

SHADOW - Main Result

Calculation: Worst & Real Case

Assumptions for shadow calculations

Maximum distance for influence

Calculate only when more than 20 % of sun is covered by the blade
Please look in WTG table

Minimum sun height over horizon for influence 3 °
Day step for calculation 1 days
Time step for calculation 1 minutes

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational hours are calculated from WTGs in calculation and wind distribution:

CERRA N 56,483277 E 26,150006

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Monthly aggregation of real case reduction

Idle start wind speed 3,0 m/s

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:

DHM: DTM model

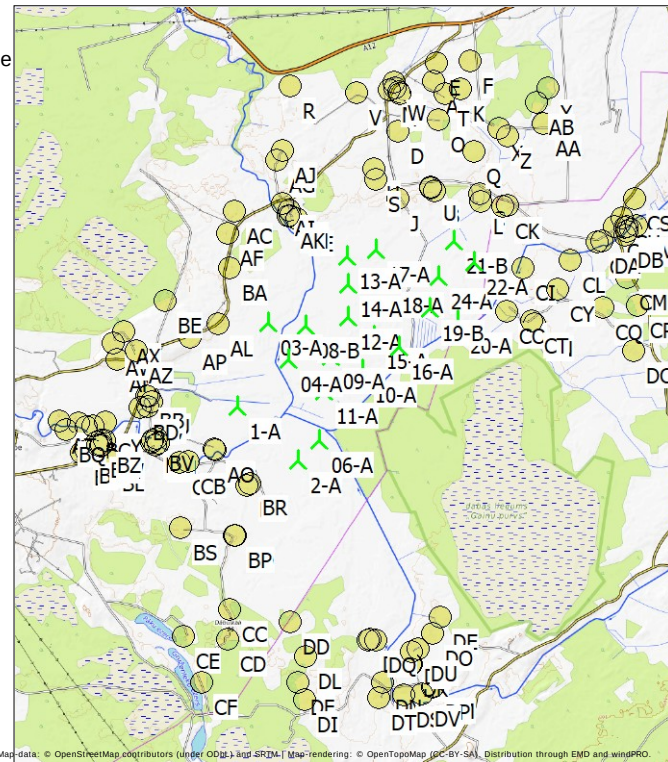
Receptor grid resolution: 1,0 m

Topographic shadow included in calculation

All coordinates are in

Geo [deg]-WGS84

WTGs



Map data: © OpenStreetMap contributors (under OGL) and SRTM; Map rendering: © OpenTopoMap (CC-BY-SA), Distribution through EMD and windPRO.

New WTG

Shadow receptor

Scale 1:125 000

	Longitude	Latitude	Z	Row data/Description	WTG type		Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.	Type-generator			Calculation distance [m]	RPM
1	26,154944° E	56,472000° N	86,4	1-A	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	1 894	10,8
2	26,171545° E	56,464065° N	87,4	2-A	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	1 894	10,8
3	26,188797° E	56,477423° N	87,3	10-A	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	1 894	10,8
4	26,191766° E	56,482416° N	88,1	15-A	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	1 894	10,8
5	26,184830° E	56,485277° N	88,1	12-A	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	1 894	10,8
6	26,195723° E	56,490817° N	88,2	18-A	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	1 894	10,8
7	26,184789° E	56,490106° N	88,3	14-A	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	1 894	10,8
8	26,192600° E	56,495313° N	88,9	17-A	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	1 894	10,8
9	26,209173° E	56,491273° N	88,1	24-A	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	1 894	10,8
10	26,213491° E	56,496603° N	89,1	21-B	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	1 894	10,8
11	26,218949° E	56,493438° N	89,5	22-A	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	1 894	10,8
12	26,214396° E	56,484740° N	88,5	20-A	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	1 894	10,8
13	26,206995° E	56,486499° N	87,9	19-B	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	1 894	10,8
14	26,198775° E	56,480846° N	87,4	16-A	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	1 894	10,8
15	26,184611° E	56,494373° N	88,5	13-A	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	1 894	10,8
16	26,178446° E	56,474208° N	87,2	11-A	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	1 894	10,8
17	26,179996° E	56,479330° N	88,4	09-A	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	1 894	10,8
18	26,173625° E	56,483937° N	86,9	08-B	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	1 894	10,8
19	26,163370° E	56,484575° N	88,4	03-A	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	1 894	10,8
20	26,168908° E	56,479068° N	86,9	04-A	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	1 894	10,8
21	26,176971° E	56,466954° N	86,4	06-A	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	1 894	10,8

Shadow receptor-Input

No.	Name	Longitude	Latitude	Z	Width	Height	Elevation	Slope of	Direction mode	Eye height
				[m]	[m]	[m]	a.g.l. [m]	window [°]		(ZVI) a.g.l. [m]
A	Aizkalnes	26,207858° E	56,520369° N	94,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
B	Zvirgzdini	26,208124° E	56,504040° N	92,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
C	Uplejas	26,220364° E	56,503587° N	90,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
D	Druku Vecumi	26,198160° E	56,512887° N	93,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0

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SHADOW - Main Result

Calculation: Worst & Real Case

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No.	Name	Longitude	Latitude	Z	Width	Height	Elevation	Slope of	Direction mode	Eye height
				[m]	[m]	[m]	a.g.l.	window		(ZVI) a.g.l.
							[m]	[°]		[m]
	E Kaijas	26,208687° E	56,522987° N	96,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	F Cvetkovi	26,217847° E	56,523273° N	96,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	G Balo ž i	26,198613° E	56,518862° N	93,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	H Berzi	26,191627° E	56,507246° N	92,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	I Kropini	26,207134° E	56,504585° N	92,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	J Ergli	26,198423° E	56,502938° N	91,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	K Nazari	26,214929° E	56,519219° N	93,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	L Akoti	26,220549° E	56,502569° N	90,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	M Linares	26,197407° E	56,520072° N	93,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	N Lamani 1	26,195936° E	56,518989° N	92,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	O Ro ž lejas	26,209238° E	56,514630° N	93,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	P Aizupes	26,199053° E	56,518437° N	92,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	Q Kumelites	26,218886° E	56,509968° N	93,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	R Dzila Vada	26,169332° E	56,519514° N	91,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	S Vecumi	26,192519° E	56,505706° N	92,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	T Rutini	26,211042° E	56,518444° N	93,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	U Viksnes	26,207029° E	56,504358° N	92,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	V Dimanti	26,187384° E	56,518664° N	93,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	W Rudzi š i	26,197546° E	56,519321° N	93,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	X Podnieki	26,225499° E	56,513205° N	93,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	Y Stimbinaja	26,238938° E	56,519389° N	93,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	Z Marsnica	26,227741° E	56,512101° N	91,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	AA Vilkmui ž a	26,237475° E	56,514054° N	93,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	AB Vecergli	26,235536° E	56,517157° N	93,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	AC Kvie š i	26,154412° E	56,500927° N	90,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	AD Me ž a Rasas	26,169055° E	56,501189° N	90,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	AE Dravnieki	26,171153° E	56,499901° N	90,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	AF Ogu Purvs	26,152495° E	56,497838° N	90,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	AG Jaunmedni	26,165627° E	56,508563° N	92,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	AH Graudini	26,169543° E	56,500262° N	90,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	AI Birznieki	26,167532° E	56,502200° N	89,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	AJ Irbites	26,167241° E	56,510128° N	91,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	AK Ruki	26,168833° E	56,500283° N	90,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	AL Vipmali	26,149905° E	56,484230° N	91,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	AM Galvani 1	26,122805° E	56,478966° N	95,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	AN Pludmales 1	26,148820° E	56,465677° N	87,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	AO Pludmales	26,149040° E	56,465610° N	87,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	AP Kalna Galvani	26,142436° E	56,482221° N	98,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	AQ Ziedini	26,114434° E	56,468966° N	89,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	AR Strautini	26,112449° E	56,469534° N	89,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	AS Druvas	26,131471° E	56,473578° N	87,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	AT Saulkrasti	26,107300° E	56,469842° N	90,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	AU Jaundruvas 1	26,131987° E	56,472637° N	88,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	AV Zilites	26,131108° E	56,471880° N	88,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	AW Avotini	26,121551° E	56,481424° N	95,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	AX Biksti	26,124410° E	56,483251° N	96,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	AY Tudalinas	26,119697° E	56,469646° N	90,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	AZ Kalnares	26,127965° E	56,480344° N	97,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BA Su š i	26,153089° E	56,492562° N	90,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BB Jaundruvas	26,130673° E	56,473442° N	87,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BC Straumenini	26,116258° E	56,469089° N	90,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BD Krasta Ozoli	26,128750° E	56,471771° N	88,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BE Galvani	26,135926° E	56,487675° N	95,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BF Mui ž nieki	26,113280° E	56,465079° N	91,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BG Me ž mui ž a	26,132979° E	56,466265° N	88,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BH Krastini	26,133875° E	56,466527° N	88,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BI Strauti	26,118340° E	56,466957° N	86,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BJ Purenes	26,117319° E	56,466719° N	87,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BK Uplejas	26,118170° E	56,466952° N	86,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BL Bazes stacija	26,120683° E	56,464128° N	90,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BM Spridi š i	26,114672° E	56,465253° N	91,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BN Klavas	26,157722° E	56,460261° N	90,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BO Kaupres	26,154481° E	56,452570° N	90,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BP Kaupres 1	26,154736° E	56,452617° N	90,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0

To be continued on next page...

SHADOW - Main Result

Calculation: Worst & Real Case

...continued from previous page

No.	Name	Longitude	Latitude	Z	Width	Height	Elevation	Slope of	Direction mode	Eye height
				[m]	[m]	[m]	a.g.l.	window		(ZVI) a.g.l.
							[m]	[°]		[m]
BQ	Lici š i	26,109041° E	56,468627° N	91,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
BR	Liepsala	26,158460° E	56,460663° N	91,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
BS	Me ž vidi	26,140069° E	56,453828° N	91,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
BT	Me ž a Mui ž a	26,131989° E	56,466718° N	89,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
BU	Vilni š i	26,132310° E	56,466977° N	90,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
BV	Raceni	26,133513° E	56,467240° N	89,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
BW	Vipes skola	26,118133° E	56,466127° N	90,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
BX	Vipes skola	26,118460° E	56,466288° N	90,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
BY	Vipes skola	26,117611° E	56,466358° N	90,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
BZ	Vipes skola 1	26,119453° E	56,467114° N	88,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
CA	Slipie 1	26,139496° E	56,463705° N	87,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
CB	Upmali	26,141987° E	56,463800° N	87,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
CC	Ziemelnieki	26,152996° E	56,441528° N	92,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
CD	Ezermui ž a	26,152602° E	56,437223° N	92,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
CE	Ezermali	26,140640° E	56,437594° N	90,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
CF	Ozolmui ž a	26,145561° E	56,430795° N	92,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
CG	Vasarnieki	26,261108° E	56,498230° N	91,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
CH	Ata š a	26,251712° E	56,496522° N	91,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
CI	Mui ž nieki	26,231972° E	56,492662° N	89,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
CJ	Rijasvecumi	26,227814° E	56,501950° N	92,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
CK	Kalvani	26,226341° E	56,501709° N	92,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
CL	Uzkalnini	26,244752° E	56,493800° N	92,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
CM	Cakstes	26,260191° E	56,491064° N	93,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
CN	Jaunie Vu š karnieki	26,234910° E	56,484228° N	89,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
CO	Upmalnieki	26,227614° E	56,486271° N	89,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
CP	Gruguli	26,259452° E	56,498488° N	91,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
CQ	Aramsala	26,253669° E	56,486836° N	92,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
CR	Alksni š i	26,262738° E	56,486897° N	94,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
CS	Lejsalie š i	26,262300° E	56,502792° N	93,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
CT	Araji	26,234288° E	56,484761° N	90,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
CU	Plavinas	26,258552° E	56,500071° N	92,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
CV	Zali š i	26,262376° E	56,498812° N	91,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
CW	Grugules	26,256543° E	56,498698° N	92,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
CX	Madaras	26,260204° E	56,498671° N	91,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
CY	Vu š karnieki	26,241183° E	56,489414° N	92,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
CZ	Vecares	26,260016° E	56,497881° N	90,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
DA	Strautmali	26,253233° E	56,496637° N	91,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
DB	Jaunari	26,259494° E	56,497402° N	91,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
DC	Vidsala	26,261621° E	56,480364° N	94,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
DD	Jaunie Robe ž nieki	26,169285° E	56,439743° N	89,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
DE	Smelceja	26,209466° E	56,440532° N	92,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
DF	Kukas	26,171356° E	56,430866° N	92,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
DG	O š ini	26,190535° E	56,437029° N	89,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
DH	O š ini	26,190590° E	56,437181° N	89,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
DI	Robe ž nieki	26,173089° E	56,428132° N	92,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
DJ	Pumpuri	26,202157° E	56,433538° N	91,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
DK	Pumpuri	26,201785° E	56,433455° N	92,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
DL	Berzkalnes	26,173600° E	56,434528° N	89,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
DM	Arsmenieki	26,207754° E	56,430248° N	93,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
DN	Smelceju majas	26,194039° E	56,430891° N	90,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
DO	Zemites	26,207501° E	56,438015° N	91,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
DP	Arsmenieki	26,207477° E	56,430056° N	93,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
DQ	Upi š i	26,192367° E	56,437127° N	90,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
DR	Aizveji	26,201934° E	56,435394° N	92,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
DS	Dzervites	26,200128° E	56,428906° N	91,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
DT	Jaunmasani	26,193181° E	56,428587° N	90,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
DU	Airites	26,203694° E	56,435670° N	91,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
DV	Upmalas	26,204770° E	56,429183° N	92,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0

SHADOW - Main Result

Calculation: Worst & Real Case

Calculation Results

Shadow receptor

No.	Name	Shadow, worst case			Shadow, expected values
		Shadow hours	Shadow days	Max shadow	Shadow hours
		per year [h/year]	per year [days/year]	hours per day [h/day]	per year [h/year]
	A Aizkalnes	0:00	0	0:00	0:00
	B Zvirgzdini	145:04	115	1:39	10:37
	C Uplejas	91:57	105	1:09	6:51
	D Druku Vecumi	0:00	0	0:00	0:00
	E Kaijas	0:00	0	0:00	0:00
	F Cvetkovi	0:00	0	0:00	0:00
	G Balo ž i	0:00	0	0:00	0:00
	H Berzi	21:43	65	0:35	1:29
	I Kropini	129:28	108	1:32	9:13
	J Ergli	169:30	135	1:54	13:29
	K Nazari	0:00	0	0:00	0:00
	L Akoti	118:46	122	1:16	9:54
	M Linares	0:00	0	0:00	0:00
	N Lamani 1	0:00	0	0:00	0:00
	O Ro ž lejas	0:00	0	0:00	0:00
	P Aizupes	0:00	0	0:00	0:00
	Q Kumelites	0:00	0	0:00	0:00
	R Dzila Vada	0:00	0	0:00	0:00
	S Vecumi	53:18	90	1:03	3:54
	T Rutini	0:00	0	0:00	0:00
	U Viksnes	134:06	110	1:32	9:41
	V Dimanti	0:00	0	0:00	0:00
	W Rudzi š i	0:00	0	0:00	0:00
	X Podnieki	0:00	0	0:00	0:00
	Y Stimbinaja	0:00	0	0:00	0:00
	Z Marsnica	0:00	0	0:00	0:00
	AA Vilkmui ž a	0:00	0	0:00	0:00
	AB Vecergli	0:00	0	0:00	0:00
	AC Kvie š i	0:00	0	0:00	0:00
	AD Me ž a Rasas	57:26	152	0:38	6:09
	AE Dravnieki	89:38	166	0:51	9:52
	AF Ogu Purvs	13:58	42	0:25	0:48
	AG Jaunmedni	0:00	0	0:00	0:00
	AH Graudini	58:55	137	0:45	7:04
	AI Birznieki	48:52	144	0:31	4:52
	AJ Irbites	0:00	0	0:00	0:00
	AK Ruki	54:02	128	0:44	6:39
	AL Vipmali	73:49	155	0:49	18:04
	AM Galvani 1	0:00	0	0:00	0:00
	AN Pludmales 1	22:24	63	0:29	5:54
	AO Pludmales	22:50	64	0:29	6:02
	AP Kalna Galvani	62:29	153	0:32	9:51
	AQ Ziedini	0:00	0	0:00	0:00
	AR Strautini	0:00	0	0:00	0:00
	AS Druvas	12:39	36	0:28	3:08
	AT Saulkrasti	0:00	0	0:00	0:00
	AU Jaundruvas 1	13:34	36	0:29	3:33
	AV Zilites	12:46	36	0:28	3:29
	AW Avotini	0:00	0	0:00	0:00
	AX Biksti	0:00	0	0:00	0:00
	AY Tudalinas	0:00	0	0:00	0:00
	AZ Kalnares	0:00	0	0:00	0:00
	BA Su š i	64:12	119	0:52	5:04
	BB Jaundruvas	11:46	34	0:27	2:56
	BC Straumenini	0:00	0	0:00	0:00
	BD Krasta Ozoli	10:18	33	0:25	2:48
	BE Galvani	8:14	29	0:24	1:52
	BF Mui ž nieki	0:00	0	0:00	0:00
	BG Me ž mui ž a	21:45	60	0:29	7:10
	BH Krastini	24:39	66	0:30	8:08
	BI Strauti	0:00	0	0:00	0:00
	BJ Purenes	0:00	0	0:00	0:00

To be continued on next page...

SHADOW - Main Result

Calculation: Worst & Real Case

...continued from previous page

No.	Name	Shadow, worst case		Shadow, expected values	
		Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
BK	Uplejas	0:00	0	0:00	0:00
BL	Bazes stacija	0:00	0	0:00	0:00
BM	Spridi š i	0:00	0	0:00	0:00
BN	Klavas	82:53	89	1:06	27:38
BO	Kaupres	0:00	0	0:00	0:00
BP	Kaupres 1	0:00	0	0:00	0:00
BQ	Lici š i	0:00	0	0:00	0:00
BR	Liepsala	92:52	93	1:11	30:55
BS	Me ž vidi	0:00	0	0:00	0:00
BT	Me ž a Mui ž a	17:32	50	0:28	5:44
BU	Vilni š i	17:53	50	0:28	5:50
BV	Raceni	20:51	56	0:30	6:48
BW	Vipes skola	0:00	0	0:00	0:00
BX	Vipes skola	0:00	0	0:00	0:00
BY	Vipes skola	0:00	0	0:00	0:00
BZ	Vipes skola 1	0:00	0	0:00	0:00
CA	Slipie 1	0:00	0	0:00	0:00
CB	Upmali	7:42	29	0:23	2:05
CC	Ziemeļnieki	0:00	0	0:00	0:00
CD	Ezermui ž a	0:00	0	0:00	0:00
CE	Ezermali	0:00	0	0:00	0:00
CF	Ozolmui ž a	0:00	0	0:00	0:00
CG	Vasarnieki	0:00	0	0:00	0:00
CH	Ata š a	0:00	0	0:00	0:00
CI	Mui ž nieki	119:52	220	1:14	31:30
CJ	Rijasvecumi	91:29	146	1:02	9:14
CK	Kalvani	103:06	150	1:06	10:26
CL	Uzkalnini	10:21	33	0:26	2:45
CM	Cakstes	0:00	0	0:00	0:00
CN	Jaunie Vu š karnieki	40:37	94	0:51	11:52
CO	Upmalnieki	104:27	192	1:13	29:05
CP	Gruguli	0:00	0	0:00	0:00
CQ	Aramsala	0:00	0	0:00	0:00
CR	Alksni š i	0:00	0	0:00	0:00
CS	Lejsalie š i	0:00	0	0:00	0:00
CT	Araji	42:46	96	0:54	12:20
CU	Plavinas	0:00	0	0:00	0:00
CV	Zali š i	0:00	0	0:00	0:00
CW	Grugules	0:00	0	0:00	0:00
CX	Madaras	0:00	0	0:00	0:00
CY	Vu š karnieki	36:56	92	0:46	10:18
CZ	Vecares	0:00	0	0:00	0:00
DA	Strautmali	0:00	0	0:00	0:00
DB	Jaunari	0:00	0	0:00	0:00
DC	Vidsala	0:00	0	0:00	0:00
DD	Jaunie Robe ž nieki	0:00	0	0:00	0:00
DE	Smelceja	0:00	0	0:00	0:00
DF	Kukas	0:00	0	0:00	0:00
DG	O š ini	0:00	0	0:00	0:00
DH	O š ini	0:00	0	0:00	0:00
DI	Robe ž nieki	0:00	0	0:00	0:00
DJ	Pumpuri	0:00	0	0:00	0:00
DK	Pumpuri	0:00	0	0:00	0:00
DL	Berzkalnes	0:00	0	0:00	0:00
DM	Arsmenieki	0:00	0	0:00	0:00
DN	Smelceju majas	0:00	0	0:00	0:00
DO	Zemites	0:00	0	0:00	0:00
DP	Arsmenieki	0:00	0	0:00	0:00
DQ	Upi š i	0:00	0	0:00	0:00
DR	Aizveji	0:00	0	0:00	0:00
DS	Dzervites	0:00	0	0:00	0:00
DT	Jaunmasani	0:00	0	0:00	0:00
DU	Airites	0:00	0	0:00	0:00
DV	Upmalas	0:00	0	0:00	0:00

SHADOW - Main Result

Calculation: Worst & Real Case

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Worst case [h/year]	Expected [h/year]
1	1-A	108:17	22:21
2	2-A	93:52	29:32
3	10-A	0:00	0:00
4	15-A	0:00	0:00
5	12-A	11:49	0:40
6	18-A	36:27	2:53
7	14-A	64:58	4:28
8	17-A	142:59	13:03
9	24-A	140:59	22:47
10	21-B	288:32	35:30
11	22-A	243:38	34:45
12	20-A	88:58	21:02
13	19-B	38:19	9:53
14	16-A	6:58	1:24
15	13-A	111:29	11:25
16	11-A	0:00	0:00
17	09-A	0:00	0:00
18	08-B	25:29	4:50
19	03-A	129:31	24:40
20	04-A	46:50	6:05
21	06-A	47:39	15:30

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

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Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: A - Aizkalnes

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:30 20:52	04:33 21:50	04:27 22:07	05:12 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:42
2	08:48 15:46	08:11 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:32 21:51	04:27 22:06	05:14 21:24	06:16 20:09	07:16 18:49	07:21 16:31	08:23 15:41
3	08:48 15:47	08:09 16:46	07:04 17:48	06:41 19:54	05:26 20:56	04:31 21:52	04:28 22:06	05:16 21:22	06:18 20:07	07:18 18:46	07:24 16:29	08:25 15:40
4	08:47 15:48	08:07 16:48	07:01 17:50	06:39 19:56	05:23 20:58	04:30 21:54	04:29 22:05	05:18 21:20	06:20 20:04	07:20 18:44	07:26 16:27	08:26 15:39
5	08:47 15:50	08:05 16:50	06:58 17:53	06:36 19:58	05:21 21:00	04:29 21:55	04:30 22:04	05:20 21:18	06:22 20:01	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:51	08:03 16:53	06:56 17:55	06:33 20:00	05:19 21:03	04:28 21:56	04:31 22:04	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
7	08:46 15:53	08:01 16:55	06:53 17:57	06:31 20:02	05:17 21:05	04:27 21:57	04:32 22:03	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	08:31 15:37
8	08:45 15:54	07:58 16:57	06:51 17:59	06:28 20:04	05:14 21:07	04:26 21:59	04:33 22:02	05:26 21:11	06:28 19:53	07:28 18:33	07:35 16:19	08:32 15:37
9	08:44 15:56	07:56 16:59	06:48 18:01	06:25 20:06	05:12 21:09	04:26 22:00	04:35 22:01	05:28 21:09	06:30 19:51	07:30 18:30	07:37 16:17	08:34 15:36
10	08:44 15:57	07:54 17:02	06:45 18:03	06:23 20:08	05:10 21:11	04:25 22:01	04:36 22:00	05:30 21:06	06:32 19:48	07:32 18:28	07:39 16:15	08:35 15:36
11	08:43 15:59	07:52 17:04	06:43 18:06	06:20 20:10	05:08 21:13	04:24 22:02	04:37 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:13	08:36 15:35
12	08:42 16:01	07:50 17:06	06:40 18:08	06:17 20:13	05:06 21:15	04:24 22:02	04:38 21:58	05:34 21:02	06:36 19:43	07:37 18:22	07:43 16:11	08:38 15:35
13	08:41 16:03	07:47 17:08	06:37 18:10	06:15 20:15	05:04 21:17	04:23 22:03	04:40 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:45 16:09	08:39 15:35
14	08:40 16:04	07:45 17:11	06:35 18:12	06:12 20:17	05:02 21:19	04:23 22:04	04:41 21:56	05:38 20:57	06:40 19:37	07:41 18:17	07:47 16:07	08:40 15:35
15	08:39 16:06	07:43 17:13	06:32 18:14	06:10 20:19	05:00 21:20	04:23 22:05	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:05	08:41 15:35
16	08:38 16:08	07:41 17:15	06:29 18:16	06:07 20:21	04:58 21:22	04:22 22:05	04:44 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:52 16:03	08:42 15:35
17	08:37 16:10	07:38 17:17	06:27 18:18	06:05 20:23	04:56 21:24	04:22 22:06	04:46 21:52	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:02	08:43 15:35
18	08:35 16:12	07:36 17:20	06:24 18:20	06:02 20:25	04:54 21:26	04:22 22:06	04:47 21:50	05:46 20:48	06:48 19:27	07:49 18:07	07:56 16:00	08:44 15:35
19	08:34 16:14	07:33 17:22	06:21 18:22	05:59 20:27	04:53 21:28	04:22 22:07	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:58	08:44 15:35
20	08:33 16:16	07:31 17:24	06:19 18:25	05:57 20:29	04:51 21:30	04:22 22:07	04:51 21:47	05:50 20:43	06:52 19:21	07:53 18:02	08:00 15:57	08:45 15:35
21	08:31 16:18	07:29 17:26	06:16 18:27	05:54 20:31	04:49 21:32	04:22 22:08	04:52 21:46	05:52 20:40	06:54 19:18	07:56 18:00	08:02 15:55	08:46 15:36
22	08:30 16:20	07:26 17:29	06:13 18:29	05:52 20:33	04:47 21:33	04:22 22:08	04:54 21:44	05:54 20:38	06:56 19:16	07:58 17:57	08:04 15:53	08:46 15:36
23	08:28 16:22	07:24 17:31	06:11 18:31	05:49 20:36	04:46 21:35	04:22 22:08	04:56 21:43	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:47 15:37
24	08:27 16:24	07:21 17:33	06:08 18:33	05:47 20:38	04:44 21:37	04:23 22:08	04:57 21:41	05:58 20:33	07:00 19:10	08:02 17:52	08:08 15:51	08:47 15:37
25	08:25 16:26	07:19 17:35	06:05 18:35	05:45 20:40	04:43 21:39	04:23 22:08	04:59 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:49	08:48 15:38
26	08:23 16:28	07:16 17:37	06:03 18:37	05:42 20:42	04:41 21:40	04:24 22:08	05:01 21:37	06:02 20:28	07:04 19:05	07:06 16:48	08:12 15:48	08:48 15:39
27	08:22 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:42	04:24 22:08	05:03 21:36	06:04 20:25	07:06 19:02	07:08 16:45	08:14 15:47	08:48 15:39
28	08:20 16:33	07:11 17:42	05:57 18:41	05:37 20:46	04:38 21:44	04:25 22:08	05:05 21:34	06:06 20:22	07:08 19:00	07:11 16:43	08:16 15:45	08:48 15:40
29	08:18 16:35		05:55 18:43	05:35 20:48	04:37 21:45	04:25 22:07	05:06 21:32	06:08 20:20	07:10 18:57	07:13 16:40	08:18 15:44	08:48 15:41
30	08:16 16:37		06:52 19:45	05:33 20:50	04:35 21:47	04:26 22:07	05:08 21:30	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:43	08:48 15:42
31	08:15 16:39		06:49 19:48		04:34 21:48		05:10 21:28	06:12 20:15		07:17 16:36		08:48 15:43
Potential sun hours	235	265	365	426	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

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Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: B - Zvirgzdini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June
1	08:48	09:54 (11) 08:13	10:39 (10) 07:09	06:47	05:30	04:33
	15:45	98 14:30 (6) 16:42	68 16:09 (15) 17:44	19:50	20:52	21:50
2	08:48	09:55 (11) 08:11	10:41 (10) 07:06	06:44	05:28	04:32
	15:46	98 14:31 (6) 16:44	69 16:12 (15) 17:46	19:52	20:54	21:51
3	08:48	09:55 (11) 08:09	10:43 (10) 07:04	06:41	05:26	04:31
	15:47	98 14:31 (6) 16:46	69 16:15 (15) 17:48	19:54	20:56	21:52
4	08:47	09:56 (11) 08:07	10:44 (10) 07:01	06:39	05:23	04:30
	15:49	98 14:32 (6) 16:48	68 16:16 (15) 17:51	19:56	20:58	21:54
5	08:47	09:56 (11) 08:05	10:47 (10) 06:58	06:36	05:21	04:29
	15:50	97 14:32 (6) 16:51	64 16:19 (15) 17:53	19:58	21:00	21:55
6	08:46	09:56 (11) 08:03	10:53 (10) 06:56	06:33	05:19	04:28
	15:51	97 14:31 (6) 16:53	55 16:22 (15) 17:55	20:00	21:02	21:56
7	08:46	09:56 (11) 08:01	15:22 (8) 06:53	06:31	05:17	04:27
	15:53	96 14:31 (6) 16:55	50 16:23 (15) 17:57	20:02	21:04	21:57
8	08:45	09:57 (11) 07:58	15:23 (8) 06:51	06:28	05:14	04:26
	15:54	95 14:31 (6) 16:57	48 16:23 (15) 17:59	20:04	21:07	21:58
9	08:44	09:57 (11) 07:56	15:25 (8) 06:48	06:25	05:12	04:26
	15:56	94 14:31 (6) 16:59	46 16:24 (15) 18:01	20:06	21:09	21:59
10	08:44	09:58 (11) 07:54	15:26 (8) 06:45	06:23	05:10	04:25
	15:58	93 14:31 (6) 17:02	43 16:23 (15) 18:03	20:08	21:11	22:00
11	08:43	09:58 (11) 07:52	15:28 (8) 06:43	06:20	05:08	04:24
	15:59	92 14:31 (6) 17:04	39 16:23 (15) 18:06	20:10	21:13	22:01
12	08:42	09:59 (11) 07:50	15:31 (8) 06:40	06:18	05:06	04:24
	16:01	90 14:31 (6) 17:06	33 16:23 (15) 18:08	20:13	21:15	22:02
13	08:41	10:00 (11) 07:47	16:02 (15) 06:37	06:15	05:04	04:23
	16:03	88 14:30 (6) 17:08	20 16:22 (15) 18:10	20:15	21:16	22:03
14	08:40	10:00 (11) 07:45	16:03 (15) 06:35	06:12	05:02	04:23
	16:04	83 14:28 (6) 17:11	18 16:21 (15) 18:12	20:17	21:18	22:04
15	08:39	10:01 (11) 07:43	16:04 (15) 06:32	06:10	05:00	04:23
	16:06	77 14:26 (6) 17:13	16 16:20 (15) 18:14	20:19	21:20	22:05
16	08:38	10:01 (11) 07:41	16:06 (15) 06:29	06:07	04:58	04:22
	16:08	74 11:15 (10) 17:15	12 16:18 (15) 18:16	20:21	21:22	22:05
17	08:36	10:02 (11) 07:38	16:10 (15) 06:27	06:05	04:56	04:22
	16:10	79 15:34 (8) 17:17	4 16:14 (15) 18:18	20:23	21:24	22:06
18	08:35	10:02 (11) 07:36		06:24	06:02	04:54
	16:12	83 15:35 (8) 17:20		18:20	20:25	21:26
19	08:34	10:04 (11) 07:33		06:21	06:00	04:53
	16:14	85 15:38 (8) 17:22		18:22	20:27	21:28
20	08:33	10:05 (11) 07:31		06:19	05:57	04:51
	16:16	88 15:40 (8) 17:24		18:25	20:29	21:30
21	08:31	10:05 (11) 07:29		06:16	05:54	04:49
	16:18	91 15:42 (8) 17:26		18:27	20:31	21:32
22	08:30	10:07 (11) 07:26		06:13	05:52	04:47
	16:20	90 15:44 (8) 17:29		18:29	20:33	21:33
23	08:28	10:08 (11) 07:24		06:11	05:49	04:46
	16:22	90 15:45 (8) 17:31		18:31	20:35	21:35
24	08:27	10:10 (11) 07:21		06:08	05:47	04:44
	16:24	87 15:46 (8) 17:33		18:33	20:38	21:37
25	08:25	10:12 (11) 07:19		06:05	05:45	04:43
	16:26	84 15:47 (8) 17:35		18:35	20:40	21:39
26	08:23	10:16 (11) 07:16		06:03	05:42	04:41
	16:28	76 15:48 (8) 17:37		18:37	20:42	21:40
27	08:22	10:33 (10) 07:14		06:00	05:40	04:40
	16:31	70 15:48 (8) 17:40		18:39	20:44	21:42
28	08:20	10:34 (10) 07:11		05:57	05:37	04:38
	16:33	71 15:49 (8) 17:42		18:41	20:46	21:44
29	08:18	10:35 (10)		05:55	05:35	04:37
	16:35	69 15:49 (8)		18:43	20:48	21:45
30	08:16	10:36 (10)		06:52	05:33	04:36
	16:37	69 15:50 (8)		19:45	20:50	21:47
31	08:14	10:38 (10)		06:49		04:34
	16:39	65 15:50 (8)		19:48		21:48
Potential sun hours	235	265	365	425	507	529
Total, worst case	2665	722				
Sun reduction	0,15	0,24				
Oper. time red.	0,94	0,94				
Wind dir. red.	0,62	0,65				
Total reduction	0,09	0,15				
Total, real	239	107				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: B - Zvirgzdini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July	August	September	October	November	December
1	04:27	05:12	06:14	07:14	07:19	08:21
2	22:07	21:26	20:12	18:52	16:34	14:56 (8)
3	04:28	05:14	06:16	07:16	07:21	08:23
4	22:06	21:24	20:09	18:49	16:31	14:53 (15)
5	04:28	05:16	06:18	07:18	07:24	08:24
6	22:06	21:22	20:07	18:46	16:29	14:53 (15)
7	04:29	05:18	06:20	07:20	07:26	08:26
8	22:05	21:20	20:04	18:44	16:27	14:53 (15)
9	04:30	05:20	06:22	07:22	07:28	08:28
10	22:04	21:17	20:01	18:41	16:25	14:53 (15)
11	04:31	05:22	06:24	07:24	07:30	08:29
12	22:04	21:15	19:59	18:38	16:23	14:50 (15)
13	04:32	05:24	06:26	07:26	07:32	08:31
14	22:03	21:13	19:56	18:36	16:21	14:48 (15)
15	04:34	05:26	06:28	07:28	07:34	08:32
16	22:02	21:11	19:53	18:33	16:19	14:46 (15)
17	04:35	05:28	06:30	07:30	07:37	08:34
18	22:01	21:09	19:51	18:30	16:17	14:43 (15)
19	04:36	05:30	06:32	07:32	07:39	08:35
20	22:00	21:06	19:48	18:28	16:15	14:42 (15)
21	04:37	05:32	06:34	07:34	07:41	08:36
22	21:59	21:04	19:45	18:25	16:13	14:39 (15)
23	04:39	05:34	06:36	07:37	07:43	08:37
24	21:58	21:02	19:43	18:23	16:11	14:37 (8)
25	04:40	05:36	06:38	07:39	07:45	08:39
26	21:57	20:59	19:40	18:20	16:09	14:35 (8)
27	04:41	05:38	06:40	07:41	07:47	08:40
28	21:56	20:57	19:37	18:17	16:07	14:33 (8)
29	04:43	05:40	06:42	07:43	07:50	08:41
30	21:54	20:55	19:35	18:15	16:05	14:32 (8)
31	04:44	05:42	06:44	07:45	07:52	08:42
32	21:53	20:52	19:32	18:12	16:03	14:31 (8)
33	04:46	05:44	06:46	07:47	07:54	08:43
34	21:52	20:50	19:29	18:10	16:02	14:30 (8)
35	04:47	05:46	06:48	07:49	07:56	08:44
36	21:50	20:48	19:27	18:07	16:00	14:28 (8)
37	04:49	05:48	06:50	07:51	07:58	08:44
38	21:49	20:45	19:24	18:05	15:58	14:26 (8)
39	04:51	05:50	06:52	07:53	08:00	08:45
40	21:47	20:43	19:21	18:02	15:57	14:25 (8)
41	04:52	05:52	06:54	07:55	08:02	08:46
42	21:46	20:40	19:18	18:00	15:55	14:24 (8)
43	04:54	05:54	06:56	07:58	08:04	08:46
44	21:44	20:38	19:16	17:57	15:54	14:23 (8)
45	04:56	05:56	06:58	08:00	08:06	08:47
46	21:42	20:35	19:13	17:55	15:52	14:22 (8)
47	04:57	05:58	07:00	08:02	08:08	08:47
48	21:41	20:33	19:10	17:52	15:51	14:21 (8)
49	04:59	06:00	07:02	08:04	08:10	08:48
50	21:39	20:30	19:08	17:50	15:49	14:20 (8)
51	05:01	06:02	07:04	08:06	15:47 (15)	08:12
52	21:37	20:28	19:05	16:48	15:48	14:19 (10)
53	05:03	06:04	07:06	08:08	15:46 (15)	08:14
54	21:35	20:25	19:02	16:45	15:47	14:18 (10)
55	05:05	06:06	07:08	08:11	15:44 (15)	08:16
56	21:34	20:22	19:00	16:43	15:46	14:17 (6)
57	05:07	06:08	07:10	08:13	15:44 (15)	08:17
58	21:32	20:20	18:57	16:41	15:44	14:16 (6)
59	05:08	06:10	07:12	08:15	15:41 (8)	08:19
60	21:30	20:17	18:54	16:38	15:43	14:15 (6)
61	05:10	06:12	07:14	08:17	15:39 (8)	08:21
62	21:28	20:15	18:51	16:36	15:37 (15)	14:14 (6)
Potential sun hours	530	470	385	324	248	216
Total, worst case				129	2168	3020
Sun reduction				0,27	0,09	0,09
Oper. time red.				0,94	0,94	0,94
Wind dir. red.				0,67	0,63	0,62
Total reduction				0,17	0,05	0,05
Total, real				22	118	151

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: C - Uplejas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January			February			March	April	May	June
1	08:48		12:20 (11)	08:13		14:06 (10)	07:09	06:47	05:30	04:33
	15:45	69	14:35 (10)	16:42	44	14:50 (10)	17:44	19:50	20:52	21:50
2	08:48		12:22 (11)	08:11		14:07 (10)	07:06	06:44	05:28	04:33
	15:46	68	14:36 (10)	16:44	42	14:49 (10)	17:46	19:52	20:54	21:51
3	08:48		12:22 (11)	08:09		14:07 (10)	07:04	06:41	05:26	04:31
	15:47	68	14:36 (10)	16:46	41	14:48 (10)	17:48	19:54	20:56	21:52
4	08:47		12:23 (11)	08:07		14:08 (10)	07:01	06:39	05:23	04:30
	15:48	69	14:38 (10)	16:48	40	14:48 (10)	17:50	19:56	20:58	21:54
5	08:47		12:24 (11)	08:05		14:09 (10)	06:58	06:36	05:21	04:29
	15:50	68	14:38 (10)	16:50	38	14:47 (10)	17:53	19:58	21:00	21:55
6	08:46		12:24 (11)	08:03		14:11 (10)	06:56	06:33	05:19	04:28
	15:51	69	14:39 (10)	16:53	36	14:47 (10)	17:55	20:00	21:02	21:56
7	08:46		12:25 (11)	08:00		14:11 (10)	06:53	06:31	05:17	04:27
	15:53	67	14:39 (10)	16:55	34	14:45 (10)	17:57	20:02	21:04	21:57
8	08:45		12:26 (11)	07:58		14:13 (10)	06:51	06:28	05:14	04:26
	15:54	67	14:40 (10)	16:57	31	14:44 (10)	17:59	20:04	21:06	21:58
9	08:44		12:27 (11)	07:56		14:15 (10)	06:48	06:25	05:12	04:26
	15:56	67	14:41 (10)	16:59	27	14:42 (10)	18:01	20:06	21:08	21:59
10	08:44		12:28 (11)	07:54		14:17 (10)	06:45	06:23	05:10	04:25
	15:57	67	14:42 (10)	17:02	23	14:40 (10)	18:03	20:08	21:10	22:00
11	08:43		12:30 (11)	07:52		14:21 (10)	06:43	06:20	05:08	04:24
	15:59	64	14:42 (10)	17:04	16	14:37 (10)	18:05	20:10	21:12	22:01
12	08:42		12:32 (11)	07:50		14:29 (10)	06:40	06:17	05:06	04:24
	16:01	63	14:43 (10)	17:06	1	14:30 (10)	18:08	20:12	21:14	22:02
13	08:41		12:33 (11)	07:47			06:37	06:15	05:04	04:23
	16:03	61	14:44 (10)	17:08			18:10	20:15	21:16	22:03
14	08:40		12:35 (11)	07:45			06:35	06:12	05:02	04:23
	16:04	58	14:44 (10)	17:11			18:12	20:17	21:18	22:04
15	08:39		12:38 (11)	07:43			06:32	06:10	05:00	04:23
	16:06	53	14:45 (10)	17:13			18:14	20:19	21:20	22:05
16	08:38		14:00 (10)	07:40			06:29	06:07	04:58	04:22
	16:08	45	14:45 (10)	17:15			18:16	20:21	21:22	22:05
17	08:36		14:01 (10)	07:38			06:27	06:05	04:56	04:22
	16:10	46	14:47 (10)	17:17			18:18	20:23	21:24	22:06
18	08:35		14:00 (10)	07:36			06:24	06:02	04:54	04:22
	16:12	47	14:47 (10)	17:20			18:20	20:25	21:26	22:06
19	08:34		14:01 (10)	07:33			06:21	05:59	04:53	04:22
	16:14	47	14:48 (10)	17:22			18:22	20:27	21:28	22:07
20	08:32		14:01 (10)	07:31			06:19	05:57	04:51	04:22
	16:16	47	14:48 (10)	17:24			18:24	20:29	21:30	22:07
21	08:31		14:01 (10)	07:29			06:16	05:54	04:49	04:22
	16:18	47	14:48 (10)	17:26			18:27	20:31	21:32	22:07
22	08:30		14:02 (10)	07:26			06:13	05:52	04:47	04:22
	16:20	47	14:49 (10)	17:29			18:29	20:33	21:33	22:08
23	08:28		14:02 (10)	07:24			06:11	05:49	04:46	04:23
	16:22	47	14:49 (10)	17:31			18:31	20:35	21:35	22:08
24	08:27		14:02 (10)	07:21			06:08	05:47	04:44	04:23
	16:24	47	14:49 (10)	17:33			18:33	20:38	21:37	22:08
25	08:25		14:02 (10)	07:19			06:05	05:45	04:43	04:23
	16:26	48	14:50 (10)	17:35			18:35	20:40	21:39	22:08
26	08:23		14:02 (10)	07:16			06:03	05:42	04:41	04:24
	16:28	48	14:50 (10)	17:37			18:37	20:42	21:40	22:08
27	08:22		14:03 (10)	07:14			06:00	05:40	04:40	04:24
	16:31	47	14:50 (10)	17:40			18:39	20:44	21:42	22:08
28	08:20		14:03 (10)	07:11			05:57	05:37	04:38	04:25
	16:33	47	14:50 (10)	17:42			18:41	20:46	21:43	22:07
29	08:18		14:04 (10)				05:55	05:35	04:37	04:25
	16:35	46	14:50 (10)				18:43	20:48	21:45	22:07
30	08:16		14:04 (10)				06:52	05:33	04:36	04:26
	16:37	46	14:50 (10)				19:45	20:50	21:47	22:07
31	08:14		14:05 (10)				06:49		04:34	
	16:39	45	14:50 (10)				19:47		21:48	
Potential sun hours	235			265			365	425	507	529
Total, worst case		1725			373					
Sun reduction		0,15			0,24					
Oper. time red.		0,94			0,94					
Wind dir. red.		0,66			0,67					
Total reduction		0,10			0,15					
Total, real		166			56					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: C - Uplejas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July	August	September	October	November	December
1	04:27 22:07	05:12 21:26	06:14 20:12	07:14 18:51	07:19 16:34	13:48 (10) 14:09 (10)
2	04:28 22:06	05:14 21:24	06:16 20:09	07:16 18:49	07:21 16:31	13:45 (10) 14:11 (10)
3	04:28 22:06	05:16 21:22	06:18 20:07	07:18 18:46	07:24 16:29	13:44 (10) 14:13 (10)
4	04:29 22:05	05:18 21:20	06:20 20:04	07:20 18:43	07:26 16:27	13:42 (10) 14:14 (10)
5	04:30 22:04	05:20 21:17	06:22 20:01	07:22 18:41	07:28 16:25	13:41 (10) 14:16 (10)
6	04:31 22:04	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	13:40 (10) 14:17 (10)
7	04:32 22:03	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	13:38 (10) 14:17 (10)
8	04:34 22:02	05:26 21:11	06:28 19:53	07:28 18:33	07:34 16:19	13:38 (10) 14:19 (10)
9	04:35 22:01	05:28 21:09	06:30 19:51	07:30 18:30	07:37 16:17	13:37 (10) 14:19 (10)
10	04:36 22:00	05:30 21:06	06:32 19:48	07:32 18:28	07:39 16:15	13:37 (10) 14:20 (10)
11	04:37 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:13	13:36 (10) 14:21 (10)
12	04:39 21:58	05:34 21:02	06:36 19:43	07:36 18:22	07:43 16:11	13:36 (10) 14:21 (10)
13	04:40 21:57	05:36 20:59	06:38 19:40	07:39 18:20	07:45 16:09	13:36 (10) 14:22 (10)
14	04:41 21:56	05:38 20:57	06:40 19:37	07:41 18:17	07:47 16:07	13:35 (10) 14:22 (10)
15	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:49 16:05	13:36 (10) 14:23 (10)
16	04:44 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:52 16:03	13:36 (10) 14:23 (10)
17	04:46 21:52	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:02	13:35 (10) 14:23 (10)
18	04:47 21:50	05:46 20:47	06:48 19:27	07:49 18:07	07:56 16:00	13:36 (10) 14:24 (10)
19	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:58	13:36 (10) 14:24 (10)
20	04:51 21:47	05:50 20:43	06:52 19:21	07:53 18:02	08:00 15:57	13:36 (10) 14:23 (10)
21	04:52 21:46	05:52 20:40	06:54 19:18	07:55 18:00	08:02 15:55	13:37 (10) 14:24 (10)
22	04:54 21:44	05:54 20:38	06:56 19:16	07:58 17:57	08:04 15:54	13:37 (10) 14:24 (10)
23	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	13:37 (10) 14:24 (10)
24	04:57 21:41	05:58 20:33	07:00 19:10	08:02 17:52	08:08 15:51	13:37 (10) 14:24 (10)
25	04:59 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:49	13:39 (10) 14:25 (10)
26	05:01 21:37	06:02 20:27	07:04 19:05	07:06 16:48	08:12 15:48	13:39 (10) 14:25 (10)
27	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:45	08:14 15:47	12:21 (11) 14:25 (10)
28	05:05 21:34	06:06 20:22	07:08 19:00	07:11 16:43	08:16 15:45	12:16 (11) 14:25 (10)
29	05:06 21:32	06:08 20:20	07:10 18:57	07:13 16:40	08:17 15:44	12:15 (11) 14:25 (10)
30	05:08 21:30	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:43	12:13 (11) 14:25 (10)
31	05:10 21:28	06:12 20:15		07:17 16:36	13:52 (10) 14:05 (10)	08:48 15:43
Potential sun hours	530	470	385	324	248	216
Total, worst case				13	1320	2086
Sun reduction				0,27	0,09	0,09
Oper. time red.				0,94	0,94	0,94
Wind dir. red.				0,67	0,67	0,66
Total reduction				0,17	0,06	0,05
Total, real				2	76	111

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: D - Druku Vecumi

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:30 20:52	04:33 21:50	04:27 22:07	05:12 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:42
2	08:48 15:46	08:11 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:32 21:51	04:28 22:06	05:14 21:24	06:16 20:09	07:16 18:49	07:21 16:31	08:23 15:41
3	08:48 15:47	08:09 16:46	07:04 17:48	06:41 19:54	05:26 20:56	04:31 21:52	04:28 22:06	05:16 21:22	06:18 20:07	07:18 18:46	07:24 16:29	08:25 15:40
4	08:47 15:51	08:07 16:57	07:01 17:59	06:39 20:00	05:23 20:58	04:30 21:54	04:29 22:05	05:18 21:20	06:20 20:04	07:20 18:44	07:26 16:27	08:26 15:40
5	08:47 15:50	08:05 16:51	06:58 17:53	06:36 19:58	05:21 21:00	04:29 21:55	04:30 22:04	05:20 21:18	06:22 20:01	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:51	08:03 16:53	06:56 17:55	06:33 20:00	05:19 21:03	04:28 21:56	04:31 22:04	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
7	08:46 15:53	08:01 16:55	06:53 17:57	06:31 20:02	05:17 21:05	04:27 21:57	04:32 22:03	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	08:31 15:37
8	08:45 15:54	07:58 16:57	06:51 17:59	06:28 20:04	05:14 21:07	04:26 21:59	04:34 22:02	05:26 21:11	06:28 19:54	07:28 18:33	07:35 16:19	08:32 15:37
9	08:44 15:56	07:56 16:59	06:48 18:01	06:25 20:06	05:12 21:09	04:26 22:00	04:35 22:01	05:28 21:09	06:30 19:51	07:30 18:30	07:37 16:17	08:34 15:36
10	08:44 15:58	07:54 17:02	06:45 18:03	06:23 20:08	05:10 21:11	04:25 22:01	04:36 22:00	05:30 21:06	06:32 19:48	07:32 18:28	07:39 16:15	08:35 15:36
11	08:43 15:59	07:52 17:04	06:43 18:06	06:20 20:10	05:08 21:13	04:24 22:02	04:37 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:13	08:36 15:35
12	08:42 16:01	07:50 17:06	06:40 18:08	06:18 20:13	05:06 21:15	04:24 22:02	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:38 15:35
13	08:41 16:03	07:47 17:08	06:38 18:10	06:15 20:15	05:04 21:17	04:23 22:03	04:40 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:45 16:09	08:39 15:35
14	08:40 16:04	07:45 17:11	06:35 18:12	06:12 20:17	05:02 21:19	04:23 22:04	04:41 21:56	05:38 20:57	06:40 19:37	07:41 18:17	07:47 16:07	08:40 15:35
15	08:39 16:06	07:43 17:13	06:32 18:14	06:10 20:19	05:00 21:20	04:23 22:05	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:05	08:41 15:35
16	08:38 16:08	07:41 17:15	06:30 18:16	06:07 20:21	04:58 21:22	04:22 22:05	04:44 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:52 16:03	08:42 15:35
17	08:37 16:10	07:38 17:17	06:27 18:18	06:05 20:23	04:56 21:24	04:22 22:06	04:46 21:52	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:02	08:43 15:35
18	08:35 16:12	07:36 17:20	06:24 18:20	06:02 20:25	04:54 21:26	04:22 22:06	04:47 21:50	05:46 20:48	06:48 19:27	07:49 18:07	07:56 16:00	08:44 15:35
19	08:34 16:14	07:33 17:22	06:22 18:22	06:00 20:27	04:53 21:28	04:22 22:07	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:58	08:44 15:35
20	08:33 16:16	07:31 17:24	06:19 18:25	05:57 20:29	04:51 21:30	04:22 22:07	04:51 21:47	05:50 20:43	06:52 19:21	07:53 18:02	08:00 15:57	08:45 15:35
21	08:31 16:18	07:29 17:26	06:16 18:27	05:54 20:31	04:49 21:32	04:22 22:07	04:52 21:46	05:52 20:40	06:54 19:18	07:56 18:00	08:02 15:55	08:46 15:36
22	08:30 16:20	07:26 17:29	06:13 18:29	05:52 20:33	04:47 21:33	04:22 22:08	04:54 21:44	05:54 20:38	06:56 19:16	07:58 17:57	08:04 15:54	08:46 15:36
23	08:28 16:22	07:24 17:31	06:11 18:31	05:49 20:36	04:46 21:35	04:23 22:08	04:56 21:43	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:47 15:37
24	08:27 16:24	07:21 17:33	06:08 18:33	05:47 20:38	04:44 21:37	04:23 22:08	04:57 21:41	05:58 20:33	07:00 19:10	08:02 17:52	08:08 15:51	08:47 15:37
25	08:25 16:26	07:19 17:35	06:05 18:35	05:45 20:40	04:43 21:39	04:23 22:08	04:59 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:49	08:48 15:38
26	08:23 16:28	07:16 17:37	06:03 18:37	05:42 20:42	04:41 21:40	04:24 22:08	05:01 21:37	06:02 20:28	07:04 19:05	07:06 16:48	08:12 15:48	08:48 15:39
27	08:22 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:42	04:24 22:08	05:03 21:36	06:04 20:25	07:06 19:02	07:08 16:45	08:14 15:47	08:48 15:39
28	08:20 16:33	07:11 17:42	05:57 18:41	05:37 20:46	04:38 21:44	04:25 22:08	05:05 21:34	06:06 20:22	07:08 19:00	07:11 16:43	08:16 15:46	08:48 15:40
29	08:18 16:35		05:55 18:43	05:35 20:48	04:37 21:45	04:25 22:07	05:07 21:32	06:08 20:20	07:10 18:57	07:13 16:41	08:18 15:44	08:48 15:41
30	08:16 16:37		06:52 19:45	05:33 20:50	04:36 21:47	04:26 22:07	05:08 21:30	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:43	08:48 15:42
31	08:15 16:39		06:49 19:48		04:34 21:48		05:10 21:28	06:12 20:15		07:17 16:36		08:48 15:43
Potential sun hours	235	265	365	426	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: E - Kaijas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:30 20:52	04:33 21:50	04:27 22:07	05:12 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:42
2	08:48 15:46	08:11 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:32 21:51	04:27 22:06	05:14 21:24	06:16 20:09	07:16 18:49	07:21 16:31	08:23 15:41
3	08:48 15:47	08:09 16:46	07:04 17:48	06:41 19:54	05:26 20:56	04:31 21:52	04:28 22:06	05:16 21:22	06:18 20:07	07:18 18:46	07:24 16:29	08:25 15:40
4	08:47 15:51	08:07 16:53	07:01 17:55	06:39 20:00	05:23 21:03	04:30 21:56	04:29 22:04	05:18 21:15	06:20 19:59	07:20 18:38	07:26 16:23	08:26 15:38
5	08:47 15:50	08:05 16:50	06:58 17:53	06:36 19:58	05:21 21:00	04:29 21:55	04:30 22:04	05:20 21:18	06:22 20:01	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:51	08:03 16:53	06:56 17:55	06:33 20:00	05:19 21:03	04:28 21:56	04:31 22:04	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
7	08:46 15:53	08:01 16:55	06:53 17:57	06:31 20:02	05:17 21:05	04:27 21:57	04:32 22:03	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	08:31 15:37
8	08:45 15:54	07:58 16:57	06:51 17:59	06:28 20:04	05:14 21:07	04:26 21:59	04:33 22:02	05:26 21:11	06:28 19:53	07:28 18:33	07:35 16:19	08:32 15:37
9	08:44 15:56	07:56 16:59	06:48 18:01	06:25 20:06	05:12 21:09	04:26 22:00	04:35 22:01	05:28 21:09	06:30 19:51	07:30 18:30	07:37 16:17	08:34 15:36
10	08:44 15:57	07:54 17:02	06:45 18:03	06:23 20:08	05:10 21:11	04:25 22:01	04:36 22:00	05:30 21:06	06:32 19:48	07:32 18:28	07:39 16:15	08:35 15:36
11	08:43 15:59	07:52 17:04	06:43 18:06	06:20 20:10	05:08 21:13	04:24 22:02	04:37 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:13	08:36 15:35
12	08:42 16:01	07:50 17:06	06:40 18:08	06:17 20:13	05:06 21:15	04:24 22:02	04:38 21:58	05:34 21:02	06:36 19:43	07:37 18:22	07:43 16:11	08:38 15:35
13	08:41 16:03	07:47 17:08	06:37 18:10	06:15 20:15	05:04 21:17	04:23 22:03	04:40 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:45 16:09	08:39 15:35
14	08:40 16:04	07:45 17:11	06:35 18:12	06:12 20:17	05:02 21:19	04:23 22:04	04:41 21:56	05:38 20:57	06:40 19:37	07:41 18:17	07:47 16:07	08:40 15:35
15	08:39 16:06	07:43 17:13	06:32 18:14	06:10 20:19	05:00 21:20	04:23 22:05	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:05	08:41 15:35
16	08:38 16:08	07:41 17:15	06:29 18:16	06:07 20:21	04:58 21:22	04:22 22:05	04:44 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:52 16:03	08:42 15:35
17	08:37 16:10	07:38 17:17	06:27 18:18	06:05 20:23	04:56 21:24	04:22 22:06	04:46 21:52	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:01	08:43 15:35
18	08:35 16:12	07:36 17:20	06:24 18:20	06:02 20:25	04:54 21:26	04:22 22:06	04:47 21:50	05:46 20:48	06:48 19:27	07:49 18:07	07:56 16:00	08:44 15:35
19	08:34 16:14	07:33 17:22	06:21 18:22	05:59 20:27	04:52 21:28	04:22 22:07	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:58	08:44 15:35
20	08:33 16:16	07:31 17:24	06:19 18:25	05:57 20:29	04:51 21:30	04:22 22:07	04:51 21:47	05:50 20:43	06:52 19:21	07:53 18:02	08:00 15:57	08:45 15:35
21	08:31 16:18	07:29 17:26	06:16 18:27	05:54 20:31	04:49 21:32	04:22 22:08	04:52 21:46	05:52 20:40	06:54 19:18	07:56 18:00	08:02 15:55	08:46 15:36
22	08:30 16:20	07:26 17:29	06:13 18:29	05:52 20:33	04:47 21:34	04:22 22:08	04:54 21:44	05:54 20:38	06:56 19:16	07:58 17:57	08:04 15:53	08:46 15:36
23	08:28 16:22	07:24 17:31	06:11 18:31	05:49 20:36	04:46 21:35	04:22 22:08	04:56 21:43	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:47 15:37
24	08:27 16:24	07:21 17:33	06:08 18:33	05:47 20:38	04:44 21:37	04:23 22:08	04:57 21:41	05:58 20:33	07:00 19:10	08:02 17:52	08:08 15:51	08:47 15:37
25	08:25 16:26	07:19 17:35	06:05 18:35	05:44 20:40	04:42 21:39	04:23 22:08	04:59 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:49	08:48 15:38
26	08:23 16:28	07:16 17:37	06:03 18:37	05:42 20:42	04:41 21:40	04:24 22:08	05:01 21:37	06:02 20:28	07:04 19:05	07:06 16:48	08:12 15:48	08:48 15:39
27	08:22 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:42	04:24 22:08	05:03 21:36	06:04 20:25	07:06 19:02	07:08 16:45	08:14 15:47	08:48 15:39
28	08:20 16:33	07:11 17:42	05:57 18:41	05:37 20:46	04:38 21:44	04:25 22:08	05:05 21:34	06:06 20:22	07:08 19:00	07:11 16:43	08:16 15:45	08:48 15:40
29	08:18 16:35		05:55 18:43	05:35 20:48	04:37 21:45	04:25 22:07	05:06 21:32	06:08 20:20	07:10 18:57	07:13 16:40	08:18 15:44	08:48 15:41
30	08:16 16:37		06:52 19:45	05:32 20:50	04:35 21:47	04:26 22:07	05:08 21:30	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:43	08:48 15:42
31	08:15 16:39		06:49 19:48		04:34 21:48		05:10 21:28	06:12 20:15		07:17 16:36		08:48 15:43
Potential sun hours	235	265	365	426	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: F - Cvetkovi

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:41	07:09 17:44	06:47 19:50	05:30 20:52	04:33 21:50	04:27 22:07	05:12 21:26	06:14 20:12	07:14 18:51	07:19 16:34	08:21 15:42
2	08:48 15:46	08:11 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:32 21:51	04:27 22:06	05:14 21:24	06:16 20:09	07:16 18:49	07:21 16:31	08:23 15:41
3	08:48 15:47	08:09 16:46	07:04 17:48	06:41 19:54	05:25 20:56	04:31 21:52	04:28 22:06	05:16 21:22	06:18 20:07	07:18 18:46	07:24 16:29	08:25 15:40
4	08:47 15:51	08:07 16:57	07:01 17:59	06:39 20:00	05:23 21:02	04:30 21:56	04:29 22:04	05:18 21:15	06:20 19:59	07:20 18:38	07:26 16:23	08:26 15:38
5	08:47 15:50	08:05 16:50	06:58 17:53	06:36 19:58	05:21 21:00	04:29 21:55	04:30 22:04	05:20 21:18	06:22 20:01	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:51	08:03 16:53	06:56 17:55	06:33 20:00	05:19 21:02	04:28 21:56	04:31 22:04	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
7	08:46 15:53	08:01 16:55	06:53 17:57	06:31 20:02	05:17 21:05	04:27 21:57	04:32 22:03	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	08:31 15:37
8	08:45 15:54	07:58 16:57	06:51 17:59	06:28 20:04	05:14 21:07	04:26 21:59	04:33 22:02	05:26 21:11	06:28 19:53	07:28 18:33	07:35 16:19	08:32 15:37
9	08:44 15:56	07:56 16:59	06:48 18:01	06:25 20:06	05:12 21:09	04:25 22:00	04:35 22:01	05:28 21:09	06:30 19:51	07:30 18:30	07:37 16:16	08:34 15:36
10	08:44 15:57	07:54 17:02	06:45 18:03	06:23 20:08	05:10 21:11	04:25 22:01	04:36 22:00	05:30 21:06	06:32 19:48	07:32 18:28	07:39 16:14	08:35 15:36
11	08:43 15:59	07:52 17:04	06:43 18:05	06:20 20:10	05:08 21:13	04:24 22:02	04:37 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:13	08:36 15:35
12	08:42 16:01	07:50 17:06	06:40 18:08	06:17 20:13	05:06 21:15	04:24 22:02	04:38 21:58	05:34 21:02	06:36 19:43	07:36 18:22	07:43 16:11	08:38 15:35
13	08:41 16:03	07:47 17:08	06:37 18:10	06:15 20:15	05:04 21:17	04:23 22:03	04:40 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:45 16:09	08:39 15:35
14	08:40 16:04	07:45 17:11	06:35 18:12	06:12 20:17	05:02 21:18	04:23 22:04	04:41 21:56	05:38 20:57	06:40 19:37	07:41 18:17	07:47 16:07	08:40 15:35
15	08:39 16:06	07:43 17:13	06:32 18:14	06:10 20:19	05:00 21:20	04:23 22:05	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:05	08:41 15:35
16	08:38 16:08	07:41 17:15	06:29 18:16	06:07 20:21	04:58 21:22	04:22 22:05	04:44 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:52 16:03	08:42 15:35
17	08:36 16:10	07:38 17:17	06:27 18:18	06:05 20:23	04:56 21:24	04:22 22:06	04:46 21:52	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:01	08:43 15:35
18	08:35 16:12	07:36 17:20	06:24 18:20	06:02 20:25	04:54 21:26	04:22 22:06	04:47 21:50	05:46 20:48	06:48 19:27	07:49 18:07	07:56 16:00	08:44 15:35
19	08:34 16:14	07:33 17:22	06:21 18:22	05:59 20:27	04:52 21:28	04:22 22:07	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:58	08:44 15:35
20	08:33 16:16	07:31 17:24	06:19 18:25	05:57 20:29	04:51 21:30	04:22 22:07	04:50 21:47	05:50 20:43	06:52 19:21	07:53 18:02	08:00 15:56	08:45 15:35
21	08:31 16:18	07:29 17:26	06:16 18:27	05:54 20:31	04:49 21:32	04:22 22:07	04:52 21:46	05:52 20:40	06:54 19:18	07:55 18:00	08:02 15:55	08:46 15:36
22	08:30 16:20	07:26 17:28	06:13 18:29	05:52 20:33	04:47 21:33	04:22 22:08	04:54 21:44	05:54 20:38	06:56 19:16	07:58 17:57	08:04 15:53	08:46 15:36
23	08:28 16:22	07:24 17:31	06:11 18:31	05:49 20:35	04:46 21:35	04:22 22:08	04:56 21:43	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:47 15:37
24	08:27 16:24	07:21 17:33	06:08 18:33	05:47 20:38	04:44 21:37	04:23 22:08	04:57 21:41	05:58 20:33	07:00 19:10	08:02 17:52	08:08 15:51	08:47 15:37
25	08:25 16:26	07:19 17:35	06:05 18:35	05:44 20:40	04:42 21:39	04:23 22:08	04:59 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:49	08:48 15:38
26	08:23 16:28	07:16 17:37	06:03 18:37	05:42 20:42	04:41 21:40	04:23 22:08	05:01 21:37	06:02 20:28	07:04 19:05	07:06 16:47	08:12 15:48	08:48 15:38
27	08:22 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:39 21:42	04:24 22:08	05:03 21:36	06:04 20:25	07:06 19:02	07:08 16:45	08:14 15:47	08:48 15:39
28	08:20 16:33	07:11 17:42	05:57 18:41	05:37 20:46	04:38 21:44	04:25 22:08	05:05 21:34	06:06 20:22	07:08 19:00	07:11 16:43	08:16 15:45	08:48 15:40
29	08:18 16:35		05:55 18:43	05:35 20:48	04:37 21:45	04:25 22:07	05:06 21:32	06:08 20:20	07:10 18:57	07:13 16:40	08:18 15:44	08:48 15:41
30	08:16 16:37		06:52 19:45	05:32 20:50	04:35 21:47	04:26 22:07	05:08 21:30	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:43	08:48 15:42
31	08:15 16:39		06:49 19:48		04:34 21:48		05:10 21:28	06:12 20:15		07:17 16:36		08:48 15:43
Potential sun hours	235	265	365	426	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: G - Balo ži

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:30 20:52	04:33 21:50	04:27 22:07	05:12 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:42
2	08:48 15:46	08:11 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:32 21:51	04:27 22:06	05:14 21:24	06:16 20:09	07:16 18:49	07:22 16:31	08:23 15:41
3	08:48 15:47	08:09 16:46	07:04 17:48	06:41 19:54	05:26 20:56	04:31 21:53	04:28 22:06	05:16 21:22	06:18 20:07	07:18 18:46	07:24 16:29	08:25 15:40
4	08:47 15:51	08:07 16:57	07:01 17:59	06:39 20:00	05:23 20:58	04:30 21:54	04:29 22:05	05:18 21:20	06:20 20:04	07:20 18:44	07:26 16:27	08:26 15:39
5	08:47 15:50	08:05 16:50	06:58 17:53	06:36 19:58	05:21 21:00	04:29 21:55	04:30 22:04	05:20 21:18	06:22 20:02	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:51	08:03 16:53	06:56 17:55	06:33 20:00	05:19 21:03	04:28 21:56	04:31 22:04	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
7	08:46 15:53	08:01 16:55	06:53 17:57	06:31 20:02	05:17 21:05	04:27 21:57	04:32 22:03	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	08:31 15:37
8	08:45 15:54	07:58 16:57	06:51 17:59	06:28 20:04	05:14 21:07	04:26 21:59	04:33 22:02	05:26 21:11	06:28 19:54	07:28 18:33	07:35 16:19	08:32 15:37
9	08:44 15:56	07:56 16:59	06:48 18:01	06:25 20:06	05:12 21:09	04:26 22:00	04:35 22:01	05:28 21:09	06:30 19:51	07:30 18:30	07:37 16:17	08:34 15:36
10	08:44 15:57	07:54 17:02	06:45 18:03	06:23 20:08	05:10 21:11	04:25 22:01	04:36 22:00	05:30 21:07	06:32 19:48	07:32 18:28	07:39 16:15	08:35 15:36
11	08:43 15:59	07:52 17:04	06:43 18:06	06:20 20:10	05:08 21:13	04:24 22:02	04:37 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:13	08:36 15:35
12	08:42 16:01	07:50 17:06	06:40 18:08	06:18 20:13	05:06 21:15	04:24 22:02	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:38 15:35
13	08:41 16:03	07:47 17:08	06:38 18:10	06:15 20:15	05:04 21:17	04:23 22:03	04:40 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:45 16:09	08:39 15:35
14	08:40 16:04	07:45 17:11	06:35 18:12	06:12 20:17	05:02 21:19	04:23 22:04	04:41 21:56	05:38 20:57	06:40 19:37	07:41 18:17	07:48 16:07	08:40 15:35
15	08:39 16:06	07:43 17:13	06:32 18:14	06:10 20:19	05:00 21:20	04:23 22:05	04:43 21:55	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:05	08:41 15:35
16	08:38 16:08	07:41 17:15	06:30 18:16	06:07 20:21	04:58 21:22	04:22 22:05	04:44 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:52 16:03	08:42 15:35
17	08:37 16:10	07:38 17:17	06:27 18:18	06:05 20:23	04:56 21:24	04:22 22:06	04:46 21:52	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:02	08:43 15:35
18	08:35 16:12	07:36 17:20	06:24 18:20	06:02 20:25	04:54 21:26	04:22 22:06	04:47 21:50	05:46 20:48	06:48 19:27	07:49 18:07	07:56 16:00	08:44 15:35
19	08:34 16:14	07:33 17:22	06:22 18:22	06:00 20:27	04:53 21:28	04:22 22:07	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:58	08:44 15:35
20	08:33 16:16	07:31 17:24	06:19 18:25	05:57 20:29	04:51 21:30	04:22 22:07	04:51 21:47	05:50 20:43	06:52 19:21	07:53 18:02	08:00 15:57	08:45 15:35
21	08:31 16:18	07:29 17:26	06:16 18:27	05:54 20:31	04:49 21:32	04:22 22:08	04:52 21:46	05:52 20:40	06:54 19:18	07:56 18:00	08:02 15:55	08:46 15:36
22	08:30 16:20	07:26 17:29	06:13 18:29	05:52 20:33	04:47 21:34	04:22 22:08	04:54 21:44	05:54 20:38	06:56 19:16	07:58 17:57	08:04 15:54	08:46 15:36
23	08:28 16:22	07:24 17:31	06:11 18:31	05:49 20:36	04:46 21:35	04:22 22:08	04:56 21:43	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:47 15:37
24	08:27 16:24	07:21 17:33	06:08 18:33	05:47 20:38	04:44 21:37	04:23 22:08	04:57 21:41	05:58 20:33	07:00 19:10	08:02 17:52	08:08 15:51	08:47 15:37
25	08:25 16:26	07:19 17:35	06:05 18:35	05:45 20:40	04:43 21:39	04:23 22:08	04:59 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:49	08:48 15:38
26	08:23 16:28	07:16 17:37	06:03 18:37	05:42 20:42	04:41 21:40	04:24 22:08	05:01 21:37	06:02 20:28	07:04 19:05	07:06 16:48	08:12 15:48	08:48 15:39
27	08:22 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:42	04:24 22:08	05:03 21:36	06:04 20:25	07:06 19:02	07:08 16:45	08:14 15:47	08:48 15:39
28	08:20 16:33	07:11 17:42	05:57 18:41	05:37 20:46	04:38 21:44	04:25 22:08	05:05 21:34	06:06 20:22	07:08 19:00	07:11 16:43	08:16 15:45	08:48 15:40
29	08:18 16:35		05:55 18:43	05:35 20:48	04:37 21:45	04:25 22:07	05:06 21:32	06:08 20:20	07:10 18:57	07:13 16:41	08:18 15:44	08:48 15:41
30	08:16 16:37		06:52 19:45	05:33 20:50	04:36 21:47	04:26 22:07	05:08 21:30	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:43	08:48 15:42
31	08:15 16:39		06:49 19:48		04:34 21:48		05:10 21:28	06:12 20:15		07:17 16:36		08:48 15:43
Potential sun hours	235	265	365	426	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

SKEPAST & PUKIM

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: H - Berzi

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June
1	08:48	13:26 (15)	08:13	08:51 (10)	07:09	06:47
	15:45	12	13:38 (15)	16:42	23	09:14 (10)
2	08:48	13:27 (15)	08:11	08:51 (10)	07:06	06:44
	15:46	11	13:38 (15)	16:44	23	09:14 (10)
3	08:48	13:29 (15)	08:09	08:51 (10)	07:04	06:41
	15:47	8	13:37 (15)	16:46	24	09:15 (10)
4	08:47	13:32 (15)	08:07	08:51 (10)	07:01	06:39
	15:49	4	13:36 (15)	16:48	23	09:14 (10)
5	08:47		08:05	08:52 (10)	06:59	06:36
	15:50		16:51	22	09:14 (10)	17:53
6	08:46		08:03	08:52 (10)	06:56	06:33
	15:51		16:53	22	09:14 (10)	17:55
7	08:46		08:01	08:54 (10)	06:53	06:31
	15:53		16:55	19	09:13 (10)	17:57
8	08:45		07:58	08:54 (10)	06:51	06:28
	15:54		16:57	18	09:12 (10)	17:59
9	08:44		07:56	08:56 (10)	06:48	06:25
	15:56		17:00	15	09:11 (10)	18:01
10	08:44		07:54	08:58 (10)	06:45	06:23
	15:58		17:02	11	09:09 (10)	18:03
11	08:43		07:52	09:01 (10)	06:43	06:20
	15:59		17:04	4	09:05 (10)	18:06
12	08:42		07:50		06:40	06:18
	16:01		17:06		18:08	20:13
13	08:41		07:47		06:38	06:15
	16:03		17:09		18:10	20:15
14	08:40		07:45		06:35	06:12
	16:05		17:11		18:12	20:17
15	08:39		07:43		06:32	06:10
	16:06		17:13		18:14	20:19
16	08:38		07:41		06:30	06:07
	16:08		17:15		18:16	20:21
17	08:37		07:38		06:27	06:05
	16:10		17:18		18:18	20:23
18	08:35		07:36		06:24	06:02
	16:12		17:20		18:20	20:25
19	08:34		07:33		06:22	06:00
	16:14		17:22		18:23	20:27
20	08:33		07:31		06:19	05:57
	16:16		17:24		18:25	20:29
21	08:31		07:29		06:16	05:55
	16:18		17:26		18:27	20:31
22	08:30		07:26		06:14	05:52
	16:20		17:29		18:29	20:33
23	08:28		07:24		06:11	05:50
	16:22		17:31		18:31	20:36
24	08:27	09:02 (10)	07:21		06:08	05:47
	16:24	5	09:07 (10)	17:33	18:33	20:38
25	08:25	09:00 (10)	07:19		06:05	05:45
	16:26	8	09:08 (10)	17:35	18:35	20:40
26	08:23	08:58 (10)	07:16		06:03	05:42
	16:29	11	09:09 (10)	17:37	18:37	20:42
27	08:22	08:56 (10)	07:14		06:00	05:40
	16:31	15	09:11 (10)	17:40	18:39	20:44
28	08:20	08:54 (10)	07:11		05:57	05:37
	16:33	17	09:11 (10)	17:42	18:41	20:46
29	08:18	08:52 (10)			05:55	05:35
	16:35	20	09:12 (10)		18:43	20:48
30	08:16	08:51 (10)			06:52	05:33
	16:37	22	09:13 (10)		19:46	20:50
31	08:15	08:51 (10)			06:49	04:34
	16:39	22	09:13 (10)		19:48	21:48
Potential sun hours	235		265		365	425
Total, worst case		155		204		507
Sun reduction		0,15		0,24		
Oper. time red.		0,94		0,94		
Wind dir. red.		0,60		0,59		
Total reduction		0,09		0,13		
Total, real		13		27		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: H - Berzi

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July	August	September	October	November	December
1	04:27	05:12	06:14	07:14	07:19	08:28 (10) 08:21
	22:07	21:26	20:12	18:52	16:34	9 08:37 (10) 15:42
2	04:28	05:14	06:16	07:16	07:21	08:25 (10) 08:23
	22:06	21:24	20:09	18:49	16:32	14 08:39 (10) 15:41
3	04:28	05:16	06:18	07:18	07:24	08:24 (10) 08:25
	22:06	21:22	20:07	18:46	16:29	17 08:41 (10) 15:40
4	04:29	05:18	06:20	07:20	07:26	08:23 (10) 08:26
	22:05	21:20	20:04	18:44	16:27	19 08:42 (10) 15:40
5	04:30	05:20	06:22	07:22	07:28	08:23 (10) 08:28
	22:04	21:18	20:02	18:41	16:25	20 08:43 (10) 15:39
6	04:31	05:22	06:24	07:24	07:30	08:22 (10) 08:29
	22:04	21:15	19:59	18:38	16:23	22 08:44 (10) 15:38
7	04:32	05:24	06:26	07:26	07:32	08:22 (10) 08:31
	22:03	21:13	19:56	18:36	16:21	23 08:45 (10) 15:37
8	04:34	05:26	06:28	07:28	07:35	08:21 (10) 08:32
	22:02	21:11	19:54	18:33	16:19	24 08:45 (10) 15:37
9	04:35	05:28	06:30	07:30	07:37	08:21 (10) 08:34
	22:01	21:09	19:51	18:30	16:17	23 08:44 (10) 15:36
10	04:36	05:30	06:32	07:32	07:39	08:22 (10) 08:35
	22:00	21:06	19:48	18:28	16:15	23 08:45 (10) 15:36
11	04:37	05:32	06:34	07:34	07:41	08:22 (10) 08:36
	21:59	21:04	19:45	18:25	16:13	23 08:45 (10) 15:36
12	04:39	05:34	06:36	07:37	07:43	08:23 (10) 08:38
	21:58	21:02	19:43	18:23	16:11	22 08:45 (10) 15:35
13	04:40	05:36	06:38	07:39	07:45	08:23 (10) 08:39
	21:57	21:00	19:40	18:20	16:09	22 08:45 (10) 15:35
14	04:41	05:38	06:40	07:41	07:47	08:25 (10) 08:40
	21:56	20:57	19:37	18:17	16:07	19 08:44 (10) 15:35
15	04:43	05:40	06:42	07:43	07:50	08:28 (10) 08:41
	21:54	20:55	19:35	18:15	16:05	16 08:44 (10) 15:35
16	04:44	05:42	06:44	07:45	07:52	08:30 (10) 08:42
	21:53	20:52	19:32	18:12	16:03	13 08:43 (10) 15:35
17	04:46	05:44	06:46	07:47	07:54	08:33 (10) 08:43
	21:52	20:50	19:29	18:10	16:02	10 08:43 (10) 15:35
18	04:47	05:46	06:48	07:49	07:56	08:35 (10) 08:44
	21:50	20:48	19:27	18:07	16:00	7 08:42 (10) 15:35
19	04:49	05:48	06:50	07:51	07:58	08:37 (10) 08:44
	21:49	20:45	19:24	18:05	15:58	3 08:40 (10) 15:35
20	04:51	05:50	06:52	07:53	08:00	08:45
	21:47	20:43	19:21	18:02	15:57	34 13:36 (15)
21	04:52	05:52	06:54	07:56	08:02	08:46
	21:46	20:40	19:19	18:00	15:55	34 13:37 (15)
22	04:54	05:54	06:56	07:58	08:04	08:46
	21:44	20:38	19:16	17:57	15:54	35 13:37 (15)
23	04:56	05:56	06:58	08:00	08:06	08:47
	21:43	20:35	19:13	17:55	15:52	34 13:38 (15)
24	04:58	05:58	07:00	08:02	08:08	08:47
	21:41	20:33	19:10	17:52	15:51	34 13:38 (15)
25	04:59	06:00	07:02	08:04	08:10	08:48
	21:39	20:30	19:08	17:50	15:49	33 13:38 (15)
26	05:01	06:02	07:04	07:06	08:12	08:48
	21:37	20:28	19:05	16:48	15:48	32 13:38 (15)
27	05:03	06:04	07:06	07:08	08:14	08:48
	21:36	20:25	19:02	16:45	15:47	30 13:38 (15)
28	05:05	06:06	07:08	07:11	08:16	08:48
	21:34	20:22	19:00	16:43	15:46	30 13:38 (15)
29	05:07	06:08	07:10	07:13	08:18	08:48
	21:32	20:20	18:57	16:41	15:44	28 13:39 (15)
30	05:08	06:10	07:12	07:15	08:19	08:48
	21:30	20:17	18:54	16:38	15:43	26 13:39 (15)
31	05:10	06:12		07:17		08:48
	21:28	20:15		16:36		22 13:39 (15)
Potential sun hours	530	470	385	324	248	216
Total, worst case					329	615
Sun reduction					0,09	0,09
Oper. time red.					0,94	0,94
Wind dir. red.					0,59	0,64
Total reduction					0,05	0,05
Total, real					17	32

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

SKEPAST & PUKKIM

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: I - Kropini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January		February		March	April	May	June
1	08:48	09:50 (11)	08:13	10:35 (10)	07:09	06:47	05:30	04:33
	15:45	86 14:16 (6)	16:42	71 16:09 (15)	17:44	19:50	20:52	21:50
2	08:48	09:51 (11)	08:11	10:37 (10)	07:06	06:44	05:28	04:32
	15:46	86 14:17 (6)	16:44	68 16:12 (15)	17:46	19:52	20:54	21:51
3	08:48	09:51 (11)	08:09	10:41 (10)	07:04	06:41	05:26	04:31
	15:47	85 14:16 (6)	16:46	61 16:13 (15)	17:48	19:54	20:56	21:52
4	08:47	09:52 (11)	08:07	15:10 (8)	07:01	06:39	05:23	04:30
	15:49	84 14:17 (6)	16:48	47 16:13 (15)	17:51	19:56	20:58	21:54
5	08:47	09:52 (11)	08:05	15:11 (8)	06:58	06:36	05:21	04:29
	15:50	83 14:16 (6)	16:51	45 16:13 (15)	17:53	19:58	21:00	21:55
6	08:46	09:53 (11)	08:03	15:13 (8)	06:56	06:33	05:19	04:28
	15:51	81 14:16 (6)	16:53	42 16:13 (15)	17:55	20:00	21:02	21:56
7	08:46	09:53 (11)	08:01	15:16 (8)	06:53	06:31	05:17	04:27
	15:53	79 14:15 (6)	16:55	37 16:14 (15)	17:57	20:02	21:04	21:57
8	08:45	09:53 (11)	07:58	15:18 (8)	06:51	06:28	05:14	04:26
	15:54	79 14:15 (6)	16:57	30 16:13 (15)	17:59	20:04	21:07	21:58
9	08:44	09:54 (11)	07:56	15:52 (15)	06:48	06:25	05:12	04:26
	15:56	81 15:17 (8)	16:59	20 16:12 (15)	18:01	20:06	21:09	21:59
10	08:44	09:54 (11)	07:54	15:52 (15)	06:45	06:23	05:10	04:25
	15:58	78 15:19 (8)	17:02	19 16:11 (15)	18:03	20:08	21:11	22:00
11	08:43	09:55 (11)	07:52	15:53 (15)	06:43	06:20	05:08	04:24
	15:59	80 15:21 (8)	17:04	18 16:11 (15)	18:06	20:10	21:13	22:01
12	08:42	09:56 (11)	07:50	15:55 (15)	06:40	06:18	05:06	04:24
	16:01	83 15:23 (8)	17:06	14 16:09 (15)	18:08	20:13	21:15	22:02
13	08:41	09:57 (11)	07:47	15:57 (15)	06:37	06:15	05:04	04:23
	16:03	85 15:25 (8)	17:08	10 16:07 (15)	18:10	20:15	21:16	22:03
14	08:40	09:57 (11)	07:45		06:35	06:12	05:02	04:23
	16:04	86 15:26 (8)	17:11		18:12	20:17	21:18	22:04
15	08:39	09:58 (11)	07:43		06:32	06:10	05:00	04:23
	16:06	88 15:28 (8)	17:13		18:14	20:19	21:20	22:05
16	08:38	09:58 (11)	07:41		06:29	06:07	04:58	04:22
	16:08	90 15:29 (8)	17:15		18:16	20:21	21:22	22:05
17	08:36	09:59 (11)	07:38		06:27	06:05	04:56	04:22
	16:10	91 15:30 (8)	17:17		18:18	20:23	21:24	22:06
18	08:35	09:59 (11)	07:36		06:24	06:02	04:54	04:22
	16:12	92 15:31 (8)	17:20		18:20	20:25	21:26	22:06
19	08:34	10:01 (11)	07:33		06:21	06:00	04:53	04:22
	16:14	91 15:32 (8)	17:22		18:22	20:27	21:28	22:07
20	08:33	10:02 (11)	07:31		06:19	05:57	04:51	04:22
	16:16	91 15:32 (8)	17:24		18:25	20:29	21:30	22:07
21	08:31	10:03 (11)	07:29		06:16	05:54	04:49	04:22
	16:18	91 15:33 (8)	17:26		18:27	20:31	21:32	22:07
22	08:30	10:05 (11)	07:26		06:13	05:52	04:47	04:22
	16:20	88 15:34 (8)	17:29		18:29	20:33	21:33	22:08
23	08:28	10:06 (11)	07:24		06:11	05:49	04:46	04:23
	16:22	88 15:35 (8)	17:31		18:31	20:35	21:35	22:08
24	08:27	10:09 (11)	07:21		06:08	05:47	04:44	04:23
	16:24	82 15:35 (8)	17:33		18:33	20:38	21:37	22:08
25	08:25	10:14 (11)	07:19		06:05	05:45	04:43	04:23
	16:26	70 15:35 (8)	17:35		18:35	20:40	21:39	22:08
26	08:23	10:26 (10)	07:16		06:03	05:42	04:41	04:24
	16:28	69 15:35 (8)	17:37		18:37	20:42	21:40	22:08
27	08:22	10:27 (10)	07:14		06:00	05:40	04:40	04:24
	16:31	69 15:57 (15)	17:40		18:39	20:44	21:42	22:08
28	08:20	10:28 (10)	07:11		05:57	05:37	04:38	04:25
	16:33	71 15:59 (15)	17:42		18:41	20:46	21:44	22:08
29	08:18	10:30 (10)			05:55	05:35	04:37	04:25
	16:35	73 16:02 (15)			18:43	20:48	21:45	22:07
30	08:16	10:31 (10)			06:52	05:33	04:36	04:26
	16:37	73 16:04 (15)			19:45	20:50	21:47	22:07
31	08:14	10:33 (10)			06:49		04:34	
	16:39	73 16:07 (15)			19:48		21:48	
Potential sun hours	235		265		365	425	507	529
Total, worst case		2546		482				
Sun reduction		0,15		0,24				
Oper. time red.		0,94		0,94				
Wind dir. red.		0,62		0,66				
Total reduction		0,09		0,15				
Total, real		230		72				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: I - Kropini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July	August	September	October		November		December	
1	04:27	05:12	06:14	07:14		07:19	15:22 (15)	08:21	09:37 (11)
	22:07	21:26	20:12	18:52		16:34	19 15:41 (15)	15:42	83 15:04 (8)
2	04:28	05:14	06:16	07:16		07:21	15:21 (15)	08:23	09:37 (11)
	22:06	21:24	20:09	18:49		16:31	20 15:41 (15)	15:41	80 15:03 (8)
3	04:28	05:16	06:18	07:18		07:24	15:21 (15)	08:24	09:38 (11)
	22:06	21:22	20:07	18:46		16:29	21 15:42 (15)	15:40	78 15:02 (8)
4	04:29	05:18	06:20	07:20		07:26	14:46 (8)	08:26	09:38 (11)
	22:05	21:20	20:04	18:44		16:27	35 15:43 (15)	15:40	82 15:01 (8)
5	04:30	05:20	06:22	07:22		07:28	14:44 (8)	08:28	09:39 (11)
	22:04	21:17	20:01	18:41		16:25	40 15:43 (15)	15:39	78 14:00 (6)
6	04:31	05:22	06:24	07:24		07:30	14:42 (8)	08:29	09:39 (11)
	22:04	21:15	19:59	18:38		16:23	43 15:43 (15)	15:38	80 14:01 (6)
7	04:32	05:24	06:26	07:26		07:32	14:40 (8)	08:31	09:39 (11)
	22:03	21:13	19:56	18:36		16:21	46 15:43 (15)	15:37	83 14:03 (6)
8	04:34	05:26	06:28	07:28		07:34	10:14 (10)	08:32	09:40 (11)
	22:02	21:11	19:53	18:33		16:19	54 15:43 (15)	15:37	83 14:04 (6)
9	04:35	05:28	06:30	07:30		07:37	10:09 (10)	08:34	09:40 (11)
	22:01	21:09	19:51	18:30		16:17	65 15:43 (15)	15:36	85 14:05 (6)
10	04:36	05:30	06:32	07:32		07:39	10:07 (10)	08:35	09:41 (11)
	22:00	21:06	19:48	18:28		16:15	70 15:42 (15)	15:36	85 14:06 (6)
11	04:37	05:32	06:34	07:34		07:41	10:05 (10)	08:36	09:41 (11)
	21:59	21:04	19:45	18:25		16:13	71 15:39 (15)	15:36	87 14:07 (6)
12	04:39	05:34	06:36	07:37		07:43	10:03 (10)	08:37	09:41 (11)
	21:58	21:02	19:43	18:23		16:11	73 15:37 (15)	15:35	87 14:07 (6)
13	04:40	05:36	06:38	07:39		07:45	10:02 (10)	08:39	09:42 (11)
	21:57	20:59	19:40	18:20		16:09	72 15:35 (15)	15:35	87 14:08 (6)
14	04:41	05:38	06:40	07:41		07:47	10:01 (10)	08:40	09:43 (11)
	21:56	20:57	19:37	18:17		16:07	73 15:33 (15)	15:35	87 14:09 (6)
15	04:43	05:40	06:42	07:43		07:50	10:01 (10)	08:41	09:43 (11)
	21:54	20:55	19:35	18:15		16:05	70 15:31 (15)	15:35	87 14:09 (6)
16	04:44	05:42	06:44	07:45		07:52	10:00 (10)	08:42	09:44 (11)
	21:53	20:52	19:32	18:12		16:03	67 15:09 (8)	15:35	87 14:10 (6)
17	04:46	05:44	06:46	07:47		07:54	09:59 (10)	08:43	09:44 (11)
	21:52	20:50	19:29	18:10		16:02	69 15:08 (8)	15:35	88 14:11 (6)
18	04:47	05:46	06:48	07:49		07:56	09:45 (11)	08:44	09:45 (11)
	21:50	20:48	19:27	18:07		16:00	78 15:09 (8)	15:35	88 14:11 (6)
19	04:49	05:48	06:50	07:51		07:58	09:42 (11)	08:44	09:45 (11)
	21:49	20:45	19:24	18:05		15:58	84 15:09 (8)	15:35	87 14:11 (6)
20	04:51	05:50	06:52	07:53		08:00	09:40 (11)	08:45	09:45 (11)
	21:47	20:43	19:21	18:02		15:57	87 15:09 (8)	15:35	88 14:12 (6)
21	04:52	05:52	06:54	07:55		08:02	09:39 (11)	08:46	09:46 (11)
	21:46	20:40	19:18	18:00		15:55	91 15:09 (8)	15:36	88 14:13 (6)
22	04:54	05:54	06:56	07:58		08:04	09:38 (11)	08:46	09:46 (11)
	21:44	20:38	19:16	17:57		15:54	92 15:09 (8)	15:36	88 14:13 (6)
23	04:56	05:56	06:58	08:00		08:06	09:38 (11)	08:47	09:47 (11)
	21:42	20:35	19:13	17:55		15:52	90 15:08 (8)	15:37	88 14:14 (6)
24	04:57	05:58	07:00	08:02		08:08	09:37 (11)	08:47	09:47 (11)
	21:41	20:33	19:10	17:52		15:51	91 15:08 (8)	15:37	88 14:14 (6)
25	04:59	06:00	07:02	08:04		08:10	09:37 (11)	08:48	09:48 (11)
	21:39	20:30	19:08	17:50		15:49	92 15:09 (8)	15:38	87 14:14 (6)
26	05:01	06:02	07:04	07:06		08:12	09:37 (11)	08:48	09:48 (11)
	21:37	20:28	19:05	16:48		15:48	90 15:08 (8)	15:39	87 14:14 (6)
27	05:03	06:04	07:06	07:08		08:14	09:37 (11)	08:48	09:48 (11)
	21:35	20:25	19:02	16:45		15:47	90 15:08 (8)	15:39	88 14:15 (6)
28	05:05	06:06	07:08	07:11		08:16	09:37 (11)	08:48	09:49 (11)
	21:34	20:22	19:00	16:43		15:46	89 15:07 (8)	15:40	87 14:15 (6)
29	05:07	06:08	07:10	07:13	15:29 (15)	08:17	09:37 (11)	08:48	09:49 (11)
	21:32	20:20	18:57	16:41	6 15:35 (15)	15:44	88 15:07 (8)	15:41	87 14:15 (6)
30	05:08	06:10	07:12	07:15	15:25 (15)	08:19	09:37 (11)	08:48	09:50 (11)
	21:30	20:17	18:54	16:38	13 15:38 (15)	15:43	84 15:05 (8)	15:42	87 14:16 (6)
31	05:10	06:12		07:17	15:24 (15)			08:48	09:51 (11)
	21:28	20:15		16:36	16 15:40 (15)			15:43	86 14:16 (6)
Potential sun hours	530	470	385	324		248		216	
Total, worst case				35		2054			2651
Sun reduction				0,27		0,09			0,09
Oper. time red.				0,94		0,94			0,94
Wind dir. red.				0,67		0,63			0,62
Total reduction				0,17		0,05			0,05
Total, real				6		113			133

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

SKEPAST & PUHKIM

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: J - Ergli

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June
1	08:48	10:04 (9) 08:13	08:46 (11) 07:09	06:47 05:30	04:33	
	15:45	14:44 (7) 16:42	15:40 (15) 17:44	19:50 20:52	21:50	
2	08:48	10:05 (9) 08:11	08:46 (11) 07:06	06:44 05:28	04:32	
	15:46	14:45 (7) 16:44	15:40 (15) 17:46	19:52 20:54	21:51	
3	08:48	10:06 (9) 08:09	08:46 (11) 07:04	06:41 05:26	04:31	
	15:47	14:45 (7) 16:46	15:40 (15) 17:48	19:54 20:56	21:52	
4	08:47	10:07 (9) 08:07	08:43 (10) 07:01	06:39 05:23	04:30	
	15:49	14:46 (7) 16:48	15:39 (15) 17:51	19:56 20:58	21:54	
5	08:47	10:07 (9) 08:05	08:42 (10) 06:58	06:36 05:21	04:29	
	15:50	14:46 (7) 16:51	15:39 (15) 17:53	19:58 21:00	21:55	
6	08:46	10:07 (9) 08:03	08:41 (10) 06:56	06:33 05:19	04:28	
	15:51	14:46 (7) 16:53	15:38 (15) 17:55	20:00 21:02	21:56	
7	08:46	10:08 (9) 08:01	08:40 (10) 06:53	06:31 05:17	04:27	
	15:53	14:46 (7) 16:55	15:38 (15) 17:57	20:02 21:05	21:57	
8	08:45	10:08 (9) 07:58	08:38 (10) 06:51	06:28 05:15	04:26	
	15:54	14:46 (7) 16:57	15:36 (15) 17:59	20:04 21:07	21:58	
9	08:44	10:09 (9) 07:56	08:38 (10) 06:48	06:25 05:12	04:26	
	15:56	14:46 (7) 17:00	15:35 (15) 18:01	20:06 21:09	22:00	
10	08:44	10:10 (9) 07:54	08:38 (10) 06:45	06:23 05:10	04:25	
	15:58	14:46 (7) 17:02	15:33 (15) 18:03	20:08 21:11	22:01	
11	08:43	10:11 (9) 07:52	08:36 (10) 06:43	06:20 05:08	04:24	
	15:59	14:47 (7) 17:04	15:29 (15) 18:06	20:10 21:13	22:01	
12	08:42	10:12 (9) 07:50	08:36 (10) 06:40	06:18 05:06	04:24	
	16:01	15:22 (15) 17:06	09:10 (10) 18:08	20:13 21:15	22:02	
13	08:41	10:13 (9) 07:47	08:36 (10) 06:37	06:15 05:04	04:23	
	16:03	15:25 (15) 17:09	09:10 (10) 18:10	20:15 21:17	22:03	
14	08:40	10:13 (9) 07:45	08:36 (10) 06:35	06:12 05:02	04:23	
	16:05	15:26 (15) 17:11	09:11 (10) 18:12	20:17 21:18	22:04	
15	08:39	10:15 (9) 07:43	08:35 (10) 06:32	06:10 05:00	04:23	
	16:06	15:28 (15) 17:13	09:10 (10) 18:14	20:19 21:20	22:05	
16	08:38	10:15 (9) 07:41	08:36 (10) 06:30	06:07 04:58	04:23	
	16:08	15:29 (15) 17:15	09:11 (10) 18:16	20:21 21:22	22:05	
17	08:36	10:17 (9) 07:38	08:35 (10) 06:27	06:05 04:56	04:22	
	16:10	15:31 (15) 17:17	09:10 (10) 18:18	20:23 21:24	22:06	
18	08:35	10:18 (9) 07:36	08:36 (10) 06:24	06:02 04:54	04:22	
	16:12	15:32 (15) 17:20	09:10 (10) 18:20	20:25 21:26	22:06	
19	08:34	10:21 (9) 07:33	08:36 (10) 06:22	06:00 04:53	04:22	
	16:14	15:33 (15) 17:22	09:09 (10) 18:22	20:27 21:28	22:07	
20	08:33	10:24 (9) 07:31	08:37 (10) 06:19	05:57 04:51	04:22	
	16:16	15:34 (15) 17:24	09:09 (10) 18:25	20:29 21:30	22:07	
21	08:31	13:40 (8) 07:29	08:37 (10) 06:16	05:55 04:49	04:22	
	16:18	15:35 (15) 17:26	09:08 (10) 18:27	20:31 21:32	22:07	
22	08:30	13:41 (8) 07:26	08:38 (10) 06:13	05:52 04:47	04:22	
	16:20	15:36 (15) 17:29	09:07 (10) 18:29	20:33 21:33	22:08	
23	08:28	13:41 (8) 07:24	08:39 (10) 06:11	05:50 04:46	04:23	
	16:22	15:37 (15) 17:31	09:06 (10) 18:31	20:36 21:35	22:08	
24	08:27	13:42 (8) 07:21	08:41 (10) 06:08	05:47 04:44	04:23	
	16:24	15:37 (15) 17:33	09:05 (10) 18:33	20:38 21:37	22:08	
25	08:25	13:42 (8) 07:19	08:42 (10) 06:05	05:45 04:43	04:23	
	16:26	15:38 (15) 17:35	09:02 (10) 18:35	20:40 21:39	22:08	
26	08:23	08:58 (11) 07:16	08:44 (10) 06:03	05:42 04:41	04:24	
	16:29	15:38 (15) 17:37	08:59 (10) 18:37	20:42 21:40	22:08	
27	08:22	08:56 (11) 07:14	08:49 (10) 06:00	05:40 04:40	04:24	
	16:31	15:39 (15) 17:40	08:55 (10) 18:39	20:44 21:42	22:08	
28	08:20	08:54 (11) 07:11		05:57 05:37	04:38	04:25
	16:33	15:39 (15) 17:42		18:41 20:46	21:44	22:08
29	08:18	08:52 (11)		05:55 05:35	04:37	04:25
	16:35	15:39 (15)		18:43 20:48	21:45	22:07
30	08:16	08:50 (11)		06:52 05:33	04:36	04:26
	16:37	15:40 (15)		19:45 20:50	21:47	22:07
31	08:14	08:48 (11)		06:49	04:34	
	16:39	15:40 (15)		19:48	21:48	
Potential sun hours	235	265	365	425	507	529
Total, worst case	2832	1164				
Sun reduction	0,15	0,24				
Oper. time red.	0,94	0,94				
Wind dir. red.	0,65	0,62				
Total reduction	0,09	0,14				
Total, real	267	163				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: J - Ergli

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	July	August	September	October	November	December
1	04:27	05:12	06:14	07:14	07:19	08:06 (10) 08:21 09:53 (9)
	22:07	21:26	20:12	18:52	16:34 46	15:01 (15) 15:42 98 15:02 (15)
2	04:28	05:14	06:16	07:16	07:21	08:06 (10) 08:23 09:53 (9)
	22:06	21:24	20:09	18:49	16:32 51	15:03 (15) 15:41 95 14:29 (7)
3	04:28	05:16	06:18	07:18	07:24	08:08 (10) 08:24 09:53 (9)
	22:06	21:22	20:07	18:46	16:29 54	15:05 (15) 15:40 97 14:30 (7)
4	04:29	05:18	06:20	07:20	07:26	08:08 (10) 08:26 09:53 (9)
	22:05	21:20	20:04	18:44	16:27 56	15:06 (15) 15:40 98 14:31 (7)
5	04:30	05:20	06:22	07:22	07:28	08:10 (10) 08:28 09:54 (9)
	22:04	21:17	20:01	18:41	16:25 57	15:08 (15) 15:39 99 14:32 (7)
6	04:31	05:22	06:24	07:24	07:30	08:11 (10) 08:29 09:53 (9)
	22:04	21:15	19:59	18:38	16:23 58	15:08 (15) 15:38 99 14:31 (7)
7	04:32	05:24	06:26	07:26	07:32	08:12 (10) 08:31 09:54 (9)
	22:03	21:13	19:56	18:36	16:21 74	15:09 (15) 15:37 99 14:32 (7)
8	04:34	05:26	06:28	07:28	07:35	08:15 (10) 08:32 09:55 (9)
	22:02	21:11	19:53	18:33	16:19 78	15:10 (15) 15:37 99 14:33 (7)
9	04:35	05:28	06:30	07:30	07:37	08:16 (11) 08:34 09:54 (9)
	22:01	21:09	19:51	18:30	16:17 81	15:10 (15) 15:36 99 14:33 (7)
10	04:36	05:30	06:32	07:32	07:39	08:17 (11) 08:35 09:55 (9)
	22:00	21:06	19:48	18:28	16:15 85	15:11 (15) 15:36 100 14:34 (7)
11	04:37	05:32	06:34	07:34	07:41	08:18 (11) 08:36 09:55 (9)
	21:59	21:04	19:45	18:25	16:13 87	15:11 (15) 15:36 100 14:34 (7)
12	04:39	05:34	06:36	07:37	07:43	08:21 (11) 08:37 09:55 (9)
	21:58	21:02	19:43	18:23	16:11 86	15:12 (15) 15:35 105 14:34 (7)
13	04:40	05:36	06:38	07:39	07:45	08:23 (11) 08:39 09:56 (9)
	21:57	21:00	19:40	18:20	16:09 85	15:12 (15) 15:35 108 14:36 (7)
14	04:41	05:38	06:40	07:41	07:47	08:25 (11) 08:40 09:57 (9)
	21:56	20:57	19:37	18:17	16:07 83	15:11 (15) 15:35 108 14:36 (7)
15	04:43	05:40	06:42	07:43	07:50	08:28 (11) 08:41 09:57 (9)
	21:54	20:55	19:35	18:15	16:05 82	15:12 (15) 15:35 110 14:36 (7)
16	04:44	05:42	06:44	07:45	07:52	08:30 (11) 08:42 09:57 (9)
	21:53	20:52	19:32	18:12	09:17 (10) 16:03 77	15:12 (15) 15:35 113 14:37 (7)
17	04:46	05:44	06:46	07:47	09:31 (10) 16:03 77	15:12 (15) 15:35 113 14:37 (7)
	21:52	20:50	19:29	18:10	09:14 (10) 16:02 74	13:16 (8) 08:43 09:58 (9)
18	04:47	05:46	06:48	07:49	09:33 (10) 16:02 74	15:11 (15) 15:35 112 14:37 (7)
	21:50	20:48	19:27	18:07	09:12 (10) 16:02 74	13:16 (8) 08:44 09:58 (9)
19	04:49	05:48	06:50	07:51	09:35 (10) 16:00 74	15:12 (15) 15:35 114 14:38 (7)
	21:49	20:45	19:24	18:05	09:11 (10) 16:00 74	13:16 (8) 08:44 09:58 (9)
20	04:51	05:50	06:52	07:53	09:37 (10) 15:58 73	15:11 (15) 15:35 114 14:38 (7)
	21:47	20:43	19:21	18:02	09:09 (10) 16:00 73	13:15 (8) 08:45 09:59 (9)
21	04:52	05:52	06:54	07:56	09:38 (10) 15:57 74	15:11 (15) 15:35 113 14:38 (7)
	21:46	20:40	19:18	18:00	09:08 (10) 16:00 73	13:16 (8) 08:46 10:00 (9)
22	04:54	05:54	06:56	07:58	09:38 (10) 15:55 73	15:11 (15) 15:36 114 14:39 (7)
	21:44	20:38	19:16	17:57	09:08 (10) 16:00 73	13:16 (8) 08:46 10:00 (9)
23	04:56	05:56	06:58	08:00	09:40 (10) 15:54 73	15:11 (15) 15:36 114 14:39 (7)
	21:43	20:35	19:13	17:55	09:07 (10) 16:00 83	09:59 (9) 08:47 10:01 (9)
24	04:58	05:58	07:00	08:02	09:40 (10) 15:52 83	15:10 (15) 15:37 114 14:40 (7)
	21:41	20:33	19:10	17:52	09:06 (10) 16:00 83	09:58 (9) 08:47 10:01 (9)
25	04:59	06:00	07:02	08:04	09:40 (10) 15:51 92	15:10 (15) 15:37 113 14:40 (7)
	21:39	20:30	19:08	17:50	09:05 (10) 16:00 99	09:56 (9) 08:48 10:01 (9)
26	05:01	06:02	07:04	08:06	09:40 (10) 15:49 99	15:10 (15) 15:38 114 14:41 (7)
	21:37	20:28	19:05	16:48	08:05 (10) 16:00 102	09:55 (9) 08:48 10:01 (9)
27	05:03	06:04	07:06	08:08	08:40 (10) 15:48 102	15:09 (15) 15:39 114 14:41 (7)
	21:35	20:25	19:02	16:45	08:05 (10) 16:00 105	09:54 (9) 08:48 10:02 (9)
28	05:05	06:06	07:08	08:10	08:40 (10) 15:47 105	15:08 (15) 15:40 112 14:41 (7)
	21:34	20:22	19:00	16:43	08:06 (10) 16:00 105	09:54 (9) 08:48 10:02 (9)
29	05:07	06:08	07:10	08:12	08:41 (10) 15:46 105	15:07 (15) 15:40 113 14:42 (7)
	21:32	20:20	18:57	16:41	08:05 (10) 16:00 105	09:53 (9) 08:48 10:03 (9)
30	05:08	06:10	07:12	08:14	08:40 (10) 15:44 105	15:06 (15) 15:41 110 14:42 (7)
	21:30	20:17	18:54	16:38	08:05 (10) 16:00 103	09:53 (9) 08:48 10:04 (9)
31	05:10	06:12	07:14	08:16	08:39 (10) 15:43 103	15:04 (15) 15:42 108 14:43 (7)
	21:28	20:15	18:51	16:36	08:06 (10) 15:43 108	08:48 10:04 (9)
Potential sun hours	530	470	385	324	248	216
Total, worst case				485	2375	3314
Sun reduction				0,27	0,09	0,09
Oper. time red.				0,94	0,94	0,94
Wind dir. red.				0,60	0,65	0,65
Total reduction				0,15	0,06	0,05
Total, real				74	133	173

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: K - Nazari

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:41	07:09 17:44	06:47 19:50	05:30 20:52	04:33 21:50	04:27 22:07	05:12 21:26	06:14 20:12	07:14 18:51	07:19 16:34	08:21 15:42
2	08:48 15:46	08:11 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:32 21:51	04:27 22:06	05:14 21:24	06:16 20:09	07:16 18:49	07:21 16:31	08:23 15:41
3	08:48 15:47	08:09 16:46	07:04 17:48	06:41 19:54	05:26 20:56	04:31 21:52	04:28 22:06	05:16 21:22	06:18 20:07	07:18 18:46	07:24 16:29	08:25 15:40
4	08:47 15:51	08:07 16:57	07:01 17:59	06:39 20:00	05:23 21:02	04:30 21:56	04:29 22:04	05:18 21:15	06:20 19:59	07:20 18:38	07:26 16:23	08:26 15:38
5	08:47 15:50	08:05 16:50	06:58 17:53	06:36 19:58	05:21 21:00	04:29 21:55	04:30 22:04	05:20 21:18	06:22 20:01	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:51	08:03 16:53	06:56 17:55	06:33 20:00	05:19 21:02	04:28 21:56	04:31 22:04	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
7	08:46 15:53	08:01 16:55	06:53 17:57	06:31 20:02	05:17 21:05	04:27 21:57	04:32 22:03	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	08:31 15:37
8	08:45 15:54	07:58 16:57	06:51 17:59	06:28 20:04	05:14 21:07	04:26 21:59	04:33 22:02	05:26 21:11	06:28 19:53	07:28 18:33	07:35 16:19	08:32 15:37
9	08:44 15:56	07:56 16:59	06:48 18:01	06:25 20:06	05:12 21:09	04:26 22:00	04:35 22:01	05:28 21:09	06:30 19:51	07:30 18:30	07:37 16:17	08:34 15:36
10	08:44 15:57	07:54 17:02	06:45 18:03	06:23 20:08	05:10 21:11	04:25 22:01	04:36 22:00	05:30 21:06	06:32 19:48	07:32 18:28	07:39 16:14	08:35 15:36
11	08:43 15:59	07:52 17:04	06:43 18:06	06:20 20:10	05:08 21:13	04:24 22:02	04:37 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:13	08:36 15:35
12	08:42 16:01	07:50 17:06	06:40 18:08	06:17 20:13	05:06 21:15	04:24 22:02	04:38 21:58	05:34 21:02	06:36 19:43	07:37 18:22	07:43 16:11	08:37 15:35
13	08:41 16:03	07:47 17:08	06:37 18:10	06:15 20:15	05:04 21:17	04:23 22:03	04:40 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:45 16:09	08:39 15:35
14	08:40 16:04	07:45 17:11	06:35 18:12	06:12 20:17	05:02 21:18	04:23 22:04	04:41 21:56	05:38 20:57	06:40 19:37	07:41 18:17	07:47 16:07	08:40 15:35
15	08:39 16:06	07:43 17:13	06:32 18:14	06:10 20:19	05:00 21:20	04:23 22:05	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:05	08:41 15:35
16	08:38 16:08	07:41 17:15	06:29 18:16	06:07 20:21	04:58 21:22	04:22 22:05	04:44 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:52 16:03	08:42 15:35
17	08:36 16:10	07:38 17:17	06:27 18:18	06:05 20:23	04:56 21:24	04:22 22:06	04:46 21:52	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:01	08:43 15:35
18	08:35 16:12	07:36 17:20	06:24 18:20	06:02 20:25	04:54 21:26	04:22 22:06	04:47 21:50	05:46 20:48	06:48 19:27	07:49 18:07	07:56 16:00	08:44 15:35
19	08:34 16:14	07:33 17:22	06:21 18:22	05:59 20:27	04:52 21:28	04:22 22:07	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:58	08:44 15:35
20	08:33 16:16	07:31 17:24	06:19 18:25	05:57 20:29	04:51 21:30	04:22 22:07	04:51 21:47	05:50 20:43	06:52 19:21	07:53 18:02	08:00 15:57	08:45 15:35
21	08:31 16:18	07:29 17:26	06:16 18:27	05:54 20:31	04:49 21:32	04:22 22:07	04:52 21:46	05:52 20:40	06:54 19:18	07:55 18:00	08:02 15:55	08:46 15:36
22	08:30 16:20	07:26 17:29	06:13 18:29	05:52 20:33	04:47 21:33	04:22 22:08	04:54 21:44	05:54 20:38	06:56 19:16	07:58 17:57	08:04 15:53	08:46 15:36
23	08:28 16:22	07:24 17:31	06:11 18:31	05:49 20:35	04:46 21:35	04:22 22:08	04:56 21:43	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:47 15:37
24	08:27 16:24	07:21 17:33	06:08 18:33	05:47 20:38	04:44 21:37	04:23 22:08	04:57 21:41	05:58 20:33	07:00 19:10	08:02 17:52	08:08 15:51	08:47 15:37
25	08:25 16:26	07:19 17:35	06:05 18:35	05:44 20:40	04:42 21:39	04:23 22:08	04:59 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:49	08:48 15:38
26	08:23 16:28	07:16 17:37	06:03 18:37	05:42 20:42	04:41 21:40	04:24 22:08	05:01 21:37	06:02 20:28	07:04 19:05	07:06 16:48	08:12 15:48	08:48 15:39
27	08:22 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:42	04:24 22:08	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:45	08:14 15:47	08:48 15:39
28	08:20 16:33	07:11 17:42	05:57 18:41	05:37 20:46	04:38 21:44	04:25 22:08	05:05 21:34	06:06 20:22	07:08 19:00	07:11 16:43	08:16 15:45	08:48 15:40
29	08:18 16:35		05:55 18:43	05:35 20:48	04:37 21:45	04:25 22:07	05:06 21:32	06:08 20:20	07:10 18:57	07:13 16:40	08:18 15:44	08:48 15:41
30	08:16 16:37		06:52 19:45	05:32 20:50	04:35 21:47	04:26 22:07	05:08 21:30	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:43	08:48 15:42
31	08:14 16:39		06:49 19:48		04:34 21:48		05:10 21:28	06:12 20:15		07:17 16:36		08:48 15:43
Potential sun hours	235	265	365	426	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: L - Akoti

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January		February		March	April	May	June
1	08:48		12:21 (11)	08:13	14:18 (10)	07:09	06:47	05:30
	15:45	71	14:39 (9)	16:42	52	15:10 (10)	17:44	20:52
2	08:48		12:22 (11)	08:11		14:19 (10)	07:06	06:44
	15:46	71	14:40 (9)	16:44	52	15:11 (10)	17:46	19:52
3	08:48		12:22 (11)	08:09		14:18 (10)	07:04	06:41
	15:47	70	14:40 (10)	16:46	52	15:10 (10)	17:48	19:54
4	08:47		12:23 (11)	08:07		14:18 (10)	07:01	06:39
	15:48	72	14:43 (10)	16:48	52	15:10 (10)	17:50	19:56
5	08:47		12:24 (11)	08:05		14:19 (10)	06:58	06:36
	15:50	72	14:44 (10)	16:50	52	15:11 (10)	17:53	19:58
6	08:46		12:24 (11)	08:03		14:20 (10)	06:56	06:33
	15:51	74	14:46 (10)	16:53	51	15:11 (10)	17:55	20:00
7	08:46		12:25 (11)	08:00		14:19 (10)	06:53	06:31
	15:53	73	14:47 (10)	16:55	51	15:10 (10)	17:57	20:02
8	08:45		12:25 (11)	07:58		14:20 (10)	06:51	06:28
	15:54	75	14:49 (10)	16:57	50	15:10 (10)	17:59	20:04
9	08:44		12:26 (11)	07:56		14:21 (10)	06:48	06:25
	15:56	75	14:50 (10)	16:59	49	15:10 (10)	18:01	20:06
10	08:44		12:27 (11)	07:54		14:21 (10)	06:45	06:23
	15:58	76	14:52 (10)	17:02	48	15:09 (10)	18:03	20:08
11	08:43		12:28 (11)	07:52		14:22 (10)	06:43	06:20
	15:59	75	14:53 (10)	17:04	47	15:09 (10)	18:05	20:10
12	08:42		12:29 (11)	07:50		14:23 (10)	06:40	06:17
	16:01	75	14:55 (10)	17:06	45	15:08 (10)	18:08	20:12
13	08:41		12:30 (11)	07:47		14:24 (10)	06:37	06:15
	16:03	74	14:56 (10)	17:08	43	15:07 (10)	18:10	20:15
14	08:40		12:30 (11)	07:45		14:25 (10)	06:35	06:12
	16:04	74	14:57 (10)	17:11	41	15:06 (10)	18:12	20:17
15	08:39		12:32 (11)	07:43		14:26 (10)	06:32	06:10
	16:06	72	14:58 (10)	17:13	39	15:05 (10)	18:14	20:19
16	08:38		12:33 (11)	07:40		14:28 (10)	06:29	06:07
	16:08	71	14:59 (10)	17:15	36	15:04 (10)	18:16	20:21
17	08:36		12:34 (11)	07:38		14:29 (10)	06:27	06:05
	16:10	70	15:01 (10)	17:17	33	15:02 (10)	18:18	20:23
18	08:35		12:35 (11)	07:36		14:32 (10)	06:24	06:02
	16:12	68	15:01 (10)	17:20	28	15:00 (10)	18:20	20:25
19	08:34		12:38 (11)	07:33		14:34 (10)	06:21	05:59
	16:14	65	15:03 (10)	17:22	23	14:57 (10)	18:22	20:27
20	08:32		12:39 (11)	07:31		14:39 (10)	06:19	05:57
	16:16	64	15:03 (10)	17:24	15	14:54 (10)	18:24	20:29
21	08:31		12:42 (11)	07:29			06:16	05:54
	16:18	59	15:04 (10)	17:26			18:27	20:31
22	08:30		12:47 (11)	07:26			06:13	05:52
	16:20	52	15:05 (10)	17:29			18:29	20:33
23	08:28		14:19 (10)	07:24			06:11	05:49
	16:22	47	15:06 (10)	17:31			18:31	20:35
24	08:27		14:18 (10)	07:21			06:08	05:47
	16:24	49	15:07 (10)	17:33			18:33	20:38
25	08:25		14:18 (10)	07:19			06:05	05:45
	16:26	49	15:07 (10)	17:35			18:35	20:40
26	08:23		14:18 (10)	07:16			06:03	05:42
	16:28	50	15:08 (10)	17:37			18:37	20:42
27	08:22		14:18 (10)	07:14			06:00	05:40
	16:31	50	15:08 (10)	17:40			18:39	20:44
28	08:20		14:18 (10)	07:11			05:57	05:37
	16:33	51	15:09 (10)	17:42			18:41	20:46
29	08:18		14:18 (10)				05:55	05:35
	16:35	51	15:09 (10)				18:43	20:48
30	08:16		14:18 (10)				06:52	05:33
	16:37	52	15:10 (10)				19:45	20:50
31	08:14		14:18 (10)				06:49	
	16:39	52	15:10 (10)				19:47	21:48
Potential sun hours	235		265		365	425	507	529
Total, worst case	1999		859					
Sun reduction	0,15		0,24					
Oper. time red.	0,94		0,94					
Wind dir. red.	0,66		0,67					
Total reduction	0,10		0,15					
Total, real	191		130					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: L - Akoti

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July	August	September	October	November	December
1	04:27	05:12	06:14	07:14	07:19	13:51 (10) 08:21
	22:07	21:26	20:12	18:51	16:34	48 14:39 (10) 15:42
2	04:28	05:14	06:16	07:16	07:21	13:50 (10) 08:23
	22:06	21:24	20:09	18:49	16:31	49 14:39 (10) 15:41
3	04:28	05:16	06:18	07:18	07:24	13:50 (10) 08:24
	22:06	21:22	20:07	18:46	16:29	50 14:40 (10) 15:40
4	04:29	05:18	06:20	07:20	07:26	13:49 (10) 08:26
	22:05	21:20	20:04	18:43	16:27	51 14:40 (10) 15:40
5	04:30	05:20	06:22	07:22	07:28	13:50 (10) 08:28
	22:04	21:17	20:01	18:41	16:25	51 14:41 (10) 15:39
6	04:31	05:22	06:24	07:24	07:30	13:49 (10) 08:29
	22:04	21:15	19:59	18:38	16:23	52 14:41 (10) 15:38
7	04:32	05:24	06:26	07:26	07:32	13:49 (10) 08:31
	22:03	21:13	19:56	18:36	16:21	51 14:40 (10) 15:37
8	04:34	05:26	06:28	07:28	07:34	13:49 (10) 08:32
	22:02	21:11	19:53	18:33	16:19	52 14:41 (10) 15:37
9	04:35	05:28	06:30	07:30	07:37	13:49 (10) 08:33
	22:01	21:09	19:51	18:30	16:17	52 14:41 (10) 15:36
10	04:36	05:30	06:32	07:32	07:39	13:49 (10) 08:35
	22:00	21:06	19:48	18:28	16:15	53 14:42 (10) 15:36
11	04:37	05:32	06:34	07:34	07:41	13:49 (10) 08:36
	21:59	21:04	19:45	18:25	16:13	52 14:41 (10) 15:35
12	04:39	05:34	06:36	07:36	07:43	13:49 (10) 08:37
	21:58	21:02	19:43	18:22	16:11	52 14:41 (10) 15:35
13	04:40	05:36	06:38	07:39	07:45	13:50 (10) 08:39
	21:57	20:59	19:40	18:20	16:09	51 14:41 (10) 15:35
14	04:41	05:38	06:40	07:41	07:47	13:50 (10) 08:40
	21:56	20:57	19:37	18:17	16:07	51 14:41 (10) 15:35
15	04:43	05:40	06:42	07:43	07:49	13:51 (10) 08:41
	21:54	20:55	19:35	18:15	16:05	50 14:41 (10) 15:35
16	04:44	05:42	06:44	07:45	07:52	13:51 (10) 08:42
	21:53	20:52	19:32	18:12	16:03	50 14:41 (10) 15:35
17	04:46	05:44	06:46	07:47	07:54	13:51 (10) 08:43
	21:52	20:50	19:29	18:10	16:02	49 14:40 (10) 15:35
18	04:47	05:46	06:48	07:49	07:56	13:52 (10) 08:43
	21:50	20:47	19:27	18:07	16:00	49 14:41 (10) 15:35
19	04:49	05:48	06:50	07:51	07:58	13:53 (10) 08:44
	21:49	20:45	19:24	18:05	15:58	47 14:40 (10) 15:35
20	04:51	05:50	06:52	07:53	08:00	13:53 (10) 08:45
	21:47	20:43	19:21	18:02	15:57	47 14:40 (10) 15:35
21	04:52	05:52	06:54	07:55	08:02	12:20 (11) 08:46
	21:46	20:40	19:18	18:00	15:55	56 14:40 (10) 15:36
22	04:54	05:54	06:56	07:58	15:10 (10) 08:04	12:17 (11) 08:46
	21:44	20:38	19:16	17:57	15:22 (10) 15:54	62 14:40 (10) 15:36
23	04:56	05:56	06:58	08:00	15:06 (10) 08:06	12:15 (11) 08:47
	21:42	20:35	19:13	17:55	15:27 (10) 15:52	64 14:39 (10) 15:37
24	04:57	05:58	07:00	08:02	15:02 (10) 08:08	12:13 (11) 08:47
	21:41	20:33	19:10	17:52	15:29 (10) 15:51	67 14:39 (10) 15:37
25	04:59	06:00	07:02	08:04	15:00 (10) 08:10	12:13 (11) 08:48
	21:39	20:30	19:08	17:50	15:31 (10) 15:49	68 14:39 (10) 15:38
26	05:01	06:02	07:04	07:06	13:58 (10) 08:12	12:12 (11) 08:48
	21:37	20:27	19:05	16:48	14:33 (10) 15:48	71 14:39 (10) 15:39
27	05:03	06:04	07:06	07:08	13:56 (10) 08:14	12:12 (11) 08:48
	21:35	20:25	19:02	16:45	14:34 (10) 15:47	72 14:38 (10) 15:39
28	05:05	06:06	07:08	07:11	13:55 (10) 08:16	12:11 (11) 08:48
	21:34	20:22	19:00	16:43	14:35 (10) 15:45	73 14:37 (10) 15:40
29	05:07	06:08	07:10	07:13	13:54 (10) 08:17	12:11 (11) 08:48
	21:32	20:20	18:57	16:40	14:37 (10) 15:44	74 14:37 (10) 15:41
30	05:08	06:10	07:12	07:15	13:53 (10) 08:19	12:10 (11) 08:48
	21:30	20:17	18:54	16:38	14:37 (10) 15:43	75 14:36 (10) 15:42
31	05:10	06:12		07:17	13:52 (10)	08:48
	21:28	20:15		16:36	14:38 (10)	15:43
Potential sun hours	530	470	385	324	248	216
Total, worst case				337	1689	2242
Sun reduction				0,27	0,09	0,09
Oper. time red.				0,94	0,94	0,94
Wind dir. red.				0,67	0,67	0,65
Total reduction				0,17	0,06	0,05
Total, real				57	97	118

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: M - Linares

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:30 20:52	04:33 21:50	04:27 22:07	05:12 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:42
2	08:48 15:46	08:11 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:32 21:51	04:27 22:06	05:14 21:24	06:16 20:09	07:16 18:49	07:22 16:31	08:23 15:41
3	08:48 15:47	08:09 16:46	07:04 17:48	06:41 19:54	05:26 20:56	04:31 21:53	04:28 22:06	05:16 21:22	06:18 20:07	07:18 18:46	07:24 16:29	08:25 15:40
4	08:47 15:51	08:07 16:57	07:01 17:59	06:39 20:00	05:23 20:58	04:30 21:54	04:29 22:05	05:18 21:20	06:20 20:04	07:20 18:44	07:26 16:27	08:26 15:39
5	08:47 15:50	08:05 16:50	06:58 17:53	06:36 19:58	05:21 21:01	04:29 21:55	04:30 22:05	05:20 21:18	06:22 20:02	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:51	08:03 16:53	06:56 17:55	06:33 20:00	05:19 21:03	04:28 21:56	04:31 22:04	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
7	08:46 15:53	08:01 16:55	06:53 17:57	06:31 20:02	05:17 21:05	04:27 21:57	04:32 22:03	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	08:31 15:37
8	08:45 15:54	07:58 16:57	06:51 17:59	06:28 20:04	05:14 21:07	04:26 21:59	04:33 22:02	05:26 21:11	06:28 19:54	07:28 18:33	07:35 16:19	08:32 15:37
9	08:45 15:56	07:56 16:59	06:48 18:01	06:25 20:06	05:12 21:09	04:26 22:00	04:35 22:01	05:28 21:09	06:30 19:51	07:30 18:30	07:37 16:17	08:34 15:36
10	08:44 15:57	07:54 17:02	06:45 18:03	06:23 20:08	05:10 21:11	04:25 22:01	04:36 22:00	05:30 21:07	06:32 19:48	07:32 18:28	07:39 16:15	08:35 15:36
11	08:43 15:59	07:52 17:04	06:43 18:06	06:20 20:10	05:08 21:13	04:24 22:02	04:37 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:13	08:36 15:35
12	08:42 16:01	07:50 17:06	06:40 18:08	06:18 20:13	05:06 21:15	04:24 22:02	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:38 15:35
13	08:41 16:03	07:47 17:08	06:38 18:10	06:15 20:15	05:04 21:17	04:23 22:03	04:40 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:45 16:09	08:39 15:35
14	08:40 16:04	07:45 17:11	06:35 18:12	06:12 20:17	05:02 21:19	04:23 22:04	04:41 21:56	05:38 20:57	06:40 19:37	07:41 18:17	07:48 16:07	08:40 15:35
15	08:39 16:06	07:43 17:13	06:32 18:14	06:10 20:19	05:00 21:20	04:23 22:05	04:43 21:55	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:05	08:41 15:35
16	08:38 16:08	07:41 17:15	06:30 18:16	06:07 20:21	04:58 21:22	04:22 22:05	04:44 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:52 16:03	08:42 15:35
17	08:37 16:10	07:38 17:17	06:27 18:18	06:05 20:23	04:56 21:24	04:22 22:06	04:46 21:52	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:02	08:43 15:35
18	08:35 16:12	07:36 17:20	06:24 18:20	06:02 20:25	04:54 21:26	04:22 22:06	04:47 21:50	05:46 20:48	06:48 19:27	07:49 18:07	07:56 16:00	08:44 15:35
19	08:34 16:14	07:34 17:22	06:22 18:22	06:00 20:27	04:53 21:28	04:22 22:07	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:58	08:44 15:35
20	08:33 16:16	07:31 17:24	06:19 18:25	05:57 20:29	04:51 21:30	04:22 22:07	04:51 21:47	05:50 20:43	06:52 19:21	07:53 18:02	08:00 15:57	08:45 15:35
21	08:31 16:18	07:29 17:26	06:16 18:27	05:54 20:31	04:49 21:32	04:22 22:08	04:52 21:46	05:52 20:40	06:54 19:18	07:56 18:00	08:02 15:55	08:46 15:36
22	08:30 16:20	07:26 17:29	06:13 18:29	05:52 20:33	04:47 21:34	04:22 22:08	04:54 21:44	05:54 20:38	06:56 19:16	07:58 17:57	08:04 15:54	08:46 15:36
23	08:28 16:22	07:24 17:31	06:11 18:31	05:49 20:36	04:46 21:35	04:22 22:08	04:56 21:43	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:47 15:37
24	08:27 16:24	07:21 17:33	06:08 18:33	05:47 20:38	04:44 21:37	04:23 22:08	04:57 21:41	05:58 20:33	07:00 19:10	08:02 17:52	08:08 15:51	08:47 15:37
25	08:25 16:26	07:19 17:35	06:05 18:35	05:45 20:40	04:43 21:39	04:23 22:08	04:59 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:49	08:48 15:38
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: N - Lamani 1

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

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4	08:47 15:51	08:07 16:57	07:01 17:59	06:39 20:00	05:23 20:58	04:30 21:54	04:29 22:05	05:18 21:20	06:20 20:04	07:20 18:44	07:26 16:27	08:26 15:40
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6	08:46 15:51	08:03 16:53	06:56 17:55	06:33 20:00	05:19 21:03	04:28 21:56	04:31 22:04	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
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SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: O - Rožlejas

Assumptions for shadow calculations

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2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

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N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:30 20:52	04:33 21:50	04:27 22:07	05:12 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:42
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Calculation: Worst & Real Case Shadow receptor: P - Aizupes

Assumptions for shadow calculations

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2025

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Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
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4	08:47 15:51	08:07 16:57	07:01 17:59	06:39 20:00	05:23 20:58	04:30 21:54	04:29 22:05	05:18 21:20	06:20 20:04	07:20 18:44	07:26 16:27	08:26 15:39
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6	08:46 15:51	08:03 16:53	06:56 17:55	06:33 20:00	05:19 21:03	04:28 21:56	04:31 22:04	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
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9	08:44 15:56	07:56 16:59	06:48 18:01	06:25 20:06	05:12 21:09	04:26 22:00	04:35 22:01	05:28 21:09	06:30 19:51	07:30 18:30	07:37 16:17	08:34 15:36
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31	08:15 16:39		06:49 19:48		04:34 21:48		05:10 21:28	06:12 20:15		07:17 16:36		08:48 15:43
Potential sun hours	235	265	365	426	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: Q - Kumelites

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:30 20:52	04:33 21:50	04:27 22:07	05:12 21:26	06:14 20:12	07:14 18:51	07:19 16:34	08:21 15:42
2	08:48 15:46	08:11 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:32 21:51	04:27 22:06	05:14 21:24	06:16 20:09	07:16 18:49	07:21 16:31	08:23 15:41
3	08:48 15:47	08:09 16:46	07:04 17:48	06:41 19:54	05:26 20:56	04:31 21:52	04:28 22:06	05:16 21:22	06:18 20:07	07:18 18:46	07:24 16:29	08:24 15:40
4	08:47 15:51	08:07 16:57	07:01 17:59	06:39 20:00	05:23 21:02	04:30 21:56	04:29 22:04	05:18 21:15	06:20 19:59	07:20 18:38	07:26 16:23	08:26 15:38
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31	08:14 16:39		06:49 19:47		04:34 21:48		05:10 21:28	06:12 20:15		07:17 16:36		08:48 15:43
Potential sun hours	235	265	365	425	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: R - Dzila Vada

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:30 20:52	04:33 21:50	04:27 22:07	05:12 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:42
2	08:48 15:46	08:11 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:32 21:51	04:28 22:06	05:14 21:24	06:16 20:10	07:16 18:49	07:22 16:32	08:23 15:41
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4	08:48 15:49	08:07 16:48	07:01 17:51	06:39 19:56	05:23 20:59	04:30 21:54	04:29 22:05	05:18 21:20	06:20 20:04	07:20 18:44	07:26 16:27	08:26 15:40
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23	08:28 16:22	07:24 17:31	06:11 18:31	05:50 20:36	04:46 21:35	04:23 22:08	04:56 21:43	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:47 15:37
24	08:27 16:24	07:21 17:33	06:08 18:33	05:47 20:38	04:44 21:37	04:23 22:08	04:58 21:41	05:58 20:33	07:00 19:11	08:02 17:52	08:08 15:51	08:47 15:37
25	08:25 16:26	07:19 17:35	06:06 18:35	05:45 20:40	04:43 21:39	04:23 22:08	04:59 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:49	08:48 15:38
26	08:24 16:29	07:16 17:38	06:03 18:37	05:42 20:42	04:41 21:41	04:24 22:08	05:01 21:38	06:02 20:28	07:04 19:05	07:06 16:48	08:12 15:48	08:48 15:39
27	08:22 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:42	04:24 22:08	05:03 21:36	06:04 20:25	07:06 19:02	07:09 16:45	08:14 15:47	08:48 15:40
28	08:20 16:33	07:11 17:42	05:57 18:41	05:37 20:46	04:38 21:44	04:25 22:08	05:05 21:34	06:06 20:23	07:08 19:00	07:11 16:43	08:16 15:46	08:49 15:40
29	08:18 16:35		05:55 18:44	05:35 20:48	04:37 21:45	04:25 22:08	05:07 21:32	06:08 20:20	07:10 18:57	07:13 16:41	08:18 15:44	08:49 15:41
30	08:17 16:37		06:52 19:46	05:33 20:50	04:36 21:47	04:26 22:07	05:08 21:30	06:10 20:17	07:12 18:54	07:15 16:38	08:20 15:43	08:49 15:42
31	08:15 16:39		06:49 19:48		04:34 21:48		05:10 21:28	06:12 20:15		07:17 16:36		08:49 15:43
Potential sun hours	235	265	365	426	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

SKEPAST & PUKIM

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: S - Vecumi

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January		February		March	April	May	June
1	08:48		12:02 (8)	08:13	08:46 (10)	07:09	06:47	05:30
	15:45	59	14:05 (15)	16:42	14	09:00 (10)	17:44	19:50
2	08:48		12:03 (8)	08:11	08:44 (10)	07:06	06:44	05:28
	15:46	57	14:05 (15)	16:44	18	09:02 (10)	17:46	19:52
3	08:48		12:03 (8)	08:09	08:42 (10)	07:04	06:41	05:26
	15:47	56	14:05 (15)	16:46	21	09:03 (10)	17:48	19:54
4	08:47		12:05 (8)	08:07	08:40 (10)	07:01	06:39	05:23
	15:49	55	14:06 (15)	16:48	23	09:03 (10)	17:51	19:56
5	08:47		12:05 (8)	08:05	08:39 (10)	06:58	06:36	05:21
	15:50	54	14:06 (15)	16:51	25	09:04 (10)	17:53	19:58
6	08:46		12:06 (8)	08:03	08:40 (10)	06:56	06:33	05:19
	15:51	52	14:06 (15)	16:53	24	09:04 (10)	17:55	20:00
7	08:46		12:07 (8)	08:01	08:40 (10)	06:53	06:31	05:17
	15:53	50	14:06 (15)	16:55	25	09:05 (10)	17:57	20:02
8	08:45		12:08 (8)	07:58	08:39 (10)	06:51	06:28	05:15
	15:54	48	14:06 (15)	16:57	25	09:04 (10)	17:59	20:04
9	08:44		12:10 (8)	07:56	08:40 (10)	06:48	06:25	05:12
	15:56	44	14:06 (15)	17:00	25	09:05 (10)	18:01	20:06
10	08:44		12:11 (8)	07:54	08:40 (10)	06:45	06:23	05:10
	15:58	41	14:05 (15)	17:02	25	09:05 (10)	18:03	20:08
11	08:43		12:13 (8)	07:52	08:40 (10)	06:43	06:20	05:08
	15:59	36	14:05 (15)	17:04	24	09:04 (10)	18:06	20:10
12	08:42		12:16 (8)	07:50	08:41 (10)	06:40	06:18	05:06
	16:01	30	14:05 (15)	17:06	23	09:04 (10)	18:08	20:13
13	08:41		13:47 (15)	07:47	08:41 (10)	06:38	06:15	05:04
	16:03	18	14:05 (15)	17:09	22	09:03 (10)	18:10	20:15
14	08:40		13:48 (15)	07:45	08:43 (10)	06:35	06:12	05:02
	16:05	15	14:03 (15)	17:11	19	09:02 (10)	18:12	20:17
15	08:39		13:50 (15)	07:43	08:43 (10)	06:32	06:10	05:00
	16:06	12	14:02 (15)	17:13	17	09:00 (10)	18:14	20:19
16	08:38		13:54 (15)	07:41	08:46 (10)	06:30	06:07	04:58
	16:08	7	14:01 (15)	17:15	13	08:59 (10)	18:16	20:21
17	08:36			07:38	08:49 (10)	06:27	06:05	04:56
	16:10			17:18	5	08:54 (10)	18:18	20:23
18	08:35			07:36		06:24	06:02	04:54
	16:12			17:20		18:20	20:25	21:26
19	08:34			07:33		06:22	06:00	04:53
	16:14			17:22		18:23	20:27	21:28
20	08:33			07:31		06:19	05:57	04:51
	16:16			17:24		18:25	20:29	21:30
21	08:31			07:29		06:16	05:55	04:49
	16:18			17:26		18:27	20:31	21:32
22	08:30			07:26		06:13	05:52	04:47
	16:20			17:29		18:29	20:33	21:33
23	08:28			07:24		06:11	05:50	04:46
	16:22			17:31		18:31	20:36	21:35
24	08:27			07:21		06:08	05:47	04:44
	16:24			17:33		18:33	20:38	21:37
25	08:25			07:19		06:05	05:45	04:43
	16:26			17:35		18:35	20:40	21:39
26	08:23			07:16		06:03	05:42	04:41
	16:29			17:37		18:37	20:42	21:40
27	08:22			07:14		06:00	05:40	04:40
	16:31			17:40		18:39	20:44	21:42
28	08:20			07:11		05:57	05:37	04:38
	16:33			17:42		18:41	20:46	21:44
29	08:18		08:52 (10)			05:55	05:35	04:37
	16:35	2	08:54 (10)			18:43	20:48	21:45
30	08:16		08:50 (10)			06:52	05:33	04:36
	16:37	7	08:57 (10)			19:45	20:50	21:47
31	08:15		08:48 (10)			06:49		04:34
	16:39	11	08:59 (10)			19:48		21:48
Potential sun hours	235			265		365	425	507
Total, worst case		654		348				
Sun reduction		0,15		0,24				
Oper. time red.		0,94		0,94				
Wind dir. red.		0,64		0,60				
Total reduction		0,09		0,14				
Total, real		61		47				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: S - Vecumi

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July	August	September	October	November	December
1	04:27	05:12	06:14	07:14	07:19	08:09 (10) 08:21 11:57 (8)
	22:07	21:26	20:12	18:52	16:34 25 08:34 (10) 15:42 33 13:47 (15)	
2	04:28	05:14	06:16	07:16	07:21	08:09 (10) 08:23 11:55 (8)
	22:06	21:24	20:09	18:49	16:32 25 08:34 (10) 15:41 38 13:48 (15)	
3	04:28	05:16	06:18	07:18	07:24	08:09 (10) 08:25 11:54 (8)
	22:06	21:22	20:07	18:46	16:29 25 08:34 (10) 15:40 42 13:49 (15)	
4	04:29	05:18	06:20	07:20	07:26	08:09 (10) 08:26 11:54 (8)
	22:05	21:20	20:04	18:44	16:27 25 08:34 (10) 15:40 44 13:50 (15)	
5	04:30	05:20	06:22	07:22	07:28	08:09 (10) 08:28 11:54 (8)
	22:04	21:18	20:02	18:41	16:25 25 08:34 (10) 15:39 47 13:51 (15)	
6	04:31	05:22	06:24	07:24	07:30	08:09 (10) 08:29 11:53 (8)
	22:04	21:15	19:59	18:38	16:23 25 08:34 (10) 15:38 49 13:51 (15)	
7	04:32	05:24	06:26	07:26	07:32	08:09 (10) 08:31 11:53 (8)
	22:03	21:13	19:56	18:36	16:21 24 08:33 (10) 15:37 53 13:53 (15)	
8	04:34	05:26	06:28	07:28	07:35	08:11 (10) 08:32 11:53 (8)
	22:02	21:11	19:54	18:33	16:19 22 08:33 (10) 15:37 54 13:54 (15)	
9	04:35	05:28	06:30	07:30	07:37	08:13 (10) 08:34 11:52 (8)
	22:01	21:09	19:51	18:30	16:17 19 08:32 (10) 15:36 56 13:54 (15)	
10	04:36	05:30	06:32	07:32	07:39	08:16 (10) 08:35 11:53 (8)
	22:00	21:06	19:48	18:28	16:15 16 08:32 (10) 15:36 57 13:55 (15)	
11	04:37	05:32	06:34	07:34	07:41	08:18 (10) 08:36 11:53 (8)
	21:59	21:04	19:45	18:25	16:13 13 08:31 (10) 15:36 57 13:55 (15)	
12	04:39	05:34	06:36	07:37	07:43	08:21 (10) 08:37 11:52 (8)
	21:58	21:02	19:43	18:23	16:11 9 08:30 (10) 15:35 59 13:55 (15)	
13	04:40	05:36	06:38	07:39	07:45	08:23 (10) 08:39 11:53 (8)
	21:57	21:00	19:40	18:20	16:09 4 08:27 (10) 15:35 60 13:57 (15)	
14	04:41	05:38	06:40	07:41	07:47	08:40 11:53 (8)
	21:56	20:57	19:37	18:17	16:07 15:35 61 13:57 (15)	
15	04:43	05:40	06:42	07:43	07:50	08:41 11:53 (8)
	21:54	20:55	19:35	18:15	16:05 15:35 62 13:58 (15)	
16	04:44	05:42	06:44	07:45	07:52	08:42 11:54 (8)
	21:53	20:52	19:32	18:12	16:03 15:35 61 13:58 (15)	
17	04:46	05:44	06:46	07:47	07:54	08:43 11:54 (8)
	21:52	20:50	19:29	18:10	16:02 15:35 62 13:59 (15)	
18	04:47	05:46	06:48	07:49	07:56	08:44 11:55 (8)
	21:50	20:48	19:27	18:07	16:00 15:35 61 13:59 (15)	
19	04:49	05:48	06:50	07:51	07:58	08:44 11:54 (8)
	21:49	20:45	19:24	18:05	15:58 15:35 63 13:59 (15)	
20	04:51	05:50	06:52	07:53	08:00	08:45 11:55 (8)
	21:47	20:43	19:21	18:02	15:57 15:35 63 14:00 (15)	
21	04:52	05:52	06:54	07:56	08:02	08:46 11:56 (8)
	21:46	20:40	19:19	18:00	15:55 15:36 63 14:01 (15)	
22	04:54	05:54	06:56	07:58	08:04	08:46 11:56 (8)
	21:44	20:38	19:16	17:57	15:54 15:36 63 14:01 (15)	
23	04:56	05:56	06:58	08:00	08:06	08:47 11:57 (8)
	21:43	20:35	19:13	17:55	15:52 15:37 63 14:02 (15)	
24	04:58	05:58	07:00	08:02	08:08	08:47 11:57 (8)
	21:41	20:33	19:10	17:52	15:51 15:37 63 14:02 (15)	
25	04:59	06:00	07:02	08:04	08:10	08:48 11:57 (8)
	21:39	20:30	19:08	17:50	15:49 15:38 63 14:02 (15)	
26	05:01	06:02	07:04	07:06	08:12	08:48 11:58 (8)
	21:37	20:28	19:05	16:48	11 08:27 (10) 15:48 61 14:02 (15)	
27	05:03	06:04	07:06	07:08	08:14 (10) 08:14	13:31 (15) 08:48 11:58 (8)
	21:36	20:25	19:02	16:45	15 08:29 (10) 15:47 9 13:40 (15) 15:40 62 14:03 (15)	
28	05:05	06:06	07:08	07:11	08:13 (10) 08:16	13:29 (15) 08:48 11:59 (8)
	21:34	20:22	19:00	16:43	18 08:31 (10) 15:46 13 13:42 (15) 15:40 61 14:03 (15)	
29	05:07	06:08	07:10	07:13	08:11 (10) 08:18	13:27 (15) 08:48 11:59 (8)
	21:32	20:20	18:57	16:41	21 08:32 (10) 15:44 17 13:44 (15) 15:41 62 14:04 (15)	
30	05:08	06:10	07:12	07:15	08:10 (10) 08:19	12:00 (8) 08:48 12:00 (8)
	21:30	20:17	18:54	16:38	23 08:33 (10) 15:43 24 13:46 (15) 15:42 61 14:04 (15)	
31	05:10	06:12	07:17	07:17	08:10 (10) 08:48	12:01 (8)
	21:28	20:15	16:36	24 08:34 (10) 15:43 60 14:05 (15)		
Potential sun hours	530	470	385	324	248	216
Total, worst case				112	320	1764
Sun reduction				0,27	0,09	0,09
Oper. time red.				0,94	0,94	0,94
Wind dir. red.				0,60	0,61	0,64
Total reduction				0,15	0,05	0,05
Total, real				17	17	92

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: T - Rutini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:30 20:52	04:33 21:50	04:27 22:07	05:12 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:42
2	08:48 15:46	08:11 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:32 21:51	04:27 22:06	05:14 21:24	06:16 20:09	07:16 18:49	07:21 16:31	08:23 15:41
3	08:48 15:47	08:09 16:46	07:04 17:48	06:41 19:54	05:26 20:56	04:31 21:52	04:28 22:06	05:16 21:22	06:18 20:07	07:18 18:46	07:24 16:29	08:25 15:40
4	08:47 15:51	08:07 16:57	07:01 17:59	06:39 20:00	05:23 21:02	04:30 21:56	04:29 22:04	05:18 21:15	06:20 19:59	07:20 18:38	07:26 16:23	08:26 15:38
5	08:47 15:50	08:05 16:50	06:58 17:53	06:36 19:58	05:21 21:00	04:29 21:55	04:30 22:04	05:20 21:18	06:22 20:01	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:51	08:03 16:53	06:56 17:55	06:33 20:00	05:19 21:02	04:28 21:56	04:31 22:04	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
7	08:46 15:53	08:01 16:55	06:53 17:57	06:31 20:02	05:17 21:05	04:27 21:57	04:32 22:03	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	08:31 15:37
8	08:45 15:54	07:58 16:57	06:51 17:59	06:28 20:04	05:14 21:07	04:26 21:59	04:33 22:02	05:26 21:11	06:28 19:53	07:28 18:33	07:35 16:19	08:32 15:37
9	08:44 15:56	07:56 16:59	06:48 18:01	06:25 20:06	05:12 21:09	04:26 22:00	04:35 22:01	05:28 21:09	06:30 19:51	07:30 18:30	07:37 16:17	08:34 15:36
10	08:44 15:57	07:54 17:02	06:45 18:03	06:23 20:08	05:10 21:11	04:25 22:01	04:36 22:00	05:30 21:06	06:32 19:48	07:32 18:28	07:39 16:15	08:35 15:36
11	08:43 15:59	07:52 17:04	06:43 18:06	06:20 20:10	05:08 21:13	04:24 22:02	04:37 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:13	08:36 15:35
12	08:42 16:01	07:50 17:06	06:40 18:08	06:17 20:13	05:06 21:15	04:24 22:02	04:38 21:58	05:34 21:02	06:36 19:43	07:37 18:22	07:43 16:11	08:38 15:35
13	08:41 16:03	07:47 17:08	06:37 18:10	06:15 20:15	05:04 21:17	04:23 22:03	04:40 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:45 16:09	08:39 15:35
14	08:40 16:04	07:45 17:11	06:35 18:12	06:12 20:17	05:02 21:18	04:23 22:04	04:41 21:56	05:38 20:57	06:40 19:37	07:41 18:17	07:47 16:07	08:40 15:35
15	08:39 16:06	07:43 17:13	06:32 18:14	06:10 20:19	05:00 21:20	04:23 22:05	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:05	08:41 15:35
16	08:38 16:08	07:41 17:15	06:29 18:16	06:07 20:21	04:58 21:22	04:22 22:05	04:44 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:52 16:03	08:42 15:35
17	08:36 16:10	07:38 17:17	06:27 18:18	06:05 20:23	04:56 21:24	04:22 22:06	04:46 21:52	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:02	08:43 15:35
18	08:35 16:12	07:36 17:20	06:24 18:20	06:02 20:25	04:54 21:26	04:22 22:06	04:47 21:50	05:46 20:48	06:48 19:27	07:49 18:07	07:56 16:00	08:44 15:35
19	08:34 16:14	07:33 17:22	06:21 18:22	05:59 20:27	04:53 21:28	04:22 22:07	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:58	08:44 15:35
20	08:33 16:16	07:31 17:24	06:19 18:25	05:57 20:29	04:51 21:30	04:22 22:07	04:51 21:47	05:50 20:43	06:52 19:21	07:53 18:02	08:00 15:57	08:45 15:35
21	08:31 16:18	07:29 17:26	06:16 18:27	05:54 20:31	04:49 21:32	04:22 22:07	04:52 21:46	05:52 20:40	06:54 19:18	07:56 18:00	08:02 15:55	08:46 15:36
22	08:30 16:20	07:26 17:29	06:13 18:29	05:52 20:33	04:47 21:33	04:22 22:08	04:54 21:44	05:54 20:38	06:56 19:16	07:58 17:57	08:04 15:53	08:46 15:36
23	08:28 16:22	07:24 17:31	06:11 18:31	05:49 20:36	04:46 21:35	04:22 22:08	04:56 21:43	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:47 15:37
24	08:27 16:24	07:21 17:33	06:08 18:33	05:47 20:38	04:44 21:37	04:23 22:08	04:57 21:41	05:58 20:33	07:00 19:10	08:02 17:52	08:08 15:51	08:47 15:37
25	08:25 16:26	07:19 17:35	06:05 18:35	05:45 20:40	04:43 21:39	04:23 22:08	04:59 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:49	08:48 15:38
26	08:23 16:28	07:16 17:37	06:03 18:37	05:42 20:42	04:41 21:40	04:24 22:08	05:01 21:37	06:02 20:28	07:04 19:05	07:06 16:48	08:12 15:48	08:48 15:39
27	08:22 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:42	04:24 22:08	05:03 21:36	06:04 20:25	07:06 19:02	07:08 16:45	08:14 15:47	08:48 15:39
28	08:20 16:33	07:11 17:42	05:57 18:41	05:37 20:46	04:38 21:44	04:25 22:08	05:05 21:34	06:06 20:22	07:08 19:00	07:11 16:43	08:16 15:45	08:48 15:40
29	08:18 16:35		05:55 18:43	05:35 20:48	04:37 21:45	04:25 22:07	05:06 21:32	06:08 20:20	07:10 18:57	07:13 16:40	08:18 15:44	08:48 15:41
30	08:16 16:37		06:52 19:45	05:32 20:50	04:35 21:47	04:26 22:07	05:08 21:30	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:43	08:48 15:42
31	08:15 16:39		06:49 19:48		04:34 21:48		05:10 21:28	06:12 20:15		07:17 16:36		08:48 15:43
Potential sun hours	235	265	365	426	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

SKEPAST & PUHKIM

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: U - Viksnes

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January		February		March	April	May	June
1	08:48		09:48 (11)	08:13	10:28 (10)	07:09	06:47	05:30
	15:45	85	14:17 (6)	16:42	75 16:09 (15)	17:44	19:50	20:52
2	08:48		09:48 (11)	08:11	10:30 (10)	07:06	06:44	05:28
	15:46	86	14:18 (6)	16:44	75 16:12 (15)	17:46	19:52	20:54
3	08:48		09:48 (11)	08:09	10:32 (10)	07:04	06:41	05:26
	15:47	86	14:18 (6)	16:46	73 16:15 (15)	17:48	19:54	20:56
4	08:47		09:49 (11)	08:07	10:34 (10)	07:01	06:39	05:23
	15:49	85	14:18 (6)	16:48	66 16:14 (15)	17:51	19:56	20:58
5	08:47		09:49 (11)	08:05	10:39 (10)	06:58	06:36	05:21
	15:50	85	14:18 (6)	16:51	55 16:15 (15)	17:53	19:58	21:00
6	08:46		09:50 (11)	08:03	15:13 (8)	06:56	06:33	05:19
	15:51	83	14:18 (6)	16:53	45 16:15 (15)	17:55	20:00	21:02
7	08:46		09:50 (11)	08:01	15:15 (8)	06:53	06:31	05:17
	15:53	82	14:17 (6)	16:55	43 16:16 (15)	17:57	20:02	21:04
8	08:45		09:50 (11)	07:58	15:16 (8)	06:51	06:28	05:14
	15:54	81	14:17 (6)	16:57	38 16:15 (15)	17:59	20:04	21:07
9	08:44		09:51 (11)	07:56	15:20 (8)	06:48	06:25	05:12
	15:56	78	14:16 (6)	16:59	31 16:15 (15)	18:01	20:06	21:09
10	08:44		09:51 (11)	07:54	15:53 (15)	06:45	06:23	05:10
	15:58	79	15:19 (8)	17:02	21 16:14 (15)	18:03	20:08	21:11
11	08:43		09:52 (11)	07:52	15:54 (15)	06:43	06:20	05:08
	15:59	76	15:21 (8)	17:04	19 16:13 (15)	18:06	20:10	21:13
12	08:42		09:52 (11)	07:50	15:56 (15)	06:40	06:18	05:06
	16:01	80	15:23 (8)	17:06	17 16:13 (15)	18:08	20:13	21:15
13	08:41		09:53 (11)	07:47	15:57 (15)	06:37	06:15	05:04
	16:03	82	15:25 (8)	17:08	13 16:10 (15)	18:10	20:15	21:16
14	08:40		09:53 (11)	07:45	16:00 (15)	06:35	06:12	05:02
	16:04	85	15:27 (8)	17:11	8 16:08 (15)	18:12	20:17	21:18
15	08:39		09:54 (11)	07:43	06:32	06:10	05:00	04:23
	16:06	88	15:29 (8)	17:13	18:14	20:19	21:20	22:05
16	08:38		09:54 (11)	07:41	06:29	06:07	04:58	04:22
	16:08	90	15:30 (8)	17:15	18:16	20:21	21:22	22:05
17	08:36		09:55 (11)	07:38	06:27	06:05	04:56	04:22
	16:10	90	15:31 (8)	17:17	18:18	20:23	21:24	22:06
18	08:35		09:56 (11)	07:36	06:24	06:02	04:54	04:22
	16:12	90	15:32 (8)	17:20	18:20	20:25	21:26	22:06
19	08:34		09:57 (11)	07:33	06:21	06:00	04:53	04:22
	16:14	91	15:33 (8)	17:22	18:22	20:27	21:28	22:07
20	08:33		09:58 (11)	07:31	06:19	05:57	04:51	04:22
	16:16	92	15:34 (8)	17:24	18:25	20:29	21:30	22:07
21	08:31		09:58 (11)	07:29	06:16	05:54	04:49	04:22
	16:18	92	15:34 (8)	17:26	18:27	20:31	21:32	22:07
22	08:30		10:00 (11)	07:26	06:13	05:52	04:47	04:22
	16:20	92	15:36 (8)	17:29	18:29	20:33	21:33	22:08
23	08:28		10:01 (11)	07:24	06:11	05:49	04:46	04:23
	16:22	91	15:36 (8)	17:31	18:31	20:35	21:35	22:08
24	08:27		10:03 (11)	07:21	06:08	05:47	04:44	04:23
	16:24	89	15:37 (8)	17:33	18:33	20:38	21:37	22:08
25	08:25		10:05 (11)	07:19	06:05	05:45	04:43	04:23
	16:26	85	15:37 (8)	17:35	18:35	20:40	21:39	22:08
26	08:23		10:08 (11)	07:16	06:03	05:42	04:41	04:24
	16:28	78	15:37 (8)	17:37	18:37	20:42	21:40	22:08
27	08:22		10:22 (10)	07:14	06:00	05:40	04:40	04:24
	16:31	71	15:38 (8)	17:40	18:39	20:44	21:42	22:08
28	08:20		10:23 (10)	07:11	05:57	05:37	04:38	04:25
	16:33	72	15:59 (15)	17:42	18:41	20:46	21:44	22:08
29	08:18		10:24 (10)		05:55	05:35	04:37	04:25
	16:35	74	16:02 (15)		18:43	20:48	21:45	22:07
30	08:16		10:25 (10)		06:52	05:33	04:36	04:26
	16:37	75	16:04 (15)		19:45	20:50	21:47	22:07
31	08:14		10:26 (10)		06:49		04:34	
	16:39	76	16:07 (15)		19:48		21:48	
Potential sun hours	235		265		365	425	507	529
Total, worst case		2589		579				
Sun reduction		0,15		0,24				
Oper. time red.		0,94		0,94				
Wind dir. red.		0,62		0,66				
Total reduction		0,09		0,15				
Total, real		234		86				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: U - Viksnes

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July	August	September	October	November	December
1	04:27	05:12	06:14	07:14	07:19	08:21
2	04:28	05:14	06:16	07:16	07:21	08:23
3	04:28	05:16	06:18	07:18	07:24	08:24
4	04:29	05:18	06:20	07:20	07:26	08:26
5	04:30	05:20	06:22	07:22	07:28	08:28
6	04:31	05:22	06:24	07:24	07:30	08:29
7	04:32	05:24	06:26	07:26	07:32	08:31
8	04:34	05:26	06:28	07:28	07:34	08:32
9	04:35	05:28	06:30	07:30	07:37	08:34
10	04:36	05:30	06:32	07:32	07:39	08:35
11	04:37	05:32	06:34	07:34	07:41	08:36
12	04:39	05:34	06:36	07:37	07:43	08:37
13	04:40	05:36	06:38	07:39	07:45	08:39
14	04:41	05:38	06:40	07:41	07:47	08:40
15	04:43	05:40	06:42	07:43	07:50	08:41
16	04:44	05:42	06:44	07:45	07:52	08:42
17	04:46	05:44	06:46	07:47	07:54	08:43
18	04:47	05:46	06:48	07:49	07:56	08:44
19	04:49	05:48	06:50	07:51	07:58	08:44
20	04:51	05:50	06:52	07:53	08:00	08:45
21	04:52	05:52	06:54	07:55	08:02	08:46
22	04:54	05:54	06:56	07:57	08:04	08:46
23	04:56	05:56	06:58	08:00	08:06	08:47
24	04:57	05:58	07:00	08:02	08:08	08:47
25	04:59	06:00	07:02	08:04	08:10	08:48
26	05:01	06:02	07:04	08:06	08:12	08:48
27	05:03	06:04	07:06	08:08	08:14	08:48
28	05:05	06:06	07:08	08:10	08:16	08:48
29	05:07	06:08	07:10	08:12	08:18	08:48
30	05:08	06:10	07:12	08:14	08:19	08:48
31	05:10	06:12	07:14	08:16	08:21	08:48
Potential sun hours	530	470	385	324	248	216
Total, worst case					2180	2644
Sun reduction					0,09	0,09
Oper. time red.					0,94	0,94
Wind dir. red.					0,63	0,62
Total reduction					0,05	0,05
Total, real					120	132

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: V - Dimanti

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:13	07:09	06:47	05:30	04:33	04:27	05:12	06:14	07:14	07:19	08:21
	15:45	16:42	17:44	19:50	20:52	21:50	22:07	21:26	20:12	18:52	16:34	15:42
2	08:48	08:11	07:06	06:44	05:28	04:32	04:28	05:14	06:16	07:16	07:22	08:23
	15:46	16:44	17:46	19:52	20:54	21:51	22:06	21:24	20:09	18:49	16:31	15:41
3	08:48	08:09	07:04	06:41	05:26	04:31	04:28	05:16	06:18	07:18	07:24	08:25
	15:47	16:46	17:48	19:54	20:56	21:53	22:06	21:22	20:07	18:46	16:29	15:40
4	08:47	08:07	07:01	06:39	05:23	04:30	04:29	05:18	06:20	07:20	07:26	08:26
	15:49	16:48	17:51	19:56	20:58	21:54	22:05	21:20	20:04	18:44	16:27	15:40
5	08:47	08:05	06:59	06:36	05:21	04:29	04:30	05:20	06:22	07:22	07:28	08:28
	15:50	16:51	17:53	19:58	21:01	21:55	22:05	21:18	20:02	18:41	16:25	15:39
6	08:46	08:03	06:56	06:33	05:19	04:28	04:31	05:22	06:24	07:24	07:30	08:29
	15:51	16:53	17:55	20:00	21:03	21:56	22:04	21:15	19:59	18:38	16:23	15:38
7	08:46	08:01	06:53	06:31	05:17	04:27	04:32	05:24	06:26	07:26	07:32	08:31
	15:53	16:55	17:57	20:02	21:05	21:58	22:03	21:13	19:56	18:36	16:21	15:37
8	08:45	07:59	06:51	06:28	05:14	04:26	04:34	05:26	06:28	07:28	07:35	08:32
	15:54	16:57	17:59	20:04	21:07	21:59	22:02	21:11	19:54	18:33	16:19	15:37
9	08:45	07:56	06:48	06:25	05:12	04:26	04:35	05:28	06:30	07:30	07:37	08:34
	15:56	17:00	18:01	20:06	21:09	22:00	22:01	21:09	19:51	18:30	16:17	15:36
10	08:44	07:54	06:45	06:23	05:10	04:25	04:36	05:30	06:32	07:32	07:39	08:35
	15:58	17:02	18:03	20:08	21:11	22:01	22:00	21:07	19:48	18:28	16:15	15:36
11	08:43	07:52	06:43	06:20	05:08	04:24	04:37	05:32	06:34	07:35	07:41	08:36
	15:59	17:04	18:06	20:11	21:13	22:02	21:59	21:04	19:46	18:25	16:13	15:35
12	08:42	07:50	06:40	06:18	05:06	04:24	04:39	05:34	06:36	07:37	07:43	08:38
	16:01	17:06	18:08	20:13	21:15	22:02	21:58	21:02	19:43	18:23	16:11	15:35
13	08:41	07:48	06:38	06:15	05:04	04:23	04:40	05:36	06:38	07:39	07:45	08:39
	16:03	17:09	18:10	20:15	21:17	22:03	21:57	21:00	19:40	18:20	16:09	15:35
14	08:40	07:45	06:35	06:12	05:02	04:23	04:41	05:38	06:40	07:41	07:48	08:40
	16:04	17:11	18:12	20:17	21:19	22:04	21:56	20:57	19:37	18:17	16:07	15:35
15	08:39	07:43	06:32	06:10	05:00	04:23	04:43	05:40	06:42	07:43	07:50	08:41
	16:06	17:13	18:14	20:19	21:21	22:05	21:55	20:55	19:35	18:15	16:05	15:35
16	08:38	07:41	06:30	06:07	04:58	04:22	04:44	05:42	06:44	07:45	07:52	08:42
	16:08	17:15	18:16	20:21	21:22	22:05	21:53	20:53	19:32	18:12	16:03	15:35
17	08:37	07:38	06:27	06:05	04:56	04:22	04:46	05:44	06:46	07:47	07:54	08:43
	16:10	17:17	18:18	20:23	21:24	22:06	21:52	20:50	19:29	18:10	16:02	15:35
18	08:35	07:36	06:24	06:02	04:54	04:22	04:47	05:46	06:48	07:49	07:56	08:44
	16:12	17:20	18:20	20:25	21:26	22:06	21:50	20:48	19:27	18:07	16:00	15:35
19	08:34	07:34	06:22	06:00	04:53	04:22	04:49	05:48	06:50	07:51	07:58	08:45
	16:14	17:22	18:23	20:27	21:28	22:07	21:49	20:45	19:24	18:05	15:58	15:35
20	08:33	07:31	06:19	05:57	04:51	04:22	04:51	05:50	06:52	07:53	08:00	08:45
	16:16	17:24	18:25	20:29	21:30	22:07	21:47	20:43	19:21	18:02	15:57	15:35
21	08:31	07:29	06:16	05:55	04:49	04:22	04:52	05:52	06:54	07:56	08:02	08:46
	16:18	17:26	18:27	20:31	21:32	22:08	21:46	20:40	19:19	18:00	15:55	15:36
22	08:30	07:26	06:14	05:52	04:47	04:22	04:54	05:54	06:56	07:58	08:04	08:46
	16:20	17:29	18:29	20:34	21:34	22:08	21:44	20:38	19:16	17:57	15:54	15:36
23	08:28	07:24	06:11	05:50	04:46	04:23	04:56	05:56	06:58	08:00	08:06	08:47
	16:22	17:31	18:31	20:36	21:35	22:08	21:43	20:35	19:13	17:55	15:52	15:37
24	08:27	07:21	06:08	05:47	04:44	04:23	04:57	05:58	07:00	08:02	08:08	08:47
	16:24	17:33	18:33	20:38	21:37	22:08	21:41	20:33	19:10	17:52	15:51	15:37
25	08:25	07:19	06:05	05:45	04:43	04:23	04:59	06:00	07:02	08:04	08:10	08:48
	16:26	17:35	18:35	20:40	21:39	22:08	21:39	20:30	19:08	17:50	15:49	15:38
26	08:23	07:16	06:03	05:42	04:41	04:24	05:01	06:02	07:04	07:06	08:12	08:48
	16:29	17:37	18:37	20:42	21:40	22:08	21:37	20:28	19:05	16:48	15:48	15:39
27	08:22	07:14	06:00	05:40	04:40	04:24	05:03	06:04	07:06	07:09	08:14	08:48
	16:31	17:40	18:39	20:44	21:42	22:08	21:36	20:25	19:02	16:45	15:47	15:39
28	08:20	07:11	05:57	05:37	04:38	04:25	05:05	06:06	07:08	07:11	08:16	08:48
	16:33	17:42	18:41	20:46	21:44	22:08	21:34	20:23	19:00	16:43	15:46	15:40
29	08:18		05:55	05:35	04:37	04:25	05:07	06:08	07:10	07:13	08:18	08:49
	16:35		18:43	20:48	21:45	22:07	21:32	20:20	18:57	16:41	15:44	15:41
30	08:16		06:52	05:33	04:36	04:26	05:08	06:10	07:12	07:15	08:19	08:49
	16:37		19:46	20:50	21:47	22:07	21:30	20:17	18:54	16:38	15:43	15:42
31	08:15		06:49		04:34		05:10	06:12		07:17		08:48
	16:39		19:48		21:48		21:28	20:15		16:36		15:43
Potential sun hours	235	265	365	426	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: W - Rudziši

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:30 20:52	04:33 21:50	04:27 22:07	05:12 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:42
2	08:48 15:46	08:11 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:32 21:51	04:27 22:06	05:14 21:24	06:16 20:09	07:16 18:49	07:22 16:31	08:23 15:41
3	08:48 15:47	08:09 16:46	07:04 17:48	06:41 19:54	05:26 20:56	04:31 21:53	04:28 22:06	05:16 21:22	06:18 20:07	07:18 18:46	07:24 16:29	08:25 15:40
4	08:47 15:51	08:07 16:57	07:01 17:59	06:39 20:00	05:23 20:58	04:30 21:54	04:29 22:05	05:18 21:20	06:20 20:04	07:20 18:44	07:26 16:27	08:26 15:39
5	08:47 15:50	08:05 16:50	06:58 17:53	06:36 19:58	05:21 21:01	04:29 21:55	04:30 22:04	05:20 21:18	06:22 20:02	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:51	08:03 16:53	06:56 17:55	06:33 20:00	05:19 21:03	04:28 21:56	04:31 22:04	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
7	08:46 15:53	08:01 16:55	06:53 17:57	06:31 20:02	05:17 21:05	04:27 21:57	04:32 22:03	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	08:31 15:37
8	08:45 15:54	07:58 16:57	06:51 17:59	06:28 20:04	05:14 21:07	04:26 21:59	04:33 22:02	05:26 21:11	06:28 19:54	07:28 18:33	07:35 16:19	08:32 15:37
9	08:45 15:56	07:56 16:59	06:48 18:01	06:25 20:06	05:12 21:09	04:26 22:00	04:35 22:01	05:28 21:09	06:30 19:51	07:30 18:30	07:37 16:17	08:34 15:36
10	08:44 15:57	07:54 17:02	06:45 18:03	06:23 20:08	05:10 21:11	04:25 22:01	04:36 22:00	05:30 21:07	06:32 19:48	07:32 18:28	07:39 16:15	08:35 15:36
11	08:43 15:59	07:52 17:04	06:43 18:06	06:20 20:10	05:08 21:13	04:24 22:02	04:37 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:13	08:36 15:35
12	08:42 16:01	07:50 17:06	06:40 18:08	06:18 20:13	05:06 21:15	04:24 22:02	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:38 15:35
13	08:41 16:03	07:47 17:08	06:38 18:10	06:15 20:15	05:04 21:17	04:23 22:03	04:40 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:45 16:09	08:39 15:35
14	08:40 16:04	07:45 17:11	06:35 18:12	06:12 20:17	05:02 21:19	04:23 22:04	04:41 21:56	05:38 20:57	06:40 19:37	07:41 18:17	07:48 16:07	08:40 15:35
15	08:39 16:06	07:43 17:13	06:32 18:14	06:10 20:19	05:00 21:20	04:23 22:05	04:43 21:55	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:05	08:41 15:35
16	08:38 16:08	07:41 17:15	06:30 18:16	06:07 20:21	04:58 21:22	04:22 22:05	04:44 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:52 16:03	08:42 15:35
17	08:37 16:10	07:38 17:17	06:27 18:18	06:05 20:23	04:56 21:24	04:22 22:06	04:46 21:52	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:02	08:43 15:35
18	08:35 16:12	07:36 17:20	06:24 18:20	06:02 20:25	04:54 21:26	04:22 22:06	04:47 21:50	05:46 20:48	06:48 19:27	07:49 18:07	07:56 16:00	08:44 15:35
19	08:34 16:14	07:34 17:22	06:22 18:22	06:00 20:27	04:53 21:28	04:22 22:07	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:58	08:44 15:35
20	08:33 16:16	07:31 17:24	06:19 18:25	05:57 20:29	04:51 21:30	04:22 22:07	04:51 21:47	05:50 20:43	06:52 19:21	07:53 18:02	08:00 15:57	08:45 15:35
21	08:31 16:18	07:29 17:26	06:16 18:27	05:54 20:31	04:49 21:32	04:22 22:08	04:52 21:46	05:52 20:40	06:54 19:18	07:56 18:00	08:02 15:55	08:46 15:36
22	08:30 16:20	07:26 17:29	06:13 18:29	05:52 20:33	04:47 21:34	04:22 22:08	04:54 21:44	05:54 20:38	06:56 19:16	07:58 17:57	08:04 15:54	08:46 15:36
23	08:28 16:22	07:24 17:31	06:11 18:31	05:49 20:36	04:46 21:35	04:22 22:08	04:56 21:43	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:47 15:37
24	08:27 16:24	07:21 17:33	06:08 18:33	05:47 20:38	04:44 21:37	04:23 22:08	04:57 21:41	05:58 20:33	07:00 19:10	08:02 17:52	08:08 15:51	08:47 15:37
25	08:25 16:26	07:19 17:35	06:05 18:35	05:45 20:40	04:43 21:39	04:23 22:08	04:59 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:49	08:48 15:38
26	08:23 16:28	07:16 17:37	06:03 18:37	05:42 20:42	04:41 21:40	04:24 22:08	05:01 21:37	06:02 20:28	07:04 19:05	07:06 16:48	08:12 15:48	08:48 15:39
27	08:22 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:42	04:24 22:08	05:03 21:36	06:04 20:25	07:06 19:02	07:08 16:45	08:14 15:47	08:48 15:39
28	08:20 16:33	07:11 17:42	05:57 18:41	05:37 20:46	04:38 21:44	04:25 22:08	05:05 21:34	06:06 20:22	07:08 19:00	07:11 16:43	08:16 15:45	08:48 15:40
29	08:18 16:35		05:55 18:43	05:35 20:48	04:37 21:45	04:25 22:07	05:06 21:32	06:08 20:20	07:10 18:57	07:13 16:41	08:18 15:44	08:48 15:41
30	08:16 16:37		06:52 19:45	05:33 20:50	04:36 21:47	04:26 22:07	05:08 21:30	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:43	08:48 15:42
31	08:15 16:39		06:49 19:48		04:34 21:48		05:10 21:28	06:12 20:15		07:17 16:36		08:48 15:43
Potential sun hours	235	265	365	426	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: X - Podnieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:13	07:09	06:47	05:30	04:33	04:27	05:12	06:14	07:14	07:19	08:21
	15:45	16:41	17:44	19:50	20:52	21:50	22:07	21:26	20:12	18:51	16:34	15:42
2	08:48	08:11	07:06	06:44	05:28	04:32	04:27	05:14	06:16	07:16	07:21	08:23
	15:46	16:44	17:46	19:52	20:54	21:51	22:06	21:24	20:09	18:49	16:31	15:41
3	08:48	08:09	07:04	06:41	05:25	04:31	04:28	05:16	06:18	07:18	07:24	08:24
	15:47	16:46	17:48	19:54	20:56	21:52	22:06	21:22	20:07	18:46	16:29	15:40
4	08:47	08:07	07:01	06:39	05:23	04:30	04:29	05:18	06:20	07:20	07:26	08:26
	15:48	16:48	17:50	19:56	20:58	21:54	22:05	21:20	20:04	18:43	16:27	15:39
5	08:47	08:05	06:58	06:36	05:21	04:29	04:30	05:20	06:22	07:22	07:28	08:28
	15:50	16:50	17:53	19:58	21:00	21:55	22:04	21:17	20:01	18:41	16:25	15:39
6	08:46	08:03	06:56	06:33	05:19	04:28	04:31	05:22	06:24	07:24	07:30	08:29
	15:51	16:53	17:55	20:00	21:02	21:56	22:04	21:15	19:59	18:38	16:23	15:38
7	08:46	08:00	06:53	06:31	05:17	04:27	04:32	05:24	06:26	07:26	07:32	08:31
	15:53	16:55	17:57	20:02	21:04	21:57	22:03	21:13	19:56	18:36	16:21	15:37
8	08:45	07:58	06:51	06:28	05:14	04:26	04:33	05:26	06:28	07:28	07:34	08:32
	15:54	16:57	17:59	20:04	21:06	21:58	22:02	21:11	19:53	18:33	16:19	15:37
9	08:44	07:56	06:48	06:25	05:12	04:26	04:35	05:28	06:30	07:30	07:37	08:34
	15:56	16:59	18:01	20:06	21:08	21:59	22:01	21:09	19:51	18:30	16:16	15:36
10	08:44	07:54	06:45	06:23	05:10	04:25	04:36	05:30	06:32	07:32	07:39	08:35
	15:57	17:02	18:03	20:08	21:11	22:00	22:00	21:06	19:48	18:28	16:14	15:36
11	08:43	07:52	06:43	06:20	05:08	04:24	04:37	05:32	06:34	07:34	07:41	08:36
	15:59	17:04	18:05	20:10	21:12	22:01	21:59	21:04	19:45	18:25	16:13	15:35
12	08:42	07:50	06:40	06:17	05:06	04:24	04:38	05:34	06:36	07:36	07:43	08:37
	16:01	17:06	18:08	20:12	21:14	22:02	21:58	21:02	19:43	18:22	16:11	15:35
13	08:41	07:47	06:37	06:15	05:04	04:23	04:40	05:36	06:38	07:39	07:45	08:39
	16:03	17:08	18:10	20:15	21:16	22:03	21:57	20:59	19:40	18:20	16:09	15:35
14	08:40	07:45	06:35	06:12	05:02	04:23	04:41	05:38	06:40	07:41	07:47	08:40
	16:04	17:11	18:12	20:17	21:18	22:04	21:56	20:57	19:37	18:17	16:07	15:35
15	08:39	07:43	06:32	06:10	05:00	04:23	04:43	05:40	06:42	07:43	07:50	08:41
	16:06	17:13	18:14	20:19	21:20	22:05	21:54	20:55	19:35	18:15	16:05	15:35
16	08:38	07:40	06:29	06:07	04:58	04:22	04:44	05:42	06:44	07:45	07:52	08:42
	16:08	17:15	18:16	20:21	21:22	22:05	21:53	20:52	19:32	18:12	16:03	15:35
17	08:36	07:38	06:27	06:05	04:56	04:22	04:46	05:44	06:46	07:47	07:54	08:43
	16:10	17:17	18:18	20:23	21:24	22:06	21:52	20:50	19:29	18:10	16:01	15:35
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	16:12	17:20	18:20	20:25	21:26	22:06	21:50	20:48	19:26	18:07	16:00	15:35
19	08:34	07:33	06:21	05:59	04:52	04:22	04:49	05:48	06:50	07:51	07:58	08:44
	16:14	17:22	18:22	20:27	21:28	22:07	21:49	20:45	19:24	18:05	15:58	15:35
20	08:32	07:31	06:19	05:57	04:51	04:22	04:51	05:50	06:52	07:53	08:00	08:45
	16:16	17:24	18:24	20:29	21:30	22:07	21:47	20:43	19:21	18:02	15:57	15:35
21	08:31	07:29	06:16	05:54	04:49	04:22	04:52	05:52	06:54	07:55	08:02	08:46
	16:18	17:26	18:27	20:31	21:32	22:07	21:46	20:40	19:18	18:00	15:55	15:36
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31	08:14		06:49		04:34		05:10	06:12		07:17		08:48
	16:39		19:47		21:48		21:28	20:15		16:36		15:43
Potential sun hours	235	265	365	426	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: Y - Stimbinaja

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:13	07:09	06:46	05:30	04:33	04:27	05:12	06:14	07:14	07:19	08:21
	15:45	16:41	17:44	19:49	20:52	21:50	22:07	21:26	20:12	18:51	16:34	15:42
2	08:48	08:11	07:06	06:44	05:28	04:32	04:27	05:14	06:16	07:16	07:21	08:23
	15:46	16:44	17:46	19:52	20:54	21:51	22:06	21:24	20:09	18:49	16:31	15:41
3	08:48	08:09	07:03	06:41	05:25	04:31	04:28	05:16	06:18	07:18	07:24	08:24
	15:47	16:46	17:48	19:54	20:56	21:52	22:06	21:22	20:07	18:46	16:29	15:40
4	08:47	08:07	07:01	06:38	05:23	04:30	04:29	05:18	06:20	07:20	07:26	08:26
	15:48	16:48	17:50	19:56	20:58	21:54	22:05	21:20	20:04	18:43	16:27	15:39
5	08:47	08:05	06:58	06:36	05:21	04:29	04:30	05:20	06:22	07:22	07:28	08:28
	15:50	16:50	17:53	19:58	21:00	21:55	22:04	21:17	20:01	18:41	16:25	15:39
6	08:46	08:03	06:56	06:33	05:19	04:28	04:31	05:22	06:24	07:24	07:30	08:29
	15:51	16:53	17:55	20:00	21:02	21:56	22:04	21:15	19:59	18:38	16:23	15:38
7	08:46	08:00	06:53	06:31	05:16	04:27	04:32	05:24	06:26	07:26	07:32	08:31
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8	08:45	07:58	06:51	06:28	05:14	04:26	04:33	05:26	06:28	07:28	07:34	08:32
	15:54	16:57	17:59	20:04	21:06	21:58	22:02	21:11	19:53	18:33	16:18	15:37
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	15:56	16:59	18:01	20:06	21:08	21:59	22:01	21:09	19:51	18:30	16:16	15:36
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	15:57	17:02	18:03	20:08	21:10	22:00	22:00	21:06	19:48	18:28	16:14	15:36
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12	08:42	07:50	06:40	06:17	05:06	04:24	04:38	05:34	06:36	07:36	07:43	08:37
	16:01	17:06	18:08	20:12	21:14	22:02	21:58	21:02	19:43	18:22	16:10	15:35
13	08:41	07:47	06:37	06:15	05:04	04:23	04:40	05:36	06:38	07:38	07:45	08:39
	16:02	17:08	18:10	20:15	21:16	22:03	21:57	20:59	19:40	18:20	16:09	15:35
14	08:40	07:45	06:35	06:12	05:02	04:23	04:41	05:38	06:40	07:41	07:47	08:40
	16:04	17:11	18:12	20:17	21:18	22:04	21:56	20:57	19:37	18:17	16:07	15:35
15	08:39	07:43	06:32	06:10	05:00	04:22	04:43	05:40	06:42	07:43	07:49	08:41
	16:06	17:13	18:14	20:19	21:20	22:05	21:54	20:55	19:35	18:15	16:05	15:35
16	08:38	07:40	06:29	06:07	04:58	04:22	04:44	05:42	06:44	07:45	07:52	08:42
	16:08	17:15	18:16	20:21	21:22	22:05	21:53	20:52	19:32	18:12	16:03	15:34
17	08:36	07:38	06:27	06:04	04:56	04:22	04:46	05:44	06:46	07:47	07:54	08:43
	16:10	17:17	18:18	20:23	21:24	22:06	21:52	20:50	19:29	18:10	16:01	15:35
18	08:35	07:36	06:24	06:02	04:54	04:22	04:47	05:46	06:48	07:49	07:56	08:44
	16:12	17:20	18:20	20:25	21:26	22:06	21:50	20:47	19:26	18:07	16:00	15:35
19	08:34	07:33	06:21	05:59	04:52	04:22	04:49	05:48	06:50	07:51	07:58	08:44
	16:14	17:22	18:22	20:27	21:28	22:07	21:49	20:45	19:24	18:05	15:58	15:35
20	08:32	07:31	06:19	05:57	04:51	04:22	04:50	05:50	06:52	07:53	08:00	08:45
	16:16	17:24	18:24	20:29	21:30	22:07	21:47	20:43	19:21	18:02	15:56	15:35
21	08:31	07:29	06:16	05:54	04:49	04:22	04:52	05:52	06:54	07:55	08:02	08:46
	16:18	17:26	18:27	20:31	21:32	22:07	21:46	20:40	19:18	18:00	15:55	15:36
22	08:30	07:26	06:13	05:52	04:47	04:22	04:54	05:54	06:56	07:58	08:04	08:46
	16:20	17:28	18:29	20:33	21:33	22:08	21:44	20:38	19:16	17:57	15:53	15:36
23	08:28	07:24	06:11	05:49	04:46	04:22	04:56	05:56	06:58	08:00	08:06	08:47
	16:22	17:31	18:31	20:35	21:35	22:08	21:42	20:35	19:13	17:55	15:52	15:36
24	08:27	07:21	06:08	05:47	04:44	04:23	04:57	05:58	07:00	08:02	08:08	08:47
	16:24	17:33	18:33	20:37	21:37	22:08	21:41	20:33	19:10	17:52	15:50	15:37
25	08:25	07:19	06:05	05:44	04:42	04:23	04:59	06:00	07:02	08:04	08:10	08:48
	16:26	17:35	18:35	20:40	21:39	22:08	21:39	20:30	19:08	17:50	15:49	15:38
26	08:23	07:16	06:03	05:42	04:41	04:23	05:01	06:02	07:04	07:06	08:12	08:48
	16:28	17:37	18:37	20:42	21:40	22:08	21:37	20:27	19:05	16:47	15:48	15:38
27	08:22	07:14	06:00	05:40	04:39	04:24	05:03	06:04	07:06	07:08	08:14	08:48
	16:30	17:39	18:39	20:44	21:42	22:08	21:35	20:25	19:02	16:45	15:47	15:39
28	08:20	07:11	05:57	05:37	04:38	04:24	05:04	06:06	07:08	07:10	08:16	08:48
	16:33	17:42	18:41	20:46	21:44	22:08	21:34	20:22	18:59	16:43	15:45	15:40
29	08:18		05:55	05:35	04:37	04:25	05:06	06:08	07:10	07:13	08:17	08:48
	16:35		18:43	20:48	21:45	22:07	21:32	20:20	18:57	16:40	15:44	15:41
30	08:16		06:52	05:32	04:35	04:26	05:08	06:10	07:12	07:15	08:19	08:48
	16:37		19:45	20:50	21:47	22:07	21:30	20:17	18:54	16:38	15:43	15:42
31	08:14		06:49		04:34		05:10	06:12		07:17		08:48
	16:39		19:47		21:48		21:28	20:15		16:36		15:43
Potential sun hours	235	265	365	426	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: Z - Marsnica

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:13	07:09	06:47	05:30	04:33	04:27	05:12	06:14	07:14	07:19	08:21
	15:45	16:41	17:44	19:50	20:52	21:50	22:07	21:26	20:12	18:51	16:34	15:42
2	08:48	08:11	07:06	06:44	05:28	04:32	04:27	05:14	06:16	07:16	07:21	08:23
	15:46	16:44	17:46	19:52	20:54	21:51	22:06	21:24	20:09	18:49	16:31	15:41
3	08:48	08:09	07:04	06:41	05:25	04:31	04:28	05:16	06:18	07:18	07:24	08:24
	15:47	16:46	17:48	19:54	20:56	21:52	22:06	21:22	20:07	18:46	16:29	15:40
4	08:47	08:07	07:01	06:39	05:23	04:30	04:29	05:18	06:20	07:20	07:26	08:26
	15:48	16:48	17:50	19:56	20:58	21:54	22:05	21:20	20:04	18:43	16:27	15:39
5	08:47	08:05	06:58	06:36	05:21	04:29	04:30	05:20	06:22	07:22	07:28	08:28
	15:50	16:50	17:53	19:58	21:00	21:55	22:04	21:17	20:01	18:41	16:25	15:39
6	08:46	08:03	06:56	06:33	05:19	04:28	04:31	05:22	06:24	07:24	07:30	08:29
	15:51	16:53	17:55	20:00	21:02	21:56	22:04	21:15	19:59	18:38	16:23	15:38
7	08:46	08:00	06:53	06:31	05:17	04:27	04:32	05:24	06:26	07:26	07:32	08:31
	15:53	16:55	17:57	20:02	21:04	21:57	22:03	21:13	19:56	18:36	16:21	15:37
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	15:54	16:57	17:59	20:04	21:06	21:58	22:02	21:11	19:53	18:33	16:19	15:37
9	08:44	07:56	06:48	06:25	05:12	04:26	04:35	05:28	06:30	07:30	07:37	08:34
	15:56	16:59	18:01	20:06	21:08	21:59	22:01	21:09	19:51	18:30	16:16	15:36
10	08:44	07:54	06:45	06:23	05:10	04:25	04:36	05:30	06:32	07:32	07:39	08:35
	15:57	17:02	18:03	20:08	21:10	22:00	22:00	21:06	19:48	18:28	16:14	15:36
11	08:43	07:52	06:43	06:20	05:08	04:24	04:37	05:32	06:34	07:34	07:41	08:36
	15:59	17:04	18:05	20:10	21:12	22:01	21:59	21:04	19:45	18:25	16:13	15:35
12	08:42	07:50	06:40	06:17	05:06	04:24	04:38	05:34	06:36	07:36	07:43	08:37
	16:01	17:06	18:08	20:12	21:14	22:02	21:58	21:02	19:43	18:22	16:11	15:35
13	08:41	07:47	06:37	06:15	05:04	04:23	04:40	05:36	06:38	07:39	07:45	08:39
	16:03	17:08	18:10	20:15	21:16	22:03	21:57	20:59	19:40	18:20	16:09	15:35
14	08:40	07:45	06:35	06:12	05:02	04:23	04:41	05:38	06:40	07:41	07:47	08:40
	16:04	17:11	18:12	20:17	21:18	22:04	21:56	20:57	19:37	18:17	16:07	15:35
15	08:39	07:43	06:32	06:10	05:00	04:23	04:43	05:40	06:42	07:43	07:49	08:41
	16:06	17:13	18:14	20:19	21:20	22:05	21:54	20:55	19:35	18:15	16:05	15:35
16	08:38	07:40	06:29	06:07	04:58	04:22	04:44	05:42	06:44	07:45	07:52	08:42
	16:08	17:15	18:16	20:21	21:22	22:05	21:53	20:52	19:32	18:12	16:03	15:35
17	08:36	07:38	06:27	06:05	04:56	04:22	04:46	05:44	06:46	07:47	07:54	08:43
	16:10	17:17	18:18	20:23	21:24	22:06	21:52	20:50	19:29	18:10	16:01	15:35
18	08:35	07:36	06:24	06:02	04:54	04:22	04:47	05:46	06:48	07:49	07:56	08:44
	16:12	17:20	18:20	20:25	21:26	22:06	21:50	20:47	19:26	18:07	16:00	15:35
19	08:34	07:33	06:21	05:59	04:52	04:22	04:49	05:48	06:50	07:51	07:58	08:44
	16:14	17:22	18:22	20:27	21:28	22:07	21:49	20:45	19:24	18:05	15:58	15:35
20	08:32	07:31	06:19	05:57	04:51	04:22	04:51	05:50	06:52	07:53	08:00	08:45
	16:16	17:24	18:24	20:29	21:30	22:07	21:47	20:43	19:21	18:02	15:57	15:35
21	08:31	07:29	06:16	05:54	04:49	04:22	04:52	05:52	06:54	07:55	08:02	08:46
	16:18	17:26	18:27	20:31	21:32	22:07	21:46	20:40	19:18	18:00	15:55	15:36
22	08:30	07:26	06:13	05:52	04:47	04:22	04:54	05:54	06:56	07:58	08:04	08:46
	16:20	17:28	18:29	20:33	21:33	22:08	21:44	20:38	19:16	17:57	15:53	15:36
23	08:28	07:24	06:11	05:49	04:46	04:22	04:56	05:56	06:58	08:00	08:06	08:47
	16:22	17:31	18:31	20:35	21:35	22:08	21:42	20:35	19:13	17:55	15:52	15:37
24	08:27	07:21	06:08	05:47	04:44	04:23	04:57	05:58	07:00	08:02	08:08	08:47
	16:24	17:33	18:33	20:38	21:37	22:08	21:41	20:33	19:10	17:52	15:51	15:37
25	08:25	07:19	06:05	05:44	04:42	04:23	04:59	06:00	07:02	08:04	08:10	08:48
	16:26	17:35	18:35	20:40	21:39	22:08	21:39	20:30	19:08	17:50	15:49	15:38
26	08:23	07:16	06:03	05:42	04:41	04:24	05:01	06:02	07:04	07:06	08:12	08:48
	16:28	17:37	18:37	20:42	21:40	22:08	21:37	20:27	19:05	16:47	15:48	15:39
27	08:22	07:14	06:00	05:40	04:40	04:24	05:03	06:04	07:06	07:08	08:14	08:48
	16:31	17:40	18:39	20:44	21:42	22:08	21:35	20:25	19:02	16:45	15:47	15:39
28	08:20	07:11	05:57	05:37	04:38	04:25	05:05	06:06	07:08	07:11	08:16	08:48
	16:33	17:42	18:41	20:46	21:44	22:08	21:34	20:22	18:59	16:43	15:45	15:40
29	08:18		05:55	05:35	04:37	04:25	05:06	06:08	07:10	07:13	08:17	08:48
	16:35		18:43	20:48	21:45	22:07	21:32	20:20	18:57	16:40	15:44	15:41
30	08:16		06:52	05:32	04:35	04:26	05:08	06:10	07:12	07:15	08:19	08:48
	16:37		19:45	20:50	21:47	22:07	21:30	20:17	18:54	16:38	15:43	15:42
31	08:14		06:49		04:34		05:10	06:12		07:17		08:48
	16:39		19:47		21:48		21:28	20:15		16:36		15:43
Potential sun hours	235	265	365	425	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AA - Vilkmuiža

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:12 16:41	07:09 17:44	06:47 19:49	05:30 20:52	04:33 21:50	04:27 22:07	05:12 21:26	06:14 20:12	07:14 18:51	07:19 16:34	08:21 15:42
2	08:48 15:46	08:11 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:32 21:51	04:27 22:06	05:14 21:24	06:16 20:09	07:16 18:49	07:21 16:31	08:23 15:41
3	08:48 15:47	08:09 16:46	07:03 17:48	06:41 19:54	05:25 20:56	04:31 21:52	04:28 22:06	05:16 21:22	06:18 20:07	07:18 18:46	07:24 16:29	08:24 15:40
4	08:47 15:48	08:07 16:48	07:01 17:50	06:38 19:56	05:23 20:58	04:30 21:54	04:29 22:05	05:18 21:20	06:20 20:04	07:20 18:43	07:26 16:27	08:26 15:39
5	08:47 15:50	08:05 16:50	06:58 17:53	06:36 19:58	05:21 21:00	04:29 21:55	04:30 22:04	05:20 21:17	06:22 20:01	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:51	08:03 16:53	06:56 17:55	06:33 20:00	05:19 21:02	04:28 21:56	04:31 22:04	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
7	08:46 15:53	08:00 16:55	06:53 17:57	06:31 20:02	05:16 21:04	04:27 21:57	04:32 22:03	05:24 21:13	06:26 19:56	07:26 18:35	07:32 16:21	08:31 15:37
8	08:45 15:54	07:58 16:57	06:51 17:59	06:28 20:04	05:14 21:06	04:26 21:58	04:33 22:02	05:26 21:11	06:28 19:53	07:28 18:33	07:34 16:18	08:32 15:37
9	08:44 15:56	07:56 16:59	06:48 18:01	06:25 20:06	05:12 21:08	04:25 21:59	04:35 22:01	05:28 21:09	06:30 19:51	07:30 18:30	07:37 16:16	08:33 15:36
10	08:44 15:57	07:54 17:02	06:45 18:03	06:23 20:08	05:10 21:10	04:25 22:00	04:36 22:00	05:30 21:06	06:32 19:48	07:32 18:28	07:39 16:14	08:35 15:36
11	08:43 15:59	07:52 17:04	06:43 18:05	06:20 20:10	05:08 21:12	04:24 22:01	04:37 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:12	08:36 15:35
12	08:42 16:01	07:50 17:06	06:40 18:08	06:17 20:12	05:06 21:14	04:24 22:02	04:38 21:58	05:34 21:02	06:36 19:43	07:36 18:22	07:43 16:11	08:37 15:35
13	08:41 16:03	07:47 17:08	06:37 18:10	06:15 20:14	05:04 21:16	04:23 22:03	04:40 21:57	05:36 20:59	06:38 19:40	07:38 18:20	07:45 16:09	08:39 15:35
14	08:40 16:04	07:45 17:11	06:35 18:12	06:12 20:17	05:02 21:18	04:23 22:04	04:41 21:56	05:38 20:57	06:40 19:37	07:41 18:17	07:47 16:07	08:40 15:35
15	08:39 16:06	07:43 17:13	06:32 18:14	06:10 20:19	05:00 21:20	04:23 22:05	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:49 16:05	08:41 15:35
16	08:38 16:08	07:40 17:15	06:29 18:16	06:07 20:21	04:58 21:22	04:22 22:05	04:44 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:52 16:03	08:42 15:35
17	08:36 16:10	07:38 17:17	06:27 18:18	06:04 20:23	04:56 21:24	04:22 22:06	04:46 21:52	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:01	08:43 15:35
18	08:35 16:12	07:36 17:20	06:24 18:20	06:02 20:25	04:54 21:26	04:22 22:06	04:47 21:50	05:46 20:47	06:48 19:26	07:49 18:07	07:56 16:00	08:43 15:35
19	08:34 16:14	07:33 17:22	06:21 18:22	05:59 20:27	04:52 21:28	04:22 22:07	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:58	08:44 15:35
20	08:32 16:16	07:31 17:24	06:19 18:24	05:57 20:29	04:51 21:30	04:22 22:07	04:50 21:47	05:50 20:43	06:52 19:21	07:53 18:02	08:00 15:56	08:45 15:35
21	08:31 16:18	07:29 17:26	06:16 18:27	05:54 20:31	04:49 21:32	04:22 22:07	04:52 21:46	05:52 20:40	06:54 19:18	07:55 18:00	08:02 15:55	08:46 15:36
22	08:30 16:20	07:26 17:28	06:13 18:29	05:52 20:33	04:47 21:33	04:22 22:08	04:54 21:44	05:54 20:38	06:56 19:16	07:58 17:57	08:04 15:53	08:46 15:36
23	08:28 16:22	07:24 17:31	06:11 18:31	05:49 20:35	04:46 21:35	04:22 22:08	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:47 15:37
24	08:26 16:24	07:21 17:33	06:08 18:33	05:47 20:37	04:44 21:37	04:23 22:08	04:57 21:41	05:58 20:33	07:00 19:10	08:02 17:52	08:08 15:51	08:47 15:37
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29	08:18 16:35		05:55 18:43	05:35 20:48	04:37 21:45	04:25 22:07	05:06 21:32	06:08 20:20	07:10 18:57	07:13 16:40	08:17 15:44	08:48 15:41
30	08:16 16:37		06:52 19:45	05:32 20:50	04:35 21:47	04:26 22:07	05:08 21:30	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:43	08:48 15:42
31	08:14 16:39		06:49 19:47		04:34 21:48		05:10 21:28	06:12 20:15		07:17 16:36		08:48 15:43
Potential sun hours	235	265	365	426	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AB - Vecergli

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:13	07:09	06:47	05:30	04:33	04:27	05:12	06:14	07:14	07:19	08:21
	15:45	16:41	17:44	19:50	20:52	21:50	22:07	21:26	20:12	18:51	16:34	15:42
2	08:48	08:11	07:06	06:44	05:28	04:32	04:27	05:14	06:16	07:16	07:21	08:23
	15:46	16:44	17:46	19:52	20:54	21:51	22:06	21:24	20:09	18:49	16:31	15:41
3	08:48	08:09	07:03	06:41	05:25	04:31	04:28	05:16	06:18	07:18	07:24	08:24
	15:47	16:46	17:48	19:54	20:56	21:52	22:06	21:22	20:07	18:46	16:29	15:40
4	08:47	08:07	07:01	06:39	05:23	04:30	04:29	05:18	06:20	07:20	07:26	08:26
	15:48	16:48	17:50	19:56	20:58	21:54	22:05	21:20	20:04	18:43	16:27	15:39
5	08:47	08:05	06:58	06:36	05:21	04:29	04:30	05:20	06:22	07:22	07:28	08:28
	15:50	16:50	17:53	19:58	21:00	21:55	22:04	21:17	20:01	18:41	16:25	15:39
6	08:46	08:03	06:56	06:33	05:19	04:28	04:31	05:22	06:24	07:24	07:30	08:29
	15:51	16:53	17:55	20:00	21:02	21:56	22:04	21:15	19:59	18:38	16:23	15:38
7	08:46	08:00	06:53	06:31	05:16	04:27	04:32	05:24	06:26	07:26	07:32	08:31
	15:53	16:55	17:57	20:02	21:04	21:57	22:03	21:13	19:56	18:35	16:21	15:37
8	08:45	07:58	06:51	06:28	05:14	04:26	04:33	05:26	06:28	07:28	07:34	08:32
	15:54	16:57	17:59	20:04	21:06	21:58	22:02	21:11	19:53	18:33	16:18	15:37
9	08:44	07:56	06:48	06:25	05:12	04:25	04:35	05:28	06:30	07:30	07:37	08:34
	15:56	16:59	18:01	20:06	21:08	21:59	22:01	21:09	19:51	18:30	16:16	15:36
10	08:44	07:54	06:45	06:23	05:10	04:25	04:36	05:30	06:32	07:32	07:39	08:35
	15:57	17:02	18:03	20:08	21:10	22:00	22:00	21:06	19:48	18:28	16:14	15:36
11	08:43	07:52	06:43	06:20	05:08	04:24	04:37	05:32	06:34	07:34	07:41	08:36
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	16:01	17:06	18:08	20:12	21:14	22:02	21:58	21:02	19:43	18:22	16:11	15:35
13	08:41	07:47	06:37	06:15	05:04	04:23	04:40	05:36	06:38	07:39	07:45	08:39
	16:03	17:08	18:10	20:15	21:16	22:03	21:57	20:59	19:40	18:20	16:09	15:35
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	16:04	17:11	18:12	20:17	21:18	22:04	21:56	20:57	19:37	18:17	16:07	15:35
15	08:39	07:43	06:32	06:10	05:00	04:22	04:43	05:40	06:42	07:43	07:49	08:41
	16:06	17:13	18:14	20:19	21:20	22:05	21:54	20:55	19:35	18:15	16:05	15:35
16	08:38	07:40	06:29	06:07	04:58	04:22	04:44	05:42	06:44	07:45	07:52	08:42
	16:08	17:15	18:16	20:21	21:22	22:05	21:53	20:52	19:32	18:12	16:03	15:35
17	08:36	07:38	06:27	06:04	04:56	04:22	04:46	05:44	06:46	07:47	07:54	08:43
	16:10	17:17	18:18	20:23	21:24	22:06	21:52	20:50	19:29	18:10	16:01	15:35
18	08:35	07:36	06:24	06:02	04:54	04:22	04:47	05:46	06:48	07:49	07:56	08:44
	16:12	17:20	18:20	20:25	21:26	22:06	21:50	20:47	19:26	18:07	16:00	15:35
19	08:34	07:33	06:21	05:59	04:52	04:22	04:49	05:48	06:50	07:51	07:58	08:44
	16:14	17:22	18:22	20:27	21:28	22:07	21:49	20:45	19:24	18:05	15:58	15:35
20	08:32	07:31	06:19	05:57	04:51	04:22	04:50	05:50	06:52	07:53	08:00	08:45
	16:16	17:24	18:24	20:29	21:30	22:07	21:47	20:43	19:21	18:02	15:56	15:35
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	16:18	17:26	18:27	20:31	21:32	22:07	21:46	20:40	19:18	18:00	15:55	15:36
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	16:20	17:28	18:29	20:33	21:33	22:08	21:44	20:38	19:16	17:57	15:53	15:36
23	08:28	07:24	06:11	05:49	04:46	04:22	04:56	05:56	06:58	08:00	08:06	08:47
	16:22	17:31	18:31	20:35	21:35	22:08	21:42	20:35	19:13	17:55	15:52	15:37
24	08:27	07:21	06:08	05:47	04:44	04:23	04:57	05:58	07:00	08:02	08:08	08:47
	16:24	17:33	18:33	20:37	21:37	22:08	21:41	20:33	19:10	17:52	15:50	15:37
25	08:25	07:19	06:05	05:44	04:42	04:23	04:59	06:00	07:02	08:04	08:10	08:48
	16:26	17:35	18:35	20:40	21:39	22:08	21:39	20:30	19:08	17:50	15:49	15:38
26	08:23	07:16	06:03	05:42	04:41	04:23	05:01	06:02	07:04	07:06	08:12	08:48
	16:28	17:37	18:37	20:42	21:40	22:08	21:37	20:27	19:05	16:47	15:48	15:38
27	08:22	07:14	06:00	05:40	04:39	04:24	05:03	06:04	07:06	07:08	08:14	08:48
	16:30	17:39	18:39	20:44	21:42	22:08	21:35	20:25	19:02	16:45	15:47	15:39
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	16:33	17:42	18:41	20:46	21:44	22:08	21:34	20:22	18:59	16:43	15:45	15:40
29	08:18		05:55	05:35	04:37	04:25	05:06	06:08	07:10	07:13	08:17	08:48
	16:35		18:43	20:48	21:45	22:07	21:32	20:20	18:57	16:40	15:44	15:41
30	08:16		06:52	05:32	04:35	04:26	05:08	06:10	07:12	07:15	08:19	08:48
	16:37		19:45	20:50	21:47	22:07	21:30	20:17	18:54	16:38	15:43	15:42
31	08:14		06:49		04:34		05:10	06:12		07:17		08:48
	16:39		19:47		21:48		21:28	20:15		16:36		15:43
Potential sun hours	235	265	365	426	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AC - Kvie š i

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:30 20:52	04:33 21:50	04:27 22:07	05:12 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:43
2	08:48 15:46	08:11 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:32 21:51	04:28 22:06	05:14 21:24	06:16 20:10	07:16 18:49	07:22 16:32	08:23 15:42
3	08:48 15:47	08:09 16:46	07:04 17:49	06:42 19:54	05:26 20:56	04:31 21:53	04:29 22:06	05:16 21:22	06:18 20:07	07:18 18:46	07:24 16:29	08:25 15:41
4	08:47 15:49	08:07 16:48	07:01 17:51	06:39 19:56	05:24 20:59	04:30 21:54	04:30 22:05	05:18 21:20	06:20 20:04	07:20 18:44	07:26 16:27	08:26 15:40
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25	08:25 16:27	07:19 17:35	06:06 18:35	05:45 20:40	04:43 21:39	04:23 22:08	04:59 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:50	08:48 15:38
26	08:24 16:29	07:16 17:38	06:03 18:37	05:42 20:42	04:41 21:40	04:24 22:08	05:01 21:37	06:02 20:28	07:04 19:05	07:06 16:48	08:12 15:48	08:48 15:39
27	08:22 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:42	04:24 22:08	05:03 21:36	06:04 20:25	07:06 19:02	07:09 16:45	08:14 15:47	08:48 15:40
28	08:20 16:33	07:11 17:42	05:58 18:41	05:38 20:46	04:38 21:44	04:25 22:08	05:05 21:34	06:06 20:23	07:08 19:00	07:11 16:43	08:16 15:46	08:48 15:41
29	08:18 16:35		05:55 18:44	05:35 20:48	04:37 21:45	04:26 22:07	05:07 21:32	06:08 20:20	07:10 18:57	07:13 16:41	08:18 15:45	08:49 15:41
30	08:17 16:37		06:52 19:46	05:33 20:50	04:36 21:47	04:26 22:07	05:09 21:30	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:44	08:49 15:42
31	08:15 16:40		06:50 19:48		04:35 21:48		05:11 21:28	06:12 20:15		07:17 16:36		08:48 15:44
Potential sun hours	235	265	365	425	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AD - Me ž a Rasas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January			February			March			April			May			June		
1	08:48			09:30 (7)	08:13		08:49 (15)	07:09		07:50 (8)	06:47		05:30			04:33		
	15:45	11		09:41 (7)	16:42	14	09:03 (15)	17:44	25	08:15 (8)	19:50		20:52			21:50		
2	08:48			09:30 (7)	08:11		08:47 (15)	07:06		07:50 (8)	06:44		05:28			04:32		
	15:46	13		09:43 (7)	16:44	18	09:05 (15)	17:46	24	08:14 (8)	19:52		20:54			21:51		
3	08:48			09:29 (7)	08:09		08:46 (15)	07:04		07:50 (8)	06:41		05:26			04:31		
	15:47	14		09:43 (7)	16:46	21	09:07 (15)	17:49	23	08:13 (8)	19:54		20:56			21:52		
4	08:47			09:29 (7)	08:07		08:44 (15)	07:01		07:51 (8)	06:39		05:23			04:30		
	15:49	16		09:45 (7)	16:48	24	09:08 (15)	17:51	22	08:13 (8)	19:56		20:58			21:54		
5	08:47			09:28 (7)	08:05		08:43 (15)	06:59		07:52 (8)	06:36		05:21			04:29		
	15:50	17		09:45 (7)	16:51	26	09:09 (15)	17:53	19	08:11 (8)	19:58		21:01			21:55		
6	08:46			09:27 (7)	08:03		08:42 (15)	06:56		07:53 (8)	06:33		05:19			04:28		
	15:51	19		09:46 (7)	16:53	29	09:11 (15)	17:55	16	08:09 (8)	20:00		21:03			21:56		
7	08:46			09:26 (7)	08:01		08:42 (15)	06:53		07:55 (8)	06:31		05:17			04:27		
	15:53	21		09:47 (7)	16:55	30	09:12 (15)	17:57	12	08:07 (8)	20:02		21:05			21:57		
8	08:45			09:25 (7)	07:59		08:41 (15)	06:51			06:28		05:15			04:27		
	15:55	22		09:47 (7)	16:57	31	09:12 (15)	17:59			20:04		21:07			21:59		
9	08:45			09:25 (7)	07:56		08:41 (15)	06:48			06:26		05:13			04:26		
	15:56	23		09:48 (7)	17:00	32	09:13 (15)	18:01			20:06		21:09			22:00		
10	08:44			09:26 (7)	07:54		08:41 (15)	06:46			06:23		05:10			04:25		
	15:58	23		09:49 (7)	17:02	33	09:14 (15)	18:04			20:08		21:11			22:01		
11	08:43			09:26 (7)	07:52		08:40 (15)	06:43			06:20		05:08			04:25		
	15:59	24		09:50 (7)	17:04	33	09:13 (15)	18:06			20:11		21:13			22:02		
12	08:42			09:26 (7)	07:50		08:40 (15)	06:40			06:18		05:06			04:24		
	16:01	25		09:51 (7)	17:06	34	09:14 (15)	18:08			20:13		21:15			22:02		
13	08:41			09:26 (7)	07:48		08:40 (15)	06:38			06:15		05:04			04:24		
	16:03	26		09:52 (7)	17:09	33	09:13 (15)	18:10			20:15		21:17			22:03		
14	08:40			09:26 (7)	07:45		08:40 (15)	06:35			06:12		05:02			04:23		
	16:05	26		09:52 (7)	17:11	34	09:14 (15)	18:12			20:17		21:19			22:04		
15	08:39			09:26 (7)	07:43		08:41 (15)	06:32			06:10		05:00			04:23		
	16:07	27		09:53 (7)	17:13	33	09:14 (15)	18:14			20:19		21:21			22:05		
16	08:38			09:27 (7)	07:41		08:40 (15)	06:30			06:07		04:58			04:23		
	16:08	27		09:54 (7)	17:15	33	09:13 (15)	18:16			20:21		21:22			22:05		
17	08:37			09:27 (7)	07:38		08:41 (15)	06:27			06:05		04:56			04:22		
	16:10	27		09:54 (7)	17:18	32	09:13 (15)	18:18			20:23		21:24			22:06		
18	08:35			09:27 (7)	07:36		08:41 (15)	06:24			06:02		04:55			04:22		
	16:12	28		09:55 (7)	17:20	31	09:12 (15)	18:21			20:25		21:26			22:06		
19	08:34			09:27 (7)	07:34		08:43 (15)	06:22			06:00		04:53			04:22		
	16:14	28		09:55 (7)	17:22	29	09:12 (15)	18:23			20:27		21:28			22:07		
20	08:33			09:27 (7)	07:31		08:01 (8)	06:19			05:57		04:51			04:22		
	16:16	28		09:55 (7)	17:24	35	09:10 (15)	18:25			20:29		21:30			22:07		
21	08:31			09:29 (7)	07:29		07:58 (8)	06:16			05:55		04:49			04:22		
	16:18	27		09:56 (7)	17:27	37	09:08 (15)	18:27			20:31		21:32			22:08		
22	08:30			09:29 (7)	07:26		07:56 (8)	06:14			05:52		04:48			04:23		
	16:20	26		09:55 (7)	17:29	38	09:07 (15)	18:29			20:34		21:34			22:08		
23	08:28			09:29 (7)	07:24		07:53 (8)	06:11			05:50		04:46			04:23		
	16:22	26		09:55 (7)	17:31	37	09:04 (15)	18:31			20:36		21:35			22:08		
24	08:27			09:29 (7)	07:21		07:52 (8)	06:08			05:47		04:44			04:23		
	16:24	26		09:55 (7)	17:33	33	09:01 (15)	18:33			20:38		21:37			22:08		
25	08:25			09:30 (7)	07:19		07:50 (8)	06:06			05:45		04:43			04:23		
	16:27	25		09:55 (7)	17:35	25	08:15 (8)	18:35			20:40		21:39			22:08		
26	08:23			09:31 (7)	07:16		07:50 (8)	06:03			05:42		04:41			04:24		
	16:29	23		09:54 (7)	17:38	25	08:15 (8)	18:37			20:42		21:40			22:08		
27	08:22			09:32 (7)	07:14		07:50 (8)	06:00			05:40		04:40			04:24		
	16:31	22		09:54 (7)	17:40	25	08:15 (8)	18:39			20:44		21:42			22:08		
28	08:20			09:33 (7)	07:11		07:49 (8)	05:57			05:37		04:38			04:25		
	16:33	20		09:53 (7)	17:42	26	08:15 (8)	18:41			20:46		21:44			22:08		
29	08:18			09:34 (7)				05:55			05:35		04:37			04:26		
	16:35	18		09:52 (7)				18:44			20:48		21:45			22:07		
30	08:16			09:36 (7)				06:52			05:33		04:36			04:26		
	16:37	15		09:51 (7)				19:46			20:50		21:47			22:07		
31	08:15			08:52 (15)				06:49					04:35					
	16:40	18		09:49 (7)				19:48					21:48					
Potential sun hours	235			265			365			425		507		529				
Total, worst case		691			831			141										
Sun reduction		0,15			0,24			0,39										
Oper. time red.		0,94			0,94			0,94										
Wind dir. red.		0,60			0,60			0,62										
Total reduction		0,09			0,14			0,23										
Total, real		60			114			32										

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AD - Me ž a Rasas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July	August	September	October	November	December
1	04:27	05:12	06:14	07:14	07:19	08:10 (15) 08:21 09:08 (7)
	22:07	21:26	20:12	18:52	16:34 33	08:43 (15) 15:42 24 09:32 (7)
2	04:28	05:14	06:16	07:16	07:22	08:11 (15) 08:23 09:08 (7)
	22:06	21:24	20:10	18:49	16:32 32	08:43 (15) 15:41 24 09:32 (7)
3	04:29	05:16	06:18	07:18	07:24	08:11 (15) 08:25 09:09 (7)
	22:06	21:22	20:07	18:46	16:29 31	08:42 (15) 15:41 24 09:33 (7)
4	04:30	05:18	06:20	07:20	07:26	08:11 (15) 08:26 09:10 (7)
	22:05	21:20	20:04	18:44	16:27 30	08:41 (15) 15:40 23 09:33 (7)
5	04:30	05:20	06:22	07:22	07:28	08:12 (15) 08:28 09:11 (7)
	22:04	21:18	20:02	18:41	16:25 29	08:41 (15) 15:39 22 09:33 (7)
6	04:32	05:22	06:24	07:24	07:30	08:13 (15) 08:29 09:12 (7)
	22:04	21:15	19:59	18:38	16:23 27	08:40 (15) 15:38 20 09:32 (7)
7	04:33	05:24	06:26	07:26	08:31 (8) 07:32	08:14 (15) 08:31 09:14 (7)
	22:03	21:13	19:56	18:36 11	08:42 (8) 16:21 25	08:39 (15) 15:38 18 09:32 (7)
8	04:34	05:26	06:28	07:28	08:29 (8) 07:35	08:15 (15) 08:32 09:16 (7)
	22:02	21:11	19:54	18:33 16	08:45 (8) 16:19 23	08:38 (15) 15:37 17 09:33 (7)
9	04:35	05:28	06:30	07:30	08:27 (8) 07:37	08:16 (15) 08:34 09:17 (7)
	22:01	21:09	19:51	18:30 19	08:46 (8) 16:17 20	08:36 (15) 15:36 15 09:32 (7)
10	04:36	05:30	06:32	07:33	08:25 (8) 07:39	08:19 (15) 08:35 09:19 (7)
	22:00	21:07	19:48	18:28 22	08:47 (8) 16:15 16	08:35 (15) 15:36 14 09:33 (7)
11	04:37	05:32	06:34	07:35	08:24 (8) 07:41	08:21 (15) 08:36 09:20 (7)
	21:59	21:04	19:46	18:25 23	08:47 (8) 16:13 19	09:19 (7) 15:36 12 09:32 (7)
12	04:39	05:34	06:36	07:37	08:23 (8) 07:43	09:09 (7) 08:38 09:21 (7)
	21:58	21:02	19:43	18:23 24	08:47 (8) 16:11 13	09:22 (7) 15:35 11 09:32 (7)
13	04:40	05:36	06:38	07:39	08:22 (8) 07:45	09:07 (7) 08:39 09:23 (7)
	21:57	21:00	19:40	18:20 25	08:47 (8) 16:09 17	09:24 (7) 15:35 9 09:32 (7)
14	04:42	05:38	06:40	07:41	08:23 (8) 07:48	09:05 (7) 08:40 09:24 (7)
	21:56	20:57	19:37	18:18 25	08:48 (8) 16:07 20	09:25 (7) 15:35 8 09:32 (7)
15	04:43	05:40	06:42	07:43	08:22 (8) 07:50	09:05 (7) 08:41 09:25 (7)
	21:54	20:55	19:35	18:15 26	08:48 (8) 16:05 22	09:27 (7) 15:35 7 09:32 (7)
16	04:45	05:42	06:44	07:45	08:22 (8) 07:52	09:04 (7) 08:42 09:26 (7)
	21:53	20:53	19:32	18:12 25	08:47 (8) 16:04 23	09:27 (7) 15:35 6 09:32 (7)
17	04:46	05:44	06:46	07:47	08:22 (8) 07:54	09:05 (7) 08:43 09:27 (7)
	21:52	20:50	19:29	18:10 24	08:46 (8) 16:02 24	09:29 (7) 15:35 5 09:32 (7)
18	04:48	05:46	06:48	07:49	08:23 (8) 07:56	09:04 (7) 08:44 09:28 (7)
	21:50	20:48	19:27	18:07 30	09:31 (15) 16:00 25	09:29 (7) 15:35 4 09:32 (7)
19	04:49	05:48	06:50	07:51	08:24 (8) 07:58	09:03 (7) 08:44 09:28 (7)
	21:49	20:45	19:24	18:05 36	09:35 (15) 15:58 26	09:29 (7) 15:35 4 09:32 (7)
20	04:51	05:50	06:52	07:54	08:26 (8) 08:00	09:04 (7) 08:45 09:29 (7)
	21:47	20:43	19:21	18:02 38	09:37 (15) 15:57 27	09:31 (7) 15:36 3 09:32 (7)
21	04:52	05:52	06:54	07:56	08:28 (8) 08:02	09:04 (7) 08:46 09:30 (7)
	21:46	20:40	19:19	18:00 37	09:38 (15) 15:55 27	09:31 (7) 15:36 3 09:33 (7)
22	04:54	05:54	06:56	07:58	08:31 (8) 08:04	09:04 (7) 08:46 09:30 (7)
	21:44	20:38	19:16	17:57 35	09:40 (15) 15:54 27	09:31 (7) 15:36 3 09:33 (7)
23	04:56	05:56	06:58	08:00	08:33 (8) 08:06	09:04 (7) 08:47 09:31 (7)
	21:43	20:35	19:13	17:55 31	09:41 (15) 15:52 27	09:31 (7) 15:37 3 09:34 (7)
24	04:58	05:58	07:00	08:02	09:11 (15) 08:08	09:05 (7) 08:47 09:31 (7)
	21:41	20:33	19:11	17:53 30	09:41 (15) 15:51 27	09:32 (7) 15:37 3 09:34 (7)
25	04:59	06:00	07:02	08:04	09:11 (15) 08:10	09:05 (7) 08:48 09:31 (7)
	21:39	20:30	19:08	17:50 32	09:43 (15) 15:49 27	09:32 (7) 15:38 4 09:35 (7)
26	05:01	06:02	07:04	07:06	08:10 (15) 08:12	09:05 (7) 08:48 09:31 (7)
	21:37	20:28	19:05	16:48 33	08:43 (15) 15:48 27	09:32 (7) 15:39 4 09:35 (7)
27	05:03	06:04	07:06	07:09	08:10 (15) 08:14	09:05 (7) 08:48 09:31 (7)
	21:36	20:25	19:02	16:45 33	08:43 (15) 15:47 27	09:32 (7) 15:40 5 09:36 (7)
28	05:05	06:06	07:08	07:11	08:10 (15) 08:16	09:06 (7) 08:48 09:31 (7)
	21:34	20:23	19:00	16:43 33	08:43 (15) 15:46 26	09:32 (7) 15:40 6 09:37 (7)
29	05:07	06:08	07:10	07:13	08:09 (15) 08:18	09:06 (7) 08:48 09:31 (7)
	21:32	20:20	18:57	16:41 34	08:43 (15) 15:45 26	09:32 (7) 15:41 7 09:38 (7)
30	05:09	06:10	07:12	07:15	08:09 (15) 08:19	09:07 (7) 08:48 09:31 (7)
	21:30	20:17	18:54	16:38 34	08:43 (15) 15:43 25	09:32 (7) 15:42 8 09:39 (7)
31	05:10	06:12	07:17	07:17	08:10 (15)	08:48 09:31 (7)
	21:28	20:15	16:36 33	08:43 (15)	15:43 10	09:41 (7)
Potential sun hours	530	470	385	324	248	216
Total, worst case				709	748	326
Sun reduction				0,27	0,09	0,09
Oper. time red.				0,94	0,94	0,94
Wind dir. red.				0,61	0,60	0,60
Total reduction				0,15	0,05	0,05
Total, real				110	39	16

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AE - Dravnieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January		February		March		April		May	June
1	08:48		09:30 (7)	08:13	09:37 (7)	07:09	07:41 (8)	06:47	05:30	04:33
	15:45	33	10:26 (5)	16:42	09:58 (7)	17:44	09:04 (15)	19:50	20:52	21:50
2	08:48		09:30 (7)	08:11	09:39 (7)	07:06	07:39 (8)	06:44	05:28	04:32
	15:46	35	10:27 (5)	16:44	09:57 (7)	17:46	09:01 (15)	19:52	20:54	21:51
3	08:48		09:29 (7)	08:09	09:41 (7)	07:04	07:38 (8)	06:41	05:26	04:31
	15:47	35	10:26 (5)	16:46	09:55 (7)	17:49	08:57 (15)	19:54	20:56	21:52
4	08:47		09:30 (7)	08:07	09:44 (7)	07:01	07:38 (8)	06:39	05:23	04:30
	15:49	35	10:27 (5)	16:48	09:51 (7)	17:51	08:07 (8)	19:56	20:58	21:54
5	08:47		09:29 (7)	08:05	08:37 (6)	06:59	07:38 (8)	06:36	05:21	04:29
	15:50	37	10:27 (5)	16:51	08:59 (15)	17:53	08:06 (8)	19:58	21:01	21:55
6	08:46		09:29 (7)	08:03	08:35 (6)	06:56	07:37 (8)	06:33	05:19	04:28
	15:51	36	10:26 (5)	16:53	09:02 (15)	17:55	08:06 (8)	20:00	21:03	21:56
7	08:46		09:29 (7)	08:01	08:33 (6)	06:53	07:38 (8)	06:31	05:17	04:27
	15:53	35	10:26 (5)	16:55	09:04 (15)	17:57	08:06 (8)	20:02	21:05	21:57
8	08:45		09:28 (7)	07:59	08:30 (6)	06:51	07:38 (8)	06:28	05:15	04:27
	15:55	35	10:25 (5)	16:57	09:05 (15)	17:59	08:05 (8)	20:04	21:07	21:59
9	08:44		09:28 (7)	07:56	08:28 (6)	06:48	07:38 (8)	06:26	05:12	04:26
	15:56	34	10:25 (5)	17:00	09:07 (15)	18:01	08:04 (8)	20:06	21:09	22:00
10	08:44		09:28 (7)	07:54	08:26 (6)	06:46	07:39 (8)	06:23	05:10	04:25
	15:58	31	10:23 (5)	17:02	09:09 (15)	18:04	08:03 (8)	20:08	21:11	22:01
11	08:43		09:28 (7)	07:52	08:24 (6)	06:43	07:39 (8)	06:20	05:08	04:25
	15:59	26	09:54 (7)	17:04	09:09 (15)	18:06	08:02 (8)	20:11	21:13	22:02
12	08:42		09:29 (7)	07:50	08:24 (6)	06:40	07:40 (8)	06:18	05:06	04:24
	16:01	26	09:55 (7)	17:06	09:10 (15)	18:08	08:00 (8)	20:13	21:15	22:02
13	08:41		09:29 (7)	07:48	08:24 (6)	06:38	07:42 (8)	06:15	05:04	04:24
	16:03	27	09:56 (7)	17:09	09:10 (15)	18:10	07:57 (8)	20:15	21:17	22:03
14	08:40		09:28 (7)	07:45	08:24 (6)	06:35	07:45 (8)	06:12	05:02	04:23
	16:05	28	09:56 (7)	17:11	09:11 (15)	18:12	07:54 (8)	20:17	21:19	22:04
15	08:39		09:29 (7)	07:43	08:24 (6)	06:32		06:10	05:00	04:23
	16:07	28	09:57 (7)	17:13	09:11 (15)	18:14		20:19	21:20	22:05
16	08:38		09:29 (7)	07:41	08:25 (6)	06:30		06:07	04:58	04:23
	16:08	29	09:58 (7)	17:15	09:12 (15)	18:16		20:21	21:22	22:05
17	08:37		09:29 (7)	07:38	08:26 (6)	06:27		06:05	04:56	04:22
	16:10	30	09:59 (7)	17:18	09:13 (15)	18:18		20:23	21:24	22:06
18	08:35		09:28 (7)	07:36	08:27 (6)	06:24		06:02	04:55	04:22
	16:12	31	09:59 (7)	17:20	09:12 (15)	18:20		20:25	21:26	22:06
19	08:34		09:29 (7)	07:34	08:27 (6)	06:22		06:00	04:53	04:22
	16:14	31	10:00 (7)	17:22	09:12 (15)	18:23		20:27	21:28	22:07
20	08:33		09:29 (7)	07:31	08:30 (6)	06:19		05:57	04:51	04:22
	16:16	31	10:00 (7)	17:24	09:12 (15)	18:25		20:29	21:30	22:07
21	08:31		09:30 (7)	07:29	08:33 (15)	06:16		05:55	04:49	04:22
	16:18	31	10:01 (7)	17:27	09:12 (15)	18:27		20:31	21:32	22:07
22	08:30		09:30 (7)	07:26	08:33 (15)	06:14		05:52	04:48	04:23
	16:20	31	10:01 (7)	17:29	09:12 (15)	18:29		20:34	21:34	22:08
23	08:28		09:30 (7)	07:24	08:33 (15)	06:11		05:50	04:46	04:23
	16:22	31	10:01 (7)	17:31	09:11 (15)	18:31		20:36	21:35	22:08
24	08:27		09:30 (7)	07:21	08:34 (15)	06:08		05:47	04:44	04:23
	16:24	31	10:01 (7)	17:33	09:10 (15)	18:33		20:38	21:37	22:08
25	08:25		09:31 (7)	07:19	07:48 (8)	06:06		05:45	04:43	04:23
	16:27	30	10:01 (7)	17:35	09:09 (15)	18:35		20:40	21:39	22:08
26	08:23		09:31 (7)	07:16	07:45 (8)	06:03		05:42	04:41	04:24
	16:29	30	10:01 (7)	17:38	09:08 (15)	18:37		20:42	21:40	22:08
27	08:22		09:32 (7)	07:14	07:43 (8)	06:00		05:40	04:40	04:24
	16:31	29	10:01 (7)	17:40	09:07 (15)	18:39		20:44	21:42	22:08
28	08:20		09:32 (7)	07:11	07:41 (8)	05:57		05:37	04:38	04:25
	16:33	28	10:00 (7)	17:42	09:05 (15)	18:41		20:46	21:44	22:08
29	08:18		09:33 (7)			05:55		05:35	04:37	04:26
	16:35	27	10:00 (7)			18:43		20:48	21:45	22:07
30	08:16		09:34 (7)			06:52		05:33	04:36	04:26
	16:37	25	09:59 (7)			19:46		20:50	21:47	22:07
31	08:15		09:35 (7)			06:49			04:35	
	16:40	24	09:59 (7)			19:48			21:48	
Potential sun hours	235		265		365		425	507	529	
Total, worst case		950		1054		396				
Sun reduction		0,15		0,24		0,39				
Oper. time red.		0,94		0,94		0,94				
Wind dir. red.		0,60		0,60		0,62				
Total reduction		0,09		0,14		0,23				
Total, real		83		145		90				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AE - Dravnieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July	August	September	October	November	December
1	04:27	05:12	06:14	07:14	08:22 (8)	07:19
	22:07	21:26	20:12	18:52	15	08:38 (15)
2	04:28	05:14	06:16	07:16	08:19 (8)	07:22
	22:06	21:24	20:10	18:49	20	08:38 (15)
3	04:29	05:16	06:18	07:18	08:17 (8)	07:24
	22:06	21:22	20:07	18:46	23	08:40 (8)
4	04:30	05:18	06:20	07:20	08:16 (8)	07:26
	22:05	21:20	20:04	18:44	24	08:40 (8)
5	04:30	05:20	06:22	07:22	08:15 (8)	07:28
	22:04	21:18	20:02	18:41	26	08:41 (8)
6	04:32	05:22	06:24	07:24	08:14 (8)	07:30
	22:04	21:15	19:59	18:38	27	08:41 (8)
7	04:33	05:24	06:26	07:26	08:13 (8)	07:32
	22:03	21:13	19:56	18:36	28	08:41 (8)
8	04:34	05:26	06:28	07:28	08:13 (8)	07:35
	22:02	21:11	19:54	18:33	29	08:42 (8)
9	04:35	05:28	06:30	07:30	08:13 (8)	07:37
	22:01	21:09	19:51	18:30	28	08:41 (8)
10	04:36	05:30	06:32	07:32	08:13 (8)	07:39
	22:00	21:07	19:48	18:28	28	08:41 (8)
11	04:37	05:32	06:34	07:35	08:13 (8)	07:41
	21:59	21:04	19:46	18:25	38	09:30 (15)
12	04:39	05:34	06:36	07:37	08:13 (8)	07:43
	21:58	21:02	19:43	18:23	45	09:34 (15)
13	04:40	05:36	06:38	07:39	08:13 (8)	07:45
	21:57	21:00	19:40	18:20	49	09:36 (15)
14	04:42	05:38	06:40	07:41	08:14 (8)	07:48
	21:56	20:57	19:37	18:18	51	09:38 (15)
15	04:43	05:40	06:42	07:43	08:15 (8)	07:50
	21:54	20:55	19:35	18:15	51	09:39 (15)
16	04:45	05:42	06:44	07:45	08:17 (8)	07:52
	21:53	20:53	19:32	18:12	49	09:40 (15)
17	04:46	05:44	06:46	07:47	08:19 (8)	07:54
	21:52	20:50	19:29	18:10	46	09:40 (15)
18	04:48	05:46	06:48	07:49	08:23 (8)	07:56
	21:50	20:48	19:27	18:07	41	09:42 (15)
19	04:49	05:48	06:50	07:51	09:05 (15)	07:58
	21:49	20:45	19:24	18:05	37	09:42 (15)
20	04:51	05:50	06:52	07:53	09:04 (15)	08:00
	21:47	20:43	19:21	18:02	38	09:42 (15)
21	04:52	05:52	06:54	07:56	09:03 (15)	08:02
	21:46	20:40	19:19	18:00	39	09:42 (15)
22	04:54	05:54	06:56	07:58	09:02 (6)	08:04
	21:44	20:38	19:16	17:57	41	09:43 (15)
23	04:56	05:56	06:58	08:00	08:59 (6)	08:06
	21:43	20:35	19:13	17:55	44	09:43 (15)
24	04:58	05:58	07:00	08:02	08:57 (6)	08:08
	21:41	20:33	19:10	17:53	45	09:42 (15)
25	04:59	06:00	07:02	08:04	08:56 (6)	08:10
	21:39	20:30	19:08	17:50	47	09:43 (15)
26	05:01	06:02	07:04	07:06	07:55 (6)	08:12
	21:37	20:28	19:05	16:48	47	08:42 (15)
27	05:03	06:04	07:06	07:09	07:54 (6)	08:14
	21:36	20:25	19:02	16:45	47	08:41 (15)
28	05:05	06:06	07:08	07:11	07:54 (6)	08:16
	21:34	20:23	19:00	16:43	47	08:41 (15)
29	05:07	06:08	07:10	07:13	07:54 (6)	08:18
	21:32	20:20	18:57	16:41	47	08:41 (15)
30	05:09	06:10	07:12	07:15	07:53 (6)	08:19
	21:30	20:17	18:54	9 08:34 (8)	46	08:39 (15)
31	05:10	06:12		07:17	07:54 (6)	
	21:28	20:15		16:36	45	08:39 (15)
Potential sun hours	530	470	385	324	248	216
Total, worst case				1188		945
Sun reduction			0,43	0,27	0,09	0,09
Oper. time red.			0,94	0,94	0,94	0,94
Wind dir. red.			0,62	0,61	0,60	0,60
Total reduction			0,25	0,15	0,05	0,05
Total, real			2	184	43	46

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AF - Ogu Purvs

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December	
1	08:48 15:45 23	10:18 (19) 08:13 07:09	08:13 07:09 06:47	06:47 05:30 04:33	05:30 04:33 04:27	04:33 04:27 05:12	04:27 05:12 06:14	05:12 06:14 07:14	06:14 07:14 07:19	07:14 07:19 08:21	07:19 08:21 08:21	08:21 08:21 10:14 (19)	
2	08:48 15:46 21	10:41 (19) 08:11 07:06	08:11 07:06 06:44	06:44 05:28 04:32	05:28 04:32 04:28	04:32 04:28 05:14	04:28 05:14 06:16	05:14 06:16 07:16	06:16 07:16 07:22	07:16 07:22 08:23	07:22 08:23 08:23	08:23 08:23 10:12 (19)	
3	08:48 15:47 21	10:41 (19) 08:09 07:04	08:09 07:04 06:42	06:42 05:26 04:31	05:26 04:31 04:29	04:31 04:29 05:16	04:29 05:16 06:18	05:16 06:18 07:18	06:18 07:18 07:24	07:18 07:24 08:25	07:24 08:25 08:25	08:25 08:25 10:11 (19)	
4	08:47 15:49 21	10:41 (19) 08:07 07:01	08:07 07:01 06:49	06:49 05:24 04:30	05:24 04:30 04:30	04:30 04:30 05:18	04:30 05:18 06:20	05:18 06:20 07:20	06:20 07:20 07:26	07:20 07:26 08:26	07:26 08:26 08:26	08:26 08:26 10:10 (19)	
5	08:47 15:50 19	10:41 (19) 08:05 06:59	08:05 06:59 06:51	06:51 05:21 04:29	05:21 04:29 04:31	04:29 04:31 05:20	04:31 05:20 06:22	05:20 06:22 07:22	06:22 07:22 07:28	07:22 07:28 08:28	07:28 08:28 08:28	08:28 08:28 10:10 (19)	
6	08:46 15:52 18	10:41 (19) 08:03 06:53	08:03 06:53 06:53	06:53 05:19 04:28	05:19 04:28 04:32	04:28 04:32 05:22	04:32 05:22 06:24	05:22 06:24 07:24	06:24 07:24 07:30	07:24 07:30 08:29	07:30 08:29 08:29	08:29 08:29 10:09 (19)	
7	08:46 15:53 17	10:41 (19) 08:01 06:55	08:01 06:55 06:57	06:57 05:17 04:27	05:17 04:27 04:33	04:27 04:33 05:24	04:33 05:24 06:26	05:24 06:26 07:26	06:26 07:26 07:33	07:26 07:33 08:31	07:33 08:31 08:31	08:31 08:31 10:09 (19)	
8	08:45 15:55 15	10:41 (19) 07:59 06:51	07:59 06:51 06:57	06:57 05:15 04:27	05:15 04:27 04:34	04:27 04:34 05:26	04:34 05:26 06:28	05:26 06:28 07:28	06:28 07:28 07:35	07:28 07:35 08:32	07:35 08:32 08:32	08:32 08:32 10:09 (19)	
9	08:45 15:56 14	10:41 (19) 07:56 06:48	07:56 06:48 06:26	06:48 05:13 04:26	05:13 04:26 04:35	04:26 04:35 05:28	04:35 05:28 06:30	05:28 06:30 07:31	06:30 07:31 07:37	07:31 07:37 08:34	07:37 08:34 08:34	08:34 08:34 10:09 (19)	
10	08:44 15:58 11	10:41 (19) 07:54 06:43	07:54 06:43 06:23	06:43 05:10 04:25	05:10 04:25 04:36	04:25 04:36 05:30	04:36 05:30 06:32	05:30 06:32 07:33	06:32 07:33 07:39	07:33 07:39 08:35	07:39 08:35 08:35	08:35 08:35 10:10 (19)	
11	08:43 15:59 8	10:38 (19) 07:52 06:40	07:52 06:40 06:18	06:40 05:08 04:25	05:08 04:25 04:38	04:25 04:38 05:32	04:38 05:32 06:34	05:32 06:34 07:35	06:34 07:35 07:41	07:35 07:41 08:36	07:41 08:36 08:36	08:36 08:36 10:09 (19)	
12	08:42 16:01 08:41	10:38 (19) 07:50 06:38	07:50 06:38 06:15	06:38 05:06 04:24	05:06 04:24 04:39	04:24 04:39 05:34	04:39 05:34 06:36	05:34 06:36 07:37	06:36 07:37 07:43	07:37 07:43 08:38	07:43 08:38 08:38	08:38 08:38 10:09 (19)	
13	08:41 16:03 08:40	10:38 (19) 07:48 06:35	07:48 06:35 06:13	06:35 05:04 04:23	05:04 04:23 04:42	04:23 04:42 05:38	04:42 05:38 06:40	05:38 06:40 07:41	06:40 07:41 07:48	07:41 07:48 08:40	07:48 08:40 08:40	08:40 08:40 10:10 (19)	
14	08:40 16:05 08:39	10:38 (19) 07:45 06:32	07:45 06:32 06:10	06:32 05:02 04:23	05:02 04:23 04:43	04:23 04:43 05:40	04:43 05:40 06:42	05:40 06:42 07:43	06:42 07:43 07:50	07:43 07:50 08:41	07:50 08:41 08:41	08:41 08:41 10:10 (19)	
15	08:39 16:07 08:38	10:38 (19) 07:43 06:30	07:43 06:30 06:07	06:30 05:00 04:23	05:00 04:23 04:45	04:23 04:45 05:42	04:45 05:42 06:44	05:42 06:44 07:45	06:44 07:45 07:52	07:45 07:52 08:42	07:52 08:42 08:42	08:42 08:42 10:11 (19)	
16	08:38 16:08 08:37	10:38 (19) 07:41 06:27	07:41 06:27 06:05	06:27 05:00 04:23	05:00 04:23 04:46	04:23 04:46 05:44	04:46 05:44 06:46	05:44 06:46 07:47	06:46 07:47 07:54	07:47 07:54 08:43	07:54 08:43 08:43	08:43 08:43 10:11 (19)	
17	08:37 16:10 08:35	10:38 (19) 07:38 06:24	07:38 06:24 06:02	06:24 05:00 04:23	05:00 04:23 04:48	04:23 04:48 05:46	04:48 05:46 06:48	05:46 06:48 07:49	06:48 07:49 07:56	07:49 07:56 08:44	07:56 08:44 08:44	08:44 08:44 10:12 (19)	
18	08:35 16:12 08:34	10:38 (19) 07:36 06:22	07:36 06:22 06:00	06:22 05:00 04:23	05:00 04:23 04:49	04:23 04:49 05:48	04:49 05:48 06:50	05:48 06:50 07:51	06:50 07:51 07:58	07:51 07:58 08:44	07:58 08:44 08:44	08:44 08:44 10:12 (19)	
19	08:34 16:14 08:33	10:38 (19) 07:34 06:20	07:34 06:20 05:57	06:20 05:00 04:23	05:00 04:23 04:51	04:23 04:51 05:50	04:51 05:50 06:52	05:50 06:52 07:54	06:52 07:54 08:00	07:54 08:00 08:45	08:00 08:45 08:45	08:45 08:45 10:12 (19)	
20	08:33 16:16 08:31	10:38 (19) 07:31 06:16	07:31 06:16 05:55	06:16 05:00 04:23	05:00 04:23 04:53	04:23 04:53 05:52	04:53 05:52 06:54	05:52 06:54 07:56	06:54 07:56 08:02	07:56 08:02 08:46	08:02 08:46 08:46	08:46 08:46 10:13 (19)	
21	08:31 16:18 08:30	10:38 (19) 07:29 06:14	07:29 06:14 05:52	06:14 05:00 04:23	05:00 04:23 04:48	04:23 04:48 05:44	04:48 05:44 06:54	05:44 06:54 07:56	06:54 07:56 08:04	07:56 08:04 08:46	08:04 08:46 08:46	08:46 08:46 10:13 (19)	
22	08:30 16:20 08:28	10:38 (19) 07:26 06:11	07:26 06:11 05:50	06:11 05:00 04:23	05:00 04:23 04:46	04:23 04:46 05:46	04:46 05:46 06:56	05:46 06:56 07:58	06:56 07:58 08:06	07:58 08:06 08:47	08:06 08:47 08:47	08:47 08:47 10:14 (19)	
23	08:28 16:22 08:27	10:38 (19) 07:24 06:08	07:24 06:08 05:47	06:08 05:00 04:23	05:00 04:23 04:44	04:23 04:44 05:48	04:44 05:48 06:58	05:48 06:58 07:59	06:58 07:59 08:08	07:59 08:08 08:47	08:08 08:47 08:47	08:47 08:47 10:14 (19)	
24	08:27 16:24 08:25	10:38 (19) 07:21 06:06	07:21 06:06 05:45	06:06 05:00 04:23	05:00 04:23 04:43	04:23 04:43 05:49	04:43 05:49 06:59	05:49 06:59 07:59	06:59 07:59 08:09	07:59 08:09 08:48	08:09 08:48 08:48	08:48 08:48 10:15 (19)	
25	08:25 16:27 08:24	10:38 (19) 07:19 06:03	07:19 06:03 05:42	06:03 05:00 04:23	05:00 04:23 04:44	04:23 04:44 05:50	04:44 05:50 06:59	05:50 06:59 07:59	06:59 07:59 08:09	07:59 08:09 08:48	08:09 08:48 08:48	08:48 08:48 10:15 (19)	
26	08:24 16:29 08:22	10:38 (19) 07:16 06:00	07:16 06:00 05:40	06:00 05:00 04:23	05:00 04:23 04:44	04:23 04:44 05:51	04:44 05:51 06:59	05:51 06:59 07:59	06:59 07:59 08:09	07:59 08:09 08:48	08:09 08:48 08:48	08:48 08:48 10:16 (19)	
27	08:22 16:31 08:20	10:38 (19) 07:14 06:00	07:14 06:00 05:40	06:00 05:00 04:23	05:00 04:23 04:44	04:23 04:44 05:51	04:44 05:51 06:59	05:51 06:59 07:59	06:59 07:59 08:09	07:59 08:09 08:48	08:09 08:48 08:48	08:48 08:48 10:16 (19)	
28	08:20 16:33 08:18	10:38 (19) 07:11 05:58	07:11 05:58 05:38	05:58 05:00 04:23	05:00 04:23 04:44	04:23 04:44 05:51	04:44 05:51 06:59	05:51 06:59 07:59	06:59 07:59 08:09	07:59 08:09 08:48	08:09 08:48 08:48	08:48 08:48 10:16 (19)	
29	08:18 16:35 08:16	10:38 (19) 07:08 05:55	07:08 05:55 05:35	05:55 05:00 04:23	05:00 04:23 04:44	04:23 04:44 05:51	04:44 05:51 06:59	05:51 06:59 07:59	06:59 07:59 08:09	07:59 08:09 08:48	08:09 08:48 08:48	08:48 08:48 10:16 (19)	
30	08:16 16:37 08:15	10:38 (19) 07:06 05:53	07:06 05:53 05:33	05:53 05:00 04:23	05:00 04:23 04:44	04:23 04:44 05:51	04:44 05:51 06:59	05:51 06:59 07:59	06:59 07:59 08:09	07:59 08:09 08:48	08:09 08:48 08:48	08:48 08:48 10:16 (19)	
31	08:15 16:40	10:38 (19) 07:04 05:50	07:04 05:50 05:30	05:50 05:00 04:23	05:00 04:23 04:44	04:23 04:44 05:51	04:44 05:51 06:59	05:51 06:59 07:59	06:59 07:59 08:09	07:59 08:09 08:48	08:09 08:48 08:48	08:48 08:48 10:16 (19)	
Potential sun hours	235	265	365	425	507	529	530	470	385	324	248	216	
Total, worst case	188												650
Sun reduction	0,15												0,09
Oper. time red.	0,94												0,94
Wind dir. red.	0,61												0,61
Total reduction	0,09												0,05
Total, real	17												32

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AG - Jaunmedni

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:30 20:52	04:33 21:50	04:27 22:07	05:12 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:42
2	08:48 15:46	08:11 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:32 21:51	04:28 22:06	05:14 21:24	06:16 20:10	07:16 18:49	07:22 16:32	08:23 15:41
3	08:48 15:47	08:09 16:46	07:04 17:49	06:41 19:54	05:26 20:56	04:31 21:53	04:29 22:06	05:16 21:22	06:18 20:07	07:18 18:46	07:24 16:29	08:25 15:41
4	08:47 15:49	08:07 16:48	07:01 17:51	06:39 19:56	05:23 20:59	04:30 21:54	04:29 22:05	05:18 21:20	06:20 20:04	07:20 18:44	07:26 16:27	08:26 15:40
5	08:47 15:50	08:05 16:51	06:59 17:53	06:36 19:58	05:21 21:01	04:29 21:55	04:30 22:05	05:20 21:18	06:22 20:02	07:22 18:41	07:28 16:25	08:28 15:39
6	08:47 15:51	08:03 16:53	06:56 17:55	06:33 20:00	05:19 21:03	04:28 21:56	04:31 22:04	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
7	08:46 15:53	08:01 16:55	06:53 17:57	06:31 20:02	05:17 21:05	04:27 21:58	04:33 22:03	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	08:31 15:38
8	08:45 15:54	07:59 16:57	06:51 17:59	06:28 20:04	05:15 21:07	04:27 21:59	04:34 22:02	05:26 21:11	06:28 19:54	07:28 18:33	07:35 16:19	08:32 15:37
9	08:45 15:56	07:56 17:00	06:48 18:01	06:26 20:06	05:12 21:09	04:26 22:00	04:35 22:01	05:28 21:09	06:30 19:51	07:30 18:30	07:37 16:17	08:34 15:36
10	08:44 15:58	07:54 17:02	06:46 18:04	06:23 20:09	05:10 21:11	04:25 22:01	04:36 22:00	05:30 21:07	06:32 19:48	07:33 18:28	07:39 16:15	08:35 15:36
11	08:43 15:59	07:52 17:04	06:43 18:06	06:20 20:11	05:08 21:13	04:25 22:02	04:37 21:59	05:32 21:04	06:34 19:46	07:35 18:25	07:41 16:13	08:36 15:36
12	08:42 16:01	07:50 17:06	06:40 18:08	06:18 20:13	05:06 21:15	04:24 22:03	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:38 15:35
13	08:41 16:03	07:48 17:09	06:38 18:10	06:15 20:15	05:04 21:17	04:24 22:03	04:40 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:45 16:09	08:39 15:35
14	08:40 16:05	07:45 17:11	06:35 18:12	06:12 20:17	05:02 21:19	04:23 22:04	04:42 21:56	05:38 20:57	06:40 19:38	07:41 18:18	07:48 16:07	08:40 15:35
15	08:39 16:06	07:43 17:13	06:32 18:14	06:10 20:19	05:00 21:21	04:23 22:05	04:43 21:55	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:05	08:41 15:35
16	08:38 16:08	07:41 17:15	06:30 18:16	06:07 20:21	04:58 21:22	04:23 22:05	04:44 21:53	05:42 20:53	06:44 19:32	07:45 18:12	07:52 16:03	08:42 15:35
17	08:37 16:10	07:38 17:18	06:27 18:18	06:05 20:23	04:56 21:24	04:22 22:06	04:46 21:52	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:02	08:43 15:35
18	08:35 16:12	07:36 17:20	06:24 18:21	06:02 20:25	04:55 21:26	04:22 22:06	04:48 21:50	05:46 20:48	06:48 19:27	07:49 18:07	07:56 16:00	08:44 15:35
19	08:34 16:14	07:34 17:22	06:22 18:23	06:00 20:27	04:53 21:28	04:22 22:07	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:58	08:45 15:35
20	08:33 16:16	07:31 17:24	06:19 18:25	05:57 20:29	04:51 21:30	04:22 22:07	04:51 21:47	05:50 20:43	06:52 19:21	07:54 18:02	08:00 15:57	08:45 15:36
21	08:31 16:18	07:29 17:27	06:16 18:27	05:55 20:31	04:49 21:32	04:22 22:08	04:52 21:46	05:52 20:40	06:54 19:19	07:56 18:00	08:02 15:55	08:46 15:36
22	08:30 16:20	07:26 17:29	06:14 18:29	05:52 20:34	04:48 21:34	04:22 22:08	04:54 21:44	05:54 20:38	06:56 19:16	07:58 17:57	08:04 15:54	08:46 15:36
23	08:28 16:22	07:24 17:31	06:11 18:31	05:50 20:36	04:46 21:35	04:23 22:08	04:56 21:43	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:47 15:37
24	08:27 16:24	07:21 17:33	06:08 18:33	05:47 20:38	04:44 21:37	04:23 22:08	04:58 21:41	05:58 20:33	07:00 19:11	08:02 17:53	08:08 15:51	08:47 15:37
25	08:25 16:27	07:19 17:35	06:06 18:35	05:45 20:40	04:43 21:39	04:23 22:08	04:59 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:49	08:48 15:38
26	08:24 16:29	07:16 17:38	06:03 18:37	05:42 20:42	04:41 21:40	04:24 22:08	05:01 21:37	06:02 20:28	07:04 19:05	07:06 16:48	08:12 15:48	08:48 15:39
27	08:22 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:42	04:24 22:08	05:03 21:36	06:04 20:25	07:06 19:02	07:09 16:45	08:14 15:47	08:48 15:40
28	08:20 16:33	07:11 17:42	05:58 18:41	05:37 20:46	04:38 21:44	04:25 22:08	05:05 21:34	06:06 20:23	07:08 19:00	07:11 16:43	08:16 15:46	08:48 15:40
29	08:18 16:35		05:55 18:44	05:35 20:48	04:37 21:45	04:25 22:07	05:07 21:32	06:08 20:20	07:10 18:57	07:13 16:41	08:18 15:45	08:49 15:41
30	08:16 16:37		06:52 19:46	05:33 20:50	04:36 21:47	04:26 22:07	05:09 21:30	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:43	08:49 15:42
31	08:15 16:40		06:49 19:48		04:34 21:48		05:10 21:28	06:12 20:15		07:17 16:36		08:48 15:43
Potential sun hours	235	265	365	425	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AH - Graudini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June
1	08:48	08:13	09:28 (7)	07:09	07:40 (8)	06:47
	15:45	16:42	21	09:49 (7)	17:44	41
2	08:48	08:11	09:29 (7)	07:06	08:53 (15)	19:50
	15:46	16:44	19	09:48 (7)	17:46	33
3	08:48	09:29 (7)	08:09	09:31 (7)	07:04	07:38 (8)
	15:47	09:30 (7)	16:46	09:47 (7)	17:49	26
4	08:47	09:29 (7)	08:07	09:33 (7)	07:01	07:39 (8)
	15:49	09:34 (7)	16:48	09:44 (7)	17:51	26
5	08:47	09:28 (7)	08:05		06:59	07:38 (8)
	15:50	09:35 (7)	16:51		17:53	26
6	08:46	09:27 (7)	08:03	08:40 (15)	06:56	08:04 (8)
	15:51	09:37 (7)	16:53	12	08:52 (15)	17:55
7	08:46	09:26 (7)	08:01	08:38 (15)	06:53	08:04 (8)
	15:53	09:38 (7)	16:55	17	08:55 (15)	17:57
8	08:45	09:25 (7)	07:59	08:35 (15)	06:51	07:39 (8)
	15:55	09:39 (7)	16:57	22	08:57 (15)	17:59
9	08:44	09:24 (7)	07:56	08:34 (15)	06:48	07:39 (8)
	15:56	09:40 (7)	17:00	25	08:59 (15)	18:01
10	08:44	09:23 (7)	07:54	08:33 (15)	06:46	07:41 (8)
	15:58	09:42 (7)	17:02	27	09:00 (15)	18:04
11	08:43	09:22 (7)	07:52	08:32 (15)	06:43	07:42 (8)
	15:59	09:43 (7)	17:04	29	09:01 (15)	18:06
12	08:42	09:22 (7)	07:50	08:31 (15)	06:40	07:44 (8)
	16:01	09:44 (7)	17:06	31	09:02 (15)	18:08
13	08:41	09:22 (7)	07:48	08:30 (15)	06:38	07:55 (8)
	16:03	09:45 (7)	17:09	32	09:02 (15)	18:10
14	08:40	09:21 (7)	07:45	08:30 (15)	06:35	
	16:05	09:45 (7)	17:11	33	09:03 (15)	18:12
15	08:39	09:21 (7)	07:43	08:29 (15)	06:32	
	16:07	09:47 (7)	17:13	34	09:03 (15)	18:14
16	08:38	09:22 (7)	07:41	08:29 (15)	06:30	
	16:08	09:48 (7)	17:15	35	09:04 (15)	18:16
17	08:37	09:21 (7)	07:38	08:29 (15)	06:27	
	16:10	09:48 (7)	17:18	36	09:05 (15)	18:18
18	08:35	09:22 (7)	07:36	08:28 (15)	06:24	
	16:12	09:49 (7)	17:20	36	09:04 (15)	18:20
19	08:34	09:22 (7)	07:34	08:29 (15)	06:22	
	16:14	09:49 (7)	17:22	36	09:05 (15)	18:23
20	08:33	09:21 (7)	07:31	08:28 (15)	06:19	
	16:16	09:50 (7)	17:24	36	09:04 (15)	18:25
21	08:31	09:22 (7)	07:29	08:28 (15)	06:16	
	16:18	09:51 (7)	17:27	35	09:03 (15)	18:27
22	08:30	09:22 (7)	07:26	08:29 (15)	06:14	
	16:20	09:51 (7)	17:29	34	09:03 (15)	18:29
23	08:28	09:22 (7)	07:24	08:29 (15)	06:11	
	16:22	09:51 (7)	17:31	33	09:02 (15)	18:31
24	08:27	09:22 (7)	07:21	07:51 (8)	06:08	
	16:24	09:51 (7)	17:33	38	09:02 (15)	18:33
25	08:25	09:23 (7)	07:19	07:48 (8)	06:06	
	16:27	09:51 (7)	17:35	41	09:00 (15)	18:35
26	08:23	09:23 (7)	07:16	07:45 (8)	06:03	
	16:29	09:51 (7)	17:38	44	08:59 (15)	18:37
27	08:22	09:23 (7)	07:14	07:43 (8)	06:00	
	16:31	09:51 (7)	17:40	45	08:58 (15)	18:39
28	08:20	09:24 (7)	07:11	07:40 (8)	05:57	
	16:33	09:51 (7)	17:42	44	08:55 (15)	18:41
29	08:18	09:25 (7)			05:55	
	16:35	09:51 (7)			18:44	
30	08:16	09:25 (7)			06:52	
	16:37	09:50 (7)			19:46	
31	08:15	09:27 (7)			06:49	
	16:40	09:50 (7)			19:48	
Potential sun hours	235	265	365	425	507	529
Total, worst case	637	822	294			
Sun reduction	0,15	0,24	0,39			
Oper. time red.	0,94	0,94	0,94			
Wind dir. red.	0,59	0,61	0,62			
Total reduction	0,09	0,14	0,23			
Total, real	55	113	67			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AH - Graudini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July	August	September	October		November		December
1	04:27 22:07	05:12 21:26	06:14 20:12	07:14 18:52		07:19 16:34	28	08:02 (15) 15:42
2	04:28 22:06	05:14 21:24	06:16 20:10	07:16 18:49	11	08:23 (8) 16:32	26	08:03 (15) 15:41
3	04:29 22:06	05:16 21:22	06:18 20:07	07:18 18:46	16	08:20 (8) 16:29	23	08:04 (15) 15:41
4	04:30 22:05	05:18 21:20	06:20 20:04	07:20 18:44	19	08:15 (8) 16:27	19	08:06 (15) 15:40
5	04:30 22:04	05:20 21:18	06:22 20:02	07:22 18:41	22	08:16 (8) 16:25	15	08:09 (15) 15:39
6	04:32 22:04	05:22 21:15	06:24 19:59	07:24 18:38	24	08:38 (8) 16:23	7	08:12 (15) 15:38
7	04:33 22:03	05:24 21:13	06:26 19:56	07:26 18:36	25	08:39 (8) 16:21	7	08:14 (8) 15:38
8	04:34 22:02	05:26 21:11	06:28 19:54	07:28 18:33	26	08:39 (8) 16:19	14	09:02 (7) 15:37
9	04:35 22:01	05:28 21:09	06:30 19:51	07:30 18:30	27	08:40 (8) 16:17	18	09:00 (7) 15:36
10	04:36 22:00	05:30 21:07	06:32 19:48	07:33 18:28	26	08:13 (8) 16:15	21	09:18 (7) 15:35
11	04:37 21:59	05:32 21:04	06:34 19:46	07:35 18:25	27	08:39 (8) 16:13	23	08:59 (7) 15:36
12	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	32	08:12 (8) 16:11	24	08:58 (7) 15:35
13	04:40 21:57	05:36 21:00	06:38 19:40	07:39 18:20	40	09:21 (15) 16:09	26	08:57 (7) 15:35
14	04:42 21:56	05:38 20:57	06:40 19:37	07:41 18:18	43	08:14 (8) 16:07	27	09:23 (7) 15:35
15	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	45	08:15 (8) 16:05	27	08:57 (7) 15:35
16	04:45 21:53	05:42 20:53	06:44 19:32	07:45 18:12	44	09:30 (15) 16:04	28	08:56 (7) 15:35
17	04:46 21:52	05:44 20:50	06:46 19:29	07:47 18:10	43	08:19 (8) 16:02	28	09:24 (7) 15:35
18	04:48 21:50	05:46 20:48	06:48 19:27	07:49 18:07	39	09:32 (15) 16:00	28	08:57 (7) 15:35
19	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:05	33	09:01 (15) 15:58	29	08:56 (7) 15:35
20	04:51 21:47	05:50 20:43	06:52 19:21	07:53 18:02	34	09:34 (15) 15:57	29	08:57 (7) 15:36
21	04:53 21:46	05:52 20:40	06:54 19:19	07:56 18:00	35	08:59 (15) 15:55	29	08:57 (7) 15:36
22	04:54 21:44	05:54 20:38	06:56 19:16	07:58 17:57	36	09:34 (15) 15:54	29	08:57 (7) 15:36
23	04:56 21:43	05:56 20:35	06:58 19:13	08:00 17:55	35	09:35 (15) 15:52	28	08:59 (15) 15:37
24	04:58 21:41	05:58 20:33	07:00 19:10	08:02 17:53	36	08:58 (15) 15:51	28	08:59 (7) 15:37
25	04:59 21:39	06:00 20:30	07:02 19:08	08:04 17:50	36	09:34 (15) 15:49	27	08:59 (7) 15:38
26	05:01 21:37	06:02 20:28	07:04 19:05	07:06 16:48	36	07:58 (15) 15:48	26	09:00 (7) 15:39
27	05:03 21:36	06:04 20:25	07:06 19:02	07:09 16:45	35	08:34 (15) 15:47	26	07:58 (15) 15:40
28	05:05 21:34	06:06 20:23	07:08 19:00	07:11 16:43	34	08:33 (15) 15:46	25	09:01 (7) 15:40
29	05:07 21:32	06:08 20:20	07:10 18:57	07:13 16:41	33	07:59 (15) 15:45	24	08:59 (7) 15:41
30	05:09 21:30	06:10 20:17	07:12 18:54	07:15 16:38	31	08:32 (15) 15:43	22	09:02 (7) 15:42
31	05:10 21:28	06:12 20:15		07:17 16:36	30	08:00 (15) 15:43		08:01 (15) 15:43
Potential sun hours	530	470	385	324		248		216
Total, worst case				953		711		118
Sun reduction				0,27		0,09		0,09
Oper. time red.				0,94		0,94		0,94
Wind dir. red.				0,61		0,60		0,59
Total reduction				0,16		0,05		0,05
Total, real				148		37		6

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AI - Birznieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

January			February			March			April			May			June		
1	08:48		09:30 (7)	08:13		08:48 (15)	07:09		08:00 (8)	06:47		05:30			04:33		
	15:45	10	09:40 (7)	16:42	22	09:10 (15)	17:44	18	08:18 (8)	19:50		20:52			21:50		
2	08:48		09:30 (7)	08:11		08:47 (15)	07:06		08:01 (8)	06:44		05:28			04:32		
	15:46	12	09:42 (7)	16:44	24	09:11 (15)	17:46	14	08:15 (8)	19:52		20:54			21:51		
3	08:48		09:29 (7)	08:09		08:47 (15)	07:04		08:04 (8)	06:41		05:26			04:31		
	15:47	13	09:42 (7)	16:46	26	09:13 (15)	17:49	8	08:12 (8)	19:54		20:56			21:53		
4	08:47		09:29 (7)	08:07		08:45 (15)	07:01			06:39		05:23			04:30		
	15:49	14	09:43 (7)	16:48	28	09:13 (15)	17:51			19:56		20:58			21:54		
5	08:47		09:28 (7)	08:05		08:45 (15)	06:59			06:36		05:21			04:29		
	15:50	16	09:44 (7)	16:51	29	09:14 (15)	17:53			19:58		21:01			21:55		
6	08:46		09:27 (7)	08:03		08:45 (15)	06:56			06:33		05:19			04:28		
	15:51	18	09:45 (7)	16:53	29	09:14 (15)	17:55			20:00		21:03			21:56		
7	08:46		09:26 (7)	08:01		08:45 (15)	06:53			06:31		05:17			04:27		
	15:53	19	09:45 (7)	16:55	30	09:15 (15)	17:57			20:02		21:05			21:57		
8	08:45		09:25 (7)	07:59		08:44 (15)	06:51			06:28		05:15			04:27		
	15:55	21	09:46 (7)	16:57	31	09:15 (15)	17:59			20:04		21:07			21:59		
9	08:45		09:24 (7)	07:56		08:45 (15)	06:48			06:26		05:13			04:26		
	15:56	23	09:47 (7)	17:00	30	09:15 (15)	18:01			20:06		21:09			22:00		
10	08:44		09:25 (7)	07:54		08:45 (15)	06:46			06:23		05:10			04:25		
	15:58	22	09:47 (7)	17:02	31	09:16 (15)	18:04			20:08		21:11			22:01		
11	08:43		09:25 (7)	07:52		08:45 (15)	06:43			06:20		05:08			04:25		
	15:59	23	09:48 (7)	17:04	30	09:15 (15)	18:06			20:11		21:13			22:02		
12	08:42		09:25 (7)	07:50		08:46 (15)	06:40			06:18		05:06			04:24		
	16:01	24	09:49 (7)	17:06	29	09:15 (15)	18:08			20:13		21:15			22:02		
13	08:41		09:26 (7)	07:48		08:45 (15)	06:38			06:15		05:04			04:24		
	16:03	24	09:50 (7)	17:09	29	09:14 (15)	18:10			20:15		21:17			22:03		
14	08:40		09:25 (7)	07:45		08:46 (15)	06:35			06:12		05:02			04:23		
	16:05	25	09:50 (7)	17:11	28	09:14 (15)	18:12			20:17		21:19			22:04		
15	08:39		09:26 (7)	07:43		08:48 (15)	06:32			06:10		05:00			04:23		
	16:07	25	09:51 (7)	17:13	25	09:13 (15)	18:14			20:19		21:21			22:05		
16	08:38		09:27 (7)	07:41		08:11 (8)	06:30			06:07		04:58			04:23		
	16:08	25	09:52 (7)	17:15	26	09:12 (15)	18:16			20:21		21:22			22:05		
17	08:37		09:26 (7)	07:38		08:09 (8)	06:27			06:05		04:56			04:22		
	16:10	25	09:51 (7)	17:18	29	09:11 (15)	18:18			20:23		21:24			22:06		
18	08:35		09:27 (7)	07:36		08:06 (8)	06:24			06:02		04:55			04:22		
	16:12	25	09:52 (7)	17:20	30	09:09 (15)	18:21			20:25		21:26			22:06		
19	08:34		09:27 (7)	07:34		08:04 (8)	06:22			06:00		04:53			04:22		
	16:14	25	09:52 (7)	17:22	29	09:07 (15)	18:23			20:27		21:28			22:07		
20	08:33		09:27 (7)	07:31		08:01 (8)	06:19			05:57		04:51			04:22		
	16:16	25	09:52 (7)	17:24	20	09:00 (15)	18:25			20:29		21:30			22:07		
21	08:31		09:29 (7)	07:29		07:58 (8)	06:16			05:55		04:49			04:22		
	16:18	24	09:53 (7)	17:27	22	08:20 (8)	18:27			20:31		21:32			22:08		
22	08:30		09:29 (7)	07:26		07:58 (8)	06:14			05:52		04:48			04:23		
	16:20	23	09:52 (7)	17:29	23	08:21 (8)	18:29			20:34		21:34			22:08		
23	08:28		09:30 (7)	07:24		07:57 (8)	06:11			05:50		04:46			04:23		
	16:22	22	09:52 (7)	17:31	24	08:21 (8)	18:31			20:36		21:35			22:08		
24	08:27		09:30 (7)	07:21		07:58 (8)	06:08			05:47		04:44			04:23		
	16:24	22	09:52 (7)	17:33	24	08:22 (8)	18:33			20:38		21:37			22:08		
25	08:25		09:31 (7)	07:19		07:57 (8)	06:06			05:45		04:43			04:23		
	16:27	20	09:51 (7)	17:35	24	08:21 (8)	18:35			20:40		21:39			22:08		
26	08:23		09:32 (7)	07:16		07:57 (8)	06:03			05:42		04:41			04:24		
	16:29	18	09:50 (7)	17:38	23	08:20 (8)	18:37			20:42		21:40			22:08		
27	08:22		09:33 (7)	07:14		07:58 (8)	06:00			05:40		04:40			04:24		
	16:31	16	09:49 (7)	17:40	22	08:20 (8)	18:39			20:44		21:42			22:08		
28	08:20		08:55 (15)	07:11		07:59 (8)	05:58			05:37		04:38			04:25		
	16:33	19	09:48 (7)	17:42	19	08:18 (8)	18:41			20:46		21:44			22:08		
29	08:18		08:52 (15)				05:55			05:35		04:37			04:25		
	16:35	20	09:46 (7)				18:44			20:48		21:45			22:07		
30	08:16		08:50 (15)				06:52			05:33		04:36			04:26		
	16:37	17	09:07 (15)				19:46			20:50		21:47			22:07		
31	08:15		08:49 (15)				06:49					04:35					
	16:40	20	09:09 (15)				19:48					21:48					
Potential sun hours	235			265		365			425		507		529				
Total, worst case		635			736		40										
Sun reduction		0,15			0,24		0,39										
Oper. time red.		0,94			0,94		0,94										
Wind dir. red.		0,60			0,60		0,62										
Total reduction		0,09			0,14		0,23										
Total, real		55			100		9										

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AI - Birznieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	July	August	September	October	November	December
1	04:27	05:12	06:14	07:14	07:19	08:14 (15) 08:21 09:07 (7)
	22:07	21:26	20:12	18:52	16:34 30	08:44 (15) 15:42 23 09:30 (7)
2	04:28	05:14	06:16	07:16	07:22	08:15 (15) 08:23 09:07 (7)
	22:06	21:24	20:10	18:49	16:32 30	08:45 (15) 15:41 24 09:31 (7)
3	04:29	05:16	06:18	07:18	07:24	08:14 (15) 08:25 09:08 (7)
	22:06	21:22	20:07	18:46	16:29 31	08:45 (15) 15:41 23 09:31 (7)
4	04:30	05:18	06:20	07:20	07:26	08:14 (15) 08:26 09:09 (7)
	22:05	21:20	20:04	18:44	16:27 30	08:44 (15) 15:40 22 09:31 (7)
5	04:30	05:20	06:22	07:22	07:28	08:15 (15) 08:28 09:11 (7)
	22:04	21:18	20:02	18:41	16:25 30	08:45 (15) 15:39 20 09:31 (7)
6	04:32	05:22	06:24	07:24	07:30	08:15 (15) 08:29 09:12 (7)
	22:04	21:15	19:59	18:38	16:23 29	08:44 (15) 15:38 19 09:31 (7)
7	04:33	05:24	06:26	07:26	07:32	08:16 (15) 08:31 09:14 (7)
	22:03	21:13	19:56	18:36	16:21 28	08:44 (15) 15:38 17 09:31 (7)
8	04:34	05:26	06:28	07:28	07:35	08:16 (15) 08:32 09:16 (7)
	22:02	21:11	19:54	18:33	16:19 27	08:43 (15) 15:37 15 09:31 (7)
9	04:35	05:28	06:30	07:30	07:37	08:17 (15) 08:34 09:17 (7)
	22:01	21:09	19:51	18:30	16:17 25	08:42 (15) 15:36 14 09:31 (7)
10	04:36	05:30	06:32	07:33	07:39	08:18 (15) 08:35 09:19 (7)
	22:00	21:07	19:48	18:28	16:15 24	08:42 (15) 15:36 12 09:31 (7)
11	04:37	05:32	06:34	07:35	08:38 (8) 07:41	08:19 (15) 08:36 09:20 (7)
	21:59	21:04	19:46	18:25 8	08:46 (8) 16:13 21	08:40 (15) 15:36 11 09:31 (7)
12	04:39	05:34	06:36	07:37	08:35 (8) 07:43	08:21 (15) 08:38 09:21 (7)
	21:58	21:02	19:43	18:23 14	08:49 (8) 16:11 19	08:40 (15) 15:35 10 09:31 (7)
13	04:40	05:36	06:38	07:39	08:33 (8) 07:45	08:23 (15) 08:39 09:23 (7)
	21:57	21:00	19:40	18:20 17	08:50 (8) 16:09 19	09:16 (7) 15:35 9 09:32 (7)
14	04:42	05:38	06:40	07:41	08:32 (8) 07:48	08:25 (15) 08:40 09:24 (7)
	21:56	20:57	19:38	18:18 20	08:52 (8) 16:07 21	09:19 (7) 15:35 7 09:31 (7)
15	04:43	05:40	06:42	07:43	08:31 (8) 07:50	09:07 (7) 08:41 09:25 (7)
	21:55	20:55	19:35	18:15 21	08:52 (8) 16:05 15	09:22 (7) 15:35 6 09:31 (7)
16	04:45	05:42	06:44	07:45	08:30 (8) 07:52	09:06 (7) 08:42 09:26 (7)
	21:53	20:53	19:32	18:12 22	08:52 (8) 16:04 17	09:23 (7) 15:35 5 09:31 (7)
17	04:46	05:44	06:46	07:47	08:29 (8) 07:54	09:06 (7) 08:43 09:27 (7)
	21:52	20:50	19:29	18:10 23	08:52 (8) 16:02 19	09:25 (7) 15:35 5 09:32 (7)
18	04:48	05:46	06:48	07:49	08:29 (8) 07:56	09:05 (7) 08:44 09:28 (7)
	21:50	20:48	19:27	18:07 24	08:53 (8) 16:00 21	09:26 (7) 15:35 4 09:32 (7)
19	04:49	05:48	06:50	07:51	08:29 (8) 07:58	09:04 (7) 08:44 09:28 (7)
	21:49	20:45	19:24	18:05 24	08:53 (8) 15:58 22	09:26 (7) 15:35 3 09:31 (7)
20	04:51	05:50	06:52	07:54	08:29 (8) 08:00	09:04 (7) 08:45 09:29 (7)
	21:47	20:43	19:21	18:02 23	08:52 (8) 15:57 23	09:27 (7) 15:36 3 09:32 (7)
21	04:52	05:52	06:54	07:56	08:29 (8) 08:02	09:04 (7) 08:46 09:30 (7)
	21:46	20:40	19:19	18:00 22	08:51 (8) 15:55 24	09:28 (7) 15:36 3 09:33 (7)
22	04:54	05:54	06:56	07:58	08:31 (8) 08:04	09:04 (7) 08:46 09:30 (7)
	21:44	20:38	19:16	17:57 20	08:51 (8) 15:54 24	09:28 (7) 15:36 3 09:33 (7)
23	04:56	05:56	06:58	08:00	08:33 (8) 08:06	09:04 (7) 08:47 09:31 (7)
	21:43	20:35	19:13	17:55 28	09:35 (15) 15:52 24	09:28 (7) 15:37 3 09:34 (7)
24	04:58	05:58	07:00	08:02	08:35 (8) 08:08	09:05 (7) 08:47 09:31 (7)
	21:41	20:33	19:11	17:53 30	09:38 (15) 15:51 24	09:29 (7) 15:37 3 09:34 (7)
25	04:59	06:00	07:02	08:04	08:38 (8) 08:10	09:05 (7) 08:48 09:31 (7)
	21:39	20:30	19:08	17:50 29	09:40 (15) 15:49 25	09:30 (7) 15:38 3 09:34 (7)
26	05:01	06:02	07:04	07:06	07:40 (8) 08:12	09:05 (7) 08:48 09:31 (7)
	21:37	20:28	19:05	16:48 27	08:41 (15) 15:48 25	09:30 (7) 15:39 4 09:35 (7)
27	05:03	06:04	07:06	07:09	08:17 (15) 08:14	09:05 (7) 08:48 09:31 (7)
	21:36	20:25	19:02	16:45 25	08:42 (15) 15:47 25	09:30 (7) 15:40 5 09:36 (7)
28	05:05	06:06	07:08	07:11	08:16 (15) 08:16	09:05 (7) 08:48 09:31 (7)
	21:34	20:23	19:00	16:43 27	08:43 (15) 15:46 25	09:30 (7) 15:40 6 09:37 (7)
29	05:07	06:08	07:10	07:13	08:15 (15) 08:18	09:06 (7) 08:48 09:31 (7)
	21:32	20:20	18:57	16:41 29	08:44 (15) 15:45 24	09:30 (7) 15:41 6 09:37 (7)
30	05:09	06:10	07:12	07:15	08:15 (15) 08:19	09:06 (7) 08:48 09:31 (7)
	21:30	20:17	18:54	16:38 29	08:44 (15) 15:43 24	09:30 (7) 15:42 7 09:38 (7)
31	05:10	06:12	07:17	07:17	08:15 (15)	08:48 09:31 (7)
	21:28	20:15	16:36 30	08:45 (15)	15:43 9	09:40 (7)
Potential sun hours	530	470	385	324	248	216
Total, worst case				492	725	304
Sun reduction				0,27	0,09	0,09
Oper. time red.				0,94	0,94	0,94
Wind dir. red.				0,61	0,59	0,60
Total reduction				0,15	0,05	0,05
Total, real				76	37	15

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AJ - Irbites

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:30 20:52	04:33 21:50	04:27 22:07	05:12 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:42
2	08:48 15:46	08:11 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:32 21:51	04:28 22:06	05:14 21:24	06:16 20:10	07:16 18:49	07:22 16:32	08:23 15:41
3	08:48 15:47	08:09 16:46	07:04 17:49	06:41 19:54	05:26 20:56	04:31 21:53	04:29 22:06	05:16 21:22	06:18 20:07	07:18 18:46	07:24 16:29	08:25 15:41
4	08:47 15:49	08:07 16:48	07:01 17:51	06:39 19:56	05:23 20:59	04:30 21:54	04:29 22:05	05:18 21:20	06:20 20:04	07:20 18:44	07:26 16:27	08:26 15:40
5	08:47 15:50	08:05 16:51	06:59 17:53	06:36 19:58	05:21 21:01	04:29 21:55	04:30 22:05	05:20 21:18	06:22 20:02	07:22 18:41	07:28 16:25	08:28 15:39
6	08:47 15:51	08:03 16:53	06:56 17:55	06:33 20:00	05:19 21:03	04:28 21:56	04:31 22:04	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
7	08:46 15:53	08:01 16:55	06:53 17:57	06:31 20:02	05:17 21:05	04:27 21:58	04:33 22:03	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	08:31 15:38
8	08:45 15:54	07:59 16:57	06:51 17:59	06:28 20:04	05:15 21:07	04:26 21:59	04:34 22:02	05:26 21:11	06:28 19:54	07:28 18:33	07:35 16:19	08:32 15:37
9	08:45 15:56	07:56 17:00	06:48 18:01	06:26 20:06	05:12 21:09	04:26 22:00	04:35 22:01	05:28 21:09	06:30 19:51	07:30 18:30	07:37 16:17	08:34 15:36
10	08:44 15:58	07:54 17:02	06:46 18:04	06:23 20:09	05:10 21:11	04:25 22:01	04:36 22:00	05:30 21:07	06:32 19:48	07:33 18:28	07:39 16:15	08:35 15:36
11	08:43 15:59	07:52 17:04	06:43 18:06	06:20 20:11	05:08 21:13	04:25 22:02	04:37 21:59	05:32 21:04	06:34 19:46	07:35 18:25	07:41 16:13	08:36 15:36
12	08:42 16:01	07:50 17:06	06:40 18:08	06:18 20:13	05:06 21:15	04:24 22:03	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:38 15:35
13	08:41 16:03	07:48 17:09	06:38 18:10	06:15 20:15	05:04 21:17	04:24 22:03	04:40 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:45 16:09	08:39 15:35
14	08:40 16:05	07:45 17:11	06:35 18:12	06:12 20:17	05:02 21:19	04:23 22:04	04:42 21:56	05:38 20:57	06:40 19:38	07:41 18:18	07:48 16:07	08:40 15:35
15	08:39 16:06	07:43 17:13	06:32 18:14	06:10 20:19	05:00 21:21	04:23 22:05	04:43 21:55	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:05	08:41 15:35
16	08:38 16:08	07:41 17:15	06:30 18:16	06:07 20:21	04:58 21:22	04:23 22:05	04:44 21:53	05:42 20:53	06:44 19:32	07:45 18:12	07:52 16:03	08:42 15:35
17	08:37 16:10	07:38 17:18	06:27 18:18	06:05 20:23	04:56 21:24	04:22 22:06	04:46 21:52	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:02	08:43 15:35
18	08:35 16:12	07:36 17:20	06:24 18:21	06:02 20:25	04:55 21:26	04:22 22:06	04:48 21:50	05:46 20:48	06:48 19:27	07:49 18:07	07:56 16:00	08:44 15:35
19	08:34 16:14	07:34 17:22	06:22 18:23	06:00 20:27	04:53 21:28	04:22 22:07	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:58	08:45 15:35
20	08:33 16:16	07:31 17:24	06:19 18:25	05:57 20:29	04:51 21:30	04:22 22:07	04:51 21:47	05:50 20:43	06:52 19:21	07:54 18:02	08:00 15:57	08:45 15:36
21	08:31 16:18	07:29 17:27	06:16 18:27	05:55 20:31	04:49 21:32	04:22 22:08	04:52 21:46	05:52 20:40	06:54 19:19	07:56 18:00	08:02 15:55	08:46 15:36
22	08:30 16:20	07:26 17:29	06:14 18:29	05:52 20:34	04:48 21:34	04:22 22:08	04:54 21:44	05:54 20:38	06:56 19:16	07:58 17:57	08:04 15:54	08:46 15:36
23	08:28 16:22	07:24 17:31	06:11 18:31	05:50 20:36	04:46 21:35	04:23 22:08	04:56 21:43	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:47 15:37
24	08:27 16:24	07:21 17:33	06:08 18:33	05:47 20:38	04:44 21:37	04:23 22:08	04:58 21:41	05:58 20:33	07:00 19:11	08:02 17:53	08:08 15:51	08:47 15:37
25	08:25 16:26	07:19 17:35	06:06 18:35	05:45 20:40	04:43 21:39	04:23 22:08	04:59 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:49	08:48 15:38
26	08:24 16:29	07:16 17:38	06:03 18:37	05:42 20:42	04:41 21:40	04:24 22:08	05:01 21:37	06:02 20:28	07:04 19:05	07:06 16:48	08:12 15:48	08:48 15:39
27	08:22 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:42	04:24 22:08	05:03 21:36	06:04 20:25	07:06 19:02	07:09 16:45	08:14 15:47	08:48 15:40
28	08:20 16:33	07:11 17:42	05:57 18:41	05:37 20:46	04:38 21:44	04:25 22:08	05:05 21:34	06:06 20:23	07:08 19:00	07:11 16:43	08:16 15:46	08:48 15:40
29	08:18 16:35		05:55 18:44	05:35 20:48	04:37 21:45	04:25 22:08	05:07 21:32	06:08 20:20	07:10 18:57	07:13 16:41	08:18 15:45	08:49 15:41
30	08:16 16:37		06:52 19:46	05:33 20:50	04:36 21:47	04:26 22:07	05:09 21:30	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:43	08:49 15:42
31	08:15 16:40		06:49 19:48		04:34 21:48		05:10 21:28	06:12 20:15		07:17 16:36		08:48 15:43
Potential sun hours	235	265	365	425	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AK - Ruki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June
1	08:48	08:13	09:22 (7)	07:09	07:39 (8)	06:47
	15:45	16:42	23 09:45 (7)	17:44	42 08:50 (15)	19:50
2	08:48	08:11	09:23 (7)	07:06	07:38 (8)	06:44
	15:46	16:44	21 09:44 (7)	17:46	36 08:46 (15)	19:52
3	08:48	08:09	09:25 (7)	07:04	07:37 (8)	06:41
	15:47	16:46	19 09:44 (7)	17:49	25 08:02 (8)	19:54
4	08:47	08:07	09:26 (7)	07:01	07:37 (8)	06:39
	15:49	16:48	15 09:41 (7)	17:51	26 08:03 (8)	19:56
5	08:47	08:05	09:29 (7)	06:59	07:36 (8)	06:36
	15:50	16:51	10 09:39 (7)	17:53	26 08:02 (8)	19:58
6	08:46	08:03	08:56	06:56	07:36 (8)	06:33
	15:52	16:53	25 17:55	08:01 (8)	20:00	21:03
7	08:46	09:26 (7)	08:01	08:38 (15)	06:53	07:37 (8)
	15:53	1 09:27 (7)	16:55	8 08:46 (15)	17:57	25 08:02 (8)
8	08:45	09:25 (7)	07:59	08:34 (15)	06:51	07:37 (8)
	15:55	5 09:30 (7)	16:57	15 08:49 (15)	17:59	23 08:00 (8)
9	08:44	09:24 (7)	07:56	08:32 (15)	06:48	07:37 (8)
	15:56	8 09:32 (7)	17:00	20 08:52 (15)	18:01	22 07:59 (8)
10	08:44	09:23 (7)	07:54	08:31 (15)	06:46	07:39 (8)
	15:58	11 09:34 (7)	17:02	23 08:54 (15)	18:04	19 07:58 (8)
11	08:43	09:22 (7)	07:52	08:29 (15)	06:43	07:40 (8)
	15:59	13 09:35 (7)	17:04	26 08:55 (15)	18:06	16 07:56 (8)
12	08:42	09:21 (7)	07:50	08:28 (15)	06:40	07:42 (8)
	16:01	16 09:37 (7)	17:06	28 08:56 (15)	18:08	11 07:53 (8)
13	08:41	09:20 (7)	07:48	08:27 (15)	06:38	06:15
	16:03	18 09:38 (7)	17:09	29 08:56 (15)	18:10	20:15
14	08:40	09:18 (7)	07:45	08:26 (15)	06:35	06:12
	16:05	21 09:39 (7)	17:11	32 08:58 (15)	18:12	20:17
15	08:39	09:18 (7)	07:43	08:26 (15)	06:32	06:10
	16:07	22 09:40 (7)	17:13	33 08:59 (15)	18:14	20:19
16	08:38	09:18 (7)	07:41	08:25 (15)	06:30	06:07
	16:08	24 09:42 (7)	17:15	34 08:59 (15)	18:16	20:21
17	08:37	09:17 (7)	07:38	08:25 (15)	06:27	06:05
	16:10	25 09:42 (7)	17:18	34 08:59 (15)	18:18	20:23
18	08:35	09:18 (7)	07:36	08:25 (15)	06:24	06:02
	16:12	25 09:43 (7)	17:20	34 08:59 (15)	18:21	20:25
19	08:34	09:17 (7)	07:34	08:25 (15)	06:22	06:00
	16:14	27 09:44 (7)	17:22	35 09:00 (15)	18:23	20:27
20	08:33	09:17 (7)	07:31	08:24 (15)	06:19	05:57
	16:16	27 09:44 (7)	17:24	35 08:59 (15)	18:25	20:29
21	08:31	09:18 (7)	07:29	08:24 (15)	06:16	05:55
	16:18	27 09:45 (7)	17:27	34 08:58 (15)	18:27	20:31
22	08:30	09:18 (7)	07:26	08:25 (15)	06:14	05:52
	16:20	27 09:45 (7)	17:29	34 08:59 (15)	18:29	20:34
23	08:28	09:18 (7)	07:24	08:25 (15)	06:11	05:50
	16:22	28 09:46 (7)	17:31	33 08:58 (15)	18:31	20:36
24	08:27	09:18 (7)	07:21	08:26 (15)	06:08	05:47
	16:24	28 09:46 (7)	17:33	31 08:57 (15)	18:33	20:38
25	08:25	09:18 (7)	07:19	07:48 (8)	06:06	05:45
	16:27	28 09:46 (7)	17:35	38 08:56 (15)	18:35	20:40
26	08:23	09:18 (7)	07:16	07:45 (8)	06:03	05:42
	16:29	28 09:46 (7)	17:38	42 08:55 (15)	18:37	20:42
27	08:22	09:18 (7)	07:14	07:43 (8)	06:00	05:40
	16:31	28 09:46 (7)	17:40	43 08:54 (15)	18:39	20:44
28	08:20	09:19 (7)	07:11	07:40 (8)	05:58	05:37
	16:33	27 09:46 (7)	17:42	44 08:52 (15)	18:41	20:46
29	08:18	09:19 (7)		05:55		05:35
	16:35	27 09:46 (7)		18:44		20:48
30	08:16	09:20 (7)		06:52		05:33
	16:37	26 09:46 (7)		19:46		20:50
31	08:15	09:21 (7)		06:49		04:35
	16:40	25 09:46 (7)		19:48		21:48
Potential sun hours	235	265	365	425	507	529
Total, worst case	542	773	296			
Sun reduction	0,15	0,24	0,39			
Oper. time red.	0,94	0,94	0,94			
Wind dir. red.	0,59	0,61	0,62			
Total reduction	0,09	0,14	0,23			
Total, real	46	106	67			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AK - Ruki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	July	August	September	October	November	December
1	04:27 22:07	05:12 21:26	06:14 20:12	07:14 18:52	07:19 16:34	07:59 (15) 15:42
2	04:28 22:06	05:14 21:24	06:16 20:10	07:16 18:49	08:20 (8) 16:32	08:23 (15) 15:41
3	04:29 22:06	05:16 21:22	06:18 20:07	07:18 18:46	08:18 (8) 16:29	08:03 (15) 15:41
4	04:30 22:05	05:18 21:20	06:20 20:04	07:20 18:44	08:34 (8) 16:27	08:20 (15) 15:40
5	04:31 22:04	05:20 21:18	06:22 20:02	07:22 18:41	08:16 (8) 16:25	08:05 (15) 15:39
6	04:32 22:04	05:22 21:15	06:24 19:59	07:24 18:38	08:35 (8) 16:23	08:17 (15) 15:38
7	04:33 22:03	05:24 21:13	06:26 19:56	07:26 18:36	08:36 (8) 16:21	08:18 (15) 15:37
8	04:34 22:02	05:26 21:11	06:28 19:54	07:28 18:33	08:37 (8) 16:19	08:19 (15) 15:36
9	04:35 22:01	05:28 21:09	06:30 19:51	07:30 18:30	08:38 (8) 16:17	08:20 (15) 15:35
10	04:36 22:00	05:30 21:07	06:32 19:48	07:33 18:28	08:12 (8) 16:15	08:21 (15) 15:34
11	04:37 21:59	05:32 21:04	06:34 19:46	07:35 18:25	08:11 (8) 16:13	08:22 (15) 15:33
12	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	08:36 (8) 16:11	08:23 (15) 15:32
13	04:40 21:57	05:36 21:00	06:38 19:40	07:39 18:20	08:37 (8) 16:09	08:24 (15) 15:31
14	04:42 21:56	05:38 20:57	06:40 19:37	07:41 18:18	08:12 (8) 16:07	08:25 (15) 15:30
15	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	08:13 (8) 16:05	08:26 (15) 15:29
16	04:45 21:53	05:42 20:53	06:44 19:32	07:45 18:12	08:15 (8) 16:04	08:27 (15) 15:28
17	04:46 21:52	05:44 20:50	06:46 19:29	07:47 18:10	08:17 (8) 16:02	08:28 (15) 15:27
18	04:48 21:50	05:46 20:48	06:48 19:27	07:49 18:07	08:19 (8) 16:00	08:29 (15) 15:26
19	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:05	08:22 (8) 15:58	08:30 (15) 15:25
20	04:51 21:47	05:50 20:43	06:52 19:21	07:54 18:02	08:23 (8) 15:57	08:31 (15) 15:24
21	04:53 21:46	05:52 20:40	06:54 19:19	07:56 18:00	08:25 (15) 15:55	08:33 (15) 15:23
22	04:54 21:44	05:54 20:38	06:56 19:16	07:58 17:57	08:27 (15) 15:54	08:35 (15) 15:22
23	04:56 21:43	05:56 20:35	06:58 19:13	08:00 17:55	08:29 (15) 15:52	08:37 (15) 15:21
24	04:58 21:41	05:58 20:33	07:00 19:11	08:02 17:53	08:31 (15) 15:51	08:39 (15) 15:20
25	04:59 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:33 (15) 15:49	08:41 (15) 15:19
26	05:01 21:37	06:02 20:28	07:04 19:05	08:06 17:48	08:35 (15) 15:47	08:43 (15) 15:18
27	05:03 21:36	06:04 20:25	07:06 19:02	08:09 17:45	08:37 (15) 15:46	08:45 (15) 15:17
28	05:05 21:34	06:06 20:23	07:08 19:00	08:11 17:43	08:39 (15) 15:44	08:47 (15) 15:16
29	05:07 21:32	06:08 20:20	07:10 18:57	08:13 17:41	08:41 (15) 15:43	08:49 (15) 15:15
30	05:09 21:30	06:10 20:17	07:12 18:54	08:15 17:38	08:43 (15) 15:41	08:51 (15) 15:14
31	05:10 21:28	06:12 20:15	07:14 18:52	08:17 17:36	08:45 (15) 15:40	08:53 (15) 15:13
Potential sun hours	530	470	385	324	248	216
Total, worst case				920	662	49
Sun reduction				0,27	0,09	0,09
Oper. time red.				0,94	0,94	0,94
Wind dir. red.				0,61	0,59	0,59
Total reduction				0,16	0,05	0,05
Total, real				143	34	2

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AL - Vipmali

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

January		February		March		April		May		June	
1	08:48	11:14 (1)	08:13	07:09	07:56 (20)	06:47	07:23 (18)	05:31	07:12 (19)	04:34	
2	08:48	11:16 (1)	08:11	07:06	07:56 (20)	06:44	07:23 (18)	05:28	07:13 (19)	04:32	
3	08:48	11:17 (1)	08:09	07:04	07:56 (20)	06:42	07:22 (19)	05:26	07:14 (19)	04:31	
4	08:47	11:21 (1)	08:07	07:01	07:57 (20)	06:39	07:19 (19)	05:24	07:17 (19)	04:30	
5	08:47	11:23 (1)	08:05	06:59	07:57 (20)	06:36	07:17 (19)	05:21	07:21 (19)	04:29	
6	08:46		08:03	06:56	07:58 (20)	06:34	07:15 (19)	05:19	07:29 (19)	04:28	
7	08:46		08:01	06:53	07:59 (20)	06:31	07:14 (19)	05:17		04:28	
8	08:45		07:59	06:51	08:01 (20)	06:28	07:12 (19)	05:15		04:27	
9	08:44		07:56	06:48	08:18 (20)	06:26	07:11 (19)	05:13		04:26	
10	08:44		07:54	06:46	08:03 (20)	06:26	07:11 (19)	05:13		04:26	
11	08:43		07:52	06:43	08:14 (20)	06:23	07:10 (19)	05:11		04:25	
12	08:42		07:50	06:40		06:20	07:09 (19)	05:08		04:25	
13	08:41		07:48	06:38		06:18	07:08 (19)	05:06		04:24	
14	08:40		07:45	06:35		06:15	07:07 (19)	05:04		04:24	
15	08:39		07:43	06:32		06:13	07:07 (19)	05:02		04:23	
16	08:38		07:41	06:30		06:10	07:06 (19)	05:00		04:23	
17	08:37		07:38	06:27		06:08	07:05 (19)	04:57		04:23	
18	08:35		07:36	06:24		06:05	07:05 (19)	04:55		04:23	
19	08:34		07:34	06:22		06:03	07:05 (19)	04:53		04:22	
20	08:33		07:31	06:19		06:00	07:05 (19)	04:51		04:23	
21	08:31		07:29	06:16		05:57	07:05 (19)	04:49		04:23	
22	08:30		07:26	06:14		05:55	07:05 (19)	04:48		04:23	
23	08:28		07:24	06:11		05:52	07:05 (19)	04:46		04:23	
24	08:27		07:21	06:08		05:50	07:05 (19)	04:45		04:23	
25	08:25		07:19	06:06		05:47	07:05 (19)	04:43		04:24	
26	08:23		07:16	06:03		05:45	07:05 (19)	04:41		04:24	
27	08:22		07:14	06:00		05:43	07:05 (19)	04:40		04:25	
28	08:20		07:11	05:58		05:41	07:05 (19)	04:39		04:25	
29	08:18		07:09	05:55		05:39	07:05 (19)	04:37		04:26	
30	08:16		07:07	05:52		05:37	07:05 (19)	04:36		04:26	
31	08:15		07:05	05:50		05:35	07:05 (19)	04:35		04:26	
Potential sun hours	235		265	365		425		507		529	
Total, worst case	34		278	386		1231		104			
Sun reduction	0,15		0,24	0,39		0,48		0,53			
Oper. time red.	0,94		0,94	0,94		0,94		0,94			
Wind dir. red.	0,61		0,62	0,64		0,66		0,66			
Total reduction	0,09		0,14	0,23		0,30		0,33			
Total, real	3		39	90		367		34			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AL - Vipmali

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	July	August	September	October	November	December
1	04:27 22:07	05:13 21:26	06:14 20:12	07:07 (19) 18:52	07:19 16:34	08:21 15:43
2	04:28 22:06	05:14 21:24	06:16 20:10	07:08 (19) 18:49	07:22 16:32	08:23 15:42
3	04:29 22:06	05:16 21:22	06:18 20:07	07:08 (19) 18:46	07:24 16:30	08:25 15:41
4	04:30 22:05	05:18 21:20	06:20 20:04	07:09 (19) 18:44	07:26 16:27	08:26 15:40
5	04:31 22:04	05:20 21:18	06:22 20:02	07:10 (19) 18:41	08:41 (20) 16:25	07:28 15:39
6	04:32 22:04	05:22 21:15	06:24 19:59	07:11 (19) 18:38	08:37 (20) 16:23	07:30 15:38
7	04:33 22:03	05:24 21:13	06:26 19:56	07:12 (19) 18:36	08:36 (20) 16:21	07:32 15:38
8	04:34 22:02	05:26 21:11	06:28 19:54	07:13 (19) 18:33	08:34 (20) 16:19	07:35 15:37
9	04:35 22:01	05:28 21:09	06:30 19:51	07:14 (19) 18:31	08:32 (20) 16:17	07:37 15:37
10	04:36 22:00	05:30 21:07	06:32 19:48	07:16 (18) 18:28	08:31 (20) 16:15	07:39 15:36
11	04:38 21:59	05:32 21:04	06:34 19:46	07:15 (18) 18:25	08:30 (20) 16:13	07:41 15:36
12	04:39 21:58	05:34 21:02	06:36 19:43	07:15 (18) 18:23	08:29 (20) 16:11	07:43 15:36
13	04:40 21:57	05:36 21:00	06:38 19:40	07:15 (18) 18:20	08:28 (20) 16:09	07:45 15:35
14	04:42 21:56	05:38 20:57	06:40 19:38	07:15 (18) 18:18	08:29 (20) 16:07	07:48 15:35
15	04:43 21:54	05:40 20:55	06:42 19:35	07:15 (18) 18:15	08:28 (20) 16:05	07:50 15:35
16	04:45 21:53	05:42 20:53	06:44 19:32	07:16 (18) 18:13	08:28 (20) 16:04	07:52 15:35
17	04:46 21:52	05:44 20:50	06:46 19:29	07:17 (18) 18:10	08:28 (20) 16:02	07:54 15:35
18	04:48 21:50	05:46 20:48	06:48 19:27	07:19 (18) 18:07	08:29 (20) 16:00	07:56 15:35
19	04:49 21:49	05:48 20:45	06:50 19:24	07:21 (18) 18:05	08:29 (20) 15:59	07:58 15:36
20	04:51 21:47	05:50 20:43	06:52 19:21	07:23 (18) 18:02	08:29 (20) 15:57	08:00 15:36
21	04:53 21:46	05:52 20:40	06:54 19:19	07:23 (18) 18:00	08:29 (20) 15:55	08:02 15:36
22	04:54 21:44	05:54 20:38	06:56 19:16	07:25 (18) 17:58	08:30 (20) 15:54	08:04 15:37
23	04:56 21:43	05:56 20:35	06:58 19:13	07:27 (18) 17:55	08:32 (20) 15:52	08:06 15:37
24	04:58 21:41	05:58 20:33	07:00 19:11	07:29 (18) 17:53	08:35 (20) 15:51	08:08 15:38
25	05:00 21:39	06:00 20:30	07:02 19:08	07:31 (18) 17:50	08:40 (20) 15:50	08:10 15:38
26	05:01 21:37	06:02 20:28	07:04 19:05	07:33 (18) 17:48	08:45 (20) 15:48	08:12 15:39
27	05:03 21:36	06:04 20:25	07:06 19:02	07:35 (18) 17:46	08:49 (20) 15:47	08:14 15:40
28	05:05 21:34	06:06 20:23	07:08 (19) 19:00	07:37 (18) 17:43	08:52 (20) 15:46	08:16 15:41
29	05:07 21:32	06:08 20:20	07:10 (19) 18:57	07:39 (18) 17:41	08:55 (20) 15:45	08:18 15:42
30	05:09 21:30	06:10 20:17	07:12 (19) 18:54	07:41 (18) 17:39	08:59 (20) 15:44	08:20 15:43
31	05:11 21:28	06:12 20:15	07:14 (19) 18:51	07:43 (18) 17:37	09:02 (20) 15:43	08:22 15:44
Potential sun hours	530	470	385	324	248	216
Total, worst case						
Sun reduction		933	594	505		364
Oper. time red.		0,51	0,43	0,27		0,09
Wind dir. red.		0,94	0,94	0,94		0,94
Total reduction		0,66	0,66	0,62		0,61
Total, real		0,32	0,26	0,16		0,05
		297	157	80		18

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

SKEPAST & PUHKIM

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AM - Galvani 1

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:13	07:09	06:47	05:31	04:34	04:27	05:13	06:14	07:14	07:20	08:21
	15:45	16:42	17:44	19:50	20:52	21:50	22:07	21:26	20:12	18:52	16:34	15:43
2	08:48	08:11	07:06	06:44	05:28	04:33	04:28	05:15	06:16	07:16	07:22	08:23
	15:46	16:44	17:47	19:52	20:54	21:51	22:06	21:24	20:10	18:49	16:32	15:42
3	08:48	08:09	07:04	06:42	05:26	04:31	04:29	05:16	06:18	07:18	07:24	08:25
	15:48	16:46	17:49	19:54	20:57	21:53	22:06	21:22	20:07	18:47	16:30	15:41
4	08:47	08:07	07:01	06:39	05:24	04:30	04:30	05:18	06:20	07:20	07:26	08:26
	15:49	16:49	17:51	19:56	20:59	21:54	22:05	21:20	20:04	18:44	16:28	15:40
5	08:47	08:05	06:59	06:36	05:22	04:29	04:31	05:20	06:22	07:22	07:28	08:28
	15:50	16:51	17:53	19:58	21:01	21:55	22:04	21:18	20:02	18:41	16:25	15:39
6	08:46	08:03	06:56	06:34	05:19	04:29	04:32	05:22	06:24	07:24	07:30	08:29
	15:52	16:53	17:55	20:00	21:03	21:56	22:04	21:16	19:59	18:39	16:23	15:39
7	08:46	08:01	06:54	06:31	05:17	04:28	04:33	05:24	06:26	07:26	07:33	08:31
	15:53	16:55	17:57	20:02	21:05	21:57	22:03	21:13	19:56	18:36	16:21	15:38
8	08:45	07:59	06:51	06:28	05:15	04:27	04:34	05:26	06:28	07:29	07:35	08:32
	15:55	16:58	18:00	20:04	21:07	21:59	22:02	21:11	19:54	18:33	16:19	15:37
9	08:45	07:56	06:48	06:26	05:13	04:26	04:35	05:28	06:30	07:31	07:37	08:34
	15:56	17:00	18:02	20:07	21:09	22:00	22:01	21:09	19:51	18:31	16:17	15:37
10	08:44	07:54	06:46	06:23	05:11	04:26	04:37	05:30	06:32	07:33	07:39	08:35
	15:58	17:02	18:04	20:09	21:11	22:01	22:00	21:07	19:48	18:28	16:15	15:36
11	08:43	07:52	06:43	06:21	05:09	04:25	04:38	05:32	06:34	07:35	07:41	08:36
	16:00	17:04	18:06	20:11	21:13	22:02	21:59	21:04	19:46	18:25	16:13	15:36
12	08:42	07:50	06:40	06:18	05:07	04:24	04:39	05:34	06:36	07:37	07:43	08:38
	16:01	17:07	18:08	20:13	21:15	22:02	21:58	21:02	19:43	18:23	16:11	15:36
13	08:41	07:48	06:38	06:15	05:05	04:24	04:40	05:36	06:38	07:39	07:45	08:39
	16:03	17:09	18:10	20:15	21:17	22:03	21:57	21:00	19:40	18:20	16:09	15:35
14	08:40	07:45	06:35	06:13	05:03	04:24	04:42	05:38	06:40	07:41	07:48	08:40
	16:05	17:11	18:12	20:17	21:19	22:04	21:56	20:57	19:38	18:18	16:07	15:35
15	08:39	07:43	06:32	06:10	05:01	04:23	04:43	05:40	06:42	07:43	07:50	08:41
	16:07	17:13	18:14	20:19	21:21	22:05	21:55	20:55	19:35	18:15	16:06	15:35
16	08:38	07:41	06:30	06:08	04:59	04:23	04:45	05:42	06:44	07:45	07:52	08:42
	16:09	17:16	18:16	20:21	21:22	22:05	21:53	20:53	19:32	18:13	16:04	15:35
17	08:37	07:38	06:27	06:05	04:57	04:23	04:46	05:44	06:46	07:47	07:54	08:43
	16:11	17:18	18:19	20:23	21:24	22:06	21:52	20:50	19:30	18:10	16:02	15:35
18	08:35	07:36	06:24	06:02	04:55	04:23	04:48	05:46	06:48	07:49	07:56	08:44
	16:13	17:20	18:21	20:25	21:26	22:06	21:50	20:48	19:27	18:08	16:00	15:35
19	08:34	07:34	06:22	06:00	04:53	04:23	04:50	05:48	06:50	07:52	07:58	08:44
	16:14	17:22	18:23	20:27	21:28	22:07	21:49	20:45	19:24	18:05	15:59	15:36
20	08:33	07:31	06:19	05:57	04:51	04:23	04:51	05:50	06:52	07:54	08:00	08:45
	16:16	17:25	18:25	20:29	21:30	22:07	21:47	20:43	19:21	18:03	15:57	15:36
21	08:31	07:29	06:16	05:55	04:50	04:23	04:53	05:52	06:54	07:56	08:02	08:46
	16:19	17:27	18:27	20:32	21:32	22:08	21:46	20:40	19:19	18:00	15:56	15:36
22	08:30	07:26	06:14	05:52	04:48	04:23	04:55	05:54	06:56	07:58	08:04	08:46
	16:21	17:29	18:29	20:34	21:34	22:08	21:44	20:38	19:16	17:58	15:54	15:37
23	08:28	07:24	06:11	05:50	04:46	04:23	04:56	05:56	06:58	08:00	08:06	08:47
	16:23	17:31	18:31	20:36	21:35	22:08	21:43	20:35	19:13	17:55	15:53	15:37
24	08:27	07:22	06:08	05:47	04:45	04:23	04:58	05:58	07:00	08:02	08:08	08:47
	16:25	17:33	18:33	20:38	21:37	22:08	21:41	20:33	19:11	17:53	15:51	15:38
25	08:25	07:19	06:06	05:45	04:43	04:24	05:00	06:00	07:02	08:04	08:10	08:48
	16:27	17:36	18:35	20:40	21:39	22:08	21:39	20:30	19:08	17:50	15:50	15:38
26	08:24	07:17	06:03	05:43	04:42	04:24	05:02	06:02	07:04	07:07	08:12	08:48
	16:29	17:38	18:37	20:42	21:40	22:08	21:37	20:28	19:05	16:48	15:48	15:39
27	08:22	07:14	06:00	05:40	04:40	04:25	05:03	06:04	07:06	07:09	08:14	08:48
	16:31	17:40	18:40	20:44	21:42	22:08	21:36	20:25	19:03	16:46	15:47	15:40
28	08:20	07:12	05:58	05:38	04:39	04:25	05:05	06:06	07:08	07:11	08:16	08:48
	16:33	17:42	18:42	20:46	21:44	22:08	21:34	20:23	19:00	16:43	15:46	15:41
29	08:18		05:55	05:35	04:37	04:26	05:07	06:08	07:10	07:13	08:18	08:49
	16:35		18:44	20:48	21:45	22:07	21:32	20:20	18:57	16:41	15:45	15:42
30	08:17		06:52	05:33	04:36	04:27	05:09	06:10	07:12	07:15	08:19	08:49
	16:38		19:46	20:50	21:47	22:07	21:30	20:17	18:55	16:39	15:44	15:43
31	08:15		06:50		04:35		05:11	06:12		07:17		08:48
	16:40		19:48		21:48		21:28	20:15		16:36		15:44
Potential sun hours	235	265	365	425	507	529	529	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AN - Pludmales 1

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June
1	08:48	08:13	07:09	06:47	07:14 (21)	05:31
	15:45	16:42	17:44	19:50	08:05 (2)	20:52
2	08:48	08:11	07:06	06:44	07:12 (21)	05:28
	15:46	16:44	17:46	19:52	08:01 (2)	20:54
3	08:48	08:09	07:04	06:42	07:09 (21)	05:26
	15:48	16:46	17:49	19:54	07:24 (21)	20:56
4	08:47	08:07	07:01	06:39	07:06 (21)	05:24
	15:49	16:49	17:51	19:56	07:24 (21)	20:58
5	08:47	08:05	06:59	06:36	07:04 (21)	05:21
	15:50	16:51	17:53	19:58	07:25 (21)	21:00
6	08:46	08:03	06:56	06:34	07:02 (21)	05:19
	15:52	16:53	17:55	20:00	07:25 (21)	21:03
7	08:46	08:01	06:53	06:31	07:02 (21)	05:17
	15:53	16:55	17:57	20:02	07:25 (21)	21:05
8	08:45	07:58	06:51	06:28	07:01 (21)	05:15
	15:55	16:58	17:59	20:04	07:25 (21)	21:07
9	08:44	07:56	06:48	06:26	07:01 (21)	05:13
	15:56	17:00	18:02	20:06	07:24 (21)	21:09
10	08:44	07:54	06:46	06:23	07:02 (21)	05:11
	15:58	17:02	18:04	20:09	07:24 (21)	21:11
11	08:43	07:52	06:43	06:20	07:01 (21)	05:09
	16:00	17:04	18:06	20:11	07:22 (21)	21:13
12	08:42	07:50	06:40	06:18	07:02 (21)	05:07
	16:01	17:07	18:08	20:13	07:22 (21)	21:15
13	08:41	07:48	06:38	06:15	07:03 (21)	05:04
	16:03	17:09	18:10	20:15	07:20 (21)	21:17
14	08:40	07:45	06:35	06:13	07:05 (21)	05:02
	16:05	17:11	18:12	20:17	07:18 (21)	21:18
15	08:39	07:43	06:32	06:10	07:07 (21)	05:01
	16:07	17:13	18:14	20:19	07:15 (21)	21:20
16	08:38	07:41	06:30	06:08		04:59
	16:09	17:16	18:16	11 07:08 (2)		21:22
17	08:36	07:38	06:27	06:05		04:57
	16:11	17:18	18:18	16 07:11 (2)		21:24
18	08:35	07:36	06:24	06:02		04:55
	16:12	17:20	18:21	20 07:12 (2)		21:26
19	08:34	07:34	06:22	06:00		04:53
	16:14	17:22	18:23	23 07:13 (2)		21:28
20	08:33	07:31	06:19	05:57		04:51
	16:16	17:24	18:25	25 07:15 (2)		21:30
21	08:31	07:29	06:16	05:55		04:50
	16:18	17:27	18:27	27 07:15 (2)		21:32
22	08:30	07:26	06:14	05:52		04:48
	16:21	17:29	18:29	28 07:15 (2)		21:33
23	08:28	07:24	06:11	05:50		04:46
	16:23	17:31	18:31	28 07:14 (2)		21:35
24	08:27	07:21	06:08	05:47		04:45
	16:25	17:33	18:33	29 07:15 (2)		21:37
25	08:25	07:19	06:06	05:45		04:43
	16:27	17:36	18:35	28 07:14 (2)		21:39
26	08:23	07:16	06:03	05:42		04:42
	16:29	17:38	18:37	28 07:13 (2)		21:40
27	08:22	07:14	06:00	05:40		04:40
	16:31	17:40	18:39	27 07:13 (2)		21:42
28	08:20	07:11	05:58	05:38		04:39
	16:33	17:42	18:41	26 07:12 (2)		21:44
29	08:18		05:55	05:35		04:37
	16:35		18:44	24 07:10 (2)		21:45
30	08:16		06:52	05:33		04:36
	16:38		19:46	22 08:10 (2)		21:47
31	08:15		06:50	07:49 (2)		04:35
	16:40		19:48	18 08:07 (2)		21:48
Potential sun hours	235	265	365	425	507	528
Total, worst case			380		287	
Sun reduction			0,39		0,48	
Oper. time red.			0,94		0,94	
Wind dir. red.			0,64		0,66	
Total reduction			0,23		0,30	
Total, real			89		86	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AN - Pludmales 1

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July	August	September	October	November	December
1	04:27	05:13	06:14	07:01 (21)	07:14	07:19
	22:07	21:26	20:12	18:52	16:34	15:43
2	04:28	05:15	06:16	07:00 (21)	07:16	07:22
	22:06	21:24	20:10	18:49	16:32	15:42
3	04:29	05:16	06:18	06:59 (21)	07:18	07:24
	22:06	21:22	20:07	18:46	16:30	15:41
4	04:30	05:18	06:20	06:59 (21)	07:20	07:26
	22:05	21:20	20:04	18:44	16:27	15:40
5	04:31	05:20	06:22	06:58 (21)	07:22	07:28
	22:04	21:18	20:02	18:41	16:25	15:39
6	04:32	05:22	06:24	06:58 (21)	07:24	07:30
	22:04	21:15	19:59	18:39	16:23	15:39
7	04:33	05:24	06:26	06:58 (21)	07:26	07:32
	22:03	21:13	19:56	18:36	16:21	15:38
8	04:34	05:26	06:28	07:00 (21)	07:28	07:35
	22:02	21:11	19:54	18:33	16:19	15:37
9	04:35	05:28	06:30	07:01 (21)	07:30	07:37
	22:01	21:09	19:51	18:31	16:17	15:37
10	04:37	05:30	06:32	07:03 (21)	07:33	07:39
	22:00	21:06	19:48	18:28	16:15	15:36
11	04:38	05:32	06:34	07:05 (21)	07:35	07:41
	21:59	21:04	19:46	18:25	16:13	15:36
12	04:39	05:34	06:36	07:07 (21)	07:37	07:43
	21:58	21:02	19:43	18:23	16:11	15:36
13	04:40	05:36	06:38	07:39 (2)	07:39	07:45
	21:57	21:00	19:40	18:20	16:09	15:35
14	04:42	05:38	06:40	07:38 (2)	07:41	07:47
	21:56	20:57	19:38	18:18	16:07	15:35
15	04:43	05:40	06:42	07:36 (2)	07:43	07:50
	21:54	20:55	19:35	18:15	16:06	15:35
16	04:45	05:42	06:44	07:35 (2)	07:45	07:52
	21:53	20:52	19:32	18:13	16:04	15:35
17	04:46	05:44	06:46	07:35 (2)	07:47	07:54
	21:52	20:50	19:29	18:10	16:02	15:35
18	04:48	05:46	06:48	07:34 (2)	07:49	07:56
	21:50	20:48	19:27	18:08	16:00	15:35
19	04:50	05:48	06:50	07:33 (2)	07:51	07:58
	21:49	20:45	19:24	18:05	15:59	15:36
20	04:51	05:50	06:52	07:33 (2)	07:54	08:00
	21:47	20:43	19:21	18:03	15:57	15:36
21	04:53	05:52	06:54	07:33 (2)	07:56	08:02
	21:46	20:40	19:19	18:00	15:56	15:36
22	04:54	05:54	06:56	07:33 (2)	07:58	08:04
	21:44	20:38	19:16	17:58	15:54	15:37
23	04:56	05:56	06:58	07:33 (2)	08:00	08:06
	21:42	20:35	19:13	17:55	15:53	15:37
24	04:58	05:58	07:00	07:33 (2)	08:02	08:08
	21:41	20:33	19:11	17:53	15:51	15:38
25	05:00	06:00	07:02	07:34 (2)	08:04	08:10
	21:39	20:30	19:08	17:50	15:50	15:38
26	05:02	06:02	07:04	07:35 (2)	07:06	08:12
	21:37	20:28	19:05	16:48	15:48	15:39
27	05:03	06:04	07:06	07:37 (2)	07:09	08:14
	21:35	20:25	19:03	16:46	15:47	15:40
28	05:05	06:06	07:08	07:39 (2)	07:11	08:16
	21:34	20:23	19:00	16:43	15:46	15:41
29	05:07	06:08	07:10	07:13	08:17	08:48
	21:32	20:20	18:57	16:41	15:45	15:42
30	05:09	06:10	07:12	07:15	08:19	08:48
	21:30	20:17	18:54	16:39	15:44	15:43
31	05:11	06:12	07:14	07:17		08:48
	21:28	20:15	18:52	16:36		15:44
Potential sun hours	529	470	385	324	248	216
Total, worst case		46	631			
Sun reduction		0,51	0,43			
Oper. time red.		0,94	0,94			
Wind dir. red.		0,66	0,65			
Total reduction		0,32	0,26			
Total, real		15	165			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AO - Pludmales

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June
1	08:48	08:13	07:09	06:47	07:14 (21)	05:31
	15:45	16:42	17:44	19:50	08:05 (2)	20:52
2	08:48	08:11	07:06	06:44	07:12 (21)	05:28
	15:46	16:44	17:46	19:52	08:03 (2)	20:54
3	08:48	08:09	07:04	06:42	07:09 (21)	05:26
	15:48	16:46	17:49	19:54	07:22 (21)	20:56
4	08:47	08:07	07:01	06:39	07:06 (21)	05:24
	15:49	16:49	17:51	19:56	07:23 (21)	20:58
5	08:47	08:05	06:59	06:36	07:04 (21)	05:21
	15:50	16:51	17:53	19:58	07:24 (21)	21:00
6	08:46	08:03	06:56	06:34	07:01 (21)	05:19
	15:52	16:53	17:55	20:00	07:24 (21)	21:02
7	08:46	08:01	06:53	06:31	07:01 (21)	05:17
	15:53	16:55	17:57	20:02	07:25 (21)	21:05
8	08:45	07:58	06:51	06:28	07:00 (21)	05:15
	15:55	16:58	17:59	20:04	07:24 (21)	21:07
9	08:44	07:56	06:48	06:26	07:00 (21)	05:13
	15:56	17:00	18:02	20:06	07:23 (21)	21:09
10	08:44	07:54	06:46	06:23	07:00 (21)	05:11
	15:58	17:02	18:04	20:08	07:23 (21)	21:11
11	08:43	07:52	06:43	06:20	07:00 (21)	05:09
	16:00	17:04	18:06	20:11	07:22 (21)	21:13
12	08:42	07:50	06:40	06:18	07:01 (21)	05:06
	16:01	17:07	18:08	20:13	07:21 (21)	21:15
13	08:41	07:48	06:38	06:15	07:01 (21)	05:04
	16:03	17:09	18:10	20:15	07:20 (21)	21:17
14	08:40	07:45	06:35	06:13	07:03 (21)	05:02
	16:05	17:11	18:12	20:17	07:19 (21)	21:18
15	08:39	07:43	06:32	06:10	07:04 (21)	05:01
	16:07	17:13	18:14	20:19	07:16 (21)	21:20
16	08:38	07:41	06:30	06:08	07:08 (21)	04:59
	16:09	17:16	18:16	8 07:06 (2)	07:12 (21)	21:22
17	08:36	07:38	06:27	06:05		04:57
	16:11	17:18	18:18	15 07:10 (2)		21:24
18	08:35	07:36	06:24	06:02		04:55
	16:12	17:20	18:21	19 07:11 (2)		21:26
19	08:34	07:34	06:22	06:00		04:53
	16:14	17:22	18:23	22 07:12 (2)		21:28
20	08:33	07:31	06:19	05:57		04:51
	16:16	17:24	18:25	25 07:14 (2)		21:30
21	08:31	07:29	06:16	05:55		04:50
	16:18	17:27	18:27	26 07:14 (2)		21:32
22	08:30	07:26	06:14	05:52		04:48
	16:21	17:29	18:29	27 07:14 (2)		21:33
23	08:28	07:24	06:11	05:50		04:46
	16:23	17:31	18:31	28 07:14 (2)		21:35
24	08:27	07:21	06:08	05:47		04:45
	16:25	17:33	18:33	28 07:14 (2)		21:37
25	08:25	07:19	06:06	05:45		04:43
	16:27	17:36	18:35	29 07:14 (2)		21:39
26	08:23	07:16	06:03	05:42		04:42
	16:29	17:38	18:37	28 07:13 (2)		21:40
27	08:22	07:14	06:00	05:40		04:40
	16:31	17:40	18:39	28 07:13 (2)		21:42
28	08:20	07:11	05:58	05:38		04:39
	16:33	17:42	18:41	27 07:12 (2)		21:44
29	08:18		05:55	05:35		04:37
	16:35		18:44	25 07:10 (2)		21:45
30	08:16		06:52	05:33		04:36
	16:38		19:46	24 08:10 (2)		21:47
31	08:15		06:50	07:47 (2)		04:35
	16:40		19:48	21 08:08 (2)		21:48
Potential sun hours	235	265	365	425	507	528
Total, worst case			380		302	
Sun reduction			0,39		0,48	
Oper. time red.			0,94		0,94	
Wind dir. red.			0,64		0,66	
Total reduction			0,23		0,30	
Total, real			89		90	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AO - Pludmales

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July	August	September	October	November	December
1	04:27	05:13	06:14	07:00 (21)	07:14	07:19
	22:07	21:26	20:12	18:52	16:34	15:43
2	04:28	05:15	06:16	06:59 (21)	07:16	07:22
	22:06	21:24	20:10	18:49	16:32	15:42
3	04:29	05:16	06:18	06:58 (21)	07:18	07:24
	22:06	21:22	20:07	18:46	16:30	15:41
4	04:30	05:18	06:20	06:58 (21)	07:20	07:26
	22:05	21:20	20:04	18:44	16:27	15:40
5	04:31	05:20	06:22	06:58 (21)	07:22	07:28
	22:04	21:18	20:02	18:41	16:25	15:39
6	04:32	05:22	06:24	06:58 (21)	07:24	07:30
	22:04	21:15	19:59	18:39	16:23	15:39
7	04:33	05:24	06:26	06:58 (21)	07:26	07:32
	22:03	21:13	19:56	18:36	16:21	15:38
8	04:34	05:26	06:28	07:00 (21)	07:28	07:35
	22:02	21:11	19:54	18:33	16:19	15:37
9	04:35	05:28	06:30	07:01 (21)	07:30	07:37
	22:01	21:09	19:51	18:31	16:17	15:37
10	04:37	05:30	06:32	07:03 (21)	07:33	07:39
	22:00	21:06	19:48	18:28	16:15	15:36
11	04:38	05:32	06:34	07:05 (21)	07:35	07:41
	21:59	21:04	19:46	18:25	16:13	15:36
12	04:39	05:34	06:36	07:07 (21)	07:37	07:43
	21:58	21:02	19:43	18:23	16:11	15:36
13	04:40	05:36	06:38	07:38 (2)	07:39	07:45
	21:57	21:00	19:40	18:20	16:09	15:35
14	04:42	05:38	06:40	07:37 (2)	07:41	07:47
	21:56	20:57	19:38	18:18	16:07	15:35
15	04:43	05:40	06:42	07:35 (2)	07:43	07:50
	21:54	20:55	19:35	18:15	16:06	15:35
16	04:45	05:42	06:44	07:34 (2)	07:45	07:52
	21:53	20:52	19:32	18:13	16:04	15:35
17	04:46	05:44	06:46	07:34 (2)	07:47	07:54
	21:52	20:50	19:29	18:10	16:02	15:35
18	04:48	05:46	06:48	07:33 (2)	07:49	07:56
	21:50	20:48	19:27	18:08	16:00	15:35
19	04:50	05:48	06:50	07:33 (2)	07:51	07:58
	21:49	20:45	19:24	18:05	15:59	15:36
20	04:51	05:50	06:52	07:32 (2)	07:54	08:00
	21:47	20:43	19:21	18:03	15:57	15:36
21	04:53	05:52	06:54	07:32 (2)	07:56	08:02
	21:46	20:40	19:19	18:00	15:56	15:36
22	04:54	05:54	06:56	07:32 (2)	07:58	08:04
	21:44	20:38	19:16	17:58	15:54	15:37
23	04:56	05:56	06:58	07:33 (2)	08:00	08:06
	21:42	20:35	19:13	17:55	15:53	15:37
24	04:58	05:58	07:00	07:33 (2)	08:02	08:08
	21:41	20:33	19:11	17:53	15:51	15:38
25	05:00	06:00	07:02	07:34 (2)	08:04	08:10
	21:39	20:30	19:08	17:50	15:50	15:38
26	05:02	06:02	07:04	07:35 (2)	07:06	08:12
	21:37	20:28	19:05	17:48	15:48	15:39
27	05:03	06:04	07:06	07:37 (2)	07:09	08:14
	21:35	20:25	19:03	17:46	15:47	15:40
28	05:05	06:06	07:08 (21)	07:40 (2)	07:11	08:16
	21:34	20:23	19:00	17:47 (2)	16:43	15:46
29	05:07	06:08	07:05 (21)	07:13	08:17	08:48
	21:32	20:20	18:57	16:41	15:45	15:42
30	05:09	06:10	07:02 (21)	07:15	08:19	08:48
	21:30	20:17	18:54	16:39	15:44	15:43
31	05:11	06:12	07:01 (21)	07:17		08:48
	21:28	20:15	19:07:20 (21)	16:36		15:44
Potential sun hours	529	470	385	324	248	216
Total, worst case			630			
Sun reduction		0,51	0,43			
Oper. time red.		0,94	0,94			
Wind dir. red.		0,66	0,65			
Total reduction		0,32	0,26			
Total, real		18	165			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AP - Kalna Galvani

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

January		February		March		April		May		June	
1	08:48	09:36 (1)	08:13	07:09		06:47		05:31		06:40 (19)	04:34
	15:45	29	10:05 (1)	16:42	17:44	19:50		20:52	16	06:56 (19)	21:50
2	08:48		09:37 (1)	08:11	07:06	06:44		05:28		06:42 (19)	04:32
	15:46	29	10:06 (1)	16:44	17:46	19:52		20:54	12	06:54 (19)	21:51
3	08:48		09:37 (1)	08:09	07:04	06:42		05:26			04:31
	15:48	29	10:06 (1)	16:46	17:49	19:54		20:56			21:52
4	08:47		09:38 (1)	08:07	07:01	06:39		05:24			04:30
	15:49	29	10:07 (1)	16:49	17:51	19:56		20:59			21:54
5	08:47		09:38 (1)	08:05	06:59	06:36		05:21			04:29
	15:50	29	10:07 (1)	16:51	17:53	19:58		21:01			21:55
6	08:46		09:38 (1)	08:03	06:56	06:34		05:19			04:28
	15:52	30	10:08 (1)	16:53	17:55	20:00		21:03			21:56
7	08:46		09:38 (1)	08:01	06:53	06:31		05:17			04:28
	15:53	30	10:08 (1)	16:55	17:57	20:02		21:05			21:57
8	08:45		09:38 (1)	07:59	06:51	07:19 (20)	06:28	05:15			04:27
	15:55	31	10:09 (1)	16:58	17:59	07:24 (20)	20:04	21:07			21:59
9	08:44		09:38 (1)	07:56	06:48	07:16 (20)	06:26	05:13			04:26
	15:56	31	10:09 (1)	17:00	18:02	07:26 (20)	20:06	21:09			22:00
10	08:44		09:39 (1)	07:54	06:46	07:14 (20)	06:23	05:11			04:25
	15:58	31	10:10 (1)	17:02	18:04	07:28 (20)	20:09	21:11			22:01
11	08:43		09:39 (1)	07:52	06:43	07:11 (20)	06:20	06:48 (19)	05:08		04:25
	16:00	31	10:10 (1)	17:04	18:06	07:28 (20)	20:11	9 06:57 (19)	21:13		22:02
12	08:42		09:40 (1)	07:50	06:40	07:08 (20)	06:18	06:46 (19)	05:06		04:24
	16:01	31	10:11 (1)	17:07	18:08	07:28 (20)	20:13	15 07:01 (19)	21:15		22:02
13	08:41		09:40 (1)	07:48	06:38	07:06 (20)	06:15	06:43 (19)	05:04		04:24
	16:03	32	10:12 (1)	17:09	18:10	07:29 (20)	20:15	19 07:02 (19)	21:17		22:03
14	08:40		09:40 (1)	07:45	06:35	07:05 (20)	06:13	06:41 (19)	05:02		04:23
	16:05	31	10:11 (1)	17:11	18:12	07:29 (20)	20:17	23 07:04 (19)	21:19		22:04
15	08:39		09:41 (1)	07:43	06:32	07:04 (20)	06:10	06:38 (19)	05:00		04:23
	16:07	31	10:12 (1)	17:13	18:14	07:28 (20)	20:19	26 07:04 (19)	21:21		22:05
16	08:38		09:42 (1)	07:41	06:30	07:04 (20)	06:07	06:37 (19)	04:59		04:23
	16:09	31	10:13 (1)	17:16	18:16	07:27 (20)	20:21	28 07:05 (19)	21:22		22:05
17	08:37		09:42 (1)	07:38	06:27	07:05 (20)	06:05	06:36 (19)	04:57		04:23
	16:10	30	10:12 (1)	17:18	18:19	07:27 (20)	20:23	29 07:05 (19)	21:24		22:06
18	08:35		09:42 (1)	07:36	06:24	07:05 (20)	06:02	06:36 (19)	04:55		04:23
	16:12	30	10:12 (1)	17:20	18:21	07:26 (20)	20:25	30 07:06 (19)	21:26		22:06
19	08:34		09:43 (1)	07:34	06:22	07:05 (20)	06:00	06:34 (19)	04:53		04:23
	16:14	30	10:13 (1)	17:22	18:23	07:25 (20)	20:27	31 07:05 (19)	21:28		22:07
20	08:33		09:43 (1)	07:31	06:19	07:07 (20)	05:57	06:34 (19)	04:51		04:23
	16:16	30	10:13 (1)	17:24	18:25	07:24 (20)	20:29	31 07:05 (19)	21:30		22:07
21	08:31		09:45 (1)	07:29	06:16	07:08 (20)	05:55	06:35 (19)	04:50		04:23
	16:18	28	10:13 (1)	17:27	18:27	07:21 (20)	20:31	31 07:06 (19)	21:32		22:07
22	08:30		09:45 (1)	07:26	06:14	07:11 (20)	05:52	06:34 (19)	04:48		04:23
	16:20	28	10:13 (1)	17:29	18:29	07:17 (20)	20:34	31 07:05 (19)	21:34		22:08
23	08:28		09:46 (1)	07:24	06:11		05:50	06:34 (19)	04:46		04:23
	16:23	26	10:12 (1)	17:31	18:31		20:36	31 07:05 (19)	21:35		22:08
24	08:27		09:46 (1)	07:21	06:08		05:47	06:34 (19)	04:45		04:23
	16:25	26	10:12 (1)	17:33	18:33		20:38	30 07:04 (19)	21:37		22:08
25	08:25		09:47 (1)	07:19	06:06		05:45	06:34 (19)	04:43		04:24
	16:27	24	10:11 (1)	17:36	18:35		20:40	29 07:03 (19)	21:39		22:08
26	08:23		09:49 (1)	07:16	06:03		05:42	06:35 (19)	04:42		04:24
	16:29	21	10:10 (1)	17:38	18:37		20:42	28 07:03 (19)	21:40		22:08
27	08:22		09:50 (1)	07:14	06:00		05:40	06:36 (19)	04:40		04:25
	16:31	19	10:09 (1)	17:40	18:39		20:44	26 07:02 (19)	21:42		22:08
28	08:20		09:52 (1)	07:11	05:58		05:38	06:36 (19)	04:39		04:25
	16:33	15	10:07 (1)	17:42	18:42		20:46	24 07:00 (19)	21:44		22:08
29	08:18		09:55 (1)		05:55		05:35	06:37 (19)	04:37		04:26
	16:35	10	10:05 (1)		18:44		20:48	22 06:59 (19)	21:45		22:07
30	08:16				06:52		05:33	06:38 (19)	04:36		04:26
	16:38				19:46		20:50	20 06:58 (19)	21:47		22:07
31	08:15				06:50				04:35		
	16:40				19:48				21:48		
Potential sun hours	235		265	365		425		507		529	
Total, worst case		802			259		513		28		
Sun reduction		0,15			0,39		0,48		0,53		
Oper. time red.		0,94			0,94		0,94		0,94		
Wind dir. red.		0,60			0,63		0,66		0,66		
Total reduction		0,09			0,23		0,30		0,33		
Total, real		70			59		153		9		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AP - Kalna Galvani

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	July	August	September	October	November	December
1	04:27 22:07	05:13 21:26	06:14 20:12	06:46 (19) 18:52	07:14 18:08 (20)	07:19 16:34
2	04:28 22:06	05:14 21:24	06:16 20:10	06:48 (19) 18:49	07:16 18:07 (20)	07:22 16:32
3	04:29 22:06	05:16 21:22	06:18 20:07	06:54 (19) 18:49	07:18 18:06 (20)	07:24 16:30
4	04:30 22:05	05:18 21:20	06:20 20:04	07:20 18:44	07:20 18:05 (20)	07:26 16:27
5	04:31 22:04	05:20 21:18	06:22 20:02	07:22 18:41	07:28 18:03 (20)	07:28 16:25
6	04:32 22:04	05:22 21:15	06:24 19:59	07:24 18:39	07:30 18:00 (20)	07:30 16:23
7	04:33 22:03	05:24 21:13	06:26 19:56	07:26 18:36	07:32 18:00	07:32 16:21
8	04:34 22:02	05:26 21:11	06:28 19:54	07:28 18:33	07:35 18:00	07:35 16:19
9	04:35 22:01	05:28 21:09	06:30 19:51	07:31 18:31	07:37 18:00	07:37 16:17
10	04:36 22:00	05:30 21:07	06:32 19:48	07:33 18:28	07:39 18:00	07:39 16:15
11	04:38 21:59	05:32 21:04	06:34 19:46	07:35 18:25	07:41 18:00	07:41 16:13
12	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 18:00	07:43 16:11
13	04:40 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:45 18:00	07:45 16:09
14	04:42 21:56	05:38 20:57	06:40 19:38	07:41 18:18	07:48 18:00	07:48 16:07
15	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:50 18:00	07:50 16:05
16	04:45 21:53	05:42 20:53	06:44 19:32	07:45 18:13	07:52 18:00	07:52 16:04
17	04:46 21:52	05:44 20:50	06:46 19:29	07:47 18:10	07:54 18:00	07:54 16:02
18	04:48 21:50	05:46 20:48	06:48 19:27	07:49 18:08	07:56 18:00	07:56 16:02
19	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:05	07:58 18:00	07:58 16:00
20	04:51 21:47	05:50 20:43	06:52 19:21	07:54 18:03	08:00 18:00	08:00 16:00
21	04:53 21:46	05:52 20:40	06:54 19:19	07:56 18:00	08:02 18:00	08:02 16:00
22	04:54 21:44	05:54 20:38	06:56 19:16	07:58 18:00	08:04 18:00	08:04 16:00
23	04:56 21:43	05:56 20:35	06:58 19:13	07:52 (20) 18:06 (20)	08:00 18:00	08:00 16:00
24	04:58 21:41	05:58 20:33	07:00 19:11	08:02 18:08 (20)	08:08 18:00	08:08 16:00
25	05:00 21:39	06:00 20:30	07:02 19:08	08:04 18:09 (20)	08:10 18:00	08:10 16:00
26	05:01 21:37	06:02 20:28	07:04 19:05	08:06 18:09 (20)	08:12 18:00	08:12 16:00
27	05:03 21:36	06:04 20:25	07:06 19:03	08:08 18:09 (20)	08:14 18:00	08:14 16:00
28	05:05 21:34	06:06 20:23	07:08 19:00	08:10 18:09 (20)	08:16 18:00	08:16 16:00
29	05:07 21:32	06:08 20:20	07:10 18:57	08:12 18:09 (20)	08:18 18:00	08:18 16:00
30	05:09 21:30	06:10 20:17	07:12 18:54	08:14 18:09 (20)	08:20 18:00	08:20 16:00
31	05:11 21:28	06:12 20:15	07:14 19:01	08:16 18:09 (20)	08:22 18:00	08:22 16:00
Potential sun hours	530	470	385	324	248	216
Total, worst case		533	197	89	458	870
Sun reduction		0,51	0,43	0,27	0,09	0,09
Oper. time red.		0,94	0,94	0,94	0,94	0,94
Wind dir. red.		0,66	0,63	0,63	0,60	0,60
Total reduction		0,32	0,25	0,16	0,05	0,05
Total, real		170	50	14	24	42

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AQ - Ziedini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:31 20:52	04:34 21:50	04:27 22:07	05:13 21:26	06:14 20:12	07:14 18:52	07:20 16:34	08:21 15:43
2	08:48 15:47	08:11 16:44	07:06 17:47	06:44 19:52	05:28 20:54	04:33 21:51	04:28 22:06	05:15 21:24	06:16 20:10	07:16 18:49	07:22 16:32	08:23 15:42
3	08:48 15:48	08:09 16:47	07:04 17:49	06:42 19:54	05:26 20:57	04:32 21:52	04:29 22:06	05:17 21:22	06:18 20:07	07:18 18:47	07:24 16:30	08:25 15:41
4	08:47 15:49	08:07 16:49	07:01 17:51	06:39 19:56	05:24 20:59	04:31 21:54	04:30 22:05	05:19 21:20	06:20 20:04	07:20 18:44	07:26 16:28	08:26 15:40
5	08:47 15:50	08:05 16:51	06:59 17:53	06:36 19:58	05:22 21:01	04:30 21:55	04:31 22:04	05:20 21:18	06:22 20:02	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:52	08:03 16:53	06:56 17:55	06:34 20:00	05:19 21:03	04:29 21:56	04:32 22:04	05:22 21:16	06:24 19:59	07:24 18:39	07:30 16:23	08:29 15:39
7	08:46 15:53	08:01 16:56	06:54 17:57	06:31 20:02	05:17 21:05	04:28 21:57	04:33 22:03	05:24 21:13	06:26 19:56	07:27 18:36	07:33 16:21	08:31 15:38
8	08:45 15:55	07:59 16:58	06:51 18:00	06:28 20:04	05:15 21:07	04:27 21:59	04:34 22:02	05:26 21:11	06:28 19:54	07:29 18:33	07:35 16:19	08:32 15:37
9	08:45 15:57	07:56 17:00	06:48 18:02	06:26 20:07	05:13 21:09	04:26 22:00	04:35 22:01	05:28 21:09	06:30 19:51	07:31 18:31	07:37 16:17	08:34 15:37
10	08:44 15:58	07:54 17:02	06:46 18:04	06:23 20:09	05:11 21:11	04:26 22:01	04:37 22:00	05:30 21:07	06:32 19:48	07:33 18:28	07:39 16:15	08:35 15:36
11	08:43 16:00	07:52 17:04	06:43 18:06	06:21 20:11	05:09 21:13	04:25 22:02	04:38 21:59	05:32 21:04	06:34 19:46	07:35 18:26	07:41 16:13	08:36 15:36
12	08:42 16:02	07:50 17:07	06:40 18:08	06:18 20:13	05:07 21:15	04:25 22:02	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:38 15:36
13	08:41 16:03	07:48 17:09	06:38 18:10	06:15 20:15	05:05 21:17	04:24 22:03	04:41 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:45 16:09	08:39 15:36
14	08:40 16:05	07:45 17:11	06:35 18:12	06:13 20:17	05:03 21:19	04:24 22:04	04:42 21:56	05:38 20:57	06:40 19:38	07:41 18:18	07:48 16:07	08:40 15:35
15	08:39 16:07	07:43 17:13	06:33 18:14	06:10 20:19	05:01 21:21	04:23 22:05	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:06	08:41 15:35
16	08:38 16:09	07:41 17:16	06:30 18:17	06:08 20:21	04:59 21:22	04:23 22:05	04:45 21:53	05:42 20:53	06:44 19:32	07:45 18:13	07:52 16:04	08:42 15:35
17	08:37 16:11	07:38 17:18	06:27 18:19	06:05 20:23	04:57 21:24	04:23 22:06	04:46 21:52	05:44 20:50	06:46 19:30	07:47 18:10	07:54 16:02	08:43 15:35
18	08:35 16:13	07:36 17:20	06:25 18:21	06:03 20:25	04:55 21:26	04:23 22:06	04:48 21:50	05:46 20:48	06:48 19:27	07:49 18:08	07:56 16:00	08:44 15:36
19	08:34 16:15	07:34 17:22	06:22 18:23	06:00 20:27	04:53 21:28	04:23 22:07	04:50 21:49	05:48 20:45	06:50 19:24	07:52 18:05	07:58 15:59	08:44 15:36
20	08:33 16:17	07:31 17:25	06:19 18:25	05:57 20:29	04:51 21:30	04:23 22:07	04:51 21:47	05:50 20:43	06:52 19:22	07:54 18:03	08:00 15:57	08:45 15:36
21	08:31 16:19	07:29 17:27	06:16 18:27	05:55 20:32	04:50 21:32	04:23 22:07	04:53 21:46	05:52 20:40	06:54 19:19	07:56 18:00	08:02 15:56	08:46 15:36
22	08:30 16:21	07:26 17:29	06:14 18:29	05:52 20:34	04:48 21:34	04:23 22:08	04:55 21:44	05:54 20:38	06:56 19:16	07:58 17:58	08:04 15:54	08:46 15:37
23	08:28 16:23	07:24 17:31	06:11 18:31	05:50 20:36	04:46 21:35	04:23 22:08	04:56 21:43	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:53	08:47 15:37
24	08:27 16:25	07:22 17:33	06:08 18:33	05:48 20:38	04:45 21:37	04:24 22:08	04:58 21:41	05:58 20:33	07:00 19:11	08:02 17:53	08:08 15:51	08:47 15:38
25	08:25 16:27	07:19 17:36	06:06 18:35	05:45 20:40	04:43 21:39	04:24 22:08	05:00 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:50	08:48 15:39
26	08:24 16:29	07:17 17:38	06:03 18:37	05:43 20:42	04:42 21:40	04:24 22:08	05:02 21:37	06:02 20:28	07:04 19:05	07:07 16:48	08:12 15:49	08:48 15:39
27	08:22 16:31	07:14 17:40	06:00 18:40	05:40 20:44	04:40 21:42	04:25 22:08	05:03 21:36	06:04 20:25	07:06 19:03	07:09 16:46	08:14 15:47	08:48 15:40
28	08:20 16:33	07:12 17:42	05:58 18:42	05:38 20:46	04:39 21:44	04:25 22:08	05:05 21:34	06:06 20:23	07:08 19:00	07:11 16:43	08:16 15:46	08:48 15:41
29	08:18 16:36		05:55 18:44	05:35 20:48	04:37 21:45	04:26 22:07	05:07 21:32	06:08 20:20	07:10 18:57	07:13 16:41	08:18 15:45	08:48 15:42
30	08:17 16:38		06:52 19:46	05:33 20:50	04:36 21:47	04:27 22:07	05:09 21:30	06:10 20:18	07:12 18:55	07:15 16:39	08:19 15:44	08:48 15:43
31	08:15 16:40		06:50 19:48		04:35 21:48		05:11 21:28	06:12 20:15	07:17 16:36			08:48 15:44
Potential sun hours	235	265	365	425	507	528	529	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AR - Strautini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:31 20:52	04:34 21:50	04:27 22:07	05:13 21:26	06:14 20:12	07:14 18:52	07:20 16:34	08:21 15:43
2	08:48 15:47	08:11 16:44	07:06 17:47	06:44 19:52	05:28 20:54	04:33 21:51	04:28 22:06	05:15 21:24	06:16 20:10	07:16 18:49	07:22 16:32	08:23 15:42
3	08:48 15:48	08:09 16:47	07:04 17:49	06:42 19:54	05:26 20:57	04:32 21:52	04:29 22:06	05:17 21:22	06:18 20:07	07:18 18:47	07:24 16:30	08:25 15:41
4	08:47 15:49	08:07 16:49	07:01 17:51	06:39 19:56	05:24 20:59	04:31 21:54	04:30 22:05	05:19 21:20	06:20 20:04	07:20 18:44	07:26 16:28	08:26 15:40
5	08:47 15:51	08:05 16:51	06:59 17:53	06:36 19:58	05:22 21:01	04:30 21:55	04:31 22:04	05:20 21:18	06:22 20:02	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:52	08:03 16:53	06:56 17:55	06:34 20:00	05:19 21:03	04:29 21:56	04:32 22:04	05:22 21:16	06:24 19:59	07:24 18:39	07:30 16:23	08:29 15:39
7	08:46 15:53	08:01 16:56	06:54 17:57	06:31 20:02	05:17 21:05	04:28 21:57	04:33 22:03	05:24 21:13	06:26 19:56	07:27 18:36	07:33 16:21	08:31 15:38
8	08:45 15:55	07:59 16:58	06:51 18:00	06:28 20:04	05:15 21:07	04:27 21:59	04:34 22:02	05:26 21:11	06:28 19:54	07:29 18:33	07:35 16:19	08:32 15:37
9	08:45 15:57	07:57 17:00	06:48 18:02	06:26 20:07	05:13 21:09	04:26 22:00	04:35 22:01	05:28 21:09	06:30 19:51	07:31 18:31	07:37 16:17	08:34 15:37
10	08:44 15:58	07:54 17:02	06:46 18:04	06:23 20:09	05:11 21:11	04:26 22:01	04:37 22:00	05:30 21:07	06:32 19:48	07:33 18:28	07:39 16:15	08:35 15:36
11	08:43 16:00	07:52 17:04	06:43 18:06	06:21 20:11	05:09 21:13	04:25 22:02	04:38 21:59	05:32 21:04	06:34 19:46	07:35 18:26	07:41 16:13	08:36 15:36
12	08:42 16:02	07:50 17:07	06:40 18:08	06:18 20:13	05:07 21:15	04:25 22:02	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:38 15:36
13	08:41 16:03	07:48 17:09	06:38 18:10	06:15 20:15	05:05 21:17	04:24 22:03	04:41 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:45 16:09	08:39 15:36
14	08:40 16:05	07:45 17:11	06:35 18:12	06:13 20:17	05:03 21:19	04:24 22:04	04:42 21:56	05:38 20:57	06:40 19:38	07:41 18:18	07:48 16:07	08:40 15:35
15	08:39 16:07	07:43 17:13	06:33 18:14	06:10 20:19	05:01 21:21	04:23 22:05	04:43 21:55	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:06	08:41 15:35
16	08:38 16:09	07:41 17:16	06:30 18:17	06:08 20:21	04:59 21:22	04:23 22:05	04:45 21:53	05:42 20:53	06:44 19:32	07:45 18:13	07:52 16:04	08:42 15:35
17	08:37 16:11	07:38 17:18	06:27 18:19	06:05 20:23	04:57 21:24	04:23 22:06	04:46 21:52	05:44 20:50	06:46 19:30	07:47 18:10	07:54 16:02	08:43 15:35
18	08:35 16:13	07:36 17:20	06:25 18:21	06:03 20:25	04:55 21:26	04:23 22:06	04:48 21:50	05:46 20:48	06:48 19:27	07:49 18:08	07:56 16:00	08:44 15:36
19	08:34 16:15	07:34 17:22	06:22 18:23	06:00 20:27	04:53 21:28	04:23 22:07	04:50 21:49	05:48 20:45	06:50 19:24	07:52 18:05	07:58 15:59	08:44 15:36
20	08:33 16:17	07:31 17:25	06:19 18:25	05:57 20:29	04:51 21:30	04:23 22:07	04:51 21:47	05:50 20:43	06:52 19:22	07:54 18:03	08:00 15:57	08:45 15:36
21	08:31 16:19	07:29 17:27	06:17 18:27	05:55 20:32	04:50 21:32	04:23 22:07	04:53 21:46	05:52 20:40	06:54 19:19	07:56 18:00	08:02 15:56	08:46 15:36
22	08:30 16:21	07:26 17:29	06:14 18:29	05:52 20:34	04:48 21:34	04:23 22:08	04:55 21:44	05:54 20:38	06:56 19:16	07:58 17:58	08:04 15:54	08:46 15:37
23	08:28 16:23	07:24 17:31	06:11 18:31	05:50 20:36	04:46 21:35	04:23 22:08	04:56 21:43	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:53	08:47 15:37
24	08:27 16:25	07:22 17:33	06:08 18:33	05:48 20:38	04:45 21:37	04:24 22:08	04:58 21:41	05:58 20:33	07:00 19:11	08:02 17:53	08:08 15:51	08:47 15:38
25	08:25 16:27	07:19 17:36	06:06 18:35	05:45 20:40	04:43 21:39	04:24 22:08	05:00 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:50	08:48 15:39
26	08:24 16:29	07:17 17:38	06:03 18:37	05:43 20:42	04:42 21:40	04:24 22:08	05:02 21:37	06:02 20:28	07:04 19:05	07:07 16:48	08:12 15:49	08:48 15:39
27	08:22 16:31	07:14 17:40	06:00 18:40	05:40 20:44	04:40 21:42	04:25 22:08	05:03 21:36	06:04 20:25	07:06 19:03	07:09 16:46	08:14 15:47	08:48 15:40
28	08:20 16:33	07:12 17:42	05:58 18:42	05:38 20:46	04:39 21:44	04:25 22:08	05:05 21:34	06:06 20:23	07:08 19:00	07:11 16:43	08:16 15:46	08:48 15:41
29	08:18 16:36		05:55 18:44	05:35 20:48	04:38 21:45	04:26 22:07	05:07 21:32	06:08 20:20	07:10 18:57	07:13 16:41	08:18 15:45	08:48 15:42
30	08:17 16:38		06:52 19:46	05:33 20:50	04:36 21:47	04:27 22:07	05:09 21:30	06:10 20:18	07:12 18:55	07:15 16:39	08:19 15:44	08:48 15:43
31	08:15 16:40		06:50 19:48		04:35 21:48		05:11 21:28	06:12 20:15	07:17 16:36			08:48 15:44
Potential sun hours	235	265	365	425	507	528	529	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AS - Druvas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	January	February	March		April		May	June	July	August	September		October	November	December
1	08:48	08:13	07:09		06:47								07:14	07:19	08:21
	15:45	16:42	17:44		19:50	13	08:02 (1)	20:52	21:50	22:07	21:26		18:52	16:34	15:43
2	08:48	08:11	07:06		06:44		07:54 (1)	05:28	04:33	04:28	05:15		07:16	07:22	08:23
	15:46	16:44	17:47		19:52	4	07:58 (1)	20:54	21:51	22:06	21:24		18:49	16:32	15:42
3	08:48	08:09	07:04		06:42			05:26	04:31	04:29	05:16		07:18	07:24	08:25
	15:48	16:46	17:49		19:54			20:56	21:52	22:06	21:22		18:47	16:30	15:41
4	08:47	08:07	07:01		06:39			05:24	04:30	04:30	05:18		07:20	07:26	08:26
	15:49	16:49	17:51		19:56			20:59	21:54	22:05	21:20		18:44	16:27	15:40
5	08:47	08:05	06:59		06:36			05:22	04:29	04:31	05:20		07:22	07:28	08:28
	15:50	16:51	17:53		19:58			21:01	21:55	22:04	21:18		18:41	16:25	15:39
6	08:46	08:03	06:56		06:34			05:19	04:29	04:32	05:22		07:24	07:30	08:29
	15:52	16:53	17:55		20:00			21:03	21:56	22:04	21:15		18:39	16:23	15:39
7	08:46	08:01	06:54		06:31			05:17	04:28	04:33	05:24		07:26	07:32	08:31
	15:53	16:55	17:57		20:02			21:05	21:57	22:03	21:13		18:36	16:21	15:38
8	08:45	07:59	06:51		06:28			05:15	04:27	04:34	05:26		07:29	07:35	08:32
	15:55	16:58	17:59		20:04			21:07	21:59	22:02	21:11		18:33	16:19	15:37
9	08:44	07:56	06:48		06:26			05:13	04:26	04:35	05:28		07:31	07:37	08:34
	15:56	17:00	18:02		20:07			21:09	22:00	22:01	21:09		18:31	16:17	15:37
10	08:44	07:54	06:46		06:23			05:11	04:26	04:37	05:30		07:33	07:39	08:35
	15:58	17:02	18:04		20:09			21:11	22:01	22:00	21:07		18:28	16:15	15:36
11	08:43	07:52	06:43		06:21			05:09	04:25	04:38	05:32		07:35	07:41	08:36
	16:00	17:04	18:06		20:11			21:13	22:01	21:59	21:04	8	07:52 (1)	18:25	16:13
12	08:42	07:50	06:40		06:18			05:07	04:24	04:39	05:34		07:40 (1)	07:37	07:43
	16:01	17:07	18:08		20:13			21:15	22:02	21:58	21:02	15	07:55 (1)	18:23	16:11
13	08:41	07:48	06:38		06:15			05:05	04:24	04:40	05:36		07:38 (1)	07:39	07:45
	16:03	17:09	18:10		20:15			21:17	22:03	21:57	21:00	19	07:57 (1)	18:20	16:09
14	08:40	07:45	06:35		06:13			05:03	04:24	04:42	05:38		07:37 (1)	07:41	07:48
	16:05	17:11	18:12		20:17			21:19	22:04	21:56	20:57	21	07:58 (1)	18:18	16:07
15	08:39	07:43	06:32		06:10			05:01	04:23	04:43	05:40		07:35 (1)	07:43	07:50
	16:07	17:13	18:14		20:19			21:21	22:05	21:54	20:55	24	07:59 (1)	18:15	16:06
16	08:38	07:41	06:30		06:08			04:59	04:23	04:45	05:42		07:34 (1)	07:45	07:52
	16:09	17:16	18:16	8	07:05 (1)	20:21		21:22	22:05	21:53	20:53	25	07:59 (1)	18:13	16:04
17	08:37	07:38	06:27		06:55 (1)	06:05		04:57	04:23	04:46	05:44		07:33 (1)	07:47	07:54
	16:11	17:18	18:19	14	07:09 (1)	20:23		21:24	22:06	21:52	20:50	27	08:00 (1)	18:10	16:02
18	08:35	07:36	06:24		06:52 (1)	06:02		04:55	04:23	04:48	05:46		07:33 (1)	07:49	07:56
	16:13	17:20	18:21	18	07:10 (1)	20:25		21:26	22:06	21:50	20:48	19	08:00 (1)	18:08	16:00
19	08:34	07:34	06:22		06:49 (1)	06:00		04:53	04:23	04:50	05:48		07:32 (1)	07:51	07:58
	16:14	17:22	18:23	22	07:11 (1)	20:27		21:28	22:07	21:49	20:45	28	08:00 (1)	18:05	15:59
20	08:33	07:31	06:19		06:48 (1)	05:57		04:51	04:23	04:51	05:50		07:32 (1)	07:54	08:00
	16:16	17:25	18:25	24	07:12 (1)	20:29		21:30	22:07	21:47	20:43	27	07:59 (1)	18:03	15:57
21	08:31	07:29	06:16		06:47 (1)	05:55		04:50	04:23	04:53	05:52		07:31 (1)	07:56	08:02
	16:19	17:27	18:27	25	07:12 (1)	20:32		21:32	22:07	21:46	20:40	28	07:59 (1)	18:00	15:56
22	08:30	07:26	06:14		06:46 (1)	05:52		04:48	04:23	04:55	05:54		07:31 (1)	07:58	08:04
	16:21	17:29	18:29	26	07:12 (1)	20:34		21:34	22:08	21:44	20:38	27	07:58 (1)	17:58	15:54
23	08:28	07:24	06:11		06:46 (1)	05:50		04:46	04:23	04:56	05:56		07:32 (1)	08:00	08:06
	16:23	17:31	18:31	27	07:13 (1)	20:36		21:35	22:08	21:43	20:35	25	07:57 (1)	17:55	15:53
24	08:27	07:21	06:08		06:45 (1)	05:47		04:45	04:23	04:58	05:58		07:32 (1)	08:02	08:08
	16:25	17:33	18:33	28	07:13 (1)	20:38		21:37	22:08	21:41	20:33	24	07:56 (1)	17:53	15:51
25	08:25	07:19	06:06		06:45 (1)	05:45		04:43	04:24	05:00	06:00		07:33 (1)	08:04	08:10
	16:27	17:36	18:35	27	07:12 (1)	20:40		21:39	22:08	21:39	20:30	21	07:54 (1)	17:50	15:50
26	08:23	07:17	06:03		06:44 (1)	05:43		04:42	04:24	05:02	06:02		07:35 (1)	07:06	08:12
	16:29	17:38	18:37	27	07:11 (1)	20:42		21:40	22:08	21:37	20:28	18	07:53 (1)	16:48	15:48
27	08:22	07:14	06:00		06:45 (1)	05:40		04:40	04:25	05:03	06:04		07:37 (1)	07:09	08:14
	16:31	17:40	18:39	26	07:11 (1)	20:44		21:42	22:08	21:36	20:25	13	07:50 (1)	16:46	15:47
28	08:20	07:11	05:58		06:45 (1)	05:38		04:39	04:25	05:05	06:06		07:39 (1)	07:11	08:16
	16:33	17:42	18:42	25	07:10 (1)	20:46		21:44	22:08	21:34	20:23	7	07:46 (1)	16:43	15:46
29	08:18		05:55		06:45 (1)	05:35		04:37	04:26	05:07	06:08		07:13	08:18	08:48
	16:35		18:44	23	07:08 (1)	20:48		21:45	22:07	21:32	20:20		16:41	15:45	15:42
30	08:16		06:52		07:47 (1)	05:33		04:36	04:27	05:09	06:10		07:15	08:19	08:48
	16:38		19:46	20	08:07 (1)	20:50		21:47	22:07	21:30	20:17		16:39	15:44	15:43
31	08:15		06:50		07:47 (1)			04:35		05:11	06:12		07:17		08:48
	16:40		19:48	18	08:05 (1)			21:48		21:28	20:15		16:36		15:44
Potential sun hours	235	265	365		425			507	528	529	470	385	324	248	216
Total, worst case				358		17						384			
Sun reduction				0,39		0,48						0,43			
Oper. time red.				0,94		0,94						0,94			
Wind dir. red.				0,64		0,64						0,64			
Total reduction				0,23		0,29						0,26			
Total, real				84		5						99			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AT - Saulkrasti

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:31 20:52	04:34 21:50	04:27 22:07	05:13 21:26	06:14 20:12	07:14 18:52	07:20 16:34	08:21 15:43
2	08:48 15:47	08:11 16:44	07:06 17:47	06:44 19:52	05:28 20:54	04:33 21:51	04:28 22:06	05:15 21:24	06:16 20:10	07:16 18:49	07:22 16:32	08:23 15:42
3	08:48 15:48	08:09 16:47	07:04 17:49	06:42 19:54	05:26 20:57	04:32 21:53	04:29 22:06	05:17 21:22	06:18 20:07	07:18 18:47	07:24 16:30	08:25 15:41
4	08:47 15:49	08:07 16:49	07:01 17:51	06:39 19:56	05:24 20:59	04:31 21:54	04:30 22:05	05:19 21:20	06:20 20:04	07:20 18:44	07:26 16:28	08:26 15:40
5	08:47 15:51	08:05 16:51	06:59 17:53	06:36 19:58	05:22 21:01	04:30 21:55	04:31 22:04	05:20 21:18	06:22 20:02	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:52	08:03 16:53	06:56 17:55	06:34 20:00	05:19 21:03	04:29 21:56	04:32 22:04	05:22 21:16	06:24 19:59	07:24 18:39	07:30 16:23	08:29 15:39
7	08:46 15:53	08:01 16:56	06:54 17:57	06:31 20:02	05:17 21:05	04:28 21:57	04:33 22:03	05:24 21:13	06:26 19:56	07:27 18:36	07:33 16:21	08:31 15:38
8	08:45 15:55	07:59 16:58	06:51 18:00	06:28 20:05	05:15 21:07	04:27 21:59	04:34 22:02	05:26 21:11	06:28 19:54	07:29 18:33	07:35 16:19	08:32 15:37
9	08:45 15:57	07:57 17:00	06:48 18:02	06:26 20:07	05:13 21:09	04:26 22:00	04:35 22:01	05:28 21:09	06:30 19:51	07:31 18:31	07:37 16:17	08:34 15:37
10	08:44 15:58	07:54 17:02	06:46 18:04	06:23 20:09	05:11 21:11	04:26 22:01	04:37 22:00	05:30 21:07	06:32 19:48	07:33 18:28	07:39 16:15	08:35 15:37
11	08:43 16:00	07:52 17:05	06:43 18:06	06:21 20:11	05:09 21:13	04:25 22:02	04:38 21:59	05:32 21:04	06:34 19:46	07:35 18:26	07:41 16:13	08:36 15:36
12	08:42 16:02	07:50 17:07	06:40 18:08	06:18 20:13	05:07 21:15	04:25 22:02	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:38 15:36
13	08:41 16:03	07:48 17:09	06:38 18:10	06:15 20:15	05:05 21:17	04:24 22:03	04:41 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:46 16:09	08:39 15:36
14	08:40 16:05	07:45 17:11	06:35 18:12	06:13 20:17	05:03 21:19	04:24 22:04	04:42 21:56	05:38 20:57	06:40 19:38	07:41 18:18	07:48 16:07	08:40 15:35
15	08:39 16:07	07:43 17:13	06:33 18:14	06:10 20:19	05:01 21:21	04:23 22:05	04:43 21:55	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:06	08:41 15:35
16	08:38 16:09	07:41 17:16	06:30 18:17	06:08 20:21	04:59 21:22	04:23 22:05	04:45 21:53	05:42 20:53	06:44 19:32	07:45 18:13	07:52 16:04	08:42 15:35
17	08:37 16:11	07:38 17:18	06:27 18:19	06:05 20:23	04:57 21:24	04:23 22:06	04:46 21:52	05:44 20:50	06:46 19:30	07:47 18:10	07:54 16:02	08:43 15:35
18	08:35 16:13	07:36 17:20	06:25 18:21	06:03 20:25	04:55 21:26	04:23 22:06	04:48 21:50	05:46 20:48	06:48 19:27	07:49 18:08	07:56 16:00	08:44 15:36
19	08:34 16:15	07:34 17:22	06:22 18:23	06:00 20:27	04:53 21:28	04:23 22:07	04:50 21:49	05:48 20:45	06:50 19:24	07:52 18:05	07:58 15:59	08:44 15:36
20	08:33 16:17	07:31 17:25	06:19 18:25	05:57 20:30	04:51 21:30	04:23 22:07	04:51 21:47	05:50 20:43	06:52 19:22	07:54 18:03	08:00 15:57	08:45 15:36
21	08:31 16:19	07:29 17:27	06:17 18:27	05:55 20:32	04:50 21:32	04:23 22:08	04:53 21:46	05:52 20:40	06:54 19:19	07:56 18:00	08:02 15:56	08:46 15:36
22	08:30 16:21	07:26 17:29	06:14 18:29	05:52 20:34	04:48 21:34	04:23 22:08	04:55 21:44	05:54 20:38	06:56 19:16	07:58 17:58	08:04 15:54	08:46 15:37
23	08:28 16:23	07:24 17:31	06:11 18:31	05:50 20:36	04:46 21:35	04:23 22:08	04:56 21:43	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:53	08:47 15:37
24	08:27 16:25	07:22 17:33	06:08 18:33	05:48 20:38	04:45 21:37	04:24 22:08	04:58 21:41	05:58 20:33	07:00 19:11	08:02 17:53	08:08 15:51	08:47 15:38
25	08:25 16:27	07:19 17:36	06:06 18:35	05:45 20:40	04:43 21:39	04:24 22:08	05:00 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:50	08:48 15:39
26	08:24 16:29	07:17 17:38	06:03 18:37	05:43 20:42	04:42 21:40	04:24 22:08	05:02 21:37	06:02 20:28	07:04 19:05	07:07 16:48	08:12 15:49	08:48 15:39
27	08:22 16:31	07:14 17:40	06:00 18:40	05:40 20:44	04:40 21:42	04:25 22:08	05:03 21:36	06:04 20:25	07:06 19:03	07:09 16:46	08:14 15:47	08:48 15:40
28	08:20 16:33	07:12 17:42	05:58 18:42	05:38 20:46	04:39 21:44	04:25 22:08	05:05 21:34	06:06 20:23	07:08 19:00	07:11 16:43	08:16 15:46	08:48 15:41
29	08:18 16:36		05:55 18:44	05:35 20:48	04:38 21:45	04:26 22:07	05:07 21:32	06:08 20:20	07:10 18:57	07:13 16:41	08:18 15:45	08:49 15:42
30	08:17 16:38		06:52 19:46	05:33 20:50	04:36 21:47	04:27 22:07	05:09 21:30	06:10 20:18	07:12 18:55	07:15 16:39	08:19 15:44	08:49 15:43
31	08:15 16:40		06:50 19:48		04:35 21:48		05:11 21:28	06:12 20:15	07:17 16:36			08:48 15:44
Potential sun hours	235	265	365	425	507	528	529	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AU - Jaundruvas 1

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

		January	February	March		April		May	June	July	August	September		October	November	December
1	08:48	08:13	07:09		06:47		07:29 (1)	05:31	04:34	04:27	05:13	06:14		07:14	07:19	08:21
	15:45	16:42	17:44		19:50	27	07:56 (1)	20:52	21:50	22:07	21:26	20:12		18:52	16:34	15:43
2	08:48	08:11	07:06		06:44		07:29 (1)	05:28	04:33	04:28	05:15	06:16		07:16	07:22	08:23
	15:46	16:44	17:47		19:52	27	07:56 (1)	20:54	21:51	22:06	21:24	20:10		18:49	16:32	15:42
3	08:48	08:09	07:04		06:42		07:29 (1)	05:26	04:31	04:29	05:16	06:18		07:18	07:24	08:25
	15:48	16:46	17:49		19:54	26	07:55 (1)	20:56	21:52	22:06	21:22	20:07		18:47	16:30	15:41
4	08:47	08:07	07:01		06:39		07:30 (1)	05:24	04:30	04:30	05:18	06:20		07:20	07:26	08:26
	15:49	16:49	17:51		19:56	25	07:55 (1)	20:59	21:54	22:05	21:20	20:04		18:44	16:27	15:40
5	08:47	08:05	06:59		06:36		07:31 (1)	05:22	04:29	04:31	05:20	06:22		07:32 (1)	07:22	08:28
	15:50	16:51	17:53		19:58	22	07:53 (1)	21:01	21:55	22:04	21:18	20:02	12	07:44 (1)	18:41	16:25
6	08:46	08:03	06:56		06:34		07:31 (1)	05:19	04:29	04:32	05:22	06:24		07:29 (1)	07:24	08:30
	15:52	16:53	17:55		20:00	20	07:51 (1)	21:03	21:56	22:04	21:15	19:59	17	07:46 (1)	18:39	16:23
7	08:46	08:01	06:54		06:31		07:34 (1)	05:17	04:28	04:33	05:24	06:26		07:27 (1)	07:26	07:32
	15:53	16:55	17:57		20:02	15	07:49 (1)	21:05	21:57	22:03	21:13	19:56	20	07:47 (1)	18:36	16:21
8	08:45	07:59	06:51		06:28		07:36 (1)	05:15	04:27	04:34	05:26	06:28		07:25 (1)	07:29	07:35
	15:55	16:58	17:59		20:04	9	07:45 (1)	21:07	21:58	22:02	21:11	19:54	23	07:48 (1)	18:33	16:19
9	08:44	07:56	06:48		06:26		05:13	04:26	04:35	05:28	06:30	07:32		07:24 (1)	07:31	07:37
	15:56	17:00	18:02		20:07		21:09	22:00	22:01	21:09	19:51	18:31	25	07:49 (1)	18:31	16:17
10	08:44	07:54	06:46		06:23		05:11	04:26	04:37	05:30	06:32	07:34		07:22 (1)	07:33	07:39
	15:58	17:02	18:04		20:09		21:11	22:01	22:00	21:07	19:48	18:28	27	07:49 (1)	18:28	16:15
11	08:43	07:52	06:43		06:21		05:09	04:25	04:38	05:32	06:34	07:36		07:21 (1)	07:35	07:41
	16:00	17:04	18:06		20:11		21:13	22:01	21:59	21:04	19:46	18:25	28	07:49 (1)	18:25	16:13
12	08:42	07:50	06:40		06:18		05:07	04:24	04:39	05:34	06:36	07:38		07:21 (1)	07:37	07:43
	16:01	17:07	18:08		20:13		21:15	22:02	21:58	21:02	19:43	18:23	28	07:49 (1)	18:23	16:11
13	08:41	07:48	06:38		06:15		05:05	04:24	04:41	05:36	06:38	07:40		07:20 (1)	07:39	07:45
	16:03	17:09	18:10		20:15		21:17	22:03	21:57	21:00	19:40	18:20	29	07:49 (1)	18:20	16:09
14	08:40	07:45	06:35		06:13		05:03	04:24	04:42	05:38	06:40	07:42		07:20 (1)	07:41	07:48
	16:05	17:11	18:12		20:17		21:19	22:04	21:56	20:57	19:38	18:18	28	07:48 (1)	18:18	16:07
15	08:39	07:43	06:32		06:10		05:01	04:23	04:43	05:40	06:42	07:44		07:20 (1)	07:43	07:50
	16:07	17:13	18:14		20:19		21:20	22:05	21:54	20:55	19:35	18:15	28	07:48 (1)	18:15	16:06
16	08:38	07:41	06:30		06:08		04:59	04:23	04:45	05:42	06:44	07:46		07:20 (1)	07:45	07:52
	16:09	17:16	18:16		20:21		21:22	22:05	21:53	20:53	19:32	18:13	27	07:47 (1)	18:13	16:04
17	08:37	07:38	06:27		06:05		04:57	04:23	04:46	05:44	06:46	07:48		07:20 (1)	07:47	07:54
	16:11	17:18	18:19		20:23		21:24	22:06	21:52	20:50	19:30	18:10	26	07:46 (1)	18:10	16:02
18	08:35	07:36	06:24		06:02		04:55	04:23	04:48	05:46	06:48	07:50		07:21 (1)	07:49	07:56
	16:13	17:20	18:21		20:25		21:26	22:06	21:50	20:48	19:27	18:07	24	07:45 (1)	18:08	16:00
19	08:34	07:34	06:22		06:00		04:53	04:23	04:50	05:48	06:50	07:52		07:21 (1)	07:51	07:58
	16:14	17:22	18:23		20:27		21:28	22:07	21:49	20:45	19:24	18:05	23	07:44 (1)	18:05	15:59
20	08:33	07:31	06:19		05:57		04:51	04:23	04:51	05:50	06:52	07:54		07:23 (1)	07:54	08:00
	16:16	17:25	18:25		20:29		21:30	22:07	21:47	20:43	19:21	18:03	19	07:42 (1)	18:03	15:57
21	08:31	07:29	06:16		05:55		04:50	04:23	04:53	05:52	06:54	07:56		07:25 (1)	07:56	08:02
	16:19	17:27	18:27		20:31		21:32	22:07	21:46	20:40	19:19	18:00	15	07:40 (1)	18:00	15:56
22	08:30	07:26	06:14		06:41 (1)		05:52	04:48	04:23	04:55	05:54	06:56		07:27 (1)	07:58	08:04
	16:21	17:29	18:29	11	06:52 (1)		20:34	21:34	22:08	21:44	20:38	19:16	10	07:37 (1)	17:58	15:54
23	08:28	07:24	06:11		06:39 (1)		05:50	04:46	04:23	04:56	05:56	06:58		08:00	08:06	08:47
	16:23	17:31	18:31	16	06:55 (1)		20:36	21:35	22:08	21:43	20:35	19:13		17:55	15:53	15:37
24	08:27	07:21	06:08		06:36 (1)		05:47	04:45	04:23	04:58	05:58	07:00		08:02	08:08	08:47
	16:25	17:33	18:33	20	06:56 (1)		20:38	21:37	22:08	21:41	20:33	19:11		17:53	15:51	15:38
25	08:25	07:19	06:06		06:34 (1)		05:45	04:43	04:24	05:00	06:00	07:02		08:04	08:10	08:48
	16:27	17:36	18:35	23	06:57 (1)		20:40	21:39	22:08	21:39	20:30	19:08		17:50	15:50	15:38
26	08:23	07:17	06:03		06:32 (1)		05:43	04:42	04:24	05:02	06:02	07:04		07:06	08:12	08:48
	16:29	17:38	18:37	25	06:57 (1)		20:42	21:40	22:08	21:37	20:28	19:05		16:48	15:48	15:39
27	08:22	07:14	06:00		06:32 (1)		05:40	04:40	04:25	05:03	06:04	07:06		07:09	08:14	08:48
	16:31	17:40	18:39	26	06:58 (1)		20:44	21:42	22:08	21:36	20:25	19:03		16:46	15:47	15:40
28	08:20	07:11	05:58		06:30 (1)		05:38	04:39	04:25	05:05	06:06	07:08		07:11	08:16	08:48
	16:33	17:42	18:42	28	06:58 (1)		20:46	21:44	22:08	21:34	20:23	19:00		16:43	15:46	15:41
29	08:18	07:05	05:55		06:29 (1)		05:35	04:37	04:26	05:07	06:08	07:10		07:13	08:18	08:48
	16:35	18:44	18:44	29	06:58 (1)		20:48	21:45	22:07	21:32	20:20	18:57		16:41	15:45	15:42
30	08:16	07:02	05:52		07:30 (1)		05:33	04:36	04:27	05:09	06:10	07:12		07:15	08:19	08:48
	16:38	19:46	19:46	28	07:58 (1)		20:50	21:47	22:07	21:30	20:17	18:55		16:39	15:44	15:43
31	08:15	06:50	05:40		07:29 (1)		05:31	04:35	05:11	06:12	07:14	08:16		07:17	08:22	08:48
	16:40	19:48	19:48	28	07:57 (1)		20:51	21:48	22:08	21:28	20:15	18:53		16:36	15:41	15:44
Potential sun hours		235	265	365		425		507	528	529	470	385		324	248	216
Total, worst case				234		171						409				
Sun reduction				0,39		0,48						0,43				
Oper. time red.				0,94		0,94						0,94				
Wind dir. red.				0,65		0,65						0,65				
Total reduction				0,24		0,29						0,26				
Total, real				56		50						107				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AV - Zilites

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June
1	08:48	08:13	07:09	06:47	07:18 (1)	04:34
	15:45	16:42	17:44	19:50	07:44 (1)	21:50
2	08:48	08:11	07:06	06:44	07:18 (1)	04:33
	15:46	16:44	17:47	19:52	07:45 (1)	21:51
3	08:48	08:09	07:04	06:42	07:17 (1)	04:31
	15:48	16:46	17:49	19:54	07:44 (1)	21:52
4	08:47	08:07	07:01	06:39	07:17 (1)	04:30
	15:49	16:49	17:51	19:56	07:44 (1)	21:54
5	08:47	08:05	06:59	06:36	07:17 (1)	04:29
	15:50	16:51	17:53	19:58	07:44 (1)	21:55
6	08:46	08:03	06:56	06:34	07:16 (1)	04:29
	15:52	16:53	17:55	20:00	07:43 (1)	21:56
7	08:46	08:01	06:54	06:31	07:17 (1)	04:28
	15:53	16:55	17:57	20:02	07:42 (1)	21:57
8	08:45	07:59	06:51	06:28	07:17 (1)	04:27
	15:55	16:58	17:59	20:04	07:41 (1)	21:58
9	08:44	07:56	06:48	06:26	07:18 (1)	04:26
	15:56	17:00	18:02	20:07	07:40 (1)	22:00
10	08:44	07:54	06:46	06:23	07:19 (1)	04:26
	15:58	17:02	18:04	20:09	07:38 (1)	22:01
11	08:43	07:52	06:43	06:21	07:20 (1)	04:25
	16:00	17:04	18:06	20:11	07:36 (1)	22:01
12	08:42	07:50	06:40	06:18	07:23 (1)	04:24
	16:01	17:07	18:08	20:13	07:33 (1)	22:02
13	08:41	07:48	06:38	06:15		04:24
	16:03	17:09	18:10	20:15		22:03
14	08:40	07:45	06:35	06:13		04:24
	16:05	17:11	18:12	20:17		22:04
15	08:39	07:43	06:32	06:10		04:23
	16:07	17:13	18:14	20:19		22:05
16	08:38	07:41	06:30	06:08		04:23
	16:09	17:16	18:16	20:21		22:05
17	08:37	07:38	06:27	06:05		04:23
	16:11	17:18	18:19	20:23		22:06
18	08:35	07:36	06:24	06:02		04:23
	16:13	17:20	18:21	20:25		22:06
19	08:34	07:34	06:22	06:00		04:23
	16:14	17:22	18:23	20:27		22:07
20	08:33	07:31	06:19	05:57		04:23
	16:16	17:25	18:25	20:29		22:07
21	08:31	07:29	06:16	05:55		04:23
	16:19	17:27	18:27	20:31		22:07
22	08:30	07:26	06:14	05:52		04:23
	16:21	17:29	18:29	20:34		22:08
23	08:28	07:24	06:11	05:50		04:23
	16:23	17:31	18:31	20:36		22:08
24	08:27	07:21	06:08	05:47		04:23
	16:25	17:33	18:33	20:38		22:08
25	08:25	07:19	06:06	05:45		04:24
	16:27	17:36	18:35	20:40		22:08
26	08:23	07:17	06:03	06:30 (1)	05:43	04:24
	16:29	17:38	18:37	06:36 (1)	20:42	22:08
27	08:22	07:14	06:00	06:28 (1)	05:40	04:25
	16:31	17:40	18:39	06:40 (1)	20:44	22:08
28	08:20	07:11	05:58	06:25 (1)	05:38	04:25
	16:33	17:42	18:42	06:42 (1)	20:46	22:08
29	08:18		05:55	06:22 (1)	05:35	04:26
	16:35		18:44	06:42 (1)	20:48	22:07
30	08:16		06:52	07:20 (1)	05:33	04:27
	16:38		19:46	07:44 (1)	20:50	22:07
31	08:15		06:50	07:19 (1)		
	16:40		19:48	07:44 (1)		
Potential sun hours	235	265	365	425	507	528
Total, worst case			104		277	
Sun reduction			0,39		0,48	
Oper. time red.			0,94		0,94	
Wind dir. red.			0,66		0,66	
Total reduction			0,24		0,30	
Total, real			25		82	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AV - Zilites

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July	August	September	October	November	December
1	04:27	05:13	06:14	07:20 (1)	07:14	07:19
	22:07	21:26	20:12	13 07:33 (1)	18:52	16:34
2	04:28	05:15	06:16	07:18 (1)	07:16	07:22
	22:06	21:24	20:10	17 07:35 (1)	18:49	16:32
3	04:29	05:17	06:18	07:16 (1)	07:18	07:24
	22:06	21:22	20:07	21 07:37 (1)	18:47	16:30
4	04:30	05:18	06:20	07:15 (1)	07:20	07:26
	22:05	21:20	20:04	23 07:38 (1)	18:44	16:27
5	04:31	05:20	06:22	07:14 (1)	07:22	07:28
	22:04	21:18	20:02	24 07:38 (1)	18:41	16:25
6	04:32	05:22	06:24	07:13 (1)	07:24	07:30
	22:04	21:15	19:59	26 07:39 (1)	18:39	16:23
7	04:33	05:24	06:26	07:12 (1)	07:26	07:32
	22:03	21:13	19:56	27 07:39 (1)	18:36	16:21
8	04:34	05:26	06:28	07:12 (1)	07:29	07:35
	22:02	21:11	19:54	27 07:39 (1)	18:33	16:19
9	04:35	05:28	06:30	07:11 (1)	07:31	07:37
	22:01	21:09	19:51	28 07:39 (1)	18:31	16:17
10	04:37	05:30	06:32	07:10 (1)	07:33	07:39
	22:00	21:07	19:48	27 07:37 (1)	18:28	16:15
11	04:38	05:32	06:34	07:10 (1)	07:35	07:41
	21:59	21:04	19:46	27 07:37 (1)	18:25	16:13
12	04:39	05:34	06:36	07:10 (1)	07:37	07:43
	21:58	21:02	19:43	26 07:36 (1)	18:23	16:11
13	04:41	05:36	06:38	07:10 (1)	07:39	07:45
	21:57	21:00	19:40	25 07:35 (1)	18:20	16:09
14	04:42	05:38	06:40	07:11 (1)	07:41	07:48
	21:56	20:57	19:38	23 07:34 (1)	18:18	16:07
15	04:43	05:40	06:42	07:13 (1)	07:43	07:50
	21:54	20:55	19:35	19 07:32 (1)	18:15	16:06
16	04:45	05:42	06:44	07:15 (1)	07:45	07:52
	21:53	20:53	19:32	15 07:30 (1)	18:13	16:04
17	04:46	05:44	06:46	07:17 (1)	07:47	07:54
	21:52	20:50	19:30	11 07:28 (1)	18:10	16:02
18	04:48	05:46	06:48		07:49	07:56
	21:50	20:48	19:27		18:08	16:00
19	04:50	05:48	06:50		07:51	07:58
	21:49	20:45	19:24		18:05	15:59
20	04:51	05:50	06:52		07:54	08:00
	21:47	20:43	19:21		18:03	15:57
21	04:53	05:52	06:54		07:56	08:02
	21:46	20:40	19:19		18:00	15:56
22	04:55	05:54	06:56		07:58	08:04
	21:44	20:38	19:16		17:58	15:54
23	04:56	05:56	06:58		08:00	08:06
	21:43	20:35	19:13		17:55	15:53
24	04:58	05:58	07:00		08:02	08:08
	21:41	20:33	19:11		17:53	15:51
25	05:00	06:00	07:02		08:04	08:10
	21:39	20:30	19:08		17:50	15:50
26	05:02	06:02	07:04		07:06	08:12
	21:37	20:28	19:05		16:48	15:48
27	05:03	06:04	07:06		07:09	08:14
	21:36	20:25	19:03		16:46	15:47
28	05:05	06:06	07:08		07:11	08:16
	21:34	20:23	19:00		16:43	15:46
29	05:07	06:08	07:10		07:13	08:18
	21:32	20:20	18:57		16:41	15:45
30	05:09	06:10	07:12		07:15	08:19
	21:30	20:17	18:55		16:39	15:44
31	05:11	06:12	07:24 (1)		07:17	08:48
	21:28	20:15	6 07:30 (1)		16:36	15:44
Potential sun hours	529	470	385		324	248
Total, worst case		6	379			
Sun reduction		0,51	0,43			
Oper. time red.		0,94	0,94			
Wind dir. red.		0,66	0,66			
Total reduction		0,32	0,27			
Total, real		2	100			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AW - Avotini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:31 20:52	04:34 21:50	04:27 22:07	05:13 21:26	06:14 20:12	07:14 18:52	07:20 16:34	08:21 15:43
2	08:48 15:46	08:11 16:44	07:06 17:47	06:44 19:52	05:28 20:54	04:32 21:51	04:28 22:06	05:15 21:24	06:16 20:10	07:16 18:49	07:22 16:32	08:23 15:42
3	08:48 15:48	08:09 16:46	07:04 17:49	06:42 19:54	05:26 20:57	04:31 21:53	04:29 22:06	05:16 21:22	06:18 20:07	07:18 18:47	07:24 16:30	08:25 15:41
4	08:47 15:52	08:07 16:53	07:01 17:55	06:39 20:00	05:24 21:03	04:30 21:56	04:30 22:04	05:18 21:16	06:20 19:59	07:20 18:39	07:26 16:23	08:26 15:39
5	08:47 15:50	08:05 16:51	06:59 17:53	06:36 19:58	05:22 21:01	04:29 21:55	04:31 22:05	05:20 21:18	06:22 20:02	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:52	08:03 16:53	06:56 17:55	06:34 20:00	05:19 21:03	04:29 21:56	04:32 22:04	05:22 21:16	06:24 19:59	07:24 18:39	07:30 16:23	08:29 15:39
7	08:46 15:53	08:01 16:55	06:54 17:57	06:31 20:02	05:17 21:05	04:28 21:57	04:33 22:03	05:24 21:13	06:26 19:56	07:26 18:36	07:33 16:21	08:31 15:38
8	08:45 15:55	07:59 16:58	06:51 18:00	06:28 20:04	05:15 21:07	04:27 21:59	04:34 22:02	05:26 21:11	06:28 19:54	07:29 18:33	07:35 16:19	08:32 15:37
9	08:45 15:56	07:57 17:00	06:48 18:02	06:26 20:07	05:13 21:09	04:26 22:00	04:35 22:01	05:28 21:09	06:30 19:51	07:31 18:31	07:37 16:17	08:34 15:37
10	08:44 15:58	07:54 17:02	06:46 18:04	06:23 20:09	05:11 21:11	04:26 22:01	04:37 22:00	05:30 21:07	06:32 19:48	07:33 18:28	07:39 16:15	08:35 15:36
11	08:43 16:00	07:52 17:04	06:43 18:06	06:21 20:11	05:09 21:13	04:25 22:02	04:38 21:59	05:32 21:04	06:34 19:46	07:35 18:25	07:41 16:13	08:36 15:36
12	08:42 16:01	07:50 17:07	06:40 18:08	06:18 20:13	05:07 21:15	04:24 22:02	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:38 15:36
13	08:41 16:03	07:48 17:09	06:38 18:10	06:15 20:15	05:05 21:17	04:24 22:03	04:40 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:46 16:09	08:39 15:35
14	08:40 16:05	07:45 17:11	06:35 18:12	06:13 20:17	05:03 21:19	04:24 22:04	04:42 21:56	05:38 20:57	06:40 19:38	07:41 18:18	07:48 16:07	08:40 15:35
15	08:39 16:07	07:43 17:13	06:32 18:14	06:10 20:19	05:01 21:21	04:23 22:05	04:43 21:55	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:06	08:41 15:35
16	08:38 16:09	07:41 17:16	06:30 18:16	06:08 20:21	04:59 21:23	04:23 22:05	04:45 21:53	05:42 20:53	06:44 19:32	07:45 18:13	07:52 16:04	08:42 15:35
17	08:37 16:11	07:38 17:18	06:27 18:19	06:05 20:23	04:57 21:24	04:23 22:06	04:46 21:52	05:44 20:50	06:46 19:30	07:47 18:10	07:54 16:02	08:43 15:35
18	08:35 16:13	07:36 17:20	06:24 18:21	06:02 20:25	04:55 21:26	04:23 22:06	04:48 21:50	05:46 20:48	06:48 19:27	07:49 18:08	07:56 16:00	08:44 15:35
19	08:34 16:14	07:34 17:22	06:22 18:23	06:00 20:27	04:53 21:28	04:23 22:07	04:50 21:49	05:48 20:45	06:50 19:24	07:52 18:05	07:58 15:59	08:45 15:36
20	08:33 16:16	07:31 17:25	06:19 18:25	05:57 20:29	04:51 21:30	04:23 22:07	04:51 21:47	05:50 20:43	06:52 19:21	07:54 18:03	08:00 15:57	08:45 15:36
21	08:31 16:18	07:29 17:27	06:16 18:27	05:55 20:32	04:50 21:32	04:23 22:08	04:53 21:46	05:52 20:40	06:54 19:19	07:56 18:00	08:02 15:56	08:46 15:36
22	08:30 16:21	07:26 17:29	06:14 18:29	05:52 20:34	04:48 21:34	04:23 22:08	04:55 21:44	05:54 20:38	06:56 19:16	07:58 17:58	08:04 15:54	08:46 15:37
23	08:28 16:23	07:24 17:31	06:11 18:31	05:50 20:36	04:46 21:35	04:23 22:08	04:56 21:43	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:53	08:47 15:37
24	08:27 16:25	07:22 17:33	06:08 18:33	05:47 20:38	04:45 21:37	04:23 22:08	04:58 21:41	05:58 20:33	07:00 19:11	08:02 17:53	08:08 15:51	08:47 15:38
25	08:25 16:27	07:19 17:36	06:06 18:35	05:45 20:40	04:43 21:39	04:24 22:08	05:00 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:50	08:48 15:38
26	08:24 16:29	07:17 17:38	06:03 18:37	05:43 20:42	04:42 21:40	04:24 22:08	05:02 21:37	06:02 20:28	07:04 19:05	07:07 16:48	08:12 15:48	08:48 15:39
27	08:22 16:31	07:14 17:40	06:00 18:40	05:40 20:44	04:40 21:42	04:25 22:08	05:03 21:36	06:04 20:25	07:06 19:03	07:09 16:46	08:14 15:47	08:48 15:40
28	08:20 16:33	07:12 17:42	05:58 18:42	05:38 20:46	04:39 21:44	04:25 22:08	05:05 21:34	06:06 20:23	07:08 19:00	07:11 16:43	08:16 15:46	08:48 15:41
29	08:18 16:35		05:55 18:44	05:35 20:48	04:37 21:45	04:26 22:07	05:07 21:32	06:08 20:20	07:10 18:57	07:13 16:41	08:18 15:45	08:49 15:42
30	08:17 16:38		06:52 19:46	05:33 20:50	04:36 21:47	04:27 22:07	05:09 21:30	06:10 20:18	07:12 18:55	07:15 16:39	08:19 15:44	08:49 15:43
31	08:15 16:40		06:50 19:48		04:35 21:48		05:11 21:28	06:12 20:15	07:17 16:36			08:48 15:44
Potential sun hours	235	265	365	425	507	529	529	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AX - Biksti

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:31 20:52	04:34 21:50	04:27 22:07	05:13 21:26	06:14 20:12	07:14 18:52	07:20 16:34	08:21 15:43
2	08:48 15:46	08:11 16:44	07:06 17:47	06:44 19:52	05:28 20:54	04:32 21:51	04:28 22:06	05:15 21:24	06:16 20:10	07:16 18:49	07:22 16:32	08:23 15:42
3	08:48 15:48	08:09 16:46	07:04 17:49	06:42 19:54	05:26 20:57	04:31 21:53	04:29 22:06	05:16 21:22	06:18 20:07	07:18 18:47	07:24 16:30	08:25 15:41
4	08:47 15:49	08:07 16:49	07:01 17:51	06:39 19:56	05:24 20:59	04:30 21:54	04:30 22:05	05:18 21:20	06:20 20:04	07:20 18:44	07:26 16:27	08:26 15:40
5	08:47 15:50	08:05 16:51	06:59 17:53	06:36 19:58	05:22 21:01	04:29 21:55	04:31 22:05	05:20 21:18	06:22 20:02	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:52	08:03 16:53	06:56 17:55	06:34 20:00	05:19 21:03	04:28 21:56	04:32 22:04	05:22 21:16	06:24 19:59	07:24 18:39	07:30 16:23	08:29 15:39
7	08:46 15:53	08:01 16:55	06:54 17:57	06:31 20:02	05:17 21:05	04:28 21:57	04:33 22:03	05:24 21:13	06:26 19:56	07:26 18:36	07:33 16:21	08:31 15:38
8	08:45 15:55	07:59 16:58	06:51 17:59	06:28 20:04	05:15 21:07	04:27 21:59	04:34 22:02	05:26 21:11	06:28 19:54	07:29 18:33	07:35 16:19	08:32 15:37
9	08:45 15:56	07:57 17:00	06:48 18:02	06:26 20:07	05:13 21:09	04:26 22:00	04:35 22:01	05:28 21:09	06:30 19:51	07:31 18:31	07:37 16:17	08:34 15:37
10	08:44 15:58	07:54 17:02	06:46 18:04	06:23 20:09	05:11 21:11	04:25 22:01	04:36 22:00	05:30 21:07	06:32 19:48	07:33 18:28	07:39 16:15	08:35 15:36
11	08:43 16:00	07:52 17:04	06:43 18:06	06:21 20:11	05:09 21:13	04:25 22:02	04:38 21:59	05:32 21:04	06:34 19:46	07:35 18:25	07:41 16:13	08:36 15:36
12	08:42 16:01	07:50 17:07	06:40 18:08	06:18 20:13	05:07 21:15	04:24 22:02	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:38 15:36
13	08:41 16:03	07:48 17:09	06:38 18:10	06:15 20:15	05:04 21:17	04:24 22:03	04:40 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:46 16:09	08:39 15:35
14	08:40 16:05	07:45 17:11	06:35 18:12	06:13 20:17	05:02 21:19	04:24 22:04	04:42 21:56	05:38 20:57	06:40 19:38	07:41 18:18	07:48 16:07	08:40 15:35
15	08:39 16:07	07:43 17:13	06:32 18:14	06:10 20:19	05:01 21:21	04:23 22:05	04:43 21:55	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:06	08:41 15:35
16	08:38 16:09	07:41 17:16	06:30 18:16	06:08 20:21	04:59 21:23	04:23 22:05	04:45 21:53	05:42 20:53	06:44 19:32	07:45 18:13	07:52 16:04	08:42 15:35
17	08:37 16:11	07:38 17:18	06:27 18:19	06:05 20:23	04:57 21:24	04:23 22:06	04:46 21:52	05:44 20:50	06:46 19:30	07:47 18:10	07:54 16:02	08:43 15:35
18	08:35 16:12	07:36 17:20	06:24 18:21	06:02 20:25	04:55 21:26	04:23 22:06	04:48 21:50	05:46 20:48	06:48 19:27	07:49 18:08	07:56 16:00	08:44 15:35
19	08:34 16:14	07:34 17:22	06:22 18:23	06:00 20:27	04:53 21:28	04:23 22:07	04:49 21:49	05:48 20:45	06:50 19:24	07:52 18:05	07:58 15:59	08:45 15:36
20	08:33 16:16	07:31 17:25	06:19 18:25	05:57 20:29	04:51 21:30	04:23 22:07	04:51 21:47	05:50 20:43	06:52 19:21	07:54 18:03	08:00 15:57	08:45 15:36
21	08:31 16:18	07:29 17:27	06:16 18:27	05:55 20:32	04:50 21:32	04:23 22:08	04:53 21:46	05:52 20:40	06:54 19:19	07:56 18:00	08:02 15:56	08:46 15:36
22	08:30 16:21	07:26 17:29	06:14 18:29	05:52 20:34	04:48 21:34	04:23 22:08	04:54 21:44	05:54 20:38	06:56 19:16	07:58 17:58	08:04 15:54	08:46 15:37
23	08:28 16:23	07:24 17:31	06:11 18:31	05:50 20:36	04:46 21:35	04:23 22:08	04:56 21:43	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:53	08:47 15:37
24	08:27 16:25	07:22 17:33	06:08 18:33	05:47 20:38	04:45 21:37	04:23 22:08	04:58 21:41	05:58 20:33	07:00 19:11	08:02 17:53	08:08 15:51	08:47 15:38
25	08:25 16:27	07:19 17:36	06:06 18:35	05:45 20:40	04:43 21:39	04:24 22:08	05:00 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:50	08:48 15:38
26	08:24 16:29	07:17 17:38	06:03 18:37	05:43 20:42	04:42 21:40	04:24 22:08	05:02 21:37	06:02 20:28	07:04 19:05	07:07 16:48	08:12 15:48	08:48 15:39
27	08:22 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:42	04:25 22:08	05:03 21:36	06:04 20:25	07:06 19:03	07:09 16:46	08:14 15:47	08:48 15:40
28	08:20 16:33	07:12 17:42	05:58 18:42	05:38 20:46	04:39 21:44	04:25 22:08	05:05 21:34	06:06 20:23	07:08 19:00	07:11 16:43	08:16 15:46	08:48 15:41
29	08:18 16:35		05:55 18:44	05:35 20:48	04:37 21:45	04:26 22:07	05:07 21:32	06:08 20:20	07:10 18:57	07:13 16:41	08:18 15:45	08:49 15:42
30	08:17 16:38		06:52 19:46	05:33 20:50	04:36 21:47	04:27 22:07	05:09 21:30	06:10 20:17	07:12 18:55	07:15 16:39	08:19 15:44	08:49 15:43
31	08:15 16:40		06:50 19:48		04:35 21:48		05:11 21:28	06:12 20:15	07:17 16:36			08:48 15:44
Potential sun hours	235	265	365	425	507	529	530	470	385	324	248	216
Total, worst case												
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AY - Tudalinas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

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2	08:48 15:47	08:11 16:44	07:06 17:47	06:44 19:52	05:28 20:54	04:33 21:51	04:28 22:06	05:15 21:24	06:16 20:10	07:16 18:49	07:22 16:32	08:23 15:42
3	08:48 15:48	08:09 16:47	07:04 17:49	06:42 19:54	05:26 20:56	04:32 21:52	04:29 22:06	05:17 21:22	06:18 20:07	07:18 18:47	07:24 16:30	08:25 15:41
4	08:47 15:49	08:07 16:49	07:01 17:51	06:39 19:56	05:24 20:59	04:30 21:54	04:30 22:05	05:18 21:20	06:20 20:04	07:20 18:44	07:26 16:28	08:26 15:40
5	08:47 15:50	08:05 16:51	06:59 17:53	06:36 19:58	05:22 21:01	04:30 21:55	04:31 22:04	05:20 21:18	06:22 20:02	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:52	08:03 16:53	06:56 17:55	06:34 20:00	05:19 21:03	04:29 21:56	04:32 22:04	05:22 21:15	06:24 19:59	07:24 18:39	07:30 16:23	08:29 15:39
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8	08:45 15:55	07:59 16:58	06:51 18:00	06:28 20:04	05:15 21:07	04:27 21:59	04:34 22:02	05:26 21:11	06:28 19:54	07:29 18:33	07:35 16:19	08:32 15:37
9	08:44 15:56	07:56 17:00	06:48 18:02	06:26 20:07	05:13 21:09	04:26 22:00	04:35 22:01	05:28 21:09	06:30 19:51	07:31 18:31	07:37 16:17	08:34 15:37
10	08:44 15:58	07:54 17:02	06:46 18:04	06:23 20:09	05:11 21:11	04:26 22:01	04:37 22:00	05:30 21:07	06:32 19:48	07:33 18:28	07:39 16:15	08:35 15:36
11	08:43 16:00	07:52 17:04	06:43 18:06	06:21 20:11	05:09 21:13	04:25 22:02	04:38 21:59	05:32 21:04	06:34 19:46	07:35 18:26	07:41 16:13	08:36 15:36
12	08:42 16:02	07:50 17:07	06:40 18:08	06:18 20:13	05:07 21:15	04:25 22:02	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:38 15:36
13	08:41 16:03	07:48 17:09	06:38 18:10	06:15 20:15	05:05 21:17	04:24 22:03	04:41 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:45 16:09	08:39 15:36
14	08:40 16:05	07:45 17:11	06:35 18:12	06:13 20:17	05:03 21:19	04:24 22:04	04:42 21:56	05:38 20:57	06:40 19:38	07:41 18:18	07:48 16:07	08:40 15:35
15	08:39 16:07	07:43 17:13	06:32 18:14	06:10 20:19	05:01 21:21	04:23 22:05	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:06	08:41 15:35
16	08:38 16:09	07:41 17:16	06:30 18:16	06:08 20:21	04:59 21:22	04:23 22:05	04:45 21:53	05:42 20:53	06:44 19:32	07:45 18:13	07:52 16:04	08:42 15:35
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19	08:34 16:15	07:34 17:22	06:22 18:23	06:00 20:27	04:53 21:28	04:23 22:07	04:50 21:49	05:48 20:45	06:50 19:24	07:52 18:05	07:58 15:59	08:44 15:36
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Mihkel Lindpere / mihkel.lindpere@skpk.ee

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SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: AZ - Kalnares

Assumptions for shadow calculations

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2025

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N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
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2	08:48 15:46	08:11 16:44	07:06 17:47	06:44 19:52	05:28 20:54	04:32 21:51	04:28 22:06	05:15 21:24	06:16 20:10	07:16 18:49	07:22 16:32	08:23 15:42
3	08:48 15:48	08:09 16:46	07:04 17:49	06:42 19:54	05:26 20:57	04:31 21:53	04:29 22:06	05:16 21:22	06:18 20:07	07:18 18:47	07:24 16:30	08:25 15:41
4	08:47 15:49	08:07 16:49	07:01 17:51	06:39 19:56	05:24 20:59	04:30 21:54	04:30 22:05	05:18 21:20	06:20 20:04	07:20 18:44	07:26 16:27	08:26 15:40
5	08:47 15:50	08:05 16:51	06:59 17:53	06:36 19:58	05:22 21:01	04:29 21:55	04:31 22:04	05:20 21:18	06:22 20:02	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:52	08:03 16:53	06:56 17:55	06:34 20:00	05:19 21:03	04:29 21:56	04:32 22:04	05:22 21:16	06:24 19:59	07:24 18:39	07:30 16:23	08:29 15:39
7	08:46 15:53	08:01 16:55	06:54 17:57	06:31 20:02	05:17 21:05	04:28 21:57	04:33 22:03	05:24 21:13	06:26 19:56	07:26 18:36	07:33 16:21	08:31 15:38
8	08:45 15:55	07:59 16:58	06:51 17:59	06:28 20:04	05:15 21:07	04:27 21:59	04:34 22:02	05:26 21:11	06:28 19:54	07:29 18:33	07:35 16:19	08:32 15:37
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16	08:38 16:09	07:41 17:16	06:30 18:16	06:08 20:21	04:59 21:22	04:23 22:05	04:45 21:53	05:42 20:53	06:44 19:32	07:45 18:13	07:52 16:04	08:42 15:35
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18	08:35 16:12	07:36 17:20	06:24 18:21	06:02 20:25	04:55 21:26	04:23 22:06	04:48 21:50	05:46 20:48	06:48 19:27	07:49 18:08	07:56 16:00	08:44 15:35
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24	08:27 16:25	07:22 17:33	06:08 18:33	05:47 20:38	04:45 21:37	04:23 22:08	04:58 21:41	05:58 20:33	07:00 19:11	08:02 17:53	08:08 15:51	08:47 15:38
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27	08:22 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:42	04:25 22:08	05:03 21:36	06:04 20:25	07:06 19:03	07:09 16:46	08:14 15:47	08:48 15:40
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2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

SKEPAST & PUKIM

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BA - Su š i

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January		February		March	April	May	June
1	08:48	09:39 (19)	08:13	08:46 (18)	07:09	06:47	05:30	04:33
	15:45	26 10:05 (20)	16:42	44 10:16 (19)	17:44	19:50	20:52	21:50
2	08:48	09:39 (19)	08:11	08:44 (18)	07:06	06:44	05:28	04:32
	15:46	27 10:06 (20)	16:44	47 10:16 (19)	17:46	19:52	20:54	21:51
3	08:48	09:38 (19)	08:09	08:42 (18)	07:04	06:42	05:26	04:31
	15:47	28 10:06 (20)	16:46	49 10:15 (19)	17:49	19:54	20:56	21:52
4	08:47	09:39 (19)	08:07	08:39 (18)	07:01	06:39	05:24	04:30
	15:49	28 10:07 (20)	16:49	51 10:14 (19)	17:51	19:56	20:59	21:54
5	08:47	09:38 (19)	08:05	08:37 (18)	06:59	06:36	05:21	04:29
	15:50	29 10:07 (20)	16:51	52 10:13 (19)	17:53	19:58	21:01	21:55
6	08:46	09:38 (19)	08:03	08:37 (18)	06:56	06:34	05:19	04:28
	15:52	30 10:08 (20)	16:53	50 10:12 (19)	17:55	20:00	21:03	21:56
7	08:46	09:37 (19)	08:01	08:37 (18)	06:53	06:31	05:17	04:27
	15:53	31 10:08 (20)	16:55	48 10:11 (19)	17:57	20:02	21:05	21:57
8	08:45	09:37 (19)	07:59	08:36 (18)	06:51	06:28	05:15	04:27
	15:55	31 10:08 (20)	16:58	45 10:08 (19)	17:59	20:04	21:07	21:59
9	08:45	09:37 (19)	07:56	08:36 (18)	06:48	06:26	05:13	04:26
	15:56	31 10:08 (20)	17:00	38 10:05 (19)	18:02	20:06	21:09	22:00
10	08:44	09:37 (19)	07:54	08:36 (18)	06:46	06:23	05:10	04:25
	15:58	32 10:09 (20)	17:02	27 09:03 (18)	18:04	20:09	21:11	22:01
11	08:43	09:37 (19)	07:52	08:36 (18)	06:43	06:20	05:08	04:25
	16:00	32 10:09 (20)	17:04	26 09:02 (18)	18:06	20:11	21:13	22:02
12	08:42	09:37 (19)	07:50	08:37 (18)	06:40	06:18	05:06	04:24
	16:01	32 10:09 (20)	17:06	25 09:02 (18)	18:08	20:13	21:15	22:02
13	08:41	09:37 (19)	07:48	08:37 (18)	06:38	06:15	05:04	04:24
	16:03	33 10:10 (19)	17:09	24 09:01 (18)	18:10	20:15	21:17	22:03
14	08:40	09:36 (19)	07:45	08:38 (18)	06:35	06:13	05:02	04:23
	16:05	34 10:10 (19)	17:11	23 09:01 (18)	18:12	20:17	21:19	22:04
15	08:39	09:37 (19)	07:43	08:39 (18)	06:32	06:10	05:00	04:23
	16:07	34 10:11 (19)	17:13	22 09:01 (18)	18:14	20:19	21:21	22:05
16	08:38	09:37 (19)	07:41	08:39 (18)	06:30	06:07	04:58	04:23
	16:08	35 10:12 (19)	17:15	20 08:59 (18)	18:16	20:21	21:22	22:05
17	08:37	09:37 (19)	07:38	08:41 (18)	06:27	06:05	04:57	04:23
	16:10	35 10:12 (19)	17:18	17 08:58 (18)	18:18	20:23	21:24	22:06
18	08:35	09:37 (19)	07:36	08:43 (18)	06:24	06:02	04:55	04:22
	16:12	37 10:14 (19)	17:20	12 08:55 (18)	18:21	20:25	21:26	22:06
19	08:34	09:37 (19)	07:34	08:48 (18)	06:22	06:00	04:53	04:22
	16:14	37 10:14 (19)	17:22	3 08:51 (18)	18:23	20:27	21:28	22:07
20	08:33	09:37 (19)	07:31		06:19	05:57	04:51	04:22
	16:16	37 10:14 (19)	17:24		18:25	20:29	21:30	22:07
21	08:31	09:37 (19)	07:29		06:16	05:55	04:49	04:23
	16:18	38 10:15 (19)	17:27		18:27	20:31	21:32	22:07
22	08:30	09:37 (19)	07:26		06:14	05:52	04:48	04:23
	16:20	39 10:16 (19)	17:29		18:29	20:34	21:34	22:08
23	08:28	09:37 (19)	07:24		06:11	05:50	04:46	04:23
	16:22	39 10:16 (19)	17:31		18:31	20:36	21:35	22:08
24	08:27	09:37 (19)	07:21		06:08	05:47	04:44	04:23
	16:25	39 10:16 (19)	17:33		18:33	20:38	21:37	22:08
25	08:25	09:37 (19)	07:19		06:06	05:45	04:43	04:24
	16:27	39 10:16 (19)	17:35		18:35	20:40	21:39	22:08
26	08:23	09:38 (19)	07:16		06:03	05:42	04:41	04:24
	16:29	38 10:16 (19)	17:38		18:37	20:42	21:40	22:08
27	08:22	09:38 (19)	07:14		06:00	05:40	04:40	04:24
	16:31	38 10:16 (19)	17:40		18:39	20:44	21:42	22:08
28	08:20	09:38 (19)	07:11		05:58	05:38	04:39	04:25
	16:33	38 10:16 (19)	17:42		18:41	20:46	21:44	22:08
29	08:18	09:39 (19)			05:55	05:35	04:37	04:26
	16:35	37 10:16 (19)			18:44	20:48	21:45	22:07
30	08:16	09:39 (19)			06:52	05:33	04:36	04:26
	16:37	37 10:16 (19)			19:46	20:50	21:47	22:07
31	08:15	08:48 (18)			06:50		04:35	
	16:40	40 10:16 (19)			19:48		21:48	
Potential sun hours	235		265		365	425	507	529
Total, worst case	1061		623					
Sun reduction	0,15		0,24					
Oper. time red.	0,94		0,94					
Wind dir. red.	0,60		0,60					
Total reduction	0,09		0,14					
Total, real	93		85					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BA - Suš i

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July	August	September	October	November	December
1	04:27	05:12	06:14	07:14	07:19	08:05 (18)
	22:07	21:26	20:12	18:52	16:34	27 08:32 (18)
2	04:28	05:14	06:16	07:16	07:22	08:06 (18)
	22:06	21:24	20:10	18:49	16:32	36 09:34 (19)
3	04:29	05:16	06:18	07:18	07:24	08:06 (18)
	22:06	21:22	20:07	18:46	16:30	43 09:37 (19)
4	04:30	05:18	06:20	07:20	07:26	08:06 (18)
	22:05	21:20	20:04	18:44	16:27	46 09:39 (19)
5	04:31	05:20	06:22	07:22	07:28	08:07 (18)
	22:04	21:18	20:02	18:41	16:25	48 09:41 (19)
6	04:32	05:22	06:24	07:24	07:30	08:07 (18)
	22:04	21:15	19:59	18:38	16:23	51 09:43 (19)
7	04:33	05:24	06:26	07:26	07:32	08:09 (18)
	22:03	21:13	19:56	18:36	16:21	51 09:44 (19)
8	04:34	05:26	06:28	07:28	07:35	08:11 (18)
	22:02	21:11	19:54	18:33	16:19	50 09:45 (19)
9	04:35	05:28	06:30	07:30	07:37	08:13 (18)
	22:01	21:09	19:51	18:31	16:17	48 09:45 (19)
10	04:36	05:30	06:32	07:33	07:39	08:16 (18)
	22:00	21:07	19:48	18:28	16:15	46 09:47 (19)
11	04:38	05:32	06:34	07:35	07:41	08:18 (18)
	21:59	21:04	19:46	18:25	16:13	43 09:47 (19)
12	04:39	05:34	06:36	07:37	07:43	08:21 (18)
	21:58	21:02	19:43	18:23	16:11	37 09:48 (19)
13	04:40	05:36	06:38	07:39	07:45	09:11 (19)
	21:57	21:00	19:40	18:20	16:09	37 09:48 (19)
14	04:42	05:38	06:40	07:41	07:48	09:11 (19)
	21:56	20:57	19:38	18:18	16:07	37 09:48 (19)
15	04:43	05:40	06:42	07:43	07:50	09:11 (19)
	21:55	20:55	19:35	18:15	16:05	38 09:49 (19)
16	04:45	05:42	06:44	07:45	07:52	09:11 (19)
	21:53	20:53	19:32	18:12	16:04	38 09:49 (19)
17	04:46	05:44	06:46	07:47	07:54	09:12 (19)
	21:52	20:50	19:29	18:10	16:02	38 09:50 (19)
18	04:48	05:46	06:48	07:49	07:56	09:11 (19)
	21:50	20:48	19:27	18:07	16:00	39 09:50 (19)
19	04:49	05:48	06:50	07:51	07:58	09:11 (19)
	21:49	20:45	19:24	18:05	15:59	39 09:50 (19)
20	04:51	05:50	06:52	07:54	08:00	09:12 (19)
	21:47	20:43	19:21	18:02	15:57	39 09:51 (19)
21	04:53	05:52	06:54	07:56	08:02	09:12 (19)
	21:46	20:40	19:19	18:00	15:55	39 09:51 (19)
22	04:54	05:54	06:56	07:58	08:04	09:13 (19)
	21:44	20:38	19:16	17:58	15:54	37 09:50 (19)
23	04:56	05:56	06:58	08:00	08:06	09:13 (19)
	21:43	20:35	19:13	17:55	15:52	37 09:50 (19)
24	04:58	05:58	07:00	08:02	09:13 (18)	08:08
	21:41	20:33	19:11	17:53	15:51	37 09:51 (19)
25	05:00	06:00	07:02	08:04	09:12 (18)	08:10
	21:39	20:30	19:08	17:50	15:50	36 09:51 (19)
26	05:01	06:02	07:04	07:06	08:10 (18)	08:12
	21:37	20:28	19:05	16:48	15:48	36 09:51 (19)
27	05:03	06:04	07:06	07:09	08:08 (18)	08:14
	21:36	20:25	19:02	16:45	15:47	34 09:50 (19)
28	05:05	06:06	07:08	07:11	08:08 (18)	08:16
	21:34	20:23	19:00	16:43	15:46	34 09:50 (19)
29	05:07	06:08	07:10	07:13	08:07 (18)	08:18
	21:32	20:20	18:57	16:41	15:45	33 09:50 (19)
30	05:09	06:10	07:12	07:15	08:06 (18)	08:19
	21:30	20:17	18:54	16:38	15:44	32 09:50 (20)
31	05:11	06:12		07:17	08:06 (18)	
	21:28	20:15		16:36	08:32 (18)	
Potential sun hours	530	470	385	324	248	216
Total, worst case				163	1186	819
Sun reduction				0,27	0,09	0,09
Oper. time red.				0,94	0,94	0,94
Wind dir. red.				0,60	0,60	0,60
Total reduction				0,15	0,05	0,05
Total, real				25	62	40

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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2026-02-Ecosoul-MEŽARES-VIPE

Skepast & Puhkim OÜ

Laki pöik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

Calculation: Worst & Real Case Shadow receptor: BB - Jaundruvas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker
			(WTG causing flicker last time)

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BC - Straumenini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:31 20:52	04:34 21:50	04:27 22:07	05:13 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:43
2	08:48 15:47	08:11 16:44	07:06 17:47	06:44 19:52	05:28 20:54	04:33 21:51	04:28 22:06	05:15 21:24	06:16 20:10	07:16 18:49	07:22 16:32	08:23 15:42
3	08:48 15:48	08:09 16:47	07:04 17:49	06:42 19:54	05:26 20:57	04:32 21:52	04:29 22:06	05:17 21:22	06:18 20:07	07:18 18:47	07:24 16:30	08:25 15:41
4	08:47 15:49	08:07 16:49	07:01 17:51	06:39 19:56	05:24 20:59	04:31 21:54	04:30 22:05	05:19 21:20	06:20 20:04	07:20 18:44	07:26 16:28	08:26 15:40
5	08:47 15:50	08:05 16:51	06:59 17:53	06:36 19:58	05:22 21:01	04:30 21:55	04:31 22:04	05:20 21:18	06:22 20:02	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:52	08:03 16:53	06:56 17:55	06:34 20:00	05:19 21:03	04:29 21:56	04:32 22:04	05:22 21:16	06:24 19:59	07:24 18:39	07:30 16:23	08:29 15:39
7	08:46 15:53	08:01 16:55	06:54 17:57	06:31 20:02	05:17 21:05	04:28 21:57	04:33 22:03	05:24 21:13	06:26 19:56	07:27 18:36	07:33 16:21	08:31 15:38
8	08:45 15:55	07:59 16:58	06:51 18:00	06:28 20:04	05:15 21:07	04:27 21:59	04:34 22:02	05:26 21:11	06:28 19:54	07:29 18:33	07:35 16:19	08:32 15:37
9	08:45 15:57	07:56 17:00	06:48 18:02	06:26 20:07	05:13 21:09	04:26 22:00	04:35 22:01	05:28 21:09	06:30 19:51	07:31 18:31	07:37 16:17	08:34 15:37
10	08:44 15:58	07:54 17:02	06:46 18:04	06:23 20:09	05:11 21:11	04:26 22:01	04:37 22:00	05:30 21:07	06:32 19:48	07:33 18:28	07:39 16:15	08:35 15:36
11	08:43 16:00	07:52 17:04	06:43 18:06	06:21 20:11	05:09 21:13	04:25 22:02	04:38 21:59	05:32 21:04	06:34 19:46	07:35 18:26	07:41 16:13	08:36 15:36
12	08:42 16:02	07:50 17:07	06:40 18:08	06:18 20:13	05:07 21:15	04:25 22:02	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:38 15:36
13	08:41 16:03	07:48 17:09	06:38 18:10	06:15 20:15	05:05 21:17	04:24 22:03	04:41 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:45 16:09	08:39 15:36
14	08:40 16:05	07:45 17:11	06:35 18:12	06:13 20:17	05:03 21:19	04:24 22:04	04:42 21:56	05:38 20:57	06:40 19:38	07:41 18:18	07:48 16:07	08:40 15:35
15	08:39 16:07	07:43 17:13	06:32 18:14	06:10 20:19	05:01 21:21	04:23 22:05	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:06	08:41 15:35
16	08:38 16:09	07:41 17:16	06:30 18:17	06:08 20:21	04:59 21:22	04:23 22:05	04:45 21:53	05:42 20:53	06:44 19:32	07:45 18:13	07:52 16:04	08:42 15:35
17	08:37 16:11	07:38 17:18	06:27 18:19	06:05 20:23	04:57 21:24	04:23 22:06	04:46 21:52	05:44 20:50	06:46 19:30	07:47 18:10	07:54 16:02	08:43 15:35
18	08:35 16:13	07:36 17:20	06:25 18:21	06:03 20:25	04:55 21:26	04:23 22:06	04:48 21:50	05:46 20:48	06:48 19:27	07:49 18:08	07:56 16:00	08:44 15:36
19	08:34 16:15	07:34 17:22	06:22 18:23	06:00 20:27	04:53 21:28	04:23 22:07	04:50 21:49	05:48 20:45	06:50 19:24	07:52 18:05	07:58 15:59	08:44 15:36
20	08:33 16:17	07:31 17:25	06:19 18:25	05:57 20:29	04:51 21:30	04:23 22:07	04:51 21:47	05:50 20:43	06:52 19:21	07:54 18:03	08:00 15:57	08:45 15:36
21	08:31 16:19	07:29 17:27	06:16 18:27	05:55 20:32	04:50 21:32	04:23 22:07	04:53 21:46	05:52 20:40	06:54 19:19	07:56 18:00	08:02 15:56	08:46 15:36
22	08:30 16:21	07:26 17:29	06:14 18:29	05:52 20:34	04:48 21:34	04:23 22:08	04:55 21:44	05:54 20:38	06:56 19:16	07:58 17:58	08:04 15:54	08:46 15:37
23	08:28 16:23	07:24 17:31	06:11 18:31	05:50 20:36	04:46 21:35	04:23 22:08	04:56 21:43	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:53	08:47 15:37
24	08:27 16:25	07:22 17:33	06:08 18:33	05:48 20:38	04:45 21:37	04:24 22:08	04:58 21:41	05:58 20:33	07:00 19:11	08:02 17:53	08:08 15:51	08:47 15:38
25	08:25 16:27	07:19 17:36	06:06 18:35	05:45 20:40	04:43 21:39	04:24 22:08	05:00 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:50	08:48 15:39
26	08:24 16:29	07:17 17:38	06:03 18:37	05:43 20:42	04:42 21:40	04:24 22:08	05:02 21:37	06:02 20:28	07:04 19:05	07:07 16:48	08:12 15:49	08:48 15:39
27	08:22 16:31	07:14 17:40	06:00 18:40	05:40 20:44	04:40 21:42	04:25 22:08	05:03 21:36	06:04 20:25	07:06 19:03	07:09 16:46	08:14 15:47	08:48 15:40
28	08:20 16:33	07:12 17:42	05:58 18:42	05:38 20:46	04:39 21:44	04:25 22:08	05:05 21:34	06:06 20:23	07:08 19:00	07:11 16:43	08:16 15:46	08:48 15:41
29	08:18 16:36		05:55 18:44	05:35 20:48	04:37 21:45	04:26 22:07	05:07 21:32	06:08 20:20	07:10 18:57	07:13 16:41	08:18 15:45	08:48 15:42
30	08:17 16:38		06:52 19:46	05:33 20:50	04:36 21:47	04:27 22:07	05:09 21:30	06:10 20:17	07:12 18:55	07:15 16:39	08:19 15:44	08:48 15:43
31	08:15 16:40		06:50 19:48		04:35 21:48		05:11 21:28	06:12 20:15		07:17 16:36		08:48 15:44
Potential sun hours	235	265	365	425	507	528	529	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BD - Krasta Ozoli

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	January	February	March		April		May	June	July	August	September		October	November	December
1	08:48	08:13	07:09		06:47		07:16 (1)	05:31	04:34	04:27	05:13	06:14	07:14	07:19	08:21
	15:45	16:42	17:44		19:50	24	07:40 (1)	20:52	21:50	22:07	21:26	20:12	18:52	16:34	15:43
2	08:48	08:11	07:06		06:44		07:16 (1)	05:28	04:33	04:28	05:15	06:16	07:19 (1)	07:16	07:22
	15:46	16:44	17:47		19:52	25	07:41 (1)	20:54	21:51	22:06	21:24	20:10	18:49	16:32	15:42
3	08:48	08:09	07:04		06:42		07:15 (1)	05:26	04:31	04:29	05:17	06:18	07:17 (1)	07:18	07:24
	15:48	16:46	17:49		19:54	25	07:40 (1)	20:56	21:52	22:06	21:22	20:07	14	07:31 (1)	18:47
4	08:47	08:07	07:01		06:39		07:16 (1)	05:24	04:30	04:30	05:18	06:20	07:15 (1)	07:20	07:26
	15:49	16:49	17:51		19:56	25	07:41 (1)	20:59	21:54	22:05	21:20	20:04	18	07:33 (1)	18:44
5	08:47	08:05	06:59		06:36		07:15 (1)	05:22	04:29	04:31	05:20	06:22	07:13 (1)	07:22	07:28
	15:50	16:51	17:53		19:58	25	07:40 (1)	21:01	21:55	22:04	21:18	20:02	21	07:34 (1)	18:41
6	08:46	08:03	06:56		06:34		07:15 (1)	05:19	04:29	04:32	05:22	06:24	07:12 (1)	07:24	07:30
	15:52	16:53	17:55		20:00	23	07:38 (1)	21:03	21:56	22:04	21:15	19:59	22	07:34 (1)	18:39
7	08:46	08:01	06:54		06:31		07:16 (1)	05:17	04:28	04:33	05:24	06:26	07:11 (1)	07:26	07:32
	15:53	16:55	17:57		20:02	22	07:38 (1)	21:05	21:57	22:03	21:13	19:56	24	07:35 (1)	18:36
8	08:45	07:59	06:51		06:28		07:17 (1)	05:15	04:27	04:34	05:26	06:28	07:10 (1)	07:29	07:35
	15:55	16:58	17:59		20:04	19	07:36 (1)	21:07	21:58	22:02	21:11	19:54	25	07:35 (1)	18:33
9	08:44	07:56	06:48		06:26		07:18 (1)	05:13	04:26	04:35	05:28	06:30	07:10 (1)	07:31	07:37
	15:56	17:00	18:02		20:07	17	07:35 (1)	21:09	22:00	22:01	22:00	21:07	25	07:35 (1)	18:31
10	08:44	07:54	06:46		06:23		07:20 (1)	05:11	04:26	04:37	05:30	06:32	07:09 (1)	07:33	07:39
	15:58	17:02	18:04		20:09	12	07:32 (1)	21:11	22:01	22:00	21:07	19:48	25	07:34 (1)	18:28
11	08:43	07:52	06:43		06:21		07:23 (1)	05:09	04:25	04:38	05:32	06:34	07:09 (1)	07:35	07:41
	16:00	17:04	18:06		20:11	5	07:28 (1)	21:13	22:01	21:59	21:04	19:46	24	07:33 (1)	18:25
12	08:42	07:50	06:40		06:18			05:07	04:24	04:39	05:34	06:36	07:09 (1)	07:37	07:43
	16:01	17:07	18:08		20:13			21:15	22:02	21:58	21:02	19:43	24	07:33 (1)	18:23
13	08:41	07:48	06:38		06:15			05:05	04:24	04:41	05:36	06:38	07:09 (1)	07:39	07:45
	16:03	17:09	18:10		20:15			21:17	22:03	21:57	21:00	19:40	23	07:32 (1)	18:20
14	08:40	07:45	06:35		06:13			05:03	04:24	04:42	05:38	06:40	07:11 (1)	07:41	07:48
	16:05	17:11	18:12		20:17			21:19	22:04	21:56	20:57	19:38	20	07:31 (1)	18:18
15	08:39	07:43	06:32		06:10			05:01	04:23	04:43	05:40	06:42	07:13 (1)	07:43	07:50
	16:07	17:13	18:14		20:19			21:21	22:05	21:54	20:55	19:35	16	07:29 (1)	18:15
16	08:38	07:41	06:30		06:08			04:59	04:23	04:45	05:42	06:44	07:15 (1)	07:45	07:52
	16:09	17:16	18:16		20:21			21:22	22:05	21:53	20:53	19:32	12	07:27 (1)	18:13
17	08:37	07:38	06:27		06:05			04:57	04:23	04:46	05:44	06:46	07:17 (1)	07:47	07:54
	16:11	17:18	18:19		20:23			21:24	22:06	21:52	20:50	19:30	8	07:25 (1)	18:10
18	08:35	07:36	06:24		06:02			04:55	04:23	04:48	05:46	06:48		07:49	07:56
	16:13	17:20	18:21		20:25			21:26	22:06	21:50	20:48	19:27		18:08	16:00
19	08:34	07:34	06:22		06:00			04:53	04:23	04:50	05:48	06:50		07:51	07:58
	16:15	17:22	18:23		20:27			21:28	22:07	21:49	20:45	19:24		18:05	15:57
20	08:33	07:31	06:19		05:57			04:51	04:23	04:51	05:50	06:52		07:54	08:00
	16:17	17:25	18:25		20:29			21:30	22:07	21:47	20:43	19:21		18:03	15:57
21	08:31	07:29	06:16		05:55			04:50	04:23	04:53	05:52	06:54		07:56	08:02
	16:19	17:27	18:27		20:32			21:32	22:07	21:46	20:40	19:19		18:00	15:56
22	08:30	07:26	06:14		05:52			04:48	04:23	04:55	05:54	06:56		07:58	08:04
	16:21	17:29	18:29		20:34			21:34	22:08	21:44	20:38	19:16		17:58	15:54
23	08:28	07:24	06:11		05:50			04:46	04:23	04:56	05:56	06:58		08:00	08:06
	16:23	17:31	18:31		20:36			21:35	22:08	21:43	20:35	19:13		17:55	15:53
24	08:27	07:21	06:08		05:47			04:45	04:23	04:58	05:58	07:00		08:02	08:08
	16:25	17:33	18:33		20:38			21:37	22:08	21:41	20:33	19:11		17:53	15:51
25	08:25	07:19	06:06		05:45			04:43	04:24	05:00	06:00	07:02		08:04	08:10
	16:27	17:36	18:35		20:40			21:39	22:08	21:39	20:30	19:08		17:50	15:50
26	08:23	07:17	06:03		05:43			04:42	04:24	05:02	06:02	07:04		07:06	08:12
	16:29	17:38	18:37	2	06:30 (1)			21:40	22:08	21:37	20:28	19:05		16:48	15:48
27	08:22	07:14	06:00		06:28 (1)			04:40	04:25	05:03	06:04	07:06		07:09	08:14
	16:31	17:40	18:39	9	06:37 (1)			21:42	22:08	21:36	20:25	19:03		16:46	15:47
28	08:20	07:11	05:58		06:25 (1)			04:39	04:25	05:05	06:06	07:08		07:11	08:16
	16:33	17:42	18:42	13	06:38 (1)			21:44	22:08	21:34	20:23	19:00		16:43	15:46
29	08:18	05:55	06:22 (1)		05:35			04:37	04:26	05:07	06:08	07:10		07:13	08:18
	16:35	18:44	17	06:39 (1)	20:48			21:45	22:07	21:32	20:20	18:57		16:41	15:45
30	08:16	06:52	07:20 (1)		05:33			04:36	04:27	05:09	06:10	07:12		07:15	08:19
	16:38	19:46	20	07:40 (1)	20:50			21:47	22:07	21:30	20:17	18:55		16:39	15:44
31	08:15	06:50	07:17 (1)		05:35			04:35	05:11	06:12	07:12	08:12		07:17	08:22
	16:40	19:48	24	07:41 (1)	20:51			21:48	21:28	20:15	18:52	16:36		16:36	15:44
Potential sun hours	235	265	365		425			507	528	529	470	385		324	216
Total, worst case			85		222							311			
Sun reduction			0,39		0,48							0,43			
Oper. time red.			0,94		0,94							0,94			
Wind dir. red.			0,66		0,66							0,66			
Total reduction			0,24		0,30							0,27			
Total, real			20		66							83			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BE - Galvani

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

		January	February	March		April	May	June	July	August	September		October		November	December
1	08:48 15:45	08:13 16:42	07:09 17:44		06:47 19:50	05:31 20:52	04:34 21:50	04:27 22:07	05:13 21:26	06:14 20:12		07:14 18:52	20	07:45 (19) 08:05 (19)	07:19 16:34	08:21 15:43
2	08:48 15:46	08:11 16:44	07:06 17:46		06:44 19:52	05:28 20:54	04:32 21:51	04:28 22:06	05:14 21:24	06:16 20:10		07:16 18:49	17	07:47 (19) 08:04 (19)	07:22 16:32	08:23 15:42
3	08:48 15:48	08:09 16:46	07:04 17:49		06:42 19:54	05:26 20:57	04:31 21:53	04:29 22:06	05:16 21:22	06:18 20:07		07:18 18:46	14	07:49 (19) 08:03 (19)	07:24 16:30	08:25 15:41
4	08:47 15:49	08:07 16:49	07:01 17:51		06:39 19:56	05:24 20:59	04:30 21:54	04:30 22:05	05:18 21:20	06:20 20:04		07:20 18:44	10	07:51 (19) 08:01 (19)	07:26 16:27	08:26 15:40
5	08:47 15:50	08:05 16:51	06:59 17:53		06:36 19:58	05:21 21:01	04:29 21:55	04:31 22:05	05:20 21:18	06:22 20:02		07:22 18:41	5	07:53 (19) 07:58 (19)	07:28 16:25	08:28 15:39
6	08:46 15:52	08:03 16:53	06:56 17:55		06:34 20:00	05:19 21:03	04:28 21:56	04:32 22:04	05:22 21:16	06:24 19:59		07:24 18:39			07:30 16:23	08:29 15:38
7	08:46 15:53	08:01 16:55	06:54 17:57		06:31 20:02	05:17 21:05	04:28 21:57	04:33 22:03	05:24 21:13	06:26 19:56		07:26 18:36			07:33 16:21	08:31 15:38
8	08:45 15:55	07:59 16:58	06:51 17:59		06:28 20:04	05:15 21:07	04:27 21:59	04:34 22:02	05:26 21:11	06:28 19:54		07:29 18:33			07:35 16:19	08:32 15:37
9	08:45 15:56	07:56 17:00	06:48 18:02	5	07:16 (19) 07:21 (19)	06:26 20:07	05:13 21:09	04:26 22:00	04:35 22:01	06:30 19:51		07:31 18:31			07:37 16:17	08:34 15:37
10	08:44 15:58	07:54 17:02	06:46 18:04	10	07:14 (19) 07:24 (19)	06:23 20:09	05:11 21:11	04:25 22:01	05:30 21:07	06:32 19:48		07:33 18:28			07:39 16:15	08:35 15:36
11	08:43 16:00	07:52 17:04	06:43 18:06	14	07:11 (19) 07:25 (19)	06:20 20:11	05:08 21:13	04:25 22:02	05:32 21:04	06:34 19:46		07:35 18:25			07:41 16:13	08:36 15:36
12	08:42 16:01	07:50 17:07	06:40 18:08	17	07:08 (19) 07:25 (19)	06:18 20:13	05:06 21:15	04:24 22:02	05:34 21:02	06:36 19:43		07:37 18:23			07:43 16:11	08:38 15:36
13	08:41 16:03	07:48 17:09	06:38 18:10	20	07:06 (19) 07:26 (19)	06:15 20:15	05:04 21:17	04:24 22:03	05:36 21:00	06:38 19:40		07:39 18:20			07:45 16:09	08:39 15:35
14	08:40 16:05	07:45 17:11	06:35 18:12	23	07:03 (19) 07:26 (19)	06:13 20:17	05:02 21:19	04:23 22:04	05:38 20:57	06:40 19:38		07:41 18:18			07:48 16:07	08:40 15:35
15	08:39 16:07	07:43 17:13	06:32 18:14	24	07:02 (19) 07:26 (19)	06:10 20:19	05:00 21:21	04:23 22:05	05:40 20:55	06:42 19:35		07:43 18:15			07:50 16:05	08:41 15:35
16	08:38 16:09	07:41 17:16	06:30 18:16	23	07:02 (19) 07:25 (19)	06:08 20:21	04:59 21:22	04:23 22:05	05:42 20:53	06:44 19:32		07:45 18:13			07:52 16:04	08:42 15:35
17	08:37 16:10	07:38 17:18	06:27 18:19	22	07:03 (19) 07:25 (19)	06:05 20:23	04:57 21:24	04:23 22:06	05:44 20:50	06:46 19:30		07:47 18:10			07:54 16:02	08:43 15:35
18	08:35 16:12	07:36 17:20	06:24 18:21	22	07:02 (19) 07:24 (19)	06:02 20:25	04:55 21:26	04:23 22:06	05:46 20:48	06:48 19:27		07:49 18:08			07:56 16:00	08:44 15:35
19	08:34 16:14	07:34 17:22	06:22 18:23	20	07:03 (19) 07:23 (19)	06:00 20:27	04:53 21:28	04:23 22:07	05:48 20:45	06:50 19:24		07:51 18:05			07:58 15:59	08:44 15:36
20	08:33 16:16	07:31 17:24	06:19 18:25	18	07:04 (19) 07:22 (19)	05:57 20:29	04:51 21:30	04:23 22:07	05:50 20:43	06:52 19:21		07:54 18:03			08:00 15:57	08:45 15:36
21	08:31 16:18	07:29 17:27	06:16 18:27	15	07:05 (19) 07:20 (19)	05:55 20:32	04:49 21:32	04:23 22:08	05:52 20:40	06:54 19:19	07:57 (19) 2	07:56 18:00			08:02 15:55	08:46 15:36
22	08:30 16:20	07:26 17:29	06:14 18:29	11	07:06 (19) 07:17 (19)	05:52 20:34	04:48 21:34	04:23 22:08	05:54 20:38	06:56 19:16	07:52 (19) 11	07:58 17:58			08:04 15:54	08:46 15:37
23	08:28 16:23	07:24 17:31	06:11 18:31		07:06 (19) 07:26 (19)	05:50 20:36	04:46 21:35	04:23 22:08	05:56 20:35	06:58 19:13	07:49 (19) 16	08:00 17:55			08:06 15:52	08:47 15:37
24	08:27 16:25	07:22 17:33	06:08 18:33		07:06 (19) 07:26 (19)	05:47 20:38	04:45 21:37	04:23 22:08	05:58 20:33	06:58 19:11	07:47 (19) 19	08:02 17:53			08:08 15:51	08:47 15:38
25	08:25 16:27	07:19 17:36	06:06 18:35		07:06 (19) 07:26 (19)	05:45 20:40	04:43 21:39	04:24 22:08	06:00 20:30	07:02 19:08	07:46 (19) 21	08:04 17:50			08:10 15:50	08:48 15:38
26	08:24 16:29	07:17 17:38	06:03 18:37		07:06 (19) 07:26 (19)	05:42 20:42	04:42 21:40	04:24 22:08	06:02 20:28	07:04 19:05	07:45 (19) 22	08:02 17:48			08:12 15:48	08:48 15:39
27	08:22 16:31	07:14 17:40	06:00 18:39		07:06 (19) 07:26 (19)	05:40 20:44	04:40 21:42	04:25 22:08	06:04 20:25	07:06 19:03	07:44 (19) 23	08:07 17:46			08:14 15:47	08:48 15:40
28	08:20 16:33	07:11 17:42	05:58 18:42		07:06 (19) 07:26 (19)	05:38 20:46	04:39 21:44	04:25 22:08	06:06 20:23	07:08 19:00	07:44 (19) 23	08:07 17:11			08:16 15:46	08:48 15:41
29	08:18 16:35	07:05 18:44	05:55 18:44		07:06 (19) 07:26 (19)	05:35 20:48	04:37 21:45	04:26 22:07	06:08 20:20	07:10 18:57	07:43 (19) 24	08:07 17:13			08:18 15:45	08:49 15:42
30	08:17 16:38	06:52 19:46	05:52 19:46		07:06 (19) 07:26 (19)	05:33 20:50	04:36 21:47	04:26 22:07	06:10 20:17	07:12 18:55	07:43 (19) 23	08:07 17:15			08:19 15:44	08:49 15:43
31	08:15 16:40	06:50 19:48	06:50 19:48		07:06 (19) 07:26 (19)	05:31 21:48	04:35 21:48	04:26 22:07	06:12 20:15	07:13 18:55	07:43 (19) 23	08:06 17:17			08:20 15:44	08:49 15:44
Potential sun hours	235	265	365		425	507	529	530	470	385		324		248	216	
Total, worst case				244						184		66				
Sun reduction				0.39						0.43		0.27				
Oper. time red.				0.94						0.94		0.94				
Wind dir. red.				0.63						0.63		0.63				
Total reduction				0.23						0.25		0.16				
Total, real				56						47		11				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BF - Mui ž nieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:31 20:52	04:34 21:50	04:27 22:07	05:13 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:43
2	08:48 15:47	08:11 16:44	07:06 17:47	06:44 19:52	05:28 20:54	04:33 21:51	04:28 22:06	05:15 21:24	06:16 20:10	07:16 18:49	07:22 16:32	08:23 15:42
3	08:48 15:48	08:09 16:47	07:04 17:49	06:42 19:54	05:26 20:56	04:32 21:52	04:29 22:06	05:17 21:22	06:18 20:07	07:18 18:47	07:24 16:30	08:25 15:41
4	08:47 15:49	08:07 16:49	07:01 17:51	06:39 19:56	05:24 20:59	04:31 21:54	04:30 22:05	05:19 21:20	06:20 20:04	07:20 18:44	07:26 16:28	08:26 15:40
5	08:47 15:51	08:05 16:51	06:59 17:53	06:36 19:58	05:22 21:01	04:30 21:55	04:31 22:04	05:20 21:18	06:22 20:02	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:52	08:03 16:53	06:56 17:55	06:34 20:00	05:19 21:03	04:29 21:56	04:32 22:04	05:22 21:16	06:24 19:59	07:24 18:39	07:30 16:23	08:29 15:39
7	08:46 15:53	08:01 16:56	06:54 17:57	06:31 20:02	05:17 21:05	04:28 21:57	04:33 22:03	05:24 21:13	06:26 19:56	07:27 18:36	07:33 16:21	08:31 15:38
8	08:45 15:55	07:59 16:58	06:51 18:00	06:28 20:04	05:15 21:07	04:27 21:59	04:34 22:02	05:26 21:11	06:28 19:54	07:29 18:33	07:35 16:19	08:32 15:37
9	08:44 15:57	07:56 17:00	06:48 18:02	06:26 20:07	05:13 21:09	04:26 22:00	04:35 22:01	05:28 21:09	06:30 19:51	07:31 18:31	07:37 16:17	08:34 15:37
10	08:44 15:58	07:54 17:02	06:46 18:04	06:23 20:09	05:11 21:11	04:26 22:01	04:37 22:00	05:30 21:07	06:32 19:48	07:33 18:28	07:39 16:15	08:35 15:37
11	08:43 16:00	07:52 17:04	06:43 18:06	06:21 20:11	05:09 21:13	04:25 22:01	04:38 21:59	05:32 21:04	06:34 19:46	07:35 18:26	07:41 16:13	08:36 15:36
12	08:42 16:02	07:50 17:07	06:40 18:08	06:18 20:13	05:07 21:15	04:25 22:02	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:38 15:36
13	08:41 16:03	07:48 17:09	06:38 18:10	06:15 20:15	05:05 21:17	04:24 22:03	04:41 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:45 16:09	08:39 15:36
14	08:40 16:05	07:45 17:11	06:35 18:12	06:13 20:17	05:03 21:19	04:24 22:04	04:42 21:56	05:38 20:57	06:40 19:38	07:41 18:18	07:48 16:07	08:40 15:35
15	08:39 16:07	07:43 17:13	06:33 18:14	06:10 20:19	05:01 21:21	04:23 22:05	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:06	08:41 15:35
16	08:38 16:09	07:41 17:16	06:30 18:17	06:08 20:21	04:59 21:22	04:23 22:05	04:45 21:53	05:42 20:53	06:44 19:32	07:45 18:13	07:52 16:04	08:42 15:35
17	08:37 16:11	07:38 17:18	06:27 18:19	06:05 20:23	04:57 21:24	04:23 22:06	04:47 21:52	05:44 20:50	06:46 19:30	07:47 18:10	07:54 16:02	08:43 15:35
18	08:35 16:13	07:36 17:20	06:25 18:21	06:03 20:25	04:55 21:26	04:23 22:06	04:48 21:50	05:46 20:48	06:48 19:27	07:49 18:08	07:56 16:00	08:44 15:36
19	08:34 16:15	07:34 17:22	06:22 18:23	06:00 20:27	04:53 21:28	04:23 22:07	04:50 21:49	05:48 20:45	06:50 19:24	07:52 18:05	07:58 15:59	08:44 15:36
20	08:33 16:17	07:31 17:25	06:19 18:25	05:57 20:29	04:51 21:30	04:23 22:07	04:51 21:47	05:50 20:43	06:52 19:22	07:54 18:03	08:00 15:57	08:45 15:36
21	08:31 16:19	07:29 17:27	06:17 18:27	05:55 20:32	04:50 21:32	04:23 22:07	04:53 21:46	05:52 20:40	06:54 19:19	07:56 18:00	08:02 15:56	08:46 15:36
22	08:30 16:21	07:26 17:29	06:14 18:29	05:52 20:34	04:48 21:34	04:23 22:08	04:55 21:44	05:54 20:38	06:56 19:16	07:58 17:58	08:04 15:54	08:46 15:37
23	08:28 16:23	07:24 17:31	06:11 18:31	05:50 20:36	04:46 21:35	04:23 22:08	04:56 21:43	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:53	08:47 15:37
24	08:27 16:25	07:22 17:33	06:08 18:33	05:48 20:38	04:45 21:37	04:24 22:08	04:58 21:41	05:58 20:33	07:00 19:11	08:02 17:53	08:08 15:51	08:47 15:38
25	08:25 16:27	07:19 17:36	06:06 18:35	05:45 20:40	04:43 21:39	04:24 22:08	05:00 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:50	08:48 15:39
26	08:23 16:29	07:17 17:38	06:03 18:37	05:43 20:42	04:42 21:40	04:24 22:08	05:02 21:37	06:02 20:28	07:04 19:05	07:07 16:48	08:12 15:49	08:48 15:39
27	08:22 16:31	07:14 17:40	06:00 18:40	05:40 20:44	04:40 21:42	04:25 22:08	05:03 21:36	06:04 20:25	07:06 19:03	07:09 16:46	08:14 15:47	08:48 15:40
28	08:20 16:33	07:12 17:42	05:58 18:42	05:38 20:46	04:39 21:44	04:25 22:08	05:05 21:34	06:06 20:23	07:08 19:00	07:11 16:43	08:16 15:46	08:48 15:41
29	08:18 16:36		05:55 18:44	05:35 20:48	04:38 21:45	04:26 22:07	05:07 21:32	06:08 20:20	07:10 18:57	07:13 16:41	08:18 15:45	08:48 15:42
30	08:17 16:38		06:52 19:46	05:33 20:50	04:36 21:47	04:27 22:07	05:09 21:30	06:10 20:17	07:12 18:55	07:15 16:39	08:19 15:44	08:48 15:43
31	08:15 16:40		06:50 19:48		04:35 21:48		05:11 21:28	06:12 20:15	07:17 16:36			08:48 15:44
Potential sun hours	235	265	365	425	507	528	529	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BG - Me ž mui ž a

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January	February	March	April	May	June	
1	08:48	08:13	07:09	06:47	05:31	04:34	05:55 (1)
	15:45	16:42	17:44	19:50	20:52	21:50	8 06:03 (1)
2	08:48	08:11	07:06	06:44	05:28	04:33	
	15:46	16:44	17:47	19:52	20:54	21:51	
3	08:48	08:09	07:04	06:42	05:26	05:56 (1)	04:31
	15:48	16:46	17:49	19:54	20:56	06:03 (1)	21:52
4	08:47	08:07	07:01	06:39	05:24	05:54 (1)	04:30
	15:49	16:49	17:51	19:56	20:58	06:05 (1)	21:54
5	08:47	08:05	06:59	06:36	05:22	05:52 (1)	04:29
	15:50	16:51	17:53	19:58	21:01	06:07 (1)	21:55
6	08:46	08:03	06:56	06:34	05:19	05:50 (1)	04:29
	15:52	16:53	17:55	20:00	21:03	06:08 (1)	21:56
7	08:46	08:01	06:53	06:31	05:17	05:48 (1)	04:28
	15:53	16:55	17:57	20:02	21:05	06:09 (1)	21:57
8	08:45	07:59	06:51	06:28	05:15	05:46 (1)	04:27
	15:55	16:58	17:59	20:04	21:07	06:10 (1)	21:58
9	08:44	07:56	06:48	06:26	05:13	05:45 (1)	04:26
	15:56	17:00	18:02	20:06	21:09	06:11 (1)	21:59
10	08:44	07:54	06:46	06:23	05:11	05:45 (1)	04:26
	15:58	17:02	18:04	20:09	21:11	06:11 (1)	22:00
11	08:43	07:52	06:43	06:21	05:09	05:45 (1)	04:25
	16:00	17:04	18:06	20:11	21:13	06:12 (1)	22:01
12	08:42	07:50	06:40	06:18	05:07	05:45 (1)	04:24
	16:01	17:07	18:08	20:13	21:15	06:12 (1)	22:02
13	08:41	07:48	06:38	06:15	05:05	05:44 (1)	04:24
	16:03	17:09	18:10	20:15	21:17	06:12 (1)	22:03
14	08:40	07:45	06:35	06:13	05:03	05:44 (1)	04:24
	16:05	17:11	18:12	20:17	21:19	06:12 (1)	22:04
15	08:39	07:43	06:32	06:10	05:01	05:44 (1)	04:23
	16:07	17:13	18:14	20:19	21:20	06:12 (1)	22:05
16	08:38	07:41	06:30	06:08	04:59	05:44 (1)	04:23
	16:09	17:16	18:16	20:21	21:22	06:13 (1)	22:05
17	08:37	07:38	06:27	06:05	04:57	05:44 (1)	04:23
	16:11	17:18	18:19	20:23	21:24	06:12 (1)	22:06
18	08:35	07:36	06:24	06:02	04:55	05:44 (1)	04:23
	16:13	17:20	18:21	20:25	21:26	06:12 (1)	22:06
19	08:34	07:34	06:22	06:00	04:53	05:45 (1)	04:23
	16:15	17:22	18:23	20:27	21:28	06:12 (1)	22:07
20	08:33	07:31	06:19	05:57	04:51	05:45 (1)	04:23
	16:17	17:25	18:25	20:29	21:30	06:11 (1)	22:07
21	08:31	07:29	06:16	05:55	04:50	05:46 (1)	04:23
	16:19	17:27	18:27	20:31	21:32	06:12 (1)	22:07
22	08:30	07:26	06:14	05:52	04:48	05:45 (1)	04:23
	16:21	17:29	18:29	20:34	21:33	06:11 (1)	22:08
23	08:28	07:24	06:11	05:50	04:46	05:46 (1)	04:23
	16:23	17:31	18:31	20:36	21:35	06:11 (1)	22:08
24	08:27	07:21	06:08	05:47	04:45	05:47 (1)	04:23
	16:25	17:33	18:33	20:38	21:37	06:11 (1)	22:08
25	08:25	07:19	06:06	05:45	04:43	05:47 (1)	04:24
	16:27	17:36	18:35	20:40	21:39	06:09 (1)	22:08
26	08:23	07:16	06:03	05:43	04:42	05:48 (1)	04:24
	16:29	17:38	18:37	20:42	21:40	06:09 (1)	22:08
27	08:22	07:14	06:00	05:40	04:40	05:49 (1)	04:25
	16:31	17:40	18:39	20:44	21:42	06:09 (1)	22:08
28	08:20	07:11	05:58	05:38	04:39	05:51 (1)	04:25
	16:33	17:42	18:42	20:46	21:44	06:08 (1)	22:08
29	08:18		05:55	05:35	04:37	05:51 (1)	04:26
	16:35		18:44	20:48	21:45	06:06 (1)	22:07
30	08:16		06:52	05:33	04:36	05:52 (1)	04:27
	16:38		19:46	20:50	21:47	06:06 (1)	22:07
31	08:15		06:50		04:35	05:54 (1)	
	16:40		19:48		21:48	06:04 (1)	
Potential sun hours	235	265	365	425	507	528	
Total, worst case					644		8
Sun reduction					0,53		0,54
Oper. time red.					0,94		0,94
Wind dir. red.					0,68		0,68
Total reduction					0,34		0,34
Total, real					217		3

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BG - Me ž mui ž a

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	July	August	September	October	November	December
1	04:27 22:07	05:13 21:26	05:55 (1) 20:12	06:14 20:12	07:14 18:52	07:19 16:34
2	04:28 22:06	05:15 21:24	05:55 (1) 20:10	06:16 20:10	07:16 18:49	07:22 16:32
3	04:29 22:06	05:17 21:22	05:55 (1) 20:07	06:18 20:07	07:18 18:47	07:24 16:30
4	04:30 22:05	05:18 21:20	05:56 (1) 20:04	06:20 20:04	07:20 18:44	07:26 16:28
5	04:31 22:04	05:20 21:18	05:56 (1) 20:02	06:22 20:02	07:22 18:41	07:28 16:25
6	04:32 22:04	05:22 21:15	05:58 (1) 19:59	06:24 19:59	07:24 18:39	07:30 16:23
7	04:33 22:03	05:24 21:13	06:00 (1) 19:56	06:26 19:56	07:26 18:36	07:32 16:21
8	04:34 22:02	05:26 21:11	06:01 (1) 19:54	06:28 19:54	07:28 18:33	07:35 16:19
9	04:35 22:01	05:28 21:09	06:03 (1) 19:51	06:30 19:51	07:31 18:31	07:37 16:17
10	04:37 22:00	05:30 21:07	06:05 (1) 19:48	06:32 19:48	07:33 18:28	07:39 16:15
11	04:38 21:59	05:32 21:04	06:13 (1) 19:46	06:34 19:46	07:35 18:25	07:41 16:13
12	04:39 21:58	06:03 (1) 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:37 15:36
13	04:41 21:57	06:03 (1) 21:00	06:38 19:40	07:39 18:20	07:45 16:09	08:39 15:36
14	04:42 21:56	06:13 (1) 20:57	06:40 19:38	07:41 18:18	07:48 16:07	08:40 15:35
15	04:43 21:54	06:15 (1) 20:55	06:42 19:35	07:43 18:15	07:50 16:06	08:41 15:35
16	04:45 21:53	06:15 (1) 20:52	06:44 19:32	07:45 18:13	07:52 16:04	08:42 15:35
17	04:46 21:52	06:17 (1) 20:50	06:46 19:30	07:47 18:10	07:54 16:02	08:43 15:35
18	04:48 21:50	05:59 (1) 20:48	06:48 19:27	07:49 18:08	07:56 16:00	08:44 15:35
19	04:50 21:49	05:58 (1) 20:45	06:50 19:24	07:51 18:05	07:58 15:59	08:44 15:36
20	04:51 21:47	05:57 (1) 20:43	06:52 19:21	07:54 18:03	08:00 15:57	08:45 15:36
21	04:53 21:46	06:20 (1) 20:40	06:54 19:19	07:56 18:00	08:02 15:56	08:46 15:36
22	04:55 21:44	05:57 (1) 20:38	06:56 19:16	07:58 17:58	08:04 15:54	08:46 15:37
23	04:56 21:43	05:56 (1) 20:35	06:58 19:13	08:00 17:55	08:06 15:53	08:47 15:37
24	04:58 21:41	06:22 (1) 20:33	07:00 19:11	08:02 17:53	08:08 15:51	08:47 15:38
25	05:00 21:39	05:55 (1) 20:30	07:02 19:08	08:04 17:50	08:10 15:50	08:48 15:39
26	05:02 21:37	06:22 (1) 20:28	07:04 19:05	08:06 17:48	08:12 15:49	08:48 15:39
27	05:03 21:36	05:54 (1) 20:25	07:06 19:03	08:08 17:46	08:14 15:47	08:48 15:40
28	05:05 21:34	05:55 (1) 20:23	07:08 19:00	08:10 17:43	08:16 15:46	08:48 15:41
29	05:07 21:32	06:23 (1) 20:20	07:10 18:57	08:13 17:41	08:18 15:45	08:48 15:42
30	05:09 21:30	05:54 (1) 20:17	07:12 18:55	08:15 17:39	08:19 15:44	08:48 15:43
31	05:11 21:28	06:22 (1) 20:15	07:14 18:53	08:17 17:37	08:21 15:42	08:48 15:44
Potential sun hours	529	470	385	324	248	216
Total, worst case	444	209				
Sun reduction	0,51	0,51				
Oper. time red.	0,94	0,94				
Wind dir. red.	0,68	0,68				
Total reduction	0,32	0,33				
Total, real	143	68				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

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Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BH - Krastini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January	February	March	April	May	June	
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:31 20:52	04:34 21:50	05:53 (1) 14 06:07 (1)
2	08:48 15:46	08:11 16:44	07:06 17:47	06:44 19:52	05:28 20:54	04:33 21:51	05:54 (1) 12 06:06 (1)
3	08:48 15:48	08:09 16:46	07:04 17:49	06:42 19:54	05:26 20:56	04:31 21:52	05:57 (1) 8 06:05 (1)
4	08:47 15:49	08:07 16:49	07:01 17:51	06:39 19:56	05:24 20:58	04:30 21:54	05:59 (1) 4 06:03 (1)
5	08:47 15:50	08:05 16:51	06:59 17:53	06:36 19:58	05:22 21:01	04:29 21:55	
6	08:46 15:52	08:03 16:53	06:56 17:55	06:34 20:00	05:19 21:03	04:29 21:56	
7	08:46 15:53	08:01 16:55	06:53 17:57	06:31 20:02	05:17 21:05	04:28 21:57	
8	08:45 15:55	07:59 16:58	06:51 17:59	06:28 20:04	05:15 21:07	04:27 21:58	
9	08:44 15:56	07:56 17:00	06:48 18:02	06:26 20:06	05:13 21:09	04:26 21:59	
10	08:44 15:58	07:54 17:02	06:46 18:04	06:23 20:09	05:11 21:11	04:26 22:00	
11	08:43 16:00	07:52 17:04	06:43 18:06	06:21 20:11	05:09 21:13	04:25 22:01	
12	08:42 16:01	07:50 17:07	06:40 18:08	06:18 20:13	05:07 21:15	04:24 22:02	
13	08:41 16:03	07:48 17:09	06:38 18:10	06:15 20:15	05:05 21:17	04:24 22:03	
14	08:40 16:05	07:45 17:11	06:35 18:12	06:13 20:17	05:03 21:19	04:24 22:04	
15	08:39 16:07	07:43 17:13	06:32 18:14	06:10 20:19	05:01 21:20	04:23 22:05	
16	08:38 16:09	07:41 17:16	06:30 18:16	06:08 20:21	04:59 21:22	04:23 22:05	
17	08:37 16:11	07:38 17:18	06:27 18:19	06:05 20:23	04:57 21:24	04:23 22:06	
18	08:35 16:13	07:36 17:20	06:24 18:21	06:02 20:25	04:55 21:26	04:23 22:06	
19	08:34 16:15	07:34 17:22	06:22 18:23	06:00 20:27	04:53 21:28	04:23 22:07	
20	08:33 16:17	07:31 17:25	06:19 18:25	05:57 20:29	04:51 21:30	04:23 22:07	
21	08:31 16:19	07:29 17:27	06:16 18:27	05:55 20:31	04:50 21:32	04:23 22:07	
22	08:30 16:21	07:26 17:29	06:14 18:29	05:52 20:34	04:48 21:33	04:23 22:08	
23	08:28 16:23	07:24 17:31	06:11 18:31	05:50 20:36	04:46 21:35	04:23 22:08	
24	08:27 16:25	07:21 17:33	06:08 18:33	05:47 20:38	04:45 21:37	04:23 22:08	
25	08:25 16:27	07:19 17:36	06:06 18:35	05:45 20:40	04:43 21:39	04:24 22:08	
26	08:23 16:29	07:16 17:38	06:03 18:37	05:43 20:42	04:42 21:40	04:24 22:08	
27	08:22 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:42	04:25 22:08	
28	08:20 16:33	07:11 17:42	05:58 18:42	05:38 20:46	04:39 21:44	04:25 22:08	
29	08:18 16:35		05:55 18:44	05:35 20:48	04:37 21:45	04:26 22:07	
30	08:16 16:38		06:52 19:46	05:33 20:50	04:36 21:47	04:27 22:07	
31	08:15 16:40		06:50 19:48		04:35 21:48		
Potential sun hours	235	265	365	425	507	528	
Total, worst case					700		38
Sun reduction					0,53		0,54
Oper. time red.					0,94		0,94
Wind dir. red.					0,68		0,68
Total reduction					0,34		0,34
Total, real					236		13

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BH - Krastini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	July	August	September	October	November	December
1	04:27	05:13	05:56 (1)	06:14	07:14	07:19
	22:07	21:26	20:12	18:52	16:34	15:43
2	04:28	05:15	05:56 (1)	06:16	07:16	07:22
	22:06	21:24	20:10	18:49	16:32	15:42
3	04:29	05:17	05:56 (1)	06:18	07:18	07:24
	22:06	21:22	20:07	18:47	16:30	15:41
4	04:30	05:18	05:56 (1)	06:20	07:20	07:26
	22:05	21:20	20:04	18:44	16:28	15:40
5	04:31	05:20	05:57 (1)	06:22	07:22	07:28
	22:04	21:18	20:02	18:41	16:25	15:39
6	04:32	05:22	05:58 (1)	06:24	07:24	07:30
	22:04	21:15	19:59	18:39	16:23	15:39
7	04:33	05:24	06:00 (1)	06:26	07:26	07:32
	22:03	21:13	19:56	18:36	16:21	15:38
8	04:34	05:26	06:01 (1)	06:28	07:28	07:35
	22:02	21:11	19:54	18:33	16:19	15:37
9	04:35	06:06 (1)	05:28	06:03 (1)	06:30	07:31
	22:01	21:09	19:51	18:31	16:17	15:37
10	04:37	06:04 (1)	05:30	06:05 (1)	06:32	07:33
	22:00	21:07	19:48	18:28	16:15	15:36
11	04:38	06:02 (1)	05:32	06:14 (1)	06:34	07:35
	21:59	21:04	19:46	18:25	16:13	15:36
12	04:39	06:01 (1)	05:34		06:36	07:37
	21:58	21:02	19:43	18:23	16:11	15:36
13	04:41	06:01 (1)	05:36		06:38	07:39
	21:57	21:00	19:40	18:20	16:09	15:36
14	04:42	06:00 (1)	05:38		06:40	07:41
	21:56	20:57	19:38	18:18	16:07	15:35
15	04:43	05:59 (1)	05:40		06:42	07:43
	21:54	20:55	19:35	18:15	16:06	15:35
16	04:45	05:59 (1)	05:42		06:44	07:45
	21:53	20:53	19:32	18:13	16:04	15:35
17	04:46	05:58 (1)	05:44		06:46	07:47
	21:52	20:50	19:30	18:10	16:02	15:35
18	04:48	05:57 (1)	05:46		06:48	07:49
	21:50	20:48	19:27	18:08	16:00	15:35
19	04:50	05:57 (1)	05:48		06:50	07:51
	21:49	20:45	19:24	18:05	15:59	15:36
20	04:51	05:56 (1)	05:50		06:52	07:54
	21:47	20:43	19:21	18:03	15:57	15:36
21	04:53	05:56 (1)	05:52		06:54	07:56
	21:46	20:40	19:19	18:00	15:56	15:36
22	04:55	05:56 (1)	05:54		06:56	07:58
	21:44	20:38	19:16	17:58	15:54	15:37
23	04:56	05:56 (1)	05:56		06:58	08:00
	21:43	20:35	19:13	17:55	15:53	15:37
24	04:58	05:55 (1)	05:58		07:00	08:02
	21:41	20:33	19:11	17:53	15:51	15:38
25	05:00	05:55 (1)	06:00		07:02	08:04
	21:39	20:30	19:08	17:50	15:50	15:39
26	05:02	05:55 (1)	06:02		07:04	08:06
	21:37	20:28	19:05	16:48	15:49	15:39
27	05:03	05:55 (1)	06:04		07:06	08:08
	21:36	20:25	19:03	16:46	15:47	15:40
28	05:05	05:55 (1)	06:06		07:08	08:10
	21:34	20:23	19:00	16:43	15:46	15:41
29	05:07	05:55 (1)	06:08		07:10	08:12
	21:32	20:20	18:57	16:41	15:45	15:42
30	05:09	05:55 (1)	06:10		07:12	08:14
	21:30	20:17	18:55	16:39	15:44	15:43
31	05:11	05:55 (1)	06:12		07:17	08:16
	21:28	20:15		16:36		15:44
Potential sun hours	529	470	385	324	248	216
Total, worst case	525	216				
Sun reduction	0,51	0,51				
Oper. time red.	0,94	0,94				
Wind dir. red.	0,68	0,68				
Total reduction	0,32	0,33				
Total, real	169	70				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BI - Strauti

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:13	07:09	06:47	05:31	04:34	04:27	05:13	06:14	07:14	07:19	08:21
	15:45	16:42	17:44	19:50	20:52	21:50	22:07	21:26	20:12	18:52	16:34	15:43
2	08:48	08:11	07:06	06:44	05:28	04:33	04:28	05:15	06:16	07:16	07:22	08:23
	15:47	16:44	17:47	19:52	20:54	21:51	22:06	21:24	20:10	18:49	16:32	15:42
3	08:48	08:09	07:04	06:42	05:26	04:32	04:29	05:17	06:18	07:18	07:24	08:25
	15:48	16:47	17:49	19:54	20:56	21:52	22:06	21:22	20:07	18:47	16:30	15:41
4	08:47	08:07	07:01	06:39	05:24	04:31	04:30	05:19	06:20	07:20	07:26	08:26
	15:49	16:49	17:51	19:56	20:59	21:54	22:05	21:20	20:04	18:44	16:28	15:40
5	08:47	08:05	06:59	06:36	05:22	04:30	04:31	05:20	06:22	07:22	07:28	08:28
	15:50	16:51	17:53	19:58	21:01	21:55	22:04	21:18	20:02	18:41	16:25	15:39
6	08:46	08:03	06:56	06:34	05:19	04:29	04:32	05:22	06:24	07:24	07:30	08:29
	15:52	16:53	17:55	20:00	21:03	21:56	22:04	21:15	19:59	18:39	16:23	15:39
7	08:46	08:01	06:54	06:31	05:17	04:28	04:33	05:24	06:26	07:26	07:33	08:31
	15:53	16:55	17:57	20:02	21:05	21:57	22:03	21:13	19:56	18:36	16:21	15:38
8	08:45	07:59	06:51	06:28	05:15	04:27	04:34	05:26	06:28	07:29	07:35	08:32
	15:55	16:58	18:00	20:04	21:07	21:59	22:02	21:11	19:54	18:33	16:19	15:37
9	08:44	07:56	06:48	06:26	05:13	04:26	04:35	05:28	06:30	07:31	07:37	08:34
	15:57	17:00	18:02	20:07	21:09	22:00	22:01	21:09	19:51	18:31	16:17	15:37
10	08:44	07:54	06:46	06:23	05:11	04:26	04:37	05:30	06:32	07:33	07:39	08:35
	15:58	17:02	18:04	20:09	21:11	22:01	22:00	21:07	19:48	18:28	16:15	15:36
11	08:43	07:52	06:43	06:21	05:09	04:25	04:38	05:32	06:34	07:35	07:41	08:36
	16:00	17:04	18:06	20:11	21:13	22:01	21:59	21:04	19:46	18:26	16:13	15:36
12	08:42	07:50	06:40	06:18	05:07	04:25	04:39	05:34	06:36	07:37	07:43	08:38
	16:02	17:07	18:08	20:13	21:15	22:02	21:58	21:02	19:43	18:23	16:11	15:36
13	08:41	07:48	06:38	06:15	05:05	04:24	04:41	05:36	06:38	07:39	07:45	08:39
	16:03	17:09	18:10	20:15	21:17	22:03	21:57	21:00	19:40	18:20	16:09	15:36
14	08:40	07:45	06:35	06:13	05:03	04:24	04:42	05:38	06:40	07:41	07:48	08:40
	16:05	17:11	18:12	20:17	21:19	22:04	21:56	20:57	19:38	18:18	16:07	15:35
15	08:39	07:43	06:32	06:10	05:01	04:23	04:43	05:40	06:42	07:43	07:50	08:41
	16:07	17:13	18:14	20:19	21:21	22:05	21:54	20:55	19:35	18:15	16:06	15:35
16	08:38	07:41	06:30	06:08	04:59	04:23	04:45	05:42	06:44	07:45	07:52	08:42
	16:09	17:16	18:17	20:21	21:22	22:05	21:53	20:53	19:32	18:13	16:04	15:35
17	08:37	07:38	06:27	06:05	04:57	04:23	04:46	05:44	06:46	07:47	07:54	08:43
	16:11	17:18	18:19	20:23	21:24	22:06	21:52	20:50	19:30	18:10	16:02	15:35
18	08:35	07:36	06:24	06:03	04:55	04:23	04:48	05:46	06:48	07:49	07:56	08:44
	16:13	17:20	18:21	20:25	21:26	22:06	21:50	20:48	19:27	18:08	16:00	15:36
19	08:34	07:34	06:22	06:00	04:53	04:23	04:50	05:48	06:50	07:52	07:58	08:44
	16:15	17:22	18:23	20:27	21:28	22:07	21:49	20:45	19:24	18:05	15:59	15:36
20	08:33	07:31	06:19	05:57	04:51	04:23	04:51	05:50	06:52	07:54	08:00	08:45
	16:17	17:25	18:25	20:29	21:30	22:07	21:47	20:43	19:21	18:03	15:57	15:36
21	08:31	07:29	06:16	05:55	04:50	04:23	04:53	05:52	06:54	07:56	08:02	08:46
	16:19	17:27	18:27	20:32	21:32	22:07	21:46	20:40	19:19	18:00	15:56	15:36
22	08:30	07:26	06:14	05:52	04:48	04:23	04:55	05:54	06:56	07:58	08:04	08:46
	16:21	17:29	18:29	20:34	21:34	22:08	21:44	20:38	19:16	17:58	15:54	15:37
23	08:28	07:24	06:11	05:50	04:46	04:23	04:56	05:56	06:58	08:00	08:06	08:47
	16:23	17:31	18:31	20:36	21:35	22:08	21:43	20:35	19:13	17:55	15:53	15:37
24	08:27	07:22	06:08	05:47	04:45	04:24	04:58	05:58	07:00	08:02	08:08	08:47
	16:25	17:33	18:33	20:38	21:37	22:08	21:41	20:33	19:11	17:53	15:51	15:38
25	08:25	07:19	06:06	05:45	04:43	04:24	05:00	06:00	07:02	08:04	08:10	08:48
	16:27	17:36	18:35	20:40	21:39	22:08	21:39	20:30	19:08	17:50	15:50	15:39
26	08:23	07:17	06:03	05:43	04:42	04:24	05:02	06:02	07:04	07:06	08:12	08:48
	16:29	17:38	18:37	20:42	21:40	22:08	21:37	20:28	19:05	16:48	15:49	15:39
27	08:22	07:14	06:00	05:40	04:40	04:25	05:03	06:04	07:06	07:09	08:14	08:48
	16:31	17:40	18:40	20:44	21:42	22:08	21:36	20:25	19:03	16:46	15:47	15:40
28	08:20	07:12	05:58	05:38	04:39	04:25	05:05	06:06	07:08	07:11	08:16	08:48
	16:33	17:42	18:42	20:46	21:44	22:08	21:34	20:23	19:00	16:43	15:46	15:41
29	08:18		05:55	05:35	04:37	04:26	05:07	06:08	07:10	07:13	08:18	08:48
	16:36		18:44	20:48	21:45	22:07	21:32	20:20	18:57	16:41	15:45	15:42
30	08:16		06:52	05:33	04:36	04:27	05:09	06:10	07:12	07:15	08:19	08:48
	16:38		19:46	20:50	21:47	22:07	21:30	20:17	18:55	16:39	15:44	15:43
31	08:15		06:50		04:35		05:11	06:12		07:17		08:48
	16:40		19:48		21:48		21:28	20:15		16:36		15:44
Potential sun hours	235	265	365	425	507	528	529	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BJ - Purenes

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:31 20:52	04:34 21:50	04:27 22:07	05:13 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:43
2	08:48 15:47	08:11 16:44	07:06 17:47	06:44 19:52	05:28 20:54	04:33 21:51	04:28 22:06	05:15 21:24	06:16 20:10	07:16 18:49	07:22 16:32	08:23 15:42
3	08:48 15:48	08:09 16:47	07:04 17:49	06:42 19:54	05:26 20:56	04:32 21:52	04:29 22:06	05:17 21:22	06:18 20:07	07:18 18:47	07:24 16:30	08:25 15:41
4	08:47 15:49	08:07 16:49	07:01 17:51	06:39 19:56	05:24 20:59	04:31 21:54	04:30 22:05	05:19 21:20	06:20 20:04	07:20 18:44	07:26 16:28	08:26 15:40
5	08:47 15:51	08:05 16:51	06:59 17:53	06:36 19:58	05:22 21:01	04:30 21:55	04:31 22:04	05:20 21:18	06:22 20:02	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:52	08:03 16:53	06:56 17:55	06:34 20:00	05:19 21:03	04:29 21:56	04:32 22:04	05:22 21:15	06:24 19:59	07:24 18:39	07:30 16:23	08:29 15:39
7	08:46 15:53	08:01 16:55	06:54 17:57	06:31 20:02	05:17 21:05	04:28 21:57	04:33 22:03	05:24 21:13	06:26 19:56	07:27 18:36	07:33 16:21	08:31 15:38
8	08:45 15:55	07:59 16:58	06:51 18:00	06:28 20:04	05:15 21:07	04:27 21:59	04:34 22:02	05:26 21:11	06:28 19:54	07:29 18:33	07:35 16:19	08:32 15:37
9	08:44 15:57	07:56 17:00	06:48 18:02	06:26 20:07	05:13 21:09	04:26 22:00	04:35 22:01	05:28 21:09	06:30 19:51	07:31 18:31	07:37 16:17	08:34 15:37
10	08:44 15:58	07:54 17:02	06:46 18:04	06:23 20:09	05:11 21:11	04:26 22:01	04:37 22:00	05:30 21:07	06:32 19:48	07:33 18:28	07:39 16:15	08:35 15:36
11	08:43 16:00	07:52 17:04	06:43 18:06	06:21 20:11	05:09 21:13	04:25 22:01	04:38 21:59	05:32 21:04	06:34 19:46	07:35 18:26	07:41 16:13	08:36 15:36
12	08:42 16:02	07:50 17:07	06:40 18:08	06:18 20:13	05:07 21:15	04:25 22:02	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:38 15:36
13	08:41 16:03	07:48 17:09	06:38 18:10	06:15 20:15	05:05 21:17	04:24 22:03	04:41 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:45 16:09	08:39 15:36
14	08:40 16:05	07:45 17:11	06:35 18:12	06:13 20:17	05:03 21:19	04:24 22:04	04:42 21:56	05:38 20:57	06:40 19:38	07:41 18:18	07:48 16:07	08:40 15:35
15	08:39 16:07	07:43 17:13	06:32 18:14	06:10 20:19	05:01 21:21	04:23 22:05	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:06	08:41 15:35
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17	08:37 16:11	07:38 17:18	06:27 18:19	06:05 20:23	04:57 21:24	04:23 22:06	04:46 21:52	05:44 20:50	06:46 19:30	07:47 18:10	07:54 16:02	08:43 15:35
18	08:35 16:13	07:36 17:20	06:25 18:21	06:03 20:25	04:55 21:26	04:23 22:06	04:48 21:50	05:46 20:48	06:48 19:27	07:49 18:08	07:56 16:00	08:44 15:36
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Potential sun hours	235	265	365	425	507	528	529	470	385	324	248	216
Total, worst case												
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Table layout: For each day in each month the following matrix apply

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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BK - Uplejas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:31 20:52	04:34 21:50	04:27 22:07	05:13 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:43
2	08:48 15:47	08:11 16:44	07:06 17:47	06:44 19:52	05:28 20:54	04:33 21:51	04:28 22:06	05:15 21:24	06:16 20:10	07:16 18:49	07:22 16:32	08:23 15:42
3	08:48 15:48	08:09 16:47	07:04 17:49	06:42 19:54	05:26 20:56	04:32 21:52	04:29 22:06	05:17 21:22	06:18 20:07	07:18 18:47	07:24 16:30	08:25 15:41
4	08:47 15:49	08:07 16:49	07:01 17:51	06:39 19:56	05:24 20:59	04:31 21:54	04:30 22:05	05:19 21:20	06:20 20:04	07:20 18:44	07:26 16:28	08:26 15:40
5	08:47 15:50	08:05 16:51	06:59 17:53	06:36 19:58	05:22 21:01	04:30 21:55	04:31 22:04	05:20 21:18	06:22 20:02	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:52	08:03 16:53	06:56 17:55	06:34 20:00	05:19 21:03	04:29 21:56	04:32 22:04	05:22 21:15	06:24 19:59	07:24 18:39	07:30 16:23	08:29 15:39
7	08:46 15:53	08:01 16:55	06:54 17:57	06:31 20:02	05:17 21:05	04:28 21:57	04:33 22:03	05:24 21:13	06:26 19:56	07:26 18:36	07:33 16:21	08:31 15:38
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11	08:43 16:00	07:52 17:04	06:43 18:06	06:21 20:11	05:09 21:13	04:25 22:01	04:38 21:59	05:32 21:04	06:34 19:46	07:35 18:26	07:41 16:13	08:36 15:36
12	08:42 16:02	07:50 17:07	06:40 18:08	06:18 20:13	05:07 21:15	04:25 22:02	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:38 15:36
13	08:41 16:03	07:48 17:09	06:38 18:10	06:15 20:15	05:05 21:17	04:24 22:03	04:41 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:45 16:09	08:39 15:36
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31	08:15 16:40		06:50 19:48		04:35 21:48		05:11 21:28	06:12 20:15	07:17 16:36			08:48 15:44
Potential sun hours	235	265	365	425	507	528	529	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BL - Bazes stacija

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:31 20:52	04:34 21:50	04:27 22:07	05:13 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:43
2	08:48 15:47	08:11 16:44	07:06 17:47	06:44 19:52	05:28 20:54	04:33 21:51	04:28 22:06	05:15 21:24	06:16 20:10	07:16 18:49	07:22 16:32	08:23 15:42
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Skepast & Puhkim OÜ

Laki põik 2

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+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

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SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BM - Spridi š i

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:31 20:52	04:34 21:50	04:27 22:07	05:13 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:43
2	08:48 15:47	08:11 16:44	07:06 17:47	06:44 19:52	05:28 20:54	04:33 21:51	04:28 22:06	05:15 21:24	06:16 20:10	07:16 18:49	07:22 16:32	08:23 15:42
3	08:48 15:48	08:09 16:47	07:04 17:49	06:42 19:54	05:26 20:56	04:32 21:52	04:29 22:06	05:17 21:22	06:18 20:07	07:18 18:47	07:24 16:30	08:25 15:41
4	08:47 15:49	08:07 16:49	07:01 17:51	06:39 19:56	05:24 20:59	04:31 21:54	04:30 22:05	05:19 21:20	06:20 20:04	07:20 18:44	07:26 16:28	08:26 15:40
5	08:47 15:51	08:05 16:51	06:59 17:53	06:36 19:58	05:22 21:01	04:30 21:55	04:31 22:04	05:20 21:18	06:22 20:02	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:52	08:03 16:53	06:56 17:55	06:34 20:00	05:19 21:03	04:29 21:56	04:32 22:04	05:22 21:15	06:24 19:59	07:24 18:39	07:30 16:23	08:29 15:39
7	08:46 15:53	08:01 16:56	06:54 17:57	06:31 20:02	05:17 21:05	04:28 21:57	04:33 22:03	05:24 21:13	06:26 19:56	07:27 18:36	07:33 16:21	08:31 15:38
8	08:45 15:55	07:59 16:58	06:51 18:00	06:28 20:04	05:15 21:07	04:27 21:59	04:34 22:02	05:26 21:11	06:28 19:54	07:29 18:33	07:35 16:19	08:32 15:37
9	08:44 15:57	07:56 17:00	06:48 18:02	06:26 20:07	05:13 21:09	04:26 22:00	04:35 22:01	05:28 21:09	06:30 19:51	07:31 18:31	07:37 16:17	08:34 15:37
10	08:44 15:58	07:54 17:02	06:46 18:04	06:23 20:09	05:11 21:11	04:26 22:01	04:37 22:00	05:30 21:07	06:32 19:48	07:33 18:28	07:39 16:15	08:35 15:37
11	08:43 16:00	07:52 17:04	06:43 18:06	06:21 20:11	05:09 21:13	04:25 22:01	04:38 21:59	05:32 21:04	06:34 19:46	07:35 18:26	07:41 16:13	08:36 15:36
12	08:42 16:02	07:50 17:07	06:40 18:08	06:18 20:13	05:07 21:15	04:25 22:02	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:38 15:36
13	08:41 16:03	07:48 17:09	06:38 18:10	06:15 20:15	05:05 21:17	04:24 22:03	04:41 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:45 16:09	08:39 15:36
14	08:40 16:05	07:45 17:11	06:35 18:12	06:13 20:17	05:03 21:19	04:24 22:04	04:42 21:56	05:38 20:57	06:40 19:38	07:41 18:18	07:48 16:07	08:40 15:35
15	08:39 16:07	07:43 17:13	06:33 18:14	06:10 20:19	05:01 21:21	04:23 22:05	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:06	08:41 15:35
16	08:38 16:09	07:41 17:16	06:30 18:17	06:08 20:21	04:59 21:22	04:23 22:05	04:45 21:53	05:42 20:53	06:44 19:32	07:45 18:13	07:52 16:04	08:42 15:35
17	08:37 16:11	07:38 17:18	06:27 18:19	06:05 20:23	04:57 21:24	04:23 22:06	04:46 21:52	05:44 20:50	06:46 19:30	07:47 18:10	07:54 16:02	08:43 15:35
18	08:35 16:13	07:36 17:20	06:25 18:21	06:03 20:25	04:55 21:26	04:23 22:06	04:48 21:50	05:46 20:48	06:48 19:27	07:49 18:08	07:56 16:00	08:44 15:36
19	08:34 16:15	07:34 17:22	06:22 18:23	06:00 20:27	04:53 21:28	04:23 22:07	04:50 21:49	05:48 20:45	06:50 19:24	07:52 18:05	07:58 15:59	08:44 15:36
20	08:33 16:17	07:31 17:25	06:19 18:25	05:57 20:29	04:51 21:30	04:23 22:07	04:51 21:47	05:50 20:43	06:52 19:22	07:54 18:03	08:00 15:57	08:45 15:36
21	08:31 16:19	07:29 17:27	06:16 18:27	05:55 20:32	04:50 21:32	04:23 22:07	04:53 21:46	05:52 20:40	06:54 19:19	07:56 18:00	08:02 15:56	08:46 15:36
22	08:30 16:21	07:26 17:29	06:14 18:29	05:52 20:34	04:48 21:34	04:23 22:08	04:55 21:44	05:54 20:38	06:56 19:16	07:58 17:58	08:04 15:54	08:46 15:37
23	08:28 16:23	07:24 17:31	06:11 18:31	05:50 20:36	04:46 21:35	04:23 22:08	04:56 21:43	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:53	08:47 15:37
24	08:27 16:25	07:22 17:33	06:08 18:33	05:48 20:38	04:45 21:37	04:24 22:08	04:58 21:41	05:58 20:33	07:00 19:11	08:02 17:53	08:08 15:51	08:47 15:38
25	08:25 16:27	07:19 17:36	06:06 18:35	05:45 20:40	04:43 21:39	04:24 22:08	05:00 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:50	08:48 15:39
26	08:23 16:29	07:17 17:38	06:03 18:37	05:43 20:42	04:42 21:40	04:24 22:08	05:02 21:37	06:02 20:28	07:04 19:05	07:06 16:48	08:12 15:49	08:48 15:39
27	08:22 16:31	07:14 17:40	06:00 18:40	05:40 20:44	04:40 21:42	04:25 22:08	05:03 21:36	06:04 20:25	07:06 19:03	07:09 16:46	08:14 15:47	08:48 15:40
28	08:20 16:33	07:12 17:42	05:58 18:42	05:38 20:46	04:39 21:44	04:25 22:08	05:05 21:34	06:06 20:23	07:08 19:00	07:11 16:43	08:16 15:46	08:48 15:41
29	08:18 16:36		05:55 18:44	05:35 20:48	04:38 21:45	04:26 22:07	05:07 21:32	06:08 20:20	07:10 18:57	07:13 16:41	08:18 15:45	08:48 15:42
30	08:16 16:38		06:52 19:46	05:33 20:50	04:36 21:47	04:27 22:07	05:09 21:30	06:10 20:17	07:12 18:55	07:15 16:39	08:19 15:44	08:48 15:43
31	08:15 16:40		06:50 19:48		04:35 21:48		05:11 21:28	06:12 20:15	07:17 16:36			08:48 15:44
Potential sun hours	235	265	365	425	507	528	529	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BN - Klavas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	
1	08:48	08:13	07:09	06:47	05:31	04:34	05:20 (21)
	15:45	16:42	17:44	19:50	20:52	21:49	65 06:25 (2)
2	08:48	08:11	07:06	06:44	05:28	04:33	05:20 (21)
	15:46	16:44	17:46	19:52	20:54	21:51	65 06:25 (2)
3	08:48	08:09	07:04	06:42	05:26	04:31	05:20 (21)
	15:48	16:46	17:49	19:54	20:56	21:52	65 06:25 (2)
4	08:47	08:07	07:01	06:39	05:24	04:30	05:21 (21)
	15:49	16:49	17:51	19:56	20:58	21:54	65 06:26 (2)
5	08:47	08:05	06:59	06:36	05:21	04:29	05:20 (21)
	15:50	16:51	17:53	19:58	21:00	21:55	66 06:26 (2)
6	08:46	08:03	06:56	06:34	05:19	04:29	05:20 (21)
	15:52	16:53	17:55	20:00	21:02	21:56	66 06:26 (2)
7	08:46	08:01	06:53	06:31	05:17	04:28	05:21 (21)
	15:53	16:55	17:57	20:02	21:04	21:57	66 06:27 (2)
8	08:45	07:58	06:51	06:28	05:15	04:27	05:21 (21)
	15:55	16:58	17:59	20:04	21:06	21:58	65 06:26 (2)
9	08:44	07:56	06:48	06:26	05:13	05:55 (2)	04:26 05:21 (21)
	15:56	17:00	18:02	20:06	21:09	06:08 (2)	21:59 65 06:26 (2)
10	08:44	07:54	06:46	06:23	05:11	05:52 (2)	04:26 05:21 (21)
	15:58	17:02	18:04	20:08	21:11	06:11 (2)	22:00 66 06:27 (2)
11	08:43	07:52	06:43	06:20	05:09	05:50 (2)	04:25 05:22 (21)
	16:00	17:04	18:06	20:11	21:13	06:13 (2)	22:01 65 06:27 (2)
12	08:42	07:50	06:40	06:18	05:06	05:49 (2)	04:24 05:22 (21)
	16:01	17:07	18:08	20:13	21:14	06:15 (2)	22:02 65 06:27 (2)
13	08:41	07:47	06:38	06:15	05:04	05:47 (2)	04:24 05:22 (21)
	16:03	17:09	18:10	20:15	21:16	06:16 (2)	22:03 65 06:27 (2)
14	08:40	07:45	06:35	06:13	05:02	05:46 (2)	04:24 05:23 (21)
	16:05	17:11	18:12	20:17	21:18	06:17 (2)	22:04 65 06:28 (2)
15	08:39	07:43	06:32	06:10	05:01	05:44 (2)	04:23 05:22 (21)
	16:07	17:13	18:14	20:19	21:20	06:18 (2)	22:04 65 06:27 (2)
16	08:38	07:41	06:30	06:07	04:59	05:44 (2)	04:23 05:22 (21)
	16:09	17:16	18:16	20:21	21:22	06:20 (2)	22:05 65 06:27 (2)
17	08:36	07:38	06:27	06:05	04:57	05:30 (21)	04:23 05:23 (21)
	16:11	17:18	18:18	20:23	21:24	06:20 (2)	22:06 65 06:28 (2)
18	08:35	07:36	06:24	06:02	04:55	05:28 (21)	04:23 05:23 (21)
	16:12	17:20	18:21	20:25	21:26	06:20 (2)	22:06 65 06:28 (2)
19	08:34	07:34	06:22	06:00	04:53	05:27 (21)	04:23 05:23 (21)
	16:14	17:22	18:23	20:27	21:28	06:21 (2)	22:07 65 06:28 (2)
20	08:32	07:31	06:19	05:57	04:51	05:25 (21)	04:23 05:23 (21)
	16:16	17:24	18:25	20:29	21:30	06:22 (2)	22:07 65 06:28 (2)
21	08:31	07:29	06:16	05:55	04:50	05:24 (21)	04:23 05:24 (21)
	16:18	17:27	18:27	20:31	21:32	06:23 (2)	22:07 65 06:29 (2)
22	08:30	07:26	06:14	05:52	04:48	05:22 (21)	04:23 05:24 (21)
	16:21	17:29	18:29	20:33	21:33	06:22 (2)	22:07 65 06:29 (2)
23	08:28	07:24	06:11	05:50	04:46	05:22 (21)	04:23 05:24 (21)
	16:23	17:31	18:31	20:36	21:35	06:23 (2)	22:08 65 06:29 (2)
24	08:27	07:21	06:08	05:47	04:45	05:21 (21)	04:23 05:24 (21)
	16:25	17:33	18:33	20:38	21:37	06:23 (2)	22:08 65 06:29 (2)
25	08:25	07:19	06:06	05:45	04:43	05:21 (21)	04:24 05:25 (21)
	16:27	17:36	18:35	20:40	21:39	06:24 (2)	22:08 65 06:30 (2)
26	08:23	07:16	06:03	05:42	04:42	05:21 (21)	04:24 05:25 (21)
	16:29	17:38	18:37	20:42	21:40	06:24 (2)	22:08 65 06:30 (2)
27	08:22	07:14	06:00	05:40	04:40	05:21 (21)	04:25 05:25 (21)
	16:31	17:40	18:39	20:44	21:42	06:25 (2)	22:08 65 06:30 (2)
28	08:20	07:11	05:58	05:38	04:39	05:20 (21)	04:25 05:25 (21)
	16:33	17:42	18:41	20:46	21:43	06:24 (2)	22:07 65 06:30 (2)
29	08:18		05:55	05:35	04:37	05:20 (21)	04:26 05:26 (21)
	16:35		18:44	20:48	21:45	06:24 (2)	22:07 65 06:31 (2)
30	08:16		06:52	05:33	04:36	05:20 (21)	04:27 05:26 (21)
	16:38		19:46	20:50	21:47	06:25 (2)	22:07 65 06:31 (2)
31	08:14		06:50		04:35	05:20 (21)	
	16:40		19:48		21:48	06:25 (2)	
Potential sun hours	235	265	365	425	507	528	
Total, worst case					1109		1954
Sun reduction					0,53		0,54
Oper. time red.					0,94		0,94
Wind dir. red.					0,68		0,68
Total reduction					0,34		0,34
Total, real					375		668

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BN - Klavas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July		August		September		October	November		December
1	04:27	05:26 (21)	05:13		05:59 (2)	06:14	07:14	07:19	08:21	
	22:06	65 06:31 (2)	21:26	27	06:26 (2)	20:12	18:52	16:34	15:43	
2	04:28	05:26 (21)	05:15		06:01 (2)	06:16	07:16	07:21	08:23	
	22:06	65 06:31 (2)	21:24	23	06:24 (2)	20:09	18:49	16:32	15:42	
3	04:29	05:26 (21)	05:16		06:02 (2)	06:18	07:18	07:24	08:24	
	22:05	66 06:32 (2)	21:22	20	06:22 (2)	20:07	18:46	16:30	15:41	
4	04:30	05:27 (21)	05:18		06:04 (2)	06:20	07:20	07:26	08:26	
	22:05	65 06:32 (2)	21:20	15	06:19 (2)	20:04	18:44	16:27	15:40	
5	04:31	05:27 (21)	05:20		06:09 (2)	06:22	07:22	07:28	08:28	
	22:04	65 06:32 (2)	21:17	5	06:14 (2)	20:02	18:41	16:25	15:39	
6	04:32	05:27 (21)	05:22			06:24	07:24	07:30	08:29	
	22:03	66 06:33 (2)	21:15			19:59	18:38	16:23	15:39	
7	04:33	05:27 (21)	05:24			06:26	07:26	07:32	08:31	
	22:03	66 06:33 (2)	21:13			19:56	18:36	16:21	15:38	
8	04:34	05:27 (21)	05:26			06:28	07:28	07:35	08:32	
	22:02	66 06:33 (2)	21:11			19:54	18:33	16:19	15:37	
9	04:35	05:28 (21)	05:28			06:30	07:30	07:37	08:33	
	22:01	65 06:33 (2)	21:09			19:51	18:31	16:17	15:37	
10	04:37	05:28 (21)	05:30			06:32	07:33	07:39	08:35	
	22:00	65 06:33 (2)	21:06			19:48	18:28	16:15	15:36	
11	04:38	05:28 (21)	05:32			06:34	07:35	07:41	08:36	
	21:59	65 06:33 (2)	21:04			19:46	18:25	16:13	15:36	
12	04:39	05:28 (21)	05:34			06:36	07:37	07:43	08:37	
	21:58	65 06:33 (2)	21:02			19:43	18:23	16:11	15:36	
13	04:40	05:28 (21)	05:36			06:38	07:39	07:45	08:38	
	21:57	65 06:33 (2)	21:00			19:40	18:20	16:09	15:35	
14	04:42	05:29 (21)	05:38			06:40	07:41	07:47	08:40	
	21:56	65 06:34 (2)	20:57			19:38	18:18	16:07	15:35	
15	04:43	05:29 (21)	05:40			06:42	07:43	07:50	08:41	
	21:54	64 06:33 (2)	20:55			19:35	18:15	16:06	15:35	
16	04:45	05:29 (21)	05:42			06:44	07:45	07:52	08:42	
	21:53	64 06:33 (2)	20:52			19:32	18:13	16:04	15:35	
17	04:46	05:30 (21)	05:44			06:46	07:47	07:54	08:43	
	21:52	64 06:34 (2)	20:50			19:29	18:10	16:02	15:35	
18	04:48	05:30 (21)	05:46			06:48	07:49	07:56	08:43	
	21:50	63 06:33 (2)	20:48			19:27	18:07	16:00	15:35	
19	04:50	05:31 (21)	05:48			06:50	07:51	07:58	08:44	
	21:49	63 06:34 (2)	20:45			19:24	18:05	15:59	15:36	
20	04:51	05:31 (21)	05:50			06:52	07:53	08:00	08:45	
	21:47	62 06:33 (2)	20:43			19:21	18:02	15:57	15:36	
21	04:53	05:32 (21)	05:52			06:54	07:56	08:02	08:46	
	21:46	61 06:33 (2)	20:40			19:19	18:00	15:56	15:36	
22	04:54	05:32 (21)	05:54			06:56	07:58	08:04	08:46	
	21:44	61 06:33 (2)	20:38			19:16	17:58	15:54	15:37	
23	04:56	05:34 (21)	05:56			06:58	08:00	08:06	08:47	
	21:42	59 06:33 (2)	20:35			19:13	17:55	15:53	15:37	
24	04:58	05:35 (21)	05:58			07:00	08:02	08:08	08:47	
	21:41	57 06:32 (2)	20:33			19:11	17:53	15:51	15:38	
25	05:00	05:37 (21)	06:00			07:02	08:04	08:10	08:47	
	21:39	55 06:32 (2)	20:30			19:08	17:50	15:50	15:38	
26	05:02	05:39 (21)	06:02			07:04	07:06	08:12	08:48	
	21:37	52 06:32 (2)	20:28			19:05	16:48	15:48	15:39	
27	05:03	05:40 (21)	06:04			07:06	07:08	08:14	08:48	
	21:35	47 06:30 (2)	20:25			19:02	16:46	15:47	15:40	
28	05:05	05:43 (21)	06:06			07:08	07:11	08:16	08:48	
	21:34	39 06:30 (2)	20:22			19:00	16:43	15:46	15:41	
29	05:07	05:56 (2)	06:08			07:10	07:13	08:17	08:48	
	21:32	33 06:29 (2)	20:20			18:57	16:41	15:45	15:42	
30	05:09	05:56 (2)	06:10			07:12	07:15	08:19	08:48	
	21:30	32 06:28 (2)	20:17			18:54	16:39	15:44	15:43	
31	05:11	05:57 (2)	06:12				07:17		08:48	
	21:28	30 06:27 (2)	20:15				16:36		15:44	
Potential sun hours	529		470		385	324	248	216		
Total, worst case	1820		90							
Sun reduction	0,51		0,51							
Oper. time red.	0,94		0,94							
Wind dir. red.	0,68		0,68							
Total reduction	0,32		0,33							
Total, real	587		29							

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BO - Kaupres

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:13	07:09	06:47	05:31	04:34	04:27	05:13	06:14	07:14	07:19	08:21
	15:45	16:42	17:44	19:50	20:52	21:49	22:06	21:26	20:12	18:52	16:34	15:43
2	08:48	08:11	07:06	06:44	05:28	04:33	04:28	05:15	06:16	07:16	07:21	08:23
	15:47	16:44	17:46	19:52	20:54	21:51	22:06	21:24	20:09	18:49	16:32	15:42
3	08:47	08:09	07:04	06:42	05:26	04:31	04:29	05:17	06:18	07:18	07:24	08:24
	15:48	16:46	17:49	19:54	20:56	21:52	22:05	21:22	20:07	18:46	16:30	15:41
4	08:47	08:07	07:01	06:39	05:24	04:30	04:30	05:18	06:20	07:20	07:26	08:26
	15:49	16:49	17:51	19:56	20:58	21:54	22:05	21:20	20:04	18:44	16:27	15:40
5	08:47	08:05	06:59	06:36	05:22	04:30	04:31	05:20	06:22	07:22	07:28	08:28
	15:50	16:51	17:53	19:58	21:00	21:55	22:04	21:17	20:02	18:41	16:25	15:39
6	08:46	08:03	06:56	06:34	05:19	04:29	04:32	05:22	06:24	07:24	07:30	08:29
	15:52	16:53	17:55	20:00	21:02	21:56	22:03	21:15	19:59	18:38	16:23	15:39
7	08:46	08:01	06:53	06:31	05:17	04:28	04:33	05:24	06:26	07:26	07:32	08:31
	15:53	16:55	17:57	20:02	21:04	21:57	22:03	21:13	19:56	18:36	16:21	15:38
8	08:45	07:58	06:51	06:28	05:15	04:27	04:34	05:26	06:28	07:28	07:34	08:32
	15:55	16:58	17:59	20:04	21:06	21:58	22:02	21:11	19:54	18:33	16:19	15:37
9	08:44	07:56	06:48	06:26	05:13	04:26	04:35	05:28	06:30	07:30	07:37	08:33
	15:56	17:00	18:02	20:06	21:08	21:59	22:01	21:09	19:51	18:31	16:17	15:37
10	08:43	07:54	06:46	06:23	05:11	04:26	04:37	05:30	06:32	07:33	07:39	08:35
	15:58	17:02	18:04	20:08	21:10	22:00	22:00	21:06	19:48	18:28	16:15	15:36
11	08:43	07:52	06:43	06:20	05:09	04:25	04:38	05:32	06:34	07:35	07:41	08:36
	16:00	17:04	18:06	20:11	21:12	22:01	21:59	21:04	19:46	18:25	16:13	15:36
12	08:42	07:50	06:40	06:18	05:07	04:25	04:39	05:34	06:36	07:37	07:43	08:37
	16:01	17:07	18:08	20:13	21:14	22:02	21:58	21:02	19:43	18:23	16:11	15:36
13	08:41	07:47	06:38	06:15	05:05	04:24	04:41	05:36	06:38	07:39	07:45	08:38
	16:03	17:09	18:10	20:15	21:16	22:03	21:57	21:00	19:40	18:20	16:09	15:36
14	08:40	07:45	06:35	06:13	05:03	04:24	04:42	05:38	06:40	07:41	07:47	08:40
	16:05	17:11	18:12	20:17	21:18	22:04	21:55	20:57	19:38	18:18	16:07	15:35
15	08:39	07:43	06:32	06:10	05:01	04:23	04:43	05:40	06:42	07:43	07:50	08:41
	16:07	17:13	18:14	20:19	21:20	22:04	21:54	20:55	19:35	18:15	16:06	15:35
16	08:38	07:41	06:30	06:08	04:59	04:23	04:45	05:42	06:44	07:45	07:52	08:42
	16:09	17:16	18:16	20:21	21:22	22:05	21:53	20:52	19:32	18:13	16:04	15:35
17	08:36	07:38	06:27	06:05	04:57	04:23	04:46	05:44	06:46	07:47	07:54	08:43
	16:11	17:18	18:18	20:23	21:24	22:06	21:52	20:50	19:29	18:10	16:02	15:35
18	08:35	07:36	06:24	06:02	04:55	04:23	04:48	05:46	06:48	07:49	07:56	08:43
	16:13	17:20	18:21	20:25	21:26	22:06	21:50	20:48	19:27	18:08	16:00	15:36
19	08:34	07:33	06:22	06:00	04:53	04:23	04:50	05:48	06:50	07:51	07:58	08:44
	16:15	17:22	18:23	20:27	21:28	22:07	21:49	20:45	19:24	18:05	15:59	15:36
20	08:32	07:31	06:19	05:57	04:51	04:23	04:51	05:50	06:52	07:53	08:00	08:45
	16:17	17:24	18:25	20:29	21:30	22:07	21:47	20:43	19:21	18:03	15:57	15:36
21	08:31	07:29	06:16	05:55	04:50	04:23	04:53	05:52	06:54	07:56	08:02	08:46
	16:19	17:27	18:27	20:31	21:31	22:07	21:46	20:40	19:19	18:00	15:56	15:36
22	08:30	07:26	06:14	05:52	04:48	04:23	04:55	05:54	06:56	07:58	08:04	08:46
	16:21	17:29	18:29	20:33	21:33	22:07	21:44	20:38	19:16	17:58	15:54	15:37
23	08:28	07:24	06:11	05:50	04:46	04:23	04:56	05:56	06:58	08:00	08:06	08:47
	16:23	17:31	18:31	20:36	21:35	22:08	21:42	20:35	19:13	17:55	15:53	15:37
24	08:27	07:21	06:08	05:47	04:45	04:23	04:58	05:58	07:00	08:02	08:08	08:47
	16:25	17:33	18:33	20:38	21:37	22:08	21:41	20:33	19:11	17:53	15:51	15:38
25	08:25	07:19	06:06	05:45	04:43	04:24	05:00	06:00	07:02	08:04	08:10	08:47
	16:27	17:36	18:35	20:40	21:38	22:08	21:39	20:30	19:08	17:50	15:50	15:39
26	08:23	07:16	06:03	05:43	04:42	04:24	05:02	06:02	07:04	07:06	08:12	08:48
	16:29	17:38	18:37	20:42	21:40	22:08	21:37	20:28	19:05	16:48	15:49	15:39
27	08:22	07:14	06:00	05:40	04:40	04:25	05:03	06:04	07:06	07:08	08:14	08:48
	16:31	17:40	18:39	20:44	21:42	22:08	21:35	20:25	19:02	16:46	15:47	15:40
28	08:20	07:11	05:58	05:38	04:39	04:25	05:05	06:06	07:08	07:11	08:16	08:48
	16:33	17:42	18:41	20:46	21:43	22:07	21:34	20:22	19:00	16:43	15:46	15:41
29	08:18		05:55	05:35	04:37	04:26	05:07	06:08	07:10	07:13	08:17	08:48
	16:35		18:44	20:48	21:45	22:07	21:32	20:20	18:57	16:41	15:45	15:42
30	08:16		06:52	05:33	04:36	04:27	05:09	06:10	07:12	07:15	08:19	08:48
	16:38		19:46	20:50	21:47	22:07	21:30	20:17	18:54	16:39	15:44	15:43
31	08:14		06:50		04:35		05:11	06:12		07:17		08:48
	16:40		19:48		21:48		21:28	20:15		16:36		15:44
Potential sun hours	235	265	365	425	507	528	529	470	385	324	248	217
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BP - Kaupres 1

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:31 20:52	04:34 21:49	04:27 22:06	05:13 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:43
2	08:48 15:47	08:11 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:33 21:51	04:28 22:06	05:15 21:24	06:16 20:09	07:16 18:49	07:21 16:32	08:23 15:42
3	08:47 15:48	08:09 16:46	07:04 17:49	06:42 19:54	05:26 20:56	04:31 21:52	04:29 22:05	05:17 21:22	06:18 20:07	07:18 18:46	07:24 16:30	08:24 15:41
4	08:47 15:49	08:07 16:49	07:01 17:51	06:39 19:56	05:24 20:58	04:30 21:54	04:30 22:05	05:18 21:20	06:20 20:04	07:20 18:44	07:26 16:27	08:26 15:40
5	08:47 15:50	08:05 16:51	06:59 17:53	06:36 19:58	05:22 21:00	04:30 21:55	04:31 22:04	05:20 21:17	06:22 20:02	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:52	08:03 16:53	06:56 17:55	06:34 20:00	05:19 21:02	04:29 21:56	04:32 22:03	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:39
7	08:46 15:53	08:01 16:55	06:53 17:57	06:31 20:02	05:17 21:04	04:28 21:57	04:33 22:03	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	08:31 15:38
8	08:45 15:55	07:58 16:58	06:51 17:59	06:28 20:04	05:15 21:06	04:27 21:58	04:34 22:02	05:26 21:11	06:28 19:54	07:28 18:33	07:34 16:19	08:32 15:37
9	08:44 15:56	07:56 17:00	06:48 18:02	06:26 20:06	05:13 21:08	04:26 21:59	04:35 22:01	05:28 21:09	06:30 19:51	07:30 18:31	07:37 16:17	08:33 15:37
10	08:43 15:58	07:54 17:02	06:46 18:04	06:23 20:08	05:11 21:10	04:26 22:00	04:37 22:00	05:30 21:06	06:32 19:48	07:33 18:28	07:39 16:15	08:35 15:36
11	08:43 16:00	07:52 17:04	06:43 18:06	06:20 20:11	05:09 21:12	04:25 22:01	04:38 21:59	05:32 21:04	06:34 19:46	07:35 18:25	07:41 16:13	08:36 15:36
12	08:42 16:01	07:50 17:07	06:40 18:08	06:18 20:13	05:07 21:14	04:24 22:02	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:37 15:36
13	08:41 16:03	07:47 17:09	06:38 18:10	06:15 20:15	05:05 21:16	04:24 22:03	04:41 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:45 16:09	08:38 15:36
14	08:40 16:05	07:45 17:11	06:35 18:12	06:13 20:17	05:03 21:18	04:24 22:04	04:42 21:55	05:38 20:57	06:40 19:38	07:41 18:18	07:47 16:07	08:40 15:35
15	08:39 16:07	07:43 17:13	06:32 18:14	06:10 20:19	05:01 21:20	04:23 22:04	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:06	08:41 15:35
16	08:38 16:09	07:41 17:16	06:30 18:16	06:08 20:21	04:59 21:22	04:23 22:05	04:45 21:53	05:42 20:52	06:44 19:32	07:45 18:13	07:52 16:04	08:42 15:35
17	08:36 16:11	07:38 17:18	06:27 18:18	06:05 20:23	04:57 21:24	04:23 22:06	04:46 21:52	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:02	08:43 15:35
18	08:35 16:13	07:36 17:20	06:24 18:21	06:02 20:25	04:55 21:26	04:23 22:06	04:48 21:50	05:46 20:48	06:48 19:27	07:49 18:08	07:56 16:00	08:43 15:36
19	08:34 16:15	07:33 17:22	06:22 18:23	06:00 20:27	04:53 21:28	04:23 22:07	04:50 21:49	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:59	08:44 15:36
20	08:32 16:17	07:31 17:24	06:19 18:25	05:57 20:29	04:51 21:30	04:23 22:07	04:51 21:47	05:50 20:43	06:52 19:21	07:53 18:03	08:00 15:57	08:45 15:36
21	08:31 16:19	07:29 17:27	06:16 18:27	05:55 20:31	04:50 21:31	04:23 22:07	04:53 21:46	05:52 20:40	06:54 19:19	07:56 18:00	08:02 15:56	08:46 15:36
22	08:30 16:21	07:26 17:29	06:14 18:29	05:52 20:33	04:48 21:33	04:23 22:07	04:55 21:44	05:54 20:38	06:56 19:16	07:58 17:58	08:04 15:54	08:46 15:37
23	08:28 16:23	07:24 17:31	06:11 18:31	05:50 20:36	04:46 21:35	04:23 22:08	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:53	08:47 15:37
24	08:27 16:25	07:21 17:33	06:08 18:33	05:47 20:38	04:45 21:37	04:23 22:08	04:58 21:41	05:58 20:33	07:00 19:11	08:02 17:53	08:08 15:51	08:47 15:38
25	08:25 16:27	07:19 17:36	06:06 18:35	05:45 20:40	04:43 21:38	04:24 22:08	05:00 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:50	08:47 15:39
26	08:23 16:29	07:16 17:38	06:03 18:37	05:43 20:42	04:42 21:40	04:24 22:08	05:02 21:37	06:02 20:28	07:04 19:05	07:06 16:48	08:12 15:49	08:48 15:39
27	08:22 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:42	04:25 22:08	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:46	08:14 15:47	08:48 15:40
28	08:20 16:33	07:11 17:42	05:58 18:41	05:38 20:46	04:39 21:43	04:25 22:07	05:05 21:34	06:06 20:22	07:08 19:00	07:11 16:43	08:16 15:46	08:48 15:41
29	08:18 16:35		05:55 18:44	05:35 20:48	04:37 21:45	04:26 22:07	05:07 21:32	06:08 20:20	07:10 18:57	07:13 16:41	08:17 15:45	08:48 15:42
30	08:16 16:38		06:52 19:46	05:33 20:50	04:36 21:47	04:27 22:07	05:09 21:30	06:10 20:17	07:12 18:54	07:15 16:39	08:19 15:44	08:48 15:43
31	08:14 16:40		06:50 19:48		04:35 21:48		05:11 21:28	06:12 20:15		07:17 16:36		08:48 15:44
Potential sun hours	235	265	365	425	507	528	529	470	385	324	248	217
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BQ - Lici š i

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:31 20:52	04:34 21:50	04:27 22:07	05:13 21:26	06:14 20:12	07:14 18:52	07:20 16:34	08:21 15:43
2	08:48 15:47	08:11 16:44	07:06 17:47	06:44 19:52	05:28 20:54	04:33 21:51	04:28 22:06	05:15 21:24	06:16 20:10	07:16 18:49	07:22 16:32	08:23 15:42
3	08:48 15:48	08:09 16:47	07:04 17:49	06:42 19:54	05:26 20:57	04:32 21:52	04:29 22:06	05:17 21:22	06:18 20:07	07:18 18:47	07:24 16:30	08:25 15:41
4	08:47 15:49	08:07 16:49	07:01 17:51	06:39 19:56	05:24 20:59	04:31 21:54	04:30 22:05	05:19 21:20	06:20 20:04	07:20 18:44	07:26 16:28	08:26 15:40
5	08:47 15:51	08:05 16:51	06:59 17:53	06:36 19:58	05:22 21:01	04:30 21:55	04:31 22:04	05:20 21:18	06:22 20:02	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:52	08:03 16:53	06:56 17:55	06:34 20:00	05:19 21:03	04:29 21:56	04:32 22:04	05:22 21:16	06:24 19:59	07:24 18:39	07:30 16:23	08:29 15:39
7	08:46 15:53	08:01 16:56	06:54 17:57	06:31 20:02	05:17 21:05	04:28 21:57	04:33 22:03	05:24 21:13	06:26 19:56	07:27 18:36	07:33 16:21	08:31 15:38
8	08:45 15:55	07:59 16:58	06:51 18:00	06:28 20:05	05:15 21:07	04:27 21:59	04:34 22:02	05:26 21:11	06:28 19:54	07:29 18:33	07:35 16:19	08:32 15:37
9	08:45 15:57	07:57 17:00	06:48 18:02	06:26 20:07	05:13 21:09	04:26 22:00	04:35 22:01	05:28 21:09	06:30 19:51	07:31 18:31	07:37 16:17	08:34 15:37
10	08:44 15:58	07:54 17:02	06:46 18:04	06:23 20:09	05:11 21:11	04:26 22:01	04:37 22:00	05:30 21:07	06:32 19:48	07:33 18:28	07:39 16:15	08:35 15:37
11	08:43 16:00	07:52 17:05	06:43 18:06	06:21 20:11	05:09 21:13	04:25 22:02	04:38 21:59	05:32 21:04	06:34 19:46	07:35 18:26	07:41 16:13	08:36 15:36
12	08:42 16:02	07:50 17:07	06:40 18:08	06:18 20:13	05:07 21:15	04:25 22:02	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:38 15:36
13	08:41 16:03	07:48 17:09	06:38 18:10	06:15 20:15	05:05 21:17	04:24 22:03	04:41 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:46 16:09	08:39 15:36
14	08:40 16:05	07:45 17:11	06:35 18:12	06:13 20:17	05:03 21:19	04:24 22:04	04:42 21:56	05:38 20:57	06:40 19:38	07:41 18:18	07:48 16:07	08:40 15:35
15	08:39 16:07	07:43 17:13	06:33 18:14	06:10 20:19	05:01 21:21	04:23 22:05	04:43 21:55	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:06	08:41 15:35
16	08:38 16:09	07:41 17:16	06:30 18:17	06:08 20:21	04:59 21:22	04:23 22:05	04:45 21:53	05:42 20:53	06:44 19:32	07:45 18:13	07:52 16:04	08:42 15:35
17	08:37 16:11	07:38 17:18	06:27 18:19	06:05 20:23	04:57 21:24	04:23 22:06	04:46 21:52	05:44 20:50	06:46 19:30	07:47 18:10	07:54 16:02	08:43 15:35
18	08:35 16:13	07:36 17:20	06:25 18:21	06:03 20:25	04:55 21:26	04:23 22:06	04:48 21:50	05:46 20:48	06:48 19:27	07:49 18:08	07:56 16:00	08:44 15:36
19	08:34 16:15	07:34 17:22	06:22 18:23	06:00 20:27	04:53 21:28	04:23 22:07	04:50 21:49	05:48 20:45	06:50 19:24	07:52 18:05	07:58 15:59	08:44 15:36
20	08:33 16:17	07:31 17:25	06:19 18:25	05:57 20:29	04:51 21:30	04:23 22:07	04:51 21:47	05:50 20:43	06:52 19:22	07:54 18:03	08:00 15:57	08:45 15:36
21	08:31 16:19	07:29 17:27	06:17 18:27	05:55 20:32	04:50 21:32	04:23 22:07	04:53 21:46	05:52 20:40	06:54 19:19	07:56 18:00	08:02 15:56	08:46 15:36
22	08:30 16:21	07:26 17:29	06:14 18:29	05:52 20:34	04:48 21:34	04:23 22:08	04:55 21:44	05:54 20:38	06:56 19:16	07:58 17:58	08:04 15:54	08:46 15:37
23	08:28 16:23	07:24 17:31	06:11 18:31	05:50 20:36	04:46 21:35	04:23 22:08	04:56 21:43	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:53	08:47 15:37
24	08:27 16:25	07:22 17:33	06:08 18:33	05:48 20:38	04:45 21:37	04:24 22:08	04:58 21:41	05:58 20:33	07:00 19:11	08:02 17:53	08:08 15:51	08:47 15:38
25	08:25 16:27	07:19 17:36	06:06 18:35	05:45 20:40	04:43 21:39	04:24 22:08	05:00 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:50	08:48 15:39
26	08:24 16:29	07:17 17:38	06:03 18:37	05:43 20:42	04:42 21:40	04:24 22:08	05:02 21:37	06:02 20:28	07:04 19:05	07:07 16:48	08:12 15:49	08:48 15:39
27	08:22 16:31	07:14 17:40	06:00 18:40	05:40 20:44	04:40 21:42	04:25 22:08	05:03 21:36	06:04 20:25	07:06 19:03	07:09 16:46	08:14 15:47	08:48 15:40
28	08:20 16:33	07:12 17:42	05:58 18:42	05:38 20:46	04:39 21:44	04:25 22:08	05:05 21:34	06:06 20:23	07:08 19:00	07:11 16:43	08:16 15:46	08:48 15:41
29	08:18 16:36		05:55 18:44	05:35 20:48	04:38 21:45	04:26 22:07	05:07 21:32	06:08 20:20	07:10 18:57	07:13 16:41	08:18 15:45	08:48 15:42
30	08:17 16:38		06:52 19:46	05:33 20:50	04:36 21:47	04:27 22:07	05:09 21:30	06:10 20:18	07:12 18:55	07:15 16:39	08:19 15:44	08:48 15:43
31	08:15 16:40		06:50 19:48		04:35 21:48		05:11 21:28	06:12 20:15	07:17 16:36			08:48 15:44
Potential sun hours	235	265	365	425	507	528	529	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BR - Liepsala

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	
1	08:48	08:13	07:09	06:47	05:31	04:34	05:22 (21)
	15:45	16:42	17:44	19:50	20:52	21:49	71 06:33 (2)
2	08:48	08:11	07:06	06:44	05:28	04:32	05:22 (21)
	15:46	16:44	17:46	19:52	20:54	21:51	71 06:33 (2)
3	08:48	08:09	07:04	06:42	05:26	04:31	05:22 (21)
	15:48	16:46	17:49	19:54	20:56	21:52	71 06:33 (2)
4	08:47	08:07	07:01	06:39	05:24	04:30	05:23 (21)
	15:49	16:49	17:51	19:56	20:58	21:54	71 06:34 (2)
5	08:47	08:05	06:59	06:36	05:21	04:29	05:22 (21)
	15:50	16:51	17:53	19:58	21:00	21:55	71 06:33 (2)
6	08:46	08:03	06:56	06:34	05:19	04:29	05:22 (21)
	15:52	16:53	17:55	20:00	21:02	21:56	71 06:33 (2)
7	08:46	08:01	06:53	06:31	05:17	04:28	05:23 (21)
	15:53	16:55	17:57	20:02	21:04	13 06:14 (2)	21:57 71 06:34 (2)
8	08:45	07:58	06:51	06:28	05:15	05:58 (2)	04:27 05:23 (21)
	15:55	16:58	17:59	20:04	21:06	19 06:17 (2)	21:58 71 06:34 (2)
9	08:44	07:56	06:48	06:26	05:13	05:56 (2)	04:26 05:23 (21)
	15:56	17:00	18:02	20:06	21:09	23 06:19 (2)	21:59 70 06:33 (2)
10	08:44	07:54	06:46	06:23	05:11	05:54 (2)	04:26 05:23 (21)
	15:58	17:02	18:04	20:08	21:11	27 06:21 (2)	22:00 71 06:34 (2)
11	08:43	07:52	06:43	06:20	05:09	05:52 (2)	04:25 05:24 (21)
	16:00	17:04	18:06	20:11	21:12	30 06:22 (2)	22:01 71 06:35 (2)
12	08:42	07:50	06:40	06:18	05:06	05:52 (2)	04:24 05:24 (21)
	16:01	17:07	18:08	20:13	21:14	32 06:24 (2)	22:02 70 06:34 (2)
13	08:41	07:47	06:38	06:15	05:04	05:50 (2)	04:24 05:24 (21)
	16:03	17:09	18:10	20:15	21:16	35 06:25 (2)	22:03 71 06:35 (2)
14	08:40	07:45	06:35	06:13	05:02	05:49 (2)	04:24 05:25 (21)
	16:05	17:11	18:12	20:17	21:18	37 06:26 (2)	22:04 70 06:35 (2)
15	08:39	07:43	06:32	06:10	05:01	05:48 (2)	04:23 05:24 (21)
	16:07	17:13	18:14	20:19	21:20	38 06:26 (2)	22:04 70 06:34 (2)
16	08:38	07:41	06:30	06:07	04:59	05:32 (21)	04:23 05:25 (21)
	16:09	17:16	18:16	20:21	21:22	50 06:28 (2)	22:05 70 06:35 (2)
17	08:36	07:38	06:27	06:05	04:57	05:30 (21)	04:23 05:25 (21)
	16:11	17:18	18:18	20:23	21:24	55 06:28 (2)	22:06 70 06:35 (2)
18	08:35	07:36	06:24	06:02	04:55	05:28 (21)	04:23 05:25 (21)
	16:12	17:20	18:21	20:25	21:26	60 06:28 (2)	22:06 70 06:35 (2)
19	08:34	07:34	06:22	06:00	04:53	05:27 (21)	04:23 05:25 (21)
	16:14	17:22	18:23	20:27	21:28	62 06:29 (2)	22:07 70 06:35 (2)
20	08:32	07:31	06:19	05:57	04:51	05:25 (21)	04:23 05:25 (21)
	16:16	17:24	18:25	20:29	21:30	64 06:29 (2)	22:07 70 06:35 (2)
21	08:31	07:29	06:16	05:55	04:50	05:25 (21)	04:23 05:27 (21)
	16:18	17:27	18:27	20:31	21:32	65 06:30 (2)	22:07 69 06:36 (2)
22	08:30	07:26	06:14	05:52	04:48	05:24 (21)	04:23 05:27 (21)
	16:21	17:29	18:29	20:33	21:33	66 06:30 (2)	22:07 69 06:36 (2)
23	08:28	07:24	06:11	05:50	04:46	05:24 (21)	04:23 05:26 (21)
	16:23	17:31	18:31	20:36	21:35	67 06:31 (2)	22:08 70 06:36 (2)
24	08:27	07:21	06:08	05:47	04:45	05:23 (21)	04:23 05:26 (21)
	16:25	17:33	18:33	20:38	21:37	68 06:31 (2)	22:08 70 06:36 (2)
25	08:25	07:19	06:06	05:45	04:43	05:23 (21)	04:24 05:27 (21)
	16:27	17:36	18:35	20:40	21:39	68 06:31 (2)	22:08 70 06:37 (2)
26	08:23	07:16	06:03	05:42	04:42	05:23 (21)	04:24 05:27 (21)
	16:29	17:38	18:37	20:42	21:40	69 06:32 (2)	22:08 70 06:37 (2)
27	08:22	07:14	06:00	05:40	04:40	05:23 (21)	04:25 05:28 (21)
	16:31	17:40	18:39	20:44	21:42	69 06:32 (2)	22:08 70 06:38 (2)
28	08:20	07:11	05:58	05:38	04:39	05:22 (21)	04:25 05:27 (21)
	16:33	17:42	18:41	20:46	21:43	70 06:32 (2)	22:07 70 06:37 (2)
29	08:18		05:55	05:35	04:37	05:22 (21)	04:26 05:28 (21)
	16:35		18:44	20:48	21:45	70 06:32 (2)	22:07 70 06:38 (2)
30	08:16		06:52	05:33	04:36	05:22 (21)	04:27 05:28 (21)
	16:38		19:46	20:50	21:47	70 06:32 (2)	22:07 71 06:39 (2)
31	08:14		06:50		04:35	05:22 (21)	
	16:40		19:48		21:48	70 06:32 (2)	
Potential sun hours	235	265	365	425	507	528	
Total, worst case					1297		2110
Sun reduction					0,53		0,54
Oper. time red.					0,94		0,94
Wind dir. red.					0,68		0,68
Total reduction					0,34		0,34
Total, real					438		720

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BR - Liepsala

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July	August	September	October	November	December
1	04:27	05:28 (21)	05:13	06:02 (2)	06:14	07:14
	22:06	70 06:38 (2)	21:26	33 06:35 (2)	20:12	18:52
2	04:28	05:28 (21)	05:15	06:03 (2)	06:16	07:16
	22:06	71 06:39 (2)	21:24	31 06:34 (2)	20:09	18:49
3	04:29	05:28 (21)	05:16	06:04 (2)	06:18	07:18
	22:05	71 06:39 (2)	21:22	28 06:32 (2)	20:07	18:46
4	04:30	05:29 (21)	05:18	06:06 (2)	06:20	07:20
	22:05	70 06:39 (2)	21:20	24 06:30 (2)	20:04	18:44
5	04:31	05:29 (21)	05:20	06:08 (2)	06:22	07:22
	22:04	71 06:40 (2)	21:17	20 06:28 (2)	20:02	18:41
6	04:32	05:29 (21)	05:22	06:11 (2)	06:24	07:24
	22:03	71 06:40 (2)	21:15	14 06:25 (2)	19:59	18:38
7	04:33	05:29 (21)	05:24	06:17 (2)	06:26	07:26
	22:03	71 06:40 (2)	21:13	1 06:18 (2)	19:56	18:36
8	04:34	05:29 (21)	05:26		06:28	07:28
	22:02	71 06:40 (2)	21:11		19:54	18:33
9	04:35	05:30 (21)	05:28		06:30	07:30
	22:01	71 06:41 (2)	21:09		19:51	18:31
10	04:37	05:30 (21)	05:30		06:32	07:33
	22:00	71 06:41 (2)	21:06		19:48	18:28
11	04:38	05:30 (21)	05:32		06:34	07:35
	21:59	71 06:41 (2)	21:04		19:46	18:25
12	04:39	05:30 (21)	05:34		06:36	07:37
	21:58	71 06:41 (2)	21:02		19:43	18:23
13	04:40	05:30 (21)	05:36		06:38	07:39
	21:57	70 06:40 (2)	21:00		19:40	18:20
14	04:42	05:31 (21)	05:38		06:40	07:41
	21:56	70 06:41 (2)	20:57		19:38	18:18
15	04:43	05:31 (21)	05:40		06:42	07:43
	21:54	70 06:41 (2)	20:55		19:35	18:15
16	04:45	05:31 (21)	05:42		06:44	07:45
	21:53	70 06:41 (2)	20:52		19:32	18:13
17	04:46	05:32 (21)	05:44		06:46	07:47
	21:52	69 06:41 (2)	20:50		19:29	18:10
18	04:48	05:32 (21)	05:46		06:48	07:49
	21:50	69 06:41 (2)	20:48		19:27	18:07
19	04:50	05:33 (21)	05:48		06:50	07:51
	21:49	68 06:41 (2)	20:45		19:24	18:05
20	04:51	05:33 (21)	05:50		06:52	07:53
	21:47	68 06:41 (2)	20:43		19:21	18:02
21	04:53	05:34 (21)	05:52		06:54	07:56
	21:46	67 06:41 (2)	20:40		19:19	18:00
22	04:54	05:34 (21)	05:54		06:56	07:58
	21:44	66 06:40 (2)	20:38		19:16	17:58
23	04:56	05:35 (21)	05:56		06:58	08:00
	21:42	66 06:41 (2)	20:35		19:13	17:55
24	04:58	05:35 (21)	05:58		07:00	08:02
	21:41	65 06:40 (2)	20:33		19:11	17:53
25	05:00	05:37 (21)	06:00		07:02	08:04
	21:39	63 06:40 (2)	20:30		19:08	17:50
26	05:01	05:39 (21)	06:02		07:04	08:06
	21:37	61 06:40 (2)	20:28		19:05	17:48
27	05:03	05:40 (21)	06:04		07:06	08:08
	21:35	56 06:38 (2)	20:25		19:02	17:46
28	05:05	05:42 (21)	06:06		07:08	08:10
	21:34	51 06:38 (2)	20:22		19:00	17:43
29	05:07	05:46 (21)	06:08		07:10	08:12
	21:32	42 06:38 (2)	20:20		18:57	17:41
30	05:09	05:59 (2)	06:10		07:12	08:14
	21:30	37 06:36 (2)	20:17		18:54	17:39
31	05:11	06:00 (2)	06:12			07:17
	21:28	36 06:36 (2)	20:15			16:36
Potential sun hours	529		470		385	324
Total, worst case	2014		151			248
Sun reduction	0,51		0,51			216
Oper. time red.	0,94		0,94			
Wind dir. red.	0,68		0,68			
Total reduction	0,32		0,33			
Total, real	649		49			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BS - Me ž vidi

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:31 20:52	04:34 21:50	04:27 22:06	05:13 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:43
2	08:48 15:47	08:11 16:44	07:06 17:47	06:44 19:52	05:28 20:54	04:33 21:51	04:28 22:06	05:15 21:24	06:16 20:10	07:16 18:49	07:22 16:32	08:23 15:42
3	08:48 15:48	08:09 16:47	07:04 17:49	06:42 19:54	05:26 20:56	04:32 21:52	04:29 22:05	05:17 21:22	06:18 20:07	07:18 18:46	07:24 16:30	08:24 15:41
4	08:47 15:49	08:07 16:49	07:01 17:51	06:39 19:56	05:24 20:58	04:31 21:54	04:30 22:05	05:18 21:20	06:20 20:04	07:20 18:44	07:26 16:28	08:26 15:40
5	08:47 15:50	08:05 16:51	06:59 17:53	06:36 19:58	05:22 21:00	04:30 21:55	04:31 22:04	05:20 21:17	06:22 20:02	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:52	08:03 16:53	06:56 17:55	06:34 20:00	05:19 21:02	04:29 21:56	04:32 22:04	05:22 21:15	06:24 19:59	07:24 18:39	07:30 16:23	08:29 15:39
7	08:46 15:53	08:01 16:55	06:53 17:57	06:31 20:02	05:17 21:05	04:28 21:57	04:33 22:03	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	08:31 15:38
8	08:45 15:55	07:58 16:58	06:51 17:59	06:28 20:04	05:15 21:07	04:27 21:58	04:34 22:02	05:26 21:11	06:28 19:54	07:28 18:33	07:35 16:19	08:32 15:37
9	08:44 15:57	07:56 17:00	06:48 18:02	06:26 20:06	05:13 21:09	04:26 21:59	04:35 22:01	05:28 21:09	06:30 19:51	07:31 18:31	07:37 16:17	08:33 15:37
10	08:44 15:58	07:54 17:02	06:46 18:04	06:23 20:09	05:11 21:11	04:26 22:00	04:37 22:00	05:30 21:06	06:32 19:48	07:33 18:28	07:39 16:15	08:35 15:36
11	08:43 16:00	07:52 17:04	06:43 18:06	06:21 20:11	05:09 21:13	04:25 22:01	04:38 21:59	05:32 21:04	06:34 19:46	07:35 18:25	07:41 16:13	08:36 15:36
12	08:42 16:02	07:50 17:07	06:40 18:08	06:18 20:13	05:07 21:15	04:25 22:02	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:37 15:36
13	08:41 16:03	07:48 17:09	06:38 18:10	06:15 20:15	05:05 21:16	04:24 22:03	04:41 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:45 16:09	08:39 15:36
14	08:40 16:05	07:45 17:11	06:35 18:12	06:13 20:17	05:03 21:18	04:24 22:04	04:42 21:56	05:38 20:57	06:40 19:38	07:41 18:18	07:47 16:07	08:40 15:35
15	08:39 16:07	07:43 17:13	06:32 18:14	06:10 20:19	05:01 21:20	04:23 22:04	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:06	08:41 15:35
16	08:38 16:09	07:41 17:16	06:30 18:16	06:08 20:21	04:59 21:22	04:23 22:05	04:45 21:53	05:42 20:52	06:44 19:32	07:45 18:13	07:52 16:04	08:42 15:35
17	08:36 16:11	07:38 17:18	06:27 18:19	06:05 20:23	04:57 21:24	04:23 22:06	04:46 21:52	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:02	08:43 15:35
18	08:35 16:13	07:36 17:20	06:24 18:21	06:02 20:25	04:55 21:26	04:23 22:06	04:48 21:50	05:46 20:48	06:48 19:27	07:49 18:08	07:56 16:00	08:43 15:36
19	08:34 16:15	07:34 17:22	06:22 18:23	06:00 20:27	04:53 21:28	04:23 22:07	04:50 21:49	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:59	08:44 15:36
20	08:32 16:17	07:31 17:25	06:19 18:25	05:57 20:29	04:51 21:30	04:23 22:07	04:51 21:47	05:50 20:43	06:52 19:21	07:54 18:03	08:00 15:57	08:45 15:36
21	08:31 16:19	07:29 17:27	06:16 18:27	05:55 20:31	04:50 21:32	04:23 22:07	04:53 21:46	05:52 20:40	06:54 19:19	07:56 18:00	08:02 15:56	08:46 15:36
22	08:30 16:21	07:26 17:29	06:14 18:29	05:52 20:33	04:48 21:33	04:23 22:07	04:55 21:44	05:54 20:38	06:56 19:16	07:58 17:58	08:04 15:54	08:46 15:37
23	08:28 16:23	07:24 17:31	06:11 18:31	05:50 20:36	04:46 21:35	04:23 22:08	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:53	08:47 15:37
24	08:27 16:25	07:21 17:33	06:08 18:33	05:47 20:38	04:45 21:37	04:24 22:08	04:58 21:41	05:58 20:33	07:00 19:11	08:02 17:53	08:08 15:51	08:47 15:38
25	08:25 16:27	07:19 17:36	06:06 18:35	05:45 20:40	04:43 21:39	04:24 22:08	05:00 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:50	08:48 15:39
26	08:23 16:29	07:16 17:38	06:03 18:37	05:43 20:42	04:42 21:40	04:24 22:08	05:02 21:37	06:02 20:28	07:04 19:05	07:06 16:48	08:12 15:49	08:48 15:39
27	08:22 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:42	04:25 22:08	05:03 21:35	06:04 20:25	07:06 19:03	07:09 16:46	08:14 15:47	08:48 15:40
28	08:20 16:33	07:11 17:42	05:58 18:41	05:38 20:46	04:39 21:43	04:25 22:07	05:05 21:34	06:06 20:23	07:08 19:00	07:11 16:43	08:16 15:46	08:48 15:41
29	08:18 16:35		05:55 18:44	05:35 20:48	04:37 21:45	04:26 22:07	05:07 21:32	06:08 20:20	07:10 18:57	07:13 16:41	08:17 15:45	08:48 15:42
30	08:16 16:38		06:52 19:46	05:33 20:50	04:36 21:47	04:27 22:07	05:09 21:30	06:10 20:17	07:12 18:54	07:15 16:39	08:19 15:44	08:48 15:43
31	08:14 16:40		06:50 19:48		04:35 21:48		05:11 21:28	06:12 20:15		07:17 16:36		08:48 15:44
Potential sun hours	235	265	365	425	507	528	529	470	385	324	248	217
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

SKEPAST & PUKIM

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BT - Me ž a Mui ž a

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June
1	08:48	08:13	07:09	06:47	05:31	06:01 (1) 04:34
	15:45	16:42	17:44	19:50	20:52	17 06:18 (1) 21:50
2	08:48	08:11	07:06	06:44	05:28	05:59 (1) 04:33
	15:46	16:44	17:47	19:52	20:54	21 06:20 (1) 21:51
3	08:48	08:09	07:04	06:42	05:26	05:57 (1) 04:31
	15:48	16:46	17:49	19:54	20:56	23 06:20 (1) 21:52
4	08:47	08:07	07:01	06:39	05:24	05:55 (1) 04:30
	15:49	16:49	17:51	19:56	20:58	25 06:20 (1) 21:54
5	08:47	08:05	06:59	06:36	05:22	05:55 (1) 04:29
	15:50	16:51	17:53	19:58	21:01	25 06:20 (1) 21:55
6	08:46	08:03	06:56	06:34	05:19	05:54 (1) 04:29
	15:52	16:53	17:55	20:00	21:03	27 06:21 (1) 21:56
7	08:46	08:01	06:53	06:31	05:17	05:54 (1) 04:28
	15:53	16:55	17:57	20:02	21:05	27 06:21 (1) 21:57
8	08:45	07:59	06:51	06:28	05:15	05:54 (1) 04:27
	15:55	16:58	17:59	20:04	21:07	27 06:21 (1) 21:58
9	08:44	07:56	06:48	06:26	05:13	05:53 (1) 04:26
	15:56	17:00	18:02	20:06	21:09	28 06:21 (1) 21:59
10	08:44	07:54	06:46	06:23	05:11	05:53 (1) 04:26
	15:58	17:02	18:04	20:09	21:11	28 06:21 (1) 22:00
11	08:43	07:52	06:43	06:21	05:09	05:54 (1) 04:25
	16:00	17:04	18:06	20:11	21:13	27 06:21 (1) 22:01
12	08:42	07:50	06:40	06:18	05:07	05:54 (1) 04:24
	16:01	17:07	18:08	20:13	21:15	27 06:21 (1) 22:02
13	08:41	07:48	06:38	06:15	05:05	05:54 (1) 04:24
	16:03	17:09	18:10	20:15	21:17	26 06:20 (1) 22:03
14	08:40	07:45	06:35	06:13	05:03	05:55 (1) 04:24
	16:05	17:11	18:12	20:17	21:19	25 06:20 (1) 22:04
15	08:39	07:43	06:32	06:10	05:01	05:55 (1) 04:23
	16:07	17:13	18:14	20:19	21:20	24 06:19 (1) 22:05
16	08:38	07:41	06:30	06:08	04:59	05:56 (1) 04:23
	16:09	17:16	18:16	20:21	21:22	23 06:19 (1) 22:05
17	08:37	07:38	06:27	06:05	04:57	05:56 (1) 04:23
	16:11	17:18	18:19	20:23	21:24	22 06:18 (1) 22:06
18	08:35	07:36	06:24	06:02	04:55	05:57 (1) 04:23
	16:13	17:20	18:21	20:25	21:26	20 06:17 (1) 22:06
19	08:34	07:34	06:22	06:00	04:53	05:59 (1) 04:23
	16:15	17:22	18:23	20:27	21:28	17 06:16 (1) 22:07
20	08:33	07:31	06:19	05:57	04:51	05:59 (1) 04:23
	16:17	17:25	18:25	20:29	21:30	16 06:15 (1) 22:07
21	08:31	07:29	06:16	05:55	04:50	06:01 (1) 04:23
	16:19	17:27	18:27	20:31	21:32	13 06:14 (1) 22:07
22	08:30	07:26	06:14	05:52	04:48	06:03 (1) 04:23
	16:21	17:29	18:29	20:34	21:33	8 06:11 (1) 22:08
23	08:28	07:24	06:11	05:50	04:46	04:23
	16:23	17:31	18:31	20:36	21:35	22:08
24	08:27	07:21	06:08	05:47	04:45	04:23
	16:25	17:33	18:33	20:38	21:37	22:08
25	08:25	07:19	06:06	05:45	04:43	04:24
	16:27	17:36	18:35	20:40	21:39	22:08
26	08:23	07:17	06:03	05:43	04:42	04:24
	16:29	17:38	18:37	20:42	21:40	22:08
27	08:22	07:14	06:00	05:40	04:40	04:25
	16:31	17:40	18:39	20:44	21:42	22:08
28	08:20	07:11	05:58	05:38	06:07 (1) 04:39	04:25
	16:33	17:42	18:42	20:46	5 06:12 (1) 21:44	22:08
29	08:18		05:55	05:35	06:05 (1) 04:37	04:26
	16:35		18:44	20:48	10 06:15 (1) 21:45	22:07
30	08:16		06:52	05:33	06:03 (1) 04:36	04:27
	16:38		19:46	20:50	14 06:17 (1) 21:47	22:07
31	08:15		06:50		04:35	
	16:40		19:48		21:48	
Potential sun hours	235	265	365	425	507	528
Total, worst case						496
Sun reduction				0,48		0,53
Oper. time red.				0,94		0,94
Wind dir. red.				0,67		0,67
Total reduction				0,30		0,34
Total, real				9		166

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BT - Me ž a Mui ž a

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	July	August	September	October	November	December
1	04:27	05:13	06:05 (1)	06:14	07:14	07:19
	22:07	21:26	20:12	18:52	16:34	15:43
2	04:28	05:15	06:05 (1)	06:16	07:16	07:22
	22:06	21:24	20:10	18:49	16:32	15:42
3	04:29	05:17	06:04 (1)	06:18	07:18	07:24
	22:06	21:22	20:07	18:47	16:30	15:41
4	04:30	05:18	06:04 (1)	06:20	07:20	07:26
	22:05	21:20	20:04	18:44	16:28	15:40
5	04:31	05:20	06:04 (1)	06:22	07:22	07:28
	22:04	21:18	20:02	18:41	16:25	15:39
6	04:32	05:22	06:04 (1)	06:24	07:24	07:30
	22:04	21:15	19:59	18:39	16:23	15:39
7	04:33	05:24	06:04 (1)	06:26	07:26	07:32
	22:03	21:13	19:56	18:36	16:21	15:38
8	04:34	05:26	06:04 (1)	06:28	07:28	07:35
	22:02	21:11	19:54	18:33	16:19	15:37
9	04:35	05:28	06:04 (1)	06:30	07:31	07:37
	22:01	21:09	19:51	18:31	16:17	15:37
10	04:37	05:30	06:05 (1)	06:32	07:33	07:39
	22:00	21:07	19:48	18:28	16:15	15:36
11	04:38	05:32	06:07 (1)	06:34	07:35	07:41
	21:59	21:04	19:46	18:25	16:13	15:36
12	04:39	05:34	06:09 (1)	06:36	07:37	07:43
	21:58	21:02	19:43	18:23	16:11	15:36
13	04:41	05:36	06:11 (1)	06:38	07:39	07:45
	21:57	21:00	19:40	18:20	16:09	15:36
14	04:42	05:38	06:12 (1)	06:40	07:41	07:48
	21:56	20:57	19:38	18:18	16:07	15:35
15	04:43	05:40	06:14 (1)	06:42	07:43	07:50
	21:54	20:55	19:35	18:15	16:06	15:35
16	04:45	05:42	06:14 (1)	06:44	07:45	07:52
	21:53	20:53	19:32	18:13	16:04	15:35
17	04:46	05:44	06:16	07:47	07:54	08:43
	21:52	20:50	19:30	18:10	16:02	15:35
18	04:48	05:46	06:18	07:49	07:56	08:44
	21:50	20:48	19:27	18:08	16:00	15:35
19	04:50	05:48	06:20	07:51	07:58	08:44
	21:49	20:45	19:24	18:05	15:59	15:36
20	04:51	05:50	06:22	07:54	08:00	08:45
	21:47	20:43	19:21	18:03	15:57	15:36
21	04:53	05:52	06:24	07:56	08:02	08:46
	21:46	20:40	19:19	18:00	15:56	15:36
22	04:55	06:13 (1)	06:26	07:58	08:04	08:46
	21:44	20:38	19:16	17:58	15:54	15:37
23	04:56	06:12 (1)	06:28	08:00	08:06	08:47
	21:43	20:35	19:13	17:55	15:53	15:37
24	04:58	06:10 (1)	06:30	08:02	08:08	08:47
	21:41	20:33	19:11	17:53	15:51	15:38
25	05:00	06:09 (1)	06:32	08:04	08:10	08:48
	21:39	20:30	19:08	17:50	15:50	15:39
26	05:02	06:08 (1)	06:34	08:06	08:12	08:48
	21:37	20:28	19:05	17:48	15:49	15:39
27	05:03	06:07 (1)	06:36	08:08	08:14	08:48
	21:36	20:25	19:03	17:46	15:47	15:40
28	05:05	06:06 (1)	06:38	08:10	08:16	08:48
	21:34	20:23	19:00	17:43	15:46	15:41
29	05:07	06:06 (1)	06:40	08:12	08:18	08:48
	21:32	20:20	18:57	17:41	15:45	15:42
30	05:09	06:05 (1)	06:42	08:14	08:19	08:48
	21:30	20:17	18:55	17:39	15:44	15:43
31	05:11	06:05 (1)	06:44	08:16	08:21	08:48
	21:28	20:15	18:53	17:36	15:43	15:44
Potential sun hours	529	470	385	324	248	216
Total, worst case	191	336				
Sun reduction	0,51	0,51				
Oper. time red.	0,94	0,94				
Wind dir. red.	0,67	0,67				
Total reduction	0,32	0,32				
Total, real	61	109				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

SKEPAST & PUKIM

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BU - Vilni š i

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January	February	March	April	May	June
1	08:48	08:13	07:09	06:47	05:31	06:01 (1) 04:34
	15:45	16:42	17:44	19:50	20:52	22 06:23 (1) 21:50
2	08:48	08:11	07:06	06:44	05:28	05:59 (1) 04:33
	15:46	16:44	17:47	19:52	20:54	24 06:23 (1) 21:51
3	08:48	08:09	07:04	06:42	05:26	05:59 (1) 04:31
	15:48	16:46	17:49	19:54	20:56	25 06:24 (1) 21:52
4	08:47	08:07	07:01	06:39	05:24	05:57 (1) 04:30
	15:49	16:49	17:51	19:56	20:58	27 06:24 (1) 21:54
5	08:47	08:05	06:59	06:36	05:22	05:57 (1) 04:29
	15:50	16:51	17:53	19:58	21:01	27 06:24 (1) 21:55
6	08:46	08:03	06:56	06:34	05:19	05:56 (1) 04:29
	15:52	16:53	17:55	20:00	21:03	28 06:24 (1) 21:56
7	08:46	08:01	06:53	06:31	05:17	05:56 (1) 04:28
	15:53	16:55	17:57	20:02	21:05	28 06:24 (1) 21:57
8	08:45	07:59	06:51	06:28	05:15	05:56 (1) 04:27
	15:55	16:58	17:59	20:04	21:07	28 06:24 (1) 21:58
9	08:44	07:56	06:48	06:26	05:13	05:56 (1) 04:26
	15:56	17:00	18:02	20:06	21:09	28 06:24 (1) 21:59
10	08:44	07:54	06:46	06:23	05:11	05:56 (1) 04:26
	15:58	17:02	18:04	20:09	21:11	27 06:23 (1) 22:00
11	08:43	07:52	06:43	06:21	05:09	05:57 (1) 04:25
	16:00	17:04	18:06	20:11	21:13	27 06:24 (1) 22:01
12	08:42	07:50	06:40	06:18	05:07	05:57 (1) 04:24
	16:01	17:07	18:08	20:13	21:15	27 06:24 (1) 22:02
13	08:41	07:48	06:38	06:15	05:05	05:57 (1) 04:24
	16:03	17:09	18:10	20:15	21:17	26 06:23 (1) 22:03
14	08:40	07:45	06:35	06:13	05:03	05:58 (1) 04:24
	16:05	17:11	18:12	20:17	21:19	24 06:22 (1) 22:04
15	08:39	07:43	06:32	06:10	05:01	05:58 (1) 04:23
	16:07	17:13	18:14	20:19	21:20	23 06:21 (1) 22:05
16	08:38	07:41	06:30	06:08	04:59	06:00 (1) 04:23
	16:09	17:16	18:16	20:21	21:22	21 06:21 (1) 22:05
17	08:37	07:38	06:27	06:05	04:57	06:00 (1) 04:23
	16:11	17:18	18:19	20:23	21:24	20 06:20 (1) 22:06
18	08:35	07:36	06:24	06:02	04:55	06:01 (1) 04:23
	16:13	17:20	18:21	20:25	21:26	17 06:18 (1) 22:06
19	08:34	07:34	06:22	06:00	04:53	06:03 (1) 04:23
	16:15	17:22	18:23	20:27	21:28	15 06:18 (1) 22:07
20	08:33	07:31	06:19	05:57	04:51	06:04 (1) 04:23
	16:17	17:25	18:25	20:29	21:30	12 06:16 (1) 22:07
21	08:31	07:29	06:16	05:55	04:50	06:07 (1) 04:23
	16:19	17:27	18:27	20:31	21:32	7 06:14 (1) 22:07
22	08:30	07:26	06:14	05:52	04:48	04:23
	16:21	17:29	18:29	20:34	21:33	22:08
23	08:28	07:24	06:11	05:50	04:46	04:23
	16:23	17:31	18:31	20:36	21:35	22:08
24	08:27	07:21	06:08	05:47	04:45	04:23
	16:25	17:33	18:33	20:38	21:37	22:08
25	08:25	07:19	06:06	05:45	04:43	04:24
	16:27	17:36	18:35	20:40	21:39	22:08
26	08:23	07:16	06:03	05:43	04:42	04:24
	16:29	17:38	18:37	20:42	21:40	22:08
27	08:22	07:14	06:00	05:40	06:10 (1) 04:40	04:25
	16:31	17:40	18:39	20:44	6 06:16 (1) 21:42	22:08
28	08:20	07:11	05:58	05:38	06:07 (1) 04:39	04:25
	16:33	17:42	18:42	20:46	11 06:18 (1) 21:44	22:08
29	08:18		05:55	05:35	06:05 (1) 04:37	04:26
	16:35		18:44	20:48	15 06:20 (1) 21:45	22:07
30	08:16		06:52	05:33	06:03 (1) 04:36	04:27
	16:38		19:46	20:50	19 06:22 (1) 21:47	22:07
31	08:15		06:50		04:35	
	16:40		19:48		21:48	
Potential sun hours	235	265	365	425	507	528
Total, worst case				51		483
Sun reduction				0,48		0,53
Oper. time red.				0,94		0,94
Wind dir. red.				0,67		0,67
Total reduction				0,30		0,33
Total, real				15		162

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BU - Vilni š i

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	July	August	September	October	November	December
1	04:27	05:13	06:08 (1)	06:14	07:14	08:21
	22:07	21:26	20:12	18:52	16:34	15:43
2	04:28	05:15	06:07 (1)	06:16	07:16	08:23
	22:06	21:24	20:10	18:49	16:32	15:42
3	04:29	05:17	06:06 (1)	06:18	07:18	08:25
	22:06	21:22	20:07	18:47	16:30	15:41
4	04:30	05:18	06:06 (1)	06:20	07:20	08:26
	22:05	21:20	20:04	18:44	16:28	15:40
5	04:31	05:20	06:06 (1)	06:22	07:22	08:28
	22:04	21:18	20:02	18:41	16:25	15:39
6	04:32	05:22	06:07 (1)	06:24	07:24	08:29
	22:04	21:15	19:59	18:39	16:23	15:39
7	04:33	05:24	06:07 (1)	06:26	07:26	08:31
	22:03	21:13	19:56	18:36	16:21	15:38
8	04:34	05:26	06:06 (1)	06:28	07:28	08:32
	22:02	21:11	19:54	18:33	16:19	15:37
9	04:35	05:28	06:06 (1)	06:30	07:31	08:34
	22:01	21:09	19:51	18:31	16:17	15:37
10	04:37	05:30	06:07 (1)	06:32	07:33	08:35
	22:00	21:07	19:48	18:28	16:15	15:36
11	04:38	05:32	06:07 (1)	06:34	07:35	08:36
	21:59	21:04	19:46	18:25	16:13	15:36
12	04:39	05:34	06:09 (1)	06:36	07:37	08:37
	21:58	21:02	19:43	18:23	16:11	15:36
13	04:41	05:36	06:11 (1)	06:38	07:39	08:39
	21:57	21:00	19:40	18:20	16:09	15:36
14	04:42	05:38	06:12 (1)	06:40	07:41	08:40
	21:56	20:57	19:38	18:18	16:07	15:35
15	04:43	05:40	06:14 (1)	06:42	07:43	08:41
	21:54	20:55	19:35	18:15	16:06	15:35
16	04:45	05:42	06:16 (1)	06:44	07:45	08:42
	21:53	20:53	19:32	18:13	16:04	15:35
17	04:46	05:44	06:46	07:47	07:54	08:43
	21:52	20:50	19:30	18:10	16:02	15:35
18	04:48	05:46	06:48	07:49	07:56	08:44
	21:50	20:48	19:27	18:08	16:00	15:35
19	04:50	05:48	06:50	07:51	07:58	08:44
	21:49	20:45	19:24	18:05	15:59	15:36
20	04:51	05:50	06:52	07:54	08:00	08:45
	21:47	20:43	19:21	18:03	15:57	15:36
21	04:53	05:52	06:54	07:56	08:02	08:46
	21:46	20:40	19:19	18:00	15:56	15:36
22	04:55	05:54	06:56	07:58	08:04	08:46
	21:44	20:38	19:16	17:58	15:54	15:37
23	04:56	06:17 (1)	06:58	08:00	08:06	08:47
	21:43	20:35	19:13	17:55	15:53	15:37
24	04:58	06:14 (1)	07:00	08:02	08:08	08:47
	21:41	20:33	19:11	17:53	15:51	15:38
25	05:00	06:13 (1)	07:02	08:04	08:10	08:48
	21:39	20:30	19:08	17:50	15:50	15:39
26	05:02	06:12 (1)	07:04	07:06	08:12	08:48
	21:37	20:28	19:05	16:48	15:49	15:39
27	05:03	06:10 (1)	07:06	07:09	08:14	08:48
	21:36	20:25	19:03	16:46	15:47	15:40
28	05:05	06:10 (1)	07:08	07:11	08:16	08:48
	21:34	20:23	19:00	16:43	15:46	15:41
29	05:07	06:09 (1)	07:10	07:13	08:18	08:48
	21:32	20:20	18:57	16:41	15:45	15:42
30	05:09	06:08 (1)	07:12	07:15	08:19	08:48
	21:30	20:17	18:55	16:39	15:44	15:43
31	05:11	06:08 (1)	07:17	07:17	08:24	08:48
	21:28	20:15	18:52	16:36	15:44	15:44
Potential sun hours	529	470	385	324	248	216
Total, worst case	165	374				
Sun reduction	0,51	0,51				
Oper. time red.	0,94	0,94				
Wind dir. red.	0,67	0,67				
Total reduction	0,32	0,32				
Total, real	53	121				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BV - Raceni

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June
1	08:48	08:13	07:09	06:47	05:31	06:01 (1) 04:34
	15:45	16:42	17:44	19:50	20:52	22 06:23 (1) 21:50
2	08:48	08:11	07:06	06:44	05:28	06:00 (1) 04:33
	15:46	16:44	17:47	19:52	20:54	24 06:24 (1) 21:51
3	08:48	08:09	07:04	06:42	05:26	05:58 (1) 04:31
	15:48	16:46	17:49	19:54	20:56	26 06:24 (1) 21:52
4	08:47	08:07	07:01	06:39	05:24	05:57 (1) 04:30
	15:49	16:49	17:51	19:56	20:58	28 06:25 (1) 21:54
5	08:47	08:05	06:59	06:36	05:22	05:57 (1) 04:29
	15:50	16:51	17:53	19:58	21:01	28 06:25 (1) 21:55
6	08:46	08:03	06:56	06:34	05:19	05:57 (1) 04:29
	15:52	16:53	17:55	20:00	21:03	28 06:25 (1) 21:56
7	08:46	08:01	06:53	06:31	05:17	05:56 (1) 04:28
	15:53	16:55	17:57	20:02	21:05	29 06:25 (1) 21:57
8	08:45	07:59	06:51	06:28	05:15	05:56 (1) 04:27
	15:55	16:58	17:59	20:04	21:07	30 06:26 (1) 21:58
9	08:44	07:56	06:48	06:26	05:13	05:56 (1) 04:26
	15:56	17:00	18:02	20:06	21:09	29 06:25 (1) 21:59
10	08:44	07:54	06:46	06:23	05:11	05:56 (1) 04:26
	15:58	17:02	18:04	20:09	21:11	29 06:25 (1) 22:00
11	08:43	07:52	06:43	06:21	05:09	05:57 (1) 04:25
	16:00	17:04	18:06	20:11	21:13	29 06:26 (1) 22:01
12	08:42	07:50	06:40	06:18	05:07	05:57 (1) 04:24
	16:01	17:07	18:08	20:13	21:15	29 06:26 (1) 22:02
13	08:41	07:48	06:38	06:15	05:05	05:57 (1) 04:24
	16:03	17:09	18:10	20:15	21:17	28 06:25 (1) 22:03
14	08:40	07:45	06:35	06:13	05:03	05:57 (1) 04:24
	16:05	17:11	18:12	20:17	21:19	27 06:24 (1) 22:04
15	08:39	07:43	06:32	06:10	05:01	05:57 (1) 04:23
	16:07	17:13	18:14	20:19	21:20	27 06:24 (1) 22:05
16	08:38	07:41	06:30	06:08	04:59	05:58 (1) 04:23
	16:09	17:16	18:16	20:21	21:22	26 06:24 (1) 22:05
17	08:37	07:38	06:27	06:05	04:57	05:59 (1) 04:23
	16:11	17:18	18:19	20:23	21:24	24 06:23 (1) 22:06
18	08:35	07:36	06:24	06:02	04:55	05:59 (1) 04:23
	16:13	17:20	18:21	20:25	21:26	23 06:22 (1) 22:06
19	08:34	07:34	06:22	06:00	04:53	06:00 (1) 04:23
	16:15	17:22	18:23	20:27	21:28	22 06:22 (1) 22:07
20	08:33	07:31	06:19	05:57	04:51	06:01 (1) 04:23
	16:17	17:25	18:25	20:29	21:30	19 06:20 (1) 22:07
21	08:31	07:29	06:16	05:55	04:50	06:03 (1) 04:23
	16:19	17:27	18:27	20:31	21:32	16 06:19 (1) 22:07
22	08:30	07:26	06:14	05:52	04:48	06:04 (1) 04:23
	16:21	17:29	18:29	20:34	21:33	14 06:18 (1) 22:08
23	08:28	07:24	06:11	05:50	04:46	06:06 (1) 04:23
	16:23	17:31	18:31	20:36	21:35	10 06:16 (1) 22:08
24	08:27	07:21	06:08	05:47	04:45	06:10 (1) 04:23
	16:25	17:33	18:33	20:38	21:37	3 06:13 (1) 22:08
25	08:25	07:19	06:06	05:45	04:43	04:24
	16:27	17:36	18:35	20:40	21:39	22:08
26	08:23	07:16	06:03	05:43	04:42	04:24
	16:29	17:38	18:37	20:42	21:40	22:08
27	08:22	07:14	06:00	05:40	06:11 (1) 04:40	04:25
	16:31	17:40	18:39	20:44	3 06:14 (1) 21:42	22:08
28	08:20	07:11	05:58	05:38	06:07 (1) 04:39	04:25
	16:33	17:42	18:42	20:46	11 06:18 (1) 21:44	22:08
29	08:18		05:55	05:35	06:05 (1) 04:37	04:26
	16:35		18:44	20:48	15 06:20 (1) 21:45	22:07
30	08:16		06:52	05:33	06:03 (1) 04:36	04:27
	16:38		19:46	20:50	19 06:22 (1) 21:47	22:07
31	08:15		06:50		04:35	
	16:40		19:48		21:48	
Potential sun hours	235	265	365	425	507	528
Total, worst case				48		570
Sun reduction				0,48		0,53
Oper. time red.				0,94		0,94
Wind dir. red.				0,67		0,67
Total reduction				0,30		0,33
Total, real				15		191

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BV - Raceni

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July	August	September	October	November	December
1	04:27	05:13	06:07 (1)	06:14	07:14	07:19
	22:07	21:26	20:12	18:52	16:34	15:43
2	04:28	05:15	06:07 (1)	06:16	07:16	07:22
	22:06	21:24	20:10	18:49	16:32	15:42
3	04:29	05:17	06:06 (1)	06:18	07:18	07:24
	22:06	21:22	20:07	18:47	16:30	15:41
4	04:30	05:18	06:06 (1)	06:20	07:20	07:26
	22:05	21:20	20:04	18:44	16:28	15:40
5	04:31	05:20	06:06 (1)	06:22	07:22	07:28
	22:04	21:18	20:02	18:41	16:25	15:39
6	04:32	05:22	06:07 (1)	06:24	07:24	07:30
	22:04	21:15	19:59	18:39	16:23	15:39
7	04:33	05:24	06:07 (1)	06:26	07:26	07:32
	22:03	21:13	19:56	18:36	16:21	15:38
8	04:34	05:26	06:06 (1)	06:28	07:28	07:35
	22:02	21:11	19:54	18:33	16:19	15:37
9	04:35	05:28	06:07 (1)	06:30	07:31	07:37
	22:01	21:09	19:51	18:31	16:17	15:37
10	04:37	05:30	06:07 (1)	06:32	07:33	07:39
	22:00	21:07	19:48	18:28	16:15	15:36
11	04:38	05:32	06:08 (1)	06:34	07:35	07:41
	21:59	21:04	19:46	18:25	16:13	15:36
12	04:39	05:34	06:09 (1)	06:36	07:37	07:43
	21:58	21:02	19:43	18:23	16:11	15:36
13	04:41	05:36	06:10 (1)	06:38	07:39	07:45
	21:57	21:00	19:40	18:20	16:09	15:36
14	04:42	05:38	06:12 (1)	06:40	07:41	07:48
	21:56	20:57	19:38	18:18	16:07	15:35
15	04:43	05:40	06:14 (1)	06:42	07:43	07:50
	21:54	20:55	19:35	18:15	16:06	15:35
16	04:45	05:42	06:16 (1)	06:44	07:45	07:52
	21:53	20:53	19:32	18:13	16:04	15:35
17	04:46	05:44	06:46	07:47	07:54	08:43
	21:52	20:50	19:30	18:10	16:02	15:35
18	04:48	05:46	06:48	07:49	07:56	08:44
	21:50	20:48	19:27	18:08	16:00	15:35
19	04:50	05:48	06:50	07:51	07:58	08:44
	21:49	20:45	19:24	18:05	15:59	15:36
20	04:51	06:19 (1)	05:50	06:52	07:54	08:00
	21:47	06:22 (1)	20:43	19:21	18:03	15:57
21	04:53	06:16 (1)	05:52	06:54	07:56	08:02
	21:46	06:26 (1)	20:40	19:19	18:00	15:56
22	04:55	06:14 (1)	05:54	06:56	07:58	08:04
	21:44	06:28 (1)	20:38	19:16	17:58	15:54
23	04:56	06:13 (1)	05:56	06:58	08:00	08:06
	21:43	06:30 (1)	20:35	19:13	17:55	15:53
24	04:58	06:11 (1)	05:58	07:00	08:02	08:08
	21:41	06:30 (1)	20:33	19:11	17:53	15:51
25	05:00	06:11 (1)	06:00	07:02	08:04	08:10
	21:39	06:32 (1)	20:30	19:08	17:50	15:50
26	05:02	06:10 (1)	06:02	07:04	07:06	08:12
	21:37	06:33 (1)	20:28	19:05	16:48	15:49
27	05:03	06:09 (1)	06:04	07:06	07:09	08:14
	21:36	06:33 (1)	20:25	19:03	16:46	15:47
28	05:05	06:09 (1)	06:06	07:08	07:11	08:16
	21:34	06:34 (1)	20:23	19:00	16:43	15:46
29	05:07	06:08 (1)	06:08	07:10	07:13	08:18
	21:32	06:35 (1)	20:20	18:57	16:41	15:45
30	05:09	06:07 (1)	06:10	07:12	07:15	08:19
	21:30	06:35 (1)	20:17	18:55	16:39	15:44
31	05:11	06:07 (1)	06:12	07:17	07:17	08:48
	21:28	06:35 (1)	20:15	18:52	16:36	15:44
Potential sun hours	529	470	385	324	248	216
Total, worst case	239	394				
Sun reduction	0,51	0,51				
Oper. time red.	0,94	0,94				
Wind dir. red.	0,67	0,67				
Total reduction	0,32	0,32				
Total, real	76	127				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BW - Vipes skola

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:13	07:09	06:47	05:31	04:34	04:27	05:13	06:14	07:14	07:19	08:21
	15:45	16:42	17:44	19:50	20:52	21:50	22:07	21:26	20:12	18:52	16:34	15:43
2	08:48	08:11	07:06	06:44	05:28	04:33	04:28	05:15	06:16	07:16	07:22	08:23
	15:47	16:44	17:47	19:52	20:54	21:51	22:06	21:24	20:10	18:49	16:32	15:42
3	08:48	08:09	07:04	06:42	05:26	04:32	04:29	05:17	06:18	07:18	07:24	08:25
	15:48	16:47	17:49	19:54	20:56	21:52	22:06	21:22	20:07	18:47	16:30	15:41
4	08:47	08:07	07:01	06:39	05:24	04:31	04:30	05:19	06:20	07:20	07:26	08:26
	15:49	16:49	17:51	19:56	20:59	21:54	22:05	21:20	20:04	18:44	16:28	15:40
5	08:47	08:05	06:59	06:36	05:22	04:30	04:31	05:20	06:22	07:22	07:28	08:28
	15:51	16:51	17:53	19:58	21:01	21:55	22:04	21:18	20:02	18:41	16:25	15:39
6	08:46	08:03	06:56	06:34	05:19	04:29	04:32	05:22	06:24	07:24	07:30	08:29
	15:52	16:53	17:55	20:00	21:03	21:56	22:04	21:15	19:59	18:39	16:23	15:39
7	08:46	08:01	06:54	06:31	05:17	04:28	04:33	05:24	06:26	07:26	07:33	08:31
	15:53	16:55	17:57	20:02	21:05	21:57	22:03	21:13	19:56	18:36	16:21	15:38
8	08:45	07:59	06:51	06:28	05:15	04:27	04:34	05:26	06:28	07:29	07:35	08:32
	15:55	16:58	18:00	20:04	21:07	21:58	22:02	21:11	19:54	18:33	16:19	15:37
9	08:44	07:56	06:48	06:26	05:13	04:26	04:35	05:28	06:30	07:31	07:37	08:34
	15:57	17:00	18:02	20:07	21:09	22:00	22:01	21:09	19:51	18:31	16:17	15:37
10	08:44	07:54	06:46	06:23	05:11	04:26	04:37	05:30	06:32	07:33	07:39	08:35
	15:58	17:02	18:04	20:09	21:11	22:01	22:00	21:07	19:48	18:28	16:15	15:36
11	08:43	07:52	06:43	06:21	05:09	04:25	04:38	05:32	06:34	07:35	07:41	08:36
	16:00	17:04	18:06	20:11	21:13	22:01	21:59	21:04	19:46	18:26	16:13	15:36
12	08:42	07:50	06:40	06:18	05:07	04:25	04:39	05:34	06:36	07:37	07:43	08:38
	16:02	17:07	18:08	20:13	21:15	22:02	21:58	21:02	19:43	18:23	16:11	15:36
13	08:41	07:48	06:38	06:15	05:05	04:24	04:41	05:36	06:38	07:39	07:45	08:39
	16:03	17:09	18:10	20:15	21:17	22:03	21:57	21:00	19:40	18:20	16:09	15:36
14	08:40	07:45	06:35	06:13	05:03	04:24	04:42	05:38	06:40	07:41	07:48	08:40
	16:05	17:11	18:12	20:17	21:19	22:04	21:56	20:57	19:38	18:18	16:07	15:35
15	08:39	07:43	06:32	06:10	05:01	04:23	04:43	05:40	06:42	07:43	07:50	08:41
	16:07	17:13	18:14	20:19	21:21	22:05	21:54	20:55	19:35	18:15	16:06	15:35
16	08:38	07:41	06:30	06:08	04:59	04:23	04:45	05:42	06:44	07:45	07:52	08:42
	16:09	17:16	18:17	20:21	21:22	22:05	21:53	20:53	19:32	18:13	16:04	15:35
17	08:37	07:38	06:27	06:05	04:57	04:23	04:46	05:44	06:46	07:47	07:54	08:43
	16:11	17:18	18:19	20:23	21:24	22:06	21:52	20:50	19:30	18:10	16:02	15:35
18	08:35	07:36	06:25	06:03	04:55	04:23	04:48	05:46	06:48	07:49	07:56	08:44
	16:13	17:20	18:21	20:25	21:26	22:06	21:50	20:48	19:27	18:08	16:00	15:36
19	08:34	07:34	06:22	06:00	04:53	04:23	04:50	05:48	06:50	07:52	07:58	08:44
	16:15	17:22	18:23	20:27	21:28	22:07	21:49	20:45	19:24	18:05	15:59	15:36
20	08:33	07:31	06:19	05:57	04:51	04:23	04:51	05:50	06:52	07:54	08:00	08:45
	16:17	17:25	18:25	20:29	21:30	22:07	21:47	20:43	19:21	18:03	15:57	15:36
21	08:31	07:29	06:16	05:55	04:50	04:23	04:53	05:52	06:54	07:56	08:02	08:46
	16:19	17:27	18:27	20:32	21:32	22:07	21:46	20:40	19:19	18:00	15:56	15:36
22	08:30	07:26	06:14	05:52	04:48	04:23	04:55	05:54	06:56	07:58	08:04	08:46
	16:21	17:29	18:29	20:34	21:34	22:08	21:44	20:38	19:16	17:58	15:54	15:37
23	08:28	07:24	06:11	05:50	04:46	04:23	04:56	05:56	06:58	08:00	08:06	08:47
	16:23	17:31	18:31	20:36	21:35	22:08	21:43	20:35	19:13	17:55	15:53	15:37
24	08:27	07:22	06:08	05:48	04:45	04:24	04:58	05:58	07:00	08:02	08:08	08:47
	16:25	17:33	18:33	20:38	21:37	22:08	21:41	20:33	19:11	17:53	15:51	15:38
25	08:25	07:19	06:06	05:45	04:43	04:24	05:00	06:00	07:02	08:04	08:10	08:48
	16:27	17:36	18:35	20:40	21:39	22:08	21:39	20:30	19:08	17:50	15:50	15:39
26	08:23	07:17	06:03	05:43	04:42	04:24	05:02	06:02	07:04	07:06	08:12	08:48
	16:29	17:38	18:37	20:42	21:40	22:08	21:37	20:28	19:05	16:48	15:49	15:39
27	08:22	07:14	06:00	05:40	04:40	04:25	05:03	06:04	07:06	07:09	08:14	08:48
	16:31	17:40	18:40	20:44	21:42	22:08	21:36	20:25	19:03	16:46	15:47	15:40
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31	08:15		06:50		04:35		05:11	06:12		07:17		08:48
	16:40		19:48		21:48		21:28	20:15		16:36		15:44
Potential sun hours	235	265	365	425	507	528	529	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BX - Vipes skola

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:13	07:09	06:47	05:31	04:34	04:27	05:13	06:14	07:14	07:19	08:21
	15:45	16:42	17:44	19:50	20:52	21:50	22:07	21:26	20:12	18:52	16:34	15:43
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	15:47	16:44	17:47	19:52	20:54	21:51	22:06	21:24	20:10	18:49	16:32	15:42
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	15:48	16:47	17:49	19:54	20:56	21:52	22:06	21:22	20:07	18:47	16:30	15:41
4	08:47	08:07	07:01	06:39	05:24	04:31	04:30	05:19	06:20	07:20	07:26	08:26
	15:49	16:49	17:51	19:56	20:59	21:54	22:05	21:20	20:04	18:44	16:28	15:40
5	08:47	08:05	06:59	06:36	05:22	04:30	04:31	05:20	06:22	07:22	07:28	08:28
	15:51	16:51	17:53	19:58	21:01	21:55	22:04	21:18	20:02	18:41	16:25	15:39
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	15:53	16:55	17:57	20:02	21:05	21:57	22:03	21:13	19:56	18:36	16:21	15:38
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	15:57	17:00	18:02	20:07	21:09	22:00	22:01	21:09	19:51	18:31	16:17	15:37
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	15:58	17:02	18:04	20:09	21:11	22:01	22:00	21:07	19:48	18:28	16:15	15:36
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12	08:42	07:50	06:40	06:18	05:07	04:25	04:39	05:34	06:36	07:37	07:43	08:38
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13	08:41	07:48	06:38	06:15	05:05	04:24	04:41	05:36	06:38	07:39	07:45	08:39
	16:03	17:09	18:10	20:15	21:17	22:03	21:57	21:00	19:40	18:20	16:09	15:36
14	08:40	07:45	06:35	06:13	05:03	04:24	04:42	05:38	06:40	07:41	07:48	08:40
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	16:07	17:13	18:14	20:19	21:21	22:05	21:54	20:55	19:35	18:15	16:06	15:35
16	08:38	07:41	06:30	06:08	04:59	04:23	04:45	05:42	06:44	07:45	07:52	08:42
	16:09	17:16	18:17	20:21	21:22	22:05	21:53	20:53	19:32	18:13	16:04	15:35
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18	08:35	07:36	06:24	06:03	04:55	04:23	04:48	05:46	06:48	07:49	07:56	08:44
	16:13	17:20	18:21	20:25	21:26	22:06	21:50	20:48	19:27	18:08	16:00	15:36
19	08:34	07:34	06:22	06:00	04:53	04:23	04:50	05:48	06:50	07:52	07:58	08:44
	16:15	17:22	18:23	20:27	21:28	22:07	21:49	20:45	19:24	18:05	15:59	15:36
20	08:33	07:31	06:19	05:57	04:51	04:23	04:51	05:50	06:52	07:54	08:00	08:45
	16:17	17:25	18:25	20:29	21:30	22:07	21:47	20:43	19:21	18:03	15:57	15:36
21	08:31	07:29	06:16	05:55	04:50	04:23	04:53	05:52	06:54	07:56	08:02	08:46
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	16:23	17:31	18:31	20:36	21:35	22:08	21:43	20:35	19:13	17:55	15:53	15:37
24	08:27	07:22	06:08	05:48	04:45	04:24	04:58	05:58	07:00	08:02	08:08	08:47
	16:25	17:33	18:33	20:38	21:37	22:08	21:41	20:33	19:11	17:53	15:51	15:38
25	08:25	07:19	06:06	05:45	04:43	04:24	05:00	06:00	07:02	08:04	08:10	08:48
	16:27	17:36	18:35	20:40	21:39	22:08	21:39	20:30	19:08	17:50	15:50	15:39
26	08:23	07:17	06:03	05:43	04:42	04:24	05:02	06:02	07:04	07:06	08:12	08:48
	16:29	17:38	18:37	20:42	21:40	22:08	21:37	20:28	19:05	16:48	15:49	15:39
27	08:22	07:14	06:00	05:40	04:40	04:25	05:03	06:04	07:06	07:09	08:14	08:48
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	16:33	17:42	18:42	20:46	21:44	22:08	21:34	20:23	19:00	16:43	15:46	15:41
29	08:18		05:55	05:35	04:38	04:26	05:07	06:08	07:10	07:13	08:18	08:48
	16:36		18:44	20:48	21:45	22:07	21:32	20:20	18:57	16:41	15:45	15:42
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31	08:15		06:50		04:35		05:11	06:12		07:17		08:48
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Total, worst case												
Sun reduction												
Oper. time red.												
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BY - Vipes skola

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:31 20:52	04:34 21:50	04:27 22:07	05:13 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:43
2	08:48 15:47	08:11 16:44	07:06 17:47	06:44 19:52	05:28 20:54	04:33 21:51	04:28 22:06	05:15 21:24	06:16 20:10	07:16 18:49	07:22 16:32	08:23 15:42
3	08:48 15:48	08:09 16:47	07:04 17:49	06:42 19:54	05:26 20:56	04:32 21:52	04:29 22:06	05:17 21:22	06:18 20:07	07:18 18:47	07:24 16:30	08:25 15:41
4	08:47 15:49	08:07 16:49	07:01 17:51	06:39 19:56	05:24 20:59	04:31 21:54	04:30 22:05	05:19 21:20	06:20 20:04	07:20 18:44	07:26 16:28	08:26 15:40
5	08:47 15:51	08:05 16:51	06:59 17:53	06:36 19:58	05:22 21:01	04:30 21:55	04:31 22:04	05:20 21:18	06:22 20:02	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:52	08:03 16:53	06:56 17:55	06:34 20:00	05:19 21:03	04:29 21:56	04:32 22:04	05:22 21:15	06:24 19:59	07:24 18:39	07:30 16:23	08:29 15:39
7	08:46 15:53	08:01 16:55	06:54 17:57	06:31 20:02	05:17 21:05	04:28 21:57	04:33 22:03	05:24 21:13	06:26 19:56	07:26 18:36	07:33 16:21	08:31 15:38
8	08:45 15:55	07:59 16:58	06:51 18:00	06:28 20:04	05:15 21:07	04:27 21:59	04:34 22:02	05:26 21:11	06:28 19:54	07:29 18:33	07:35 16:19	08:32 15:37
9	08:44 15:57	07:56 17:00	06:48 18:02	06:26 20:07	05:13 21:09	04:26 22:00	04:35 22:01	05:28 21:09	06:30 19:51	07:31 18:31	07:37 16:17	08:34 15:37
10	08:44 15:58	07:54 17:02	06:46 18:04	06:23 20:09	05:11 21:11	04:26 22:01	04:37 22:00	05:30 21:07	06:32 19:48	07:33 18:28	07:39 16:15	08:35 15:36
11	08:43 16:00	07:52 17:04	06:43 18:06	06:21 20:11	05:09 21:13	04:25 22:01	04:38 21:59	05:32 21:04	06:34 19:46	07:35 18:26	07:41 16:13	08:36 15:36
12	08:42 16:02	07:50 17:07	06:40 18:08	06:18 20:13	05:07 21:15	04:25 22:02	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:38 15:36
13	08:41 16:03	07:48 17:09	06:38 18:10	06:15 20:15	05:05 21:17	04:24 22:03	04:41 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:45 16:09	08:39 15:36
14	08:40 16:05	07:45 17:11	06:35 18:12	06:13 20:17	05:03 21:19	04:24 22:04	04:42 21:56	05:38 20:57	06:40 19:38	07:41 18:18	07:48 16:07	08:40 15:35
15	08:39 16:07	07:43 17:13	06:32 18:14	06:10 20:19	05:01 21:21	04:23 22:05	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:06	08:41 15:35
16	08:38 16:09	07:41 17:16	06:30 18:17	06:08 20:21	04:59 21:22	04:23 22:05	04:45 21:53	05:42 20:53	06:44 19:32	07:45 18:13	07:52 16:04	08:42 15:35
17	08:37 16:11	07:38 17:18	06:27 18:19	06:05 20:23	04:57 21:24	04:23 22:06	04:46 21:52	05:44 20:50	06:46 19:30	07:47 18:10	07:54 16:02	08:43 15:35
18	08:35 16:13	07:36 17:20	06:25 18:21	06:03 20:25	04:55 21:26	04:23 22:06	04:48 21:50	05:46 20:48	06:48 19:27	07:49 18:08	07:56 16:00	08:44 15:36
19	08:34 16:15	07:34 17:22	06:22 18:23	06:00 20:27	04:53 21:28	04:23 22:07	04:50 21:49	05:48 20:45	06:50 19:24	07:52 18:05	07:58 15:59	08:44 15:36
20	08:33 16:17	07:31 17:25	06:19 18:25	05:57 20:29	04:51 21:30	04:23 22:07	04:51 21:47	05:50 20:43	06:52 19:21	07:54 18:03	08:00 15:57	08:45 15:36
21	08:31 16:19	07:29 17:27	06:16 18:27	05:55 20:32	04:50 21:32	04:23 22:07	04:53 21:46	05:52 20:40	06:54 19:19	07:56 18:00	08:02 15:56	08:46 15:36
22	08:30 16:21	07:26 17:29	06:14 18:29	05:52 20:34	04:48 21:34	04:23 22:08	04:55 21:44	05:54 20:38	06:56 19:16	07:58 17:58	08:04 15:54	08:46 15:37
23	08:28 16:23	07:24 17:31	06:11 18:31	05:50 20:36	04:46 21:35	04:23 22:08	04:56 21:43	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:53	08:47 15:37
24	08:27 16:25	07:22 17:33	06:08 18:33	05:48 20:38	04:45 21:37	04:24 22:08	04:58 21:41	05:58 20:33	07:00 19:11	08:02 17:53	08:08 15:51	08:47 15:38
25	08:25 16:27	07:19 17:36	06:06 18:35	05:45 20:40	04:43 21:39	04:24 22:08	05:00 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:50	08:48 15:39
26	08:23 16:29	07:17 17:38	06:03 18:37	05:43 20:42	04:42 21:40	04:24 22:08	05:02 21:37	06:02 20:28	07:04 19:05	07:06 16:48	08:12 15:49	08:48 15:39
27	08:22 16:31	07:14 17:40	06:00 18:40	05:40 20:44	04:40 21:42	04:25 22:08	05:03 21:36	06:04 20:25	07:06 19:03	07:09 16:46	08:14 15:47	08:48 15:40
28	08:20 16:33	07:12 17:42	05:58 18:42	05:38 20:46	04:39 21:44	04:25 22:08	05:05 21:34	06:06 20:23	07:08 19:00	07:11 16:43	08:16 15:46	08:48 15:41
29	08:18 16:36		05:55 18:44	05:35 20:48	04:38 21:45	04:26 22:07	05:07 21:32	06:08 20:20	07:10 18:57	07:13 16:41	08:18 15:45	08:48 15:42
30	08:16 16:38		06:52 19:46	05:33 20:50	04:36 21:47	04:27 22:07	05:09 21:30	06:10 20:17	07:12 18:55	07:15 16:39	08:19 15:44	08:48 15:43
31	08:15 16:40		06:50 19:48		04:35 21:48		05:11 21:28	06:12 20:15	07:17 16:36			08:48 15:44
Potential sun hours	235	265	365	425	507	528	529	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: BZ - Vipes skola 1

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:13	07:09	06:47	05:31	04:34	04:27	05:13	06:14	07:14	07:19	08:21
	15:45	16:42	17:44	19:50	20:52	21:50	22:07	21:26	20:12	18:52	16:34	15:43
2	08:48	08:11	07:06	06:44	05:28	04:33	04:28	05:15	06:16	07:16	07:22	08:23
	15:47	16:44	17:47	19:52	20:54	21:51	22:06	21:24	20:10	18:49	16:32	15:42
3	08:48	08:09	07:04	06:42	05:26	04:32	04:29	05:17	06:18	07:18	07:24	08:25
	15:48	16:47	17:49	19:54	20:56	21:52	22:06	21:22	20:07	18:47	16:30	15:41
4	08:47	08:07	07:01	06:39	05:24	04:31	04:30	05:19	06:20	07:20	07:26	08:26
	15:49	16:49	17:51	19:56	20:59	21:54	22:05	21:20	20:04	18:44	16:28	15:40
5	08:47	08:05	06:59	06:36	05:22	04:30	04:31	05:20	06:22	07:22	07:28	08:28
	15:50	16:51	17:53	19:58	21:01	21:55	22:04	21:18	20:02	18:41	16:25	15:39
6	08:46	08:03	06:56	06:34	05:19	04:29	04:32	05:22	06:24	07:24	07:30	08:29
	15:52	16:53	17:55	20:00	21:03	21:56	22:04	21:15	19:59	18:39	16:23	15:39
7	08:46	08:01	06:54	06:31	05:17	04:28	04:33	05:24	06:26	07:26	07:33	08:31
	15:53	16:55	17:57	20:02	21:05	21:57	22:03	21:13	19:56	18:36	16:21	15:38
8	08:45	07:59	06:51	06:28	05:15	04:27	04:34	05:26	06:28	07:29	07:35	08:32
	15:55	16:58	18:00	20:04	21:07	21:59	22:02	21:11	19:54	18:33	16:19	15:37
9	08:44	07:56	06:48	06:26	05:13	04:26	04:35	05:28	06:30	07:31	07:37	08:34
	15:57	17:00	18:02	20:07	21:09	22:00	22:01	21:09	19:51	18:31	16:17	15:37
10	08:44	07:54	06:46	06:23	05:11	04:26	04:37	05:30	06:32	07:33	07:39	08:35
	15:58	17:02	18:04	20:09	21:11	22:01	22:00	21:07	19:48	18:28	16:15	15:36
11	08:43	07:52	06:43	06:21	05:09	04:25	04:38	05:32	06:34	07:35	07:41	08:36
	16:00	17:04	18:06	20:11	21:13	22:01	21:59	21:04	19:46	18:26	16:13	15:36
12	08:42	07:50	06:40	06:18	05:07	04:25	04:39	05:34	06:36	07:37	07:43	08:38
	16:02	17:07	18:08	20:13	21:15	22:02	21:58	21:02	19:43	18:23	16:11	15:36
13	08:41	07:48	06:38	06:15	05:05	04:24	04:41	05:36	06:38	07:39	07:45	08:39
	16:03	17:09	18:10	20:15	21:17	22:03	21:57	21:00	19:40	18:20	16:09	15:36
14	08:40	07:45	06:35	06:13	05:03	04:24	04:42	05:38	06:40	07:41	07:48	08:40
	16:05	17:11	18:12	20:17	21:19	22:04	21:56	20:57	19:38	18:18	16:07	15:35
15	08:39	07:43	06:32	06:10	05:01	04:23	04:43	05:40	06:42	07:43	07:50	08:41
	16:07	17:13	18:14	20:19	21:21	22:05	21:54	20:55	19:35	18:15	16:06	15:35
16	08:38	07:41	06:30	06:08	04:59	04:23	04:45	05:42	06:44	07:45	07:52	08:42
	16:09	17:16	18:17	20:21	21:22	22:05	21:53	20:53	19:32	18:13	16:04	15:35
17	08:37	07:38	06:27	06:05	04:57	04:23	04:46	05:44	06:46	07:47	07:54	08:43
	16:11	17:18	18:19	20:23	21:24	22:06	21:52	20:50	19:30	18:10	16:02	15:35
18	08:35	07:36	06:24	06:03	04:55	04:23	04:48	05:46	06:48	07:49	07:56	08:44
	16:13	17:20	18:21	20:25	21:26	22:06	21:50	20:48	19:27	18:08	16:00	15:36
19	08:34	07:34	06:22	06:00	04:53	04:23	04:50	05:48	06:50	07:52	07:58	08:44
	16:15	17:22	18:23	20:27	21:28	22:07	21:49	20:45	19:24	18:05	15:59	15:36
20	08:33	07:31	06:19	05:57	04:51	04:23	04:51	05:50	06:52	07:54	08:00	08:45
	16:17	17:25	18:25	20:29	21:30	22:07	21:47	20:43	19:21	18:03	15:57	15:36
21	08:31	07:29	06:16	05:55	04:50	04:23	04:53	05:52	06:54	07:56	08:02	08:46
	16:19	17:27	18:27	20:32	21:32	22:07	21:46	20:40	19:19	18:00	15:56	15:36
22	08:30	07:26	06:14	05:52	04:48	04:23	04:55	05:54	06:56	07:58	08:04	08:46
	16:21	17:29	18:29	20:34	21:34	22:08	21:44	20:38	19:16	17:58	15:54	15:37
23	08:28	07:24	06:11	05:50	04:46	04:23	04:56	05:56	06:58	08:00	08:06	08:47
	16:23	17:31	18:31	20:36	21:35	22:08	21:43	20:35	19:13	17:55	15:53	15:37
24	08:27	07:22	06:08	05:47	04:45	04:24	04:58	05:58	07:00	08:02	08:08	08:47
	16:25	17:33	18:33	20:38	21:37	22:08	21:41	20:33	19:11	17:53	15:51	15:38
25	08:25	07:19	06:06	05:45	04:43	04:24	05:00	06:00	07:02	08:04	08:10	08:48
	16:27	17:36	18:35	20:40	21:39	22:08	21:39	20:30	19:08	17:50	15:50	15:39
26	08:23	07:17	06:03	05:43	04:42	04:24	05:02	06:02	07:04	07:06	08:12	08:48
	16:29	17:38	18:37	20:42	21:40	22:08	21:37	20:28	19:05	16:48	15:49	15:39
27	08:22	07:14	06:00	05:40	04:40	04:25	05:03	06:04	07:06	07:09	08:14	08:48
	16:31	17:40	18:40	20:44	21:42	22:08	21:36	20:25	19:03	16:46	15:47	15:40
28	08:20	07:12	05:58	05:38	04:39	04:25	05:05	06:06	07:08	07:11	08:16	08:48
	16:33	17:42	18:42	20:46	21:44	22:08	21:34	20:23	19:00	16:43	15:46	15:41
29	08:18		05:55	05:35	04:37	04:26	05:07	06:08	07:10	07:13	08:18	08:48
	16:36		18:44	20:48	21:45	22:07	21:32	20:20	18:57	16:41	15:45	15:42
30	08:16		06:52	05:33	04:36	04:27	05:09	06:10	07:12	07:15	08:19	08:48
	16:38		19:46	20:50	21:47	22:07	21:30	20:17	18:55	16:39	15:44	15:43
31	08:15		06:50		04:35		05:11	06:12		07:17		08:48
	16:40		19:48		21:48		21:28	20:15		16:36		15:44
Potential sun hours	235	265	365	425	507	528	529	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CA - Slipie 1

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:13	07:09	06:47	05:31	04:34	04:27	05:13	06:14	07:14	07:19	08:21
	15:45	16:42	17:44	19:50	20:52	21:50	22:07	21:26	20:12	18:52	16:34	15:43
2	08:48	08:11	07:06	06:44	05:28	04:33	04:28	05:15	06:16	07:16	07:22	08:23
	15:46	16:44	17:47	19:52	20:54	21:51	22:06	21:24	20:10	18:49	16:32	15:42
3	08:48	08:09	07:04	06:42	05:26	04:31	04:29	05:17	06:18	07:18	07:24	08:24
	15:48	16:46	17:49	19:54	20:56	21:52	22:06	21:22	20:07	18:46	16:30	15:41
4	08:47	08:07	07:01	06:39	05:24	04:30	04:30	05:18	06:20	07:20	07:26	08:26
	15:49	16:49	17:51	19:56	20:58	21:54	22:05	21:20	20:04	18:44	16:27	15:40
5	08:47	08:05	06:59	06:36	05:22	04:29	04:31	05:20	06:22	07:22	07:28	08:28
	15:50	16:51	17:53	19:58	21:00	21:55	22:04	21:18	20:02	18:41	16:25	15:39
6	08:46	08:03	06:56	06:34	05:19	04:29	04:32	05:22	06:24	07:24	07:30	08:29
	15:52	16:53	17:55	20:00	21:03	21:56	22:04	21:15	19:59	18:39	16:23	15:39
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	15:56	17:00	18:02	20:06	21:09	21:59	22:01	21:09	19:51	18:31	16:17	15:37
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	15:58	17:02	18:04	20:09	21:11	22:00	22:00	21:07	19:48	18:28	16:15	15:36
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	16:00	17:04	18:06	20:11	21:13	22:01	21:59	21:04	19:46	18:25	16:13	15:36
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	16:01	17:07	18:08	20:13	21:15	22:02	21:58	21:02	19:43	18:23	16:11	15:36
13	08:41	07:48	06:38	06:15	05:05	04:24	04:41	05:36	06:38	07:39	07:45	08:39
	16:03	17:09	18:10	20:15	21:17	22:03	21:57	21:00	19:40	18:20	16:09	15:36
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16	08:38	07:41	06:30	06:08	04:59	04:23	04:45	05:42	06:44	07:45	07:52	08:42
	16:09	17:16	18:16	20:21	21:22	22:05	21:53	20:53	19:32	18:13	16:04	15:35
17	08:36	07:38	06:27	06:05	04:57	04:23	04:46	05:44	06:46	07:47	07:54	08:43
	16:11	17:18	18:19	20:23	21:24	22:06	21:52	20:50	19:29	18:10	16:02	15:35
18	08:35	07:36	06:24	06:02	04:55	04:23	04:48	05:46	06:48	07:49	07:56	08:44
	16:13	17:20	18:21	20:25	21:26	22:06	21:50	20:48	19:27	18:08	16:00	15:35
19	08:34	07:34	06:22	06:00	04:53	04:23	04:50	05:48	06:50	07:51	07:58	08:44
	16:15	17:22	18:23	20:27	21:28	22:07	21:49	20:45	19:24	18:05	15:59	15:36
20	08:33	07:31	06:19	05:57	04:51	04:23	04:51	05:50	06:52	07:54	08:00	08:45
	16:17	17:25	18:25	20:29	21:30	22:07	21:47	20:43	19:21	18:03	15:57	15:36
21	08:31	07:29	06:16	05:55	04:50	04:23	04:53	05:52	06:54	07:56	08:02	08:46
	16:19	17:27	18:27	20:31	21:32	22:07	21:46	20:40	19:19	18:00	15:56	15:36
22	08:30	07:26	06:14	05:52	04:48	04:23	04:55	05:54	06:56	07:58	08:04	08:46
	16:21	17:29	18:29	20:34	21:33	22:08	21:44	20:38	19:16	17:58	15:54	15:37
23	08:28	07:24	06:11	05:50	04:46	04:23	04:56	05:56	06:58	08:00	08:06	08:47
	16:23	17:31	18:31	20:36	21:35	22:08	21:42	20:35	19:13	17:55	15:53	15:37
24	08:27	07:21	06:08	05:47	04:45	04:23	04:58	05:58	07:00	08:02	08:08	08:47
	16:25	17:33	18:33	20:38	21:37	22:08	21:41	20:33	19:11	17:53	15:51	15:38
25	08:25	07:19	06:06	05:45	04:43	04:24	05:00	06:00	07:02	08:04	08:10	08:48
	16:27	17:36	18:35	20:40	21:39	22:08	21:39	20:30	19:08	17:50	15:50	15:39
26	08:23	07:16	06:03	05:43	04:42	04:24	05:02	06:02	07:04	07:06	08:12	08:48
	16:29	17:38	18:37	20:42	21:40	22:08	21:37	20:28	19:05	16:48	15:49	15:39
27	08:22	07:14	06:00	05:40	04:40	04:25	05:03	06:04	07:06	07:09	08:14	08:48
	16:31	17:40	18:39	20:44	21:42	22:08	21:35	20:25	19:03	16:46	15:47	15:40
28	08:20	07:11	05:58	05:38	04:39	04:25	05:05	06:06	07:08	07:11	08:16	08:48
	16:33	17:42	18:42	20:46	21:44	22:07	21:34	20:23	19:00	16:43	15:46	15:41
29	08:18		05:55	05:35	04:37	04:26	05:07	06:08	07:10	07:13	08:18	08:48
	16:35		18:44	20:48	21:45	22:07	21:32	20:20	18:57	16:41	15:45	15:42
30	08:16		06:52	05:33	04:36	04:27	05:09	06:10	07:12	07:15	08:19	08:48
	16:38		19:46	20:50	21:47	22:07	21:30	20:17	18:54	16:39	15:44	15:43
31	08:15		06:50		04:35		05:11	06:12		07:17		08:48
	16:40		19:48		21:48		21:28	20:15		16:36		15:44
Potential sun hours	235	265	365	425	507	528	529	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CB - Upmali

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	January	February	March			April			May	June	July	August	September			October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44			06:47 19:50	22	07:16 (2)	05:31 20:52	04:34 21:50	04:27 22:07	05:13 21:26	06:14 20:12			07:14 18:52	07:19 16:34	08:21 15:43
2	08:48 15:46	08:11 16:44	07:06 17:47			06:44 19:52	22	07:16 (2)	05:28 20:54	04:33 21:51	04:28 22:06	05:15 21:24	06:16 20:10			07:16 18:49	07:22 16:32	08:23 15:42
3	08:48 15:48	08:09 16:46	07:04 17:49			06:42 19:54	21	07:16 (2)	05:26 20:56	04:31 21:52	04:29 22:06	05:17 21:22	06:18 20:07			07:18 18:46	07:24 16:30	08:24 15:41
4	08:47 15:49	08:07 16:49	07:01 17:51			06:39 19:56	21	07:15 (2)	05:24 20:58	04:30 21:54	04:30 22:05	05:18 21:20	06:20 20:04	7	07:19 (2)	07:20 18:44	07:26 16:27	08:26 15:40
5	08:47 15:50	08:05 16:51	06:59 17:53			06:36 19:58	20	07:16 (2)	05:22 21:00	04:29 21:55	04:31 22:04	05:20 21:18	06:22 20:02	13	07:16 (2)	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:52	08:03 16:53	06:56 17:55			06:34 20:00	17	07:17 (2)	05:19 21:03	04:29 21:56	04:32 22:04	05:22 21:15	06:24 19:59	16	07:14 (2)	07:24 18:39	07:30 16:23	08:29 15:39
7	08:46 15:53	08:01 16:55	06:53 17:57			06:31 20:02	15	07:18 (2)	05:17 21:05	04:28 21:57	04:33 22:03	05:24 21:13	06:26 19:56	19	07:12 (2)	07:26 18:36	07:32 16:21	08:31 15:38
8	08:45 15:55	07:59 16:58	06:51 17:59			06:28 20:04	12	07:19 (2)	05:15 21:07	04:27 21:58	04:34 22:02	05:26 21:11	06:28 19:54	20	07:11 (2)	07:28 18:33	07:35 16:19	08:32 15:37
9	08:44 15:56	07:56 17:00	06:48 18:02			06:25 20:06	1	07:21 (2)	05:13 21:09	04:26 21:59	04:35 22:01	05:28 21:09	06:28 19:51	22	07:09 (2)	07:31 18:31	07:37 16:17	08:34 15:37
10	08:44 15:58	07:54 17:02	06:46 18:04			06:23 20:09		07:25 (2)	05:11 21:11	04:26 22:00	04:37 22:00	05:30 21:07	06:32 19:48	22	07:09 (2)	07:33 18:28	07:39 16:15	08:35 15:36
11	08:43 16:00	07:52 17:04	06:43 18:06			06:20 20:11			05:09 21:13	04:25 22:01	04:38 21:59	05:32 21:04	06:34 19:46	23	07:08 (2)	07:35 18:25	07:41 16:13	08:36 15:36
12	08:42 16:01	07:50 17:07	06:40 18:08			06:18 20:13			05:07 21:15	04:24 22:02	04:39 21:58	05:34 21:02	06:36 19:43	22	07:08 (2)	07:37 18:23	07:43 16:11	08:37 15:36
13	08:41 16:03	07:48 17:09	06:38 18:10			06:15 20:15			05:05 21:17	04:24 22:03	04:41 21:57	05:36 21:00	06:38 19:40	21	07:09 (2)	07:39 18:20	07:45 16:09	08:39 15:36
14	08:40 16:05	07:45 17:11	06:35 18:12			06:13 20:17			05:03 21:18	04:24 22:04	04:42 21:56	05:38 21:00	06:40 19:38	18	07:11 (2)	07:41 18:18	07:47 16:07	08:40 15:35
15	08:39 16:07	07:43 17:13	06:32 18:14			06:10 20:19			05:01 21:20	04:23 22:05	04:43 21:54	05:40 20:57	06:42 19:38	14	07:13 (2)	07:43 18:15	07:50 16:06	08:41 15:35
16	08:38 16:09	07:41 17:16	06:30 18:16			06:08 20:21			04:59 21:22	04:23 22:05	04:45 21:53	05:42 20:52	06:44 19:32	11	07:15 (2)	07:45 18:13	07:52 16:04	08:42 15:35
17	08:36 16:11	07:38 17:18	06:27 18:19			06:05 20:23			04:57 21:24	04:23 22:06	04:46 21:52	05:44 20:50	06:46 19:29	7	07:17 (2)	07:47 18:10	07:54 16:02	08:43 15:35
18	08:35 16:13	07:36 17:20	06:24 18:21			06:02 20:25			04:55 21:26	04:23 22:06	04:48 21:50	05:46 20:48	06:48 19:27		07:24 (2)	07:49 18:08	07:56 16:00	08:44 15:35
19	08:34 16:15	07:34 17:22	06:22 18:23			06:00 20:27			04:53 21:28	04:23 22:07	04:50 21:49	05:48 20:45	06:50 19:24			07:51 18:05	07:58 15:59	08:45 15:36
20	08:33 16:16	07:31 17:25	06:19 18:25			05:57 20:29			04:51 21:30	04:23 22:07	04:51 21:47	05:50 20:43	06:52 19:21			07:50 18:03	08:00 15:57	08:45 15:36
21	08:31 16:19	07:29 17:27	06:16 18:27			05:55 20:31			04:50 21:32	04:23 22:07	04:53 21:46	05:52 20:40	06:54 19:19			07:56 18:00	08:02 15:56	08:46 15:36
22	08:30 16:21	07:26 17:29	06:14 18:29			05:52 20:34			04:48 21:33	04:23 22:08	04:55 21:44	05:54 20:38	06:56 19:16			07:58 17:58	08:04 15:54	08:46 15:37
23	08:28 16:23	07:24 17:31	06:11 18:31			05:50 20:36			04:46 21:35	04:23 22:08	04:56 21:42	05:56 20:35	06:58 19:13			08:00 17:55	08:06 15:53	08:47 15:37
24	08:27 16:25	07:21 17:33	06:08 18:33			05:47 20:38			04:45 21:37	04:23 22:08	04:58 21:41	05:58 20:33	07:00 19:11			08:02 17:53	08:08 15:51	08:47 15:38
25	08:25 16:27	07:19 17:36	06:06 18:35			05:45 20:40			04:43 21:39	04:24 22:08	05:00 21:39	06:00 20:30	07:02 19:08			08:04 17:50	08:10 15:50	08:48 15:38
26	08:23 16:29	07:16 17:38	06:03 18:37	2	06:30 (2)	05:43 20:42			04:42 21:40	04:24 22:08	05:02 21:37	06:02 20:28	07:04 19:05			07:06 17:48	08:12 15:48	08:48 15:39
27	08:22 16:31	07:14 17:40	06:00 18:39	8	06:28 (2)	05:40 20:44			04:40 21:42	04:25 22:08	05:03 21:35	06:04 20:25	07:06 19:03			07:09 17:46	08:14 15:47	08:48 15:40
28	08:20 16:33	07:11 17:42	05:58 18:41	12	06:25 (2)	05:38 20:46			04:39 21:44	04:25 22:07	05:05 21:34	06:06 20:23	07:08 19:00			07:11 17:43	08:16 15:46	08:48 15:41
29	08:18 16:35	07:05 17:44	05:55 18:43	15	06:22 (2)	05:35 20:48			04:37 21:45	04:26 22:07	05:07 21:32	06:08 20:20	07:10 18:57			07:13 17:41	08:18 15:45	08:48 15:42
30	08:16 16:38	06:52 17:46	07:20 (2)	18	05:33 (2)	05:33 20:50			04:36 21:47	04:27 22:07	05:09 21:30	06:10 20:17	07:12 18:54			07:15 17:39	08:19 15:44	08:48 15:43
31	08:15 16:40	06:50 19:48	07:17 (2)	21	07:38 (2)	05:40 21:48			04:35 21:48	05:11 21:28	06:12 20:15	07:13 20:15	18:54			07:17 16:36	08:17 15:44	08:48 15:44
Potential sun hours	235	265	365			425			507	528	529	470	385			324	248	216
Total, worst case					76					151							235	
Sun reduction					0,39					0,48							0,43	
Oper. time red.					0,94					0,94							0,94	
Wind dir. red.					0,66					0,66							0,66	
Total reduction					0,24					0,30							0,27	
Total, real					18					45							62	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CC - Ziemelnieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:13	07:09	06:47	05:31	04:34	04:27	05:13	06:14	07:14	07:19	08:21
	15:45	16:42	17:44	19:50	20:52	21:49	22:06	21:26	20:12	18:52	16:34	15:43
2	08:48	08:11	07:06	06:44	05:28	04:33	04:28	05:15	06:16	07:16	07:21	08:23
	15:47	16:44	17:46	19:52	20:54	21:51	22:06	21:24	20:09	18:49	16:32	15:42
3	08:47	08:09	07:04	06:42	05:26	04:32	04:29	05:17	06:18	07:18	07:24	08:24
	15:48	16:47	17:49	19:54	20:56	21:52	22:05	21:22	20:07	18:46	16:30	15:41
4	08:47	08:07	07:01	06:39	05:24	04:31	04:30	05:18	06:20	07:20	07:26	08:26
	15:49	16:49	17:51	19:56	20:58	21:53	22:05	21:20	20:04	18:44	16:28	15:40
5	08:47	08:05	06:59	06:36	05:22	04:30	04:31	05:20	06:22	07:22	07:28	08:27
	15:51	16:51	17:53	19:58	21:00	21:55	22:04	21:17	20:02	18:41	16:25	15:39
6	08:46	08:03	06:56	06:34	05:19	04:29	04:32	05:22	06:24	07:24	07:30	08:29
	15:52	16:53	17:55	20:00	21:02	21:56	22:03	21:15	19:59	18:39	16:23	15:39
7	08:46	08:00	06:53	06:31	05:17	04:28	04:33	05:24	06:26	07:26	07:32	08:31
	15:53	16:55	17:57	20:02	21:04	21:57	22:03	21:13	19:56	18:36	16:21	15:38
8	08:45	07:58	06:51	06:28	05:15	04:27	04:34	05:26	06:28	07:28	07:34	08:32
	15:55	16:58	17:59	20:04	21:06	21:58	22:02	21:11	19:54	18:33	16:19	15:37
9	08:44	07:56	06:48	06:26	05:13	04:26	04:35	05:28	06:30	07:30	07:37	08:33
	15:57	17:00	18:02	20:06	21:08	21:59	22:01	21:09	19:51	18:31	16:17	15:37
10	08:43	07:54	06:46	06:23	05:11	04:26	04:37	05:30	06:32	07:32	07:39	08:35
	15:58	17:02	18:04	20:08	21:10	22:00	22:00	21:06	19:48	18:28	16:15	15:37
11	08:43	07:52	06:43	06:20	05:09	04:25	04:38	05:32	06:34	07:35	07:41	08:36
	16:00	17:04	18:06	20:11	21:12	22:01	21:59	21:04	19:46	18:25	16:13	15:36
12	08:42	07:50	06:40	06:18	05:07	04:25	04:39	05:34	06:36	07:37	07:43	08:37
	16:02	17:07	18:08	20:13	21:14	22:02	21:58	21:02	19:43	18:23	16:11	15:36
13	08:41	07:47	06:38	06:15	05:05	04:24	04:41	05:36	06:38	07:39	07:45	08:38
	16:03	17:09	18:10	20:15	21:16	22:03	21:57	20:59	19:40	18:20	16:09	15:36
14	08:40	07:45	06:35	06:13	05:03	04:24	04:42	05:38	06:40	07:41	07:47	08:39
	16:05	17:11	18:12	20:17	21:18	22:04	21:55	20:57	19:38	18:18	16:07	15:35
15	08:39	07:43	06:32	06:10	05:01	04:23	04:43	05:40	06:42	07:43	07:49	08:41
	16:07	17:13	18:14	20:19	21:20	22:04	21:54	20:55	19:35	18:15	16:06	15:35
16	08:37	07:41	06:30	06:08	04:59	04:23	04:45	05:42	06:44	07:45	07:52	08:42
	16:09	17:16	18:16	20:21	21:22	22:05	21:53	20:52	19:32	18:13	16:04	15:35
17	08:36	07:38	06:27	06:05	04:57	04:23	04:47	05:44	06:46	07:47	07:54	08:42
	16:11	17:18	18:18	20:23	21:24	22:05	21:51	20:50	19:29	18:10	16:02	15:35
18	08:35	07:36	06:24	06:02	04:55	04:23	04:48	05:46	06:48	07:49	07:56	08:43
	16:13	17:20	18:21	20:25	21:26	22:06	21:50	20:48	19:27	18:08	16:00	15:36
19	08:34	07:33	06:22	06:00	04:53	04:23	04:50	05:48	06:50	07:51	07:58	08:44
	16:15	17:22	18:23	20:27	21:28	22:06	21:49	20:45	19:24	18:05	15:59	15:36
20	08:32	07:31	06:19	05:57	04:51	04:23	04:51	05:50	06:52	07:53	08:00	08:45
	16:17	17:25	18:25	20:29	21:30	22:07	21:47	20:43	19:21	18:03	15:57	15:36
21	08:31	07:29	06:16	05:55	04:50	04:23	04:53	05:52	06:54	07:56	08:02	08:45
	16:19	17:27	18:27	20:31	21:31	22:07	21:46	20:40	19:19	18:00	15:56	15:36
22	08:30	07:26	06:14	05:52	04:48	04:23	04:55	05:54	06:56	07:58	08:04	08:46
	16:21	17:29	18:29	20:33	21:33	22:07	21:44	20:38	19:16	17:58	15:54	15:37
23	08:28	07:24	06:11	05:50	04:46	04:23	04:56	05:56	06:58	08:00	08:06	08:47
	16:23	17:31	18:31	20:35	21:35	22:07	21:42	20:35	19:13	17:55	15:53	15:37
24	08:26	07:21	06:08	05:47	04:45	04:24	04:58	05:58	07:00	08:02	08:08	08:47
	16:25	17:33	18:33	20:38	21:37	22:08	21:41	20:33	19:11	17:53	15:51	15:38
25	08:25	07:19	06:06	05:45	04:43	04:24	05:00	06:00	07:02	08:04	08:10	08:47
	16:27	17:36	18:35	20:40	21:38	22:08	21:39	20:30	19:08	17:50	15:50	15:39
26	08:23	07:16	06:03	05:43	04:42	04:24	05:02	06:02	07:04	07:06	08:12	08:48
	16:29	17:38	18:37	20:42	21:40	22:08	21:37	20:28	19:05	16:48	15:49	15:39
27	08:22	07:14	06:00	05:40	04:40	04:25	05:03	06:04	07:06	07:08	08:14	08:48
	16:31	17:40	18:39	20:44	21:42	22:07	21:35	20:25	19:02	16:46	15:47	15:40
28	08:20	07:11	05:58	05:38	04:39	04:25	05:05	06:06	07:08	07:11	08:16	08:48
	16:33	17:42	18:41	20:46	21:43	22:07	21:33	20:22	19:00	16:43	15:46	15:41
29	08:18		05:55	05:35	04:38	04:26	05:07	06:08	07:10	07:13	08:17	08:48
	16:35		18:44	20:48	21:45	22:07	21:32	20:20	18:57	16:41	15:45	15:42
30	08:16		06:52	05:33	04:36	04:27	05:09	06:10	07:12	07:15	08:19	08:48
	16:38		19:46	20:50	21:46	22:07	21:30	20:17	18:54	16:39	15:44	15:43
31	08:14		06:50		04:35		05:11	06:12		07:17		08:48
	16:40		19:48		21:48		21:28	20:15		16:36		15:44
Potential sun hours	235	266	365	425	507	528	529	470	385	324	248	217
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CD - Ezermuiža

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:12	07:09	06:47	05:31	04:34	04:27	05:13	06:14	07:14	07:19	08:21
	15:45	16:42	17:44	19:50	20:52	21:49	22:06	21:26	20:12	18:52	16:34	15:43
2	08:48	08:11	07:06	06:44	05:28	04:33	04:28	05:15	06:16	07:16	07:21	08:23
	15:47	16:44	17:47	19:52	20:54	21:51	22:06	21:24	20:09	18:49	16:32	15:42
3	08:47	08:09	07:04	06:42	05:26	04:32	04:29	05:17	06:18	07:18	07:24	08:24
	15:48	16:47	17:49	19:54	20:56	21:52	22:05	21:22	20:07	18:46	16:30	15:41
4	08:47	08:07	07:01	06:39	05:24	04:31	04:30	05:19	06:20	07:20	07:26	08:26
	15:49	16:49	17:51	19:56	20:58	21:53	22:05	21:19	20:04	18:44	16:28	15:40
5	08:47	08:05	06:59	06:36	05:22	04:30	04:31	05:20	06:22	07:22	07:28	08:27
	15:51	16:51	17:53	19:58	21:00	21:55	22:04	21:17	20:02	18:41	16:25	15:39
6	08:46	08:03	06:56	06:34	05:19	04:29	04:32	05:22	06:24	07:24	07:30	08:29
	15:52	16:53	17:55	20:00	21:02	21:56	22:03	21:15	19:59	18:39	16:23	15:39
7	08:46	08:00	06:53	06:31	05:17	04:28	04:33	05:24	06:26	07:26	07:32	08:30
	15:53	16:55	17:57	20:02	21:04	21:57	22:03	21:13	19:56	18:36	16:21	15:38
8	08:45	07:58	06:51	06:28	05:15	04:27	04:34	05:26	06:28	07:28	07:34	08:32
	15:55	16:58	17:59	20:04	21:06	21:58	22:02	21:11	19:54	18:33	16:19	15:37
9	08:44	07:56	06:48	06:26	05:13	04:26	04:35	05:28	06:30	07:30	07:37	08:33
	15:57	17:00	18:02	20:06	21:08	21:59	22:01	21:09	19:51	18:31	16:17	15:37
10	08:43	07:54	06:46	06:23	05:11	04:26	04:37	05:30	06:32	07:32	07:39	08:35
	15:58	17:02	18:04	20:08	21:10	22:00	22:00	21:06	19:48	18:28	16:15	15:37
11	08:43	07:52	06:43	06:20	05:09	04:25	04:38	05:32	06:34	07:35	07:41	08:36
	16:00	17:04	18:06	20:11	21:12	22:01	21:59	21:04	19:46	18:25	16:13	15:36
12	08:42	07:50	06:40	06:18	05:07	04:25	04:39	05:34	06:36	07:37	07:43	08:37
	16:02	17:07	18:08	20:13	21:14	22:02	21:58	21:02	19:43	18:23	16:11	15:36
13	08:41	07:47	06:38	06:15	05:05	04:24	04:41	05:36	06:38	07:39	07:45	08:38
	16:03	17:09	18:10	20:15	21:16	22:03	21:57	20:59	19:40	18:20	16:09	15:36
14	08:40	07:45	06:35	06:13	05:03	04:24	04:42	05:38	06:40	07:41	07:47	08:39
	16:05	17:11	18:12	20:17	21:18	22:04	21:55	20:57	19:38	18:18	16:07	15:36
15	08:39	07:43	06:32	06:10	05:01	04:23	04:44	05:40	06:42	07:43	07:49	08:41
	16:07	17:13	18:14	20:19	21:20	22:04	21:54	20:55	19:35	18:15	16:06	15:35
16	08:37	07:41	06:30	06:08	04:59	04:23	04:45	05:42	06:44	07:45	07:52	08:41
	16:09	17:16	18:16	20:21	21:22	22:05	21:53	20:52	19:32	18:13	16:04	15:35
17	08:36	07:38	06:27	06:05	04:57	04:23	04:47	05:44	06:46	07:47	07:54	08:42
	16:11	17:18	18:18	20:23	21:24	22:05	21:51	20:50	19:29	18:10	16:02	15:35
18	08:35	07:36	06:24	06:02	04:55	04:23	04:48	05:46	06:48	07:49	07:56	08:43
	16:13	17:20	18:21	20:25	21:26	22:06	21:50	20:48	19:27	18:08	16:00	15:36
19	08:34	07:33	06:22	06:00	04:53	04:23	04:50	05:48	06:50	07:51	07:58	08:44
	16:15	17:22	18:23	20:27	21:28	22:06	21:49	20:45	19:24	18:05	15:59	15:36
20	08:32	07:31	06:19	05:57	04:51	04:23	04:51	05:50	06:52	07:53	08:00	08:45
	16:17	17:25	18:25	20:29	21:30	22:07	21:47	20:43	19:21	18:03	15:57	15:36
21	08:31	07:29	06:16	05:55	04:50	04:23	04:53	05:52	06:54	07:56	08:02	08:45
	16:19	17:27	18:27	20:31	21:31	22:07	21:46	20:40	19:19	18:00	15:56	15:36
22	08:29	07:26	06:14	05:52	04:48	04:23	04:55	05:54	06:56	07:58	08:04	08:46
	16:21	17:29	18:29	20:33	21:33	22:07	21:44	20:38	19:16	17:58	15:54	15:37
23	08:28	07:24	06:11	05:50	04:46	04:23	04:56	05:56	06:58	08:00	08:06	08:47
	16:23	17:31	18:31	20:35	21:35	22:07	21:42	20:35	19:13	17:55	15:53	15:37
24	08:26	07:21	06:08	05:47	04:45	04:24	04:58	05:58	07:00	08:02	08:08	08:47
	16:25	17:33	18:33	20:38	21:37	22:08	21:41	20:33	19:11	17:53	15:51	15:38
25	08:25	07:19	06:06	05:45	04:43	04:24	05:00	06:00	07:02	08:04	08:10	08:47
	16:27	17:36	18:35	20:40	21:38	22:08	21:39	20:30	19:08	17:50	15:50	15:39
26	08:23	07:16	06:03	05:43	04:42	04:24	05:02	06:02	07:04	07:06	08:12	08:48
	16:29	17:38	18:37	20:42	21:40	22:08	21:37	20:28	19:05	16:48	15:49	15:39
27	08:22	07:14	06:00	05:40	04:40	04:25	05:03	06:04	07:06	07:08	08:14	08:48
	16:31	17:40	18:39	20:44	21:42	22:07	21:35	20:25	19:02	16:46	15:47	15:40
28	08:20	07:11	05:58	05:38	04:39	04:25	05:05	06:06	07:08	07:11	08:15	08:48
	16:33	17:42	18:41	20:46	21:43	22:07	21:33	20:22	19:00	16:43	15:46	15:41
29	08:18		05:55	05:35	04:38	04:26	05:07	06:08	07:10	07:13	08:17	08:48
	16:36		18:44	20:48	21:45	22:07	21:32	20:20	18:57	16:41	15:45	15:42
30	08:16		06:52	05:33	04:36	04:27	05:09	06:10	07:12	07:15	08:19	08:48
	16:38		19:46	20:50	21:46	22:07	21:30	20:17	18:54	16:39	15:44	15:43
31	08:14		06:50		04:35		05:11	06:12		07:17		08:48
	16:40		19:48		21:48		21:28	20:15		16:36		15:44
Potential sun hours	235	266	365	425	507	528	529	470	385	324	248	217
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CE - Ezermali

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	05:31 20:52	04:34 21:49	04:28 22:06	05:13 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:43
2	08:48 15:47	08:11 16:44	07:06 17:47	06:44 19:52	05:28 20:54	04:33 21:51	04:28 22:06	05:15 21:24	06:16 20:09	07:16 18:49	07:21 16:32	08:23 15:42
3	08:47 15:48	08:09 16:47	07:04 17:49	06:42 19:54	05:26 20:56	04:32 21:52	04:29 22:05	05:17 21:22	06:18 20:07	07:18 18:47	07:24 16:30	08:24 15:41
4	08:47 15:49	08:07 16:49	07:01 17:51	06:39 19:56	05:24 20:58	04:31 21:53	04:30 22:05	05:19 21:20	06:20 20:04	07:20 18:44	07:26 16:28	08:26 15:40
5	08:47 15:51	08:05 16:51	06:59 17:53	06:36 19:58	05:22 21:00	04:30 21:55	04:31 22:04	05:21 21:17	06:22 20:02	07:22 18:41	07:28 16:25	08:28 15:39
6	08:46 15:52	08:03 16:53	06:56 17:55	06:34 20:00	05:19 21:02	04:29 21:56	04:32 22:03	05:22 21:15	06:24 19:59	07:24 18:39	07:30 16:23	08:29 15:39
7	08:46 15:54	08:01 16:56	06:53 17:57	06:31 20:02	05:17 21:04	04:28 21:57	04:33 22:03	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	08:31 15:38
8	08:45 15:55	07:58 16:58	06:51 17:59	06:28 20:04	05:15 21:06	04:27 21:58	04:34 22:02	05:26 21:11	06:28 19:54	07:28 18:33	07:34 16:19	08:32 15:38
9	08:44 15:57	07:56 17:00	06:48 18:02	06:26 20:06	05:13 21:08	04:26 21:59	04:36 22:01	05:28 21:09	06:30 19:51	07:30 18:31	07:37 16:17	08:33 15:37
10	08:43 15:58	07:54 17:02	06:46 18:04	06:23 20:08	05:11 21:10	04:26 22:00	04:37 22:00	05:30 21:06	06:32 19:48	07:33 18:28	07:39 16:15	08:35 15:37
11	08:43 16:00	07:52 17:04	06:43 18:06	06:21 20:11	05:09 21:12	04:25 22:01	04:38 21:59	05:32 21:04	06:34 19:46	07:35 18:25	07:41 16:13	08:36 15:36
12	08:42 16:02	07:50 17:07	06:40 18:08	06:18 20:13	05:07 21:14	04:25 22:02	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:37 15:36
13	08:41 16:03	07:47 17:09	06:38 18:10	06:15 20:15	05:05 21:16	04:24 22:03	04:41 21:57	05:36 20:59	06:38 19:40	07:39 18:20	07:45 16:09	08:38 15:36
14	08:40 16:05	07:45 17:11	06:35 18:12	06:13 20:17	05:03 21:18	04:24 22:04	04:42 21:55	05:38 20:57	06:40 19:38	07:41 18:18	07:47 16:08	08:40 15:36
15	08:39 16:07	07:43 17:13	06:32 18:14	06:10 20:19	05:01 21:20	04:24 22:04	04:44 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:49 16:06	08:41 15:35
16	08:38 16:09	07:41 17:16	06:30 18:16	06:08 20:21	04:59 21:22	04:23 22:05	04:45 21:53	05:42 20:52	06:44 19:32	07:45 18:13	07:52 16:04	08:42 15:35
17	08:36 16:11	07:38 17:18	06:27 18:19	06:05 20:23	04:57 21:24	04:23 22:06	04:47 21:52	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:02	08:42 15:36
18	08:35 16:13	07:36 17:20	06:24 18:21	06:03 20:25	04:55 21:26	04:23 22:06	04:48 21:50	05:46 20:48	06:48 19:27	07:49 18:08	07:56 16:00	08:43 15:36
19	08:34 16:15	07:34 17:22	06:22 18:23	06:00 20:27	04:53 21:28	04:23 22:06	04:50 21:49	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:59	08:44 15:36
20	08:32 16:17	07:31 17:25	06:19 18:25	05:57 20:29	04:52 21:30	04:23 22:07	04:51 21:47	05:50 20:43	06:52 19:21	07:53 18:03	08:00 15:57	08:45 15:36
21	08:31 16:19	07:29 17:27	06:16 18:27	05:55 20:31	04:50 21:31	04:23 22:07	04:53 21:46	05:52 20:40	06:54 19:19	07:56 18:00	08:02 15:56	08:45 15:37
22	08:30 16:21	07:26 17:29	06:14 18:29	05:52 20:33	04:48 21:33	04:23 22:07	04:55 21:44	05:54 20:38	06:56 19:16	07:58 17:58	08:04 15:54	08:46 15:37
23	08:28 16:23	07:24 17:31	06:11 18:31	05:50 20:36	04:46 21:35	04:23 22:08	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:53	08:47 15:37
24	08:26 16:25	07:21 17:33	06:08 18:33	05:48 20:38	04:45 21:37	04:24 22:08	04:58 21:41	05:58 20:33	07:00 19:11	08:02 17:53	08:08 15:51	08:47 15:38
25	08:25 16:27	07:19 17:36	06:06 18:35	05:45 20:40	04:43 21:38	04:24 22:08	05:00 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:50	08:47 15:39
26	08:23 16:29	07:16 17:38	06:03 18:37	05:43 20:42	04:42 21:40	04:24 22:08	05:02 21:37	06:02 20:28	07:04 19:05	07:06 16:48	08:12 15:49	08:48 15:39
27	08:22 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:42	04:25 22:07	05:04 21:35	06:04 20:25	07:06 19:03	07:08 16:46	08:14 15:47	08:48 15:40
28	08:20 16:33	07:11 17:42	05:58 18:41	05:38 20:46	04:39 21:43	04:26 22:07	05:05 21:33	06:06 20:22	07:08 19:00	07:11 16:43	08:16 15:46	08:48 15:41
29	08:18 16:36		05:55 18:44	05:35 20:48	04:38 21:45	04:26 22:07	05:07 21:32	06:08 20:20	07:10 18:57	07:13 16:41	08:17 15:45	08:48 15:42
30	08:16 16:38		06:52 19:46	05:33 20:50	04:36 21:46	04:27 22:07	05:09 21:30	06:10 20:17	07:12 18:55	07:15 16:39	08:19 15:44	08:48 15:43
31	08:14 16:40		06:50 19:48		04:35 21:48		05:11 21:28	06:12 20:15		07:17 16:36		08:48 15:44
Potential sun hours	235	266	365	425	507	528	529	470	385	324	248	217
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CF - Ozolmui ž a

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:12	07:09	06:47	05:31	04:34	04:28	05:13	06:14	07:14	07:19	08:21
	15:45	16:42	17:44	19:50	20:52	21:49	22:06	21:26	20:12	18:52	16:34	15:43
2	08:48	08:11	07:06	06:44	05:28	04:33	04:28	05:15	06:16	07:16	07:21	08:23
	15:47	16:44	17:47	19:52	20:54	21:51	22:06	21:24	20:09	18:49	16:32	15:42
3	08:47	08:09	07:04	06:42	05:26	04:32	04:29	05:17	06:18	07:18	07:24	08:24
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	15:49	16:49	17:51	19:56	20:58	21:53	22:05	21:19	20:04	18:44	16:28	15:40
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	16:33	17:42	18:41	20:46	21:43	22:07	21:33	20:22	19:00	16:43	15:46	15:41
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	16:38		19:46	20:50	21:46	22:07	21:30	20:17	18:54	16:39	15:44	15:43
31	08:14		06:50		04:35		05:11	06:12		07:17		08:48
	16:40		19:48		21:48		21:28	20:15		16:36		15:44
Potential sun hours	235	266	365	425	507	528	529	470	385	324	248	217
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CG - Vasarnieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:12 16:41	07:08 17:44	06:46 19:49	05:30 20:52	04:33 21:49	04:27 22:06	05:12 21:26	06:14 20:12	07:14 18:51	07:19 16:34	08:21 15:42
2	08:48 15:46	08:10 16:44	07:06 17:46	06:44 19:51	05:28 20:54	04:32 21:51	04:27 22:06	05:14 21:24	06:16 20:09	07:16 18:49	07:21 16:31	08:23 15:41
3	08:47 15:47	08:08 16:46	07:03 17:48	06:41 19:54	05:25 20:56	04:31 21:52	04:28 22:05	05:16 21:21	06:18 20:07	07:18 18:46	07:23 16:29	08:24 15:40
4	08:47 15:51	08:06 16:57	07:01 17:59	06:38 19:56	05:23 20:58	04:30 21:53	04:29 22:05	05:18 21:19	06:20 20:04	07:20 18:43	07:26 16:27	08:26 15:39
5	08:47 15:50	08:04 16:50	06:58 17:52	06:36 19:58	05:21 21:00	04:29 21:55	04:30 22:04	05:20 21:17	06:22 20:01	07:22 18:41	07:28 16:25	08:27 15:39
6	08:46 15:51	08:02 16:53	06:56 17:55	06:33 20:00	05:19 21:02	04:28 21:56	04:31 22:03	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
7	08:45 15:53	08:00 16:55	06:53 17:57	06:30 20:02	05:16 21:04	04:27 21:57	04:32 22:03	05:24 21:13	06:26 19:56	07:26 18:35	07:32 16:21	08:30 15:37
8	08:45 15:54	07:58 16:57	06:50 17:59	06:28 20:04	05:14 21:06	04:26 21:58	04:33 22:02	05:26 21:11	06:28 19:53	07:28 18:33	07:34 16:18	08:32 15:37
9	08:44 15:56	07:56 16:59	06:48 18:01	06:25 20:06	05:12 21:08	04:25 21:59	04:35 22:01	05:28 21:08	06:30 19:51	07:30 18:30	07:36 16:16	08:33 15:36
10	08:43 15:57	07:54 17:02	06:45 18:03	06:23 20:08	05:10 21:10	04:25 22:00	04:36 22:00	05:30 21:06	06:32 19:48	07:32 18:28	07:39 16:14	08:35 15:36
11	08:42 15:59	07:52 17:04	06:43 18:05	06:20 20:10	05:08 21:12	04:24 22:01	04:37 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:12	08:36 15:35
12	08:42 16:01	07:49 17:06	06:40 18:07	06:17 20:12	05:06 21:14	04:24 22:02	04:38 21:58	05:34 21:02	06:36 19:43	07:36 18:22	07:43 16:11	08:37 15:35
13	08:41 16:03	07:47 17:08	06:37 18:10	06:15 20:14	05:04 21:16	04:23 22:03	04:40 21:57	05:36 20:59	06:38 19:40	07:38 18:20	07:45 16:09	08:38 15:35
14	08:40 16:04	07:45 17:11	06:35 18:12	06:12 20:16	05:02 21:18	04:23 22:04	04:41 21:55	05:38 20:57	06:40 19:37	07:40 18:17	07:47 16:07	08:39 15:35
15	08:39 16:06	07:43 17:13	06:32 18:14	06:10 20:19	05:00 21:20	04:23 22:04	04:43 21:54	05:40 20:55	06:42 19:34	07:43 18:15	07:49 16:05	08:41 15:35
16	08:37 16:08	07:40 17:15	06:29 18:16	06:07 20:21	04:58 21:22	04:22 22:05	04:44 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:51 16:03	08:41 15:35
17	08:36 16:10	07:38 17:17	06:27 18:18	06:04 20:23	04:56 21:24	04:22 22:06	04:46 21:51	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:01	08:42 15:35
18	08:35 16:12	07:36 17:19	06:24 18:20	06:02 20:25	04:54 21:26	04:22 22:06	04:47 21:50	05:46 20:47	06:48 19:26	07:49 18:07	07:56 16:00	08:43 15:35
19	08:34 16:14	07:33 17:22	06:21 18:22	05:59 20:27	04:52 21:28	04:22 22:06	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:04	07:58 15:58	08:44 15:35
20	08:32 16:16	07:31 17:24	06:19 18:24	05:57 20:29	04:51 21:30	04:22 22:07	04:50 21:47	05:50 20:42	06:52 19:21	07:53 18:02	08:00 15:56	08:45 15:35
21	08:31 16:18	07:28 17:26	06:16 18:26	05:54 20:31	04:49 21:31	04:22 22:07	04:52 21:45	05:52 20:40	06:54 19:18	07:55 18:00	08:02 15:55	08:45 15:36
22	08:29 16:20	07:26 17:28	06:13 18:29	05:52 20:33	04:47 21:33	04:22 22:07	04:54 21:44	05:54 20:37	06:56 19:16	07:57 17:57	08:04 15:53	08:46 15:36
23	08:28 16:22	07:23 17:31	06:11 18:31	05:49 20:35	04:46 21:35	04:22 22:08	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:47 15:37
24	08:26 16:24	07:21 17:33	06:08 18:33	05:47 20:37	04:44 21:37	04:23 22:08	04:57 21:41	05:58 20:32	07:00 19:10	08:02 17:52	08:08 15:50	08:47 15:37
25	08:25 16:26	07:19 17:35	06:05 18:35	05:44 20:39	04:42 21:38	04:23 22:08	04:59 21:39	06:00 20:30	07:02 19:07	08:04 17:50	08:10 15:49	08:47 15:38
26	08:23 16:28	07:16 17:37	06:02 18:37	05:42 20:42	04:41 21:40	04:23 22:08	05:01 21:37	06:02 20:27	07:04 19:05	07:06 16:47	08:12 15:48	08:48 15:38
27	08:21 16:30	07:14 17:39	06:00 18:39	05:40 20:44	04:39 21:42	04:24 22:07	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:45	08:14 15:47	08:48 15:39
28	08:20 16:33	07:11 17:42	05:57 18:41	05:37 20:46	04:38 21:43	04:25 22:07	05:05 21:33	06:06 20:22	07:08 18:59	07:10 16:43	08:15 15:45	08:48 15:40
29	08:18 16:35		05:54 18:43	05:35 20:48	04:37 21:45	04:25 22:07	05:06 21:31	06:08 20:20	07:10 18:57	07:12 16:40	08:17 15:44	08:48 15:41
30	08:16 16:37		06:52 19:45	05:32 20:50	04:35 21:46	04:26 22:07	05:08 21:30	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:43	08:48 15:42
31	08:14 16:39		06:49 19:47		04:34 21:48		05:10 21:28	06:12 20:14		07:17 16:36		08:48 15:43
Potential sun hours	235	265	365	425	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CH - Ata š a

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:12 16:41	07:09 17:44	06:46 19:49	05:30 20:52	04:33 21:49	04:27 22:06	05:12 21:26	06:14 20:12	07:14 18:51	07:19 16:34	08:21 15:42
2	08:48 15:46	08:10 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:32 21:51	04:27 22:06	05:14 21:24	06:16 20:09	07:21 18:49	07:21 16:31	08:23 15:41
3	08:47 15:47	08:08 16:46	07:03 17:48	06:41 19:54	05:25 20:56	04:31 21:52	04:28 22:05	05:16 21:21	06:18 20:07	07:18 18:46	07:23 16:29	08:24 15:40
4	08:47 15:51	08:06 16:57	07:01 17:59	06:38 19:56	05:23 20:58	04:30 21:53	04:29 22:05	05:18 21:19	06:20 20:04	07:20 18:43	07:26 16:27	08:26 15:39
5	08:47 15:50	08:04 16:50	06:58 17:53	06:36 19:58	05:21 21:00	04:29 21:55	04:30 22:04	05:20 21:17	06:22 20:01	07:22 18:41	07:28 16:25	08:27 15:39
6	08:46 15:51	08:02 16:53	06:56 17:55	06:33 20:00	05:19 21:02	04:28 21:56	04:31 22:03	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
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19	08:34 16:14	07:33 17:22	06:21 18:22	05:59 20:27	04:52 21:28	04:22 22:06	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:58	08:44 15:35
20	08:32 16:16	07:31 17:24	06:19 18:24	05:57 20:29	04:51 21:30	04:22 22:07	04:51 21:47	05:50 20:42	06:52 19:21	07:53 18:02	08:00 15:56	08:45 15:35
21	08:31 16:18	07:28 17:26	06:16 18:26	05:54 20:31	04:49 21:31	04:22 22:07	04:52 21:46	05:52 20:40	06:54 19:18	07:55 18:00	08:02 15:55	08:45 15:36
22	08:29 16:20	07:26 17:28	06:13 18:29	05:52 20:33	04:47 21:33	04:22 22:07	04:54 21:44	05:54 20:37	06:56 19:16	07:57 17:57	08:04 15:53	08:46 15:36
23	08:28 16:22	07:24 17:31	06:11 18:31	05:49 20:35	04:46 21:35	04:22 22:08	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:47 15:37
24	08:26 16:24	07:21 17:33	06:08 18:33	05:47 20:37	04:44 21:37	04:23 22:08	04:57 21:41	05:58 20:32	07:00 19:10	08:02 17:52	08:08 15:51	08:47 15:37
25	08:25 16:26	07:19 17:35	06:05 18:35	05:44 20:39	04:42 21:38	04:23 22:08	04:59 21:39	06:00 20:30	07:02 19:07	08:04 17:50	08:10 15:49	08:47 15:38
26	08:23 16:28	07:16 17:37	06:03 18:37	05:42 20:42	04:41 21:40	04:24 22:08	05:01 21:37	06:02 20:27	07:04 19:05	07:06 16:47	08:12 15:48	08:48 15:39
27	08:21 16:31	07:14 17:39	06:00 18:39	05:40 20:44	04:40 21:42	04:24 22:07	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:45	08:14 15:47	08:48 15:39
28	08:20 16:33	07:11 17:42	05:57 18:41	05:37 20:46	04:38 21:43	04:25 22:07	05:05 21:33	06:06 20:22	07:08 18:59	07:10 16:43	08:15 15:45	08:48 15:40
29	08:18 16:35		05:54 18:43	05:35 20:48	04:37 21:45	04:25 22:07	05:06 21:31	06:08 20:20	07:10 18:57	07:13 16:40	08:17 15:44	08:48 15:41
30	08:16 16:37		06:52 19:45	05:32 20:50	04:35 21:46	04:26 22:07	05:08 21:30	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:43	08:48 15:42
31	08:14 16:39		06:49 19:47		04:34 21:48		05:10 21:28	06:12 20:14		07:17 16:36		08:48 15:43
Potential sun hours	235	265	365	425	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CI - Mui ž nieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

January		February		March		April		May		June	
1	08:48	08:12	15:49 (12)	07:09	16:43 (13)	06:47	18:34 (9)	05:30	18:44 (11)	04:33	
	15:45	16:42	20	16:09 (12)	17:44	17:06 (13)	19:49	20	18:54 (9)	20:52	71
2	08:48	08:10	15:48 (12)	07:06	16:44 (13)	06:44	18:35 (9)	05:28	18:44 (11)	04:32	
	15:46	16:44	23	16:11 (12)	17:46	17:06 (13)	19:52	16	18:51 (9)	20:54	73
3	08:47	08:09	15:46 (12)	07:03	16:44 (13)	06:41	18:39 (9)	05:26	18:45 (11)	04:31	
	15:47	16:46	25	16:11 (12)	17:48	17:05 (13)	19:54	10	18:49 (9)	20:56	73
4	08:47	08:07	15:46 (12)	07:01	16:44 (13)	06:39	18:46 (11)	05:23	18:46 (11)	04:30	
	15:48	16:48	26	16:12 (12)	17:50	17:03 (13)	19:56	20:58	72	20:21 (10)	21:53
5	08:47	08:05	15:46 (12)	06:58	16:46 (13)	06:36	18:46 (11)	05:21	18:47 (11)	04:29	
	15:50	16:50	27	16:13 (12)	17:53	17:02 (13)	19:58	21:00	73	20:22 (10)	21:55
6	08:46	08:02	15:46 (12)	06:56	16:48 (13)	06:33	18:48 (11)	05:19	18:47 (11)	04:28	
	15:51	16:53	28	16:14 (12)	17:55	17:00 (13)	20:00	21:02	72	20:22 (10)	21:56
7	08:46	08:00	15:45 (12)	06:53	16:48 (13)	06:31	19:08 (11)	05:17	18:48 (11)	04:27	
	15:53	16:55	29	16:14 (12)	17:57	20:02	19:16 (11)	21:04	72	20:23 (10)	21:57
8	08:45	07:58	15:45 (12)	06:51	16:48 (13)	06:28	19:03 (11)	05:14	18:50 (11)	04:26	
	15:54	16:57	29	16:14 (12)	17:59	20:04	19:22 (11)	21:06	69	20:23 (10)	21:58
9	08:44	07:56	15:45 (12)	06:48	16:48 (13)	06:25	18:59 (11)	05:12	18:51 (11)	04:26	
	15:56	16:59	30	16:15 (12)	18:01	20:06	19:24 (11)	21:08	66	20:23 (10)	21:59
10	08:43	07:54	15:45 (12)	06:45	16:48 (13)	06:23	18:57 (11)	05:10	18:52 (11)	04:25	
	15:58	17:02	29	16:14 (12)	18:03	20:08	19:27 (11)	21:10	65	20:23 (10)	22:00
11	08:43	07:52	15:45 (12)	06:43	16:48 (13)	06:20	18:55 (11)	05:08	18:53 (11)	04:24	
	15:59	17:04	30	16:15 (12)	18:05	20:10	19:28 (11)	21:12	62	20:23 (10)	22:01
12	08:42	07:50	15:46 (12)	06:40	16:48 (13)	06:17	18:52 (11)	05:06	18:55 (11)	04:24	
	16:01	17:06	29	16:15 (12)	18:08	20:12	19:29 (11)	21:14	58	20:23 (10)	22:02
13	08:41	07:47	15:46 (12)	06:37	16:48 (13)	06:15	18:51 (11)	05:04	18:57 (11)	04:23	
	16:03	17:08	28	16:14 (12)	18:10	20:14	19:30 (11)	21:16	53	20:22 (10)	22:03
14	08:40	07:45	15:47 (12)	06:35	16:48 (13)	06:12	18:49 (11)	05:02	19:01 (11)	04:23	
	16:04	17:11	27	16:14 (12)	18:12	20:17	19:31 (11)	21:18	47	20:23 (10)	22:04
15	08:39	07:43	15:47 (12)	06:32	16:48 (13)	06:10	18:49 (11)	05:00	19:49 (10)	04:23	
	16:06	17:13	25	16:12 (12)	18:14	20:19	19:32 (11)	21:20	33	20:22 (10)	22:04
16	08:37	07:40	15:48 (12)	06:29	16:48 (13)	06:07	18:47 (11)	04:58	19:49 (10)	04:22	
	16:08	17:15	24	16:12 (12)	18:16	20:21	19:32 (11)	21:22	33	20:22 (10)	22:05
17	08:36	07:38	15:49 (12)	06:27	16:48 (13)	06:05	18:47 (11)	04:56	19:50 (10)	04:22	
	16:10	17:17	21	16:10 (12)	18:18	20:23	19:33 (11)	21:24	32	20:22 (10)	22:06
18	08:35	07:36	15:51 (12)	06:24	16:48 (13)	06:02	18:45 (11)	04:54	19:50 (10)	04:22	
	16:12	17:20	18	16:09 (12)	18:20	20:25	19:33 (11)	21:26	31	20:21 (10)	22:06
19	08:34	07:33	15:53 (12)	06:21	16:48 (13)	05:59	18:45 (11)	04:53	19:50 (10)	04:22	
	16:14	17:22	13	16:06 (12)	18:22	20:27	19:33 (11)	21:28	31	20:21 (10)	22:07
20	08:32	07:31	15:59 (12)	06:19	16:48 (13)	05:57	18:45 (11)	04:51	19:51 (10)	04:22	
	16:16	17:24	7	16:56 (13)	18:24	20:29	19:34 (11)	21:30	30	20:21 (10)	22:07
21	08:31	07:28	16:48 (13)	06:16	16:48 (13)	05:54	18:44 (11)	04:49	19:51 (10)	04:22	
	16:18	17:26	10	16:58 (13)	18:27	20:31	19:33 (11)	21:31	29	20:20 (10)	22:07
22	08:29	07:26	16:47 (13)	06:13	16:48 (13)	05:52	18:44 (11)	04:47	19:53 (10)	04:22	
	16:20	17:29	14	17:01 (13)	18:29	20:33	19:34 (11)	21:33	27	20:20 (10)	22:07
23	08:28	07:24	16:45 (13)	06:11	16:48 (13)	05:49	18:43 (11)	04:46	19:53 (10)	04:23	
	16:22	17:31	18	17:03 (13)	18:31	20:35	19:33 (11)	21:35	25	20:18 (10)	22:08
24	08:26	07:21	16:44 (13)	06:08	16:48 (13)	05:47	18:43 (11)	04:44	19:54 (10)	04:23	
	16:24	17:33	21	17:05 (13)	18:33	20:37	19:33 (11)	21:37	24	20:18 (10)	22:08
25	08:25	07:19	16:44 (13)	06:05	16:48 (13)	05:45	18:43 (11)	04:43	19:55 (10)	04:23	
	16:26	17:35	23	17:07 (13)	18:35	20:40	19:33 (11)	21:38	23	20:18 (10)	22:08
26	08:23	07:16	16:43 (13)	06:03	16:48 (13)	05:42	18:42 (11)	04:41	19:56 (10)	04:24	
	16:28	17:37	24	17:07 (13)	18:37	20:42	19:32 (11)	21:40	20	20:16 (10)	22:08
27	08:21	07:14	16:43 (13)	06:00	16:48 (13)	05:40	18:43 (11)	04:40	19:57 (10)	04:24	
	16:31	17:40	24	17:07 (13)	18:39	20:44	20:10 (10)	21:42	18	20:15 (10)	22:08
28	08:20	07:11	16:43 (13)	05:57	16:48 (13)	05:37	18:43 (11)	04:38	19:59 (10)	04:25	
	16:33	17:42	24	17:07 (13)	18:41	20:46	20:14 (10)	21:43	15	20:14 (10)	22:07
29	08:18		15:54 (12)	05:55	16:48 (13)	05:35	18:44 (11)	04:37	20:01 (10)	04:25	
	16:35	8	16:02 (12)	18:43	16:48 (13)	05:33	20:16 (10)	21:45	12	20:13 (10)	22:07
30	08:16	15:51 (12)		06:52	18:32 (9)	05:33	18:43 (11)	04:36	20:03 (10)	04:26	
	16:37	13	16:04 (12)	19:45	18:57 (9)	20:50	20:17 (10)	21:46	8	20:11 (10)	22:07
31	08:14	15:50 (12)		06:49	18:33 (9)			04:34			
	16:39	17	16:07 (12)	19:47	18:56 (9)			21:48			
Potential sun hours	235	17	16:07 (12)	19:47	18:56 (9)	425		507		529	
Total, worst case	38		646	467	1111		1317				
Sun reduction	0,15		0,24	0,39	0,48		0,53				
Oper. time red.	0,94		0,94	0,94	0,94		0,94				
Wind dir. red.	0,67		0,67	0,67	0,64		0,63				
Total reduction	0,10		0,15	0,24	0,29		0,31				
Total, real	4		99	113	323		414				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CI - Mui ž nieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

July		August		September		October		November		December	
1	04:27	05:12	19:06 (11)	06:14	18:53 (11)	07:14		07:19	15:15 (12)	08:21	
2	04:28	05:14	19:04 (11)	06:16	18:54 (11)	07:16		07:21	15:14 (12)	08:23	
3	04:28	05:16	19:03 (11)	06:18	18:56 (11)	07:18		07:23	15:15 (12)	08:24	
4	04:29	05:18	19:01 (11)	06:20	18:58 (11)	07:20		07:26	15:15 (12)	08:26	
5	04:30	05:20	18:59 (11)	06:22	19:01 (11)	07:22		07:28	15:15 (12)	08:27	
6	04:31	05:22	18:58 (11)	06:24	19:16 (11)	07:24		07:30	15:16 (12)	08:29	
7	04:32	05:24	18:57 (11)	06:26		07:26		07:32	15:16 (12)	08:31	
8	04:34	05:26	18:56 (11)	06:28		07:28		07:34	15:17 (12)	08:32	
9	04:35	05:28	18:55 (11)	06:30	18:37 (9)	07:30	12	07:35 (13)	15:18 (12)	08:33	
10	04:36	05:30	18:54 (11)	06:32	18:38 (9)	07:32	15	07:36 (13)	15:19 (12)	08:35	
11	04:37	05:32	18:53 (11)	06:34	18:43 (9)	07:34	18	07:38 (13)	15:20 (12)	08:36	
12	04:39	05:34	18:52 (11)	06:36	18:45 (9)	07:36	21	07:39 (13)	15:21 (12)	08:37	
13	04:40	05:36	18:52 (11)	06:38	18:47 (9)	07:38	22	07:41 (13)	15:22 (12)	08:38	
14	04:41	05:38	18:51 (11)	06:40	18:48 (9)	07:40	23	07:42 (13)	15:23 (12)	08:39	
15	04:43	05:40	18:51 (11)	06:42	18:49 (9)	07:42	24	07:43 (13)	15:24 (12)	08:40	
16	04:44	05:42	18:51 (11)	06:44	18:49 (9)	07:44	25	07:44 (13)	15:25 (12)	08:41	
17	04:46	05:44	18:49 (11)	06:46	18:49 (9)	07:46	26	07:45 (13)	15:26 (12)	08:42	
18	04:47	05:46	18:49 (11)	06:48	18:49 (9)	07:48	27	07:46 (13)	15:27 (12)	08:43	
19	04:49	05:48	18:49 (11)	06:50	18:49 (9)	07:50	28	07:47 (13)	15:28 (12)	08:44	
20	04:51	05:50	18:49 (11)	06:52	18:49 (9)	07:52	29	07:48 (13)	15:29 (12)	08:45	
21	04:52	05:52	18:49 (11)	06:54	18:49 (9)	07:54	30	07:49 (13)	15:30 (12)	08:46	
22	04:54	05:54	18:49 (11)	06:56	18:49 (9)	07:56	31	07:50 (13)	15:31 (12)	08:47	
23	04:56	05:56	18:49 (11)	06:58	18:49 (9)	07:58		07:51 (13)	15:32 (12)	08:48	
24	04:57	05:58	18:49 (11)	07:00	18:49 (9)	08:00		07:52 (13)	15:33 (12)	08:49	
25	04:59	06:00	18:49 (11)	07:02	18:49 (9)	08:02		07:53 (13)	15:34 (12)	08:50	
26	05:01	06:02	18:48 (11)	07:04	18:49 (9)	08:04		07:54 (13)	15:35 (12)	08:51	
27	05:03	06:04	18:49 (11)	07:06	18:49 (9)	08:06		07:55 (13)	15:36 (12)	08:52	
28	05:05	06:06	18:49 (11)	07:08	18:49 (9)	08:08		07:56 (13)	15:37 (12)	08:53	
29	05:07	06:08	18:50 (11)	07:10	18:49 (9)	08:10		07:57 (13)	15:38 (12)	08:54	
30	05:08	06:10	18:51 (11)	07:12	18:49 (9)	08:12		07:58 (13)	15:39 (12)	08:55	
31	05:10	06:12	18:52 (11)	07:14	18:49 (9)	08:14		07:59 (13)	15:40 (12)	08:56	
Potential sun hours	530	470	385	324	248	216					
Total, worst case	488	1780	539	488	318						
Sun reduction	0,51	0,51	0,43	0,27	0,09						
Oper. time red.	0,94	0,94	0,94	0,94	0,94						
Wind dir. red.	0,62	0,64	0,66	0,67	0,67						
Total reduction	0,30	0,31	0,27	0,17	0,06						
Total, real	145	548	143	83	19						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CJ - Rijasvecumi

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January			February			March			April	May	June
1	08:48		14:08 (11)	08:12		14:24 (11)	07:09		15:59 (10)	06:47	05:30	04:33
	15:45	34	14:42 (11)	16:42	47	15:47 (9)	17:44	29	16:28 (10)	19:50	20:52	21:49
2	08:48		14:09 (11)	08:11		14:26 (11)	07:06		16:01 (10)	06:44	05:28	04:32
	15:46	34	14:43 (11)	16:44	42	15:47 (9)	17:46	26	16:27 (10)	19:52	20:54	21:51
3	08:48		14:08 (11)	08:09		14:28 (11)	07:04		16:02 (10)	06:41	05:26	04:31
	15:47	35	14:43 (11)	16:46	35	15:45 (9)	17:48	23	16:25 (10)	19:54	20:56	21:52
4	08:47		14:09 (11)	08:07		14:33 (11)	07:01		16:04 (10)	06:39	05:23	04:30
	15:48	36	14:45 (11)	16:48	24	15:44 (9)	17:50	18	16:22 (10)	19:56	20:58	21:54
5	08:47		14:09 (11)	08:05		15:28 (9)	06:58		16:08 (10)	06:36	05:21	04:29
	15:50	36	14:45 (11)	16:50	15	15:43 (9)	17:53	11	16:19 (10)	19:58	21:00	21:55
6	08:46		14:09 (11)	08:03		15:31 (9)	06:56			06:33	05:19	04:28
	15:51	36	14:45 (11)	16:53	10	15:41 (9)	17:55			20:00	21:02	21:56
7	08:46		14:09 (11)	08:00			06:53			06:31	05:17	04:27
	15:53	37	14:46 (11)	16:55			17:57			20:02	21:04	21:57
8	08:45		14:09 (11)	07:58		16:09 (10)	06:51			06:28	05:14	04:26
	15:54	37	14:46 (11)	16:57	11	16:20 (10)	17:59			20:04	21:06	21:58
9	08:44		14:10 (11)	07:56		16:06 (10)	06:48			06:25	05:12	04:26
	15:56	37	14:47 (11)	16:59	18	16:24 (10)	18:01			20:06	21:08	21:59
10	08:43		14:10 (11)	07:54		16:04 (10)	06:45			06:23	05:10	04:25
	15:57	38	14:48 (11)	17:02	21	16:25 (10)	18:03			20:08	21:10	22:00
11	08:43		14:10 (11)	07:52		16:02 (10)	06:43			06:20	05:08	04:24
	15:59	38	14:48 (11)	17:04	25	16:27 (10)	18:05			20:10	21:12	22:01
12	08:42		14:11 (11)	07:50		16:01 (10)	06:40			06:17	05:06	04:24
	16:01	38	14:49 (11)	17:06	28	16:29 (10)	18:08			20:12	21:14	22:02
13	08:41		14:11 (11)	07:47		16:00 (10)	06:37			06:15	05:04	04:23
	16:03	39	14:50 (11)	17:08	30	16:30 (10)	18:10			20:15	21:16	22:03
14	08:40		14:11 (11)	07:45		15:59 (10)	06:35			06:12	05:02	04:23
	16:04	40	15:27 (9)	17:11	32	16:31 (10)	18:12			20:17	21:18	22:04
15	08:39		14:12 (11)	07:43		15:58 (10)	06:32			06:10	05:00	04:23
	16:06	43	15:29 (9)	17:13	34	16:32 (10)	18:14			20:19	21:20	22:04
16	08:38		14:11 (11)	07:40		15:58 (10)	06:29			06:07	04:58	04:22
	16:08	47	15:31 (9)	17:15	35	16:33 (10)	18:16			20:21	21:22	22:05
17	08:36		14:12 (11)	07:38		15:56 (10)	06:27			06:05	04:56	04:22
	16:10	50	15:34 (9)	17:17	37	16:33 (10)	18:18			20:23	21:24	22:06
18	08:35		14:12 (11)	07:36		15:57 (10)	06:24			06:02	04:54	04:22
	16:12	52	15:35 (9)	17:20	37	16:34 (10)	18:20			20:25	21:26	22:06
19	08:34		14:13 (11)	07:33		15:56 (10)	06:21			05:59	04:53	04:22
	16:14	55	15:38 (9)	17:22	37	16:33 (10)	18:22			20:27	21:28	22:07
20	08:32		14:13 (11)	07:31		15:56 (10)	06:19			05:57	04:51	04:22
	16:16	57	15:40 (9)	17:24	38	16:34 (10)	18:24			20:29	21:30	22:07
21	08:31		14:13 (11)	07:29		15:55 (10)	06:16			05:54	04:49	04:22
	16:18	60	15:42 (9)	17:26	39	16:34 (10)	18:27			20:31	21:32	22:07
22	08:30		14:15 (11)	07:26		15:56 (10)	06:13			05:52	04:47	04:22
	16:20	61	15:45 (9)	17:29	38	16:34 (10)	18:29			20:33	21:33	22:08
23	08:28		14:15 (11)	07:24		15:56 (10)	06:11			05:49	04:46	04:23
	16:22	61	15:45 (9)	17:31	37	16:33 (10)	18:31			20:35	21:35	22:08
24	08:26		14:15 (11)	07:21		15:55 (10)	06:08			05:47	04:44	04:23
	16:24	62	15:46 (9)	17:33	38	16:33 (10)	18:33			20:37	21:37	22:08
25	08:25		14:16 (11)	07:19		15:56 (10)	06:05			05:44	04:43	04:23
	16:26	61	15:46 (9)	17:35	37	16:33 (10)	18:35			20:40	21:39	22:08
26	08:23		14:17 (11)	07:16		15:56 (10)	06:03			05:42	04:41	04:24
	16:28	60	15:46 (9)	17:37	36	16:32 (10)	18:37			20:42	21:40	22:08
27	08:22		14:17 (11)	07:14		15:58 (10)	06:00			05:40	04:40	04:24
	16:31	60	15:47 (9)	17:40	33	16:31 (10)	18:39			20:44	21:42	22:08
28	08:20		14:18 (11)	07:11		15:58 (10)	05:57			05:37	04:38	04:25
	16:33	59	15:47 (9)	17:42	32	16:30 (10)	18:41			20:46	21:43	22:07
29	08:18		14:19 (11)				05:55			05:35	04:37	04:25
	16:35	56	15:47 (9)				18:43			20:48	21:45	22:07
30	08:16		14:21 (11)				06:52			05:32	04:36	04:26
	16:37	54	15:47 (9)				19:45			20:50	21:47	22:07
31	08:14		14:22 (11)				06:49				04:34	
	16:39	51	15:47 (9)				19:47				21:48	
Potential sun hours	235			265			365		425		507	529
Total, worst case		1464			846			107				
Sun reduction		0,15			0,24			0,39				
Oper. time red.		0,94			0,94			0,94				
Wind dir. red.		0,67			0,67			0,68				
Total reduction		0,10			0,15			0,25				
Total, real		141			129			26				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CJ - Rijasvecumi

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

		July	August	September	October		November		December			
	1	04:27	05:12	06:14	07:14		07:19	15:33 (10)	08:21	13:52 (11)		
		22:06	21:26	20:12	18:51		16:34	23	15:56 (10)	15:42	38	14:30 (11)
	2	04:27	05:14	06:16	07:16		07:21		15:34 (10)	08:23		13:53 (11)
		22:06	21:24	20:09	18:49		16:31	19	15:53 (10)	15:41	38	14:31 (11)
	3	04:28	05:16	06:18	07:18		07:24		15:38 (10)	08:24		13:53 (11)
		22:05	21:22	20:07	18:46		16:29	13	15:51 (10)	15:40	38	14:31 (11)
	4	04:29	05:18	06:20	07:20		07:26			08:26		13:54 (11)
		22:05	21:19	20:04	18:43		16:27			15:39	37	14:31 (11)
	5	04:30	05:20	06:22	07:22		07:28		15:02 (9)	08:28		13:54 (11)
		22:04	21:17	20:01	18:41		16:25	8	15:10 (9)	15:39	37	14:31 (11)
	6	04:31	05:22	06:24	07:24		07:30		14:59 (9)	08:29		13:55 (11)
		22:04	21:15	19:59	18:38		16:23	13	15:12 (9)	15:38	36	14:31 (11)
	7	04:32	05:24	06:26	07:26		07:32		14:57 (9)	08:31		13:56 (11)
		22:03	21:13	19:56	18:36		16:21	17	15:14 (9)	15:37	36	14:32 (11)
	8	04:34	05:26	06:28	07:28		07:34		14:01 (11)	08:32		13:56 (11)
		22:02	21:11	19:53	18:33		16:19	31	15:16 (9)	15:37	36	14:32 (11)
	9	04:35	05:28	06:30	07:30	16:43 (10)	07:37		13:57 (11)	08:33		13:57 (11)
		22:01	21:09	19:51	18:30	11	16:54 (10)	39	15:16 (9)	15:36	35	14:32 (11)
	10	04:36	05:30	06:32	07:32		07:39		13:56 (11)	08:35		13:57 (11)
		22:00	21:06	19:48	18:28	18	16:57 (10)	45	15:18 (9)	15:36	35	14:32 (11)
	11	04:37	05:32	06:34	07:34		07:41		13:54 (11)	08:36		13:58 (11)
		21:59	21:04	19:45	18:25	23	16:59 (10)	49	15:18 (9)	15:35	35	14:33 (11)
	12	04:39	05:34	06:36	07:36		07:43		13:52 (11)	08:37		13:59 (11)
		21:58	21:02	19:43	18:22	27	17:01 (10)	52	15:18 (9)	15:35	34	14:33 (11)
	13	04:40	05:36	06:38	07:39		07:45		13:52 (11)	08:38		13:59 (11)
		21:57	20:59	19:40	18:20	30	17:02 (10)	55	15:19 (9)	15:35	34	14:33 (11)
	14	04:41	05:38	06:40	07:41		07:47		13:51 (11)	08:40		14:00 (11)
		21:56	20:57	19:37	18:17	31	17:02 (10)	57	15:19 (9)	15:35	34	14:34 (11)
	15	04:43	05:40	06:42	07:43		07:49		13:51 (11)	08:41		14:01 (11)
		21:54	20:55	19:35	18:15	34	17:04 (10)	59	15:20 (9)	15:35	33	14:34 (11)
	16	04:44	05:42	06:44	07:45		07:52		13:50 (11)	08:42		14:02 (11)
		21:53	20:52	19:32	18:12	35	17:04 (10)	60	15:20 (9)	15:35	32	14:34 (11)
	17	04:46	05:44	06:46	07:47		07:54		13:49 (11)	08:43		14:02 (11)
		21:52	20:50	19:29	18:10	36	17:04 (10)	61	15:19 (9)	15:35	33	14:35 (11)
	18	04:47	05:46	06:48	07:49		07:56		13:50 (11)	08:43		14:02 (11)
		21:50	20:47	19:26	18:07	37	17:04 (10)	61	15:20 (9)	15:35	32	14:34 (11)
	19	04:49	05:48	06:50	07:51		07:58		13:49 (11)	08:44		14:03 (11)
		21:49	20:45	19:24	18:05	38	17:05 (10)	62	15:20 (9)	15:35	32	14:35 (11)
	20	04:51	05:50	06:52	07:53		08:00		13:49 (11)	08:45		14:03 (11)
		21:47	20:43	19:21	18:02	38	17:05 (10)	61	15:19 (9)	15:35	32	14:35 (11)
	21	04:52	05:52	06:54	07:55		08:02		13:50 (11)	08:46		14:04 (11)
		21:46	20:40	19:18	18:00	38	17:04 (10)	61	15:20 (9)	15:36	32	14:36 (11)
	22	04:54	05:54	06:56	07:58		08:04		13:49 (11)	08:46		14:04 (11)
		21:44	20:38	19:16	17:57	38	17:04 (10)	60	15:18 (9)	15:36	32	14:36 (11)
	23	04:56	05:56	06:58	08:00		08:06		13:49 (11)	08:47		14:04 (11)
		21:42	20:35	19:13	17:55	38	17:04 (10)	57	15:16 (9)	15:37	32	14:36 (11)
	24	04:57	05:58	07:00	08:02		08:08		13:49 (11)	08:47		14:05 (11)
		21:41	20:33	19:10	17:52	37	17:03 (10)	54	15:14 (9)	15:37	32	14:37 (11)
	25	04:59	06:00	07:02	08:04		08:10		13:50 (11)	08:48		14:06 (11)
		21:39	20:30	19:08	17:50	37	17:03 (10)	51	15:13 (9)	15:38	32	14:38 (11)
	26	05:01	06:02	07:04	07:06		08:12		13:50 (11)	08:48		14:06 (11)
		21:37	20:27	19:05	16:48	36	16:03 (10)	49	15:11 (9)	15:39	32	14:38 (11)
	27	05:03	06:04	07:06	07:08		08:14		13:51 (11)	08:48		14:06 (11)
		21:35	20:25	19:02	16:45	35	16:02 (10)	46	15:10 (9)	15:39	33	14:39 (11)
	28	05:05	06:06	07:08	07:10		08:16		13:51 (11)	08:48		14:07 (11)
		21:33	20:22	18:59	16:43	32	16:00 (10)	42	15:08 (9)	15:40	32	14:39 (11)
	29	05:06	06:08	07:10	07:13		08:17		13:51 (11)	08:48		14:07 (11)
		21:32	20:20	18:57	16:40	31	16:00 (10)	39	14:30 (11)	15:41	33	14:40 (11)
	30	05:08	06:10	07:12	07:15		08:19		13:52 (11)	08:48		14:07 (11)
		21:30	20:17	18:54	16:38	29	15:59 (10)	38	14:30 (11)	15:42	34	14:41 (11)
	31	05:10	06:12		07:17		15:32 (10)			08:48		14:08 (11)
		21:28	20:15		16:36	26	15:58 (10)			15:43	34	14:42 (11)
Potential sun hours		530	470	385	324		248			216		
Total, worst case					735			1282			1055	
Sun reduction					0,27			0,09			0,09	
Oper. time red.					0,94			0,94			0,94	
Wind dir. red.					0,68			0,66			0,67	
Total reduction					0,17			0,06			0,05	
Total, real					127			74			57	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CK - Kalvani

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January		February		March		April	May	June
1	08:48	13:50 (11)	08:12	14:10 (11)	07:09	15:49 (10)	06:47	05:30	04:33
	15:45	39	14:29 (11)	16:42	44	15:40 (9)	17:44	20:52	21:50
2	08:48	13:51 (11)	08:11	14:12 (11)	07:06	15:51 (10)	06:44	05:28	04:32
	15:46	39	14:30 (11)	16:44	38	15:39 (9)	17:46	20:54	21:51
3	08:48	13:51 (11)	08:09	14:16 (11)	07:04	15:52 (10)	06:41	05:26	04:31
	15:47	39	14:30 (11)	16:46	27	15:37 (9)	17:48	20:56	21:52
4	08:47	13:52 (11)	08:07	15:20 (9)	07:01	15:54 (10)	06:39	05:23	04:30
	15:48	39	14:31 (11)	16:48	16	15:36 (9)	17:50	20:58	21:54
5	08:47	13:52 (11)	08:05	15:23 (9)	06:58	15:57 (10)	06:36	05:21	04:29
	15:50	40	14:32 (11)	16:50	12	15:35 (9)	17:53	21:00	21:55
6	08:46	13:52 (11)	08:03	15:28 (9)	06:56	16:01 (10)	06:33	05:19	04:28
	15:51	40	14:32 (11)	16:53	8	16:10 (10)	17:55	21:02	21:56
7	08:46	13:52 (11)	08:00	15:59 (10)	06:53	16:11 (10)	06:31	05:17	04:27
	15:53	40	14:32 (11)	16:55	15	16:14 (10)	17:57	21:04	21:57
8	08:45	13:52 (11)	07:58	15:57 (10)	06:51	16:18 (10)	06:28	05:14	04:26
	15:54	41	14:33 (11)	16:57	21	16:18 (10)	17:59	21:06	21:58
9	08:44	13:52 (11)	07:56	15:55 (10)	06:48	16:20 (10)	06:25	05:12	04:26
	15:56	41	14:33 (11)	16:59	25	16:20 (10)	18:01	21:08	21:59
10	08:44	13:53 (11)	07:54	15:53 (10)	06:45	16:21 (10)	06:23	05:10	04:25
	15:57	41	14:34 (11)	17:02	28	16:21 (10)	18:03	21:10	22:00
11	08:43	13:53 (11)	07:52	15:52 (10)	06:43	16:22 (10)	06:20	05:08	04:24
	15:59	46	15:21 (9)	17:04	31	16:23 (10)	18:05	21:12	22:01
12	08:42	13:54 (11)	07:50	15:51 (10)	06:40	16:24 (10)	06:17	05:06	04:24
	16:01	48	15:23 (9)	17:06	33	16:24 (10)	18:08	21:14	22:02
13	08:41	13:54 (11)	07:47	15:50 (10)	06:37	16:25 (10)	06:15	05:04	04:23
	16:03	51	15:25 (9)	17:08	35	16:25 (10)	18:10	21:16	22:03
14	08:40	13:54 (11)	07:45	15:49 (10)	06:35	16:26 (10)	06:12	05:02	04:23
	16:04	55	15:27 (9)	17:11	37	16:26 (10)	18:12	21:18	22:04
15	08:39	13:55 (11)	07:43	15:48 (10)	06:32	16:27 (10)	06:10	05:00	04:23
	16:06	56	15:29 (9)	17:13	38	16:26 (10)	18:14	21:20	22:04
16	08:38	13:55 (11)	07:40	15:48 (10)	06:29	16:28 (10)	06:07	04:58	04:22
	16:08	59	15:31 (9)	17:15	39	16:27 (10)	18:16	21:22	22:05
17	08:36	13:55 (11)	07:38	15:47 (10)	06:27	16:28 (10)	06:05	04:56	04:22
	16:10	63	15:34 (9)	17:17	40	16:27 (10)	18:18	21:24	22:06
18	08:35	13:55 (11)	07:36	15:47 (10)	06:24	16:28 (10)	06:02	04:54	04:22
	16:12	64	15:35 (9)	17:20	41	16:28 (10)	18:20	21:26	22:06
19	08:34	13:57 (11)	07:33	15:46 (10)	06:21	16:29 (10)	05:59	04:53	04:22
	16:14	65	15:37 (9)	17:22	42	16:28 (10)	18:22	21:28	22:07
20	08:32	13:57 (11)	07:31	15:47 (10)	06:19	16:29 (10)	05:57	04:51	04:22
	16:16	65	15:38 (9)	17:24	41	16:28 (10)	18:24	21:30	22:07
21	08:31	13:57 (11)	07:29	15:46 (10)	06:16	16:29 (10)	05:54	04:49	04:22
	16:18	66	15:38 (9)	17:26	42	16:28 (10)	18:27	21:32	22:07
22	08:30	13:58 (11)	07:26	15:47 (10)	06:13	16:29 (10)	05:52	04:47	04:22
	16:20	66	15:39 (9)	17:29	41	16:28 (10)	18:29	21:33	22:08
23	08:28	13:59 (11)	07:24	15:46 (10)	06:11	16:29 (10)	05:49	04:46	04:23
	16:22	66	15:40 (9)	17:31	42	16:28 (10)	18:31	21:35	22:08
24	08:26	13:59 (11)	07:21	15:46 (10)	06:08	16:29 (10)	05:47	04:44	04:23
	16:24	65	15:40 (9)	17:33	41	16:27 (10)	18:33	21:37	22:08
25	08:25	14:00 (11)	07:19	15:47 (10)	06:05	16:28 (10)	05:45	04:43	04:23
	16:26	64	15:40 (9)	17:35	40	16:27 (10)	18:35	21:39	22:08
26	08:23	14:01 (11)	07:16	15:47 (10)	06:03	16:28 (10)	05:42	04:41	04:24
	16:28	62	15:40 (9)	17:37	39	16:26 (10)	18:37	21:40	22:08
27	08:22	14:02 (11)	07:14	15:48 (10)	06:00	16:27 (10)	05:40	04:40	04:24
	16:31	61	15:40 (9)	17:40	38	16:26 (10)	18:39	21:42	22:08
28	08:20	14:03 (11)	07:11	15:49 (10)	05:57	16:27 (10)	05:37	04:38	04:25
	16:33	58	15:40 (9)	17:42	35	16:24 (10)	18:41	21:43	22:07
29	08:18	14:04 (11)			05:55		05:35	04:37	04:25
	16:35	57	15:40 (9)		18:43		20:48	21:45	22:07
30	08:16	14:06 (11)			06:52		05:33	04:36	04:26
	16:37	53	15:40 (9)		19:45		20:50	21:47	22:07
31	08:14	14:07 (11)			06:49			04:34	
	16:39	50	15:40 (9)		19:47			21:48	
Potential sun hours	235		265		365		425	507	529
Total, worst case	1639		929		146				
Sun reduction	0,15		0,24		0,39				
Oper. time red.	0,94		0,94		0,94				
Wind dir. red.	0,66		0,67		0,68				
Total reduction	0,10		0,15		0,25				
Total, real	158		142		36				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CK - Kalvani

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July	August	September	October		November		December
1	04:27	05:12	06:14	07:14		07:19	15:22 (10)	08:21 13:35 (11)
	22:06	21:26	20:12	18:51		16:34	30 15:52 (10)	15:42 15:04 (9)
2	04:27	05:14	06:16	07:16		07:21	15:23 (10)	08:23 13:36 (11)
	22:06	21:24	20:09	18:49		16:31	27 15:50 (10)	15:41 15:03 (9)
3	04:28	05:16	06:18	07:18		07:24	15:26 (10)	08:24 13:36 (11)
	22:05	21:22	20:07	18:46		16:29	22 15:48 (10)	15:40 14:17 (11)
4	04:29	05:18	06:20	07:20		07:26	15:28 (10)	08:26 13:37 (11)
	22:05	21:20	20:04	18:43		16:27	18 15:46 (10)	15:39 14:18 (11)
5	04:30	05:20	06:22	07:22		07:28	15:32 (10)	08:28 13:37 (11)
	22:04	21:17	20:01	18:41		16:25	11 15:43 (10)	15:39 14:17 (11)
6	04:31	05:22	06:24	07:24		07:30	14:54 (9)	08:29 13:37 (11)
	22:04	21:15	19:59	18:38		16:23	9 15:03 (9)	15:38 14:18 (11)
7	04:32	05:24	06:26	07:26		07:32	14:51 (9)	08:31 13:38 (11)
	22:03	21:13	19:56	18:36		16:21	15 15:06 (9)	15:37 14:19 (11)
8	04:34	05:26	06:28	07:28		07:34	14:50 (9)	08:32 13:38 (11)
	22:02	21:11	19:53	18:33	10	16:46 (10)	16:19 15:08 (9)	15:37 14:18 (11)
9	04:35	05:28	06:30	07:30		07:37	13:44 (11)	08:33 13:39 (11)
	22:01	21:09	19:51	18:30	18	16:50 (10)	16:17 15:09 (9)	15:36 14:19 (11)
10	04:36	05:30	06:32	07:32		07:39	13:42 (11)	08:35 13:39 (11)
	22:00	21:06	19:48	18:28	24	16:53 (10)	16:15 15:10 (9)	15:36 14:19 (11)
11	04:37	05:32	06:34	07:34		07:41	13:39 (11)	08:36 13:40 (11)
	21:59	21:04	19:45	18:25	27	16:54 (10)	16:13 15:11 (9)	15:35 14:20 (11)
12	04:39	05:34	06:36	07:36		07:43	13:38 (11)	08:37 13:41 (11)
	21:58	21:02	19:43	18:22	30	16:55 (10)	16:11 15:11 (9)	15:35 14:20 (11)
13	04:40	05:36	06:38	07:39		07:45	13:37 (11)	08:38 13:41 (11)
	21:57	20:59	19:40	18:20	33	16:56 (10)	16:09 15:12 (9)	15:35 14:20 (11)
14	04:41	05:38	06:40	07:41		07:47	13:36 (11)	08:40 13:42 (11)
	21:56	20:57	19:37	18:17	36	16:57 (10)	16:07 15:12 (9)	15:35 14:21 (11)
15	04:43	05:40	06:42	07:43		07:49	13:36 (11)	08:41 13:43 (11)
	21:54	20:55	19:35	18:15	37	16:58 (10)	16:05 15:13 (9)	15:35 14:21 (11)
16	04:44	05:42	06:44	07:45		07:52	13:35 (11)	08:42 13:43 (11)
	21:53	20:52	19:32	18:12	38	16:58 (10)	16:03 15:13 (9)	15:35 14:21 (11)
17	04:46	05:44	06:46	07:47		07:54	13:34 (11)	08:43 13:44 (11)
	21:52	20:50	19:29	18:10	39	16:58 (10)	16:02 15:13 (9)	15:35 14:22 (11)
18	04:47	05:46	06:48	07:49		07:56	13:34 (11)	08:43 13:44 (11)
	21:50	20:47	19:26	18:07	40	16:58 (10)	16:00 15:14 (9)	15:35 14:21 (11)
19	04:49	05:48	06:50	07:51		07:58	13:33 (11)	08:44 13:44 (11)
	21:49	20:45	19:24	18:05	41	16:59 (10)	15:58 15:14 (9)	15:35 14:22 (11)
20	04:51	05:50	06:52	07:53		08:00	13:33 (11)	08:45 13:45 (11)
	21:47	20:43	19:21	18:02	42	16:59 (10)	15:57 15:14 (9)	15:35 14:23 (11)
21	04:52	05:52	06:54	07:55		08:02	13:33 (11)	08:46 13:46 (11)
	21:46	20:40	19:18	18:00	42	16:59 (10)	15:55 15:14 (9)	15:36 14:24 (11)
22	04:54	05:54	06:56	07:58		08:04	13:33 (11)	08:46 13:46 (11)
	21:44	20:38	19:16	17:57	42	16:58 (10)	15:53 15:14 (9)	15:36 14:24 (11)
23	04:56	05:56	06:58	08:00		08:06	13:33 (11)	08:47 13:46 (11)
	21:42	20:35	19:13	17:55	41	16:58 (10)	15:52 15:14 (9)	15:37 14:24 (11)
24	04:57	05:58	07:00	08:02		08:08	13:33 (11)	08:47 13:47 (11)
	21:41	20:33	19:10	17:52	41	16:58 (10)	15:51 15:13 (9)	15:37 14:25 (11)
25	04:59	06:00	07:02	08:04		08:10	13:34 (11)	08:48 13:47 (11)
	21:39	20:30	19:08	17:50	40	16:57 (10)	15:49 15:13 (9)	15:38 14:25 (11)
26	05:01	06:02	07:04	07:06		08:12	13:34 (11)	08:48 13:48 (11)
	21:37	20:27	19:05	16:48	39	15:57 (10)	15:48 15:11 (9)	15:39 14:25 (11)
27	05:03	06:04	07:06	07:08		08:14	13:34 (11)	08:48 13:48 (11)
	21:35	20:25	19:02	16:45	38	15:56 (10)	15:47 15:10 (9)	15:39 14:26 (11)
28	05:05	06:06	07:08	07:10		08:16	13:34 (11)	08:48 13:48 (11)
	21:33	20:22	18:59	16:43	37	15:55 (10)	15:45 15:08 (9)	15:40 14:27 (11)
29	05:06	06:08	07:10	07:13		08:17	13:34 (11)	08:48 13:49 (11)
	21:32	20:20	18:57	16:40	36	15:55 (10)	15:44 15:07 (9)	15:41 14:27 (11)
30	05:08	06:10	07:12	07:15		08:19	13:35 (11)	08:48 13:49 (11)
	21:30	20:17	18:54	16:38	34	15:54 (10)	15:43 15:05 (9)	15:42 14:28 (11)
31	05:10	06:12		07:17		15:22 (10)		08:48 13:50 (11)
	21:28	20:15		16:36	31	15:53 (10)		15:43 14:29 (11)
Potential sun hours	530	470	385	324		248		216
Total, worst case				836		1416		1220
Sun reduction				0,27		0,09		0,09
Oper. time red.				0,94		0,94		0,94
Wind dir. red.				0,68		0,66		0,66
Total reduction				0,17		0,06		0,05
Total, real				144		82		66

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CL - Uzkalnini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:12	07:09	06:46	18:49 (11)	05:30	04:33	04:27	05:12	06:14	07:14	08:21
	15:45	16:41	17:44	19:49	19:14 (11)	20:52	21:49	22:06	21:26	20:12	18:51	16:34
2	08:48	08:10	07:06	06:44	18:49 (11)	05:28	04:32	04:27	05:14	06:16	07:16	08:23
	15:46	16:44	17:46	19:52	19:13 (11)	20:54	21:51	22:06	21:24	20:09	18:49	16:31
3	08:47	08:08	07:03	06:41	18:50 (11)	05:26	04:31	04:28	05:16	06:18	07:18	08:24
	15:47	16:46	17:48	19:54	19:13 (11)	20:56	21:52	22:05	21:21	20:07	18:46	16:29
4	08:47	08:06	07:01	06:38	18:50 (11)	05:23	04:30	04:29	05:18	06:20	07:20	08:26
	15:48	16:48	17:50	19:56	19:11 (11)	20:58	21:53	22:05	21:19	20:04	18:43	16:27
5	08:47	08:04	06:58	06:36	18:50 (11)	05:21	04:29	04:30	05:20	06:22	18:53 (11)	07:22
	15:50	16:50	17:53	19:58	19:10 (11)	21:00	21:55	22:04	21:17	20:01	18:41	16:25
6	08:46	08:02	06:56	06:33	18:52 (11)	05:19	04:28	04:31	05:22	06:24	18:49 (11)	07:24
	15:51	16:53	17:55	20:00	19:08 (11)	21:02	21:56	22:03	21:15	19:59	18:41	16:23
7	08:46	08:00	06:53	06:31	18:54 (11)	05:17	04:27	04:32	05:24	06:26	18:47 (11)	07:26
	15:53	16:55	17:57	20:02	19:05 (11)	21:04	21:57	22:03	21:13	19:56	18:45 (11)	07:28
8	08:45	07:58	06:50	06:28	18:54 (11)	05:14	04:26	04:33	05:26	06:28	18:45 (11)	07:28
	15:54	16:57	17:59	20:04	19:05 (11)	21:04	21:57	22:03	21:13	19:56	18:45 (11)	07:28
9	08:44	07:56	06:48	06:25	18:54 (11)	05:12	04:26	04:35	05:28	06:30	18:44 (11)	07:30
	15:56	16:59	18:01	20:06	19:05 (11)	21:04	21:57	22:03	21:13	19:56	18:45 (11)	07:28
10	08:43	07:54	06:45	06:23	18:54 (11)	05:10	04:25	04:36	05:30	06:32	18:43 (11)	07:32
	15:57	17:02	18:03	20:08	19:05 (11)	21:04	21:57	22:03	21:13	19:56	18:45 (11)	07:28
11	08:43	07:52	06:43	06:20	18:54 (11)	05:08	04:24	04:37	05:32	06:34	18:42 (11)	07:34
	15:59	17:04	18:05	20:10	19:05 (11)	21:04	21:57	22:03	21:13	19:56	18:45 (11)	07:28
12	08:42	07:49	06:40	06:17	18:54 (11)	05:06	04:24	04:39	05:34	06:36	18:41 (11)	07:36
	16:01	17:06	18:08	20:12	19:05 (11)	21:04	21:57	22:03	21:13	19:56	18:45 (11)	07:28
13	08:41	07:47	06:37	06:15	18:54 (11)	05:04	04:23	04:40	05:36	06:38	18:41 (11)	07:38
	16:03	17:08	18:10	20:14	19:05 (11)	21:04	21:57	22:03	21:13	19:56	18:45 (11)	07:28
14	08:40	07:45	06:35	06:12	18:54 (11)	05:02	04:23	04:41	05:38	06:40	18:41 (11)	07:41
	16:04	17:11	18:12	20:17	19:05 (11)	21:04	21:57	22:03	21:13	19:56	18:45 (11)	07:28
15	08:39	07:43	06:32	06:10	18:54 (11)	05:00	04:23	04:43	05:40	06:42	18:41 (11)	07:43
	16:06	17:13	18:14	20:19	19:05 (11)	21:04	21:57	22:03	21:13	19:56	18:45 (11)	07:28
16	08:37	07:40	06:29	06:07	18:54 (11)	04:58	04:22	04:44	05:42	06:44	18:41 (11)	07:45
	16:08	17:15	18:16	20:21	19:05 (11)	21:04	21:57	22:03	21:13	19:56	18:45 (11)	07:28
17	08:36	07:38	06:27	06:04	18:54 (11)	04:56	04:22	04:46	05:44	06:46	18:41 (11)	07:47
	16:10	17:17	18:18	20:23	19:05 (11)	21:04	21:57	22:03	21:13	19:56	18:45 (11)	07:28
18	08:35	07:36	06:24	06:02	18:54 (11)	04:54	04:22	04:47	05:46	06:48	18:42 (11)	07:49
	16:12	17:20	18:20	20:25	19:05 (11)	21:04	21:57	22:03	21:13	19:56	18:45 (11)	07:28
19	08:34	07:33	06:21	05:59	18:54 (11)	04:53	04:22	04:49	05:48	06:50	18:42 (11)	07:51
	16:14	17:22	18:22	20:27	19:05 (11)	21:04	21:57	22:03	21:13	19:56	18:45 (11)	07:28
20	08:32	07:31	06:19	05:57	18:54 (11)	04:51	04:22	04:51	05:50	06:52	18:44 (11)	07:53
	16:16	17:24	18:24	20:29	19:05 (11)	21:04	21:57	22:03	21:13	19:56	18:45 (11)	07:28
21	08:31	07:28	06:16	05:54	18:54 (11)	04:49	04:22	04:52	05:52	06:54	18:47 (11)	07:55
	16:18	17:26	18:26	20:31	19:05 (11)	21:04	21:57	22:03	21:13	19:56	18:45 (11)	07:28
22	08:29	07:26	06:13	05:52	18:54 (11)	04:47	04:22	04:54	05:54	06:56	18:47 (11)	07:55
	16:20	17:28	18:29	20:33	19:05 (11)	21:04	21:57	22:03	21:13	19:56	18:45 (11)	07:28
23	08:28	07:24	06:11	05:49	18:54 (11)	04:46	04:23	04:56	05:56	06:58	18:47 (11)	07:55
	16:22	17:31	18:31	20:35	19:05 (11)	21:04	21:57	22:03	21:13	19:56	18:45 (11)	07:28
24	08:26	07:21	06:08	05:47	18:54 (11)	04:44	04:23	04:57	05:58	07:00	18:47 (11)	07:55
	16:24	17:33	18:33	20:37	19:05 (11)	21:04	21:57	22:03	21:13	19:56	18:45 (11)	07:28
25	08:25	07:19	06:05	05:44	18:54 (11)	04:43	04:23	04:59	06:00	07:02	18:47 (11)	07:55
	16:26	17:35	18:35	20:39	19:05 (11)	21:04	21:57	22:03	21:13	19:56	18:45 (11)	07:28
26	08:23	07:16	06:03	05:42	18:54 (11)	04:41	04:24	05:01	06:02	07:04	18:47 (11)	07:55
	16:28	17:37	18:37	20:42	19:05 (11)	21:04	21:57	22:03	21:13	19:56	18:45 (11)	07:28
27	08:21	07:14	06:00	05:40	18:54 (11)	04:40	04:24	05:03	06:04	07:06	18:47 (11)	07:55
	16:31	17:39	18:39	20:44	19:05 (11)	21:04	21:57	22:03	21:13	19:56	18:45 (11)	07:28
28	08:20	07:11	05:57	05:37	18:54 (11)	04:38	04:25	05:05	06:06	07:08	18:47 (11)	07:55
	16:33	17:42	18:41	20:46	19:05 (11)	21:04	21:57	22:03	21:13	19:56	18:45 (11)	07:28
29	08:18	05:55	05:35	05:35	18:54 (11)	04:37	04:25	05:06	06:08	07:10	18:47 (11)	07:55
	16:35	18:43	25	20:48	19:05 (11)	21:04	21:57	22:03	21:13	19:56	18:45 (11)	07:28
30	08:16	06:52	05:32	05:32	18:54 (11)	04:36	04:26	05:08	06:10	07:12	18:47 (11)	07:55
	16:37	19:45	26	20:50	19:05 (11)	21:04	21:57	22:03	21:13	19:56	18:45 (11)	07:28
31	08:14	06:49	05:29	05:30	18:54 (11)	04:34	04:26	05:10	06:12	07:14	18:47 (11)	07:55
	16:39	19:47	25	20:51	19:05 (11)	21:04	21:57	22:03	21:13	19:56	18:45 (11)	07:28
Potential sun hours	235	265	365	425	507	529	530	470	385	314	248	216
Total, worst case			167	140						0,43		
Sun reduction			0,39	0,48						0,94		
Oper. time red.			0,66	0,66						0,66		
Wind dir. red.			0,24	0,30						0,27		
Total reduction			40	42						83		
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CM - Cakstes

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:12 16:41	07:08 17:44	06:46 19:49	05:30 20:52	04:33 21:49	04:27 22:06	05:12 21:26	06:14 20:12	07:14 18:51	07:19 16:34	08:21 15:42
2	08:48 15:46	08:10 16:44	07:06 17:46	06:44 19:51	05:28 20:54	04:32 21:51	04:27 22:06	05:14 21:23	06:16 20:09	07:16 18:49	07:21 16:31	08:22 15:41
3	08:47 15:47	08:08 16:46	07:03 17:48	06:41 19:54	05:25 20:56	04:31 21:52	04:28 22:05	05:16 21:21	06:18 20:06	07:18 18:46	07:23 16:29	08:24 15:40
4	08:47 15:51	08:06 16:57	07:01 17:59	06:38 19:56	05:23 20:58	04:30 21:53	04:29 22:05	05:18 21:19	06:20 20:04	07:20 18:43	07:26 16:27	08:26 15:39
5	08:47 15:50	08:04 16:50	06:58 17:52	06:36 19:58	05:21 21:00	04:29 21:55	04:30 22:04	05:20 21:17	06:22 20:01	07:22 18:41	07:28 16:25	08:27 15:39
6	08:46 15:51	08:02 16:53	06:56 17:55	06:33 20:00	05:19 21:02	04:28 21:56	04:31 22:03	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
7	08:45 15:53	08:00 16:55	06:53 17:57	06:30 20:02	05:17 21:04	04:27 21:57	04:32 22:03	05:24 21:13	06:26 19:56	07:26 18:35	07:32 16:21	08:30 15:37
8	08:45 15:54	07:58 16:57	06:50 17:59	06:28 20:04	05:14 21:06	04:26 21:58	04:33 22:02	05:26 21:11	06:28 19:53	07:28 18:33	07:34 16:18	08:32 15:37
9	08:44 15:56	07:56 16:59	06:48 18:01	06:25 20:06	05:12 21:08	04:26 21:59	04:35 22:01	05:28 21:08	06:30 19:51	07:30 18:30	07:36 16:16	08:33 15:36
10	08:43 15:57	07:54 17:02	06:45 18:03	06:23 20:08	05:10 21:10	04:25 22:00	04:36 22:00	05:30 21:06	06:32 19:48	07:32 18:28	07:39 16:14	08:35 15:36
11	08:42 15:59	07:52 17:04	06:43 18:05	06:20 20:10	05:08 21:12	04:24 22:01	04:37 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:12	08:36 15:35
12	08:42 16:01	07:49 17:06	06:40 18:07	06:17 20:12	05:06 21:14	04:24 22:02	04:38 21:58	05:34 21:02	06:36 19:43	07:36 18:22	07:43 16:11	08:37 15:35
13	08:41 16:03	07:47 17:08	06:37 18:10	06:15 20:14	05:04 21:16	04:23 22:03	04:40 21:57	05:36 20:59	06:38 19:40	07:38 18:20	07:45 16:09	08:38 15:35
14	08:40 16:04	07:45 17:11	06:35 18:12	06:12 20:16	05:02 21:18	04:23 22:04	04:41 21:55	05:38 20:57	06:40 19:37	07:40 18:17	07:47 16:07	08:39 15:35
15	08:38 16:06	07:43 17:13	06:32 18:14	06:10 20:19	05:00 21:20	04:23 22:04	04:43 21:54	05:40 20:55	06:42 19:34	07:43 18:15	07:49 16:05	08:40 15:35
16	08:37 16:08	07:40 17:15	06:29 18:16	06:07 20:21	04:58 21:22	04:22 22:05	04:44 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:51 16:03	08:41 15:35
17	08:36 16:10	07:38 17:17	06:27 18:18	06:04 20:23	04:56 21:24	04:22 22:05	04:46 21:51	05:44 20:50	06:46 19:29	07:47 18:10	07:53 16:01	08:42 15:35
18	08:35 16:12	07:36 17:20	06:24 18:20	06:02 20:25	04:54 21:26	04:22 22:06	04:47 21:50	05:46 20:47	06:48 19:26	07:49 18:07	07:56 16:00	08:43 15:35
19	08:34 16:14	07:33 17:22	06:21 18:22	05:59 20:27	04:52 21:28	04:22 22:06	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:58	08:44 15:35
20	08:32 16:16	07:31 17:24	06:19 18:24	05:57 20:29	04:51 21:29	04:22 22:07	04:51 21:47	05:50 20:42	06:52 19:21	07:53 18:02	08:00 15:56	08:45 15:35
21	08:31 16:18	07:28 17:26	06:16 18:26	05:54 20:31	04:49 21:31	04:22 22:07	04:52 21:45	05:52 20:40	06:54 19:18	07:55 18:00	08:02 15:55	08:45 15:36
22	08:29 16:20	07:26 17:28	06:13 18:29	05:52 20:33	04:47 21:33	04:22 22:07	04:54 21:44	05:54 20:37	06:56 19:16	07:57 17:57	08:04 15:53	08:46 15:36
23	08:28 16:22	07:23 17:31	06:11 18:31	05:49 20:35	04:46 21:35	04:22 22:07	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:46 15:37
24	08:26 16:24	07:21 17:33	06:08 18:33	05:47 20:37	04:44 21:37	04:23 22:08	04:57 21:40	05:58 20:32	07:00 19:10	08:02 17:52	08:08 15:51	08:47 15:37
25	08:25 16:26	07:19 17:35	06:05 18:35	05:44 20:39	04:42 21:38	04:23 22:08	04:59 21:39	06:00 20:30	07:02 19:07	08:04 17:50	08:10 15:49	08:47 15:38
26	08:23 16:28	07:16 17:37	06:03 18:37	05:42 20:41	04:41 21:40	04:24 22:08	05:01 21:37	06:02 20:27	07:04 19:05	07:06 16:47	08:12 15:48	08:48 15:39
27	08:21 16:30	07:14 17:39	06:00 18:39	05:40 20:44	04:40 21:42	04:24 22:07	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:45	08:14 15:47	08:48 15:39
28	08:20 16:33	07:11 17:42	05:57 18:41	05:37 20:46	04:38 21:43	04:25 22:07	05:05 21:33	06:06 20:22	07:08 18:59	07:10 16:43	08:15 15:45	08:48 15:40
29	08:18 16:35		05:54 18:43	05:35 20:48	04:37 21:45	04:25 22:07	05:06 21:31	06:08 20:20	07:10 18:57	07:12 16:40	08:17 15:44	08:48 15:41
30	08:16 16:37		06:52 19:45	05:32 20:50	04:35 21:46	04:26 22:07	05:08 21:29	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:43	08:48 15:42
31	08:14 16:39		06:49 19:47		04:34 21:48		05:10 21:28	06:12 20:14		07:17 16:36		08:48 15:43
Potential sun hours	235	265	365	425	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CN - Jaunie Vuš karnieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June
1	08:48 15:45	08:12 16:42	07:09 17:44	06:47 19:49	19:01 (12) 21 19:22 (12)	05:30 20:52
2	08:48 15:46	08:10 16:44	07:06 17:46	06:44 19:52	18:59 (12) 24 19:23 (12)	05:28 20:54
3	08:47 15:47	08:08 16:46	07:03 17:48	06:41 19:54	18:58 (12) 27 19:25 (12)	05:26 20:56
4	08:47 15:49	08:06 16:48	07:01 17:50	06:39 19:56	18:57 (12) 28 19:25 (12)	05:23 20:58
5	08:47 15:50	08:04 16:50	06:58 17:53	06:36 19:58	18:55 (12) 30 19:25 (12)	05:21 21:00
6	08:46 15:51	08:02 16:53	06:56 17:55	06:33 20:00	18:55 (12) 36 19:34 (13)	05:19 21:02
7	08:45 15:53	08:00 16:55	06:53 17:57	06:31 20:02	18:54 (12) 40 19:35 (13)	05:17 21:04
8	08:45 15:54	07:58 16:57	06:50 17:59	06:28 20:04	18:54 (12) 44 19:38 (13)	05:14 21:06
9	08:44 15:56	07:56 16:59	06:48 18:01	06:25 20:06	18:53 (12) 46 19:39 (13)	05:12 21:08
10	08:43 15:58	07:54 17:02	06:45 18:03	06:23 20:08	18:54 (12) 48 19:42 (13)	05:10 21:10
11	08:43 15:59	07:52 17:04	06:43 18:05	06:20 20:10	18:53 (12) 50 19:43 (13)	05:08 21:12
12	08:42 16:01	07:49 17:06	06:40 18:08	06:17 20:12	18:53 (12) 50 19:43 (13)	05:06 21:14
13	08:41 16:03	07:47 17:08	06:37 18:10	06:15 20:14	18:54 (12) 50 19:44 (13)	05:04 21:16
14	08:40 16:05	07:45 17:11	06:35 18:12	06:12 20:17	18:54 (12) 49 19:43 (13)	05:02 21:18
15	08:39 16:06	07:43 17:13	06:32 18:14	06:10 20:19	18:55 (12) 48 19:43 (13)	05:00 21:20
16	08:37 16:08	07:40 17:15	06:29 18:16	06:07 20:21	18:55 (12) 46 19:42 (13)	04:58 21:22
17	08:36 16:10	07:38 17:17	06:27 18:18	06:05 20:23	18:57 (12) 41 19:41 (13)	04:56 21:24
18	08:35 16:12	07:36 17:20	06:24 18:20	06:02 20:25	18:58 (12) 35 19:39 (13)	04:54 21:26
19	08:34 16:14	07:33 17:22	06:21 18:22	05:59 20:27	19:01 (12) 28 19:38 (13)	04:53 21:28
20	08:32 16:16	07:31 17:24	06:19 18:24	05:57 20:29	19:24 (13) 13 19:37 (13)	04:51 21:30
21	08:31 16:18	07:28 17:26	06:16 18:27	05:54 20:31	19:27 (13) 6 19:33 (13)	04:49 21:31
22	08:29 16:20	07:26 17:29	06:13 18:29	05:52 20:33	04:47 19 21:33	20:39 (9) 22:07
23	08:28 16:22	07:24 17:31	06:11 18:31	05:49 20:35	04:46 17 21:35	20:39 (9) 22:07
24	08:26 16:24	07:21 17:33	06:08 18:33	05:47 20:37	04:44 16 21:37	20:38 (9) 22:08
25	08:25 16:26	07:19 17:35	06:05 18:35	05:45 20:39	04:43 14 21:38	20:38 (9) 22:08
26	08:23 16:28	07:16 17:37	06:03 18:37	05:42 20:42	04:41 11 21:40	20:37 (9) 22:08
27	08:21 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 8 21:42	20:36 (9) 22:07
28	08:20 16:33	07:11 17:42	05:57 18:41	05:37 20:46	04:38 21:43	20:34 (9) 22:07
29	08:18 16:35		05:55 18:43	05:35 20:48	04:37 21:45	22:07
30	08:16 16:37		06:52 19:45	05:33 19:17 (12)	04:36 10 21:46	22:07
31	08:14 16:39		06:49 19:47	05:31 19:04 (12)	04:34 17 21:48	
Potential sun hours	235	265	365	425	507	529
Total, worst case			27	760		423
Sun reduction			0,39	0,48		0,53
Oper. time red.			0,94	0,94		0,94
Wind dir. red.			0,65	0,65		0,62
Total reduction			0,24	0,29		0,31
Total, real			6	222		131

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CN - Jaunie Vu š karnieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July	August	September	October	November	December
1	04:27	05:12	20:28 (9)	06:14	18:53 (12)	07:14
	22:06	21:26	20:51 (9)	20:12	19:43 (13)	18:51
2	04:28	05:14	20:28 (9)	06:16	18:52 (12)	07:16
	22:06	21:24	20:51 (9)	20:09	19:41 (13)	18:49
3	04:28	05:16	20:29 (9)	06:18	18:52 (12)	07:18
	22:05	21:21	20:50 (9)	20:07	19:39 (13)	18:46
4	04:29	05:18	20:29 (9)	06:20	18:51 (12)	07:20
	22:05	21:19	20:48 (9)	20:04	19:36 (13)	18:43
5	04:30	05:20	20:29 (9)	06:22	18:50 (12)	07:22
	22:04	21:17	20:45 (9)	20:01	19:33 (13)	18:41
6	04:31	05:22	20:30 (9)	06:24	18:50 (12)	07:24
	22:03	21:15	20:44 (9)	19:59	19:30 (13)	18:38
7	04:32	05:24	20:31 (9)	06:26	18:50 (12)	07:26
	22:03	21:13	20:42 (9)	19:56	19:28 (13)	18:36
8	04:34	05:26	20:33 (9)	06:28	18:51 (12)	07:28
	22:02	21:11	20:40 (9)	19:53	19:20 (12)	18:33
9	04:35	05:28	20:35 (9)	06:30	18:51 (12)	07:30
	22:01	21:08	20:38 (9)	19:51	19:19 (12)	18:30
10	04:36	05:30		06:32	18:52 (12)	07:32
	22:00	21:06		19:48	19:17 (12)	18:28
11	04:37	05:32		06:34	18:53 (12)	07:34
	21:59	21:04		19:45	19:16 (12)	18:25
12	04:39	05:34		06:36	18:54 (12)	07:36
	21:58	21:02		19:43	19:14 (12)	18:22
13	04:40	05:36		06:38	18:56 (12)	07:38
	21:57	20:59		19:40	19:11 (12)	18:20
14	04:41	05:38		06:40	19:00 (12)	07:41
	21:55	20:57		19:37	19:07 (12)	18:17
15	04:43	05:40		06:42	19:03 (12)	07:43
	21:54	20:55		19:35	18:55	16:05
16	04:44	05:42		06:44	19:04 (12)	07:44
	21:53	20:52		19:32	18:52	16:03
17	04:46	20:35 (9)	05:44	06:46	19:06 (12)	07:46
	21:51	20:43 (9)	20:50	19:29	18:10	16:02
18	04:47	20:34 (9)	05:46	06:48	19:07 (12)	07:47
	21:50	20:45 (9)	20:47	19:26	18:07	16:00
19	04:49	20:32 (9)	05:48	06:50	19:08 (12)	07:48
	21:49	20:46 (9)	20:45	19:24	18:05	15:58
20	04:51	20:32 (9)	05:50	06:52	19:09 (12)	07:49
	21:47	20:48 (9)	20:42	19:21	18:02	15:57
21	04:52	20:31 (9)	05:52	06:54	19:10 (12)	07:50
	21:45	20:48 (9)	20:40	19:18	18:00	15:55
22	04:54	20:30 (9)	05:54	06:56	19:11 (12)	07:51
	21:44	20:49 (9)	20:37	19:16	17:57	15:54
23	04:56	20:29 (9)	05:56	19:29 (13)	06:58	18:00
	21:42	20:49 (9)	20:35	19:13	17:55	15:52
24	04:57	20:29 (9)	05:58	19:07 (12)	07:00	18:02
	21:41	20:50 (9)	20:32	19:10	17:52	15:51
25	04:59	20:29 (9)	06:00	19:03 (12)	07:02	18:04
	21:39	20:51 (9)	20:30	19:08	17:50	15:49
26	05:01	20:28 (9)	06:02	19:00 (12)	07:04	18:06
	21:37	20:51 (9)	20:27	19:05	16:48	15:48
27	05:03	20:28 (9)	06:04	18:58 (12)	07:06	18:08
	21:35	20:52 (9)	20:25	19:03 (12)	16:45	15:47
28	05:05	20:28 (9)	06:06	18:56 (12)	07:08	18:10
	21:33	20:52 (9)	20:22	19:44 (13)	18:59	16:43
29	05:07	20:28 (9)	06:08	18:55 (12)	07:10	18:12
	21:31	20:52 (9)	20:20	19:44 (13)	18:57	16:40
30	05:08	20:28 (9)	06:10	18:54 (12)	07:12	18:14
	21:30	20:52 (9)	20:17	19:44 (13)	18:54	16:38
31	05:10	20:28 (9)	06:12	18:53 (12)	07:17	18:16
	21:28	20:52 (9)	20:14	19:44 (13)	16:36	15:43
Potential sun hours	530	470	385	324	248	216
Total, worst case		484	452			
Sun reduction	0,51	0,51	0,43			
Oper. time red.	0,94	0,94	0,94			
Wind dir. red.	0,62	0,64	0,65			
Total reduction	0,30	0,31	0,26			
Total, real	86	149	118			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CO - Upmalnieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January		February		March		April		May		June	
1	08:48	08:12			07:09	17:05 (14)	06:47		17:54 (12)	05:30		04:33
	15:45	16:42			17:44	12	17:17 (14)	19:50	71	19:20 (13)	20:52	21:49
2	08:48	08:10			07:06		17:04 (14)	06:44		17:53 (12)	05:28	04:32
	15:46	16:44			17:46	16	17:20 (14)	19:52	72	19:20 (13)	20:54	21:51
3	08:47	08:09			07:03		17:03 (14)	06:41		17:55 (12)	05:26	04:31
	15:47	16:46			17:48	19	17:22 (14)	19:54	72	19:22 (13)	20:56	21:52
4	08:47	08:07			07:01		17:02 (14)	06:39		17:55 (12)	05:23	04:30
	15:49	16:48			17:50	22	17:24 (14)	19:56	71	19:21 (13)	20:58	21:53
5	08:47	08:05			06:58		17:03 (14)	06:36		17:55 (12)	05:21	04:29
	15:50	16:51			17:53	21	17:24 (14)	19:58	70	19:21 (13)	21:00	21:55
6	08:46	08:02			06:56		17:02 (14)	06:33		17:57 (12)	05:19	04:28
	15:51	16:53			17:55	22	17:24 (14)	20:00	67	19:21 (13)	21:02	21:56
7	08:46	08:00			06:53		17:02 (14)	06:31		17:58 (12)	05:17	04:27
	15:53	16:55			17:57	21	17:23 (14)	20:02	65	19:21 (13)	21:04	21:57
8	08:45	07:58			06:51		17:03 (14)	06:28		18:00 (12)	05:14	04:26
	15:54	16:57			17:59	20	17:23 (14)	20:04	61	19:21 (13)	21:06	21:58
9	08:44	07:56			06:48		17:03 (14)	06:25		18:01 (12)	05:12	04:26
	15:56	16:59			18:01	18	17:21 (14)	20:06	57	19:20 (13)	21:08	21:59
10	08:43	07:54			06:45		17:04 (14)	06:23		18:04 (12)	05:10	04:25
	15:58	17:02			18:03	15	17:19 (14)	20:08	51	19:20 (13)	21:10	22:00
11	08:43	07:52			06:43		17:07 (14)	06:20		18:07 (12)	05:08	04:24
	15:59	17:04			18:05	11	17:18 (14)	20:10	43	19:19 (13)	21:12	22:01
12	08:42	07:50			06:40			06:17		18:50 (13)	05:06	04:24
	16:01	17:06			18:08			20:12	27	19:17 (13)	21:14	22:02
13	08:41	07:47			06:37		17:14 (12)	06:15		18:51 (13)	05:04	04:23
	16:03	17:08			18:10	15	17:29 (12)	20:14	25	19:16 (13)	21:16	22:03
14	08:40	07:45			06:35		17:11 (12)	06:12		18:52 (13)	05:02	04:23
	16:05	17:11			18:12	22	17:33 (12)	20:17	22	19:14 (13)	21:18	22:04
15	08:39	07:43			06:32		17:08 (12)	06:10		18:54 (13)	05:00	04:23
	16:06	17:13			18:14	27	17:35 (12)	20:19	19	19:13 (13)	21:20	22:04
16	08:37	07:40			06:29		17:05 (12)	06:07		18:55 (13)	04:58	04:23
	16:08	17:15			18:16	31	17:36 (12)	20:21	15	19:10 (13)	21:22	22:05
17	08:36	07:38			06:27		17:03 (12)	06:05		18:59 (13)	04:56	04:22
	16:10	17:17			18:18	34	17:37 (12)	20:23	8	19:07 (13)	21:24	22:06
18	08:35	07:36			06:24		17:02 (12)	06:02		04:54	04:54	04:22
	16:12	17:20			18:20	37	17:39 (12)	20:25		21:26	33	20:41 (9)
19	08:34	07:33			06:21		17:00 (12)	05:59		04:53	20:07 (9)	04:22
	16:14	17:22			18:22	40	17:40 (12)	20:27		21:28	34	20:41 (9)
20	08:32	07:31			06:19		16:59 (12)	05:57		04:51	20:08 (9)	04:22
	16:16	17:24			18:24	41	17:40 (12)	20:29		21:30	33	20:41 (9)
21	08:31	07:28			06:16		16:58 (12)	05:54		04:49	20:07 (9)	04:22
	16:18	17:26			18:27	43	17:41 (12)	20:31		21:31	34	20:41 (9)
22	08:29	07:26			06:13		16:57 (12)	05:52		04:47	20:08 (9)	04:22
	16:20	17:29			18:29	44	17:41 (12)	20:33		21:33	33	20:41 (9)
23	08:28	07:24			06:11		16:56 (12)	05:49		04:46	20:07 (9)	04:23
	16:22	17:31			18:31	45	17:41 (12)	20:35		21:35	34	20:41 (9)
24	08:26	07:21			06:08		16:55 (12)	05:47		04:44	20:08 (9)	04:23
	16:24	17:33			18:33	46	17:41 (12)	20:37		21:37	33	20:41 (9)
25	08:25	07:19			06:05		16:55 (12)	05:45		04:43	20:08 (9)	04:23
	16:26	17:35			18:35	47	17:42 (12)	20:40		21:38	33	20:41 (9)
26	08:23	07:16			06:03		16:54 (12)	05:42		04:41	20:08 (9)	04:24
	16:29	17:37			18:37	47	17:41 (12)	20:42		21:40	33	20:41 (9)
27	08:21	07:14	17:09 (14)		06:00		16:53 (12)	05:40		04:40	20:08 (9)	04:24
	16:31	17:40	4	17:13 (14)	18:39	48	17:41 (12)	20:44		21:42	33	20:41 (9)
28	08:20	07:11		17:07 (14)	05:57		16:54 (12)	05:37		04:38	20:09 (9)	04:25
	16:33	17:42	8	17:15 (14)	18:41	58	18:14 (13)	20:46		21:43	32	20:41 (9)
29	08:18				05:55		16:53 (12)	05:35		04:37	20:09 (9)	04:25
	16:35				18:43	65	18:16 (13)	20:48		21:45	32	20:41 (9)
30	08:16				06:52		17:53 (12)	05:33		04:36	20:10 (9)	04:26
	16:37				19:45	68	19:18 (13)	20:50		21:46	31	20:41 (9)
31	08:14				06:49		17:54 (12)			04:34	20:10 (9)	
	16:39				19:47	70	19:20 (13)			21:48	31	20:41 (9)
Potential sun hours	235	265			365			425		507		529
Total, worst case					1025			816		764		679
Sun reduction		12			0,39			0,48		0,53		0,54
Oper. time red.		0,94			0,94			0,94		0,94		0,94
Wind dir. red.		0,66			0,66			0,66		0,62		0,62
Total reduction		0,15			0,24			0,30		0,31		0,31
Total, real		2			247			242		237		212

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CO - Upmalnieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July		August		September		October		November		December
1	04:27		20:21 (9)	05:12	20:20 (9)	06:14	18:10 (12)	07:14	17:54 (12)	07:19	08:21
	22:06	22	20:43 (9)	21:26	20:48 (9)	20:12	19:17 (13)	18:51	18:08 (12)	16:34	15:42
2	04:28		20:21 (9)	05:14	20:21 (9)	06:16	18:04 (12)	07:16		07:21	08:23
	22:06	23	20:44 (9)	21:24	20:48 (9)	20:09	19:18 (13)	18:49		16:31	15:41
3	04:28		20:20 (9)	05:16	20:22 (9)	06:18	18:01 (12)	07:18	17:45 (14)	07:23	08:24
	22:05	24	20:44 (9)	21:22	20:47 (9)	20:07	19:18 (13)	18:46	11	17:56 (14)	16:29
4	04:29		20:20 (9)	05:18	20:23 (9)	06:20	17:58 (12)	07:20		17:42 (14)	08:26
	22:05	24	20:44 (9)	21:19	20:46 (9)	20:04	19:18 (13)	18:43	15	17:57 (14)	16:27
5	04:30		20:20 (9)	05:20	20:24 (9)	06:22	17:55 (12)	07:22		17:41 (14)	08:27
	22:04	25	20:45 (9)	21:17	20:44 (9)	20:01	19:17 (13)	18:41	17	17:58 (14)	16:25
6	04:31		20:19 (9)	05:22	20:25 (9)	06:24	17:53 (12)	07:24		17:39 (14)	08:29
	22:03	26	20:45 (9)	21:15	20:42 (9)	19:59	19:17 (13)	18:38	20	17:59 (14)	16:23
7	04:32		20:19 (9)	05:24	20:28 (9)	06:26	17:51 (12)	07:26		17:38 (14)	08:31
	22:03	27	20:46 (9)	21:13	20:40 (9)	19:56	19:17 (13)	18:36	21	17:59 (14)	16:21
8	04:34		20:19 (9)	05:26		06:28	17:50 (12)	07:28		17:37 (14)	08:32
	22:02	27	20:46 (9)	21:11		19:53	19:16 (13)	18:33	22	17:59 (14)	16:19
9	04:35		20:19 (9)	05:28		06:30	17:49 (12)	07:30		17:37 (14)	08:33
	22:01	28	20:47 (9)	21:09		19:51	19:15 (13)	18:30	21	17:58 (14)	16:17
10	04:36		20:18 (9)	05:30		06:32	17:48 (12)	07:32		17:38 (14)	08:35
	22:00	29	20:47 (9)	21:06		19:48	19:15 (13)	18:28	21	17:59 (14)	16:15
11	04:37		20:19 (9)	05:32		06:34	17:47 (12)	07:34		17:37 (14)	08:36
	21:59	29	20:48 (9)	21:04		19:45	19:13 (13)	18:25	19	17:56 (14)	16:13
12	04:39		20:19 (9)	05:34		06:36	17:46 (12)	07:36		17:38 (14)	08:37
	21:58	30	20:49 (9)	21:02		19:43	19:12 (13)	18:22	15	17:53 (14)	16:11
13	04:40		20:18 (9)	05:36		06:38	17:45 (12)	07:38		17:38 (14)	08:38
	21:57	31	20:49 (9)	20:59		19:40	19:11 (13)	18:20	13	17:51 (14)	16:09
14	04:41		20:18 (9)	05:38		06:40	17:44 (12)	07:41		17:39 (14)	08:40
	21:55	31	20:49 (9)	20:57		19:37	19:09 (13)	18:17	9	17:48 (14)	16:07
15	04:43		20:18 (9)	05:40		06:42	17:44 (12)	07:43		17:41 (14)	08:41
	21:54	32	20:50 (9)	20:55		19:35	19:06 (13)	18:15	5	17:46 (14)	16:05
16	04:44		20:18 (9)	05:42		06:44	17:43 (12)	07:45		07:51	08:42
	21:53	32	20:50 (9)	20:52		19:32	19:02 (13)	18:12		16:03	15:35
17	04:46		20:17 (9)	05:44		06:46	17:43 (12)	07:47		07:54	08:42
	21:51	33	20:50 (9)	20:50		19:29	18:30 (12)	18:10		16:02	15:35
18	04:47		20:18 (9)	05:46		06:48	17:43 (12)	07:49		07:56	08:43
	21:50	33	20:51 (9)	20:47		19:26	18:30 (12)	18:07		16:00	15:35
19	04:49		20:17 (9)	05:48		06:50	17:42 (12)	07:51		07:58	08:44
	21:49	34	20:51 (9)	20:45		19:24	18:29 (12)	18:05		15:58	15:35
20	04:51		20:18 (9)	05:50		06:52	17:42 (12)	07:53		08:00	08:45
	21:47	33	20:51 (9)	20:42		19:21	18:29 (12)	18:02		15:57	15:35
21	04:52		20:17 (9)	05:52		06:54	17:42 (12)	07:55		08:02	08:45
	21:46	34	20:51 (9)	20:40		19:18	18:28 (12)	18:00		15:55	15:36
22	04:54		20:18 (9)	05:54		06:56	17:42 (12)	07:58		08:04	08:46
	21:44	33	20:51 (9)	20:38		19:16	18:26 (12)	17:57		15:54	15:36
23	04:56		20:17 (9)	05:56		06:58	17:42 (12)	08:00		08:06	08:47
	21:42	34	20:51 (9)	20:35		19:13	18:25 (12)	17:55		15:52	15:37
24	04:58		20:18 (9)	05:58		07:00	17:42 (12)	08:02		08:08	08:47
	21:41	33	20:51 (9)	20:32		19:10	18:24 (12)	17:52		15:51	15:37
25	04:59		20:18 (9)	06:00		07:02	17:43 (12)	08:04		08:10	08:47
	21:39	34	20:52 (9)	20:30		19:08	18:22 (12)	17:50		15:49	15:38
26	05:01		20:18 (9)	06:02		07:04	17:44 (12)	07:06		08:12	08:48
	21:37	33	20:51 (9)	20:27		19:05	18:21 (12)	16:48		15:48	15:39
27	05:03		20:18 (9)	06:04	18:58 (13)	07:06	17:46 (12)	07:08		08:14	08:48
	21:35	33	20:51 (9)	20:25	13	19:11 (13)	19:02	16:45		15:47	15:40
28	05:05		20:19 (9)	06:06	18:56 (13)	07:08	17:47 (12)	07:10		08:15	08:48
	21:33	32	20:51 (9)	20:22	17	19:13 (13)	18:59	16:43		15:46	15:40
29	05:07		20:19 (9)	06:08	18:53 (13)	07:10	17:49 (12)	07:13		08:17	08:48
	21:32	31	20:50 (9)	20:20	22	19:15 (13)	18:57	16:41		15:44	15:41
30	05:08		20:19 (9)	06:10	18:52 (13)	07:12	17:51 (12)	07:15		08:19	08:48
	21:30	31	20:50 (9)	20:17	24	19:16 (13)	18:54	16:38		15:43	15:42
31	05:10		20:20 (9)	06:12	18:50 (13)		07:17			08:48	
	21:28	30	20:50 (9)	20:14	27	19:17 (13)	16:36			15:43	
Potential sun hours	530		470		385		324		248	216	
Total, worst case		931		255		1562		223			
Sun reduction		0,51		0,51		0,43		0,27			
Oper. time red.		0,94		0,94		0,94		0,94			
Wind dir. red.		0,62		0,63		0,66		0,66			
Total reduction		0,30		0,31		0,27		0,17			
Total, real		275		78		415		38			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CP - Gruguli

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:12 16:41	07:08 17:44	06:46 19:49	05:30 20:52	04:33 21:49	04:27 22:06	05:12 21:26	06:14 20:12	07:14 18:51	07:19 16:34	08:21 15:42
2	08:48 15:46	08:10 16:44	07:06 17:46	06:44 19:51	05:28 20:54	04:32 21:51	04:27 22:06	05:14 21:24	06:16 20:09	07:21 18:49	07:21 16:31	08:23 15:41
3	08:47 15:47	08:08 16:46	07:03 17:48	06:41 19:54	05:25 20:56	04:31 21:52	04:28 22:05	05:16 21:21	06:18 20:07	07:18 18:46	07:23 16:29	08:24 15:40
4	08:47 15:51	08:06 16:57	07:01 17:59	06:38 19:56	05:23 20:58	04:30 21:53	04:29 22:05	05:18 21:19	06:20 20:04	07:20 18:43	07:26 16:27	08:26 15:39
5	08:47 15:50	08:04 16:50	06:58 17:52	06:36 19:58	05:21 21:00	04:29 21:55	04:30 22:04	05:20 21:17	06:22 20:01	07:22 18:41	07:28 16:25	08:27 15:39
6	08:46 15:51	08:02 16:53	06:56 17:55	06:33 20:00	05:19 21:02	04:28 21:56	04:31 22:03	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
7	08:45 15:53	08:00 16:55	06:53 17:57	06:30 20:02	05:16 21:04	04:27 21:57	04:32 22:03	05:24 21:13	06:26 19:56	07:26 18:35	07:32 16:21	08:30 15:37
8	08:45 15:54	07:58 16:57	06:50 17:59	06:28 20:04	05:14 21:06	04:26 21:58	04:33 22:02	05:26 21:11	06:28 19:53	07:28 18:33	07:34 16:18	08:32 15:37
9	08:44 15:56	07:56 16:59	06:48 18:01	06:25 20:06	05:12 21:08	04:25 21:59	04:35 22:01	05:28 21:08	06:30 19:51	07:30 18:30	07:36 16:16	08:33 15:36
10	08:43 15:57	07:54 17:02	06:45 18:03	06:23 20:08	05:10 21:10	04:25 22:00	04:36 22:00	05:30 21:06	06:32 19:48	07:32 18:28	07:39 16:14	08:35 15:36
11	08:43 15:59	07:52 17:04	06:43 18:05	06:20 20:10	05:08 21:12	04:24 22:01	04:37 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:12	08:36 15:35
12	08:42 16:01	07:49 17:06	06:40 18:07	06:17 20:12	05:06 21:14	04:24 22:02	04:38 21:58	05:34 21:02	06:36 19:43	07:36 18:22	07:43 16:11	08:37 15:35
13	08:41 16:03	07:47 17:08	06:37 18:10	06:15 20:14	05:04 21:16	04:23 22:03	04:40 21:57	05:36 20:59	06:38 19:40	07:38 18:20	07:45 16:09	08:38 15:35
14	08:40 16:04	07:45 17:11	06:35 18:12	06:12 20:16	05:02 21:18	04:23 22:04	04:41 21:55	05:38 20:57	06:40 19:37	07:40 18:17	07:47 16:07	08:39 15:35
15	08:39 16:06	07:43 17:13	06:32 18:14	06:10 20:19	05:00 21:20	04:23 22:04	04:43 21:54	05:40 20:55	06:42 19:34	07:43 18:15	07:49 16:05	08:41 15:35
16	08:37 16:08	07:40 17:15	06:29 18:16	06:07 20:21	04:58 21:22	04:22 22:05	04:44 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:51 16:03	08:41 15:35
17	08:36 16:10	07:38 17:17	06:27 18:18	06:04 20:23	04:56 21:24	04:22 22:06	04:46 21:51	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:01	08:42 15:35
18	08:35 16:12	07:36 17:19	06:24 18:20	06:02 20:25	04:54 21:26	04:22 22:06	04:47 21:50	05:46 20:47	06:48 19:26	07:49 18:07	07:56 16:00	08:43 15:35
19	08:34 16:14	07:33 17:22	06:21 18:22	05:59 20:27	04:52 21:28	04:22 22:06	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:04	07:58 15:58	08:44 15:35
20	08:32 16:16	07:31 17:24	06:19 18:24	05:57 20:29	04:51 21:30	04:22 22:07	04:50 21:47	05:50 20:42	06:52 19:21	07:53 18:02	08:00 15:56	08:45 15:35
21	08:31 16:18	07:28 17:26	06:16 18:26	05:54 20:31	04:49 21:31	04:22 22:07	04:52 21:45	05:52 20:40	06:54 19:18	07:55 18:00	08:02 15:55	08:45 15:36
22	08:29 16:20	07:26 17:28	06:13 18:29	05:52 20:33	04:47 21:33	04:22 22:07	04:54 21:44	05:54 20:37	06:56 19:16	07:57 17:57	08:04 15:53	08:46 15:36
23	08:28 16:22	07:24 17:31	06:11 18:31	05:49 20:35	04:46 21:35	04:22 22:08	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:47 15:37
24	08:26 16:24	07:21 17:33	06:08 18:33	05:47 20:37	04:44 21:37	04:23 22:08	04:57 21:41	05:58 20:32	07:00 19:10	08:02 17:52	08:08 15:50	08:47 15:37
25	08:25 16:26	07:19 17:35	06:05 18:35	05:44 20:39	04:42 21:38	04:23 22:08	04:59 21:39	06:00 20:30	07:02 19:07	08:04 17:50	08:10 15:49	08:47 15:38
26	08:23 16:28	07:16 17:37	06:03 18:37	05:42 20:42	04:41 21:40	04:23 22:08	05:01 21:37	06:02 20:27	07:04 19:05	07:06 16:47	08:12 15:48	08:48 15:39
27	08:21 16:30	07:14 17:39	06:00 18:39	05:40 20:44	04:39 21:42	04:24 22:07	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:45	08:14 15:47	08:48 15:39
28	08:20 16:33	07:11 17:42	05:57 18:41	05:37 20:46	04:38 21:43	04:25 22:07	05:05 21:33	06:06 20:22	07:08 18:59	07:10 16:43	08:15 15:45	08:48 15:40
29	08:18 16:35		05:54 18:43	05:35 20:48	04:37 21:45	04:25 22:07	05:06 21:31	06:08 20:20	07:10 18:57	07:13 16:40	08:17 15:44	08:48 15:41
30	08:16 16:37		06:52 19:45	05:32 20:50	04:35 21:46	04:26 22:07	05:08 21:30	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:43	08:48 15:42
31	08:14 16:39		06:49 19:47		04:34 21:48		05:10 21:28	06:12 20:14		07:17 16:36		08:48 15:43
Potential sun hours	235	265	365	425	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CQ - Aramsala

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:12 16:41	07:08 17:44	06:46 19:49	05:30 20:52	04:33 21:49	04:27 22:06	05:12 21:26	06:14 20:12	07:14 18:51	07:19 16:34	08:21 15:42
2	08:48 15:46	08:10 16:44	07:06 17:46	06:44 19:51	05:28 20:54	04:32 21:51	04:28 22:06	05:14 21:23	06:16 20:09	07:16 18:49	07:21 16:31	08:22 15:41
3	08:47 15:47	08:08 16:46	07:03 17:48	06:41 19:54	05:25 20:56	04:31 21:52	04:28 22:05	05:16 21:21	06:18 20:07	07:18 18:46	07:23 16:29	08:24 15:40
4	08:47 15:51	08:06 16:57	07:01 17:59	06:38 19:56	05:23 20:58	04:30 21:53	04:29 22:05	05:18 21:19	06:20 20:04	07:20 18:43	07:26 16:27	08:26 15:39
5	08:47 15:50	08:04 16:50	06:58 17:53	06:36 19:58	05:21 21:00	04:29 21:55	04:30 22:04	05:20 21:17	06:22 20:01	07:22 18:41	07:28 16:25	08:27 15:39
6	08:46 15:51	08:02 16:53	06:56 17:55	06:33 20:00	05:19 21:02	04:28 21:56	04:31 22:03	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
7	08:45 15:53	08:00 16:55	06:53 17:57	06:31 20:02	05:17 21:04	04:27 21:57	04:32 22:03	05:24 21:13	06:26 19:56	07:26 18:35	07:32 16:21	08:30 15:37
8	08:45 15:54	07:58 16:57	06:50 17:59	06:28 20:04	05:14 21:06	04:26 21:58	04:34 22:02	05:26 21:11	06:28 19:53	07:28 18:33	07:34 16:19	08:32 15:37
9	08:44 15:56	07:56 16:59	06:48 18:01	06:25 20:06	05:12 21:08	04:26 21:59	04:35 22:01	05:28 21:08	06:30 19:51	07:30 18:30	07:36 16:16	08:33 15:36
10	08:43 15:57	07:54 17:02	06:45 18:03	06:23 20:08	05:10 21:10	04:25 22:00	04:36 22:00	05:30 21:06	06:32 19:48	07:32 18:28	07:39 16:14	08:35 15:36
11	08:42 15:59	07:52 17:04	06:43 18:05	06:20 20:10	05:08 21:12	04:24 22:01	04:37 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:13	08:36 15:35
12	08:42 16:01	07:49 17:06	06:40 18:08	06:17 20:12	05:06 21:14	04:24 22:02	04:39 21:58	05:34 21:02	06:36 19:43	07:36 18:22	07:43 16:11	08:37 15:35
13	08:41 16:03	07:47 17:08	06:37 18:10	06:15 20:14	05:04 21:16	04:23 22:03	04:40 21:57	05:36 20:59	06:38 19:40	07:38 18:20	07:45 16:09	08:38 15:35
14	08:40 16:04	07:45 17:11	06:35 18:12	06:12 20:16	05:02 21:18	04:23 22:04	04:41 21:55	05:38 20:57	06:40 19:37	07:40 18:17	07:47 16:07	08:39 15:35
15	08:38 16:06	07:43 17:13	06:32 18:14	06:10 20:19	05:00 21:20	04:23 22:04	04:43 21:54	05:40 20:55	06:42 19:34	07:43 18:15	07:49 16:05	08:40 15:35
16	08:37 16:08	07:40 17:15	06:29 18:16	06:07 20:21	04:58 21:22	04:22 22:05	04:44 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:51 16:03	08:41 15:35
17	08:36 16:10	07:38 17:17	06:27 18:18	06:04 20:23	04:56 21:24	04:22 22:05	04:46 21:51	05:44 20:50	06:46 19:29	07:47 18:10	07:53 16:01	08:42 15:35
18	08:35 16:12	07:36 17:20	06:24 18:20	06:02 20:25	04:54 21:26	04:22 22:06	04:47 21:50	05:46 20:47	06:48 19:26	07:49 18:07	07:56 16:00	08:43 15:35
19	08:34 16:14	07:33 17:22	06:21 18:22	05:59 20:27	04:53 21:28	04:22 22:06	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:58	08:44 15:35
20	08:32 16:16	07:31 17:24	06:19 18:24	05:57 20:29	04:51 21:29	04:22 22:07	04:51 21:47	05:50 20:42	06:52 19:21	07:53 18:02	08:00 15:57	08:45 15:35
21	08:31 16:18	07:28 17:26	06:16 18:26	05:54 20:31	04:49 21:31	04:22 22:07	04:52 21:45	05:52 20:40	06:54 19:18	07:55 18:00	08:02 15:55	08:45 15:36
22	08:29 16:20	07:26 17:28	06:13 18:29	05:52 20:33	04:47 21:33	04:22 22:07	04:54 21:44	05:54 20:37	06:56 19:16	07:57 17:57	08:04 15:53	08:46 15:36
23	08:28 16:22	07:23 17:31	06:11 18:31	05:49 20:35	04:46 21:35	04:23 22:07	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:46 15:37
24	08:26 16:24	07:21 17:33	06:08 18:33	05:47 20:37	04:44 21:37	04:23 22:08	04:57 21:40	05:58 20:32	07:00 19:10	08:02 17:52	08:08 15:51	08:47 15:37
25	08:25 16:26	07:19 17:35	06:05 18:35	05:44 20:39	04:43 21:38	04:23 22:08	04:59 21:39	06:00 20:30	07:02 19:07	08:04 17:50	08:10 15:49	08:47 15:38
26	08:23 16:28	07:16 17:37	06:03 18:37	05:42 20:41	04:41 21:40	04:24 22:08	05:01 21:37	06:02 20:27	07:04 19:05	07:06 16:47	08:12 15:48	08:48 15:39
27	08:21 16:31	07:14 17:39	06:00 18:39	05:40 20:44	04:40 21:42	04:24 22:07	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:45	08:14 15:47	08:48 15:39
28	08:20 16:33	07:11 17:42	05:57 18:41	05:37 20:46	04:38 21:43	04:25 22:07	05:05 21:33	06:06 20:22	07:08 18:59	07:10 16:43	08:15 15:45	08:48 15:40
29	08:18 16:35		05:54 18:43	05:35 20:48	04:37 21:45	04:25 22:07	05:06 21:31	06:08 20:20	07:10 18:57	07:12 16:40	08:17 15:44	08:48 15:41
30	08:16 16:37		06:52 19:45	05:32 20:50	04:36 21:46	04:26 22:07	05:08 21:29	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:43	08:48 15:42
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Potential sun hours	235	265	365	425	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
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Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CR - Alksni š i

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:12 16:41	07:08 17:44	06:46 19:49	05:30 20:52	04:33 21:49	04:27 22:06	05:12 21:25	06:14 20:12	07:14 18:51	07:19 16:34	08:21 15:42
2	08:48 15:46	08:10 16:44	07:06 17:46	06:44 19:51	05:28 20:54	04:32 21:51	04:27 22:06	05:14 21:23	06:16 20:09	07:16 18:49	07:21 16:31	08:22 15:41
3	08:47 15:47	08:08 16:46	07:03 17:48	06:41 19:54	05:25 20:56	04:31 21:52	04:28 22:05	05:16 21:21	06:18 20:06	07:18 18:46	07:23 16:29	08:24 15:40
4	08:47 15:51	08:06 16:57	07:01 17:59	06:38 19:56	05:23 20:58	04:30 21:53	04:29 22:05	05:18 21:19	06:20 20:04	07:20 18:43	07:25 16:27	08:26 15:39
5	08:46 15:50	08:04 16:50	06:58 17:52	06:36 19:58	05:21 21:00	04:29 21:55	04:30 22:04	05:20 21:17	06:22 20:01	07:22 18:41	07:28 16:25	08:27 15:39
6	08:46 15:51	08:02 16:53	06:56 17:55	06:33 20:00	05:19 21:02	04:28 21:56	04:31 22:03	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
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9	08:44 15:56	07:56 16:59	06:48 18:01	06:25 20:06	05:12 21:08	04:26 21:59	04:35 22:01	05:28 21:08	06:30 19:51	07:30 18:30	07:36 16:16	08:33 15:36
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CS - Lejsalie š i

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:12	07:08	06:46	05:30	04:33	04:27	05:12	06:14	07:14	07:19	08:21
	15:45	16:41	17:44	19:49	20:52	21:49	22:06	21:26	20:12	18:51	16:33	15:42
2	08:48	08:10	07:06	06:44	05:28	04:32	04:27	05:14	06:16	07:16	07:21	08:23
	15:46	16:44	17:46	19:51	20:54	21:51	22:06	21:24	20:09	18:49	16:31	15:41
3	08:47	08:08	07:03	06:41	05:25	04:31	04:28	05:16	06:18	07:18	07:23	08:24
	15:47	16:46	17:48	19:54	20:56	21:52	22:05	21:21	20:07	18:46	16:29	15:40
4	08:47	08:06	07:01	06:38	05:23	04:30	04:29	05:18	06:20	07:20	07:26	08:26
	15:48	16:48	17:50	19:56	20:58	21:53	22:05	21:19	20:04	18:43	16:27	15:39
5	08:47	08:04	06:58	06:36	05:21	04:29	04:30	05:20	06:22	07:22	07:28	08:27
	15:50	16:50	17:52	19:58	21:00	21:55	22:04	21:17	20:01	18:41	16:25	15:39
6	08:46	08:02	06:56	06:33	05:19	04:28	04:31	05:22	06:24	07:24	07:30	08:29
	15:51	16:53	17:55	20:00	21:02	21:56	22:03	21:15	19:59	18:38	16:23	15:38
7	08:45	08:00	06:53	06:30	05:16	04:27	04:32	05:24	06:26	07:26	07:32	08:30
	15:53	16:55	17:57	20:02	21:04	21:57	22:03	21:13	19:56	18:35	16:20	15:37
8	08:45	07:58	06:50	06:28	05:14	04:26	04:33	05:26	06:28	07:28	07:34	08:32
	15:54	16:57	17:59	20:04	21:06	21:58	22:02	21:11	19:53	18:33	16:18	15:37
9	08:44	07:56	06:48	06:25	05:12	04:25	04:35	05:28	06:30	07:30	07:36	08:33
	15:56	16:59	18:01	20:06	21:08	21:59	22:01	21:08	19:51	18:30	16:16	15:36
10	08:43	07:54	06:45	06:23	05:10	04:25	04:36	05:30	06:32	07:32	07:39	08:35
	15:57	17:02	18:03	20:08	21:10	22:00	22:00	21:06	19:48	18:28	16:14	15:36
11	08:43	07:52	06:43	06:20	05:08	04:24	04:37	05:32	06:34	07:34	07:41	08:36
	15:59	17:04	18:05	20:10	21:12	22:01	21:59	21:04	19:45	18:25	16:12	15:35
12	08:42	07:49	06:40	06:17	05:06	04:24	04:38	05:34	06:36	07:36	07:43	08:37
	16:01	17:06	18:07	20:12	21:14	22:02	21:58	21:02	19:43	18:22	16:10	15:35
13	08:41	07:47	06:37	06:15	05:04	04:23	04:40	05:36	06:38	07:38	07:45	08:38
	16:02	17:08	18:10	20:14	21:16	22:03	21:57	20:59	19:40	18:20	16:09	15:35
14	08:40	07:45	06:35	06:12	05:02	04:23	04:41	05:38	06:40	07:40	07:47	08:39
	16:04	17:11	18:12	20:16	21:18	22:04	21:55	20:57	19:37	18:17	16:07	15:35
15	08:39	07:43	06:32	06:10	05:00	04:23	04:43	05:40	06:42	07:43	07:49	08:41
	16:06	17:13	18:14	20:19	21:20	22:04	21:54	20:55	19:34	18:15	16:05	15:35
16	08:37	07:40	06:29	06:07	04:58	04:22	04:44	05:42	06:44	07:45	07:51	08:42
	16:08	17:15	18:16	20:21	21:22	22:05	21:53	20:52	19:32	18:12	16:03	15:35
17	08:36	07:38	06:27	06:04	04:56	04:22	04:46	05:44	06:46	07:47	07:54	08:42
	16:10	17:17	18:18	20:23	21:24	22:06	21:51	20:50	19:29	18:10	16:01	15:35
18	08:35	07:36	06:24	06:02	04:54	04:22	04:47	05:46	06:48	07:49	07:56	08:43
	16:12	17:19	18:20	20:25	21:26	22:06	21:50	20:47	19:26	18:07	16:00	15:35
19	08:34	07:33	06:21	05:59	04:52	04:22	04:49	05:48	06:50	07:51	07:58	08:44
	16:14	17:22	18:22	20:27	21:28	22:06	21:49	20:45	19:24	18:04	15:58	15:35
20	08:32	07:31	06:19	05:57	04:51	04:22	04:50	05:50	06:52	07:53	08:00	08:45
	16:16	17:24	18:24	20:29	21:30	22:07	21:47	20:42	19:21	18:02	15:56	15:35
21	08:31	07:28	06:16	05:54	04:49	04:22	04:52	05:52	06:54	07:55	08:02	08:45
	16:18	17:26	18:26	20:31	21:31	22:07	21:46	20:40	19:18	18:00	15:55	15:36
22	08:29	07:26	06:13	05:52	04:47	04:22	04:54	05:54	06:56	07:57	08:04	08:46
	16:20	17:28	18:29	20:33	21:33	22:07	21:44	20:37	19:16	17:57	15:53	15:36
23	08:28	07:23	06:11	05:49	04:46	04:22	04:56	05:56	06:58	08:00	08:06	08:47
	16:22	17:31	18:31	20:35	21:35	22:08	21:42	20:35	19:13	17:55	15:52	15:37
24	08:26	07:21	06:08	05:47	04:44	04:23	04:57	05:58	07:00	08:02	08:08	08:47
	16:24	17:33	18:33	20:37	21:37	22:08	21:41	20:32	19:10	17:52	15:50	15:37
25	08:25	07:19	06:05	05:44	04:42	04:23	04:59	06:00	07:02	08:04	08:10	08:47
	16:26	17:35	18:35	20:39	21:38	22:08	21:39	20:30	19:07	17:50	15:49	15:38
26	08:23	07:16	06:02	05:42	04:41	04:23	05:01	06:02	07:04	07:06	08:12	08:48
	16:28	17:37	18:37	20:42	21:40	22:08	21:37	20:27	19:05	16:47	15:48	15:38
27	08:21	07:14	06:00	05:39	04:39	04:24	05:03	06:04	07:06	07:08	08:14	08:48
	16:30	17:39	18:39	20:44	21:42	22:07	21:35	20:25	19:02	16:45	15:47	15:39
28	08:20	07:11	05:57	05:37	04:38	04:24	05:04	06:06	07:08	07:10	08:15	08:48
	16:33	17:42	18:41	20:46	21:43	22:07	21:33	20:22	18:59	16:43	15:45	15:40
29	08:18		05:54	05:35	04:37	04:25	05:06	06:08	07:10	07:13	08:17	08:48
	16:35		18:43	20:48	21:45	22:07	21:31	20:20	18:57	16:40	15:44	15:41
30	08:16		06:52	05:32	04:35	04:26	05:08	06:10	07:12	07:15	08:19	08:48
	16:37		19:45	20:50	21:46	22:07	21:30	20:17	18:54	16:38	15:43	15:42
31	08:14		06:49		04:34		05:10	06:12		07:17		08:48
	16:39		19:47		21:48		21:28	20:14		16:36		15:43
Potential sun hours	235	265	365	425	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CT - Araj

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June
1	08:48 15:45	08:12 16:42	07:09 17:44	06:47 19:49	18:47 (12) 19:17 (12)	05:30 20:52
2	08:48 15:46	08:10 16:44	07:06 17:46	06:44 19:52	18:46 (12) 19:17 (12)	05:28 20:54
3	08:47 15:47	08:08 16:46	07:03 17:48	06:41 19:54	18:46 (12) 19:28 (13)	05:26 20:56
4	08:47 15:49	08:07 16:48	07:01 17:50	06:39 19:56	18:45 (12) 19:29 (13)	05:23 20:58
5	08:47 15:50	08:04 16:50	06:58 17:53	06:36 19:58	18:44 (12) 19:31 (13)	05:21 21:00
6	08:46 15:51	08:02 16:53	06:56 17:55	06:33 20:00	18:44 (12) 19:34 (13)	05:19 21:02
7	08:45 15:53	08:00 16:55	06:53 17:57	06:31 20:02	18:44 (12) 19:35 (13)	05:17 21:04
8	08:45 15:54	07:58 16:57	06:50 17:59	06:28 20:04	18:45 (12) 19:38 (13)	05:14 21:06
9	08:44 15:56	07:56 16:59	06:48 18:01	06:25 20:06	18:44 (12) 19:38 (13)	05:12 21:08
10	08:43 15:58	07:54 17:02	06:45 18:03	06:23 20:08	18:45 (12) 19:39 (13)	05:10 21:10
11	08:43 15:59	07:52 17:04	06:43 18:05	06:20 20:10	18:45 (12) 19:38 (13)	05:08 21:12
12	08:42 16:01	07:49 17:06	06:40 18:08	06:17 20:12	18:46 (12) 19:37 (13)	05:06 21:14
13	08:41 16:03	07:47 17:08	06:37 18:10	06:15 20:14	18:47 (12) 19:37 (13)	05:04 21:16
14	08:40 16:05	07:45 17:11	06:35 18:12	06:12 20:17	18:48 (12) 19:36 (13)	05:02 21:18
15	08:39 16:06	07:43 17:13	06:32 18:14	06:10 20:19	18:51 (12) 19:35 (13)	05:00 21:20
16	08:37 16:08	07:40 17:15	06:29 18:16	06:07 20:21	18:54 (12) 19:33 (13)	04:58 21:22
17	08:36 16:10	07:38 17:17	06:27 18:18	06:05 20:23	19:17 (13) 19:32 (13)	04:56 21:24
18	08:35 16:12	07:36 17:20	06:24 18:20	06:02 20:25	19:18 (13) 19:29 (13)	04:54 21:26
19	08:34 16:14	07:33 17:22	06:21 18:22	05:59 20:27	21:28	22:06
20	08:32 16:16	07:31 17:24	06:19 18:24	05:57 20:29	04:51 21:30	22:07
21	08:31 16:18	07:28 17:26	06:16 18:27	05:54 20:31	04:49 21:31	22:07
22	08:29 16:20	07:26 17:29	06:13 18:29	05:52 20:33	04:47 21:33	22:07
23	08:28 16:22	07:24 17:31	06:11 18:31	05:49 20:35	04:46 21:35	22:08
24	08:26 16:24	07:21 17:33	06:08 18:33	05:47 20:37	04:44 21:37	22:08
25	08:25 16:26	07:19 17:35	06:05 18:35	05:45 20:39	04:43 21:38	22:08
26	08:23 16:28	07:16 17:37	06:03 18:37	05:42 20:42	04:41 21:40	22:08
27	08:21 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:42	22:07
28	08:20 16:33	07:11 17:42	05:57 18:41	05:37 20:46	04:38 21:43	22:07
29	08:18 16:35		05:55 18:43	05:35 20:48	04:37 21:45	22:07
30	08:16 16:37		06:52 19:45	05:33 20:50	04:36 21:46	22:07
31	08:14 16:39		06:49 19:47	28 18:49 (12) 19:17 (12)	04:34 21:48	
Potential sun hours	235	265	365	425	507	529
Total, worst case			120	718	438	
Sun reduction			0,39	0,48	0,53	
Oper. time red.			0,94	0,94	0,94	
Wind dir. red.			0,66	0,65	0,62	
Total reduction			0,24	0,29	0,31	
Total, real			29	211	136	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CT - Araj

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July	August	September	October	November	December
1	04:27	05:12	20:22 (9)	06:14	18:45 (12)	07:14
	22:06	21:26	25	20:47 (9)	20:12	51
2	04:28	05:14	20:23 (9)	06:16	18:44 (12)	07:16
	22:06	21:24	24	20:47 (9)	20:09	53
3	04:28	05:16	20:23 (9)	06:18	18:43 (12)	07:18
	22:05	21:21	24	20:47 (9)	20:07	54
4	04:29	05:18	20:23 (9)	06:20	18:42 (12)	07:20
	22:05	21:19	24	20:47 (9)	20:04	54
5	04:30	05:20	20:23 (9)	06:22	18:40 (12)	07:22
	22:04	21:17	22	20:45 (9)	20:01	53
6	04:31	05:22	20:23 (9)	06:24	18:40 (12)	07:24
	22:03	21:15	21	20:44 (9)	19:59	50
7	04:32	05:24	20:24 (9)	06:26	18:40 (12)	07:26
	22:03	21:13	18	20:42 (9)	19:56	46
8	04:34	05:26	20:25 (9)	06:28	18:39 (12)	07:28
	22:02	21:11	15	20:40 (9)	19:53	43
9	04:35	05:28	20:26 (9)	06:30	18:39 (12)	07:30
	22:01	21:08	12	20:38 (9)	19:51	39
10	04:36	05:30	20:28 (9)	06:32	18:39 (12)	07:32
	22:00	21:06	8	20:36 (9)	19:48	32
11	04:37	05:32	20:29 (9)	06:34	18:39 (12)	07:34
	21:59	21:04	4	20:33 (9)	19:45	31
12	04:39	05:34		06:36	18:40 (12)	07:36
	21:58	21:02		19:43	29	18:22
13	04:40	05:36		06:38	18:40 (12)	07:38
	21:57	20:59		19:40	28	18:20
14	04:41	05:38		06:40	18:41 (12)	07:41
	21:55	20:57		19:37	26	18:17
15	04:43	05:40		06:42	18:42 (12)	07:43
	21:54	20:55		19:35	23	18:15
16	04:44	05:42		06:44	18:44 (12)	07:45
	21:53	20:52		19:32	19	18:12
17	04:46	05:44		06:46	18:46 (12)	07:47
	21:51	20:50		19:29	14	18:10
18	04:47	05:46		06:48		07:49
	21:50	20:47		19:26		18:07
19	04:49	20:31 (9)	05:48	06:50	07:51	07:58
	21:49	20:38 (9)	20:45	19:24	18:05	15:58
20	04:51	20:30 (9)	05:50	06:52	07:53	08:00
	21:47	20:41 (9)	20:42	19:21	18:02	15:57
21	04:52	20:28 (9)	05:52	06:54	07:55	08:02
	21:46	20:42 (9)	20:40	19:18	18:00	15:55
22	04:54	20:27 (9)	05:54	06:56	07:57	08:04
	21:44	20:43 (9)	20:37	19:16	17:57	15:54
23	04:56	20:26 (9)	05:56	06:58	08:00	08:06
	21:42	20:44 (9)	20:35	19:13	17:55	15:52
24	04:57	20:26 (9)	05:58	07:00	08:02	08:08
	21:41	20:45 (9)	20:32	19:10	17:52	15:51
25	04:59	20:25 (9)	06:00	19:24 (13)	07:02	08:04
	21:39	20:46 (9)	20:30	8	19:32 (13)	19:08
26	05:01	20:24 (9)	06:02	19:20 (13)	07:04	08:06
	21:37	20:46 (9)	20:27	13	19:33 (13)	19:05
27	05:03	20:24 (9)	06:04	19:18 (13)	07:06	08:08
	21:35	20:47 (9)	20:25	17	19:35 (13)	19:02
28	05:05	20:24 (9)	06:06	18:53 (12)	07:08	08:10
	21:33	20:47 (9)	20:22	32	19:36 (13)	18:59
29	05:07	20:23 (9)	06:08	18:50 (12)	07:10	08:12
	21:31	20:47 (9)	20:20	40	19:37 (13)	18:57
30	05:08	20:23 (9)	06:10	18:48 (12)	07:12	08:14
	21:30	20:47 (9)	20:17	44	19:37 (13)	18:54
31	05:10	20:23 (9)	06:12	18:47 (12)	07:17	08:16
	21:28	20:48 (9)	20:14	47	19:37 (13)	18:51
Potential sun hours	530		470	385	324	248
Total, worst case		247	398	645		216
Sun reduction		0,51	0,51	0,43		
Oper. time red.		0,94	0,94	0,94		
Wind dir. red.		0,62	0,64	0,65		
Total reduction		0,30	0,31	0,26		
Total, real		73	122	170		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CU - Plavinas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:12 16:41	07:08 17:44	06:46 19:49	05:30 20:52	04:33 21:49	04:27 22:06	05:12 21:26	06:14 20:12	07:14 18:51	07:19 16:34	08:21 15:42
2	08:48 15:46	08:10 16:44	07:06 17:46	06:44 19:51	05:28 20:54	04:32 21:51	04:27 22:06	05:14 21:24	06:16 20:09	07:16 18:49	07:21 16:31	08:23 15:41
3	08:47 15:47	08:08 16:46	07:03 17:48	06:41 19:54	05:25 20:56	04:31 21:52	04:28 22:05	05:16 21:21	06:18 20:07	07:18 18:46	07:23 16:29	08:24 15:40
4	08:47 15:51	08:06 16:57	07:01 17:59	06:38 19:56	05:23 20:58	04:30 21:53	04:29 22:05	05:18 21:19	06:20 20:04	07:20 18:43	07:26 16:27	08:26 15:39
5	08:47 15:50	08:04 16:50	06:58 17:52	06:36 19:58	05:21 21:00	04:29 21:55	04:30 22:04	05:20 21:17	06:22 20:01	07:22 18:41	07:28 16:25	08:27 15:39
6	08:46 15:51	08:02 16:53	06:56 17:55	06:33 20:00	05:19 21:02	04:28 21:56	04:31 22:03	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
7	08:45 15:53	08:00 16:55	06:53 17:57	06:30 20:02	05:16 21:04	04:27 21:57	04:32 22:03	05:24 21:13	06:26 19:56	07:26 18:35	07:32 16:21	08:30 15:37
8	08:45 15:54	07:58 16:57	06:50 17:59	06:28 20:04	05:14 21:06	04:26 21:58	04:33 22:02	05:26 21:11	06:28 19:53	07:28 18:33	07:34 16:18	08:32 15:37
9	08:44 15:56	07:56 16:59	06:48 18:01	06:25 20:06	05:12 21:08	04:25 21:59	04:35 22:01	05:28 21:08	06:30 19:51	07:30 18:30	07:36 16:16	08:33 15:36
10	08:43 15:57	07:54 17:02	06:45 18:03	06:23 20:08	05:10 21:10	04:25 22:00	04:36 22:00	05:30 21:06	06:32 19:48	07:32 18:28	07:39 16:14	08:35 15:36
11	08:43 15:59	07:52 17:04	06:43 18:05	06:20 20:10	05:08 21:12	04:24 22:01	04:37 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:12	08:36 15:35
12	08:42 16:01	07:49 17:06	06:40 18:07	06:17 20:12	05:06 21:14	04:24 22:02	04:38 21:58	05:34 21:02	06:36 19:43	07:36 18:22	07:43 16:11	08:37 15:35
13	08:41 16:03	07:47 17:08	06:37 18:10	06:15 20:14	05:04 21:16	04:23 22:03	04:40 21:57	05:36 20:59	06:38 19:40	07:38 18:20	07:45 16:09	08:38 15:35
14	08:40 16:04	07:45 17:11	06:35 18:12	06:12 20:16	05:02 21:18	04:23 22:04	04:41 21:55	05:38 20:57	06:40 19:37	07:40 18:17	07:47 16:07	08:39 15:35
15	08:39 16:06	07:43 17:13	06:32 18:14	06:10 20:19	05:00 21:20	04:23 22:04	04:43 21:54	05:40 20:55	06:42 19:34	07:43 18:15	07:49 16:05	08:41 15:35
16	08:37 16:08	07:40 17:15	06:29 18:16	06:07 20:21	04:58 21:22	04:22 22:05	04:44 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:51 16:03	08:42 15:35
17	08:36 16:10	07:38 17:17	06:27 18:18	06:04 20:23	04:56 21:24	04:22 22:06	04:46 21:51	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:01	08:42 15:35
18	08:35 16:12	07:36 17:19	06:24 18:20	06:02 20:25	04:54 21:26	04:22 22:06	04:47 21:50	05:46 20:47	06:48 19:26	07:49 18:07	07:56 16:00	08:43 15:35
19	08:34 16:14	07:33 17:22	06:21 18:22	05:59 20:27	04:52 21:28	04:22 22:06	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:04	07:58 15:58	08:44 15:35
20	08:32 16:16	07:31 17:24	06:19 18:24	05:57 20:29	04:51 21:30	04:22 22:07	04:50 21:47	05:50 20:42	06:52 19:21	07:53 18:02	08:00 15:56	08:45 15:35
21	08:31 16:18	07:28 17:26	06:16 18:26	05:54 20:31	04:49 21:31	04:22 22:07	04:52 21:46	05:52 20:40	06:54 19:18	07:55 18:00	08:02 15:55	08:45 15:36
22	08:29 16:20	07:26 17:28	06:13 18:29	05:52 20:33	04:47 21:33	04:22 22:07	04:54 21:44	05:54 20:37	06:56 19:16	07:57 17:57	08:04 15:53	08:46 15:36
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24	08:26 16:24	07:21 17:33	06:08 18:33	05:47 20:37	04:44 21:37	04:23 22:08	04:57 21:41	05:58 20:32	07:00 19:10	08:02 17:52	08:08 15:50	08:47 15:37
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27	08:21 16:30	07:14 17:39	06:00 18:39	05:40 20:44	04:39 21:42	04:24 22:07	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:45	08:14 15:47	08:48 15:39
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29	08:18 16:35		05:54 18:43	05:35 20:48	04:37 21:45	04:25 22:07	05:06 21:31	06:08 20:20	07:10 18:57	07:13 16:40	08:17 15:44	08:48 15:41
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31	08:14 16:39		06:49 19:47		04:34 21:48		05:10 21:28	06:12 20:14		07:17 16:36		08:48 15:43
Potential sun hours	235	265	365	425	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CV - Zali š i

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:12	07:08	06:46	05:30	04:33	04:27	05:12	06:14	07:14	07:19	08:21
	15:45	16:41	17:44	19:49	20:52	21:49	22:06	21:26	20:12	18:51	16:33	15:42
2	08:48	08:10	07:06	06:44	05:28	04:32	04:27	05:14	06:16	07:16	07:21	08:23
	15:46	16:44	17:46	19:51	20:54	21:51	22:06	21:24	20:09	18:49	16:31	15:41
3	08:47	08:08	07:03	06:41	05:25	04:31	04:28	05:16	06:18	07:18	07:23	08:24
	15:47	16:46	17:48	19:54	20:56	21:52	22:05	21:21	20:07	18:46	16:29	15:40
4	08:47	08:06	07:01	06:38	05:23	04:30	04:29	05:18	06:20	07:20	07:26	08:26
	15:48	16:48	17:50	19:56	20:58	21:53	22:05	21:19	20:04	18:43	16:27	15:39
5	08:47	08:04	06:58	06:36	05:21	04:29	04:30	05:20	06:22	07:22	07:28	08:27
	15:50	16:50	17:52	19:58	21:00	21:55	22:04	21:17	20:01	18:41	16:25	15:39
6	08:46	08:02	06:56	06:33	05:19	04:28	04:31	05:22	06:24	07:24	07:30	08:29
	15:51	16:53	17:55	20:00	21:02	21:56	22:03	21:15	19:59	18:38	16:23	15:38
7	08:45	08:00	06:53	06:30	05:16	04:27	04:32	05:24	06:26	07:26	07:32	08:30
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8	08:45	07:58	06:50	06:28	05:14	04:26	04:33	05:26	06:28	07:28	07:34	08:32
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9	08:44	07:56	06:48	06:25	05:12	04:25	04:35	05:28	06:30	07:30	07:36	08:33
	15:56	16:59	18:01	20:06	21:08	21:59	22:01	21:08	19:51	18:30	16:16	15:36
10	08:43	07:54	06:45	06:23	05:10	04:25	04:36	05:30	06:32	07:32	07:39	08:35
	15:57	17:02	18:03	20:08	21:10	22:00	22:00	21:06	19:48	18:28	16:14	15:36
11	08:42	07:52	06:43	06:20	05:08	04:24	04:37	05:32	06:34	07:34	07:41	08:36
	15:59	17:04	18:05	20:10	21:12	22:01	21:59	21:04	19:45	18:25	16:12	15:35
12	08:42	07:49	06:40	06:17	05:06	04:24	04:38	05:34	06:36	07:36	07:43	08:37
	16:01	17:06	18:07	20:12	21:14	22:02	21:58	21:02	19:43	18:22	16:10	15:35
13	08:41	07:47	06:37	06:15	05:04	04:23	04:40	05:36	06:38	07:38	07:45	08:38
	16:03	17:08	18:10	20:14	21:16	22:03	21:57	20:59	19:40	18:20	16:09	15:35
14	08:40	07:45	06:35	06:12	05:02	04:23	04:41	05:38	06:40	07:40	07:47	08:39
	16:04	17:11	18:12	20:16	21:18	22:04	21:55	20:57	19:37	18:17	16:07	15:35
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	16:06	17:13	18:14	20:19	21:20	22:04	21:54	20:55	19:34	18:15	16:05	15:35
16	08:37	07:40	06:29	06:07	04:58	04:22	04:44	05:42	06:44	07:45	07:51	08:41
	16:08	17:15	18:16	20:21	21:22	22:05	21:53	20:52	19:32	18:12	16:03	15:35
17	08:36	07:38	06:27	06:04	04:56	04:22	04:46	05:44	06:46	07:47	07:54	08:42
	16:10	17:17	18:18	20:23	21:24	22:06	21:51	20:50	19:29	18:10	16:01	15:35
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	16:12	17:19	18:20	20:25	21:26	22:06	21:50	20:47	19:26	18:07	16:00	15:35
19	08:34	07:33	06:21	05:59	04:52	04:22	04:49	05:48	06:50	07:51	07:58	08:44
	16:14	17:22	18:22	20:27	21:28	22:06	21:49	20:45	19:24	18:04	15:58	15:35
20	08:32	07:31	06:19	05:57	04:51	04:22	04:50	05:50	06:52	07:53	08:00	08:45
	16:16	17:24	18:24	20:29	21:30	22:07	21:47	20:42	19:21	18:02	15:56	15:35
21	08:31	07:28	06:16	05:54	04:49	04:22	04:52	05:52	06:54	07:55	08:02	08:45
	16:18	17:26	18:26	20:31	21:31	22:07	21:45	20:40	19:18	18:00	15:55	15:36
22	08:29	07:26	06:13	05:52	04:47	04:22	04:54	05:54	06:56	07:57	08:04	08:46
	16:20	17:28	18:29	20:33	21:33	22:07	21:44	20:37	19:16	17:57	15:53	15:36
23	08:28	07:23	06:11	05:49	04:46	04:22	04:56	05:56	06:58	08:00	08:06	08:47
	16:22	17:31	18:31	20:35	21:35	22:08	21:42	20:35	19:13	17:55	15:52	15:37
24	08:26	07:21	06:08	05:47	04:44	04:23	04:57	05:58	07:00	08:02	08:08	08:47
	16:24	17:33	18:33	20:37	21:37	22:08	21:41	20:32	19:10	17:52	15:50	15:37
25	08:25	07:19	06:05	05:44	04:42	04:23	04:59	06:00	07:02	08:04	08:10	08:47
	16:26	17:35	18:35	20:39	21:38	22:08	21:39	20:30	19:07	17:50	15:49	15:38
26	08:23	07:16	06:02	05:42	04:41	04:23	05:01	06:02	07:04	07:06	08:12	08:48
	16:28	17:37	18:37	20:42	21:40	22:08	21:37	20:27	19:05	16:47	15:48	15:38
27	08:21	07:14	06:00	05:40	04:39	04:24	05:03	06:04	07:06	07:08	08:14	08:48
	16:30	17:39	18:39	20:44	21:42	22:07	21:35	20:25	19:02	16:45	15:47	15:39
28	08:20	07:11	05:57	05:37	04:38	04:25	05:05	06:06	07:08	07:10	08:15	08:48
	16:33	17:42	18:41	20:46	21:43	22:07	21:33	20:22	18:59	16:43	15:45	15:40
29	08:18		05:54	05:35	04:37	04:25	05:06	06:08	07:10	07:12	08:17	08:48
	16:35		18:43	20:48	21:45	22:07	21:31	20:20	18:57	16:40	15:44	15:41
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	16:37		19:45	20:50	21:46	22:07	21:30	20:17	18:54	16:38	15:43	15:42
31	08:14		06:49		04:34		05:10	06:12		07:17		08:48
	16:39		19:47		21:48		21:28	20:14		16:36		15:43
Potential sun hours	235	265	365	425	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CW - Grugules

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:12 16:41	07:08 17:44	06:46 19:49	05:30 20:52	04:33 21:49	04:27 22:06	05:12 21:26	06:14 20:12	07:14 18:51	07:19 16:34	08:21 15:42
2	08:48 15:46	08:10 16:44	07:06 17:46	06:44 19:51	05:28 20:54	04:32 21:51	04:27 22:06	05:14 21:24	06:16 20:09	07:16 18:49	07:21 16:31	08:23 15:41
3	08:47 15:47	08:08 16:46	07:03 17:48	06:41 19:54	05:25 20:56	04:31 21:52	04:28 22:05	05:16 21:21	06:18 20:07	07:18 18:46	07:23 16:29	08:24 15:40
4	08:47 15:51	08:06 16:57	07:01 17:59	06:38 19:56	05:23 20:58	04:30 21:53	04:29 22:05	05:18 21:19	06:20 20:04	07:20 18:43	07:26 16:27	08:26 15:39
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25	08:25 16:26	07:19 17:35	06:05 18:35	05:44 20:39	04:42 21:38	04:23 22:08	04:59 21:39	06:00 20:30	07:02 19:07	08:04 17:50	08:10 15:49	08:47 15:38
26	08:23 16:28	07:16 17:37	06:03 18:37	05:42 20:42	04:41 21:40	04:24 22:08	05:01 21:37	06:02 20:27	07:04 19:05	07:06 16:47	08:12 15:48	08:48 15:39
27	08:21 16:30	07:14 17:39	06:00 18:39	05:40 20:44	04:39 21:42	04:24 22:07	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:45	08:14 15:47	08:48 15:39
28	08:20 16:33	07:11 17:42	05:57 18:41	05:37 20:46	04:38 21:43	04:25 22:07	05:05 21:33	06:06 20:22	07:08 18:59	07:10 16:43	08:15 15:45	08:48 15:40
29	08:18 16:35		05:54 18:43	05:35 20:48	04:37 21:45	04:25 22:07	05:06 21:31	06:08 20:20	07:10 18:57	07:13 16:40	08:17 15:44	08:48 15:41
30	08:16 16:37		06:52 19:45	05:32 20:50	04:35 21:46	04:26 22:07	05:08 21:30	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:43	08:48 15:42
31	08:14 16:39		06:49 19:47		04:34 21:48		05:10 21:28	06:12 20:14		07:17 16:36		08:48 15:43
Potential sun hours	235	265	365	425	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CX - Madaras

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:12 16:41	07:08 17:44	06:46 19:49	05:30 20:52	04:33 21:49	04:27 22:06	05:12 21:26	06:14 20:12	07:14 18:51	07:19 16:34	08:21 15:42
2	08:48 15:46	08:10 16:44	07:06 17:46	06:44 19:51	05:28 20:54	04:32 21:51	04:27 22:06	05:14 21:24	06:16 20:09	07:16 18:49	07:21 16:31	08:23 15:41
3	08:47 15:47	08:08 16:46	07:03 17:48	06:41 19:54	05:25 20:56	04:31 21:52	04:28 22:05	05:16 21:21	06:18 20:07	07:18 18:46	07:23 16:29	08:24 15:40
4	08:47 15:51	08:06 16:57	07:01 17:59	06:38 19:56	05:23 20:58	04:30 21:53	04:29 22:05	05:18 21:19	06:20 20:04	07:20 18:43	07:26 16:27	08:26 15:39
5	08:47 15:50	08:04 16:50	06:58 17:52	06:36 19:58	05:21 21:00	04:29 21:55	04:30 22:04	05:20 21:17	06:22 20:01	07:22 18:41	07:28 16:25	08:27 15:39
6	08:46 15:51	08:02 16:53	06:56 17:55	06:33 20:00	05:19 21:02	04:28 21:56	04:31 22:03	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
7	08:45 15:53	08:00 16:55	06:53 17:57	06:30 20:02	05:16 21:04	04:27 21:57	04:32 22:03	05:24 21:13	06:26 19:56	07:26 18:35	07:32 16:21	08:30 15:37
8	08:45 15:54	07:58 16:57	06:50 17:59	06:28 20:04	05:14 21:06	04:26 21:58	04:33 22:02	05:26 21:11	06:28 19:53	07:28 18:33	07:34 16:18	08:32 15:37
9	08:44 15:56	07:56 16:59	06:48 18:01	06:25 20:06	05:12 21:08	04:25 21:59	04:35 22:01	05:28 21:08	06:30 19:51	07:30 18:30	07:36 16:16	08:33 15:36
10	08:43 15:57	07:54 17:02	06:45 18:03	06:23 20:08	05:10 21:10	04:25 22:00	04:36 22:00	05:30 21:06	06:32 19:48	07:32 18:28	07:39 16:14	08:35 15:36
11	08:43 15:59	07:52 17:04	06:43 18:05	06:20 20:10	05:08 21:12	04:24 22:01	04:37 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:12	08:36 15:35
12	08:42 16:01	07:49 17:06	06:40 18:07	06:17 20:12	05:06 21:14	04:24 22:02	04:38 21:58	05:34 21:02	06:36 19:43	07:36 18:22	07:43 16:11	08:37 15:35
13	08:41 16:03	07:47 17:08	06:37 18:10	06:15 20:14	05:04 21:16	04:23 22:03	04:40 21:57	05:36 20:59	06:38 19:40	07:38 18:20	07:45 16:09	08:38 15:35
14	08:40 16:04	07:45 17:11	06:35 18:12	06:12 20:16	05:02 21:18	04:23 22:04	04:41 21:55	05:38 20:57	06:40 19:37	07:40 18:17	07:47 16:07	08:39 15:35
15	08:39 16:06	07:43 17:13	06:32 18:14	06:10 20:19	05:00 21:20	04:23 22:04	04:43 21:54	05:40 20:55	06:42 19:34	07:43 18:15	07:49 16:05	08:41 15:35
16	08:37 16:08	07:40 17:15	06:29 18:16	06:07 20:21	04:58 21:22	04:22 22:05	04:44 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:51 16:03	08:41 15:35
17	08:36 16:10	07:38 17:17	06:27 18:18	06:04 20:23	04:56 21:24	04:22 22:06	04:46 21:51	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:01	08:42 15:35
18	08:35 16:12	07:36 17:19	06:24 18:20	06:02 20:25	04:54 21:26	04:22 22:06	04:47 21:50	05:46 20:47	06:48 19:26	07:49 18:07	07:56 16:00	08:43 15:35
19	08:34 16:14	07:33 17:22	06:21 18:22	05:59 20:27	04:52 21:28	04:22 22:06	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:04	07:58 15:58	08:44 15:35
20	08:32 16:16	07:31 17:24	06:19 18:24	05:57 20:29	04:51 21:30	04:22 22:07	04:50 21:47	05:50 20:42	06:52 19:21	07:53 18:02	08:00 15:56	08:45 15:35
21	08:31 16:18	07:28 17:26	06:16 18:26	05:54 20:31	04:49 21:31	04:22 22:07	04:52 21:45	05:52 20:40	06:54 19:18	07:55 18:00	08:02 15:55	08:45 15:36
22	08:29 16:20	07:26 17:28	06:13 18:29	05:52 20:33	04:47 21:33	04:22 22:07	04:54 21:44	05:54 20:37	06:56 19:16	07:57 17:57	08:04 15:53	08:46 15:36
23	08:28 16:22	07:23 17:31	06:11 18:31	05:49 20:35	04:46 21:35	04:22 22:08	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:47 15:37
24	08:26 16:24	07:21 17:33	06:08 18:33	05:47 20:37	04:44 21:37	04:23 22:08	04:57 21:41	05:58 20:32	07:00 19:10	08:02 17:52	08:08 15:50	08:47 15:37
25	08:25 16:26	07:19 17:35	06:05 18:35	05:44 20:39	04:42 21:38	04:23 22:08	04:59 21:39	06:00 20:30	07:02 19:07	08:04 17:50	08:10 15:49	08:47 15:38
26	08:23 16:28	07:16 17:37	06:03 18:37	05:42 20:42	04:41 21:40	04:23 22:08	05:01 21:37	06:02 20:27	07:04 19:05	07:06 16:47	08:12 15:48	08:48 15:38
27	08:21 16:30	07:14 17:39	06:00 18:39	05:40 20:44	04:39 21:42	04:24 22:07	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:45	08:14 15:47	08:48 15:39
28	08:20 16:33	07:11 17:42	05:57 18:41	05:37 20:46	04:38 21:43	04:25 22:07	05:05 21:33	06:06 20:22	07:08 18:59	07:10 16:43	08:15 15:45	08:48 15:40
29	08:18 16:35		05:54 18:43	05:35 20:48	04:37 21:45	04:25 22:07	05:06 21:31	06:08 20:20	07:10 18:57	07:13 16:40	08:17 15:44	08:48 15:41
30	08:16 16:37		06:52 19:45	05:32 20:50	04:35 21:46	04:26 22:07	05:08 21:30	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:43	08:48 15:42
31	08:14 16:39		06:49 19:47		04:34 21:48		05:10 21:28	06:12 20:14		07:17 16:36		08:48 15:43
Potential sun hours	235	265	365	425	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CY - Vu š karnieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January	February	March		April		May		June
1	08:48 15:45	08:12 16:42	07:09 17:44	5	17:12 (12) 17:17 (12)	06:47 19:49	05:30 20:52	19:44 (11) 20:13 (11)	04:33 21:49
2	08:48 15:46	08:10 16:44	07:06 17:46	10	17:10 (12) 17:20 (12)	06:44 19:52	05:28 20:54	19:44 (11) 20:24 (10)	04:32 21:51
3	08:47 15:47	08:08 16:46	07:03 17:48	14	17:08 (12) 17:22 (12)	06:41 19:54	05:26 20:56	19:44 (11) 20:26 (10)	04:31 21:52
4	08:47 15:48	08:06 16:48	07:01 17:50	18	17:06 (12) 17:24 (12)	06:39 19:56	05:23 20:58	19:44 (11) 20:28 (10)	04:30 21:53
5	08:47 15:50	08:04 16:50	06:58 17:53	21	17:06 (12) 17:27 (12)	06:36 19:58	05:21 21:00	19:45 (11) 20:30 (10)	04:29 21:55
6	08:46 15:51	08:02 16:53	06:56 17:55	23	17:05 (12) 17:28 (12)	06:33 20:00	05:19 21:02	19:45 (11) 20:32 (10)	04:28 21:56
7	08:45 15:53	08:00 16:55	06:53 17:57	24	17:04 (12) 17:28 (12)	06:31 20:02	05:17 21:04	19:46 (11) 20:34 (10)	04:27 21:57
8	08:45 15:54	07:58 16:57	06:50 17:59	23	17:05 (12) 17:28 (12)	06:28 20:04	05:14 21:06	19:46 (11) 20:36 (10)	04:26 21:58
9	08:44 15:56	07:56 16:59	06:48 18:01	23	17:04 (12) 17:27 (12)	06:25 20:06	05:12 21:08	19:47 (11) 20:37 (10)	04:26 21:59
10	08:43 15:58	07:54 17:02	06:45 18:03	22	17:04 (12) 17:26 (12)	06:23 20:08	05:10 21:10	19:48 (11) 20:37 (10)	04:25 22:00
11	08:43 15:59	07:52 17:04	06:43 18:05	21	17:05 (12) 17:26 (12)	06:20 20:10	05:08 21:12	19:49 (11) 20:37 (10)	04:24 22:01
12	08:42 16:01	07:49 17:06	06:40 18:08	19	17:06 (12) 17:25 (12)	06:17 20:12	05:06 21:14	19:50 (11) 20:37 (10)	04:24 22:02
13	08:41 16:03	07:47 17:08	06:37 18:10	16	17:07 (12) 17:23 (12)	06:15 20:14	05:04 21:16	19:52 (11) 20:36 (10)	04:23 22:03
14	08:40 16:04	07:45 17:11	06:35 18:12	12	17:08 (12) 17:20 (12)	06:12 20:17	05:02 21:18	19:55 (11) 20:37 (10)	04:23 22:04
15	08:39 16:06	07:43 17:13	06:32 18:14			06:10 20:19	05:00 21:20	20:16 (10) 20:36 (10)	04:23 22:04
16	08:37 16:08	07:40 17:15	06:29 18:16			06:07 20:21	04:58 21:22	20:16 (10) 20:35 (10)	04:22 22:05
17	08:36 16:10	07:38 17:17	06:27 18:18			06:05 20:23	04:56 21:24	20:16 (10) 20:34 (10)	04:22 22:06
18	08:35 16:12	07:36 17:20	06:24 18:20			06:02 20:25	04:54 21:26	20:18 (10) 20:34 (10)	04:22 22:06
19	08:34 16:14	07:33 17:22	06:21 18:22			05:59 20:27	04:53 21:28	20:18 (10) 20:33 (10)	04:22 22:06
20	08:32 16:16	07:31 17:24	06:19 18:24			05:57 20:29	04:51 21:30	20:20 (10) 20:32 (10)	04:22 22:07
21	08:31 16:18	07:28 17:26	06:16 18:27			05:54 20:31	19:58 (11) 20:03 (11)	20:22 (10) 20:30 (10)	04:22 22:07
22	08:29 16:20	07:26 17:28	06:13 18:29			05:52 20:33	19:54 (11) 20:05 (11)	20:26 (10) 20:27 (10)	04:22 22:07
23	08:28 16:22	07:24 17:31	06:11 18:31			05:49 20:35	19:51 (11) 20:07 (11)	20:27 (10) 21:35	04:23 22:08
24	08:26 16:24	07:21 17:33	06:08 18:33			05:47 20:37	19:50 (11) 20:09 (11)	20:26 (10) 21:37	04:23 22:08
25	08:25 16:26	07:19 17:35	06:05 18:35			05:44 20:39	19:49 (11) 20:11 (11)	20:26 (10) 21:38	04:23 22:08
26	08:23 16:28	07:16 17:37	06:03 18:37			05:42 20:42	19:47 (11) 20:12 (11)	20:26 (10) 21:40	04:24 22:08
27	08:21 16:31	07:14 17:40	06:00 18:39			05:40 20:44	19:46 (11) 20:12 (11)	20:26 (10) 21:42	04:24 22:07
28	08:20 16:33	07:11 17:42	05:57 18:41			05:37 20:46	19:46 (11) 20:13 (11)	20:26 (10) 21:43	04:25 22:07
29	08:18 16:35		05:55 18:43			05:35 20:48	19:45 (11) 20:13 (11)	20:26 (10) 21:45	04:25 22:07
30	08:16 16:37		06:52 19:45			05:32 20:50	19:44 (11) 20:13 (11)	20:26 (10) 21:46	04:26 22:07
31	08:14 16:39		06:49 19:47				20:13 (11) 21:48	20:26 (10) 21:46	04:26 22:07
Potential sun hours	235	265	365		425		507		529
Total, worst case			251		208		643		
Sun reduction			0,39		0,48		0,53		
Oper. time red.			0,94		0,94		0,94		
Wind dir. red.			0,66		0,62		0,62		
Total reduction			0,24		0,28		0,31		
Total, real			61		58		199		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CY - Vu š karnieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July	August	September	October	November	December
1	04:27 22:06	05:12 21:26 38	20:00 (11) 20:47 (10)	06:14 20:12	07:14 18:51 16	17:47 (12) 16:34 15:42
2	04:28 22:06	05:14 21:24 41	19:59 (11) 20:47 (10)	06:16 20:09	17:45 (12) 18:49 19	16:31 16:31 15:41
3	04:28 22:05	05:16 21:21 44	19:58 (11) 20:48 (10)	06:18 20:07	17:43 (12) 18:46 21	16:29 16:29 15:40
4	04:29 22:05	05:18 21:19 46	19:57 (11) 20:48 (10)	06:20 20:04	17:42 (12) 18:43 22	16:26 16:27 15:40
5	04:30 22:04	05:20 21:17 44	19:56 (11) 20:45 (10)	06:22 20:01	17:41 (12) 18:41 23	16:25 16:25 15:39
6	04:31 22:03	05:22 21:15 45	19:55 (11) 20:44 (10)	06:24 19:59	17:41 (12) 18:38 23	16:25 16:23 15:38
7	04:32 22:03	05:24 21:13 42	19:55 (11) 20:42 (10)	06:26 19:56	17:40 (12) 18:35 24	16:23 16:21 15:37
8	04:34 22:02	05:26 21:11 41	19:54 (11) 20:40 (10)	06:28 19:53	17:40 (12) 18:33 23	16:21 16:19 15:37
9	04:35 22:01	05:28 21:08 39	19:54 (11) 20:38 (10)	06:30 19:51	17:40 (12) 18:30 21	16:21 16:17 15:36
10	04:36 22:00	05:30 21:06 35	19:53 (11) 20:35 (10)	06:32 19:48	17:42 (12) 18:28 17	16:17 16:15 15:36
11	04:37 21:59	05:32 21:04 33	19:53 (11) 20:33 (10)	06:34 19:45	17:42 (12) 18:25 14	16:15 16:13 15:35
12	04:39 21:58	05:34 21:02 29	19:53 (11) 20:22 (11)	06:36 19:43	17:43 (12) 18:22 10	16:13 16:11 15:35
13	04:40 21:57	05:36 20:59 28	19:53 (11) 20:21 (11)	06:38 19:40	17:45 (12) 18:20 6	16:11 16:09 15:35
14	04:41 21:55	05:38 20:57 28	19:53 (11) 20:21 (11)	06:40 19:37	17:51 (12) 18:17	16:09 16:07 15:35
15	04:43 21:54	05:40 20:55 28	19:53 (11) 20:21 (11)	06:42 19:35	17:43 18:15	16:07 16:05 15:35
16	04:44 21:53	05:42 20:52 26	19:54 (11) 20:20 (11)	06:44 19:32	17:45 18:12	16:05 16:03 15:35
17	04:46 21:51	05:44 20:50 26	19:53 (11) 20:19 (11)	06:46 19:29	17:47 18:10	16:03 16:02 15:35
18	04:47 21:50	05:46 20:47 24	19:54 (11) 20:18 (11)	06:48 19:26	17:49 18:07	16:01 16:00 15:35
19	04:49 21:49	05:48 20:45 20	19:55 (11) 20:15 (11)	06:50 19:24	17:51 18:05	16:00 15:58 15:35
20	04:51 21:47	05:50 20:42 17	19:56 (11) 20:13 (11)	06:52 19:21	17:53 18:02	15:58 15:57 15:35
21	04:52 21:46	05:52 20:40 13	19:58 (11) 20:11 (11)	06:54 19:18	17:55 18:00	15:57 15:55 15:36
22	04:54 21:44	05:54 20:37 8	20:01 (11) 20:09 (11)	06:56 19:16	17:57 17:57	15:54 15:54 15:36
23	04:56 21:42 8	20:32 (10) 20:40 (10)	05:56 20:35	06:58 19:13	18:00 17:55	15:52 15:52 15:37
24	04:57 21:41 11	20:31 (10) 20:42 (10)	05:58 20:32	07:00 19:10	18:02 17:52	15:52 15:51 15:37
25	04:59 21:39 14	20:30 (10) 20:44 (10)	06:00 20:30	07:02 19:08	18:04 17:50	15:51 15:49 15:38
26	05:01 21:37 16	20:28 (10) 20:44 (10)	06:02 20:27	07:04 19:05	18:06 16:47	15:50 15:48 15:39
27	05:03 21:35 17	20:28 (10) 20:45 (10)	06:04 20:25	07:06 19:02	18:08 16:45	15:48 15:47 15:39
28	05:05 21:33 19	20:26 (10) 20:45 (10)	06:06 20:22	07:08 18:59	18:10 16:43	15:47 15:45 15:40
29	05:06 21:31 20	20:26 (10) 20:46 (10)	06:08 20:20	07:10 18:57 3	18:13 17:54 (12) 17:57 (12)	15:45 15:44 15:41
30	05:08 21:30 26	20:06 (11) 20:47 (10)	06:10 20:17	07:12 18:54 12	17:49 (12) 18:01 (12)	15:44 15:43 15:42
31	05:10 21:28 34	20:03 (11) 20:48 (10)	06:12 20:14		17:17 16:36	15:43 15:43 15:43
Potential sun hours	530	470	385	324	248	216
Total, worst case	165	695	15	239		
Sun reduction	0,51	0,51	0,43	0,27		
Oper. time red.	0,94	0,94	0,94	0,94		
Wind dir. red.	0,62	0,62	0,66	0,66		
Total reduction	0,30	0,30	0,27	0,17		
Total, real	49	208	4	40		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: CZ - Vecares

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:12 16:41	07:08 17:44	06:46 19:49	05:30 20:52	04:33 21:49	04:27 22:06	05:12 21:26	06:14 20:12	07:14 18:51	07:19 16:34	08:21 15:42
2	08:48 15:46	08:10 16:44	07:06 17:46	06:44 19:51	05:28 20:54	04:32 21:51	04:27 22:06	05:14 21:24	06:16 20:09	07:16 18:49	07:21 16:31	08:23 15:41
3	08:47 15:47	08:08 16:46	07:03 17:48	06:41 19:54	05:25 20:56	04:31 21:52	04:28 22:05	05:16 21:21	06:18 20:07	07:18 18:46	07:23 16:29	08:24 15:40
4	08:47 15:51	08:06 16:57	07:01 17:59	06:38 19:56	05:23 20:58	04:30 21:53	04:29 22:05	05:18 21:19	06:20 20:04	07:20 18:43	07:26 16:27	08:26 15:39
5	08:47 15:50	08:04 16:50	06:58 17:52	06:36 19:58	05:21 21:00	04:29 21:55	04:30 22:04	05:20 21:17	06:22 20:01	07:22 18:41	07:28 16:25	08:27 15:39
6	08:46 15:51	08:02 16:53	06:56 17:55	06:33 20:00	05:19 21:02	04:28 21:56	04:31 22:03	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
7	08:45 15:53	08:00 16:55	06:53 17:57	06:30 20:02	05:16 21:04	04:27 21:57	04:32 22:03	05:24 21:13	06:26 19:56	07:26 18:35	07:32 16:21	08:30 15:37
8	08:45 15:54	07:58 16:57	06:50 17:59	06:28 20:04	05:14 21:06	04:26 21:58	04:33 22:02	05:26 21:11	06:28 19:53	07:28 18:33	07:34 16:18	08:32 15:37
9	08:44 15:56	07:56 16:59	06:48 18:01	06:25 20:06	05:12 21:08	04:25 21:59	04:35 22:01	05:28 21:08	06:30 19:51	07:30 18:30	07:36 16:16	08:33 15:36
10	08:43 15:57	07:54 17:02	06:45 18:03	06:23 20:08	05:10 21:10	04:25 22:00	04:36 22:00	05:30 21:06	06:32 19:48	07:32 18:28	07:39 16:14	08:35 15:36
11	08:43 15:59	07:52 17:04	06:43 18:05	06:20 20:10	05:08 21:12	04:24 22:01	04:37 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:12	08:36 15:35
12	08:42 16:01	07:49 17:06	06:40 18:07	06:17 20:12	05:06 21:14	04:24 22:02	04:38 21:58	05:34 21:02	06:36 19:43	07:36 18:22	07:43 16:11	08:37 15:35
13	08:41 16:03	07:47 17:08	06:37 18:10	06:15 20:14	05:04 21:16	04:23 22:03	04:40 21:57	05:36 20:59	06:38 19:40	07:38 18:20	07:45 16:09	08:38 15:35
14	08:40 16:04	07:45 17:11	06:35 18:12	06:12 20:16	05:02 21:18	04:23 22:04	04:41 21:55	05:38 20:57	06:40 19:37	07:40 18:17	07:47 16:07	08:39 15:35
15	08:39 16:06	07:43 17:13	06:32 18:14	06:10 20:19	05:00 21:20	04:23 22:04	04:43 21:54	05:40 20:55	06:42 19:34	07:43 18:15	07:49 16:05	08:41 15:35
16	08:37 16:08	07:40 17:15	06:29 18:16	06:07 20:21	04:58 21:22	04:22 22:05	04:44 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:51 16:03	08:41 15:35
17	08:36 16:10	07:38 17:17	06:27 18:18	06:04 20:23	04:56 21:24	04:22 22:06	04:46 21:51	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:01	08:42 15:35
18	08:35 16:12	07:36 17:19	06:24 18:20	06:02 20:25	04:54 21:26	04:22 22:06	04:47 21:50	05:46 20:47	06:48 19:26	07:49 18:07	07:56 16:00	08:43 15:35
19	08:34 16:14	07:33 17:22	06:21 18:22	05:59 20:27	04:52 21:28	04:22 22:06	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:04	07:58 15:58	08:44 15:35
20	08:32 16:16	07:31 17:24	06:19 18:24	05:57 20:29	04:51 21:30	04:22 22:07	04:50 21:47	05:50 20:42	06:52 19:21	07:53 18:02	08:00 15:56	08:45 15:35
21	08:31 16:18	07:28 17:26	06:16 18:26	05:54 20:31	04:49 21:31	04:22 22:07	04:52 21:45	05:52 20:40	06:54 19:18	07:55 18:00	08:02 15:55	08:45 15:36
22	08:29 16:20	07:26 17:28	06:13 18:29	05:52 20:33	04:47 21:33	04:22 22:07	04:54 21:44	05:54 20:37	06:56 19:16	07:57 17:57	08:04 15:53	08:46 15:36
23	08:28 16:22	07:23 17:31	06:11 18:31	05:49 20:35	04:46 21:35	04:22 22:08	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:47 15:37
24	08:26 16:24	07:21 17:33	06:08 18:33	05:47 20:37	04:44 21:37	04:23 22:08	04:57 21:41	05:58 20:32	07:00 19:10	08:02 17:52	08:08 15:51	08:47 15:37
25	08:25 16:26	07:19 17:35	06:05 18:35	05:44 20:39	04:42 21:38	04:23 22:08	04:59 21:39	06:00 20:30	07:02 19:07	08:04 17:50	08:10 15:49	08:47 15:38
26	08:23 16:28	07:16 17:37	06:03 18:37	05:42 20:42	04:41 21:40	04:23 22:08	05:01 21:37	06:02 20:27	07:04 19:05	07:06 16:47	08:12 15:48	08:48 15:39
27	08:21 16:30	07:14 17:39	06:00 18:39	05:40 20:44	04:39 21:42	04:24 22:07	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:45	08:14 15:47	08:48 15:39
28	08:20 16:33	07:11 17:42	05:57 18:41	05:37 20:46	04:38 21:43	04:25 22:07	05:05 21:33	06:06 20:22	07:08 18:59	07:10 16:43	08:15 15:45	08:48 15:40
29	08:18 16:35		05:54 18:43	05:35 20:48	04:37 21:45	04:25 22:07	05:06 21:31	06:08 20:20	07:10 18:57	07:12 16:40	08:17 15:44	08:48 15:41
30	08:16 16:37		06:52 19:45	05:32 20:50	04:35 21:46	04:26 22:07	05:08 21:30	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:43	08:48 15:42
31	08:14 16:39		06:49 19:47		04:34 21:48		05:10 21:28	06:12 20:14		07:17 16:36		08:48 15:43
Potential sun hours	235	265	365	425	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: DA - Strautmali

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:12	07:09	06:46	05:30	04:33	04:27	05:12	06:14	07:14	07:19	08:21
	15:45	16:41	17:44	19:49	20:52	21:49	22:06	21:26	20:12	18:51	16:34	15:42
2	08:48	08:10	07:06	06:44	05:28	04:32	04:27	05:14	06:16	07:16	07:21	08:23
	15:46	16:44	17:46	19:51	20:54	21:51	22:06	21:24	20:09	18:49	16:31	15:41
3	08:47	08:08	07:03	06:41	05:25	04:31	04:28	05:16	06:18	07:18	07:23	08:24
	15:47	16:46	17:48	19:54	20:56	21:52	22:05	21:21	20:07	18:46	16:29	15:40
4	08:47	08:06	07:01	06:38	05:23	04:30	04:29	05:18	06:20	07:20	07:26	08:26
	15:48	16:48	17:50	19:56	20:58	21:53	22:05	21:19	20:04	18:43	16:27	15:39
5	08:47	08:04	06:58	06:36	05:21	04:29	04:30	05:20	06:22	07:22	07:28	08:27
	15:50	16:50	17:53	19:58	21:00	21:55	22:04	21:17	20:01	18:41	16:25	15:39
6	08:46	08:02	06:56	06:33	05:19	04:28	04:31	05:22	06:24	07:24	07:30	08:29
	15:51	16:53	17:55	20:00	21:02	21:56	22:03	21:15	19:59	18:38	16:23	15:38
7	08:45	08:00	06:53	06:31	05:17	04:27	04:32	05:24	06:26	07:26	07:32	08:30
	15:53	16:55	17:57	20:02	21:04	21:57	22:03	21:13	19:56	18:35	16:21	15:37
8	08:45	07:58	06:50	06:28	05:14	04:26	04:33	05:26	06:28	07:28	07:34	08:32
	15:54	16:57	17:59	20:04	21:06	21:58	22:02	21:11	19:53	18:33	16:18	15:37
9	08:44	07:56	06:48	06:25	05:12	04:26	04:35	05:28	06:30	07:30	07:36	08:33
	15:56	16:59	18:01	20:06	21:08	21:59	22:01	21:08	19:51	18:30	16:16	15:36
10	08:43	07:54	06:45	06:23	05:10	04:25	04:36	05:30	06:32	07:32	07:39	08:35
	15:57	17:02	18:03	20:08	21:10	22:00	22:00	21:06	19:48	18:28	16:14	15:36
11	08:43	07:52	06:43	06:20	05:08	04:24	04:37	05:32	06:34	07:34	07:41	08:36
	15:59	17:04	18:05	20:10	21:12	22:01	21:59	21:04	19:45	18:25	16:12	15:35
12	08:42	07:49	06:40	06:17	05:06	04:24	04:38	05:34	06:36	07:36	07:43	08:37
	16:01	17:06	18:07	20:12	21:14	22:02	21:58	21:02	19:43	18:22	16:11	15:35
13	08:41	07:47	06:37	06:15	05:04	04:23	04:40	05:36	06:38	07:38	07:45	08:38
	16:03	17:08	18:10	20:14	21:16	22:03	21:57	20:59	19:40	18:20	16:09	15:35
14	08:40	07:45	06:35	06:12	05:02	04:23	04:41	05:38	06:40	07:40	07:47	08:39
	16:04	17:11	18:12	20:16	21:18	22:04	21:55	20:57	19:37	18:17	16:07	15:35
15	08:39	07:43	06:32	06:10	05:00	04:23	04:43	05:40	06:42	07:43	07:49	08:41
	16:06	17:13	18:14	20:19	21:20	22:04	21:54	20:55	19:34	18:15	16:05	15:35
16	08:37	07:40	06:29	06:07	04:58	04:22	04:44	05:42	06:44	07:45	07:51	08:42
	16:08	17:15	18:16	20:21	21:22	22:05	21:53	20:52	19:32	18:12	16:03	15:35
17	08:36	07:38	06:27	06:04	04:56	04:22	04:46	05:44	06:46	07:47	07:54	08:42
	16:10	17:17	18:18	20:23	21:24	22:06	21:51	20:50	19:29	18:10	16:01	15:35
18	08:35	07:36	06:24	06:02	04:54	04:22	04:47	05:46	06:48	07:49	07:56	08:43
	16:12	17:20	18:20	20:25	21:26	22:06	21:50	20:47	19:26	18:07	16:00	15:35
19	08:34	07:33	06:21	05:59	04:52	04:22	04:49	05:48	06:50	07:51	07:58	08:44
	16:14	17:22	18:22	20:27	21:28	22:06	21:49	20:45	19:24	18:05	15:58	15:35
20	08:32	07:31	06:19	05:57	04:51	04:22	04:51	05:50	06:52	07:53	08:00	08:45
	16:16	17:24	18:24	20:29	21:30	22:07	21:47	20:42	19:21	18:02	15:56	15:35
21	08:31	07:28	06:16	05:54	04:49	04:22	04:52	05:52	06:54	07:55	08:02	08:45
	16:18	17:26	18:26	20:31	21:31	22:07	21:45	20:40	19:18	18:00	15:55	15:36
22	08:29	07:26	06:13	05:52	04:47	04:22	04:54	05:54	06:56	07:57	08:04	08:46
	16:20	17:28	18:29	20:33	21:33	22:07	21:44	20:37	19:16	17:57	15:53	15:36
23	08:28	07:24	06:11	05:49	04:46	04:22	04:56	05:56	06:58	08:00	08:06	08:47
	16:22	17:31	18:31	20:35	21:35	22:08	21:42	20:35	19:13	17:55	15:52	15:37
24	08:26	07:21	06:08	05:47	04:44	04:23	04:57	05:58	07:00	08:02	08:08	08:47
	16:24	17:33	18:33	20:37	21:37	22:08	21:41	20:32	19:10	17:52	15:51	15:37
25	08:25	07:19	06:05	05:44	04:42	04:23	04:59	06:00	07:02	08:04	08:10	08:47
	16:26	17:35	18:35	20:39	21:38	22:08	21:39	20:30	19:07	17:50	15:49	15:38
26	08:23	07:16	06:03	05:42	04:41	04:24	05:01	06:02	07:04	07:06	08:12	08:48
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	16:33	17:42	18:41	20:46	21:43	22:07	21:33	20:22	18:59	16:43	15:45	15:40
29	08:18		05:54	05:35	04:37	04:25	05:06	06:08	07:10	07:13	08:17	08:48
	16:35		18:43	20:48	21:45	22:07	21:31	20:20	18:57	16:40	15:44	15:41
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	16:37		19:45	20:50	21:46	22:07	21:30	20:17	18:54	16:38	15:43	15:42
31	08:14		06:49		04:34		05:10	06:12		07:17		08:48
	16:39		19:47		21:48		21:28	20:14		16:36		15:43
Potential sun hours	235	265	365	425	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: DB - Jaunari

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:12 16:41	07:08 17:44	06:46 19:49	05:30 20:52	04:33 21:49	04:27 22:06	05:12 21:26	06:14 20:12	07:14 18:51	07:19 16:34	08:21 15:42
2	08:48 15:46	08:10 16:44	07:06 17:46	06:44 19:51	05:28 20:54	04:32 21:51	04:27 22:06	05:14 21:24	06:16 20:09	07:16 18:49	07:21 16:31	08:23 15:41
3	08:47 15:47	08:08 16:46	07:03 17:48	06:41 19:54	05:25 20:56	04:31 21:52	04:28 22:05	05:16 21:21	06:18 20:07	07:18 18:46	07:23 16:29	08:24 15:40
4	08:47 15:51	08:06 16:57	07:01 17:59	06:38 19:56	05:23 20:58	04:30 21:53	04:29 22:05	05:18 21:19	06:20 20:04	07:20 18:43	07:26 16:27	08:26 15:39
5	08:47 15:50	08:04 16:50	06:58 17:52	06:36 19:58	05:21 21:00	04:29 21:55	04:30 22:04	05:20 21:17	06:22 20:01	07:22 18:41	07:28 16:25	08:27 15:39
6	08:46 15:51	08:02 16:53	06:56 17:55	06:33 20:00	05:19 21:02	04:28 21:56	04:31 22:03	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
7	08:45 15:53	08:00 16:55	06:53 17:57	06:30 20:02	05:16 21:04	04:27 21:57	04:32 22:03	05:24 21:13	06:26 19:56	07:26 18:35	07:32 16:21	08:30 15:37
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9	08:44 15:56	07:56 16:59	06:48 18:01	06:25 20:06	05:12 21:08	04:26 21:59	04:35 22:01	05:28 21:08	06:30 19:51	07:30 18:30	07:36 16:16	08:33 15:36
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11	08:43 15:59	07:52 17:04	06:43 18:05	06:20 20:10	05:08 21:12	04:24 22:01	04:37 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:12	08:36 15:35
12	08:42 16:01	07:49 17:06	06:40 18:07	06:17 20:12	05:06 21:14	04:24 22:02	04:38 21:58	05:34 21:02	06:36 19:43	07:36 18:22	07:43 16:11	08:37 15:35
13	08:41 16:03	07:47 17:08	06:37 18:10	06:15 20:14	05:04 21:16	04:23 22:03	04:40 21:57	05:36 20:59	06:38 19:40	07:38 18:20	07:45 16:09	08:38 15:35
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17	08:36 16:10	07:38 17:17	06:27 18:18	06:04 20:23	04:56 21:24	04:22 22:06	04:46 21:51	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:01	08:42 15:35
18	08:35 16:12	07:36 17:19	06:24 18:20	06:02 20:25	04:54 21:26	04:22 22:06	04:47 21:50	05:46 20:47	06:48 19:26	07:49 18:07	07:56 16:00	08:43 15:35
19	08:34 16:14	07:33 17:22	06:21 18:22	05:59 20:27	04:52 21:28	04:22 22:06	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:04	07:58 15:58	08:44 15:35
20	08:32 16:16	07:31 17:24	06:19 18:24	05:57 20:29	04:51 21:30	04:22 22:07	04:50 21:47	05:50 20:42	06:52 19:21	07:53 18:02	08:00 15:56	08:45 15:35
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31	08:14 16:39		06:49 19:47		04:34 21:48		05:10 21:28	06:12 20:14		07:17 16:36		08:48 15:43
Potential sun hours	235	265	365	425	507	529	530	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: DC - Vidsala

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:12	07:08	06:46	05:30	04:33	04:27	05:12	06:14	07:14	07:19	08:21
	15:45	16:41	17:44	19:49	20:52	21:49	22:06	21:25	20:12	18:51	16:34	15:42
2	08:48	08:10	07:06	06:44	05:28	04:32	04:28	05:14	06:16	07:16	07:21	08:22
	15:46	16:44	17:46	19:51	20:54	21:51	22:06	21:23	20:09	18:49	16:31	15:41
3	08:47	08:08	07:03	06:41	05:25	04:31	04:28	05:16	06:18	07:18	07:23	08:24
	15:47	16:46	17:48	19:54	20:56	21:52	22:05	21:21	20:06	18:46	16:29	15:40
4	08:47	08:06	07:01	06:38	05:23	04:30	04:29	05:18	06:20	07:20	07:25	08:26
	15:48	16:48	17:50	19:56	20:58	21:53	22:05	21:19	20:04	18:43	16:27	15:39
5	08:46	08:04	06:58	06:36	05:21	04:29	04:30	05:20	06:22	07:22	07:28	08:27
	15:50	16:50	17:52	19:58	21:00	21:55	22:04	21:17	20:01	18:41	16:25	15:39
6	08:46	08:02	06:56	06:33	05:19	04:28	04:31	05:22	06:24	07:24	07:30	08:29
	15:51	16:53	17:55	20:00	21:02	21:56	22:03	21:15	19:59	18:38	16:23	15:38
7	08:45	08:00	06:53	06:30	05:17	04:27	04:32	05:24	06:26	07:26	07:32	08:30
	15:53	16:55	17:57	20:02	21:04	21:57	22:02	21:13	19:56	18:35	16:21	15:37
8	08:45	07:58	06:50	06:28	05:14	04:26	04:34	05:26	06:28	07:28	07:34	08:32
	15:54	16:57	17:59	20:04	21:06	21:58	22:02	21:11	19:53	18:33	16:19	15:37
9	08:44	07:56	06:48	06:25	05:12	04:26	04:35	05:28	06:30	07:30	07:36	08:33
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	15:59	17:04	18:05	20:10	21:12	22:01	21:59	21:04	19:45	18:25	16:13	15:35
12	08:41	07:49	06:40	06:17	05:06	04:24	04:39	05:34	06:36	07:36	07:43	08:37
	16:01	17:06	18:07	20:12	21:14	22:02	21:58	21:02	19:42	18:22	16:11	15:35
13	08:41	07:47	06:37	06:15	05:04	04:23	04:40	05:36	06:38	07:38	07:45	08:38
	16:03	17:08	18:10	20:14	21:16	22:03	21:56	20:59	19:40	18:20	16:09	15:35
14	08:39	07:45	06:35	06:12	05:02	04:23	04:41	05:38	06:40	07:40	07:47	08:39
	16:04	17:11	18:12	20:16	21:18	22:03	21:55	20:57	19:37	18:17	16:07	15:35
15	08:38	07:43	06:32	06:10	05:00	04:23	04:43	05:40	06:42	07:43	07:49	08:40
	16:06	17:13	18:14	20:18	21:20	22:04	21:54	20:54	19:34	18:15	16:05	15:35
16	08:37	07:40	06:29	06:07	04:58	04:22	04:44	05:42	06:44	07:45	07:51	08:41
	16:08	17:15	18:16	20:21	21:22	22:05	21:53	20:52	19:32	18:12	16:03	15:35
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18	08:35	07:36	06:24	06:02	04:54	04:22	04:47	05:46	06:48	07:49	07:56	08:43
	16:12	17:20	18:20	20:25	21:26	22:06	21:50	20:47	19:26	18:07	16:00	15:35
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	16:14	17:22	18:22	20:27	21:28	22:06	21:48	20:45	19:24	18:05	15:58	15:35
20	08:32	07:31	06:19	05:57	04:51	04:22	04:51	05:50	06:52	07:53	08:00	08:45
	16:16	17:24	18:24	20:29	21:29	22:07	21:47	20:42	19:21	18:02	15:57	15:35
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	16:18	17:26	18:26	20:31	21:31	22:07	21:45	20:40	19:18	18:00	15:55	15:36
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	16:22	17:31	18:31	20:35	21:35	22:07	21:42	20:35	19:13	17:55	15:52	15:37
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	16:24	17:33	18:33	20:37	21:37	22:07	21:40	20:32	19:10	17:52	15:51	15:37
25	08:25	07:19	06:05	05:44	04:43	04:23	04:59	06:00	07:02	08:04	08:10	08:47
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	16:37		19:45	20:50	21:46	22:07	21:29	20:17	18:54	16:38	15:43	15:42
31	08:14		06:49		04:34		05:10	06:12		07:17		08:48
	16:39		19:47		21:48		21:27	20:14		16:36		15:43
Potential sun hours	235	265	365	425	507	529	529	470	385	324	248	216
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: DD - Jaunie Robe ž nieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:12 16:42	07:09 17:44	06:47 19:50	05:31 20:52	04:34 21:49	04:27 22:06	05:13 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:43
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19	08:34 16:15	07:33 17:22	06:22 18:23	06:00 20:27	04:53 21:28	04:23 22:06	04:50 21:49	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:59	08:44 15:36
20	08:32 16:17	07:31 17:24	06:19 18:25	05:57 20:29	04:51 21:30	04:23 22:07	04:51 21:47	05:50 20:43	06:52 19:21	07:53 18:02	08:00 15:57	08:45 15:36
21	08:31 16:19	07:29 17:27	06:16 18:27	05:55 20:31	04:50 21:31	04:23 22:07	04:53 21:45	05:52 20:40	06:54 19:19	07:55 18:00	08:02 15:56	08:45 15:36
22	08:29 16:21	07:26 17:29	06:14 18:29	05:52 20:33	04:48 21:33	04:23 22:07	04:55 21:44	05:54 20:38	06:56 19:16	07:58 17:58	08:04 15:54	08:46 15:37
23	08:28 16:23	07:24 17:31	06:11 18:31	05:50 20:35	04:46 21:35	04:23 22:07	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:53	08:46 15:37
24	08:26 16:25	07:21 17:33	06:08 18:33	05:47 20:37	04:45 21:37	04:24 22:08	04:58 21:41	05:58 20:33	07:00 19:10	08:02 17:53	08:08 15:51	08:47 15:38
25	08:25 16:27	07:19 17:36	06:06 18:35	05:45 20:40	04:43 21:38	04:24 22:08	05:00 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:50	08:47 15:39
26	08:23 16:29	07:16 17:38	06:03 18:37	05:43 20:42	04:42 21:40	04:24 22:07	05:02 21:37	06:02 20:28	07:04 19:05	07:06 16:48	08:12 15:49	08:48 15:39
27	08:21 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:42	04:25 22:07	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:46	08:14 15:47	08:48 15:40
28	08:20 16:33	07:11 17:42	05:58 18:41	05:38 20:46	04:39 21:43	04:25 22:07	05:05 21:33	06:06 20:22	07:08 19:00	07:11 16:43	08:15 15:46	08:48 15:41
29	08:18 16:35		05:55 18:43	05:35 20:48	04:37 21:45	04:26 22:07	05:07 21:31	06:08 20:20	07:10 18:57	07:13 16:41	08:17 15:45	08:48 15:42
30	08:16 16:38		06:52 19:46	05:33 20:50	04:36 21:46	04:27 22:07	05:09 21:30	06:10 20:17	07:12 18:54	07:15 16:39	08:19 15:44	08:48 15:43
31	08:14 16:40		06:50 19:48		04:35 21:48		05:11 21:28	06:12 20:15		07:17 16:36		08:48 15:44
Potential sun hours	235	266	365	425	507	528	529	470	385	324	248	217
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: DE - Smelceja

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:12	07:09	06:47	05:30	04:34	04:27	05:13	06:14	07:14	07:19	08:21
	15:45	16:42	17:44	19:50	20:52	21:49	22:06	21:25	20:12	18:52	16:34	15:43
2	08:47	08:10	07:06	06:44	05:28	04:32	04:28	05:14	06:16	07:16	07:21	08:22
	15:46	16:44	17:46	19:52	20:54	21:51	22:06	21:23	20:09	18:49	16:32	15:42
3	08:47	08:08	07:03	06:41	05:26	04:31	04:29	05:16	06:18	07:18	07:23	08:24
	15:48	16:46	17:48	19:54	20:56	21:52	22:05	21:21	20:07	18:46	16:29	15:41
4	08:47	08:06	07:01	06:39	05:24	04:30	04:30	05:18	06:20	07:20	07:26	08:26
	15:49	16:49	17:51	19:56	20:58	21:53	22:05	21:19	20:04	18:44	16:27	15:40
5	08:46	08:04	06:58	06:36	05:21	04:29	04:31	05:20	06:22	07:22	07:28	08:27
	15:50	16:51	17:53	19:58	21:00	21:54	22:04	21:17	20:01	18:41	16:25	15:39
6	08:46	08:02	06:56	06:33	05:19	04:28	04:32	05:22	06:24	07:24	07:30	08:29
	15:52	16:53	17:55	20:00	21:02	21:56	22:03	21:15	19:59	18:38	16:23	15:38
7	08:45	08:00	06:53	06:31	05:17	04:28	04:33	05:24	06:26	07:26	07:32	08:30
	15:53	16:55	17:57	20:02	21:04	21:57	22:02	21:13	19:56	18:36	16:21	15:38
8	08:45	07:58	06:51	06:28	05:15	04:27	04:34	05:26	06:28	07:28	07:34	08:32
	15:55	16:57	17:59	20:04	21:06	21:58	22:02	21:11	19:53	18:33	16:19	15:37
9	08:44	07:56	06:48	06:26	05:13	04:26	04:35	05:28	06:30	07:30	07:36	08:33
	15:56	17:00	18:01	20:06	21:08	21:59	22:01	21:08	19:51	18:30	16:17	15:37
10	08:43	07:54	06:45	06:23	05:11	04:25	04:36	05:30	06:32	07:32	07:39	08:34
	15:58	17:02	18:03	20:08	21:10	22:00	22:00	21:06	19:48	18:28	16:15	15:36
11	08:42	07:52	06:43	06:20	05:08	04:25	04:38	05:32	06:34	07:34	07:41	08:36
	16:00	17:04	18:06	20:10	21:12	22:01	21:59	21:04	19:45	18:25	16:13	15:36
12	08:41	07:49	06:40	06:18	05:06	04:24	04:39	05:34	06:36	07:36	07:43	08:37
	16:01	17:06	18:08	20:12	21:14	22:02	21:58	21:02	19:43	18:23	16:11	15:36
13	08:40	07:47	06:37	06:15	05:04	04:24	04:40	05:36	06:38	07:38	07:45	08:38
	16:03	17:09	18:10	20:14	21:16	22:03	21:56	20:59	19:40	18:20	16:09	15:35
14	08:39	07:45	06:35	06:12	05:02	04:24	04:42	05:38	06:40	07:41	07:47	08:39
	16:05	17:11	18:12	20:17	21:18	22:03	21:55	20:57	19:37	18:17	16:07	15:35
15	08:38	07:43	06:32	06:10	05:00	04:23	04:43	05:40	06:42	07:43	07:49	08:40
	16:07	17:13	18:14	20:19	21:20	22:04	21:54	20:55	19:35	18:15	16:05	15:35
16	08:37	07:40	06:29	06:07	04:59	04:23	04:45	05:42	06:44	07:45	07:51	08:41
	16:09	17:15	18:16	20:21	21:22	22:05	21:53	20:52	19:32	18:12	16:04	15:35
17	08:36	07:38	06:27	06:05	04:57	04:23	04:46	05:44	06:46	07:47	07:53	08:42
	16:10	17:18	18:18	20:23	21:24	22:05	21:51	20:50	19:29	18:10	16:02	15:35
18	08:35	07:36	06:24	06:02	04:55	04:23	04:48	05:46	06:48	07:49	07:56	08:43
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	16:14	17:22	18:22	20:27	21:28	22:06	21:48	20:45	19:24	18:05	15:59	15:36
20	08:32	07:31	06:19	05:57	04:51	04:23	04:51	05:50	06:52	07:53	08:00	08:45
	16:16	17:24	18:25	20:29	21:29	22:07	21:47	20:42	19:21	18:02	15:57	15:36
21	08:31	07:28	06:16	05:55	04:49	04:23	04:53	05:52	06:54	07:55	08:02	08:45
	16:18	17:27	18:27	20:31	21:31	22:07	21:45	20:40	19:18	18:00	15:55	15:36
22	08:29	07:26	06:13	05:52	04:48	04:23	04:54	05:54	06:56	07:57	08:04	08:46
	16:20	17:29	18:29	20:33	21:33	22:07	21:44	20:37	19:16	17:57	15:54	15:37
23	08:28	07:24	06:11	05:50	04:46	04:23	04:56	05:56	06:58	08:00	08:06	08:46
	16:22	17:31	18:31	20:35	21:35	22:07	21:42	20:35	19:13	17:55	15:52	15:37
24	08:26	07:21	06:08	05:47	04:45	04:23	04:58	05:58	07:00	08:02	08:08	08:47
	16:25	17:33	18:33	20:37	21:36	22:07	21:40	20:32	19:10	17:53	15:51	15:38
25	08:25	07:19	06:05	05:45	04:43	04:24	05:00	06:00	07:02	08:04	08:10	08:47
	16:27	17:35	18:35	20:39	21:38	22:07	21:39	20:30	19:08	17:50	15:50	15:38
26	08:23	07:16	06:03	05:42	04:42	04:24	05:01	06:02	07:04	07:06	08:12	08:47
	16:29	17:38	18:37	20:42	21:40	22:07	21:37	20:27	19:05	16:48	15:48	15:39
27	08:21	07:14	06:00	05:40	04:40	04:25	05:03	06:04	07:06	07:08	08:13	08:48
	16:31	17:40	18:39	20:44	21:41	22:07	21:35	20:25	19:02	16:45	15:47	15:40
28	08:20	07:11	05:57	05:38	04:39	04:25	05:05	06:06	07:08	07:10	08:15	08:48
	16:33	17:42	18:41	20:46	21:43	22:07	21:33	20:22	19:00	16:43	15:46	15:41
29	08:18		05:55	05:35	04:37	04:26	05:07	06:08	07:10	07:13	08:17	08:48
	16:35		18:43	20:48	21:45	22:07	21:31	20:20	18:57	16:41	15:45	15:42
30	08:16		06:52	05:33	04:36	04:27	05:09	06:10	07:12	07:15	08:19	08:48
	16:37		19:45	20:50	21:46	22:06	21:29	20:17	18:54	16:38	15:44	15:43
31	08:14		06:49		04:35		05:11	06:12		07:17		08:48
	16:40		19:47		21:48		21:27	20:14		16:36		15:44
Potential sun hours	235	266	365	425	507	528	529	470	385	324	248	217
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: DF - Kukas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:12 16:42	07:09 17:44	06:47 19:50	05:31 20:52	04:34 21:49	04:27 22:06	05:13 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:43
2	08:48 15:47	08:10 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:33 21:51	04:28 22:06	05:15 21:24	06:16 20:09	07:16 18:49	07:21 16:32	08:22 15:42
3	08:47 15:48	08:09 16:46	07:04 17:49	06:42 19:54	05:26 20:56	04:32 21:52	04:29 22:05	05:17 21:21	06:18 20:07	07:18 18:46	07:23 16:30	08:24 15:41
4	08:47 15:49	08:07 16:49	07:01 17:51	06:39 19:56	05:24 20:58	04:31 21:53	04:30 22:05	05:18 21:19	06:20 20:04	07:20 18:44	07:26 16:27	08:26 15:40
5	08:46 15:51	08:05 16:51	06:58 17:53	06:36 19:58	05:22 21:00	04:30 21:55	04:31 22:04	05:20 21:17	06:22 20:01	07:22 18:41	07:28 16:25	08:27 15:39
6	08:46 15:52	08:02 16:53	06:56 17:55	06:34 20:00	05:19 21:02	04:29 21:56	04:32 22:03	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:39
7	08:45 15:53	08:00 16:55	06:53 17:57	06:31 20:02	05:17 21:04	04:28 21:57	04:33 22:02	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	08:30 15:38
8	08:45 15:55	07:58 16:58	06:51 17:59	06:28 20:04	05:15 21:06	04:27 21:58	04:34 22:02	05:26 21:11	06:28 19:53	07:28 18:33	07:34 16:19	08:32 15:37
9	08:44 15:57	07:56 17:00	06:48 18:01	06:26 20:06	05:13 21:08	04:26 21:59	04:35 22:01	05:28 21:09	06:30 19:51	07:30 18:31	07:36 16:17	08:33 15:37
10	08:43 15:58	07:54 17:02	06:45 18:04	06:23 20:08	05:11 21:10	04:26 22:00	04:37 22:00	05:30 21:06	06:32 19:48	07:32 18:28	07:39 16:15	08:35 15:37
11	08:42 16:00	07:52 17:04	06:43 18:06	06:20 20:10	05:09 21:12	04:25 22:01	04:38 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:13	08:36 15:36
12	08:42 16:02	07:50 17:07	06:40 18:08	06:18 20:12	05:07 21:14	04:25 22:02	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:37 15:36
13	08:41 16:03	07:47 17:09	06:38 18:10	06:15 20:15	05:05 21:16	04:24 22:03	04:41 21:56	05:36 20:59	06:38 19:40	07:39 18:20	07:45 16:09	08:38 15:36
14	08:40 16:05	07:45 17:11	06:35 18:12	06:13 20:17	05:03 21:18	04:24 22:03	04:42 21:55	05:38 20:57	06:40 19:37	07:41 18:18	07:47 16:07	08:39 15:35
15	08:38 16:07	07:43 17:13	06:32 18:14	06:10 20:19	05:01 21:20	04:23 22:04	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:49 16:06	08:40 15:35
16	08:37 16:09	07:40 17:16	06:30 18:16	06:08 20:21	04:59 21:22	04:23 22:05	04:45 21:53	05:42 20:52	06:44 19:32	07:45 18:13	07:51 16:04	08:41 15:35
17	08:36 16:11	07:38 17:18	06:27 18:18	06:05 20:23	04:57 21:24	04:23 22:05	04:47 21:51	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:02	08:42 15:35
18	08:35 16:13	07:36 17:20	06:24 18:21	06:02 20:25	04:55 21:26	04:23 22:06	04:48 21:50	05:46 20:47	06:48 19:27	07:49 18:07	07:56 16:00	08:43 15:36
19	08:34 16:15	07:33 17:22	06:22 18:23	06:00 20:27	04:53 21:28	04:23 22:06	04:50 21:48	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:59	08:44 15:36
20	08:32 16:17	07:31 17:24	06:19 18:25	05:57 20:29	04:51 21:29	04:23 22:07	04:51 21:47	05:50 20:43	06:52 19:21	07:53 18:03	08:00 15:57	08:45 15:36
21	08:31 16:19	07:29 17:27	06:16 18:27	05:55 20:31	04:50 21:31	04:23 22:07	04:53 21:45	05:52 20:40	06:54 19:19	07:55 18:00	08:02 15:56	08:45 15:36
22	08:29 16:21	07:26 17:29	06:14 18:29	05:52 20:33	04:48 21:33	04:23 22:07	04:55 21:44	05:54 20:38	06:56 19:16	07:58 17:58	08:04 15:54	08:46 15:37
23	08:28 16:23	07:24 17:31	06:11 18:31	05:50 20:35	04:46 21:35	04:23 22:07	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:53	08:46 15:37
24	08:26 16:25	07:21 17:33	06:08 18:33	05:47 20:37	04:45 21:37	04:24 22:07	04:58 21:40	05:58 20:33	07:00 19:10	08:02 17:53	08:08 15:51	08:47 15:38
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27	08:21 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:42	04:25 22:07	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:46	08:14 15:47	08:48 15:40
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29	08:18 16:35		05:55 18:43	05:35 20:48	04:38 21:45	04:26 22:07	05:07 21:31	06:08 20:20	07:10 18:57	07:13 16:41	08:17 15:45	08:48 15:42
30	08:16 16:38		06:52 19:46	05:33 20:50	04:36 21:46	04:27 22:07	05:09 21:30	06:10 20:17	07:12 18:54	07:15 16:39	08:19 15:44	08:48 15:43
31	08:14 16:40		06:50 19:48		04:35 21:48		05:11 21:28	06:12 20:15		07:17 16:36		08:48 15:44
Potential sun hours	235	266	365	425	507	528	529	470	385	324	248	217
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: DG - O šini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:12 16:42	07:09 17:44	06:47 19:50	05:31 20:52	04:34 21:49	04:27 22:06	05:13 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:43
2	08:48 15:46	08:10 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:33 21:51	04:28 22:06	05:15 21:23	06:16 20:09	07:16 18:49	07:21 16:32	08:22 15:42
3	08:47 15:48	08:08 16:46	07:04 17:49	06:41 19:54	05:26 20:56	04:31 21:52	04:29 22:05	05:16 21:21	06:18 20:07	07:18 18:46	07:23 16:30	08:24 15:41
4	08:47 15:49	08:06 16:49	07:01 17:51	06:39 19:56	05:24 20:58	04:30 21:53	04:30 22:05	05:18 21:19	06:20 20:04	07:20 18:44	07:26 16:27	08:26 15:40
5	08:46 15:50	08:04 16:51	06:58 17:53	06:36 19:58	05:21 21:00	04:29 21:55	04:31 22:04	05:20 21:17	06:22 20:01	07:22 18:41	07:28 16:25	08:27 15:39
6	08:46 15:52	08:02 16:53	06:56 17:55	06:33 20:00	05:19 21:02	04:29 21:56	04:32 22:03	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:39
7	08:45 15:53	08:00 16:55	06:53 17:57	06:31 20:02	05:17 21:04	04:28 21:57	04:33 22:02	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	08:30 15:38
8	08:45 15:55	07:58 16:58	06:51 17:59	06:28 20:04	05:15 21:06	04:27 21:58	04:34 22:02	05:26 21:11	06:28 19:53	07:28 18:33	07:34 16:19	08:32 15:37
9	08:44 15:56	07:56 17:00	06:48 18:01	06:26 20:06	05:13 21:08	04:26 21:59	04:35 22:01	05:28 21:08	06:30 19:51	07:30 18:30	07:36 16:17	08:33 15:37
10	08:43 15:58	07:54 17:02	06:45 18:04	06:23 20:08	05:11 21:10	04:26 22:00	04:37 22:00	05:30 21:06	06:32 19:48	07:32 18:28	07:39 16:15	08:35 15:36
11	08:42 16:00	07:52 17:04	06:43 18:06	06:20 20:10	05:09 21:12	04:25 22:01	04:38 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:13	08:36 15:36
12	08:41 16:01	07:49 17:07	06:40 18:08	06:18 20:12	05:06 21:14	04:24 22:02	04:39 21:58	05:34 21:02	06:36 19:43	07:36 18:23	07:43 16:11	08:37 15:36
13	08:41 16:03	07:47 17:09	06:37 18:10	06:15 20:15	05:04 21:16	04:24 22:03	04:41 21:56	05:36 20:59	06:38 19:40	07:39 18:20	07:45 16:09	08:38 15:36
14	08:40 16:05	07:45 17:11	06:35 18:12	06:13 20:17	05:02 21:18	04:24 22:03	04:42 21:55	05:38 20:57	06:40 19:37	07:41 18:18	07:47 16:07	08:39 15:35
15	08:38 16:07	07:43 17:13	06:32 18:14	06:10 20:19	05:01 21:20	04:23 22:04	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:49 16:05	08:40 15:35
16	08:37 16:09	07:40 17:15	06:30 18:16	06:07 20:21	04:59 21:22	04:23 22:05	04:45 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:51 16:04	08:41 15:35
17	08:36 16:11	07:38 17:18	06:27 18:18	06:05 20:23	04:57 21:24	04:23 22:05	04:46 21:51	05:44 20:50	06:46 19:29	07:47 18:10	07:53 16:02	08:42 15:35
18	08:35 16:12	07:36 17:20	06:24 18:20	06:02 20:25	04:55 21:26	04:23 22:06	04:48 21:50	05:46 20:47	06:48 19:27	07:49 18:07	07:56 16:00	08:43 15:35
19	08:34 16:14	07:33 17:22	06:22 18:23	06:00 20:27	04:53 21:28	04:23 22:06	04:50 21:48	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:59	08:44 15:36
20	08:32 16:16	07:31 17:24	06:19 18:25	05:57 20:29	04:51 21:29	04:23 22:07	04:51 21:47	05:50 20:42	06:52 19:21	07:53 18:02	08:00 15:57	08:45 15:36
21	08:31 16:18	07:29 17:27	06:16 18:27	05:55 20:31	04:50 21:31	04:23 22:07	04:53 21:45	05:52 20:40	06:54 19:18	07:55 18:00	08:02 15:55	08:45 15:36
22	08:29 16:21	07:26 17:29	06:14 18:29	05:52 20:33	04:48 21:33	04:23 22:07	04:55 21:44	05:54 20:38	06:56 19:16	07:58 17:57	08:04 15:54	08:46 15:37
23	08:28 16:23	07:24 17:31	06:11 18:31	05:50 20:35	04:46 21:35	04:23 22:07	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:53	08:46 15:37
24	08:26 16:25	07:21 17:33	06:08 18:33	05:47 20:37	04:45 21:37	04:23 22:07	04:58 21:40	05:58 20:32	07:00 19:10	08:02 17:53	08:08 15:51	08:47 15:38
25	08:25 16:27	07:19 17:35	06:05 18:35	05:45 20:39	04:43 21:38	04:24 22:07	05:00 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:50	08:47 15:38
26	08:23 16:29	07:16 17:38	06:03 18:37	05:42 20:42	04:42 21:40	04:24 22:07	05:02 21:37	06:02 20:27	07:04 19:05	07:06 16:48	08:12 15:48	08:47 15:39
27	08:21 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:42	04:25 22:07	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:45	08:13 15:47	08:48 15:40
28	08:20 16:33	07:11 17:42	05:57 18:41	05:38 20:46	04:39 21:43	04:25 22:07	05:05 21:33	06:06 20:22	07:08 19:00	07:10 16:43	08:15 15:46	08:48 15:41
29	08:18 16:35		05:55 18:43	05:35 20:48	04:37 21:45	04:26 22:07	05:07 21:31	06:08 20:20	07:10 18:57	07:13 16:41	08:17 15:45	08:48 15:42
30	08:16 16:38		06:52 19:45	05:33 20:50	04:36 21:46	04:27 22:07	05:09 21:29	06:10 20:17	07:12 18:54	07:15 16:39	08:19 15:44	08:48 15:43
31	08:14 16:40		06:49 19:48		04:35 21:48		05:11 21:27	06:12 20:15		07:17 16:36		08:48 15:44
Potential sun hours	235	266	365	425	507	528	529	470	385	324	248	217
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: DH - O šini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:12	07:09	06:47	05:31	04:34	04:27	05:13	06:14	07:14	07:19	08:21
	15:45	16:42	17:44	19:50	20:52	21:49	22:06	21:26	20:12	18:52	16:34	15:43
2	08:48	08:10	07:06	06:44	05:28	04:33	04:28	05:15	06:16	07:16	07:21	08:22
	15:46	16:44	17:46	19:52	20:54	21:51	22:06	21:23	20:09	18:49	16:32	15:42
3	08:47	08:08	07:04	06:41	05:26	04:31	04:29	05:16	06:18	07:18	07:23	08:24
	15:48	16:46	17:49	19:54	20:56	21:52	22:05	21:21	20:07	18:46	16:30	15:41
4	08:47	08:06	07:01	06:39	05:24	04:30	04:30	05:18	06:20	07:20	07:26	08:26
	15:49	16:49	17:51	19:56	20:58	21:53	22:05	21:19	20:04	18:44	16:27	15:40
5	08:46	08:04	06:58	06:36	05:21	04:29	04:31	05:20	06:22	07:22	07:28	08:27
	15:50	16:51	17:53	19:58	21:00	21:55	22:04	21:17	20:01	18:41	16:25	15:39
6	08:46	08:02	06:56	06:33	05:19	04:29	04:32	05:22	06:24	07:24	07:30	08:29
	15:52	16:53	17:55	20:00	21:02	21:56	22:03	21:15	19:59	18:38	16:23	15:39
7	08:45	08:00	06:53	06:31	05:17	04:28	04:33	05:24	06:26	07:26	07:32	08:30
	15:53	16:55	17:57	20:02	21:04	21:57	22:02	21:13	19:56	18:36	16:21	15:38
8	08:45	07:58	06:51	06:28	05:15	04:27	04:34	05:26	06:28	07:28	07:34	08:32
	15:55	16:58	17:59	20:04	21:06	21:58	22:02	21:11	19:53	18:33	16:19	15:37
9	08:44	07:56	06:48	06:26	05:13	04:26	04:35	05:28	06:30	07:30	07:36	08:33
	15:56	17:00	18:01	20:06	21:08	21:59	22:01	21:08	19:51	18:30	16:17	15:37
10	08:43	07:54	06:45	06:23	05:11	04:26	04:37	05:30	06:32	07:32	07:39	08:35
	15:58	17:02	18:04	20:08	21:10	22:00	22:00	21:06	19:48	18:28	16:15	15:36
11	08:42	07:52	06:43	06:20	05:09	04:25	04:38	05:32	06:34	07:34	07:41	08:36
	16:00	17:04	18:06	20:10	21:12	22:01	21:59	21:04	19:45	18:25	16:13	15:36
12	08:41	07:49	06:40	06:18	05:06	04:24	04:39	05:34	06:36	07:36	07:43	08:37
	16:01	17:07	18:08	20:12	21:14	22:02	21:58	21:02	19:43	18:23	16:11	15:36
13	08:41	07:47	06:37	06:15	05:04	04:24	04:41	05:36	06:38	07:39	07:45	08:38
	16:03	17:09	18:10	20:15	21:16	22:03	21:56	20:59	19:40	18:20	16:09	15:36
14	08:40	07:45	06:35	06:13	05:02	04:24	04:42	05:38	06:40	07:41	07:47	08:39
	16:05	17:11	18:12	20:17	21:18	22:03	21:55	20:57	19:37	18:18	16:07	15:35
15	08:38	07:43	06:32	06:10	05:01	04:23	04:43	05:40	06:42	07:43	07:49	08:40
	16:07	17:13	18:14	20:19	21:20	22:04	21:54	20:55	19:35	18:15	16:05	15:35
16	08:37	07:40	06:30	06:07	04:59	04:23	04:45	05:42	06:44	07:45	07:51	08:41
	16:09	17:15	18:16	20:21	21:22	22:05	21:53	20:52	19:32	18:12	16:04	15:35
17	08:36	07:38	06:27	06:05	04:57	04:23	04:46	05:44	06:46	07:47	07:53	08:42
	16:11	17:18	18:18	20:23	21:24	22:05	21:51	20:50	19:29	18:10	16:02	15:35
18	08:35	07:36	06:24	06:02	04:55	04:23	04:48	05:46	06:48	07:49	07:56	08:43
	16:12	17:20	18:20	20:25	21:26	22:06	21:50	20:47	19:27	18:07	16:00	15:35
19	08:34	07:33	06:22	06:00	04:53	04:23	04:50	05:48	06:50	07:51	07:58	08:44
	16:14	17:22	18:23	20:27	21:28	22:06	21:48	20:45	19:24	18:05	15:59	15:36
20	08:32	07:31	06:19	05:57	04:51	04:23	04:51	05:50	06:52	07:53	08:00	08:45
	16:16	17:24	18:25	20:29	21:29	22:07	21:47	20:42	19:21	18:02	15:57	15:36
21	08:31	07:29	06:16	05:55	04:50	04:23	04:53	05:52	06:54	07:55	08:02	08:45
	16:18	17:27	18:27	20:31	21:31	22:07	21:45	20:40	19:18	18:00	15:55	15:36
22	08:29	07:26	06:14	05:52	04:48	04:23	04:55	05:54	06:56	07:58	08:04	08:46
	16:21	17:29	18:29	20:33	21:33	22:07	21:44	20:38	19:16	17:57	15:54	15:37
23	08:28	07:24	06:11	05:50	04:46	04:23	04:56	05:56	06:58	08:00	08:06	08:46
	16:23	17:31	18:31	20:35	21:35	22:07	21:42	20:35	19:13	17:55	15:53	15:37
24	08:26	07:21	06:08	05:47	04:45	04:23	04:58	05:58	07:00	08:02	08:08	08:47
	16:25	17:33	18:33	20:37	21:37	22:07	21:40	20:32	19:10	17:53	15:51	15:38
25	08:25	07:19	06:05	05:45	04:43	04:24	05:00	06:00	07:02	08:04	08:10	08:47
	16:27	17:35	18:35	20:39	21:38	22:07	21:39	20:30	19:08	17:50	15:50	15:38
26	08:23	07:16	06:03	05:42	04:42	04:24	05:02	06:02	07:04	07:06	08:12	08:47
	16:29	17:38	18:37	20:42	21:40	22:07	21:37	20:27	19:05	16:48	15:48	15:39
27	08:21	07:14	06:00	05:40	04:40	04:25	05:03	06:04	07:06	07:08	08:13	08:48
	16:31	17:40	18:39	20:44	21:42	22:07	21:35	20:25	19:02	16:45	15:47	15:40
28	08:20	07:11	05:57	05:38	04:39	04:25	05:05	06:06	07:08	07:10	08:15	08:48
	16:33	17:42	18:41	20:46	21:43	22:07	21:33	20:22	19:00	16:43	15:46	15:41
29	08:18		05:55	05:35	04:37	04:26	05:07	06:08	07:10	07:13	08:17	08:48
	16:35		18:43	20:48	21:45	22:07	21:31	20:20	18:57	16:41	15:45	15:42
30	08:16		06:52	05:33	04:36	04:27	05:09	06:10	07:12	07:15	08:19	08:48
	16:38		19:45	20:50	21:46	22:07	21:29	20:17	18:54	16:39	15:44	15:43
31	08:14		06:49		04:35		05:11	06:12		07:17		08:48
	16:40		19:48		21:48		21:27	20:15		16:36		15:44
Potential sun hours	235	266	365	425	507	528	529	470	385	324	248	217
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: DI - Robe ž nieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:12	07:09	06:47	05:31	04:34	04:27	05:13	06:14	07:14	07:19	08:21
	15:45	16:42	17:44	19:50	20:52	21:49	22:06	21:26	20:12	18:52	16:34	15:43
2	08:48	08:10	07:06	06:44	05:28	04:33	04:28	05:15	06:16	07:16	07:21	08:22
	15:47	16:44	17:46	19:52	20:54	21:51	22:06	21:24	20:09	18:49	16:32	15:42
3	08:47	08:09	07:04	06:42	05:26	04:32	04:29	05:17	06:18	07:18	07:23	08:24
	15:48	16:46	17:49	19:54	20:56	21:52	22:05	21:21	20:07	18:46	16:30	15:41
4	08:47	08:07	07:01	06:39	05:24	04:31	04:30	05:18	06:20	07:20	07:26	08:26
	15:49	16:49	17:51	19:56	20:58	21:53	22:05	21:19	20:04	18:44	16:27	15:40
5	08:46	08:04	06:58	06:36	05:22	04:30	04:31	05:20	06:22	07:22	07:28	08:27
	15:51	16:51	17:53	19:58	21:00	21:55	22:04	21:17	20:01	18:41	16:25	15:39
6	08:46	08:02	06:56	06:34	05:19	04:29	04:32	05:22	06:24	07:24	07:30	08:29
	15:52	16:53	17:55	20:00	21:02	21:56	22:03	21:15	19:59	18:38	16:23	15:39
7	08:45	08:00	06:53	06:31	05:17	04:28	04:33	05:24	06:26	07:26	07:32	08:30
	15:53	16:55	17:57	20:02	21:04	21:57	22:02	21:13	19:56	18:36	16:21	15:38
8	08:45	07:58	06:51	06:28	05:15	04:27	04:34	05:26	06:28	07:28	07:34	08:32
	15:55	16:58	17:59	20:04	21:06	21:58	22:02	21:11	19:53	18:33	16:19	15:37
9	08:44	07:56	06:48	06:26	05:13	04:26	04:35	05:28	06:30	07:30	07:36	08:33
	15:57	17:00	18:01	20:06	21:08	21:59	22:01	21:08	19:51	18:31	16:17	15:37
10	08:43	07:54	06:45	06:23	05:11	04:26	04:37	05:30	06:32	07:32	07:39	08:35
	15:58	17:02	18:04	20:08	21:10	22:00	22:00	21:06	19:48	18:28	16:15	15:37
11	08:42	07:52	06:43	06:20	05:09	04:25	04:38	05:32	06:34	07:34	07:41	08:36
	16:00	17:04	18:06	20:10	21:12	22:01	21:59	21:04	19:45	18:25	16:13	15:36
12	08:42	07:50	06:40	06:18	05:07	04:25	04:39	05:34	06:36	07:37	07:43	08:37
	16:02	17:07	18:08	20:12	21:14	22:02	21:58	21:02	19:43	18:23	16:11	15:36
13	08:41	07:47	06:38	06:15	05:05	04:24	04:41	05:36	06:38	07:39	07:45	08:38
	16:03	17:09	18:10	20:15	21:16	22:03	21:56	20:59	19:40	18:20	16:09	15:36
14	08:40	07:45	06:35	06:13	05:03	04:24	04:42	05:38	06:40	07:41	07:47	08:39
	16:05	17:11	18:12	20:17	21:18	22:03	21:55	20:57	19:37	18:18	16:07	15:35
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	16:07	17:13	18:14	20:19	21:20	22:04	21:54	20:55	19:35	18:15	16:06	15:35
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18	08:35	07:36	06:24	06:02	04:55	04:23	04:48	05:46	06:48	07:49	07:56	08:43
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	16:38		19:46	20:50	21:46	22:07	21:29	20:17	18:54	16:39	15:44	15:43
31	08:14		06:50		04:35		05:11	06:12		07:17		08:48
	16:40		19:48		21:48		21:28	20:15		16:36		15:44
Potential sun hours	235	266	365	425	507	528	529	470	385	324	248	217
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: DJ - Pumpuri

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:12 16:42	07:09 17:44	06:47 19:50	05:31 20:52	04:34 21:49	04:27 22:06	05:13 21:25	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:43
2	08:47 15:46	08:10 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:33 21:51	04:28 22:06	05:14 21:23	06:16 20:09	07:16 18:49	07:21 16:32	08:22 15:42
3	08:47 15:48	08:08 16:46	07:04 17:48	06:41 19:54	05:26 20:56	04:31 21:52	04:29 22:05	05:16 21:21	06:18 20:07	07:18 18:46	07:23 16:30	08:24 15:41
4	08:47 15:49	08:06 16:49	07:01 17:51	06:39 19:56	05:24 20:58	04:30 21:53	04:30 22:04	05:18 21:19	06:20 20:04	07:20 18:44	07:26 16:27	08:26 15:40
5	08:46 15:50	08:04 16:51	06:58 17:53	06:36 19:58	05:21 21:00	04:29 21:54	04:31 22:04	05:20 21:17	06:22 20:01	07:22 18:41	07:28 16:25	08:27 15:39
6	08:46 15:52	08:02 16:53	06:56 17:55	06:33 20:00	05:19 21:02	04:29 21:56	04:32 22:03	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:39
7	08:45 15:53	08:00 16:55	06:53 17:57	06:31 20:02	05:17 21:04	04:28 21:57	04:33 22:02	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	08:30 15:38
8	08:45 15:55	07:58 16:58	06:51 17:59	06:28 20:04	05:15 21:06	04:27 21:58	04:34 22:01	05:26 21:11	06:28 19:53	07:28 18:33	07:34 16:19	08:32 15:37
9	08:44 15:56	07:56 17:00	06:48 18:01	06:26 20:06	05:13 21:08	04:26 21:59	04:35 22:01	05:28 21:08	06:30 19:51	07:30 18:30	07:36 16:17	08:33 15:37
10	08:43 15:58	07:54 17:02	06:45 18:03	06:23 20:08	05:11 21:10	04:26 22:00	04:37 22:00	05:30 21:06	06:32 19:48	07:32 18:28	07:39 16:15	08:34 15:36
11	08:42 16:00	07:52 17:04	06:43 18:06	06:20 20:10	05:09 21:12	04:25 22:01	04:38 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:13	08:36 15:36
12	08:41 16:01	07:49 17:06	06:40 18:08	06:18 20:12	05:06 21:14	04:24 22:02	04:39 21:57	05:34 21:02	06:36 19:43	07:36 18:23	07:43 16:11	08:37 15:36
13	08:40 16:03	07:47 17:09	06:37 18:10	06:15 20:14	05:04 21:16	04:24 22:03	04:40 21:56	05:36 20:59	06:38 19:40	07:39 18:20	07:45 16:09	08:38 15:35
14	08:39 16:05	07:45 17:11	06:35 18:12	06:13 20:17	05:02 21:18	04:24 22:03	04:42 21:55	05:38 20:57	06:40 19:37	07:41 18:18	07:47 16:07	08:39 15:35
15	08:38 16:07	07:43 17:13	06:32 18:14	06:10 20:19	05:00 21:20	04:23 22:04	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:49 16:05	08:40 15:35
16	08:37 16:09	07:40 17:15	06:29 18:16	06:07 20:21	04:59 21:22	04:23 22:05	04:45 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:51 16:04	08:41 15:35
17	08:36 16:11	07:38 17:18	06:27 18:18	06:05 20:23	04:57 21:24	04:23 22:05	04:46 21:51	05:44 20:50	06:46 19:29	07:47 18:10	07:53 16:02	08:42 15:35
18	08:35 16:12	07:36 17:20	06:24 18:20	06:02 20:25	04:55 21:26	04:23 22:06	04:48 21:50	05:46 20:47	06:48 19:27	07:49 18:07	07:56 16:00	08:43 15:35
19	08:33 16:14	07:33 17:22	06:21 18:22	06:00 20:27	04:53 21:28	04:23 22:06	04:50 21:48	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:59	08:44 15:36
20	08:32 16:16	07:31 17:24	06:19 18:25	05:57 20:29	04:51 21:29	04:23 22:07	04:51 21:47	05:50 20:42	06:52 19:21	07:53 18:02	08:00 15:57	08:45 15:36
21	08:31 16:18	07:28 17:27	06:16 18:27	05:55 20:31	04:50 21:31	04:23 22:07	04:53 21:45	05:52 20:40	06:54 19:18	07:55 18:00	08:02 15:55	08:45 15:36
22	08:29 16:20	07:26 17:29	06:13 18:29	05:52 20:33	04:48 21:33	04:23 22:07	04:54 21:44	05:54 20:37	06:56 19:16	07:57 17:57	08:04 15:54	08:46 15:37
23	08:28 16:23	07:24 17:31	06:11 18:31	05:50 20:35	04:46 21:35	04:23 22:07	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:46 15:37
24	08:26 16:25	07:21 17:33	06:08 18:33	05:47 20:37	04:45 21:36	04:23 22:07	04:58 21:40	05:58 20:32	07:00 19:10	08:02 17:53	08:08 15:51	08:47 15:38
25	08:25 16:27	07:19 17:35	06:05 18:35	05:45 20:39	04:43 21:38	04:24 22:07	05:00 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:50	08:47 15:38
26	08:23 16:29	07:16 17:38	06:03 18:37	05:42 20:42	04:42 21:40	04:24 22:07	05:01 21:37	06:02 20:27	07:04 19:05	07:06 16:48	08:12 15:48	08:47 15:39
27	08:21 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:41	04:25 22:07	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:45	08:13 15:47	08:48 15:40
28	08:20 16:33	07:11 17:42	05:57 18:41	05:38 20:46	04:39 21:43	04:25 22:07	05:05 21:33	06:06 20:22	07:08 19:00	07:10 16:43	08:15 15:46	08:48 15:41
29	08:18 16:35		05:55 18:43	05:35 20:48	04:37 21:45	04:26 22:07	05:07 21:31	06:08 20:20	07:10 18:57	07:13 16:41	08:17 15:45	08:48 15:42
30	08:16 16:38		06:52 19:45	05:33 20:50	04:36 21:46	04:27 22:06	05:09 21:29	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:44	08:48 15:43
31	08:14 16:40		06:49 19:47		04:35 21:48		05:11 21:27	06:12 20:14		07:17 16:36		08:48 15:44
Potential sun hours	235	266	365	425	507	528	529	470	385	324	248	217
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: DK - Pumpuri

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:12	07:09	06:47	05:31	04:34	04:27	05:13	06:14	07:14	07:19	08:21
	15:45	16:42	17:44	19:50	20:52	21:49	22:06	21:25	20:12	18:52	16:34	15:43
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	15:46	16:44	17:46	19:52	20:54	21:51	22:06	21:23	20:09	18:49	16:32	15:42
3	08:47	08:08	07:04	06:41	05:26	04:31	04:29	05:16	06:18	07:18	07:23	08:24
	15:48	16:46	17:48	19:54	20:56	21:52	22:05	21:21	20:07	18:46	16:30	15:41
4	08:47	08:06	07:01	06:39	05:24	04:30	04:30	05:18	06:20	07:20	07:26	08:26
	15:49	16:49	17:51	19:56	20:58	21:53	22:04	21:19	20:04	18:44	16:27	15:40
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18	08:35	07:36	06:24	06:02	04:55	04:23	04:48	05:46	06:48	07:49	07:56	08:43
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	16:20	17:29	18:29	20:33	21:33	22:07	21:44	20:37	19:16	17:57	15:54	15:37
23	08:28	07:24	06:11	05:50	04:46	04:23	04:56	05:56	06:58	08:00	08:06	08:46
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27	08:21	07:14	06:00	05:40	04:40	04:25	05:03	06:04	07:06	07:08	08:13	08:48
	16:31	17:40	18:39	20:44	21:41	22:07	21:35	20:25	19:02	16:45	15:47	15:40
28	08:20	07:11	05:57	05:38	04:39	04:25	05:05	06:06	07:08	07:10	08:15	08:48
	16:33	17:42	18:41	20:46	21:43	22:07	21:33	20:22	19:00	16:43	15:46	15:41
29	08:18		05:55	05:35	04:37	04:26	05:07	06:08	07:10	07:13	08:17	08:48
	16:35		18:43	20:48	21:45	22:07	21:31	20:20	18:57	16:41	15:45	15:42
30	08:16		06:52	05:33	04:36	04:27	05:09	06:10	07:12	07:15	08:19	08:48
	16:38		19:45	20:50	21:46	22:06	21:29	20:17	18:54	16:38	15:44	15:43
31	08:14		06:49		04:35		05:11	06:12		07:17		08:48
	16:40		19:47		21:48		21:27	20:14		16:36		15:44
Potential sun hours	235	266	365	425	507	528	529	470	385	324	248	217
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: DL - Berzkalnes

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:12	07:09	06:47	05:31	04:34	04:27	05:13	06:14	07:14	07:19	08:21
	15:45	16:42	17:44	19:50	20:52	21:49	22:06	21:26	20:12	18:52	16:34	15:43
2	08:48	08:10	07:06	06:44	05:28	04:33	04:28	05:15	06:16	07:16	07:21	08:22
	15:47	16:44	17:46	19:52	20:54	21:51	22:06	21:24	20:09	18:49	16:32	15:42
3	08:47	08:09	07:04	06:42	05:26	04:32	04:29	05:17	06:18	07:18	07:23	08:24
	15:48	16:46	17:49	19:54	20:56	21:52	22:05	21:21	20:07	18:46	16:30	15:41
4	08:47	08:07	07:01	06:39	05:24	04:31	04:30	05:18	06:20	07:20	07:26	08:26
	15:49	16:49	17:51	19:56	20:58	21:53	22:05	21:19	20:04	18:44	16:27	15:40
5	08:46	08:05	06:58	06:36	05:22	04:30	04:31	05:20	06:22	07:22	07:28	08:27
	15:50	16:51	17:53	19:58	21:00	21:55	22:04	21:17	20:01	18:41	16:25	15:39
6	08:46	08:02	06:56	06:34	05:19	04:29	04:32	05:22	06:24	07:24	07:30	08:29
	15:52	16:53	17:55	20:00	21:02	21:56	22:03	21:15	19:59	18:38	16:23	15:39
7	08:45	08:00	06:53	06:31	05:17	04:28	04:33	05:24	06:26	07:26	07:32	08:30
	15:53	16:55	17:57	20:02	21:04	21:57	22:02	21:13	19:56	18:36	16:21	15:38
8	08:45	07:58	06:51	06:28	05:15	04:27	04:34	05:26	06:28	07:28	07:34	08:32
	15:55	16:58	17:59	20:04	21:06	21:58	22:02	21:11	19:53	18:33	16:19	15:37
9	08:44	07:56	06:48	06:26	05:13	04:26	04:35	05:28	06:30	07:30	07:36	08:33
	15:56	17:00	18:01	20:06	21:08	21:59	22:01	21:09	19:51	18:31	16:17	15:37
10	08:43	07:54	06:45	06:23	05:11	04:26	04:37	05:30	06:32	07:32	07:39	08:35
	15:58	17:02	18:04	20:08	21:10	22:00	22:00	21:06	19:48	18:28	16:15	15:36
11	08:42	07:52	06:43	06:20	05:09	04:25	04:38	05:32	06:34	07:34	07:41	08:36
	16:00	17:04	18:06	20:10	21:12	22:01	21:59	21:04	19:45	18:25	16:13	15:36
12	08:42	07:50	06:40	06:18	05:07	04:25	04:39	05:34	06:36	07:37	07:43	08:37
	16:02	17:07	18:08	20:12	21:14	22:02	21:58	21:02	19:43	18:23	16:11	15:36
13	08:41	07:47	06:38	06:15	05:05	04:24	04:41	05:36	06:38	07:39	07:45	08:38
	16:03	17:09	18:10	20:15	21:16	22:03	21:56	20:59	19:40	18:20	16:09	15:36
14	08:40	07:45	06:35	06:13	05:03	04:24	04:42	05:38	06:40	07:41	07:47	08:39
	16:05	17:11	18:12	20:17	21:18	22:03	21:55	20:57	19:37	18:18	16:07	15:35
15	08:38	07:43	06:32	06:10	05:01	04:23	04:43	05:40	06:42	07:43	07:49	08:40
	16:07	17:13	18:14	20:19	21:20	22:04	21:54	20:55	19:35	18:15	16:06	15:35
16	08:37	07:40	06:30	06:07	04:59	04:23	04:45	05:42	06:44	07:45	07:51	08:41
	16:09	17:16	18:16	20:21	21:22	22:05	21:53	20:52	19:32	18:13	16:04	15:35
17	08:36	07:38	06:27	06:05	04:57	04:23	04:46	05:44	06:46	07:47	07:54	08:42
	16:11	17:18	18:18	20:23	21:24	22:05	21:51	20:50	19:29	18:10	16:02	15:35
18	08:35	07:36	06:24	06:02	04:55	04:23	04:48	05:46	06:48	07:49	07:56	08:43
	16:13	17:20	18:20	20:25	21:26	22:06	21:50	20:47	19:27	18:07	16:00	15:36
19	08:34	07:33	06:22	06:00	04:53	04:23	04:50	05:48	06:50	07:51	07:58	08:44
	16:15	17:22	18:23	20:27	21:28	22:06	21:48	20:45	19:24	18:05	15:59	15:36
20	08:32	07:31	06:19	05:57	04:51	04:23	04:51	05:50	06:52	07:53	08:00	08:45
	16:17	17:24	18:25	20:29	21:30	22:07	21:47	20:43	19:21	18:02	15:57	15:36
21	08:31	07:29	06:16	05:55	04:50	04:23	04:53	05:52	06:54	07:55	08:02	08:45
	16:19	17:27	18:27	20:31	21:31	22:07	21:45	20:40	19:19	18:00	15:56	15:36
22	08:29	07:26	06:14	05:52	04:48	04:23	04:55	05:54	06:56	07:58	08:04	08:46
	16:21	17:29	18:29	20:33	21:33	22:07	21:44	20:38	19:16	17:58	15:54	15:37
23	08:28	07:24	06:11	05:50	04:46	04:23	04:56	05:56	06:58	08:00	08:06	08:46
	16:23	17:31	18:31	20:35	21:35	22:07	21:42	20:35	19:13	17:55	15:53	15:37
24	08:26	07:21	06:08	05:47	04:45	04:24	04:58	05:58	07:00	08:02	08:08	08:47
	16:25	17:33	18:33	20:37	21:37	22:07	21:40	20:33	19:10	17:53	15:51	15:38
25	08:25	07:19	06:06	05:45	04:43	04:24	05:00	06:00	07:02	08:04	08:10	08:47
	16:27	17:35	18:35	20:40	21:38	22:07	21:39	20:30	19:08	17:50	15:50	15:39
26	08:23	07:16	06:03	05:43	04:42	04:24	05:02	06:02	07:04	07:06	08:12	08:48
	16:29	17:38	18:37	20:42	21:40	22:07	21:37	20:27	19:05	16:48	15:49	15:39
27	08:21	07:14	06:00	05:40	04:40	04:25	05:03	06:04	07:06	07:08	08:14	08:48
	16:31	17:40	18:39	20:44	21:42	22:07	21:35	20:25	19:02	16:46	15:47	15:40
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	16:33	17:42	18:41	20:46	21:43	22:07	21:33	20:22	19:00	16:43	15:46	15:41
29	08:18		05:55	05:35	04:37	04:26	05:07	06:08	07:10	07:13	08:17	08:48
	16:35		18:43	20:48	21:45	22:07	21:31	20:20	18:57	16:41	15:45	15:42
30	08:16		06:52	05:33	04:36	04:27	05:09	06:10	07:12	07:15	08:19	08:48
	16:38		19:46	20:50	21:46	22:07	21:30	20:17	18:54	16:39	15:44	15:43
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	16:40		19:48		21:48		21:28	20:15		16:36		15:44
Potential sun hours	235	266	365	425	507	528	529	470	385	324	248	217
Total, worst case												
Sun reduction												
Oper. time red.												
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Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: DM - Arsmenieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:12 16:42	07:09 17:44	06:47 19:50	05:31 20:52	04:34 21:49	04:27 22:06	05:13 21:25	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:43
2	08:47 15:46	08:10 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:33 21:50	04:28 22:06	05:14 21:23	06:16 20:09	07:16 18:49	07:21 16:32	08:22 15:42
3	08:47 15:48	08:08 16:46	07:03 17:48	06:41 19:54	05:26 20:56	04:31 21:52	04:29 22:05	05:16 21:21	06:18 20:07	07:18 18:46	07:23 16:30	08:24 15:41
4	08:47 15:49	08:06 16:49	07:01 17:51	06:39 19:56	05:24 20:58	04:30 21:53	04:30 22:04	05:18 21:19	06:20 20:04	07:20 18:44	07:26 16:27	08:26 15:40
5	08:46 15:50	08:04 16:51	06:58 17:53	06:36 19:58	05:21 21:00	04:29 21:54	04:31 22:04	05:20 21:17	06:22 20:01	07:22 18:41	07:28 16:25	08:27 15:39
6	08:46 15:52	08:02 16:53	06:56 17:55	06:33 20:00	05:19 21:02	04:29 21:56	04:32 22:03	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:39
7	08:45 15:53	08:00 16:55	06:53 17:57	06:31 20:02	05:17 21:04	04:28 21:57	04:33 22:02	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	08:30 15:38
8	08:45 15:55	07:58 16:58	06:51 17:59	06:28 20:04	05:15 21:06	04:27 21:58	04:34 22:01	05:26 21:11	06:28 19:53	07:28 18:33	07:34 16:19	08:32 15:37
9	08:44 15:56	07:56 17:00	06:48 18:01	06:26 20:06	05:13 21:08	04:26 21:59	04:35 22:01	05:28 21:08	06:30 19:51	07:30 18:30	07:36 16:17	08:33 15:37
10	08:43 15:58	07:54 17:02	06:45 18:03	06:23 20:08	05:11 21:10	04:26 22:00	04:37 22:00	05:30 21:06	06:32 19:48	07:32 18:28	07:38 16:15	08:34 15:36
11	08:42 16:00	07:52 17:04	06:43 18:06	06:20 20:10	05:08 21:12	04:25 22:01	04:38 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:13	08:36 15:36
12	08:41 16:01	07:49 17:06	06:40 18:08	06:18 20:12	05:06 21:14	04:24 22:02	04:39 21:57	05:34 21:02	06:36 19:43	07:36 18:23	07:43 16:11	08:37 15:36
13	08:40 16:03	07:47 17:09	06:37 18:10	06:15 20:14	05:04 21:16	04:24 22:03	04:40 21:56	05:36 20:59	06:38 19:40	07:38 18:20	07:45 16:09	08:38 15:35
14	08:39 16:05	07:45 17:11	06:35 18:12	06:13 20:16	05:02 21:18	04:24 22:03	04:42 21:55	05:38 20:57	06:40 19:37	07:41 18:17	07:47 16:07	08:39 15:35
15	08:38 16:07	07:43 17:13	06:32 18:14	06:10 20:19	05:00 21:20	04:23 22:04	04:43 21:54	05:40 20:54	06:42 19:35	07:43 18:15	07:49 16:05	08:40 15:35
16	08:37 16:09	07:40 17:15	06:29 18:16	06:07 20:21	04:59 21:22	04:23 22:05	04:45 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:51 16:04	08:41 15:35
17	08:36 16:11	07:38 17:18	06:27 18:18	06:05 20:23	04:57 21:24	04:23 22:05	04:46 21:51	05:44 20:50	06:46 19:29	07:47 18:10	07:53 16:02	08:42 15:35
18	08:35 16:12	07:36 17:20	06:24 18:20	06:02 20:25	04:55 21:26	04:23 22:06	04:48 21:50	05:46 20:47	06:48 19:27	07:49 18:07	07:55 16:00	08:43 15:35
19	08:33 16:14	07:33 17:22	06:21 18:22	06:00 20:27	04:53 21:28	04:23 22:06	04:50 21:48	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:59	08:44 15:36
20	08:32 16:16	07:31 17:24	06:19 18:25	05:57 20:29	04:51 21:29	04:23 22:06	04:51 21:47	05:50 20:42	06:52 19:21	07:53 18:02	08:00 15:57	08:45 15:36
21	08:31 16:18	07:28 17:27	06:16 18:27	05:55 20:31	04:50 21:31	04:23 22:07	04:53 21:45	05:52 20:40	06:54 19:18	07:55 18:00	08:02 15:55	08:45 15:36
22	08:29 16:20	07:26 17:29	06:13 18:29	05:52 20:33	04:48 21:33	04:23 22:07	04:54 21:44	05:54 20:37	06:56 19:16	07:57 17:57	08:04 15:54	08:46 15:37
23	08:28 16:23	07:24 17:31	06:11 18:31	05:50 20:35	04:46 21:35	04:23 22:07	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:46 15:37
24	08:26 16:25	07:21 17:33	06:08 18:33	05:47 20:37	04:45 21:36	04:23 22:07	04:58 21:40	05:58 20:32	07:00 19:10	08:02 17:53	08:08 15:51	08:47 15:38
25	08:25 16:27	07:19 17:35	06:05 18:35	05:45 20:39	04:43 21:38	04:24 22:07	05:00 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:50	08:47 15:38
26	08:23 16:29	07:16 17:38	06:03 18:37	05:42 20:41	04:42 21:40	04:24 22:07	05:01 21:37	06:02 20:27	07:04 19:05	07:06 16:48	08:11 15:48	08:47 15:39
27	08:21 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:41	04:25 22:07	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:45	08:13 15:47	08:48 15:40
28	08:20 16:33	07:11 17:42	05:57 18:41	05:38 20:46	04:39 21:43	04:25 22:07	05:05 21:33	06:06 20:22	07:08 19:00	07:10 16:43	08:15 15:46	08:48 15:41
29	08:18 16:35		05:55 18:43	05:35 20:48	04:37 21:45	04:26 22:07	05:07 21:31	06:08 20:20	07:10 18:57	07:13 16:41	08:17 15:45	08:48 15:42
30	08:16 16:38		06:52 19:45	05:33 20:50	04:36 21:46	04:27 22:06	05:09 21:29	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:44	08:48 15:43
31	08:14 16:40		06:49 19:47	05:30 21:48	04:35 21:48	05:11 21:27	06:12 20:14	06:12 20:14	07:17 16:36			08:48 15:44
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Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
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Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: DN - Smelceju majas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:12	07:09	06:47	05:31	04:34	04:27	05:13	06:14	07:14	07:19	08:21
	15:45	16:42	17:44	19:50	20:52	21:49	22:06	21:25	20:12	18:52	16:34	15:43
2	08:47	08:10	07:06	06:44	05:28	04:33	04:28	05:15	06:16	07:16	07:21	08:22
	15:46	16:44	17:46	19:52	20:54	21:51	22:06	21:23	20:09	18:49	16:32	15:42
3	08:47	08:08	07:04	06:41	05:26	04:31	04:29	05:16	06:18	07:18	07:23	08:24
	15:48	16:46	17:49	19:54	20:56	21:52	22:05	21:21	20:07	18:46	16:30	15:41
4	08:47	08:06	07:01	06:39	05:24	04:30	04:30	05:18	06:20	07:20	07:26	08:26
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	16:33	17:42	18:41	20:46	21:43	22:07	21:33	20:22	19:00	16:43	15:46	15:41
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	16:38		19:45	20:50	21:46	22:06	21:29	20:17	18:54	16:39	15:44	15:43
31	08:14		06:49		04:35		05:11	06:12		07:17		08:48
	16:40		19:47		21:48		21:27	20:14		16:36		15:44
Potential sun hours	235	266	365	425	507	528	529	470	385	324	248	217
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: DO - Zemites

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:12 16:42	07:09 17:44	06:47 19:50	05:30 20:52	04:34 21:49	04:27 22:06	05:13 21:25	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:43
2	08:47 15:46	08:10 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:32 21:51	04:28 22:06	05:14 21:23	06:16 20:09	07:16 18:49	07:21 16:32	08:22 15:42
3	08:47 15:48	08:08 16:46	07:03 17:48	06:41 19:54	05:26 20:56	04:31 21:52	04:29 22:05	05:16 21:21	06:18 20:07	07:18 18:46	07:23 16:29	08:24 15:41
4	08:47 15:49	08:06 16:49	07:01 17:51	06:39 19:56	05:24 20:58	04:30 21:53	04:30 22:04	05:18 21:19	06:20 20:04	07:20 18:44	07:26 16:27	08:26 15:40
5	08:46 15:50	08:04 16:51	06:58 17:53	06:36 19:58	05:21 21:00	04:29 21:54	04:31 22:04	05:20 21:17	06:22 20:01	07:22 18:41	07:28 16:25	08:27 15:39
6	08:46 15:52	08:02 16:53	06:56 17:55	06:33 20:00	05:19 21:02	04:28 21:56	04:32 22:03	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
7	08:45 15:53	08:00 16:55	06:53 17:57	06:31 20:02	05:17 21:04	04:28 21:57	04:33 22:02	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	08:30 15:38
8	08:45 15:55	07:58 16:57	06:51 17:59	06:28 20:04	05:15 21:06	04:27 21:58	04:34 22:01	05:26 21:11	06:28 19:53	07:28 18:33	07:34 16:19	08:32 15:37
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11	08:42 16:00	07:52 17:04	06:43 18:06	06:20 20:10	05:08 21:12	04:25 22:01	04:38 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:13	08:36 15:36
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19	08:33 16:14	07:33 17:22	06:21 18:22	06:00 20:27	04:53 21:28	04:23 22:06	04:49 21:48	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:59	08:44 15:36
20	08:32 16:16	07:31 17:24	06:19 18:25	05:57 20:29	04:51 21:29	04:23 22:07	04:51 21:47	05:50 20:42	06:52 19:21	07:53 18:02	08:00 15:57	08:45 15:36
21	08:31 16:18	07:28 17:27	06:16 18:27	05:55 20:31	04:50 21:31	04:23 22:07	04:53 21:45	05:52 20:40	06:54 19:18	07:55 18:00	08:02 15:55	08:45 15:36
22	08:29 16:20	07:26 17:29	06:13 18:29	05:52 20:33	04:48 21:33	04:23 22:07	04:54 21:44	05:54 20:37	06:56 19:16	07:57 17:57	08:04 15:54	08:46 15:37
23	08:28 16:22	07:24 17:31	06:11 18:31	05:50 20:35	04:46 21:35	04:23 22:07	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:46 15:37
24	08:26 16:25	07:21 17:33	06:08 18:33	05:47 20:37	04:45 21:36	04:23 22:07	04:58 21:40	05:58 20:32	07:00 19:10	08:02 17:53	08:08 15:51	08:47 15:38
25	08:25 16:27	07:19 17:35	06:05 18:35	05:45 20:39	04:43 21:38	04:24 22:07	05:00 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:50	08:47 15:38
26	08:23 16:29	07:16 17:38	06:03 18:37	05:42 20:42	04:42 21:40	04:24 22:07	05:01 21:37	06:02 20:27	07:04 19:05	07:06 16:48	08:12 15:48	08:47 15:39
27	08:21 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:41	04:25 22:07	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:45	08:13 15:47	08:48 15:40
28	08:20 16:33	07:11 17:42	05:57 18:41	05:38 20:46	04:39 21:43	04:25 22:07	05:05 21:33	06:06 20:22	07:08 19:00	07:10 16:43	08:15 15:46	08:48 15:41
29	08:18 16:35		05:55 18:43	05:35 20:48	04:37 21:45	04:26 22:07	05:07 21:31	06:08 20:20	07:10 18:57	07:13 16:41	08:17 15:45	08:48 15:42
30	08:16 16:37		06:52 19:45	05:33 20:50	04:36 21:46	04:27 22:06	05:09 21:29	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:44	08:48 15:43
31	08:14 16:40		06:49 19:47		04:35 21:48		05:11 21:27	06:12 20:14		07:17 16:36		08:48 15:44
Potential sun hours	235	266	365	425	507	528	529	470	385	324	248	217
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: DP - Arsmeneki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:12 16:42	07:09 17:44	06:47 19:50	05:31 20:52	04:34 21:49	04:27 22:06	05:13 21:25	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:43
2	08:47 15:46	08:10 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:33 21:50	04:28 22:06	05:14 21:23	06:16 20:09	07:16 18:49	07:21 16:32	08:22 15:42
3	08:47 15:48	08:08 16:46	07:03 17:48	06:41 19:54	05:26 20:56	04:31 21:52	04:29 22:05	05:16 21:21	06:18 20:07	07:18 18:46	07:23 16:30	08:24 15:41
4	08:47 15:49	08:06 16:49	07:01 17:51	06:39 19:56	05:24 20:58	04:30 21:53	04:30 22:04	05:18 21:19	06:20 20:04	07:20 18:44	07:26 16:27	08:26 15:40
5	08:46 15:50	08:04 16:51	06:58 17:53	06:36 19:58	05:21 21:00	04:29 21:54	04:31 22:04	05:20 21:17	06:22 20:01	07:22 18:41	07:28 16:25	08:27 15:39
6	08:46 15:52	08:02 16:53	06:56 17:55	06:33 20:00	05:19 21:02	04:29 21:56	04:32 22:03	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:39
7	08:45 15:53	08:00 16:55	06:53 17:57	06:31 20:02	05:17 21:04	04:28 21:57	04:33 22:02	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	08:30 15:38
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9	08:44 15:56	07:56 17:00	06:48 18:01	06:26 20:06	05:13 21:08	04:26 21:59	04:35 22:01	05:28 21:08	06:30 19:51	07:30 18:30	07:36 16:17	08:33 15:37
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11	08:42 16:00	07:52 17:04	06:43 18:06	06:20 20:10	05:08 21:12	04:25 22:01	04:38 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:13	08:36 15:36
12	08:41 16:01	07:49 17:06	06:40 18:08	06:18 20:12	05:06 21:14	04:24 22:02	04:39 21:57	05:34 21:02	06:36 19:43	07:36 18:23	07:43 16:11	08:37 15:36
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15	08:38 16:07	07:43 17:13	06:32 18:14	06:10 20:19	05:00 21:20	04:23 22:04	04:43 21:54	05:40 20:54	06:42 19:35	07:43 18:15	07:49 16:05	08:40 15:35
16	08:37 16:09	07:40 17:15	06:29 18:16	06:07 20:21	04:59 21:22	04:23 22:05	04:45 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:51 16:04	08:41 15:35
17	08:36 16:11	07:38 17:18	06:27 18:18	06:05 20:23	04:57 21:24	04:23 22:05	04:46 21:51	05:44 20:50	06:46 19:29	07:47 18:10	07:53 16:02	08:42 15:35
18	08:35 16:12	07:36 17:20	06:24 18:20	06:02 20:25	04:55 21:26	04:23 22:06	04:48 21:50	05:46 20:47	06:48 19:27	07:49 18:07	07:55 16:00	08:43 15:35
19	08:33 16:14	07:33 17:22	06:21 18:22	06:00 20:27	04:53 21:28	04:23 22:06	04:50 21:48	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:59	08:44 15:36
20	08:32 16:16	07:31 17:24	06:19 18:25	05:57 20:29	04:51 21:29	04:23 22:06	04:51 21:47	05:50 20:42	06:52 19:21	07:53 18:02	08:00 15:57	08:45 15:36
21	08:31 16:18	07:28 17:27	06:16 18:27	05:55 20:31	04:50 21:31	04:23 22:07	04:53 21:45	05:52 20:40	06:54 19:18	07:55 18:00	08:02 15:55	08:45 15:36
22	08:29 16:20	07:26 17:29	06:13 18:29	05:52 20:33	04:48 21:33	04:23 22:07	04:54 21:44	05:54 20:37	06:56 19:16	07:57 17:57	08:04 15:54	08:46 15:37
23	08:28 16:23	07:24 17:31	06:11 18:31	05:50 20:35	04:46 21:35	04:23 22:07	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:46 15:37
24	08:26 16:25	07:21 17:33	06:08 18:33	05:47 20:37	04:45 21:36	04:23 22:07	04:58 21:40	05:58 20:32	07:00 19:10	08:02 17:53	08:08 15:51	08:47 15:38
25	08:25 16:27	07:19 17:35	06:05 18:35	05:45 20:39	04:43 21:38	04:24 22:07	05:00 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:50	08:47 15:38
26	08:23 16:29	07:16 17:38	06:03 18:37	05:42 20:41	04:42 21:40	04:24 22:07	05:01 21:37	06:02 20:27	07:04 19:05	07:06 16:48	08:11 15:48	08:47 15:39
27	08:21 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:41	04:25 22:07	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:45	08:13 15:47	08:48 15:40
28	08:20 16:33	07:11 17:42	05:57 18:41	05:38 20:46	04:39 21:43	04:25 22:07	05:05 21:33	06:06 20:22	07:08 19:00	07:10 16:43	08:15 15:46	08:48 15:41
29	08:18 16:35		05:55 18:43	05:35 20:48	04:37 21:45	04:26 22:07	05:07 21:31	06:08 20:20	07:10 18:57	07:13 16:41	08:17 15:45	08:48 15:42
30	08:16 16:38		06:52 19:45	05:33 20:50	04:36 21:46	04:27 22:06	05:09 21:29	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:44	08:48 15:43
31	08:14 16:40		06:49 19:47		04:35 21:48		05:11 21:27	06:12 20:14		07:17 16:36		08:48 15:44
Potential sun hours	235	266	365	425	507	528	529	470	385	324	248	217
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: DQ - Upi š i

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:12	07:09	06:47	05:31	04:34	04:27	05:13	06:14	07:14	07:19	08:21
	15:45	16:42	17:44	19:50	20:52	21:49	22:06	21:25	20:12	18:52	16:34	15:43
2	08:48	08:10	07:06	06:44	05:28	04:33	04:28	05:15	06:16	07:16	07:21	08:22
	15:46	16:44	17:46	19:52	20:54	21:51	22:06	21:23	20:09	18:49	16:32	15:42
3	08:47	08:08	07:04	06:41	05:26	04:31	04:29	05:16	06:18	07:18	07:23	08:24
	15:48	16:46	17:49	19:54	20:56	21:52	22:05	21:21	20:07	18:46	16:30	15:41
4	08:47	08:06	07:01	06:39	05:24	04:30	04:30	05:18	06:20	07:20	07:26	08:26
	15:49	16:49	17:51	19:56	20:58	21:53	22:05	21:19	20:04	18:44	16:27	15:40
5	08:46	08:04	06:58	06:36	05:21	04:29	04:31	05:20	06:22	07:22	07:28	08:27
	15:50	16:51	17:53	19:58	21:00	21:55	22:04	21:17	20:01	18:41	16:25	15:39
6	08:46	08:02	06:56	06:33	05:19	04:29	04:32	05:22	06:24	07:24	07:30	08:29
	15:52	16:53	17:55	20:00	21:02	21:56	22:03	21:15	19:59	18:38	16:23	15:39
7	08:45	08:00	06:53	06:31	05:17	04:28	04:33	05:24	06:26	07:26	07:32	08:30
	15:53	16:55	17:57	20:02	21:04	21:57	22:02	21:13	19:56	18:36	16:21	15:38
8	08:45	07:58	06:51	06:28	05:15	04:27	04:34	05:26	06:28	07:28	07:34	08:32
	15:55	16:58	17:59	20:04	21:06	21:58	22:02	21:11	19:53	18:33	16:19	15:37
9	08:44	07:56	06:48	06:26	05:13	04:26	04:35	05:28	06:30	07:30	07:36	08:33
	15:56	17:00	18:01	20:06	21:08	21:59	22:01	21:08	19:51	18:30	16:17	15:37
10	08:43	07:54	06:45	06:23	05:11	04:26	04:37	05:30	06:32	07:32	07:39	08:35
	15:58	17:02	18:04	20:08	21:10	22:00	22:00	21:06	19:48	18:28	16:15	15:36
11	08:42	07:52	06:43	06:20	05:09	04:25	04:38	05:32	06:34	07:34	07:41	08:36
	16:00	17:04	18:06	20:10	21:12	22:01	21:59	21:04	19:45	18:25	16:13	15:36
12	08:41	07:49	06:40	06:18	05:06	04:24	04:39	05:34	06:36	07:36	07:43	08:37
	16:01	17:07	18:08	20:12	21:14	22:02	21:58	21:02	19:43	18:23	16:11	15:36
13	08:41	07:47	06:37	06:15	05:04	04:24	04:41	05:36	06:38	07:39	07:45	08:38
	16:03	17:09	18:10	20:14	21:16	22:03	21:56	20:59	19:40	18:20	16:09	15:35
14	08:40	07:45	06:35	06:13	05:02	04:24	04:42	05:38	06:40	07:41	07:47	08:39
	16:05	17:11	18:12	20:17	21:18	22:03	21:55	20:57	19:37	18:18	16:07	15:35
15	08:38	07:43	06:32	06:10	05:01	04:23	04:43	05:40	06:42	07:43	07:49	08:40
	16:07	17:13	18:14	20:19	21:20	22:04	21:54	20:55	19:35	18:15	16:05	15:35
16	08:37	07:40	06:30	06:07	04:59	04:23	04:45	05:42	06:44	07:45	07:51	08:41
	16:09	17:15	18:16	20:21	21:22	22:05	21:53	20:52	19:32	18:12	16:04	15:35
17	08:36	07:38	06:27	06:05	04:57	04:23	04:46	05:44	06:46	07:47	07:53	08:42
	16:11	17:18	18:18	20:23	21:24	22:05	21:51	20:50	19:29	18:10	16:02	15:35
18	08:35	07:36	06:24	06:02	04:55	04:23	04:48	05:46	06:48	07:49	07:56	08:43
	16:12	17:20	18:20	20:25	21:26	22:06	21:50	20:47	19:27	18:07	16:00	15:35
19	08:34	07:33	06:22	06:00	04:53	04:23	04:50	05:48	06:50	07:51	07:58	08:44
	16:14	17:22	18:23	20:27	21:28	22:06	21:48	20:45	19:24	18:05	15:59	15:36
20	08:32	07:31	06:19	05:57	04:51	04:23	04:51	05:50	06:52	07:53	08:00	08:45
	16:16	17:24	18:25	20:29	21:29	22:07	21:47	20:42	19:21	18:02	15:57	15:36
21	08:31	07:29	06:16	05:55	04:50	04:23	04:53	05:52	06:54	07:55	08:02	08:45
	16:18	17:27	18:27	20:31	21:31	22:07	21:45	20:40	19:18	18:00	15:55	15:36
22	08:29	07:26	06:14	05:52	04:48	04:23	04:54	05:54	06:56	07:58	08:04	08:46
	16:20	17:29	18:29	20:33	21:33	22:07	21:44	20:38	19:16	17:57	15:54	15:37
23	08:28	07:24	06:11	05:50	04:46	04:23	04:56	05:56	06:58	08:00	08:06	08:46
	16:23	17:31	18:31	20:35	21:35	22:07	21:42	20:35	19:13	17:55	15:53	15:37
24	08:26	07:21	06:08	05:47	04:45	04:23	04:58	05:58	07:00	08:02	08:08	08:47
	16:25	17:33	18:33	20:37	21:37	22:07	21:40	20:32	19:10	17:53	15:51	15:38
25	08:25	07:19	06:05	05:45	04:43	04:24	05:00	06:00	07:02	08:04	08:10	08:47
	16:27	17:35	18:35	20:39	21:38	22:07	21:39	20:30	19:08	17:50	15:50	15:38
26	08:23	07:16	06:03	05:42	04:42	04:24	05:02	06:02	07:04	07:06	08:12	08:47
	16:29	17:38	18:37	20:42	21:40	22:07	21:37	20:27	19:05	16:48	15:48	15:39
27	08:21	07:14	06:00	05:40	04:40	04:25	05:03	06:04	07:06	07:08	08:13	08:48
	16:31	17:40	18:39	20:44	21:42	22:07	21:35	20:25	19:02	16:45	15:47	15:40
28	08:20	07:11	05:57	05:38	04:39	04:25	05:05	06:06	07:08	07:10	08:15	08:48
	16:33	17:42	18:41	20:46	21:43	22:07	21:33	20:22	19:00	16:43	15:46	15:41
29	08:18		05:55	05:35	04:37	04:26	05:07	06:08	07:10	07:13	08:17	08:48
	16:35		18:43	20:48	21:45	22:07	21:31	20:20	18:57	16:41	15:45	15:42
30	08:16		06:52	05:33	04:36	04:27	05:09	06:10	07:12	07:15	08:19	08:48
	16:38		19:45	20:50	21:46	22:07	21:29	20:17	18:54	16:39	15:44	15:43
31	08:14		06:49		04:35		05:11	06:12		07:17		08:48
	16:40		19:48		21:48		21:27	20:15		16:36		15:44
Potential sun hours	235	266	365	425	507	528	529	470	385	324	248	217
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: DR - Aizveji

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:12 16:42	07:09 17:44	06:47 19:50	05:31 20:52	04:34 21:49	04:27 22:06	05:13 21:25	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:43
2	08:47 15:46	08:10 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:33 21:51	04:28 22:06	05:14 21:23	06:16 20:09	07:16 18:49	07:21 16:32	08:22 15:42
3	08:47 15:48	08:08 16:46	07:04 17:48	06:41 19:54	05:26 20:56	04:31 21:52	04:29 22:05	05:16 21:21	06:18 20:07	07:18 18:46	07:23 16:30	08:24 15:41
4	08:47 15:49	08:06 16:49	07:01 17:51	06:39 19:56	05:24 20:58	04:30 21:53	04:30 22:04	05:18 21:19	06:20 20:04	07:20 18:44	07:26 16:27	08:26 15:40
5	08:46 15:50	08:04 16:51	06:58 17:53	06:36 19:58	05:21 21:00	04:29 21:54	04:31 22:04	05:20 21:17	06:22 20:01	07:22 18:41	07:28 16:25	08:27 15:39
6	08:46 15:52	08:02 16:53	06:56 17:55	06:33 20:00	05:19 21:02	04:29 21:56	04:32 22:03	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:39
7	08:45 15:53	08:00 16:55	06:53 17:57	06:31 20:02	05:17 21:04	04:28 21:57	04:33 22:02	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	08:30 15:38
8	08:45 15:55	07:58 16:58	06:51 17:59	06:28 20:04	05:15 21:06	04:27 21:58	04:34 22:01	05:26 21:11	06:28 19:53	07:28 18:33	07:34 16:19	08:32 15:37
9	08:44 15:56	07:56 17:00	06:48 18:01	06:26 20:06	05:13 21:08	04:26 21:59	04:35 22:01	05:28 21:08	06:30 19:51	07:30 18:30	07:36 16:17	08:33 15:37
10	08:43 15:58	07:54 17:02	06:45 18:03	06:23 20:08	05:11 21:10	04:26 22:00	04:37 22:00	05:30 21:06	06:32 19:48	07:32 18:28	07:39 16:15	08:34 15:36
11	08:42 16:00	07:52 17:04	06:43 18:06	06:20 20:10	05:08 21:12	04:25 22:01	04:38 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:13	08:36 15:36
12	08:41 16:01	07:49 17:06	06:40 18:08	06:18 20:12	05:06 21:14	04:24 22:02	04:39 21:58	05:34 21:02	06:36 19:43	07:36 18:23	07:43 16:11	08:37 15:36
13	08:40 16:03	07:47 17:09	06:37 18:10	06:15 20:14	05:04 21:16	04:24 22:03	04:40 21:56	05:36 20:59	06:38 19:40	07:39 18:20	07:45 16:09	08:38 15:35
14	08:39 16:05	07:45 17:11	06:35 18:12	06:13 20:17	05:02 21:18	04:24 22:03	04:42 21:55	05:38 20:57	06:40 19:37	07:41 18:18	07:47 16:07	08:39 15:35
15	08:38 16:07	07:43 17:13	06:32 18:14	06:10 20:19	05:00 21:20	04:23 22:04	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:49 16:05	08:40 15:35
16	08:37 16:09	07:40 17:15	06:29 18:16	06:07 20:21	04:59 21:22	04:23 22:05	04:45 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:51 16:04	08:41 15:35
17	08:36 16:11	07:38 17:18	06:27 18:18	06:05 20:23	04:57 21:24	04:23 22:05	04:46 21:51	05:44 20:50	06:46 19:29	07:47 18:10	07:53 16:02	08:42 15:35
18	08:35 16:12	07:36 17:20	06:24 18:20	06:02 20:25	04:55 21:26	04:23 22:06	04:48 21:50	05:46 20:47	06:48 19:27	07:49 18:07	07:56 16:00	08:43 15:35
19	08:34 16:14	07:33 17:22	06:21 18:22	06:00 20:27	04:53 21:28	04:23 22:06	04:50 21:48	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:59	08:44 15:36
20	08:32 16:16	07:31 17:24	06:19 18:25	05:57 20:29	04:51 21:29	04:23 22:07	04:51 21:47	05:50 20:42	06:52 19:21	07:53 18:02	08:00 15:57	08:45 15:36
21	08:31 16:18	07:28 17:27	06:16 18:27	05:55 20:31	04:50 21:31	04:23 22:07	04:53 21:45	05:52 20:40	06:54 19:18	07:55 18:00	08:02 15:55	08:45 15:36
22	08:29 16:20	07:26 17:29	06:13 18:29	05:52 20:33	04:48 21:33	04:23 22:07	04:54 21:44	05:54 20:37	06:56 19:16	07:57 17:57	08:04 15:54	08:46 15:37
23	08:28 16:23	07:24 17:31	06:11 18:31	05:50 20:35	04:46 21:35	04:23 22:07	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:46 15:37
24	08:26 16:25	07:21 17:33	06:08 18:33	05:47 20:37	04:45 21:36	04:23 22:07	04:58 21:40	05:58 20:32	07:00 19:10	08:02 17:53	08:08 15:51	08:47 15:38
25	08:25 16:27	07:19 17:35	06:05 18:35	05:45 20:39	04:43 21:38	04:24 22:07	05:00 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:50	08:47 15:38
26	08:23 16:29	07:16 17:38	06:03 18:37	05:42 20:42	04:42 21:40	04:24 22:07	05:01 21:37	06:02 20:27	07:04 19:05	07:06 16:48	08:12 15:48	08:47 15:39
27	08:21 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:41	04:25 22:07	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:45	08:13 15:47	08:48 15:40
28	08:20 16:33	07:11 17:42	05:57 18:41	05:38 20:46	04:39 21:43	04:25 22:07	05:05 21:33	06:06 20:22	07:08 19:00	07:10 16:43	08:15 15:46	08:48 15:41
29	08:18 16:35		05:55 18:43	05:35 20:48	04:37 21:45	04:26 22:07	05:07 21:31	06:08 20:20	07:10 18:57	07:13 16:41	08:17 15:45	08:48 15:42
30	08:16 16:38		06:52 19:45	05:33 20:50	04:36 21:46	04:27 22:06	05:09 21:29	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:44	08:48 15:43
31	08:14 16:40		06:49 19:47		04:35 21:48		05:11 21:27	06:12 20:14		07:17 16:36		08:48 15:44
Potential sun hours	235	266	365	425	507	528	529	470	385	324	248	217
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: DS - Dzervites

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:12	07:09	06:47	05:31	04:34	04:27	05:13	06:14	07:14	07:19	08:21
	15:45	16:42	17:44	19:50	20:52	21:49	22:06	21:25	20:12	18:52	16:34	15:43
2	08:47	08:10	07:06	06:44	05:28	04:33	04:28	05:15	06:16	07:16	07:21	08:22
	15:46	16:44	17:46	19:52	20:54	21:50	22:06	21:23	20:09	18:49	16:32	15:42
3	08:47	08:08	07:04	06:41	05:26	04:31	04:29	05:16	06:18	07:18	07:23	08:24
	15:48	16:46	17:48	19:54	20:56	21:52	22:05	21:21	20:07	18:46	16:30	15:41
4	08:47	08:06	07:01	06:39	05:24	04:30	04:30	05:18	06:20	07:20	07:26	08:26
	15:49	16:49	17:51	19:56	20:58	21:53	22:04	21:19	20:04	18:44	16:27	15:40
5	08:46	08:04	06:58	06:36	05:21	04:29	04:31	05:20	06:22	07:22	07:28	08:27
	15:50	16:51	17:53	19:58	21:00	21:54	22:04	21:17	20:01	18:41	16:25	15:39
6	08:46	08:02	06:56	06:33	05:19	04:29	04:32	05:22	06:24	07:24	07:30	08:29
	15:52	16:53	17:55	20:00	21:02	21:56	22:03	21:15	19:59	18:38	16:23	15:39
7	08:45	08:00	06:53	06:31	05:17	04:28	04:33	05:24	06:26	07:26	07:32	08:30
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8	08:45	07:58	06:51	06:28	05:15	04:27	04:34	05:26	06:28	07:28	07:34	08:32
	15:55	16:58	17:59	20:04	21:06	21:58	22:01	21:11	19:53	18:33	16:19	15:37
9	08:44	07:56	06:48	06:26	05:13	04:26	04:35	05:28	06:30	07:30	07:36	08:33
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18	08:35	07:36	06:24	06:02	04:55	04:23	04:48	05:46	06:48	07:49	07:56	08:43
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19	08:33	07:33	06:22	06:00	04:53	04:23	04:50	05:48	06:50	07:51	07:58	08:44
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20	08:32	07:31	06:19	05:57	04:51	04:23	04:51	05:50	06:52	07:53	08:00	08:45
	16:16	17:24	18:25	20:29	21:29	22:07	21:47	20:42	19:21	18:02	15:57	15:36
21	08:31	07:28	06:16	05:55	04:50	04:23	04:53	05:52	06:54	07:55	08:02	08:45
	16:18	17:27	18:27	20:31	21:31	22:07	21:45	20:40	19:18	18:00	15:55	15:36
22	08:29	07:26	06:13	05:52	04:48	04:23	04:55	05:54	06:56	07:57	08:04	08:46
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	16:38		19:45	20:50	21:46	22:06	21:29	20:17	18:54	16:39	15:44	15:43
31	08:14		06:49		04:35		05:11	06:12		07:17		08:48
	16:40		19:47		21:48		21:27	20:14		16:36		15:44
Potential sun hours	235	266	365	425	507	528	529	470	385	324	248	217
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: DT - Jaunmasani

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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Operational time

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373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

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2	08:47 15:47	08:10 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:33 21:51	04:28 22:06	05:15 21:23	06:16 20:09	07:16 18:49	07:21 16:32	08:22 15:42
3	08:47 15:48	08:08 16:46	07:04 17:49	06:41 19:54	05:26 20:56	04:32 21:52	04:29 22:05	05:16 21:21	06:18 20:07	07:18 18:46	07:23 16:30	08:24 15:41
4	08:47 15:49	08:06 16:49	07:01 17:51	06:39 19:56	05:24 20:58	04:30 21:53	04:30 22:04	05:18 21:19	06:20 20:04	07:20 18:44	07:26 16:27	08:26 15:40
5	08:46 15:50	08:04 16:51	06:58 17:53	06:36 19:58	05:21 21:00	04:30 21:54	04:31 22:04	05:20 21:17	06:22 20:01	07:22 18:41	07:28 16:25	08:27 15:39
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7	08:45 15:53	08:00 16:55	06:53 17:57	06:31 20:02	05:17 21:04	04:28 21:57	04:33 22:02	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	08:30 15:38
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10	08:43 15:58	07:54 17:02	06:45 18:04	06:23 20:08	05:11 21:10	04:26 22:00	04:37 22:00	05:30 21:06	06:32 19:48	07:32 18:28	07:39 16:15	08:34 15:36
11	08:42 16:00	07:52 17:04	06:43 18:06	06:20 20:10	05:09 21:12	04:25 22:01	04:38 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:13	08:36 15:36
12	08:41 16:01	07:49 17:07	06:40 18:08	06:18 20:12	05:07 21:14	04:25 22:02	04:39 21:57	05:34 21:02	06:36 19:43	07:36 18:23	07:43 16:11	08:37 15:36
13	08:40 16:03	07:47 17:09	06:37 18:10	06:15 20:14	05:04 21:16	04:24 22:03	04:41 21:56	05:36 20:59	06:38 19:40	07:39 18:20	07:45 16:09	08:38 15:36
14	08:39 16:05	07:45 17:11	06:35 18:12	06:13 20:17	05:03 21:18	04:24 22:03	04:42 21:55	05:38 20:57	06:40 19:37	07:41 18:18	07:47 16:07	08:39 15:35
15	08:38 16:07	07:43 17:13	06:32 18:14	06:10 20:19	05:01 21:20	04:23 22:04	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:49 16:06	08:40 15:35
16	08:37 16:09	07:40 17:15	06:30 18:16	06:07 20:21	04:59 21:22	04:23 22:05	04:45 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:51 16:04	08:41 15:35
17	08:36 16:11	07:38 17:18	06:27 18:18	06:05 20:23	04:57 21:24	04:23 22:05	04:46 21:51	05:44 20:50	06:46 19:29	07:47 18:10	07:53 16:02	08:42 15:35
18	08:35 16:13	07:36 17:20	06:24 18:20	06:02 20:25	04:55 21:26	04:23 22:06	04:48 21:50	05:46 20:47	06:48 19:27	07:49 18:07	07:56 16:00	08:43 15:36
19	08:33 16:14	07:33 17:22	06:22 18:23	06:00 20:27	04:53 21:28	04:23 22:06	04:50 21:48	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:59	08:44 15:36
20	08:32 16:16	07:31 17:24	06:19 18:25	05:57 20:29	04:51 21:29	04:23 22:07	04:51 21:47	05:50 20:42	06:52 19:21	07:53 18:02	08:00 15:57	08:45 15:36
21	08:31 16:18	07:28 17:27	06:16 18:27	05:55 20:31	04:50 21:31	04:23 22:07	04:53 21:45	05:52 20:40	06:54 19:18	07:55 18:00	08:02 15:56	08:45 15:36
22	08:29 16:21	07:26 17:29	06:14 18:29	05:52 20:33	04:48 21:33	04:23 22:07	04:55 21:44	05:54 20:37	06:56 19:16	07:58 17:57	08:04 15:54	08:46 15:37
23	08:28 16:23	07:24 17:31	06:11 18:31	05:50 20:35	04:46 21:35	04:23 22:07	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:53	08:46 15:37
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Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

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SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: DU - Airites

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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2	08:47 15:46	08:10 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:32 21:51	04:28 22:06	05:14 21:23	06:16 20:09	07:21 18:49	07:21 16:32	08:22 15:42
3	08:47 15:48	08:08 16:46	07:03 17:48	06:41 19:54	05:26 20:56	04:31 21:52	04:29 22:05	05:16 21:21	06:18 20:07	07:18 18:46	07:23 16:30	08:24 15:41
4	08:47 15:49	08:06 16:49	07:01 17:51	06:39 19:56	05:24 20:58	04:30 21:53	04:30 22:04	05:18 21:19	06:20 20:04	07:20 18:44	07:26 16:27	08:26 15:40
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8	08:45 15:55	07:58 16:58	06:51 17:59	06:28 20:04	05:15 21:06	04:27 21:58	04:34 22:01	05:26 21:11	06:28 19:53	07:28 18:33	07:34 16:19	08:32 15:37
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11	08:42 16:00	07:52 17:04	06:43 18:06	06:20 20:10	05:08 21:12	04:25 22:01	04:38 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:13	08:36 15:36
12	08:41 16:01	07:49 17:06	06:40 18:08	06:18 20:12	05:06 21:14	04:24 22:02	04:39 21:58	05:34 21:02	06:36 19:43	07:36 18:23	07:43 16:11	08:37 15:36
13	08:40 16:03	07:47 17:09	06:37 18:10	06:15 20:14	05:04 21:16	04:24 22:03	04:40 21:56	05:36 20:59	06:38 19:40	07:39 18:20	07:45 16:09	08:38 15:35
14	08:39 16:05	07:45 17:11	06:35 18:12	06:13 20:17	05:02 21:18	04:24 22:03	04:42 21:55	05:38 20:57	06:40 19:37	07:41 18:17	07:47 16:07	08:39 15:35
15	08:38 16:07	07:43 17:13	06:32 18:14	06:10 20:19	05:00 21:20	04:23 22:04	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:49 16:05	08:40 15:35
16	08:37 16:09	07:40 17:15	06:29 18:16	06:07 20:21	04:59 21:22	04:23 22:05	04:45 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:51 16:04	08:41 15:35
17	08:36 16:11	07:38 17:18	06:27 18:18	06:05 20:23	04:57 21:24	04:23 22:05	04:46 21:51	05:44 20:50	06:46 19:29	07:47 18:10	07:53 16:02	08:42 15:35
18	08:35 16:12	07:36 17:20	06:24 18:20	06:02 20:25	04:55 21:26	04:23 22:06	04:48 21:50	05:46 20:47	06:48 19:27	07:49 18:07	07:56 16:00	08:43 15:35
19	08:33 16:14	07:33 17:22	06:21 18:22	06:00 20:27	04:53 21:28	04:23 22:06	04:49 21:48	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:59	08:44 15:36
20	08:32 16:16	07:31 17:24	06:19 18:25	05:57 20:29	04:51 21:29	04:23 22:07	04:51 21:47	05:50 20:42	06:52 19:21	07:53 18:02	08:00 15:57	08:45 15:36
21	08:31 16:18	07:28 17:27	06:16 18:27	05:55 20:31	04:50 21:31	04:23 22:07	04:53 21:45	05:52 20:40	06:54 19:18	07:55 18:00	08:02 15:55	08:45 15:36
22	08:29 16:20	07:26 17:29	06:13 18:29	05:52 20:33	04:48 21:33	04:23 22:07	04:54 21:44	05:54 20:37	06:56 19:16	07:57 17:57	08:04 15:54	08:46 15:37
23	08:28 16:23	07:24 17:31	06:11 18:31	05:50 20:35	04:46 21:35	04:23 22:07	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:46 15:37
24	08:26 16:25	07:21 17:33	06:08 18:33	05:47 20:37	04:45 21:36	04:23 22:07	04:58 21:40	05:58 20:32	07:00 19:10	08:02 17:53	08:08 15:51	08:47 15:38
25	08:25 16:27	07:19 17:35	06:05 18:35	05:45 20:39	04:43 21:38	04:24 22:07	05:00 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:50	08:47 15:38
26	08:23 16:29	07:16 17:38	06:03 18:37	05:42 20:42	04:42 21:40	04:24 22:07	05:01 21:37	06:02 20:27	07:04 19:05	07:06 16:48	08:12 15:48	08:47 15:39
27	08:21 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:41	04:25 22:07	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:45	08:13 15:47	08:48 15:40
28	08:20 16:33	07:11 17:42	05:57 18:41	05:38 20:46	04:39 21:43	04:25 22:07	05:05 21:33	06:06 20:22	07:08 19:00	07:10 16:43	08:15 15:46	08:48 15:41
29	08:18 16:35		05:55 18:43	05:35 20:48	04:37 21:45	04:26 22:07	05:07 21:31	06:08 20:20	07:10 18:57	07:13 16:41	08:17 15:45	08:48 15:42
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31	08:14 16:40		06:49 19:47		04:35 21:48		05:11 21:27	06:12 20:14		07:17 16:36		08:48 15:44
Potential sun hours	235	266	365	425	507	528	529	470	385	324	248	217
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar

Calculation: Worst & Real Case Shadow receptor: DV - Upmalas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

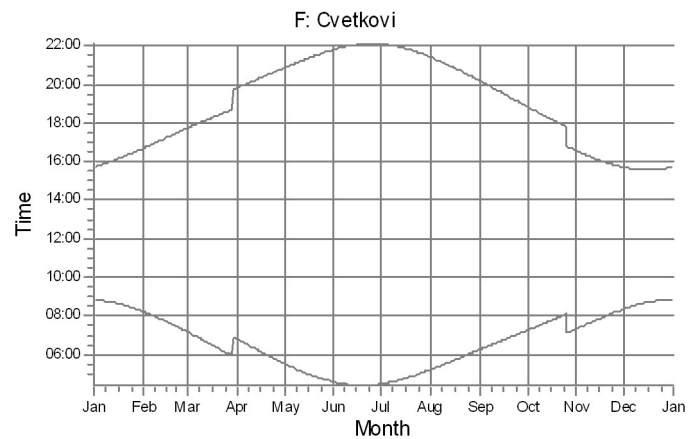
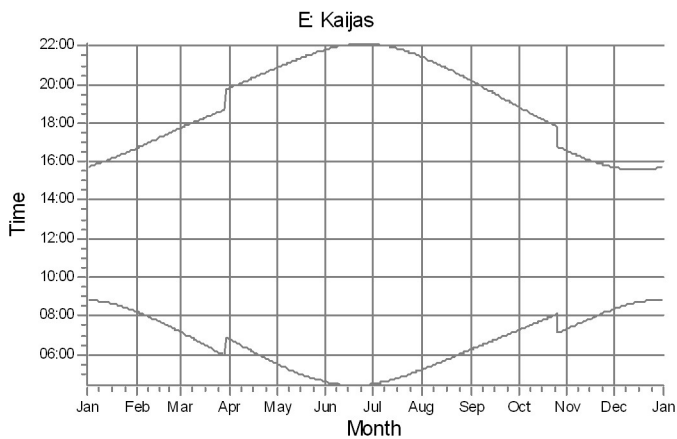
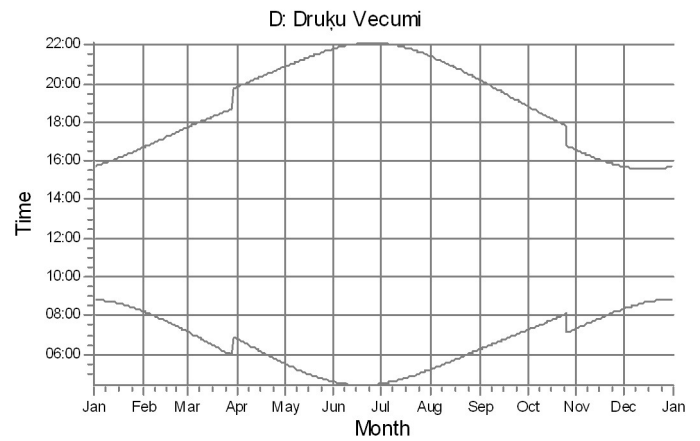
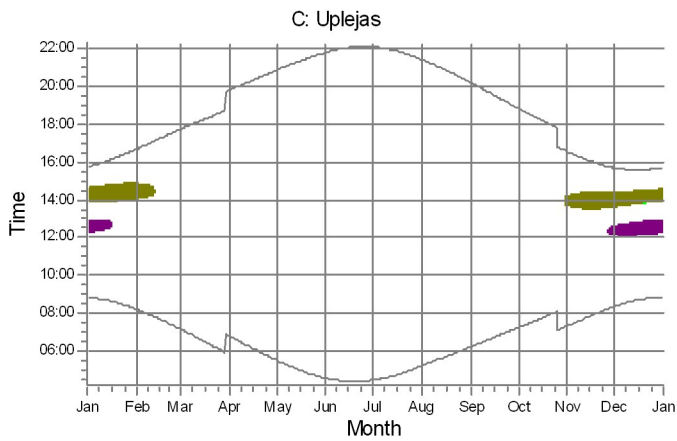
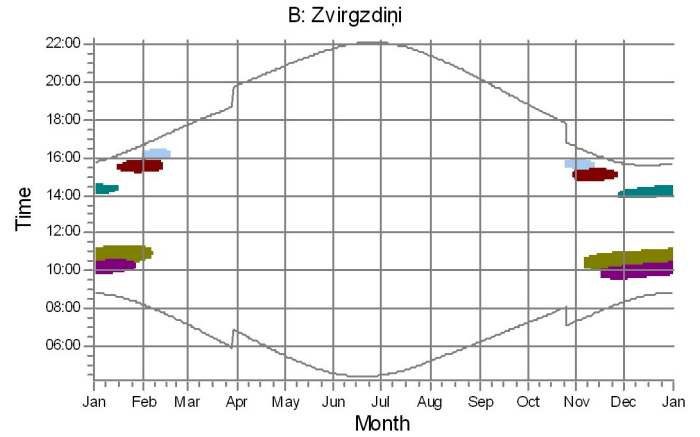
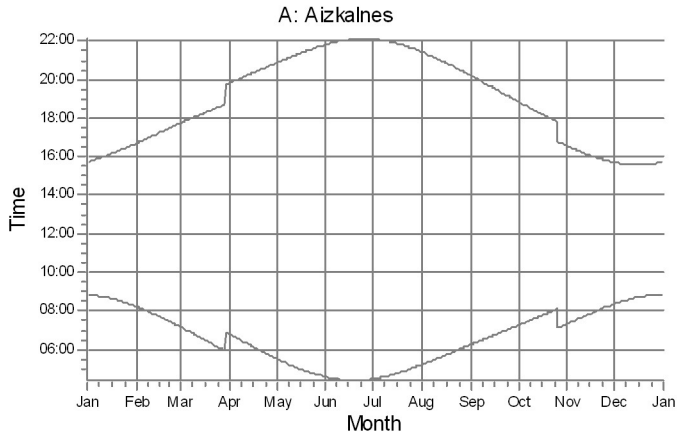
	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45	08:12 16:42	07:09 17:44	06:47 19:50	05:31 20:52	04:34 21:49	04:27 22:06	05:13 21:25	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:43
2	08:47 15:46	08:10 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:33 21:50	04:28 22:06	05:15 21:23	06:16 20:09	07:16 18:49	07:21 16:32	08:22 15:42
3	08:47 15:48	08:08 16:46	07:03 17:48	06:41 19:54	05:26 20:56	04:31 21:52	04:29 22:05	05:16 21:21	06:18 20:07	07:18 18:46	07:23 16:30	08:24 15:41
4	08:47 15:49	08:06 16:49	07:01 17:51	06:39 19:56	05:24 20:58	04:30 21:53	04:30 22:04	05:18 21:19	06:20 20:04	07:20 18:44	07:26 16:27	08:26 15:40
5	08:46 15:50	08:04 16:51	06:58 17:53	06:36 19:58	05:21 21:00	04:29 21:54	04:31 22:04	05:20 21:17	06:22 20:01	07:22 18:41	07:28 16:25	08:27 15:39
6	08:46 15:52	08:02 16:53	06:56 17:55	06:33 20:00	05:19 21:02	04:29 21:56	04:32 22:03	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:39
7	08:45 15:53	08:00 16:55	06:53 17:57	06:31 20:02	05:17 21:04	04:28 21:57	04:33 22:02	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	08:30 15:38
8	08:45 15:55	07:58 16:58	06:51 17:59	06:28 20:04	05:15 21:06	04:27 21:58	04:34 22:01	05:26 21:11	06:28 19:53	07:28 18:33	07:34 16:19	08:32 15:37
9	08:44 15:56	07:56 17:00	06:48 18:01	06:26 20:06	05:13 21:08	04:26 21:59	04:35 22:01	05:28 21:08	06:30 19:51	07:30 18:30	07:36 16:17	08:33 15:37
10	08:43 15:58	07:54 17:02	06:45 18:03	06:23 20:08	05:11 21:10	04:26 22:00	04:37 22:00	05:30 21:06	06:32 19:48	07:32 18:28	07:39 16:15	08:34 15:36
11	08:42 16:00	07:52 17:04	06:43 18:06	06:20 20:10	05:09 21:12	04:25 22:01	04:38 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:13	08:36 15:36
12	08:41 16:01	07:49 17:06	06:40 18:08	06:18 20:12	05:06 21:14	04:24 22:02	04:39 21:57	05:34 21:02	06:36 19:43	07:36 18:23	07:43 16:11	08:37 15:36
13	08:40 16:03	07:47 17:09	06:37 18:10	06:15 20:14	05:04 21:16	04:24 22:03	04:41 21:56	05:36 20:59	06:38 19:40	07:38 18:20	07:45 16:09	08:38 15:36
14	08:39 16:05	07:45 17:11	06:35 18:12	06:13 20:17	05:02 21:18	04:24 22:03	04:42 21:55	05:38 20:57	06:40 19:37	07:41 18:18	07:47 16:07	08:39 15:35
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16	08:37 16:09	07:40 17:15	06:29 18:16	06:07 20:21	04:59 21:22	04:23 22:05	04:45 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:51 16:04	08:41 15:35
17	08:36 16:11	07:38 17:18	06:27 18:18	06:05 20:23	04:57 21:24	04:23 22:05	04:46 21:51	05:44 20:50	06:46 19:29	07:47 18:10	07:53 16:02	08:42 15:35
18	08:35 16:12	07:36 17:20	06:24 18:20	06:02 20:25	04:55 21:26	04:23 22:06	04:48 21:50	05:46 20:47	06:48 19:27	07:49 18:07	07:55 16:00	08:43 15:35
19	08:33 16:14	07:33 17:22	06:21 18:22	06:00 20:27	04:53 21:28	04:23 22:06	04:50 21:48	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:59	08:44 15:36
20	08:32 16:16	07:31 17:24	06:19 18:25	05:57 20:29	04:51 21:29	04:23 22:06	04:51 21:47	05:50 20:42	06:52 19:21	07:53 18:02	08:00 15:57	08:45 15:36
21	08:31 16:18	07:28 17:27	06:16 18:27	05:55 20:31	04:50 21:31	04:23 22:07	04:53 21:45	05:52 20:40	06:54 19:18	07:55 18:00	08:02 15:55	08:45 15:36
22	08:29 16:20	07:26 17:29	06:13 18:29	05:52 20:33	04:48 21:33	04:23 22:07	04:54 21:44	05:54 20:37	06:56 19:16	07:57 17:57	08:04 15:54	08:46 15:37
23	08:28 16:23	07:24 17:31	06:11 18:31	05:50 20:35	04:46 21:35	04:23 22:07	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:53	08:46 15:37
24	08:26 16:25	07:21 17:33	06:08 18:33	05:47 20:37	04:45 21:36	04:23 22:07	04:58 21:40	05:58 20:32	07:00 19:10	08:02 17:53	08:08 15:51	08:47 15:38
25	08:25 16:27	07:19 17:35	06:05 18:35	05:45 20:39	04:43 21:38	04:24 22:07	05:00 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:50	08:47 15:38
26	08:23 16:29	07:16 17:38	06:03 18:37	05:42 20:41	04:42 21:40	04:24 22:07	05:01 21:37	06:02 20:27	07:04 19:05	07:06 16:48	08:11 15:48	08:47 15:39
27	08:21 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:41	04:25 22:07	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:45	08:13 15:47	08:48 15:40
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29	08:18 16:35		05:55 18:43	05:35 20:48	04:37 21:45	04:26 22:07	05:07 21:31	06:08 20:20	07:10 18:57	07:13 16:41	08:17 15:45	08:48 15:42
30	08:16 16:38		06:52 19:45	05:33 20:50	04:36 21:46	04:27 22:06	05:09 21:29	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:44	08:48 15:43
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Potential sun hours	235	266	365	425	507	528	529	470	385	324	248	217
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

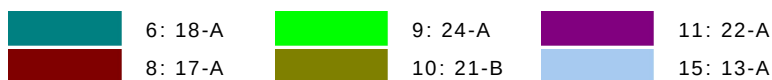
Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar, graphical

Calculation: Worst & Real Case

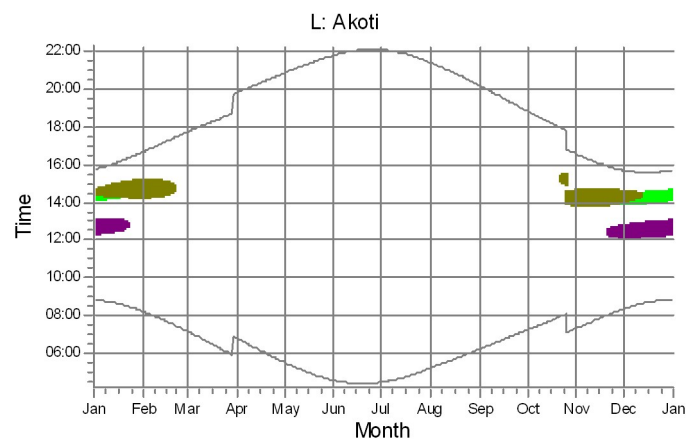
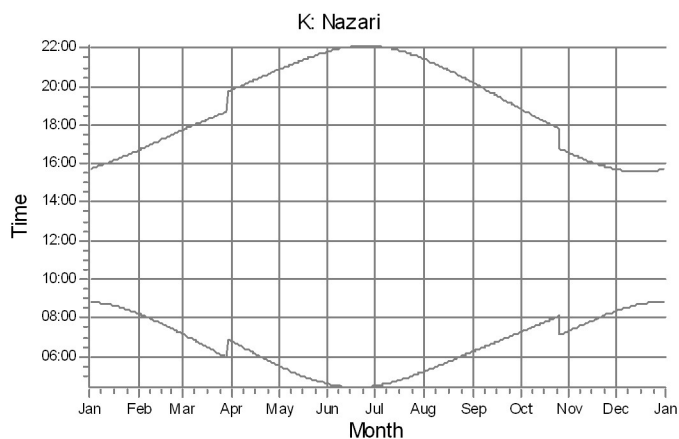
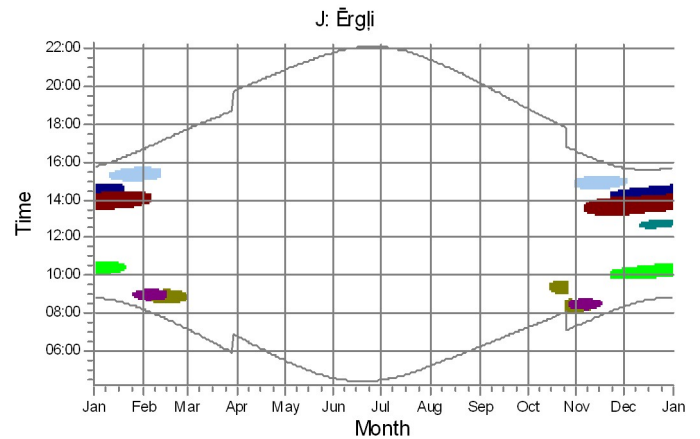
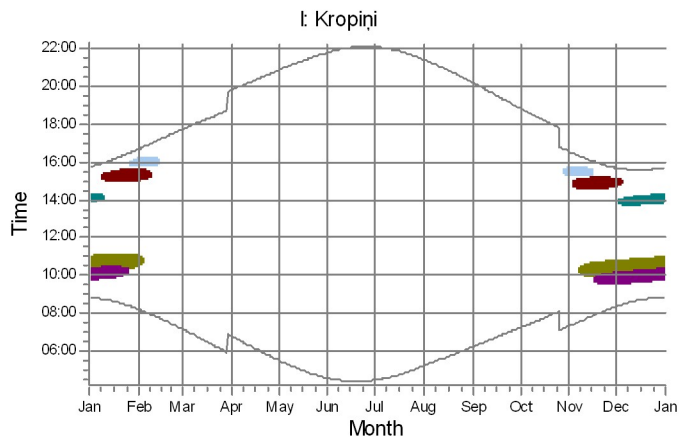
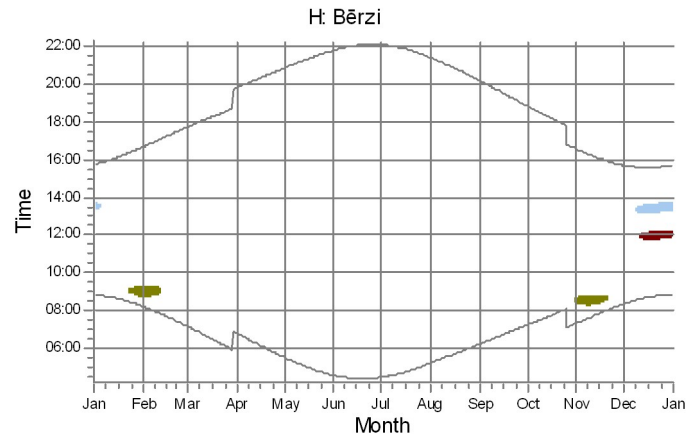
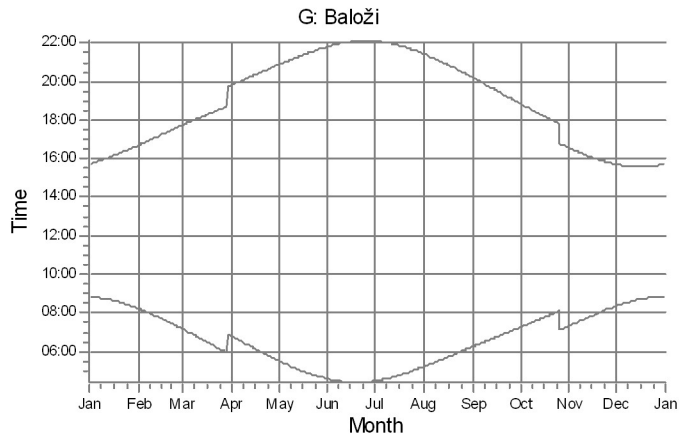


WTGs



SHADOW - Calendar, graphical

Calculation: Worst & Real Case

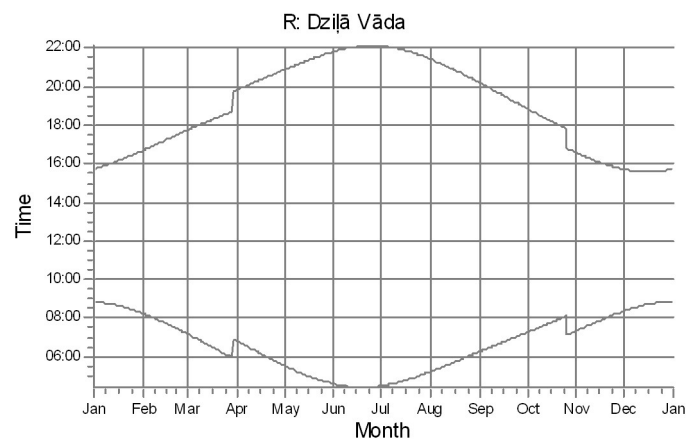
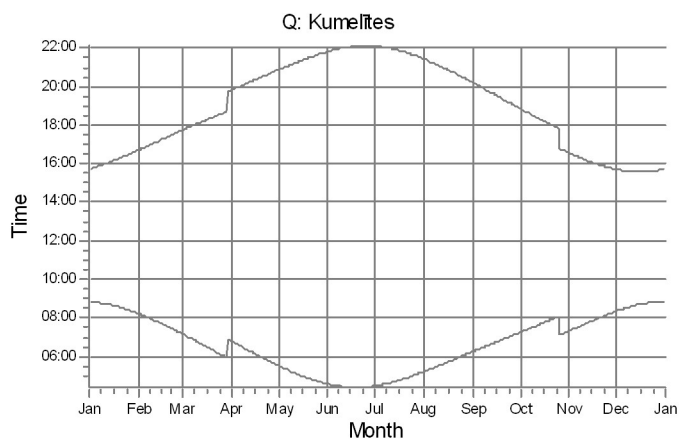
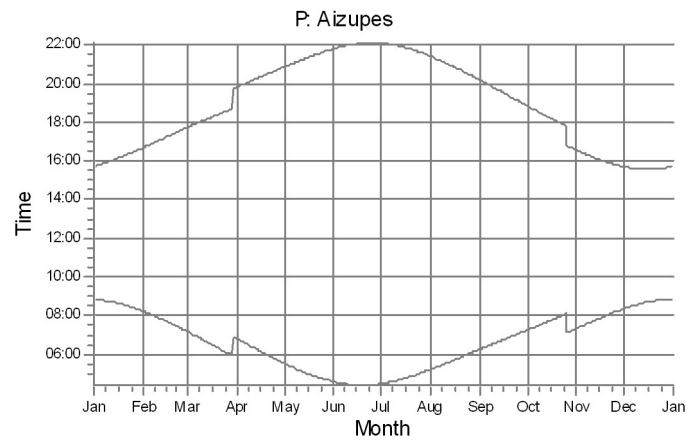
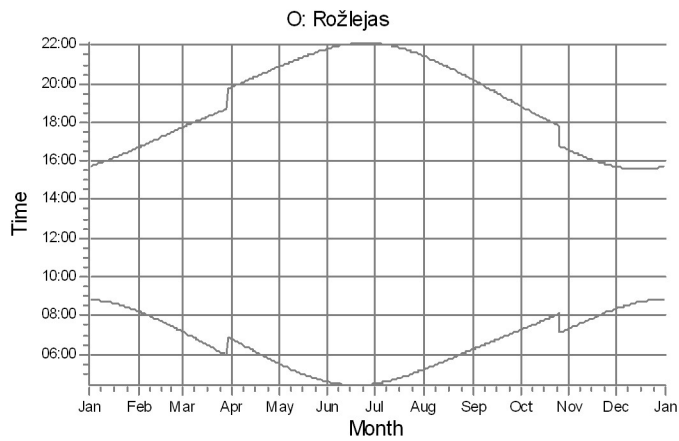
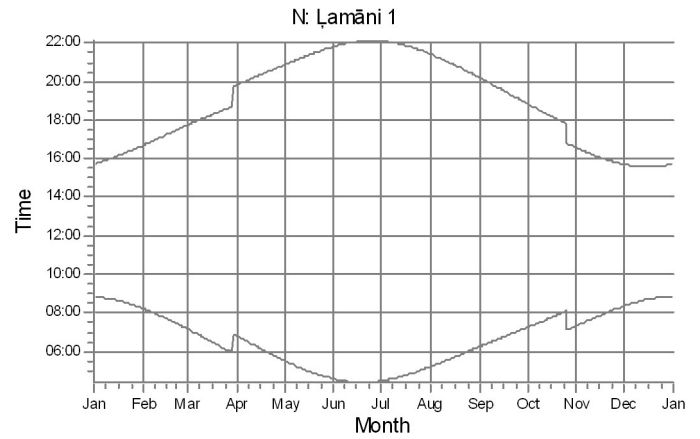
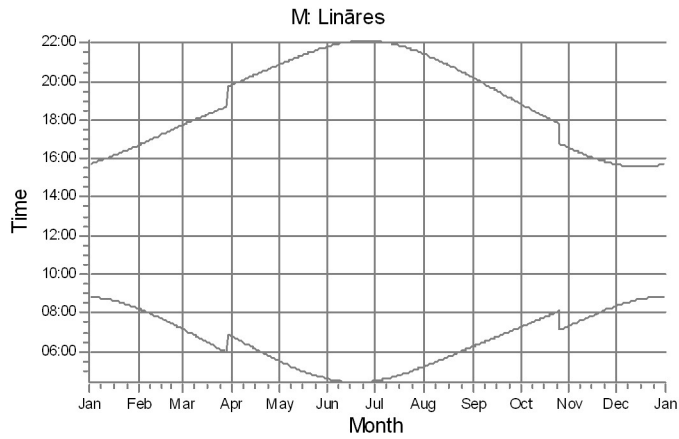


WTGs



SHADOW - Calendar, graphical

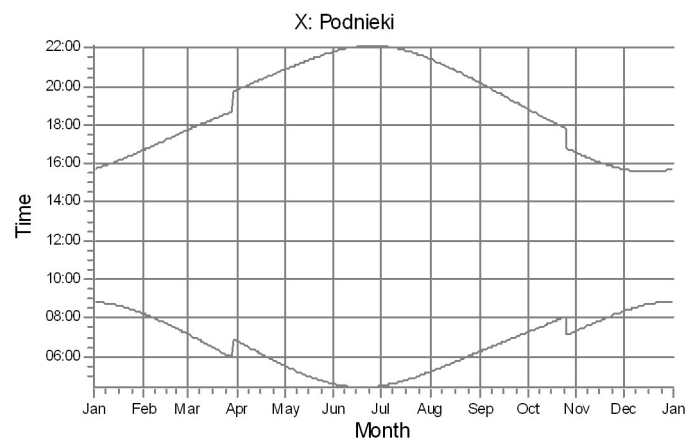
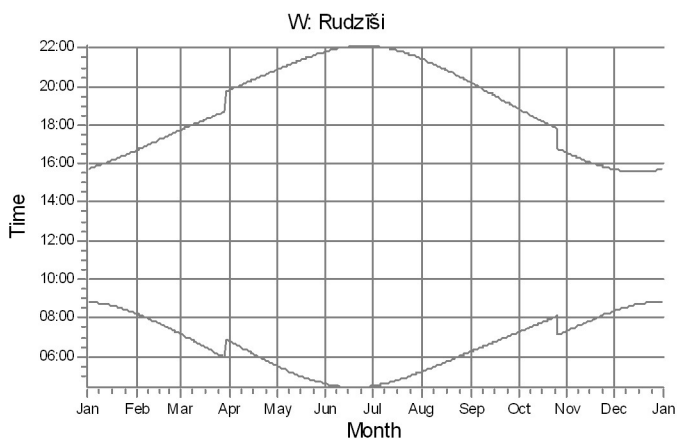
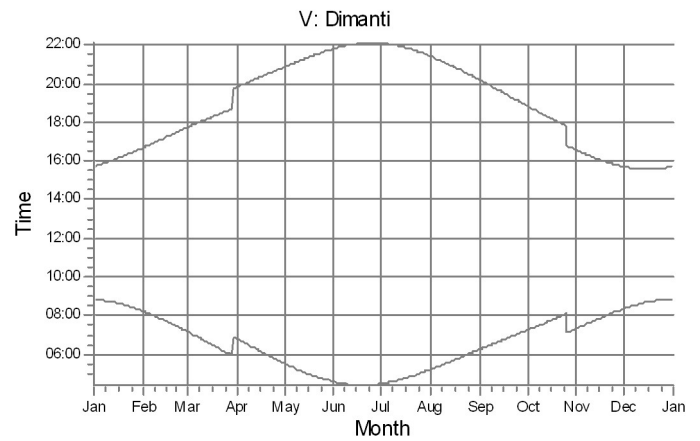
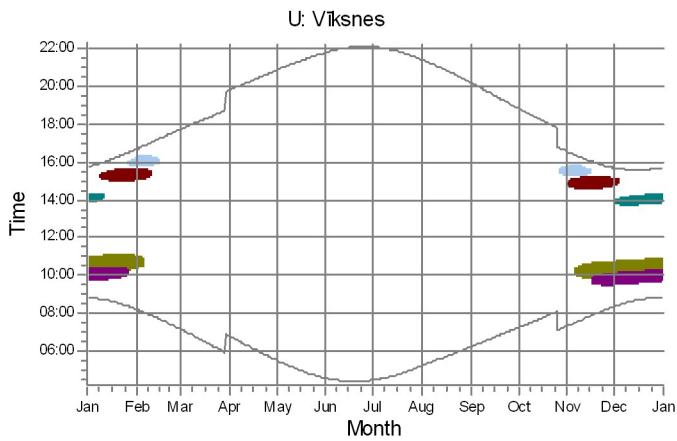
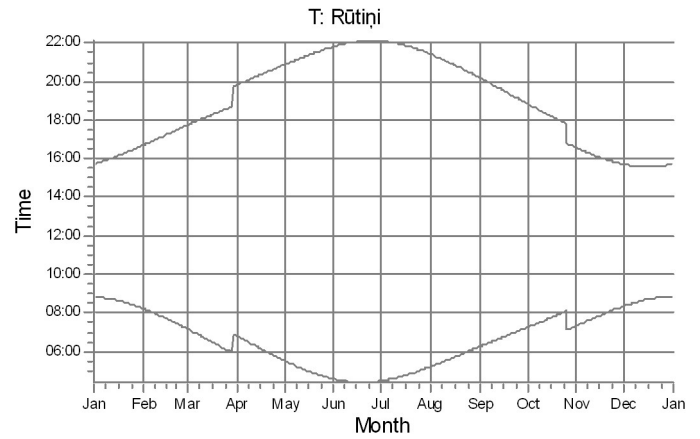
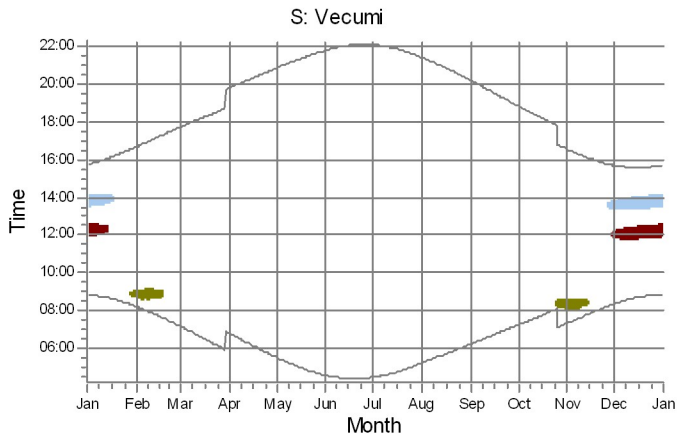
Calculation: Worst & Real Case



WTGs

SHADOW - Calendar, graphical

Calculation: Worst & Real Case

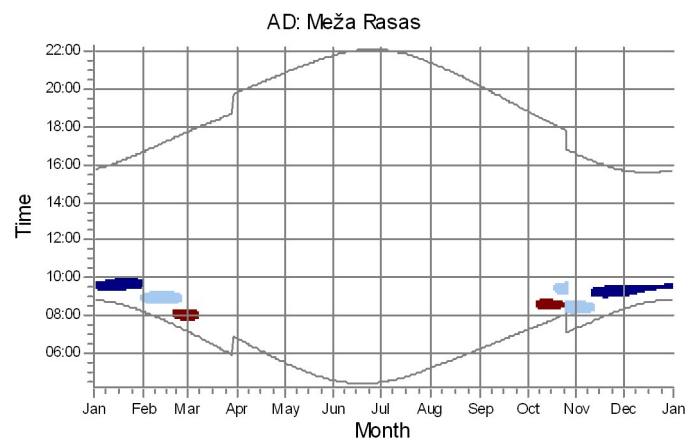
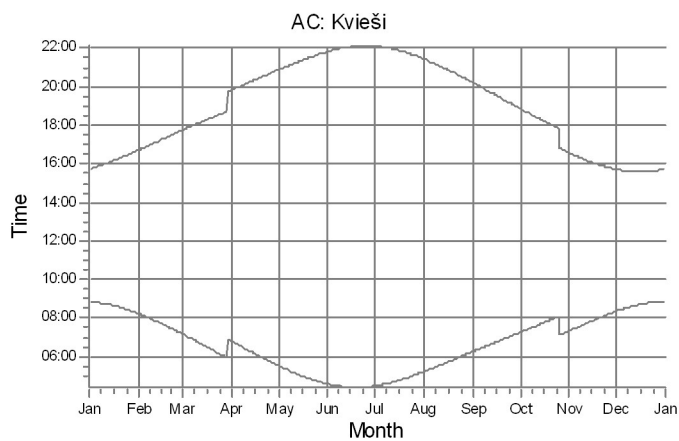
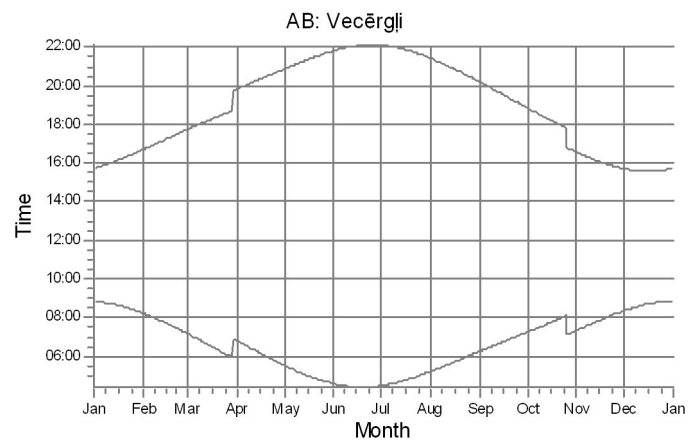
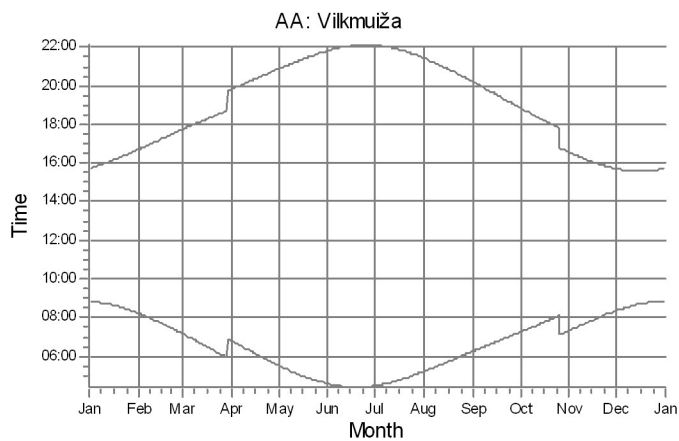
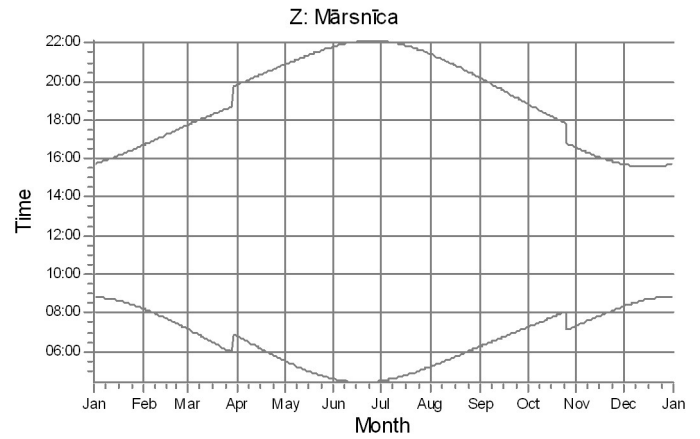
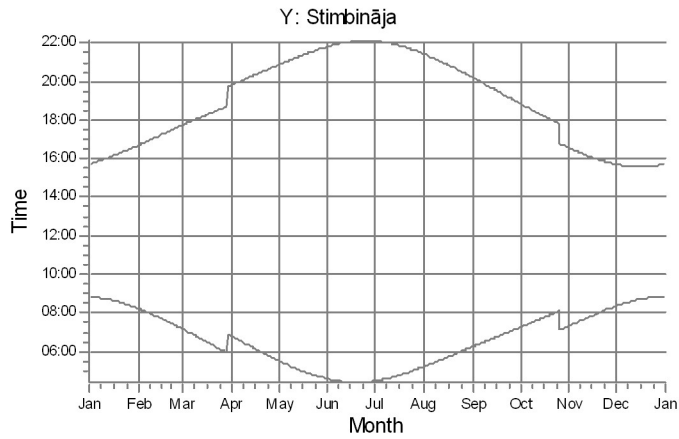


WTGs



SHADOW - Calendar, graphical

Calculation: Worst & Real Case

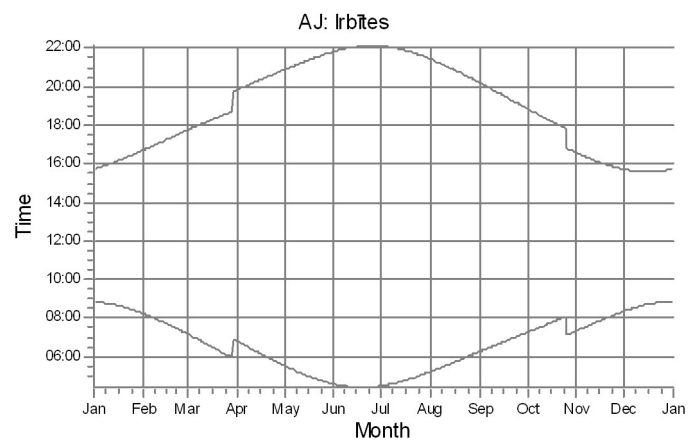
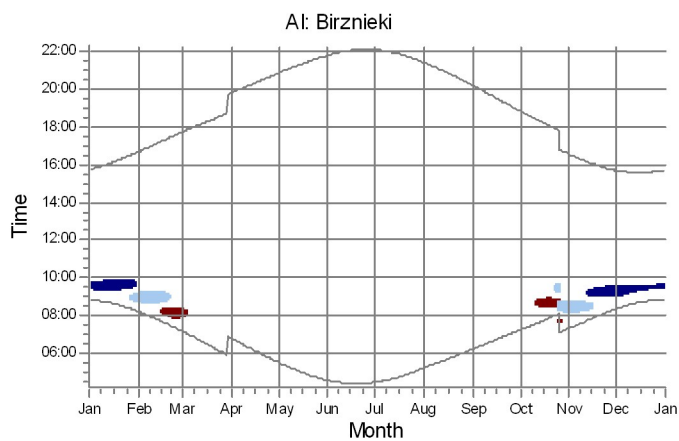
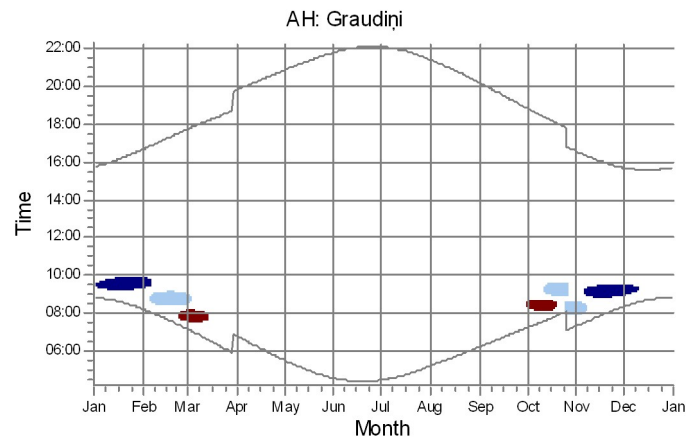
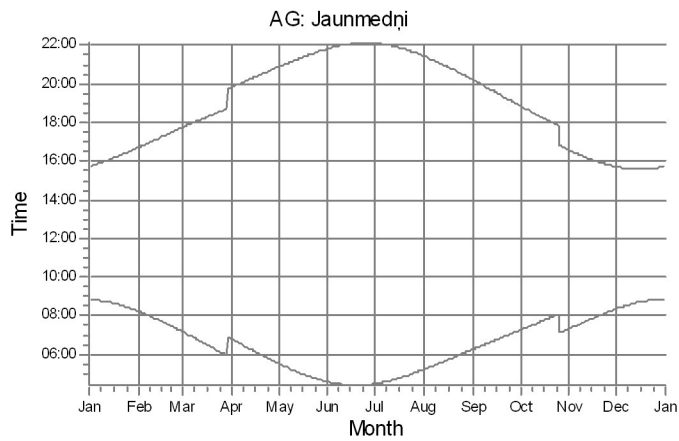
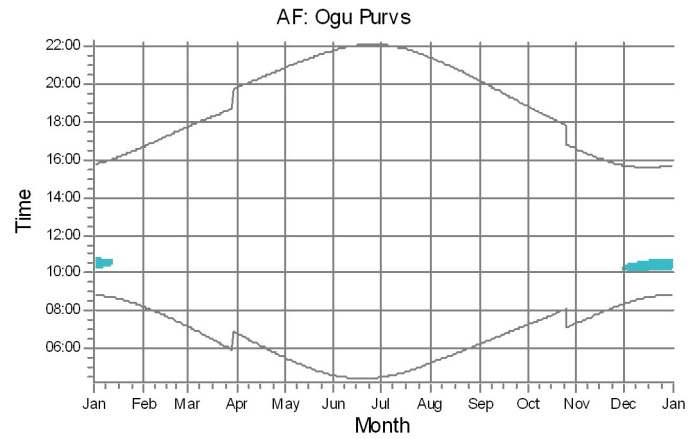
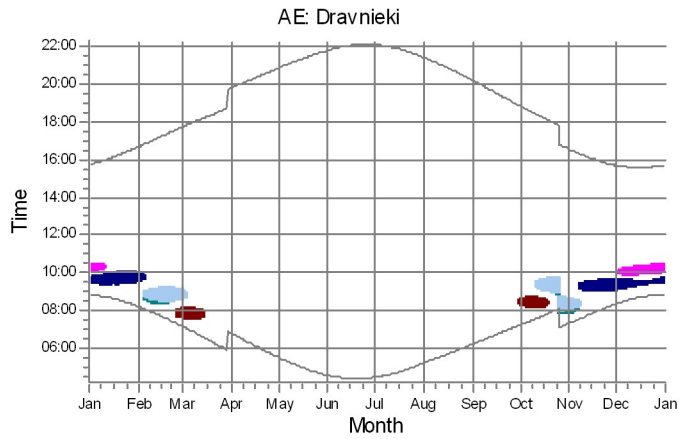


WTGs



SHADOW - Calendar, graphical

Calculation: Worst & Real Case

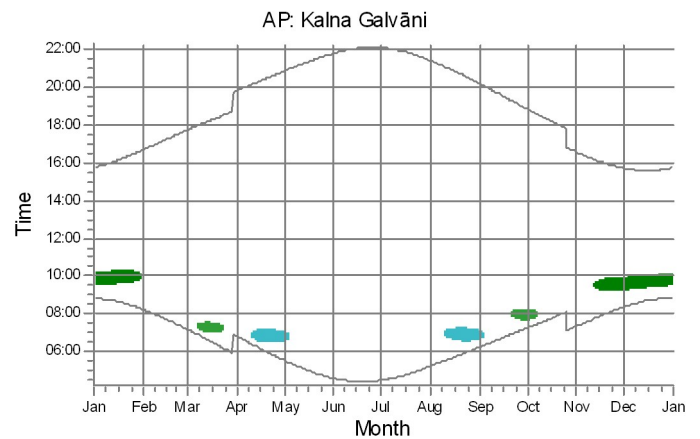
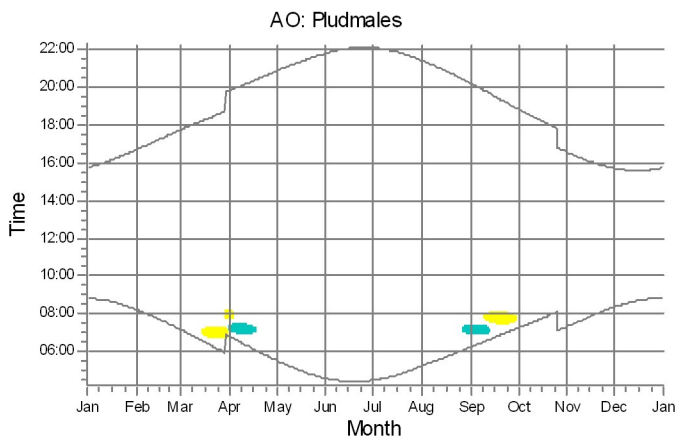
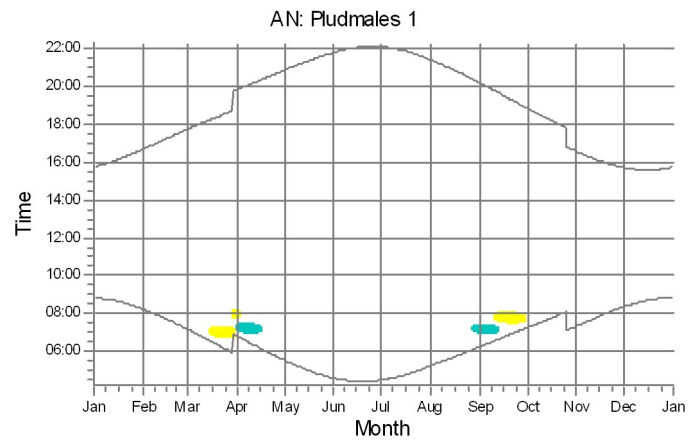
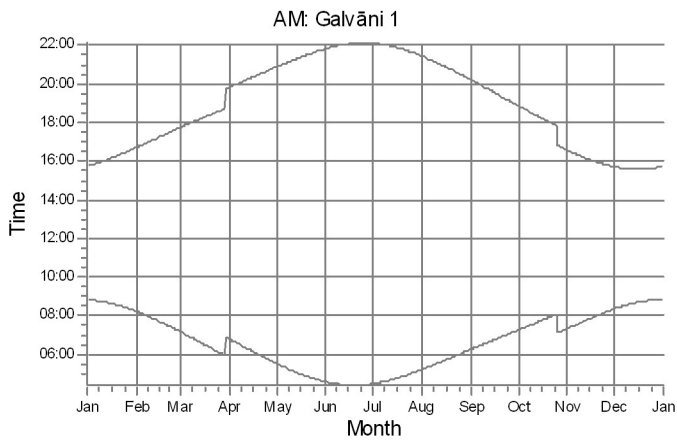
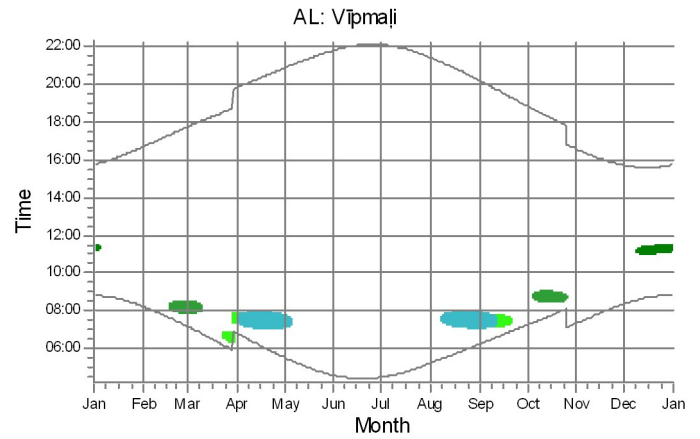
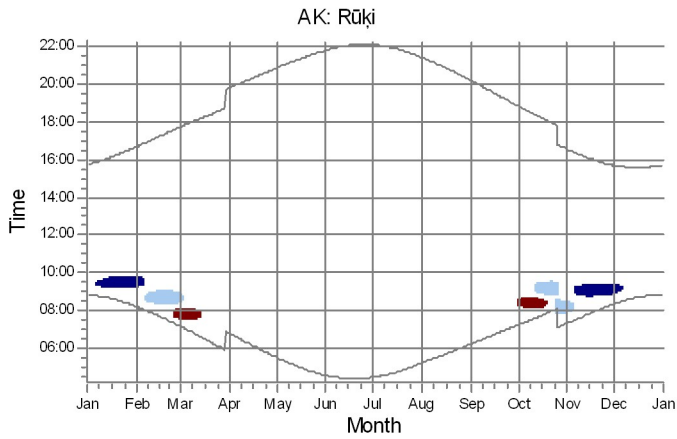


WTGs

5: 12-A	7: 14-A	15: 13-A
6: 18-A	8: 17-A	19: 03-A

SHADOW - Calendar, graphical

Calculation: Worst & Real Case

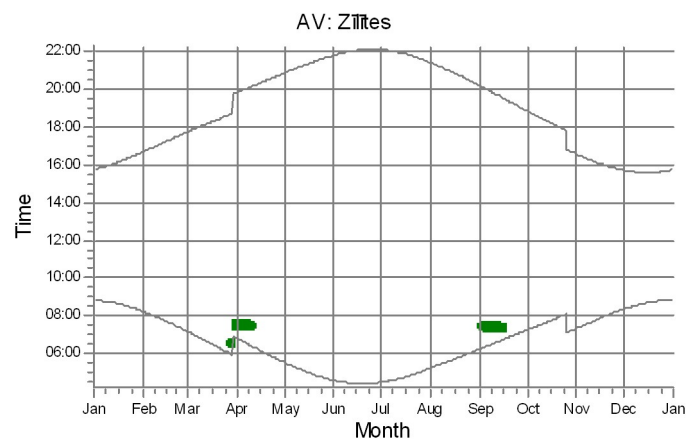
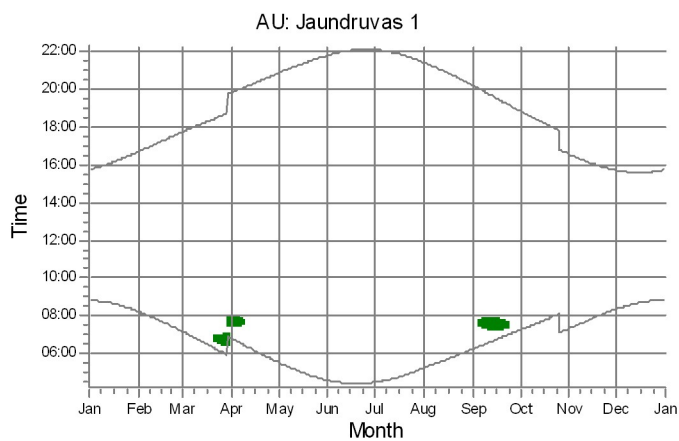
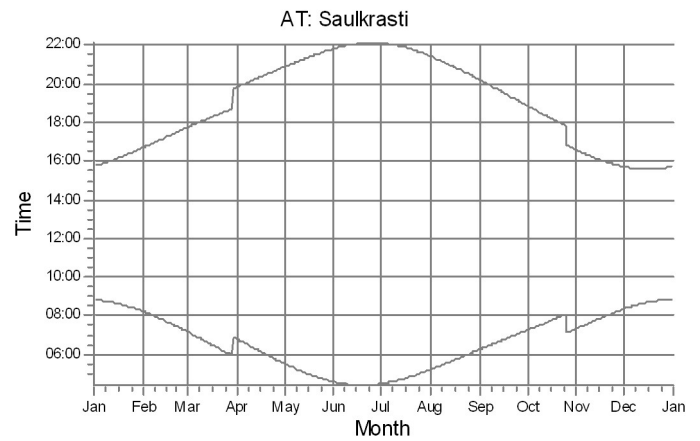
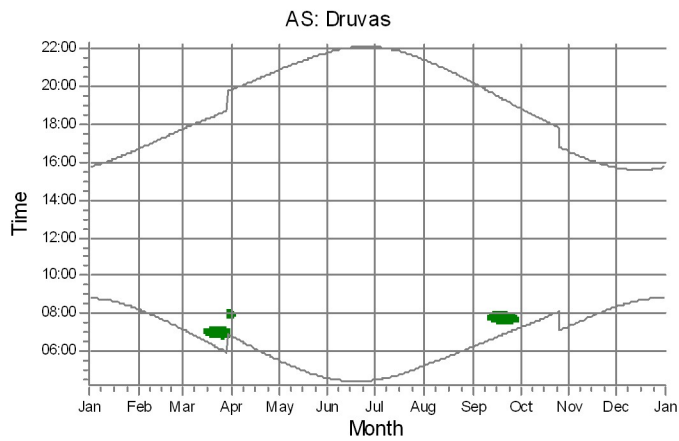
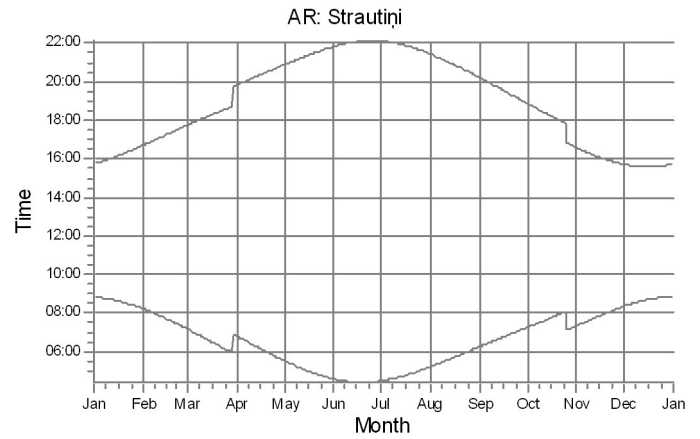
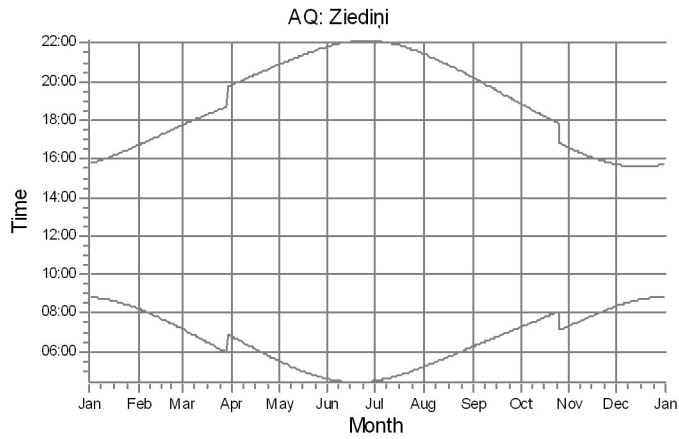


WTGs

1: 1-A	7: 14-A	15: 13-A	19: 03-A	21: 06-A
2: 2-A	8: 17-A	18: 08-B	20: 04-A	

SHADOW - Calendar, graphical

Calculation: Worst & Real Case



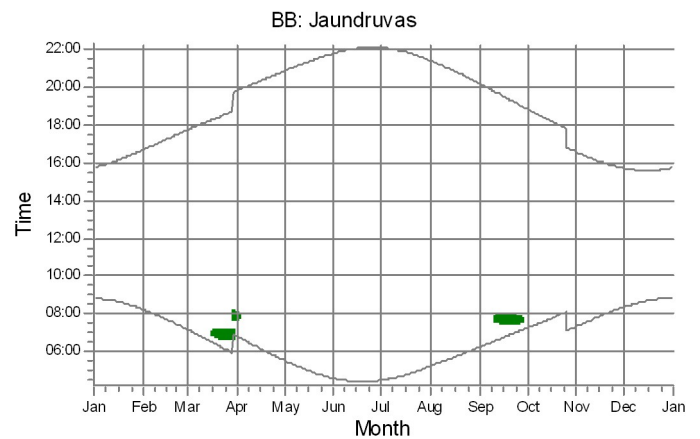
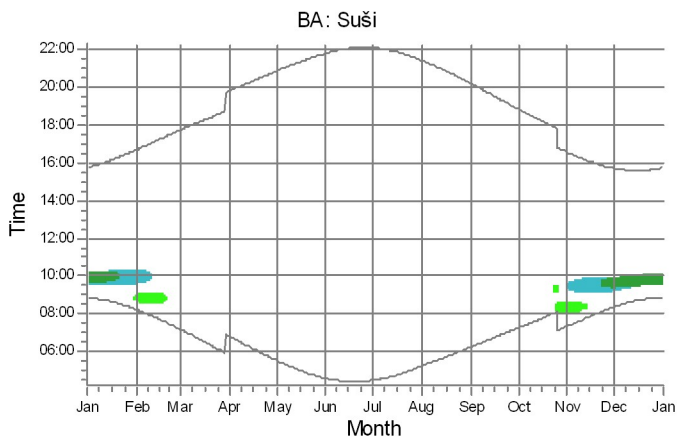
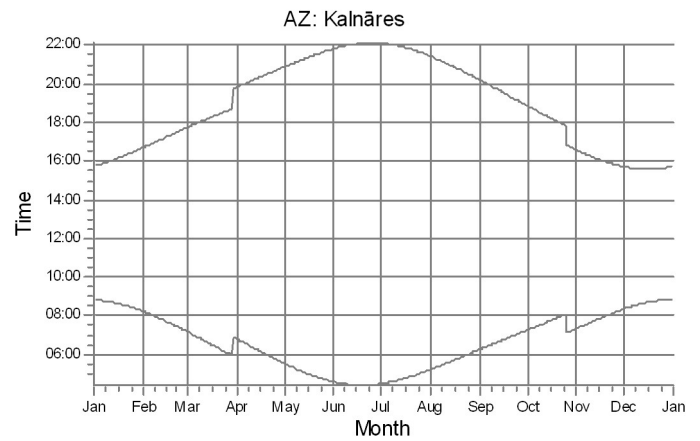
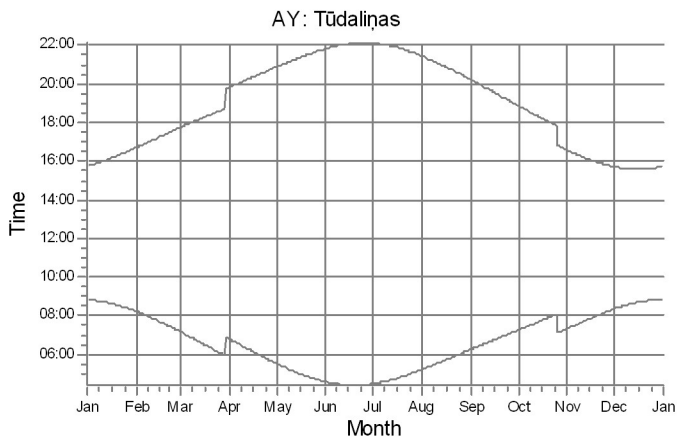
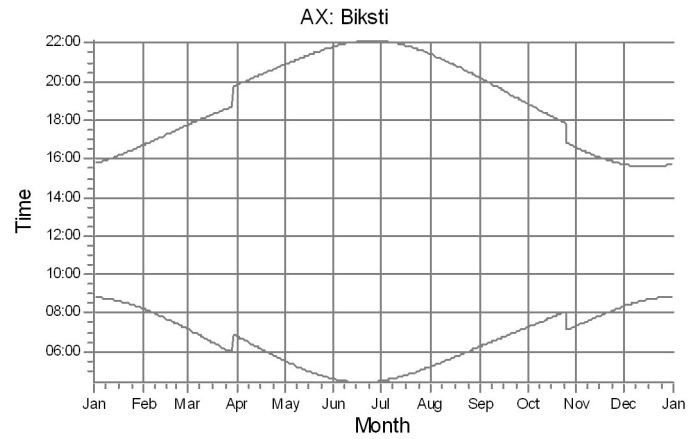
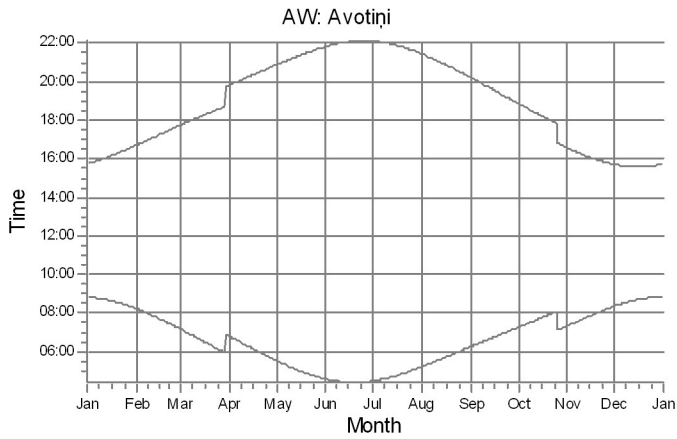
WTGs



1: 1-A

SHADOW - Calendar, graphical

Calculation: Worst & Real Case

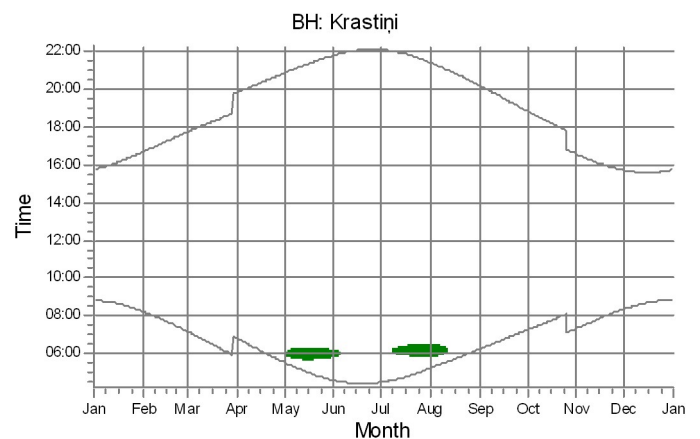
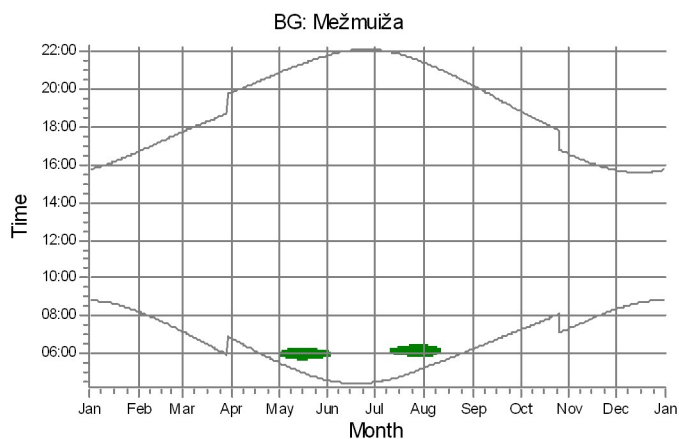
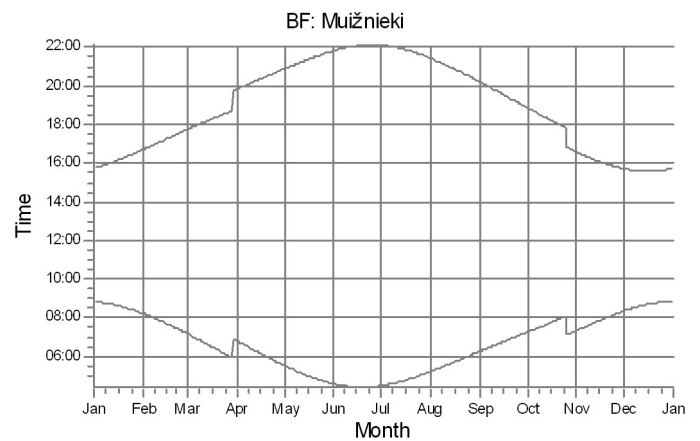
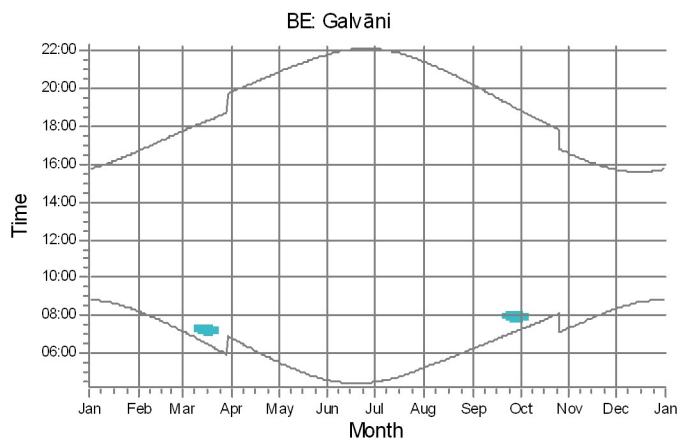
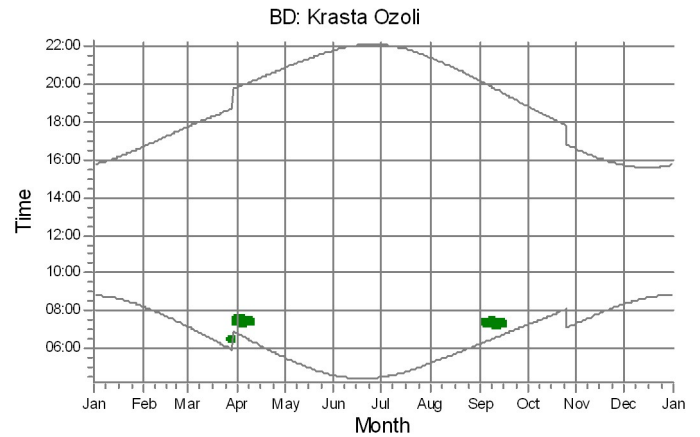
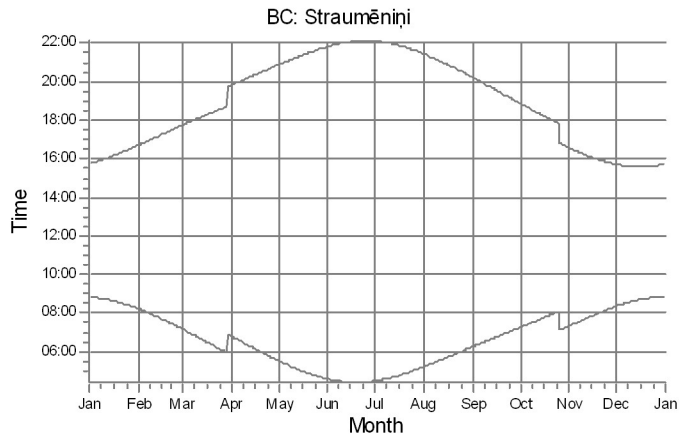


WTGs

1: 1-A 18: 08-B 19: 03-A 20: 04-A

SHADOW - Calendar, graphical

Calculation: Worst & Real Case

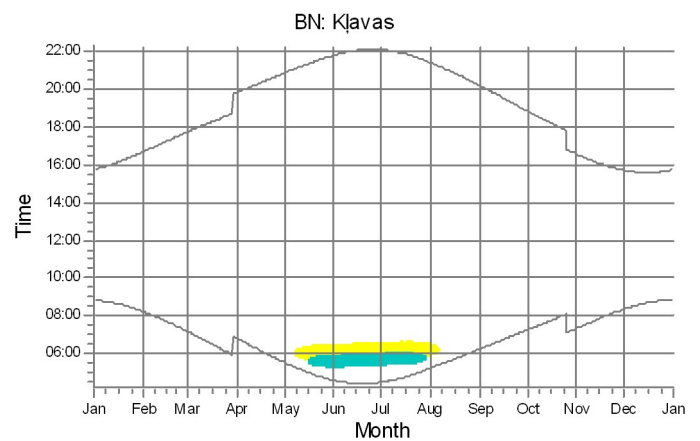
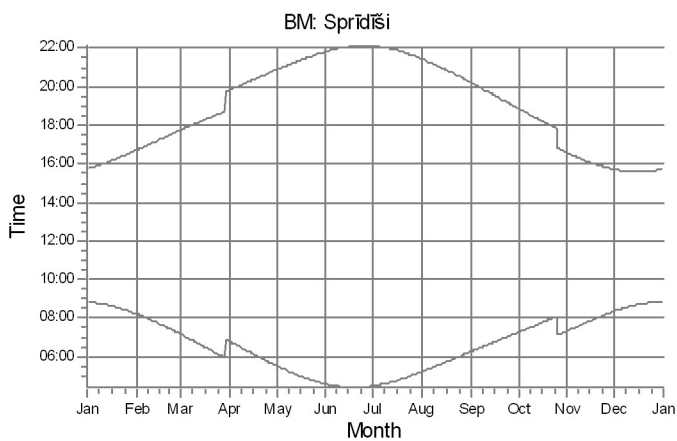
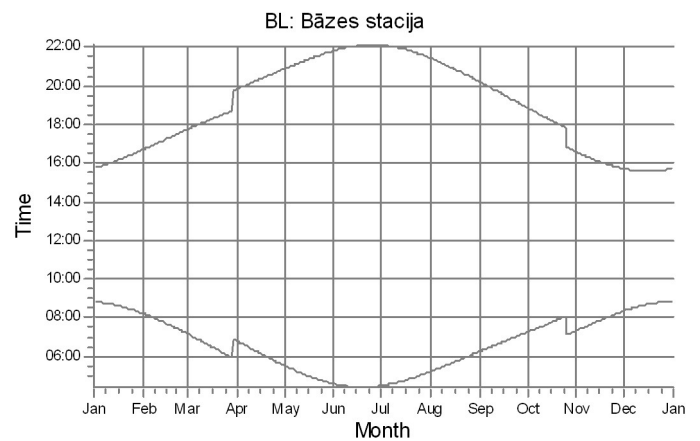
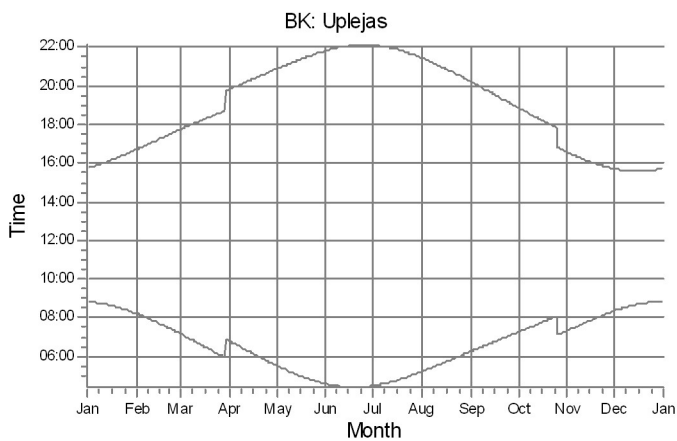
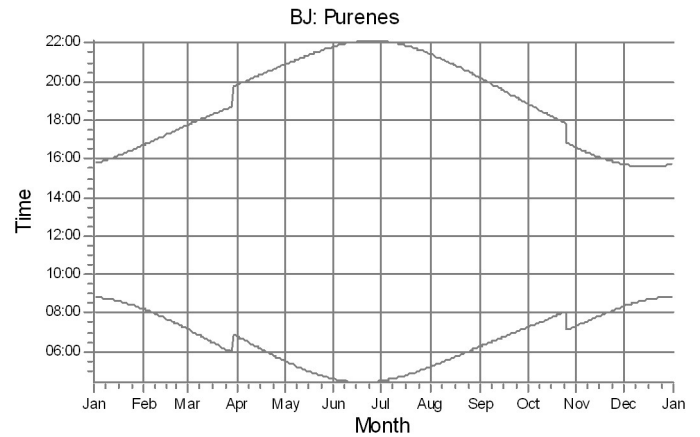
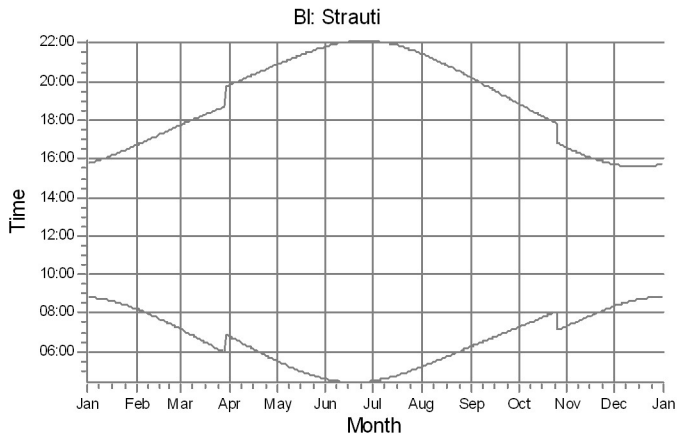


WTGs

1: 1-A 19: 03-A

SHADOW - Calendar, graphical

Calculation: Worst & Real Case



WTGs



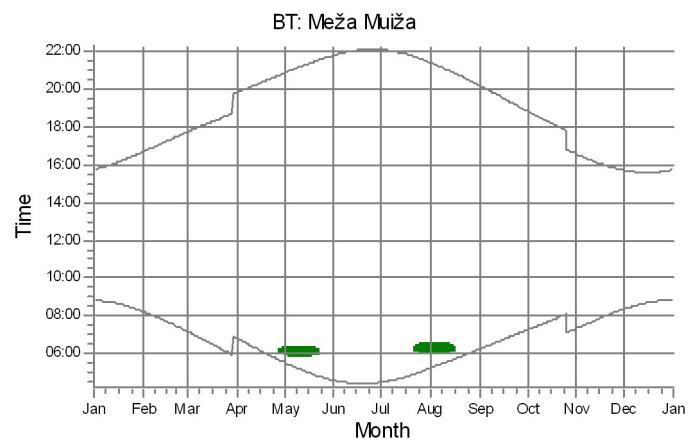
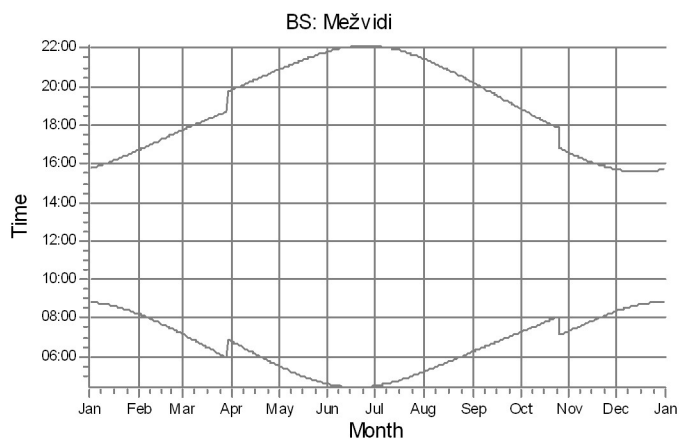
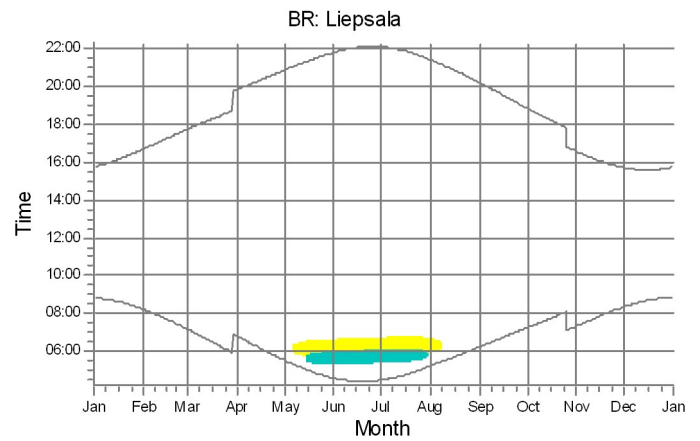
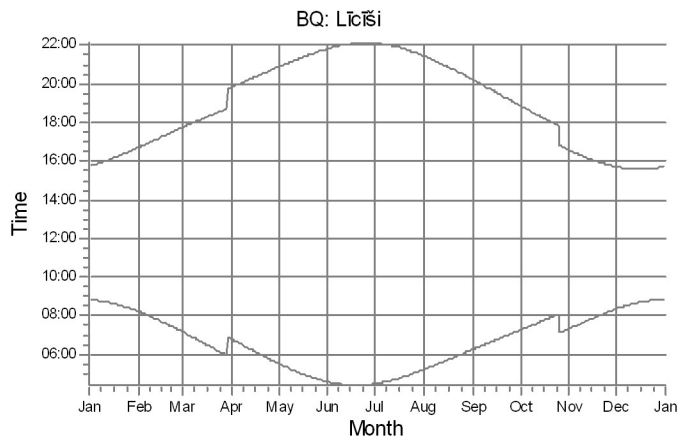
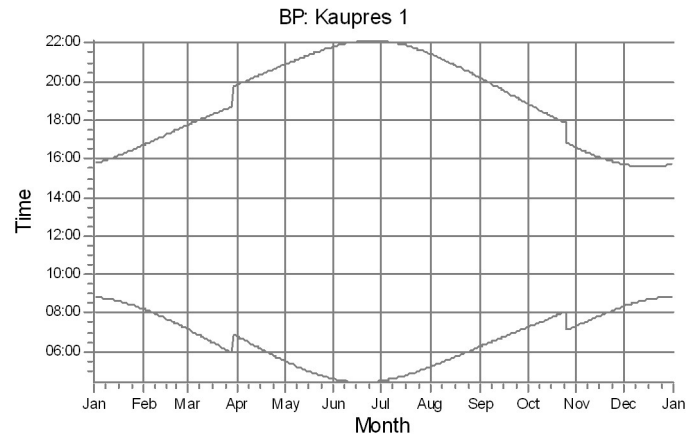
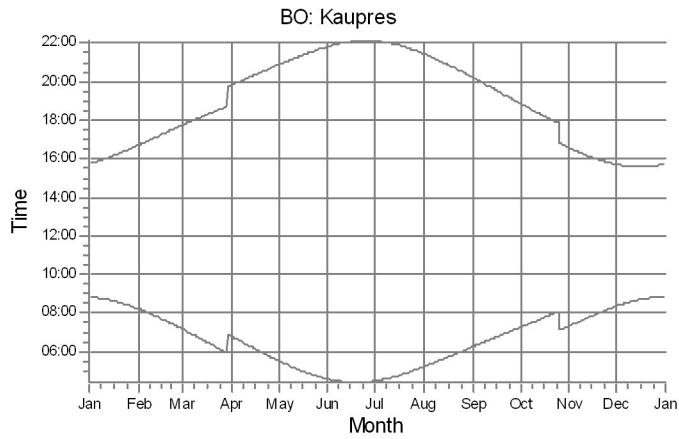
2: 2-A



21: 06-A

SHADOW - Calendar, graphical

Calculation: Worst & Real Case

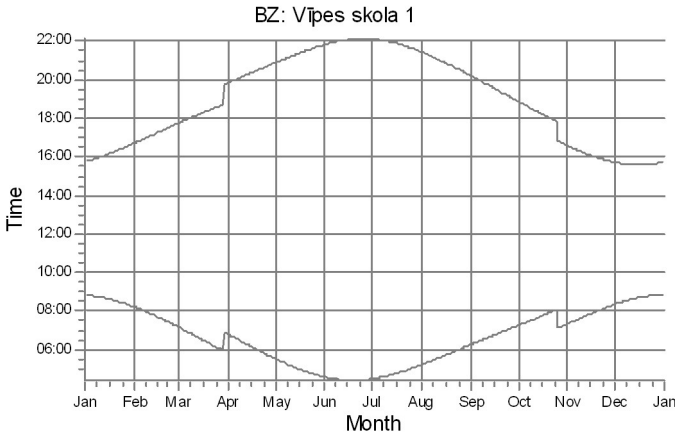
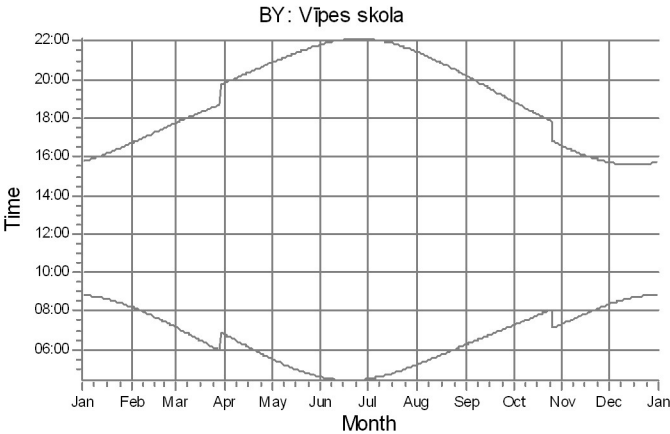
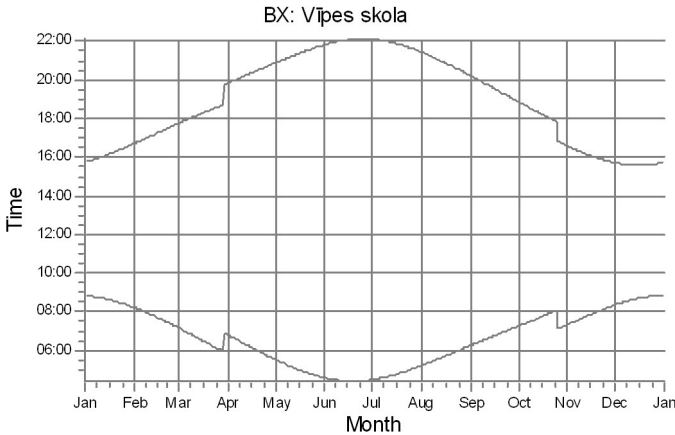
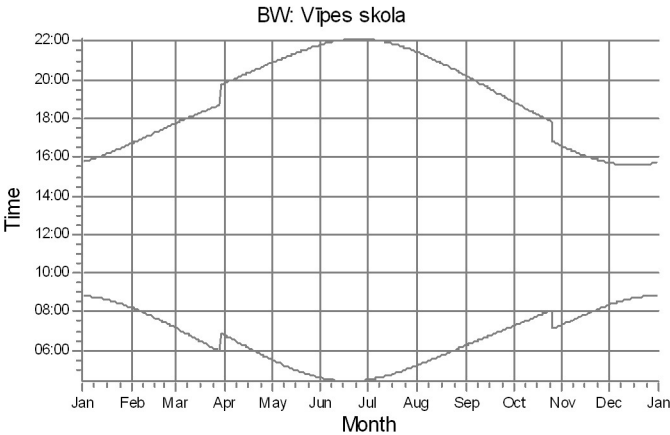
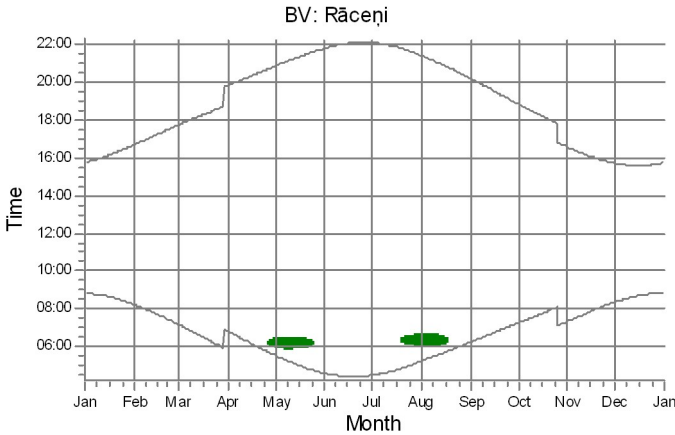
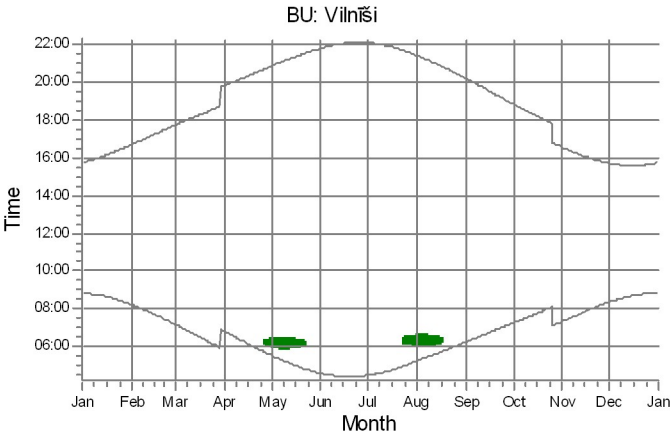


WTGs



SHADOW - Calendar, graphical

Calculation: Worst & Real Case

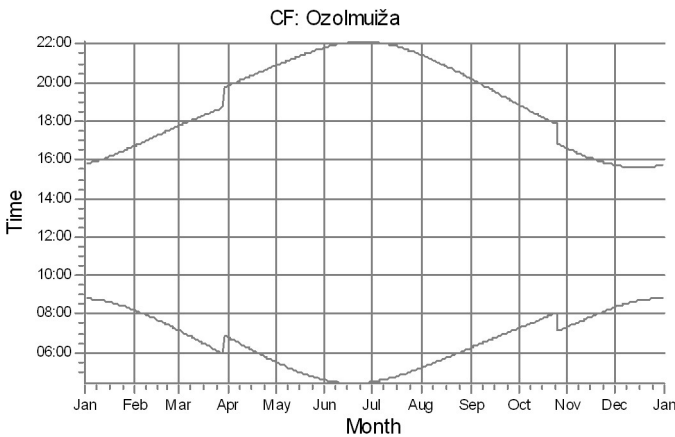
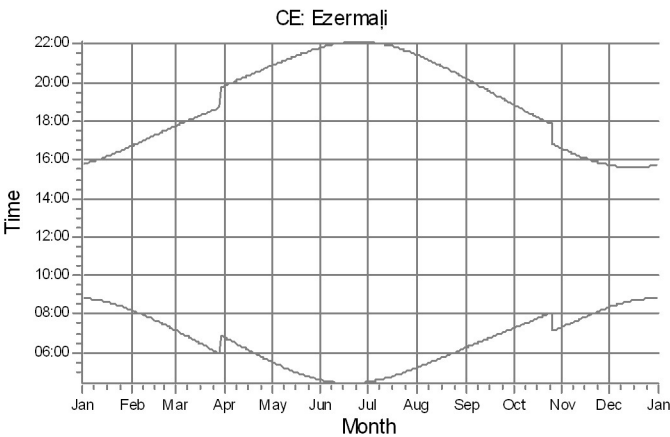
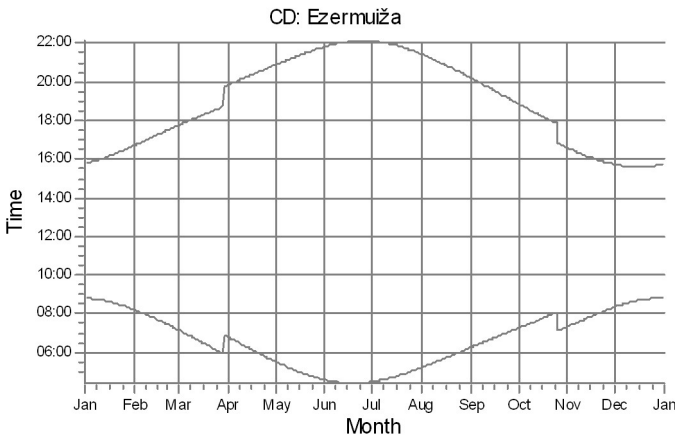
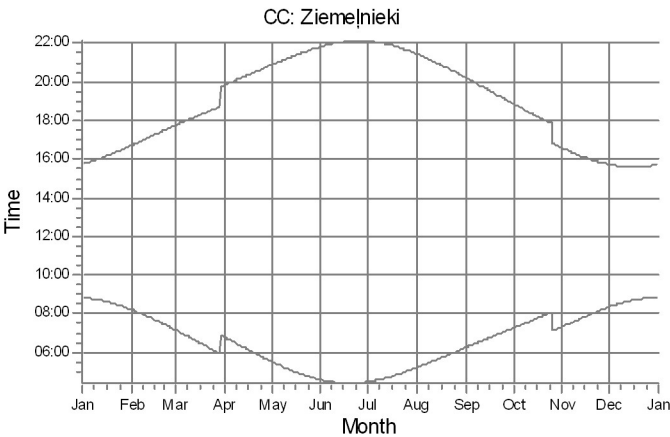
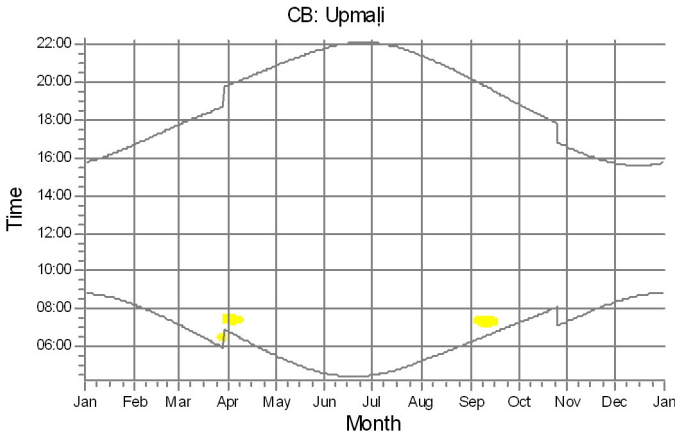
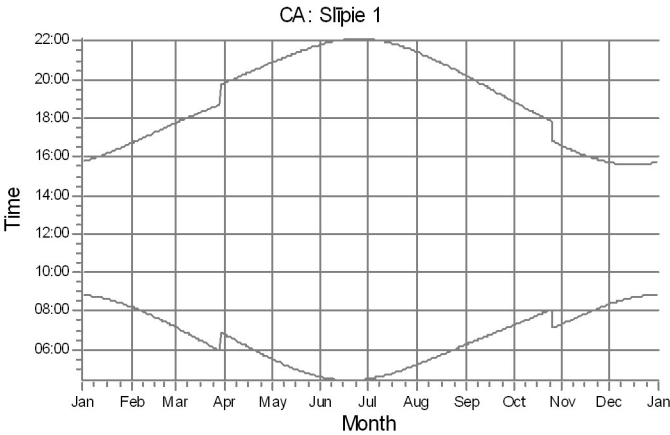


WTGs

1: 1-A

SHADOW - Calendar, graphical

Calculation: Worst & Real Case

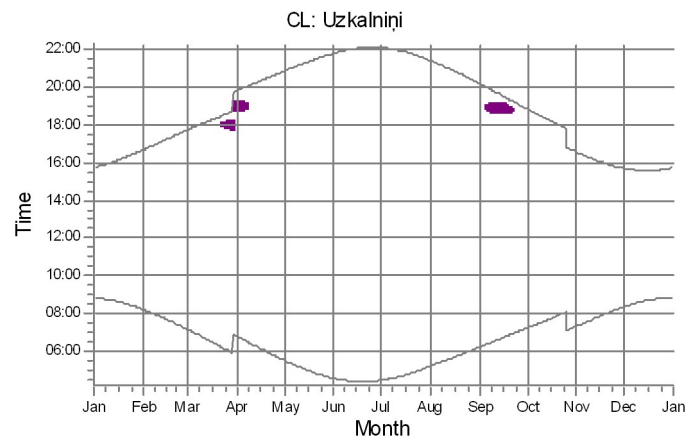
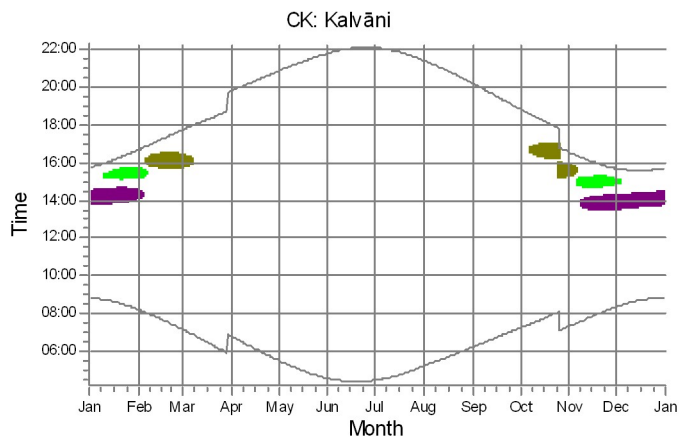
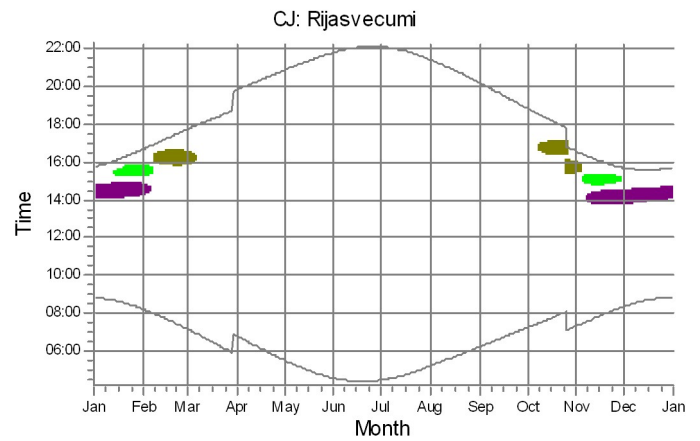
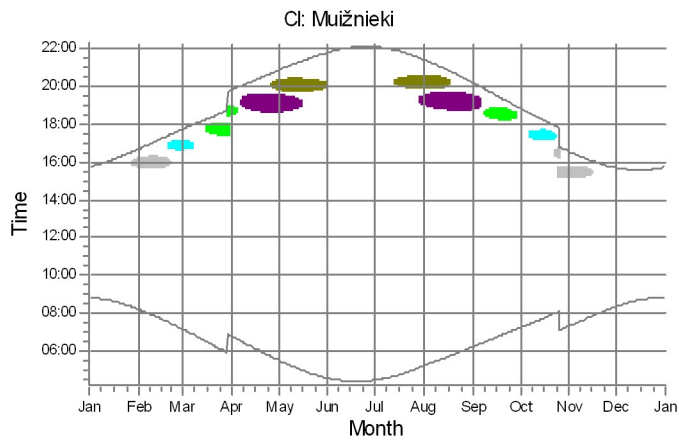
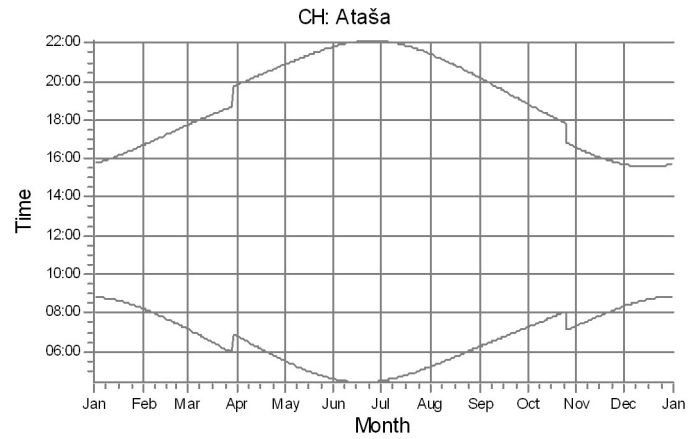
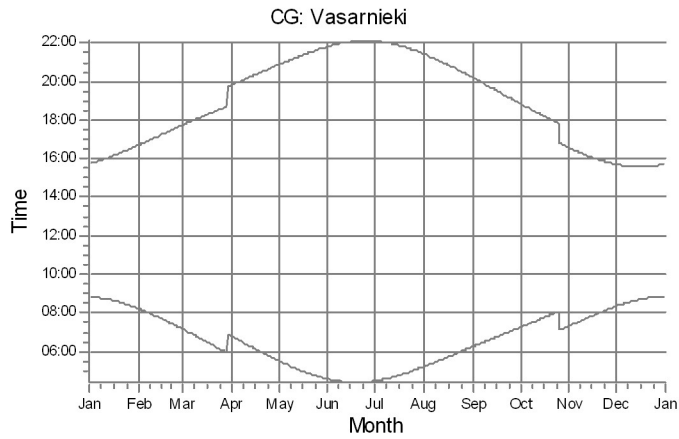


WTGs

2: 2-A

SHADOW - Calendar, graphical

Calculation: Worst & Real Case

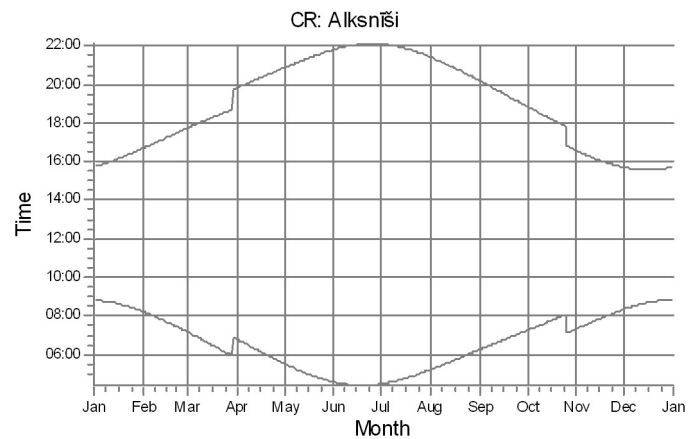
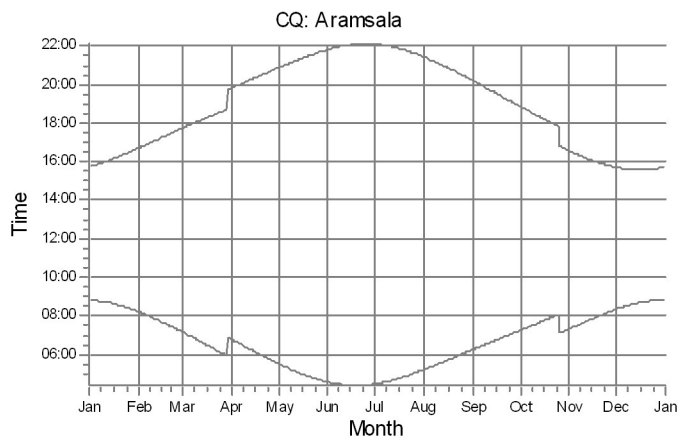
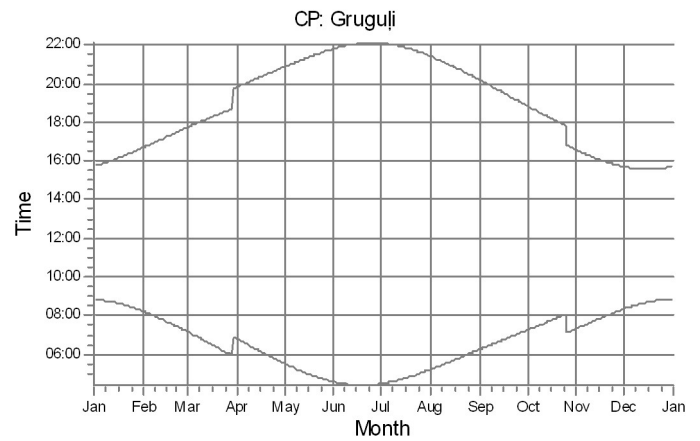
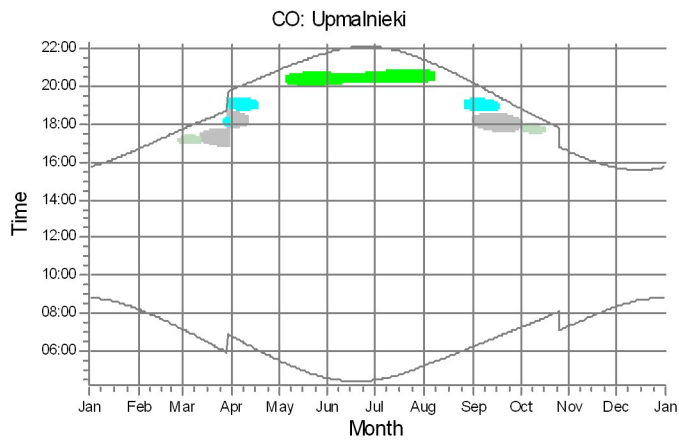
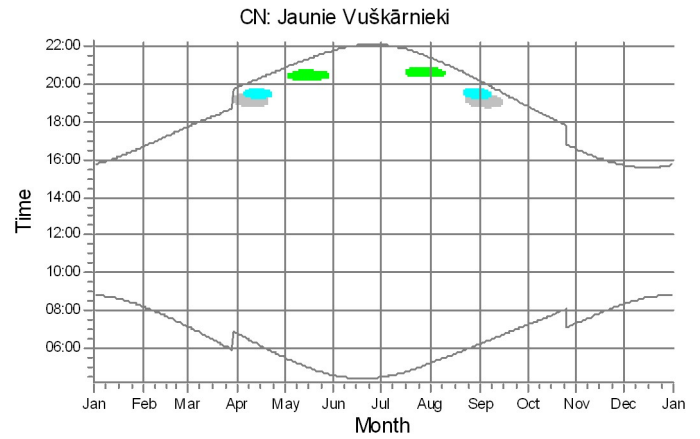
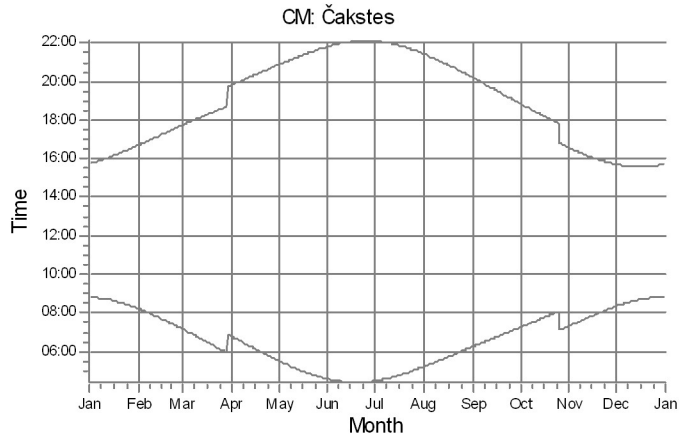


WTGs



SHADOW - Calendar, graphical

Calculation: Worst & Real Case

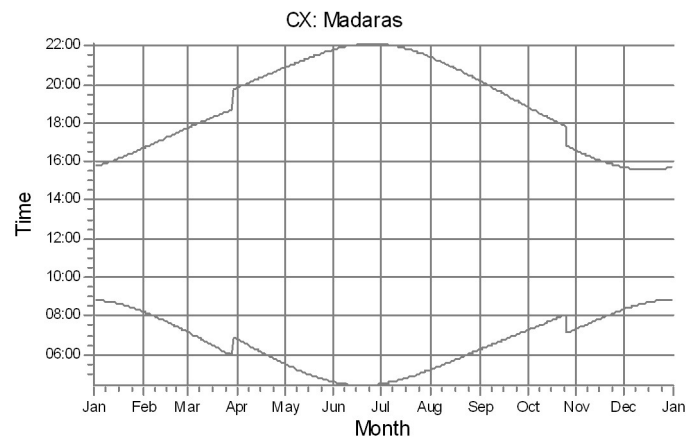
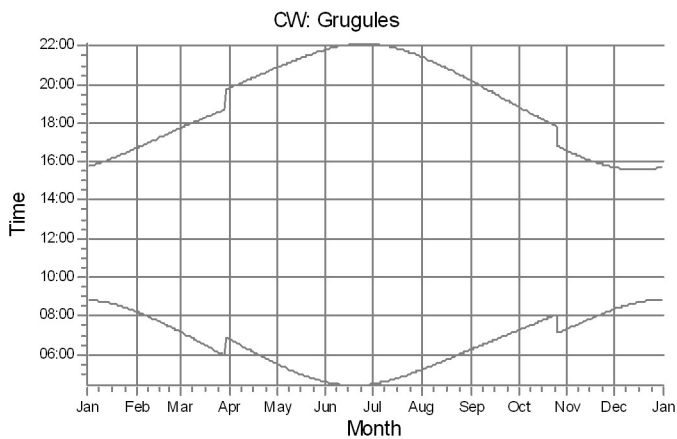
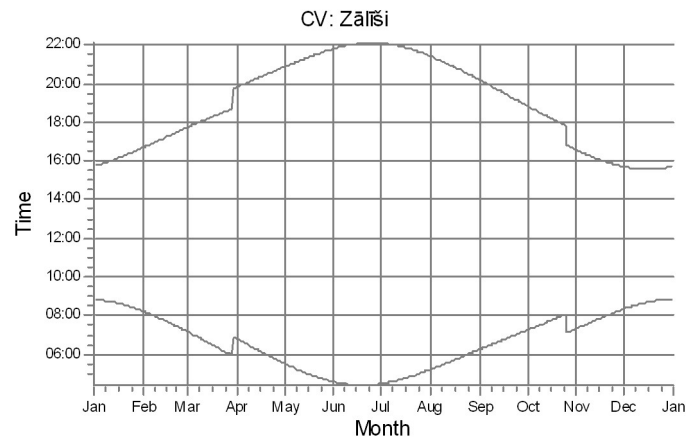
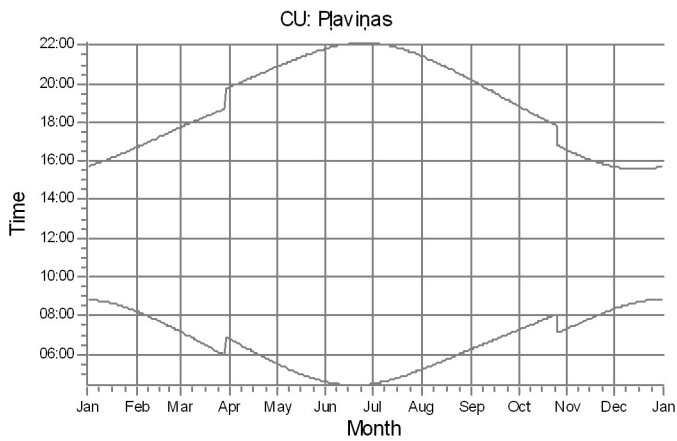
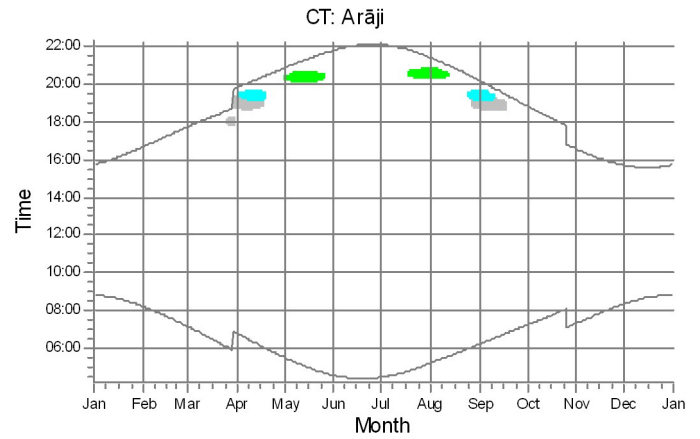
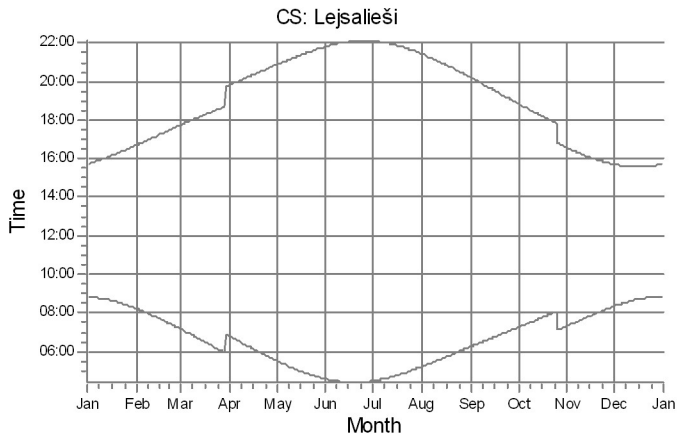


WTGs



SHADOW - Calendar, graphical

Calculation: Worst & Real Case

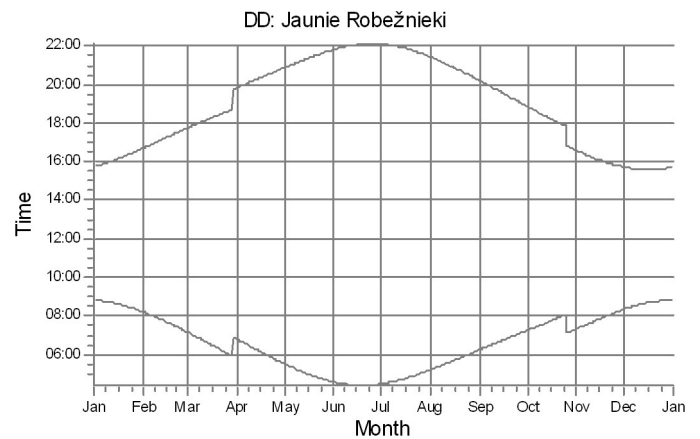
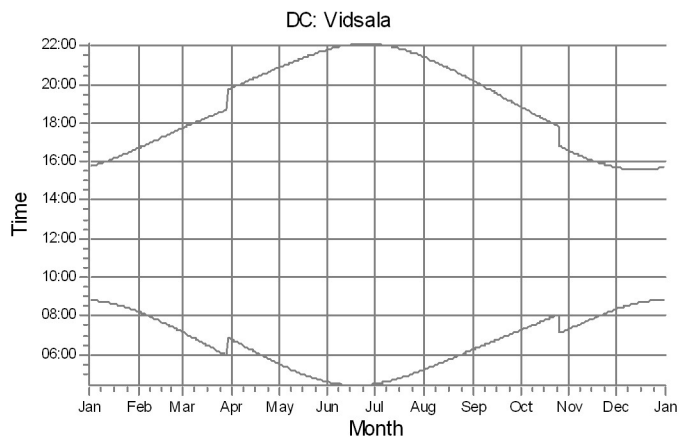
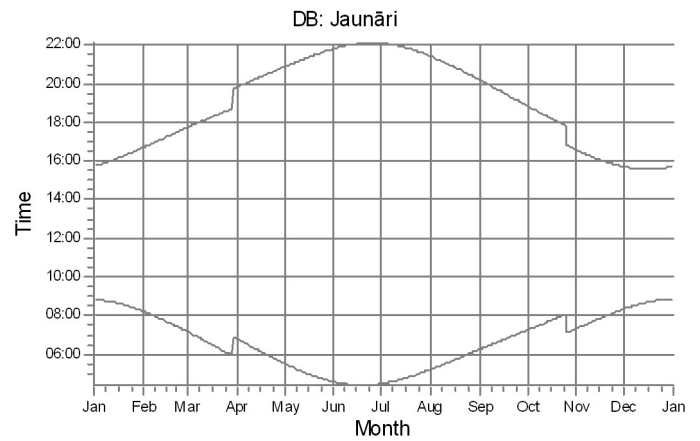
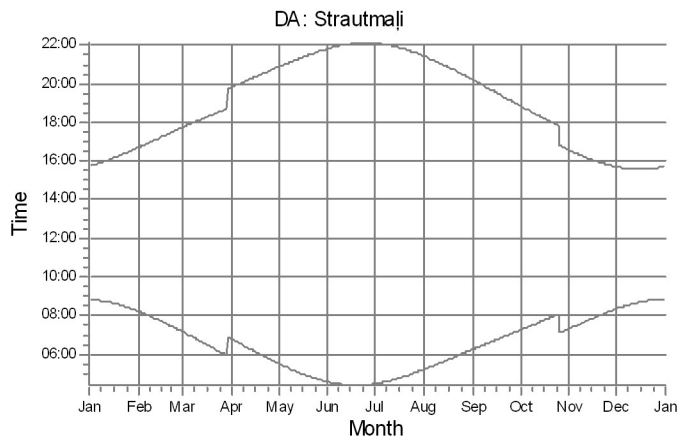
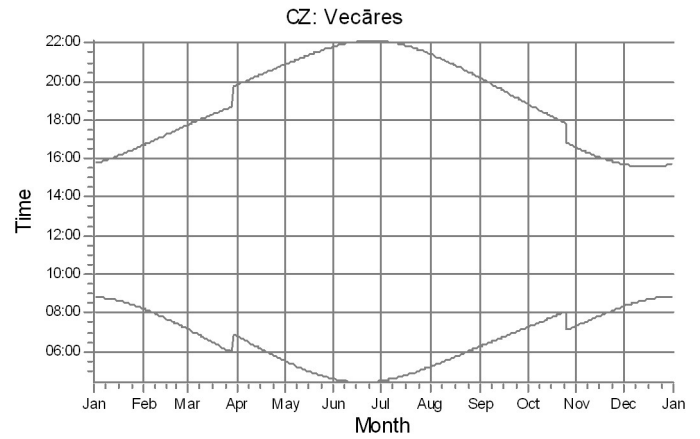
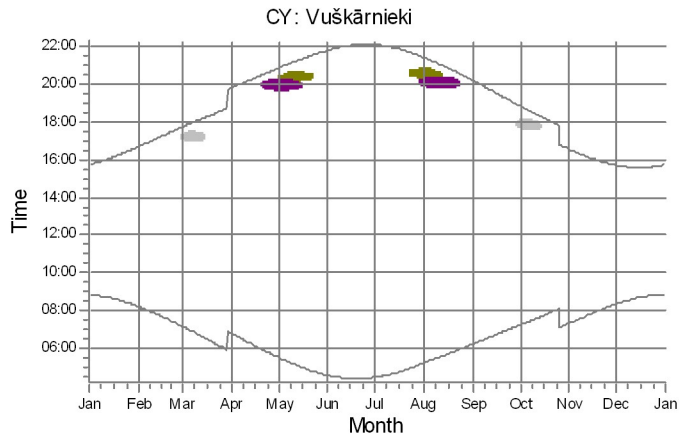


WTGs

9: 24-A 12: 20-A 13: 19-B

SHADOW - Calendar, graphical

Calculation: Worst & Real Case

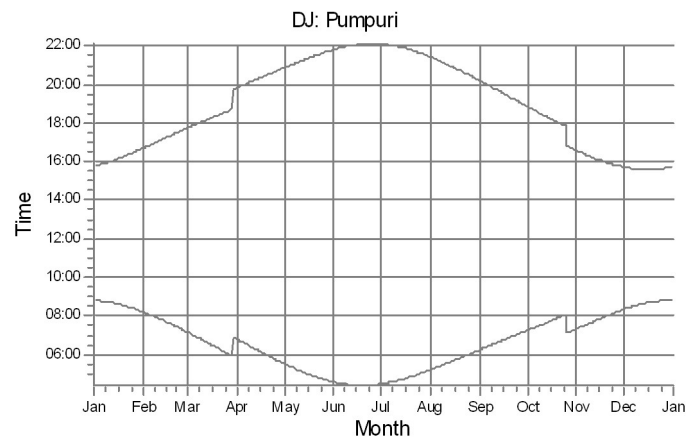
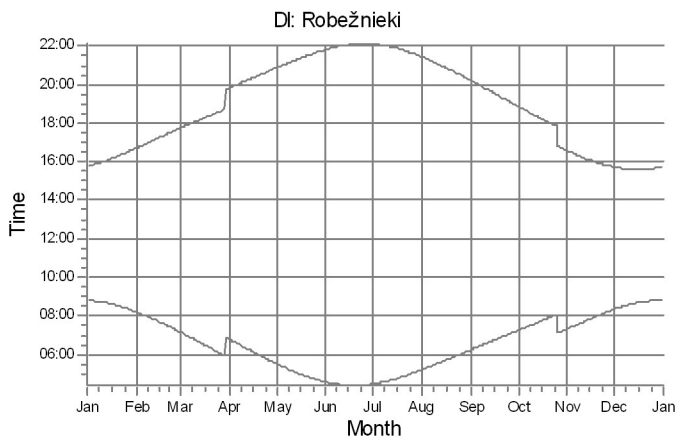
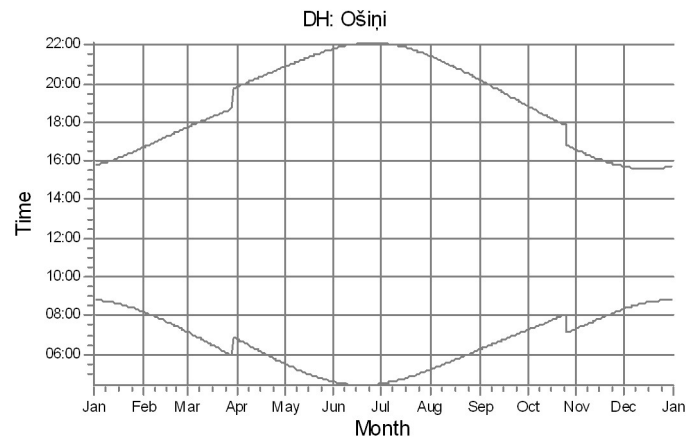
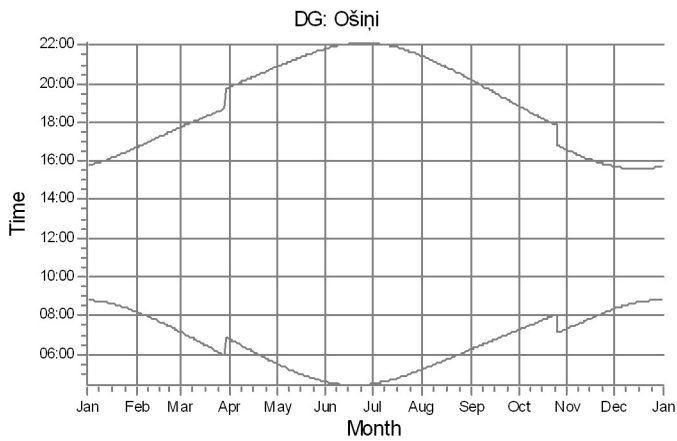
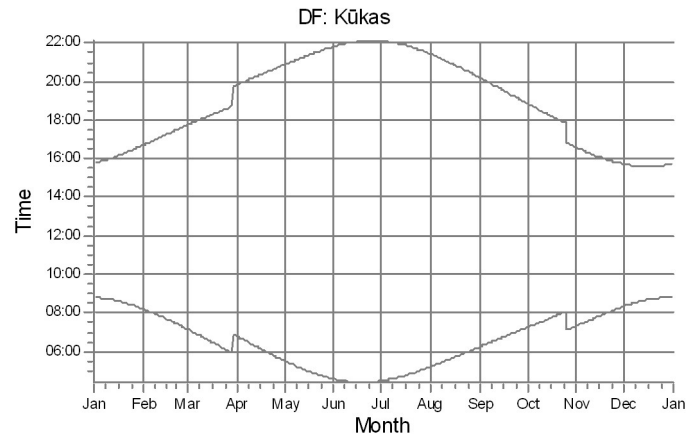
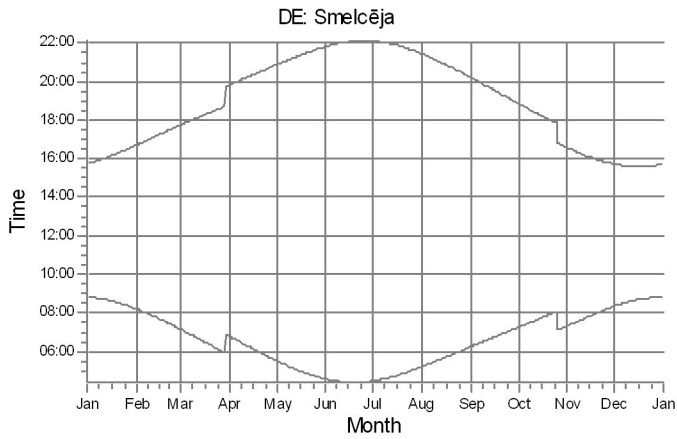


WTGs



SHADOW - Calendar, graphical

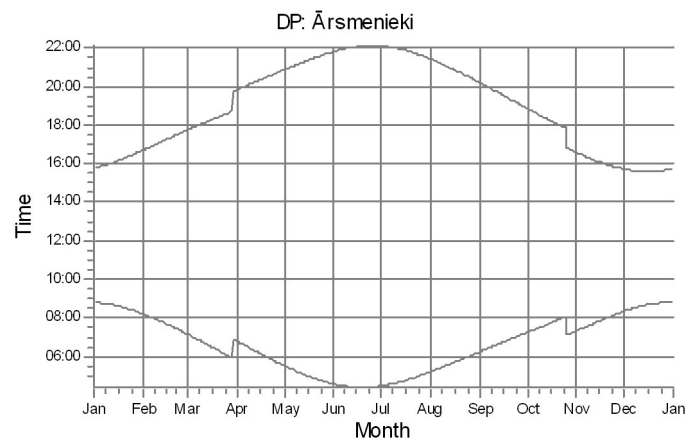
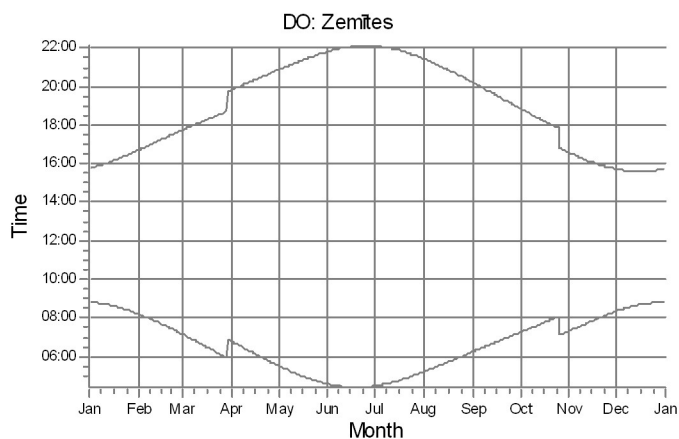
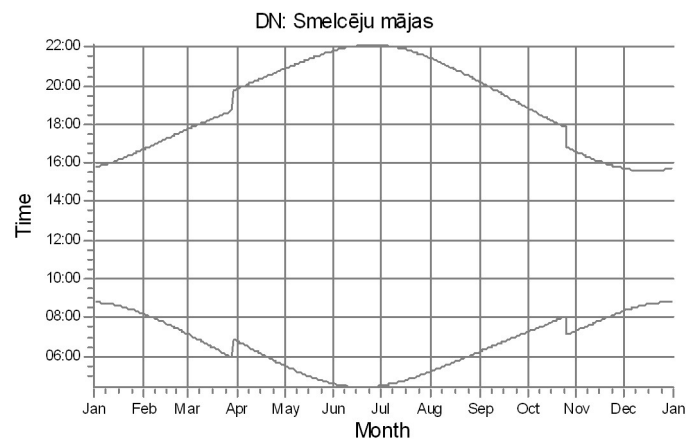
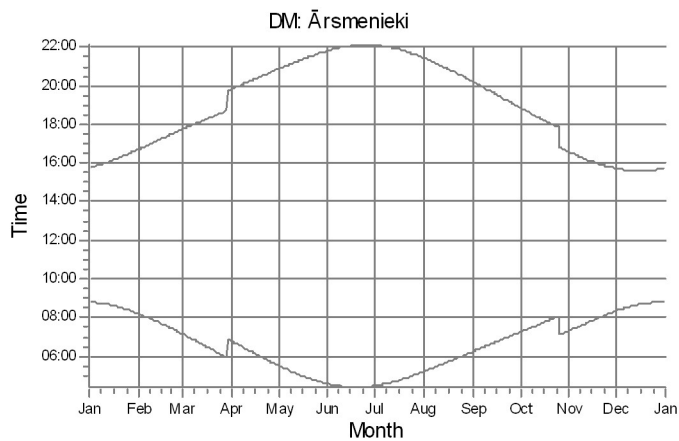
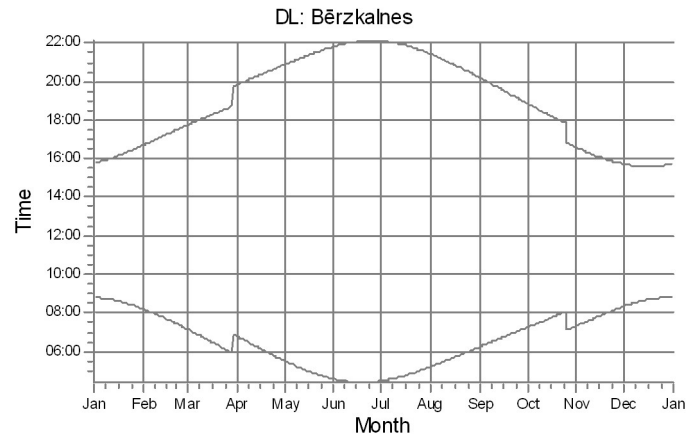
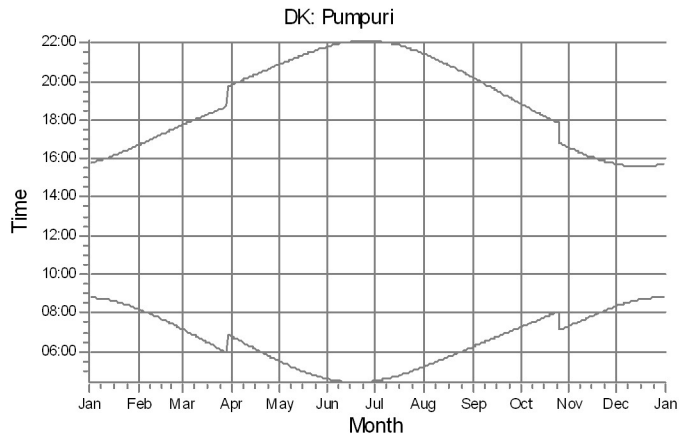
Calculation: Worst & Real Case



WTGs

SHADOW - Calendar, graphical

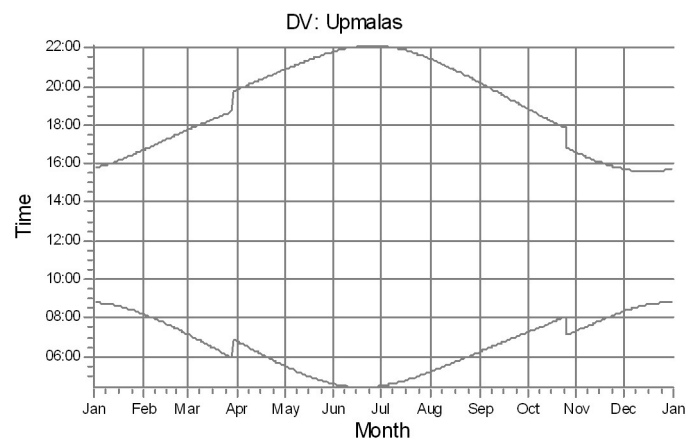
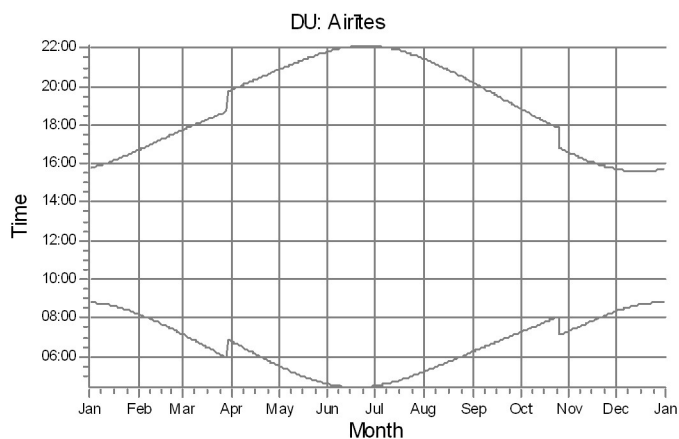
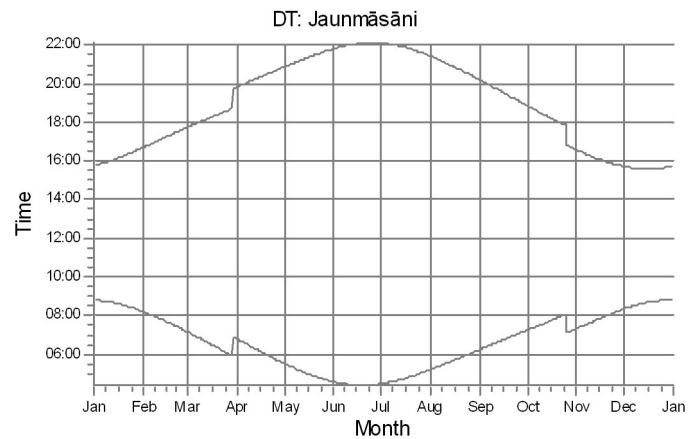
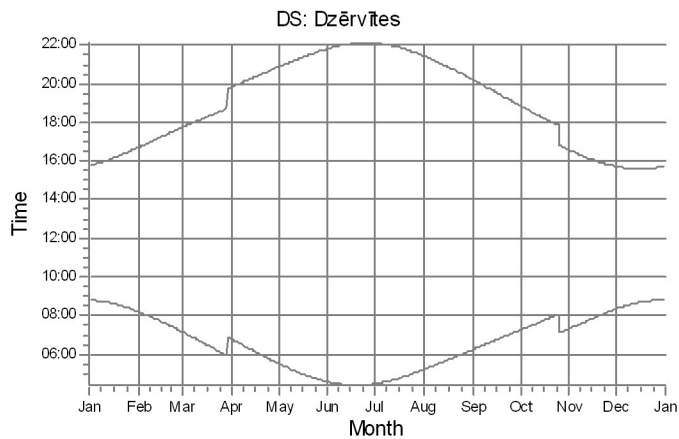
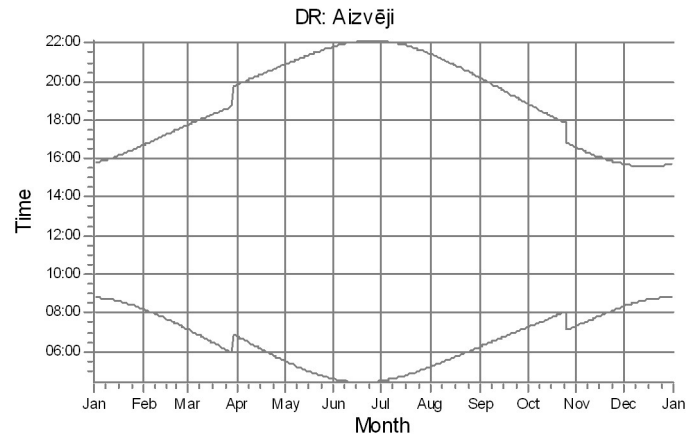
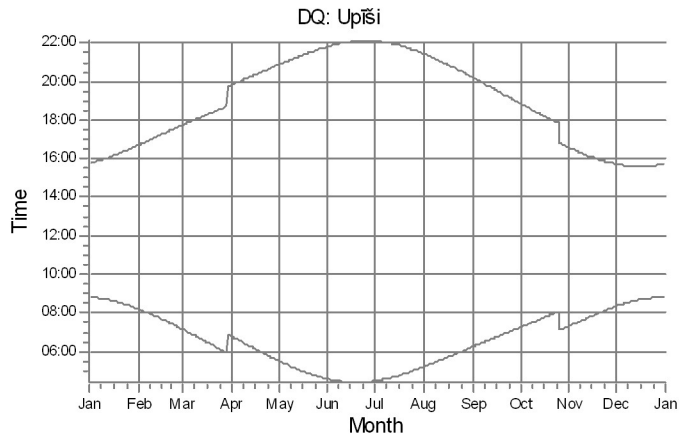
Calculation: Worst & Real Case



WTGs

SHADOW - Calendar, graphical

Calculation: Worst & Real Case



WTGs

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 1 - 1-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January			February			March			April			May			June		
1	08:48	09:36-10:05/29	08:13	07:09	06:47	07:16-08:02/46	05:31	06:01-06:23/22	04:34	05:53-06:07/14								
	15:45	11:14-11:27/13	16:42	17:44	19:50		20:52		21:50									
2	08:48	09:37-10:06/29	08:11	07:06	06:44	07:16-07:58/42	05:28	05:59-06:24/25	04:32	05:54-06:06/12								
	15:46	11:16-11:27/11	16:44	17:46	19:52		20:54		21:51									
3	08:48	09:37-10:06/29	08:09	07:04	06:42	07:15-07:55/40	05:26	05:56-06:24/28	04:31	05:57-06:05/8								
	15:48	11:17-11:25/8	16:46	17:49	19:54		20:56		21:52									
4	08:47	09:38-10:07/29	08:07	07:01	06:39	07:16-07:55/39	05:24	05:54-06:25/31	04:30	05:59-06:03/4								
	15:49	11:21-11:23/2	16:49	17:51	19:56		20:58		21:54									
5	08:47	09:38-10:07/29	08:05	06:59	06:36	07:15-07:53/38	05:21	05:52-06:25/33	04:29									
	15:50		16:51	17:53	19:58		21:00		21:55									
6	08:46	09:38-10:08/30	08:03	06:56	06:34	07:15-07:51/36	05:19	05:50-06:25/35	04:28									
	15:52		16:53	17:55	20:00		21:03		21:56									
7	08:46	09:38-10:08/30	08:01	06:53	06:31	07:16-07:49/33	05:17	05:48-06:25/37	04:28									
	15:53		16:55	17:57	20:02		21:05		21:57									
8	08:45	09:38-10:09/31	07:58	06:51	06:28	07:17-07:45/28	05:15	05:46-06:26/40	04:27									
	15:55		16:58	17:59	20:04		21:07		21:58									
9	08:44	09:38-10:09/31	07:56	06:48	06:26	07:18-07:40/22	05:13	05:45-06:25/40	04:26									
	15:56		17:00	18:02	20:06		21:09		21:59									
10	08:44	09:39-10:10/31	07:54	06:46	06:23	07:19-07:38/19	05:11	05:45-06:25/40	04:25									
	15:58		17:02	18:04	20:08		21:11		22:00									
11	08:43	09:39-10:10/31	07:52	06:43	06:20	07:20-07:36/16	05:08	05:45-06:26/41	04:25									
	16:00		17:04	18:06	20:11		21:13		22:01									
12	08:42	09:40-10:11/31	07:50	06:40	06:18	07:23-07:33/10	05:06	05:45-06:26/41	04:24									
	16:01		17:07	18:08	20:13		21:15		22:02									
13	08:41	09:40-10:12/32	07:48	06:38	06:15		05:04	05:44-06:25/41	04:24									
	16:03		17:09	18:10	20:15		21:17		22:03									
14	08:40	09:40-10:11/31	07:45	06:35	06:13		05:02	05:44-06:24/40	04:23									
	16:05		17:11	18:12	20:17		21:18		22:04									
15	08:39	09:41-10:12/31	07:43	06:32	06:10		05:00	05:44-06:24/40	04:23									
	16:07		17:13	18:14	20:19		21:20		22:05									
16	08:38	09:42-10:13/31	07:41	06:30	06:07		04:59	05:44-06:24/40	04:23									
	16:09		17:16	18:16	20:21		21:22		22:05									
17	08:36	09:42-10:12/30	07:38	06:27	06:05		04:57	05:44-06:23/39	04:23									
	16:11		17:18	18:18	20:23		21:24		22:06									
18	08:35	09:42-10:12/30	07:36	06:24	06:02		04:55	05:44-06:22/38	04:23									
	16:12		17:20	18:21	20:25		21:26		22:06									
19	08:34	09:43-10:13/30	07:34	06:22	06:00		04:53	05:45-06:22/37	04:23									
	16:14		17:22	18:23	20:27		21:28		22:07									
20	08:33	09:43-10:13/30	07:31	06:19	05:57		04:51	05:45-06:20/35	04:23									
	16:16		17:24	18:25	20:29		21:30		22:07									
21	08:31	09:45-10:13/28	07:29	06:16	05:55		04:50	05:46-06:19/33	04:23									
	16:18		17:27	18:27	20:31		21:32		22:07									
22	08:30	09:45-10:13/28	07:26	06:14	05:52		04:48	05:45-06:18/33	04:23									
	16:20		17:29	18:29	20:33		21:33		22:08									
23	08:28	09:46-10:12/26	07:24	06:11	05:50		04:46	05:46-06:16/30	04:23									
	16:23		17:31	18:31	20:36		21:35		22:08									
24	08:27	09:46-10:12/26	07:21	06:08	05:47		04:45	05:47-06:13/26	04:23									
	16:25		17:33	18:33	20:38		21:37		22:08									
25	08:25	09:47-10:11/24	07:19	06:06	05:45		04:43	05:47-06:12/25	04:24									
	16:27		17:35	18:35	20:40		21:39		22:08									
26	08:23	09:49-10:10/21	07:16	06:03	05:42		04:42	05:48-06:12/24	04:24									
	16:29		17:38	18:37	20:42		21:40		22:08									
27	08:22	09:50-10:09/19	07:14	06:00	05:40		04:40	05:49-06:11/22	04:25									
	16:31		17:40	18:39	20:44		21:42		22:08									
28	08:20	09:52-10:07/15	07:11	05:58	05:38		04:39	05:50-06:11/21	04:25									
	16:33		17:42	18:41	20:46		21:44		22:08									
29	08:18	09:55-10:05/10		05:55	05:35		04:37	05:50-06:09/19	04:26									
	16:35			18:44	20:48		21:45		22:07									
30	08:16			06:52	05:33		04:36	05:51-06:09/18	04:26									
	16:38			19:46	20:50		21:47		22:07									
31	08:15			06:50	05:35		04:35	05:52-06:08/16										
	16:40			19:48			21:48											
Potential sun hours	235		265	365	425		507		528									
Sum of minutes with flicker	836	0	524	420	990	38												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 1 - 1-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July	August	September	October	November	December
1	04:27 22:07	05:13 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:43
2	04:28 22:06	05:14 21:24	06:16 20:10	07:18 18:49	07:22 16:32	08:23 15:42
3	04:29 22:06	05:16 21:22	06:18 20:07	07:16 18:46	07:24 16:30	08:24 15:41
4	04:30 22:05	05:18 21:20	06:20 20:04	07:15 18:44	07:26 16:27	08:26 15:40
5	04:31 22:04	05:20 21:18	06:22 20:02	07:13 18:41	07:28 16:25	08:28 15:39
6	04:32 22:04	05:22 21:15	06:24 19:59	07:12 18:38	07:30 16:23	08:29 15:38
7	04:33 22:03	05:24 21:13	06:26 19:56	07:11 18:36	07:32 16:21	08:31 15:38
8	04:34 22:02	05:26 21:11	06:28 19:54	07:10 18:33	07:35 16:19	08:32 15:37
9	04:35 22:01	05:28 21:09	06:30 19:51	07:10 18:31	07:37 16:17	08:34 15:37
10	04:36 22:00	05:30 21:06	06:32 19:48	07:09 18:28	07:39 16:15	08:35 15:36
11	04:38 21:59	05:32 21:04	06:34 19:46	07:09 18:25	07:41 16:13	08:36 15:36
12	04:39 21:58	05:34 21:02	06:36 19:43	07:09 18:23	07:43 16:11	08:37 15:36
13	04:40 21:57	05:36 21:00	06:38 19:40	07:09 18:20	07:45 16:09	08:39 15:35
14	04:42 21:56	05:38 20:57	06:40 19:38	07:11 18:18	07:47 16:07	08:40 15:35
15	04:43 21:54	05:40 20:55	06:42 19:35	07:13 18:15	07:50 16:05	08:41 15:35
16	04:45 21:53	05:42 20:52	06:44 19:32	07:15 18:13	07:52 16:04	08:42 15:35
17	04:46 21:52	05:44 20:50	06:46 19:29	07:17 18:10	07:54 16:02	08:43 15:35
18	04:48 21:50	05:46 20:48	06:48 19:27	07:21 18:07	07:56 16:00	08:44 15:35
19	04:49 21:49	05:48 20:45	06:50 19:24	07:21 18:05	07:58 15:59	08:44 15:36
20	04:51 21:47	05:50 20:43	06:52 19:21	07:23 18:02	08:00 15:57	08:45 15:36
21	04:53 21:46	05:52 20:40	06:54 19:19	07:25 18:00	08:02 15:55	08:46 15:36
22	04:54 21:44	05:54 20:38	06:56 19:16	07:27 17:58	08:04 15:54	08:46 15:37
23	04:56 21:42	05:56 20:35	06:58 19:13	07:30 17:55	08:06 15:52	08:47 15:37
24	04:58 21:41	05:58 20:33	07:00 19:11	07:31 17:53	08:08 15:51	08:47 15:38
25	05:00 21:39	06:00 20:30	07:02 19:08	07:33 17:50	08:10 15:50	08:48 15:38
26	05:01 21:37	06:02 20:28	07:04 19:05	07:35 17:48	08:12 15:48	08:48 15:39
27	05:03 21:35	06:04 20:25	07:06 19:02	07:37 17:46	08:14 15:47	08:48 15:40
28	05:05 21:34	06:06 20:23	07:08 19:00	07:39 17:43	08:16 15:46	08:48 15:41
29	05:07 21:32	06:08 20:20	07:10 18:57	07:41 17:41	08:18 15:45	08:48 15:42
30	05:09 21:30	06:10 20:17	07:12 18:54	07:43 17:39	08:19 15:44	08:48 15:43
31	05:11 21:28	06:12 20:15	07:14 18:52	07:45 17:37	08:21 15:43	08:48 15:44
Potential sun hours	529	470	385	324	248	216
Sum of minutes with flicker	614	484	899	0	458	1234

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

2026-02-Ecosoul-MEŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 2 - 2-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January	February	March	April	May	June
1	08:48	08:13	07:09	06:47	07:16-07:38/22	05:31
	15:45	16:42	17:44	19:50	07:48-08:05/17	20:52
2	08:48	08:11	07:06	06:44	07:16-07:38/22	05:28
	15:46	16:44	17:46	19:52	07:51-08:03/12	20:54
3	08:47	08:09	07:04	06:41	07:16-07:37/21	05:26
	15:48	16:46	17:49	19:54		20:56
4	08:47	08:07	07:01	06:39	07:15-07:36/21	05:24
	15:49	16:49	17:51	19:56		20:58
5	08:47	08:05	06:59	06:36	07:16-07:36/20	05:21
	15:50	16:51	17:53	19:58		21:00
6	08:46	08:03	06:56	06:34	07:17-07:34/17	05:19
	15:52	16:53	17:55	20:00		21:02
7	08:46	08:01	06:53	06:31	07:18-07:33/15	05:17
	15:53	16:55	17:57	20:02		21:04
8	08:45	07:58	06:51	06:28	07:19-07:31/12	05:15
	15:55	16:58	17:59	20:04		21:06
9	08:44	07:56	06:48	06:26	07:24-07:25/1	05:13
	15:56	17:00	18:01	20:06		21:08
10	08:43	07:54	06:45	06:23		05:11
	15:58	17:02	18:04	20:08		21:10
11	08:43	07:52	06:43	06:20		05:08
	16:00	17:04	18:06	20:10		21:12
12	08:42	07:50	06:40	06:18		05:06
	16:01	17:07	18:08	20:13		21:14
13	08:41	07:47	06:38	06:15		05:04
	16:03	17:09	18:10	20:15		21:16
14	08:40	07:45	06:35	06:13		05:02
	16:05	17:11	18:12	20:17		21:18
15	08:39	07:43	06:32	06:10		05:00
	16:07	17:13	18:14	20:19		21:20
16	08:38	07:41	06:30	06:07		04:59
	16:09	17:15	18:16	20:21		21:22
17	08:36	07:38	06:27	06:05		04:57
	16:10	17:18	18:18	20:23		21:24
18	08:35	07:36	06:24	06:02		04:55
	16:12	17:20	18:20	20:25		21:26
19	08:34	07:33	06:22	06:00		04:53
	16:14	17:22	18:23	20:27		21:28
20	08:32	07:31	06:19	05:57		04:51
	16:16	17:24	18:25	20:29		21:30
21	08:31	07:29	06:16	05:55		04:49
	16:18	17:27	18:27	20:31		21:31
22	08:30	07:26	06:14	05:52		04:48
	16:20	17:29	18:29	20:33		21:33
23	08:28	07:24	06:11	05:50		04:46
	16:23	17:31	18:31	20:35		21:35
24	08:27	07:21	06:08	05:47		04:45
	16:25	17:33	18:33	20:38		21:37
25	08:25	07:19	06:06	05:45		04:43
	16:27	17:35	18:35	20:40		21:38
26	08:23	07:16	06:03	05:42		04:42
	16:29	17:38	18:37	20:42		21:40
27	08:22	07:14	06:00	05:40		04:40
	16:31	17:40	18:39	20:44		21:42
28	08:20	07:11	05:58	05:38		04:39
	16:33	17:42	18:41	20:46		21:43
29	08:18		05:55	05:35		04:37
	16:35		18:43	20:48		21:45
30	08:16		06:52	05:33		04:36
	16:38		19:46	20:50		21:47
31	08:14		06:49			04:35
	16:40		19:48			21:48
Potential sun hours	235	265	365	425	507	528
Sum of minutes with flicker	0	0	466	180	1063	1554

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 2 - 2-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July	August	September	October	November	December
1	04:27 05:46-06:38/52 22:06	05:13 05:59-06:35/36 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:43
2	04:28 05:47-06:39/52 22:06	05:14 06:01-06:34/33 21:24	06:16 20:09	07:16 18:49	07:21 16:32	08:23 15:42
3	04:29 05:47-06:39/52 22:05	05:16 06:02-06:32/30 21:22	06:18 20:07	07:18 18:46	07:24 16:30	08:24 15:41
4	04:30 05:47-06:39/52 22:05	05:18 06:04-06:30/26 21:20	06:20 07:19-07:26/7 20:04	07:20 18:44	07:26 16:27	08:26 15:40
5	04:31 05:48-06:40/52 22:04	05:20 06:08-06:28/20 21:17	06:22 07:16-07:29/13 20:02	07:22 18:41	07:28 16:25	08:28 15:39
6	04:32 05:48-06:40/52 22:03	05:22 06:11-06:25/14 21:15	06:24 07:14-07:30/16 19:59	07:24 18:38	07:30 16:23	08:29 15:38
7	04:33 05:48-06:40/52 22:03	05:24 06:17-06:18/1 21:13	06:26 07:12-07:31/19 19:56	07:26 18:36	07:32 16:21	08:31 15:38
8	04:34 05:48-06:40/52 22:02	05:26 21:11	06:28 07:11-07:31/20 19:54	07:28 18:33	07:34 16:19	08:32 15:37
9	04:35 05:48-06:41/53 22:01	05:28 21:09	06:30 07:09-07:31/22 19:51	07:30 18:31	07:37 16:17	08:33 15:37
10	04:36 05:48-06:41/53 22:00	05:30 21:06	06:32 07:09-07:31/22 19:48	07:32 18:28	07:39 16:15	08:35 15:36
11	04:38 05:48-06:41/53 21:59	05:32 21:04	06:34 07:08-07:31/23 19:46	07:35 18:25	07:41 16:13	08:36 15:36
12	04:39 05:48-06:41/53 21:58	05:34 21:02	06:36 07:08-07:30/22 19:43	07:37 18:23	07:43 16:11	08:37 15:36
13	04:40 05:48-06:40/52 21:57	05:36 20:59	06:38 07:09-07:30/21 19:40	07:39 18:20	07:45 16:09	08:38 15:35
14	04:42 05:49-06:41/52 21:55	05:38 20:57	06:40 07:11-07:29/18 19:37	07:41 18:18	07:47 16:07	08:40 15:35
15	04:43 05:49-06:41/52 21:54	05:40 20:55	06:42 07:13-07:27/14 19:35	07:43 18:15	07:49 16:05	08:41 15:35
16	04:45 05:49-06:41/52 21:53	05:42 20:52	06:44 07:15-07:26/11 19:32	07:45 18:12	07:52 16:04	08:42 15:35
17	04:46 05:50-06:41/51 21:52	05:44 20:50	06:46 07:17-07:24/7 19:29	07:47 18:10	07:54 16:02	08:43 15:35
18	04:48 05:49-06:41/52 21:50	05:46 20:48	06:48 07:33-08:02/29 19:27	07:49 18:07	07:56 16:00	08:43 15:35
19	04:49 05:50-06:41/51 21:49	05:48 20:45	06:50 07:33-08:02/29 19:24	07:51 18:05	07:58 15:59	08:44 15:36
20	04:51 05:50-06:41/51 21:47	05:50 20:43	06:52 07:32-08:01/29 19:21	07:53 18:02	08:00 15:57	08:45 15:36
21	04:53 05:51-06:41/50 21:46	05:52 20:40	06:54 07:32-08:01/29 19:19	07:56 18:00	08:02 15:55	08:46 15:36
22	04:54 05:51-06:40/49 21:44	05:54 20:38	06:56 07:32-08:00/28 19:16	07:58 17:57	08:04 15:54	08:46 15:37
23	04:56 05:52-06:41/49 21:42	05:56 20:35	06:58 07:33-07:59/26 19:13	08:00 17:55	08:06 15:52	08:47 15:37
24	04:58 05:51-06:40/49 21:41	05:58 20:33	07:00 07:33-07:58/25 19:10	08:02 17:53	08:08 15:51	08:47 15:38
25	05:00 05:52-06:40/48 21:39	06:00 20:30	07:02 07:34-07:57/23 19:08	08:04 17:50	08:10 15:50	08:47 15:38
26	05:01 05:53-06:40/47 21:37	06:02 20:28	07:04 07:35-07:55/20 19:05	07:06 16:48	08:12 15:48	08:48 15:39
27	05:03 05:53-06:38/45 21:35	06:04 20:25	07:06 07:37-07:53/16 19:02	07:08 16:45	08:14 15:47	08:48 15:40
28	05:05 05:54-06:38/44 21:34	06:06 20:22	07:08 07:39-07:50/11 19:00	07:11 16:43	08:16 15:46	08:48 15:41
29	05:07 05:56-06:38/42 21:32	06:08 20:20	07:10 18:57	07:13 16:41	08:17 15:45	08:48 15:42
30	05:09 05:56-06:36/40 21:30	06:10 20:17	07:12 18:54	07:15 16:39	08:19 15:44	08:48 15:43
31	05:11 05:57-06:36/39 21:28	06:12 20:15		07:17 16:36		08:48 15:44
Potential sun hours	529	470	385	324	248	216
Sum of minutes with flicker	1543	160	666	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 3 - 10-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:13	07:09	06:47	05:30	04:33	04:27	05:12	06:14	07:14	07:19	08:21
	15:45	16:42	17:44	19:50	20:52	21:49	22:06	21:26	20:12	18:52	16:34	15:43
2	08:48	08:11	07:06	06:44	05:28	04:32	04:28	05:14	06:16	07:16	07:21	08:23
	15:46	16:44	17:46	19:52	20:54	21:51	22:06	21:24	20:09	18:49	16:32	15:42
3	08:48	08:09	07:04	06:41	05:26	04:31	04:29	05:16	06:18	07:18	07:24	08:24
	15:47	16:46	17:48	19:54	20:56	21:52	22:05	21:22	20:07	18:46	16:29	15:41
4	08:47	08:07	07:01	06:39	05:24	04:30	04:30	05:18	06:20	07:20	07:26	08:26
	15:49	16:48	17:51	19:56	20:58	21:54	22:05	21:20	20:04	18:44	16:27	15:40
5	08:47	08:05	06:58	06:36	05:21	04:29	04:31	05:20	06:22	07:22	07:28	08:28
	15:50	16:51	17:53	19:58	21:00	21:55	22:04	21:17	20:01	18:41	16:25	15:39
6	08:46	08:03	06:56	06:33	05:19	04:28	04:32	05:22	06:24	07:24	07:30	08:29
	15:52	16:53	17:55	20:00	21:02	21:56	22:03	21:15	19:59	18:38	16:23	15:38
7	08:46	08:00	06:53	06:31	05:17	04:27	04:33	05:24	06:26	07:26	07:32	08:31
	15:53	16:55	17:57	20:02	21:04	21:57	22:03	21:13	19:56	18:36	16:21	15:38
8	08:45	07:58	06:51	06:28	05:15	04:27	04:34	05:26	06:28	07:28	07:34	08:32
	15:55	16:57	17:59	20:04	21:06	21:58	22:02	21:11	19:53	18:33	16:19	15:37
9	08:44	07:56	06:48	06:26	05:13	04:26	04:35	05:28	06:30	07:30	07:37	08:33
	15:56	17:00	18:01	20:06	21:08	21:59	22:01	21:09	19:51	18:30	16:17	15:37
10	08:43	07:54	06:45	06:23	05:10	04:25	04:36	05:30	06:32	07:32	07:39	08:35
	15:58	17:02	18:04	20:08	21:10	22:00	22:00	21:06	19:48	18:28	16:15	15:36
11	08:43	07:52	06:43	06:20	05:08	04:25	04:38	05:32	06:34	07:34	07:41	08:36
	15:59	17:04	18:06	20:10	21:12	22:01	21:59	21:04	19:45	18:25	16:13	15:36
12	08:42	07:50	06:40	06:18	05:06	04:24	04:39	05:34	06:36	07:37	07:43	08:37
	16:01	17:06	18:08	20:13	21:14	22:02	21:58	21:02	19:43	18:23	16:11	15:35
13	08:41	07:47	06:38	06:15	05:04	04:24	04:40	05:36	06:38	07:39	07:45	08:38
	16:03	17:09	18:10	20:15	21:16	22:03	21:57	20:59	19:40	18:20	16:09	15:35
14	08:40	07:45	06:35	06:12	05:02	04:23	04:42	05:38	06:40	07:41	07:47	08:40
	16:05	17:11	18:12	20:17	21:18	22:04	21:56	20:57	19:37	18:17	16:07	15:35
15	08:39	07:43	06:32	06:10	05:00	04:23	04:43	05:40	06:42	07:43	07:49	08:41
	16:07	17:13	18:14	20:19	21:20	22:04	21:54	20:55	19:35	18:15	16:05	15:35
16	08:38	07:41	06:30	06:07	04:58	04:23	04:45	05:42	06:44	07:45	07:52	08:42
	16:08	17:15	18:16	20:21	21:22	22:05	21:53	20:52	19:32	18:12	16:04	15:35
17	08:36	07:38	06:27	06:05	04:57	04:23	04:46	05:44	06:46	07:47	07:54	08:43
	16:10	17:18	18:18	20:23	21:24	22:06	21:52	20:50	19:29	18:10	16:02	15:35
18	08:35	07:36	06:24	06:02	04:55	04:22	04:48	05:46	06:48	07:49	07:56	08:43
	16:12	17:20	18:20	20:25	21:26	22:06	21:50	20:48	19:27	18:07	16:00	15:35
19	08:34	07:33	06:22	06:00	04:53	04:22	04:49	05:48	06:50	07:51	07:58	08:44
	16:14	17:22	18:23	20:27	21:28	22:07	21:49	20:45	19:24	18:05	15:58	15:35
20	08:32	07:31	06:19	05:57	04:51	04:22	04:51	05:50	06:52	07:53	08:00	08:45
	16:16	17:24	18:25	20:29	21:30	22:07	21:47	20:43	19:21	18:02	15:57	15:36
21	08:31	07:29	06:16	05:55	04:49	04:22	04:53	05:52	06:54	07:56	08:02	08:46
	16:18	17:27	18:27	20:31	21:32	22:07	21:46	20:40	19:19	18:00	15:55	15:36
22	08:30	07:26	06:14	05:52	04:48	04:23	04:54	05:54	06:56	07:58	08:04	08:46
	16:20	17:29	18:29	20:33	21:33	22:07	21:44	20:38	19:16	17:57	15:54	15:36
23	08:28	07:24	06:11	05:50	04:46	04:23	04:56	05:56	06:58	08:00	08:06	08:47
	16:22	17:31	18:31	20:35	21:35	22:08	21:42	20:35	19:13	17:55	15:52	15:37
24	08:27	07:21	06:08	05:47	04:44	04:23	04:58	05:58	07:00	08:02	08:08	08:47
	16:24	17:33	18:33	20:38	21:37	22:08	21:41	20:33	19:10	17:53	15:51	15:38
25	08:25	07:19	06:05	05:45	04:43	04:24	04:59	06:00	07:02	08:04	08:10	08:47
	16:27	17:35	18:35	20:40	21:39	22:08	21:39	20:30	19:08	17:50	15:50	15:38
26	08:23	07:16	06:03	05:42	04:41	04:24	05:01	06:02	07:04	08:06	08:12	08:48
	16:29	17:38	18:37	20:42	21:40	22:08	21:37	20:28	19:05	16:48	15:48	15:39
27	08:22	07:14	06:00	05:40	04:40	04:24	05:03	06:04	07:06	08:08	08:14	08:48
	16:31	17:40	18:39	20:44	21:42	22:08	21:35	20:25	19:02	16:45	15:47	15:40
28	08:20	07:11	05:57	05:37	04:38	04:25	05:05	06:06	07:08	08:11	08:16	08:48
	16:33	17:42	18:41	20:46	21:43	22:07	21:34	20:22	19:00	16:43	15:46	15:41
29	08:18		05:55	05:35	04:37	04:26	05:07	06:08	07:10	08:13	08:17	08:48
	16:35		18:43	20:48	21:45	22:07	21:32	20:20	18:57	16:41	15:45	15:41
30	08:16		06:52	05:33	04:36	04:26	05:09	06:10	07:12	08:15	08:19	08:48
	16:37		19:45	20:50	21:47	22:07	21:30	20:17	18:54	16:38	15:44	15:42
31	08:14		06:49		04:35		05:11	06:12		07:17		08:48
	16:40		19:48		21:48		21:28	20:15		16:36		15:44
Potential sun hours	235	265	365	425	507	529	529	470	385	324	248	216
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 4 - 15-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:13	07:09	06:47	05:30	04:33	04:27	05:12	06:14	07:14	07:19	08:21
	15:45	16:42	17:44	19:50	20:52	21:50	22:06	21:26	20:12	18:52	16:34	15:42
2	08:48	08:11	07:06	06:44	05:28	04:32	04:28	05:14	06:16	07:16	07:21	08:23
	15:46	16:44	17:46	19:52	20:54	21:51	22:06	21:24	20:09	18:49	16:32	15:42
3	08:48	08:09	07:04	06:41	05:26	04:31	04:29	05:16	06:18	07:18	07:24	08:24
	15:47	16:46	17:48	19:54	20:56	21:52	22:05	21:22	20:07	18:46	16:29	15:41
4	08:47	08:07	07:01	06:39	05:23	04:30	04:30	05:18	06:20	07:20	07:26	08:26
	15:49	16:48	17:51	19:56	20:58	21:54	22:05	21:20	20:04	18:44	16:27	15:40
5	08:47	08:05	06:58	06:36	05:21	04:29	04:31	05:20	06:22	07:22	07:28	08:28
	15:50	16:51	17:53	19:58	21:00	21:55	22:04	21:17	20:01	18:41	16:25	15:39
6	08:46	08:03	06:56	06:33	05:19	04:28	04:32	05:22	06:24	07:24	07:30	08:29
	15:52	16:53	17:55	20:00	21:02	21:56	22:04	21:15	19:59	18:38	16:23	15:38
7	08:46	08:00	06:53	06:31	05:17	04:27	04:33	05:24	06:26	07:26	07:32	08:31
	15:53	16:55	17:57	20:02	21:04	21:57	22:03	21:13	19:56	18:36	16:21	15:38
8	08:45	07:58	06:51	06:28	05:15	04:27	04:34	05:26	06:28	07:28	07:34	08:32
	15:55	16:57	17:59	20:04	21:06	21:58	22:02	21:11	19:53	18:33	16:19	15:37
9	08:44	07:56	06:48	06:25	05:13	04:26	04:35	05:28	06:30	07:30	07:37	08:33
	15:56	17:00	18:01	20:06	21:08	21:59	22:01	21:09	19:51	18:30	16:17	15:37
10	08:44	07:54	06:45	06:23	05:10	04:25	04:36	05:30	06:32	07:32	07:39	08:35
	15:58	17:02	18:03	20:08	21:10	22:00	22:00	21:06	19:48	18:28	16:15	15:36
11	08:43	07:52	06:43	06:20	05:08	04:25	04:37	05:32	06:34	07:34	07:41	08:36
	15:59	17:04	18:06	20:10	21:12	22:01	21:59	21:04	19:45	18:25	16:13	15:36
12	08:42	07:50	06:40	06:18	05:06	04:24	04:39	05:34	06:36	07:37	07:43	08:37
	16:01	17:06	18:08	20:13	21:14	22:02	21:58	21:02	19:43	18:23	16:11	15:35
13	08:41	07:47	06:38	06:15	05:04	04:24	04:40	05:36	06:38	07:39	07:45	08:39
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	16:07	17:13	18:14	20:19	21:20	22:04	21:54	20:55	19:35	18:15	16:05	15:35
16	08:38	07:41	06:30	06:07	04:58	04:23	04:45	05:42	06:44	07:45	07:52	08:42
	16:08	17:15	18:16	20:21	21:22	22:05	21:53	20:52	19:32	18:12	16:04	15:35
17	08:36	07:38	06:27	06:05	04:56	04:23	04:46	05:44	06:46	07:47	07:54	08:43
	16:10	17:18	18:18	20:23	21:24	22:06	21:52	20:50	19:29	18:10	16:02	15:35
18	08:35	07:36	06:24	06:02	04:55	04:22	04:48	05:46	06:48	07:49	07:56	08:43
	16:12	17:20	18:20	20:25	21:26	22:06	21:50	20:48	19:27	18:07	16:00	15:35
19	08:34	07:33	06:22	06:00	04:53	04:22	04:49	05:48	06:50	07:51	07:58	08:44
	16:14	17:22	18:23	20:27	21:28	22:07	21:49	20:45	19:24	18:05	15:58	15:35
20	08:32	07:31	06:19	05:57	04:51	04:22	04:51	05:50	06:52	07:53	08:00	08:45
	16:16	17:24	18:25	20:29	21:30	22:07	21:47	20:43	19:21	18:02	15:57	15:36
21	08:31	07:29	06:16	05:55	04:49	04:22	04:53	05:52	06:54	07:56	08:02	08:46
	16:18	17:26	18:27	20:31	21:32	22:07	21:46	20:40	19:19	18:00	15:55	15:36
22	08:30	07:26	06:14	05:52	04:48	04:23	04:54	05:54	06:56	07:58	08:04	08:46
	16:20	17:29	18:29	20:33	21:33	22:07	21:44	20:38	19:16	17:57	15:54	15:36
23	08:28	07:24	06:11	05:50	04:46	04:23	04:56	05:56	06:58	08:00	08:06	08:47
	16:22	17:31	18:31	20:35	21:35	22:08	21:42	20:35	19:13	17:55	15:52	15:37
24	08:27	07:21	06:08	05:47	04:44	04:23	04:58	05:58	07:00	08:02	08:08	08:47
	16:24	17:33	18:33	20:38	21:37	22:08	21:41	20:33	19:10	17:53	15:51	15:38
25	08:25	07:19	06:05	05:45	04:43	04:23	04:59	06:00	07:02	08:04	08:10	08:48
	16:27	17:35	18:35	20:40	21:39	22:08	21:39	20:30	19:08	17:50	15:49	15:38
26	08:23	07:16	06:03	05:42	04:41	04:24	05:01	06:02	07:04	08:06	08:12	08:48
	16:29	17:38	18:37	20:42	21:40	22:08	21:37	20:28	19:05	16:48	15:48	15:39
27	08:22	07:14	06:00	05:40	04:40	04:24	05:03	06:04	07:06	08:08	08:14	08:48
	16:31	17:40	18:39	20:44	21:42	22:08	21:35	20:25	19:02	16:45	15:47	15:40
28	08:20	07:11	05:57	05:37	04:38	04:25	05:05	06:06	07:08	08:11	08:16	08:48
	16:33	17:42	18:41	20:46	21:43	22:07	21:34	20:22	19:00	16:43	15:46	15:41
29	08:18		05:55	05:35	04:37	04:26	05:07	06:08	07:10	08:13	08:17	08:48
	16:35		18:43	20:48	21:45	22:07	21:32	20:20	18:57	16:41	15:45	15:41
30	08:16		06:52	05:33	04:36	04:26	05:09	06:10	07:12	08:15	08:19	08:48
	16:37		19:45	20:50	21:47	22:07	21:30	20:17	18:54	16:38	15:43	15:42
31	08:14		06:49		04:35		05:10	06:12		07:17		08:48
	16:40		19:48		21:48		21:28	20:15		16:36		15:43
Potential sun hours	235	265	365	425	507	529	530	470	385	324	248	216
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

2026-02-Ecosoul-MEŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 5 - 12-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	[January	[February	[March	[April	[May	[June	[July	[August	[September	[October	[November	[December	
1	08:48 10:07-10:26/19	08:13 07:09	06:47 05:30	04:33 04:27	05:12 06:14	07:14 07:19	08:21 15:45	16:42 17:44	19:50 20:52	21:50 22:07	21:26 20:12	18:52 16:34	15:42
2	08:48 10:08-10:27/19	08:11 07:06	06:44 05:28	04:32 04:28	05:14 06:16	07:16 07:21	08:23 10:02-10:04/2	15:46 16:44	17:46 19:52	20:54 21:51	22:06 21:24	20:09 18:49	16:32 15:42
3	08:48 10:08-10:26/18	08:09 07:04	06:41 05:26	04:31 04:29	05:16 06:18	07:18 07:24	08:24 10:00-10:08/8	15:47 16:46	17:48 19:54	20:56 21:52	22:06 21:22	20:07 18:46	16:29 15:41
4	08:47 10:10-10:27/17	08:07 07:01	06:39 05:24	04:30 04:30	05:18 06:20	07:20 07:26	08:26 09:59-10:10/11	15:49 16:48	17:51 19:56	20:58 21:54	22:05 21:20	20:04 18:44	16:27 15:40
5	08:47 10:10-10:27/17	08:05 06:58	06:36 05:21	04:29 04:31	05:20 06:22	07:22 07:28	08:28 09:58-10:11/13	15:50 16:51	17:53 19:58	21:00 21:55	22:04 21:17	20:01 18:41	16:25 15:39
6	08:46 10:11-10:26/15	08:03 06:56	06:33 05:19	04:28 04:32	05:22 06:24	07:24 07:30	08:29 09:57-10:12/15	15:52 16:53	17:55 20:00	21:02 21:56	22:04 21:15	19:59 18:38	16:23 15:38
7	08:46 10:12-10:26/14	08:01 06:53	06:31 05:17	04:27 04:33	05:24 06:26	07:26 07:32	08:31 09:57-10:13/16	15:53 16:55	17:57 20:02	21:04 21:57	22:03 21:13	19:56 18:36	16:21 15:38
8	08:45 10:13-10:25/12	07:58 06:51	06:28 05:15	04:27 04:34	05:26 06:28	07:28 07:34	08:32 09:58-10:15/17	15:55 16:57	17:59 20:04	21:07 21:58	22:02 21:11	19:54 18:33	16:19 15:37
9	08:44 10:15-10:25/10	07:56 06:48	06:26 05:13	04:26 04:35	05:28 06:30	07:30 07:37	08:34 09:57-10:15/18	15:56 17:00	18:01 20:06	21:09 21:59	22:01 21:09	19:51 18:30	16:17 15:37
10	08:44 10:17-10:23/6	07:54 06:45	06:23 05:10	04:25 04:36	05:30 06:32	07:32 07:39	08:35 09:58-10:16/18	15:58 17:02	18:04 20:08	21:11 22:00	22:00 21:06	19:48 18:28	16:15 15:36
11	08:43 15:58	07:52 06:43	06:20 05:08	04:25 04:38	05:32 06:34	07:34 07:41	08:36 09:57-10:17/20	15:59 17:04	18:06 20:10	21:13 22:01	21:59 21:04	19:45 18:25	16:13 15:36
12	08:42 16:01	07:50 06:40	06:18 05:06	04:24 04:39	05:34 06:36	07:37 07:43	08:37 09:57-10:17/20	16:01 17:06	18:08 20:13	21:14 22:02	21:58 21:02	19:43 18:23	16:11 15:35
13	08:41 16:03	07:47 06:38	06:15 05:04	04:24 04:40	05:36 06:38	07:39 07:45	08:39 09:58-10:18/20	16:03 17:09	18:10 20:15	21:16 22:03	21:57 21:00	19:40 18:20	16:09 15:35
14	08:40 16:05	07:45 06:35	06:12 05:02	04:23 04:42	05:38 06:40	07:41 07:47	08:40 09:58-10:19/21	16:05 17:11	18:12 20:17	21:18 22:04	21:56 21:07	19:37 18:17	16:07 15:35
15	08:39 16:07	07:43 06:32	06:10 05:00	04:23 04:43	05:40 06:42	07:43 07:50	08:41 09:59-10:19/20	16:07 17:13	18:14 20:19	21:20 22:05	21:54 21:05	19:35 18:15	16:05 15:35
16	08:38 16:08	07:41 06:30	06:07 05:04	04:23 04:45	05:42 06:44	07:45 07:52	08:42 09:59-10:20/21	16:08 17:15	18:16 20:21	21:22 22:05	21:53 21:02	19:32 18:12	16:04 15:35
17	08:36 16:10	07:38 06:27	06:05 05:04	04:23 04:46	05:44 06:46	07:47 07:54	08:43 09:59-10:21/22	16:10 17:18	18:18 20:23	21:24 22:06	21:52 21:05	19:29 18:10	16:02 15:35
18	08:35 16:12	07:36 06:24	06:02 05:04	04:22 04:48	05:46 06:48	07:49 07:56	08:43 10:00-10:21/21	16:12 17:20	18:20 20:25	21:26 22:06	21:50 21:08	19:27 18:07	16:00 15:35
19	08:34 16:14	07:33 06:22	06:00 05:04	04:22 04:49	05:48 06:50	07:51 07:58	08:44 09:59-10:21/22	16:14 17:22	18:23 20:27	21:28 22:07	21:49 21:05	19:24 18:05	15:58 15:35
20	08:32 16:16	07:31 06:19	05:57 05:04	04:22 04:51	05:50 06:52	07:53 08:00	08:45 10:00-10:22/22	16:16 17:24	18:25 20:29	21:30 22:07	21:47 21:03	19:21 18:02	15:57 15:36
21	08:31 16:18	07:29 06:16	05:55 05:04	04:22 04:53	05:52 06:54	07:56 08:02	08:46 10:01-10:23/22	16:18 17:27	18:27 20:31	21:32 22:07	21:46 21:04	19:19 18:00	15:55 15:36
22	08:30 16:20	07:26 06:14	05:52 05:04	04:23 04:54	05:54 06:56	07:58 08:04	08:46 10:01-10:23/22	16:20 17:29	18:29 20:33	21:33 22:08	21:44 21:06	19:16 17:57	15:54 15:36
23	08:28 16:22	07:24 06:11	05:50 05:04	04:23 04:56	05:56 06:58	08:00 08:06	08:47 10:02-10:24/22	16:22 17:31	18:31 20:36	21:35 22:08	21:42 21:08	19:13 17:55	15:52 15:37
24	08:27 16:24	07:21 06:08	05:47 05:04	04:23 04:58	05:58 07:00	08:02 08:08	08:47 10:02-10:24/22	16:24 17:33	18:33 20:38	21:37 22:08	21:41 21:03	19:10 17:53	15:51 15:38
25	08:25 16:27	07:19 06:05	05:45 05:04	04:23 04:59	06:00 07:02	08:04 08:10	08:48 10:02-10:24/22	16:25 17:35	18:35 20:40	21:39 22:08	21:39 21:03	19:08 17:50	15:50 15:38
26	08:23 16:29	07:16 06:03	05:42 05:04	04:24 05:01	06:02 07:04	08:06 08:12	08:48 10:03-10:24/21	16:26 17:38	18:37 20:42	21:40 22:08	21:37 21:03	19:05 17:48	15:48 15:39
27	08:22 16:31	07:14 06:00	05:40 05:04	04:24 05:03	06:04 07:06	08:08 08:14	08:48 10:03-10:25/22	16:27 17:40	18:39 20:44	21:42 22:08	21:35 21:03	19:02 17:45	15:47 15:40
28	08:20 16:33	07:11 05:57	05:37 05:04	04:24 05:05	06:06 07:08	08:10 08:16	08:48 10:04-10:25/21	16:28 17:42	18:41 20:46	21:44 22:07	21:34 21:03	19:00 17:43	15:46 15:41
29	08:18 16:35	07:09 05:55	05:35 05:04	04:26 05:07	06:08 07:10	08:12 08:17	08:48 10:05-10:25/20	16:29 17:43	18:43 20:48	21:45 22:07	21:32 21:03	18:57 17:40	15:45 15:41
30	08:16 16:37	07:07 05:53	05:33 05:04	04:26 05:09	06:10 07:12	08:14 08:19	08:48 10:05-10:26/21	16:30 17:44	18:43 20:48	21:46 22:07	21:30 21:03	18:54 17:38	15:44 15:42
31	08:14 16:40	07:04 05:49	05:35 05:04	04:26 05:10	06:12 07:14	08:16 08:21	08:48 10:06-10:26/20	16:31 17:45	18:44 20:49	21:47 22:08	21:31 21:03	18:54 17:38	15:44 15:44
Potential sun hours	235	265	365	425	507	529	530	470	385	324	248	216	562
Sum of minutes with flicker	147	0	0	0	0	0	0	0	0	0	0	0	562

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 6 - 18-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June
1	08:48 13:57-14:30/33 15:45 12:48-12:50/2	08:13 16:42	07:09 17:44	06:47 19:50	05:30 20:52	04:33 21:50
2	08:48 13:58-14:31/33 15:46	08:11 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:32 21:51
3	08:48 13:58-14:31/33 15:47	08:09 16:46	07:04 17:48	06:41 19:54	05:26 20:56	04:31 21:52
4	08:47 14:00-14:32/32 15:49	08:07 16:48	07:01 17:51	06:39 19:56	05:23 20:58	04:30 21:54
5	08:47 14:00-14:32/32 15:50	08:05 08:37-08:39/2 16:51	06:58 17:53	06:36 19:58	05:21 21:00	04:29 21:55
6	08:46 14:01-14:31/30 15:51	08:03 08:35-08:42/7 16:53	06:56 17:55	06:33 20:00	05:19 21:02	04:28 21:56
7	08:46 14:02-14:31/29 15:53	08:01 08:33-08:44/11 16:55	06:53 17:57	06:31 20:02	05:17 21:04	04:27 21:57
8	08:45 14:03-14:31/28 15:54	07:58 08:30-08:44/14 16:57	06:51 17:59	06:28 20:04	05:15 21:06	04:27 21:58
9	08:44 14:05-14:31/26 15:56	07:56 08:28-08:45/17 17:00	06:48 18:01	06:25 20:06	05:12 21:09	04:26 21:59
10	08:44 14:07-14:31/24 15:58	07:54 08:26-08:46/20 17:02	06:45 18:03	06:23 20:08	05:10 21:11	04:25 22:00
11	08:43 14:14-14:31/17 15:59	07:52 08:24-08:46/22 17:04	06:43 18:06	06:20 20:10	05:08 21:13	04:25 22:01
12	08:42 14:16-14:31/15 16:01	07:50 08:24-08:47/23 17:06	06:40 18:08	06:18 20:13	05:06 21:14	04:24 22:02
13	08:41 14:17-14:30/13 16:03	07:47 08:24-08:46/22 17:09	06:37 18:10	06:15 20:15	05:04 21:16	04:24 22:03
14	08:40 14:19-14:28/9 16:05	07:45 08:24-08:47/23 17:11	06:35 18:12	06:12 20:17	05:02 21:18	04:23 22:04
15	08:39 14:23-14:26/3 16:06	07:43 08:24-08:46/22 17:13	06:32 18:14	06:10 20:19	05:00 21:20	04:23 22:05
16	08:38 16:08	07:41 08:25-08:46/21 17:15	06:30 18:16	06:07 20:21	04:58 21:22	04:23 22:05
17	08:36 16:10	07:38 08:26-08:46/20 17:18	06:27 18:18	06:05 20:23	04:56 21:24	04:22 22:06
18	08:35 16:12	07:36 08:27-08:44/17 17:20	06:24 18:20	06:02 20:25	04:55 21:26	04:22 22:06
19	08:34 16:14	07:33 08:27-08:42/15 17:22	06:22 18:22	06:00 20:27	04:53 21:28	04:22 22:07
20	08:32 16:16	07:31 08:30-08:40/10 17:24	06:19 18:25	05:57 20:29	04:51 21:30	04:22 22:07
21	08:31 16:18	07:29 17:26	06:16 18:27	05:55 20:31	04:49 21:32	04:22 22:07
22	08:30 16:20	07:26 17:29	06:13 18:29	05:52 20:33	04:48 21:33	04:23 22:08
23	08:28 16:22	07:24 17:31	06:11 18:31	05:50 20:35	04:46 21:35	04:23 22:08
24	08:27 16:24	07:21 17:33	06:08 18:33	05:47 20:38	04:44 21:37	04:23 22:08
25	08:25 16:26	07:19 17:35	06:05 18:35	05:45 20:40	04:43 21:39	04:23 22:08
26	08:23 16:29	07:16 17:37	06:03 18:37	05:42 20:42	04:41 21:40	04:24 22:08
27	08:22 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:42	04:24 22:08
28	08:20 16:33	07:11 17:42	05:57 18:41	05:37 20:46	04:38 21:43	04:25 22:07
29	08:18 16:35		05:55 18:43	05:35 20:48	04:37 21:45	04:25 22:07
30	08:16 16:37		06:52 19:45	05:33 20:50	04:36 21:47	04:26 22:07
31	08:14 16:39		06:49 19:48	04:34 21:48		
Potential sun hours	235	265	365	425	507	529
Sum of minutes with flicker	359	266	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 6 - 18-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July	August	September	October	November	December
1	04:27 22:07	05:12 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:42
2	04:28 22:06	05:14 21:24	06:16 20:09	07:16 18:49	07:21 16:32	08:23 15:41
3	04:29 22:06	05:16 21:22	06:18 20:07	07:18 18:46	07:24 16:29	08:24 15:41
4	04:29 22:05	05:18 21:20	06:20 20:04	07:20 18:44	07:26 16:27	08:26 15:40
5	04:30 22:04	05:20 21:17	06:22 20:01	07:22 18:41	07:28 16:25	08:28 15:39
6	04:31 22:04	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
7	04:33 22:03	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	08:31 15:38
8	04:34 22:02	05:26 21:11	06:28 19:53	07:28 18:33	07:34 16:19	08:32 15:37
9	04:35 22:01	05:28 21:09	06:30 19:51	07:30 18:30	07:37 16:17	08:34 15:36
10	04:36 22:00	05:30 21:06	06:32 19:48	07:32 18:28	07:39 16:15	08:35 15:36
11	04:37 21:59	05:32 21:04	06:34 19:45	07:34 18:25	07:41 16:13	08:36 15:36
12	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:37 15:35
13	04:40 21:57	05:36 20:59	06:38 19:40	07:39 18:20	07:45 16:09	08:39 15:35
14	04:42 21:56	05:38 20:57	06:40 19:37	07:41 18:17	07:47 16:07	08:40 15:35
15	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:05	08:41 15:35
16	04:44 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:52 16:03	08:42 15:35
17	04:46 21:52	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:02	08:43 15:35
18	04:48 21:50	05:46 20:48	06:48 19:27	07:49 18:07	07:56 16:00	08:43 15:35
19	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:58	08:44 15:35
20	04:51 21:47	05:50 20:43	06:52 19:21	07:53 18:02	08:00 15:57	08:45 15:36
21	04:52 21:46	05:52 20:40	06:54 19:18	07:56 18:00	08:02 15:55	08:46 15:36
22	04:54 21:44	05:54 20:38	06:56 19:16	07:58 17:57	08:04 15:54	08:46 15:36
23	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:47 15:37
24	04:58 21:41	05:58 20:33	07:00 19:10	08:02 17:52	08:08 15:51	08:47 15:37
25	04:59 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:49	08:48 15:38
26	05:01 21:37	06:02 20:28	07:04 19:05	07:06 16:48	07:55-08:15/20 15:48	08:48 15:39
27	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:45	07:54-08:16/22 15:47	08:48 15:40
28	05:05 21:34	06:06 20:22	07:08 19:00	07:11 16:43	07:54-08:17/23 15:46	08:48 15:40
29	05:07 21:32	06:08 20:20	07:10 18:57	07:13 16:41	07:54-08:16/22 15:45	08:48 15:41
30	05:09 21:30	06:10 20:17	07:12 18:54	07:15 16:38	07:53-08:16/23 15:43	08:48 15:42
31	05:10 21:28	06:12 20:15		07:17 16:36	07:54-08:16/22	08:48 15:43
Potential sun hours	530	470	385	324	248	216
Sum of minutes with flicker	0	0	0	188	114	1260

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 7 - 14-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January	February	March	April	May	June
1	08:48 09:30-09:44/14 15:45 14:17-14:44/27	08:13 09:22-09:58/36 16:42	07:09 17:44	06:47 19:50	05:30 20:52	04:33 21:50
2	08:48 09:30-09:46/16 15:46 14:18-14:45/27	08:11 09:23-09:57/34 16:44	07:06 17:46	06:44 19:52	05:28 20:54	04:32 21:51
3	08:48 09:29-09:46/17 15:47 14:18-14:45/27	08:09 09:25-09:55/30 16:46	07:04 17:48	06:41 19:54	05:26 20:56	04:31 21:52
4	08:47 09:29-09:48/19 15:49 14:20-14:46/26	08:07 09:26-09:51/25 16:48	07:01 17:51	06:39 19:56	05:23 20:58	04:30 21:54
5	08:47 09:28-09:49/21 15:50 14:20-14:46/26	08:05 09:29-09:39/10 16:51	06:59 17:53	06:36 19:58	05:21 21:00	04:29 21:55
6	08:46 09:27-09:50/23 15:52 14:20-14:46/26	08:03 16:53	06:56 17:55	06:33 20:00	05:19 21:02	04:28 21:56
7	08:46 09:26-09:50/24 15:53 14:21-14:46/25	08:01 16:55	06:53 17:57	06:31 20:02	05:17 21:05	04:27 21:57
8	08:45 09:25-09:51/26 15:55 14:21-14:46/25	07:58 16:57	06:51 17:59	06:28 20:04	05:15 21:07	04:27 21:58
9	08:44 09:24-09:52/28 16:01 14:22-14:46/24	07:56 17:00	06:48 18:01	06:26 20:06	05:12 21:09	04:26 21:59
10	08:44 09:23-09:53/30 15:58 14:22-14:46/24	07:54 17:02	06:45 18:04	06:23 20:08	05:10 21:11	04:25 22:00
11	08:43 09:22-09:54/32 15:59 14:23-14:47/24	07:52 17:04	06:43 18:06	06:20 20:10	05:08 21:13	04:25 22:01
12	08:42 09:21-09:55/34 16:01 14:24-14:47/23	07:50 17:06	06:40 18:08	06:18 20:13	05:06 21:15	04:24 22:02
13	08:41 09:20-09:56/36 16:03 14:25-14:47/22	07:47 17:09	06:38 18:10	06:15 20:15	05:04 21:16	04:24 22:03
14	08:40 09:18-09:56/38 16:05 14:26-14:46/20	07:45 17:11	06:35 18:12	06:12 20:17	05:02 21:18	04:23 22:04
15	08:39 09:18-09:57/39 16:07 14:27-14:46/19	07:43 17:13	06:32 18:14	06:10 20:19	05:00 21:20	04:23 22:05
16	08:38 09:18-09:58/40 16:08 14:28-14:45/17	07:41 17:15	06:30 18:16	06:07 20:21	04:58 21:22	04:23 22:05
17	08:36 09:17-09:59/42 16:10 14:30-14:45/15	07:38 17:18	06:27 18:18	06:05 20:23	04:56 21:24	04:22 22:06
18	08:35 09:18-09:59/41 16:12 14:31-14:43/12	07:36 17:20	06:24 18:20	06:02 20:25	04:55 21:26	04:22 22:06
19	08:34 09:17-10:00/43 16:14 14:34-14:42/8	07:33 17:22	06:22 18:23	06:00 20:27	04:53 21:28	04:22 22:07
20	08:33 09:17-10:00/43 16:16	07:31 17:24	06:19 18:25	05:57 20:29	04:51 21:30	04:22 22:07
21	08:31 09:18-10:01/43 16:18	07:29 17:26	06:16 18:27	05:55 20:31	04:49 21:32	04:22 22:07
22	08:30 09:18-10:01/43 16:20	07:26 17:29	06:14 18:29	05:52 20:33	04:48 21:33	04:23 22:08
23	08:28 09:18-10:01/43 16:22	07:24 17:31	06:11 18:31	05:50 20:36	04:46 21:35	04:23 22:08
24	08:27 09:18-10:01/43 16:24	07:21 17:33	06:08 18:33	05:47 20:38	04:44 21:37	04:23 22:08
25	08:25 09:18-10:01/43 16:27	07:19 17:35	06:05 18:35	05:45 20:40	04:43 21:39	04:23 22:08
26	08:23 09:18-10:01/43 16:29	07:16 17:38	06:03 18:37	05:42 20:42	04:41 21:40	04:24 22:08
27	08:22 09:18-10:01/43 16:31	07:14 17:40	06:00 18:39	05:40 20:44	04:40 21:42	04:24 22:08
28	08:20 09:19-10:00/41 16:33	07:11 17:42	05:57 18:41	05:37 20:46	04:38 21:44	04:25 22:08
29	08:18 09:19-10:00/41 16:35		05:55 18:43	05:35 20:48	04:37 21:45	04:26 22:07
30	08:16 09:20-09:59/39 16:37		06:52 19:46	05:33 20:50	04:36 21:47	04:26 22:07
31	08:14 09:21-09:59/38 16:40		06:49 19:48		04:35 21:48	
Potential sun hours	235	265	365	425	507	529
Sum of minutes with flicker	1483	135	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

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Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 7 - 14-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July	August	September	October	November	December
1	04:27 22:07	05:12 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 15:42
2	04:28 22:06	05:14 21:24	06:16 20:09	07:16 18:49	07:21 16:32	08:23 15:41
3	04:29 22:06	05:16 21:22	06:18 20:07	07:18 18:46	07:24 16:29	08:24 15:41
4	04:30 22:05	05:18 21:20	06:20 20:04	07:20 18:44	07:26 16:27	08:26 15:40
5	04:31 22:04	05:20 21:17	06:22 20:02	07:22 18:41	07:28 16:25	08:28 15:39
6	04:32 22:04	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:29 15:38
7	04:33 22:03	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	08:31 15:38
8	04:34 22:02	05:26 21:11	06:28 19:54	07:28 18:33	07:35 16:19	08:32 15:37
9	04:35 22:01	05:28 21:09	06:30 19:51	07:30 18:30	07:37 16:17	08:34 15:37
10	04:36 22:00	05:30 21:06	06:32 19:48	07:32 18:28	07:39 16:15	08:35 15:36
11	04:37 21:59	05:32 21:04	06:34 19:45	07:35 18:25	07:41 16:13	08:36 15:36
12	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:37 15:35
13	04:40 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:45 16:09	08:39 15:35
14	04:42 21:56	05:38 20:57	06:40 19:37	07:41 18:17	07:47 16:07	08:40 15:35
15	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:05	08:41 15:35
16	04:45 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:52 16:03	08:42 15:35
17	04:46 21:52	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:02	08:43 15:35
18	04:48 21:50	05:46 20:48	06:48 19:27	07:49 18:07	07:56 16:00	08:44 15:35
19	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:58	08:44 15:35
20	04:51 21:47	05:50 20:43	06:52 19:21	07:53 18:02	08:00 15:57	08:45 15:36
21	04:53 21:46	05:52 20:40	06:54 19:19	07:56 18:00	08:02 15:55	08:46 15:36
22	04:54 21:44	05:54 20:38	06:56 19:16	07:58 17:57	08:04 15:54	08:46 15:36
23	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:47 15:37
24	04:58 21:41	05:58 20:33	07:00 19:10	08:02 17:53	08:08 15:51	08:47 15:37
25	04:59 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:49	08:48 15:38
26	05:01 21:37	06:02 20:28	07:04 19:05	07:06 16:48	08:12 15:48	08:48 15:39
27	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:45	08:14 15:47	08:48 15:40
28	05:05 21:34	06:06 20:22	07:08 19:00	07:11 16:43	08:16 15:46	08:48 15:41
29	05:07 21:32	06:08 20:20	07:10 18:57	07:13 16:41	08:17 15:45	08:48 15:41
30	05:09 21:30	06:10 20:17	07:12 18:54	07:15 16:38	08:19 15:43	08:48 15:42
31	05:10 21:28	06:12 20:15		07:17 16:36		08:48 15:43
Potential sun hours	530	470	385	324	248	216
Sum of minutes with flicker	0	0	0	0	1060	1220

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

2026-02-Ecosoul-MEŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

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Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 8 - 17-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June
1	08:48 12:02-12:31/29 15:45 13:33-14:16/43	08:13 15:07-15:51/44 16:42 13:50-14:21/31	07:09 07:39-08:18/39 17:44	06:47 19:50	05:30 20:52	04:33 21:50
2	08:48 12:03-12:31/28 15:46 13:33-14:17/44	08:11 15:08-15:51/43 16:44 13:52-14:19/27	07:06 07:38-08:15/37 17:46	06:44 19:52	05:28 20:54	04:32 21:51
3	08:48 12:03-12:31/28 15:47 13:33-14:17/44	08:09 15:09-15:51/42 16:46 13:54-14:18/24	07:04 07:37-08:13/36 17:48	06:41 19:54	05:26 20:56	04:31 21:52
4	08:47 12:05-12:32/27 15:49 13:34-14:19/45	08:07 15:10-15:50/40 16:48 13:56-14:15/19	07:01 07:37-08:13/36 17:51	06:39 19:56	05:23 20:58	04:30 21:54
5	08:47 12:05-12:31/26 15:50 13:34-14:19/45	08:05 15:11-15:50/39 16:51 14:01-14:11/10	06:58 07:36-08:11/35 17:53	06:36 19:58	05:21 21:00	04:29 21:55
6	08:46 12:06-12:31/25 15:51 13:34-14:19/45	08:03 15:13-15:50/37 16:53	06:56 07:36-08:09/33 17:55	06:33 20:00	05:19 21:02	04:28 21:56
7	08:46 12:07-12:30/23 15:53 13:34-14:20/46	08:01 15:15-15:49/34 16:55	06:53 07:37-08:07/30 17:57	06:31 20:02	05:17 21:04	04:27 21:57
8	08:45 12:08-12:30/22 15:54 13:35-14:20/45	07:58 15:16-15:48/32 16:57	06:51 07:37-08:05/28 17:59	06:28 20:04	05:15 21:07	04:27 21:58
9	08:44 12:10-12:29/19 15:10-15:17/7 15:56 13:35-14:21/46	07:56 15:20-15:48/28 17:00	06:48 07:37-08:04/27 18:01	06:25 20:06	05:12 21:09	04:26 21:59
10	08:44 15:09-15:19/10 13:35-14:21/46 15:58 12:11-12:29/18	07:54 15:26-15:46/20 17:02	06:45 07:39-08:03/24 18:03	06:23 20:08	05:10 21:11	04:25 22:00
11	08:43 15:08-15:21/13 13:36-14:22/46 15:59 12:13-12:28/15	07:52 15:28-15:45/17 17:04	06:43 07:39-08:02/23 18:06	06:20 20:10	05:08 21:13	04:25 22:01
12	08:42 15:07-15:23/16 13:36-14:23/47 16:01 12:16-12:26/10	07:50 15:31-15:43/12 17:06	06:40 07:40-08:00/20 18:08	06:18 20:13	05:06 21:15	04:24 22:02
13	08:41 15:07-15:25/18 16:03 13:37-14:23/46	07:47 17:09	06:38 07:42-07:57/15 18:10	06:15 20:15	05:04 21:16	04:24 22:03
14	08:40 15:06-15:27/21 16:05 13:37-14:23/46	07:45 17:11	06:35 07:45-07:54/9 18:12	06:12 20:17	05:02 21:18	04:23 22:04
15	08:39 15:06-15:29/23 16:06 13:37-14:24/47	07:43 17:13	06:32 18:14	06:10 20:19	05:00 21:20	04:23 22:05
16	08:38 15:05-15:30/25 16:08 13:37-14:24/47	07:41 08:11-08:13/2 17:15	06:30 18:16	06:07 20:21	04:58 21:22	04:23 22:05
17	08:36 15:05-15:34/29 16:10 13:38-14:24/46	07:38 08:09-08:17/8 17:18	06:27 18:18	06:05 20:23	04:56 21:24	04:22 22:06
18	08:35 15:04-15:35/31 16:12 13:38-14:24/46	07:36 08:06-08:18/12 17:20	06:24 18:20	06:02 20:25	04:55 21:26	04:22 22:06
19	08:34 15:05-15:38/33 16:14 13:39-14:25/46	07:33 08:04-08:20/16 17:22	06:22 18:23	06:00 20:27	04:53 21:28	04:22 22:07
20	08:33 15:04-15:40/36 16:16 13:39-14:25/46	07:31 08:01-08:20/19 17:24	06:19 18:25	05:57 20:29	04:51 21:30	04:22 22:07
21	08:31 15:04-15:42/38 16:18 13:40-14:25/45	07:29 07:58-08:20/22 17:26	06:16 18:27	05:55 20:31	04:49 21:32	04:22 22:07
22	08:30 15:05-15:44/39 16:20 13:41-14:25/44	07:26 07:56-08:21/25 17:29	06:14 18:29	05:52 20:33	04:48 21:33	04:22 22:08
23	08:28 15:04-15:45/41 16:22 13:41-14:25/44	07:24 07:53-08:21/28 17:31	06:11 18:31	05:50 20:36	04:46 21:35	04:23 22:08
24	08:27 15:04-15:46/42 16:24 13:42-14:25/43	07:21 07:51-08:22/31 17:33	06:08 18:33	05:47 20:38	04:44 21:37	04:23 22:08
25	08:25 15:04-15:47/43 16:26 13:42-14:25/43	07:19 07:48-08:21/33 17:35	06:05 18:35	05:45 20:40	04:43 21:39	04:23 22:08
26	08:23 15:04-15:48/44 16:29 13:43-14:24/41	07:16 07:45-08:20/35 17:37	06:03 18:37	05:42 20:42	04:41 21:40	04:24 22:08
27	08:22 15:05-15:48/43 16:31 13:44-14:24/40	07:14 07:43-08:20/37 17:40	06:00 18:39	05:40 20:44	04:40 21:42	04:24 22:08
28	08:20 15:05-15:49/44 16:33 13:45-14:23/38	07:11 07:40-08:18/38 17:42	05:57 18:41	05:37 20:46	04:38 21:44	04:25 22:08
29	08:18 15:05-15:49/44 16:35 13:46-14:23/37		05:55 18:43	05:35 20:48	04:37 21:45	04:25 22:07
30	08:16 15:06-15:50/44 16:37 13:47-14:22/35		06:52 19:45	05:33 20:50	04:36 21:47	04:26 22:07
31	08:14 15:06-15:50/44 16:39 13:49-14:22/33		06:49 19:48		04:34 21:48	
Potential sun hours	235	265	365	425	507	529
Sum of minutes with flicker	2353	805	392	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 8 - 17-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	July	August	September	October	November	December
1	04:27 22:07	05:12 21:26	06:14 20:12	07:14 18:52	08:22-08:37/15 16:34	07:19 16:34
2	04:28 22:06	05:14 21:24	06:16 20:09	07:16 18:49	08:19-08:39/20 16:32	07:21 16:32
3	04:29 22:06	05:16 21:22	06:18 20:07	07:18 18:46	08:17-08:40/23 16:29	07:24 16:29
4	04:29 22:05	05:18 21:20	06:20 20:04	07:20 18:44	08:16-08:40/24 16:27	07:26 16:27
5	04:30 22:04	05:20 21:17	06:22 20:01	07:22 18:41	08:14-08:41/27 16:25	07:28 16:25
6	04:31 22:04	05:22 21:15	06:24 19:59	07:24 18:38	08:13-08:41/28 16:23	07:30 16:23
7	04:33 22:03	05:24 21:13	06:26 19:56	07:26 18:36	08:12-08:42/30 16:21	07:32 16:21
8	04:34 22:02	05:26 21:11	06:28 19:53	07:28 18:33	08:12-08:45/33 16:19	07:35 16:19
9	04:35 22:01	05:28 21:09	06:30 19:51	07:30 18:30	08:12-08:46/34 16:17	07:37 16:17
10	04:36 22:00	05:30 21:06	06:32 19:48	07:32 18:28	08:11-08:47/36 16:15	07:39 16:15
11	04:37 21:59	05:32 21:04	06:34 19:45	07:34 18:25	08:11-08:47/36 16:13	07:41 16:13
12	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	08:11-08:49/38 16:11	07:43 16:11
13	04:40 21:57	05:36 21:00	06:38 19:40	07:39 18:20	08:11-08:50/39 16:09	07:45 16:09
14	04:42 21:56	05:38 20:57	06:40 19:37	07:41 18:17	08:13-08:52/39 16:07	07:47 16:07
15	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	08:15-08:52/37 16:05	07:50 16:05
16	04:44 21:53	05:42 20:52	06:44 19:32	07:45 18:12	08:17-08:52/35 16:03	07:52 16:03
17	04:46 21:52	05:44 20:50	06:46 19:29	07:47 18:10	08:19-08:52/33 16:02	07:54 16:02
18	04:48 21:50	05:46 20:48	06:48 19:27	07:49 18:07	08:22-08:53/31 16:00	07:56 16:00
19	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:05	08:24-08:53/29 15:58	07:58 15:58
20	04:51 21:47	05:50 20:43	06:52 19:21	07:53 18:02	08:26-08:52/26 15:57	08:00 15:57
21	04:52 21:46	05:52 20:40	06:54 19:19	07:56 18:00	08:28-08:51/23 15:55	08:02 15:55
22	04:54 21:44	05:54 20:38	06:56 19:16	07:58 17:57	08:31-08:51/20 15:54	08:04 15:54
23	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:33-08:50/17 15:52	08:06 15:52
24	04:58 21:41	05:58 20:33	07:00 19:10	08:02 17:52	08:35-08:48/13 15:51	08:08 15:51
25	04:59 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:38-08:47/9 15:49	08:10 15:49
26	05:01 21:37	06:02 20:28	07:04 19:05	07:06 16:48	07:40-07:44/4 15:48	08:12 15:48
27	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:45	14:44-15:09/25 15:47	08:14 15:47
28	05:05 21:34	06:06 20:22	07:08 19:00	07:11 16:43	14:45-15:08/23 15:46	08:16 15:46
29	05:07 21:32	06:08 20:20	07:10 18:57	07:13 16:41	14:46-15:07/21 15:45	08:17 15:45
30	05:09 21:30	06:10 20:17	07:12 18:54	07:15 16:38	13:17-14:04/47 15:43	08:19 15:43
31	05:10 21:28	06:12 20:15		14:59-15:14/15 16:36		12:00-12:05/5 15:43
Potential sun hours	530	470	385	324	248	216
Sum of minutes with flicker	0	0	9	723	2013	2284

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

2026-02-Ecosoul-MEŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 9 - 24-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

January			February			March			April			May			June		
1	08:48	14:01-14:39/38	08:13	15:17-15:47/30	07:09	06:47	18:34-18:54/20	05:30	04:33	20:11-20:41/30		05:30	04:33	20:11-20:41/30			
	15:45	10:04-10:34/30	16:42	17:44	17:44	19:50	20:52	20:52	21:49			20:52	21:49				
2	08:48	14:02-14:40/38	08:11	15:18-15:47/29	07:06	06:44	18:35-18:51/16	05:28	04:32	20:11-20:40/29		05:28	04:32	20:11-20:40/29			
	15:46	10:05-10:35/30	16:44	17:46	17:46	19:52	20:54	20:54	21:51			20:54	21:51				
3	08:48	14:02-14:40/38	08:09	15:19-15:45/26	07:04	06:41	18:39-18:49/10	05:26	04:31	20:11-20:40/29		05:26	04:31	20:11-20:40/29			
	15:47	10:06-10:35/29	16:46	17:48	17:48	19:54	20:56	20:56	21:52			20:56	21:52				
4	08:47	14:03-14:41/38	08:07	15:20-15:44/24	07:01	06:39		05:23	04:30	20:12-20:40/28		05:23	04:30	20:12-20:40/28			
	15:49	10:07-10:36/29	16:48	17:51	17:51	19:56	20:58	20:58	21:54			20:58	21:54				
5	08:47	14:03-14:41/38	08:05	15:23-15:43/20	06:58	06:36		05:21	04:29	20:12-20:39/27		05:21	04:29	20:12-20:39/27			
	15:50	10:07-10:36/29	16:51	17:53	17:53	19:58	21:00	21:00	21:55			21:00	21:55				
6	08:46	14:04-14:41/37	08:03	15:28-15:30/2	06:56	06:33		05:19	04:28	20:13-20:40/27		05:19	04:28	20:13-20:40/27			
	15:51	10:07-10:36/29	16:53	15:31-15:41/10	17:55	20:00		21:02	21:56			21:02	21:56				
7	08:46	14:04-14:42/38	08:00	16:53	06:53	06:31		05:17	04:27	20:13-20:39/26		05:17	04:27	20:13-20:39/26			
	15:53	10:08-10:36/28	16:55	17:57	17:57	20:02		21:04	21:57			21:04	21:57				
8	08:45	14:05-14:42/37	07:58	16:51	06:51	06:28		05:15	04:26	20:15-20:40/25		05:15	04:26	20:15-20:40/25			
	15:54	10:08-10:36/28	16:57	17:59	17:59	20:04		21:06	21:58			21:06	21:58				
9	08:44	14:06-14:42/36	07:56	16:48	06:48	06:25		05:12	04:26	20:16-20:39/24		05:12	04:26	20:16-20:39/24			
	15:56	10:09-10:36/27	17:00	18:01	18:01	20:06		21:08	21:59			21:08	21:59				
10	08:44	14:07-14:42/35	07:54	16:45	06:45	06:23		05:10	04:25	20:16-20:40/24		05:10	04:25	20:16-20:40/24			
	15:58	10:10-10:36/26	17:02	18:03	18:03	20:08		21:10	22:00			21:10	22:00				
11	08:43	15:17-15:21/4	10:11-10:37/26	07:52	06:43	06:20		05:08	04:25	20:16-20:39/23		05:08	04:25	20:16-20:39/23			
	15:59	14:08-14:43/35	17:04	18:06	18:06	20:10		21:12	22:01			21:12	22:01				
12	08:42	15:16-15:23/7	10:12-10:37/25	07:50	06:40	06:18		05:06	04:24	20:17-20:39/22		05:06	04:24	20:17-20:39/22			
	16:01	14:09-14:43/34	17:06	18:08	18:08	20:12		21:14	22:02			21:14	22:02				
13	08:41	15:16-15:25/9	10:13-10:37/24	07:47	06:37	06:15		05:04	04:24	20:16-20:38/22		05:04	04:24	20:16-20:38/22			
	16:03	14:10-14:44/34	17:09	18:10	18:10	20:15		21:16	22:03			21:16	22:03				
14	08:40	15:14-15:27/13	10:13-10:36/23	07:45	06:35	06:12		05:02	04:23	20:17-20:39/22		05:02	04:23	20:17-20:39/22			
	16:05	14:11-14:43/32	17:11	18:12	18:12	20:17		21:18	22:04			21:18	22:04				
15	08:39	15:14-15:29/15	10:15-10:36/21	07:43	06:32	06:10		05:00	04:23	20:18-20:39/21		05:00	04:23	20:18-20:39/21			
	16:06	14:13-14:43/30	17:13	18:14	18:14	20:19		21:20	22:04			21:20	22:04				
16	08:38	15:13-15:31/18	10:15-10:35/20	07:40	06:29	06:07		04:58	04:23	20:18-20:39/21		04:58	04:23	20:18-20:39/21			
	16:08	14:14-14:43/29	17:15	18:16	18:16	20:21		21:22	22:05			21:22	22:05				
17	08:36	15:13-15:34/21	10:17-10:35/18	07:38	06:27	17:44-17:52/8		04:56	04:22	20:19-20:39/20		04:56	04:22	20:19-20:39/20			
	16:10	14:17-14:43/26	17:17	18:18	18:18	20:23		21:24	22:06			21:24	22:06				
18	08:35	15:13-15:35/22	10:18-10:33/15	07:36	06:24	17:41-17:55/14		04:54	04:22	20:19-20:39/20		04:54	04:22	20:19-20:39/20			
	16:12	14:19-14:42/23	17:20	18:20	18:20	20:25		21:26	22:06			21:26	22:06				
19	08:34	15:13-15:38/25	10:21-10:32/11	07:33	06:21	17:38-17:57/19		04:53	04:22	20:20-20:39/19		04:53	04:22	20:20-20:39/19			
	16:14	14:21-14:42/21	17:22	18:22	18:22	20:27		21:28	22:07			21:28	22:07				
20	08:32	15:13-15:40/27	10:24-10:29/5	07:31	06:19	17:36-17:58/22		04:51	04:22	20:20-20:39/19		04:51	04:22	20:20-20:39/19			
	16:16	14:22-14:41/19	17:24	18:25	18:25	20:29		21:30	22:07			21:30	22:07				
21	08:31	15:12-15:42/30	07:29	06:16	17:36-18:00/24	05:55		04:49	04:22	20:20-20:39/19		04:49	04:22	20:20-20:39/19			
	16:18	14:23-14:40/17	17:26	18:27	18:27	20:31		21:32	22:07			21:32	22:07				
22	08:30	15:13-15:45/32	07:26	06:13	17:34-18:00/26	05:52		04:47	04:22	20:20-20:39/19		04:47	04:22	20:20-20:39/19			
	16:20	14:26-14:39/13	17:29	18:29	18:29	20:33		21:33	22:07			21:33	22:07				
23	08:28	15:13-15:45/32	07:24	06:11	17:33-18:00/27	05:50		04:46	04:23	20:21-20:40/19		04:46	04:23	20:21-20:40/19			
	16:22	14:29-14:37/8	17:31	18:31	18:31	20:35		21:35	22:08			21:35	22:08				
24	08:26	15:13-15:46/33	07:21	06:08	17:32-18:00/28	05:47		04:44	04:23	20:21-20:40/19		04:44	04:23	20:21-20:40/19			
	16:24		17:33	18:33	18:33	20:38		21:37	22:08			21:37	22:08				
25	08:25	15:13-15:46/33	07:19	06:05	17:32-18:01/29	05:45		04:43	04:23	20:20-20:40/20		04:43	04:23	20:20-20:40/20			
	16:26		17:35	18:35	18:35	20:40		21:39	22:08			21:39	22:08				
26	08:23	15:13-15:46/33	07:16	06:03	17:32-18:00/28	05:42		04:41	04:24	20:21-20:41/20		04:41	04:24	20:21-20:41/20			
	16:29		17:37	18:37	18:37	20:42		21:40	22:08			21:40	22:08				
27	08:22	15:13-15:47/34	07:14	06:00	17:31-17:59/28	05:40		04:40	04:24	20:20-20:41/21		04:40	04:24	20:20-20:41/21			
	16:31		17:40	18:39	18:39	20:44		21:42	22:08			21:42	22:08				
28	08:20	15:14-15:47/33	07:11	05:57	17:32-17:59/27	05:37		04:38	04:25	20:21-20:42/21		04:38	04:25	20:21-20:42/21			
	16:33		17:42	18:41	18:41	20:46		21:43	22:07			21:43	22:07				
29	08:18	15:14-15:47/33		05:55	17:32-17:58/26	05:35		04:37	04:25	20:20-20:41/21		04:37	04:25	20:20-20:41/21			
	16:35			18:43	18:43	20:48		21:45	22:07			21:45	22:07				
30	08:16	15:15-15:47/32		06:52	18:32-18:57/25	05:33		04:36	04:26	20:20-20:42/22		04:36	04:26	20:20-20:42/22			
	16:37			19:45	19:45	20:50		21:47	22:07			21:47	22:07				
31	08:14	15:16-15:47/31		06:49	18:33-18:56/23			04:34				04:34					
	16:39			19:48	19:48			21:48				21:48					
Potential sun hours	235		265	365	425	507		529				529					
Sum of minutes with flicker	1684	141	354	46	829	679											

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

2026-02-Ecosoul-MEŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 9 - 24-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	July	August	September	October	November	December
1	04:27 20:21-20:43/22 22:06	05:12 20:20-20:51/31 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:21 14:58-15:04/6 09:53-10:18/25 15:42 13:50-14:25/35
2	04:28 20:21-20:44/23 22:06	05:14 20:21-20:51/30 21:24	06:16 20:09	07:16 18:49	07:21 16:32	08:23 15:00-15:03/3 09:53-10:19/26 15:41 13:50-14:25/35
3	04:29 20:20-20:44/24 22:05	05:16 20:22-20:50/28 21:22	06:18 20:07	07:18 18:46	07:24 16:29	08:24 13:50-14:26/36 15:40 09:53-10:20/27
4	04:29 20:20-20:44/24 22:05	05:18 20:23-20:48/25 21:20	06:20 20:04	07:20 18:44	07:26 16:27	08:26 13:50-14:27/37 15:40 09:53-10:21/28
5	04:30 20:20-20:45/25 22:04	05:20 20:23-20:45/22 21:17	06:22 20:01	07:22 18:41	07:28 15:02-15:10/8 16:25	08:28 13:50-14:26/36 15:39 09:54-10:22/28
6	04:31 20:19-20:45/26 22:04	05:22 20:23-20:44/21 21:15	06:24 19:59	07:24 18:38	07:30 14:54-15:12/18 16:23	08:29 13:50-14:27/37 15:38 09:53-10:22/29
7	04:33 20:19-20:46/27 22:03	05:24 20:24-20:42/18 21:13	06:26 19:56	07:26 18:36	07:32 14:51-15:14/23 16:21	08:31 13:50-14:28/38 15:37 09:54-10:23/29
8	04:34 20:19-20:46/27 22:02	05:26 20:25-20:40/15 21:11	06:28 19:53	07:28 18:33	07:34 14:50-15:16/26 16:19	08:32 13:50-14:28/38 15:37 09:55-10:23/28
9	04:35 20:19-20:47/28 22:01	05:28 20:26-20:38/12 21:09	06:30 18:37-18:38/1 19:51	07:30 18:30	07:37 14:49-15:16/27 16:17	08:33 13:51-14:29/38 15:36 09:54-10:23/29
10	04:36 20:18-20:47/29 22:00	05:30 20:28-20:36/8 21:06	06:32 18:31-18:43/12 19:48	07:32 18:28	07:39 14:48-15:18/30 16:15	08:35 13:50-14:29/39 15:36 09:55-10:25/30
11	04:37 20:19-20:48/29 21:59	05:32 20:29-20:33/4 21:04	06:34 18:28-18:45/17 19:45	07:34 18:25	07:41 14:47-15:18/31 16:13	08:36 13:51-14:30/39 15:36 09:55-10:25/30
12	04:39 20:19-20:49/30 21:58	05:34 21:02	06:36 18:26-18:47/21 19:43	07:36 18:23	07:43 14:46-15:18/32 16:11	08:37 13:51-14:30/39 15:35 09:55-10:25/30
13	04:40 20:18-20:49/31 21:57	05:36 20:59	06:38 18:24-18:48/24 19:40	07:39 18:20	07:45 14:47-15:19/32 16:09	08:38 13:51-14:30/39 15:35 09:56-10:26/30
14	04:41 20:18-20:49/31 21:56	05:38 20:57	06:40 18:23-18:48/25 19:37	07:41 18:17	07:47 14:46-15:19/33 16:07	08:40 13:53-14:31/38 15:35 09:57-10:26/29
15	04:43 20:18-20:50/32 21:54	05:40 20:55	06:42 18:22-18:49/27 19:35	07:43 18:15	07:49 14:47-15:20/33 16:05	08:41 13:53-14:32/39 15:35 09:57-10:27/30
16	04:44 20:18-20:50/32 21:53	05:42 20:52	06:44 18:21-18:49/28 19:32	07:45 18:12	07:52 14:46-15:20/34 16:03	08:42 13:53-14:32/39 15:35 09:57-10:27/30
17	04:46 20:17-20:50/33 21:52	05:44 20:50	06:46 18:21-18:49/28 19:29	07:47 18:10	07:54 14:46-15:19/33 16:02	08:43 13:54-14:32/38 15:35 09:58-10:28/30
18	04:48 20:18-20:51/33 21:50	05:46 20:47	06:48 18:20-18:48/28 19:27	07:49 18:07	07:56 14:47-15:20/33 16:00	08:43 13:54-14:33/39 15:35 09:58-10:28/30
19	04:49 20:17-20:51/34 21:49	05:48 20:45	06:50 18:20-18:48/28 19:24	07:51 18:05	07:58 14:47-15:20/33 15:58	08:44 13:54-14:33/39 15:35 09:58-10:28/30
20	04:51 20:18-20:51/33 21:47	05:50 20:43	06:52 18:20-18:48/28 19:21	07:53 18:02	08:00 14:47-15:19/32 15:57 14:02-14:12/10	08:45 13:55-14:34/39 15:36 09:59-10:29/30
21	04:52 20:17-20:51/34 21:46	05:52 20:40	06:54 18:19-18:46/27 19:18	07:55 18:00	08:02 14:48-15:20/32 15:55 14:00-14:15/15	08:46 13:56-14:34/38 15:36 10:00-10:30/30
22	04:54 20:18-20:51/33 21:44	05:54 20:38	06:56 18:19-18:45/26 19:16	07:58 17:57	08:04 14:49-15:18/29 15:54 13:59-14:17/18	08:46 13:56-14:34/38 15:36 10:00-10:30/30
23	04:56 20:17-20:51/34 21:42	05:56 20:35	06:58 18:19-18:44/25 19:13	08:00 17:55	08:06 14:49-15:16/27 09:59-10:07/8 15:52 13:58-14:18/20	08:47 13:56-14:34/38 15:37 10:01-10:31/30
24	04:58 20:18-20:51/33 21:41	05:58 20:33	07:00 18:20-18:42/22 19:10	08:02 17:52	08:08 14:50-15:14/24 09:58-10:10/12 15:51 13:57-14:19/22	08:47 13:57-14:36/39 15:37 10:01-10:31/30
25	04:59 20:18-20:52/34 21:39	06:00 20:30	07:02 18:21-18:39/18 19:08	08:04 17:50	08:10 14:51-15:13/22 09:56-10:12/16 15:49 13:57-14:21/24	08:48 13:57-14:36/39 15:38 10:01-10:31/30
26	05:01 20:18-20:51/33 21:37	06:02 20:27	07:04 18:23-18:36/13 19:05	08:06 16:48	08:12 14:52-15:11/19 09:55-10:13/18 15:48 13:54-14:21/27	08:48 13:57-14:36/39 15:39 10:01-10:31/30
27	05:03 20:18-20:52/34 21:35	06:04 20:25	07:06 18:26-18:34/8 19:02	08:08 16:45	08:14 14:53-15:10/17 09:54-10:15/21 15:47 13:53-14:22/29	08:48 13:58-14:36/38 15:40 10:02-10:32/30
28	05:05 20:19-20:52/33 21:34	06:06 20:22	07:08 19:00	08:11 16:43	08:16 14:54-15:08/14 09:54-10:16/22 15:46 13:52-14:23/31	08:48 13:58-14:37/39 15:40 10:02-10:32/30
29	05:07 20:19-20:52/33 21:32	06:08 20:20	07:10 18:57	08:13 16:41	08:17 14:55-15:07/12 09:53-10:17/24 15:44 13:51-14:23/32	08:48 13:59-14:38/39 15:41 10:03-10:33/30
30	05:08 20:19-20:52/33 21:30	06:10 20:17	07:12 18:54	08:15 16:38	08:19 14:56-15:05/9 09:53-10:17/24 15:43 13:50-14:24/34	08:48 14:00-14:38/38 15:42 10:04-10:33/29
31	05:10 20:20-20:52/32 21:28	06:12 20:15		07:17 16:36		08:48 14:00-14:39/39 15:43 10:04-10:34/30
Potential sun hours	530	470	385	324	248	216
Sum of minutes with flicker	939	214	406	0	1070	2097

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

2026-02-Ecosoul-MEŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

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Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 10 - 21-B

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

January		February		March		April		May		June	
1	08:48 10:11-11:08/57	08:13 10:28-11:12/44	14:06-15:10/64	07:09 15:49-16:28/39	06:47 17:44	05:30 19:54-20:19/25	04:33 20:52	04:48 10:12-11:09/57	04:48 10:12-11:09/57	04:48 10:12-11:09/57	04:48 10:12-11:09/57
2	15:45 13:59-14:35/36	16:42 08:46-09:14/28	17:44 19:50	07:06 15:51-16:27/36	06:44 17:46	05:28 20:21-20:24/3	04:32 20:54	15:46 14:00-14:38/38	15:46 14:00-14:38/38	15:46 14:00-14:38/38	15:46 14:00-14:38/38
3	08:48 10:12-11:09/57	16:44 08:44-09:14/30	17:46 19:52	07:04 15:52-16:25/33	06:41 17:48	05:26 19:52-20:26/34	04:31 20:56	15:47 13:59-14:40/41	15:47 13:59-14:40/41	15:47 13:59-14:40/41	15:47 13:59-14:40/41
4	08:47 10:13-11:10/57	16:46 08:42-09:15/33	17:48 19:54	07:01 15:54-16:22/28	06:39 17:51	05:23 19:51-20:28/37	04:30 20:58	15:49 14:00-14:43/43	15:49 14:00-14:43/43	15:49 14:00-14:43/43	15:49 14:00-14:43/43
5	08:47 10:13-11:10/57	16:48 08:40-09:14/34	17:51 19:56	07:01 15:54-16:22/28	06:39 17:51	05:23 19:51-20:28/37	04:30 20:58	15:50 14:00-14:44/44	15:50 14:00-14:44/44	15:50 14:00-14:44/44	15:50 14:00-14:44/44
6	08:46 10:13-11:11/58	16:51 08:39-09:14/35	17:53 19:58	06:58 15:57-16:19/22	06:36 17:53	05:21 19:50-20:30/40	04:29 21:00	15:51 14:00-14:46/46	15:51 14:00-14:46/46	15:51 14:00-14:46/46	15:51 14:00-14:46/46
7	08:46 10:13-11:11/58	16:53 08:40-09:14/34	17:55 19:59	06:56 16:01-16:11/10	06:33 17:55	05:19 19:50-20:32/42	04:28 21:02	15:53 14:00-14:47/47	15:53 14:00-14:47/47	15:53 14:00-14:47/47	15:53 14:00-14:47/47
8	08:45 10:13-11:12/59	16:55 08:40-09:13/33	17:57 19:59	06:54 15:57-16:20/23	06:31 17:57	05:17 19:49-20:34/45	04:27 21:04	15:54 14:00-14:49/49	15:54 14:00-14:49/49	15:54 14:00-14:49/49	15:54 14:00-14:49/49
9	08:44 10:14-11:12/58	16:57 08:38-09:12/34	17:59 19:59	06:51 15:57-16:20/23	06:28 17:59	05:14 19:49-20:36/47	04:26 21:06	15:56 14:00-14:50/50	15:56 14:00-14:50/50	15:56 14:00-14:50/50	15:56 14:00-14:50/50
10	08:44 10:14-11:13/59	16:59 08:38-09:11/33	18:01 19:59	06:48 15:55-16:24/29	06:25 17:59	05:12 19:49-20:37/48	04:26 21:08	15:58 14:00-14:52/52	15:58 14:00-14:52/52	15:58 14:00-14:52/52	15:58 14:00-14:52/52
11	08:43 10:14-11:13/59	17:02 08:38-09:10/32	18:03 19:59	06:46 15:53-16:25/32	06:23 17:59	05:10 19:48-20:37/49	04:25 21:10	15:59 14:00-14:53/53	15:59 14:00-14:53/53	15:59 14:00-14:53/53	15:59 14:00-14:53/53
12	08:42 10:15-11:14/59	17:04 08:36-09:10/34	18:06 19:59	06:43 15:52-16:27/35	06:20 17:59	05:08 19:48-20:37/49	04:24 21:12	16:01 14:00-14:55/55	16:01 14:00-14:55/55	16:01 14:00-14:55/55	16:01 14:00-14:55/55
13	08:41 10:15-11:15/60	17:06 08:36-09:10/34	18:08 19:59	06:40 15:51-16:29/38	06:18 17:59	05:06 19:48-20:37/49	04:24 21:14	16:03 14:01-14:56/55	16:03 14:01-14:56/55	16:03 14:01-14:56/55	16:03 14:01-14:56/55
14	08:40 10:15-11:14/59	17:08 08:36-09:10/34	18:10 19:59	06:37 15:50-16:30/40	06:15 17:59	05:04 19:48-20:36/48	04:23 21:16	16:04 10:15-11:14/59	16:04 10:15-11:14/59	16:04 10:15-11:14/59	16:04 10:15-11:14/59
15	08:39 10:16-11:15/59	17:11 08:36-09:11/35	18:12 19:59	06:35 15:49-16:31/42	06:12 17:59	05:02 19:49-20:37/48	04:23 21:18	16:06 14:01-14:58/57	16:06 14:01-14:58/57	16:06 14:01-14:58/57	16:06 14:01-14:58/57
16	08:38 10:16-11:15/59	17:13 08:35-09:10/35	18:14 19:59	06:32 15:48-16:32/44	06:10 17:59	05:00 19:49-20:36/47	04:23 21:20	16:08 14:00-14:59/59	16:08 14:00-14:59/59	16:08 14:00-14:59/59	16:08 14:00-14:59/59
17	08:36 10:17-11:16/59	17:15 08:36-09:11/35	18:16 19:59	06:29 15:48-16:33/45	06:07 17:59	04:58 19:49-20:35/46	04:22 21:22	16:10 14:01-15:01/60	16:10 14:01-15:01/60	16:10 14:01-15:01/60	16:10 14:01-15:01/60
18	08:35 10:17-11:16/59	17:17 08:35-09:10/35	18:18 19:59	06:27 15:47-16:33/46	06:05 17:59	04:56 19:50-20:34/44	04:22 21:24	16:12 14:00-15:01/61	16:12 14:00-15:01/61	16:12 14:00-15:01/61	16:12 14:00-15:01/61
19	08:34 10:18-11:16/58	17:20 14:32-15:00/28	18:20 19:59	06:24 15:47-16:34/47	06:02 17:59	04:54 19:50-20:34/44	04:22 21:26	16:14 14:01-15:03/62	16:14 14:01-15:03/62	16:14 14:01-15:03/62	16:14 14:01-15:03/62
20	08:32 10:18-11:16/58	17:22 14:34-14:57/23	18:22 19:59	06:21 15:46-16:33/47	06:00 17:59	04:53 19:50-20:33/43	04:22 21:28	16:16 14:01-15:03/62	16:16 14:01-15:03/62	16:16 14:01-15:03/62	16:16 14:01-15:03/62
21	08:31 10:18-11:16/58	17:24 14:39-14:54/15	18:25 19:59	06:19 15:47-16:34/47	05:57 17:59	04:51 19:51-20:32/41	04:22 21:30	16:18 14:01-15:04/63	16:18 14:01-15:04/63	16:18 14:01-15:04/63	16:18 14:01-15:04/63
22	08:30 10:19-11:17/58	17:26 14:39-14:54/15	18:27 19:59	06:16 15:46-16:34/48	05:54 17:59	04:49 20:22-20:30/8	04:22 21:32	16:20 14:02-15:05/63	16:20 14:02-15:05/63	16:20 14:02-15:05/63	16:20 14:02-15:05/63
23	08:28 10:20-11:17/57	17:28 14:37-16:34/47	18:29 19:59	06:13 15:47-16:34/47	05:52 17:59	04:47 20:26-20:27/1	04:22 21:34	16:22 14:02-15:06/64	16:22 14:02-15:06/64	16:22 14:02-15:06/64	16:22 14:02-15:06/64
24	08:27 10:20-11:16/56	17:29 08:38-09:07/29	18:31 19:59	06:11 15:46-16:33/47	05:50 17:59	04:46 19:53-20:18/25	04:23 21:36	16:24 14:02-15:07/65	16:24 14:02-15:07/65	16:24 14:02-15:07/65	16:24 14:02-15:07/65
25	08:25 10:21-11:16/55	17:31 08:39-09:06/27	18:33 19:59	06:08 15:46-16:33/47	05:47 17:59	04:44 19:54-20:18/24	04:23 21:38	16:26 14:02-15:07/65	16:26 14:02-15:07/65	16:26 14:02-15:07/65	16:26 14:02-15:07/65
26	08:23 10:21-11:16/55	17:33 08:41-09:05/24	18:35 19:59	06:05 15:47-16:32/45	05:45 17:59	04:43 19:55-20:18/23	04:23 21:40	16:28 14:03-15:09/66	16:28 14:03-15:09/66	16:28 14:03-15:09/66	16:28 14:03-15:09/66
27	08:22 10:22-11:15/53	17:35 08:42-09:02/20	18:37 19:59	06:03 15:47-16:32/45	05:43 17:59	04:41 19:56-20:16/20	04:24 21:42	16:30 14:03-15:09/66	16:30 14:03-15:09/66	16:30 14:03-15:09/66	16:30 14:03-15:09/66
28	08:20 10:23-11:15/52	17:37 08:44-08:59/15	18:39 19:59	06:00 15:48-16:31/43	05:40 17:59	04:40 19:57-20:15/18	04:24 21:44	16:32 14:03-15:09/66	16:32 14:03-15:09/66	16:32 14:03-15:09/66	16:32 14:03-15:09/66
29	08:18 10:24-11:14/50	17:40 08:49-08:55/6	18:41 19:59	05:57 15:49-16:30/41	05:37 17:59	04:38 19:59-20:14/15	04:25 21:46	16:34 14:03-15:09/66	16:34 14:03-15:09/66	16:34 14:03-15:09/66	16:34 14:03-15:09/66
30	08:16 10:25-11:14/49	17:42 15:49-16:30/41	18:43 19:59	05:55 15:49-16:30/41	05:35 17:59	04:37 20:01-20:13/12	04:25 21:48	16:36 14:03-15:09/66	16:36 14:03-15:09/66	16:36 14:03-15:09/66	16:36 14:03-15:09/66
31	08:14 10:26-11:13/47	17:44 15:49-16:30/41	18:45 19:59	05:53 15:49-16:30/41	05:33 17:59	04:36 20:03-20:11/8	04:26 21:50	16:38 14:03-15:09/66	16:38 14:03-15:09/66	16:38 14:03-15:09/66	16:38 14:03-15:09/66
Potential sun hours	235	265	365	425	507	529	0				
Sum of minutes with flicker	3620	2855	168	60	1066						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 10 - 21-B

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	July	August	September	October	November	December
1	04:27 22:06	05:12 19:58-20:47/49 21:26	06:14 20:12	07:14 18:52	07:19 15:22-15:56/34 13:48-14:39/51 16:34 08:06-08:39/33	08:21 09:56-10:55/59 15:42 13:42-14:36/54
2	04:28 22:06	05:14 19:59-20:47/48 21:24	06:16 20:09	07:16 18:49	07:21 15:23-15:53/30 13:45-14:39/54 16:31 08:06-08:39/33	08:23 09:57-10:56/59 15:41 13:43-14:35/52
3	04:28 22:06	05:16 19:59-20:48/49 21:22	06:18 20:07	07:18 18:46	07:24 15:26-15:51/25 13:44-14:40/56 16:29 08:08-08:41/33	08:24 09:57-10:56/59 15:40 13:43-14:35/52
4	04:29 22:05	05:18 19:59-20:48/49 21:20	06:20 20:04	07:20 18:44	07:26 15:28-15:46/18 13:42-14:40/58 16:27 08:08-08:42/34	08:26 09:58-10:57/59 15:40 13:44-14:35/51
5	04:30 22:04	05:20 19:58-20:45/47 21:17	06:22 20:01	07:22 18:41	07:28 15:32-15:43/11 13:41-14:41/60 16:25 08:09-08:43/34	08:28 09:59-10:57/58 15:39 13:45-14:33/48
6	04:31 22:04	05:22 19:59-20:44/45 21:15	06:24 19:59	07:24 18:38	07:30 08:09-08:44/35 10:19-10:32/13 16:23 13:40-14:41/61	08:29 09:59-10:57/58 15:38 13:45-14:33/48
7	04:32 22:03	05:24 19:59-20:42/43 21:13	06:26 19:56	07:26 18:36	07:32 10:06-10:36/30 13:38-14:40/62 16:21 08:09-08:45/36	08:31 10:00-10:57/57 15:37 13:46-14:32/46
8	04:34 22:02	05:26 20:00-20:40/40 21:11	06:28 19:53	07:28 16:36-16:46/10 18:33	07:34 10:03-10:39/36 13:38-14:41/63 16:19 08:11-08:45/34	08:32 10:01-10:58/57 15:37 13:47-14:31/44
9	04:35 22:01	05:28 20:00-20:38/38 21:09	06:30 19:51	07:30 16:32-16:54/22 18:30	07:37 10:01-10:40/39 13:37-14:41/64 16:17 08:13-08:44/31	08:33 10:01-10:58/57 15:36 13:48-14:30/42
10	04:36 22:00	05:30 20:00-20:35/35 21:06	06:32 19:48	07:32 16:29-16:57/28 18:28	07:39 10:00-10:43/43 13:37-14:42/65 16:15 08:16-08:45/29	08:35 10:02-10:59/57 15:36 13:48-14:28/40
11	04:37 21:59	05:32 20:29-20:33/4 21:04	06:34 19:45	07:34 16:27-16:59/32 18:25	07:41 09:58-10:44/46 13:36-14:41/65 16:13 08:18-08:45/27	08:36 10:02-10:58/56 15:36 13:50-14:27/37
12	04:39 21:58	05:34 20:02-20:27/25 21:02	06:36 19:43	07:36 16:25-17:01/36 18:23	07:43 09:57-10:44/47 13:36-14:41/65 16:11 08:21-08:45/24	08:37 10:02-10:58/56 15:35 13:50-14:25/35
13	04:40 21:57	05:36 20:03-20:26/23 20:59	06:38 19:40	07:39 16:23-17:02/39 18:20	07:45 09:56-10:46/50 13:36-14:41/65 16:09 08:23-08:45/22	08:39 10:03-11:00/57 15:35 13:50-14:25/35
14	04:41 20:11-20:19/8 21:56	05:38 20:05-20:25/20 20:57	06:40 19:37	07:41 16:21-17:02/41 18:17	07:47 09:55-10:47/52 08:25-08:44/19 16:07 13:35-14:41/66	08:40 10:04-11:00/56 15:35 13:52-14:26/34
15	04:43 20:10-20:22/12 21:54	05:40 20:07-20:22/15 20:55	06:42 19:35	07:43 16:21-17:04/43 18:15	07:49 09:55-10:48/53 08:28-08:44/16 16:05 13:36-14:41/65	08:41 10:04-11:00/56 15:35 13:53-14:26/33
16	04:44 20:08-20:23/15 21:53	05:42 20:10-20:19/9 20:52	06:44 19:32	07:45 16:20-17:04/44 18:12 09:17-09:31/14	07:52 09:55-10:49/54 08:30-08:43/13 16:03 13:36-14:41/65	08:42 10:05-11:00/55 15:35 13:53-14:26/33
17	04:46 20:06-20:24/18 21:52	05:44 20:10-20:19/9 20:50	06:46 19:29	07:47 16:19-17:04/45 18:10 09:14-09:33/19	07:54 09:54-10:49/55 08:33-08:43/10 16:02 13:35-14:40/65	08:43 10:05-11:01/56 15:35 13:54-14:27/33
18	04:47 20:06-20:26/20 21:50	05:46 20:10-20:19/9 20:47	06:48 19:27	07:49 16:18-17:04/46 18:07 09:12-09:35/23	07:56 09:54-10:50/56 08:35-08:42/7 16:00 13:36-14:41/65	08:43 10:06-11:01/55 15:35 13:55-14:27/32
19	04:49 20:05-20:27/22 21:49	05:48 20:10-20:19/9 20:45	06:50 19:24	07:51 16:18-17:05/47 18:05 09:11-09:37/26	07:58 09:54-10:51/57 08:37-08:40/3 15:58 13:36-14:40/64	08:44 10:06-11:01/55 15:35 13:55-14:27/32
20	04:51 20:04-20:28/24 21:47	05:50 20:10-20:19/9 20:43	06:52 19:21	07:53 16:17-17:05/48 18:02 09:09-09:38/29	08:00 09:54-10:51/57 15:57 13:36-14:40/64	08:45 10:07-11:02/55 15:35 13:55-14:27/32
21	04:52 20:03-20:28/25 21:46	05:52 20:10-20:19/9 20:40	06:54 19:18	07:55 16:17-17:04/47 18:00 09:08-09:38/30	08:02 09:54-10:52/58 15:55 13:37-14:40/63	08:46 10:08-11:02/54 15:36 13:56-14:28/32
22	04:54 20:03-20:30/27 21:44	05:54 20:10-20:19/9 20:38	06:56 19:16	07:58 16:16-17:04/48 09:08-09:40/32 17:57 15:10-15:22/12	08:04 09:54-10:52/58 15:54 13:37-14:40/63	08:46 10:08-11:02/54 15:36 13:56-14:28/32
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25	04:59 20:01-20:44/43 21:39	06:00 20:10-20:19/9 20:30	07:02 19:08	08:04 16:17-17:03/46 09:05-09:40/35 17:50 15:00-15:31/31	08:10 09:55-10:54/59 15:49 13:39-14:39/60	08:48 10:09-11:04/55 15:38 13:58-14:30/32
26	05:01 20:00-20:44/44 21:37	06:02 20:10-20:19/9 20:27	07:04 19:05	07:06 15:18-16:03/45 13:58-14:33/35 16:48 08:05-08:40/35	08:12 09:55-10:54/59 15:48 13:39-14:39/60	08:48 10:09-11:04/55 15:39 13:58-14:30/32
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29	05:07 19:59-20:46/47 21:32	06:08 20:10-20:19/9 20:20	07:10 18:57	07:13 15:19-16:00/41 13:54-14:37/43 16:41 08:05-08:40/35	08:17 09:56-10:55/59 15:44 13:41-14:37/56	08:48 10:10-11:06/56 15:41 13:59-14:32/33
30	05:08 19:59-20:47/48 21:30	06:10 20:10-20:19/9 20:17	07:12 18:54	07:15 15:20-15:59/39 13:53-14:37/44 16:38 08:05-08:39/34	08:19 09:56-10:55/59 15:43 13:41-14:36/55	08:48 10:11-11:07/56 15:42 13:59-14:33/34
31	05:10 19:59-20:48/49 21:28	06:12 20:10-20:19/9 20:15	07:14 18:56	07:17 15:22-15:58/36 13:52-14:38/46 16:36 08:06-08:40/34	08:21 09:56-10:55/59 15:43 13:41-14:36/55	08:48 10:11-11:08/57 15:43 13:59-14:34/35
Potential sun hours	530	470	385	324	248	216
Sum of minutes with flicker	569	566	0	1782	3708	2918

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

2026-02-Ecosoul-MEŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 11 - 22-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January	February	March	April	May	June
1	08:48 13:50-14:42/52 12:20-13:02/42 15:45 09:48-10:26/38	08:12 14:10-14:48/38 16:42 08:46-09:09/23	07:09 17:44	06:47 18:49-19:14/25 19:50	05:30 19:44-20:13/29 20:52 18:44-19:30/46	04:33 21:49
2	08:48 13:51-14:43/52 12:22-13:03/41 15:46 09:48-10:27/39	08:11 14:12-14:46/34 16:44 08:46-09:10/24	07:06 17:46	06:44 18:49-19:13/24 19:52	05:28 19:44-20:13/29 20:54 18:44-19:30/46	04:32 21:51
3	08:48 13:51-14:43/52 12:22-13:02/40 15:47 09:48-10:27/39	08:09 14:16-14:25/9 08:46-09:11/25 16:46 14:28-14:43/15	07:04 17:48	06:41 18:50-19:13/23 19:54	05:26 19:44-20:13/29 20:56 18:45-19:29/44	04:31 21:52
4	08:47 13:52-14:45/53 12:23-13:03/40 15:49 09:49-10:28/39	08:07 14:33-14:39/6 16:48 08:45-09:10/25	07:01 17:50	06:39 18:50-19:11/21 19:56	05:23 19:44-20:13/29 20:58 18:46-19:28/42	04:30 21:54
5	08:47 13:52-14:45/53 12:24-13:03/39 15:50 09:49-10:28/39	08:05 08:46-09:11/25 16:51	06:58 17:53	06:36 18:50-19:10/20 19:58	05:21 19:45-20:12/27 21:00 18:47-19:28/41	04:29 21:55
6	08:46 13:52-14:45/53 12:24-13:03/39 15:51 09:50-10:28/38	08:03 08:46-09:11/25 16:53	06:56 17:55	06:33 18:52-19:08/16 20:00	05:19 19:45-20:12/27 21:02 18:47-19:27/40	04:28 21:56
7	08:46 13:52-14:46/54 12:25-13:03/38 15:53 09:50-10:28/38	08:00 08:47-09:12/25 16:55	06:53 17:57	06:31 18:54-19:05/11 20:02 19:08-19:16/8	05:17 19:46-20:11/25 21:04 18:48-19:26/38	04:27 21:57
8	08:45 13:52-14:46/54 12:25-13:03/38 15:54 09:50-10:29/39	07:58 08:46-09:11/25 16:57	06:51 17:59	06:28 19:03-19:22/19 20:04	05:14 19:46-20:11/25 21:06 18:50-19:25/35	04:26 21:58
9	08:44 13:52-14:47/55 12:26-13:04/38 15:56 09:51-10:29/38	07:56 08:47-09:11/24 16:59	06:48 18:01	06:25 18:59-19:24/25 20:06	05:12 19:47-20:10/23 21:08 18:51-19:23/32	04:26 21:59
10	08:43 13:53-14:48/55 12:27-13:04/37 15:58 09:51-10:30/39	07:54 08:48-09:10/22 17:02	06:45 18:03	06:23 18:57-19:27/30 20:08	05:10 19:48-20:09/21 21:10 18:52-19:22/30	04:25 22:00
11	08:43 13:53-14:48/55 12:28-13:04/36 15:59 09:52-10:30/38	07:52 08:48-09:09/21 17:04	06:43 18:06	06:20 18:55-19:28/33 20:10	05:08 19:49-20:07/18 21:12 18:53-19:20/27	04:24 22:01
12	08:42 13:54-14:49/55 12:29-13:04/35 16:01 09:52-10:30/38	07:50 08:50-09:08/18 17:06	06:40 18:08	06:18 18:52-19:29/37 20:12	05:06 19:50-20:06/16 21:14 18:55-19:18/23	04:24 22:02
13	08:41 13:54-14:50/56 12:30-13:04/34 16:03 09:53-10:31/38	07:47 08:51-09:06/15 17:08	06:37 18:10	06:15 18:51-19:30/39 20:15	05:04 19:52-20:04/12 21:16 18:57-19:16/19	04:23 22:03
14	08:40 13:54-14:50/56 12:30-13:03/33 16:05 09:53-10:30/37	07:45 08:53-09:05/12 17:11	06:35 18:12	06:12 18:49-19:31/42 20:17	05:02 19:55-20:02/7 21:18 19:01-19:14/13	04:23 22:04
15	08:39 13:55-14:51/56 12:32-13:03/31 16:06 09:54-10:31/37	07:43 17:13	06:32 18:14	06:10 18:49-19:32/43 20:19	05:00 21:20	04:23 22:04
16	08:38 13:55-14:50/55 12:33-13:02/29 16:08 09:54-10:30/36	07:40 17:15	06:29 18:16	06:07 18:47-19:32/45 20:21	04:58 21:22	04:22 22:05
17	08:36 13:55-14:51/56 12:34-13:02/28 16:10 09:55-10:31/36	07:38 17:17	06:27 18:18	06:05 18:47-19:33/46 20:23	04:56 21:24	04:22 22:06
18	08:35 13:55-14:51/56 12:35-13:01/26 16:12 09:56-10:30/34	07:36 17:20	06:24 18:20	06:02 18:45-19:33/48 20:25	04:54 21:26	04:22 22:06
19	08:34 13:57-14:52/55 12:38-13:00/22 16:14 09:57-10:31/34	07:33 17:22	06:21 18:22	06:00 18:45-19:33/48 20:27	04:53 21:28	04:22 22:07
20	08:32 13:57-14:52/55 12:39-12:59/20 16:16 09:58-10:30/32	07:31 17:24	06:19 18:24	05:57 18:45-19:34/49 20:29	04:51 21:30	04:22 22:07
21	08:31 13:57-14:52/55 12:42-12:56/14 16:18 09:58-10:29/31	07:29 17:26	06:16 18:27	05:54 19:58-20:03/5 20:31 18:44-19:33/49	04:49 21:31	04:22 22:07
22	08:30 13:58-14:53/55 12:47-12:53/6 16:20 10:00-10:29/29	07:26 17:29	06:13 18:29	05:52 19:54-20:05/11 20:33 18:44-19:34/50	04:47 21:33	04:22 22:07
23	08:28 13:59-14:52/53 16:22 10:01-10:28/27	07:24 17:31	06:11 18:01-18:05/4 18:31	05:49 19:51-20:07/16 20:35 18:43-19:33/50	04:46 21:35	04:23 22:08
24	08:26 13:59-14:52/53 16:24 10:03-10:27/24	07:21 17:33	06:08 17:57-18:07/10 18:33	05:47 19:50-20:09/19 20:37 18:43-19:33/50	04:44 21:37	04:23 22:08
25	08:25 14:00-14:52/52 16:26 10:05-10:25/20	07:19 17:35	06:05 17:55-18:09/14 18:35	05:45 19:49-20:11/22 20:40 18:43-19:33/50	04:43 21:38	04:23 22:08
26	08:23 14:01-14:52/51 08:58-08:59/1 16:28 10:08-10:15/7 10:16-10:21/5	07:16 17:37	06:03 17:53-18:11/18 18:37	05:42 19:47-20:12/25 20:42 18:42-19:32/50	04:41 21:40	04:24 22:08
27	08:22 14:02-14:51/49 16:31 08:56-09:02/6	07:14 17:40	06:00 17:52-18:13/21 18:39	05:40 19:46-20:12/26 20:44 18:43-19:32/49	04:40 21:42	04:24 22:08
28	08:20 14:03-14:51/48 16:33 08:54-09:04/10	07:11 17:42	05:57 17:51-18:15/24 18:41	05:37 19:46-20:13/27 20:46 18:43-19:32/49	04:38 21:43	04:25 22:07
29	08:18 14:04-14:50/46 16:35 08:52-09:06/14		05:55 17:50-18:15/25 18:43	05:35 19:45-20:13/28 20:48 18:44-19:32/48	04:37 21:45	04:25 22:07
30	08:16 14:06-14:50/44 16:37 08:50-09:07/17		06:52 18:49-19:15/26 19:45	05:33 19:44-20:13/29 20:50 18:43-19:31/48	04:36 21:47	04:26 22:07
31	08:14 14:07-14:49/42 16:39 08:48-09:08/20		06:49 18:50-19:15/25 19:47		04:34 21:48	
Potential sun hours	235	265	365	425	507	529
Sum of minutes with flicker	3299	411	167	1353	793	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 11 - 22-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	July	August	September	October	November	December
1	04:27 22:06	05:12 20:00-20:16/16 21:26 19:06-19:28/22	06:14 18:53-19:28/35 20:12	07:14 18:51 18:51	07:19 08:17-08:39/22 16:34	08:21 13:35-14:30/55 12:10-12:45/35 15:42 09:34-10:12/38
2	04:28 22:06	05:14 19:59-20:18/19 21:24 19:04-19:30/26	06:16 18:54-19:26/32 20:09	07:16 18:49 18:49	07:21 08:16-08:39/23 16:31	08:23 13:36-14:31/55 12:10-12:46/36 15:41 09:34-10:12/38
3	04:28 22:05	05:16 19:58-20:19/21 21:22 19:03-19:32/29	06:18 18:56-19:24/28 20:07	07:18 18:46 18:46	07:24 08:16-08:41/25 16:29	08:24 13:36-14:31/55 12:10-12:47/37 15:40 09:35-10:13/38
4	04:29 22:05	05:18 19:57-20:20/23 21:19 19:01-19:34/33	06:20 18:58-19:21/23 20:04	07:20 18:43 18:43	07:26 08:16-08:40/24 16:27	08:26 13:37-14:31/54 12:10-12:48/38 15:40 09:35-10:14/39
5	04:30 22:04	05:20 19:56-20:20/24 21:17 18:59-19:34/35	06:22 18:53-19:00/7 20:01 19:01-19:16/15	07:22 18:41 18:41	07:28 08:16-08:41/25 16:25	08:28 13:37-14:31/54 12:10-12:48/38 15:39 09:36-10:14/38
6	04:31 22:03	05:22 19:55-20:21/26 21:15 18:58-19:35/37	06:24 18:49-19:03/14 19:59	07:24 18:38 18:38	07:30 08:16-08:41/25 16:23	08:29 13:37-14:31/54 12:10-12:49/39 15:38 09:35-10:14/39
7	04:32 22:03	05:24 19:55-20:21/26 21:13 18:57-19:36/39	06:26 18:47-19:04/17 19:56	07:26 18:36 18:36	07:32 08:15-08:41/26 16:21	08:31 13:38-14:32/54 12:11-12:50/39 15:37 09:36-10:15/39
8	04:34 22:02	05:26 19:54-20:22/28 21:11 18:56-19:37/41	06:28 18:45-19:05/20 19:53	07:28 18:33 18:33	07:34 14:01-14:12/11 16:19 08:16-08:41/25	08:32 13:38-14:32/54 12:10-12:50/40 15:37 09:37-10:15/38
9	04:35 22:01	05:28 19:54-20:22/28 21:09 18:55-19:38/43	06:30 18:44-19:06/22 19:51	07:30 18:30 18:30	07:37 13:44-14:15/31 16:17 08:16-08:40/24	08:33 13:39-14:32/53 12:11-12:51/40 15:36 09:37-10:15/38
10	04:36 22:00	05:30 19:53-20:21/28 21:06 18:54-19:37/43	06:32 18:43-19:06/23 19:48	07:32 18:28 18:28	07:39 13:42-14:18/36 16:15 08:17-08:41/24	08:35 13:39-14:32/53 12:10-12:51/41 15:36 09:38-10:16/38
11	04:37 21:59	05:32 19:53-20:22/29 21:04 18:53-19:38/45	06:34 18:42-19:07/25 19:45	07:34 18:25 18:25	07:41 13:39-14:19/40 16:13 08:18-08:40/22	08:36 13:40-14:33/53 12:11-12:52/41 15:36 09:38-10:16/38
12	04:39 21:58	05:34 19:53-20:22/29 21:02 18:52-19:39/47	06:36 18:41-19:07/26 19:43	07:36 18:22 18:22	07:43 13:38-14:20/42 16:11 08:21-08:40/19	08:37 13:41-14:33/52 12:11-12:53/42 15:35 09:38-10:16/38
13	04:40 21:57	05:36 19:53-20:21/28 20:59 18:52-19:39/47	06:38 18:41-19:06/25 19:40	07:39 18:20 18:20	07:45 13:37-14:22/45 16:09 08:23-08:39/16	08:38 13:41-14:33/52 12:11-12:53/42 15:35 09:40-10:17/37
14	04:41 21:56	05:38 19:53-20:21/28 20:57 18:51-19:39/48	06:40 18:41-19:06/25 19:37	07:41 18:17 18:17	07:47 13:36-14:23/47 16:07 08:25-08:37/12	08:40 13:42-14:34/52 12:12-12:54/42 15:35 09:40-10:18/38
15	04:43 21:54	05:40 19:53-20:21/28 20:55 18:51-19:40/49	06:42 18:41-19:05/24 19:35	07:43 18:15 18:15	07:49 13:36-14:24/48 16:05 08:28-08:37/9	08:41 13:43-14:34/51 12:12-12:55/43 15:35 09:40-10:18/38
16	04:44 21:53	05:42 19:54-20:20/26 20:52 18:51-19:40/49	06:44 18:41-19:04/23 19:32	07:45 18:12 18:12	07:52 13:35-14:24/49 16:03 08:30-08:34/4	08:42 13:43-14:34/51 12:13-12:55/42 15:35 09:41-10:18/37
17	04:46 21:52	05:44 19:53-20:19/26 20:50 18:49-19:39/50	06:46 18:41-19:02/21 19:29	07:47 18:10 18:10	07:54 13:34-14:25/51 16:02 09:39-09:56/17	08:43 13:44-14:35/51 12:13-12:56/43 15:35 09:41-10:19/38
18	04:47 21:50	05:46 19:54-20:18/24 20:47 18:49-19:39/50	06:48 18:42-18:59/17 19:27	07:49 18:07 18:07	07:56 13:34-14:26/52 16:00 09:38-10:00/22	08:43 13:44-14:34/50 12:14-12:56/42 15:35 09:42-10:19/37
19	04:49 21:49	05:48 19:55-20:15/20 20:45 18:49-19:39/50	06:50 18:42-18:55/13 19:24	07:51 18:05 18:05	07:58 13:33-14:26/53 15:58 09:36-10:02/26	08:44 13:44-14:35/51 12:13-12:56/43 15:35 09:42-10:19/37
20	04:51 21:47	05:50 19:56-20:13/17 20:43 18:49-19:39/50	06:52 18:44-18:53/9 19:21	07:53 18:02 18:02	08:00 13:33-14:27/54 15:57 09:35-10:03/28	08:45 13:45-14:35/50 12:14-12:57/43 15:35 09:43-10:20/37
21	04:52 21:46	05:52 19:58-20:11/13 20:40 18:49-19:39/50	06:54 18:47-18:50/3 19:18	07:55 18:00 18:00	08:02 13:33-14:28/55 12:20-12:31/11 15:55 09:35-10:05/30	08:46 13:46-14:36/50 12:15-12:58/43 15:36 09:44-10:21/37
22	04:54 21:44	05:54 20:01-20:09/8 20:38 18:49-19:38/49	06:56 19:16 19:16	07:58 17:57 17:57	08:04 13:33-14:28/55 12:17-12:34/17 15:54 09:34-10:06/32	08:46 13:46-14:36/50 12:15-12:58/43 15:36 09:44-10:21/37
23	04:56 21:42	05:56 18:49-19:38/49 20:35	06:58 19:13 19:13	08:00 17:55 17:55	08:06 13:33-14:28/55 12:15-12:36/21 15:52 09:34-10:06/32	08:47 13:46-14:36/50 12:15-12:58/43 15:37 09:45-10:22/37
24	04:58 21:41	05:58 18:49-19:37/48 20:33	07:00 19:10 19:10	08:02 17:52 17:52	08:08 13:33-14:28/55 12:13-12:37/24 15:51 09:33-10:07/34	08:47 13:47-14:37/50 12:16-12:59/43 15:37 09:45-10:22/37
25	04:59 21:39	06:00 18:49-19:37/48 20:30	07:02 19:08 19:08	08:04 17:50 17:50	08:10 13:34-14:29/55 12:13-12:39/26 15:49 09:34-10:09/35	08:47 13:47-14:38/51 12:16-12:59/43 15:38 09:45-10:22/37
26	05:01 21:37	06:02 18:48-19:35/47 20:27	07:04 19:05 19:05	07:06 16:48 16:48	08:12 13:34-14:30/56 12:12-12:41/29 15:48 09:33-10:09/36	08:48 13:48-14:38/50 12:17-12:59/42 15:39 09:45-10:22/37
27	05:03 21:35	06:04 18:49-19:34/45 20:25	07:06 19:02 19:02	07:08 16:45 16:45	08:14 13:34-14:30/56 12:12-12:42/30 15:47 09:33-10:10/37	08:48 13:48-14:39/51 12:17-13:00/43 15:39 09:46-10:23/37
28	05:05 21:33	06:06 18:49-19:33/44 20:22	07:08 19:00 19:00	07:10 16:43 16:43	08:16 13:34-14:30/56 12:11-12:43/32 15:46 09:33-10:10/37	08:48 13:48-14:39/51 12:18-13:00/42 15:40 09:46-10:23/37
29	05:07 21:32	06:08 18:50-19:32/42 20:20	07:10 18:57 18:57	07:13 16:41 16:41	08:17 13:34-14:30/56 12:11-12:44/33 15:44 09:33-10:11/38	08:48 13:49-14:40/51 12:18-13:01/43 15:41 09:46-10:24/38
30	05:08 20:06-20:11/5 21:30 19:12-19:24/12	06:10 18:51-19:31/40 20:17	07:12 18:54 18:54	07:15 16:38 16:38	08:19 13:35-14:30/55 12:10-12:45/35 15:43 09:34-10:11/37	08:48 13:49-14:41/52 12:19-13:01/42 15:42 09:47-10:25/38
31	05:10 20:03-20:15/12 21:28 19:09-19:27/18	06:12 18:52-19:30/38 20:15	07:14 18:51 18:51	07:17 16:36 16:36	08:19 13:35-14:30/55 12:10-12:45/35 15:43 09:34-10:11/37	08:48 13:50-14:42/52 12:20-13:02/42 15:43 09:48-10:25/37
Potential sun hours	530	470	385	324	248	216
Sum of minutes with flicker	47	1848	447	62	2137	4054

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

2026-02-Ecosoul-MEŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

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Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 12 - 20-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June
1	08:48 15:45	08:12 15:49-16:09/20 16:42	07:09 17:12-17:17/5 17:44	06:47 18:47-19:22/35 19:50 17:54-18:39/45	05:30 20:52	04:33 21:49
2	08:48 15:46	08:11 15:48-16:11/23 16:44	07:06 17:10-17:20/10 17:46	06:44 18:46-19:23/37 19:52 17:53-18:37/44	05:28 20:54	04:32 21:51
3	08:47 15:47	08:09 15:46-16:11/25 16:46	07:04 17:08-17:22/14 17:48	06:41 18:46-19:25/39 19:54 17:55-18:37/42	05:26 20:56	04:31 21:52
4	08:47 15:49	08:07 15:46-16:12/26 16:48	07:01 17:06-17:24/18 17:51	06:39 18:45-19:25/40 19:56 17:55-18:36/41	05:23 20:58	04:30 21:54
5	08:47 15:50	08:05 15:46-16:13/27 16:51	06:58 17:06-17:27/21 17:53	06:36 18:44-19:25/41 19:58 17:55-18:34/39	05:21 21:00	04:29 21:55
6	08:46 15:51	08:03 15:46-16:14/28 16:53	06:56 17:05-17:28/23 17:55	06:33 18:44-19:26/42 20:00 17:57-18:33/36	05:19 21:02	04:28 21:56
7	08:46 15:53	08:00 15:45-16:14/29 16:55	06:53 17:04-17:28/24 17:57	06:31 18:44-19:25/41 20:02 17:58-18:31/33	05:17 21:04	04:27 21:57
8	08:45 15:54	07:58 15:45-16:14/29 16:57	06:51 17:05-17:28/23 17:59	06:28 18:45-19:26/41 20:04 18:00-18:30/30	05:15 21:06	04:26 21:58
9	08:44 15:56	07:56 15:45-16:15/30 17:00	06:48 17:04-17:27/23 18:01	06:25 18:44-19:25/41 20:06 18:01-18:27/26	05:12 21:08	04:26 21:59
10	08:43 15:58	07:54 15:45-16:14/29 17:02	06:45 17:04-17:26/22 18:03	06:23 18:45-19:25/40 20:08 18:04-18:25/21	05:10 21:10	04:25 22:00
11	08:43 15:59	07:52 15:45-16:15/30 17:04	06:43 17:05-17:26/21 18:06	06:20 18:45-19:24/39 20:10 18:07-18:21/14	05:08 21:12	04:25 22:01
12	08:42 16:01	07:50 15:46-16:15/29 17:06	06:40 17:06-17:25/19 18:08	06:18 18:46-19:23/37 20:12	05:06 21:14	04:24 22:02
13	08:41 16:03	07:47 15:46-16:14/28 17:09	06:37 17:07-17:29/22 18:10	06:15 18:47-19:23/36 20:15	05:04 21:16	04:24 22:03
14	08:40 16:05	07:45 15:47-16:14/27 17:11	06:35 17:08-17:33/25 18:12	06:12 18:48-19:22/34 20:17	05:02 21:18	04:23 22:04
15	08:39 16:06	07:43 15:47-16:12/25 17:13	06:32 17:08-17:35/27 18:14	06:10 18:51-19:21/30 20:19	05:00 21:20	04:23 22:04
16	08:37 16:08	07:40 15:48-16:12/24 17:15	06:29 17:05-17:36/31 18:16	06:07 18:54-19:19/25 20:21	04:58 21:22	04:23 22:05
17	08:36 16:10	07:38 15:49-16:10/21 17:17	06:27 17:03-17:37/34 18:18	06:05 18:57-19:18/21 20:23	04:56 21:24	04:22 22:06
18	08:35 16:12	07:36 15:51-16:09/18 17:20	06:24 17:02-17:39/37 18:20	06:02 18:58-19:15/17 20:25	04:55 21:26	04:22 22:06
19	08:34 16:14	07:33 15:53-16:06/13 17:22	06:21 17:00-17:40/40 18:22	06:00 19:01-19:13/12 20:27	04:53 21:28	04:22 22:07
20	08:32 16:16	07:31 15:59-16:01/2 17:24	06:19 16:59-17:40/41 18:25	05:57 20:29	04:51 21:30	04:22 22:07
21	08:31 16:18	07:29 17:26	06:16 16:58-17:41/43 18:27	05:55 20:31	04:49 21:31	04:22 22:07
22	08:30 16:20	07:26 17:29	06:13 16:57-17:41/44 18:29	05:52 20:33	04:48 21:33	04:22 22:07
23	08:28 16:22	07:24 17:31	06:11 16:56-17:41/45 18:31	05:50 20:35	04:46 21:35	04:23 22:08
24	08:26 16:24	07:21 17:33	06:08 16:55-17:41/46 18:33	05:47 20:37	04:44 21:37	04:23 22:08
25	08:25 16:26	07:19 17:35	06:05 16:55-17:42/47 18:35	05:45 20:40	04:43 21:38	04:23 22:08
26	08:23 16:29	07:16 17:37	06:03 18:01-18:07/6 18:37 16:54-17:41/47	05:42 20:42	04:41 21:40	04:24 22:08
27	08:22 16:31	07:14 17:40	06:00 17:56-18:11/15 18:39 16:53-17:41/48	05:40 20:44	04:40 21:42	04:24 22:08
28	08:20 16:33	07:11 17:42	05:57 17:54-18:14/20 18:41 16:54-17:41/47	05:37 20:46	04:38 21:43	04:25 22:07
29	08:18 15:54-16:02/8 16:35		05:55 17:51-18:15/24 18:43 16:53-17:41/48	05:35 20:48	04:37 21:45	04:25 22:07
30	08:16 15:51-16:04/13 16:37		06:52 18:49-19:17/28 19:45 17:53-18:40/47	05:33 20:50	04:36 21:46	04:26 22:07
31	08:14 15:50-16:07/17 16:39		06:49 18:49-19:21/32 19:47 17:54-18:40/46		04:34 21:48	
Potential sun hours	235	265	365	425	507	529
Sum of minutes with flicker	38	483	1113	1019	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

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SKEPAST & PUHKIM

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 12 - 20-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	July	August	September	October	November	December
1	04:27 22:06	05:12 21:26	06:14 18:45-19:23/38 20:12 18:10-18:17/7	07:14 17:47-18:08/21 18:52	07:19 15:15-15:44/29 16:34	08:21 15:42
2	04:28 22:06	05:14 21:24	06:16 18:44-19:23/39 20:09 18:04-18:22/18	07:16 17:45-18:04/19 18:49	07:21 15:14-15:44/30 16:32	08:23 15:41
3	04:29 22:05	05:16 21:22	06:18 18:43-19:23/40 20:07 18:01-18:24/23	07:18 17:43-18:04/21 18:46	07:24 15:15-15:44/29 16:29	08:24 15:40
4	04:29 22:05	05:18 21:19	06:20 18:42-19:23/41 20:04 17:58-18:26/28	07:20 17:42-18:04/22 18:44	07:26 15:15-15:44/29 16:27	08:26 15:40
5	04:30 22:04	05:20 21:17	06:22 18:40-19:22/42 20:01 17:55-18:27/32	07:22 17:41-18:04/23 18:41	07:28 15:15-15:43/28 16:25	08:28 15:39
6	04:31 22:03	05:22 21:15	06:24 18:40-19:21/41 19:59 17:53-18:28/35	07:24 17:41-18:04/23 18:38	07:30 15:16-15:43/27 16:23	08:29 15:38
7	04:33 22:03	05:24 21:13	06:26 18:40-19:21/41 19:56 17:51-18:29/38	07:26 17:40-18:04/24 18:36	07:32 15:16-15:42/26 16:21	08:31 15:38
8	04:34 22:02	05:26 21:11	06:28 18:39-19:20/41 19:53 17:50-18:30/40	07:28 17:40-18:03/23 18:33	07:34 15:17-15:42/25 16:19	08:32 15:37
9	04:35 22:01	05:28 21:09	06:30 18:39-19:19/40 19:51 17:49-18:30/41	07:30 17:40-18:01/21 18:30	07:37 15:18-15:41/23 16:17	08:33 15:36
10	04:36 22:00	05:30 21:06	06:32 18:39-19:17/38 19:48 17:48-18:31/43	07:32 17:42-17:59/17 18:28	07:39 15:19-15:41/22 16:15	08:35 15:36
11	04:37 21:59	05:32 21:04	06:34 18:39-19:16/37 19:45 17:47-18:31/44	07:34 17:42-17:56/14 18:25	07:41 15:20-15:39/19 16:13	08:36 15:36
12	04:39 21:58	05:34 21:02	06:36 18:40-19:14/34 19:43 17:46-18:31/45	07:36 17:43-17:53/10 18:23	07:43 15:21-15:37/16 16:11	08:37 15:35
13	04:40 21:57	05:36 20:59	06:38 18:40-19:11/31 19:40 17:45-18:31/46	07:39 17:45-17:51/6 18:20	07:45 15:24-15:35/11 16:09	08:38 15:35
14	04:41 21:55	05:38 20:57	06:40 18:41-19:07/26 19:37 17:44-18:31/47	07:41 18:17	07:47 15:28-15:32/4 16:07	08:40 15:35
15	04:43 21:54	05:40 20:55	06:42 18:42-19:05/23 19:35 17:44-18:31/47	07:43 18:15	07:49 16:05	08:41 15:35
16	04:44 21:53	05:42 20:52	06:44 18:44-19:03/19 19:32 17:43-18:31/48	07:45 18:12	07:52 16:03	08:42 15:35
17	04:46 21:52	05:44 20:50	06:46 18:46-19:00/14 19:29 17:43-18:30/47	07:47 18:10	07:54 16:02	08:43 15:35
18	04:48 21:50	05:46 20:47	06:48 17:43-18:30/47 19:27	07:49 18:07	07:56 16:00	08:43 15:35
19	04:49 21:49	05:48 20:45	06:50 17:42-18:29/47 19:24	07:51 18:05	07:58 15:58	08:44 15:35
20	04:51 21:47	05:50 20:43	06:52 17:42-18:29/47 19:21	07:53 18:02	08:00 15:57	08:45 15:36
21	04:52 21:46	05:52 20:40	06:54 17:42-18:28/46 19:18	07:55 18:00	08:02 15:55	08:46 15:36
22	04:54 21:44	05:54 20:38	06:56 17:42-18:26/44 19:16	07:58 17:57	08:04 15:54	08:46 15:36
23	04:56 21:42	05:56 20:35	06:58 17:42-18:25/43 19:13	08:00 16:25-16:36/11 17:55	08:06 15:52	08:47 15:37
24	04:58 21:41	05:58 19:07-19:15/8 20:33	07:00 17:42-18:24/42 19:10	08:02 16:22-16:38/16 17:52	08:08 15:51	08:47 15:37
25	04:59 21:39	06:00 19:03-19:18/15 20:30	07:02 17:43-18:22/39 19:08	08:04 16:19-16:40/21 17:50	08:10 15:49	08:47 15:38
26	05:01 21:37	06:02 19:00-19:19/19 20:27	07:04 17:44-18:21/37 19:05	07:06 15:19-15:41/22 16:48	08:12 15:48	08:48 15:39
27	05:03 21:35	06:04 18:58-19:20/22 20:25	07:06 17:46-18:20/34 19:02	07:08 15:17-15:42/25 16:45	08:14 15:47	08:48 15:40
28	05:05 21:33	06:06 18:53-19:21/28 20:22	07:08 17:47-18:18/31 19:00	07:10 15:16-15:42/26 16:43	08:16 15:46	08:48 15:40
29	05:07 21:32	06:08 18:50-19:22/32 20:20	07:10 17:49-18:16/27 18:57	07:13 15:16-15:43/27 16:41	08:17 15:44	08:48 15:41
30	05:08 21:30	06:10 18:48-19:23/35 20:17	07:12 17:49-18:13/24 18:54	07:15 15:15-15:44/29 16:38	08:19 15:43	08:48 15:42
31	05:10 21:28	06:12 18:47-19:23/36 20:15		07:17 15:14-15:43/29 16:36		08:48 15:43
Potential sun hours	530	470	385	324	248	216
Sum of minutes with flicker	0	195	1722	450	318	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 13 - 19-B

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June
1	08:48 15:45	08:12 16:42	07:09 17:44	16:43-17:06/23 17:44	06:47 19:50	18:54-19:20/26 20:52
2	08:48 15:46	08:11 16:44	07:06 17:46	16:44-17:06/22 17:46	06:44 19:52	18:52-19:20/28 20:58
3	08:48 15:47	08:09 16:46	07:04 17:48	16:44-17:05/21 17:48	06:41 19:54	19:26-19:28/2 20:56
4	08:47 15:49	08:07 16:48	07:01 17:51	16:44-17:03/19 17:51	06:39 19:56	19:22-19:29/7 20:58
5	08:47 15:50	08:05 16:51	06:58 17:53	16:46-17:02/16 17:53	06:36 19:58	18:50-19:31/41 21:00
6	08:46 15:51	08:03 16:53	06:56 17:55	16:48-17:00/12 17:55	06:33 20:00	18:50-19:34/44 21:02
7	08:46 15:53	08:00 16:55	06:53 17:57	06:53 17:57	06:31 20:02	18:49-19:35/46 21:04
8	08:45 15:54	07:58 16:57	06:51 17:59	06:28 17:59	06:28 20:04	18:50-19:38/48 21:06
9	08:44 15:56	07:56 17:00	06:48 18:01	06:25 18:01	06:25 20:06	18:49-19:39/50 21:08
10	08:43 15:58	07:54 17:02	06:45 18:03	06:23 18:03	06:23 20:08	18:50-19:42/52 21:10
11	08:43 15:59	07:52 17:04	06:43 18:06	06:20 18:06	06:20 20:10	18:50-19:43/53 21:12
12	08:42 16:01	07:50 17:06	06:40 18:08	06:18 18:08	06:18 20:12	18:50-19:43/53 21:14
13	08:41 16:03	07:47 17:09	06:37 18:10	06:15 18:10	06:15 20:15	18:51-19:44/53 21:16
14	08:40 16:05	07:45 17:11	06:35 18:12	06:12 18:12	06:12 20:17	18:52-19:43/51 21:18
15	08:39 16:06	07:43 17:13	06:32 18:14	06:10 18:14	06:10 20:19	19:15-19:43/28 18:54-19:13/19
16	08:38 16:08	07:40 17:15	06:29 18:16	06:07 18:16	06:07 20:21	19:15-19:42/27 18:55-19:10/15
17	08:36 16:10	07:38 17:17	06:27 18:18	06:05 18:18	06:05 20:23	19:17-19:41/24 18:59-19:07/8
18	08:35 16:12	07:36 17:20	06:24 18:20	06:02 18:20	06:02 20:25	19:18-19:39/21 21:26
19	08:34 16:14	07:33 17:22	06:21 18:22	06:00 18:22	06:00 20:27	19:22-19:38/16 21:28
20	08:32 16:16	07:31 17:24	06:19 18:25	05:57 18:25	05:57 20:29	19:24-19:37/13 21:30
21	08:31 16:18	07:29 17:26	06:16 18:27	05:55 18:27	05:55 20:31	19:27-19:33/6 21:31
22	08:30 16:20	07:26 17:29	06:13 18:29	05:52 18:29	05:52 20:33	04:48 21:33
23	08:28 16:22	07:24 17:31	06:11 18:31	05:50 18:31	05:50 20:35	04:46 21:35
24	08:26 16:24	07:21 17:33	06:08 18:33	05:47 18:33	05:47 20:38	04:44 21:37
25	08:25 16:26	07:19 17:35	06:05 18:35	05:45 18:35	05:45 20:40	04:43 21:38
26	08:23 16:29	07:16 17:37	06:03 18:37	05:42 18:37	05:42 20:42	04:41 21:40
27	08:22 16:31	07:14 17:40	06:00 18:39	05:40 18:39	05:40 20:44	04:40 21:42
28	08:20 16:33	07:11 17:42	05:57 18:41	18:03-18:14/11 18:41	05:37 20:46	04:38 21:43
29	08:18 16:35		05:55 18:43	17:59-18:16/17 18:43	05:35 20:48	04:37 21:45
30	08:16 16:37		06:52 19:45	18:57-19:18/21 19:45	05:33 20:50	04:36 21:47
31	08:14 16:39		06:49 19:48	18:56-19:20/24 19:48		04:34 21:48
Potential sun hours	235	265	365	425	507	529
Sum of minutes with flicker	0	163	186	791	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 13 - 19-B

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	July	August	September	October	November	December
1	04:27 22:06	05:12 21:26	06:14 18:49-19:43/54 20:12	07:14 18:52	07:19 16:34	08:21 15:42
2	04:28 22:06	05:14 21:24	06:16 18:48-19:41/53 20:09	07:16 18:49	07:21 16:32	08:23 15:41
3	04:29 22:05	05:16 21:22	06:18 18:48-19:39/51 20:07	07:18 18:46	07:24 16:29	08:24 15:41
4	04:29 22:05	05:18 21:20	06:20 18:47-19:36/49 20:04	07:20 18:44	07:26 16:27	08:26 15:40
5	04:30 22:04	05:20 21:17	06:22 18:45-19:33/48 20:01	07:22 18:41	07:28 16:25	08:28 15:39
6	04:31 22:03	05:22 21:15	06:24 18:45-19:30/45 19:59	07:24 18:38	07:30 16:23	08:29 15:38
7	04:33 22:03	05:24 21:13	06:26 18:45-19:28/43 19:56	07:26 18:36	07:32 16:21	08:31 15:38
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9	04:35 22:01	05:28 21:09	06:30 19:17-19:23/6 19:51 18:45-19:15/30	07:30 17:21-17:36/15 18:30	07:37 16:17	08:33 15:36
10	04:36 22:00	05:30 21:06	06:32 18:45-19:15/30 19:48	07:32 17:20-17:38/18 18:28	07:39 16:15	08:35 15:36
11	04:37 21:59	05:32 21:04	06:34 18:46-19:13/27 19:45	07:34 17:18-17:39/21 18:25	07:41 16:13	08:36 15:36
12	04:39 21:58	05:34 21:02	06:36 18:46-19:12/26 19:43	07:36 17:17-17:39/22 18:23	07:43 16:11	08:37 15:35
13	04:40 21:57	05:36 20:59	06:38 18:47-19:11/24 19:40	07:39 17:16-17:39/23 18:20	07:45 16:09	08:38 15:35
14	04:42 21:56	05:38 20:57	06:40 18:49-19:09/20 19:37	07:41 17:15-17:39/24 18:17	07:47 16:07	08:40 15:35
15	04:43 21:54	05:40 20:55	06:42 18:50-19:06/16 19:35	07:43 17:16-17:40/24 18:15	07:49 16:05	08:41 15:35
16	04:44 21:53	05:42 20:52	06:44 18:54-19:02/8 19:32	07:45 17:15-17:39/24 18:12	07:52 16:03	08:42 15:35
17	04:46 21:52	05:44 20:50	06:46 19:29	07:47 17:15-17:39/24 18:10	07:54 16:02	08:43 15:35
18	04:48 21:50	05:46 20:47	06:48 19:27	07:49 17:15-17:37/22 18:07	07:56 16:00	08:43 15:35
19	04:49 21:49	05:48 20:45	06:50 19:24	07:51 17:17-17:35/18 18:05	07:58 15:58	08:44 15:35
20	04:51 21:47	05:50 20:43	06:52 19:21	07:53 17:17-17:32/15 18:02	08:00 15:57	08:45 15:36
21	04:52 21:46	05:52 20:40	06:54 19:18	07:55 17:18-17:30/12 18:00	08:02 15:55	08:46 15:36
22	04:54 21:44	05:54 20:38	06:56 19:16	07:58 17:20-17:27/7 17:57	08:04 15:54	08:46 15:36
23	04:56 21:42	05:56 19:29-19:40/11 20:35	06:58 19:13	08:00 17:24-17:25/1 17:55	08:06 15:52	08:47 15:37
24	04:58 21:41	05:58 19:27-19:42/15 20:33	07:00 19:10	08:02 17:52	08:08 15:51	08:47 15:37
25	04:59 21:39	06:00 19:24-19:43/19 20:30	07:02 19:08	08:04 17:50	08:10 15:49	08:47 15:38
26	05:01 21:37	06:02 19:20-19:43/23 20:27	07:04 19:05	07:06 16:48	08:12 15:48	08:48 15:39
27	05:03 21:35	06:04 19:18-19:43/25 20:25 18:58-19:11/13	07:06 19:02	07:08 16:45	08:14 15:47	08:48 15:40
28	05:05 21:33	06:06 19:17-19:44/27 20:22 18:56-19:13/17	07:08 19:00	07:11 16:43	08:16 15:46	08:48 15:40
29	05:07 21:32	06:08 18:53-19:44/51 20:20	07:10 18:57	07:13 16:41	08:17 15:45	08:48 15:41
30	05:09 21:30	06:10 18:52-19:44/52 20:17	07:12 18:54	07:15 16:38	08:19 15:43	08:48 15:42
31	05:10 21:28	06:12 18:50-19:44/54 20:15		07:17 16:36		08:48 15:43
Potential sun hours	530	470	385	324	248	216
Sum of minutes with flicker	0	307	570	282	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 14 - 16-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238
Idle start wind speed3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48 15:45 16:42	08:12 16:42	07:09 17:45-17:17/12 17:44 19:50	06:47 19:50	05:30 20:52 21:49	04:33 22:06 22:06	04:27 22:06 22:06	05:12 21:26 20:12	06:14 20:12 18:52	07:14 18:52 17:16	07:19 16:34 18:23	08:21 15:42 18:23
2	08:48 15:46 16:44	08:11 16:44	07:06 17:46 19:52	06:44 19:52	05:28 20:54 21:51	04:32 22:06 22:06	04:28 21:24 20:09	05:14 20:16 18:49	06:16 20:09 18:49	07:16 18:49 17:18	07:21 16:32 17:45-17:56/11	08:23 15:41 18:24
3	08:48 15:47 16:46	08:09 16:46	07:04 17:48 19:54	06:41 19:54	05:26 20:56 21:52	04:31 22:05 22:05	04:29 21:22 20:07	05:16 21:22 18:46	06:18 20:07 18:46	07:18 18:46 17:42-17:57/15	07:24 16:29 17:26	08:24 15:41 18:26
4	08:47 15:49 16:48	08:07 16:48	07:01 17:51 19:56	06:39 19:56	05:23 20:58 21:54	04:30 22:05 22:05	04:30 21:20 20:04	05:18 20:18 18:44	06:20 20:04 18:44	07:20 18:44 17:41-17:58/17	07:26 16:27 16:25	08:26 15:40 15:38
5	08:47 15:50 16:51	08:05 16:51	06:58 17:53 19:58	06:36 19:58	05:21 21:00 21:55	04:29 21:55 22:04	04:31 22:04 20:01	05:20 21:17 18:41	06:22 20:01 18:41	07:22 18:41 17:39-17:59/20	07:28 16:25 16:23	08:28 15:39 15:38
6	08:46 15:52 16:53	08:03 16:53	06:56 17:55 19:59	06:33 20:00	05:19 21:02 21:56	04:28 22:03 22:03	04:32 21:15 19:59	05:22 20:15 18:38	06:24 19:59 18:38	07:24 18:38 17:38-17:59/21	07:30 16:23 16:21	08:29 15:38 15:38
7	08:46 15:53 16:55	08:00 16:55	06:53 17:57 19:59	06:31 20:02	05:17 21:04 21:57	04:33 22:03 22:03	04:33 21:13 19:56	05:24 20:26 18:36	06:26 19:56 18:36	07:26 18:36 17:37-17:59/22	07:32 16:21 16:19	08:31 15:38 15:37
8	08:45 15:55 16:57	07:58 16:57	06:51 17:59 19:59	06:28 20:04	05:15 21:06 21:58	04:27 22:02 22:02	04:34 21:11 19:53	05:26 20:28 18:33	06:28 19:53 18:33	07:28 18:33 17:37-17:58/21	07:34 16:19 16:17	08:32 15:37 15:37
9	08:44 15:56 17:00	07:56 17:00	06:48 18:01 19:59	06:25 20:06	05:12 21:08 21:59	04:26 21:59 22:01	04:35 22:01 19:51	05:28 21:09 18:30	06:30 19:51 18:30	07:30 18:30 17:37-17:58/21	07:37 16:17 16:17	08:33 15:37 15:37
10	08:43 15:58 17:02	07:54 17:02	06:45 18:03 19:59	06:23 20:08	05:10 21:10 22:00	04:25 22:00 22:00	04:36 21:06 19:48	05:30 20:32 18:28	06:32 19:48 18:28	07:32 18:28 17:38-17:59/21	07:39 16:15 16:15	08:35 15:36 15:36
11	08:43 15:59 17:04	07:52 17:04	06:43 18:06 19:59	06:20 20:10	05:08 21:12 22:01	04:25 22:01 21:59	04:37 21:59 21:04	05:32 21:04 18:25	06:34 19:45 18:25	07:34 18:25 17:37-17:56/19	07:41 16:13 16:13	08:36 15:36 15:36
12	08:42 16:01 17:06	07:50 17:06	06:40 18:08 19:59	06:40 20:12	05:06 21:14 22:02	04:39 22:02 21:58	04:39 21:02 19:43	05:34 21:02 18:23	06:36 19:43 18:23	07:36 18:23 17:38-17:53/15	07:43 16:11 16:11	08:37 15:35 15:35
13	08:41 16:03 17:09	07:47 17:09	06:37 18:10 19:59	06:37 20:15	05:04 21:16 22:03	04:24 22:03 21:57	04:40 21:59 19:40	05:36 21:40 18:20	06:38 19:40 18:20	07:39 18:20 17:38-17:51/13	07:45 16:09 16:09	08:38 15:35 15:35
14	08:40 16:05 17:11	07:45 17:11	06:35 18:12 19:59	06:35 20:17	05:02 21:18 22:04	04:23 22:04 21:55	04:42 21:57 19:37	05:38 21:40 18:17	06:40 19:37 18:17	07:41 18:17 17:41-17:46/5	07:47 16:07 16:07	08:40 15:35 15:35
15	08:39 16:07 17:13	07:43 17:13	06:32 18:14 19:59	06:32 20:19	05:00 21:20 22:04	04:23 22:04 21:54	04:43 21:54 19:35	05:40 21:55 18:15	06:42 19:35 18:15	07:43 18:15 17:41-17:46/5	07:49 16:05 16:05	08:41 15:35 15:35
16	08:38 16:08 17:15	07:40 17:15	06:30 18:16 19:59	06:30 20:21	04:58 21:22 22:05	04:23 22:05 21:53	04:45 21:53 19:32	05:42 21:53 18:12	06:44 19:32 18:12	07:45 18:12 17:41-17:46/5	07:52 16:03 16:03	08:42 15:35 15:35
17	08:36 16:10 17:18	07:38 17:18	06:27 18:18 19:59	06:27 20:23	04:56 21:24 22:06	04:42 22:06 21:52	04:46 21:52 19:30	05:44 21:50 18:10	06:46 19:29 18:10	07:47 18:10 17:41-17:46/5	07:54 16:02 16:02	08:43 15:35 15:35
18	08:35 16:12 17:20	07:36 17:20	06:24 18:20 19:59	06:24 20:25	04:55 21:26 22:06	04:42 22:06 21:50	04:48 21:50 19:27	05:46 21:47 18:07	06:48 19:27 18:07	07:49 18:07 17:41-17:46/5	07:56 16:00 16:00	08:43 15:35 15:35
19	08:34 16:14 17:22	07:33 17:22	06:22 18:22 19:59	06:22 20:27	04:53 21:28 22:07	04:42 22:07 21:49	04:49 21:49 19:25	05:48 21:49 18:05	06:50 21:49 18:05	07:51 18:05 17:41-17:46/5	07:58 15:58 15:58	08:44 15:35 15:35
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21	08:31 16:18 17:26	07:29 17:26	06:16 18:27 19:59	06:16 20:31	04:49 21:31 22:07	04:42 22:07 21:46	04:53 21:46 19:20	05:52 21:46 18:00	06:54 21:46 18:00	07:55 18:00 17:41-17:46/5	08:02 15:55 15:55	08:46 15:36 15:36
22	08:30 16:20 17:29	07:26 17:29	06:13 18:29 19:59	06:13 20:33	04:48 21:33 22:07	04:23 22:07 21:44	04:54 21:44 19:16	05:54 21:44 17:57	06:56 21:44 17:57	07:58 17:57 17:41-17:46/5	08:04 15:54 15:54	08:46 15:36 15:36
23	08:28 16:22 17:31	07:24 17:31	06:11 18:31 19:59	06:11 20:35	04:46 21:35 22:08	04:23 22:08 21:42	04:56 21:42 19:35	05:56 21:42 17:55	06:58 21:42 17:55	08:00 17:55 17:41-17:46/5	08:06 15:52 15:52	08:47 15:37 15:37
24	08:26 16:24 17:33	07:21 17:33	06:08 18:33 19:59	06:08 20:38	04:44 21:37 22:08	04:23 22:08 21:41	04:58 21:41 19:33	05:58 21:41 17:52	07:00 21:41 17:52	08:02 17:52 17:41-17:46/5	08:08 15:51 15:51	08:47 15:38 15:38
25	08:25 16:27 17:35	07:19 17:35	06:05 18:35 19:59	06:05 20:40	04:43 21:38 22:08	04:23 22:08 21:39	04:59 21:39 19:08	06:00 21:39 17:50	07:02 21:39 17:50	08:04 17:50 17:41-17:46/5	08:10 15:49 15:49	08:47 15:38 15:38
26	08:23 16:29 17:38	07:16 17:38	06:03 18:37 19:59	06:03 20:42	04:41 21:40 22:08	04:24 22:08 21:37	05:01 21:37 20:28	06:02 21:37 20:28	07:04 21:37 20:28	08:06 20:28 19:05	08:12 15:48 15:48	08:48 15:39 15:39
27	08:22 16:31 17:40	07:14 17:40	06:00 18:39 19:59	06:00 20:44	04:40 21:42 22:08	04:24 22:08 21:35	05:03 21:35 20:25	06:04 21:35 20:25	07:06 21:35 20:25	08:08 20:25 19:02	08:14 15:47 15:47	08:48 15:40 15:40
28	08:20 16:33 17:42	07:11 17:42	05:57 18:41 19:59	05:57 20:46	04:38 21:43 22:07	04:25 22:07 21:33	05:05 21:33 20:22	06:06 21:33 20:22	07:08 21:33 20:22	08:10 20:22 19:00	08:16 15:46 15:46	08:48 15:41 15:41
29	08:18 16:35 17:51	07:09 17:51	05:55 18:43 19:59	05:55 20:48	04:37 21:45 22:07	04:26 22:07 21:32	05:07 21:32 20:20	06:08 21:32 20:20	07:10 21:32 20:20	08:12 20:20 18:57	08:17 15:45 15:45	08:48 15:41 15:41
30	08:16 16:37 17:54	07:07 17:54	05:52 18:45 19:59	05:52 20:50	04:36 21:47 22:07	04:26 22:07 21:30	05:09 21:30 20:17	06:10 21:30 20:17	07:12 21:30 20:17	08:14 20:17 18:54	08:19 15:43 15:43	08:48 15:42 15:42
31	08:14 16:40	07:05 16:40	05:49 18:48 19:59	05:49 19:48	04:35 21:48 22:07	04:26 22:07 21:28	05:10 21:28 20:15	06:12 20:15 16:36	07:14 20:15 16:36	08:16 16:36 16:36	08:21 15:43 15:43	08:48 15:43 15:43
Potential sun hours	235	265	365	425	507	529	529	470	385	324	248	216
Sum of minutes with flicker	0	12	197	0	0	0	0	0	0	209	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 15 - 13-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January	February	March	April	May	June
1	08:48 13:26-14:05/39 15:45	08:13 08:48-09:10/22 15:08-15:40/32 16:42 15:50-16:09/19	07:09 08:31-09:04/33 17:44	06:47 19:50	05:30 20:52	04:33 21:50
2	08:48 13:27-14:05/38 15:46	08:11 08:47-09:11/24 15:08-15:40/32 16:44 15:50-16:12/22	07:06 08:34-09:01/27 17:46	06:44 19:52	05:28 20:54	04:32 21:51
3	08:48 13:29-14:05/36 15:47	08:09 08:46-09:13/27 15:09-15:40/31 16:46 15:50-16:15/25	07:04 08:44-08:57/13 17:48	06:41 19:54	05:26 20:56	04:31 21:52
4	08:47 13:38-14:06/28 15:49 13:32-13:36/4	08:07 08:44-09:13/29 15:09-15:39/30 16:48 15:50-16:16/26	07:01 17:51	06:39 19:56	05:23 20:58	04:30 21:54
5	08:47 13:38-14:06/28 15:50	08:05 08:43-09:14/31 15:10-15:39/29 16:51 15:50-16:19/29	06:59 17:53	06:36 19:58	05:21 21:00	04:29 21:55
6	08:46 13:39-14:06/27 15:51	08:03 08:40-09:14/34 15:11-15:38/27 16:53 15:50-16:22/32	06:56 17:55	06:33 20:00	05:19 21:02	04:28 21:56
7	08:46 13:39-14:06/27 15:53	08:01 08:38-09:15/37 15:13-15:38/25 16:55 15:51-16:23/32	06:53 17:57	06:31 20:02	05:17 21:05	04:27 21:57
8	08:45 13:40-14:06/26 15:54	07:58 08:34-09:15/41 15:13-15:36/23 16:57 15:51-16:23/32	06:51 17:59	06:28 20:04	05:15 21:07	04:27 21:58
9	08:44 13:41-14:06/25 15:56	07:56 08:32-09:15/43 15:15-15:35/20 17:00 15:52-16:24/32	06:48 18:01	06:26 20:06	05:12 21:09	04:26 22:00
10	08:44 13:42-14:05/23 15:58	07:54 08:31-09:16/45 15:18-15:33/15 17:02 15:52-16:23/31	06:45 18:04	06:23 20:08	05:10 21:11	04:25 22:00
11	08:43 13:44-14:05/21 15:59	07:52 08:29-09:15/46 15:21-15:29/8 17:04 15:53-16:23/30	06:43 18:06	06:20 20:10	05:08 21:13	04:25 22:01
12	08:42 13:45-14:05/20 16:01 15:14-15:22/8	07:50 08:28-09:15/47 17:06 15:55-16:23/28	06:40 18:08	06:18 20:13	05:06 21:15	04:24 22:02
13	08:41 13:47-14:05/18 16:03 15:13-15:25/12	07:47 08:27-09:14/47 17:09 15:57-16:22/25	06:38 18:10	06:15 20:15	05:04 21:17	04:24 22:03
14	08:40 13:48-14:03/15 16:05 15:11-15:26/15	07:45 08:26-09:14/48 17:11 16:00-16:21/21	06:35 18:12	06:12 20:17	05:02 21:18	04:23 22:04
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16	08:38 13:54-14:01/7 16:08 15:09-15:29/20	07:41 08:25-09:13/48 17:15 16:06-16:18/12	06:30 18:16	06:07 20:21	04:58 21:22	04:23 22:05
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18	08:35 15:08-15:32/24 16:12	07:36 08:25-09:12/47 17:20	06:24 18:20	06:02 20:25	04:55 21:26	04:22 22:06
19	08:34 15:08-15:33/25 16:14	07:33 08:25-09:12/47 17:22	06:22 18:23	06:00 20:27	04:53 21:28	04:22 22:07
20	08:33 15:07-15:34/27 16:16	07:31 08:24-09:12/48 17:24	06:19 18:25	05:57 20:29	04:51 21:30	04:22 22:07
21	08:31 15:07-15:35/28 16:18	07:29 08:24-09:12/48 17:26	06:16 18:27	05:55 20:31	04:49 21:32	04:22 22:07
22	08:30 15:07-15:36/29 16:20	07:26 08:25-09:12/47 17:29	06:14 18:29	05:52 20:33	04:48 21:33	04:23 22:08
23	08:28 15:07-15:37/30 16:22	07:24 08:25-09:11/46 17:31	06:11 18:31	05:50 20:36	04:46 21:35	04:23 22:08
24	08:27 15:07-15:37/30 16:24	07:21 08:26-09:10/44 17:33	06:08 18:33	05:47 20:38	04:44 21:37	04:23 22:08
25	08:25 15:06-15:38/32 16:27	07:19 08:26-09:09/43 17:35	06:05 18:35	05:45 20:40	04:43 21:39	04:23 22:08
26	08:23 15:06-15:38/32 16:29	07:16 08:26-09:08/42 17:38	06:03 18:37	05:42 20:42	04:41 21:40	04:24 22:08
27	08:22 15:06-15:39/33 16:31 15:55-15:57/2	07:14 08:28-09:07/39 17:40	06:00 18:39	05:40 20:44	04:40 21:42	04:24 22:08
28	08:20 08:55-09:01/6 15:06-15:39/33 16:33 15:53-15:59/6	07:11 08:29-09:05/36 17:42	05:57 18:41	05:37 20:46	04:38 21:44	04:25 22:08
29	08:18 08:52-09:04/12 15:06-15:39/33 16:35 15:52-16:02/10		05:55 18:43	05:35 20:48	04:37 21:45	04:25 22:07
30	08:16 08:50-09:07/17 15:07-15:40/33 16:37 15:51-16:04/13		06:52 19:46	05:33 20:50	04:36 21:47	04:26 22:07
31	08:15 08:49-09:09/20 15:07-15:40/33 16:40 15:51-16:07/16		06:49 19:48		04:34 21:48	
Potential sun hours	235	265	365	425	507	529
Sum of minutes with flicker	1013	1840	73	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 15 - 13-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	July	August	September	October		November		December	
1	04:27 22:07	05:12 21:26	06:14 20:12	07:14 18:52		07:19 16:34	07:59-08:44/45 15:22-15:53/31	08:21 15:42	13:26-13:47/21 14:57-15:02/5
2	04:28 22:06	05:14 21:24	06:16 20:09	07:16 18:49		07:21 16:32	08:01-08:45/44 15:21-15:53/32	08:23 15:41	13:26-13:48/22 13:26-13:49/23
3	04:29 22:06	05:16 21:22	06:18 20:07	07:18 18:46		07:24 16:29	08:03-08:45/42 15:21-15:53/32	08:24 15:41	13:26-13:49/23 13:26-13:50/24
4	04:30 22:05	05:18 21:20	06:20 20:04	07:20 18:44		07:26 16:27	08:05-08:44/39 15:20-15:53/33	08:26 15:40	13:26-13:50/24 13:26-13:51/25
5	04:30 22:04	05:20 21:18	06:22 20:02	07:22 18:41		07:28 16:25	08:09-08:45/36 15:20-15:53/33	08:28 15:39	13:26-13:51/25 13:25-13:51/26
6	04:32 22:04	05:22 21:15	06:24 19:59	07:24 18:38		07:30 16:23	08:12-08:44/32 15:20-15:50/30	08:29 15:38	13:25-13:51/26 13:25-13:53/28
7	04:33 22:03	05:24 21:13	06:26 19:56	07:26 18:36		07:32 16:21	08:14-08:44/30 15:20-15:48/28	08:31 15:38	13:25-13:53/28 13:26-13:54/28
8	04:34 22:02	05:26 21:11	06:28 19:54	07:28 18:33		07:35 16:19	08:15-08:43/28 15:20-15:46/26	08:32 15:37	13:26-13:54/28 13:19-13:54/35
9	04:35 22:01	05:28 21:09	06:30 19:51	07:30 18:30		07:37 16:17	08:16-08:42/26 15:20-15:43/23	08:34 15:36	13:19-13:54/35 13:18-13:55/37
10	04:36 22:00	05:30 21:06	06:32 19:48	07:32 18:28		07:39 16:15	08:18-08:42/24 15:21-15:42/21	08:35 15:36	13:18-13:55/37 13:17-13:55/38
11	04:37 21:59	05:32 21:04	06:34 19:45	07:35 18:25	09:19-09:30/11	07:41 16:13	08:19-08:40/21 15:22-15:39/17	08:36 15:36	13:17-13:55/38 13:16-13:55/39
12	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	09:08-09:34/26	07:43 16:11	08:21-08:40/19 15:22-15:37/15	08:37 15:35	13:16-13:55/39 13:17-13:57/40
13	04:40 21:57	05:36 21:00	06:38 19:40	07:39 18:20	09:04-09:36/32	07:45 16:09	08:23-08:38/15 15:24-15:35/11	08:39 15:35	13:17-13:57/40 13:16-13:57/41
14	04:42 21:56	05:38 20:57	06:40 19:37	07:41 18:17	09:03-09:38/35	07:47 16:07	08:25-08:35/10 15:24-15:33/9	08:40 15:35	13:16-13:57/41 13:16-13:58/42
15	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	09:01-09:39/38	07:50 16:05	15:27-15:31/4 14:39-15:12/33	08:41 15:35	13:16-13:58/42 13:16-13:58/42
16	04:44 21:53	05:42 20:52	06:44 19:32	07:45 18:12	08:59-09:40/41	07:52 16:03	14:39-15:12/33 14:39-15:11/32	08:42 15:35	13:16-13:58/42 13:17-13:59/42
17	04:46 21:52	05:44 20:50	06:46 19:29	07:47 18:10	08:58-09:40/42	07:54 16:02	14:39-15:11/32 14:41-15:12/31	08:43 15:35	13:17-13:59/42 13:17-13:59/42
18	04:48 21:50	05:46 20:48	06:48 19:27	07:49 18:07	08:57-09:42/45	07:56 16:00	14:41-15:12/31 14:41-15:11/30	08:44 15:35	13:17-13:59/42 13:17-13:59/42
19	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:05	08:56-09:42/46	07:58 15:58	14:41-15:11/30 14:41-15:11/30	08:44 15:35	13:17-13:59/42 13:17-14:00/43
20	04:51 21:47	05:50 20:43	06:52 19:21	07:53 18:02	08:55-09:42/47	08:00 15:57	14:41-15:11/30 14:43-15:11/28	08:45 15:36	13:17-14:00/43 13:18-14:01/43
21	04:52 21:46	05:52 20:40	06:54 19:19	07:56 18:00	08:55-09:42/47	08:02 15:55	14:43-15:11/28 14:43-15:11/28	08:46 15:36	13:18-14:01/43 13:18-14:01/43
22	04:54 21:44	05:54 20:38	06:56 19:16	07:58 17:57	08:55-09:43/48	08:04 15:54	14:43-15:11/28 14:44-15:10/26	08:46 15:37	13:18-14:01/43 13:19-14:02/43
23	04:56 21:43	05:56 20:35	06:58 19:13	08:00 17:55	08:55-09:43/48	08:06 15:52	14:44-15:10/26 14:46-15:10/24	08:47 15:37	13:19-14:02/43 13:19-14:02/43
24	04:58 21:41	05:58 20:33	07:00 19:10	08:02 17:53	08:54-09:42/48	08:08 15:51	14:46-15:10/24 14:46-15:10/24	08:47 15:37	13:19-14:02/43 13:20-14:02/42
25	04:59 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:55-09:43/48	08:10 15:49	14:46-15:10/24 14:48-15:09/21	08:48 15:38	13:20-14:02/42 13:21-14:03/42
26	05:01 21:37	06:02 20:28	07:04 19:05	07:06 16:48	07:55-08:43/48 15:37-15:47/10	08:12 15:48	14:48-15:09/21 13:31-13:40/9	08:48 15:39	13:20-14:02/42 13:21-14:03/42
27	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:45	07:55-08:43/48 15:34-15:49/15	08:14 15:47	13:31-13:40/9 14:49-15:08/19	08:48 15:40	13:21-14:03/42 13:21-14:03/42
28	05:05 21:34	06:06 20:22	07:08 19:00	07:11 16:43	07:56-08:43/47 15:30-15:50/20	08:16 15:46	13:29-13:42/13 14:50-15:07/17	08:48 15:40	13:21-14:03/42 13:22-14:04/42
29	05:07 21:32	06:08 20:20	07:10 18:57	07:13 16:41	07:56-08:44/48 15:27-15:52/25	08:18 15:45	13:27-13:44/17 14:52-15:06/14	08:48 15:41	13:22-14:04/42 13:23-14:04/41
30	05:09 21:30	06:10 20:17	07:12 18:54	07:15 16:38	07:57-08:44/47 15:25-15:52/27	08:19 15:43	13:27-13:46/19 14:54-15:04/10	08:48 15:42	13:23-14:04/41 13:25-14:05/40
31	05:10 21:28	06:12 20:15		07:17 16:36	07:58-08:45/47 15:24-15:53/29			08:48 15:43	13:25-14:05/40 13:25-14:05/40
Potential sun hours	530	470	385	324		248		216	
Sum of minutes with flicker	0	0	0	1015		1600		1148	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 16 - 11-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:13	07:09	06:47	05:30	04:33	04:27	05:12	06:14	07:14	07:19	08:21
	15:45	16:42	17:44	19:50	20:52	21:49	22:06	21:26	20:12	18:52	16:34	15:43
2	08:48	08:11	07:06	06:44	05:28	04:32	04:28	05:14	06:16	07:16	07:21	08:23
	15:46	16:44	17:46	19:52	20:54	21:51	22:06	21:24	20:09	18:49	16:32	15:42
3	08:48	08:09	07:04	06:41	05:26	04:31	04:29	05:16	06:18	07:18	07:24	08:24
	15:48	16:46	17:49	19:54	20:56	21:52	22:05	21:22	20:07	18:46	16:29	15:41
4	08:47	08:07	07:01	06:39	05:24	04:30	04:30	05:18	06:20	07:20	07:26	08:26
	15:49	16:49	17:51	19:56	20:58	21:54	22:05	21:20	20:04	18:44	16:27	15:40
5	08:47	08:05	06:59	06:36	05:21	04:29	04:31	05:20	06:22	07:22	07:28	08:28
	15:50	16:51	17:53	19:58	21:00	21:55	22:04	21:17	20:02	18:41	16:25	15:39
6	08:46	08:03	06:56	06:33	05:19	04:28	04:32	05:22	06:24	07:24	07:30	08:29
	15:52	16:53	17:55	20:00	21:02	21:56	22:04	21:15	19:59	18:38	16:23	15:38
7	08:46	08:01	06:53	06:31	05:17	04:28	04:33	05:24	06:26	07:26	07:32	08:31
	15:53	16:55	17:57	20:02	21:04	21:57	22:03	21:13	19:56	18:36	16:21	15:38
8	08:45	07:58	06:51	06:28	05:15	04:27	04:34	05:26	06:28	07:28	07:34	08:32
	15:55	16:57	17:59	20:04	21:06	21:58	22:02	21:11	19:54	18:33	16:19	15:37
9	08:44	07:56	06:48	06:26	05:13	04:26	04:35	05:28	06:30	07:30	07:37	08:33
	15:56	17:00	18:01	20:06	21:08	21:59	22:01	21:09	19:51	18:30	16:17	15:37
10	08:44	07:54	06:45	06:23	05:10	04:25	04:36	05:30	06:32	07:32	07:39	08:35
	15:58	17:02	18:04	20:08	21:10	22:00	22:00	21:06	19:48	18:28	16:15	15:36
11	08:43	07:52	06:43	06:20	05:08	04:25	04:38	05:32	06:34	07:35	07:41	08:36
	16:00	17:04	18:06	20:10	21:12	22:01	21:59	21:04	19:45	18:25	16:13	15:36
12	08:42	07:50	06:40	06:18	05:06	04:24	04:39	05:34	06:36	07:37	07:43	08:37
	16:01	17:06	18:08	20:13	21:14	22:02	21:58	21:02	19:43	18:23	16:11	15:36
13	08:41	07:47	06:38	06:15	05:04	04:24	04:40	05:36	06:38	07:39	07:45	08:39
	16:03	17:09	18:10	20:15	21:16	22:03	21:57	20:59	19:40	18:20	16:09	15:35
14	08:40	07:45	06:35	06:13	05:02	04:23	04:42	05:38	06:40	07:41	07:47	08:40
	16:05	17:11	18:12	20:17	21:18	22:04	21:56	20:57	19:37	18:18	16:07	15:35
15	08:39	07:43	06:32	06:10	05:00	04:23	04:43	05:40	06:42	07:43	07:50	08:41
	16:07	17:13	18:14	20:19	21:20	22:04	21:54	20:55	19:35	18:15	16:05	15:35
16	08:38	07:41	06:30	06:07	04:58	04:23	04:45	05:42	06:44	07:45	07:52	08:42
	16:08	17:15	18:16	20:21	21:22	22:05	21:53	20:52	19:32	18:12	16:04	15:35
17	08:36	07:38	06:27	06:05	04:57	04:23	04:46	05:44	06:46	07:47	07:54	08:43
	16:10	17:18	18:18	20:23	21:24	22:06	21:52	20:50	19:29	18:10	16:02	15:35
18	08:35	07:36	06:24	06:02	04:55	04:23	04:48	05:46	06:48	07:49	07:56	08:43
	16:12	17:20	18:20	20:25	21:26	22:06	21:50	20:48	19:27	18:07	16:00	15:35
19	08:34	07:33	06:22	06:00	04:53	04:22	04:49	05:48	06:50	07:51	07:58	08:44
	16:14	17:22	18:23	20:27	21:28	22:07	21:49	20:45	19:24	18:05	15:59	15:35
20	08:32	07:31	06:19	05:57	04:51	04:22	04:51	05:50	06:52	07:53	08:00	08:45
	16:16	17:24	18:25	20:29	21:30	22:07	21:47	20:43	19:21	18:02	15:57	15:36
21	08:31	07:29	06:16	05:55	04:49	04:23	04:53	05:52	06:54	07:56	08:02	08:46
	16:18	17:27	18:27	20:31	21:32	22:07	21:46	20:40	19:19	18:00	15:55	15:36
22	08:30	07:26	06:14	05:52	04:48	04:23	04:54	05:54	06:56	07:58	08:04	08:46
	16:20	17:29	18:29	20:33	21:33	22:07	21:44	20:38	19:16	17:57	15:54	15:37
23	08:28	07:24	06:11	05:50	04:46	04:23	04:56	05:56	06:58	08:00	08:06	08:47
	16:22	17:31	18:31	20:35	21:35	22:08	21:42	20:35	19:13	17:55	15:52	15:37
24	08:27	07:21	06:08	05:47	04:44	04:23	04:58	05:58	07:00	08:02	08:08	08:47
	16:25	17:33	18:33	20:38	21:37	22:08	21:41	20:33	19:10	17:53	15:51	15:38
25	08:25	07:19	06:06	05:45	04:43	04:24	05:00	06:00	07:02	08:04	08:10	08:48
	16:27	17:35	18:35	20:40	21:39	22:08	21:39	20:30	19:08	17:50	15:50	15:38
26	08:23	07:16	06:03	05:42	04:41	04:24	05:01	06:02	07:04	08:06	08:12	08:48
	16:29	17:38	18:37	20:42	21:40	22:08	21:37	20:28	19:05	16:48	15:48	15:39
27	08:22	07:14	06:00	05:40	04:40	04:25	05:03	06:04	07:06	08:08	08:14	08:48
	16:31	17:40	18:39	20:44	21:42	22:08	21:35	20:25	19:02	16:45	15:47	15:40
28	08:20	07:11	05:57	05:38	04:39	04:25	05:05	06:06	07:08	08:11	08:16	08:48
	16:33	17:42	18:41	20:46	21:43	22:07	21:34	20:22	19:00	16:43	15:46	15:41
29	08:18		05:55	05:35	04:37	04:26	05:07	06:08	07:10	08:13	08:17	08:48
	16:35		18:43	20:48	21:45	22:07	21:32	20:20	18:57	16:41	15:45	15:42
30	08:16		06:52	05:33	04:36	04:26	05:09	06:10	07:12	08:15	08:19	08:48
	16:37		19:46	20:50	21:47	22:07	21:30	20:17	18:54	16:38	15:44	15:43
31	08:14		06:49		04:35		05:11	06:12		07:17		08:48
	16:40		19:48		21:48		21:28	20:15		16:36		15:44
Potential sun hours	235	265	365	425	507	528	529	470	385	324	248	216
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 17 - 09-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:48	08:13	07:09	06:47	05:30	04:33	04:27	05:12	06:14	07:14	07:19	08:21
	15:45	16:42	17:44	19:50	20:52	21:50	22:06	21:26	20:12	18:52	16:34	15:43
2	08:48	08:11	07:06	06:44	05:28	04:32	04:28	05:14	06:16	07:16	07:21	08:23
	15:46	16:44	17:46	19:52	20:54	21:51	22:06	21:24	20:09	18:49	16:32	15:42
3	08:48	08:09	07:04	06:41	05:26	04:31	04:29	05:16	06:18	07:18	07:24	08:24
	15:47	16:46	17:48	19:54	20:56	21:52	22:06	21:22	20:07	18:46	16:29	15:41
4	08:47	08:07	07:01	06:39	05:24	04:30	04:30	05:18	06:20	07:20	07:26	08:26
	15:49	16:48	17:51	19:56	20:58	21:54	22:05	21:20	20:04	18:44	16:27	15:40
5	08:47	08:05	06:59	06:36	05:21	04:29	04:31	05:20	06:22	07:22	07:28	08:28
	15:50	16:51	17:53	19:58	21:00	21:55	22:04	21:17	20:02	18:41	16:25	15:39
6	08:46	08:03	06:56	06:33	05:19	04:28	04:32	05:22	06:24	07:24	07:30	08:29
	15:52	16:53	17:55	20:00	21:02	21:56	22:04	21:15	19:59	18:38	16:23	15:38
7	08:46	08:01	06:53	06:31	05:17	04:27	04:33	05:24	06:26	07:26	07:32	08:31
	15:53	16:55	17:57	20:02	21:04	21:57	22:03	21:13	19:56	18:36	16:21	15:38
8	08:45	07:58	06:51	06:28	05:15	04:27	04:34	05:26	06:28	07:28	07:34	08:32
	15:55	16:57	17:59	20:04	21:06	21:58	22:02	21:11	19:54	18:33	16:19	15:37
9	08:44	07:56	06:48	06:26	05:13	04:26	04:35	05:28	06:30	07:30	07:37	08:33
	15:56	17:00	18:01	20:06	21:09	21:59	22:01	21:09	19:51	18:30	16:17	15:37
10	08:44	07:54	06:45	06:23	05:10	04:25	04:36	05:30	06:32	07:32	07:39	08:35
	15:58	17:02	18:04	20:08	21:11	22:00	22:00	21:06	19:48	18:28	16:15	15:36
11	08:43	07:52	06:43	06:20	05:08	04:25	04:38	05:32	06:34	07:35	07:41	08:36
	15:59	17:04	18:06	20:10	21:13	22:01	21:59	21:04	19:45	18:25	16:13	15:36
12	08:42	07:50	06:40	06:18	05:06	04:24	04:39	05:34	06:36	07:37	07:43	08:37
	16:01	17:06	18:08	20:13	21:14	22:02	21:58	21:02	19:43	18:23	16:11	15:35
13	08:41	07:47	06:38	06:15	05:04	04:24	04:40	05:36	06:38	07:39	07:45	08:39
	16:03	17:09	18:10	20:15	21:16	22:03	21:57	21:00	19:40	18:20	16:09	15:35
14	08:40	07:45	06:35	06:13	05:02	04:23	04:42	05:38	06:40	07:41	07:47	08:40
	16:05	17:11	18:12	20:17	21:18	22:04	21:56	20:57	19:37	18:18	16:07	15:35
15	08:39	07:43	06:32	06:10	05:00	04:23	04:43	05:40	06:42	07:43	07:50	08:41
	16:07	17:13	18:14	20:19	21:20	22:04	21:54	20:55	19:35	18:15	16:05	15:35
16	08:38	07:41	06:30	06:07	04:58	04:23	04:45	05:42	06:44	07:45	07:52	08:42
	16:08	17:15	18:16	20:21	21:22	22:05	21:53	20:52	19:32	18:12	16:04	15:35
17	08:36	07:38	06:27	06:05	04:57	04:23	04:46	05:44	06:46	07:47	07:54	08:43
	16:10	17:18	18:18	20:23	21:24	22:06	21:52	20:50	19:29	18:10	16:02	15:35
18	08:35	07:36	06:24	06:02	04:55	04:22	04:48	05:46	06:48	07:49	07:56	08:43
	16:12	17:20	18:20	20:25	21:26	22:06	21:50	20:48	19:27	18:07	16:00	15:35
19	08:34	07:33	06:22	06:00	04:53	04:22	04:49	05:48	06:50	07:51	07:58	08:44
	16:14	17:22	18:23	20:27	21:28	22:07	21:49	20:45	19:24	18:05	15:58	15:35
20	08:32	07:31	06:19	05:57	04:51	04:22	04:51	05:50	06:52	07:53	08:00	08:45
	16:16	17:24	18:25	20:29	21:30	22:07	21:47	20:43	19:21	18:02	15:57	15:36
21	08:31	07:29	06:16	05:55	04:49	04:23	04:53	05:52	06:54	07:56	08:02	08:46
	16:18	17:27	18:27	20:31	21:32	22:07	21:46	20:40	19:19	18:00	15:55	15:36
22	08:30	07:26	06:14	05:52	04:48	04:23	04:54	05:54	06:56	07:58	08:04	08:46
	16:20	17:29	18:29	20:33	21:33	22:08	21:44	20:38	19:16	17:57	15:54	15:37
23	08:28	07:24	06:11	05:50	04:46	04:23	04:56	05:56	06:58	08:00	08:06	08:47
	16:22	17:31	18:31	20:36	21:35	22:08	21:42	20:35	19:13	17:55	15:52	15:37
24	08:27	07:21	06:08	05:47	04:44	04:23	04:58	05:58	07:00	08:02	08:08	08:47
	16:24	17:33	18:33	20:38	21:37	22:08	21:41	20:33	19:10	17:53	15:51	15:38
25	08:25	07:19	06:06	05:45	04:43	04:24	05:00	06:00	07:02	08:04	08:10	08:48
	16:27	17:35	18:35	20:40	21:39	22:08	21:39	20:30	19:08	17:50	15:50	15:38
26	08:23	07:16	06:03	05:42	04:41	04:24	05:01	06:02	07:04	08:06	08:12	08:48
	16:29	17:38	18:37	20:42	21:40	22:08	21:37	20:28	19:05	16:48	15:48	15:39
27	08:22	07:14	06:00	05:40	04:40	04:24	05:03	06:04	07:06	08:08	08:14	08:48
	16:31	17:40	18:39	20:44	21:42	22:08	21:35	20:25	19:02	16:45	15:47	15:40
28	08:20	07:11	05:57	05:38	04:39	04:25	05:05	06:06	07:08	08:11	08:16	08:48
	16:33	17:42	18:41	20:46	21:43	22:07	21:34	20:22	19:00	16:43	15:46	15:41
29	08:18		05:55	05:35	04:37	04:26	05:07	06:08	07:10	08:13	08:17	08:48
	16:35		18:43	20:48	21:45	22:07	21:32	20:20	18:57	16:41	15:45	15:42
30	08:16		06:52	05:33	04:36	04:26	05:09	06:10	07:12	08:15	08:19	08:48
	16:37		19:46	20:50	21:47	22:07	21:30	20:17	18:54	16:38	15:44	15:43
31	08:14		06:49		04:35		05:11	06:12		07:17		08:48
	16:40		19:48		21:48		21:28	20:15		16:36		15:44
Potential sun hours	235	265	365	425	507	529	529	470	385	324	248	216
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 18 - 08-B

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June
1	08:48 15:45	08:13 08:46-08:55/9 16:42	07:09 17:44	06:47 07:23-07:50/27 19:50	05:30 20:52	04:33 21:50
2	08:48 15:46	08:11 08:44-08:57/13 16:44	07:06 17:46	06:44 07:23-07:51/28 19:52	05:28 20:54	04:32 21:51
3	08:48 15:47	08:09 08:42-08:59/17 16:46	07:04 17:49	06:41 07:23-07:50/27 19:54	05:26 20:56	04:31 21:52
4	08:47 15:49	08:07 08:39-08:59/20 16:48	07:01 17:51	06:39 07:23-07:48/25 19:56	05:24 20:58	04:30 21:54
5	08:47 15:50	08:05 08:37-09:00/23 16:51	06:59 17:53	06:36 07:24-07:48/24 19:58	05:21 21:00	04:29 21:55
6	08:46 15:52	08:03 08:37-09:01/24 16:53	06:56 17:55	06:33 07:24-07:46/22 20:00	05:19 21:02	04:28 21:56
7	08:46 15:53	08:01 08:37-09:02/25 16:55	06:53 17:57	06:31 07:25-07:45/20 20:02	05:17 21:05	04:27 21:57
8	08:45 15:55	07:58 08:36-09:02/26 16:57	06:51 17:59	06:28 07:26-07:43/17 20:04	05:15 21:07	04:27 21:58
9	08:44 15:56	07:56 08:36-09:02/26 17:00	06:48 18:01	06:26 07:28-07:40/12 20:06	05:13 21:09	04:26 21:59
10	08:44 15:58	07:54 08:36-09:03/27 17:02	06:45 18:04	06:23 20:08	05:10 21:11	04:25 22:00
11	08:43 15:59	07:52 08:36-09:02/26 17:04	06:43 18:06	06:20 20:11	05:08 21:13	04:25 22:01
12	08:42 16:01	07:50 08:37-09:02/25 17:06	06:40 18:08	06:18 20:13	05:06 21:15	04:24 22:02
13	08:41 16:03	07:47 08:37-09:01/24 17:09	06:38 18:10	06:15 20:15	05:04 21:17	04:24 22:03
14	08:40 16:05	07:45 08:38-09:01/23 17:11	06:35 18:12	06:13 20:17	05:02 21:18	04:23 22:04
15	08:39 16:07	07:43 08:39-09:01/22 17:13	06:32 18:14	06:10 20:19	05:00 21:20	04:23 22:05
16	08:38 16:08	07:41 08:39-08:59/20 17:15	06:30 18:16	06:07 20:21	04:58 21:22	04:23 22:05
17	08:36 16:10	07:38 08:41-08:58/17 17:18	06:27 18:18	06:05 20:23	04:57 21:24	04:23 22:06
18	08:35 16:12	07:36 08:43-08:55/12 17:20	06:24 18:20	06:02 20:25	04:55 21:26	04:22 22:06
19	08:34 16:14	07:34 08:48-08:51/3 17:22	06:22 18:23	06:00 20:27	04:53 21:28	04:22 22:07
20	08:33 16:16	07:31 17:24	06:19 18:25	05:57 20:29	04:51 21:30	04:22 22:07
21	08:31 16:18	07:29 17:27	06:16 18:27	05:55 20:31	04:49 21:32	04:22 22:07
22	08:30 16:20	07:26 17:29	06:14 18:29	05:52 20:33	04:48 21:33	04:23 22:08
23	08:28 16:22	07:24 17:31	06:11 18:31	05:50 20:36	04:46 21:35	04:23 22:08
24	08:27 16:24	07:21 17:33	06:08 06:36-06:46/10 18:33	05:47 20:38	04:44 21:37	04:23 22:08
25	08:25 16:27	07:19 17:35	06:06 06:33-06:48/15 18:35	05:45 20:40	04:43 21:39	04:24 22:08
26	08:23 16:29	07:16 17:38	06:03 06:30-06:49/19 18:37	05:42 20:42	04:41 21:40	04:24 22:08
27	08:22 16:31	07:14 17:40	06:00 06:28-06:50/22 18:39	05:40 20:44	04:40 21:42	04:24 22:08
28	08:20 16:33	07:11 17:42	05:57 06:26-06:51/25 18:41	05:38 20:46	04:39 21:44	04:25 22:08
29	08:18 16:35		05:55 06:25-06:51/26 18:43	05:35 20:48	04:37 21:45	04:26 22:07
30	08:16 16:37		06:52 07:25-07:51/26 19:46	05:33 20:50	04:36 21:47	04:26 22:07
31	08:15 08:48-08:52/4 16:40		06:49 07:24-07:51/27 19:48		04:35 21:48	
Potential sun hours	235	265	365	425	507	529
Sum of minutes with flicker	4	382	170	202	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 18 - 08-B

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	July	August	September	October	November	December
1	04:27 22:07	05:12 21:26	06:14 20:12	07:14 18:52	07:19 16:34	08:05-08:32/27 15:43
2	04:28 22:06	05:14 21:24	06:16 20:09	07:16 18:49	07:21 16:32	08:06-08:32/26 15:42
3	04:29 22:06	05:16 21:22	06:18 20:07	07:18 18:46	07:24 16:29	08:06-08:32/26 15:41
4	04:30 22:05	05:18 21:20	06:20 20:04	07:20 18:44	07:26 16:27	08:06-08:31/25 15:40
5	04:31 22:04	05:20 21:18	06:22 20:02	07:22 18:41	07:28 16:25	08:07-08:31/24 15:39
6	04:32 22:04	05:22 21:15	06:24 19:59	07:24 18:38	07:30 16:23	08:07-08:30/23 15:38
7	04:33 22:03	05:24 21:13	06:26 19:56	07:26 18:36	07:32 16:21	08:09-08:30/21 15:38
8	04:34 22:02	05:26 21:11	06:28 19:54	07:28 18:33	07:35 16:19	08:11-08:29/18 15:37
9	04:35 22:01	05:28 21:09	06:30 19:51	07:30 18:30	07:37 16:17	08:13-08:28/15 15:37
10	04:36 22:00	05:30 21:06	06:32 19:48	07:32 18:28	07:39 16:15	08:16-08:27/11 15:36
11	04:38 21:59	05:32 21:04	06:34 19:46	07:35 18:25	07:41 16:13	08:18-08:25/7 15:36
12	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	07:43 16:11	08:21-08:22/1 15:35
13	04:40 21:57	05:36 21:00	06:38 19:40	07:39 18:20	07:45 16:09	08:39 15:35
14	04:42 21:56	05:38 20:57	06:40 19:37	07:41 18:18	07:47 16:07	08:40 15:35
15	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:50 16:05	08:41 15:35
16	04:45 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:52 16:04	08:42 15:35
17	04:46 21:52	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:02	08:43 15:35
18	04:48 21:50	05:46 20:48	06:48 19:27	07:49 18:07	07:56 16:00	08:44 15:35
19	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:58	08:44 15:35
20	04:51 21:47	05:50 20:43	06:52 19:21	07:53 18:02	08:00 15:57	08:45 15:36
21	04:53 21:46	05:52 20:40	06:54 19:19	07:56 18:00	08:02 15:55	08:46 15:36
22	04:54 21:44	05:54 20:38	06:56 19:16	07:58 17:57	08:04 15:54	08:46 15:36
23	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:47 15:37
24	04:58 21:41	05:58 20:33	07:00 19:10	08:02 17:53	09:13-09:24/11 15:51	08:47 15:38
25	05:00 21:39	06:00 20:30	07:02 19:08	08:04 17:50	09:12-09:27/15 15:50	08:48 15:38
26	05:01 21:37	06:02 20:28	07:04 19:05	07:06 16:48	08:10-08:28/18 15:48	08:48 15:39
27	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:45	08:08-08:29/21 15:47	08:48 15:40
28	05:05 21:34	06:06 20:22	07:08 19:00	07:11 16:43	08:08-08:31/23 15:46	08:48 15:41
29	05:07 21:32	06:08 20:20	07:10 18:57	07:13 16:41	08:07-08:31/24 15:45	08:48 15:42
30	05:09 21:30	06:10 20:17	07:12 18:54	07:15 16:38	08:06-08:31/25 15:44	08:48 15:43
31	05:11 21:28	06:12 20:15		07:17 16:36	08:06-08:32/26 15:44	08:48 15:44
Potential sun hours	530	470	385	324	248	216
Sum of minutes with flicker	0	0	384	163	224	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 19 - 03-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	January	February	March	April	May	June
1	08:48 09:39-09:57/18 15:45 10:18-10:41/23	08:13 09:41-10:16/35 16:42 09:42-10:16/34	07:09 17:44 07:06 17:46	06:47 19:50 06:44 07:26-07:43/17	05:30 06:40-06:56/16 20:52 07:12-07:41/29	04:33 21:50 04:32 21:51
2	08:48 09:39-09:59/20 15:46 10:20-10:41/21	08:11 09:42-10:16/34 16:44 09:43-10:15/32	07:04 17:46 07:04 17:49	06:41 07:22-07:46/24 19:54 19:54	05:26 07:13-07:40/27 20:56 07:14-07:37/23	04:31 21:52 04:30 21:54
3	08:48 09:38-09:59/21 15:48 10:20-10:41/21	08:09 09:43-10:15/32 16:46 09:43-10:14/31	07:01 17:51 17:51 17:51	06:39 07:19-07:47/28 19:56 19:56	05:24 07:17-07:34/17 20:58 20:58	04:30 21:54 04:29 21:55
4	08:47 09:39-10:01/22 15:49 10:21-10:42/21	08:07 09:44-10:13/29 16:51 10:22-10:41/19	06:59 17:53 17:53 17:53	06:36 07:17-07:50/33 19:58 19:58	05:21 07:21-07:29/8 21:00 21:00	04:29 21:55 04:28 21:56
5	08:47 09:38-10:02/24 15:50 10:22-10:41/19	08:05 09:46-10:12/26 16:51 10:23-10:41/18	06:56 17:55 17:55 17:55	06:34 07:15-07:50/35 20:00 20:00	05:19 21:03 21:03 21:03	04:28 21:56 04:27 21:57
6	08:46 09:38-10:03/25 15:52 10:23-10:41/18	08:03 09:48-10:11/23 16:53 10:24-10:41/17	06:53 17:57 17:57 17:57	06:31 07:14-07:52/38 20:02 20:02	05:17 21:05 21:05 21:05	04:27 21:58 04:26 21:58
7	08:46 09:37-10:04/27 15:53 10:24-10:41/17	08:01 09:49-10:08/19 16:57 09:53-10:05/12	06:51 17:59 17:59 17:59	06:28 07:12-07:52/40 20:04 20:04	05:15 21:07 21:07 21:07	04:27 21:58 04:26 21:58
8	08:45 09:37-10:04/27 15:55 10:25-10:40/15	07:59 09:53-10:05/12 16:57 09:53-10:05/12	06:51 17:59 17:59 17:59	06:26 07:11-07:53/42 20:06 20:06	05:13 21:09 21:09 21:09	04:26 22:00 04:25 22:00
9	08:44 09:37-10:05/28 15:56 10:26-10:40/14	07:56 09:53-10:05/12 17:00 10:26-10:40/14	06:48 07:16-07:21/5 18:01 07:14-07:24/10	06:26 07:11-07:53/42 20:06 07:10-07:54/44	05:13 21:09 21:09 21:09	04:26 22:00 04:25 22:00
10	08:44 09:37-10:06/29 15:58 10:28-10:39/11	07:54 09:53-10:05/12 17:02 10:28-10:39/11	06:46 07:14-07:24/10 18:04 07:11-07:25/14	06:23 07:10-07:54/44 20:08 06:48-06:57/9	05:10 21:11 21:11 21:11	04:25 22:01 04:25 22:01
11	08:43 09:37-10:08/31 16:00 10:30-10:38/8	07:52 10:28-10:39/11 17:04 10:30-10:38/8	06:43 07:11-07:25/14 18:06 07:08-07:25/17	06:20 06:48-06:57/9 20:11 07:09-07:54/45	05:08 21:13 21:13 21:13	04:25 22:01 04:24 22:02
12	08:42 09:37-10:09/32 16:01 10:31-10:39/7	07:50 10:31-10:39/7 17:06 10:31-10:39/7	06:40 07:08-07:25/17 18:08 07:06-07:26/20	06:18 06:46-07:01/15 20:13 07:08-07:54/46	05:06 21:15 21:15 21:15	04:24 22:02 04:24 22:03
13	08:41 09:37-10:10/33 16:03 10:32-10:40/6	07:48 10:32-10:40/6 17:09 10:32-10:40/6	06:38 07:06-07:26/20 18:10 07:03-07:26/23	06:15 06:43-07:02/19 20:15 07:07-07:54/47	05:04 21:17 21:17 21:17	04:24 22:03 04:23 22:04
14	08:40 09:36-10:10/34 16:05 10:33-10:41/5	07:45 10:33-10:41/5 17:11 10:33-10:41/5	06:35 07:03-07:26/23 18:12 07:02-07:26/24	06:13 06:41-07:04/23 20:17 07:07-07:55/48	05:02 21:18 21:18 21:18	04:23 22:04 04:23 22:05
15	08:39 09:37-10:11/34 16:07 10:34-10:42/4	07:43 10:34-10:42/4 17:13 10:34-10:42/4	06:32 07:02-07:26/24 18:14 07:02-07:25/23	06:10 06:38-07:04/26 20:19 07:06-07:54/48	05:00 21:20 21:20 21:20	04:23 22:05 04:23 22:06
16	08:38 09:37-10:12/35 16:08 10:35-10:43/3	07:41 10:35-10:43/3 17:15 10:35-10:43/3	06:30 07:02-07:25/23 18:16 07:03-07:25/22	06:07 06:37-07:05/28 20:21 07:06-07:54/48	04:58 21:22 21:22 21:22	04:23 22:06 04:23 22:07
17	08:36 09:37-10:12/35 16:10 10:36-10:44/2	07:38 10:36-10:44/2 17:18 10:36-10:44/2	06:27 07:03-07:25/22 18:18 07:02-07:24/22	06:05 06:36-07:54/78 20:23 06:36-07:54/78	04:57 21:24 21:24 21:24	04:23 22:06 04:22 22:07
18	08:35 09:37-10:14/37 16:12 10:37-10:45/1	07:36 10:37-10:45/1 17:20 10:37-10:45/1	06:24 07:02-07:24/22 18:21 07:03-07:23/20	06:02 06:36-07:54/78 20:25 06:34-07:51/77	04:55 21:26 21:26 21:26	04:22 22:07 04:22 22:08
19	08:34 09:37-10:14/37 16:14 10:38-10:46/0	07:34 10:38-10:46/0 17:22 10:38-10:46/0	06:22 07:03-07:23/20 18:23 07:04-07:22/18	06:00 06:34-07:53/79 20:27 06:34-07:53/79	04:53 21:28 21:28 21:28	04:22 22:07 04:22 22:08
20	08:33 09:37-10:14/37 16:16 10:39-10:47/0	07:31 10:39-10:47/0 17:24 10:39-10:47/0	06:19 07:04-07:22/18 18:25 07:05-07:20/15	05:57 06:34-07:53/79 20:29 06:35-07:53/78	04:51 21:30 21:30 21:30	04:22 22:07 04:23 22:08
21	08:31 09:37-10:15/38 16:18 10:40-10:48/0	07:29 10:40-10:48/0 17:27 10:40-10:48/0	06:16 07:05-07:20/15 18:27 07:06-07:17/11	05:55 06:35-07:53/78 20:31 06:34-07:51/77	04:49 21:32 21:32 21:32	04:23 22:07 04:23 22:08
22	08:30 09:37-10:16/39 16:20 10:41-10:49/0	07:26 10:41-10:49/0 17:29 10:41-10:49/0	06:14 07:06-07:17/11 18:29 07:07-07:18/10	05:52 06:34-07:51/77 20:33 06:34-07:51/77	04:48 21:33 21:33 21:33	04:23 22:08 04:23 22:09
23	08:28 09:37-10:16/39 16:22 10:42-10:50/0	07:24 10:42-10:50/0 17:31 10:42-10:50/0	06:11 07:07-07:18/10 18:31 07:08-07:19/9	05:50 06:34-07:51/31 20:36 07:06-07:51/45	04:46 21:35 21:35 21:35	04:23 22:08 04:23 22:09
24	08:27 09:37-10:16/39 16:25 10:43-10:51/0	07:21 10:43-10:51/0 17:33 10:43-10:51/0	06:08 07:08-07:19/9 18:33 07:09-07:20/8	05:47 06:34-07:51/45 20:38 07:05-07:50/45	04:44 21:37 21:37 21:37	04:23 22:08 04:24 22:09
25	08:25 09:37-10:16/39 16:27 10:44-10:52/0	07:19 10:44-10:52/0 17:35 10:44-10:52/0	06:06 07:09-07:20/8 18:35 07:10-07:21/7	05:45 06:34-07:51/31 20:40 07:06-07:51/45	04:43 21:39 21:39 21:39	04:24 22:08 04:24 22:09
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27	08:22 09:38-10:16/38 16:31 10:46-10:54/0	07:14 10:46-10:54/0 17:40 10:46-10:54/0	06:00 07:11-07:22/6 18:39 07:12-07:23/5	05:40 06:36-07:51/31 20:44 07:08-07:47/39	04:40 21:42 21:42 21:42	04:24 22:08 04:25 22:09
28	08:20 09:38-10:16/38 16:33 10:47-10:55/0	07:11 10:47-10:55/0 17:42 10:47-10:55/0	05:58 07:12-07:23/5 18:41 07:13-07:24/4	05:38 06:36-07:51/31 20:46 07:08-07:45/37	04:39 21:44 21:44 21:44	04:25 22:08 04:26 22:09
29	08:18 09:39-10:16/37 16:35 10:48-10:56/0	07:09 10:48-10:56/0 17:44 10:48-10:56/0	05:55 07:13-07:24/4 18:44 07:14-07:25/3	05:35 06:37-06:59/22 20:48 07:09-07:44/35	04:37 21:45 21:45 21:45	04:26 22:07 04:26 22:08
30	08:16 09:39-10:16/37 16:37 10:49-10:57/0	07:07 10:49-10:57/0 17:46 10:49-10:57/0	06:52 07:14-07:25/3 19:46 07:15-07:26/2	05:33 06:38-06:58/20 20:50 07:10-07:43/33	04:36 21:47 21:47 21:47	04:26 22:07 04:26 22:08
31	08:15 09:40-10:16/36 16:40 10:50-10:58/0	07:06 10:50-10:58/0 17:48 10:50-10:58/0	06:50 07:15-07:26/2 19:48 07:16-07:27/1	05:31 06:39-06:59/19 20:51 07:11-07:44/32	04:35 21:48 21:48 21:48	04:26 22:07 04:26 22:08
Potential sun hours	235	265	365	425	507	529
Sum of minutes with flicker	1192	241	244	1700	132	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 19 - 03-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	July	August	September	October	November	December
1	04:27	05:12	06:14 06:46-06:58/12	07:14 07:45-08:05/20	07:19	08:21 09:19-09:50/31
	22:07	21:26	20:12 07:07-07:53/46	18:52	16:34	15:43 10:14-10:17/3
2	04:28	05:14	06:16 06:48-06:54/6	07:16 07:47-08:04/17	07:22 09:24-09:34/10	08:23 09:20-09:50/30
	22:06	21:24	20:09 07:08-07:52/44	18:49	16:32	15:42 10:12-10:21/9
3	04:29	05:16	06:18 07:08-07:51/43	07:18 07:49-08:03/14	07:24 09:20-09:37/17	08:24 09:21-09:50/29
	22:06	21:22	20:07	18:46	16:30	15:41 10:11-10:23/12
4	04:30	05:18	06:20 07:09-07:50/41	07:20 07:51-08:01/10	07:26 09:18-09:39/21	08:26 09:22-09:50/28
	22:05	21:20	20:04	18:44	16:27	15:40 10:10-10:25/15
5	04:31	05:20	06:22 07:10-07:49/39	07:22 07:53-07:58/5	07:28 09:17-09:41/24	08:28 09:23-09:50/27
	22:04	21:18	20:02	18:41	16:25	15:39 10:10-10:26/16
6	04:32	05:22	06:24 07:11-07:48/37	07:24	07:30 09:15-09:43/28	08:29 09:23-09:49/26
	22:04	21:15	19:59	18:38	16:23	15:38 10:09-10:27/18
7	04:33	05:24	06:26 07:12-07:46/34	07:26	07:32 09:14-09:44/30	08:31 09:25-09:49/24
	22:03	21:13	19:56	18:36	16:21	15:38 10:09-10:28/19
8	04:34	05:26 07:33-07:36/3	06:28 07:13-07:44/31	07:28	07:35 09:13-09:45/32	08:32 09:26-09:49/23
	22:02	21:11	19:54	18:33	16:19	15:37 10:09-10:29/20
9	04:35	05:28 07:27-07:42/15	06:30 07:14-07:41/27	07:30	07:37 09:12-09:45/33	08:34 09:27-09:49/22
	22:01	21:09	19:51	18:31	16:17	15:37 10:09-10:29/20
10	04:36	05:30 07:24-07:45/21	06:32 07:16-07:38/22	07:33	07:39 09:12-09:47/35	08:35 09:28-09:49/21
	22:00	21:07	19:48	18:28	16:15	15:36 10:10-10:31/21
11	04:38	05:32 06:52-07:01/9	06:34 07:20-07:34/14	07:35	07:41 09:11-09:47/36	08:36 09:29-09:48/19
	21:59	21:04 07:22-07:48/26	19:46	18:25	16:13	15:36 10:09-10:31/22
12	04:39	05:34 06:49-07:04/15	06:36	07:37	07:43 09:12-09:48/36	08:37 09:30-09:48/18
	21:58	21:02 07:21-07:50/29	19:43	18:23	16:11	15:36 10:09-10:32/23
13	04:40	05:36 06:46-07:05/19	06:38	07:39	07:45 09:11-09:48/37	08:39 09:31-09:48/17
	21:57	21:00 07:18-07:50/32	19:40	18:20	16:09	15:35 10:10-10:33/23
14	04:42	05:38 06:45-07:06/21	06:40	07:41	07:47 09:11-09:48/37	08:40 09:32-09:48/16
	21:56	20:57 07:17-07:52/35	19:38	18:18	16:07	15:35 10:10-10:33/23
15	04:43	05:40 06:43-07:08/25	06:42	07:43	07:50 09:11-09:49/38	08:41 09:33-09:48/15
	21:54	20:55 07:16-07:53/37	19:35	18:15	16:05	15:35 10:10-10:34/24
16	04:45	05:42 06:42-07:09/27	06:44	07:45	07:52 09:11-09:49/38	08:42 09:34-09:48/14
	21:53	20:52 07:15-07:54/39	19:32	18:12	16:04	15:35 10:11-10:34/23
17	04:46	05:44 06:42-07:09/27	06:46	07:47	07:54 09:12-09:50/38	08:43 09:35-09:48/13
	21:52	20:50 07:14-07:55/41	19:29	18:10	16:02	15:35 10:11-10:35/24
18	04:48	05:46 06:41-07:10/29	06:48	07:49	07:56 09:11-09:50/39	08:44 09:36-09:48/12
	21:50	20:48 07:13-07:55/42	19:27	18:07	16:00	15:35 10:12-10:36/24
19	04:49	05:48 06:40-07:10/30	06:50	07:51	07:58 09:11-09:50/39	08:44 09:36-09:47/11
	21:49	20:45 07:12-07:56/44	19:24	18:05	15:59	15:35 10:12-10:37/25
20	04:51	05:50 06:39-07:09/30	06:52	07:53	08:00 09:12-09:51/39	08:45 09:38-09:47/9
	21:47	20:43 07:11-07:56/45	19:21	18:02	15:57	15:36 10:12-10:36/24
21	04:53	05:52 06:39-07:56/77	06:54 07:57-07:59/2	07:56	08:02 09:12-09:51/39	08:46 09:39-09:48/9
	21:46	20:40	19:19	18:00	15:55	15:36 10:13-10:37/24
22	04:54	05:54 06:38-07:56/78	06:56 07:52-08:03/11	07:58	08:04 09:13-09:50/37	08:46 09:39-09:48/9
	21:44	20:38	19:16	17:57	15:54	15:37 10:13-10:37/24
23	04:56	05:56 06:38-07:57/79	06:58 07:49-08:05/16	08:00	08:06 09:13-09:50/37	08:47 09:40-09:49/9
	21:43	20:35	19:13	17:55	15:52	15:37 10:14-10:38/24
24	04:58	05:58 06:38-07:57/79	07:00 07:47-08:06/19	08:02	08:08 09:14-09:51/37	08:47 09:40-09:49/9
	21:41	20:33	19:11	17:53	15:51	15:38 10:14-10:38/24
25	05:00	06:00 06:38-07:57/79	07:02 07:46-08:07/21	08:04	08:10 09:15-09:51/36	08:48 09:39-09:50/11
	21:39	20:30	19:08	17:50	15:50	15:38 10:14-10:39/25
26	05:01	06:02 06:39-07:57/78	07:04 07:45-08:07/22	07:06	08:12 09:15-09:51/36	08:48 09:39-09:51/12
	21:37	20:28	19:05	16:48	15:48	15:39 10:15-10:39/24
27	05:03	06:04 06:39-07:07/28	07:06 07:44-08:07/23	07:09	08:14 09:16-09:50/34	08:48 09:39-09:52/13
	21:36	20:25 07:08-07:56/48	19:02	16:45	15:47	15:40 10:16-10:40/24
28	05:05	06:06 06:40-07:06/26	07:08 07:44-08:07/23	07:11	08:16 09:16-09:50/34	08:48 09:39-09:53/14
	21:34	20:23 07:08-07:56/48	19:00	16:43	15:46	15:41 10:16-10:39/23
29	05:07	06:08 06:41-07:05/24	07:10 07:43-08:07/24	07:13	08:18 09:17-09:50/33	08:48 09:39-09:54/15
	21:32	20:20 07:07-07:55/48	18:57	16:41	15:45	15:42 10:16-10:40/24
30	05:09	06:10 06:42-07:03/21	07:12 07:43-08:06/23	07:15	08:19 09:18-09:50/32	08:48 09:39-09:55/16
	21:30	20:17 07:07-07:54/47	18:54	16:38	15:44	15:43 10:17-10:40/23
31	05:11	06:12 06:44-07:01/17		07:17		08:48 09:39-09:56/17
	21:28	20:15 07:07-07:54/47		16:36		15:44 10:18-10:41/23
Potential sun hours	530	470	385	324	248	216
Sum of minutes with flicker	0	1465	580	66	962	1189

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 20 - 04-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June
1	08:48 09:41-10:05/24 15:45	08:13 16:42	07:09 07:56-08:27/31 17:44	06:47 19:50	05:30 20:52	04:33 21:50
2	08:48 09:42-10:06/24 15:46	08:11 16:44	07:06 07:56-08:26/30 17:46	06:44 19:52	05:28 20:54	04:32 21:51
3	08:48 09:42-10:06/24 15:48	08:09 16:46	07:04 07:56-08:25/29 17:49	06:41 19:54	05:26 20:56	04:31 21:52
4	08:47 09:43-10:07/24 15:49	08:07 16:49	07:01 07:57-08:25/28 17:51	06:39 19:56	05:24 20:58	04:30 21:54
5	08:47 09:43-10:07/24 15:50	08:05 16:51	06:59 07:57-08:23/26 17:53	06:36 19:58	05:21 21:00	04:29 21:55
6	08:46 09:43-10:08/25 15:52	08:03 16:53	06:56 07:58-08:21/23 17:55	06:34 20:00	05:19 21:02	04:28 21:56
7	08:46 09:44-10:08/24 15:53	08:01 16:55	06:53 07:59-08:20/21 17:57	06:31 20:02	05:17 21:05	04:28 21:57
8	08:45 09:44-10:08/24 15:55	07:58 16:57	06:51 07:19-07:24/5 17:59	06:28 20:04	05:15 21:07	04:27 21:58
9	08:44 09:45-10:08/23 15:56	07:56 17:00	06:48 07:16-07:26/10 18:01	06:26 20:06	05:13 21:09	04:26 21:59
10	08:44 09:46-10:09/23 15:58	07:54 17:02	06:46 07:14-07:28/14 18:04	06:23 20:08	05:10 21:11	04:25 22:00
11	08:43 09:46-10:09/23 16:00	07:52 17:04	06:43 07:11-07:28/17 18:06	06:20 20:11	05:08 21:13	04:25 22:01
12	08:42 09:47-10:09/22 16:01	07:50 17:06	06:40 07:08-07:28/20 18:08	06:18 20:13	05:06 21:15	04:24 22:02
13	08:41 09:48-10:09/21 16:03	07:47 17:09	06:38 07:06-07:29/23 18:10	06:15 20:15	05:04 21:16	04:24 22:03
14	08:40 09:48-10:09/21 16:05	07:45 17:11	06:35 07:05-07:29/24 18:12	06:13 20:17	05:02 21:18	04:23 22:04
15	08:39 09:50-10:09/19 16:07	07:43 17:13	06:32 07:04-07:28/24 18:14	06:10 20:19	05:00 21:20	04:23 22:05
16	08:38 09:51-10:09/18 16:09	07:41 17:15	06:30 07:04-07:27/23 18:16	06:07 20:21	04:58 21:22	04:23 22:05
17	08:36 09:52-10:08/16 16:10	07:38 17:18	06:27 07:05-07:27/22 18:18	06:05 20:23	04:57 21:24	04:23 22:06
18	08:35 09:54-10:08/14 16:12	07:36 08:06-08:18/12 17:20	06:24 07:05-07:26/21 18:21	06:02 20:25	04:55 21:26	04:23 22:06
19	08:34 09:55-10:06/11 16:14	07:34 08:04-08:21/17 17:22	06:22 07:05-07:25/20 18:23	06:00 20:27	04:53 21:28	04:22 22:07
20	08:33 09:57-10:04/7 16:16	07:31 08:01-08:23/22 17:24	06:19 07:07-07:24/17 18:25	05:57 20:29	04:51 21:30	04:22 22:07
21	08:31 16:18	07:29 08:00-08:23/23 17:27	06:16 07:08-07:21/13 18:27	05:55 20:31	04:49 21:32	04:23 22:07
22	08:30 16:20	07:26 07:59-08:25/26 17:29	06:14 07:11-07:17/6 18:29	05:52 20:33	04:48 21:33	04:23 22:08
23	08:28 16:22	07:24 07:58-08:25/27 17:31	06:11 18:31	05:50 20:36	04:46 21:35	04:23 22:08
24	08:27 16:25	07:21 07:57-08:26/29 17:33	06:08 18:33	05:47 20:38	04:44 21:37	04:23 22:08
25	08:25 16:27	07:19 07:56-08:26/30 17:35	06:06 18:35	05:45 20:40	04:43 21:39	04:24 22:08
26	08:23 16:29	07:16 07:57-08:27/30 17:38	06:03 18:37	05:42 20:42	04:41 21:40	04:24 22:08
27	08:22 16:31	07:14 07:56-08:27/31 17:40	06:00 18:39	05:40 20:44	04:40 21:42	04:25 22:08
28	08:20 16:33	07:11 07:55-08:26/31 17:42	05:58 18:41	05:38 20:46	04:39 21:44	04:25 22:08
29	08:18 16:35		05:55 18:43	05:35 20:48	04:37 21:45	04:26 22:07
30	08:16 16:37		06:52 19:46	05:33 20:50	04:36 21:47	04:26 22:07
31	08:14 16:40		06:49 19:48		04:35 21:48	
Potential sun hours	235	265	365	425	507	529
Sum of minutes with flicker	411	278	475	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 20 - 04-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed3,0m/s

	July	August	September	October	November	December
1	04:27 22:07	05:12 21:26	06:14 20:12	07:14 18:52	07:45-08:08/23 16:34	07:19 15:43
2	04:28 22:06	05:14 21:24	06:16 20:09	07:16 18:49	07:47-08:07/20 16:32	07:21 15:42
3	04:29 22:06	05:16 21:22	06:18 20:07	07:18 18:46	07:49-08:06/17 16:29	07:24 15:41
4	04:30 22:05	05:18 21:20	06:20 20:04	07:20 18:44	07:51-08:05/14 16:27	07:26 15:40
5	04:31 22:04	05:20 21:17	06:22 20:02	07:22 18:41	07:53-08:03/10 16:25	07:28 15:39
6	04:32 22:04	05:22 21:15	06:24 19:59	07:24 18:38	07:55-08:00/5 16:23	07:30 15:38
7	04:33 22:03	05:24 21:13	06:26 19:56	07:26 18:36	08:37-08:54/17 16:21	07:32 15:38
8	04:34 22:02	05:26 21:11	06:28 19:54	07:28 18:33	08:36-08:56/20 16:19	07:35 15:37
9	04:35 22:01	05:28 21:09	06:30 19:51	07:30 18:31	08:32-08:58/26 16:17	07:37 15:37
10	04:36 22:00	05:30 21:06	06:32 19:48	07:32 18:28	08:31-08:59/28 16:15	07:39 15:36
11	04:38 21:59	05:32 21:04	06:34 19:46	07:35 18:25	08:30-08:59/29 16:13	07:41 15:36
12	04:39 21:58	05:34 21:02	06:36 19:43	07:37 18:23	08:29-08:59/30 16:11	07:43 15:36
13	04:40 21:57	05:36 21:00	06:38 19:40	07:39 18:20	08:28-08:59/31 16:09	07:45 15:35
14	04:42 21:56	05:38 20:57	06:40 19:37	07:41 18:18	08:29-09:00/31 16:07	07:47 15:35
15	04:43 21:54	05:40 20:55	06:42 19:35	07:43 18:15	08:28-08:59/31 16:05	07:50 15:35
16	04:45 21:53	05:42 20:52	06:44 19:32	07:45 18:12	08:28-08:59/31 16:04	07:52 15:35
17	04:46 21:52	05:44 20:50	06:46 19:29	07:47 18:10	08:28-08:58/30 16:02	07:54 15:35
18	04:48 21:50	05:46 20:48	06:48 19:27	07:49 18:07	08:29-08:58/29 16:00	07:56 15:35
19	04:49 21:49	05:48 20:45	06:50 19:24	07:51 18:05	08:29-08:57/28 15:59	07:58 15:35
20	04:51 21:47	05:50 20:43	06:52 19:21	07:53 18:02	08:29-08:56/27 15:57	08:00 15:36
21	04:53 21:46	05:52 20:40	06:54 19:19	07:56 18:00	08:30-08:54/24 15:55	08:02 15:36
22	04:54 21:44	05:54 20:38	06:56 19:16	07:58 17:57	08:32-08:54/22 15:54	08:04 15:37
23	04:56 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:33-08:52/19 15:52	08:06 15:37
24	04:58 21:41	05:58 20:33	07:00 19:10	08:02 17:53	08:35-08:49/14 15:51	08:08 15:38
25	05:00 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:40-08:45/5 15:50	08:10 15:38
26	05:01 21:37	06:02 20:28	07:04 19:05	07:06 16:48	09:30-09:47/17 15:48	08:12 15:39
27	05:03 21:35	06:04 20:25	07:06 19:02	07:08 16:45	09:29-09:48/19 15:47	08:14 15:40
28	05:05 21:34	06:06 20:22	07:08 19:00	07:11 16:43	09:29-09:48/19 15:46	08:16 15:41
29	05:07 21:32	06:08 20:20	07:10 18:57	07:13 16:41	09:29-09:49/20 15:45	08:17 15:42
30	05:09 21:30	06:10 20:17	07:12 18:54	07:15 16:38	09:28-09:50/22 15:44	08:19 15:43
31	05:11 21:28	06:12 20:15		07:17 16:36		08:48 15:44
Potential sun hours	529	470	385	324	248	216
Sum of minutes with flicker	0	0	179	594	132	741

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 21 - 06-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

	January	February	March	April	May	June
1	08:48 15:45	08:13 16:42	07:09 17:44	06:47 19:50	07:14-07:20/6 20:52	04:34 21:49
2	08:48 15:46	08:11 16:44	07:06 17:46	06:44 19:52	07:12-07:23/11 20:54	04:32 21:51
3	08:47 15:48	08:09 16:46	07:04 17:49	06:41 19:54	07:09-07:24/15 20:56	04:31 21:52
4	08:47 15:49	08:07 16:49	07:01 17:51	06:39 19:56	07:06-07:24/18 20:58	04:30 21:54
5	08:47 15:50	08:05 16:51	06:59 17:53	06:36 19:58	07:04-07:25/21 21:00	04:29 21:55
6	08:46 15:52	08:03 16:53	06:56 17:55	06:33 20:00	07:01-07:25/24 21:02	04:28 21:56
7	08:46 15:53	08:00 16:55	06:53 17:57	06:31 20:02	07:01-07:25/24 21:04	04:28 21:57
8	08:45 15:55	07:58 16:58	06:51 17:59	06:28 20:04	07:00-07:25/25 21:06	04:27 21:58
9	08:44 15:56	07:56 17:00	06:48 18:01	06:26 20:06	07:00-07:24/24 21:08	04:26 21:59
10	08:43 15:58	07:54 17:02	06:45 18:04	06:23 20:08	07:00-07:24/24 21:10	04:25 22:00
11	08:43 16:00	07:52 17:04	06:43 18:06	06:20 20:10	07:00-07:22/22 21:12	04:25 22:01
12	08:42 16:01	07:50 17:06	06:40 18:08	06:18 20:13	07:01-07:22/21 21:14	04:24 22:02
13	08:41 16:03	07:47 17:09	06:38 18:10	06:15 20:15	07:01-07:20/19 21:16	04:24 22:03
14	08:40 16:05	07:45 17:11	06:35 18:12	06:13 20:17	07:03-07:19/16 21:18	04:23 22:04
15	08:39 16:07	07:43 17:13	06:32 18:14	06:10 20:19	07:04-07:16/12 21:20	04:23 22:04
16	08:38 16:09	07:41 17:15	06:30 18:16	06:07 20:21	07:08-07:12/4 21:22	04:23 22:05
17	08:36 16:10	07:38 17:18	06:27 18:18	06:05 20:23	05:30-05:44/14 21:24	04:23 22:06
18	08:35 16:12	07:36 17:20	06:24 18:20	06:02 20:25	05:28-05:46/18 21:26	04:23 22:06
19	08:34 16:14	07:33 17:22	06:22 18:23	06:00 20:27	05:27-05:47/20 21:28	04:23 22:07
20	08:32 16:16	07:31 17:24	06:19 18:25	05:57 20:29	05:25-05:48/23 21:30	04:23 22:07
21	08:31 16:18	07:29 17:27	06:16 18:27	05:55 20:31	05:24-05:49/25 21:31	04:23 22:07
22	08:30 16:20	07:26 17:29	06:14 18:29	05:52 20:33	05:22-05:50/28 21:33	04:23 22:07
23	08:28 16:22	07:24 17:31	06:11 18:31	05:50 20:35	05:22-05:51/29 21:35	04:23 22:08
24	08:26 16:25	07:21 17:33	06:08 18:33	05:47 20:38	05:21-05:51/30 21:37	04:23 22:08
25	08:25 16:27	07:19 17:35	06:06 18:35	05:45 20:40	05:21-05:51/30 21:38	04:24 22:08
26	08:23 16:29	07:16 17:38	06:03 18:37	05:42 20:42	05:21-05:52/31 21:40	04:24 22:08
27	08:22 16:31	07:14 17:40	06:00 18:39	05:40 20:44	05:21-05:53/32 21:42	04:25 22:08
28	08:20 16:33	07:11 17:42	05:57 18:41	05:38 20:46	05:20-05:52/32 21:43	04:25 22:07
29	08:18 16:35		05:55 18:43	05:35 20:48	05:20-05:53/33 21:45	04:26 22:07
30	08:16 16:37		06:52 19:46	05:33 20:50	05:20-05:53/33 21:47	04:26 22:07
31	08:14 16:40		06:49 19:48		05:20-05:54/34 21:48	
Potential sun hours	235	265	365	425	507	528
Sum of minutes with flicker	0	0	0	286	422	1024

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast & Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

02.07.2026 16:57/4.1.287

SKEPAST & PUHKIM

SHADOW - Calendar per WTG

Calculation: Worst & Real Case WTG: 21 - 06-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,17	2,29	4,58	6,82	8,69	9,44	8,63	7,75	5,49	2,82	0,76	0,60

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
373	431	565	449	510	745	768	916	1 192	1 023	777	489	8 238

Idle start wind speed 3,0m/s

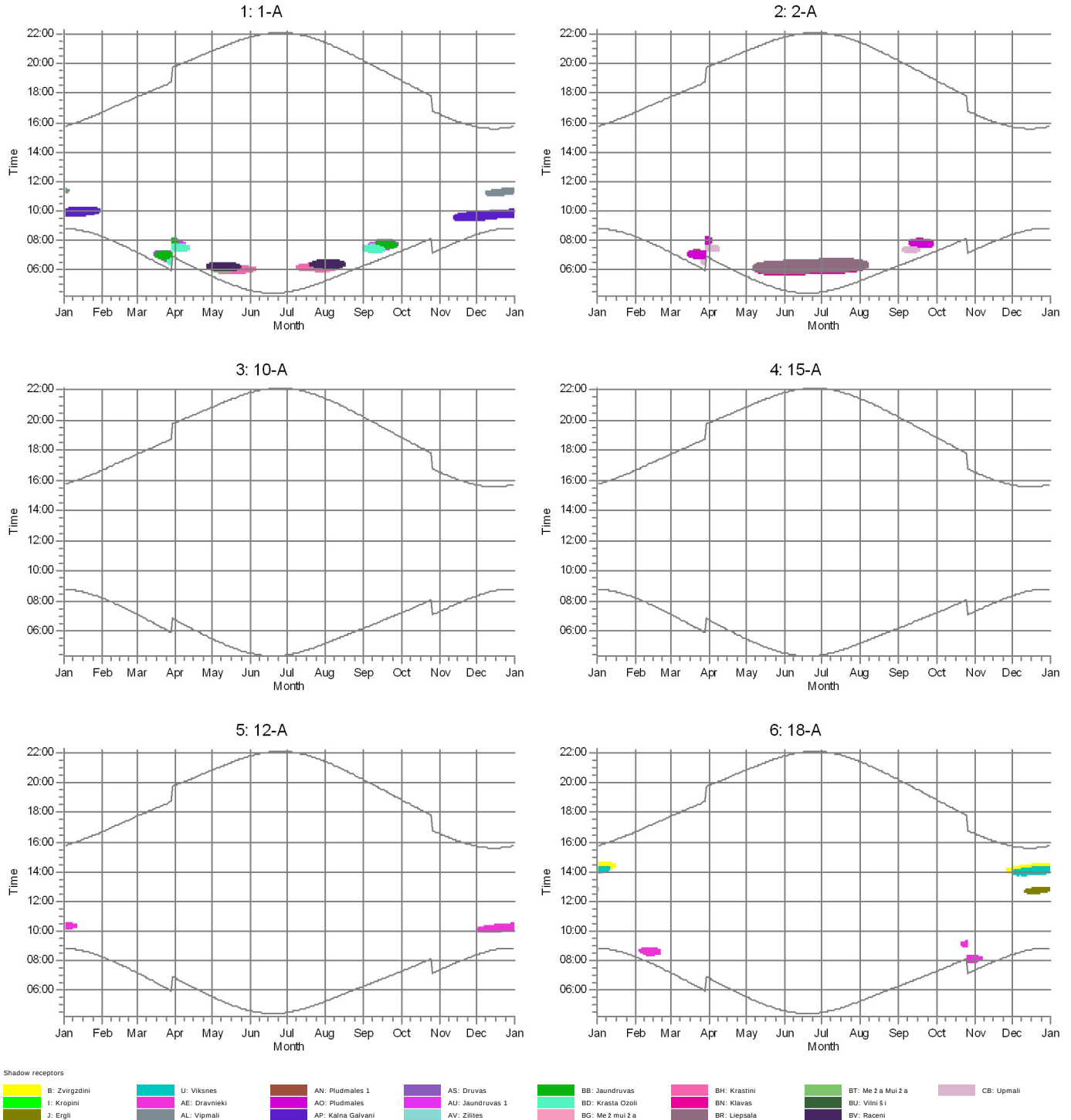
	July	August	September	October	November	December
1	04:27 05:26-06:00/34 22:06	05:13 21:26	06:14 07:00-07:21/21 20:12	07:14 18:52	07:19 16:34	08:21 15:43
2	04:28 05:26-06:00/34 22:06	05:14 21:24	06:16 06:59-07:22/23 20:09	07:16 18:49	07:21 16:32	08:23 15:42
3	04:29 05:26-06:01/35 22:05	05:16 21:22	06:18 06:58-07:22/24 20:07	07:18 18:46	07:24 16:30	08:24 15:41
4	04:30 05:27-06:01/34 22:05	05:18 21:20	06:20 06:58-07:22/24 20:04	07:20 18:44	07:26 16:27	08:26 15:40
5	04:31 05:27-06:01/34 22:04	05:20 21:17	06:22 06:58-07:22/24 20:01	07:22 18:41	07:28 16:25	08:28 15:39
6	04:32 05:27-06:02/35 22:03	05:22 21:15	06:24 06:58-07:21/23 19:59	07:24 18:38	07:30 16:23	08:29 15:38
7	04:33 05:27-06:02/35 22:03	05:24 21:13	06:26 06:58-07:21/23 19:56	07:26 18:36	07:32 16:21	08:31 15:38
8	04:34 05:27-06:02/35 22:02	05:26 21:11	06:28 07:00-07:20/20 19:54	07:28 18:33	07:34 16:19	08:32 15:37
9	04:35 05:28-06:02/34 22:01	05:28 21:09	06:30 07:01-07:18/17 19:51	07:30 18:31	07:37 16:17	08:33 15:37
10	04:36 05:28-06:02/34 22:00	05:30 21:06	06:32 07:03-07:16/13 19:48	07:32 18:28	07:39 16:15	08:35 15:36
11	04:38 05:28-06:02/34 21:59	05:32 21:04	06:34 07:05-07:15/10 19:45	07:35 18:25	07:41 16:13	08:36 15:36
12	04:39 05:28-06:02/34 21:58	05:34 21:02	06:36 07:07-07:12/5 19:43	07:37 18:23	07:43 16:11	08:37 15:36
13	04:40 05:28-06:02/34 21:57	05:36 20:59	06:38 19:40	07:39 18:20	07:45 16:09	08:38 15:35
14	04:42 05:29-06:02/33 21:55	05:38 20:57	06:40 19:37	07:41 18:18	07:47 16:07	08:40 15:35
15	04:43 05:29-06:02/33 21:54	05:40 20:55	06:42 19:35	07:43 18:15	07:49 16:05	08:41 15:35
16	04:45 05:29-06:01/32 21:53	05:42 20:52	06:44 19:32	07:45 18:12	07:52 16:04	08:42 15:35
17	04:46 05:30-06:02/32 21:52	05:44 20:50	06:46 19:29	07:47 18:10	07:54 16:02	08:43 15:35
18	04:48 05:30-06:01/31 21:50	05:46 20:48	06:48 19:27	07:49 18:07	07:56 16:00	08:43 15:35
19	04:49 05:31-06:02/31 21:49	05:48 20:45	06:50 19:24	07:51 18:05	07:58 15:59	08:44 15:36
20	04:51 05:31-06:01/30 21:47	05:50 20:43	06:52 19:21	07:53 18:02	08:00 15:57	08:45 15:36
21	04:53 05:32-06:01/29 21:46	05:52 20:40	06:54 19:19	07:56 18:00	08:02 15:55	08:46 15:36
22	04:54 05:32-06:00/28 21:44	05:54 20:38	06:56 19:16	07:58 17:57	08:04 15:54	08:46 15:37
23	04:56 05:34-06:00/26 21:42	05:56 20:35	06:58 19:13	08:00 17:55	08:06 15:52	08:47 15:37
24	04:58 05:35-05:58/23 21:41	05:58 20:33	07:00 19:10	08:02 17:53	08:08 15:51	08:47 15:38
25	05:00 05:37-05:58/21 21:39	06:00 20:30	07:02 19:08	08:04 17:50	08:10 15:50	08:47 15:38
26	05:01 05:39-05:57/18 21:37	06:02 20:28	07:04 19:05	07:06 16:48	08:12 15:48	08:48 15:39
27	05:03 05:40-05:55/15 21:35	06:04 20:25	07:06 19:02	07:08 16:45	08:14 15:47	08:48 15:40
28	05:05 05:42-05:53/11 21:33	06:06 07:08-07:16/8 20:22	07:08 19:00	07:11 16:43	08:16 15:46	08:48 15:41
29	05:07 05:46-05:49/3 21:32	06:08 07:05-07:19/14 20:20	07:10 18:57	07:13 16:41	08:17 15:45	08:48 15:42
30	05:09 21:30	06:10 07:02-07:19/17 20:17	07:12 18:54	07:15 16:38	08:19 15:44	08:48 15:43
31	05:11 21:28	06:12 07:01-07:20/19 20:15		07:17 16:36		08:48 15:44
Potential sun hours	529	470	385	324	248	216
Sum of minutes with flicker	842	58	227	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

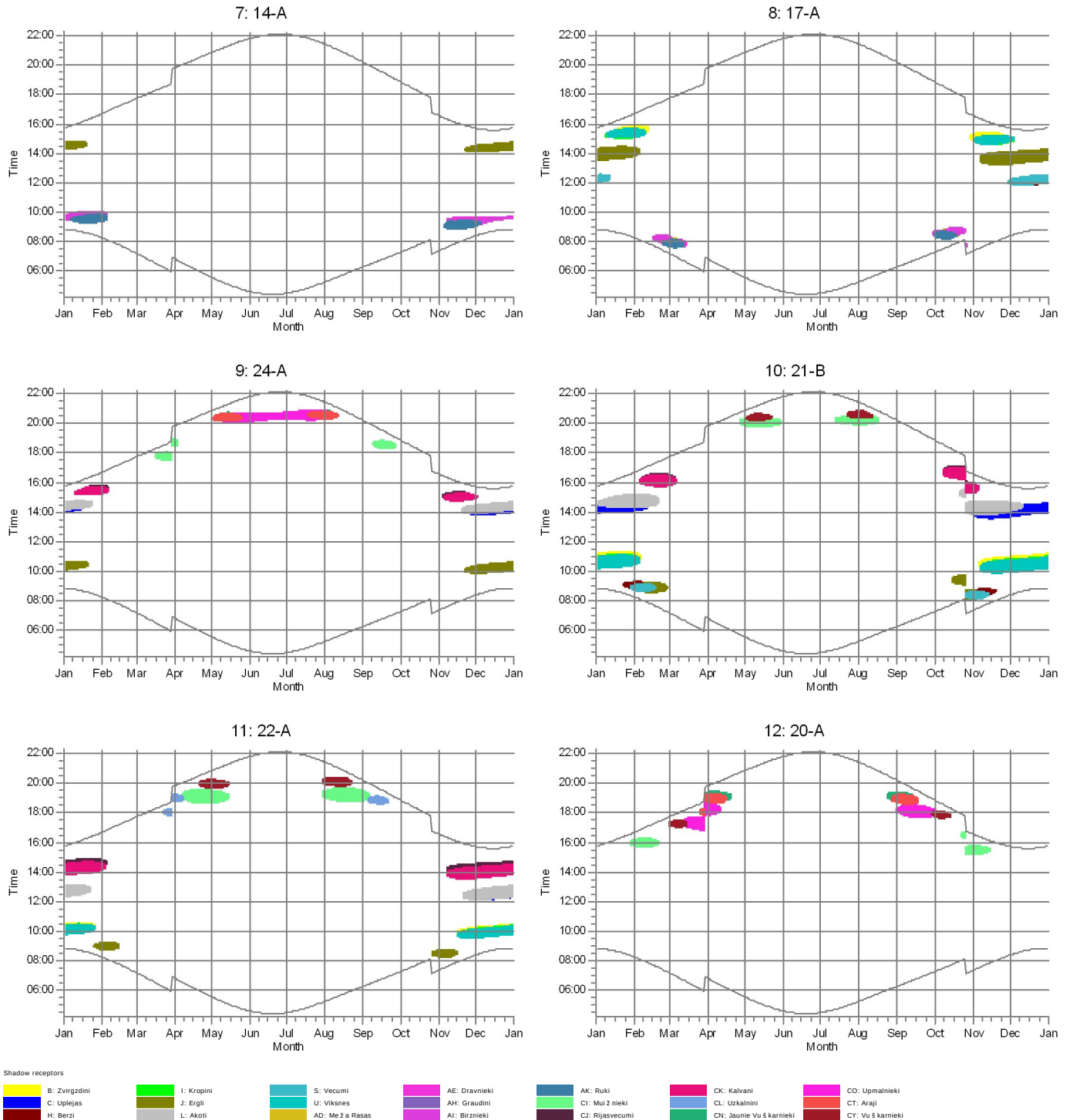
SHADOW - Calendar per WTG, graphical

Calculation: Worst & Real Case



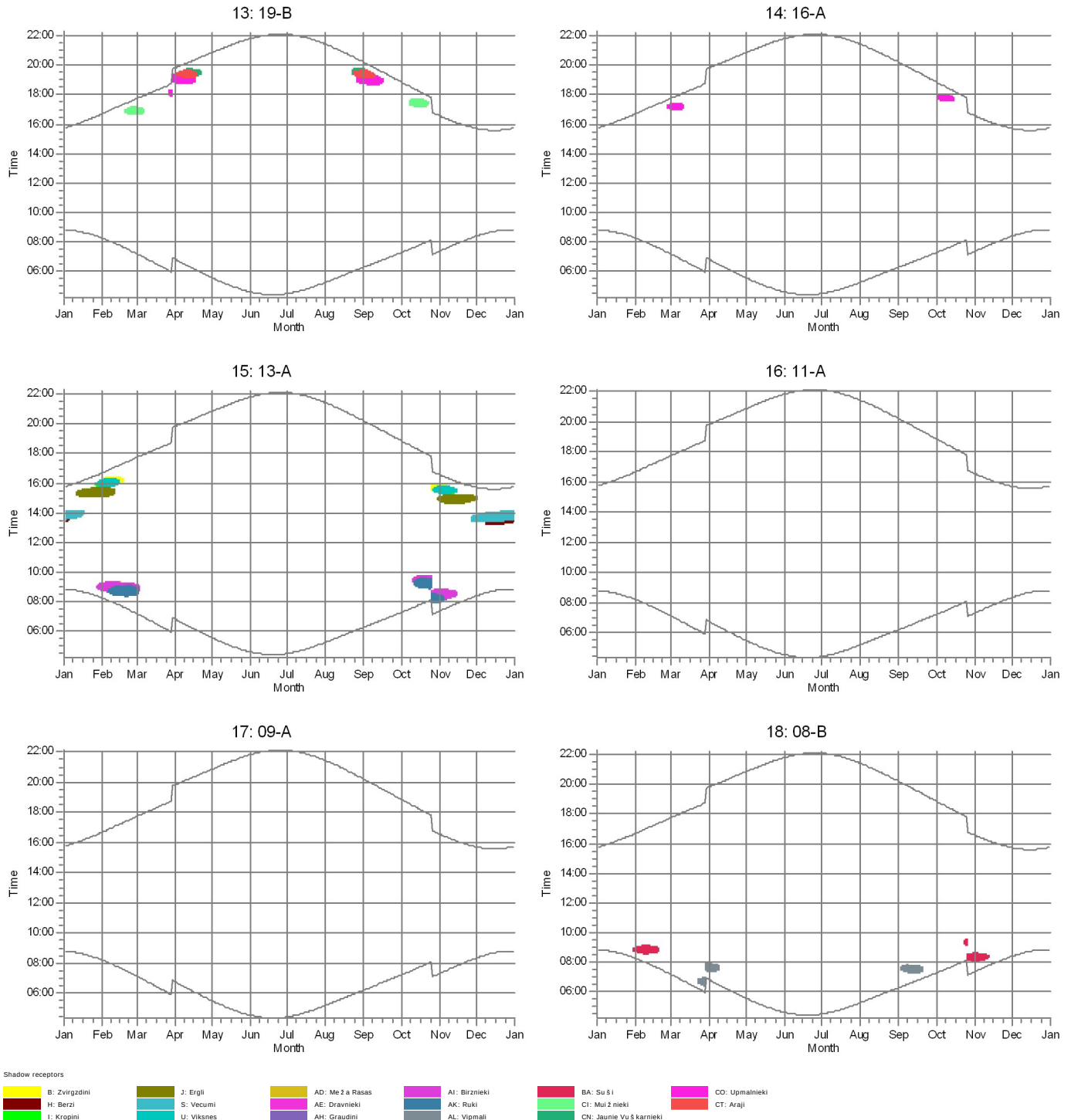
SHADOW - Calendar per WTG, graphical

Calculation: Worst & Real Case



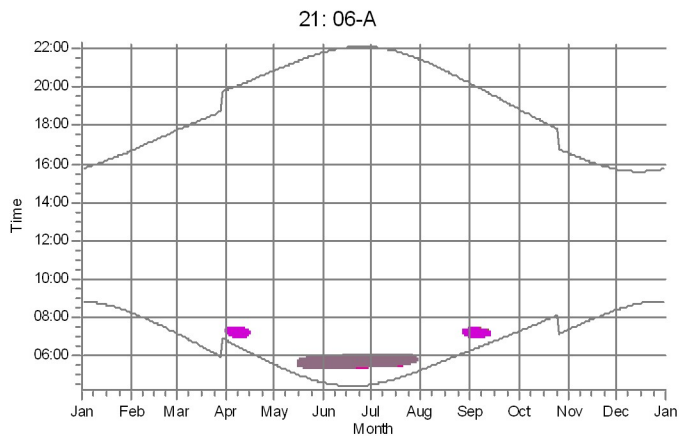
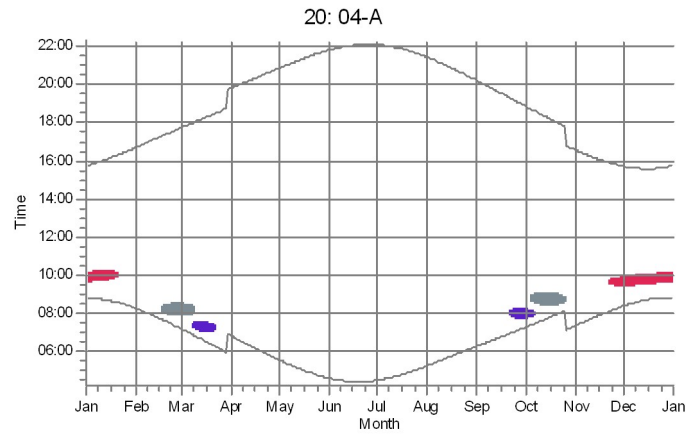
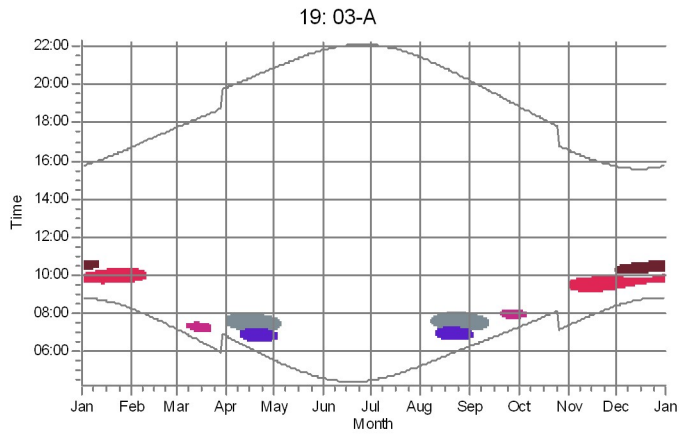
SHADOW - Calendar per WTG, graphical

Calculation: Worst & Real Case



SHADOW - Calendar per WTG, graphical

Calculation: Worst & Real Case

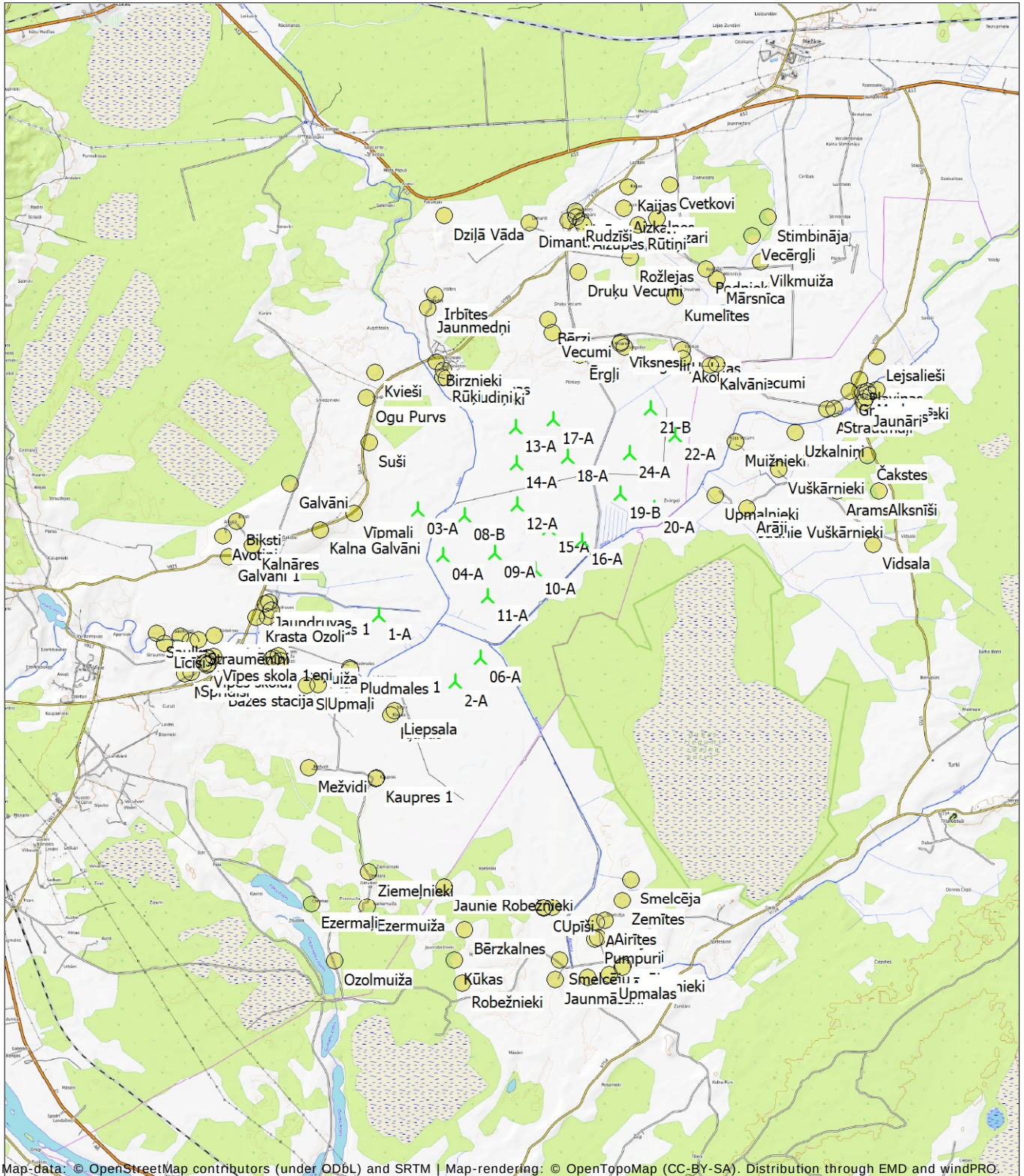


Shadow receptors

AF: Ogu Purvs	AN: Pludmales 1	AP: Kalna Galvani	BE: Galvani	BR: Liepsala
AL: Vipmali	AO: Pludmales	BA: Su 5 i	BN: Klavas	

SHADOW - Map

Calculation: Worst & Real Case



Map data: © OpenStreetMap contributors (under ODbL) and SRTM | Map-rendering: © OpenTopoMap (CC-BY-SA). Distribution through EMD and windPRO.

0 1 2 3 4 km

Map: OpenTopoMap, Print scale 1:75 000, Map center Geo WGS84 East: 26,185019° E North: 56,475703° N

New WTG

Shadow receptor

Flicker map level: DTM model