

INTEGRALE RICOSTRUZIONE PARCHI EOLICI

"Orsara"

ADEGUAMENTO TECNICO IMPIANTO EOLICO MEDIANTE INTERVENTO DI REPOWERING DELLE TORRI ESISTENTI E RIDUZIONE NUMERICA DEGLI AEROGENERATORI



Edison Rinnovabili SpA

Foro Buonaparte, 31 - 20121 Milano



Progettazione Coordinamento	 VEGA sas LANDSCAPE ECOLOGY & URBAN PLANNING Via dell'Carri, 48 - 71121 Foggia - Tel. 0881.756251 - Fax 1784412324 mail: info@studiovega.org - website: www.studiovega.org	Studi Ambientali e Paesaggistici	Arch. Antonio Demaio Via N. delli Carri, 48 - 71121 Foggia (FG) Tel. 0881.756251 Fax 1784412324 E-Mail: sit.vega@gmail.com		
Studio Geologico-Idrologico	Studio di Geologia Tecnica & Ambientale Dott.sa Geol. Giovanna Amedei Via Pietro Nenni, 4 - 71012 Rodi Garganico (Fg) Tel./Fax 0884.965793 Cell. 347.626259 E-Mail: giovannaamedei@tiscali.it		Studio Acustico	Arch. Denora Marianna Via Savona, 3 70022 Altamura (BA) Tel./Fax 080.9162455 Cell. 3315600322 E-Mail: info@studiprogettazioneacustica.it	
Studio Naturalistici e Forestali	Dott. Forestale Luigi Lupo Via Mario Pagano 47 - 71121 Foggia E-Mail: luigilupo@libero.it		Studio Idraulico	Studio di ingegneria Dott.sa Ing. Antonella Laura Giordano Viale degli Aviatori, 73 - 71121 Foggia (FG) Tel./Fax 0881.070126 Cell. 345.626259 E-Mail: lauragiordano@gmail.it	
Progettazione elettrica	 STUDIO INGEGNERIA ELETTRICA MEZZINA dott. ing. Antonio Via T. Solis 128 71016 San Severo (FG) Tel. 0882.228072 Fax 0882.243651 e-mail: info@studomezzina.net		Studio archeologico	 ArcheoLogica s.r.l. Il presidente Dott. Vincenzo Ficco Tel. 0881.750334 E-Mail: info@archeologicasrl.com	
Opera	Progetto di Integrale Ricostruzione di n. 1 impianto eolico composto da 7 aerogeneratori da 6,6 MW per una potenza complessiva di 46,2 MW nel Comune di Orsara di Puglia e relative opere di connessione alla località "Montagna" con smantellamento di n. 30 aerogeneratori di potenza in esercizio pari a 18 MW.				
Oggetto	Nome Elaborato: VIA_03_WJQUTJ3-SHFCK_Shadow flickering	Folder: VIA_03_Relazioni Specialistiche			
	Descrizione Elaborato: Relazione di Shadow flickering				
00	Magigo 2024	Emissione per progetto definitivo	VEGA	Arch. A. Demaio	Edison Rinnovabili SpA
Rev.	Data	Oggetto della revisione	Elaborazione	Verifica	Approvazione
Scala:	Varie	Integrale Ricostruzione Orsara			
Formato:		Codice progetto AU WJQUTJ3			

Integrale Ricostruzione Parco Eolico "Orsara".

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1. PREMESSA

La presente relazione è relativa alla progettazione definitiva in seno al procedimento autorizzativo del “*Progetto per il rifacimento e potenziamento di un parco eolico*” che la **Edison Rinnovabili Spa** intende realizzare nel comune di Orsara di Puglia (FG), nello specifico la proposta progettuale prevede la dismissione dell’ impianto esistente costituito da n. 30 aerogeneratori (modello Enercon E40, diametro 44m, hub 46m e potenza unitaria 600 kW/WTG) per una potenza complessiva di 18 MW, e la realizzazione di un nuovo impianto costituito da n. 7 aerogeneratori di diametro rotore fino a 155m, altezza al mozzo fino a 127,5 m, per una potenza nominale fino a 6,6 MW e complessiva 46,2 MW)

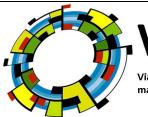
Nome WTG	WGS 84 UTM33	
	Est	Nord
1	517465	4569582
2	517955	4569572
3	518390	4569333
4	518821	4569123
5	519228	4568869
6	519682	4568984
7	518771	4568428

Il presente elaborato ha lo scopo di valutare in maniera tecnica l'eventuale impatto generato dall'evoluzione dell'ombra derivante dalla futura installazione dell'impianto eolico sopra descritto.

2. LO SHADOW FLICKERING

Per lo studio dello Shadow Flicker è stata presa in considerazione una SIEMENS-GAMESA che ha le medesime caratteristiche dimensionali dell'aerogeneratore di progetto avente un'altezza al mozzo fino a 127,5 metri ed un diametro del rotore fino a 155 metri.

Lo Shadow-Flickering è l'espressione comunemente impiegata in ambito specialistico per descrivere l'effetto stroboscopico delle ombre proiettate dalle pale rotanti degli aerogeneratori eolici quando sussistono le condizioni meteorologiche opportune; infatti la possibilità e la durata di tali effetti dipendono da una serie di condizioni ambientali, tra cui : la posizione del sole, l'ora del giorno, il giorno dell'anno, le condizioni atmosferiche ambientali e la posizione della turbina eolica rispetto ad un recettore sensibile. La valutazione tecnica è eseguita con l'ausilio di un software di simulazione specifico per la progettazione degli impianti eolici WIND PRO®, costituito da un insieme di moduli di elaborazione orientati alla simulazione di una serie

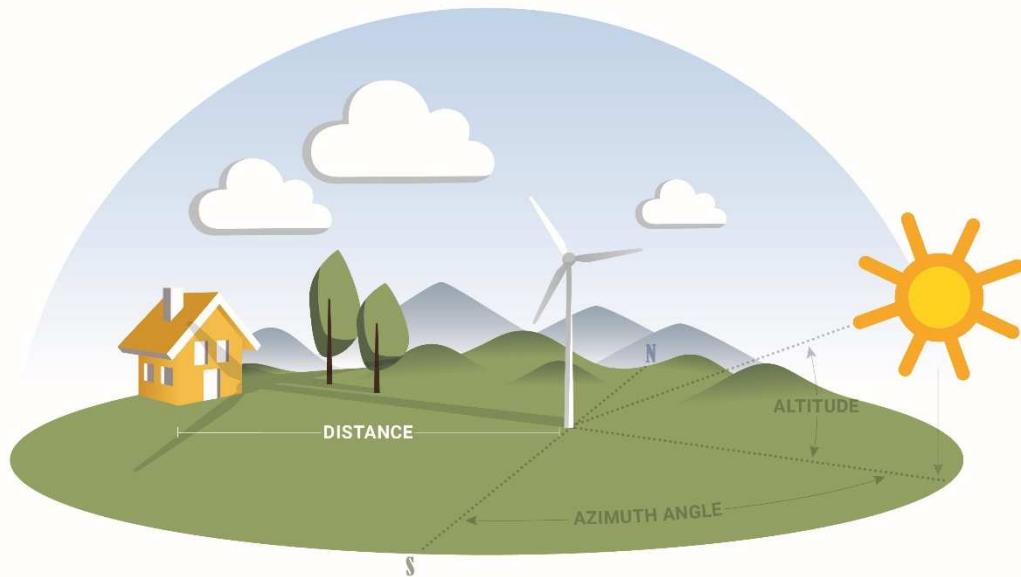


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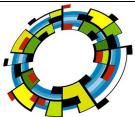
di aspetti che caratterizzano le diverse fasi progettuali. Il modulo SHADOW è quello specifico per la valutazione dell'evoluzione dell'ombra e del flickering. In tale report è riportata:

- *La descrizione del caso studio con le posizioni delle turbine e loro caratteristiche tecniche*
- *Una breve descrizione tecnica del fenomeno di shadow flickering*
- *La descrizione dei recettori soggetti al fenomeno per i quali è stata richiesta questa analisi*
- *Sintesi della metodologia di analisi seguita per lo studio*
- *Sintesi dei risultati ottenuti, con allegati grafici ed analitici di dettaglio che descrivono il fenomeno su ognuno dei recettori e da parte di ognuna delle turbine per tutto l'anno solare.*



3. STUDIO DELL'EVOLUZIONE DELL'OMBRA GIORNALIERA GENERATA DAGLI AEROGENERATORI

Le turbine eoliche, come altre strutture fortemente sviluppate in altezza, proiettano un'ombra sulle aree adiacenti in presenza della luce solare diretta. Per chi vive in tali zone prossime all'insediamento eolico può essere molto fastidioso il cosiddetto fenomeno del "flicker" che consiste in un effetto di lampeggiamento che si verifica quando le pale del rotore in movimento "tagliano" la luce solare in maniera intermittente. Una progettazione attenta a questa problematica permette di evitare questo spiacevole fenomeno semplicemente prevedendo il luogo di incidenza dell'ombra e disponendo le turbine in maniera tale che l'ombra sulle zone sensibili non superi un certo numero di ore all'anno. Il grafico in figura riporta l'evoluzione annuale dell'ombra di una turbina considerando il caso peggiore di pale sempre in rotazione intorno al mozzo, e orientate sempre ortogonalmente al sole durante la sua evoluzione giornaliera.



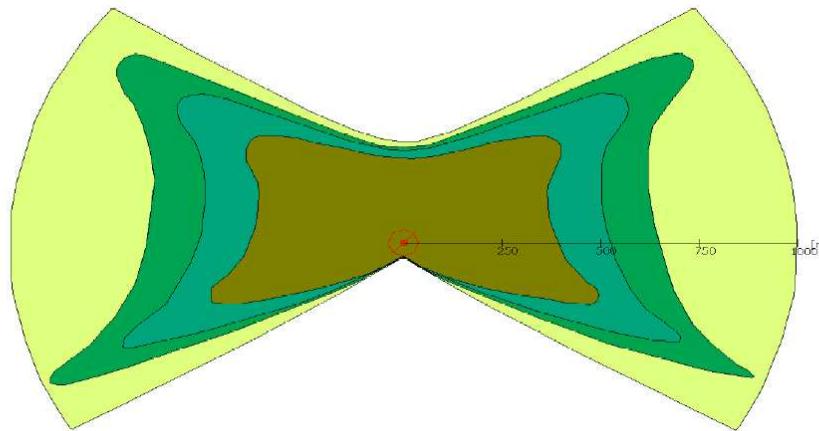
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Via delle Carri, 48 - 71121 Foggia - Tel. 0881.756251 - Fax 1784412324
mail: info@studiovega.org - website: www.studiovega.org

Protocollo: SHFCK
Data emissione: 2024
Committente: Edison Rinnovabili Spa
N° commessa: 2023-022
File: Doc_OmbraGiornaliera

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Come è evidente dal grafico e dalla legenda le ore annue di ombra sono sempre minori con l'aumentare della distanza dal pilone secondo una particolare geometria dettata dalla posizione geografica; da osservare che l'ombra arriva a proiettarsi anche sino ad una distanza di 1 km, anche se solo per pochi minuti all'anno.



ALMENO 100 ORE DI OMBRA ALL'ANNO



ALMENO 30 ORE DI OMBRA ALL'ANNO



ALMENO 50 ORE DI OMBRA ALL'ANNO



MENO DI 30 ORE DI OMBRA ALL'ANNO

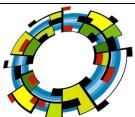
Figura 2: Evoluzione annuale tipo dell'ombra di una pala

Considerati i pochi precedenti esistenti (Germania) e le ipotesi così penalizzanti con cui è stata calcolato tale grafico si è ritenuto opportuno effettuare una sovrapposizione sull'impianto della parte più interna del grafico ovvero dell'area che supera le **100 ore all'anno di ombra dei punti di installazione, intendendo questo come limite da non superarsi.**

In Italia, così come nella maggior parte dei paesi Europei ed extraeuropei non esiste una normativa specifica in relativa al disturbo generato dal fenomeno di Shadow – Flickering. Esistono delle regolamentazioni locali ma quasi mai comprendono limiti numerici specifici, quanto piuttosto delle raccomandazioni tese a sottolineare che il fenomeno non sia “unreasonable” o “significant”.

4. INDIVIDUAZIONE DEI RECETTORI ED IPOTESI DI CALCOLO

L'analisi di shadow-flickering di cui al presente studio è stata elaborata per specifici 13 recettori che circondano l'impianto; tuttavia, alcune strutture inserite nel modello di simulazione potrebbero essere ruderii



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non abitati e sostanzialmente privi di caratteristiche minime di abitabilità o agibilità; il che sarà analizzato nel seguito.

Lo studio, i cui risultati in dettaglio sono riportati nei report allegati alla presente relazione, è stato condotto con uno specifico software (WindPRO).

Nello studio ci si è posti nella condizione più sfavorevole possibile, in quanto si è considerato che:

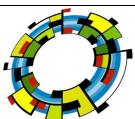
- il sole risplende per tutta la giornata dall'alba al tramonto (cioè si è sempre in assenza di copertura nuvolosa);
- il piano di rotazione delle pale è sempre perpendicolare alla linea che passa per il sole e per l'aerogeneratore (l'aerogeneratore “insegue” il sole);
- l'aerogeneratore è sempre operativo.

Allo stesso tempo, si è trascurata la presenza degli alberi e di altri ostacoli che bordano le strade “intercettando” l'ombra degli aerogeneratori riducendo il fenomeno del flickering sui recettori.

Ciò significa che i risultati forniti dal calcolo sono ampiamente cautelativi.

In base alla metodologia descritta nei paragrafi precedenti, sono stati utilizzati i seguenti dati di input per impostare il modello di simulazione per la valutazione del fenomeno di Shadow-Flickering degli aerogeneratori di progetto:

- a) **Il DTM o Modello del terreno digitale** per caratterizzare l'orografia è stato estrapolato dal grid disponibile in download dal SIT della Regione Puglia, georeferenziato, sovrapposto, confrontato e adeguato con le curve di livello presenti sulla cartografia ufficiale CTR 1:5.000 con uno step di 5 m. Il modello digitale ottenuto copre un'area sufficiente ad inglobare l'area del parco eolico di progetto e trova un ottimo riscontro con l'andamento orografico verificato in sito.
- b) **Posizioni geografiche di recettori con dettaglio dimensionale delle aree più esposte.** Sono i ricettori individuati dallo studio acustico e in quello della gittata massima degli elementi rotanti; essi sono classificati secondo la loro abitabilità e destinazione d'uso. Per tutti i ricettori si è ritenuto opportuno usare l'ipotesi di cautela della modalità “green house mode”. Questa scelta è stata operata poiché in talune circostanze anche lo spazio antistante le strutture può essere considerato o adibito a luogo di riposo e relax. La scelta di una singola finestra o di una facciata in alcune condizioni potrebbe risultare riduttiva allo scopo di una vera valutazione d'impatto.
- c) **Posizioni geografiche delle turbine eoliche e loro caratteristiche dimensionali**
Gli aerogeneratori di progetto con le loro caratteristiche dimensionali e tecnologiche
- d) **Nessun ostacolo naturale o artificiale è stato modellato.**



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Ricettore	Name Windpro		Coordinate		Ore di ombra x anno	Giorni di ombra x anno	Max ore ombra x giorno
	ID	Name	E	N			
R04	1	A	518479	4568932	48:58	62	1:12
R05	2	B	517575	4570092	189:38	86	2:52
R12	3	C	517529	4569836	378:22	160	3:21
R22	4	D	518098	4568416	79:05	146	0:50
R23	5	E	518077	4568384	76:44	136	0:49
R24	6	F	518064	4568350	80:35	126	0:54
R25	7	G	517938	4568384	63:19	140	0:41
R26	8	H	517962	4568352	63:48	130	0:42
R40	9	I	520227	4568502	65:43	100	0:59
R41	10	J	520216	4568489	59:21	96	0:59
R42	11	K	520190	4568481	51:45	91	0:56
R43	12	L	518049	4568395	72:41	140	0:47
R44	13	M	518058	4568396	74:04	140	0:47

Tab. 1 – Coordinate ricettori UTM-WGS84

5. I RISULTATI DEL CALCOLO DELL'EVOLUZIONE DELL'OMBRA

Come sopra accennato, nella procedura “Worst case”, (quella di cui ai calcoli effettuati), il fenomeno di shadow/flickering viene calcolato non tenendo conto di una serie di fattori, i cui dati allo stato dell’arte per il sito in questione non sono disponibili. Se fossero considerati tali fattori si potrebbe calcolare il fenomeno di shadow/flickering con la metodologia “real case”, nel qual caso, da quanto riportato nella letteratura specialistica secondo altri casi simili, si avrebbero risultati indicanti una riduzione del fenomeno ad 1/3 dei valori.

Cautelativamente assumiamo per effetto di tali fattori una riduzione del fenomeno del flickering di 1/2.

Dalle simulazioni effettuate, i cui risultati sono riportati nella **Tab. 1**, si evince che gli aerogeneratori di progetto generano maggiormente il fenomeno di shadow/flickering sui ricettori evidenziati, considerando solo quelli di categoria catastale più interessante per il fenomeno (ricettori con categoria catastale A e con più di 30 ore/anno nel “Worst Case”:

NESSUN RICETTORE DI CATEGORIA CATASTALE “A” È INTERESSATO DAL FENOMENO

6. CONCLUSIONI E RACCOMANDAZIONI

In conclusione, si può affermare che i risultati ottenuti dell’elaborazione evidenziano, pur considerando le condizioni più sfavorevoli, che le turbine di progetto generano effetti di shadow flickering **i cui impatti**

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risultano essere nulli per la maggior parte dei recettori individuati, e piuttosto modesti per gli altri e che comunque quelli che interessano ore superiori a 30 ore annui NON APPARTENGONO ALLA CATEGORIA CATASTALE DI TIPO A.

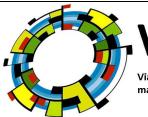
In ogni caso è comunque da rimarcare l'effetto di sovrastima dovuto al grado di cautela utilizzato per la simulazione che non tiene in conto di tutte le possibili fonti di attenuazione dell'effetto cui ogni recettore è (o può essere) soggetto quali presenza di alberi, ostacoli, siepi e quant'altro possa attenuare il fenomeno dell'evoluzione giornaliera dell'ombra.

6. ELENCO ALLEGATI

Di seguito vengono riportati i risultati dello Shadow Flicker elaborati con il software *WindPro*

1. Main result: quadro sintetico dei risultati di calcolo;
2. Calendar: analisi giornaliera dell'effetto “flickering” ricevuto da ogni recettore;
3. Calendar, graphical: grafico dell'analisi giornaliera dell'effetto “flickering” ricevuto da ogni recettore;
4. Calendar per WTG: analisi giornaliera dell'effetto “flickering” indotto da ogni aerogeneratore sui recettori;
5. Calendar per WTG, graphical: grafico dell'analisi giornaliera dell'effetto “flickering” indotto da ogni aerogeneratore sui recettori;
6. Map: mappa delle aree soggette ad ombreggiamento.

Foggia, Maggio 2024



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SHADOW - Main Result

Calculation: Ombra

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
The calculated times are "worst case" given by the following assumptions:
The sun is shining all the day, from sunrise to sunset
The rotor plane is always perpendicular to the line from the WTG to the sun
The WTG is always operating

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:

Height contours used: Elevation Grid Data Object: IR-Orsara_20km_EMDGrid
Obstacles used in calculation
Receptor grid resolution: 1,0 m

All coordinates are in
UTM (north)-WGS84 Zone: 33

WTGs

Easting	Northing	Z	Row data/Description	WTG type		Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
				Valid	Manufact.					Calculation distance	RPM
[m]											
1	517.465	4.569.582	842,2 Siemens Gamesa SG 6.6...	Yes	Siemens Gamesa	SG 6.6-155-6.600	6.600	155,0	122,5	2.040	8,8
2	517.955	4.569.572	834,8 Siemens Gamesa SG 6.6...	Yes	Siemens Gamesa	SG 6.6-155-6.600	6.600	155,0	122,5	2.040	8,8
3	518.390	4.569.333	864,4 Siemens Gamesa SG 6.6...	Yes	Siemens Gamesa	SG 6.6-155-6.600	6.600	155,0	122,5	2.040	8,8
4	518.821	4.569.123	868,2 Siemens Gamesa SG 6.6...	Yes	Siemens Gamesa	SG 6.6-155-6.600	6.600	155,0	122,5	2.040	8,8
5	519.228	4.568.869	941,5 Siemens Gamesa SG 6.6...	Yes	Siemens Gamesa	SG 6.6-155-6.600	6.600	155,0	122,5	2.040	8,8
6	519.682	4.568.983	907,4 Siemens Gamesa SG 6.6...	Yes	Siemens Gamesa	SG 6.6-145-6.600	6.600	145,0	127,5	2.040	8,8
7	518.771	4.568.428	870,3 Siemens Gamesa SG 6.6...	Yes	Siemens Gamesa	SG 6.6-155-6.600	6.600	155,0	122,5	2.040	8,8

Shadow receptor-Input

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Degrees from south cw	Slope of window	Direction mode	Eye height (ZVI) a.g.l.	[m]
				[m]	[m]	[m]	[°]	[°]			
A	518.479	4.568.932	826,3	1,0	1,0	1,0	-140,0	90,0	Fixed direction	2,0	
B	517.575	4.570.092	761,2	1,0	1,0	1,0	0,0	90,0	Fixed direction	2,0	
C	517.529	4.569.836	816,9	1,0	1,0	1,0	0,0	90,0	Fixed direction	2,0	
D	518.098	4.568.416	742,9	1,0	1,0	1,0	-90,0	90,0	Fixed direction	2,0	
E	518.077	4.568.384	741,0	1,0	1,0	1,0	-90,0	90,0	Fixed direction	2,0	
F	518.064	4.568.350	738,1	1,0	1,0	1,0	-90,0	90,0	Fixed direction	2,0	
G	517.938	4.568.384	719,6	1,0	1,0	1,0	-90,0	90,0	Fixed direction	2,0	
H	517.962	4.568.352	723,6	1,0	1,0	1,0	-90,0	90,0	Fixed direction	2,0	
I	520.227	4.568.502	802,7	1,0	1,0	1,0	120,0	90,0	Fixed direction	2,0	
J	520.216	4.568.489	802,6	1,0	1,0	1,0	120,0	90,0	Fixed direction	2,0	
K	520.190	4.568.481	804,4	1,0	1,0	1,0	120,0	90,0	Fixed direction	2,0	
L	518.049	4.568.395	736,4	1,0	1,0	1,0	-90,0	90,0	Fixed direction	2,0	
M	518.058	4.568.396	737,7	1,0	1,0	1,0	-90,0	90,0	Fixed direction	2,0	

Calculation Results

Shadow receptor

Shadow, worst case

No.	Shadow hours per year	Shadow days per year	Max shadow hours per day
A	48:58	62	1:12
B	189:38	86	2:52
C	378:22	160	3:21
D	79:05	146	0:50

To be continued on next page...



SHADOW - Main Result

Calculation: Ombra

...continued from previous page

Shadow, worst case

No.	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]
E	76:44	136	0:49
F	80:35	126	0:54
G	63:19	140	0:41
H	63:48	130	0:42
I	65:43	100	0:59
J	59:21	96	0:59
K	51:45	91	0:56
L	72:41	140	0:47
M	74:04	140	0:47

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

No.	Name	Worst case [h/year]
1	Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (1)	274:43
2	Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (2)	164:08
3	Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (3)	65:53
4	Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (4)	65:41
5	Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (5)	92:50
6	Siemens Gamesa SG 6.6-145 6600 145.0 !O! hub: 127,5 m (TOT: 200,0 m) (6)	40:34
7	Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (7)	101:28

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.

SHADOW - Calendar

Calculation: OmbraShadow receptor: A - Shadow Receptor: 1,0 × 1,0 Azimuth: -140,0° Slope: 90,0° (1)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:25	07:12	06:36	06:45	07:50 (5)	05:58	05:29	05:54	06:25	07:09 (6)	06:55	06:30 07:05
	16:41	17:15	17:49	19:24	37	08:27 (5)	19:56	20:26	20:17	19:34	72	08:27 (5) 18:43
2	07:26	07:11	06:34	06:43	07:21 (6)	05:57	05:29	05:55	06:26	07:09 (6)	06:56	06:31 07:06
	16:41	17:16	17:51	19:25	48	08:27 (5)	19:57	20:26	20:37	19:32	71	08:26 (5) 18:42
3	07:26	07:10	06:33	06:41	07:18 (6)	05:56	05:28	05:51	06:27	07:09 (6)	06:57	06:32 07:07
	16:42	17:18	17:52	19:26	57	08:29 (5)	19:58	20:27	20:36	19:31	71	08:26 (5) 18:40
4	07:26	07:09	06:31	06:40	07:16 (6)	05:55	05:28	05:51	06:28	07:09 (6)	06:58	06:33 07:08
	16:43	17:19	17:53	19:27	61	08:29 (5)	19:59	20:28	20:36	19:29	70	08:26 (5) 18:38
5	07:26	07:08	06:29	06:38	07:14 (6)	05:53	05:28	05:52	06:29	07:09 (6)	06:59	06:35 07:09
	16:44	17:20	17:54	19:28	64	08:28 (5)	20:00	20:29	20:36	19:28	70	08:26 (5) 18:37
6	07:26	07:07	06:28	06:36	07:13 (6)	05:52	05:27	05:52	06:30	07:09 (6)	07:01	06:36 07:10
	16:45	17:21	17:55	19:29	68	08:29 (5)	20:01	20:29	20:36	19:26	67	08:25 (5) 18:35
7	07:26	07:06	06:26	06:35	07:12 (6)	05:51	05:27	05:33	06:31	07:10 (6)	07:02	06:37 07:11
	16:46	17:23	17:56	19:30	70	08:29 (5)	20:02	20:30	20:35	19:24	64	08:24 (5) 18:33
8	07:25	07:04	06:25	06:33	07:12 (6)	05:50	05:27	05:34	06:32	07:11 (6)	07:03	06:38 07:12
	16:47	17:24	17:57	19:31	70	08:29 (5)	20:03	20:30	20:35	19:22	62	08:24 (5) 18:32
9	07:25	07:03	06:23	06:31	07:11 (6)	05:49	05:27	05:34	06:33	07:12 (6)	07:04	06:39 07:13
	16:48	17:25	17:59	19:32	71	08:28 (5)	20:04	20:31	20:35	19:21	57	08:23 (5) 18:30
10	07:25	07:02	06:21	06:30	07:10 (6)	05:47	05:26	05:35	06:34	07:14 (6)	07:05	06:41 07:14
	16:49	17:26	18:00	19:33	71	08:27 (5)	20:05	20:32	20:34	19:19	49	08:21 (5) 18:28
11	07:25	07:01	06:20	06:28	07:10 (6)	05:46	05:26	05:36	06:35	07:42 (5)	07:06	06:42 07:14
	16:50	17:28	18:01	19:34	72	08:28 (5)	20:06	20:32	20:34	19:17	37	08:19 (5) 18:27
12	07:25	07:00	06:18	06:27	07:10 (6)	05:45	05:26	05:36	06:36	07:43 (5)	07:07	06:43 07:15
	16:51	17:29	18:02	19:36	71	08:27 (5)	20:07	20:33	20:35	19:16	35	08:18 (5) 18:25
13	07:24	06:58	06:16	06:25	07:10 (6)	05:44	05:26	05:37	06:37	07:44 (5)	07:08	06:44 07:16
	16:52	17:30	18:03	19:37	70	08:26 (5)	20:08	20:33	20:35	19:14	32	08:16 (5) 18:24
14	07:24	06:57	06:15	06:23	07:10 (6)	05:43	05:26	05:38	06:38	07:46 (5)	07:09	06:45 07:17
	16:53	17:31	18:04	19:38	67	08:25 (5)	20:09	20:34	20:32	19:12	28	08:14 (5) 18:22
15	07:24	06:56	06:13	06:22	07:10 (6)	05:42	05:26	05:39	06:39	07:48 (5)	07:10	06:47 07:18
	16:54	17:33	18:05	19:39	65	08:24 (5)	20:10	20:34	20:32	19:11	24	08:12 (5) 18:20
16	07:23	06:54	06:11	06:20	07:11 (6)	05:41	05:26	05:40	06:40	07:50 (5)	07:11	06:48 07:18
	16:56	17:34	18:06	19:40	62	08:24 (5)	20:11	20:34	20:31	19:09	19	08:09 (5) 18:19
17	07:23	06:53	06:10	06:19	07:12 (6)	05:40	05:26	05:40	06:41	07:55 (5)	07:12	06:49 07:19
	16:57	17:35	18:07	19:41	58	08:22 (5)	20:12	20:35	20:31	19:07	8	08:03 (5) 18:17
18	07:22	06:52	06:08	06:17	07:13 (6)	05:39	05:26	05:41	06:11	08:01 (5)	06:42	07:14 07:20
	16:58	17:36	18:09	19:42	54	08:21 (5)	20:13	20:35	20:30	12	08:13 (5) 19:05	
19	07:22	06:50	06:06	06:16	07:15 (6)	05:38	05:26	05:42	06:12	07:57 (5)	06:43	07:15 07:20
	16:59	17:37	18:10	19:43	46	08:19 (5)	20:14	20:35	20:29	19	08:16 (5) 19:04	
20	07:21	06:49	06:05	06:14	07:46 (5)	05:37	05:26	05:43	06:13	07:55 (5)	06:44	07:16 07:21
	17:00	17:39	18:11	19:44	32	08:18 (5)	20:15	20:36	20:29	19:53	23	08:18 (5) 19:02
21	07:21	06:48	06:03	06:13	07:47 (5)	05:37	05:26	05:44	06:14	07:53 (5)	06:45	07:17 07:21
	17:01	17:40	18:12	19:45	29	08:16 (5)	20:16	20:36	20:28	19:51	27	08:20 (5) 19:00
22	07:20	06:46	06:01	06:11	07:48 (5)	05:36	05:27	05:45	06:15	07:51 (5)	06:46	07:18 07:22
	17:03	17:41	18:13	19:46	27	08:15 (5)	20:17	20:36	20:27	19:50	30	08:21 (5) 18:59
23	07:19	06:45	06:00	06:10	07:50 (5)	05:35	05:27	05:45	06:16	07:23 (6)	06:47	07:19 07:23
	17:04	17:42	18:14	19:47	23	08:13 (5)	20:18	20:36	20:26	19:48	36	08:22 (5) 18:57
24	07:19	06:43	05:58	06:08	07:52 (5)	05:34	05:27	05:46	06:17	07:18 (6)	06:48	07:20 07:23
	17:05	17:43	18:15	19:48	18	08:10 (5)	20:19	20:37	20:25	19:47	48	08:23 (5) 18:55
25	07:18	06:42	05:56	06:07	07:56 (5)	05:34	05:27	05:47	06:18	07:16 (6)	06:49	07:22 07:23
	17:06	17:45	18:16	19:49	10	08:06 (5)	20:20	20:37	20:24	19:45	54	08:24 (5) 18:53
26	07:17	06:40	05:55	07:09 (5)	06:05	05:33	05:28	05:48	06:19	07:14 (6)	06:50	07:22 07:24
	17:07	17:46	18:17	4	07:13 (5)	19:51	20:21	20:37	19:44	59	08:25 (5) 18:52	
27	07:16	06:39	05:53	07:03 (5)	06:04	05:32	05:28	05:49	06:20	07:13 (6)	06:51	07:24 07:24
	17:09	17:47	18:18	17	07:20 (5)	19:52	20:22	20:37	19:42	62	08:25 (5) 18:50	
28	07:15	06:37	05:51	06:59 (5)	06:03	05:32	05:28	05:50	06:21	07:12 (6)	06:52	07:25 07:24
	17:10	17:48	18:19	23	07:22 (5)	19:53	20:22	20:37	19:41	65	08:26 (5) 18:48	
29	07:15	06:50	06:01	05:31	05:29	05:51	06:22	07:11 (6)	06:53	06:26	07:03 07:25	
	17:11	17:21	28	08:24 (5)	19:54	20:23	20:37	20:21	19:39	67	08:26 (5) 18:47	
30	07:14	06:48	06:00	05:30	05:29	05:52	06:23	07:10 (6)	06:54	06:27	07:04 07:25	
	17:12	17:22	32	08:25 (5)	19:55	20:24	20:37	20:20	19:37	69	08:26 (5) 18:45	
31	07:13	06:46	07:52 (5)	05:30	05:28	05:53	06:24	07:10 (6)	06:54	06:29	07:25 07:25	
	17:14	19:23	35	08:27 (5)	05:25	20:25	20:19	19:36	71	08:27 (5)	16:57	16:40 16:40
Potential sun hours	297	297	369	399	449	453	460	428	375	836	345	297 287
Total, worst case			139	1321					642			

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: OmbraShadow receptor: B - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (2)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:26	08:04 (4) 07:12	09:29 (2) 06:36	06:45 05:58	05:29 05:30	05:54 06:25	06:55 06:30	07:05 07:05	07:49 (4)			
	16:41	172 13:25 (1) 17:15	19 09:48 (2) 17:49	19:24 19:56	20:26 20:37	20:18 19:34	18:43 16:56					
2	07:26	08:05 (4) 07:11	09:34 (2) 06:34	06:43 05:57	05:29 05:30	05:55 06:26	06:56 06:31	07:06 07:06	07:49 (4)			
	16:41	171 13:25 (1) 17:16	10 09:44 (2) 17:51	19:25 19:57	20:26 20:37	20:16 19:33	18:42 16:55					
3	07:26	08:05 (4) 07:10		06:33 06:41	05:56 05:28	05:31 05:56	06:27 06:57	06:32 06:32				
	16:42	170 13:25 (1) 17:18		17:52 19:26	19:58 20:27	20:36 20:15	19:31 18:40	16:54 16:54				
4	07:26	08:05 (4) 07:09		06:31 06:40	05:55 05:28	05:31 05:57	06:28 06:58	06:33 06:33				
	16:43	170 13:25 (1) 17:19		17:53 19:27	19:59 20:28	20:36 20:14	19:29 18:38	16:53 16:53				
5	07:26	08:05 (4) 07:08		06:29 06:38	05:53 05:28	05:32 05:58	06:29 07:00	06:35 06:35				
	16:44	170 13:25 (1) 17:20		17:54 19:28	20:00 20:29	20:36 20:13	19:28 18:37	16:51 16:51				
6	07:26	08:06 (4) 07:07		06:28 06:36	05:52 05:27	05:32 05:59	06:30 07:01	06:36 07:10	07:52 (4)			
	16:45	170 13:26 (1) 17:21		17:55 19:29	20:01 20:29	20:36 20:12	19:26 18:35	16:50 16:50				
7	07:26	08:06 (4) 07:06		06:26 06:35	05:51 05:27	05:33 06:00	06:31 07:02	06:37 07:11	07:52 (4)			
	16:46	169 13:26 (1) 17:23		17:56 19:30	20:02 20:30	20:35 20:11	19:24 18:33	16:49 16:49				
8	07:26	08:06 (4) 07:05		06:25 06:33	05:50 05:27	05:34 06:01	06:32 07:03	06:38 07:12	07:53 (4)			
	16:47	168 13:26 (1) 17:24		17:57 19:31	20:03 20:31	20:35 20:09	19:23 18:32	16:48 16:48				
9	07:25	08:06 (4) 07:03		06:23 06:31	05:49 05:27	05:34 06:02	06:33 07:04	06:39 07:13	07:54 (4)			
	16:48	167 13:25 (1) 17:25		17:59 19:32	20:04 20:31	20:35 20:08	19:21 18:30	16:47 16:47				
10	07:25	08:06 (4) 07:02		06:21 06:30	05:47 05:26	05:35 06:03	06:34 07:05	06:41 07:14	07:55 (4)			
	16:49	165 13:25 (1) 17:26		18:00 19:33	20:05 20:32	20:34 20:07	19:19 18:28	16:46 16:46				
11	07:25	08:07 (4) 07:01		06:20 06:28	05:46 05:26	05:36 06:04	06:35 07:06	06:42 07:15	07:54 (4)			
	16:50	165 13:26 (1) 17:28		18:01 19:35	20:06 20:32	20:34 20:06	19:17 18:27	16:45 16:45				
12	07:25	08:07 (4) 07:00		06:18 06:27	05:45 05:26	05:36 06:05	06:36 07:07	06:43 07:15	07:55 (4)			
	16:51	162 13:25 (1) 17:29		18:02 19:36	20:07 20:33	20:34 20:04	19:16 18:25	16:44 16:44				
13	07:24	08:07 (4) 06:58		06:16 06:25	05:44 05:26	05:37 06:06	06:37 07:08	06:44 07:16	07:56 (4)			
	16:52	160 13:25 (1) 17:30		18:03 19:37	20:09 20:33	20:33 20:03	19:14 18:24	16:43 16:43				
14	07:24	08:08 (4) 06:57		06:15 06:23	05:43 05:26	05:38 06:07	06:38 07:09	06:45 07:17	07:57 (4)			
	16:53	158 13:25 (1) 17:31		18:04 19:38	20:10 20:34	20:32 20:01	19:12 18:22	16:42 16:42				
15	07:24	08:08 (4) 06:56		06:13 06:22	05:42 05:26	05:39 06:08	06:39 07:10	06:47 07:18	07:57 (4)			
	16:54	156 13:24 (1) 17:33		18:05 19:39	20:11 20:34	20:32 20:00	19:11 18:20	16:41 16:41				
16	07:23	08:09 (4) 06:55		06:12 06:20	05:41 05:26	05:35 06:09	06:40 07:11	06:48 07:18	07:58 (4)			
	16:55	151 13:23 (1) 17:34		18:06 19:40	20:12 20:35	20:31 19:59	19:09 18:19	16:40 16:40				
17	07:23	08:09 (4) 06:53		06:10 06:19	05:40 05:26	05:36 06:10	06:41 07:13	06:49 07:19	07:59 (4)			
	16:57	148 13:22 (1) 17:35		18:08 19:41	20:12 20:35	20:31 19:57	19:07 18:17	16:40 16:40				
18	07:22	08:09 (4) 06:52		06:08 06:17	05:39 05:26	05:41 06:11	06:42 07:14	06:50 07:20	07:59 (4)			
	16:58	144 13:21 (1) 17:36		18:09 19:42	20:13 20:35	20:30 19:56	19:05 18:16	16:39 16:39				
19	07:22	08:10 (4) 06:50		06:06 06:16	05:38 05:26	05:42 06:12	06:43 07:15	06:51 07:20	08:00 (4)			
	16:59	139 13:20 (1) 17:37		18:10 19:43	20:14 20:36	20:29 19:54	19:04 18:14	16:38 16:38				
20	07:21	08:11 (4) 06:49		06:05 06:14	05:37 05:26	05:43 06:13	06:44 07:16	06:53 07:21	08:01 (4)			
	17:00	132 13:18 (1) 17:39		18:11 19:44	20:15 20:36	20:29 19:53	19:02 18:13	16:37 16:37				
21	07:21	08:12 (4) 06:48		06:03 06:13	05:37 05:26	05:44 06:14	06:45 07:17	06:54 07:22	08:01 (4)			
	17:01	127 13:17 (1) 17:40		18:12 19:45	20:16 20:36	20:28 19:51	19:00 18:11	16:37 16:37				
22	07:20	08:13 (4) 06:46		06:01 06:11	05:36 05:27	05:45 06:15	06:46 07:18	06:55 08:02				
	17:03	115 13:14 (1) 17:41		18:13 19:46	20:17 20:36	20:27 19:50	18:59 18:10	16:36 16:36				
23	07:19	08:14 (4) 06:45		06:00 06:10	05:35 05:27	05:45 06:16	06:47 07:19	06:56 08:02				
	17:04	97 13:08 (1) 17:42		18:14 19:47	20:18 20:36	20:26 19:48	18:57 18:08	16:35 16:35				
24	07:19	08:15 (4) 06:43		05:58 06:08	05:34 05:27	05:46 06:17	06:48 07:20	06:57 07:23	08:02 (4)			
	17:05	83 10:00 (2) 17:43		18:15 19:48	20:19 20:37	20:25 19:47	18:55 18:07	16:35 16:35				
25	07:18	08:17 (4) 06:42		05:56 06:07	05:34 05:27	05:47 06:18	06:49 06:22	06:58 08:03				
	17:06	76 10:00 (2) 17:45		18:16 19:50	20:20 20:37	20:24 19:45	18:53 17:06	16:34 16:34				
26	07:17	08:19 (4) 06:40		05:55 06:05	05:33 05:28	05:48 06:19	06:50 06:23	07:00 07:24	08:03 (4)			
	17:08	68 09:59 (2) 17:46		18:17 19:51	20:21 20:37	20:24 19:44	18:52 17:04	16:34 151				
27	07:16	08:41 (4) 06:39		05:53 06:04	05:32 05:28	05:49 06:20	06:51 06:24	07:01 07:24	08:03 (4)			
	17:09	54 09:58 (2) 17:47		18:18 19:52	20:22 20:37	20:23 19:42	18:50 17:03	16:33 156				
28	07:16	08:44 (4) 06:37		05:51 06:03	05:32 05:28	05:40 06:21	06:52 06:25	07:02 07:25	08:04 (4)			
	17:10	45 09:57 (2) 17:48		18:19 19:53	20:23 20:37	20:22 19:41	18:48 17:01	16:33 158				
29	07:15	09:22 (2)		06:50 06:01	05:31 05:29	05:51 06:22	06:53 06:26	07:03 07:25	08:04 (4)			
	17:11	33 09:55 (2)		19:21 19:54	20:23 20:37	20:21 19:39	18:47 17:00	16:32 160				
30	07:14	09:24 (2)		06:48 06:00	05:30 05:29	05:52 06:23	06:54 06:27	07:04 07:25	08:04 (4)			
	17:12	29 09:53 (2)		19:22 19:55	20:24 20:37	20:20 19:37	18:45 16:59	16:32 162				
31	07:13	09:26 (2)		06:46 06:04	05:30 05:28	05:53 06:24	06:53 06:29	07:25 08:04 (4)				
	17:14	25 09:51 (2)		19:23 19:56	20:25 20:37	20:19 19:36	16:58 16:58	16:40 172				
Potential sun hours	297	369	399	449	453	460	428	375	345	297	287	
Total, worst case	3959	29								2134	5256	

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: OmbraShadow receptor: C - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (3)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	January	February	March	April	May	June
1	07:26	11:53 (1) 07:12	07:39 (4) 06:36	07:55 (2) 06:45	05:58	05:29
	16:41	121 13:54 (1) 17:15	200 14:07 (1) 17:49	114 13:43 (1) 19:24	19:56	20:26
2	07:26	11:54 (1) 07:11	07:40 (4) 06:34	07:55 (2) 06:43	05:57	05:29
	16:41	120 13:54 (1) 17:16	199 14:07 (1) 17:51	101 13:38 (1) 19:25	19:57	20:26
3	07:26	11:54 (1) 07:10	07:40 (4) 06:33	07:57 (2) 06:41	05:56	05:28
	16:42	121 13:55 (1) 17:18	200 14:07 (1) 17:52	84 13:33 (1) 19:26	19:58	20:27
4	07:26	11:54 (1) 07:09	07:40 (4) 06:31	07:57 (2) 06:40	05:55	05:28
	16:43	121 13:55 (1) 17:19	200 14:07 (1) 17:53	50 08:47 (2) 19:27	19:59	20:28
5	07:26	11:55 (1) 07:08	07:41 (4) 06:29	07:58 (2) 06:38	05:53	05:28
	16:44	121 13:56 (1) 17:20	200 14:07 (1) 17:54	47 08:45 (2) 19:28	20:00	20:29
6	07:26	11:55 (1) 07:07	07:41 (4) 06:28	08:00 (2) 06:36	05:52	05:27
	16:45	122 13:57 (1) 17:21	200 14:07 (1) 17:55	44 08:44 (2) 19:29	20:01	20:29
7	07:26	11:56 (1) 07:06	07:41 (4) 06:26	08:01 (2) 06:35	05:51	05:27
	16:46	122 13:58 (1) 17:23	200 14:06 (1) 17:56	40 08:41 (2) 19:30	20:02	20:30
8	07:26	11:56 (1) 07:05	07:42 (4) 06:25	08:04 (2) 06:33	05:50	05:27
	16:47	122 13:58 (1) 17:24	198 14:06 (1) 17:57	35 08:39 (2) 19:31	20:03	20:31
9	07:25	11:55 (1) 07:03	07:43 (4) 06:23	08:06 (2) 06:31	05:49	05:27
	16:48	123 13:58 (1) 17:25	197 14:06 (1) 17:59	29 08:35 (2) 19:32	20:04	20:31
10	07:25	11:56 (1) 07:02	07:45 (4) 06:21	08:09 (2) 06:30	05:47	05:26
	16:49	123 13:59 (1) 17:26	195 14:06 (1) 18:00	22 08:31 (2) 19:33	20:05	20:32
11	07:25	11:57 (1) 07:01	07:47 (4) 06:20	08:15 (2) 06:28	05:46	05:26
	16:50	123 14:00 (1) 17:28	192 14:06 (1) 18:01	10 08:25 (2) 19:35	20:06	20:32
12	07:25	11:56 (1) 07:00	07:48 (3) 06:18		06:27	05:26
	16:51	124 14:00 (1) 17:29	190 14:05 (1) 18:02		19:36	20:07
13	07:24	11:57 (1) 06:58	07:49 (3) 06:16		06:25	05:26
	16:52	124 14:01 (1) 17:30	188 14:05 (1) 18:03		19:37	20:09
14	07:24	11:57 (1) 06:57	07:50 (3) 06:15		06:23	05:26
	16:53	125 14:02 (1) 17:31	187 14:05 (1) 18:04		19:38	20:10
15	07:24	11:57 (1) 06:56	07:51 (3) 06:13		06:22	05:26
	16:54	125 14:02 (1) 17:33	182 14:03 (1) 18:05		19:39	20:11
16	07:23	11:58 (1) 06:55	07:51 (2) 06:12		06:20	05:26
	16:56	125 14:03 (1) 17:34	181 14:03 (1) 18:06		19:40	20:12
17	07:23	11:58 (1) 06:53	07:51 (2) 06:10		06:19	05:26
	16:57	125 14:03 (1) 17:35	180 14:03 (1) 18:08		19:41	20:12
18	07:22	11:57 (1) 06:52	07:51 (2) 06:08		06:17	05:26
	16:58	126 14:03 (1) 17:36	176 14:01 (1) 18:09		19:42	20:13
19	07:22	08:15 (2) 06:50	07:51 (2) 06:06		06:16	05:26
	16:59	139 14:04 (1) 17:37	175 14:01 (1) 18:10		19:43	20:14
20	07:21	08:12 (2) 06:49	07:51 (2) 06:05		06:14	05:26
	17:00	146 14:04 (1) 17:39	170 13:59 (1) 18:11		19:44	20:15
21	07:21	08:10 (2) 06:48	07:51 (2) 06:03		06:13	05:26
	17:01	152 14:05 (1) 17:40	168 13:59 (1) 18:12		19:45	20:16
22	07:20	07:58 (3) 06:46	07:51 (2) 06:01		06:11	05:27
	17:03	164 14:05 (1) 17:41	164 13:57 (1) 18:13		19:46	20:17
23	07:19	07:46 (4) 06:45	07:52 (2) 06:00		06:10	05:27
	17:04	179 14:05 (1) 17:42	159 13:56 (1) 18:14		19:47	20:18
24	07:19	07:43 (4) 06:43	07:51 (2) 05:58		06:08	05:27
	17:05	185 14:05 (1) 17:43	155 13:54 (1) 18:15		19:48	20:19
25	07:18	07:43 (4) 06:42	07:52 (2) 05:56		06:07	05:27
	17:06	187 14:06 (1) 17:45	148 13:53 (1) 18:16		19:50	20:20
26	07:17	07:42 (4) 06:40	07:52 (2) 05:55		06:05	05:28
	17:08	190 14:06 (1) 17:46	141 13:50 (1) 18:17		19:51	20:21
27	07:16	07:41 (4) 06:39	07:53 (2) 05:53		06:04	05:28
	17:09	192 14:06 (1) 17:47	134 13:49 (1) 18:18		19:52	20:22
28	07:16	07:41 (4) 06:37	07:53 (2) 05:51		06:03	05:28
	17:10	194 14:07 (1) 17:48	126 13:46 (1) 18:19		19:53	20:23
29	07:15	07:40 (4)	06:50		06:01	05:29
	17:11	197 14:07 (1)	19:21		19:54	20:23
30	07:14	07:40 (4)	06:48		06:00	05:29
	17:13	197 14:07 (1)	19:22		19:55	20:24
31	07:13	07:40 (4)	06:46		05:30	
	17:14	198 14:07 (1)	19:23		20:25	
Potential sun hours	297	297	5005	576	399	453
Total, worst case	4533				449	

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

Day in month	Sun rise (hh:mm)	Minutes with flicker	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: OmbraShadow receptor: C - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (3)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	July	August	September	October		November		December
1	05:30	05:54	06:25	06:55		06:30	07:14 (4)	07:05 11:39 (1)
	20:37	20:18	19:34	18:43		16:56 195	13:36 (1) 16:32	123 13:42 (1)
2	05:30	05:55	06:26	06:56		06:31	07:13 (4) 07:06	11:39 (1)
	20:37	20:16	19:33	18:42		16:55 197	13:36 (1) 16:31	123 13:42 (1)
3	05:31	05:56	06:27	06:57	08:49 (2)	06:32	07:12 (4) 07:07	11:40 (1)
	20:36	20:15	19:31	18:40 18	09:07 (2) 16:54	198	13:36 (1) 16:31	122 13:42 (1)
4	05:31	05:57	06:28	06:58	08:45 (2)	06:33	07:11 (4) 07:08	11:40 (1)
	20:36	20:14	19:29	18:38 26	09:11 (2) 16:53	199	13:36 (1) 16:31	122 13:42 (1)
5	05:32	05:58	06:29	07:00	08:42 (2)	06:35	07:11 (4) 07:09	11:41 (1)
	20:36	20:13	19:28	18:37 32	09:14 (2) 16:51	200	13:37 (1) 16:31	122 13:43 (1)
6	05:33	05:59	06:30	07:01	08:39 (2)	06:36	07:10 (4) 07:10	11:41 (1)
	20:36	20:12	19:26	18:35 37	09:16 (2) 16:50	201	13:37 (1) 16:31	122 13:43 (1)
7	05:33	06:00	06:31	07:02	08:37 (2)	06:37	07:10 (4) 07:11	11:42 (1)
	20:35	20:11	19:24	18:33 41	09:18 (2) 16:49	201	13:37 (1) 16:30	121 13:43 (1)
8	05:34	06:01	06:32	07:03	08:34 (2)	06:38	07:11 (4) 07:12	11:42 (1)
	20:35	20:09	19:23	18:32 46	09:20 (2) 16:48	200	13:38 (1) 16:30	122 13:44 (1)
9	05:34	06:02	06:33	07:04	08:33 (2)	06:39	07:10 (4) 07:13	11:43 (1)
	20:35	20:08	19:21	18:30 48	09:21 (2) 16:47	200	13:38 (1) 16:30	121 13:44 (1)
10	05:35	06:03	06:34	07:05	08:31 (2)	06:41	07:10 (4) 07:14	11:44 (1)
	20:34	20:07	19:19	18:28 71	14:02 (1) 16:46	200	13:38 (1) 16:30	120 13:44 (1)
11	05:36	06:04	06:35	07:06	08:29 (2)	06:42	07:10 (4) 07:15	11:43 (1)
	20:34	20:06	19:17	18:27 93	14:09 (1) 16:45	199	13:38 (1) 16:30	121 13:44 (1)
12	05:37	06:05	06:36	07:07	08:28 (2)	06:43	07:12 (4) 07:15	11:44 (1)
	20:34	20:04	19:16	18:25 108	14:14 (1) 16:44	197	13:39 (1) 16:31	120 13:44 (1)
13	05:37	06:06	06:37	07:08	08:28 (2)	06:44	07:12 (4) 07:16	11:45 (1)
	20:33	20:03	19:14	18:24 119	14:18 (1) 16:43	197	13:39 (1) 16:31	120 13:45 (1)
14	05:38	06:07	06:38	07:09	08:27 (2)	06:45	07:12 (4) 07:17	11:46 (1)
	20:32	20:01	19:12	18:22 128	14:20 (1) 16:42	195	13:39 (1) 16:31	119 13:45 (1)
15	05:39	06:08	06:39	07:10	08:26 (2)	06:47	07:14 (4) 07:18	11:46 (1)
	20:32	20:00	19:11	18:20 136	14:22 (1) 16:41	192	13:39 (1) 16:31	119 13:45 (1)
16	05:40	06:09	06:40	07:11	08:25 (2)	06:48	07:15 (4) 07:18	11:46 (1)
	20:31	19:59	19:09	18:19 143	14:23 (1) 16:40	190	13:39 (1) 16:31	120 13:46 (1)
17	05:40	06:10	06:41	07:13	08:24 (2)	06:49	07:16 (4) 07:19	11:47 (1)
	20:31	19:57	19:07	18:17 150	14:25 (1) 16:40	187	13:39 (1) 16:32	120 13:47 (1)
18	05:41	06:11	06:42	07:14	08:23 (2)	06:50	07:17 (4) 07:20	11:47 (1)
	20:30	19:56	19:05	18:16 155	14:26 (1) 16:39	185	13:39 (1) 16:32	119 13:46 (1)
19	05:42	06:12	06:43	07:15	08:22 (2)	06:51	07:21 (4) 07:20	11:48 (1)
	20:29	19:54	19:04	18:14 161	14:27 (1) 16:38	179	13:40 (1) 16:32	119 13:47 (1)
20	05:43	06:13	06:44	07:16	08:22 (2)	06:53	07:33 (3) 07:21	11:49 (1)
	20:29	19:53	19:02	18:13 166	14:29 (1) 16:37	164	13:40 (1) 16:33	119 13:48 (1)
21	05:44	06:14	06:45	07:17	08:22 (2)	06:54	07:45 (2) 07:22	11:49 (1)
	20:28	19:51	19:00	18:11 168	14:29 (1) 16:37	152	13:40 (1) 16:33	119 13:48 (1)
22	05:45	06:15	06:46	07:18	08:21 (2)	06:55	07:48 (2) 07:22	11:50 (1)
	20:27	19:50	18:59	18:10 172	14:30 (1) 16:36	146	13:40 (1) 16:34	119 13:49 (1)
23	05:45	06:16	06:47	07:19	08:21 (2)	06:56	07:52 (2) 07:23	11:50 (1)
	20:26	19:48	18:57	18:08 175	14:31 (1) 16:35	140	13:41 (1) 16:34	119 13:49 (1)
24	05:46	06:17	06:48	07:20	08:21 (2)	06:57	11:35 (1) 07:23	11:50 (1)
	20:25	19:47	18:55	18:07 178	14:32 (1) 16:35	126	13:41 (1) 16:35	119 13:49 (1)
25	05:47	06:18	06:49	07:22	07:21 (2)	06:58	11:36 (1) 07:23	11:51 (1)
	20:24	19:45	18:53	17:06 180	13:33 (1) 16:34	125	13:41 (1) 16:35	119 13:50 (1)
26	05:48	06:19	06:50	07:23	07:21 (2)	07:00	11:36 (1) 07:24	11:51 (1)
	20:24	19:44	18:52	17:04 181	13:33 (1) 16:34	125	13:41 (1) 16:36	119 13:50 (1)
27	05:49	06:20	06:51	07:24	07:20 (3)	07:01	11:36 (1) 07:24	11:51 (1)
	20:23	19:42	18:50	17:03 184	13:33 (1) 16:33	125	13:41 (1) 16:37	120 13:51 (1)
28	05:50	06:21	06:52	07:25	07:19 (3)	07:02	11:36 (1) 07:25	11:52 (1)
	20:22	19:41	18:48	17:01 185	13:33 (1) 16:33	125	13:41 (1) 16:37	120 13:52 (1)
29	05:51	06:22	06:53	07:26	07:19 (3)	07:03	11:38 (1) 07:25	11:53 (1)
	20:21	19:39	18:47	17:00 188	13:35 (1) 16:32	124	13:42 (1) 16:38	119 13:52 (1)
30	05:52	06:23	06:54	07:27	07:18 (3)	07:04	11:38 (1) 07:25	11:53 (1)
	20:20	19:37	18:45	16:59 190	13:35 (1) 16:32	124	13:42 (1) 16:39	120 13:53 (1)
31	05:53	06:24	06:55	07:29	07:15 (4)		07:25	11:53 (1)
	20:19	19:36		16:58 194	13:35 (1)		16:40	120 13:53 (1)
Potential sun hours	460	428	375	345		297		287
Total, worst case					3673	5188		3727

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

Day in month	Sun rise (hh:mm)	Minutes with flicker	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: OmbraShadow receptor: D - Shadow Receptor: 1,0 × 1,0 Azimuth: -90,0° Slope: 90,0° (4)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	January	February	March	April	May	June	
1	07:25	07:12	06:36	06:45	05:58	07:31 (7)	05:29
	16:41	17:15	17:49	19:24	19:56	08:19 (7)	20:26
2	07:26	07:11	06:34	06:43	05:57	07:31 (7)	05:29
	16:41	17:16	17:51	19:25	19:57	08:18 (7)	20:26
3	07:26	07:10	06:33	06:41	05:56	07:30 (7)	05:29
	16:42	17:18	17:52	19:26	19:58	08:17 (7)	20:27
4	07:26	07:09	06:31	06:40	05:55	07:31 (7)	05:28
	16:43	17:19	17:53	19:27	19:59	08:17 (7)	20:28
5	07:26	07:08	06:29	06:38	05:53	07:31 (7)	05:28
	16:44	17:20	17:54	19:28	20:00	08:16 (7)	20:29
6	07:26	07:07	06:28	06:36	05:52	07:32 (7)	05:27
	16:45	17:21	17:55	19:29	20:01	08:16 (7)	20:29
7	07:26	07:06	06:26	06:35	05:51	07:32 (7)	05:27
	16:46	17:23	17:56	19:30	20:02	08:15 (7)	20:30
8	07:25	07:04	06:25	06:33	05:50	07:33 (7)	05:27
	16:47	17:24	17:57	19:31	20:03	08:14 (7)	20:30
9	07:25	07:03	06:23	06:31	05:49	07:33 (7)	05:27
	16:48	17:25	17:59	19:32	20:04	08:12 (7)	20:31
10	07:25	07:02	06:21	06:30	07:53 (7)	05:47	06:29 (6)
	16:49	17:26	18:00	19:33	14	08:07 (7)	20:05
11	07:25	07:01	06:20	06:28	07:50 (7)	05:46	06:29 (6)
	16:50	17:28	18:01	19:34	22	08:12 (7)	20:06
12	07:25	07:00	06:18	06:27	07:46 (7)	05:45	06:30 (6)
	16:51	17:29	18:02	19:36	28	08:14 (7)	20:07
13	07:24	06:58	06:16	06:25	07:45 (7)	05:44	06:31 (6)
	16:52	17:30	18:03	19:37	31	08:16 (7)	20:08
14	07:24	06:57	06:15	06:23	07:42 (7)	05:43	06:31 (6)
	16:53	17:31	18:04	19:38	35	08:17 (7)	20:09
15	07:24	06:56	06:13	06:22	07:40 (7)	05:42	06:32 (6)
	16:54	17:33	18:05	19:39	37	08:17 (7)	20:10
16	07:23	06:54	06:11	06:20	07:39 (7)	05:41	06:32 (6)
	16:56	17:34	18:06	19:40	40	08:19 (7)	20:11
17	07:23	06:53	06:10	06:19	07:37 (7)	05:40	06:33 (6)
	16:57	17:35	18:08	19:41	42	08:19 (7)	20:12
18	07:22	06:52	06:08	06:17	07:36 (7)	05:39	06:33 (6)
	16:58	17:36	18:09	19:42	44	08:20 (7)	20:13
19	07:22	06:50	06:06	06:16	07:35 (7)	05:38	06:35 (6)
	16:59	17:37	18:10	19:43	45	08:20 (7)	20:14
20	07:21	06:49	06:05	06:14	07:35 (7)	05:37	06:35 (6)
	17:00	17:39	18:11	19:44	46	08:21 (7)	20:15
21	07:21	06:48	06:03	06:13	07:33 (7)	05:37	06:35 (6)
	17:01	17:40	18:12	19:45	47	08:20 (7)	20:16
22	07:20	06:46	06:01	06:11	07:33 (7)	05:36	06:35 (6)
	17:03	17:41	18:13	19:46	48	08:21 (7)	20:17
23	07:19	06:45	06:00	06:10	07:33 (7)	05:35	06:35 (6)
	17:04	17:42	18:14	19:47	48	08:21 (7)	20:18
24	07:19	06:43	05:58	06:08	07:32 (7)	05:34	06:35 (6)
	17:05	17:43	18:15	19:48	49	08:21 (7)	20:19
25	07:18	06:42	05:56	06:07	07:32 (7)	05:34	06:35 (6)
	17:06	17:45	18:16	19:50	49	08:21 (7)	20:20
26	07:17	06:40	05:55	06:05	07:31 (7)	05:33	06:35 (6)
	17:08	17:46	18:17	19:51	49	08:20 (7)	20:21
27	07:16	06:39	05:53	06:04	07:31 (7)	05:32	06:35 (6)
	17:09	17:47	18:18	19:52	49	08:20 (7)	20:22
28	07:16	06:37	05:51	06:03	07:31 (7)	05:32	06:35 (6)
	17:10	17:48	18:19	19:53	49	08:20 (7)	20:22
29	07:15		06:50	06:01	07:30 (7)	05:31	06:35 (6)
	17:11		19:21	19:54	49	08:19 (7)	20:23
30	07:14		06:48	06:00	07:30 (7)	05:30	06:34 (6)
	17:13		19:22	19:55	49	08:19 (7)	20:24
31	07:13		06:46			05:30	06:24 (6)
	17:14		19:23			20:25	06:43 (6)
Potential sun hours	297	297	369	399	870	449	453
Total, worst case						981	748

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	(WTG causing flicker first time)
				Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: OmbraShadow receptor: D - Shadow Receptor: 1,0 × 1,0 Azimuth: -90,0° Slope: 90,0° (4)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	July	August	September	October	November	December
1	05:30	06:35 (6)	05:54	07:46 (7)	06:25	07:49 (7)
	20:37	26	07:01 (5)	20:18	35	08:21 (7)
2	05:30	06:34 (6)	05:55	07:45 (7)	06:26	07:53 (7)
	20:37	26	07:00 (5)	20:16	37	08:22 (7)
3	05:31	06:34 (6)	05:56	07:44 (7)	06:27	06:57
	20:36	27	07:01 (5)	20:15	38	08:22 (7)
4	05:31	06:33 (6)	05:57	07:43 (7)	06:28	06:58
	20:36	27	07:00 (5)	20:14	40	08:23 (7)
5	05:32	06:34 (6)	05:58	07:43 (7)	06:29	06:59
	20:36	26	07:00 (5)	20:13	41	08:24 (7)
6	05:33	06:33 (6)	05:59	07:42 (7)	06:30	07:01
	20:36	25	06:58 (5)	20:12	43	08:25 (7)
7	05:33	06:33 (6)	06:00	07:41 (7)	06:31	07:02
	20:35	25	06:58 (5)	20:11	44	08:25 (7)
8	05:34	06:32 (6)	06:01	07:41 (7)	06:32	07:03
	20:35	24	06:56 (5)	20:09	45	08:26 (7)
9	05:34	06:32 (6)	06:02	07:40 (7)	06:33	07:04
	20:35	22	06:54 (5)	20:08	47	08:27 (7)
10	05:35	06:33 (6)	06:03	07:40 (7)	06:34	07:05
	20:34	18	06:51 (6)	20:07	47	08:27 (7)
11	05:36	06:32 (6)	06:04	07:40 (7)	06:35	07:06
	20:34	19	06:51 (6)	20:05	47	08:27 (7)
12	05:37	06:32 (6)	06:05	07:39 (7)	06:36	07:07
	20:33	19	06:51 (6)	20:04	49	08:28 (7)
13	05:37	06:32 (6)	06:06	07:39 (7)	06:37	07:08
	20:33	20	06:52 (6)	20:03	49	08:28 (7)
14	05:38	06:32 (6)	06:07	07:39 (7)	06:38	07:09
	20:32	21	06:53 (6)	20:01	49	08:28 (7)
15	05:39	06:32 (6)	06:08	07:38 (7)	06:39	07:10
	20:32	20	06:52 (6)	20:00	49	08:27 (7)
16	05:40	06:32 (6)	06:09	07:37 (7)	06:40	07:11
	20:31	21	06:53 (6)	19:59	50	08:27 (7)
17	05:40	06:32 (6)	06:10	07:37 (7)	06:41	07:12
	20:31	21	06:53 (6)	19:57	50	08:27 (7)
18	05:41	06:32 (6)	06:11	07:37 (7)	06:42	07:14
	20:30	21	06:53 (6)	19:56	50	08:27 (7)
19	05:42	06:33 (6)	06:12	07:37 (7)	06:43	07:15
	20:29	21	06:54 (6)	19:54	49	08:26 (7)
20	05:43	06:32 (6)	06:13	07:38 (7)	06:44	07:16
	20:29	21	06:53 (6)	19:53	48	08:26 (7)
21	05:44	06:33 (6)	06:14	07:38 (7)	06:45	07:17
	20:28	20	06:53 (6)	19:51	48	08:26 (7)
22	05:45	06:33 (6)	06:15	07:38 (7)	06:46	07:18
	20:27	20	06:53 (6)	19:50	47	08:25 (7)
23	05:45	06:34 (6)	06:16	07:38 (7)	06:47	07:19
	20:26	19	06:53 (6)	19:48	46	08:24 (7)
24	05:46	06:34 (6)	06:17	07:39 (7)	06:48	07:20
	20:25	23	08:05 (7)	19:47	45	08:24 (7)
25	05:47	06:35 (6)	06:18	07:39 (7)	06:49	07:22
	20:24	31	08:10 (7)	19:45	44	08:23 (7)
26	05:48	06:36 (6)	06:19	07:40 (7)	06:50	07:24
	20:24	33	08:12 (7)	19:44	42	08:22 (7)
27	05:49	06:37 (6)	06:20	07:41 (7)	06:51	07:26
	20:23	35	08:14 (7)	19:42	40	08:21 (7)
28	05:50	06:38 (6)	06:21	07:42 (7)	06:52	07:27
	20:22	35	08:15 (7)	19:41	37	08:19 (7)
29	05:51	06:40 (6)	06:22	07:43 (7)	06:53	07:28
	20:21	34	08:17 (7)	19:39	35	08:18 (7)
30	05:52	07:48 (7)	06:23	07:45 (7)	06:54	07:29
	20:20	30	08:18 (7)	19:37	31	08:16 (7)
31	05:53	07:46 (7)	06:24	07:46 (7)		07:29
	20:19	33	08:19 (7)	19:36	27	08:13 (7)
Potential sun hours	460		428		375	
Total, worst case		763		1349		34

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

Day in month	Sun rise (hh:mm)	Minutes with flicker	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: OmbraShadow receptor: E - Shadow Receptor: 1,0 × 1,0 Azimuth: -90,0° Slope: 90,0° (5)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

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

SHADOW - Calendar

Calculation: OmbraShadow receptor: F - Shadow Receptor: 1,0 x 1,0 Azimuth: -90,0° Slope: 90,0° (6)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

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

SHADOW - Calendar

Calculation: OmbraShadow receptor: G - Shadow Receptor: 1,0 × 1,0 Azimuth: -90,0° Slope: 90,0° (7)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:25	07:12	06:36	06:45	05:59	07:23 (7) 05:29	06:29 (6) 05:30	06:40 (5) 05:54	07:40 (7) 06:25	06:55	06:30	07:05
2	16:41	17:15	17:49	19:24	19:56	40 08:03 (7) 20:26	25 06:54 (5) 20:37	24 07:04 (5) 20:18	23 08:03 (7) 19:34	18:43	16:56	16:32
3	07:26	07:11	06:34	06:43	05:57	07:24 (7) 05:29	06:30 (6) 05:30	06:40 (5) 05:55	07:39 (7) 06:26	06:56	06:31	07:06
4	16:41	17:16	17:51	19:25	19:57	38 08:02 (7) 20:26	25 06:55 (5) 20:37	24 07:04 (5) 20:16	25 08:04 (7) 19:32	18:42	16:55	16:31
5	07:26	07:10	06:33	06:41	05:56	07:23 (7) 05:29	06:30 (6) 05:31	06:40 (5) 05:56	07:38 (7) 06:27	06:57	06:32	07:07
6	16:42	17:18	17:52	19:26	19:58	38 08:01 (7) 20:27	26 06:56 (5) 20:36	24 07:04 (5) 20:15	28 08:06 (7) 19:31	18:40	16:54	16:31
7	07:26	07:09	06:31	06:40	05:55	07:24 (7) 05:28	06:32 (6) 05:31	06:40 (5) 05:57	07:37 (7) 06:28	06:58	06:33	07:08
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13	07:26	07:06	06:26	06:35	05:51	07:26 (7) 05:27	06:35 (5) 05:33	06:40 (6) 06:00	07:34 (7) 06:31	07:02	06:37	07:11
14	16:46	17:23	17:56	19:30	20:02	32 07:58 (7) 20:30	23 06:58 (5) 20:35	24 07:04 (5) 20:11	35 08:09 (7) 19:24	18:33	16:49	16:30
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22	16:50	17:28	18:01	19:35	20:06	24 07:53 (7) 20:32	24 06:59 (5) 20:34	25 07:02 (5) 20:05	39 08:11 (7) 19:17	18:27	16:45	16:30
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24	16:51	17:29	18:02	19:36	20:07	22 07:52 (7) 20:33	24 06:59 (5) 20:33	26 07:02 (5) 20:04	40 08:12 (7) 19:16	18:25	16:44	16:31
25	07:24	06:58	06:16	06:25	07:43 (7) 05:44	06:31 (6) 05:26	06:35 (5) 05:37	06:36 (6) 06:06	07:32 (7) 06:37	07:08	06:44	07:16
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57	0											

SHADOW - Calendar

Calculation: OmbraShadow receptor: H - Shadow Receptor: 1,0 × 1,0 Azimuth: -90,0° Slope: 90,0° (8)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

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

SHADOW - Calendar

Calculation: OmbraShadow receptor: I - Shadow Receptor: 1,0 × 1,0 Azimuth: 120,0° Slope: 90,0° (9)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	January	February	March	April	May	June	
1	07:25	07:12	06:36	06:44	18:24 (7) 05:58	05:29	18:52 (5)
	16:40	17:15	17:49	19:24	20 18:44 (7) 19:56	20:26	19:52 (4)
2	07:25	07:11	06:34	06:43	18:24 (7) 05:57	05:29	18:51 (5)
	16:41	17:16	17:50	19:25	18 18:42 (7) 19:57	20:26	19:52 (4)
3	07:26	07:10	06:32	06:41	18:27 (7) 05:56	05:28	18:52 (5)
	16:42	17:17	17:52	19:26	13 18:40 (7) 19:58	20:27	19:52 (4)
4	07:26	07:09	06:31	06:39	18:29 (7) 05:55	05:28	18:52 (5)
	16:43	17:19	17:53	19:27	8 18:37 (7) 19:59	20:28	19:53 (4)
5	07:26	07:08	06:29	06:38	05:53	05:28	18:51 (5)
	16:44	17:20	17:54	19:28	20:00	20:28	19:52 (4)
6	07:26	07:07	06:28	06:36	05:52	05:27	18:51 (5)
	16:45	17:21	17:55	19:29	20:01	20:29	19:53 (4)
7	07:25	07:06	06:26	06:35	05:51	05:27	18:52 (5)
	16:46	17:22	17:56	19:30	20:02	20:30	19:53 (4)
8	07:25	07:04	06:25	06:33	05:50	05:27	18:52 (5)
	16:47	17:24	17:57	19:31	20:03	20:30	19:54 (4)
9	07:25	07:03	06:23	06:31	05:48	05:27	18:52 (5)
	16:48	17:25	17:58	19:32	20:04	20:31	19:54 (4)
10	07:25	07:02	06:21	06:30	05:47	05:26	18:51 (5)
	16:49	17:26	18:00	19:33	20:05	20:32	19:53 (4)
11	07:25	07:01	06:20	06:28	05:46	05:26	18:52 (5)
	16:50	17:27	18:01	19:34	20:06	20:32	19:53 (4)
12	07:25	07:00	06:18	06:26	05:45	05:26	18:52 (5)
	16:51	17:29	18:02	19:35	20:07	20:33	19:54 (4)
13	07:24	06:58	06:16	06:25	05:44	05:26	18:52 (5)
	16:52	17:30	18:03	19:37	20:08	20:33	19:54 (4)
14	07:24	06:57	06:15	06:23	05:43	05:26	18:52 (5)
	16:53	17:31	18:04	19:38	20:09	20:34	19:54 (4)
15	07:24	06:56	06:13	06:22	05:42	05:26	18:52 (5)
	16:54	17:32	18:05	19:39	20:10	20:34	19:54 (4)
16	07:23	06:54	06:11	06:20	05:41	05:26	18:53 (5)
	16:55	17:34	18:06	19:40	20:11	20:34	19:54 (4)
17	07:23	06:53	06:10	06:19	05:40	05:26	18:53 (5)
	16:57	17:35	18:07	19:41	20:12	20:35	19:54 (4)
18	07:22	06:52	06:08	06:17	05:39	05:26	18:53 (5)
	16:58	17:36	18:09	19:42	20:13	20:35	19:54 (4)
19	07:22	06:50	06:06	06:16	05:38	19:35 (4)	05:26
	16:59	17:37	18:10	19:43	20:14	19:43 (4)	20:35
20	07:21	06:49	06:05	17:35 (7) 06:14	05:37	19:32 (4)	05:26
	17:00	17:39	18:11	4 17:39 (7) 19:44	20:15	19:45 (4)	20:36
21	07:21	06:47	06:03	17:31 (7) 06:13	05:37	19:04 (5)	05:26
	17:01	17:40	18:12	13 17:44 (7) 19:45	20:16	19:46 (4)	20:36
22	07:20	06:46	06:01	17:28 (7) 06:11	05:36	19:01 (5)	05:27
	17:03	17:41	18:13	17 17:45 (7) 19:46	20:17	19:48 (4)	20:36
23	07:19	06:45	06:00	17:26 (7) 06:10	05:35	18:58 (5)	05:27
	17:04	17:42	18:14	20 17:46 (7) 19:47	20:18	19:48 (4)	20:36
24	07:19	06:43	05:58	17:26 (7) 06:08	05:34	18:57 (5)	05:27
	17:05	17:43	18:15	21 17:47 (7) 19:48	20:19	19:49 (4)	20:36
25	07:18	06:42	05:56	17:24 (7) 06:07	05:33	18:56 (5)	05:27
	17:06	17:45	18:16	23 17:47 (7) 19:49	20:20	19:50 (4)	20:37
26	07:17	06:40	05:55	17:23 (7) 06:05	05:33	18:55 (5)	05:28
	17:07	17:46	18:17	24 17:47 (7) 19:50	20:21	19:50 (4)	20:37
27	07:16	06:39	05:53	17:23 (7) 06:04	05:32	18:54 (5)	05:28
	17:09	17:47	18:18	24 17:47 (7) 19:52	20:22	19:50 (4)	20:37
28	07:15	06:37	05:51	17:23 (7) 06:02	05:31	18:54 (5)	05:28
	17:10	17:48	18:19	24 17:47 (7) 19:53	20:22	19:51 (4)	20:37
29	07:15		06:50	18:23 (7) 06:01	05:31	18:53 (5)	05:29
	17:11		19:20	23 18:46 (7) 19:54	20:23	19:51 (4)	20:37
30	07:14		06:48	18:22 (7) 06:00	05:30	18:53 (5)	05:29
	17:12		19:22	23 18:45 (7) 19:55	20:24	19:52 (4)	20:37
31	07:13		06:46	18:23 (7)	05:30	18:52 (5)	
	17:14		19:23	22 18:45 (7)	20:25	19:52 (4)	
Potential sun hours	297	297	369	399	449	453	
Total, worst case			238	59	479	1729	

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

Day in month	Sun rise (hh:mm)	Minutes with flicker	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: OmbraShadow receptor: I - Shadow Receptor: 1,0 × 1,0 Azimuth: 120,0° Slope: 90,0° (9)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	July	August	September	October	November	December
1	05:30	18:56 (5)	05:54	06:25	06:55	06:30
	20:37	59	19:58 (4)	20:17	19:34	16:56
2	05:30	18:57 (5)	05:55	06:26	06:56	06:31
	20:36	57	19:58 (4)	20:16	19:32	16:55
3	05:31	18:56 (5)	05:56	06:27	06:57	06:32
	20:36	59	19:58 (4)	20:15	19:31	16:54
4	05:31	18:57 (5)	05:57	06:28	06:58	06:33
	20:36	58	19:59 (4)	20:14	19:29	16:52
5	05:32	18:58 (5)	05:58	06:29	06:59	06:35
	20:36	57	19:59 (4)	20:13	19:27	16:51
6	05:32	18:58 (5)	05:59	06:30	07:00	06:36
	20:36	57	19:59 (4)	20:12	19:26	16:50
7	05:33	18:58 (5)	06:00	06:31	07:02	06:37
	20:35	58	20:00 (4)	20:10	19:24	16:49
8	05:34	18:58 (5)	06:01	06:32	18:23 (7)	07:03
	20:35	57	19:59 (4)	20:09	19:22	16:48
9	05:34	18:59 (5)	06:02	06:33	18:20 (7)	07:04
	20:35	56	20:00 (4)	20:08	19:21	16:47
10	05:35	19:00 (5)	06:03	06:34	18:18 (7)	07:05
	20:34	55	20:00 (4)	20:07	19:19	16:46
11	05:36	18:59 (5)	06:04	06:35	18:16 (7)	07:06
	20:34	55	20:00 (4)	20:05	19:17	16:45
12	05:36	19:00 (5)	06:05	06:36	18:15 (7)	07:07
	20:33	55	20:00 (4)	20:04	19:16	16:44
13	05:37	19:01 (5)	06:06	06:37	18:14 (7)	07:08
	20:33	52	20:00 (4)	20:03	19:14	16:43
14	05:38	19:02 (5)	06:07	06:38	18:13 (7)	07:09
	20:32	51	20:00 (4)	20:01	19:12	16:42
15	05:39	19:02 (5)	06:08	06:39	18:12 (7)	07:10
	20:32	50	20:00 (4)	20:00	19:10	16:41
16	05:39	19:03 (5)	06:09	06:40	18:12 (7)	07:11
	20:31	48	20:00 (4)	19:59	19:09	16:40
17	05:40	19:04 (5)	06:10	06:41	18:12 (7)	07:12
	20:31	46	20:00 (4)	19:57	19:07	16:39
18	05:41	19:05 (5)	06:11	06:42	18:12 (7)	07:14
	20:30	43	19:59 (4)	19:56	19:05	16:39
19	05:42	19:05 (5)	06:12	06:43	18:12 (7)	07:15
	20:29	40	19:58 (4)	19:54	19:04	16:38
20	05:43	19:07 (5)	06:13	06:44	18:12 (7)	07:16
	20:28	36	19:58 (4)	19:53	19:02	16:37
21	05:44	19:09 (5)	06:14	06:45	18:13 (7)	07:17
	20:28	31	19:57 (4)	19:51	19:00	16:36
22	05:45	19:11 (5)	06:15	06:46	18:15 (7)	07:18
	20:27	25	19:57 (4)	19:50	18:58	16:36
23	05:45	19:42 (4)	06:16	06:47	18:17 (7)	07:19
	20:26	14	19:56 (4)	19:48	18:57	16:35
24	05:46	19:44 (4)	06:17	06:48	18:08	07:20
	20:25	10	19:54 (4)	19:47	18:55	16:57
25	05:47	19:47 (4)	06:18	06:49	18:07	07:23
	20:24	5	19:52 (4)	19:45	18:53	16:58
26	05:48		06:19	06:50	17:05	07:24
	20:23		19:44	18:52	16:23	16:59
27	05:49		06:20	06:51	17:04	17:04
	20:22		19:42	18:50	16:24	17:01
28	05:50		06:21	06:52	17:03	16:33
	20:22		19:40	18:48	16:25	17:02
29	05:51		06:22	06:53	17:01	16:33
	20:21		19:39	18:47	16:26	16:37
30	05:52		06:23	06:54	17:00	16:32
	20:20		19:37	18:45	16:27	16:38
31	05:53		06:24		16:59	16:32
	20:18		19:36		16:57	16:39
Potential sun hours	460		428	375	345	297
Total, worst case		1134		304		287

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: OmbraShadow receptor: J - Shadow Receptor: 1,0 × 1,0 Azimuth: 120,0° Slope: 90,0° (10)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	January	February	March	April	May	June	
1	07:25	07:12	06:36	06:44	18:24 (7) 05:58	05:29	18:57 (5)
	16:40	17:15	17:49	19:24	22 18:46 (7) 19:56	20:26	48 19:53 (4)
2	07:25	07:11	06:34	06:43	18:24 (7) 05:57	05:29	18:56 (5)
	16:41	17:16	17:50	19:25	20 18:44 (7) 19:57	20:26	50 19:53 (4)
3	07:26	07:10	06:32	06:41	18:26 (7) 05:56	05:28	18:56 (5)
	16:42	17:17	17:52	19:26	17 18:43 (7) 19:58	20:27	52 19:54 (4)
4	07:26	07:09	06:31	06:39	18:27 (7) 05:55	05:28	18:56 (5)
	16:43	17:19	17:53	19:27	14 18:41 (7) 19:59	20:28	53 19:55 (4)
5	07:26	07:08	06:29	06:38	18:29 (7) 05:53	05:28	18:55 (5)
	16:44	17:20	17:54	19:28	9 18:38 (7) 20:00	20:28	54 19:54 (4)
6	07:26	07:07	06:28	06:36	05:52	05:27	18:55 (5)
	16:45	17:21	17:55	19:29	20:01	20:29	55 19:55 (4)
7	07:25	07:06	06:26	06:35	05:51	05:27	18:55 (5)
	16:46	17:22	17:56	19:30	20:02	20:30	55 19:55 (4)
8	07:25	07:04	06:25	06:33	05:50	05:27	18:55 (5)
	16:47	17:24	17:57	19:31	20:03	20:30	56 19:55 (4)
9	07:25	07:03	06:23	06:31	05:48	05:27	18:55 (5)
	16:48	17:25	17:58	19:32	20:04	20:31	56 19:56 (4)
10	07:25	07:02	06:21	06:30	05:47	05:26	18:55 (5)
	16:49	17:26	18:00	19:33	20:05	20:32	56 19:55 (4)
11	07:25	07:01	06:20	06:28	05:46	05:26	18:55 (5)
	16:50	17:27	18:01	19:34	20:06	20:32	57 19:55 (4)
12	07:25	07:00	06:18	06:26	05:45	05:26	18:55 (5)
	16:51	17:29	18:02	19:35	20:07	20:33	57 19:56 (4)
13	07:24	06:58	06:16	06:25	05:44	05:26	18:55 (5)
	16:52	17:30	18:03	19:37	20:08	20:33	57 19:56 (4)
14	07:24	06:57	06:15	06:23	05:43	05:26	18:55 (5)
	16:53	17:31	18:04	19:38	20:09	20:34	58 19:56 (4)
15	07:24	06:56	06:13	06:22	05:42	05:26	18:55 (5)
	16:54	17:32	18:05	19:39	20:10	20:34	58 19:56 (4)
16	07:23	06:54	06:11	06:20	05:41	05:26	18:55 (5)
	16:55	17:34	18:06	19:40	20:11	20:34	58 19:57 (4)
17	07:23	06:53	06:10	06:19	05:40	05:26	18:55 (5)
	16:57	17:35	18:07	19:41	20:12	20:35	58 19:57 (4)
18	07:22	06:52	06:08	06:17	05:39	05:26	18:55 (5)
	16:58	17:36	18:09	19:42	20:13	20:35	59 19:57 (4)
19	07:22	06:50	06:06	06:16	05:38	05:26	18:56 (5)
	16:59	17:37	18:10	19:43	20:14	20:35	59 19:58 (4)
20	07:21	06:49	06:05	06:14	05:37	05:26	18:57 (5)
	17:00	17:39	18:11	19:44	20:15	20:36	58 19:58 (4)
21	07:21	06:47	06:03	17:36 (7) 06:13	05:37	19:36 (4) 05:26	18:57 (5)
	17:01	17:40	18:12	5 17:41 (7) 19:45	20:16	7 19:43 (4) 20:36	58 19:58 (4)
22	07:20	06:46	06:01	17:31 (7) 06:11	05:36	19:35 (4) 05:27	18:57 (5)
	17:03	17:41	18:13	13 17:44 (7) 19:46	20:17	11 19:46 (4) 20:36	58 19:58 (4)
23	07:19	06:45	06:00	17:29 (7) 06:10	05:35	19:33 (4) 05:27	18:57 (5)
	17:04	17:42	18:14	17 17:46 (7) 19:47	20:18	15 19:48 (4) 20:36	58 19:58 (4)
24	07:19	06:43	05:58	17:28 (7) 06:08	05:34	19:32 (4) 05:27	18:57 (5)
	17:05	17:43	18:15	20 17:48 (7) 19:48	20:19	16 19:48 (4) 20:36	59 19:59 (4)
25	07:18	06:42	05:56	17:26 (7) 06:07	05:33	19:04 (5) 05:27	18:57 (5)
	17:06	17:45	18:16	22 17:48 (7) 19:49	20:20	27 19:50 (4) 20:37	58 19:59 (4)
26	07:17	06:40	05:55	17:25 (7) 06:05	05:33	19:02 (5) 05:28	18:57 (5)
	17:07	17:46	18:17	23 17:48 (7) 19:50	20:21	32 19:50 (4) 20:37	58 19:59 (4)
27	07:16	06:39	05:53	17:24 (7) 06:04	05:32	19:00 (5) 05:28	18:58 (5)
	17:09	17:47	18:18	24 17:48 (7) 19:52	20:22	37 19:51 (4) 20:37	57 19:59 (4)
28	07:15	06:37	05:51	17:24 (7) 06:02	05:31	18:59 (5) 05:28	18:58 (5)
	17:10	17:48	18:19	24 17:48 (7) 19:53	20:22	41 19:52 (4) 20:37	58 19:59 (4)
29	07:15		06:50	18:23 (7) 06:01	05:31	18:58 (5) 05:29	18:59 (5)
			19:20	25 18:48 (7) 19:54	20:23	43 19:52 (4) 20:37	57 20:00 (4)
30	07:14		06:48	18:23 (7) 06:00	05:30	18:58 (5) 05:29	18:59 (5)
			19:22	24 18:47 (7) 19:55	20:24	45 19:53 (4) 20:37	57 20:00 (4)
31	07:13		06:46	18:24 (7)	05:30	18:57 (5)	
			17:14	23 18:47 (7)	20:25	48 19:53 (4)	
Potential sun hours	297	297	369	399	449	453	
Total, worst case			220	82	322	1692	

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

Day in month	Sun rise (hh:mm)	Minutes with flicker	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: OmbraShadow receptor: J - Shadow Receptor: 1,0 × 1,0 Azimuth: 120,0° Slope: 90,0° (10)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	July	August	September	October	November	December
1	05:30	18:59 (5)	05:54	06:25	06:55	06:30
	20:37	57	20:00 (4)	20:17	19:34	16:56
2	05:30	19:00 (5)	05:55	06:26	06:56	06:31
	20:36	56	20:00 (4)	20:16	19:32	16:55
3	05:31	18:59 (5)	05:56	06:27	06:57	06:32
	20:36	57	20:00 (4)	20:15	19:31	16:54
4	05:31	19:00 (5)	05:57	06:28	06:58	06:33
	20:36	56	20:01 (4)	20:14	19:29	16:52
5	05:32	19:01 (5)	05:58	06:29	06:59	06:35
	20:36	56	20:01 (4)	20:13	19:27	16:51
6	05:32	19:01 (5)	05:59	06:30	07:00	06:36
	20:36	55	20:01 (4)	20:12	19:26	16:50
7	05:33	19:02 (5)	06:00	06:31	18:25 (7)	06:37
	20:35	54	20:01 (4)	20:10	19:24	16:30
8	05:34	19:02 (5)	06:01	06:32	18:21 (7)	06:38
	20:35	53	20:01 (4)	20:09	19:22	16:30
9	05:34	19:03 (5)	06:02	06:33	18:19 (7)	06:39
	20:35	51	20:01 (4)	20:08	19:21	16:39
10	05:35	19:04 (5)	06:03	06:34	18:17 (7)	06:41
	20:34	51	20:02 (4)	20:07	19:19	16:46
11	05:36	19:04 (5)	06:04	06:35	18:16 (7)	06:42
	20:34	49	20:01 (4)	20:05	19:17	16:45
12	05:36	19:05 (5)	06:05	06:36	18:15 (7)	06:43
	20:33	48	20:01 (4)	20:04	19:16	16:44
13	05:37	19:06 (5)	06:06	06:37	18:14 (7)	06:44
	20:33	46	20:01 (4)	20:03	19:14	16:31
14	05:38	19:07 (5)	06:07	06:38	18:14 (7)	06:45
	20:32	44	20:01 (4)	20:01	19:12	16:42
15	05:39	19:07 (5)	06:08	06:39	18:13 (7)	06:47
	20:32	41	20:00 (4)	20:00	19:10	16:41
16	05:39	19:09 (5)	06:09	06:40	18:13 (7)	06:48
	20:31	38	20:00 (4)	19:59	19:09	16:31
17	05:40	19:10 (5)	06:10	06:41	18:13 (7)	06:49
	20:31	35	20:00 (4)	19:57	19:07	16:39
18	05:41	19:12 (5)	06:11	06:42	18:13 (7)	06:50
	20:30	30	20:00 (4)	19:56	19:05	16:32
19	05:42	19:15 (5)	06:12	06:43	18:14 (7)	06:51
	20:29	21	19:58 (4)	19:54	19:04	16:38
20	05:43	19:42 (4)	06:13	06:44	18:15 (7)	06:52
	20:28	16	19:58 (4)	19:53	19:02	16:37
21	05:44	19:44 (4)	06:14	06:45	18:16 (7)	06:54
	20:28	13	19:57 (4)	19:51	19:00	16:33
22	05:45	19:46 (4)	06:15	06:46	18:19 (7)	06:55
	20:27	9	19:55 (4)	19:50	18:58	16:39
23	05:45	19:49 (4)	06:16	06:47	18:27 (7)	06:56
	20:26	3	19:52 (4)	19:48	18:57	16:34
					18:08	06:57
24	05:46		06:17	06:48	07:20	07:23
	20:25		19:47	18:55	18:07	16:35
25	05:47		06:18	06:49	06:21	06:58
	20:24		19:45	18:53	17:05	16:34
26	05:48		06:19	06:50	06:23	06:59
	20:23		19:44	18:52	17:04	16:36
27	05:49		06:20	06:51	06:24	07:01
	20:22		19:42	18:50	17:03	16:33
28	05:50		06:21	06:52	06:25	07:02
	20:22		19:40	18:48	17:01	16:37
29	05:51		06:22	06:53	06:26	07:03
	20:21		19:39	18:47	17:00	16:32
30	05:52		06:23	06:54	06:27	07:04
	20:20		19:37	18:45	16:59	16:39
31	05:53		06:24		06:29	07:25
	20:18		19:36		16:57	16:39
Potential sun hours	460		428	375	345	297
Total, worst case		939		306		287

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	(WTG causing flicker first time)
				Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: OmbraShadow receptor: K - Shadow Receptor: 1,0 × 1,0 Azimuth: 120,0° Slope: 90,0° (11)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	January	February	March	April	May	June		
1	07:25	07:12	06:36	06:44	18:24 (7) 05:58	05:29	19:03 (5)	
	16:40	17:15	17:49	19:24	23 18:47 (7) 19:56	20:26	40 19:55 (4)	
2	07:25	07:11	06:34	06:43	18:24 (7) 05:57	05:29	19:01 (5)	
	16:41	17:16	17:50	19:25	22 18:46 (7) 19:57	20:26	41 19:54 (4)	
3	07:26	07:10	06:32	06:41	18:25 (7) 05:56	05:28	19:01 (5)	
	16:42	17:17	17:52	19:26	20 18:45 (7) 19:58	20:27	44 19:55 (4)	
4	07:26	07:09	06:31	06:40	18:26 (7) 05:55	05:28	19:01 (5)	
	16:43	17:19	17:53	19:27	17 18:43 (7) 19:59	20:28	46 19:56 (4)	
5	07:26	07:08	06:29	06:38	18:27 (7) 05:53	05:28	18:59 (5)	
	16:44	17:20	17:54	19:28	14 18:41 (7) 20:00	20:28	49 19:56 (4)	
6	07:26	07:07	06:28	06:36	18:30 (7) 05:52	05:27	18:59 (5)	
	16:45	17:21	17:55	19:29	8 18:38 (7) 20:01	20:29	49 19:56 (4)	
7	07:26	07:06	06:26	06:35	05:51	05:27	18:59 (5)	
	16:46	17:22	17:56	19:30	20:02	20:30	51 19:57 (4)	
8	07:25	07:04	06:25	06:33	05:50	05:27	18:59 (5)	
	16:47	17:24	17:57	19:31	20:03	20:30	52 19:57 (4)	
9	07:25	07:03	06:23	06:31	05:48	05:27	18:59 (5)	
	16:48	17:25	17:58	19:32	20:04	20:31	52 19:58 (4)	
10	07:25	07:02	06:21	06:30	05:47	05:26	18:58 (5)	
	16:49	17:26	18:00	19:33	20:05	20:32	53 19:57 (4)	
11	07:25	07:01	06:20	06:28	05:46	05:26	18:58 (5)	
	16:50	17:27	18:01	19:34	20:06	20:32	54 19:57 (4)	
12	07:25	07:00	06:18	06:26	05:45	05:26	18:58 (5)	
	16:51	17:29	18:02	19:35	20:07	20:33	55 19:58 (4)	
13	07:24	06:58	06:16	06:25	05:44	05:26	18:58 (5)	
	16:52	17:30	18:03	19:37	20:08	20:33	54 19:58 (4)	
14	07:24	06:57	06:15	06:23	05:43	05:26	18:58 (5)	
	16:53	17:31	18:04	19:38	20:09	20:34	55 19:58 (4)	
15	07:24	06:56	06:13	06:22	05:42	05:26	18:59 (5)	
	16:54	17:32	18:05	19:39	20:10	20:34	55 19:59 (4)	
16	07:23	06:54	06:11	06:20	05:41	05:26	18:59 (5)	
	16:55	17:34	18:06	19:40	20:11	20:34	56 19:59 (4)	
17	07:23	06:53	06:10	06:19	05:40	05:26	18:59 (5)	
	16:57	17:35	18:07	19:41	20:12	20:35	56 19:59 (4)	
18	07:22	06:52	06:08	06:17	05:39	05:26	18:59 (5)	
	16:58	17:36	18:09	19:42	20:13	20:35	56 19:59 (4)	
19	07:22	06:50	06:06	06:16	05:38	05:26	19:00 (5)	
	16:59	17:37	18:10	19:43	20:14	20:35	56 20:00 (4)	
20	07:21	06:49	06:05	06:14	05:37	05:26	19:00 (5)	
	17:00	17:39	18:11	19:44	20:15	20:36	55 20:00 (4)	
21	07:21	06:47	06:03	06:13	05:37	05:26	19:00 (5)	
	17:01	17:40	18:12	19:45	20:16	20:36	55 20:00 (4)	
22	07:20	06:46	06:01	17:33 (7) 06:11	05:36	05:27	19:00 (5)	
	17:03	17:41	18:13	11 17:44 (7) 19:46	20:17	20:36	55 20:00 (4)	
23	07:19	06:45	06:00	17:30 (7) 06:10	05:35	19:41 (4)	05:27	19:00 (5)
	17:04	17:42	18:14	16 17:46 (7) 19:47	20:18	3 19:44 (4)	20:36	55 20:00 (4)
24	07:19	06:43	05:58	17:29 (7) 06:08	05:34	19:37 (4)	05:27	19:01 (5)
	17:05	17:43	18:15	19 17:48 (7) 19:48	20:19	10 19:47 (4)	20:36	56 20:01 (4)
25	07:18	06:42	05:56	17:27 (7) 06:07	05:33	19:37 (4)	05:27	19:01 (5)
	17:06	17:45	18:16	21 17:48 (7) 19:49	20:20	12 19:49 (4)	20:37	56 20:01 (4)
26	07:17	06:40	05:55	17:26 (7) 06:05	05:33	19:35 (4)	05:28	19:01 (5)
	17:07	17:46	18:17	22 17:48 (7) 19:50	20:21	15 19:50 (4)	20:37	56 20:01 (4)
27	07:16	06:39	05:53	17:24 (7) 06:04	05:32	19:34 (4)	05:28	19:02 (5)
	17:09	17:47	18:18	24 17:48 (7) 19:52	20:22	17 19:51 (4)	20:37	55 20:02 (4)
28	07:15	06:37	05:51	17:24 (7) 06:02	05:31	19:34 (4)	05:28	19:02 (5)
	17:10	17:48	18:19	25 17:49 (7) 19:53	20:22	18 19:52 (4)	20:37	54 20:01 (4)
29	07:15		06:50	18:24 (7) 06:01	05:31	19:07 (5)	05:29	19:02 (5)
	17:11		19:20	25 18:49 (7) 19:54	20:23	25 19:52 (4)	20:37	55 20:02 (4)
30	07:14		06:48	18:23 (7) 06:00	05:30	19:05 (5)	05:29	19:02 (5)
	17:12		19:22	25 18:48 (7) 19:55	20:24	32 19:54 (4)	20:37	54 20:02 (4)
31	07:13		06:46	18:24 (7)	05:30	19:03 (5)		
	17:14		19:23	24 18:48 (7)	20:25	37 19:54 (4)		
Potential sun hours	297	297	369	399	449	453		
Total, worst case			212	104	169	1580		

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: OmbraShadow receptor: K - Shadow Receptor: 1,0 × 1,0 Azimuth: 120,0° Slope: 90,0° (11)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	July	August	September	October	November	December
1	05:30	19:02 (5)	05:54	06:25	06:55	06:30
	20:37	55	20:02 (4)	20:17	19:34	16:56
2	05:30	19:03 (5)	05:55	06:26	06:56	06:31
	20:36	53	20:02 (4)	20:16	19:32	16:55
3	05:31	19:03 (5)	05:56	06:27	06:57	06:32
	20:36	53	20:02 (4)	20:15	19:31	16:54
4	05:31	19:04 (5)	05:57	06:28	06:58	06:33
	20:36	52	20:02 (4)	20:14	19:29	16:52
5	05:32	19:05 (5)	05:58	06:29	06:59	06:35
	20:36	51	20:03 (4)	20:13	19:27	16:51
6	05:32	19:05 (5)	05:59	06:30	18:27 (7)	07:00
	20:36	49	20:02 (4)	20:12	19:26	18:34 (7)
7	05:33	19:06 (5)	06:00	06:31	18:23 (7)	07:02
	20:35	48	20:03 (4)	20:10	19:24	18:36 (7)
8	05:34	19:06 (5)	06:01	06:32	18:20 (7)	07:03
	20:35	47	20:02 (4)	20:09	19:22	18:37 (7)
9	05:34	19:08 (5)	06:02	06:33	18:18 (7)	07:04
	20:35	45	20:03 (4)	20:08	19:21	18:38 (7)
10	05:35	19:09 (5)	06:03	06:34	18:17 (7)	07:05
	20:34	43	20:03 (4)	20:07	19:19	18:39 (7)
11	05:36	19:09 (5)	06:04	06:35	18:16 (7)	07:06
	20:34	41	20:02 (4)	20:05	19:17	18:39 (7)
12	05:36	19:11 (5)	06:05	06:36	18:15 (7)	07:07
	20:33	38	20:02 (4)	20:04	19:16	18:39 (7)
13	05:37	19:13 (5)	06:06	06:37	18:14 (7)	07:08
	20:33	34	20:02 (4)	20:03	19:14	18:39 (7)
14	05:38	19:15 (5)	06:07	06:38	18:14 (7)	07:09
	20:32	29	20:02 (4)	20:01	19:12	18:39 (7)
15	05:39	19:42 (4)	06:08	06:39	18:14 (7)	07:10
	20:32	19	20:01 (4)	20:00	19:10	18:38 (7)
16	05:39	19:43 (4)	06:09	06:40	18:14 (7)	07:11
	20:31	18	20:01 (4)	19:59	19:09	18:38 (7)
17	05:40	19:44 (4)	06:10	06:41	18:14 (7)	07:12
	20:31	16	20:00 (4)	19:57	19:07	18:37 (7)
18	05:41	19:45 (4)	06:11	06:42	18:14 (7)	07:14
	20:30	14	19:59 (4)	19:56	19:05	18:36 (7)
19	05:42	19:46 (4)	06:12	06:43	18:15 (7)	07:15
	20:29	11	19:57 (4)	19:54	19:04	18:34 (7)
20	05:43	19:48 (4)	06:13	06:44	18:16 (7)	07:16
	20:28	8	19:56 (4)	19:53	19:02	18:32 (7)
21	05:44		06:14	06:45	18:18 (7)	07:17
	20:28		19:51	19:00	18:30 (7)	18:11
22	05:45		06:15	06:46		07:18
	20:27		19:50	18:58		18:10
23	05:45		06:16	06:47		07:19
	20:26		19:48	18:57		18:08
24	05:46		06:17	06:48		07:20
	20:25		19:47	18:55		18:07
25	05:47		06:18	06:49		06:21
	20:24		19:45	18:53		17:05
26	05:48		06:19	06:50		06:23
	20:23		19:44	18:52		17:04
27	05:49		06:20	06:51		06:24
	20:22		19:42	18:50		17:03
28	05:50		06:21	06:52		06:25
	20:22		19:40	18:48		17:01
29	05:51		06:22	06:53		06:26
	20:21		19:39	18:47		17:00
30	05:52		06:23	06:54		06:27
	20:20		19:37	18:45		16:59
31	05:53		06:24			16:29
	20:18		19:36			16:57
Potential sun hours	460		428	375		345
Total, worst case		724		316		297
						287

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	(WTG causing flicker first time)
				Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: OmbraShadow receptor: L - Shadow Receptor: 1,0 × 1,0 Azimuth: -90,0° Slope: 90,0° (12)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

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

SHADOW - Calendar

Calculation: OmbraShadow receptor: M - Shadow Receptor: 1,0 x 1,0 Azimuth: -90,0° Slope: 90,0° (13)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

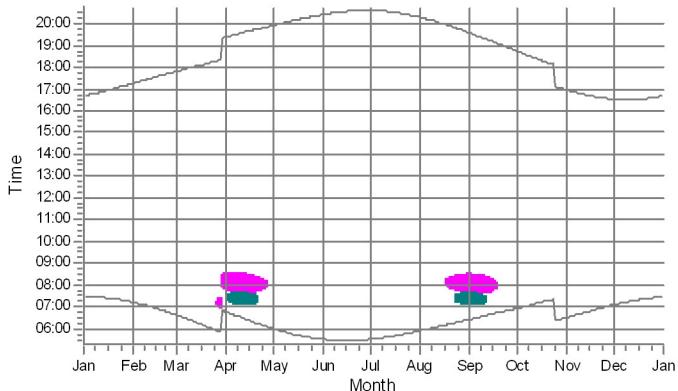
The WTG is always operating

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

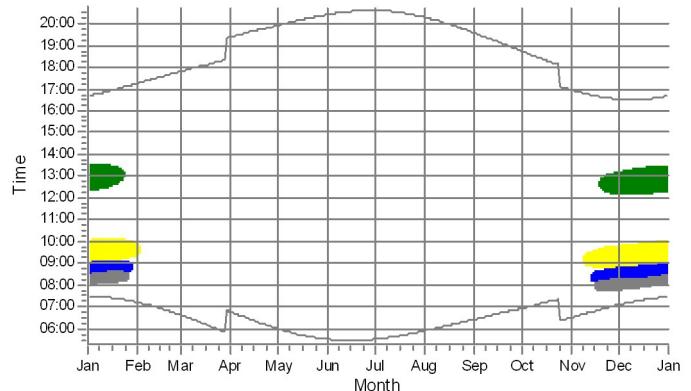
SHADOW - Calendar, graphical

Calculation: Ombra

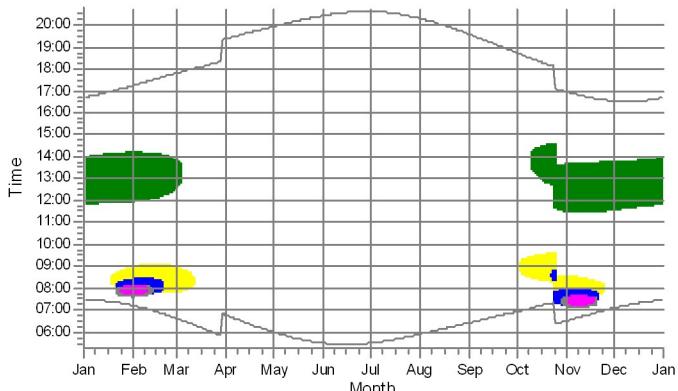
A: Shadow Receptor: 1,0 × 1,0 Azimuth: -140,0° Slope: 90,0° (1)



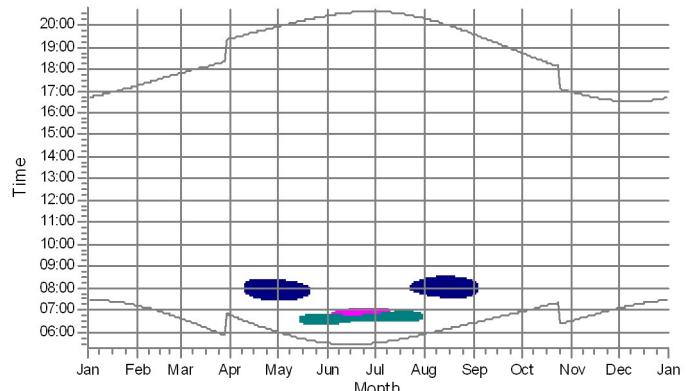
B: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (2)



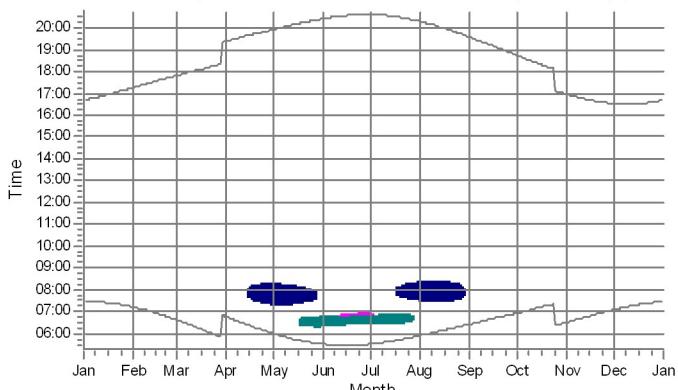
C: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (3)



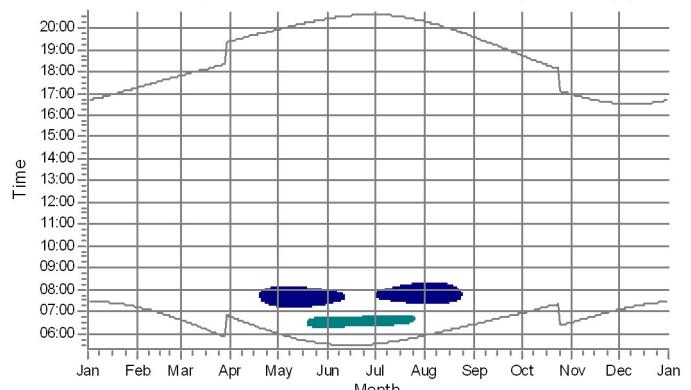
D: Shadow Receptor: 1,0 × 1,0 Azimuth: -90,0° Slope: 90,0° (4)



E: Shadow Receptor: 1,0 × 1,0 Azimuth: -90,0° Slope: 90,0° (5)



F: Shadow Receptor: 1,0 × 1,0 Azimuth: -90,0° Slope: 90,0° (6)



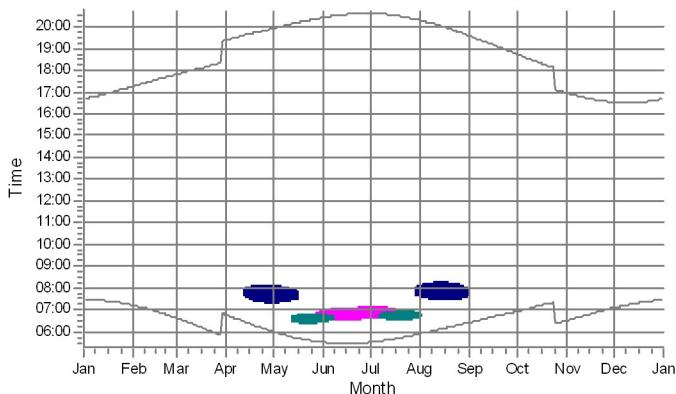
WTGs

- | |
|---|
| 1: Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (1) |
| 2: Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (2) |
| 3: Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (3) |
| 4: Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (4) |
| 5: Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (5) |
| 6: Siemens Gamesa SG 6.6-145 6600 145.0 !O! hub: 127,5 m (TOT: 200,0 m) (6) |
| 7: Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (7) |

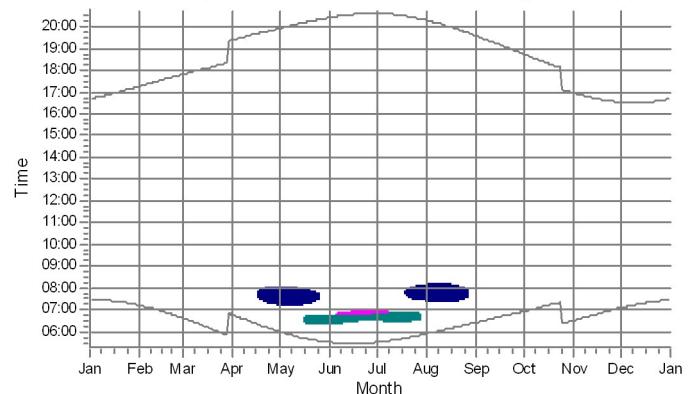
SHADOW - Calendar, graphical

Calculation: Ombra

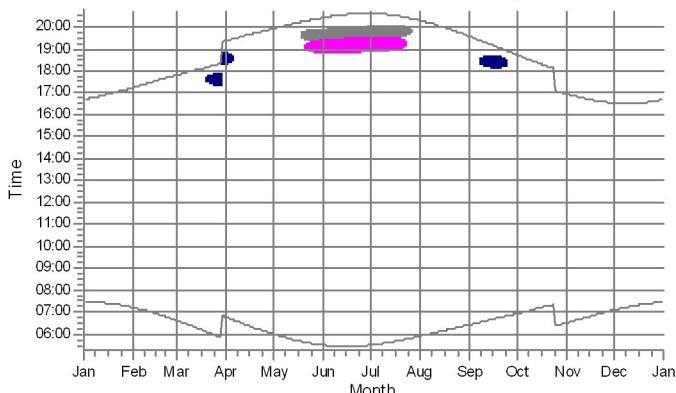
G: Shadow Receptor: 1,0 × 1,0 Azimuth: -90,0° Slope: 90,0° (7)



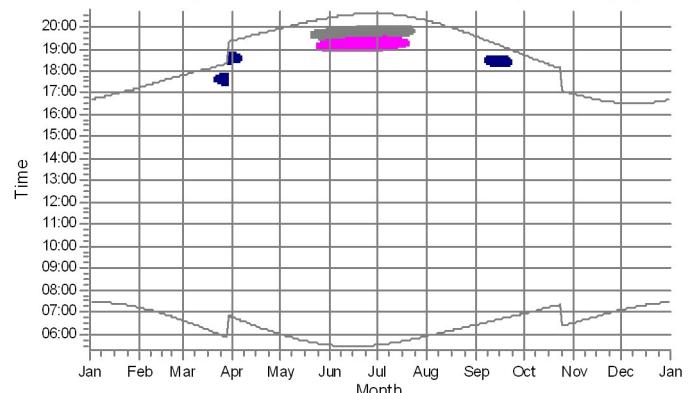
H: Shadow Receptor: 1,0 × 1,0 Azimuth: -90,0° Slope: 90,0° (8)



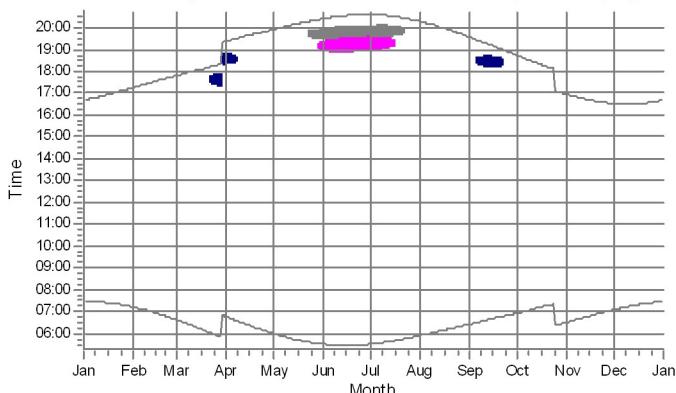
I: Shadow Receptor: 1,0 × 1,0 Azimuth: 120,0° Slope: 90,0° (9)



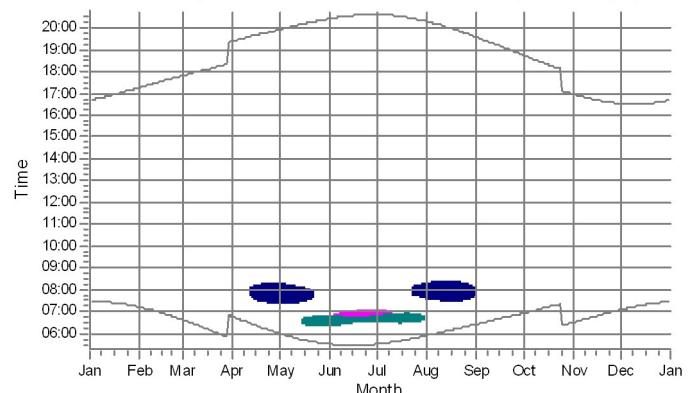
J: Shadow Receptor: 1,0 × 1,0 Azimuth: 120,0° Slope: 90,0° (10)



K: Shadow Receptor: 1,0 × 1,0 Azimuth: 120,0° Slope: 90,0° (11)



L: Shadow Receptor: 1,0 × 1,0 Azimuth: -90,0° Slope: 90,0° (12)



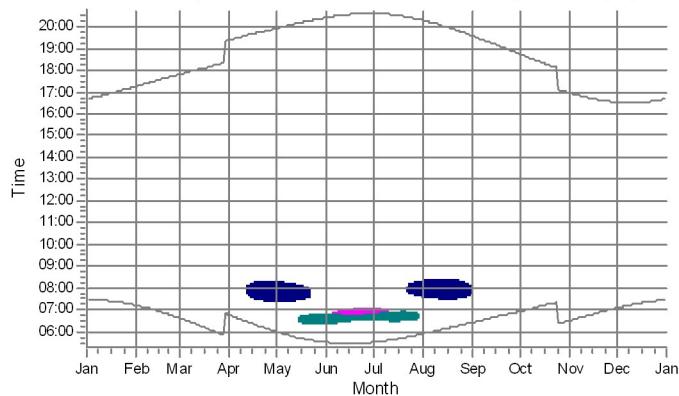
WTGs

- 4: Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (4)
- 5: Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (5)
- 6: Siemens Gamesa SG 6.6-145 6600 145.0 !O! hub: 127,5 m (TOT: 200,0 m) (6)
- 7: Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (7)

SHADOW - Calendar, graphical

Calculation: Ombra

M: Shadow Receptor: 1,0 x 1,0 Azimuth: -90,0° Slope: 90,0° (13)



WTGs

- 5: Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (5)
- 6: Siemens Gamesa SG 6.6-145 6600 145.0 !O! hub: 127,5 m (TOT: 200,0 m) (6)
- 7: Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (7)

SHADOW - Calendar per WTG

Calculation: OmbraWTG: 1 - Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (1)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	January	February	March	April	May	June
1	07:26 11:53-13:54/121 16:41	07:12 12:01-14:07/126 17:15	06:36 12:46-13:43/57 17:49	06:45 19:24	05:59 19:56	05:29 20:26
2	07:26 11:54-13:54/120 16:41	07:11 12:02-14:07/125 17:16	06:34 12:52-13:38/46 17:51	06:43 19:25	05:57 19:57	05:29 20:26
3	07:26 11:54-13:55/121 16:42	07:10 12:02-14:07/125 17:18	06:33 13:01-13:33/32 17:52	06:41 19:26	05:56 19:58	05:29 20:27
4	07:26 11:54-13:55/121 16:43	07:09 12:03-14:07/124 17:19	06:31 17:53	06:40 19:27	05:55 19:59	05:28 20:28
5	07:26 11:55-13:56/121 16:44	07:08 12:03-14:07/124 17:20	06:29 17:54	06:38 19:28	05:53 20:00	05:28 20:29
6	07:26 11:55-13:57/122 16:45	07:07 12:04-14:07/123 17:21	06:28 17:55	06:36 19:29	05:52 20:01	05:27 20:29
7	07:26 11:56-13:58/122 16:46	07:06 12:03-14:06/123 17:23	06:26 17:56	06:35 19:30	05:51 20:02	05:27 20:30
8	07:26 11:56-13:58/122 16:47	07:05 12:04-14:06/122 17:24	06:25 17:57	06:33 19:31	05:50 20:03	05:27 20:31
9	07:25 11:55-13:58/123 16:48	07:03 12:05-14:06/121 17:25	06:23 17:59	06:31 19:32	05:49 20:04	05:27 20:31
10	07:25 11:56-13:59/123 16:49	07:02 12:06-14:06/120 17:26	06:21 18:00	06:30 19:33	05:47 20:05	05:26 20:32
11	07:25 11:57-14:00/123 16:50	07:01 12:07-14:06/119 17:28	06:20 18:01	06:28 19:35	05:46 20:06	05:26 20:32
12	07:25 11:56-14:00/124 16:51	07:00 12:07-14:05/118 17:29	06:18 18:02	06:27 19:36	05:45 20:07	05:26 20:33
13	07:24 11:57-14:01/124 16:52	06:58 12:08-14:05/117 17:30	06:16 18:03	06:25 19:37	05:44 20:09	05:26 20:33
14	07:24 11:57-14:02/125 16:53	06:57 12:09-14:05/116 17:31	06:15 18:04	06:23 19:38	05:43 20:10	05:26 20:34
15	07:24 11:57-14:02/125 16:54	06:56 12:10-14:03/113 17:33	06:13 18:05	06:22 19:39	05:42 20:11	05:26 20:34
16	07:23 11:58-14:03/125 16:56	06:55 12:11-14:03/112 17:34	06:12 18:06	06:20 19:40	05:41 20:12	05:26 20:35
17	07:23 11:58-14:03/125 16:57	06:53 12:13-14:03/110 17:35	06:10 18:08	06:19 19:41	05:40 20:12	05:26 20:35
18	07:22 11:57-14:03/126 16:58	06:52 12:14-14:01/107 17:36	06:08 18:09	06:17 19:42	05:39 20:13	05:26 20:35
19	07:22 11:58-14:04/126 16:59	06:50 12:15-14:01/106 17:37	06:06 18:10	06:16 19:43	05:38 20:14	05:26 20:36
20	07:21 11:58-14:04/126 17:00	06:49 12:17-13:59/102 17:39	06:05 18:11	06:14 19:44	05:37 20:15	05:26 20:36
21	07:21 11:59-14:05/126 17:01	06:48 12:19-13:59/100 17:40	06:03 18:12	06:13 19:45	05:37 20:16	05:26 20:36
22	07:20 11:59-14:05/126 17:03	06:46 12:20-13:57/97 17:41	06:01 18:13	06:11 19:46	05:36 20:17	05:27 20:36
23	07:19 11:59-14:05/126 17:04	06:45 12:23-13:56/93 17:42	06:00 18:14	06:10 19:47	05:35 20:18	05:27 20:36
24	07:19 11:59-14:05/126 17:05	06:43 12:25-13:54/89 17:43	05:58 18:15	06:08 19:48	05:34 20:19	05:27 20:37
25	07:18 12:00-14:06/126 17:06	06:42 12:29-13:53/84 17:45	05:56 18:16	06:07 19:50	05:34 20:20	05:27 20:37
26	07:17 12:00-14:06/126 17:08	06:40 12:32-13:50/78 17:46	05:55 18:17	06:05 19:51	05:33 20:21	05:28 20:37
27	07:16 12:00-14:06/126 17:09	06:39 12:36-13:49/73 17:47	05:53 18:18	06:04 19:52	05:32 20:22	05:28 20:37
28	07:16 12:00-14:07/127 17:10	06:37 12:40-13:46/66 17:48	05:51 18:19	06:03 19:53	05:32 20:23	05:28 20:37
29	07:15 12:00-14:07/127 17:11		06:46 19:21	06:01 19:54	05:31 20:23	05:29 20:37
30	07:14 12:01-14:07/126 17:13		06:48 19:22	06:00 19:55	05:30 20:24	05:29 20:37
31	07:13 12:01-14:07/126 17:14		06:46 19:23		05:30 20:25	
	Potential sun hours 297	297	369	399	449	453
Sum of minutes with flicker	3853	3033	135	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: OmbraWTG: 1 - Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (1)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	July	August	September	October	November	December
1	05:30 05:54	06:25 06:55			06:30 11:36-13:36/120	07:05 11:39-13:42/123
	20:37 20:18	19:34 18:43			16:56 16:32	
2	05:30 05:55	06:26 06:56			06:31 11:35-13:36/121	07:06 11:39-13:42/123
	20:37 20:16	19:33 18:42			16:55 16:31	
3	05:31 05:56	06:27 06:57			06:32 11:34-13:36/122	07:07 11:40-13:42/122
	20:36 20:15	19:31 18:40			16:54 16:31	
4	05:31 05:57	06:28 06:58			06:33 11:33-13:36/123	07:08 11:40-13:42/122
	20:36 20:14	19:29 18:38			16:53 16:31	
5	05:32 05:58	06:29 07:00			06:35 11:34-13:37/123	07:09 11:41-13:43/122
	20:36 20:13	19:28 18:37			16:51 16:31	
6	05:33 05:59	06:30 07:01			06:36 11:33-13:37/124	07:10 11:41-13:43/122
	20:36 20:12	19:26 18:35			16:50 16:31	
7	05:33 06:00	06:31 07:02			06:37 11:32-13:37/125	07:11 11:42-13:43/121
	20:35 20:11	19:24 18:33			16:49 16:30	
8	05:34 06:01	06:32 07:03			06:38 11:33-13:38/125	07:12 11:42-13:44/122
	20:35 20:09	19:23 18:32			16:48 16:30	
9	05:34 06:02	06:33 07:04			06:39 11:33-13:38/125	07:13 11:43-13:44/121
	20:35 20:08	19:21 18:30			16:47 16:30	
10	05:35 06:03	06:34 07:05	13:42-14:02/20		06:41 11:32-13:38/126	07:14 11:44-13:44/120
	20:34 20:07	19:19 18:28			16:46 16:30	
11	05:36 06:04	06:35 07:06	13:30-14:09/39		06:42 11:32-13:38/126	07:15 11:43-13:44/121
	20:34 20:06	19:17 18:27			16:45 16:30	
12	05:37 06:05	06:36 07:07	13:22-14:14/52		06:43 11:33-13:39/126	07:15 11:44-13:44/120
	20:34 20:04	19:16 18:25			16:44 16:31	
13	05:37 06:06	06:37 07:08	13:17-14:18/61		06:44 11:32-13:39/127	07:16 11:45-13:45/120
	20:33 20:03	19:14 18:24			16:43 16:31	
14	05:38 06:07	06:38 07:09	13:12-14:20/68		06:45 11:32-13:39/127	07:17 11:46-13:45/119
	20:32 20:01	19:12 18:22			16:42 16:31	
15	05:39 06:08	06:39 07:10	13:07-14:22/75		06:47 11:33-13:39/126	07:18 11:46-13:45/119
	20:32 20:00	19:11 18:20			16:41 16:31	
16	05:40 06:09	06:40 07:11	13:03-14:23/80		06:48 11:33-13:39/126	07:18 11:46-13:46/120
	20:31 19:59	19:09 18:19			16:40 16:31	
17	05:40 06:10	06:41 07:13	12:59-14:25/86		06:49 11:33-13:39/126	07:19 11:47-13:47/120
	20:31 19:57	19:07 18:17			16:40 16:32	
18	05:41 06:11	06:42 07:14	12:56-14:26/90		06:50 11:33-13:39/126	07:20 11:47-13:46/119
	20:30 19:56	19:05 18:16			16:39 16:32	
19	05:42 06:12	06:43 07:15	12:53-14:27/94		06:51 11:34-13:40/126	07:20 11:48-13:47/119
	20:29 19:54	19:04 18:14			16:38 16:32	
20	05:43 06:13	06:44 07:16	12:51-14:29/98		06:53 11:34-13:40/126	07:21 11:49-13:48/119
	20:29 19:53	19:02 18:13			16:37 16:33	
21	05:44 06:14	06:45 07:17	12:49-14:29/100		06:54 11:34-13:40/126	07:22 11:49-13:48/119
	20:28 19:51	19:00 18:11			16:37 16:33	
22	05:45 06:15	06:46 07:18	12:47-14:30/103		06:55 11:34-13:40/126	07:22 11:50-13:49/119
	20:27 19:50	18:59 18:10			16:36 16:34	
23	05:45 06:16	06:47 07:19	12:45-14:31/106		06:56 11:35-13:41/126	07:23 11:50-13:49/119
	20:26 19:48	18:57 18:08			16:35 16:34	
24	05:46 06:17	06:48 07:20	12:44-14:32/108		06:57 11:35-13:41/126	07:23 11:50-13:49/119
	20:25 19:47	18:55 18:07			16:35 16:35	
25	05:47 06:18	06:49 06:22	11:42-13:33/111		06:58 11:36-13:41/125	07:23 11:51-13:50/119
	20:24 19:45	18:53 17:06			16:34 16:35	
26	05:48 06:19	06:50 06:23	11:41-13:33/112		07:00 11:36-13:41/125	07:24 11:51-13:50/119
	20:24 19:44	18:52 17:04			16:34 16:36	
27	05:49 06:20	06:51 06:24	11:39-13:33/114		07:01 11:36-13:41/125	07:24 11:51-13:51/120
	20:23 19:42	18:50 17:03			16:33 16:37	
28	05:50 06:21	06:52 06:25	11:38-13:33/115		07:02 11:36-13:41/125	07:25 11:52-13:52/120
	20:22 19:41	18:48 17:01			16:33 16:37	
29	05:51 06:22	06:53 06:26	11:38-13:35/117		07:03 11:38-13:42/124	07:25 11:53-13:52/119
	20:21 19:39	18:47 17:00			16:32 16:38	
30	05:52 06:23	06:54 06:27	11:37-13:35/118		07:04 11:38-13:42/124	07:25 11:53-13:53/120
	20:20 19:37	18:45 16:59			16:32 16:39	
31	05:53 06:24		06:29 11:35-13:35/120			07:25 11:53-13:53/120
	20:19 19:36		16:58			16:40
	Potential sun hours	460	428	375	345	297
	Sum of minutes with flicker	0	0	0	1987	3727
					3748	
					287	

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: OmbraWTG: 2 - Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (2)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	January	February	March	April	May	June
1	07:25 09:02-09:59/57 16:41	07:12 07:57-08:53/56 17:15 09:29-09:48/19	06:36 07:55-08:52/57 17:49	06:45 19:24 19:24	05:58 19:56 19:56	05:29 20:26 20:26
2	07:26 09:02-10:00/58 16:41	07:11 07:56-08:54/58 17:16 09:34-09:44/10	06:34 07:55-08:50/55 17:51	06:43 19:25 19:25	05:57 19:57 19:57	05:29 20:26 20:26
3	07:26 09:03-10:00/57 16:42	07:10 07:55-08:55/60 17:18	06:33 07:57-08:49/52 17:52	06:41 19:26 19:26	05:56 19:58 19:58	05:28 20:27 20:27
4	07:26 09:03-10:00/57 16:43	07:09 07:55-08:56/61 17:19	06:31 07:57-08:47/50 17:53	06:40 19:27 19:27	05:55 19:59 19:59	05:28 20:28 20:28
5	07:26 09:04-10:01/57 16:44	07:08 07:54-08:57/63 17:20	06:29 07:58-08:45/47 17:54	06:38 19:28 19:28	05:53 20:00 20:00	05:28 20:29 20:29
6	07:26 09:04-10:01/57 16:45	07:07 07:54-08:58/64 17:21	06:28 08:00-08:44/44 17:55	06:36 19:29 19:29	05:52 20:01 20:01	05:27 20:29 20:29
7	07:26 09:05-10:02/57 16:46	07:06 07:53-08:58/65 17:23	06:26 08:01-08:41/40 17:56	06:35 19:30 19:30	05:51 20:02 20:02	05:27 20:30 20:30
8	07:26 09:06-10:02/56 16:47	07:04 07:53-08:58/65 17:24	06:25 08:04-08:39/35 17:57	06:33 19:31 19:31	05:50 20:03 20:03	05:27 20:31 20:31
9	07:25 09:05-10:02/57 16:48	07:03 07:52-08:59/67 17:25	06:23 08:06-08:35/29 17:59	06:31 19:32 19:32	05:49 20:04 20:04	05:27 20:31 20:31
10	07:25 09:06-10:02/56 16:49	07:02 07:52-09:00/68 17:26	06:21 08:09-08:31/22 18:00	06:30 19:33 19:33	05:47 20:05 20:05	05:26 20:32 20:32
11	07:25 09:07-10:03/56 16:50	07:01 07:52-09:00/68 17:28	06:20 08:15-08:25/10 18:01	06:28 19:35 19:35	05:46 20:06 20:06	05:26 20:32 20:32
12	07:25 09:07-10:02/55 16:51	07:00 07:51-09:00/69 17:29	06:18 18:02	06:27 19:36 19:36	05:45 20:07 20:07	05:26 20:33 20:33
13	07:24 09:08-10:03/55 16:52	06:58 07:51-09:00/69 17:30	06:16 18:03	06:25 19:37 19:37	05:44 20:08 20:08	05:26 20:33 20:33
14	07:24 09:09-10:03/54 16:53	06:57 07:51-09:01/70 17:31	06:15 18:04	06:23 19:38 19:38	05:43 20:09 20:09	05:26 20:34 20:34
15	07:24 09:09-10:03/54 16:54	06:56 07:51-09:00/69 17:33	06:13 18:05	06:22 19:39 19:39	05:42 20:10 20:10	05:26 20:34 20:34
16	07:23 09:10-10:03/53 16:56	06:55 07:51-09:00/69 17:34	06:11 18:06	06:25 19:40 19:40	05:41 20:11 20:11	05:26 20:35 20:35
17	07:23 09:10-10:03/53 16:57	06:53 07:51-09:01/70 17:35	06:10 18:08	06:19 19:41 19:41	05:40 20:12 20:12	05:26 20:35 20:35
18	07:22 09:10-10:02/52 16:58	06:52 07:51-09:00/69 17:36	06:08 18:05	06:17 19:39 19:39	05:39 20:10 20:10	05:26 20:35 20:35
19	07:22 08:15-08:28/13 16:59	06:50 07:51-09:00/69 17:37	06:06 18:06	06:16 19:40 19:40	05:38 20:08 20:08	05:26 20:33 20:33
20	07:21 08:12-08:32/20 17:00	06:49 07:51-08:59/68 09:12-10:02/50	06:05 18:11	06:19 19:44 19:44	05:40 20:12 20:12	05:26 20:36 20:36
21	07:21 08:10-08:36/26 17:01	06:48 07:51-08:59/68 09:13-10:02/49	06:03 18:12	06:13 19:45 19:45	05:37 20:16 20:16	05:26 20:36 20:36
22	07:20 08:08-08:38/30 17:03	06:46 07:51-08:58/67 09:14-10:02/48	06:01 18:13	06:11 19:46 19:46	05:36 20:17 20:17	05:27 20:36 20:36
23	07:19 08:06-08:40/34 17:04	06:45 07:52-08:58/66 09:15-10:01/46	06:00 18:11	06:10 19:44 19:47	05:35 20:15 20:18	05:27 20:36 20:36
24	07:19 08:04-08:42/38 17:05	06:43 07:51-08:57/66 09:15-10:00/45	05:58 18:12	06:08 19:45 19:45	05:34 20:16 20:16	05:27 20:37 20:37
25	07:18 08:04-08:44/40 17:06	06:42 07:52-08:56/64 09:17-10:00/43	05:56 18:15	06:07 19:48 19:48	05:34 20:20 20:20	05:27 20:37 20:37
26	07:17 08:02-08:46/44 17:08	06:40 07:52-08:55/63 09:18-09:59/41	05:55 18:16	06:05 19:50 19:50	05:33 20:20 20:20	05:28 20:37 20:37
27	07:16 08:01-08:47/46 17:09	06:39 07:53-08:54/61 09:19-09:58/39	05:53 18:17	06:04 19:51 19:51	05:32 20:21 20:21	05:28 20:37 20:37
28	07:16 08:00-08:48/48 17:10	06:37 07:53-08:53/60 09:21-09:57/36	05:51 18:18	06:03 19:52 19:52	05:32 20:22 20:22	05:28 20:37 20:37
29	07:15 07:59-08:50/51 17:11	06:50 07:54-08:50/51 09:22-09:55/33	06:50 18:21	06:01 19:54 19:54	05:31 20:23 20:23	05:29 20:37 20:37
30	07:14 07:58-08:51/53 17:12	06:48 07:54-08:51/53 09:24-09:53/29	06:48 19:22	06:00 19:55 19:55	05:30 20:24 20:24	05:29 20:37 20:37
31	07:13 07:57-08:52/55 17:14	06:46 07:55-08:52/55 09:26-09:51/25	06:46 19:23	06:00 20:25 20:25	05:30 05:30 05:30	05:29 05:30 05:30
	Potential sun hours Sum of minutes with flicker	297 2034	1861	441	0 0	0 0
				369	399 449	453 453

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: OmbraWTG: 2 - Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (2)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	July	August	September	October	November	December
1	05:30	05:54	06:25	06:55	06:30 07:22-08:29/67	07:05 08:49-09:45/56
	20:37	20:18	19:34	18:43	16:56	16:32
2	05:30	05:55	06:26	06:56	06:31 07:22-08:29/67	07:06 08:49-09:45/56
	20:37	20:16	19:32	18:42	16:55	16:31
3	05:31	05:56	06:27	06:57 08:49-09:07/18	06:32 07:22-08:28/66	07:07 08:49-09:46/57
	20:36	20:15	19:31	18:40	16:54	16:31
4	05:31	05:57	06:28	06:58 08:45-09:11/26	06:33 07:23-08:27/64	07:08 08:50-09:46/56
	20:36	20:14	19:29	18:38	16:53	16:31
5	05:32	05:58	06:29	06:59 08:42-09:14/32	06:35 07:24-08:28/64	07:09 08:50-09:47/57
	20:36	20:13	19:28	18:37	16:51	16:31
6	05:32	05:59	06:30	07:01 08:39-09:16/37	06:36 07:24-08:27/63	07:10 08:50-09:47/57
	20:36	20:12	19:26	18:35	16:50	16:31
7	05:33	06:00	06:31	07:02 08:37-09:18/41	06:37 07:25-08:26/61	07:11 08:51-09:48/57
	20:35	20:11	19:24	18:33	16:49	16:30
8	05:34	06:01	06:32	07:03 08:34-09:20/46	06:38 07:26-08:26/60	07:12 08:51-09:48/57
	20:35	20:09	19:23	18:32	16:48	16:30
9	05:34	06:02	06:33	07:04 08:33-09:21/48	06:39 07:27-08:25/58	07:13 08:52-09:49/57
	20:35	20:08	19:21	18:30	16:47 09:04-09:15/11	16:30
10	05:35	06:03	06:34	07:05 08:31-09:22/51	06:41 07:28-08:24/56	07:14 08:52-09:50/58
	20:34	20:07	19:19	18:28	16:46 09:00-09:20/20	16:30
11	05:36	06:04	06:35	07:06 08:29-09:23/54	06:42 07:28-08:23/55	07:15 08:52-09:49/57
	20:34	20:05	19:17	18:27	16:45 08:57-09:22/25	16:30
12	05:36	06:05	06:36	07:07 08:28-09:24/56	06:43 07:30-08:23/53	07:15 08:52-09:50/58
	20:33	20:04	19:16	18:25	16:44 08:56-09:25/29	16:31
13	05:37	06:06	06:37	07:08 08:28-09:26/58	06:44 07:31-08:22/51	07:16 08:53-09:50/57
	20:33	20:03	19:14	18:24	16:43 08:54-09:27/33	16:31
14	05:38	06:07	06:38	07:09 08:27-09:27/60	06:45 07:32-08:20/48	07:17 08:54-09:51/57
	20:32	20:01	19:12	18:22	16:42 08:53-09:29/36	16:31
15	05:39	06:08	06:39	07:10 08:26-09:27/61	06:47 07:34-08:20/46	07:18 08:54-09:51/57
	20:32	20:00	19:11	18:20	16:41 08:52-09:31/39	16:31
16	05:40	06:09	06:40	07:11 08:25-09:28/63	06:48 07:35-08:19/44	07:18 08:54-09:52/58
	20:31	19:59	19:09	18:19	16:40 08:51-09:32/41	16:31
17	05:40	06:10	06:41	07:13 08:24-09:28/64	06:49 07:37-08:17/40	07:19 08:55-09:53/58
	20:31	19:57	19:07	18:17	16:40 08:50-09:33/43	16:32
18	05:41	06:11	06:42	07:14 08:23-09:28/65	06:50 07:38-08:16/38	07:20 08:55-09:52/57
	20:30	19:56	19:05	18:16	16:39 08:49-09:34/45	16:32
19	05:42	06:12	06:43	07:15 08:22-09:29/67	06:51 07:41-08:15/34	07:20 08:56-09:53/57
	20:29	19:54	19:04	18:14	16:38 08:50-09:36/46	16:32
20	05:43	06:13	06:44	07:16 08:22-09:30/68	06:53 07:43-08:13/30	07:21 08:57-09:54/57
	20:29	19:53	19:02	18:13	16:37 08:49-09:37/48	16:33
21	05:44	06:14	06:45	07:17 08:22-09:30/68	06:54 07:45-08:11/26	07:22 08:57-09:54/57
	20:28	19:51	19:00	18:11	16:37 08:48-09:37/49	16:33
22	05:45	06:15	06:46	07:18 08:21-09:30/69	06:55 07:48-08:08/20	07:22 08:58-09:55/57
	20:27	19:50	18:59	18:10	16:36 08:48-09:38/50	16:34
23	05:45	06:16	06:47	07:19 08:21-09:30/69	06:56 07:52-08:06/14	07:23 08:58-09:55/57
	20:26	19:48	18:57	18:08	16:35 08:49-09:40/51	16:34
24	05:46	06:17	06:48	07:20 08:21-09:31/70	06:57 08:48-09:40/52	07:23 08:58-09:55/57
	20:25	19:47	18:55	18:07	16:35	16:35
25	05:47	06:18	06:49	06:22 07:21-08:30/69	06:58 08:48-09:41/53	07:23 08:59-09:56/57
	20:24	19:45	18:53	17:06	16:34	16:35
26	05:48	06:19	06:50	06:23 07:21-08:30/69	07:00 08:48-09:41/53	07:24 08:59-09:56/57
	20:24	19:44	18:52	17:04	16:34	16:36
27	05:49	06:20	06:51	06:24 07:20-08:30/70	07:01 08:48-09:42/54	07:24 08:59-09:57/58
	20:23	19:42	18:50	17:03	16:33	16:37
28	05:50	06:21	06:52	06:25 07:20-08:29/69	07:02 08:48-09:42/54	07:25 09:00-09:58/58
	20:22	19:41	18:48	17:01	16:33	16:37
29	05:51	06:22	06:53	06:26 07:21-08:30/69	07:03 08:49-09:44/55	07:25 09:01-09:58/57
	20:21	19:39	18:47	17:00	16:32	16:38
30	05:52	06:23	06:54	06:27 07:21-08:30/69	07:04 08:49-09:44/55	07:25 09:01-09:58/57
	20:20	19:37	18:45	16:59	16:32	16:39
31	05:53	06:24		06:29 07:21-08:29/68		07:25 09:01-09:59/58
	20:19	19:36		16:57		16:40
	Potential sun hours	460	428	375	345	297
	Sum of minutes with flicker	0	0	0	1674	2067
						1771

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: OmbraWTG: 3 - Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (3)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	January	February	March	April	May	June	July	August	September	October	November	December
1 07:25	08:23-08:56/33	07:12 07:47-08:21/34	06:36 06:45 05:58 05:29 05:54 06:25 06:55								06:30 07:17-07:53/36	07:05 08:09-08:43/34
16:41		17:15 17:49 19:24 19:56 20:26 20:37 20:18 19:34 18:43									16:56	16:32
2 07:26	08:23-08:56/33	07:11 07:47-08:22/35	06:34 06:43 05:57 05:29 05:30 05:55 06:26 06:56								06:31 07:17-07:53/36	07:06 08:10-08:43/33
16:41		17:16 17:51 19:25 19:57 20:26 20:37 20:16 19:32 18:42									16:55	16:31
3 07:26	08:24-08:57/33	07:10 07:47-08:22/35	06:33 06:41 05:56 05:28 05:31 05:56 06:27 06:57								06:32 07:16-07:53/37	07:07 08:10-08:44/34
16:42		17:18 17:52 19:26 19:58 20:27 20:36 20:15 19:31 18:40									16:54	16:31
4 07:26	08:24-08:57/33	07:09 07:47-08:23/36	06:31 06:40 05:55 05:28 05:31 05:57 06:28 06:58								06:33 07:16-07:53/37	07:08 08:10-08:44/34
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5 07:26	08:25-08:58/33	07:08 07:47-08:23/36	06:29 06:38 05:53 05:28 05:32 05:58 06:29 06:59								06:35 07:17-07:53/36	07:09 08:11-08:44/33
16:44		17:20 17:54 19:28 20:00 20:29 20:36 20:13 19:28 18:37									16:51	16:31
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7 07:26	08:26-08:59/33	07:06 07:46-08:23/37	06:26 06:35 05:51 05:27 05:33 06:00 06:31 07:02								06:37 07:17-07:53/36	07:11 08:12-08:45/33
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16:47		17:24 17:57 19:31 20:03 20:30 20:35 20:09 19:22 18:32									16:48	16:30
9 07:25	08:26-09:00/34	07:03 07:47-08:23/36	06:23 06:31 05:49 05:27 05:34 06:02 06:33 07:04								06:39 07:18-07:53/35	07:13 08:13-08:46/33
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16:49		17:26 18:00 19:33 20:05 20:32 20:34 20:07 19:19 18:28									16:46	16:30
11 07:25	08:27-09:01/34	07:01 07:48-08:23/35	06:20 06:28 05:46 05:26 05:36 06:04 06:35 07:06								06:42 07:19-07:51/32	07:14 08:13-08:46/33
16:50		17:28 18:01 19:34 20:06 20:32 20:34 20:05 19:17 18:27									16:45	16:30
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16:51		17:29 18:02 19:36 20:07 20:33 20:33 20:04 19:16 18:25									16:44	16:31
13 07:24	08:28-09:01/33	06:58 07:49-08:21/32	06:16 06:25 05:44 05:26 05:37 06:06 06:37 07:08								06:44 07:21-07:51/30	07:16 08:15-08:47/32
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17:07		17:46 18:17 19:51 20:21 20:37 20:24 19:44 18:52 17:04									16:34	08:23-08:52/32
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17:10		17:48 18:19 19:53 20:22 20:37 20:22 19:41 18:48 17:01									16:33	08:24-08:54/32
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17:12		17:50 19:22 19:55 20:24 20:37 20:20 19:37 18:45 16:59									16:39	08:23-08:55/32
31 07:13	07:48-08:20/32	06:46 06:04 05:30 05:53 06:24 06:29 06:57									16:39	08:23-08:55/32
17:14		17:51 19:23 19:57 20:25 20:39 20:19 19:36 18:47 16:57									16:39	08:23-08:55/32
Potential sun hours	297	297	369 399 449 453 460 428 375 345 297								287	999
Sum of minutes with flicker	1060	596	0									

SHADOW - Calendar per WTG

Calculation: OmbraWTG: 4 - Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (4)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	January	February	March	April	May	June
1	07:25 08:04-08:24/20 16:41	07:12 07:39-08:04/25 17:15	06:36 17:49	06:45 19:24	05:58 19:56	05:29 19:28-19:55/27 20:26
2	07:26 08:05-08:25/20 16:41	07:11 07:40-08:05/25 17:16	06:34 17:51	06:43 19:25	05:57 19:57	05:29 19:27-19:54/27 20:26
3	07:26 08:05-08:25/20 16:42	07:10 07:40-08:05/25 17:17	06:33 17:52	06:41 19:26	05:56 19:58	05:28 19:28-19:55/27 20:27
4	07:26 08:05-08:26/21 16:43	07:09 07:40-08:05/25 17:19	06:31 17:53	06:40 19:27	05:55 19:59	05:28 19:28-19:56/28 20:28
5	07:26 08:05-08:27/22 16:44	07:08 07:41-08:05/24 17:20	06:29 17:54	06:38 19:28	05:53 20:00	05:28 19:28-19:56/28 20:29
6	07:26 08:06-08:28/22 16:45	07:07 07:41-08:05/24 17:21	06:28 17:55	06:36 19:29	05:52 20:01	05:27 19:28-19:56/28 20:29
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8	07:25 08:06-08:29/23 16:47	07:04 07:42-08:03/21 17:24	06:25 17:57	06:33 19:31	05:50 20:03	05:27 19:29-19:57/28 20:30
9	07:25 08:06-08:29/23 16:48	07:03 07:43-08:02/19 17:25	06:23 17:59	06:31 19:32	05:49 20:04	05:27 19:29-19:58/29 20:31
10	07:25 08:06-08:30/24 16:49	07:02 07:45-08:01/16 17:26	06:21 18:00	06:30 19:33	05:47 20:05	05:26 19:29-19:57/28 20:32
11	07:25 08:07-08:31/24 16:50	07:01 07:47-07:59/12 17:28	06:20 18:01	06:28 19:34	05:46 20:06	05:26 19:29-19:57/28 20:32
12	07:25 08:07-08:30/23 16:51	07:00 07:50-07:55/5 17:29	06:18 18:02	06:27 19:36	05:45 20:07	05:26 19:29-19:58/29 20:33
13	07:24 08:07-08:31/24 16:52	06:58 17:30	06:16 18:03	06:25 19:37	05:44 20:08	05:26 19:30-19:58/28 20:33
14	07:24 08:08-08:32/24 16:53	06:57 17:31	06:15 18:04	06:23 19:38	05:43 20:09	05:26 19:30-19:58/28 20:34
15	07:24 08:08-08:32/24 16:54	06:56 17:33	06:13 18:05	06:22 19:39	05:42 20:10	05:26 19:30-19:59/29 20:34
16	07:23 08:09-08:33/24 16:56	06:54 17:34	06:11 18:06	06:20 19:40	05:41 20:11	05:26 19:30-19:59/29 20:34
17	07:23 08:09-08:32/23 16:57	06:53 17:35	06:10 18:07	06:19 19:41	05:40 20:12	05:26 19:31-19:59/28 20:35
18	07:22 08:09-08:32/23 16:58	06:52 17:36	06:08 18:09	06:17 19:42	05:39 20:13	05:26 19:31-19:59/28 20:35
19	07:22 08:10-08:33/23 16:59	06:50 17:37	06:06 18:10	06:16 19:43	05:38 19:35-19:43/8 20:14	05:26 19:32-20:00/28 20:35
20	07:21 08:11-08:32/21 17:00	06:49 17:39	06:05 18:11	06:14 19:44	05:37 19:32-19:45/13 20:15	05:26 19:32-20:00/28 20:36
21	07:21 08:12-08:33/21 17:01	06:48 17:40	06:03 18:12	06:13 19:45	05:37 19:31-19:46/15 20:16	05:26 19:32-20:00/28 20:36
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24	07:19 07:43-07:56/13 17:05	06:43 08:15-08:30/15	05:58 17:43	06:08 18:15	05:34 19:29-19:49/20 19:48	05:27 19:33-20:01/28 20:37
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27	07:16 07:41-08:01/20 17:09	06:39 07:47	05:53 18:18	06:04 19:52	05:32 19:27-19:51/24 20:22	05:28 19:33-20:02/29 20:37
28	07:15 07:41-08:02/21 17:10	06:37 07:48	05:51 18:19	06:03 19:53	05:32 19:28-19:52/24 20:22	05:28 19:33-20:01/28 20:37
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30	07:14 07:40-08:03/23 17:12		06:48 19:22	06:00 19:55	05:30 19:28-19:54/26 20:24	05:29 19:34-20:02/28 20:37
31	07:13 07:40-08:04/24 17:14		06:46 19:23	05:30 20:25	05:30 19:27-19:54/27 449	
	Potential sun hours 297	297	243	369	399	453
	Sum of minutes with flicker 708		0	0	260	843

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: OmbraWTG: 4 - Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (4)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	July	August	September	October	November	December
1	05:30 19:33-20:02/29 20:37	05:54 06:25 20:17 19:34 18:43	06:55 16:56 16:55	06:30 07:14-07:31/17 06:31 07:13-07:32/19	07:05 07:49-08:13/24 07:06 07:49-08:13/24	
2	05:30 19:34-20:02/28 20:37	05:55 06:26 20:16 19:32 18:42	06:56 16:55 16:55	06:31 07:13-07:32/19 06:32 07:12-07:33/21	07:06 07:49-08:13/24 07:07 07:50-08:13/23	
3	05:31 19:33-20:02/29 20:36	05:56 06:27 20:15 19:31 18:40	06:57 16:54 16:54	06:32 07:12-07:33/21 06:33 07:11-07:33/22	07:07 07:50-08:13/23 07:08 07:50-08:13/23	
4	05:31 19:34-20:02/28 20:36	05:57 06:28 20:14 19:29 18:38	06:58 16:53 16:53	06:33 07:11-07:33/22 06:35 07:11-07:35/24	07:08 07:50-08:13/23 07:09 07:51-08:13/22	
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18	05:41 19:38-20:00/22 20:30	06:11 06:42 19:56 19:05 18:16	07:14 16:41 16:41	06:50 07:17-07:30/13 06:51 07:21-07:29/8	07:20 07:59-08:16/17 07:21 08:00-08:16/16	
19	05:42 19:38-19:58/20 20:29	06:12 06:43 19:54 19:04 18:14	07:15 16:38 16:38	06:51 07:21-07:29/8 06:52 07:48-08:07/19	07:21 08:01-08:17/16 07:22 08:02-08:18/16	
20	05:43 19:39-19:58/19 20:29	06:13 06:44 19:53 19:02 18:13	07:16 16:37 16:37	06:53 07:48-08:07/19 06:54 07:47-08:08/21	07:21 08:01-08:17/16 07:22 08:02-08:18/16	
21	05:44 19:40-19:57/17 20:28	06:14 06:45 19:51 19:00 18:11	07:17 16:37 16:37	06:54 07:47-08:08/21 06:55 07:47-08:08/21	07:21 08:01-08:17/16 07:22 08:02-08:18/16	
22	05:45 19:41-19:57/16 20:27	06:15 06:46 19:50 18:59 18:10	07:18 16:36 16:36	06:55 07:47-08:08/21 06:56 07:47-08:10/23	07:22 08:02-08:18/16 07:23 08:03-08:19/16	
23	05:45 19:42-19:56/14 20:26	06:16 06:47 19:48 18:57 18:08	07:19 16:35 16:35	06:56 07:47-08:10/23 06:57 07:47-08:10/23	07:22 08:02-08:18/16 07:24 08:03-08:20/17	
24	05:46 19:44-19:54/10 20:25	06:17 06:48 19:47 18:55 18:07	07:20 16:35 16:35	06:57 07:47-08:10/23 06:58 07:47-08:10/23	07:23 08:02-08:18/16 07:23 08:03-08:19/16	
25	05:47 19:47-19:52/5 20:24	06:18 06:49 19:45 18:53 17:06	07:22 16:34 16:34	06:58 07:47-08:10/23 06:59 07:47-08:11/24	07:24 08:03-08:20/17 07:24 08:04-08:21/17	
26	05:48 06:19 20:24	06:19 06:50 19:44 18:52 17:04	07:23 16:34 16:34	06:59 07:47-08:11/24 07:01 07:47-08:11/24	07:24 08:03-08:20/17 07:24 08:03-08:20/17	
27	05:49 06:20 20:23	06:20 06:51 19:42 18:50 17:03	07:24 16:33 16:33	07:01 07:47-08:11/24 07:02 07:47-08:11/24	07:24 08:03-08:20/17 07:24 08:04-08:21/17	
28	05:50 06:21 20:22	06:21 06:52 19:41 18:48 17:01	07:25 16:32 16:32	07:02 07:47-08:11/24 07:03 07:48-08:12/24	07:24 08:04-08:21/17 07:25 08:04-08:22/18	
29	05:51 06:22 20:21	06:22 06:53 19:39 18:47 17:00	07:26 16:32 16:32	07:03 07:48-08:12/24 07:04 07:49-08:13/24	07:25 08:04-08:22/18 07:25 08:04-08:23/19	
30	05:52 06:23 20:20	06:23 06:54 19:37 18:45 16:59	07:27 16:32 16:32	07:04 07:49-08:13/24 07:05 07:50-08:14/24	07:25 08:04-08:22/18 07:26 08:04-08:23/19	
31	05:53 06:24 20:19	06:24 06:55 19:36 18:45 16:57	07:28 16:33 16:33	07:05 07:50-08:14/24 07:06 07:51-08:15/24	07:26 08:04-08:23/19 07:27 08:04-08:24/24	
	Potential sun hours 460	583	0	21	699	584
	Sum of minutes with flicker		0	21		

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: OmbraWTG: 5 - Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (5)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	January	February	March	April	May	June
1	07:25 16:41	07:12 07:46-08:05/19 17:15	06:36 17:49	06:45 07:50-08:27/37 19:24	05:58 19:56	05:29 18:52-19:22/30 19:56
2	07:26 16:41	07:11 07:46-08:05/19 17:16	06:34 17:50	06:43 07:49-08:27/38 19:25	05:57 19:57	05:29 18:51-19:22/31 19:57
3	07:26 16:42	07:10 07:46-08:05/19 17:17	06:33 17:52	06:41 07:48-08:29/41 19:26	05:56 19:58	05:28 18:52-19:23/31 19:58
4	07:26 16:43	07:09 07:47-08:05/18 17:19	06:31 17:53	06:40 07:47-08:29/42 19:27	05:55 19:59	05:28 06:36-06:57/21 20:28 18:52-19:24/32
5	07:26 16:44	07:08 07:48-08:05/17 17:20	06:29 17:54	06:38 07:46-08:28/42 19:28	05:53 20:00	05:28 06:36-06:57/21 20:29 18:51-19:24/33
6	07:26 16:45	07:07 07:48-08:05/17 17:21	06:28 17:55	06:36 07:45-08:29/44 19:29	05:52 20:01	05:27 06:35-06:57/22 20:29 18:51-19:25/34
7	07:26 16:46	07:06 07:49-08:03/14 17:23	06:26 17:56	06:35 07:44-08:29/45 19:30	05:51 20:02	05:27 06:35-06:58/23 20:30 18:52-19:25/33
8	07:25 16:47	07:04 07:50-08:02/12 17:24	06:25 17:57	06:33 07:45-08:29/44 19:31	05:50 20:03	05:27 06:35-06:59/24 20:30 18:52-19:26/34
9	07:25 16:48	07:03 07:53-08:00/7 17:25	06:23 17:59	06:31 07:44-08:28/44 19:32	05:49 20:04	05:27 06:35-06:59/24 20:31 18:52-19:26/34
10	07:25 16:49	07:02 17:26	06:21 18:00	06:30 07:43-08:27/44 19:33	05:47 20:05	05:26 06:35-07:00/25 20:32 18:51-19:26/35
11	07:25 16:50	07:01 17:28	06:20 18:01	06:28 07:43-08:28/45 19:34	05:46 20:06	05:26 06:34-06:59/25 20:32 18:52-19:27/35
12	07:25 16:51	07:00 17:29	06:18 18:02	06:27 07:43-08:27/44 19:36	05:45 20:07	05:26 06:34-06:59/25 20:33 18:52-19:27/35
13	07:24 16:52	06:58 17:30	06:16 18:03	06:25 07:43-08:26/43 19:37	05:44 20:08	05:26 06:34-07:00/26 20:33 18:52-19:27/35
14	07:24 16:53	06:57 17:31	06:15 18:04	06:23 07:43-08:25/42 19:38	05:43 20:09	05:26 06:34-07:00/26 20:34 18:52-19:28/36
15	07:24 16:54	06:56 17:32	06:13 18:05	06:22 07:43-08:24/41 19:39	05:42 20:10	05:26 06:34-07:00/26 20:34 18:52-19:28/36
16	07:23 16:56	06:54 17:34	06:11 18:06	06:20 07:44-08:24/40 19:40	05:41 20:11	05:26 06:34-07:01/27 20:34 18:53-19:29/36
17	07:23 16:57	06:53 17:35	06:10 18:07	06:19 07:43-08:22/39 19:41	05:40 20:12	05:26 06:34-07:01/27 20:35 18:53-19:29/36
18	07:22 16:58	06:52 17:36	06:08 18:09	06:17 07:44-08:21/37 19:42	05:39 20:13	05:26 06:35-07:02/27 20:35 18:53-19:29/36
19	07:22 16:59	06:50 17:37	06:06 18:10	06:16 07:45-08:19/34 19:43	05:38 20:14	05:26 06:35-07:02/27 20:35 18:54-19:30/36
20	07:21 17:00	06:49 17:39	06:05 18:11	06:14 07:46-08:18/32 19:44	05:37 20:15	05:26 06:35-07:02/27 20:36 18:54-19:30/36
21	07:21 17:01	06:48 17:40	06:03 18:12	06:13 07:47-08:16/29 19:45	05:37 19:04-19:07/3 20:16	05:26 06:35-07:02/27 20:36 18:54-19:30/36
22	07:20 17:03	06:46 17:41	06:01 18:13	06:11 07:48-08:15/27 19:46	05:36 19:01-19:12/11 20:17	05:27 06:35-07:02/27 20:36 18:54-19:30/36
23	07:19 17:04	06:45 17:42	06:00 18:14	06:10 07:50-08:13/23 19:47	05:35 18:58-19:14/16 20:18	05:27 06:35-07:02/27 20:36 18:54-19:30/36
24	07:19 17:05	06:43 17:43	05:58 18:15	06:08 07:52-08:10/18 19:48	05:34 18:57-19:15/18 20:19	05:27 06:36-07:03/27 20:37 18:55-19:31/36
25	07:18 07:53-07:56/3 17:06	06:42 17:45	05:56 18:16	06:07 07:56-08:06/10 19:49	05:34 18:56-19:17/21 20:20	05:27 06:36-07:03/27 20:37 18:55-19:31/36
26	07:17 07:50-07:59/9 17:07	06:40 17:46	05:55 07:09-07:13/4 18:17	06:05 19:51	05:33 18:55-19:18/23 20:21	05:28 06:36-07:03/27 20:37 18:55-19:31/36
27	07:16 07:49-08:01/12 17:09	06:39 17:47	05:53 07:03-07:20/17 18:18	06:04 19:52	05:32 18:54-19:18/24 20:22	05:28 06:37-07:04/27 20:37 18:55-19:31/36
28	07:15 07:48-08:02/14 17:10	06:37 17:48	05:51 06:59-07:22/23 18:19	06:02 19:53	05:32 18:54-19:20/26 20:22 06:42-06:49/7	05:28 06:37-07:03/26 20:37 18:55-19:31/36
29	07:15 07:47-08:03/16 17:11	06:36 19:20	06:50 07:56-08:24/28 19:54	06:01 20:23	05:31 18:53-19:20/27 05:29 06:38-07:04/26	05:28 06:37-07:04/26 20:37 18:56-19:32/36
30	07:14 07:46-08:04/18 17:12	06:48 19:22	06:48 07:53-08:25/32 19:55	06:00 20:23	05:30 18:53-19:21/28 05:30 06:39-06:52/13	05:29 06:38-07:04/26 20:37 18:56-19:31/35
31	07:13 07:46-08:04/18 17:14	06:46 19:23	06:46 07:52-08:27/35 19:23	06:00 19:55	05:30 18:52-19:21/29 20:25 06:37-06:53/16	05:30 18:52-19:21/29 05:49 06:44 06:37-06:53/16
Potential sun hours	297	297	142	139	925	273
Sum of minutes with flicker	90	90	142	139	925	1788

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: OmbraWTG: 5 - Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (5)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	July	August	September	October	November	December
1	05:30 06:39-07:04/25 20:37 18:56-19:31/35	05:54 20:17 19:34 18:43 16:56	06:25 07:42-08:27/45 06:26 07:42-08:26/44 06:27 07:42-08:26/44 06:28 07:42-08:26/44 06:29 07:41-08:26/45	06:55 06:56 06:57 06:58 06:59	06:30 07:22-07:30/8 07:20-07:32/12 07:18-07:33/15 07:18-07:35/17	07:05 16:32 16:31 16:31 16:31
2	05:30 06:39-07:04/25 20:36 18:57-19:31/34	05:55 20:16 19:32 18:41 16:55	06:26 07:42-08:26/44 06:27 07:42-08:26/44 06:28 07:42-08:26/44 06:29 07:41-08:26/45	06:56 06:57 06:58 06:59	06:31 07:22-07:30/8 07:20-07:32/12 07:18-07:33/15 07:18-07:35/17	07:06 16:31 16:31 16:31
3	05:31 06:40-07:04/24 20:36 18:56-19:31/35	05:56 20:15 19:31 18:40 16:54	06:27 07:42-08:26/44 06:28 07:42-08:26/44 06:29 07:41-08:26/45	06:57 06:58 06:59	06:32 07:20-07:32/12 07:18-07:33/15 07:18-07:35/17	07:07 16:31 16:31
4	05:31 06:40-07:04/24 20:36 18:57-19:31/34	05:57 20:14 19:29 18:38 16:53	06:28 07:42-08:26/44 06:29 07:41-08:26/45	06:58 06:59	06:33 07:18-07:33/15 07:18-07:35/17	07:08 16:31
5	05:32 06:41-07:04/23 20:36 18:58-19:32/34	05:58 20:13 19:27 18:36 16:51	06:29 07:41-08:26/45	06:59	06:35 07:18-07:35/17	07:09 16:31
6	05:32 06:41-07:03/22 20:36 18:58-19:31/33	05:59 20:12 19:26 18:35 16:50	06:30 07:42-08:25/43	07:00	06:36 07:17-07:35/18	07:10 16:31
7	05:33 06:42-07:04/22 20:35 18:58-19:31/33	06:00 20:11 19:24 18:33 16:49	06:31 07:42-08:24/42	07:02	06:37 07:17-07:35/18	07:11 16:30
8	05:34 06:42-07:03/21 20:35 18:58-19:30/32	06:01 20:09 19:22 18:32 16:48	06:32 07:42-08:24/42	07:03	06:38 07:17-07:36/19	07:12 16:30
9	05:34 06:43-07:03/20 20:35 18:59-19:30/31	06:02 20:08 19:21 18:30 16:47	06:33 07:42-08:23/41	07:04	06:39 07:17-07:36/19	07:13 16:30
10	05:35 19:00-19:30/30 20:34 06:44-07:03/19	06:03 20:07 19:19 18:28 16:46	06:34 07:42-08:21/39	07:05	06:41 07:17-07:36/19	07:14 16:30
11	05:36 18:59-19:29/30 20:34 06:44-07:02/18	06:04 20:05 19:17 18:27 16:45	06:35 07:42-08:19/37	07:06	06:42 07:17-07:35/18	07:14 16:30
12	05:36 19:00-19:30/30 20:33 06:45-07:02/17	06:05 20:04 19:16 18:25 16:44	06:36 07:43-08:18/35	07:07	06:43 07:18-07:36/18	07:15 16:31
13	05:37 19:01-19:29/28 20:33 06:46-07:01/15	06:06 20:03 19:14 18:23 16:43	06:37 07:44-08:16/32	07:08	06:44 07:19-07:35/16	07:16 16:31
14	05:38 19:02-19:29/27 20:32 06:48-07:00/12	06:07 20:01 19:12 18:22 16:42	06:38 07:46-08:14/28	07:09	06:45 07:20-07:34/14	07:17 16:31
15	05:39 19:02-19:28/26 20:32 06:49-06:58/9	06:08 20:00 19:11 18:20 16:41	06:39 07:48-08:12/24	07:10	06:47 07:22-07:34/12	07:18 16:31
16	05:40 19:03-19:28/25 20:31 06:52-06:56/4	06:09 19:59 19:09 18:19 16:40	06:40 07:50-08:09/19	07:11	06:48 07:23-07:32/9	07:18 16:31
17	05:40 19:04-19:27/23 20:31	06:10 19:57 19:07 18:17 16:39	06:41 07:55-08:03/8	07:12	06:49 07:26-07:29/3	07:19 16:32
18	05:41 19:05-19:27/22 20:30	06:11 08:01-08:13/12 19:56 19:05 18:16 16:39	06:42	07:14	06:50	07:20 16:32
19	05:42 19:05-19:25/20 20:29	06:12 07:57-08:16/19 19:54 19:04 18:14 16:38	06:43	07:15	06:51	07:20 16:32
20	05:43 19:07-19:24/17 20:28	06:13 07:55-08:18/23 19:53 19:02 18:13 16:37	06:44	07:16	06:53	07:21 16:33
21	05:44 19:09-19:23/14 20:28	06:14 07:53-08:20/27 19:51 19:00 18:11 16:37	06:45	07:17	06:54	07:21 16:33
22	05:45 19:11-19:20/9 20:27	06:15 07:51-08:21/30 19:50 18:59 18:10 16:36	06:46	07:18	06:55	07:22 16:34
23	05:45 20:26	06:16 07:50-08:22/32 19:48 18:57 18:08 16:35	06:47	07:19	06:56	07:22 16:34
24	05:46 20:25	06:17 07:48-08:23/35 19:47 18:55 18:07 16:35	06:48	07:20	06:57	07:23 16:35
25	05:47 20:24	06:18 07:47-08:24/37 19:45 18:53 17:05 16:34	06:49	06:22	06:58	07:23 16:35
26	05:48 20:23	06:19 07:46-08:25/39 19:44 18:52 17:04 16:36	06:50	06:23	06:59	07:24 16:36
27	05:49 20:23	06:20 07:45-08:25/40 19:42 18:50 17:03 16:33	06:51	06:24	07:01	07:24 16:37
28	05:50 20:22	06:21 07:45-08:26/41 19:40 18:48 17:01 16:33	06:52	06:25	07:02	07:24 16:37
29	05:51 20:21	06:22 07:44-08:26/42 19:39 18:47 17:00 16:32	06:53	06:26	07:03	07:25 16:38
30	05:52 20:20	06:23 07:43-08:26/43 19:37 18:45 16:59 16:32	06:54	06:27	07:04	07:25 16:39
31	05:53 20:19	06:24 07:43-08:27/44 19:36 16:57 16:29 07:25	06:55	06:29		07:25 16:39
	Potential sun hours Sum of minutes with flicker	460 902 428 375 345 297		612 0 235 345 297		0 0 0 287 287

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: OmbraWTG: 6 - Siemens Gamesa SG 6.6-145 6600 145.0 !O! hub: 127,5 m (TOT: 200,0 m) (6)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	January	February	March	April	May	June	
1	07:25	07:12	06:36	06:45	05:58	05:29	06:19-06:44/25
	16:41	17:15	17:49	19:24	19:56	20:26	
2	07:26	07:11	06:34	06:43 07:21-07:31/10	05:57	05:29	06:19-06:44/25
	16:41	17:16	17:50	19:25	19:57	20:26	
3	07:26	07:10	06:33	06:41 07:18-07:34/16	05:56	05:28	06:19-06:43/24
	16:42	17:17	17:52	19:26	19:58	20:27	
4	07:26	07:09	06:31	06:40 07:16-07:35/19	05:55	05:28	06:19-06:43/24
	16:43	17:19	17:53	19:27	19:59	20:28	
5	07:26	07:08	06:29	06:38 07:14-07:36/22	05:53	05:28	06:20-06:43/23
	16:44	17:20	17:54	19:28	20:00	20:28	
6	07:26	07:07	06:28	06:36 07:13-07:37/24	05:52	05:27	06:19-06:42/23
	16:45	17:21	17:55	19:29	20:01	20:29	
7	07:26	07:06	06:26	06:35 07:12-07:37/25	05:51	05:27	06:20-06:42/22
	16:46	17:22	17:56	19:30	20:02	20:30	
8	07:25	07:04	06:25	06:33 07:12-07:38/26	05:50	05:27	06:20-06:42/22
	16:47	17:24	17:57	19:31	20:03	20:30	
9	07:25	07:03	06:23	06:31 07:11-07:38/27	05:49	05:27	06:21-06:42/21
	16:48	17:25	17:59	19:32	20:04	20:31	
10	07:25	07:02	06:21	06:30 07:10-07:37/27	05:47	05:26	06:20-06:41/21
	16:49	17:26	18:00	19:33	20:05	20:32	
11	07:25	07:01	06:20	06:28 07:10-07:37/27	05:46	05:26	06:21-06:41/20
	16:50	17:28	18:01	19:34	20:06	20:32	
12	07:25	07:00	06:18	06:26 07:10-07:37/27	05:45	05:26	06:21-06:41/20
	16:51	17:29	18:02	19:35	20:07	20:33	
13	07:24	06:58	06:16	06:25 07:10-07:37/27	05:44 06:31-06:38/7	05:26	06:21-06:41/20
	16:52	17:30	18:03	19:37	20:08	20:33	
14	07:24	06:57	06:15	06:23 07:10-07:35/25	05:43 06:29-06:39/10	05:26	06:22-06:41/19
	16:53	17:31	18:04	19:38	20:09	20:34	
15	07:24	06:56	06:13	06:22 07:10-07:34/24	05:42 06:27-06:41/14	05:26	06:22-06:41/19
	16:54	17:32	18:05	19:39	20:10	20:34	
16	07:23	06:54	06:11	06:20 07:11-07:33/22	05:41 06:27-06:42/15	05:26	06:22-06:41/19
	16:56	17:34	18:06	19:40	20:11	20:34	
17	07:23	06:53	06:10	06:19 07:12-07:31/19	05:40 06:26-06:43/17	05:26	06:23-06:41/18
	16:57	17:35	18:07	19:41	20:12	20:35	
18	07:22	06:52	06:08	06:17 07:13-07:30/17	05:39 06:25-06:43/18	05:26	06:23-06:41/18
	16:58	17:36	18:09	19:42	20:13	20:35	
19	07:22	06:50	06:06	06:16 07:15-07:27/12	05:38 06:24-06:43/19	05:26	06:24-06:42/18
	16:59	17:37	18:10	19:43	20:14	20:35	
20	07:21	06:49	06:05	06:14	05:37 06:23-06:44/21	05:26	06:24-06:42/18
	17:00	17:39	18:11	19:44	20:15	20:36	
21	07:21	06:48	06:03	06:13	05:37 06:22-06:43/21	05:26	06:24-06:42/18
	17:01	17:40	18:12	19:45	20:16	20:36	
22	07:20	06:46	06:01	06:11	05:36 06:22-06:44/22	05:27	06:24-06:42/18
	17:03	17:41	18:13	19:46	20:17	20:36	
23	07:19	06:45	06:00	06:10	05:35 06:21-06:44/23	05:27	06:24-06:42/18
	17:04	17:42	18:14	19:47	20:18	20:36	
24	07:19	06:43	05:58	06:08	05:34 06:20-06:44/24	05:27	06:25-06:43/18
	17:05	17:43	18:15	19:48	20:19	20:36	
25	07:18	06:42	05:56	06:07	05:33 06:20-06:44/24	05:27	06:25-06:43/18
	17:06	17:45	18:16	19:49	20:20	20:37	
26	07:17	06:40	05:55	06:05	05:33 06:19-06:44/25	05:28	06:24-06:43/19
	17:07	17:46	18:17	19:51	20:21	20:37	
27	07:16	06:39	05:53	06:04	05:32 06:19-06:43/24	05:28	06:25-06:44/19
	17:09	17:47	18:18	19:52	20:22	20:37	
28	07:15	06:37	05:51	06:02	05:31 06:19-06:44/25	05:28	06:25-06:44/19
	17:10	17:48	18:19	19:53	20:22	20:37	
29	07:15		06:50	06:01	05:31 06:18-06:43/25	05:29	06:26-06:45/19
	17:11		19:20	19:54	20:23	20:37	
30	07:14		06:48	06:00	05:30 06:19-06:44/25	05:29	06:25-06:45/20
	17:12		19:22	19:55	20:24	20:37	
31	07:13		06:46		05:30 06:18-06:43/25		
	17:14		19:23		20:25		
	Potential sun hours	297	297	369	399	449	453
	Sum of minutes with flicker	0	0	0	396	384	605

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: OmbraWTG: 6 - Siemens Gamesa SG 6.6-145 6600 145.0 !O! hub: 127,5 m (TOT: 200,0 m) (6)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	July	August	September	October	November	December
1	05:30 06:26-06:46/20 20:37	05:54 20:17	06:25 07:09-07:36/27 19:34	06:55 18:43	06:30 16:56	07:05 16:32
2	05:30 06:25-06:46/21 20:36	05:55 20:16	06:26 07:09-07:36/27 19:32	06:56 18:41	06:31 16:55	07:06 16:31
3	05:31 06:26-06:47/21 20:36	05:56 20:15	06:27 07:09-07:36/27 19:31	06:57 18:40	06:32 16:54	07:07 16:31
4	05:31 06:26-06:47/21 20:36	05:57 20:14	06:28 07:09-07:35/26 19:29	06:58 18:38	06:33 16:53	07:08 16:31
5	05:32 06:26-06:48/22 20:36	05:58 20:13	06:29 07:09-07:34/25 19:27	06:59 18:36	06:35 16:51	07:09 16:31
6	05:32 06:26-06:48/22 20:36	05:59 20:12	06:30 07:09-07:33/24 19:26	07:00 18:35	06:36 16:50	07:10 16:30
7	05:33 06:26-06:49/23 20:35	06:00 20:10	06:31 07:10-07:32/22 19:24	07:02 18:33	06:37 16:49	07:11 16:30
8	05:34 06:26-06:49/23 20:35	06:01 20:09	06:32 07:11-07:31/20 19:22	07:03 18:32	06:38 16:48	07:12 16:30
9	05:34 06:26-06:50/24 20:35	06:02 20:08	06:33 07:12-07:28/16 19:21	07:04 18:30	06:39 16:47	07:13 16:30
10	05:35 06:27-06:51/24 20:34	06:03 20:07	06:34 07:14-07:24/10 19:19	07:05 18:28	06:41 16:46	07:14 16:30
11	05:36 06:26-06:51/25 20:34	06:04 20:05	06:35 19:17	07:06 18:27	06:42 16:45	07:14 16:30
12	05:36 06:27-06:51/24 20:33	06:05 20:04	06:36 19:16	07:07 18:25	06:43 16:44	07:15 16:30
13	05:37 06:27-06:52/25 20:33	06:06 20:03	06:37 19:14	07:08 18:23	06:44 16:43	07:16 16:31
14	05:38 06:28-06:53/25 20:32	06:07 20:01	06:38 19:12	07:09 18:22	06:45 16:42	07:17 16:31
15	05:39 06:27-06:52/25 20:32	06:08 20:00	06:39 19:11	07:10 18:20	06:47 16:41	07:18 16:31
16	05:39 06:28-06:53/25 20:31	06:09 19:59	06:40 19:09	07:11 18:19	06:48 16:40	07:18 16:31
17	05:40 06:28-06:53/25 20:31	06:10 19:57	06:41 19:07	07:12 18:17	06:49 16:39	07:19 16:32
18	05:41 06:29-06:54/25 20:30	06:11 19:56	06:42 19:05	07:14 18:16	06:50 16:39	07:20 16:32
19	05:42 06:30-06:54/24 20:29	06:12 19:54	06:43 19:04	07:15 18:14	06:51 16:38	07:20 16:32
20	05:43 06:30-06:53/23 20:28	06:13 19:53	06:44 19:02	07:16 18:13	06:53 16:37	07:21 16:33
21	05:44 06:31-06:54/23 20:28	06:14 19:51	06:45 19:00	07:17 18:11	06:54 16:36	07:21 16:33
22	05:45 06:32-06:54/22 20:27	06:15 19:50	06:46 18:59	07:18 18:10	06:55 16:36	07:22 16:34
23	05:45 06:33-06:54/21 20:26	06:16 07:23-07:27/4 19:48	06:47 18:57	07:19 18:08	06:56 16:35	07:22 16:34
24	05:46 06:34-06:54/20 20:25	06:17 07:18-07:31/13 19:47	06:48 18:55	07:20 18:07	06:57 16:35	07:23 16:35
25	05:47 06:35-06:54/19 20:24	06:18 07:16-07:33/17 19:45	06:49 18:53	07:22 17:05	06:58 16:34	07:23 16:35
26	05:48 06:36-06:54/18 20:23	06:19 07:14-07:34/20 19:44	06:50 18:52	07:23 17:04	06:59 16:34	07:24 16:36
27	05:49 06:37-06:53/16 20:23	06:20 07:13-07:35/22 19:42	06:51 18:50	07:24 17:03	06:24 16:33	07:24 16:37
28	05:50 06:37-06:52/15 20:22	06:21 07:12-07:36/24 19:40	06:52 18:48	07:25 17:01	07:02 16:33	07:24 16:37
29	05:51 06:38-06:51/13 20:21	06:22 07:11-07:36/25 19:39	06:53 18:47	07:26 17:00	07:03 16:32	07:25 16:38
30	05:52 06:40-06:49/9 20:20	06:23 07:10-07:36/26 19:37	06:54 18:45	07:27 16:59	07:04 16:32	07:25 16:39
31	05:53 06:43-06:47/4 20:19	06:24 07:10-07:37/27 19:36			06:29 16:57	07:25 16:39
	Potential sun hours 460	428	375	345	297	287
Sum of minutes with flicker	647	178	224	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: OmbraWTG: 7 - Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (7)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	January	February	March	April	May	June
1	07:25 16:41	07:12 17:15	06:36 17:49	06:45 18:24-18:47/23 19:24	05:58 07:17-08:19/62 19:56	05:29 07:26-07:52/26 20:26
2	07:26 16:41	07:11 17:16	06:34 17:51	06:43 18:24-18:46/22 19:25	05:57 07:17-08:18/61 19:57	05:29 07:27-07:52/25 20:26
3	07:26 16:42	07:10 17:18	06:33 17:52	06:41 18:25-18:45/20 19:26	05:56 07:16-08:17/61 19:58	05:28 07:27-07:51/24 20:27
4	07:26 16:43	07:09 17:19	06:31 17:53	06:40 18:26-18:43/17 19:27	05:55 07:16-08:17/61 19:59	05:28 07:29-07:50/21 20:28
5	07:26 16:44	07:08 17:20	06:29 17:54	06:38 18:27-18:41/14 19:28	05:53 07:16-08:16/60 20:00	05:28 07:30-07:50/20 20:29
6	07:26 16:45	07:07 17:21	06:28 17:55	06:36 18:30-18:38/8 19:29	05:52 07:16-08:16/60 20:01	05:27 07:31-07:48/17 20:29
7	07:26 16:46	07:06 17:23	06:26 17:56	06:35 19:30	05:51 07:16-08:15/59 20:02	05:27 07:32-07:47/15 20:30
8	07:25 16:47	07:04 17:24	06:25 17:57	06:33 19:31	05:50 07:16-08:14/58 20:03	05:27 07:34-07:47/13 20:30
9	07:25 16:48	07:03 17:25	06:23 17:59	06:31 19:32	05:49 07:15-08:12/57 20:04	05:27 07:35-07:46/11 20:31
10	07:25 16:49	07:02 17:26	06:21 18:00	06:30 07:53-08:07/14 19:33	05:47 07:15-08:12/57 20:05	05:26 07:36-07:43/7 20:32
11	07:25 16:50	07:01 17:28	06:20 18:01	06:28 07:50-08:12/22 19:34	05:46 07:15-08:11/56 20:06	05:26 07:32-07:47/15 20:32
12	07:25 16:51	07:00 17:29	06:18 18:02	06:27 07:46-08:14/28 19:36	05:45 07:15-08:09/54 20:07	05:26 07:33-07:47/15 20:33
13	07:24 16:52	06:58 17:30	06:16 18:03	06:25 07:43-08:16/33 19:37	05:44 07:15-08:08/53 20:08	05:26 07:32-07:47/15 20:33
14	07:24 16:53	06:57 17:31	06:15 18:04	06:23 07:38-08:17/39 19:38	05:43 07:15-08:07/52 20:09	05:26 07:32-07:47/15 20:34
15	07:24 16:54	06:56 17:33	06:13 18:05	06:22 07:35-08:17/42 19:39	05:42 07:15-08:06/51 20:10	05:26 07:32-07:47/15 20:34
16	07:23 16:56	06:54 17:34	06:11 18:06	06:20 07:33-08:19/46 19:40	05:41 07:16-08:05/49 20:11	05:26 07:32-07:47/15 20:34
17	07:23 16:57	06:53 17:35	06:10 18:07	06:19 07:31-08:19/48 19:41	05:40 07:17-08:03/46 20:12	05:26 07:32-07:47/15 20:35
18	07:22 16:58	06:52 17:36	06:08 18:09	06:17 07:30-08:20/50 19:42	05:39 07:17-08:02/45 20:13	05:26 07:32-07:47/15 20:35
19	07:22 16:59	06:50 17:37	06:06 18:10	06:16 07:28-08:20/52 19:43	05:38 07:17-08:01/44 20:14	05:26 07:32-07:47/15 20:35
20	07:21 17:00	06:49 17:39	06:05 17:35-17:39/4 18:11	06:14 07:28-08:21/53 19:44	05:37 07:17-08:00/43 20:15	05:26 07:32-07:47/15 20:36
21	07:21 17:01	06:48 17:40	06:03 17:31-17:44/13 18:12	06:13 07:26-08:20/54 19:45	05:37 07:18-07:59/41 20:16	05:26 07:32-07:47/15 20:36
22	07:20 17:03	06:46 17:41	06:01 17:28-17:45/17 18:13	06:11 07:25-08:21/56 19:46	05:36 07:19-07:59/40 20:17	05:27 07:32-07:47/15 20:36
23	07:19 17:04	06:45 17:42	06:00 17:26-17:46/20 18:14	06:10 07:24-08:21/57 19:47	05:35 07:19-07:58/39 20:18	05:27 07:32-07:47/15 20:36
24	07:19 17:05	06:43 17:43	05:58 17:26-17:48/22 18:15	06:08 07:22-08:21/59 19:48	05:34 07:19-07:57/38 20:19	05:27 07:32-07:47/15 20:37
25	07:18 17:06	06:42 17:45	05:56 17:24-17:48/24 18:16	06:07 07:21-08:21/60 19:49	05:34 07:21-07:57/36 20:20	05:27 07:32-07:47/15 20:37
26	07:17 17:07	06:40 17:46	05:55 17:23-17:48/25 18:17	06:05 07:20-08:20/60 19:51	05:33 07:21-07:56/35 20:21	05:28 07:32-07:47/15 20:37
27	07:16 17:09	06:39 17:47	05:53 17:23-17:48/25 18:18	06:04 07:19-08:20/61 19:52	05:32 07:21-07:55/34 20:22	05:28 07:32-07:47/15 20:37
28	07:15 17:10	06:37 17:48	05:51 17:23-17:49/26 18:19	06:03 07:19-08:20/61 19:53	05:32 07:22-07:55/33 20:22	05:28 07:32-07:47/15 20:37
29	07:15 17:11		06:50 18:23-18:49/26 19:21	06:01 07:18-08:19/61 19:54	05:31 07:23-07:54/31 20:23	05:29 07:32-07:47/15 20:37
30	07:14 17:12		06:48 18:22-18:48/26 19:22	06:00 07:17-08:19/62 19:55	05:30 07:24-07:54/30 20:24	05:29 07:32-07:47/15 20:37
31	07:13 17:14		06:46 18:23-18:48/25 19:23		05:30 07:24-07:53/29 20:25	
	Potential sun hours	297	297	369	399	449
	Sum of minutes with flicker	0	0	253	1122	1475
						179

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: OmbraWTG: 7 - Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0 m) (7)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	July	August	September	October	November	December
1	05:30	05:54 07:25-08:21/56	06:25 07:49-08:10/21	06:55	06:30	07:05
	20:37	20:17	19:34	18:43	16:56	16:32
2	05:30 07:43-07:47/4	05:55 07:25-08:22/57	06:26 07:53-08:06/13	06:56	06:31	07:06
	20:37	20:16	19:32	18:42	16:55	16:31
3	05:31 07:41-07:50/9	05:56 07:25-08:22/57	06:27	06:57	06:32	07:07
	20:36	20:15	19:31	18:40	16:54	16:31
4	05:31 07:39-07:51/12	05:57 07:25-08:23/58	06:28	06:58	06:33	07:08
	20:36	20:14	19:29	18:38	16:53	16:31
5	05:32 07:39-07:53/14	05:58 07:25-08:24/59	06:29	06:59	06:35	07:09
	20:36	20:13	19:27	18:37	16:51	16:31
6	05:32 07:37-07:54/17	05:59 07:26-08:25/59	06:30 18:27-18:34/7	07:01	06:36	07:10
	20:36	20:12	19:26	18:35	16:50	16:31
7	05:33 07:37-07:55/18	06:00 07:26-08:25/59	06:31 18:23-18:36/13	07:02	06:37	07:11
	20:35	20:11	19:24	18:33	16:49	16:30
8	05:34 07:35-07:56/21	06:01 07:26-08:26/60	06:32 18:20-18:37/17	07:03	06:38	07:12
	20:35	20:09	19:22	18:32	16:48	16:30
9	05:34 07:35-07:57/22	06:02 07:26-08:27/61	06:33 18:18-18:38/20	07:04	06:39	07:13
	20:35	20:08	19:21	18:30	16:47	16:30
10	05:35 07:35-07:59/24	06:03 07:26-08:27/61	06:34 18:17-18:39/22	07:05	06:41	07:14
	20:34	20:07	19:19	18:28	16:46	16:30
11	05:36 07:33-07:59/26	06:04 07:26-08:27/61	06:35 18:16-18:39/23	07:06	06:42	07:14
	20:34	20:05	19:17	18:27	16:45	16:30
12	05:36 07:33-08:00/27	06:05 07:26-08:28/62	06:36 18:15-18:39/24	07:07	06:43	07:15
	20:33	20:04	19:16	18:25	16:44	16:31
13	05:37 07:33-08:02/29	06:06 07:26-08:28/62	06:37 18:14-18:39/25	07:08	06:44	07:16
	20:33	20:03	19:14	18:23	16:43	16:31
14	05:38 07:32-08:03/31	06:07 07:26-08:28/62	06:38 18:13-18:39/26	07:09	06:45	07:17
	20:32	20:01	19:12	18:22	16:42	16:31
15	05:39 07:31-08:03/32	06:08 07:26-08:27/61	06:39 18:12-18:38/26	07:10	06:47	07:18
	20:32	20:00	19:11	18:20	16:41	16:31
16	05:40 07:31-08:04/33	06:09 07:26-08:27/61	06:40 18:12-18:38/26	07:11	06:48	07:18
	20:31	19:59	19:09	18:19	16:40	16:31
17	05:40 07:31-08:05/34	06:10 07:27-08:27/60	06:41 18:12-18:37/25	07:12	06:49	07:19
	20:31	19:57	19:07	18:17	16:40	16:32
18	05:41 07:30-08:06/36	06:11 07:27-08:27/60	06:42 18:12-18:36/24	07:14	06:50	07:20
	20:30	19:56	19:05	18:16	16:39	16:32
19	05:42 07:30-08:07/37	06:12 07:28-08:26/58	06:43 18:12-18:34/22	07:15	06:51	07:20
	20:29	19:54	19:04	18:14	16:38	16:32
20	05:43 07:29-08:07/38	06:13 07:29-08:26/57	06:44 18:12-18:33/21	07:16	06:53	07:21
	20:28	19:53	19:02	18:13	16:37	16:33
21	05:44 07:28-08:08/40	06:14 07:30-08:26/56	06:45 18:13-18:31/18	07:17	06:54	07:21
	20:28	19:51	19:00	18:11	16:37	16:33
22	05:45 07:28-08:09/41	06:15 07:31-08:25/54	06:46 18:15-18:29/14	07:18	06:55	07:22
	20:27	19:50	18:59	18:10	16:36	16:34
23	05:45 07:28-08:10/42	06:16 07:32-08:24/52	06:47 18:17-18:26/9	07:19	06:56	07:22
	20:26	19:48	18:57	18:08	16:35	16:34
24	05:46 07:28-08:11/43	06:17 07:32-08:24/52	06:48	07:20	06:57	07:23
	20:25	19:47	18:55	18:07	16:35	16:35
25	05:47 07:27-08:12/45	06:18 07:33-08:23/50	06:49	06:22	06:58	07:23
	20:24	19:45	18:53	17:06	16:34	16:35
26	05:48 07:27-08:13/46	06:19 07:34-08:22/48	06:50	06:23	06:59	07:24
	20:23	19:44	18:52	17:04	16:34	16:36
27	05:49 07:27-08:14/47	06:20 07:35-08:21/46	06:51	06:24	07:01	07:24
	20:23	19:42	18:50	17:03	16:33	16:37
28	05:50 07:26-08:15/49	06:21 07:37-08:19/42	06:52	06:25	07:02	07:24
	20:22	19:41	18:48	17:01	16:33	16:37
29	05:51 07:26-08:17/51	06:22 07:39-08:18/39	06:53	06:26	07:03	07:25
	20:21	19:39	18:47	17:00	16:32	16:38
30	05:52 07:26-08:18/52	06:23 07:43-08:16/33	06:54	06:27	07:04	07:25
	20:20	19:37	18:45	16:59	16:32	16:39
31	05:53 07:26-08:19/53	06:24 07:46-08:13/27		06:29		07:25
	20:19	19:36		16:57		16:40
Potential sun hours	460	428	375	345	297	287
Sum of minutes with flicker	973	1690	396	0	0	0

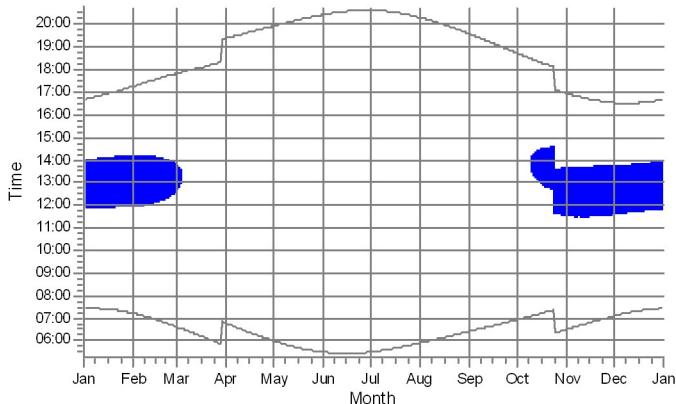
Table layout: For each day in each month the following matrix apply

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

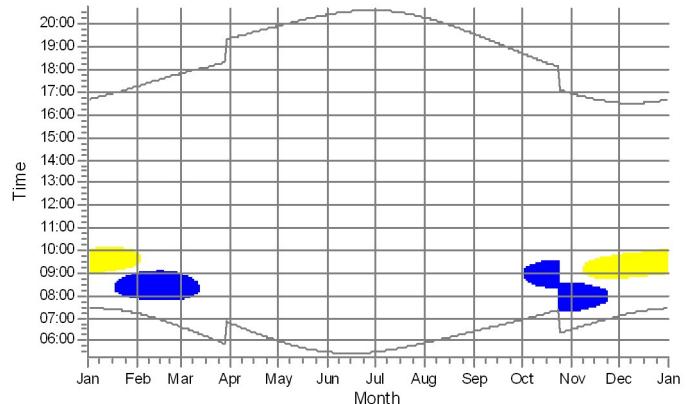
SHADOW - Calendar per WTG, graphical

Calculation: Ombra

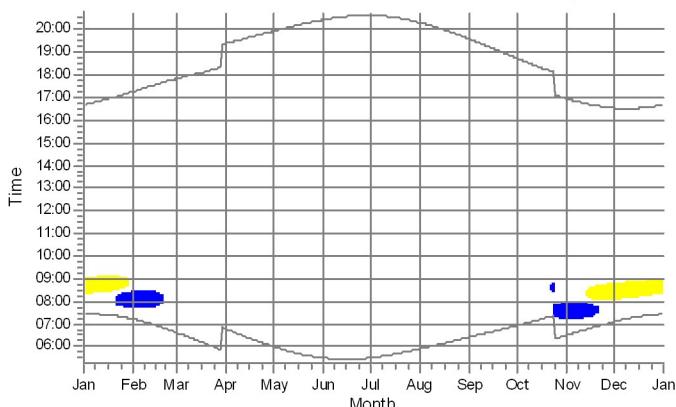
1: Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0



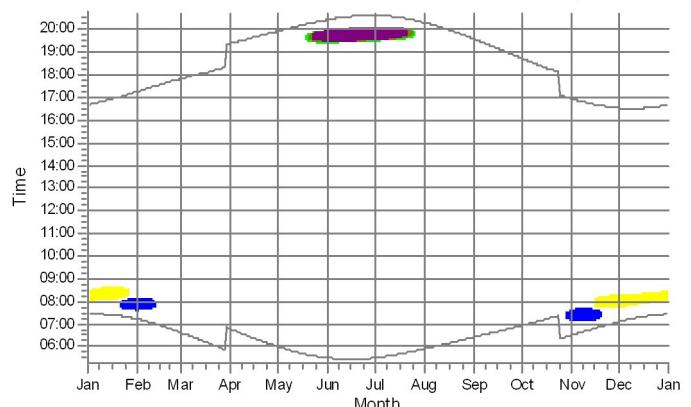
2: Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0



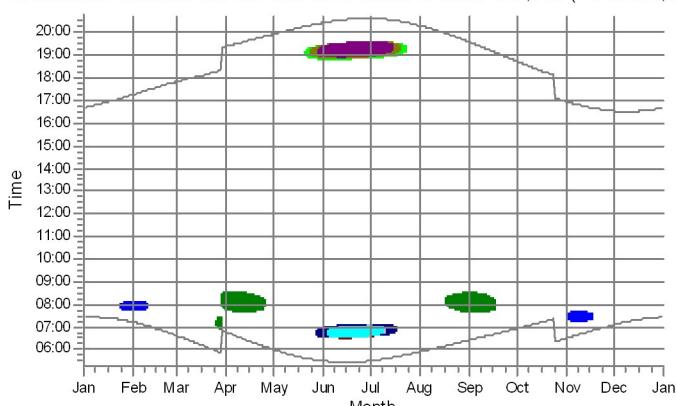
3: Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0



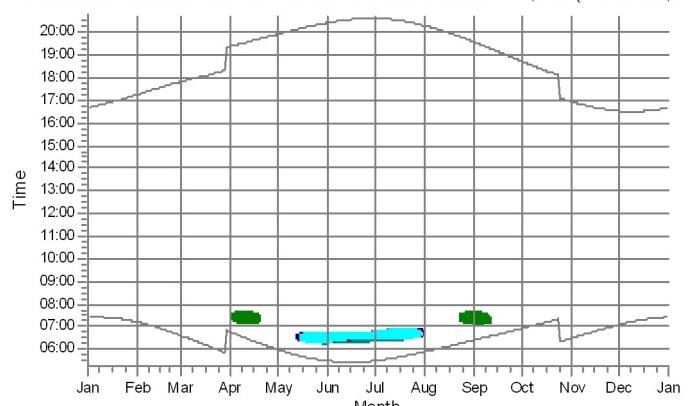
4: Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0



5: Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0



6: Siemens Gamesa SG 6.6-145 6600 145.0 !O! hub: 127,5 m (TOT: 200,0



Shadow receptors

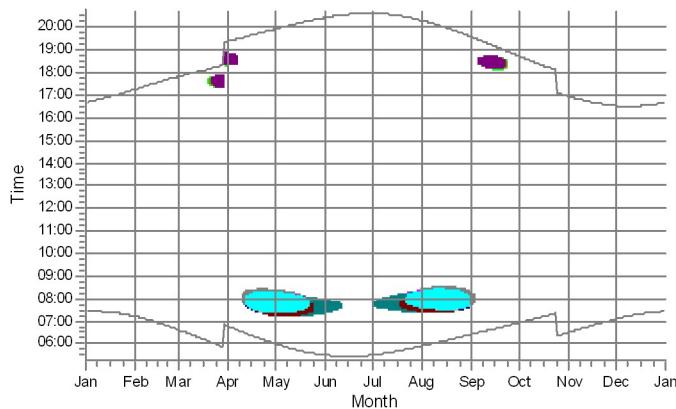
A:	Shadow Receptor: 1,0 × 1,0 Azimuth: -140,0° Slope: 90,0° (1)
B:	Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (2)
C:	Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (3)
D:	Shadow Receptor: 1,0 × 1,0 Azimuth: -90,0° Slope: 90,0° (4)
E:	Shadow Receptor: 1,0 × 1,0 Azimuth: -90,0° Slope: 90,0° (5)
F:	Shadow Receptor: 1,0 × 1,0 Azimuth: -90,0° Slope: 90,0° (6)
G:	Shadow Receptor: 1,0 × 1,0 Azimuth: -90,0° Slope: 90,0° (7)

H:	Shadow Receptor: 1,0 × 1,0 Azimuth: -90,0° Slope: 90,0° (8)
I:	Shadow Receptor: 1,0 × 1,0 Azimuth: 120,0° Slope: 90,0° (9)
J:	Shadow Receptor: 1,0 × 1,0 Azimuth: 120,0° Slope: 90,0° (10)
K:	Shadow Receptor: 1,0 × 1,0 Azimuth: 120,0° Slope: 90,0° (11)
L:	Shadow Receptor: 1,0 × 1,0 Azimuth: -90,0° Slope: 90,0° (12)
M:	Shadow Receptor: 1,0 × 1,0 Azimuth: -90,0° Slope: 90,0° (13)

SHADOW - Calendar per WTG, graphical

Calculation: Ombra

7: Siemens Gamesa SG 6.6-155 6600 155.0 !O! hub: 122,5 m (TOT: 200,0

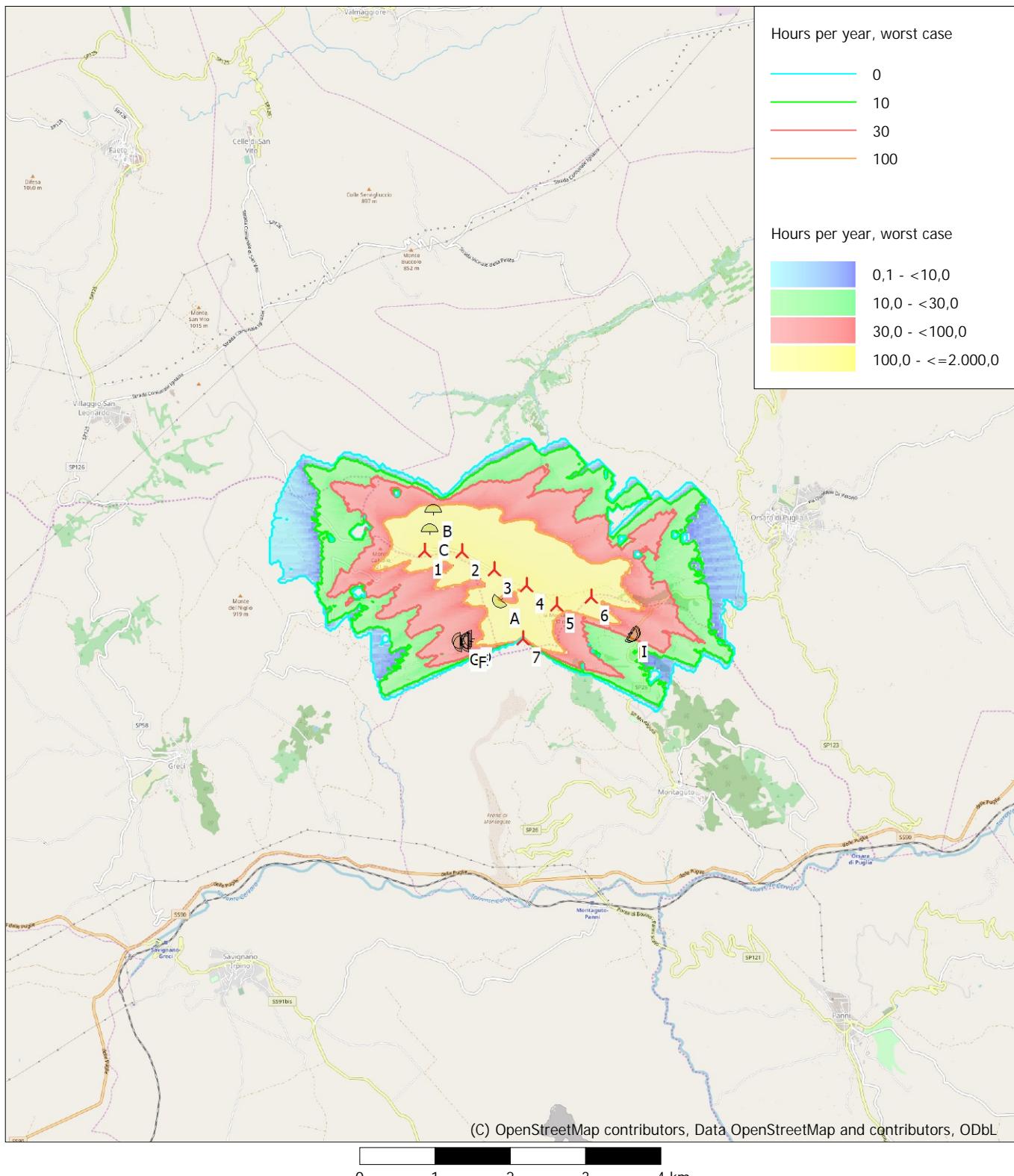


Shadow receptors

	D: Shadow Receptor: 1,0 × 1,0 Azimuth: -90,0° Slope: 90,0° (4)
	E: Shadow Receptor: 1,0 × 1,0 Azimuth: -90,0° Slope: 90,0° (5)
	F: Shadow Receptor: 1,0 × 1,0 Azimuth: -90,0° Slope: 90,0° (6)
	G: Shadow Receptor: 1,0 × 1,0 Azimuth: -90,0° Slope: 90,0° (7)
	H: Shadow Receptor: 1,0 × 1,0 Azimuth: -90,0° Slope: 90,0° (8)
	I: Shadow Receptor: 1,0 × 1,0 Azimuth: 120,0° Slope: 90,0° (9)
	J: Shadow Receptor: 1,0 × 1,0 Azimuth: 120,0° Slope: 90,0° (10)
	K: Shadow Receptor: 1,0 × 1,0 Azimuth: 120,0° Slope: 90,0° (11)
	L: Shadow Receptor: 1,0 × 1,0 Azimuth: -90,0° Slope: 90,0° (12)
	M: Shadow Receptor: 1,0 × 1,0 Azimuth: -90,0° Slope: 90,0° (13)

SHADOW - Map

Calculation: Ombra



Map: EMD OpenStreetMap , Print scale 1:75.000, Map center UTM (north)-WGS84 Zone: 33 East: 518.580 North: 4.569.240

New WTG Shadow receptor

Flicker map level: Elevation Grid Data Object: IR-Orsara_20km_EMGrid_0.wpg (1)

Time step: 4 minutes, Day step: 14 days, Map resolution: 30 m, Visibility resolution: 15 m, Eye height: 1,5 m