

ONDERWERP

Toetsing aangeleverde informatie voor goedkeuring softwarepakket voor toetsing aan Beleidsregel slagschaduw

DATUM

18 maart 2022

VAN

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Toetsing aangeleverde informatie voor goedkeuring softwarepakket voor toetsing aan de Beleidsregel slagschaduw Oosterwold

In artikel 2 van de 'Beleidsregel van het college van burgemeester en wethouders van de gemeente Almere houdende slagschaduw Oosterwold' is vastgelegd dat de slagschaduwberekeningen dienen te worden uitgevoerd met een door het bevoegd gezag goedgekeurd softwarepakket.

Voor de beoordeling van een softwarepakket dient de informatie te worden aangeleverd zoals beschreven in het document 'Aan te leveren informatie voor goedkeuring softwarepakket voor toetsing aan Beleidsregel slagschaduw Oosterwold'. Deze informatie dient te worden beoordeeld, zodat accurate berekeningen worden gewaarborgd. Hierbij dienen de gerapporteerde berekeningsresultaten voor de 15 voorgeschreven beoordelingspunten te worden vergeleken met de in Tabel 1 vermelde waarden. De nauwkeurigheid van het beschreven softwarepakket wordt voldoende geacht als de afwijking van de in Tabel 1 vermelde waarden gemiddeld niet meer dan 5% bedraagt en voor een individueel punt de afwijking niet meer dan 10% bedraagt. Afwijkingen die iets groter zijn hoeven niet per definitie tot afkeuring van het softwarepakket te leiden, maar de aangeleverde toelichting en de slagschaduwkalenders dienen dan extra kritisch te worden beoordeeld. De mate van afwijking speelt natuurlijk ook een belangrijke rol. Ook zou extra informatie kunnen worden opgevraagd om na te gaan wat de oorzaak van de afwijkingen is.

Tabel 1: Astronomisch maximaal mogelijke slagschaduw zoals berekend met het softwarepakket WindPRO versie 3.5 voor het referentiejaar 2022

Nr.	RD-coördinaten middelpunt daglichtopening		Astronomisch maximaal mogelijke slagschaduw		
	X	Y	Aantal dagen met slagschaduw per jaar	Maximaal aantal minuten slagschaduw op een dag	Aantal uren:minuten slagschaduw per jaar
01	149572	486770	114	40	47:35
02	149671	486478	176	48	85:47
03	149413	486088	116	31	40:12
04	149706	486017	109	34	37:47
05	149898	485329	138	30	49:11
06	150652	485317	211	58	123:09
07	150476	484990	121	34	47:48
08	151025	483671	132	29	42:29
09	151522	483887	184	55	107:24
10	151791	483350	178	50	92:21
11	151446	483105	192	34	76:30
12	150989	482662	103	23	25:38

Nr.	RD-coördinaten middelpunt daglichtopening		Astromisch maximaal mogelijke slagschaduw		
	X	Y	Aantal dagen met slagschaduw per jaar	Maximaal aantal minuten slagschaduw op een dag	Aantal uren:minuten slag-schaduw per jaar
13	151709	482317	145	51	95:50
14	151018	482084	189	29	64:57
15	151328	481634	181	49	84:02

Bijlage: Slagschaduwrapport WindPRO versie 3.5 conform de Beleidsregel slagschaduw Oosterwol

SHADOW - Main Result

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket

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

4 °

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: Height Contours: CONTOURLINE_ONLINEDATA AHN3

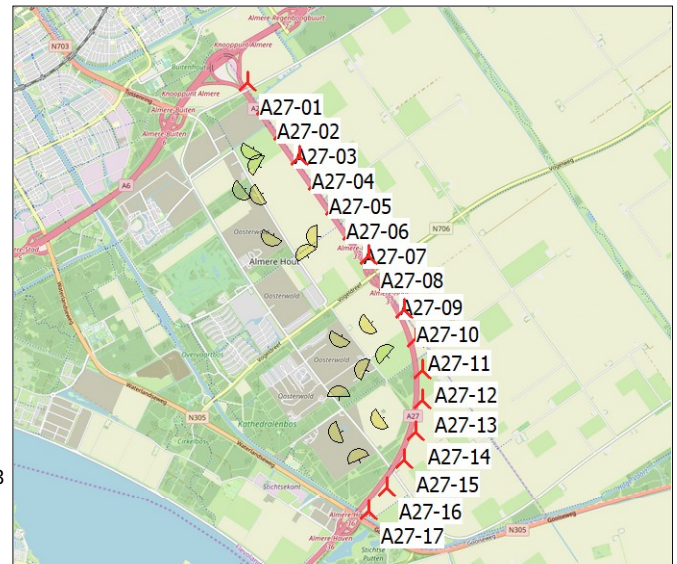
Obstacles not used in calculation

Receptor grid resolution: 1,0 m

All coordinates are in

Dutch Stereo-RD/NAP 2008

WTGs



Scale 1:125.000

 New WTG

 Shadow receptor

	X (east)	Y (north)	Z [m]	Row data/Description	WTG type			Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.	Type-generator				Calculation distance [m]	RPM
A27-01	149.490	487.866	-4,7	VESTAS V136-4.2 4200 136.0 !O... Yes	Yes	VESTAS	V136-4.2-4.200	4.200	136,0	152,0	1.799	10,4
A27-02	149.775	487.456	-5,0	VESTAS V136-4.2 4200 136.0 !O... Yes	Yes	VESTAS	V136-4.2-4.200	4.200	136,0	152,0	1.799	10,4
A27-03	150.061	487.046	-5,0	VESTAS V136-4.2 4200 136.0 !O... Yes	Yes	VESTAS	V136-4.2-4.200	4.200	136,0	152,0	1.799	10,4
A27-04	150.347	486.635	-5,0	VESTAS V136-4.2 4200 136.0 !O... Yes	Yes	VESTAS	V136-4.2-4.200	4.200	136,0	152,0	1.799	10,4
A27-05	150.633	486.225	-4,9	VESTAS V136-4.2 4200 136.0 !O... Yes	Yes	VESTAS	V136-4.2-4.200	4.200	136,0	152,0	1.799	10,4
A27-06	150.918	485.814	-5,0	VESTAS V136-4.2 4200 136.0 !O... Yes	Yes	VESTAS	V136-4.2-4.200	4.200	136,0	152,0	1.799	10,4
A27-07	151.203	485.404	-5,0	VESTAS V136-4.2 4200 136.0 !O... Yes	Yes	VESTAS	V136-4.2-4.200	4.200	136,0	152,0	1.799	10,4
A27-08	151.489	484.993	-5,0	VESTAS V136-4.2 4200 136.0 !O... Yes	Yes	VESTAS	V136-4.2-4.200	4.200	136,0	152,0	1.799	10,4
A27-09	151.810	484.553	-5,0	VESTAS V136-4.2 4200 136.0 !O... Yes	Yes	VESTAS	V136-4.2-4.200	4.200	136,0	152,0	1.799	10,4
A27-10	152.083	484.110	-5,0	VESTAS V136-4.2 4200 136.0 !O... Yes	Yes	VESTAS	V136-4.2-4.200	4.200	136,0	152,0	1.799	10,4
A27-11	152.278	483.628	-5,0	VESTAS V136-4.2 4200 136.0 !O... Yes	Yes	VESTAS	V136-4.2-4.200	4.200	136,0	152,0	1.799	10,4
A27-12	152.379	483.118	-4,9	VESTAS V136-4.2 4200 136.0 !O... Yes	Yes	VESTAS	V136-4.2-4.200	4.200	136,0	152,0	1.799	10,4
A27-13	152.380	482.611	-4,0	VESTAS V136-4.2 4200 136.0 !O... Yes	Yes	VESTAS	V136-4.2-4.200	4.200	136,0	152,0	1.799	10,4
A27-14	152.272	482.090	-4,0	VESTAS V136-4.2 4200 136.0 !O... Yes	Yes	VESTAS	V136-4.2-4.200	4.200	136,0	152,0	1.799	10,4
A27-15	152.072	481.624	-4,0	VESTAS V136-4.2 4200 136.0 !O... Yes	Yes	VESTAS	V136-4.2-4.200	4.200	136,0	152,0	1.799	10,4
A27-16	151.789	481.172	-4,0	VESTAS V136-4.2 4200 136.0 !O... Yes	Yes	VESTAS	V136-4.2-4.200	4.200	136,0	152,0	1.799	10,4
A27-17	151.486	480.769	-3,1	VESTAS V136-4.2 4200 136.0 !O... Yes	Yes	VESTAS	V136-4.2-4.200	4.200	136,0	152,0	1.799	10,4

Shadow receptor-Input

No.	X (east)	Y (north)	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]	[°]	[°]		[m]
01	149.572	486.770	-5,0	5,0	2,0	1,0	-147,3	90,0	Fixed direction	3,0
02	149.671	486.478	-5,0	6,0	2,5	0,0	-61,0	90,0	Fixed direction	2,5
03	149.413	486.088	-4,8	3,0	2,0	1,0	-128,2	90,0	Fixed direction	3,0
04	149.706	486.017	-4,6	1,0	1,0	7,0	-120,0	30,0	Fixed direction	7,5
05	149.898	485.329	-5,0	4,0	2,0	1,0	-147,6	90,0	Fixed direction	3,0
06	150.652	485.317	-5,0	3,0	2,0	1,0	-88,9	90,0	Fixed direction	3,0
07	150.476	484.990	-4,5	6,0	2,5	0,0	-35,5	90,0	Fixed direction	2,5
08	151.025	483.671	-5,0	3,0	0,7	1,5	-149,5	90,0	Fixed direction	2,2
09	151.522	483.887	-5,0	1,0	1,0	4,0	-128,6	90,0	Fixed direction	5,0
10	151.791	483.350	-4,3	4,0	1,5	4,0	-48,1	90,0	Fixed direction	5,5
11	151.446	483.105	-4,0	5,0	2,0	1,0	-65,2	90,0	Fixed direction	3,0
12	150.989	482.662	-4,0	4,5	1,5	1,0	0,0	90,0	Fixed direction	2,5
13	151.709	482.317	-4,0	4,0	2,0	1,0	-123,5	90,0	Fixed direction	3,0
14	151.018	482.084	-4,0	6,0	3,0	0,0	-111,9	90,0	Fixed direction	3,0
15	151.328	481.634	-4,0	4,0	1,5	4,0	-22,7	90,0	Fixed direction	5,5

SHADOW - Main Result

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket

Calculation Results

Shadow receptor

Shadow, worst case

No.	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]
01	47:35	114	0:40
02	85:47	176	0:48
03	40:12	116	0:31
04	37:47	109	0:34
05	49:11	138	0:30
06	123:09	211	0:58
07	47:48	121	0:34
08	42:29	132	0:29
09	107:24	184	0:55
10	92:21	178	0:50
11	76:30	192	0:34
12	25:38	103	0:23
13	95:50	145	0:51
14	64:57	189	0:29
15	84:02	181	0:49

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

No.	Name	Worst case [h/year]
A27-01	VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (204)	0:00
A27-02	VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (219)	0:00
A27-03	VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (205)	9:10
A27-04	VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (206)	109:36
A27-05	VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (207)	63:38
A27-06	VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (217)	53:43
A27-07	VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (216)	130:02
A27-08	VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (218)	42:15
A27-09	VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (208)	17:00
A27-10	VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (209)	76:57
A27-11	VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (210)	56:53
A27-12	VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (211)	83:38
A27-13	VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (212)	127:51
A27-14	VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (213)	86:45
A27-15	VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (214)	55:20
A27-16	VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (215)	74:20
A27-17	VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (220)	3:11

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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 01 - Shadow Receptor: 5,0 x 2,0 Azimuth: 0,0° Slope: 90,0° (633)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47	08:20	07:26	08:27 (A27-05)	07:15	08:21 (A27-04)	06:09	05:22
	16:33	17:21	18:14	18:45 (A27-05)	20:09	08:58 (A27-04)	21:01	21:48
2	08:47	08:19	07:24	08:29 (A27-05)	07:13	08:22 (A27-04)	06:07	05:21
	16:34	17:23	18:16	18:43 (A27-05)	20:11	08:57 (A27-04)	21:02	21:49
3	08:47	08:17	07:22	08:32 (A27-05)	07:10	08:22 (A27-04)	06:05	05:21
	16:35	17:25	18:17	08:38 (A27-05)	20:12	08:55 (A27-04)	21:04	21:50
4	08:47	08:16	07:20		07:08	08:22 (A27-04)	06:03	05:20
	16:36	17:27	18:19		20:14	08:54 (A27-04)	21:06	21:51
5	08:47	08:14	07:18		07:06	08:24 (A27-04)	06:01	05:19
	16:37	17:29	18:21		20:16	08:53 (A27-04)	21:08	21:52
6	08:46	08:12	07:15		07:03	08:25 (A27-04)	05:59	05:18
	16:39	17:31	18:23		20:17	08:52 (A27-04)	21:09	21:53
7	08:46	08:10	07:13		07:01	08:26 (A27-04)	05:58	05:18
	16:40	17:32	18:25		20:19	08:49 (A27-04)	21:11	21:54
8	08:45	08:09	07:11		06:59	08:28 (A27-04)	05:56	05:17
	16:41	17:34	18:26		20:21	08:46 (A27-04)	21:13	21:55
9	08:45	08:07	07:09		06:56	08:32 (A27-04)	05:54	05:17
	16:43	17:36	18:28		20:23	08:42 (A27-04)	21:14	21:56
10	08:44	08:05	07:06		06:54		05:52	05:16
	16:44	17:38	18:30		20:24		21:16	21:57
11	08:44	08:03	07:04		06:52		05:50	05:16
	16:45	17:40	18:32		20:26		21:18	21:58
12	08:43	08:01	07:02		06:50		05:49	05:15
	16:47	17:42	18:34		20:28		21:19	21:58
13	08:43	08:00	06:59		06:47		05:47	05:15
	16:48	17:44	18:35		20:30		21:21	21:59
14	08:42	07:58	08:35 (A27-05)	06:57	06:45		05:45	05:15
	16:50	17:46	08:42 (A27-05)	18:37	20:31		21:22	22:00
15	08:41	07:56	08:33 (A27-05)	06:55	06:43		05:44	05:15
	16:51	17:48	08:45 (A27-05)	18:39	20:33		21:24	22:00
16	08:40	07:54	08:31 (A27-05)	06:52	07:38 (A27-04)	06:41	05:42	05:14
	16:53	17:49	08:47 (A27-05)	18:41	07:52 (A27-04)	20:35	21:26	22:01
17	08:39	07:52	08:29 (A27-05)	06:50	07:34 (A27-04)	06:38	05:41	05:14
	16:55	17:51	08:48 (A27-05)	18:43	07:55 (A27-04)	20:37	21:27	22:01
18	08:38	07:50	08:27 (A27-05)	06:48	07:32 (A27-04)	06:36	05:39	05:14
	16:56	17:53	08:49 (A27-05)	18:44	07:57 (A27-04)	20:38	21:29	22:02
19	08:37	07:48	08:25 (A27-05)	06:45	07:30 (A27-04)	06:34	05:38	05:14
	16:58	17:55	08:50 (A27-05)	18:46	07:59 (A27-04)	20:40	21:30	22:02
20	08:36	07:46	08:24 (A27-05)	06:43	07:28 (A27-04)	06:32	05:36	05:14
	17:00	17:57	08:49 (A27-05)	18:48	07:59 (A27-04)	20:42	21:32	22:02
21	08:35	07:44	08:24 (A27-05)	06:41	07:27 (A27-04)	06:30	05:35	05:14
	17:01	17:59	08:50 (A27-05)	18:50	08:00 (A27-04)	20:44	21:33	22:03
22	08:34	07:41	08:24 (A27-05)	06:38	07:26 (A27-04)	06:28	05:34	05:15
	17:03	18:01	08:50 (A27-05)	18:51	08:01 (A27-04)	20:45	21:35	22:03
23	08:33	07:39	08:24 (A27-05)	06:36	07:24 (A27-04)	06:25	05:32	05:15
	17:05	18:03	08:50 (A27-05)	18:53	08:01 (A27-04)	20:47	21:36	22:03
24	08:32	07:37	08:23 (A27-05)	06:34	07:24 (A27-04)	06:23	05:31	05:15
	17:07	18:04	08:49 (A27-05)	18:55	08:01 (A27-04)	20:49	21:37	22:03
25	08:30	07:35	08:24 (A27-05)	06:31	07:22 (A27-04)	06:21	05:30	05:15
	17:08	18:06	08:49 (A27-05)	18:57	08:01 (A27-04)	20:50	21:39	22:03
26	08:29	07:33	08:24 (A27-05)	06:29	07:22 (A27-04)	06:19	05:29	05:16
	17:10	18:08	08:49 (A27-05)	18:58	08:01 (A27-04)	20:52	21:40	22:03
27	08:28	07:31	08:25 (A27-05)	07:27	08:22 (A27-04)	06:17	05:27	05:16
	17:12	18:10	08:48 (A27-05)	20:00	09:01 (A27-04)	20:54	21:42	22:03
28	08:26	07:29	08:25 (A27-05)	07:24	08:21 (A27-04)	06:15	05:26	05:17
	17:14	18:12	08:46 (A27-05)	20:02	09:00 (A27-04)	20:56	21:43	22:03
29	08:25			07:22	08:21 (A27-04)	06:13	05:25	05:17
	17:16			20:04	09:00 (A27-04)	20:57	21:44	22:03
30	08:23			07:20	08:21 (A27-04)	06:11	05:24	05:18
	17:17			20:05	09:00 (A27-04)	20:59	21:45	22:03
31	08:22			07:17	08:21 (A27-04)		05:23	
	17:19			20:07	08:58 (A27-04)		21:47	
Potential sun hours	256	276	366	416	486	501		
Total, worst case		324	571	244		483		

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

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

SHADOW - Calendar

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 01 - Shadow Receptor: 5,0 x 2,0 Azimuth: 0,0° Slope: 90,0° (633)

Assumptions for shadow calculations

Reference year for calendar

2022

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	05:18 22:03	06:34 (A27-03) 06:53 (A27-03)	05:55 21:31	06:46 20:28	07:36 19:18	07:30 17:10
2	05:19 22:02	06:36 (A27-03) 06:53 (A27-03)	05:57 21:29	06:47 20:26	07:37 19:15	07:32 17:08
3	05:20 22:02	06:37 (A27-03) 06:51 (A27-03)	05:58 21:27	06:49 20:23	07:39 19:13	07:34 17:07
4	05:20 22:02	06:39 (A27-03) 06:50 (A27-03)	06:00 21:26	06:51 20:21	07:41 19:11	07:36 17:05
5	05:21 22:01	06:42 (A27-03) 06:48 (A27-03)	06:01 21:24	06:52 20:19	07:42 19:08	07:38 17:03
6	05:22 22:01	06:48 (A27-03) 21:22	06:03 20:17	06:54 20:17	07:44 19:06	07:39 17:01
7	05:23 22:00	06:05 21:20	06:56 20:14	06:56 20:14	07:46 19:04	07:41 16:59
8	05:24 21:59	06:06 21:18	06:57 20:12	06:57 20:12	07:48 19:01	07:43 16:58
9	05:25 21:59	06:08 21:17	06:59 20:10	06:59 20:10	07:49 18:59	07:45 16:56
10	05:26 21:58	06:09 21:15	07:01 20:07	07:01 20:07	07:51 18:57	07:47 16:54
11	05:27 21:57	06:11 21:13	07:02 20:05	07:02 20:05	07:53 18:55	07:49 16:53
12	05:28 21:56	06:13 21:11	07:04 20:03	07:04 20:03	07:54 18:52	07:50 16:51
13	05:29 21:56	06:14 21:09	07:06 20:00	07:06 20:00	07:56 18:50	07:52 16:49
14	05:30 21:55	06:16 21:07	07:07 19:58	07:07 19:58	07:58 18:48	07:54 16:48
15	05:31 21:54	06:18 21:05	07:09 19:55	07:09 19:55	08:00 18:46	07:56 16:46
16	05:33 21:53	06:19 21:03	07:11 19:53	07:11 19:53	08:01 18:43	07:57 16:45
17	05:34 21:52	06:21 21:01	07:12 19:51	07:12 19:51	08:03 18:41	07:59 16:44
18	05:35 21:50	06:23 20:59	07:14 19:48	07:14 19:48	08:05 18:39	08:01 16:42
19	05:36 21:49	06:24 20:57	07:16 19:46	07:16 19:46	08:07 18:37	08:03 16:41
20	05:38 21:48	06:26 20:54	07:17 19:44	07:17 19:44	08:09 18:35	08:05 16:40
21	05:39 21:47	06:27 20:52	07:19 19:41	07:19 19:41	08:10 18:33	08:06 16:38
22	05:40 21:46	06:29 20:50	07:21 19:39	07:21 19:39	08:12 18:30	08:08 16:37
23	05:42 21:44	06:31 20:48	07:22 19:36	07:22 19:36	08:14 18:28	08:10 16:36
24	05:43 21:43	06:32 20:46	07:24 19:34	07:24 19:34	08:16 18:26	08:11 16:35
25	05:45 21:42	06:34 20:44	07:26 19:32	07:26 19:32	08:18 18:24	08:13 16:34
26	05:46 21:40	06:36 20:41	07:27 19:29	07:27 19:29	08:19 18:22	08:15 16:33
27	05:48 21:39	06:37 20:39	07:29 19:27	07:29 19:27	08:21 18:20	08:16 16:32
28	05:49 21:37	06:39 20:37	07:31 19:25	07:31 19:25	08:23 18:18	08:18 16:31
29	05:50 21:36	06:41 20:35	07:32 19:22	07:32 19:22	08:25 18:16	08:19 16:30
30	05:52 21:34	06:42 20:33	07:34 19:20	07:34 19:20	07:27 17:14	08:21 16:29
31	05:54 21:32	06:44 20:30			07:28 17:12	
Potential sun hours	505	456	382	332	265	242
Total, worst case	67		796	370		

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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 02 - Shadow Receptor: 6,0 x 2,5 Azimuth: 0,0° Slope: 90,0° (631)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47 16:33	08:20 17:21	07:26 18:14	07:15 20:09	06:09 21:01	07:04 (A27-04) 21:48
2	08:47 16:34	08:19 17:23	07:24 18:16	07:13 20:11	41 21:02	07:45 (A27-04) 21:49
3	08:47 16:35	08:17 17:25	07:22 18:17	07:10 20:12	43 21:04	07:46 (A27-04) 21:50
4	08:47 16:36	08:16 17:27	07:20 18:19	07:08 20:14	44 21:06	07:46 (A27-04) 21:51
5	08:47 16:37	08:14 17:29	07:18 18:21	07:06 20:16	45 21:08	07:46 (A27-04) 21:52
6	08:46 16:39	08:12 17:31	07:15 18:23	07:03 20:17	45 21:09	07:46 (A27-04) 21:53
7	08:46 16:40	08:10 17:32	07:13 18:25	07:01 20:19	46 21:11	07:47 (A27-04) 21:54
8	08:45 16:41	08:09 17:34	07:11 18:26	06:59 20:21	47 21:13	07:47 (A27-04) 21:55
9	08:45 16:43	08:07 17:36	07:09 18:28	06:56 20:23	48 21:14	07:47 (A27-04) 21:56
10	08:44 16:44	08:05 17:38	07:06 18:30	06:54 20:24	47 21:16	07:47 (A27-04) 21:57
11	08:44 16:45	08:03 17:40	07:04 18:32	06:52 20:26	48 21:18	07:47 (A27-04) 21:58
12	08:43 16:47	08:01 17:42	07:02 18:34	06:50 20:28	47 21:19	07:47 (A27-04) 21:58
13	08:43 16:48	08:00 17:44	06:59 18:35	06:47 20:30	48 21:21	07:47 (A27-04) 21:59
14	08:42 16:50	07:58 17:46	06:57 18:37	06:45 20:31	47 21:22	07:47 (A27-04) 22:00
15	08:41 16:51	07:56 17:48	06:55 18:39	06:43 20:33	47 21:24	07:47 (A27-04) 22:00
16	08:40 16:53	07:54 17:49	06:52 18:41	06:41 20:35	47 21:25	07:46 (A27-04) 22:01
17	08:39 16:55	07:52 17:51	06:50 18:43	06:38 20:37	46 21:27	07:46 (A27-04) 22:01
18	08:38 16:56	07:50 17:53	06:48 18:44	06:36 20:38	46 21:29	07:46 (A27-04) 22:02
19	08:37 16:58	07:48 17:55	06:45 18:46	06:34 20:40	45 21:30	07:45 (A27-04) 22:02
20	08:36 17:00	07:46 17:57	06:43 18:48	06:32 20:42	45 21:32	07:45 (A27-04) 22:02
21	08:35 17:01	07:44 17:59	06:41 18:50	06:30 20:43	44 21:33	07:45 (A27-04) 22:03
22	08:34 17:03	07:41 18:01	06:38 18:51	06:28 20:45	42 21:35	07:44 (A27-04) 22:03
23	08:33 17:05	07:39 18:03	06:36 18:53	06:25 20:47	42 21:36	07:44 (A27-04) 22:03
24	08:32 17:07	07:37 18:04	06:34 18:55	06:23 20:49	41 21:37	07:44 (A27-04) 22:03
25	08:30 17:08	07:35 18:06	06:31 18:57	06:21 20:50	39 21:39	07:43 (A27-04) 22:03
26	08:29 17:10	07:33 18:08	06:29 18:58	06:19 20:52	39 21:40	07:43 (A27-04) 22:03
27	08:28 17:12	07:31 18:10	06:27 20:00	06:17 20:54	37 21:42	07:42 (A27-04) 22:03
28	08:26 17:14	07:29 18:12	06:24 20:02	06:15 20:56	36 21:43	07:42 (A27-04) 22:03
29	08:25 17:16		06:22 20:04	06:13 20:57	35 21:44	07:41 (A27-04) 22:03
30	08:23 17:17		06:20 20:05	06:11 20:59	33 21:45	07:41 (A27-04) 22:03
31	08:22 17:19		06:17 20:07		31 21:47	07:40 (A27-04) 22:03
Potential sun hours	256	276	366	416	486	501
Total, worst case		249	510	237	1325	238

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

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

SHADOW - Calendar

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 02 - Shadow Receptor: 6,0 × 2,5 Azimuth: 0,0° Slope: 90,0° (631)

Assumptions for shadow calculations

Reference year for calendar

2022

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	05:18	07:26 (A27-04)	05:55	07:10 (A27-04)	06:46	07:36	08:19 (A27-05)	07:30	08:22		
	22:03	6 07:32 (A27-04)	21:31	48 07:58 (A27-04)	20:28	19:18	32 08:51 (A27-05)	17:10	16:28		
2	05:19	07:25 (A27-04)	05:57	07:10 (A27-04)	06:47	07:37	08:20 (A27-05)	07:32	08:24		
	22:02	9 07:34 (A27-04)	21:29	47 07:57 (A27-04)	20:26	19:15	30 08:50 (A27-05)	17:08	16:28		
3	05:20	07:23 (A27-04)	05:58	07:09 (A27-04)	06:49	07:39	08:20 (A27-05)	07:34	08:25		
	22:02	12 07:35 (A27-04)	21:27	48 07:57 (A27-04)	20:23	19:13	29 08:49 (A27-05)	17:07	16:27		
4	05:20	07:23 (A27-04)	06:00	07:10 (A27-04)	06:51	07:41	08:21 (A27-05)	07:36	08:27		
	22:02	14 07:37 (A27-04)	21:26	47 07:57 (A27-04)	20:21	19:11	27 08:48 (A27-05)	17:05	16:26		
5	05:21	07:22 (A27-04)	06:01	07:09 (A27-04)	06:52	07:42	08:21 (A27-05)	07:38	08:28		
	22:01	16 07:38 (A27-04)	21:24	48 07:57 (A27-04)	20:19	19:08	25 08:46 (A27-05)	17:03	16:26		
6	05:22	07:21 (A27-04)	06:03	07:10 (A27-04)	06:54	07:44	08:23 (A27-05)	07:39	08:29		
	22:01	19 07:40 (A27-04)	21:22	47 07:57 (A27-04)	20:17	19:06	22 08:45 (A27-05)	17:01	16:25		
7	05:23	07:20 (A27-04)	06:05	07:10 (A27-04)	06:56	07:46	08:25 (A27-05)	07:41	08:31		
	22:00	20 07:40 (A27-04)	21:20	46 07:56 (A27-04)	20:14	19:04	18 08:43 (A27-05)	16:59	16:25		
8	05:24	07:19 (A27-04)	06:06	07:10 (A27-04)	06:57	07:48	08:28 (A27-05)	07:43	08:32		
	21:59	22 07:41 (A27-04)	21:18	46 07:56 (A27-04)	20:12	19:01	12 08:40 (A27-05)	16:58	16:25		
9	05:25	07:19 (A27-04)	06:08	07:10 (A27-04)	06:59	07:49		07:45	08:33		
	21:59	24 07:43 (A27-04)	21:17	46 07:56 (A27-04)	20:10	18:59		16:56	16:24		
10	05:26	07:18 (A27-04)	06:09	07:11 (A27-04)	07:01	07:51		07:47	08:34		
	21:58	26 07:44 (A27-04)	21:15	44 07:55 (A27-04)	20:07	18:57		16:54	16:24		
11	05:27	07:18 (A27-04)	06:11	07:11 (A27-04)	07:02	07:53		07:49	08:35		
	21:57	27 07:45 (A27-04)	21:13	43 07:54 (A27-04)	20:05	18:55		16:53	16:24		
12	05:28	07:17 (A27-04)	06:13	07:12 (A27-04)	07:04	07:54		07:50	08:36		
	21:56	29 07:46 (A27-04)	21:11	42 07:54 (A27-04)	20:02	18:52		16:51	16:24		
13	05:29	07:17 (A27-04)	06:14	07:12 (A27-04)	07:06	07:56		07:52	08:37		
	21:56	30 07:47 (A27-04)	21:09	41 07:53 (A27-04)	20:00	18:50		16:49	16:23		
14	05:30	07:16 (A27-04)	06:16	07:13 (A27-04)	07:07	07:58		07:54	08:38		
	21:55	32 07:48 (A27-04)	21:07	39 07:52 (A27-04)	19:58	18:48		16:48	16:23		
15	05:31	07:15 (A27-04)	06:18	07:13 (A27-04)	07:09	08:00		07:56	08:39		
	21:54	34 07:49 (A27-04)	21:05	38 07:51 (A27-04)	19:55	18:46		16:46	16:23		
16	05:33	07:15 (A27-04)	06:19	07:15 (A27-04)	07:11	08:01		07:57	08:40		
	21:53	34 07:49 (A27-04)	21:03	35 07:50 (A27-04)	19:53	18:43		16:45	16:24		
17	05:34	07:14 (A27-04)	06:21	07:16 (A27-04)	07:12	08:03		09:03 (A27-06)	07:59	08:41	
	21:52	36 07:50 (A27-04)	21:01	32 07:48 (A27-04)	19:51	18:41	10 09:13 (A27-06)	16:44	16:24		
18	05:35	07:14 (A27-04)	06:23	07:17 (A27-04)	07:14	08:05		09:00 (A27-06)	08:01	08:42	
	21:50	37 07:51 (A27-04)	20:59	30 07:47 (A27-04)	19:48	18:39	15 09:15 (A27-06)	16:42	16:24		
19	05:36	07:14 (A27-04)	06:24	07:19 (A27-04)	07:16	08:07		08:59 (A27-06)	08:03	08:43	
	21:49	38 07:52 (A27-04)	20:57	25 07:44 (A27-04)	19:46	18:37	18 09:17 (A27-06)	16:41	16:24		
20	05:38	07:13 (A27-04)	06:26	07:21 (A27-04)	07:17	08:30 (A27-05)	08:09	08:58 (A27-06)	08:04	08:43	
	21:48	40 07:53 (A27-04)	20:54	21 07:42 (A27-04)	19:44	18:35	20 09:18 (A27-06)	16:40	16:24		
21	05:39	07:13 (A27-04)	06:27	07:24 (A27-04)	07:19	08:28 (A27-05)	08:10	08:57 (A27-06)	08:06	08:44	
	21:47	40 07:53 (A27-04)	20:52	14 07:38 (A27-04)	19:41	18:33	21 09:18 (A27-06)	16:38	16:25		
22	05:40	07:12 (A27-04)	06:29		07:21	08:26 (A27-05)	08:12	08:56 (A27-06)	08:08	08:45	
	21:46	41 07:53 (A27-04)	20:50		19:39	08:50 (A27-05)	18:30	09:19 (A27-06)	16:37	16:25	
23	05:42	07:12 (A27-04)	06:31		07:22	08:24 (A27-05)	08:14	08:56 (A27-06)	08:10	08:45	
	21:44	43 07:55 (A27-04)	20:48		19:36	08:52 (A27-05)	18:28	09:19 (A27-06)	16:36	16:26	
24	05:43	07:12 (A27-04)	06:32		07:24	08:23 (A27-05)	08:16	08:56 (A27-06)	08:11	08:46	
	21:43	43 07:55 (A27-04)	20:46		19:34	08:52 (A27-05)	18:26	09:19 (A27-06)	16:35	16:26	
25	05:45	07:11 (A27-04)	06:34		07:26	08:22 (A27-05)	08:18	08:57 (A27-06)	08:13	08:46	
	21:42	44 07:55 (A27-04)	20:44		19:32	08:52 (A27-05)	18:24	09:19 (A27-06)	16:34	16:27	
26	05:46	07:11 (A27-04)	06:36		07:27	08:21 (A27-05)	08:19	08:59 (A27-06)	08:15	08:46	
	21:40	44 07:55 (A27-04)	20:41		19:29	08:53 (A27-05)	18:22	09:19 (A27-06)	16:33	16:28	
27	05:48	07:11 (A27-04)	06:37		07:29	08:21 (A27-05)	08:21	09:01 (A27-06)	08:16	08:47	
	21:39	45 07:56 (A27-04)	20:39		19:27	08:53 (A27-05)	18:20	09:18 (A27-06)	16:32	16:28	
28	05:49	07:10 (A27-04)	06:39		07:31	08:20 (A27-05)	08:23	09:03 (A27-06)	08:18	08:47	
	21:37	46 07:56 (A27-04)	20:37		19:25	08:52 (A27-05)	18:18	09:18 (A27-06)	16:31	16:29	
29	05:50	07:10 (A27-04)	06:41		07:32	08:20 (A27-05)	08:25	09:05 (A27-06)	08:19	08:47	
	21:36	46 07:56 (A27-04)	20:35		19:22	08:52 (A27-05)	18:16	09:17 (A27-06)	16:30	16:30	
30	05:52	07:10 (A27-04)	06:42		07:34	08:20 (A27-05)	07:27	08:07 (A27-06)	08:21	08:47	
	21:34	47 07:57 (A27-04)	20:33		19:20	08:52 (A27-05)	17:14	08:15 (A27-06)	16:29	16:31	
31	05:54	07:10 (A27-04)	06:44				07:28	08:09 (A27-06)		08:47	
	21:32	47 07:57 (A27-04)	20:30				17:12	5 08:14 (A27-06)		16:32	
Potential sun hours	505		456		382		332		265	242	
Total, worst case		991		827		323		447			

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

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

SHADOW - Calendar

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 03 - Shadow Receptor: 3,0 × 2,0 Azimuth: 0,0° Slope: 90,0° (632)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47	08:20	07:26		07:15		06:09		05:22
	16:33	17:21	18:14		20:09		21:01		21:48
2	08:47	08:19	07:24		07:13		06:07		05:21
	16:34	17:23	18:16		20:11		21:02		21:49
3	08:47	08:17	07:22		07:10		06:05		05:21
	16:35	17:25	18:17		20:12		21:04		21:50
4	08:47	08:16	07:20		07:08		06:03		05:20
	16:36	17:27	18:19		20:14		21:06		21:51
5	08:47	08:14	07:18		07:06		06:01		05:19
	16:38	17:29	18:21		20:16		21:08		21:52
6	08:46	08:12	07:15		07:03		05:59		05:18
	16:39	17:31	18:23		20:17		21:09		21:53
7	08:46	08:10	07:13		07:01	07:35 (A27-05)	05:58		05:18
	16:40	17:32	18:25		20:19	07:43 (A27-05)	21:11		21:54
8	08:45	08:09	07:11		06:59	07:33 (A27-05)	05:56		05:17
	16:41	17:34	18:26		20:21	07:45 (A27-05)	21:13		21:55
9	08:45	08:07	07:09		06:56	07:31 (A27-05)	05:54		05:17
	16:43	17:36	18:28		20:23	07:47 (A27-05)	21:14		21:56
10	08:44	08:05	07:06		06:54	07:29 (A27-05)	05:52		05:16
	16:44	17:38	18:30		20:24	07:48 (A27-05)	21:16		21:57
11	08:44	08:03	07:04	07:39 (A27-06)	06:52	07:26 (A27-05)	05:51		05:16
	16:45	17:40	18:32	2	07:41 (A27-06)	20:26	21:18		21:57
12	08:43	08:01	07:02	07:36 (A27-06)	06:50	07:24 (A27-05)	05:49		05:15
	16:47	17:42	18:34	6	07:42 (A27-06)	20:28	21:19		21:58
13	08:43	08:00	06:59	07:34 (A27-06)	06:47	07:23 (A27-05)	05:47		05:15
	16:48	17:44	18:35	9	07:43 (A27-06)	20:30	21:21		21:59
14	08:42	07:58	06:57	07:32 (A27-06)	06:45	07:23 (A27-05)	05:45		05:15
	16:50	17:46	18:37	12	07:44 (A27-06)	20:31	21:22		22:00
15	08:41	07:56	06:55	07:29 (A27-06)	06:43	07:22 (A27-05)	05:44		05:15
	16:51	17:48	18:39	15	07:44 (A27-06)	20:33	21:24		22:00
16	08:40	07:54	06:52	07:27 (A27-06)	06:41	07:21 (A27-05)	05:42		05:14
	16:53	17:49	18:41	17	07:44 (A27-06)	20:35	21:25		22:01
17	08:39	07:52	06:50	07:24 (A27-06)	06:38	07:22 (A27-05)	05:41		05:14
	16:55	17:51	18:43	19	07:43 (A27-06)	20:37	21:27		22:01
18	08:38	07:50	06:48	07:23 (A27-06)	06:36	07:22 (A27-05)	05:39		05:14
	16:56	17:53	18:44	20	07:43 (A27-06)	20:38	21:29		22:02
19	08:37	07:48	06:45	07:24 (A27-06)	06:34	07:22 (A27-05)	05:38		05:14
	16:58	17:55	18:46	19	07:43 (A27-06)	20:40	21:30		22:02
20	08:36	07:46	06:43	07:24 (A27-06)	06:32	07:23 (A27-05)	05:36		05:14
	17:00	17:57	18:48	17	07:41 (A27-06)	20:42	21:32		22:02
21	08:35	07:44	06:41	07:25 (A27-06)	06:30	07:24 (A27-05)	05:35		05:14
	17:01	17:59	18:50	15	07:40 (A27-06)	20:44	21:33		22:03
22	08:34	07:41	06:38	07:27 (A27-06)	06:28	07:25 (A27-05)	05:34		05:15
	17:03	18:01	18:51	11	07:38 (A27-06)	20:45	21:35		22:03
23	08:33	07:39	06:36	07:31 (A27-06)	06:25	07:27 (A27-05)	05:32		05:15
	17:05	18:03	18:53	1	07:32 (A27-06)	20:47	21:36		22:03
24	08:32	07:37	06:34		06:23		05:31		05:15
	17:07	18:04	18:55		20:49		21:37		22:03
25	08:30	07:35	06:31		06:21		05:30		05:15
	17:08	18:06	18:57		20:50		21:39		22:03
26	08:29	07:33	06:29		06:19		05:29	06:10 (A27-04)	05:16
	17:10	18:08	18:58		20:52		21:40	9	06:19 (A27-04)
27	08:28	07:31	07:27		06:17		05:27		05:16
	17:12	18:10	20:00		20:54		21:42	12	06:21 (A27-04)
28	08:26	07:29	07:24		06:15		05:26		05:17
	17:14	18:12	20:02		20:56		21:43	15	06:23 (A27-04)
29	08:25		07:22		06:13		05:25		05:17
	17:16		20:04		20:57		21:44	17	06:24 (A27-04)
30	08:23		07:20		06:11		05:24		05:18
	17:17		20:05		20:59		21:45	19	06:25 (A27-04)
31	08:22		07:17				05:23		06:05 (A27-04)
	17:19		20:07				21:47	20	06:25 (A27-04)
Potential sun hours	256	276	366		416		486		501
Total, worst case			163		344		92		864

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

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

SHADOW - Calendar

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 03 - Shadow Receptor: 3,0 x 2,0 Azimuth: 0,0° Slope: 90,0° (632)

Assumptions for shadow calculations

Reference year for calendar

2022

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	05:18	06:06 (A27-04)	05:55	06:46	07:24 (A27-05)	07:36	08:12 (A27-06)	07:30	08:22		
	22:03	30	06:36 (A27-04)	21:31	20:28	24	07:48 (A27-05)	19:18	11	08:23 (A27-06)	17:10
2	05:19	06:07 (A27-04)	05:57	06:47	07:25 (A27-05)	07:37	08:14 (A27-06)	07:32	08:24		
	22:02	29	06:36 (A27-04)	21:29	20:26	22	07:47 (A27-05)	19:15	8	08:22 (A27-06)	17:08
3	05:20	06:07 (A27-04)	05:58	06:49	07:27 (A27-05)	07:39	08:16 (A27-06)	07:34	08:25		
	22:02	29	06:36 (A27-04)	21:27	20:23	19	07:46 (A27-05)	19:13	4	08:20 (A27-06)	17:07
4	05:20	06:07 (A27-04)	06:00	06:51	07:28 (A27-05)	07:41		07:36	08:27		
	22:02	29	06:36 (A27-04)	21:26	20:21	16	07:44 (A27-05)	19:11		17:05	16:26
5	05:21	06:08 (A27-04)	06:01	06:52	07:30 (A27-05)	07:42		07:38	08:28		
	22:01	28	06:36 (A27-04)	21:24	20:19	12	07:42 (A27-05)	19:08		17:03	16:26
6	05:22	06:09 (A27-04)	06:03	06:54	07:31 (A27-05)	07:44		07:39	08:29		
	22:01	27	06:36 (A27-04)	21:22	20:17	8	07:39 (A27-05)	19:06		17:01	16:25
7	05:23	06:08 (A27-04)	06:05	06:56	07:33 (A27-05)	07:46		07:41	08:31		
	22:00	27	06:35 (A27-04)	21:20	20:14	2	07:35 (A27-05)	19:04		16:59	16:25
8	05:24	06:09 (A27-04)	06:06	06:57			07:48	07:43	08:32		
	21:59	26	06:35 (A27-04)	21:18	20:12		19:01	16:58	16:25		
9	05:25	06:09 (A27-04)	06:08	06:59			07:49	07:45	08:33		
	21:59	26	06:35 (A27-04)	21:17	20:10		18:59	16:56	16:24		
10	05:26	06:10 (A27-04)	06:09	07:01			07:51	07:47	08:34		
	21:58	25	06:35 (A27-04)	21:15	20:07		18:57	16:54	16:24		
11	05:27	06:11 (A27-04)	06:11	07:02			07:53	07:49	08:35		
	21:57	24	06:35 (A27-04)	21:13	20:05		18:55	16:53	16:24		
12	05:28	06:12 (A27-04)	06:13	07:04			07:54	07:50	08:36		
	21:56	23	06:35 (A27-04)	21:11	20:03		18:52	16:51	16:24		
13	05:29	06:13 (A27-04)	06:14	07:06			07:56	07:52	08:37		
	21:56	21	06:34 (A27-04)	21:09	20:00		18:50	16:50	16:24		
14	05:30	06:14 (A27-04)	06:16	07:07			07:58	07:54	08:38		
	21:55	20	06:34 (A27-04)	21:07	19:58		18:48	16:48	16:23		
15	05:31	06:15 (A27-04)	06:18	07:09			08:00	07:56	08:39		
	21:54	18	06:33 (A27-04)	21:05	19:55		18:46	16:46	16:24		
16	05:33	06:16 (A27-04)	06:19	07:11			08:01	07:57	08:40		
	21:53	16	06:32 (A27-04)	21:03	19:53		18:43	16:45	16:24		
17	05:34	06:17 (A27-04)	06:21	07:12			08:03	07:59	08:41		
	21:52	14	06:31 (A27-04)	21:01	19:51		18:41	16:44	16:24		
18	05:35	06:18 (A27-04)	06:23	07:14			08:05	08:01	08:42		
	21:50	11	06:29 (A27-04)	20:59	19:48		18:39	16:42	16:24		
19	05:36	06:21 (A27-04)	06:24	07:16			08:07	08:03	08:43		
	21:49	6	06:27 (A27-04)	20:57	19:46		18:37	16:41	16:24		
20	05:38		06:26	07:36 (A27-05)	07:17		08:09	08:04	08:43		
	21:48		20:54	5	07:41 (A27-05)	19:44	18:35	16:40	16:25		
21	05:39		06:28		07:32 (A27-05)	07:19	18:10	08:06	08:44		
	21:47		20:52	12	07:44 (A27-05)	19:41	18:33	16:38	16:25		
22	05:40		06:29		07:30 (A27-05)	07:21	08:12 (A27-06)	08:08	08:45		
	21:46		20:50	16	07:46 (A27-05)	19:39	10	08:22 (A27-06)	16:37	16:25	
23	05:42		06:31		07:29 (A27-05)	07:22	08:10 (A27-06)	08:14	08:45		
	21:44		20:48	19	07:48 (A27-05)	19:36	14	08:24 (A27-06)	16:36	16:26	
24	05:43		06:32		07:27 (A27-05)	07:24	08:09 (A27-06)	08:16	08:46		
	21:43		20:46	21	07:48 (A27-05)	19:34	16	08:25 (A27-06)	16:35	16:26	
25	05:45		06:34		07:26 (A27-05)	07:26	08:07 (A27-06)	08:18	08:46		
	21:42		20:44	23	07:49 (A27-05)	19:32	18	08:25 (A27-06)	16:34	16:27	
26	05:46		06:36		07:25 (A27-05)	07:27	08:06 (A27-06)	08:19	08:46		
	21:40		20:41	24	07:49 (A27-05)	19:29	20	08:26 (A27-06)	16:33	16:28	
27	05:48		06:37		07:24 (A27-05)	07:29	08:06 (A27-06)	08:21	08:47		
	21:39		20:39	26	07:50 (A27-05)	19:27	20	08:26 (A27-06)	16:32	16:28	
28	05:49		06:39		07:23 (A27-05)	07:31	08:07 (A27-06)	08:23	08:47		
	21:37		20:37	26	07:49 (A27-05)	19:25	18	08:25 (A27-06)	16:31	16:29	
29	05:51		06:41		07:23 (A27-05)	07:32	08:09 (A27-06)	08:25	08:47		
	21:36		20:35	26	07:49 (A27-05)	19:22	16	08:25 (A27-06)	16:30	16:30	
30	05:52		06:42		07:22 (A27-05)	07:34	08:11 (A27-06)	07:27	08:47		
	21:34		20:33	26	07:48 (A27-05)	19:20	13	08:24 (A27-06)	16:29	16:31	
31	05:54		06:44		07:23 (A27-05)			07:28	08:47		
	21:32		20:30	25	07:48 (A27-05)			17:12	16:32		
Potential sun hours	505		456		382		332		265		242
Total, worst case		429		249		248		23			

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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 04 - Shadow Receptor: 1,0 x 1,0 Azimuth: 0,0° Slope: 30,0° (634)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47	08:20	07:26	08:07 (A27-07)	07:15	06:09
	16:33	17:21	18:14	16	08:23 (A27-07)	20:09
2	08:47	08:19	07:24	08:08 (A27-07)	07:13	06:07
	16:34	17:23	18:16	13	08:21 (A27-07)	20:11
3	08:47	08:17	07:22	08:10 (A27-07)	07:10	06:05
	16:35	17:25	18:17	8	08:18 (A27-07)	20:12
4	08:47	08:16	07:20	07:08	06:03	07:00 (A27-05)
	16:36	17:27	18:19	20:14	21:06	07:32 (A27-05)
5	08:47	08:14	07:18	07:06	06:01	07:00 (A27-05)
	16:37	17:29	18:21	20:16	21:08	07:31 (A27-05)
6	08:46	08:12	07:15	07:03	05:59	07:01 (A27-05)
	16:39	17:31	18:23	20:17	21:09	07:31 (A27-05)
7	08:46	08:10	07:13	07:01	05:58	07:01 (A27-05)
	16:40	17:32	18:25	20:19	21:11	07:30 (A27-05)
8	08:45	08:09	07:11	06:59	05:56	07:01 (A27-05)
	16:41	17:34	18:26	20:21	21:13	07:28 (A27-05)
9	08:45	08:07	07:09	06:56	05:54	07:03 (A27-05)
	16:43	17:36	18:28	20:23	21:14	07:28 (A27-05)
10	08:44	08:05	07:06	06:54	05:52	07:03 (A27-05)
	16:44	17:38	18:30	20:24	21:16	07:27 (A27-05)
11	08:44	08:03	07:04	06:52	05:50	07:05 (A27-05)
	16:45	17:40	18:32	20:26	21:17	07:26 (A27-05)
12	08:43	08:01	07:02	07:36 (A27-06)	06:50	07:06 (A27-05)
	16:47	17:42	18:34	1	07:37 (A27-06)	07:24 (A27-05)
13	08:43	08:00	06:59	07:34 (A27-06)	06:47	07:08 (A27-05)
	16:48	17:44	18:35	7	07:41 (A27-06)	07:22 (A27-05)
14	08:42	07:58	06:57	07:32 (A27-06)	06:45	07:11 (A27-05)
	16:50	17:46	18:37	12	07:44 (A27-06)	07:19 (A27-05)
15	08:41	07:56	06:55	07:29 (A27-06)	06:43	07:15
	16:51	17:48	18:39	15	07:44 (A27-06)	07:20
16	08:40	07:54	06:52	07:27 (A27-06)	06:41	07:14
	16:53	17:49	18:41	18	07:45 (A27-06)	07:21
17	08:39	07:52	06:50	07:24 (A27-06)	06:38	07:18
	16:55	17:51	18:43	21	07:45 (A27-06)	07:20
18	08:38	07:50	06:48	07:22 (A27-06)	06:36	07:14 (A27-05)
	16:56	17:53	18:44	24	07:46 (A27-06)	07:23 (A27-05)
19	08:37	07:48	06:45	07:21 (A27-06)	06:34	07:11 (A27-05)
	16:58	17:55	18:46	25	07:46 (A27-06)	07:26 (A27-05)
20	08:36	07:46	06:43	07:20 (A27-06)	06:32	07:08 (A27-05)
	17:00	17:57	18:48	25	07:45 (A27-06)	07:28 (A27-05)
21	08:35	07:44	06:41	07:20 (A27-06)	06:30	07:06 (A27-05)
	17:01	17:59	18:50	25	07:45 (A27-06)	07:30 (A27-05)
22	08:34	07:41	06:38	07:20 (A27-06)	06:28	07:05 (A27-05)
	17:03	18:01	18:51	25	07:45 (A27-06)	07:31 (A27-05)
23	08:33	07:39	06:36	07:20 (A27-06)	06:25	07:04 (A27-05)
	17:05	18:03	18:53	23	07:43 (A27-06)	07:32 (A27-05)
24	08:32	07:37	06:34	07:21 (A27-06)	06:23	07:03 (A27-05)
	17:07	18:04	18:55	21	07:42 (A27-06)	07:32 (A27-05)
25	08:30	07:35	06:31	07:21 (A27-06)	06:21	07:02 (A27-05)
	17:08	18:06	18:57	19	07:40 (A27-06)	07:33 (A27-05)
26	08:29	07:33	06:29	07:22 (A27-06)	06:19	07:01 (A27-05)
	17:10	18:08	18:58	17	07:39 (A27-06)	07:33 (A27-05)
27	08:28	07:31	07:27	08:25 (A27-06)	06:17	07:00 (A27-05)
	17:12	18:10	20:00	11	08:36 (A27-06)	07:33 (A27-05)
28	08:26	07:29	07:24	06:15	07:00 (A27-05)	05:26
	17:14	18:12	20:02	33	07:33 (A27-05)	21:43
29	08:25		07:22	06:13	06:59 (A27-05)	05:25
	17:16		20:04	34	07:33 (A27-05)	21:44
30	08:23		07:20	06:11	06:59 (A27-05)	05:24
	17:17		20:05	34	07:33 (A27-05)	21:45
31	08:22		07:17		05:23	
	17:19		20:07		21:47	
Potential sun hours	256	276	366	416	486	501
Total, worst case		95	326	348	357	

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

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

SHADOW - Calendar

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 04 - Shadow Receptor: 1,0 x 1,0 Azimuth: 0,0° Slope: 30,0° (634)

Assumptions for shadow calculations

Reference year for calendar

2022

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	05:18	05:55	07:18 (A27-05)	06:46		07:36	08:12 (A27-06)	07:30	08:22		
	22:03	21:31	15 07:33 (A27-05)	20:28		19:18	9 08:21 (A27-06)	17:10	16:28		
2	05:19	05:57	07:16 (A27-05)	06:47		07:37	08:14 (A27-06)	07:32	08:24		
	22:02	21:29	19 07:35 (A27-05)	20:26		19:15	4 08:18 (A27-06)	17:08	16:28		
3	05:20	05:58	07:15 (A27-05)	06:49		07:39		07:34	08:25		
	22:02	21:27	22 07:37 (A27-05)	20:23		19:13		17:07	16:27		
4	05:20	06:00	07:13 (A27-05)	06:51		07:41		07:36	08:27		
	22:02	21:26	24 07:37 (A27-05)	20:21		19:11		17:05	16:26		
5	05:21	06:01	07:12 (A27-05)	06:52		07:42		07:38	08:28		
	22:01	21:24	26 07:38 (A27-05)	20:19		19:08		17:03	16:26		
6	05:22	06:03	07:11 (A27-05)	06:54		07:44		07:39	08:29		
	22:01	21:22	28 07:39 (A27-05)	20:17		19:06		17:01	16:25		
7	05:23	06:05	07:10 (A27-05)	06:56		07:46		07:41	08:31		
	22:00	21:20	29 07:39 (A27-05)	20:14		19:04		16:59	16:25		
8	05:24	06:06	07:10 (A27-05)	06:57		07:48		07:43	08:32		
	21:59	21:18	30 07:40 (A27-05)	20:12		19:01		16:58	16:25		
9	05:25	06:08	07:09 (A27-05)	06:59		07:49		07:45	08:33		
	21:59	21:17	31 07:40 (A27-05)	20:10		18:59		16:56	16:24		
10	05:26	06:09	07:09 (A27-05)	07:01		07:51		07:47	08:34		
	21:58	21:15	32 07:41 (A27-05)	20:07		18:57		16:54	16:24		
11	05:27	06:11	07:08 (A27-05)	07:02		07:53	08:47 (A27-07)	07:48	08:35		
	21:57	21:13	33 07:41 (A27-05)	20:05		18:55	3 08:50 (A27-07)	16:53	16:24		
12	05:28	06:13	07:08 (A27-05)	07:04		07:54	08:43 (A27-07)	07:50	08:36		
	21:56	21:11	34 07:42 (A27-05)	20:02		18:52	11 08:54 (A27-07)	16:51	16:24		
13	05:29	06:14	07:07 (A27-05)	07:06		07:56	08:41 (A27-07)	07:52	08:37		
	21:55	21:09	34 07:41 (A27-05)	20:00		18:50	14 08:55 (A27-07)	16:49	16:24		
14	05:30	06:16	07:08 (A27-05)	07:07		07:58	08:40 (A27-07)	07:54	08:38		
	21:55	21:07	33 07:41 (A27-05)	19:58		18:48	16 08:56 (A27-07)	16:48	16:23		
15	05:31	06:18	07:07 (A27-05)	07:09		08:00	08:39 (A27-07)	07:56	08:39		
	21:54	21:05	34 07:41 (A27-05)	19:55		18:46	18 08:57 (A27-07)	16:46	16:23		
16	05:33	06:19	07:08 (A27-05)	07:11		08:01	08:40 (A27-07)	07:57	08:40		
	21:53	21:03	33 07:41 (A27-05)	19:53		18:43	17 08:57 (A27-07)	16:45	16:24		
17	05:34	06:21	07:07 (A27-05)	07:12	08:14 (A27-06)	08:03	08:41 (A27-07)	07:59	08:41		
	21:52	21:01	33 07:40 (A27-05)	19:51	10 08:24 (A27-06)	18:41	15 08:56 (A27-07)	16:44	16:24		
18	05:35	06:23	07:08 (A27-05)	07:14	08:11 (A27-06)	08:05	08:43 (A27-07)	08:01	08:42		
	21:50	20:59	32 07:40 (A27-05)	19:48	16 08:27 (A27-06)	18:39	13 08:56 (A27-07)	16:42	16:24		
19	05:36	06:24	07:08 (A27-05)	07:16	08:09 (A27-06)	08:07	08:45 (A27-07)	08:03	08:43		
	21:49	20:57	30 07:38 (A27-05)	19:46	18 08:27 (A27-06)	18:37	11 08:56 (A27-07)	16:41	16:24		
20	05:38	06:26	07:08 (A27-05)	07:17	08:07 (A27-06)	08:09	08:47 (A27-07)	08:04	08:43		
	21:48	20:54	30 07:38 (A27-05)	19:44	22 08:29 (A27-06)	18:35	8 08:55 (A27-07)	16:40	16:24		
21	05:39	06:27	07:09 (A27-05)	07:19	08:07 (A27-06)	08:10	08:49 (A27-07)	08:06	08:44		
	21:47	20:52	27 07:36 (A27-05)	19:41	23 08:30 (A27-06)	18:33	6 08:55 (A27-07)	16:38	16:25		
22	05:40	06:29	07:10 (A27-05)	07:21	08:05 (A27-06)	08:12	08:51 (A27-07)	08:08	08:45		
	21:46	20:50	26 07:36 (A27-05)	19:39	24 08:29 (A27-06)	18:30	2 08:53 (A27-07)	16:37	16:25		
23	05:42	06:31	07:11 (A27-05)	07:22	08:05 (A27-06)	08:14		08:10	08:45		
	21:44	20:48	23 07:34 (A27-05)	19:36	25 08:30 (A27-06)	18:28		16:36	16:26		
24	05:43	06:32	07:12 (A27-05)	07:24	08:03 (A27-06)	08:16		08:11	08:45		
	21:43	20:46	20 07:32 (A27-05)	19:34	26 08:29 (A27-06)	18:26		16:35	16:26		
25	05:45	06:34	07:15 (A27-05)	07:26	08:03 (A27-06)	08:18		08:13	08:46		
	21:41	20:44	15 07:30 (A27-05)	19:32	26 08:29 (A27-06)	18:24		16:34	16:27		
26	05:46	06:36	07:18 (A27-05)	07:27	08:04 (A27-06)	08:19		08:15	08:46		
	21:40	20:41	7 07:25 (A27-05)	19:29	24 08:28 (A27-06)	18:22		16:33	16:28		
27	05:48	06:37		07:29	08:06 (A27-06)	08:21		08:16	08:47		
	21:39	20:39		19:27	22 08:28 (A27-06)	18:20		16:32	16:28		
28	05:49	06:39		07:31	08:07 (A27-06)	08:23		08:18	08:47		
	21:37	20:37		19:25	19 08:26 (A27-06)	18:18		16:31	16:29		
29	05:51	06:41		07:32	08:09 (A27-06)	08:25		08:19	08:47		
	21:36	20:35		19:22	16 08:25 (A27-06)	18:16		16:30	16:30		
30	05:52	06:42		07:34	08:11 (A27-06)	07:27		08:21	08:47		
	21:34	20:33		19:20	13 08:24 (A27-06)	17:14		16:29	16:31		
31	05:54	07:20 (A27-05)	06:44			07:28			08:47		
	21:32	10 07:30 (A27-05)	20:30			17:12			16:32		
Potential sun hours	505	456		382		332		265	242		
Total, worst case	10	700		284		147					

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

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

SHADOW - Calendar

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 05 - Shadow Receptor: 4,0 x 2,0 Azimuth: 0,0° Slope: 90,0° (635)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47	08:20	07:26	07:15	07:49 (A27-07)	06:09
	16:33	17:21	18:14	20:09	07:52 (A27-07)	21:01
2	08:47	08:19	07:24	07:13	07:47 (A27-07)	06:07
	16:34	17:23	18:16	20:10	07:55 (A27-07)	21:02
3	08:47	08:17	07:22	07:10	07:44 (A27-07)	06:05
	16:35	17:25	18:17	20:12	07:56 (A27-07)	21:04
4	08:47	08:16	07:20	07:08	07:42 (A27-07)	06:03
	16:36	17:27	18:19	20:14	07:57 (A27-07)	21:06
5	08:46	08:14	07:18	07:06	07:40 (A27-07)	06:01
	16:38	17:29	18:21	20:16	07:58 (A27-07)	21:07
6	08:46	08:12	07:15	07:03	07:38 (A27-07)	05:59
	16:39	17:31	18:23	20:17	07:58 (A27-07)	21:09
7	08:46	08:10	07:13	07:01	07:35 (A27-07)	05:58
	16:40	17:32	18:25	20:19	07:58 (A27-07)	21:11
8	08:45	08:09	07:11	06:59	07:34 (A27-07)	05:56
	16:41	17:34	18:26	20:21	07:58 (A27-07)	21:13
9	08:45	08:07	07:08	06:56	07:34 (A27-07)	05:54
	16:43	17:36	18:28	20:23	07:58 (A27-07)	21:14
10	08:44	08:05	07:06	06:54	07:34 (A27-07)	05:52
	16:44	17:38	18:30	20:24	07:58 (A27-07)	21:16
11	08:44	08:03	07:04	06:52	07:33 (A27-07)	05:51
	16:45	17:40	18:32	20:26	07:56 (A27-07)	21:17
12	08:43	08:01	07:02	06:50	07:34 (A27-07)	05:49
	16:47	17:42	18:34	20:28	07:56 (A27-07)	21:19
13	08:42	07:59	06:59	06:47	07:34 (A27-07)	05:47
	16:48	17:44	18:35	20:30	07:55 (A27-07)	21:21
14	08:42	07:58	06:57	06:45	07:35 (A27-07)	05:45
	16:50	17:46	18:37	20:31	07:53 (A27-07)	21:22
15	08:41	07:56	06:55	06:43	07:37 (A27-07)	05:44
	16:51	17:48	18:39	20:33	07:52 (A27-07)	21:24
16	08:40	07:54	06:52	06:41	07:38 (A27-07)	05:42
	16:53	17:49	18:41	20:35	07:48 (A27-07)	21:25
17	08:39	07:52	06:50	06:38	05:41	06:20 (A27-06)
	16:55	17:51	18:43	20:37	21:27	06:42 (A27-06)
18	08:38	07:50	06:48	06:36	05:39	06:19 (A27-06)
	16:56	17:53	18:44	20:38	21:29	06:43 (A27-06)
19	08:37	07:48	06:45	06:34	05:38	06:17 (A27-06)
	16:58	17:55	18:46	20:40	21:30	06:43 (A27-06)
20	08:36	07:46	06:43	06:32	05:36	06:17 (A27-06)
	17:00	17:57	18:48	20:42	21:32	06:44 (A27-06)
21	08:35	07:44	06:41	06:30	05:35	06:16 (A27-06)
	17:01	17:59	18:50	20:43	21:33	06:44 (A27-06)
22	08:34	07:41	06:38	06:28	05:34	06:16 (A27-06)
	17:03	18:01	18:51	20:45	21:34	06:45 (A27-06)
23	08:33	07:39	06:36	06:25	05:32	06:16 (A27-06)
	17:05	18:03	18:53	20:47	21:36	06:45 (A27-06)
24	08:32	07:37	06:34	06:23	05:31	06:16 (A27-06)
	17:07	18:04	18:55	20:49	21:37	06:46 (A27-06)
25	08:30	07:35	06:31	06:21	05:30	06:16 (A27-06)
	17:08	18:06	18:57	20:50	21:39	06:46 (A27-06)
26	08:29	07:33	06:29	06:19	05:29	06:16 (A27-06)
	17:10	18:08	18:58	20:52	21:40	06:46 (A27-06)
27	08:28	07:31	07:27	06:17	05:27	06:16 (A27-06)
	17:12	18:10	20:00	20:54	21:41	06:46 (A27-06)
28	08:26	07:29	07:24	06:15	05:26	06:16 (A27-06)
	17:14	18:12	20:02	20:56	21:43	06:46 (A27-06)
29	08:25		07:22	06:13	05:25	06:16 (A27-06)
	17:16		20:04	20:57	21:44	06:46 (A27-06)
30	08:23		07:20	06:11	05:24	06:16 (A27-06)
	17:17		20:05	20:59	21:45	06:46 (A27-06)
31	08:22		07:17		05:23	06:16 (A27-06)
	17:19		20:07		21:46	06:46 (A27-06)
Potential sun hours	256	276	366	416	486	501
Total, worst case			135	280	494	781

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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 05 - Shadow Receptor: 4,0 x 2,0 Azimuth: 0,0° Slope: 90,0° (635)

Assumptions for shadow calculations

Reference year for calendar

2022

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	05:18	06:24 (A27-06)	05:55	06:37 (A27-06)	06:46	07:34 (A27-07)	07:36	08:12 (A27-08)	07:30	08:22		07:30	08:22		07:30	08:22	
	22:03	26 06:50 (A27-06)	21:31	10 06:47 (A27-06)	20:28	22 07:56 (A27-07)	19:18	16 08:28 (A27-08)	17:10	16:28		17:10	16:28		17:10	16:28	
2	05:19	06:25 (A27-06)	05:57	06:40 (A27-06)	06:47	07:32 (A27-07)	07:37	08:14 (A27-08)	07:32	08:24		07:32	08:24		07:32	08:24	
	22:02	26 06:51 (A27-06)	21:29	2 06:42 (A27-06)	20:26	23 07:55 (A27-07)	19:15	13 08:27 (A27-08)	17:08	16:28		17:08	16:28		17:08	16:28	
3	05:20	06:24 (A27-06)	05:58		06:49	07:32 (A27-07)	07:39	08:16 (A27-08)	07:34	08:25		07:34	08:25		07:34	08:25	
	22:02	27 06:51 (A27-06)	21:27		20:23	24 07:56 (A27-07)	19:13	11 08:27 (A27-08)	17:07	16:27		17:07	16:27		17:07	16:27	
4	05:20	06:24 (A27-06)	06:00		06:51	07:31 (A27-07)	07:41	08:18 (A27-08)	07:36	08:27		07:36	08:27		07:36	08:27	
	22:01	27 06:51 (A27-06)	21:26		20:21	24 07:55 (A27-07)	19:11	8 08:26 (A27-08)	17:05	16:26		17:05	16:26		17:05	16:26	
5	05:21	06:25 (A27-06)	06:01		06:52	07:31 (A27-07)	07:42	08:19 (A27-08)	07:38	08:28		07:38	08:28		07:38	08:28	
	22:01	27 06:52 (A27-06)	21:24		20:19	24 07:55 (A27-07)	19:08	5 08:24 (A27-08)	17:03	16:26		17:03	16:26		17:03	16:26	
6	05:22	06:25 (A27-06)	06:03		06:54	07:31 (A27-07)	07:44	08:21 (A27-08)	07:39	08:29		07:39	08:29		07:39	08:29	
	22:01	28 06:53 (A27-06)	21:22		20:16	23 07:54 (A27-07)	19:06	1 08:22 (A27-08)	17:01	16:25		17:01	16:25		17:01	16:25	
7	05:23	06:24 (A27-06)	06:05		06:56	07:33 (A27-07)	07:46		07:41	08:30		07:41	08:30		07:41	08:30	
	22:00	28 06:52 (A27-06)	21:20		20:14	21 07:54 (A27-07)	19:04		16:59	16:25		16:59	16:25		16:59	16:25	
8	05:24	06:24 (A27-06)	06:06		06:57	07:35 (A27-07)	07:48		07:43	08:32		07:43	08:32		07:43	08:32	
	21:59	29 06:53 (A27-06)	21:18		20:12	18 07:53 (A27-07)	19:01		16:58	16:25		16:58	16:25		16:58	16:25	
9	05:25	06:24 (A27-06)	06:08		06:59	07:36 (A27-07)	07:49		07:45	08:33		07:45	08:33		07:45	08:33	
	21:59	29 06:53 (A27-06)	21:16		20:10	15 07:51 (A27-07)	18:59		16:56	16:24		16:56	16:24		16:56	16:24	
10	05:26	06:24 (A27-06)	06:09		07:01	07:38 (A27-07)	07:51		07:47	08:34		07:47	08:34		07:47	08:34	
	21:58	30 06:54 (A27-06)	21:15		20:07	12 07:50 (A27-07)	18:57		16:54	16:24		16:54	16:24		16:54	16:24	
11	05:27	06:24 (A27-06)	06:11		07:02	07:39 (A27-07)	07:53		07:48	08:35		07:48	08:35		07:48	08:35	
	21:57	30 06:54 (A27-06)	21:13		20:05	8 07:47 (A27-07)	18:55		16:53	16:24		16:53	16:24		16:53	16:24	
12	05:28	06:25 (A27-06)	06:13		07:04	07:41 (A27-07)	07:54		07:50	08:36		07:50	08:36		07:50	08:36	
	21:56	29 06:54 (A27-06)	21:11		20:02	4 07:45 (A27-07)	18:52		16:51	16:24		16:51	16:24		16:51	16:24	
13	05:29	06:25 (A27-06)	06:14		07:06		07:56		07:52	08:37		07:52	08:37		07:52	08:37	
	21:55	29 06:54 (A27-06)	21:09		20:00		18:50		16:50	16:24		16:50	16:24		16:50	16:24	
14	05:30	06:25 (A27-06)	06:16		07:07		07:58		07:54	08:38		07:54	08:38		07:54	08:38	
	21:55	30 06:55 (A27-06)	21:07		19:58		18:48		16:48	16:23		16:48	16:23		16:48	16:23	
15	05:31	06:25 (A27-06)	06:18		07:09		08:00		07:56	08:39		07:56	08:39		07:56	08:39	
	21:54	30 06:55 (A27-06)	21:05		19:55		18:46		16:46	16:24		16:46	16:24		16:46	16:24	
16	05:33	06:25 (A27-06)	06:19		07:11		08:01		07:57	08:40		07:57	08:40		07:57	08:40	
	21:53	30 06:55 (A27-06)	21:03		19:53		18:43		16:45	16:24		16:45	16:24		16:45	16:24	
17	05:34	06:25 (A27-06)	06:21		07:12		08:03		07:59	08:41		07:59	08:41		07:59	08:41	
	21:51	30 06:55 (A27-06)	21:01		19:51		18:41		16:44	16:24		16:44	16:24		16:44	16:24	
18	05:35	06:25 (A27-06)	06:23		07:14		08:05		08:01	08:42		08:01	08:42		08:01	08:42	
	21:50	30 06:55 (A27-06)	20:59		19:48		18:39		16:42	16:24		16:42	16:24		16:42	16:24	
19	05:36	06:26 (A27-06)	06:24		07:16		08:07		08:03	08:43		08:03	08:43		08:03	08:43	
	21:49	29 06:55 (A27-06)	20:57		19:47		18:37		16:41	16:24		16:41	16:24		16:41	16:24	
20	05:38	06:26 (A27-06)	06:26		07:17		08:09		08:04	08:43		08:04	08:43		08:04	08:43	
	21:48	29 06:55 (A27-06)	20:54		19:44		18:35		16:40	16:25		16:40	16:25		16:40	16:25	
21	05:39	06:26 (A27-06)	06:28		07:19		08:10		08:06	08:44		08:06	08:44		08:06	08:44	
	21:47	29 06:55 (A27-06)	20:52		19:41		18:33		16:38	16:25		16:38	16:25		16:38	16:25	
22	05:40	06:26 (A27-06)	06:29		07:21		08:12		08:08	08:44		08:08	08:44		08:08	08:44	
	21:46	29 06:55 (A27-06)	20:50		19:39		18:30		16:37	16:25		16:37	16:25		16:37	16:25	
23	05:42	06:27 (A27-06)	06:31		07:22		08:14		08:10	08:45		08:10	08:45		08:10	08:45	
	21:44	28 06:55 (A27-06)	20:48		19:36		18:28		16:36	16:26		16:36	16:26		16:36	16:26	
24	05:43	06:27 (A27-06)	06:32		07:24		08:16		08:11	08:45		08:11	08:45		08:11	08:45	
	21:43	27 06:54 (A27-06)	20:46		19:34		18:26		16:35	16:26		16:35	16:26		16:35	16:26	
25	05:45	06:27 (A27-06)	06:34		07:26		08:18 (A27-08)	08:18	08:13	08:46		08:13	08:46		08:13	08:46	
	21:41	27 06:54 (A27-06)	20:44		19:32	4	08:22 (A27-08)	18:24	16:34	16:27		16:34	16:27		16:34	16:27	
26	05:46	06:28 (A27-06)	06:36		07:27		08:15 (A27-08)	08:19	08:14	08:46		08:14	08:46		08:14	08:46	
	21:40	25 06:53 (A27-06)	20:41		19:29	11	08:26 (A27-08)	18:22	16:33	16:28		16:33	16:28		16:33	16:28	
27	05:48	06:30 (A27-06)	06:37		07:29		08:13 (A27-08)	08:21	08:16	08:46		08:16	08:46		08:16	08:46	
	21:39	23 06:53 (A27-06)	20:39		19:27	14	08:27 (A27-08)	18:20	16:32	16:28		16:32	16:28		16:32	16:28	
28	05:49	06:31 (A27-06)	06:39		07:31		08:11 (A27-08)	08:23	08:18	08:47		08:18	08:47		08:18	08:47	
	21:37	21 06:52 (A27-06)	20:37	11 07:50 (A27-07)	19:25	16 08:27 (A27-08)	18:18		16:31	16:29		16:31	16:29		16:31	16:29	
29	05:51	06:32 (A27-06)	06:41		07:37 (A27-07)		08:10 (A27-08)	08:25	08:19	08:47		08:19	08:47		08:19	08:47	
	21:36	19 06:51 (A27-06)	20:35	16 07:53 (A27-07)	19:22	18 08:28 (A27-08)	18:16		16:30	16:30		16:30	16:30		16:30	16:30	
30	05:52	06:34 (A27-06)	06:42		07:35 (A27-07)		08:11 (A27-08)	07:27	08:21	08:47		08:21	08:47		08:21	08:47	
	21:34	16 06:50 (A27-06)	20:33	18 07:53 (A27-07)	19:20	18 08:29 (A27-08)	17:14		16:29	16:31		16:29	16:31		16:29	16:31	
31	05:54	06:35 (A27-06)	06:44		07:34 (A27-07)		07:28			08:47			08:47			08:47	
	21:32	13 06:48 (A27-06)	20:30	21 07:55 (A27-07)			17:12			16:32			16:32			16:32	
Potential sun hours	505		456		382		332		266	242							
Total, worst case	830		78		299		54										

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

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

SHADOW - Calendar

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 06 - Shadow Receptor: 3,0 x 2,0 Azimuth: 0,0° Slope: 90,0° (636)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47	08:20		07:26	08:08 (A27-08)	07:15		06:09	07:17 (A27-07)	05:22	07:22 (A27-07)			
		16:33	17:21		18:14	27	08:35 (A27-08)	20:09	21:01	54	08:11 (A27-07)	21:48	41	08:03 (A27-07)	
	2	08:47	08:19		08:59 (A27-09)	07:24	08:07 (A27-08)	07:13	06:07		07:17 (A27-07)	05:21		07:24 (A27-07)	
		16:34	17:23	2	09:01 (A27-09)	18:15	29	08:36 (A27-08)	20:10	21:02	55	08:12 (A27-07)	21:49	40	08:04 (A27-07)
	3	08:47	08:17		08:57 (A27-09)	07:22	08:05 (A27-08)	07:10	06:05		07:17 (A27-07)	05:21		07:24 (A27-07)	
		16:35	17:25	6	09:03 (A27-09)	18:17	31	08:36 (A27-08)	20:12	21:04	55	08:12 (A27-07)	21:50	39	08:03 (A27-07)
	4	08:47	08:15		08:55 (A27-09)	07:20	08:04 (A27-08)	07:08	06:03		07:16 (A27-07)	05:20		07:24 (A27-07)	
		16:36	17:27	9	09:04 (A27-09)	18:19	33	08:37 (A27-08)	20:14	21:06	56	08:12 (A27-07)	21:51	38	08:02 (A27-07)
	5	08:46	08:14		08:53 (A27-09)	07:17	08:04 (A27-08)	07:06	06:01		07:15 (A27-07)	05:19		07:26 (A27-07)	
		16:37	17:29	12	09:05 (A27-09)	18:21	34	08:38 (A27-08)	20:16	21:07	57	08:12 (A27-07)	21:52	36	08:02 (A27-07)
	6	08:46	08:12		08:51 (A27-09)	07:15	08:03 (A27-08)	07:03	05:59		07:16 (A27-07)	05:18		07:26 (A27-07)	
		16:39	17:31	15	09:06 (A27-09)	18:23	34	08:37 (A27-08)	20:17	21:09	56	08:12 (A27-07)	21:53	35	08:01 (A27-07)
	7	08:46	08:10		08:49 (A27-09)	07:13	08:03 (A27-08)	07:01	05:58		07:15 (A27-07)	05:18		07:27 (A27-07)	
		16:40	17:32	18	09:07 (A27-09)	18:25	34	08:37 (A27-08)	20:19	21:11	57	08:12 (A27-07)	21:54	34	08:01 (A27-07)
	8	08:45	08:09		08:47 (A27-09)	07:11	08:03 (A27-08)	06:59	05:56		07:14 (A27-07)	05:17		07:27 (A27-07)	
		16:41	17:34	20	09:07 (A27-09)	18:26	35	08:38 (A27-08)	20:21	21:12	58	08:12 (A27-07)	21:55	33	08:00 (A27-07)
	9	08:45	08:07		08:45 (A27-09)	07:08	08:02 (A27-08)	06:56	05:54		07:15 (A27-07)	05:17		07:28 (A27-07)	
		16:43	17:36	22	09:07 (A27-09)	18:28	35	08:37 (A27-08)	20:23	21:14	57	08:12 (A27-07)	21:56	32	08:00 (A27-07)
	10	08:44	08:05		08:44 (A27-09)	07:06	08:02 (A27-08)	06:53	05:52		07:14 (A27-07)	05:16		07:29 (A27-07)	
		16:44	17:38	24	09:08 (A27-09)	18:30	35	08:37 (A27-08)	20:24	21:16	58	08:12 (A27-07)	21:57	31	08:00 (A27-07)
	11	08:44	08:03		08:44 (A27-09)	07:04	08:02 (A27-08)	06:52	05:50		07:15 (A27-07)	05:16		07:29 (A27-07)	
		16:45	17:40	24	09:08 (A27-09)	18:32	34	08:36 (A27-08)	20:26	21:17	57	08:12 (A27-07)	21:57	30	07:59 (A27-07)
	12	08:43	08:01		08:44 (A27-09)	07:02	08:02 (A27-08)	06:50	05:49		07:14 (A27-07)	05:15		07:30 (A27-07)	
		16:47	17:42	24	09:08 (A27-09)	18:34	33	08:35 (A27-08)	20:28	21:19	57	08:11 (A27-07)	21:58	29	07:59 (A27-07)
	13	08:42	07:59		08:45 (A27-09)	06:59	08:03 (A27-08)	06:47	05:47		07:15 (A27-07)	05:15		07:31 (A27-07)	
		16:48	17:44	22	09:07 (A27-09)	18:35	31	08:34 (A27-08)	20:30	21:21	57	08:12 (A27-07)	21:59	28	07:59 (A27-07)
	14	08:42	07:58		08:46 (A27-09)	06:57	08:03 (A27-08)	06:45	05:45		07:15 (A27-07)	05:15		07:32 (A27-07)	
		16:50	17:46	21	09:07 (A27-09)	18:37	29	08:32 (A27-08)	20:31	21:22	56	08:11 (A27-07)	21:59	27	07:59 (A27-07)
	15	08:41	07:56		08:46 (A27-09)	06:55	08:04 (A27-08)	06:43	05:44		07:15 (A27-07)	05:15		07:33 (A27-07)	
		16:51	17:48	20	09:06 (A27-09)	18:39	27	08:31 (A27-08)	20:33	21:24	56	08:11 (A27-07)	22:00	26	07:59 (A27-07)
	16	08:40	07:54		08:48 (A27-09)	06:52	08:05 (A27-08)	06:41	05:42		07:15 (A27-07)	05:14		07:33 (A27-07)	
		16:53	17:49	17	09:05 (A27-09)	18:41	25	08:30 (A27-08)	20:35	21:25	55	08:10 (A27-07)	22:01	26	07:59 (A27-07)
	17	08:39	07:52		08:49 (A27-09)	06:50	08:06 (A27-08)	06:38	05:41		07:15 (A27-07)	05:14		07:34 (A27-07)	
		16:55	17:51	15	09:04 (A27-09)	18:42	21	08:27 (A27-08)	20:36	21:27	55	08:10 (A27-07)	22:01	25	07:59 (A27-07)
	18	08:38	07:50		08:52 (A27-09)	06:48	08:08 (A27-08)	06:34	05:39	07:42 (A27-07)	05:39	07:16 (A27-07)	05:14		07:34 (A27-07)
		16:56	17:53	9	09:01 (A27-09)	18:44	17	08:25 (A27-08)	20:38	21:28	54	08:10 (A27-07)	22:02	25	07:59 (A27-07)
	19	08:37	07:48			06:45	08:12 (A27-08)	06:34	05:38	07:37 (A27-07)	05:38	07:16 (A27-07)	05:14		07:34 (A27-07)
		16:58	17:55		18:46	9	08:21 (A27-08)	20:40	20	07:57 (A27-07)	21:30	08:09 (A27-07)	22:02	25	07:59 (A27-07)
	20	08:36	07:46		06:43			06:32	05:36	07:33 (A27-07)	05:36	07:16 (A27-07)	05:14		07:35 (A27-07)
		17:00	17:57		18:48			20:42	27	08:00 (A27-07)	21:32	08:09 (A27-07)	22:02	24	07:59 (A27-07)
	21	08:35	07:43		06:41			06:30	05:35	07:31 (A27-07)	05:35	07:17 (A27-07)	05:14		07:35 (A27-07)
		17:01	17:59		18:50			20:43	31	08:02 (A27-07)	21:33	08:09 (A27-07)	22:03	23	07:58 (A27-07)
	22	08:34	07:41		06:38			06:28	05:34	07:29 (A27-07)	05:34	07:17 (A27-07)	05:15		07:35 (A27-07)
		17:03	18:01		18:51			20:45	35	08:04 (A27-07)	21:34	08:09 (A27-07)	22:03	23	07:58 (A27-07)
	23	08:33	07:39		06:36			06:25	05:32	07:27 (A27-07)	05:32	07:18 (A27-07)	05:15		07:35 (A27-07)
		17:05	18:03		18:53			20:47	39	08:06 (A27-07)	21:36	08:08 (A27-07)	22:03	24	07:59 (A27-07)
	24	08:32	07:37		06:34			06:23	05:31	07:25 (A27-07)	05:31	07:18 (A27-07)	05:15		07:36 (A27-07)
		17:07	18:04		18:55			20:49	42	08:07 (A27-07)	21:37	08:08 (A27-07)	22:03	24	08:00 (A27-07)
	25	08:30	07:35		08:20 (A27-08)	06:31		06:21	05:30	07:24 (A27-07)	05:30	07:19 (A27-07)	05:15		07:35 (A27-07)
		17:08	18:06	4	08:24 (A27-08)	18:57		20:50	44	08:08 (A27-07)	21:39	08:08 (A27-07)	22:03	25	08:00 (A27-07)
	26	08:29	07:33		08:15 (A27-08)	06:29		06:19	05:29	07:22 (A27-07)	05:29	07:20 (A27-07)	05:16		07:35 (A27-07)
		17:10	18:08	14	08:29 (A27-08)	18:58		20:52	46	08:08 (A27-07)	21:40	08:07 (A27-07)	22:03	25	08:00 (A27-07)
	27	08:28	07:31		08:12 (A27-08)	07:27		06:17	05:27	07:21 (A27-07)	05:27	07:20 (A27-07)	05:16		07:35 (A27-07)
		17:12	18:10	20	08:32 (A27-08)	20:00		20:54	48	08:09 (A27-07)	21:41	08:07 (A27-07)	22:03	26	08:01 (A27-07)
	28	08:26	07:29		08:09 (A27-08)	07:24		06:15	05:26	07:20 (A27-07)	05:26	07:21 (A27-07)	05:17		07:35 (A27-07)
		17:14	18:12	24	08:33 (A27-08)	20:02		20:56	50	08:10 (A27-07)	21:43	08:06 (A27-07)	22:03	26	08:01 (A27-07)
	29	08:25			07:22			06:13	05:25	07:19 (A27-07)	05:25	07:21 (A27-07)	05:17		07:35 (A27-07)
		17:16			20:03			20:57	51	08:10 (A27-07)	21:44	08:05 (A27-07)	22:03	27	08:02 (A27-07)
	30	08:23			07:20			06:11		07:18 (A27-07)	05:24	07:22 (A27-07)	05:18		07:34 (A27-07)
		17:17			20:05			20:59	52	08:10 (A27-07)	21:45	08:05 (A27-07)	22:03	28	08:02 (A27-07)
	31	08:22			07:17						05:23	07:22 (A27-07)			
		17:19			20:07						21:46	08:04 (A27-07)			
Potential sun hours		256	276		366		416		486		501				
Total, worst case			342		553		495		1637		875				

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

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

SHADOW - Calendar

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 06 - Shadow Receptor: 3,0 × 2,0 Azimuth: 0,0° Slope: 90,0° (636)

Assumptions for shadow calculations

Reference year for calendar

2022

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	05:18	07:35 (A27-07)	05:55	07:25 (A27-07)	06:46	07:36	08:42 (A27-08)	07:30	08:14 (A27-09)	08:22	
2	22:03	28 08:03 (A27-07)	21:31	57 08:22 (A27-07)	20:28	31 19:18	09:13 (A27-08)	17:10	23 08:37 (A27-09)	16:28	
3	05:19	07:35 (A27-07)	05:57	07:25 (A27-07)	06:47	07:37	08:41 (A27-08)	07:32	08:14 (A27-09)	08:24	
4	22:02	29 08:04 (A27-07)	21:29	57 08:22 (A27-07)	20:26	19:15	09:14 (A27-08)	17:08	23 08:37 (A27-09)	16:28	
5	05:20	07:34 (A27-07)	05:58	07:24 (A27-07)	06:49	07:39	08:40 (A27-08)	07:34	08:15 (A27-09)	08:25	
6	22:02	30 08:04 (A27-07)	21:27	58 08:22 (A27-07)	20:23	19:13	09:14 (A27-08)	17:06	22 08:37 (A27-09)	16:27	
7	05:20	07:34 (A27-07)	06:00	07:25 (A27-07)	06:51	07:41	08:40 (A27-08)	07:36	08:17 (A27-09)	08:26	
8	22:01	31 08:05 (A27-07)	21:26	57 08:22 (A27-07)	20:21	19:11	09:14 (A27-08)	17:05	20 08:37 (A27-09)	16:26	
9	05:21	07:34 (A27-07)	06:01	07:24 (A27-07)	06:52	07:42	08:39 (A27-08)	07:38	08:19 (A27-09)	08:28	
10	22:01	32 08:06 (A27-07)	21:24	58 08:22 (A27-07)	20:19	19:08	09:14 (A27-08)	17:03	17 08:36 (A27-09)	16:26	
11	05:22	07:34 (A27-07)	06:03	07:25 (A27-07)	06:54	07:44	08:39 (A27-08)	07:39	08:21 (A27-09)	08:29	
12	22:00	33 08:07 (A27-07)	21:22	57 08:22 (A27-07)	20:16	19:06	09:14 (A27-08)	17:01	15 08:36 (A27-09)	16:25	
13	05:23	07:32 (A27-07)	06:05	07:25 (A27-07)	06:56	07:46	08:39 (A27-08)	07:41	08:23 (A27-09)	08:30	
14	22:00	35 08:07 (A27-07)	21:20	57 08:22 (A27-07)	20:14	19:04	09:14 (A27-08)	16:59	12 08:35 (A27-09)	16:25	
15	05:24	07:32 (A27-07)	06:06	07:25 (A27-07)	06:57	07:48	08:39 (A27-08)	07:43	08:25 (A27-09)	08:32	
16	21:59	36 08:08 (A27-07)	21:18	57 08:22 (A27-07)	20:12	19:01	09:13 (A27-08)	16:58	9 08:34 (A27-09)	16:25	
17	05:25	07:32 (A27-07)	06:08	07:25 (A27-07)	06:59	07:49	08:39 (A27-08)	07:45	08:28 (A27-09)	08:33	
18	21:59	37 08:09 (A27-07)	21:16	56 08:21 (A27-07)	20:09	18:59	09:13 (A27-08)	16:56	6 08:34 (A27-09)	16:24	
19	05:26	07:32 (A27-07)	06:09	07:26 (A27-07)	07:01	07:51	08:38 (A27-08)	07:47	08:30 (A27-09)	08:34	
20	21:58	38 08:10 (A27-07)	21:15	55 08:21 (A27-07)	20:07	18:57	09:11 (A27-08)	16:54	2 08:32 (A27-09)	16:24	
21	05:27	07:31 (A27-07)	06:11	07:25 (A27-07)	07:02	07:53	08:39 (A27-08)	07:48		08:35	
22	21:57	40 08:11 (A27-07)	21:13	55 08:20 (A27-07)	20:05	18:54	09:11 (A27-08)	16:53		16:24	
23	05:28	07:31 (A27-07)	06:13	07:26 (A27-07)	07:04	07:54	08:40 (A27-08)	07:50		08:36	
24	21:56	40 08:11 (A27-07)	21:11	54 08:20 (A27-07)	20:02	18:52	09:10 (A27-08)	16:51		16:24	
25	05:29	07:31 (A27-07)	06:14	07:26 (A27-07)	07:06	07:56	08:41 (A27-08)	07:52		08:37	
26	21:55	41 08:12 (A27-07)	21:09	53 08:19 (A27-07)	20:00	18:50	09:09 (A27-08)	16:49		16:23	
27	05:30	07:30 (A27-07)	06:16	07:27 (A27-07)	07:07	07:58	08:42 (A27-08)	07:54		08:38	
28	21:54	43 08:13 (A27-07)	21:07	52 08:19 (A27-07)	19:58	18:48	09:07 (A27-08)	16:48		16:23	
29	05:31	07:30 (A27-07)	06:18	07:27 (A27-07)	07:09	08:00	08:43 (A27-08)	07:56		08:39	
30	21:54	44 08:14 (A27-07)	21:05	51 08:18 (A27-07)	19:55	18:46	09:06 (A27-08)	16:46		16:23	
31	05:33	07:29 (A27-07)	06:19	07:28 (A27-07)	07:10	08:01	08:44 (A27-08)	07:57		08:40	
32	21:52	45 08:14 (A27-07)	21:03	49 08:17 (A27-07)	19:53	18:43	09:02 (A27-08)	16:45		16:24	
33	05:34	07:29 (A27-07)	06:21	07:28 (A27-07)	07:12	08:03	08:47 (A27-08)	07:59		08:41	
34	21:51	46 08:15 (A27-07)	21:01	48 08:16 (A27-07)	19:51	18:41	08:59 (A27-08)	16:44		16:24	
35	05:35	07:28 (A27-07)	06:22	07:29 (A27-07)	07:14	08:05		08:01		08:42	
36	21:50	47 08:15 (A27-07)	20:59	46 08:15 (A27-07)	19:48	18:39		16:42		16:24	
37	05:36	07:29 (A27-07)	06:24	07:30 (A27-07)	07:15	08:07		08:03		08:43	
38	21:49	48 08:17 (A27-07)	20:56	43 08:13 (A27-07)	19:46	18:37		16:41		16:24	
39	05:38	07:28 (A27-07)	06:26	07:31 (A27-07)	07:17	08:08		08:04		08:43	
40	21:48	49 08:17 (A27-07)	20:54	41 08:12 (A27-07)	19:44	18:35		16:40		16:24	
41	05:39	07:28 (A27-07)	06:27	07:32 (A27-07)	07:19	08:10		08:06		08:44	
42	21:47	50 08:18 (A27-07)	20:52	38 08:10 (A27-07)	19:41	18:32		16:38		16:25	
43	05:40	07:27 (A27-07)	06:29	07:34 (A27-07)	07:20	08:12		08:08		08:44	
44	21:45	51 08:18 (A27-07)	20:50	35 08:09 (A27-07)	19:39	18:30		16:37		16:25	
45	05:42	07:28 (A27-07)	06:31	07:35 (A27-07)	07:22	08:14		08:09		08:45	
46	21:44	51 08:19 (A27-07)	20:48	31 08:06 (A27-07)	19:36	18:28		16:36		16:26	
47	05:43	07:27 (A27-07)	06:32	07:38 (A27-07)	07:24	08:16		08:11		08:45	
48	21:43	52 08:19 (A27-07)	20:46	26 08:04 (A27-07)	19:34	18:26		16:35		16:26	
49	05:45	07:26 (A27-07)	06:34	07:41 (A27-07)	07:25	08:17	09:20 (A27-09)	08:13		08:46	
50	21:41	54 08:20 (A27-07)	20:44	20 08:01 (A27-07)	19:32	3 09:01 (A27-08)	18:24	11 09:31 (A27-09)	16:34	16:27	
51	05:46	07:26 (A27-07)	06:36	07:45 (A27-07)	07:27	08:52 (A27-08)	08:19	09:18 (A27-09)	16:34	08:46	
52	21:40	54 08:20 (A27-07)	20:41	9 07:54 (A27-07)	19:29	15 09:07 (A27-08)	18:22	15 09:33 (A27-09)	16:33	16:28	
53	05:47	07:26 (A27-07)	06:37		07:29	08:48 (A27-08)	08:21	09:17 (A27-09)	16:32	08:46	
54	21:39	55 08:21 (A27-07)	20:39		19:27	20 09:08 (A27-08)	18:20	18 09:35 (A27-09)	16:32	16:28	
55	05:49	07:26 (A27-07)	06:39		07:31	08:46 (A27-08)	08:23	09:16 (A27-09)	16:31	08:47	
56	21:37	55 08:21 (A27-07)	20:37		19:25	24 09:10 (A27-08)	18:18	20 09:36 (A27-09)	16:31	16:29	
57	05:50	07:25 (A27-07)	06:41		07:32	08:45 (A27-08)	08:25	09:15 (A27-09)	16:30	08:47	
58	21:35	56 08:21 (A27-07)	20:35		19:22	27 09:12 (A27-08)	18:16	22 09:37 (A27-09)	16:30	16:30	
59	05:52	07:26 (A27-07)	06:42		07:34	08:44 (A27-08)	07:27	08:14 (A27-09)	08:21	08:47	
60	21:34	56 08:22 (A27-07)	20:32		19:20	29 09:13 (A27-08)	17:14	23 08:37 (A27-09)	16:29	16:31	
61	05:54	07:25 (A27-07)	06:44				07:28	08:14 (A27-09)		08:47	
62	21:32	56 08:21 (A27-07)	20:30				17:12	23 08:37 (A27-09)		16:32	
Potential sun hours	505		456		382		332		266		242
Total, worst case	1362		1220		118		638		149		

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

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

SHADOW - Calendar

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 07 - Shadow Receptor: 6,0 × 2,5 Azimuth: 0,0° Slope: 90,0° (637)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47 16:33 08:47 16:34	08:20 17:21 08:19 17:23	07:26 18:14 07:24 18:16	08:02 (A27-09) 20:09 08:00 (A27-09) 20:10	07:51 (A27-08) 21:01 07:49 (A27-08) 21:02	05:22 21:48 05:21 21:49
2	08:47 16:35 08:47 16:36	08:17 17:25 08:15 17:27	07:22 18:17 07:20 18:19	07:57 (A27-09) 20:12 07:55 (A27-09) 20:14	07:47 (A27-08) 21:04 07:47 (A27-08) 21:06	05:21 21:50 05:20 21:51
3	08:47 16:35 08:47 16:36	08:17 17:25 08:15 17:27	07:22 18:17 07:20 18:19	07:57 (A27-09) 20:12 07:55 (A27-09) 20:14	07:47 (A27-08) 21:04 07:47 (A27-08) 21:06	05:21 21:50 05:20 21:51
4	08:47 16:35 08:47 16:36	08:17 17:25 08:15 17:27	07:22 18:17 07:20 18:19	07:57 (A27-09) 20:12 07:55 (A27-09) 20:14	07:47 (A27-08) 21:04 07:47 (A27-08) 21:06	05:21 21:50 05:20 21:51
5	08:46 16:37 08:46 16:37	08:14 17:29 08:12 17:31	07:17 18:21 07:15 18:23	07:53 (A27-09) 20:16 07:51 (A27-09) 20:17	07:46 (A27-08) 21:07 07:46 (A27-08) 21:09	05:19 21:52 05:18 21:53
6	08:46 16:39 08:46 16:40	08:12 17:31 08:10 17:32	07:15 18:23 07:13 18:25	07:51 (A27-09) 20:17 07:51 (A27-09) 20:19	07:45 (A27-08) 21:09 07:45 (A27-08) 21:11	05:18 21:54 05:18 21:54
7	08:46 16:40 08:46 16:41	08:10 17:32 08:09 17:34	07:13 18:25 07:11 18:26	07:51 (A27-09) 20:19 07:52 (A27-09) 20:21	07:45 (A27-08) 21:11 07:45 (A27-08) 21:12	05:18 21:54 05:17 21:55
8	08:45 16:41 08:45 16:43	08:09 17:34 08:07 17:36	07:11 18:26 07:08 18:28	07:52 (A27-09) 20:21 07:51 (A27-09) 20:23	07:45 (A27-08) 21:12 07:45 (A27-08) 21:14	05:17 21:55 05:17 21:56
9	08:45 16:43 08:44 16:44	08:07 17:36 08:05 17:38	07:08 18:28 07:06 18:30	07:51 (A27-09) 20:23 07:52 (A27-09) 20:24	07:45 (A27-08) 21:14 07:44 (A27-08) 21:16	05:17 21:56 05:16 21:57
10	08:44 16:44 08:44 16:45	08:05 17:38 08:03 17:40	07:06 18:30 07:04 18:32	07:52 (A27-09) 20:24 07:54 (A27-09) 20:26	07:44 (A27-08) 21:16 07:44 (A27-08) 21:17	05:16 21:57 05:16 21:57
11	08:43 16:45 08:43 16:47	08:01 17:40 08:01 17:42	07:02 18:32 07:02 18:34	07:55 (A27-09) 20:26 07:55 (A27-09) 20:28	07:45 (A27-08) 21:17 07:45 (A27-08) 21:19	05:15 21:57 05:15 21:58
12	08:42 16:47 08:42 16:48	07:59 17:42 07:59 17:44	06:59 18:34 06:59 18:35	06:47 20:28 06:47 20:30	07:46 (A27-08) 21:19 07:46 (A27-08) 21:21	05:15 21:58 05:15 21:59
13	08:42 16:48 08:42 16:50	07:59 17:44 07:58 17:46	06:59 18:35 06:57 18:37	06:47 20:30 06:45 20:31	07:46 (A27-08) 21:21 07:47 (A27-08) 21:22	05:15 21:59 05:15 21:59
14	08:42 16:50 08:41 16:51	07:58 17:46 07:56 17:48	06:57 18:37 06:55 18:39	06:45 20:31 06:43 20:33	07:47 (A27-08) 21:22 07:48 (A27-08) 21:24	05:15 21:59 05:15 22:00
15	08:41 16:51 08:40 16:53	07:56 17:48 07:54 17:49	06:55 18:39 06:52 18:41	06:43 20:33 06:41 20:35	07:48 (A27-08) 21:24 07:48 (A27-08) 21:25	05:15 22:00 05:14 22:01
16	08:39 16:53 08:39 16:55	07:52 17:49 07:52 17:51	06:50 18:41 06:50 18:42	06:38 20:35 06:38 20:36	07:51 (A27-08) 21:25 07:51 (A27-08) 21:27	05:14 22:01 05:14 22:01
17	08:38 16:55 08:38 16:56	07:50 17:51 07:50 17:53	06:48 18:42 06:48 18:44	06:36 20:36 06:34 20:38	07:55 (A27-08) 21:27 07:59 (A27-08) 21:28	05:14 22:01 05:14 22:02
18	08:37 16:56 08:36 17:00	07:48 17:53 07:46 17:57	06:45 18:44 06:43 18:48	06:34 20:38 06:32 20:42	05:38 21:28 05:36 21:31	05:14 22:02 05:14 22:02
19	08:36 17:00 08:35 17:01	07:46 17:57 07:43 17:59	06:43 18:48 06:41 18:50	06:32 20:42 06:30 20:43	05:36 21:31 05:35 21:33	05:14 22:02 05:14 22:03
20	08:35 17:01 08:34 17:03	07:43 17:59 07:41 18:01	06:41 18:50 06:38 18:51	06:30 20:43 06:28 20:45	05:35 21:33 05:34 21:34	05:14 22:03 05:15 22:03
21	08:33 17:03 08:33 17:05	07:39 18:01 07:39 18:03	06:36 18:51 06:36 18:53	06:25 20:45 06:25 20:47	05:32 21:34 05:32 21:36	05:15 22:03 05:15 22:03
22	08:32 17:05 08:30 17:07	07:37 18:03 07:35 18:04	06:34 18:53 06:31 18:55	06:23 20:47 06:21 20:49	05:31 21:36 05:30 21:37	05:15 22:03 05:15 22:03
23	08:30 17:07 08:29 17:08	07:35 18:04 07:33 18:06	06:31 18:55 06:29 18:57	06:21 20:49 06:19 20:50	05:30 21:37 05:29 21:39	05:15 22:03 05:16 22:03
24	08:29 17:08 08:28 17:10	07:33 18:06 07:31 18:08	06:29 18:57 06:28 18:58	06:19 20:50 06:17 20:52	05:29 21:39 05:27 21:40	05:16 22:03 05:16 22:03
25	08:28 17:10 08:26 17:12	07:31 18:08 07:29 18:10	06:27 18:58 06:24 19:00	06:17 20:52 06:15 20:54	05:27 21:40 05:26 21:41	05:16 22:03 05:17 22:03
26	08:26 17:12 08:26 17:14	07:29 18:10 07:29 18:12	06:24 19:00 06:22 19:02	06:15 20:54 06:15 20:56	05:26 21:41 05:26 21:43	05:17 22:03 05:17 22:03
27	08:25 17:14 08:23 17:16	07:27 18:12 07:25 18:14	06:22 19:02 06:20 19:04	06:15 20:56 06:13 20:57	05:26 21:43 05:25 21:44	05:17 22:03 05:17 22:03
28	08:23 17:16 08:23 17:17	07:25 18:14 07:23 18:16	06:20 19:04 06:18 19:06	06:13 20:57 06:11 20:59	05:25 21:44 05:24 21:45	05:17 22:03 05:18 22:03
29	08:22 17:17 08:22 17:19	07:23 18:16 07:21 18:18	06:18 19:06 06:17 19:07	06:11 20:59 06:10 21:00	05:24 21:45 05:23 21:46	05:18 22:03 05:18 22:03
Potential sun hours	256	276	366	416	486	501
Total, worst case		10	265	462	50	938

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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 07 - Shadow Receptor: 6,0 × 2,5 Azimuth: 0,0° Slope: 90,0° (637)

Assumptions for shadow calculations

Reference year for calendar

2022

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	05:18		06:13 (A27-07)	05:55		06:46	07:44 (A27-08)	07:36				07:30	08:22				
	22:03	33	06:46 (A27-07)	21:31		20:28	08:12 (A27-08)	19:18				17:10	16:28				
2	05:19		06:14 (A27-07)	05:57		06:47	07:43 (A27-08)	07:37			08:35 (A27-09)	07:32	08:24				
	22:02	32	06:46 (A27-07)	21:29		20:26	08:13 (A27-08)	19:15		9	08:44 (A27-09)	17:08	16:28				
3	05:20		06:14 (A27-07)	05:58		06:49	07:43 (A27-08)	07:39			08:33 (A27-09)	07:34	08:25				
	22:02	31	06:45 (A27-07)	21:27		20:23	08:14 (A27-08)	19:13		14	08:47 (A27-09)	17:07	16:27				
4	05:20		06:15 (A27-07)	06:00		06:51	07:42 (A27-08)	07:41			08:31 (A27-09)	07:36	08:26				
	22:01	30	06:45 (A27-07)	21:26		20:21	08:13 (A27-08)	19:11		17	08:48 (A27-09)	17:05	16:26				
5	05:21		06:15 (A27-07)	06:01		06:52	07:42 (A27-08)	07:42			08:29 (A27-09)	07:38	08:28				
	22:01	30	06:45 (A27-07)	21:24		20:19	08:13 (A27-08)	19:08		19	08:48 (A27-09)	17:03	16:26				
6	05:22		06:16 (A27-07)	06:03		06:54	07:41 (A27-08)	07:44			08:28 (A27-09)	07:39	08:29				
	22:00	29	06:45 (A27-07)	21:22		20:16	08:12 (A27-08)	19:06		21	08:49 (A27-09)	17:01	16:25				
7	05:23		06:16 (A27-07)	06:05		06:56	07:41 (A27-08)	07:46			08:27 (A27-09)	07:41	08:30				
	22:00	28	06:44 (A27-07)	21:20		20:14	08:12 (A27-08)	19:04		23	08:50 (A27-09)	16:59	16:25				
8	05:24		06:17 (A27-07)	06:06		06:57	07:40 (A27-08)	07:48			08:27 (A27-09)	07:43	08:32				
	21:59	27	06:44 (A27-07)	21:18		20:12	08:11 (A27-08)	19:01		23	08:50 (A27-09)	16:58	16:25				
9	05:25		06:18 (A27-07)	06:08		06:59	07:41 (A27-08)	07:49			08:27 (A27-09)	07:45	08:33				
	21:59	26	06:44 (A27-07)	21:16		20:09	08:11 (A27-08)	18:59		23	08:50 (A27-09)	16:56	16:24				
10	05:26		06:18 (A27-07)	06:09		07:01	07:42 (A27-08)	07:51			08:28 (A27-09)	07:47	08:34				
	21:58	25	06:43 (A27-07)	21:15		20:07	08:10 (A27-08)	18:57		21	08:49 (A27-09)	16:54	16:24				
11	05:27		06:19 (A27-07)	06:11		07:02	07:42 (A27-08)	07:53			08:30 (A27-09)	07:48	08:35				
	21:57	24	06:43 (A27-07)	21:13		20:05	08:08 (A27-08)	18:55		18	08:48 (A27-09)	16:53	16:24				
12	05:28		06:20 (A27-07)	06:13		07:04	07:43 (A27-08)	07:54			08:32 (A27-09)	07:50	08:36				
	21:56	22	06:42 (A27-07)	21:11		20:02	08:07 (A27-08)	18:52		16	08:48 (A27-09)	16:51	16:24				
13	05:29		06:22 (A27-07)	06:14		07:06	07:43 (A27-08)	07:56			08:34 (A27-09)	07:52	08:37				
	21:55	19	06:41 (A27-07)	21:09		20:00	08:05 (A27-08)	18:50		13	08:47 (A27-09)	16:49	16:24				
14	05:30		06:23 (A27-07)	06:16		07:07	07:45 (A27-08)	07:58			08:36 (A27-09)	07:54	08:38				
	21:54	17	06:40 (A27-07)	21:07		19:58	08:03 (A27-08)	18:48		9	08:45 (A27-09)	16:48	16:23				
15	05:31		06:25 (A27-07)	06:18		07:09	07:48 (A27-08)	08:00			08:38 (A27-09)	07:56	08:39				
	21:54	13	06:38 (A27-07)	21:05		19:55	08:00 (A27-08)	18:46		6	08:44 (A27-09)	16:46	16:23				
16	05:33		06:27 (A27-07)	06:19		07:11		08:01			08:39 (A27-09)	07:57	08:40				
	21:52	9	06:36 (A27-07)	21:03		19:53		18:43		1	08:40 (A27-09)	16:45	16:24				
17	05:34			06:21		07:12		08:03				07:59	08:41				
	21:51			21:01		19:51		18:41				16:44	16:24				
18	05:35			06:23		07:14		08:05				08:01	08:42				
	21:50			20:59		19:48		18:39				16:42	16:24				
19	05:36			06:24		07:15		08:07				08:03	08:43				
	21:49			20:56		19:46		18:37				16:41	16:24				
20	05:38			06:26		07:17		08:09				08:04	08:43				
	21:48			20:54		19:44		18:35				16:40	16:24				
21	05:39			06:27		07:19		08:10				08:06	08:44				
	21:47			20:52		19:41		18:33				16:38	16:25				
22	05:40			06:29		07:20		08:12				08:08	08:44				
	21:45			20:50		19:39		18:30				16:37	16:25				
23	05:42			06:31		07:22		08:14				08:09	08:45				
	21:44			20:48		19:36		18:28				16:36	16:26				
24	05:43			06:32		07:24		08:16				08:11	08:45				
	21:43			20:46		19:34		18:26				16:35	16:26				
25	05:45			06:34		07:25		08:17				08:13	08:46				
	21:41			20:44		19:32		18:24				16:34	16:27				
26	05:46			06:36		07:27		08:19				08:14	08:46				
	21:40			20:41	6	08:03 (A27-08)		18:22				16:33	16:28				
27	05:48			06:37		07:29		08:21				08:16	08:46				
	21:39			20:39	14	08:07 (A27-08)		18:20				16:32	16:28				
28	05:49			06:39		07:31		08:23				08:18	08:47				
	21:37			20:37	19	08:09 (A27-08)		18:18				16:31	16:29				
29	05:51			06:41		07:32		08:25				08:19	08:47				
	21:35			20:35	22	08:11 (A27-08)		18:16				16:30	16:30				
30	05:52			06:42		07:34		07:27				08:21	08:47				
	21:34			20:32	24	08:11 (A27-08)		17:14				16:29	16:31				
31	05:54			06:44		07:46 (A27-08)		07:28					08:47				
	21:32			20:30	26	08:12 (A27-08)		17:12					16:32				
Potential sun hours	505			456		382		332				266	242				
Total, worst case		395			111		404		233								

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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 08 - Shadow Receptor: 3,0 x 0,7 Azimuth: 0,0° Slope: 90,0° (638)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47 16:33	08:20 17:21		07:26 18:14		08:06 (A27-12) 21 08:27 (A27-12)	07:15 20:09	07:53 (A27-11) 25 08:18 (A27-11)	06:09 21:01	05:22 21:48	06:30 (A27-10) 21 06:51 (A27-10)
2	08:47 16:34	08:19 17:23		07:24 18:15		08:07 (A27-12) 19 08:26 (A27-12)	07:13 20:10	07:53 (A27-11) 25 08:18 (A27-11)	06:07 21:02	05:21 21:49	06:31 (A27-10) 20 06:51 (A27-10)
3	08:47 16:35	08:17 17:25		07:22 18:17		08:07 (A27-12) 18 08:25 (A27-12)	07:10 20:12	07:52 (A27-11) 24 08:16 (A27-11)	06:05 21:04	05:21 21:50	06:32 (A27-10) 18 06:50 (A27-10)
4	08:47 16:36	08:15 17:27		07:20 18:19		08:08 (A27-12) 15 08:23 (A27-12)	07:08 20:14	07:53 (A27-11) 23 08:16 (A27-11)	06:03 21:06	05:20 21:51	06:32 (A27-10) 17 06:49 (A27-10)
5	08:46 16:38	08:14 17:29		07:17 18:21		08:10 (A27-12) 11 08:21 (A27-12)	07:06 20:16	07:54 (A27-11) 21 08:15 (A27-11)	06:01 21:07	05:19 21:52	06:34 (A27-10) 15 06:49 (A27-10)
6	08:46 16:39	08:12 17:31		07:15 18:23		07:15 20:17	07:03 20:17	07:54 (A27-11) 19 08:13 (A27-11)	05:59 21:09	06:37 (A27-10) 8 06:45 (A27-10)	05:18 21:53
7	08:46 16:40	08:10 17:32		07:13 18:25		07:13 20:19	07:01 20:19	07:55 (A27-11) 16 08:11 (A27-11)	05:58 21:11	06:35 (A27-10) 12 06:47 (A27-10)	05:18 21:54
8	08:45 16:41	08:09 17:34		07:11 18:26		07:11 20:21	06:59 20:21	07:57 (A27-11) 12 08:09 (A27-11)	05:56 21:12	06:33 (A27-10) 16 06:49 (A27-10)	05:17 21:55
9	08:45 16:43	08:07 17:36		07:08 18:28		07:08 20:23	06:56 20:23	05:54 21:14	05:54 21:14	06:32 (A27-10) 18 06:50 (A27-10)	05:17 21:56
10	08:44 16:44	08:05 17:38		07:06 18:30		07:06 20:24	06:54 20:24	05:52 21:16	05:52 21:16	06:30 (A27-10) 21 06:51 (A27-10)	05:16 21:56
11	08:44 16:45	08:03 17:40		07:04 18:32		07:04 20:26	06:52 20:26	05:50 21:17	05:50 21:17	06:29 (A27-10) 23 06:52 (A27-10)	05:16 21:57
12	08:43 16:47	08:01 17:42		07:02 18:34		07:02 20:28	06:50 20:28	05:49 21:19	05:49 21:19	06:27 (A27-10) 25 06:52 (A27-10)	05:15 21:58
13	08:42 16:48	07:59 17:44		06:59 18:35		06:59 20:30	06:47 20:30	05:47 21:21	05:47 21:21	06:27 (A27-10) 26 06:53 (A27-10)	05:15 21:59
14	08:42 16:50	07:57 17:46		06:57 18:37		06:57 20:31	06:45 20:31	05:45 21:22	05:45 21:22	06:26 (A27-10) 27 06:53 (A27-10)	05:15 21:59
15	08:41 16:51	07:56 17:48		06:55 18:39		06:55 20:33	06:43 20:33	05:44 21:24	05:44 21:24	06:26 (A27-10) 28 06:54 (A27-10)	05:15 22:00
16	08:40 16:53	07:54 17:49		06:52 18:41		06:52 20:35	06:41 20:35	05:42 21:25	05:42 21:25	06:25 (A27-10) 29 06:54 (A27-10)	05:14 22:00
17	08:39 16:55	07:52 17:51		06:50 18:42		06:50 20:36	06:38 20:36	05:41 21:27	05:41 21:27	06:25 (A27-10) 29 06:54 (A27-10)	05:14 22:01
18	08:38 16:56	07:50 17:53		06:48 18:44		06:48 20:38	06:36 20:38	05:39 21:28	05:39 21:28	06:26 (A27-10) 29 06:55 (A27-10)	05:14 22:01
19	08:37 16:58	07:48 17:55		06:45 18:46		06:45 20:40	06:34 20:40	05:38 21:30	05:38 21:30	06:25 (A27-10) 29 06:54 (A27-10)	05:14 22:02
20	08:36 17:00	07:45 17:57		06:43 18:48		06:43 20:42	06:32 20:42	05:36 21:31	05:36 21:31	06:25 (A27-10) 29 06:54 (A27-10)	05:14 22:02
21	08:35 17:01	07:43 17:59		06:41 18:49		06:41 20:43	06:30 20:43	05:35 21:33	05:35 21:33	06:25 (A27-10) 29 06:54 (A27-10)	05:14 22:02
22	08:34 17:03	07:41 18:01		06:38 18:51		06:38 20:45	06:28 20:45	05:34 21:34	05:34 21:34	06:26 (A27-10) 28 06:54 (A27-10)	05:15 22:03
23	08:33 17:05	07:39 18:03		06:36 18:53		06:36 20:47	06:25 20:47	05:32 21:36	05:32 21:36	06:26 (A27-10) 28 06:54 (A27-10)	05:15 22:03
24	08:31 17:07	07:37 18:04		06:34 18:55		06:34 20:49	06:23 20:49	05:31 21:37	05:31 21:37	06:27 (A27-10) 27 06:54 (A27-10)	05:15 22:03
25	08:30 17:08	07:35 18:06		06:31 18:56		06:31 20:50	06:21 20:50	05:30 21:39	05:30 21:39	06:27 (A27-10) 27 06:54 (A27-10)	05:15 22:03
26	08:29 17:10	07:33 18:08		06:29 18:58		06:29 20:52	06:19 20:52	05:29 21:40	05:29 21:40	06:27 (A27-10) 27 06:54 (A27-10)	05:16 22:03
27	08:28 17:12	07:31 18:10		06:27 20:00		06:27 20:54	06:17 20:54	05:27 21:41	05:27 21:41	06:28 (A27-10) 25 06:53 (A27-10)	05:16 22:03
28	08:26 17:14	07:29 18:12		06:24 20:02		06:24 20:55	06:15 20:55	05:26 21:43	05:26 21:43	06:28 (A27-10) 25 06:53 (A27-10)	05:17 22:03
29	08:25 17:16			06:22 20:03		06:22 20:57	06:13 20:57	05:25 21:44	05:25 21:44	06:29 (A27-10) 24 06:53 (A27-10)	05:17 22:03
30	08:23 17:17			06:20 20:05		06:20 20:59	06:11 20:59	05:24 21:45	05:24 21:45	06:29 (A27-10) 23 06:52 (A27-10)	05:18 22:03
31	08:22 17:19			06:17 20:07		06:17 20:59	06:08 20:59	05:23 21:46	05:23 21:46	06:30 (A27-10) 21 06:51 (A27-10)	
Potential sun hours	256	276		366		416	165	486	633	501	140
Total, worst case		112		216							

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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 08 - Shadow Receptor: 3,0 x 0,7 Azimuth: 0,0° Slope: 90,0° (638)

Assumptions for shadow calculations

Reference year for calendar

2022

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	05:18			05:55	06:38 (A27-10)		06:46			07:36			07:30	08:22		
	22:02			21:31	26 07:04 (A27-10)		20:28			19:18			17:10	16:28		
2	05:19			05:57	06:38 (A27-10)		06:47			07:37			07:32	08:24		
	22:02			21:29	25 07:03 (A27-10)		20:26			19:15			17:08	16:28		
3	05:20		06:46 (A27-10)	05:58	06:39 (A27-10)		06:49			07:39			07:34	08:25		
	22:02	1	06:47 (A27-10)	21:27	22 07:01 (A27-10)		20:23			19:13			17:07	16:27		
4	05:21		06:44 (A27-10)	06:00	06:41 (A27-10)		06:51			07:41			07:36	08:26		
	22:01	6	06:50 (A27-10)	21:25	20 07:01 (A27-10)		20:21			19:11			17:05	16:26		
5	05:21		06:43 (A27-10)	06:01	06:42 (A27-10)		06:52		07:55 (A27-11)	07:42			07:37	08:28		
	22:01	9	06:52 (A27-10)	21:24	18 07:00 (A27-10)		20:19	11	08:06 (A27-11)	19:08			17:03	16:26		
6	05:22		06:43 (A27-10)	06:03	06:44 (A27-10)		06:54		07:51 (A27-11)	07:44			07:39	08:29		
	22:00	11	06:54 (A27-10)	21:22	15 06:59 (A27-10)		20:16	16	08:07 (A27-11)	19:06			17:01	16:25		
7	05:23		06:41 (A27-10)	06:05	06:45 (A27-10)		06:56		07:50 (A27-11)	07:46			07:41	08:30		
	22:00	13	06:54 (A27-10)	21:20	11 06:56 (A27-10)		20:14	19	08:09 (A27-11)	19:04			16:59	16:25		
8	05:24		06:40 (A27-10)	06:06	06:47 (A27-10)		06:57		07:48 (A27-11)	07:47			07:43	08:32		
	21:59	15	06:55 (A27-10)	21:18	7 06:54 (A27-10)		20:12	21	08:09 (A27-11)	19:01			16:58	16:25		
9	05:25		06:40 (A27-10)	06:08			06:59		07:47 (A27-11)	07:49		08:46 (A27-12)	07:45	08:33		
	21:58	16	06:56 (A27-10)	21:16			20:09	23	08:10 (A27-11)	18:59	8	08:54 (A27-12)	16:56	16:24		
10	05:26		06:40 (A27-10)	06:09			07:01		07:47 (A27-11)	07:51		08:43 (A27-12)	07:47	08:34		
	21:58	17	06:57 (A27-10)	21:14			20:07	23	08:10 (A27-11)	18:57	14	08:57 (A27-12)	16:54	16:24		
11	05:27		06:39 (A27-10)	06:11			07:02		07:45 (A27-11)	07:53		08:42 (A27-12)	07:48	08:35		
	21:57	19	06:58 (A27-10)	21:13			20:05	25	08:10 (A27-11)	18:54	16	08:58 (A27-12)	16:53	16:24		
12	05:28		06:39 (A27-10)	06:13			07:04		07:45 (A27-11)	07:54		08:41 (A27-12)	07:50	08:36		
	21:56	20	06:59 (A27-10)	21:11			20:02	25	08:10 (A27-11)	18:52	18	08:59 (A27-12)	16:51	16:24		
13	05:29		06:38 (A27-10)	06:14			07:06		07:44 (A27-11)	07:56		08:40 (A27-12)	07:52	08:37		
	21:55	22	07:00 (A27-10)	21:09			20:00	25	08:09 (A27-11)	18:50	20	09:00 (A27-12)	16:49	16:24		
14	05:30		06:38 (A27-10)	06:16			07:07		07:45 (A27-11)	07:58		08:39 (A27-12)	07:54	08:38		
	21:54	22	07:00 (A27-10)	21:07			19:58	24	08:09 (A27-11)	18:48	21	09:00 (A27-12)	16:48	16:24		
15	05:31		06:37 (A27-10)	06:18			07:09		07:46 (A27-11)	08:00		08:39 (A27-12)	07:56	08:39		
	21:53	24	07:01 (A27-10)	21:05			19:55	23	08:09 (A27-11)	18:46	21	09:00 (A27-12)	16:46	16:24		
16	05:33		06:37 (A27-10)	06:19			07:10		07:47 (A27-11)	08:01		08:39 (A27-12)	07:57	08:40		
	21:52	24	07:01 (A27-10)	21:03			19:53	20	08:07 (A27-11)	18:43	20	08:59 (A27-12)	16:45	16:24		
17	05:34		06:37 (A27-10)	06:21			07:12		07:49 (A27-11)	08:03		08:41 (A27-12)	07:59	08:41		
	21:51	25	07:02 (A27-10)	21:01			19:51	17	08:06 (A27-11)	18:41	18	08:59 (A27-12)	16:44	16:24		
18	05:35		06:36 (A27-10)	06:23			07:14		07:51 (A27-11)	08:05		08:43 (A27-12)	08:01	08:42		
	21:50	26	07:02 (A27-10)	20:58			19:48	14	08:05 (A27-11)	18:39	15	08:58 (A27-12)	16:42	16:24		
19	05:36		06:37 (A27-10)	06:24			07:15		07:52 (A27-11)	08:07		08:45 (A27-12)	08:03	08:42		
	21:49	26	07:03 (A27-10)	20:56			19:46	10	08:02 (A27-11)	18:37	13	08:58 (A27-12)	16:41	16:24		
20	05:38		06:36 (A27-10)	06:26			07:17		07:54 (A27-11)	08:08		08:47 (A27-12)	08:04	08:43		
	21:48	28	07:04 (A27-10)	20:54			19:44	5	07:59 (A27-11)	18:35	10	08:57 (A27-12)	16:40	16:25		
21	05:39		06:36 (A27-10)	06:27			07:19		08:10	08:10		08:49 (A27-12)	08:06	08:44		
	21:47	28	07:04 (A27-10)	20:52			19:41		18:32	6	08:55 (A27-12)	16:38	16:25			
22	05:40		06:36 (A27-10)	06:29			07:20		08:12			08:51 (A27-12)	08:08	08:44		
	21:45	28	07:04 (A27-10)	20:50			19:39		18:30	2	08:53 (A27-12)	16:37	16:25			
23	05:42		06:36 (A27-10)	06:31			07:22		08:14			08:09	08:45			
	21:44	29	07:05 (A27-10)	20:48			19:36		18:28			16:36	16:26			
24	05:43		06:36 (A27-10)	06:32			07:24		08:16			08:11	08:45			
	21:43	29	07:05 (A27-10)	20:46			19:34		18:26			16:35	16:26			
25	05:45		06:36 (A27-10)	06:34			07:25		08:17			08:13	08:46			
	21:41	29	07:05 (A27-10)	20:44			19:32		18:24			16:34	16:27			
26	05:46		06:35 (A27-10)	06:36			07:27		08:19			08:14	08:46			
	21:40	29	07:04 (A27-10)	20:41			19:29		18:22			16:33	16:28			
27	05:48		06:36 (A27-10)	06:37			07:29		08:21			08:16	08:46			
	21:38	29	07:05 (A27-10)	20:39			19:27		18:20			16:32	16:28			
28	05:49		06:36 (A27-10)	06:39			07:30		08:23			08:18	08:47			
	21:37	28	07:04 (A27-10)	20:37			19:25		18:18			16:31	16:29			
29	05:51		06:36 (A27-10)	06:41			07:32		08:25			08:19	08:47			
	21:35	28	07:04 (A27-10)	20:35			19:22		18:16			16:30	16:30			
30	05:52		06:37 (A27-10)	06:42			07:34		07:26			08:21	08:47			
	21:34	27	07:04 (A27-10)	20:32			19:20		17:14			16:29	16:31			
31	05:54		06:36 (A27-10)	06:44					07:28				08:47			
	21:32	28	07:04 (A27-10)	20:30					17:12				16:32			
Potential sun hours	505			456			382		332			266	242			
Total, worst case	636			144			301		202							

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

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

SHADOW - Calendar

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 09 - Shadow Receptor: 1,0 x 1,0 Azimuth: 0,0° Slope: 90,0° (639)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47 16:33		08:20 17:21	28	09:14 (A27-12) 09:42 (A27-12)	07:26 18:14		07:15 20:09	06:09 21:01		05:22 21:48	06:34 (A27-10) 07:26 (A27-10)	
2	08:47 16:34		08:19 17:23	27	09:15 (A27-12) 09:42 (A27-12)	07:24 18:15	13	08:10 (A27-11) 08:23 (A27-11)	07:13 20:10		05:21 21:49	06:35 (A27-10) 07:27 (A27-10)	
3	08:47 16:35		08:17 17:25	27	09:15 (A27-12) 09:42 (A27-12)	07:22 18:17	19	08:06 (A27-11) 08:25 (A27-11)	07:10 20:12		05:21 21:50	06:34 (A27-10) 07:27 (A27-10)	
4	08:47 16:36		08:15 17:27	26	09:15 (A27-12) 09:41 (A27-12)	07:20 18:19	24	08:04 (A27-11) 08:28 (A27-11)	07:08 20:14		05:20 21:51	06:34 (A27-10) 07:27 (A27-10)	
5	08:46 16:37		08:14 17:29	25	09:16 (A27-12) 09:41 (A27-12)	07:17 18:21	28	08:02 (A27-11) 08:30 (A27-11)	07:06 20:16		05:19 21:52	06:35 (A27-10) 07:28 (A27-10)	
6	08:46 16:39		08:12 17:30	23	09:17 (A27-12) 09:40 (A27-12)	07:15 18:23	30	08:00 (A27-11) 08:30 (A27-11)	07:03 20:17		05:18 21:53	06:34 (A27-10) 07:27 (A27-10)	
7	08:46 16:40		08:10 17:32	21	09:18 (A27-12) 09:39 (A27-12)	07:13 18:25	32	07:59 (A27-11) 08:31 (A27-11)	07:01 20:19		05:18 21:54	06:35 (A27-10) 07:28 (A27-10)	
8	08:45 16:41		08:09 17:34	19	09:19 (A27-12) 09:38 (A27-12)	07:11 18:26	34	07:58 (A27-11) 08:32 (A27-11)	06:59 20:21		05:17 21:55	06:34 (A27-10) 07:28 (A27-10)	
9	08:45 16:43		08:07 17:36	15	09:21 (A27-12) 09:36 (A27-12)	07:08 18:28	36	07:56 (A27-11) 08:32 (A27-11)	06:56 20:23		05:17 21:56	06:35 (A27-10) 07:29 (A27-10)	
10	08:44 16:44		08:05 17:38		09:24 (A27-12) 09:33 (A27-12)	07:06 18:30		07:56 (A27-11) 08:33 (A27-11)	06:54 20:24		05:16 21:56	06:35 (A27-10) 07:29 (A27-10)	
11	08:44 16:45		08:03 17:40	9		07:04 18:32	37	07:56 (A27-11) 08:33 (A27-11)	06:52 20:26		05:16 21:57	06:35 (A27-10) 07:29 (A27-10)	
12	08:43 16:47		08:01 17:42			07:02 18:34	37	07:54 (A27-11) 08:33 (A27-11)	06:50 20:28	14	06:52 (A27-10) 07:06 (A27-10)	05:15 21:58	06:35 (A27-10) 07:29 (A27-10)
13	08:42 16:48		07:59 17:44			06:59 18:35	39	07:54 (A27-11) 08:33 (A27-11)	06:47 20:29	21	06:49 (A27-10) 07:10 (A27-10)	05:15 21:59	06:35 (A27-10) 07:30 (A27-10)
14	08:42 16:50		07:57 17:46			06:57 18:37	38	07:54 (A27-11) 08:32 (A27-11)	06:45 20:31	25	06:46 (A27-10) 07:11 (A27-10)	05:15 21:59	06:36 (A27-10) 07:30 (A27-10)
15	08:41 16:51		07:55 17:48			06:55 18:39	38	07:54 (A27-11) 08:32 (A27-11)	06:43 20:33	29	06:45 (A27-10) 07:14 (A27-10)	05:15 22:00	06:36 (A27-10) 07:30 (A27-10)
16	08:40 16:53	09:24 (A27-12)	07:54 17:49			06:52 18:41	38	07:54 (A27-11) 08:32 (A27-11)	06:41 20:35	32	06:43 (A27-10) 07:15 (A27-10)	05:14 22:00	06:36 (A27-10) 07:31 (A27-10)
17	08:39 16:55	09:25 (A27-12) 09:29 (A27-12)	07:52 17:51			06:50 18:42	38	07:53 (A27-11) 08:30 (A27-11)	06:38 20:36	32	06:42 (A27-10) 07:16 (A27-10)	05:14 22:01	06:36 (A27-10) 07:31 (A27-10)
18	08:38 16:56	09:22 (A27-12) 09:31 (A27-12)	07:50 17:53			06:48 18:44	37	07:54 (A27-11) 08:30 (A27-11)	06:36 20:38	34	06:41 (A27-10) 07:18 (A27-10)	05:14 22:01	06:37 (A27-10) 07:31 (A27-10)
19	08:37 16:58	09:21 (A27-12) 09:33 (A27-12)	07:48 17:55			06:45 18:46	36	07:55 (A27-11) 08:29 (A27-11)	06:34 20:40	37	06:39 (A27-10) 07:18 (A27-10)	05:14 22:02	06:37 (A27-10) 07:31 (A27-10)
20	08:36 17:00	09:19 (A27-12) 09:34 (A27-12)	07:45 17:57			06:43 18:48	34	07:55 (A27-11) 08:27 (A27-11)	06:32 20:42	39	06:39 (A27-10) 07:19 (A27-10)	05:14 22:02	06:37 (A27-10) 07:31 (A27-10)
21	08:35 17:01	09:18 (A27-12) 09:36 (A27-12)	07:43 17:59			06:41 18:49	32	07:56 (A27-11) 08:26 (A27-11)	06:30 20:43	40	06:38 (A27-10) 07:20 (A27-10)	05:14 22:02	06:37 (A27-10) 07:31 (A27-10)
22	08:34 17:03	09:16 (A27-12) 09:36 (A27-12)	07:41 18:01			06:38 18:51	30	07:56 (A27-11) 08:24 (A27-11)	06:27 20:45	42	06:38 (A27-10) 07:21 (A27-10)	05:15 22:03	06:37 (A27-10) 07:31 (A27-10)
23	08:33 17:05	09:15 (A27-12) 09:38 (A27-12)	07:39 18:03			06:36 18:53	28	07:58 (A27-11) 08:22 (A27-11)	06:25 20:47	43	06:37 (A27-10) 07:22 (A27-10)	05:15 22:03	06:37 (A27-10) 07:31 (A27-10)
24	08:31 17:07	09:14 (A27-12) 09:39 (A27-12)	07:37 18:04			06:34 18:55	24	08:00 (A27-11) 08:20 (A27-11)	06:23 20:49	45	06:37 (A27-10) 07:23 (A27-10)	05:15 22:03	06:38 (A27-10) 07:32 (A27-10)
25	08:30 17:08	09:14 (A27-12) 09:39 (A27-12)	07:35 18:06			06:31 18:56	20	08:03 (A27-11) 08:15 (A27-11)	06:21 20:50	46	06:37 (A27-10) 07:23 (A27-10)	05:15 22:03	06:38 (A27-10) 07:32 (A27-10)
26	08:29 17:10	09:14 (A27-12) 09:41 (A27-12)	07:33 18:08			06:29 18:58	12		06:19 20:52	46	06:36 (A27-10) 07:24 (A27-10)	05:16 22:03	06:37 (A27-10) 07:32 (A27-10)
27	08:28 17:12	09:13 (A27-12) 09:41 (A27-12)	07:31 18:10			07:27 20:00			06:17 20:54	48	06:36 (A27-10) 07:24 (A27-10)	05:16 22:03	06:38 (A27-10) 07:33 (A27-10)
28	08:26 17:14	09:13 (A27-12) 09:41 (A27-12)	07:28 18:12			07:24 20:02			06:15 20:55	48	06:35 (A27-10) 07:25 (A27-10)	05:17 22:03	06:38 (A27-10) 07:33 (A27-10)
29	08:25 17:16	09:14 (A27-12) 09:42 (A27-12)				07:22 20:03			06:13 20:57	50	06:35 (A27-10) 07:25 (A27-10)	05:17 22:03	06:39 (A27-10) 07:33 (A27-10)
30	08:23 17:17	09:14 (A27-12) 09:42 (A27-12)				07:20 20:05			06:11 20:59	50	06:35 (A27-10) 07:25 (A27-10)	05:18 22:03	06:38 (A27-10) 07:33 (A27-10)
31	08:22 17:19	09:13 (A27-12) 09:42 (A27-12)				07:17 20:07			05:23 21:46	50	06:34 (A27-10) 07:26 (A27-10)		
Potential sun hours	256		276			366		416	486	791	501	1618	
Total, worst case	322		220			735							

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

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

SHADOW - Calendar

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 09 - Shadow Receptor: 1,0 x 1,0 Azimuth: 0,0° Slope: 90,0° (639)

Assumptions for shadow calculations

Reference year for calendar

2022

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	05:18	06:39 (A27-10)	05:55	07:01 (A27-10)	06:46	07:36	08:33 (A27-11)	07:30		08:22	
	22:02	54 07:33 (A27-10)	21:31	18 07:19 (A27-10)	20:28	19:18	39 09:12 (A27-11)	17:10		16:28	
2	05:19	06:40 (A27-10)	05:57	07:04 (A27-10)	06:47	07:37	08:33 (A27-11)	07:32		08:53 (A27-12)	08:24
	22:02	54 07:34 (A27-10)	21:29	11 07:15 (A27-10)	20:26	19:15	39 09:12 (A27-11)	17:08	10	09:03 (A27-12)	16:28
3	05:20	06:39 (A27-10)	05:58		06:49	07:39	08:33 (A27-11)	07:34		08:51 (A27-12)	08:25
	22:02	54 07:33 (A27-10)	21:27		20:23	19:13	38 09:11 (A27-11)	17:06	15	09:06 (A27-12)	16:27
4	05:20	06:40 (A27-10)	06:00		06:51	07:41	08:34 (A27-11)	07:36		08:49 (A27-12)	08:26
	22:01	54 07:34 (A27-10)	21:25		20:21	19:11	37 09:11 (A27-11)	17:05	19	09:08 (A27-12)	16:26
5	05:21	06:40 (A27-10)	06:01		06:52	07:42	08:33 (A27-11)	07:37		08:48 (A27-12)	08:28
	22:01	54 07:34 (A27-10)	21:24		20:19	19:08	36 09:09 (A27-11)	17:03	21	09:09 (A27-12)	16:26
6	05:22	06:41 (A27-10)	06:03		06:54	07:44	08:34 (A27-11)	07:39		08:47 (A27-12)	08:29
	22:00	53 07:34 (A27-10)	21:22		20:16	19:06	35 09:09 (A27-11)	17:01	23	09:10 (A27-12)	16:25
7	05:23	06:40 (A27-10)	06:05		06:56	07:46	08:34 (A27-11)	07:41		08:46 (A27-12)	08:30
	22:00	54 07:34 (A27-10)	21:20		20:14	19:04	34 09:08 (A27-11)	16:59	25	09:11 (A27-12)	16:25
8	05:24	06:41 (A27-10)	06:06		06:57	07:47	08:35 (A27-11)	07:43		08:45 (A27-12)	08:32
	21:59	53 07:34 (A27-10)	21:18		20:12	19:01	32 09:07 (A27-11)	16:58	26	09:11 (A27-12)	16:25
9	05:25	06:41 (A27-10)	06:08		06:59	07:49	08:35 (A27-11)	07:45		08:45 (A27-12)	08:33
	21:58	53 07:34 (A27-10)	21:16		20:09	18:59	30 09:05 (A27-11)	16:56	27	09:12 (A27-12)	16:24
10	05:26	06:42 (A27-10)	06:09		07:01	07:51	08:37 (A27-11)	07:47		08:45 (A27-12)	08:34
	21:58	52 07:34 (A27-10)	21:14		20:07	18:57	26 09:03 (A27-11)	16:54	27	09:12 (A27-12)	16:24
11	05:27	06:42 (A27-10)	06:11		07:02	07:53	08:39 (A27-11)	07:48		08:45 (A27-12)	08:35
	21:57	52 07:34 (A27-10)	21:13		20:05	18:54	22 09:01 (A27-11)	16:53	28	09:13 (A27-12)	16:24
12	05:28	06:42 (A27-10)	06:13		07:04	07:54	08:41 (A27-11)	07:50		08:45 (A27-12)	08:36
	21:56	52 07:34 (A27-10)	21:11		20:02	18:52	17 08:58 (A27-11)	16:51	29	09:14 (A27-12)	16:24
13	05:29	06:43 (A27-10)	06:14		07:06	07:56	08:45 (A27-11)	07:52		08:46 (A27-12)	08:37
	21:55	51 07:34 (A27-10)	21:09		20:00	18:50	9 08:54 (A27-11)	16:49	28	09:14 (A27-12)	16:23
14	05:30	06:43 (A27-10)	06:16		07:07	07:58		07:54		08:46 (A27-12)	08:38
	21:54	51 07:34 (A27-10)	21:07		19:58	18:48		16:48	28	09:14 (A27-12)	16:23
15	05:31	06:43 (A27-10)	06:18		07:09	08:00		07:56		08:46 (A27-12)	08:39
	21:53	51 07:34 (A27-10)	21:05		19:55	18:46		16:46	28	09:14 (A27-12)	16:23
16	05:33	06:44 (A27-10)	06:19		07:10	08:01		07:57		08:46 (A27-12)	08:40
	21:52	49 07:33 (A27-10)	21:03		19:53	18:43		16:45	28	09:14 (A27-12)	16:24
17	05:34	06:44 (A27-10)	06:21		07:12	08:03		07:59		08:47 (A27-12)	08:41
	21:51	49 07:33 (A27-10)	21:01		19:51	18:41		16:44	27	09:14 (A27-12)	16:24
18	05:35	06:44 (A27-10)	06:22		07:14	08:05		08:01		08:48 (A27-12)	08:42
	21:50	49 07:33 (A27-10)	20:58		19:48	18:39		16:42	25	09:13 (A27-12)	16:24
19	05:36	06:46 (A27-10)	06:24		07:15	08:07		08:03		08:48 (A27-12)	08:42
	21:49	47 07:33 (A27-10)	20:56	11	19:46	09:02 (A27-11)	18:37	16:41	25	09:13 (A27-12)	16:24
20	05:38	06:46 (A27-10)	06:26		07:17	08:08		08:04		08:50 (A27-12)	08:43
	21:48	47 07:33 (A27-10)	20:54		19:43	09:05 (A27-11)	18:35	16:40	23	09:13 (A27-12)	16:24
21	05:39	06:47 (A27-10)	06:27		07:19	08:10		08:06		08:52 (A27-12)	08:44
	21:47	45 07:32 (A27-10)	20:52		19:41	09:07 (A27-11)	18:32	16:38	20	09:12 (A27-12)	16:25
22	05:40	06:47 (A27-10)	06:29		07:20	08:12		08:08		08:54 (A27-12)	08:44
	21:45	44 07:31 (A27-10)	20:50		19:39	09:09 (A27-11)	18:30	16:37	18	09:12 (A27-12)	16:25
23	05:42	06:49 (A27-10)	06:31		07:22	08:14		08:09		08:55 (A27-12)	08:45
	21:44	42 07:31 (A27-10)	20:48		19:36	09:10 (A27-11)	18:28	16:36	15	09:10 (A27-12)	16:26
24	05:43	06:49 (A27-10)	06:32		07:24	08:16		08:11		08:57 (A27-12)	08:45
	21:43	41 07:30 (A27-10)	20:46		19:34	09:11 (A27-11)	18:26	16:35	13	09:10 (A27-12)	16:26
25	05:45	06:50 (A27-10)	06:34		07:25	08:17		08:13		08:59 (A27-12)	08:46
	21:41	39 07:29 (A27-10)	20:44		19:32	09:11 (A27-11)	18:24	16:34	10	09:09 (A27-12)	16:27
26	05:46	06:50 (A27-10)	06:36		07:27	08:19		08:14		09:01 (A27-12)	08:46
	21:40	38 07:28 (A27-10)	20:41		19:29	09:12 (A27-11)	18:22	16:33	6	09:07 (A27-12)	16:28
27	05:48	06:52 (A27-10)	06:37		07:29	08:21		08:16		09:03 (A27-12)	08:46
	21:38	36 07:28 (A27-10)	20:39		19:27	09:12 (A27-11)	18:20	16:32	2	09:05 (A27-12)	16:28
28	05:49	06:53 (A27-10)	06:39		07:30	08:23		08:17			08:47
	21:37	33 07:26 (A27-10)	20:37		19:25	09:12 (A27-11)	18:18	16:31			16:29
29	05:50	06:54 (A27-10)	06:41		07:32	08:25		08:19			08:47
	21:35	30 07:24 (A27-10)	20:35		19:22	09:13 (A27-11)	18:16	16:30			16:30
30	05:52	06:56 (A27-10)	06:42		07:34	08:26		08:21			08:47
	21:34	27 07:23 (A27-10)	20:32		19:20	09:13 (A27-11)	17:14	16:29			16:31
31	05:54	06:58 (A27-10)	06:44								08:47
	21:32	23 07:21 (A27-10)	20:30								16:32
Potential sun hours	505				382				266		242
Total, worst case	1431		29		358		394		546		

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

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

SHADOW - Calendar

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 10 - Shadow Receptor: 4,0 x 1,5 Azimuth: 0,0° Slope: 90,0° (644)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47 16:33	09:43 (A27-13) 10:11 (A27-13)	08:20 10:17 (A27-13)	09:55 (A27-13) 18:14	07:26 20:09	08:21 (A27-12) 21:01
2	08:47 16:34	09:43 (A27-13) 10:12 (A27-13)	08:19 17:23	09:58 (A27-13) 18:15	07:24 20:10	08:18 (A27-12) 21:02
3	08:47 16:35	09:43 (A27-13) 10:12 (A27-13)	08:17 17:25	10:00 (A27-13) 18:17	07:22 20:12	08:15 (A27-12) 21:04
4	08:47 16:36	09:43 (A27-13) 10:13 (A27-13)	08:15 17:27	10:05 (A27-13) 18:19	07:20 20:14	08:13 (A27-12) 21:06
5	08:46 16:37	09:43 (A27-13) 10:13 (A27-13)	08:14 17:29	10:08 (A27-13) 18:21	07:17 20:16	08:12 (A27-12) 21:07
6	08:46 16:39	09:43 (A27-13) 10:15 (A27-13)	08:12 17:30	18:23	07:15 20:17	08:10 (A27-12) 21:09
7	08:46 16:40	09:43 (A27-13) 10:15 (A27-13)	08:10 17:32	18:25	07:13 20:19	08:09 (A27-12) 21:11
8	08:45 16:41	09:44 (A27-13) 10:16 (A27-13)	08:09 17:34	18:26	07:11 20:21	08:08 (A27-12) 21:12
9	08:45 16:43	09:44 (A27-13) 10:17 (A27-13)	08:07 17:36	18:28	07:08 20:23	08:06 (A27-12) 21:14
10	08:44 16:44	09:44 (A27-13) 10:17 (A27-13)	08:05 17:38	18:30	07:06 20:24	08:06 (A27-12) 21:16
11	08:44 16:45	09:44 (A27-13) 10:17 (A27-13)	08:03 17:40	18:32	07:04 20:26	08:04 (A27-12) 21:17
12	08:43 16:47	09:44 (A27-13) 10:18 (A27-13)	08:01 17:42	18:34	07:01 20:28	08:04 (A27-12) 21:19
13	08:42 16:48	09:44 (A27-13) 10:18 (A27-13)	07:59 17:44	18:35	06:59 20:29	08:04 (A27-12) 21:21
14	08:42 16:50	09:44 (A27-13) 10:19 (A27-13)	07:57 17:46	18:37	06:57 20:31	08:03 (A27-12) 21:22
15	08:41 16:51	09:44 (A27-13) 10:20 (A27-13)	07:55 17:48	18:39	06:55 20:33	08:03 (A27-12) 21:24
16	08:40 16:53	09:45 (A27-13) 10:20 (A27-13)	07:53 17:49	18:41	06:52 20:35	08:03 (A27-12) 21:25
17	08:39 16:55	09:45 (A27-13) 10:21 (A27-13)	07:52 17:51	18:42	06:50 20:36	08:02 (A27-12) 21:27
18	08:38 16:56	09:46 (A27-13) 10:21 (A27-13)	07:50 17:53	18:44	06:48 20:38	08:02 (A27-12) 21:28
19	08:37 16:58	09:46 (A27-13) 10:22 (A27-13)	07:47 17:55	18:45	06:45 20:40	08:03 (A27-12) 21:30
20	08:36 17:00	09:46 (A27-13) 10:21 (A27-13)	07:45 17:57	18:46	06:43 20:42	08:02 (A27-12) 21:31
21	08:35 17:01	09:46 (A27-13) 10:22 (A27-13)	07:43 17:59	18:48	06:41 20:43	08:03 (A27-12) 21:33
22	08:34 17:03	09:46 (A27-13) 10:22 (A27-13)	07:41 18:01	18:49	06:38 20:45	08:04 (A27-12) 21:34
23	08:33 17:05	09:47 (A27-13) 10:22 (A27-13)	07:39 18:03	18:51	06:36 20:47	08:03 (A27-12) 21:36
24	08:31 17:07	09:48 (A27-13) 10:22 (A27-13)	07:37 18:04	18:53	06:34 20:48	08:04 (A27-12) 21:37
25	08:30 17:08	09:48 (A27-13) 10:22 (A27-13)	07:35 18:06	18:55	06:31 20:50	08:05 (A27-12) 21:39
26	08:29 17:10	09:49 (A27-13) 10:21 (A27-13)	07:33 18:08	18:56	06:29 20:52	08:06 (A27-12) 21:40
27	08:27 17:12	09:50 (A27-13) 10:22 (A27-13)	07:31 18:10	18:58	06:27 20:54	08:40 (A27-12) 21:41
28	08:26 17:14	09:50 (A27-13) 10:21 (A27-13)	07:28 18:12	19:00	06:25 20:56	09:08 (A27-12) 21:43
29	08:25 17:16	09:52 (A27-13) 10:21 (A27-13)	07:26 18:03	19:02	06:23 20:57	09:35 (A27-12) 21:44
30	08:23 17:17	09:53 (A27-13) 10:20 (A27-13)	07:25 18:05	19:04	06:21 20:59	09:11 (A27-12) 21:45
31	08:22 17:19	09:54 (A27-13) 10:18 (A27-13)	07:24 18:07	19:06	06:19 20:59	09:32 (A27-12) 21:46
Potential sun hours	256	276	366	416	486	501
Total, worst case	1007	68	1177			463

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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 10 - Shadow Receptor: 4,0 x 1,5 Azimuth: 0,0° Slope: 90,0° (644)

Assumptions for shadow calculations

Reference year for calendar

2022

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	05:18	06:33 (A27-11)	05:55	06:46		07:35	08:43 (A27-12)	07:30		08:22	09:26 (A27-13)
	22:02	18 06:51 (A27-11)	21:31	20:28		19:18	48 09:31 (A27-12)	17:10		16:28	34 10:00 (A27-13)
2	05:19	06:34 (A27-11)	05:57	06:47		07:37	08:43 (A27-12)	07:32		08:23	09:26 (A27-13)
	22:02	16 06:50 (A27-11)	21:29	20:26		19:15	48 09:31 (A27-12)	17:08		16:28	34 10:00 (A27-13)
3	05:20	06:35 (A27-11)	05:58	06:49		07:39	08:43 (A27-12)	07:34		08:25	09:27 (A27-13)
	22:02	13 06:48 (A27-11)	21:27	20:23		19:13	48 09:31 (A27-12)	17:06		16:27	33 10:00 (A27-13)
4	05:20	06:38 (A27-11)	06:00	06:51		07:41	08:42 (A27-12)	07:36		08:26	09:28 (A27-13)
	22:01	9 06:47 (A27-11)	21:25	20:21		19:11	47 09:29 (A27-12)	17:05		16:26	33 10:01 (A27-13)
5	05:21		06:01	06:52		07:42	08:43 (A27-12)	07:37		08:28	09:28 (A27-13)
	22:01		21:24	20:19		19:08	46 09:29 (A27-12)	17:03		16:26	32 10:00 (A27-13)
6	05:22		06:03	06:54		07:44	08:44 (A27-12)	07:39		08:29	09:29 (A27-13)
	22:00		21:22	20:16		19:06	44 09:28 (A27-12)	17:01		16:25	32 10:01 (A27-13)
7	05:23		06:05	06:56		07:46	08:44 (A27-12)	07:41		08:30	09:29 (A27-13)
	22:00		21:20	20:14		19:04	43 09:27 (A27-12)	16:59		16:25	32 10:01 (A27-13)
8	05:24		06:06	06:57		07:47	08:45 (A27-12)	07:43		08:32	09:30 (A27-13)
	21:59		21:18	20:12		19:01	41 09:26 (A27-12)	16:58	5 09:39 (A27-13)	16:25	30 10:00 (A27-13)
9	05:25		06:08	06:59		07:49	08:45 (A27-12)	07:45		08:33	09:31 (A27-13)
	21:58		21:16	20:09		18:59	39 09:24 (A27-12)	16:56	13 09:43 (A27-13)	16:24	30 10:01 (A27-13)
10	05:26		06:09	07:01		07:51	08:47 (A27-12)	07:46		08:34	09:32 (A27-13)
	21:58		21:14	20:07		18:57	35 09:22 (A27-12)	16:54	19 09:46 (A27-13)	16:24	29 10:01 (A27-13)
11	05:27		06:11	07:02		07:53	08:48 (A27-12)	07:48		08:35	09:32 (A27-13)
	21:57		21:12	20:05		18:54	33 09:21 (A27-12)	16:53	22 09:48 (A27-13)	16:24	29 10:01 (A27-13)
12	05:28		06:13	07:04		07:54	08:50 (A27-12)	07:50		08:36	09:33 (A27-13)
	21:56		21:11	20:02		18:52	29 09:19 (A27-12)	16:51	24 09:50 (A27-13)	16:24	28 10:01 (A27-13)
13	05:29		06:14	07:05		07:56	08:53 (A27-12)	07:52		08:37	09:33 (A27-13)
	21:55		21:09	20:00		18:50	23 09:16 (A27-12)	16:49	27 09:52 (A27-13)	16:24	28 10:01 (A27-13)
14	05:30		06:16	07:07	9 09:07 (A27-12)	07:58	08:56 (A27-12)	07:54		08:38	09:35 (A27-13)
	21:54		21:07	19:58	9 09:16 (A27-12)	18:48	17 09:13 (A27-12)	16:48	29 09:53 (A27-13)	16:23	27 10:02 (A27-13)
15	05:31		06:18	07:09		08:00	09:01 (A27-12)	07:55		08:39	09:36 (A27-13)
	21:53		21:05	19:55	19 09:21 (A27-12)	18:45	5 09:06 (A27-12)	16:46	31 09:54 (A27-13)	16:23	27 10:03 (A27-13)
16	05:33		06:19	07:10		08:01		07:57		08:40	09:35 (A27-13)
	21:52		21:03	19:53	24 09:23 (A27-12)	18:43		16:45	32 09:55 (A27-13)	16:24	27 10:02 (A27-13)
17	05:34		06:21	07:12		08:03		07:59		08:41	09:36 (A27-13)
	21:51		21:01	19:51	30 09:26 (A27-12)	18:41		16:44	32 09:55 (A27-13)	16:24	26 10:02 (A27-13)
18	05:35		06:22	07:14		08:05		08:01		08:42	09:37 (A27-13)
	21:50		20:58	19:48	33 09:27 (A27-12)	18:39		16:42	34 09:56 (A27-13)	16:24	26 10:03 (A27-13)
19	05:36		06:24	07:15		08:07		08:03		08:42	09:38 (A27-13)
	21:49		20:56	19:46	37 09:29 (A27-12)	18:37		16:41	35 09:57 (A27-13)	16:24	26 10:04 (A27-13)
20	05:38		06:26	07:17		08:08		08:04		08:43	09:38 (A27-13)
	21:48		20:54	19:43	39 09:30 (A27-12)	18:35		16:40	35 09:57 (A27-13)	16:24	25 10:03 (A27-13)
21	05:39		06:27	07:19		08:10		08:06		08:44	09:39 (A27-13)
	21:47		20:52	19:41	41 09:30 (A27-12)	18:32		16:38	36 09:58 (A27-13)	16:25	25 10:04 (A27-13)
22	05:40		06:29	07:20		08:12		08:08		08:44	09:40 (A27-13)
	21:45		20:50	19:39	43 09:31 (A27-12)	18:30		16:37	35 09:58 (A27-13)	16:25	25 10:05 (A27-13)
23	05:42		06:31	07:22		08:14		08:09		08:45	09:40 (A27-13)
	21:44		20:48	19:36	44 09:32 (A27-12)	18:28		16:36	36 09:58 (A27-13)	16:26	25 10:05 (A27-13)
24	05:43		06:32	07:24		08:16		08:11		08:45	09:40 (A27-13)
	21:43		20:46	19:34	46 09:32 (A27-12)	18:26		16:35	36 09:58 (A27-13)	16:26	25 10:05 (A27-13)
25	05:45		06:34	07:25		08:17		08:13		08:46	09:41 (A27-13)
	21:41		20:43	19:32	48 09:33 (A27-12)	18:24		16:34	35 09:58 (A27-13)	16:27	25 10:06 (A27-13)
26	05:46		06:36	07:27		08:19		08:14		08:46	09:41 (A27-13)
	21:40		20:41	19:29	48 09:33 (A27-12)	18:22		16:33	36 09:59 (A27-13)	16:28	26 10:07 (A27-13)
27	05:48		06:37	07:29		08:21		08:16		08:46	09:41 (A27-13)
	21:38		20:39	19:27	48 09:32 (A27-12)	18:20		16:32	35 09:59 (A27-13)	16:28	26 10:07 (A27-13)
28	05:49		06:39	07:30		08:23		08:17		08:47	09:41 (A27-13)
	21:37		20:37	19:25	49 09:33 (A27-12)	18:18		16:31	36 10:00 (A27-13)	16:29	27 10:08 (A27-13)
29	05:50		06:41	07:32		08:25		08:19		08:47	09:42 (A27-13)
	21:35		20:35	19:22	50 09:33 (A27-12)	18:16		16:30	35 09:59 (A27-13)	16:30	26 10:08 (A27-13)
30	05:52		06:42	07:34		07:26		08:21		08:47	09:42 (A27-13)
	21:34		20:32	19:20	50 09:33 (A27-12)	17:14		16:29	35 10:00 (A27-13)	16:31	27 10:09 (A27-13)
31	05:54		06:44			07:28				08:47	09:42 (A27-13)
	21:32		20:30			17:12				16:32	28 10:10 (A27-13)
Potential sun hours	505		456		382		332		266	693	873
Total, worst case	56				658		546				

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

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

SHADOW - Calendar

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 11 - Shadow Receptor: 5,0 x 2,0 Azimuth: 0,0° Slope: 90,0° (645)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47	09:37 (A27-14)	08:20	07:26	08:27 (A27-13)	07:15	07:52 (A27-12)	06:09	05:22		
	16:33	26 10:03 (A27-14)	17:21	18:14	26 08:53 (A27-13)	20:09	21 08:13 (A27-12)	21:01	21:47		
2	08:47	09:38 (A27-14)	08:19	07:24	08:29 (A27-13)	07:13	07:50 (A27-12)	06:07	05:21		
	16:34	26 10:04 (A27-14)	17:23	18:15	23 08:52 (A27-13)	20:10	25 08:15 (A27-12)	21:02	21:49		
3	08:47	09:38 (A27-14)	08:17	07:22	08:29 (A27-13)	07:10	07:48 (A27-12)	06:05	05:21		06:07 (A27-11)
	16:35	26 10:04 (A27-14)	17:25	18:17	20 08:49 (A27-13)	20:12	27 08:15 (A27-12)	21:04	21:50	8	06:15 (A27-11)
4	08:47	09:38 (A27-14)	08:15	07:20	08:32 (A27-13)	07:08	07:47 (A27-12)	06:03	05:20		06:05 (A27-11)
	16:36	27 10:05 (A27-14)	17:27	18:19	15 08:47 (A27-13)	20:14	29 08:16 (A27-12)	21:06	21:51	12	06:17 (A27-11)
5	08:46	09:38 (A27-14)	08:14	07:17	08:35 (A27-13)	07:06	07:46 (A27-12)	06:01	05:19		06:05 (A27-11)
	16:38	27 10:05 (A27-14)	17:29	18:21	8 08:43 (A27-13)	20:16	31 08:17 (A27-12)	21:07	21:52	14	06:19 (A27-11)
6	08:46	09:39 (A27-14)	08:12	07:15		07:03	07:44 (A27-12)	05:59	05:18		06:03 (A27-11)
	16:39	27 10:06 (A27-14)	17:31	18:23		20:17	32 08:16 (A27-12)	21:09	21:53	16	06:19 (A27-11)
7	08:46	09:39 (A27-14)	08:10	07:13		07:01	07:44 (A27-12)	05:58	05:18		06:03 (A27-11)
	16:40	27 10:06 (A27-14)	17:32	18:25		20:19	33 08:17 (A27-12)	21:11	21:54	18	06:21 (A27-11)
8	08:45	09:40 (A27-14)	08:09	07:11		06:59	07:43 (A27-12)	05:56	05:17		06:02 (A27-11)
	16:41	27 10:07 (A27-14)	17:34	18:26		20:21	34 08:17 (A27-12)	21:12	21:55	19	06:21 (A27-11)
9	08:45	09:40 (A27-14)	08:07	07:08		06:56	07:43 (A27-12)	05:54	05:17		06:02 (A27-11)
	16:43	27 10:07 (A27-14)	17:36	18:28		20:23	34 08:17 (A27-12)	21:14	21:56	20	06:22 (A27-11)
10	08:44	09:41 (A27-14)	08:05	07:06		06:54	07:42 (A27-12)	05:52	05:16		06:02 (A27-11)
	16:44	26 10:07 (A27-14)	17:38	18:30		20:24	34 08:16 (A27-12)	21:16	21:56	21	06:23 (A27-11)
11	08:44	09:41 (A27-14)	08:03	07:04		06:52	07:42 (A27-12)	05:50	05:16		06:01 (A27-11)
	16:45	26 10:07 (A27-14)	17:40	18:32		20:26	34 08:16 (A27-12)	21:17	21:57	22	06:23 (A27-11)
12	08:43	09:41 (A27-14)	08:01	07:02		06:50	07:42 (A27-12)	05:49	05:15		06:01 (A27-11)
	16:47	26 10:07 (A27-14)	17:42	18:34		20:28	34 08:16 (A27-12)	21:19	21:58	23	06:24 (A27-11)
13	08:42	09:42 (A27-14)	07:59	06:59	08:39 (A27-13)	06:47	07:42 (A27-12)	05:47	05:15		06:01 (A27-11)
	16:48	25 10:07 (A27-14)	17:44	18:35	6 08:45 (A27-13)	20:29	33 08:15 (A27-12)	21:21	21:59	24	06:25 (A27-11)
14	08:42	09:43 (A27-14)	07:57	06:57	08:35 (A27-13)	06:45	07:42 (A27-12)	05:45	05:15		06:01 (A27-11)
	16:50	25 10:08 (A27-14)	17:46	18:37	14 08:49 (A27-13)	20:31	32 08:14 (A27-12)	21:22	21:59	24	06:25 (A27-11)
15	08:41	09:43 (A27-14)	07:55	06:55	08:33 (A27-13)	06:43	07:43 (A27-12)	05:44	05:15		06:01 (A27-11)
	16:51	25 10:08 (A27-14)	17:48	18:39	18 08:51 (A27-13)	20:33	31 08:14 (A27-12)	21:24	22:00	25	06:26 (A27-11)
16	08:40	09:44 (A27-14)	07:54	06:52	08:31 (A27-13)	06:41	07:43 (A27-12)	05:42	05:14		06:01 (A27-11)
	16:53	24 10:08 (A27-14)	17:49	18:41	22 08:53 (A27-13)	20:35	29 08:12 (A27-12)	21:25	22:00	25	06:26 (A27-11)
17	08:39	09:45 (A27-14)	07:52	06:50	08:30 (A27-13)	06:38	07:44 (A27-12)	05:41	05:14		06:01 (A27-11)
	16:55	23 10:08 (A27-14)	17:51	18:42	24 08:54 (A27-13)	20:36	26 08:10 (A27-12)	21:27	22:01	26	06:27 (A27-11)
18	08:38	09:46 (A27-14)	07:50	06:48	08:28 (A27-13)	06:36	07:45 (A27-12)	05:39	05:14		06:01 (A27-11)
	16:56	22 10:08 (A27-14)	17:53	18:44	26 08:54 (A27-13)	20:38	24 08:09 (A27-12)	21:28	22:01	26	06:27 (A27-11)
19	08:37	09:47 (A27-14)	07:47	06:45	08:27 (A27-13)	06:34	07:46 (A27-12)	05:38	05:14		06:02 (A27-11)
	16:58	21 10:08 (A27-14)	17:55	18:46	28 08:55 (A27-13)	20:40	21 08:07 (A27-12)	21:30	22:02	25	06:27 (A27-11)
20	08:36	09:48 (A27-14)	07:45	06:43	08:27 (A27-13)	06:32	07:48 (A27-12)	05:36	05:14		06:02 (A27-11)
	17:00	18 10:06 (A27-14)	17:57	18:48	29 08:56 (A27-13)	20:42	16 08:04 (A27-12)	21:31	22:02	25	06:27 (A27-11)
21	08:35	09:49 (A27-14)	07:43	06:41	08:26 (A27-13)	06:30	07:51 (A27-12)	05:35	05:14		06:02 (A27-11)
	17:01	17 10:06 (A27-14)	17:59	18:49	30 08:56 (A27-13)	20:43	10 08:01 (A27-12)	21:33	22:02	26	06:28 (A27-11)
22	08:34	09:50 (A27-14)	07:41	06:38	08:26 (A27-13)	06:28		05:34	05:15		06:02 (A27-11)
	17:03	14 10:04 (A27-14)	18:01	18:51	31 08:57 (A27-13)	20:45		21:34	22:03	26	06:28 (A27-11)
23	08:33	09:53 (A27-14)	07:39	06:36	08:25 (A27-13)	06:25		05:32	05:15		06:02 (A27-11)
	17:05	10 10:03 (A27-14)	18:03	18:53	31 08:56 (A27-13)	20:47		21:36	22:03	25	06:27 (A27-11)
24	08:31		07:37	06:34	08:25 (A27-13)	06:23		05:31	05:15		06:03 (A27-11)
	17:07		18:04	18:55	31 08:56 (A27-13)	20:49		21:37	22:03	25	06:28 (A27-11)
25	08:30		07:35	06:31	08:26 (A27-13)	06:21		05:30	05:15		06:02 (A27-11)
	17:08		18:06	18:56	30 08:56 (A27-13)	20:50		21:39	22:03	26	06:28 (A27-11)
26	08:29		07:33	06:29	08:26 (A27-13)	06:19		05:29	05:16		06:02 (A27-11)
	17:10		18:08	18:58	30 08:56 (A27-13)	20:52		21:40	22:03	26	06:28 (A27-11)
27	08:27		07:31	07:27	08:26 (A27-13)	06:17		05:27	05:16		06:03 (A27-11)
	17:12		18:10	20:00	28 08:54 (A27-13)	20:54		21:41	22:03	26	06:29 (A27-11)
28	08:26		07:28	07:24	08:26 (A27-13)	06:15		05:26	05:17		06:03 (A27-11)
	17:14		18:12	20:02	28 08:54 (A27-13)	20:55		21:43	22:03	25	06:28 (A27-11)
29	08:25			07:22		06:13		05:25	05:17		06:04 (A27-11)
	17:16			20:03		20:57		21:44	22:03	25	06:29 (A27-11)
30	08:23			07:20		06:11		05:24	05:18		06:04 (A27-11)
	17:17			20:05	7 08:07 (A27-12)	20:59		21:45	22:03	24	06:28 (A27-11)
31	08:22			07:17				05:23			
	17:19			20:07	15 08:10 (A27-12)			21:46			
Potential sun hours	256			366		416		486		501	627
Total, worst case	542		406	114		590					

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

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

SHADOW - Calendar

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 11 - Shadow Receptor: 5,0 × 2,0 Azimuth: 0,0° Slope: 90,0° (645)

Assumptions for shadow calculations

Reference year for calendar

2022

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	05:18	06:05 (A27-11)	05:55			06:46		07:41 (A27-12)	07:36			07:30			08:22		09:24 (A27-14)
	22:02	23	06:28 (A27-11)	21:31		20:28	34	08:15 (A27-12)	19:18			17:10			16:28	25	09:49 (A27-14)
2	05:19	06:06 (A27-11)	05:57			06:47		07:41 (A27-12)	07:37			07:32			08:24		09:23 (A27-14)
	22:02	23	06:29 (A27-11)	21:29		20:26	34	08:15 (A27-12)	19:15			17:08			16:28	26	09:49 (A27-14)
3	05:20	06:06 (A27-11)	05:58			06:49		07:41 (A27-12)	07:39			07:34			08:25		09:24 (A27-14)
	22:02	22	06:28 (A27-11)	21:27		20:23	34	08:15 (A27-12)	19:13			17:07			16:27	26	09:50 (A27-14)
4	05:21	06:07 (A27-11)	06:00			06:51		07:40 (A27-12)	07:41			07:36			08:26		09:25 (A27-14)
	22:01	21	06:28 (A27-11)	21:25		20:21	34	08:14 (A27-12)	19:11			17:05			16:26	26	09:51 (A27-14)
5	05:21	06:08 (A27-11)	06:01			06:52		07:40 (A27-12)	07:42			07:37			08:28		09:24 (A27-14)
	22:01	20	06:28 (A27-11)	21:24		20:19	34	08:14 (A27-12)	19:08			17:03			16:26	27	09:51 (A27-14)
6	05:22	06:09 (A27-11)	06:03			06:54		07:40 (A27-12)	07:44			07:39			08:29		09:25 (A27-14)
	22:00	18	06:27 (A27-11)	21:22		20:16	33	08:13 (A27-12)	19:06			17:01			16:25	27	09:52 (A27-14)
7	05:23	06:09 (A27-11)	06:05			06:56		07:40 (A27-12)	07:46			07:41			08:30		09:25 (A27-14)
	22:00	17	06:26 (A27-11)	21:20		20:14	33	08:13 (A27-12)	19:04			16:59			16:25	27	09:52 (A27-14)
8	05:24	06:10 (A27-11)	06:06			06:57		07:40 (A27-12)	07:47			07:43			08:32		09:25 (A27-14)
	21:59	15	06:25 (A27-11)	21:18		20:12	31	08:11 (A27-12)	19:01			16:58			16:25	27	09:52 (A27-14)
9	05:25	06:12 (A27-11)	06:08			06:59		07:41 (A27-12)	07:49			07:45			08:33		09:27 (A27-14)
	21:58	12	06:24 (A27-11)	21:16		20:09	29	08:10 (A27-12)	18:59			16:56			16:24	26	09:53 (A27-14)
10	05:26	06:14 (A27-11)	06:09			07:01		07:42 (A27-12)	07:51	09:07 (A27-13)		07:46			08:34		09:27 (A27-14)
	21:58	9	06:23 (A27-11)	21:14		20:07	27	08:09 (A27-12)	18:57	12	09:19 (A27-13)	16:54			16:24	26	09:53 (A27-14)
11	05:27	06:17 (A27-11)	06:11			07:02		07:42 (A27-12)	07:53		09:05 (A27-13)	07:48			08:35		09:27 (A27-14)
	21:57	4	06:21 (A27-11)	21:13		20:05	25	08:07 (A27-12)	18:54	17	09:22 (A27-13)	16:53			16:24	26	09:53 (A27-14)
12	05:28		06:13			07:04		07:44 (A27-12)	07:54		09:03 (A27-13)	07:50			08:36		09:27 (A27-14)
	21:56		21:11			20:02	21	08:05 (A27-12)	18:52	21	09:24 (A27-13)	16:51			16:24	26	09:53 (A27-14)
13	05:29		06:14			07:06		07:46 (A27-12)	07:56		09:01 (A27-13)	07:52			08:37		09:28 (A27-14)
	21:55		21:09			20:00	16	08:02 (A27-12)	18:50	24	09:25 (A27-13)	16:49			16:24	26	09:54 (A27-14)
14	05:30		06:16			07:07		07:49 (A27-12)	07:58		09:00 (A27-13)	07:54			08:38		09:29 (A27-14)
	21:54		21:07			19:58	10	07:59 (A27-12)	18:48	26	09:26 (A27-13)	16:48			16:24	26	09:55 (A27-14)
15	05:31		06:18			07:09			08:00		08:58 (A27-13)	07:55			08:39		09:30 (A27-14)
	21:53		21:05			19:55			18:46	28	09:26 (A27-13)	16:46			16:24	25	09:55 (A27-14)
16	05:33		06:19			07:10			08:01		08:58 (A27-13)	07:57			08:40		09:29 (A27-14)
	21:52		21:03			19:53			18:43	29	09:27 (A27-13)	16:45			16:24	26	09:55 (A27-14)
17	05:34		06:21			07:12			08:03		08:57 (A27-13)	07:59			08:41		09:30 (A27-14)
	21:51		21:01			19:51			18:41	30	09:27 (A27-13)	16:44			16:24	25	09:55 (A27-14)
18	05:35		06:23			07:14			08:05		08:57 (A27-13)	08:01			08:42		09:31 (A27-14)
	21:50		20:58			19:48			18:39	30	09:27 (A27-13)	16:42			16:24	25	09:56 (A27-14)
19	05:36		06:24			07:15			08:07		08:57 (A27-13)	08:03			08:42		09:32 (A27-14)
	21:49		20:56			19:46			18:37	30	09:27 (A27-13)	16:41			16:24	25	09:57 (A27-14)
20	05:38		06:26			07:17			08:08		08:57 (A27-13)	08:04			08:43		09:32 (A27-14)
	21:48		20:54			19:43			18:35	30	09:27 (A27-13)	16:40	10	09:28 (A27-14)	16:25	24	09:56 (A27-14)
21	05:39		06:27			07:19			08:10		08:57 (A27-13)	08:06			09:27 (A27-14)		09:33 (A27-14)
	21:47		20:52			19:41			18:32	30	09:27 (A27-13)	16:38	13	09:40 (A27-14)	16:25	24	09:57 (A27-14)
22	05:40		06:29			07:20			08:12		08:57 (A27-13)	08:08			09:26 (A27-14)		09:34 (A27-14)
	21:45		20:50			19:39			18:30	30	09:27 (A27-13)	16:37	16	09:42 (A27-14)	16:25	24	09:58 (A27-14)
23	05:42		06:31	07:54 (A27-12)	07:22				08:14		08:57 (A27-13)	08:09			09:24 (A27-14)		09:34 (A27-14)
	21:44		20:48	11	08:05 (A27-12)	19:36			18:28	29	09:26 (A27-13)	16:36	18	09:42 (A27-14)	16:26	24	09:58 (A27-14)
24	05:43		06:32	07:51 (A27-12)	07:24				08:16		08:58 (A27-13)	08:11			09:23 (A27-14)		09:34 (A27-14)
	21:43		20:46	18	08:09 (A27-12)	19:34			18:26	27	09:25 (A27-13)	16:35	21	09:44 (A27-14)	16:26	24	09:58 (A27-14)
25	05:45		06:34	07:50 (A27-12)	07:25				08:17		08:59 (A27-13)	08:13			09:23 (A27-14)		09:35 (A27-14)
	21:41		20:43	21	08:11 (A27-12)	19:32			18:24	25	09:24 (A27-13)	16:34	22	09:45 (A27-14)	16:27	24	09:59 (A27-14)
26	05:46		06:36	07:47 (A27-12)	07:27				08:19		09:00 (A27-13)	08:14			09:23 (A27-14)		09:35 (A27-14)
	21:40		20:41	25	08:12 (A27-12)	19:29			18:22	23	09:23 (A27-13)	16:33	23	09:46 (A27-14)	16:28	25	10:00 (A27-14)
27	05:48		06:37	07:46 (A27-12)	07:29				08:21		09:01 (A27-13)	08:16			09:23 (A27-14)		09:35 (A27-14)
	21:38		20:39	27	08:13 (A27-12)	19:27			18:20	21	09:22 (A27-13)	16:32	24	09:47 (A27-14)	16:28	25	10:00 (A27-14)
28	05:49		06:39	07:45 (A27-12)	07:30				08:23		09:03 (A27-13)	08:17			09:23 (A27-14)		09:35 (A27-14)
	21:37		20:37	28	08:13 (A27-12)	19:25			18:18	17	09:20 (A27-13)	16:31	25	09:48 (A27-14)	16:29	26	10:01 (A27-14)
29	05:51		06:41	07:44 (A27-12)	07:32				08:25		09:05 (A27-13)	08:19			09:23 (A27-14)		09:36 (A27-14)
	21:35		20:35	30	08:14 (A27-12)	19:22			18:16	13	09:18 (A27-13)	16:30	25	09:48 (A27-14)	16:30	25	10:01 (A27-14)
30	05:52		06:42	07:42 (A27-12)	07:34				07:26		08:10 (A27-13)	08:21			09:23 (A27-14)		09:36 (A27-14)
	21:34		20:32	32	08:14 (A27-12)	19:20			17:14	3	08:13 (A27-13)	16:29	26	09:49 (A27-14)	16:31	26	10:02 (A27-14)
31	05:54		06:44	07:42 (A27-12)					07:28						08:47		09:37 (A27-14)
	21:32		20:30	33	08:15 (A27-12)				17:12						16:32	25	10:02 (A27-14)
Potential sun hours	505		456			382			332			266			242		
Total, worst case	184		225			395			495			223			789		

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

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

SHADOW - Calendar

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 12 - Shadow Receptor: 4,5 x 1,5 Azimuth: 0,0° Slope: 90,0° (640)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47		08:20		07:26	08:14 (A27-14)	07:15	07:56 (A27-13)	06:09	05:22		
	16:33		17:21		18:14	18	08:32 (A27-14)	20:09	19	08:15 (A27-13)	21:01	21:47
2	08:47		08:19		07:24	08:15 (A27-14)	07:13	07:57 (A27-13)	06:07	05:22		
	16:34		17:23		18:16	16	08:31 (A27-14)	20:10	17	08:14 (A27-13)	21:02	21:49
3	08:47		08:17		07:22	08:16 (A27-14)	07:10	07:57 (A27-13)	06:05	05:21		
	16:35		17:25		18:17	12	08:28 (A27-14)	20:12	16	08:13 (A27-13)	21:04	21:50
4	08:47		08:15		07:20	08:20 (A27-14)	07:08	07:59 (A27-13)	06:03	05:20		
	16:36		17:27		18:19	5	08:25 (A27-14)	20:14	13	08:12 (A27-13)	21:06	21:51
5	08:46		08:14		07:17		07:06	08:00 (A27-13)	06:01	05:19		
	16:38		17:29		18:21		20:16	10	08:10 (A27-13)	21:07	21:52	
6	08:46		08:12		07:15		07:03	08:00 (A27-13)	05:59	05:18		
	16:39		17:31		18:23		20:17	6	08:06 (A27-13)	21:09	21:53	
7	08:46		08:10		07:13		07:01		05:58	05:18		
	16:40		17:32		18:25		20:19		21:11	21:54		
8	08:45		08:09		07:11		06:59		05:56	05:17		
	16:41		17:34		18:26		20:21		21:12	21:55		
9	08:45		08:07		07:08		06:56		05:54	05:17		
	16:43		17:36		18:28		20:23		21:14	21:56		
10	08:44	09:30 (A27-15)	08:05		07:06		06:54		05:52	05:16		
	16:44	2 09:32 (A27-15)	17:38		18:30		20:24		21:16	21:56		
11	08:44	09:29 (A27-15)	08:03		07:04		06:52		05:51	05:16		
	16:46	4 09:33 (A27-15)	17:40		18:32		20:26		21:17	21:57		
12	08:43	09:28 (A27-15)	08:01		07:02		06:50		05:49	05:15		
	16:47	6 09:34 (A27-15)	17:42		18:34		20:28		21:19	21:58		
13	08:42	09:27 (A27-15)	07:59		06:59		06:47		05:47	05:15		
	16:48	8 09:35 (A27-15)	17:44		18:35		20:29		21:21	21:59		
14	08:42	09:26 (A27-15)	07:57		06:57		06:45		05:46	05:15		
	16:50	10 09:36 (A27-15)	17:46		18:37		20:31		21:22	21:59		
15	08:41	09:25 (A27-15)	07:55		06:55		06:43		05:44	05:15		
	16:52	12 09:37 (A27-15)	17:48		18:39		20:33		21:24	22:00		
16	08:40	09:24 (A27-15)	07:54		06:52		06:41		05:42	05:15		
	16:53	14 09:38 (A27-15)	17:49		18:41		20:35		21:25	22:00		
17	08:39	09:23 (A27-15)	07:52		06:50		06:38		05:41	05:14		
	16:55	16 09:39 (A27-15)	17:51		18:42		20:36		21:27	22:01		
18	08:38	09:22 (A27-15)	07:50	08:27 (A27-14)	06:48		06:36		05:39	05:14		
	16:56	17 09:39 (A27-15)	17:53	3 08:30 (A27-14)	18:44		20:38		21:28	22:01		
19	08:37	09:21 (A27-15)	07:48	08:24 (A27-14)	06:45		06:34		05:38	05:14		
	16:58	19 09:40 (A27-15)	17:55	7 08:31 (A27-14)	18:46		20:40		21:30	22:02		
20	08:36	09:19 (A27-15)	07:45	08:22 (A27-14)	06:43		06:32		05:36	05:14		
	17:00	21 09:40 (A27-15)	17:57	11 08:33 (A27-14)	18:48		20:42		21:31	22:02		
21	08:35	09:18 (A27-15)	07:43	08:20 (A27-14)	06:41		06:30		05:35	05:15		
	17:01	23 09:41 (A27-15)	17:59	14 08:34 (A27-14)	18:49		20:43		21:33	22:02		
22	08:34	09:18 (A27-15)	07:41	08:18 (A27-14)	06:38		06:28		05:34	05:15		
	17:03	22 09:40 (A27-15)	18:01	17 08:35 (A27-14)	18:51		20:45		21:34	22:03		
23	08:33	09:19 (A27-15)	07:39	08:16 (A27-14)	06:36		06:25		05:32	05:15		
	17:05	22 09:41 (A27-15)	18:03	19 08:35 (A27-14)	18:53		20:47		21:36	22:03		
24	08:31	09:20 (A27-15)	07:37	08:13 (A27-14)	06:34	07:08 (A27-13)	06:23		05:31	05:15		
	17:07	21 09:41 (A27-15)	18:04	22 08:35 (A27-14)	18:55	4 07:12 (A27-13)	20:49		21:37	22:03		
25	08:30	09:20 (A27-15)	07:35	08:12 (A27-14)	06:31	07:05 (A27-13)	06:21		05:30	05:15		
	17:08	21 09:41 (A27-15)	18:06	23 08:35 (A27-14)	18:56	9 07:14 (A27-13)	20:50		21:39	22:03		
26	08:29	09:20 (A27-15)	07:33	08:12 (A27-14)	06:29	07:03 (A27-13)	06:19		05:29	05:16		
	17:10	20 09:40 (A27-15)	18:08	23 08:35 (A27-14)	18:58	12 07:15 (A27-13)	20:52		21:40	22:03		
27	08:27	09:21 (A27-15)	07:31	08:12 (A27-14)	07:27	08:01 (A27-13)	06:17		05:27	05:16		
	17:12	19 09:40 (A27-15)	18:10	22 08:34 (A27-14)	20:00	15 08:16 (A27-13)	20:54		21:41	22:03		
28	08:26	09:22 (A27-15)	07:29	08:13 (A27-14)	07:24	07:58 (A27-13)	06:15		05:26	05:17		
	17:14	17 09:39 (A27-15)	18:12	20 08:33 (A27-14)	20:02	18 08:16 (A27-13)	20:55		21:43	22:03		
29	08:25	09:24 (A27-15)			07:22	07:56 (A27-13)	06:13		05:25	05:17		
	17:16	15 09:39 (A27-15)			20:03	20 08:16 (A27-13)	20:57		21:44	22:03		
30	08:23	09:25 (A27-15)			07:20	07:55 (A27-13)	06:11		05:24	05:18		
	17:17	13 09:38 (A27-15)			20:05	21 08:16 (A27-13)	20:59		21:45	22:03		
31	08:22	09:27 (A27-15)			07:17	07:55 (A27-13)			05:23			
	17:19	8 09:35 (A27-15)			20:07	20 08:15 (A27-13)			21:46			
Potential sun hours	256		276		366		416		486	501		
Total, worst case	330		181		170		81					

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

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

SHADOW - Calendar

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 12 - Shadow Receptor: 4,5 x 1,5 Azimuth: 0,0° Slope: 90,0° (640)

Assumptions for shadow calculations

Reference year for calendar

2022

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	05:18	05:55	06:46	07:36	07:30	08:22	09:10 (A27-15)
	22:02	21:31	20:28	19:18	17:10	16:29	6 09:16 (A27-15)
2	05:19	05:57	06:47	07:37	07:32	08:24	09:11 (A27-15)
	22:02	21:29	20:26	19:15	17:08	16:28	5 09:16 (A27-15)
3	05:20	05:58	06:49	07:39	07:34	08:25	09:13 (A27-15)
	22:02	21:27	20:23	19:13	17:07	16:27	3 09:16 (A27-15)
4	05:21	06:00	06:51	07:41	07:36	08:26	09:15 (A27-15)
	22:01	21:25	20:21	19:11	17:05	16:27	1 09:16 (A27-15)
5	05:21	06:01	06:52	07:42	07:37	08:28	
	22:01	21:24	20:19	19:08	17:03	16:26	
6	05:22	06:03	06:54	07:44	07:39	08:29	
	22:00	21:22	20:16	19:06	17:01	16:25	
7	05:23	06:05	06:56	07:46	07:41	08:30	
	22:00	21:20	20:14	19:04	16:59	16:25	
8	05:24	06:06	06:57	07:47	07:43	08:32	
	21:59	21:18	20:12	19:01	16:58	16:25	
9	05:25	06:08	06:59	07:49	07:45	08:33	
	21:58	21:16	20:09	18:59	16:56	16:24	
10	05:26	06:09	07:01	07:51	07:47	08:34	
	21:58	21:14	20:07	18:57	16:54	16:24	
11	05:27	06:11	07:02	07:53	08:52 (A27-14)	07:48	08:35
	21:57	21:13	20:05	18:55	9 09:01 (A27-14)	16:53	16:24
12	05:28	06:13	07:04	07:54	08:49 (A27-14)	07:50	08:36
	21:56	21:11	20:02	18:52	14 09:03 (A27-14)	16:51	8 09:07 (A27-15)
13	05:29	06:14	07:06	07:56	08:48 (A27-14)	07:52	08:37
	21:55	21:09	20:00	18:50	17 09:05 (A27-14)	16:50	13 09:10 (A27-15)
14	05:30	06:16	07:07	07:58	08:46 (A27-14)	07:54	08:38
	21:54	21:07	19:58	18:48	20 09:06 (A27-14)	16:48	15 09:11 (A27-15)
15	05:31	06:18	07:09	08:00	08:46 (A27-14)	07:55	08:39
	21:53	21:05	19:55	18:46	21 09:07 (A27-14)	16:47	17 09:12 (A27-15)
16	05:33	06:19	07:10	08:01	08:44 (A27-14)	07:57	08:40
	21:52	21:03	19:53	18:43	22 09:06 (A27-14)	16:45	19 09:13 (A27-15)
17	05:34	06:21	07:12	08:03	08:44 (A27-14)	07:59	08:41
	21:51	21:01	19:51	18:41	22 09:06 (A27-14)	16:44	20 09:14 (A27-15)
18	05:35	06:23	07:14	08:05	08:43 (A27-14)	08:01	08:42
	21:50	20:58	19:48	18:39	23 09:06 (A27-14)	16:42	21 09:15 (A27-15)
19	05:36	06:24	07:15	08:07	08:45 (A27-14)	08:03	08:42
	21:49	20:56	19:46	18:37	21 09:06 (A27-14)	16:41	21 09:15 (A27-15)
20	05:38	06:26	07:17	08:08	08:47 (A27-14)	08:04	08:43
	21:48	20:54	19:43	18:35	19 09:06 (A27-14)	16:40	22 09:16 (A27-15)
21	05:39	06:28	07:19	08:10	08:49 (A27-14)	08:06	08:44
	21:47	20:52	19:41	18:33	16 09:05 (A27-14)	16:38	22 09:16 (A27-15)
22	05:40	06:29	07:20	08:12	08:51 (A27-14)	08:08	08:44
	21:45	20:50	19:39	18:30	13 09:04 (A27-14)	16:37	23 09:17 (A27-15)
23	05:42	06:31	07:22	08:14	08:53 (A27-14)	08:09	08:45
	21:44	20:48	19:36	18:28	10 09:03 (A27-14)	16:36	21 09:16 (A27-15)
24	05:43	06:32	07:24	08:16	08:55 (A27-14)	08:11	08:45
	21:43	20:46	19:34	18:26	6 09:01 (A27-14)	16:35	19 09:16 (A27-15)
25	05:45	06:34	07:25	08:17	08:57 (A27-14)	08:13	08:46
	21:41	20:44	19:32	18:24	2 08:59 (A27-14)	16:34	18 09:17 (A27-15)
26	05:46	06:36	07:27	08:19		08:14	18 09:01 (A27-15)
	21:40	20:41	19:29	18:22		16:33	16 09:17 (A27-15)
27	05:48	06:37	07:29	08:21		08:16	09:03 (A27-15)
	21:38	20:39	19:27	18:20		16:32	14 09:17 (A27-15)
28	05:49	06:39	07:30	08:23		08:17	09:05 (A27-15)
	21:37	20:37	19:25	18:18		16:31	12 09:17 (A27-15)
29	05:51	06:41	07:32	08:25		08:19	09:06 (A27-15)
	21:35	20:35	19:22	18:16		16:30	10 09:16 (A27-15)
30	05:52	06:42	07:34	07:26		08:21	09:08 (A27-15)
	21:34	20:32	19:20	17:14		16:29	8 09:16 (A27-15)
31	05:54	06:44		07:28			08:47
	21:32	20:30		17:12			16:32
Potential sun hours	505	456	382	332	266	242	
Total, worst case			207	235	319	15	

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

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

SHADOW - Calendar

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 13 - Shadow Receptor: 4,0 x 2,0 Azimuth: 0,0° Slope: 90,0° (641)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47	08:20	07:26		08:26 (A27-14)	07:15	09:20 (A27-14)	06:09	05:22	06:25 (A27-13)
	16:33	17:21	18:14	16	08:42 (A27-14)	20:09	7 09:27 (A27-14)	21:00	21:47	45 07:10 (A27-13)
2	08:47	08:19	07:24		08:22 (A27-14)	07:13		06:07	05:21	06:26 (A27-13)
	16:34	17:23	18:15	24	08:46 (A27-14)	20:10		21:02	21:49	45 07:11 (A27-13)
3	08:47	08:17	07:22		08:19 (A27-14)	07:10		06:05	05:21	06:26 (A27-13)
	16:35	17:25	18:17	29	08:48 (A27-14)	20:12		21:04	21:50	45 07:11 (A27-13)
4	08:46	08:15	07:20		08:17 (A27-14)	07:08		06:03	05:20	06:25 (A27-13)
	16:36	17:27	18:19	33	08:50 (A27-14)	20:14		21:06	21:51	46 07:11 (A27-13)
5	08:46	08:14	07:17		08:16 (A27-14)	07:06		06:01	05:19	06:26 (A27-13)
	16:38	17:29	18:21	35	08:51 (A27-14)	20:16		21:07	21:52	45 07:11 (A27-13)
6	08:46	08:12	07:15		08:13 (A27-14)	07:03		05:59	05:18	06:26 (A27-13)
	16:39	17:31	18:23	39	08:52 (A27-14)	20:17		21:09	21:53	45 07:11 (A27-13)
7	08:46	08:10	07:13		08:12 (A27-14)	07:01		05:58	05:18	06:26 (A27-13)
	16:40	17:32	18:25	41	08:53 (A27-14)	20:19		21:11	21:54	46 07:12 (A27-13)
8	08:45	08:08	07:11		08:11 (A27-14)	06:59		05:56	05:17	06:26 (A27-13)
	16:41	17:34	18:26	43	08:54 (A27-14)	20:21		21:12	21:55	46 07:12 (A27-13)
9	08:45	08:07	07:08		08:09 (A27-14)	06:56		05:54	05:17	06:26 (A27-13)
	16:43	17:36	18:28	45	08:54 (A27-14)	20:23		21:14	21:56	46 07:12 (A27-13)
10	08:44	08:05	07:06		08:09 (A27-14)	06:54		05:52	05:16	06:27 (A27-13)
	16:44	17:38	18:30	46	08:55 (A27-14)	20:24		21:16	21:56	46 07:13 (A27-13)
11	08:44	08:03	07:04		08:07 (A27-14)	06:52		05:51	05:16	06:26 (A27-13)
	16:45	17:40	18:32	48	08:55 (A27-14)	20:26		21:17	21:57	46 07:12 (A27-13)
12	08:43	08:01	07:01		08:07 (A27-14)	06:50		05:49	05:15	06:27 (A27-13)
	16:47	17:42	18:34	48	08:55 (A27-14)	20:28		21:19	21:58	46 07:13 (A27-13)
13	08:42	07:59	06:59		08:07 (A27-14)	06:47		05:47	05:15	06:27 (A27-13)
	16:48	17:44	18:35	49	08:56 (A27-14)	20:29		21:20	21:59	46 07:13 (A27-13)
14	08:41	07:57	06:57		08:05 (A27-14)	06:45		05:45	05:15	06:27 (A27-13)
	16:50	17:46	18:37	50	08:55 (A27-14)	20:31		21:22	21:59	47 07:14 (A27-13)
15	08:41	07:55	06:55		08:05 (A27-14)	06:43		05:44	05:15	06:28 (A27-13)
	16:52	17:48	18:39	50	08:55 (A27-14)	20:33		21:24	22:00	46 07:14 (A27-13)
16	08:40	07:53	06:52		08:05 (A27-14)	06:41		05:42	05:14	06:28 (A27-13)
	16:53	17:49	18:41	51	08:56 (A27-14)	20:35		21:25	22:00	46 07:14 (A27-13)
17	08:39	07:51	06:50		08:04 (A27-14)	06:38		05:41	05:14	06:28 (A27-13)
	16:55	17:51	18:42	51	08:55 (A27-14)	20:36		21:27	22:01	47 07:15 (A27-13)
18	08:38	07:49	06:48		08:04 (A27-14)	06:36		05:39	05:14	06:28 (A27-13)
	16:56	17:53	18:44	50	08:54 (A27-14)	20:38		21:28	22:01	47 07:15 (A27-13)
19	08:37	07:47	06:45		08:05 (A27-14)	06:34		05:38	05:14	06:28 (A27-13)
	16:58	17:55	18:46	49	08:54 (A27-14)	20:40		21:30	22:02	47 07:15 (A27-13)
20	08:36	07:45	06:43		08:04 (A27-14)	06:32		05:36	05:14	06:28 (A27-13)
	17:00	17:57	18:48	49	08:53 (A27-14)	20:42		21:31	22:02	47 07:15 (A27-13)
21	08:35	07:43	06:41		08:05 (A27-14)	06:30		05:35	05:14	06:28 (A27-13)
	17:01	17:59	18:49	47	08:52 (A27-14)	20:43		21:33	22:02	47 07:15 (A27-13)
22	08:34	07:41	06:38		08:04 (A27-14)	06:28		05:34	05:15	06:28 (A27-13)
	17:03	18:01	18:51	47	08:51 (A27-14)	20:45		21:34	22:03	47 07:15 (A27-13)
23	08:33	07:39	06:36		08:05 (A27-14)	06:25		05:32	05:15	06:28 (A27-13)
	17:05	18:03	18:53	45	08:50 (A27-14)	20:47		21:36	22:03	47 07:15 (A27-13)
24	08:31	07:37	06:34		08:06 (A27-14)	06:23		05:31	05:15	06:29 (A27-13)
	17:07	18:04	18:55	43	08:49 (A27-14)	20:48		21:37	22:03	47 07:16 (A27-13)
25	08:30	07:35	06:31		08:06 (A27-14)	06:21		05:30	05:15	06:29 (A27-13)
	17:08	18:06	18:56	41	08:47 (A27-14)	20:50		21:38	22:03	47 07:16 (A27-13)
26	08:29	07:33	06:29		08:07 (A27-14)	06:19		05:29	05:16	06:29 (A27-13)
	17:10	18:08	18:58	39	08:46 (A27-14)	20:52		21:40	22:03	47 07:16 (A27-13)
27	08:27	07:31	07:27		09:08 (A27-14)	06:17		05:27	05:16	06:30 (A27-13)
	17:12	18:10	20:00	36	09:44 (A27-14)	20:54		21:41	22:03	46 07:16 (A27-13)
28	08:26	07:28	07:24		09:08 (A27-14)	06:15		05:26	05:17	06:30 (A27-13)
	17:14	18:12	20:02	34	09:42 (A27-14)	20:55		21:43	22:03	46 07:16 (A27-13)
29	08:25		07:22		09:10 (A27-14)	06:13		05:25	05:17	06:30 (A27-13)
	17:16		20:03	30	09:40 (A27-14)	20:57		21:44	22:03	47 07:17 (A27-13)
30	08:23		07:20		09:12 (A27-14)	06:11		05:24	05:18	06:30 (A27-13)
	17:17		20:05	25	09:37 (A27-14)	20:59		21:45	22:03	46 07:16 (A27-13)
31	08:22		07:17		09:14 (A27-14)			05:23		
	17:19		20:07	19	09:33 (A27-14)			21:46		
Potential sun hours	256	276	366		416			486	501	
Total, worst case				1252		7		624		1387

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

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

SHADOW - Calendar

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 13 - Shadow Receptor: 4,0 × 2,0 Azimuth: 0,0° Slope: 90,0° (641)

Assumptions for shadow calculations

Reference year for calendar

2022

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	05:18		06:31 (A27-13)	05:55	06:46		07:35	08:45 (A27-14)	07:30	08:22	
	22:02	46	07:17 (A27-13)	21:30	20:28		19:18	50 09:35 (A27-14)	17:10	16:29	
2	05:19		06:31 (A27-13)	05:57	06:47		07:37	08:46 (A27-14)	07:32	08:23	
	22:02	47	07:18 (A27-13)	21:29	20:26		19:15	49 09:35 (A27-14)	17:08	16:28	
3	05:20		06:31 (A27-13)	05:58	06:49		07:39	08:46 (A27-14)	07:34	08:25	
	22:02	46	07:17 (A27-13)	21:27	20:23		19:13	48 09:34 (A27-14)	17:07	16:27	
4	05:21		06:31 (A27-13)	06:00	06:51		07:41	08:45 (A27-14)	07:36	08:26	
	22:01	47	07:18 (A27-13)	21:25	20:21		19:11	47 09:32 (A27-14)	17:05	16:27	
5	05:21		06:32 (A27-13)	06:01	06:52		07:42	08:46 (A27-14)	07:37	08:28	
	22:01	46	07:18 (A27-13)	21:24	20:19		19:08	46 09:32 (A27-14)	17:03	16:26	
6	05:22		06:32 (A27-13)	06:03	06:54		07:44	08:47 (A27-14)	07:39	08:29	
	22:00	46	07:18 (A27-13)	21:22	20:16		19:06	44 09:31 (A27-14)	17:01	16:25	
7	05:23		06:32 (A27-13)	06:05	06:56		07:46	08:48 (A27-14)	07:41	08:30	
	22:00	46	07:18 (A27-13)	21:20	20:14		19:04	42 09:30 (A27-14)	16:59	16:25	
8	05:24		06:32 (A27-13)	06:06	06:57		07:47	08:49 (A27-14)	07:43	08:32	
	21:59	46	07:18 (A27-13)	21:18	20:12		19:01	40 09:29 (A27-14)	16:58	16:25	
9	05:25		06:33 (A27-13)	06:08	06:59		07:49	08:49 (A27-14)	07:45	08:33	
	21:58	45	07:18 (A27-13)	21:16	20:09		18:59	37 09:26 (A27-14)	16:56	16:24	
10	05:26		06:33 (A27-13)	06:09	07:01		07:51	08:50 (A27-14)	07:46	08:34	
	21:58	45	07:18 (A27-13)	21:14	20:07		18:57	35 09:25 (A27-14)	16:54	16:24	
11	05:27		06:33 (A27-13)	06:11	07:02		07:53	08:52 (A27-14)	07:48	08:35	
	21:57	45	07:18 (A27-13)	21:12	20:05		18:54	31 09:23 (A27-14)	16:53	16:24	
12	05:28		06:34 (A27-13)	06:13	07:04	09:14 (A27-14)	07:54	08:54 (A27-14)	07:50	08:36	
	21:56	44	07:18 (A27-13)	21:11	20:02	4 09:18 (A27-14)	18:52	27 09:21 (A27-14)	16:51	16:24	
13	05:29		06:34 (A27-13)	06:14	07:06	09:06 (A27-14)	07:56	08:57 (A27-14)	07:52	08:37	
	21:55	44	07:18 (A27-13)	21:09	20:00	18 09:24 (A27-14)	18:50	21 09:18 (A27-14)	16:49	16:24	
14	05:30		06:34 (A27-13)	06:16	07:07	09:03 (A27-14)	07:58	09:01 (A27-14)	07:54	08:38	
	21:54	44	07:18 (A27-13)	21:07	19:58	24 09:27 (A27-14)	18:48	13 09:14 (A27-14)	16:48	16:24	
15	05:31		06:35 (A27-13)	06:18	07:09	09:01 (A27-14)	08:00		07:55	08:39	
	21:53	43	07:18 (A27-13)	21:05	19:55	29 09:30 (A27-14)	18:46		16:46	16:24	
16	05:33		06:35 (A27-13)	06:19	07:10	08:58 (A27-14)	08:01		07:57	08:40	
	21:52	43	07:18 (A27-13)	21:03	19:53	33 09:31 (A27-14)	18:43		16:45	16:24	
17	05:34		06:35 (A27-13)	06:21	07:12	08:57 (A27-14)	08:03		07:59	08:41	
	21:51	42	07:17 (A27-13)	21:00	19:51	36 09:33 (A27-14)	18:41		16:44	16:24	
18	05:35		06:36 (A27-13)	06:23	07:14	08:54 (A27-14)	08:05		08:01	08:42	
	21:50	41	07:17 (A27-13)	20:58	19:48	39 09:33 (A27-14)	18:39		16:42	16:24	
19	05:36		06:37 (A27-13)	06:24	07:15	08:53 (A27-14)	08:07		08:02	08:42	
	21:49	40	07:17 (A27-13)	20:56	19:46	41 09:34 (A27-14)	18:37		16:41	16:24	
20	05:38		06:37 (A27-13)	06:26	07:17	08:52 (A27-14)	08:08		08:04	08:43	
	21:48	40	07:17 (A27-13)	20:54	19:43	43 09:35 (A27-14)	18:35		16:40	16:25	
21	05:39		06:38 (A27-13)	06:27	07:19	08:51 (A27-14)	08:10		08:06	08:44	
	21:47	38	07:16 (A27-13)	20:52	19:41	44 09:35 (A27-14)	18:32		16:38	16:25	
22	05:40		06:38 (A27-13)	06:29	07:20	08:50 (A27-14)	08:12		08:08	08:44	
	21:45	37	07:15 (A27-13)	20:50	19:39	46 09:36 (A27-14)	18:30		16:37	16:25	
23	05:42		06:40 (A27-13)	06:31	07:22	08:49 (A27-14)	08:14		08:09	08:45	
	21:44	35	07:15 (A27-13)	20:48	19:36	48 09:37 (A27-14)	18:28		16:36	16:26	
24	05:43		06:40 (A27-13)	06:32	07:24	08:48 (A27-14)	08:16		08:11	08:45	
	21:43	34	07:14 (A27-13)	20:46	19:34	48 09:36 (A27-14)	18:26		16:35	16:26	
25	05:45		06:41 (A27-13)	06:34	07:25	08:47 (A27-14)	08:17		08:13	08:46	
	21:41	32	07:13 (A27-13)	20:43	19:32	50 09:37 (A27-14)	18:24		16:34	16:27	
26	05:46		06:42 (A27-13)	06:36	07:27	08:47 (A27-14)	08:19		08:14	08:46	
	21:40	30	07:12 (A27-13)	20:41	19:29	50 09:37 (A27-14)	18:22		16:33	16:28	
27	05:48		06:44 (A27-13)	06:37	07:29	08:46 (A27-14)	08:21		08:16	08:46	
	21:38	28	07:12 (A27-13)	20:39	19:27	50 09:36 (A27-14)	18:20		16:32	16:28	
28	05:49		06:45 (A27-13)	06:39	07:30	08:46 (A27-14)	08:23		08:17	08:46	
	21:37	25	07:10 (A27-13)	20:37	19:25	50 09:36 (A27-14)	18:18		16:31	16:29	
29	05:51		06:46 (A27-13)	06:41	07:32	08:46 (A27-14)	08:25		08:19	08:47	
	21:35	22	07:08 (A27-13)	20:35	19:22	50 09:36 (A27-14)	18:16		16:30	16:30	
30	05:52		06:49 (A27-13)	06:42	07:34	08:46 (A27-14)	07:26		08:20	08:47	
	21:34	18	07:07 (A27-13)	20:32	19:20	50 09:36 (A27-14)	17:14		16:29	16:31	
31	05:54		06:51 (A27-13)	06:44			07:28			08:47	
	21:32	12	07:03 (A27-13)	20:30			17:12			16:32	
Potential sun hours	505			456	382		332		266	242	
Total, worst case		1197			753		530				

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

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

SHADOW - Calendar

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 14 - Shadow Receptor: 6,0 x 3,0 Azimuth: 0,0° Slope: 90,0° (642)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47	09:35 (A27-16)	08:20			07:26	08:11 (A27-15)	07:15	07:49 (A27-14)	06:09					05:22		
	16:33	24 09:59 (A27-16)	17:21			18:14	28 08:39 (A27-15)	20:09	21 08:10 (A27-14)	21:01					21:47		
2	08:47	09:35 (A27-16)	08:19			07:24	08:11 (A27-15)	07:13	07:47 (A27-14)	06:07					05:22		
	16:34	24 09:59 (A27-16)	17:23			18:16	27 08:38 (A27-15)	20:10	24 08:11 (A27-14)	21:02				4 06:44 (A27-13)	21:49		
3	08:47	09:35 (A27-16)	08:17			07:22	08:10 (A27-15)	07:10	07:45 (A27-14)	06:05					05:21		
	16:35	25 10:00 (A27-16)	17:25			18:17	27 08:37 (A27-15)	20:12	25 08:10 (A27-14)	21:04				7 06:49 (A27-13)	21:50		
4	08:47	09:36 (A27-16)	08:15			07:20	08:11 (A27-15)	07:08	07:44 (A27-14)	06:03					05:20		
	16:36	25 10:01 (A27-16)	17:27			18:19	26 08:37 (A27-15)	20:14	26 08:10 (A27-14)	21:06				10 06:50 (A27-13)	21:51		
5	08:46	09:35 (A27-16)	08:14			07:17	08:12 (A27-15)	07:06	07:44 (A27-14)	06:01					05:19		
	16:38	26 10:01 (A27-16)	17:29			18:21	24 08:36 (A27-15)	20:16	26 08:10 (A27-14)	21:07				12 06:50 (A27-13)	21:52		
6	08:46	09:36 (A27-16)	08:12			07:15	08:12 (A27-15)	07:03	07:44 (A27-14)	05:59					05:19		
	16:39	27 10:03 (A27-16)	17:31			18:23	22 08:34 (A27-15)	20:17	25 08:09 (A27-14)	21:09				15 06:52 (A27-13)	21:53		
7	08:46	09:36 (A27-16)	08:10			07:13	08:14 (A27-15)	07:01	07:44 (A27-14)	05:58					05:18		
	16:40	27 10:03 (A27-16)	17:32			18:25	18 08:32 (A27-15)	20:19	24 08:08 (A27-14)	21:11				17 06:52 (A27-13)	21:54		
8	08:45	09:36 (A27-16)	08:09			07:11	08:16 (A27-15)	06:59	07:44 (A27-14)	05:56					05:17		
	16:41	27 10:03 (A27-16)	17:34			18:26	15 08:31 (A27-15)	20:21	24 08:08 (A27-14)	21:12				19 06:52 (A27-13)	21:55		
9	08:45	09:37 (A27-16)	08:07			07:08	08:18 (A27-15)	06:56	07:45 (A27-14)	05:54					05:17		
	16:43	27 10:04 (A27-16)	17:36			18:28	8 08:26 (A27-15)	20:23	22 08:07 (A27-14)	21:14				20 06:52 (A27-13)	21:56		
10	08:44	09:37 (A27-16)	08:05			07:06		06:54		07:45 (A27-14)	05:52				05:16		
	16:44	28 10:05 (A27-16)	17:38			18:30		20:24	19 08:04 (A27-14)	21:16				22 06:52 (A27-13)	21:56		
11	08:44	09:37 (A27-16)	08:03			07:04		06:52		05:51					05:16		
	16:46	28 10:05 (A27-16)	17:40			18:32		20:26	15 08:02 (A27-14)	21:17				23 06:52 (A27-13)	21:57		
12	08:43	09:37 (A27-16)	08:01			07:02		06:50		05:49					05:16		
	16:47	28 10:05 (A27-16)	17:42			18:34		20:28	11 08:00 (A27-14)	21:19				23 06:52 (A27-13)	21:58		
13	08:42	09:38 (A27-16)	07:59			06:59		06:47		05:47					05:15		
	16:48	28 10:06 (A27-16)	17:44			18:35		20:29		21:21				23 06:52 (A27-13)	21:59		
14	08:42	09:38 (A27-16)	07:57			06:57		06:45		05:46					05:15		
	16:50	28 10:06 (A27-16)	17:46			18:37		20:31		21:22				22 06:51 (A27-13)	21:59		
15	08:41	09:38 (A27-16)	07:55			06:55		06:43		05:44					05:15		
	16:52	29 10:07 (A27-16)	17:48			18:39		20:33		21:24				21 06:51 (A27-13)	22:00		
16	08:40	09:39 (A27-16)	07:54			06:52		06:41		05:42					05:15		
	16:53	28 10:07 (A27-16)	17:49			18:41		20:35		21:25				20 06:50 (A27-13)	22:00		
17	08:39	09:40 (A27-16)	07:52			06:50		06:38		05:41					05:14		
	16:55	27 10:07 (A27-16)	17:51			18:42		20:36		21:27				18 06:49 (A27-13)	22:01		
18	08:38	09:40 (A27-16)	07:50			06:48		06:36		05:39					05:14		
	16:56	28 10:08 (A27-16)	17:53			18:44		20:38		21:28				17 06:49 (A27-13)	22:01		
19	08:37	09:40 (A27-16)	07:48		08:25 (A27-15)	06:45		06:34		05:38					05:14		
	16:58	27 10:07 (A27-16)	17:55	1 08:26 (A27-15)	18:46			20:40		21:30				15 06:47 (A27-13)	22:02		
20	08:36	09:41 (A27-16)	07:45		08:22 (A27-15)	06:43		06:32		05:36					05:14		
	17:00	27 10:08 (A27-16)	17:57	10 08:32 (A27-15)	18:48			20:42		21:31				12 06:46 (A27-13)	22:02		
21	08:35	09:42 (A27-16)	07:43		08:20 (A27-15)	06:41		06:30		05:35					05:15		
	17:01	26 10:08 (A27-16)	17:59	14 08:34 (A27-15)	18:49			20:43		21:33				8 06:44 (A27-13)	22:02		
22	08:34	09:42 (A27-16)	07:41		08:18 (A27-15)	06:38		06:28		05:34					05:15		
	17:03	25 10:07 (A27-16)	18:01	18 08:36 (A27-15)	18:51			20:45		21:34				1 06:41 (A27-13)	22:03		
23	08:33	09:43 (A27-16)	07:39		08:15 (A27-15)	06:36		06:25		05:32					05:15		
	17:05	24 10:07 (A27-16)	18:03	21 08:36 (A27-15)	18:53			20:47		21:36					22:03		
24	08:31	09:45 (A27-16)	07:37		08:13 (A27-15)	06:34		06:23		05:31					05:15		
	17:07	22 10:07 (A27-16)	18:04	24 08:37 (A27-15)	18:55			20:49		21:37					22:03		
25	08:30	09:45 (A27-16)	07:35		08:12 (A27-15)	06:31		06:21		05:30					05:16		
	17:08	21 10:06 (A27-16)	18:06	26 08:38 (A27-15)	18:56			20:50		21:39					22:03		
26	08:29	09:46 (A27-16)	07:33		08:12 (A27-15)	06:29		06:19		05:29					05:16		
	17:10	19 10:05 (A27-16)	18:08	27 08:39 (A27-15)	18:58			20:52		21:40					22:03		
27	08:27	09:48 (A27-16)	07:31		08:10 (A27-15)	07:27		06:17		05:28					05:16		
	17:12	16 10:04 (A27-16)	18:10	28 08:38 (A27-15)	20:00			20:54		21:41					22:03		
28	08:26	09:50 (A27-16)	07:28		08:10 (A27-15)	07:24		06:15		05:26					05:17		
	17:14	12 10:02 (A27-16)	18:12	28 08:38 (A27-15)	20:02		7 07:58 (A27-14)	20:55		21:43					22:03		
29	08:25	09:55 (A27-16)			20:22		7 07:56 (A27-14)	06:13		05:25					05:17		
	17:16	4 09:59 (A27-16)			20:03		12 08:08 (A27-14)	20:57		21:44					22:03		
30	08:23				20:03		12 07:54 (A27-14)	06:11		05:24					05:18		
	17:17				20:05		15 08:09 (A27-14)	20:59		21:45					22:03		
31	08:22				20:07		15 07:51 (A27-14)			05:23							
	17:19				20:07		18 08:09 (A27-14)			21:46							
Potential sun hours	256							416		486					501		
Total, worst case	707				197		247		262		329						

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

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

Project:

Almere_Slagschaduw_uitgebreid_v3

Licensed user:

Arcadis
Beaulieustraat 22
NL-6814 DV Arnhem
+31 (0)6 2706 2060
Erik Koppen / erik.koppen@arcadis.com
Calculated:
26-10-2021 16:02/3.5.552



SHADOW - Calendar

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 14 - Shadow Receptor: 6,0 x 3,0 Azimuth: 0,0° Slope: 90,0° (642)

Assumptions for shadow calculations

Reference year for calendar

2022

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	05:18		05:55	06:40 (A27-13)	06:46	07:48 (A27-14)	07:36		07:30		08:22	09:19 (A27-16)				
	22:02		21:31	22	07:02 (A27-13)	20:28	11	07:59 (A27-14)	19:18		17:10	16:29	29	09:48 (A27-16)		
2	05:19		05:57	06:39 (A27-13)	06:47	07:46 (A27-14)	07:37		07:32		08:23	09:19 (A27-16)				
	22:02		21:29	23	07:02 (A27-13)	20:26	15	08:01 (A27-14)	19:15		17:08	16:28	28	09:47 (A27-16)		
3	05:20		05:58	06:40 (A27-13)	06:49	07:44 (A27-14)	07:39		07:34		08:25	09:20 (A27-16)				
	22:02		21:27	23	07:03 (A27-13)	20:23	19	08:03 (A27-14)	19:13		17:07	16:27	28	09:48 (A27-16)		
4	05:21		06:00	06:41 (A27-13)	06:51	07:42 (A27-14)	07:41		07:36		08:26	09:21 (A27-16)				
	22:01		21:25	21	07:02 (A27-13)	20:21	22	08:04 (A27-14)	19:11		17:05	16:27	28	09:49 (A27-16)		
5	05:21		06:01	06:42 (A27-13)	06:52	07:42 (A27-14)	07:42		07:37		08:28	09:21 (A27-16)				
	22:01		21:24	20	07:02 (A27-13)	20:19	23	08:05 (A27-14)	19:08		17:03	16:26	27	09:48 (A27-16)		
6	05:22		06:03	06:44 (A27-13)	06:54	07:40 (A27-14)	07:44		08:53 (A27-15)		07:39	08:29		09:22 (A27-16)		
	22:00		21:22	18	07:02 (A27-13)	20:16	24	08:04 (A27-14)	19:06	12	09:05 (A27-15)	17:01	16:26	27	09:49 (A27-16)	
7	05:23		06:05	06:45 (A27-13)	06:56	07:40 (A27-14)	07:46		08:51 (A27-15)		07:41	08:30		09:22 (A27-16)		
	22:00		21:20	16	07:01 (A27-13)	20:14	25	08:05 (A27-14)	19:04	17	09:08 (A27-15)	16:59	16:25	27	09:49 (A27-16)	
8	05:24		06:06	06:47 (A27-13)	06:57	07:39 (A27-14)	07:47		08:49 (A27-15)		07:43	08:32		09:23 (A27-16)		
	21:59		21:18	14	07:01 (A27-13)	20:12	25	08:04 (A27-14)	19:01	20	09:09 (A27-15)	16:58	16:25	26	09:49 (A27-16)	
9	05:25		06:08	06:48 (A27-13)	06:59	07:39 (A27-14)	07:49		08:47 (A27-15)		07:45	08:33		09:24 (A27-16)		
	21:58		21:16	12	07:00 (A27-13)	20:09	25	08:04 (A27-14)	18:59	22	09:09 (A27-15)	16:56	16:24	26	09:50 (A27-16)	
10	05:26		06:09	06:50 (A27-13)	07:01	07:39 (A27-14)	07:51		08:46 (A27-15)		07:46	08:34		09:24 (A27-16)		
	21:58		21:14	9	06:59 (A27-13)	20:07	25	08:04 (A27-14)	18:57	24	09:10 (A27-15)	16:54	16:24	25	09:49 (A27-16)	
11	05:27		06:11	06:51 (A27-13)	07:02	07:39 (A27-14)	07:53		08:45 (A27-15)		07:48	08:35		09:25 (A27-16)		
	21:57		21:13	6	06:57 (A27-13)	20:05	24	08:03 (A27-14)	18:55	26	09:11 (A27-15)	16:53	16:24	24	09:49 (A27-16)	
12	05:28		06:13	06:53 (A27-13)	07:04	07:41 (A27-14)	07:54		08:44 (A27-15)		07:50	08:36		09:25 (A27-16)		
	21:56		21:11	3	06:56 (A27-13)	20:02	22	08:03 (A27-14)	18:52	27	09:11 (A27-15)	16:51	16:24	25	09:50 (A27-16)	
13	05:29		06:14		07:06	07:42 (A27-14)	07:56		08:44 (A27-15)		07:52	08:37		09:26 (A27-16)		
	21:55		21:09		20:00	19	08:01 (A27-14)	18:50	28	09:12 (A27-15)	16:50	16:24	24	09:50 (A27-16)		
14	05:30		06:16		07:07	07:44 (A27-14)	07:58		08:44 (A27-15)		07:54	09:27 (A27-16)	08:38	09:27 (A27-16)		
	21:54		21:07		19:58	16	08:00 (A27-14)	18:48	28	09:12 (A27-15)	16:48	4	09:31 (A27-16)	16:24	23	09:50 (A27-16)
15	05:31		06:18		07:09	07:46 (A27-14)	18:00		08:44 (A27-15)		07:55	09:23 (A27-16)	08:39	09:28 (A27-16)		
	21:53		21:05		19:55	12	07:58 (A27-14)	18:46	28	09:12 (A27-15)	16:47	12	09:35 (A27-16)	16:24	22	09:50 (A27-16)
16	05:33		06:19		07:10	07:47 (A27-14)	18:01		08:43 (A27-15)		07:57	09:22 (A27-16)	08:40	09:29 (A27-16)		
	21:52		21:03		19:53	8	07:55 (A27-14)	18:43	27	09:10 (A27-15)	16:45	15	09:37 (A27-16)	16:24	22	09:51 (A27-16)
17	05:34		06:21		07:12	07:49 (A27-14)	18:03		08:43 (A27-15)		07:59	09:20 (A27-16)	08:41	09:30 (A27-16)		
	21:51		21:01		19:51	3	07:52 (A27-14)	18:41	27	09:10 (A27-15)	16:44	19	09:39 (A27-16)	16:24	21	09:51 (A27-16)
18	05:35		06:23		07:14		08:05		08:44 (A27-15)		08:01	09:20 (A27-16)	08:42	09:31 (A27-16)		
	21:50		20:58		19:48		18:39	25	09:09 (A27-15)	16:42	20	09:40 (A27-16)	16:24	21	09:52 (A27-16)	
19	05:36		06:24		07:15		08:07		08:45 (A27-15)	08:03		09:19 (A27-16)	08:42	09:32 (A27-16)		
	21:49		20:56		19:46		18:37	23	09:08 (A27-15)	16:41	22	09:41 (A27-16)	16:24	20	09:52 (A27-16)	
20	05:38		06:26		07:17		08:08		08:47 (A27-15)	08:04		09:19 (A27-16)	08:43	09:32 (A27-16)		
	21:48		20:54		19:43		18:35	20	09:07 (A27-15)	16:40	23	09:42 (A27-16)	16:25	20	09:52 (A27-16)	
21	05:39		06:28		07:19		08:10		08:49 (A27-15)	08:06		09:18 (A27-16)	08:44	09:33 (A27-16)		
	21:47		20:52		19:41		18:33	17	09:06 (A27-15)	16:38	25	09:43 (A27-16)	16:25	20	09:53 (A27-16)	
22	05:40		06:29		07:20		08:12		08:51 (A27-15)	08:08		09:18 (A27-16)	08:44	09:34 (A27-16)		
	21:45		20:50		19:39		18:30	13	09:04 (A27-15)	16:37	26	09:44 (A27-16)	16:25	20	09:54 (A27-16)	
23	05:42		06:31		07:22		08:14		08:53 (A27-15)	08:09		09:17 (A27-16)	08:45	09:34 (A27-16)		
	21:44	6	06:54 (A27-13)		19:36		18:28	8	09:01 (A27-15)	16:36	27	09:44 (A27-16)	16:26	20	09:54 (A27-16)	
24	05:43		06:45 (A27-13)		07:24		08:16		08:54 (A27-15)	08:11		09:17 (A27-16)	08:45	09:34 (A27-16)		
	21:43	11	06:56 (A27-13)		19:34		18:26		08:44 (A27-15)	16:35	27	09:44 (A27-16)	16:26	20	09:54 (A27-16)	
25	05:45		06:44 (A27-13)		07:25		08:17		08:13	16:34	28	09:17 (A27-16)	08:46	09:35 (A27-16)		
	21:41	13	06:57 (A27-13)		19:32		18:24		08:13	16:34	28	09:45 (A27-16)	16:27	20	09:55 (A27-16)	
26	05:46		06:42 (A27-13)		07:27		08:19		08:14	16:33	28	09:18 (A27-16)	08:46	09:35 (A27-16)		
	21:40	16	06:58 (A27-13)		19:29		18:22		08:16	16:32	28	09:46 (A27-16)	16:28	20	09:55 (A27-16)	
27	05:48		06:42 (A27-13)		07:29		08:21		08:17	16:31	28	09:18 (A27-16)	08:46	09:35 (A27-16)		
	21:38	18	07:00 (A27-13)		19:27		18:20		08:19	16:30	28	09:46 (A27-16)	16:28	21	09:56 (A27-16)	
28	05:49		06:41 (A27-13)		07:30		08:23		08:21	16:29	28	09:19 (A27-16)	08:47	09:35 (A27-16)		
	21:37	19	07:00 (A27-13)		19:25		18:18		08:25	16:28	28	09:47 (A27-16)	16:29	21	09:56 (A27-16)	
29	05:51		06:41 (A27-13)		07:32		08:25		08:27	16:27	28	09:18 (A27-16)	08:47	09:35 (A27-16)		
	21:35	20	07:01 (A27-13)		19:22		18:16		08:29	16:26	28	09:46 (A27-16)	16:30	22	09:57 (A27-16)	
30	05:52		06:40 (A27-13)		07:34		08:26		08:31	16:25	28	09:19 (A27-16)	08:47	09:35 (A27-16)		
	21:34	21	07:01 (A27-13)		19:20		17:14		08:33	16:24	28	09:47 (A27-16)	16:31	23	09:58 (A27-16)	
31	05:54		06:39 (A27-13)		07:36		08:28		08:35	16:23	28	09:50 (A27-16)	16:32	24	09:59 (A27-16)	
	21:32	23	07:02 (A27-13)		19:12		17:12		08:37	16:22	28	09:51 (A27-16)	16:33	25	10:00 (A27-16)	
Potential sun hours	505		456		382		332		266		242		178		128	
Total, worst case	147		187		318		392		388		723					

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

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

SHADOW - Calendar

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 15 - Shadow Receptor: 4,0 x 1,5 Azimuth: 0,0° Slope: 90,0° (643)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47	08:20	09:28 (A27-16)	07:26	07:15	08:00 (A27-15)
	16:33	17:21	18:11 (A27-16)	18:14	20:09	21:01
2	08:47	08:19	09:28 (A27-16)	07:24	07:13	07:58 (A27-15)
	16:34	17:23	18:13 (A27-16)	18:16	20:10	21:02
3	08:47	08:17	09:28 (A27-16)	07:22	07:10	07:55 (A27-15)
	16:35	17:25	18:13 (A27-16)	18:17	20:12	21:04
4	08:46	08:15	09:27 (A27-16)	07:20	07:08	07:54 (A27-15)
	16:36	17:27	18:14 (A27-16)	18:19	20:14	21:06
5	08:46	08:14	09:27 (A27-16)	07:17	07:06	07:53 (A27-15)
	16:38	17:29	18:14 (A27-16)	18:21	20:16	21:07
6	08:46	08:12	09:26 (A27-16)	07:15	07:03	07:51 (A27-15)
	16:39	17:31	18:15 (A27-16)	18:23	20:17	21:09
7	08:46	08:10	09:26 (A27-16)	07:13	07:01	07:51 (A27-15)
	16:40	17:32	18:15 (A27-16)	18:25	20:19	21:11
8	08:45	08:08	09:26 (A27-16)	07:11	06:59	07:50 (A27-15)
	16:41	17:34	18:15 (A27-16)	18:26	20:21	21:12
9	08:45	08:07	09:26 (A27-16)	07:08	06:56	07:50 (A27-15)
	16:43	17:36	18:15 (A27-16)	18:28	20:23	21:14
10	08:44	08:05	09:26 (A27-16)	07:06	06:54	07:48 (A27-15)
	16:44	17:38	18:15 (A27-16)	18:30	20:24	21:16
11	08:44	08:03	09:26 (A27-16)	07:04	06:52	07:48 (A27-15)
	16:46	17:40	18:15 (A27-16)	18:32	20:26	21:17
12	08:43	08:01	09:26 (A27-16)	07:02	06:50	07:48 (A27-15)
	16:47	17:42	18:15 (A27-16)	18:34	20:28	21:19
13	08:42	07:59	09:26 (A27-16)	06:59	06:47	07:48 (A27-15)
	16:48	17:44	18:15 (A27-16)	18:35	20:29	21:20
14	08:41	07:57	09:27 (A27-16)	06:57	06:45	07:48 (A27-15)
	16:50	17:46	18:15 (A27-16)	18:37	20:31	21:22
15	08:41	07:55	09:27 (A27-16)	06:55	06:43	07:48 (A27-15)
	16:52	17:48	18:15 (A27-16)	18:39	20:33	21:24
16	08:40	07:53	09:28 (A27-16)	06:52	06:41	07:48 (A27-15)
	16:53	17:49	18:14 (A27-16)	18:41	20:35	21:25
17	08:39	07:52	09:28 (A27-16)	06:50	06:38	07:48 (A27-15)
	16:55	17:51	18:14 (A27-16)	18:42	20:36	21:27
18	08:38	07:50	09:28 (A27-16)	06:48	06:36	07:48 (A27-15)
	16:56	17:53	18:12 (A27-16)	18:44	20:38	21:28
19	08:37	07:47	09:29 (A27-16)	06:45	06:34	07:49 (A27-15)
	16:58	17:55	18:11 (A27-16)	18:46	20:40	21:30
20	08:36	09:46 (A27-16)	07:45	09:30 (A27-16)	06:32	07:50 (A27-15)
	17:00	17:57	18:48	18:48	20:42	21:31
21	08:35	09:41 (A27-16)	07:43	09:31 (A27-16)	06:30	07:51 (A27-15)
	17:01	17:59	18:49	18:49	20:43	21:33
22	08:34	09:38 (A27-16)	07:41	09:32 (A27-16)	06:28	07:52 (A27-15)
	17:03	18:01	18:51	18:51	20:45	21:34
23	08:33	09:37 (A27-16)	07:39	09:33 (A27-16)	06:25	07:53 (A27-15)
	17:05	18:03	18:53	18:53	20:47	21:36
24	08:31	09:35 (A27-16)	07:37	09:35 (A27-16)	06:23	07:55 (A27-15)
	17:07	18:04	18:55	18:55	20:48	21:37
25	08:30	09:34 (A27-16)	07:35	09:37 (A27-16)	06:21	07:57 (A27-15)
	17:08	18:06	18:56	18:56	20:50	21:38
26	08:29	09:32 (A27-16)	07:33	09:41 (A27-16)	06:19	08:00 (A27-15)
	17:10	18:08	18:58	18:58	20:52	21:40
27	08:27	09:32 (A27-16)	07:31	07:27	06:17	05:28
	17:12	18:10	20:00	20:00	20:54	21:41
28	08:26	09:31 (A27-16)	07:28	07:24	06:15	05:26
	17:14	18:12	20:02	20:02	20:55	21:42
29	08:25	09:31 (A27-16)	07:22	07:22	06:13	05:25
	17:16	18:09 (A27-16)	20:03	20:03	20:57	21:44
30	08:23	09:30 (A27-16)	07:20	08:06 (A27-15)	06:11	05:24
	17:17	18:10 (A27-16)	20:05	08:21 (A27-15)	20:59	21:45
31	08:22	09:29 (A27-16)	07:17	08:02 (A27-15)		05:23
	17:19	18:11 (A27-16)	20:07	08:23 (A27-15)		21:46
Potential sun hours	256		366	416	486	501
Total, worst case	339	1105	36	891	36	

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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket Shadow receptor: 15 - Shadow Receptor: 4,0 × 1,5 Azimuth: 0,0° Slope: 90,0° (643)

Assumptions for shadow calculations

Reference year for calendar

2022

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

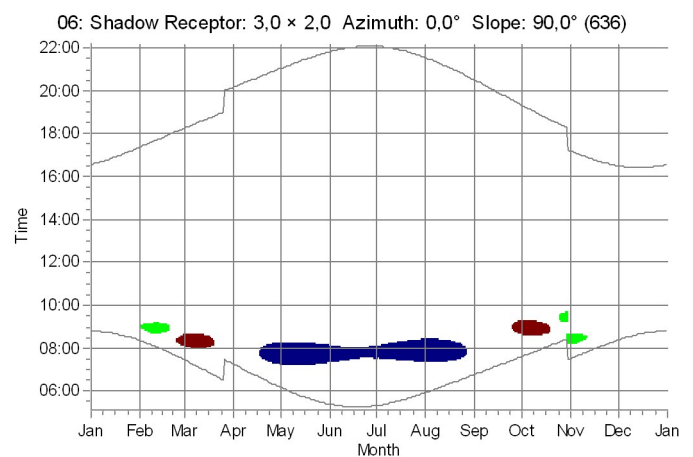
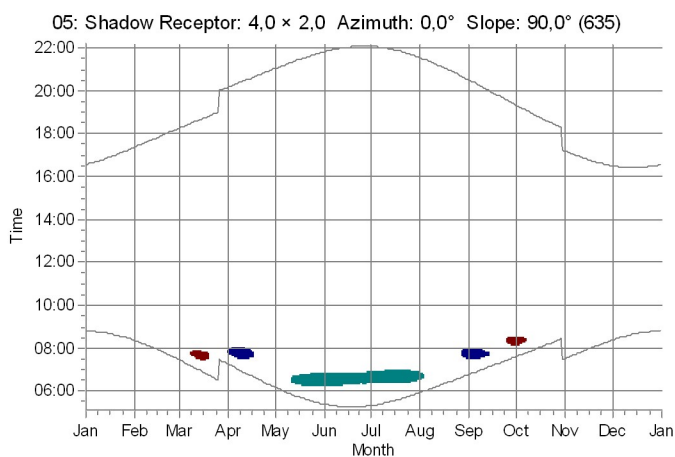
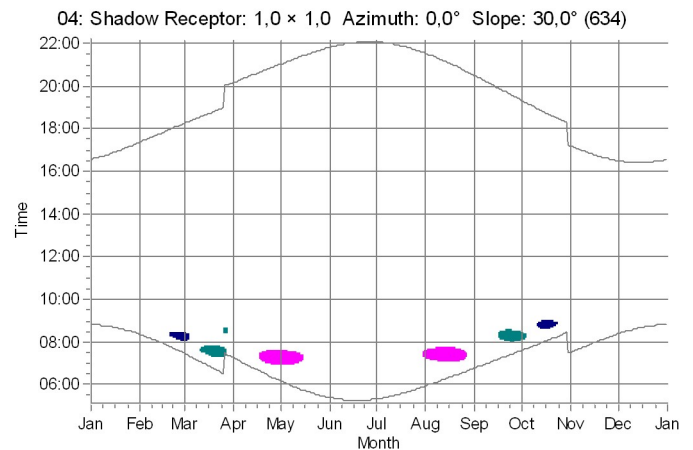
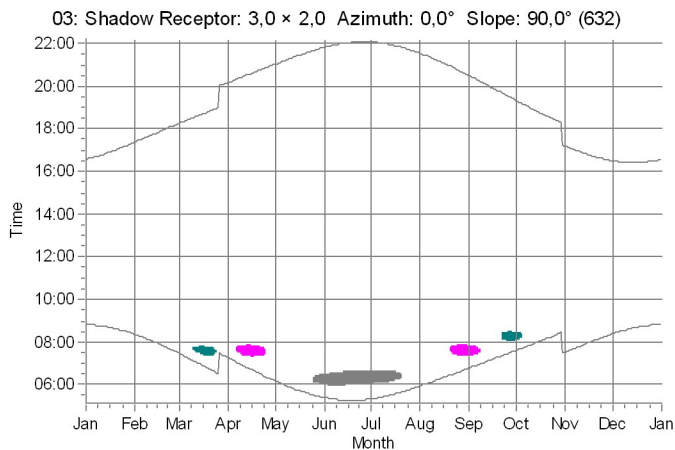
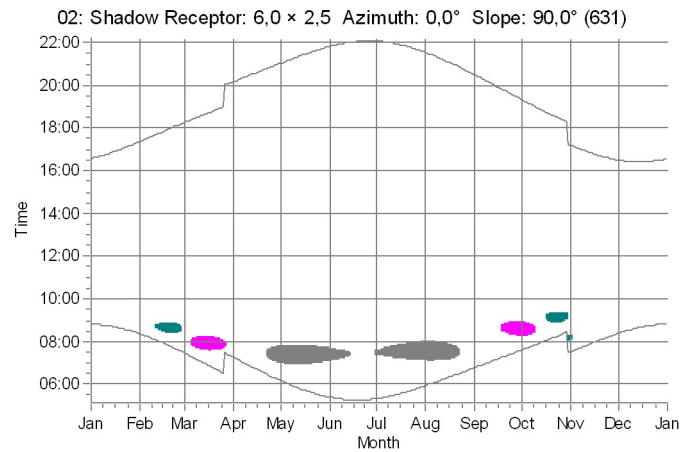
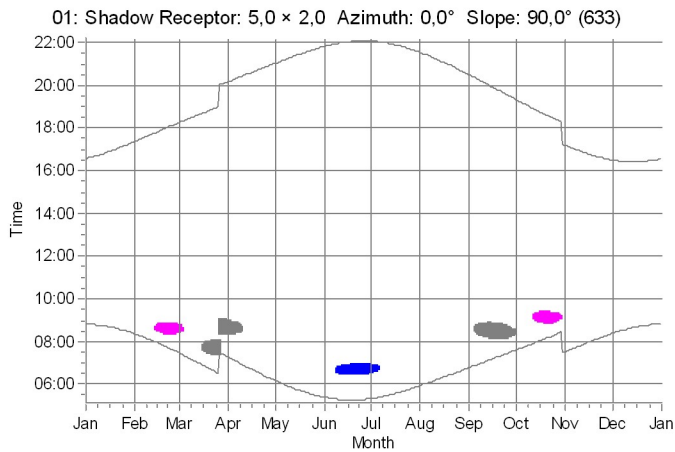
July		August		September		October		November		December	
1	05:18	05:55	06:46	07:47 (A27-15)	07:36	07:30	08:56 (A27-16)	08:22			
	22:02	21:30	20:28	42 08:29 (A27-15)	19:18	17:10	09:45 (A27-16)	16:29			
2	05:19	05:57	06:47	07:47 (A27-15)	07:37	07:32	08:56 (A27-16)	08:23			
	22:02	21:29	20:26	42 08:29 (A27-15)	19:15	17:08	09:45 (A27-16)	16:28			
3	05:20	05:58	06:49	07:47 (A27-15)	07:39	07:34	08:56 (A27-16)	08:25			
	22:02	21:27	20:23	42 08:29 (A27-15)	19:13	17:07	09:45 (A27-16)	16:27			
4	05:21	06:00	06:51	07:47 (A27-15)	07:41	07:36	08:56 (A27-16)	08:26			
	22:01	21:25	20:21	41 08:28 (A27-15)	19:11	17:05	09:45 (A27-16)	16:27			
5	05:21	06:01	06:52	07:47 (A27-15)	07:42	07:37	08:56 (A27-16)	08:28			
	22:01	21:24	20:19	41 08:28 (A27-15)	19:08	17:03	09:45 (A27-16)	16:26			
6	05:22	06:03	06:54	07:47 (A27-15)	07:44	07:39	08:56 (A27-16)	08:29			
	22:00	21:22	20:16	39 08:26 (A27-15)	19:06	17:01	09:44 (A27-16)	16:26			
7	05:23	06:05	06:56	07:47 (A27-15)	07:46	07:41	08:57 (A27-16)	08:30			
	22:00	21:20	20:14	39 08:26 (A27-15)	19:04	16:59	09:44 (A27-16)	16:25			
8	05:24	06:06	06:57	07:47 (A27-15)	07:47	07:43	08:57 (A27-16)	08:31			
	21:59	21:18	20:12	37 08:24 (A27-15)	19:01	16:58	09:44 (A27-16)	16:25			
9	05:25	06:08	06:59	07:49 (A27-15)	07:49	07:45	08:58 (A27-16)	08:33			
	21:58	21:16	20:09	35 08:23 (A27-15)	18:59	16:56	09:43 (A27-16)	16:24			
10	05:26	06:09	07:01	07:50 (A27-15)	07:51	07:46	08:58 (A27-16)	08:34			
	21:58	21:14	20:07	33 08:22 (A27-15)	18:57	16:54	09:43 (A27-16)	16:24			
11	05:27	06:11	07:02	07:52 (A27-15)	07:53	07:48	08:59 (A27-16)	08:35			
	21:57	21:12	20:05	30 08:20 (A27-15)	18:54	16:53	09:42 (A27-16)	16:24			
12	05:28	06:13	07:04	07:52 (A27-15)	07:54	07:50	09:00 (A27-16)	08:36			
	21:56	21:11	20:02	26 08:18 (A27-15)	18:52	16:51	09:42 (A27-16)	16:24			
13	05:29	06:14	07:06	07:56 (A27-15)	07:56	07:52	09:02 (A27-16)	08:37			
	21:55	21:09	20:00	22 08:15 (A27-15)	18:50	16:50	09:42 (A27-16)	16:24			
14	05:30	06:16	07:07	07:56 (A27-15)	07:58	07:54	09:03 (A27-16)	08:38			
	21:54	21:07	19:58	16 08:12 (A27-15)	18:48	16:48	09:41 (A27-16)	16:24	3	11:44 (A27-17)	
15	05:31	06:18	07:09	08:01 (A27-15)	08:00	07:55	09:04 (A27-16)	08:39			
	21:53	21:05	19:55	6 08:07 (A27-15)	18:46	16:47	09:40 (A27-16)	16:24	7	11:49 (A27-17)	
16	05:33	06:19	07:10	08:01		10:16 (A27-16)	07:57	09:05 (A27-16)	08:40		
	21:52	21:03	19:53	18:43	8	10:24 (A27-16)	16:45	35 09:40 (A27-16)	16:24	10	11:51 (A27-17)
17	05:34	06:21	07:12	08:03		10:11 (A27-16)	07:59	09:06 (A27-16)	08:41		
	21:51	21:00	19:51	18:41	18	10:29 (A27-16)	16:44	33 09:39 (A27-16)	16:24	12	11:53 (A27-17)
18	05:35	06:23	07:14	08:05		10:08 (A27-16)	08:01	09:08 (A27-16)	08:42		
	21:50	20:58	19:48	18:39	25	10:33 (A27-16)	16:42	30 09:38 (A27-16)	16:24	13	11:54 (A27-17)
19	05:36	06:24	07:15	08:07		10:06 (A27-16)	08:02	09:10 (A27-16)	08:42		
	21:49	20:56	19:46	18:37	29	10:35 (A27-16)	16:41	26 09:36 (A27-16)	16:24	13	11:55 (A27-17)
20	05:38	06:26	07:17	08:08		10:04 (A27-16)	08:04	09:12 (A27-16)	08:43		
	21:48	20:54	19:43	18:35	33	10:37 (A27-16)	16:40	23 09:35 (A27-16)	16:25	14	11:55 (A27-17)
21	05:39	06:28	07:19	08:10		10:02 (A27-16)	08:06	09:14 (A27-16)	08:44		
	21:47	20:52	19:41	18:33	37	10:39 (A27-16)	16:38	19 09:33 (A27-16)	16:25	14	11:56 (A27-17)
22	05:40	06:29	07:20	08:12		10:01 (A27-16)	08:08	09:16 (A27-16)	08:44		
	21:45	20:50	19:39	18:30	39	10:40 (A27-16)	16:37	14 09:30 (A27-16)	16:25	14	11:56 (A27-17)
23	05:42	06:31	07:22	08:14		10:00 (A27-16)	08:09	09:21 (A27-16)	08:45		
	21:44	20:48	19:36	18:28	41	10:41 (A27-16)	16:36	5 09:26 (A27-16)	16:26	14	11:57 (A27-17)
24	05:43	06:32	07:24	08:16		09:59 (A27-16)	08:11		08:45		
	21:43	20:46	19:34	18:26	43	10:42 (A27-16)	16:35		16:26	14	11:57 (A27-17)
25	05:45	06:34	07:25	08:17		09:58 (A27-16)	08:13		08:46		
	21:41	20:43	19:32	18:24	45	10:43 (A27-16)	16:34		16:27	13	11:58 (A27-17)
26	05:46	06:36	07:27	08:19		09:58 (A27-16)	08:14		08:46		
	21:40	20:41	19:29	18:22	45	10:43 (A27-16)	16:33		16:28	13	11:58 (A27-17)
27	05:48	06:37	07:29	08:21		09:57 (A27-16)	08:16		08:46		
	21:38	20:39	19:27	18:20	47	10:44 (A27-16)	16:32		16:28	12	11:58 (A27-17)
28	05:49	06:39	07:30	08:23		09:57 (A27-16)	08:17		08:46		
	21:37	20:37	19:25	18:18	47	10:44 (A27-16)	16:31		16:29	10	11:57 (A27-17)
29	05:51	06:41	07:32	08:25		09:56 (A27-16)	08:19		08:47		
	21:35	20:35	19:22	18:16	49	10:45 (A27-16)	16:30		16:30	9	11:57 (A27-17)
30	05:52	06:42	07:34	07:26		08:56 (A27-16)	08:20		08:47		
	21:34	20:32	19:20	17:14	49	09:45 (A27-16)	16:29		16:31	6	11:56 (A27-17)
31	05:54	06:44	07:48 (A27-15)	07:28		08:56 (A27-16)			08:47		
	21:32	20:30	42 08:30 (A27-15)	17:12	49	09:45 (A27-16)			16:32		
Potential sun hours	505	456	382	491	332	604	266	861	242	191	
Total, worst case	34	454	491	604	861	242	191				

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

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

SHADOW - Calendar, graphical

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket



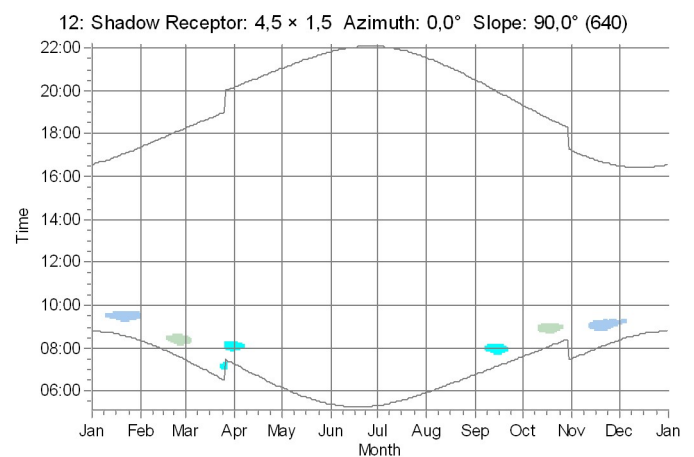
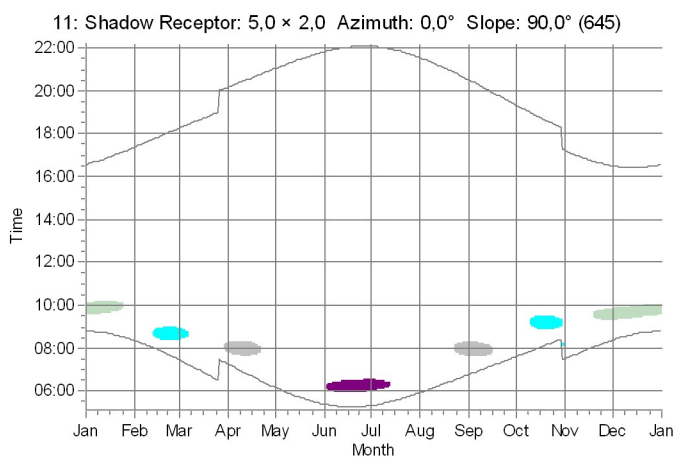
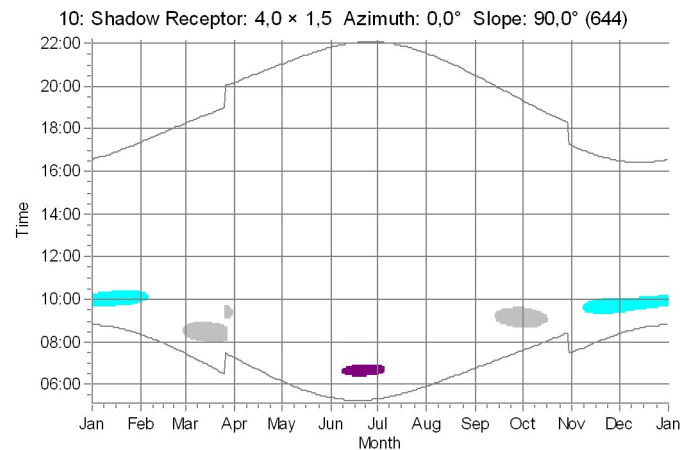
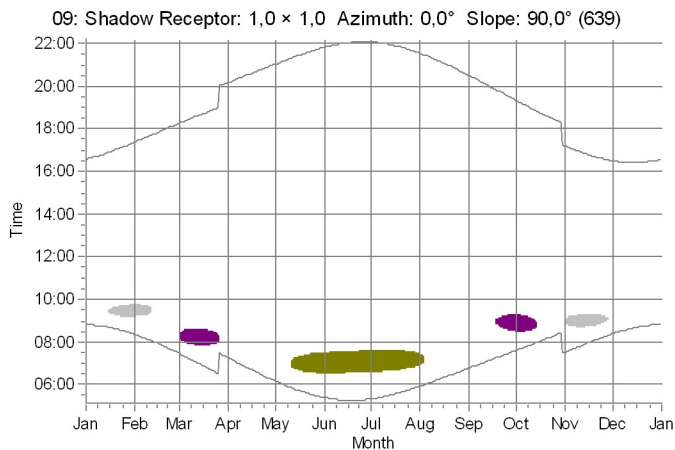
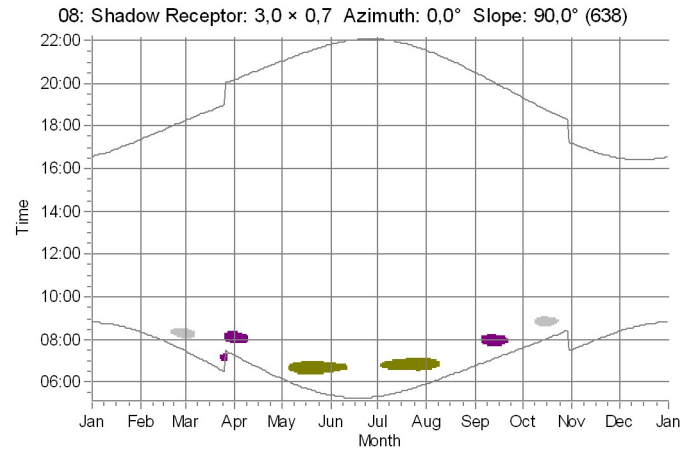
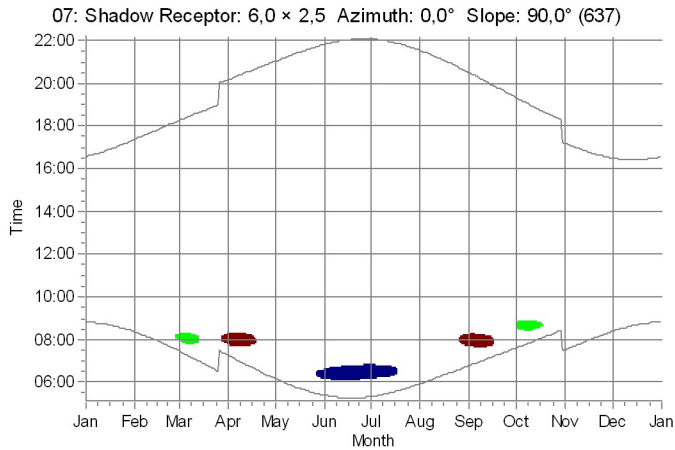
WTGs

	A27-03: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (205)
	A27-04: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (206)
	A27-05: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (207)
	A27-06: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (217)

	A27-07: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (216)
	A27-08: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (218)
	A27-09: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (208)

SHADOW - Calendar, graphical

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket



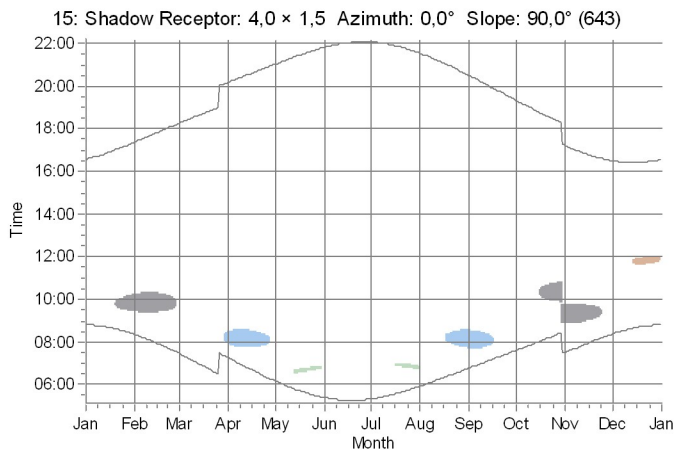
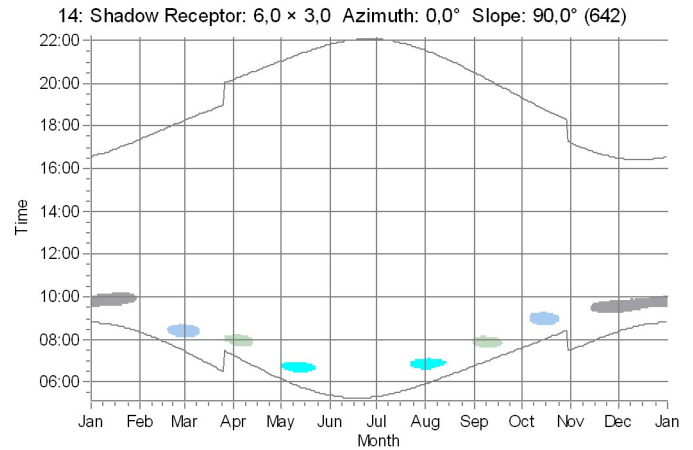
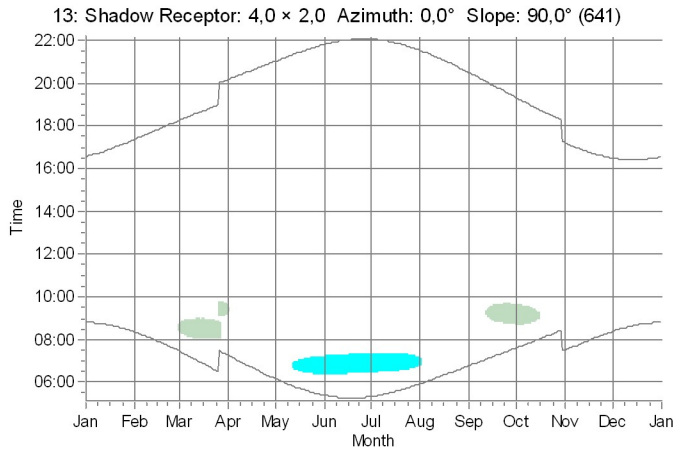
WTGs

	A27-07: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (216)
	A27-08: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (218)
	A27-09: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (208)
	A27-10: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (209)
	A27-11: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (210)

	A27-12: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (211)
	A27-13: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (212)
	A27-14: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (213)
	A27-15: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (214)

SHADOW - Calendar, graphical

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket



WTGs

	A27-13: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (212)
	A27-14: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (213)
	A27-15: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (214)

	A27-16: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (215)
	A27-17: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (220)

SHADOW - Calendar per WTG

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-01 - VESTAS V136-4.2 4200 136.0 !OI hub: 152,0 m (TOT: 220,0 m) (204)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47 16:33	08:20 17:21	07:26 18:14	07:15 20:09	06:09 21:01	05:22 21:48	05:18 22:03	05:55 21:31	06:46 20:28	07:36 19:18	07:30 17:10	08:22 16:28
2	08:47 16:34	08:19 17:23	07:24 18:16	07:13 20:11	06:07 21:02	05:21 21:49	05:19 22:02	05:57 21:29	06:47 20:26	07:37 19:15	07:32 17:08	08:24 16:28
3	08:47 16:35	08:17 17:25	07:22 18:17	07:10 20:12	06:05 21:04	05:21 21:50	05:20 22:02	05:58 21:27	06:49 20:23	07:39 19:13	07:34 17:07	08:25 16:27
4	08:47 16:36	08:16 17:27	07:20 18:19	07:08 20:14	06:03 21:06	05:20 21:51	05:20 22:02	06:00 21:26	06:51 20:21	07:41 19:11	07:36 17:05	08:27 16:26
5	08:47 16:37	08:14 17:29	07:18 18:21	07:06 20:16	06:01 21:08	05:19 21:52	05:21 22:01	06:01 21:24	06:52 20:19	07:42 19:08	07:38 17:03	08:28 16:26
6	08:46 16:39	08:12 17:31	07:15 18:23	07:03 20:18	05:59 21:09	05:18 21:53	05:22 22:01	06:03 21:22	06:54 20:17	07:44 19:06	07:39 17:01	08:29 16:25
7	08:46 16:40	08:11 17:32	07:13 18:25	07:01 20:19	05:58 21:11	05:18 21:54	05:23 22:00	06:05 21:20	06:56 20:14	07:46 19:04	07:41 16:59	08:31 16:25
8	08:46 16:41	08:09 17:34	07:11 18:26	06:59 20:21	05:56 21:13	05:17 21:55	05:24 21:59	06:06 21:18	06:57 20:12	07:48 19:01	07:43 16:58	08:32 16:25
9	08:45 16:43	08:07 17:36	07:09 18:28	06:56 20:23	05:54 21:14	05:17 21:56	05:25 21:59	06:08 21:17	06:59 20:10	07:49 18:59	07:45 16:56	08:33 16:24
10	08:45 16:44	08:05 17:38	07:06 18:30	06:54 20:24	05:52 21:16	05:16 21:57	05:26 21:58	06:09 21:15	07:01 20:07	07:51 18:57	07:47 16:54	08:34 16:24
11	08:44 16:45	08:03 17:40	07:04 18:32	06:52 20:26	05:50 21:18	05:16 21:58	05:27 21:57	06:11 21:13	07:02 20:05	07:53 18:55	07:49 16:53	08:35 16:24
12	08:43 16:47	08:01 17:42	07:02 18:34	06:50 20:28	05:49 21:19	05:15 21:58	05:28 21:56	06:13 21:11	07:04 20:03	07:55 18:52	07:50 16:51	08:36 16:24
13	08:43 16:48	08:00 17:44	07:00 18:35	06:49 20:30	05:47 21:21	05:15 21:59	05:29 21:56	06:14 21:09	07:06 20:00	07:56 18:50	07:52 16:49	08:38 16:23
14	08:42 16:50	07:58 17:46	06:57 18:37	06:45 20:31	05:45 21:22	05:15 22:00	05:30 21:55	06:16 21:07	07:07 19:58	07:58 18:48	07:54 16:48	08:39 16:23
15	08:41 16:51	07:56 17:48	06:55 18:39	06:43 20:33	05:44 21:24	05:14 22:00	05:31 21:54	06:18 21:05	07:09 19:55	08:00 18:46	07:56 16:46	08:39 16:23
16	08:40 16:53	07:54 17:49	06:52 18:41	06:41 20:35	05:42 21:26	05:14 22:01	05:33 21:53	06:19 21:03	07:11 19:53	08:02 18:43	07:58 16:45	08:40 16:23
17	08:39 16:55	07:52 17:51	06:50 18:43	06:38 20:37	05:41 21:27	05:14 22:01	05:34 21:52	06:21 21:01	07:12 19:51	08:03 18:41	07:59 16:44	08:41 16:24
18	08:38 16:56	07:50 17:53	06:48 18:44	06:36 20:38	05:39 21:29	05:14 22:02	05:35 21:51	06:22 20:59	07:14 19:48	08:05 18:39	08:01 16:42	08:42 16:24
19	08:37 16:58	07:48 17:55	06:45 18:46	06:34 20:40	05:38 21:30	05:14 22:02	05:36 21:49	06:24 20:57	07:16 19:46	08:07 18:37	08:03 16:41	08:43 16:24
20	08:36 17:00	07:46 17:57	06:43 18:48	06:32 20:42	05:36 21:32	05:14 22:02	05:38 21:48	06:26 20:54	07:17 19:44	08:09 18:35	08:05 16:40	08:43 16:24
21	08:35 17:01	07:44 17:59	06:41 18:50	06:30 20:44	05:35 21:33	05:14 22:03	05:39 21:47	06:27 20:52	07:19 19:41	08:10 18:33	08:06 16:38	08:44 16:25
22	08:34 17:03	07:42 18:01	06:38 18:51	06:28 20:45	05:34 21:35	05:14 22:03	05:40 21:46	06:29 20:50	07:21 19:39	08:12 18:30	08:08 16:37	08:45 16:25
23	08:33 17:05	07:39 18:03	06:36 18:53	06:25 20:47	05:32 21:36	05:15 22:03	05:42 21:44	06:31 20:48	07:22 19:36	08:14 18:28	08:10 16:36	08:45 16:26
24	08:32 17:07	07:37 18:04	06:34 18:55	06:23 20:49	05:31 21:37	05:15 22:03	05:43 21:43	06:32 20:46	07:24 19:34	08:16 18:26	08:11 16:35	08:46 16:26
25	08:30 17:08	07:35 18:06	06:31 18:57	06:21 20:50	05:30 21:39	05:15 22:03	05:45 21:42	06:34 20:44	07:26 19:32	08:18 18:24	08:13 16:34	08:46 16:27
26	08:29 17:10	07:33 18:08	06:29 18:58	06:19 20:52	05:28 21:40	05:16 22:03	05:46 21:40	06:36 20:42	07:27 19:29	08:19 18:22	08:15 16:33	08:46 16:28
27	08:28 17:12	07:31 18:10	07:27 20:00	06:17 20:54	05:27 21:42	05:16 22:03	05:47 21:39	06:37 20:39	07:29 19:27	08:21 18:20	08:16 16:32	08:47 16:28
28	08:26 17:14	07:29 18:12	07:24 20:02	06:15 20:56	05:26 21:43	05:17 22:03	05:49 21:37	06:39 20:37	07:31 19:25	08:23 18:18	08:18 16:31	08:47 16:29
29	08:25 17:16		07:22 20:04	06:13 20:57	05:25 21:44	05:17 22:03	05:50 21:36	06:41 20:35	07:32 19:22	08:25 18:16	08:19 16:30	08:47 16:30
30	08:23 17:17		07:20 20:05	06:11 20:59	05:24 21:45	05:18 22:03	05:52 21:34	06:42 20:33	07:34 19:20	07:27 17:14	08:21 16:29	08:47 16:31
31	08:22 17:19		07:17 20:07		05:23 21:47		05:53 21:32	06:44 20:30		07:29 17:12		08:47 16:32
Potential sun hours	256	276	366	416	486	501	505	456	382	332	265	242
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	0

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

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

SHADOW - Calendar per WTG

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-02 - VESTAS V136-4.2 4200 136.0 !OI hub: 152,0 m (TOT: 220,0 m) (219)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47 16:33	08:20 17:21	07:26 18:14	07:15 20:09	06:09 21:01	05:22 21:48	05:18 22:03	05:55 21:31	06:46 20:28	07:36 19:18	07:30 17:10	08:22 16:28
2	08:47 16:34	08:19 17:23	07:24 18:16	07:13 20:11	06:07 21:02	05:21 21:49	05:19 22:02	05:57 21:29	06:47 20:26	07:37 19:15	07:32 17:08	08:24 16:28
3	08:47 16:35	08:17 17:25	07:22 18:17	07:10 20:12	06:05 21:04	05:21 21:50	05:20 22:02	05:58 21:27	06:49 20:23	07:39 19:13	07:34 17:06	08:25 16:27
4	08:47 16:36	08:16 17:27	07:20 18:19	07:08 20:14	06:03 21:06	05:20 21:51	05:20 22:02	06:00 21:26	06:51 20:21	07:41 19:11	07:36 17:05	08:27 16:26
5	08:47 16:37	08:14 17:29	07:18 18:21	07:06 20:16	06:01 21:08	05:19 21:52	05:21 22:01	06:01 21:24	06:52 20:19	07:42 19:08	07:38 17:03	08:28 16:26
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15	08:41 16:51	07:56 17:48	06:55 18:39	06:43 20:33	05:44 21:24	05:14 22:00	05:31 21:54	06:18 21:05	07:09 19:55	08:00 18:46	07:56 16:46	08:39 16:23
16	08:40 16:53	07:54 17:49	06:52 18:41	06:41 20:35	05:42 21:26	05:14 22:01	05:33 21:53	06:19 21:03	07:11 19:53	08:01 18:43	07:58 16:45	08:40 16:23
17	08:39 16:55	07:52 17:51	06:50 18:43	06:38 20:37	05:41 21:27	05:14 22:01	05:34 21:52	06:21 21:01	07:12 19:51	08:03 18:41	07:59 16:44	08:41 16:24
18	08:38 16:56	07:50 17:53	06:48 18:44	06:36 20:38	05:39 21:29	05:14 22:02	05:35 21:50	06:22 20:59	07:14 19:48	08:05 18:39	08:01 16:42	08:42 16:24
19	08:37 16:58	07:48 17:55	06:45 18:46	06:34 20:40	05:38 21:30	05:14 22:02	05:36 21:49	06:24 20:57	07:16 19:46	08:07 18:37	08:03 16:41	08:43 16:24
20	08:36 17:00	07:46 17:57	06:43 18:48	06:32 20:42	05:36 21:32	05:14 22:02	05:38 21:48	06:26 20:54	07:17 19:44	08:09 18:35	08:05 16:40	08:43 16:24
21	08:35 17:01	07:44 17:59	06:41 18:50	06:30 20:44	05:35 21:33	05:14 22:03	05:39 21:47	06:27 20:52	07:19 19:41	08:10 18:33	08:06 16:38	08:44 16:25
22	08:34 17:03	07:41 18:01	06:38 18:51	06:28 20:45	05:34 21:35	05:15 22:03	05:40 21:46	06:29 20:50	07:21 19:39	08:12 18:30	08:08 16:37	08:45 16:25
23	08:33 17:05	07:39 18:03	06:36 18:53	06:25 20:47	05:32 21:36	05:15 22:03	05:42 21:44	06:31 20:48	07:22 19:36	08:14 18:28	08:10 16:36	08:45 16:26
24	08:32 17:07	07:37 18:04	06:34 18:55	06:23 20:49	05:31 21:37	05:15 22:03	05:43 21:43	06:32 20:46	07:24 19:34	08:16 18:26	08:11 16:35	08:46 16:26
25	08:30 17:08	07:35 18:06	06:31 18:57	06:21 20:50	05:30 21:39	05:15 22:03	05:45 21:42	06:34 20:44	07:26 19:32	08:18 18:24	08:13 16:34	08:46 16:27
26	08:29 17:10	07:33 18:08	06:29 18:58	06:19 20:52	05:28 21:40	05:16 22:03	05:46 21:40	06:36 20:41	07:27 19:29	08:19 18:22	08:15 16:33	08:46 16:28
27	08:28 17:12	07:31 18:10	07:27 20:00	06:17 20:54	05:27 21:42	05:16 22:03	05:47 21:39	06:37 20:39	07:29 19:27	08:21 18:20	08:16 16:32	08:47 16:28
28	08:26 17:14	07:29 18:12	07:24 20:02	06:15 20:56	05:26 21:43	05:17 22:03	05:49 21:37	06:39 20:37	07:31 19:25	08:23 18:18	08:18 16:31	08:47 16:29
29	08:25 17:16		07:22 20:04	06:13 20:57	05:25 21:44	05:17 22:03	05:50 21:36	06:41 20:35	07:32 19:22	08:25 18:16	08:19 16:30	08:47 16:30
30	08:23 17:17		07:20 20:05	06:11 20:59	05:24 21:45	05:18 22:03	05:52 21:34	06:42 20:33	07:34 19:20	07:27 17:14	08:21 16:29	08:47 16:31
31	08:22 17:19		07:17 20:07		05:23 21:47		05:53 21:32	06:44 20:30		07:28 17:12		08:47 16:32
Potential sun hours	256	276	366	416	486	501	505	456	382	332	265	242
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	0

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

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

SHADOW - Calendar per WTG

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-03 - VESTAS V136-4.2 4200 136.0 !OI! hub: 152,0 m (TOT: 220,0 m) (205)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47 16:33	08:20 17:21	07:26 18:14	07:15 20:09	06:09 21:01	05:22 21:48	05:18 22:03	06:34-06:53/19 21:31	05:55 20:28	06:46 19:18	07:36 17:10	08:22 16:28
2	08:47 16:34	08:19 17:23	07:24 18:16	07:13 20:10	06:07 21:02	05:21 21:49	05:19 22:02	06:36-06:53/17 21:29	05:57 20:26	06:47 19:15	07:37 17:08	08:24 16:28
3	08:47 16:35	08:17 17:25	07:22 18:17	07:10 20:12	06:05 21:04	05:21 21:50	05:20 22:02	06:37-06:51/14 21:27	05:58 20:23	06:49 19:13	07:39 17:06	08:25 16:27
4	08:47 16:36	08:16 17:27	07:20 18:19	07:08 20:14	06:03 21:06	05:20 21:51	05:20 22:02	06:39-06:50/11 21:26	06:00 20:21	06:51 19:11	07:41 17:05	08:27 16:26
5	08:47 16:37	08:14 17:29	07:18 18:21	07:06 20:16	06:01 21:08	05:19 21:52	05:21 22:01	06:42-06:48/6 21:24	06:01 20:19	06:52 19:08	07:42 17:03	08:28 16:26
6	08:46 16:39	08:12 17:30	07:15 18:23	07:03 20:17	05:59 21:09	05:18 21:53	05:22 22:01	06:03 21:22	06:04 20:17	06:54 19:06	07:44 17:01	08:29 16:25
7	08:46 16:40	08:10 17:32	07:13 18:25	07:01 20:19	05:58 21:11	05:18 21:54	05:23 22:00	06:05 21:20	06:56 20:14	07:46 19:04	07:41 16:59	08:31 16:25
8	08:45 16:41	08:09 17:34	07:11 18:26	06:59 20:21	05:56 21:13	05:17 21:55	05:24 21:59	06:06 21:18	06:57 20:12	07:48 19:01	07:43 16:58	08:32 16:25
9	08:45 16:43	08:07 17:36	07:08 18:28	06:56 20:23	05:54 21:14	05:17 21:56	06:34-06:44/10 21:59	06:08 21:17	06:59 20:10	07:49 18:59	07:45 16:56	08:33 16:24
10	08:44 16:44	08:05 17:38	07:06 18:30	06:54 20:24	05:52 21:16	05:16 21:57	06:33-06:46/13 21:58	06:09 21:15	07:01 20:07	07:51 18:57	07:47 16:54	08:34 16:24
11	08:44 16:45	08:03 17:40	07:04 18:32	06:52 20:26	05:50 21:18	05:16 21:58	06:31-06:47/16 21:57	06:11 21:13	07:02 20:05	07:53 18:55	07:49 16:53	08:35 16:24
12	08:43 16:47	08:01 17:42	07:02 18:34	06:50 20:28	05:49 21:19	05:15 21:58	06:31-06:49/18 21:56	06:13 21:11	07:04 20:02	07:54 18:52	07:50 16:51	08:36 16:24
13	08:43 16:48	08:00 17:44	06:59 18:35	06:47 20:30	05:47 21:21	05:15 21:59	06:30-06:50/20 21:56	06:14 21:09	07:06 20:00	07:56 18:50	07:52 16:49	08:37 16:23
14	08:42 16:50	07:58 17:46	06:57 18:37	06:45 20:31	05:45 21:22	05:15 22:00	06:30-06:51/21 21:55	06:16 21:07	07:07 19:58	07:58 18:48	07:54 16:48	08:38 16:23
15	08:41 16:51	07:56 17:48	06:55 18:39	06:43 20:33	05:44 21:24	05:15 22:00	06:30-06:52/22 21:54	06:18 21:05	07:09 19:55	08:00 18:46	07:56 16:46	08:39 16:23
16	08:40 16:53	07:54 17:49	06:52 18:41	06:41 20:35	05:42 21:25	05:14 22:01	06:29-06:53/24 21:53	06:19 21:03	07:11 19:53	08:01 18:43	07:57 16:45	08:40 16:24
17	08:39 16:55	07:52 17:51	06:50 18:42	06:38 20:37	05:41 21:27	05:14 22:01	06:29-06:53/24 21:52	06:21 21:01	07:12 19:51	08:03 18:41	07:59 16:44	08:41 16:24
18	08:38 16:56	07:50 17:53	06:48 18:44	06:36 20:38	05:39 21:29	05:14 22:02	06:29-06:54/25 21:50	06:22 20:59	07:14 19:48	08:05 18:39	08:01 16:42	08:42 16:24
19	08:37 16:58	07:48 17:55	06:45 18:46	06:34 20:40	05:38 21:30	05:14 22:02	06:29-06:54/25 21:49	06:24 20:57	07:15 19:46	08:07 18:37	08:03 16:41	08:43 16:24
20	08:36 17:00	07:46 17:57	06:43 18:48	06:32 20:42	05:36 21:32	05:14 22:02	06:29-06:54/25 21:48	06:26 20:54	07:17 19:44	08:09 18:35	08:04 16:40	08:43 16:24
21	08:35 17:01	07:44 17:59	06:41 18:50	06:30 20:43	05:35 21:33	05:14 22:03	06:29-06:55/26 21:47	06:27 20:52	07:19 19:41	08:10 18:32	08:06 16:38	08:44 16:25
22	08:34 17:03	07:41 18:01	06:38 18:51	06:28 20:45	05:34 21:35	05:15 22:03	06:29-06:55/26 21:46	06:29 20:50	07:20 19:39	08:12 18:30	08:08 16:37	08:45 16:25
23	08:33 17:05	07:39 18:03	06:36 18:53	06:25 20:47	05:32 21:36	05:15 22:03	06:29-06:54/25 21:44	06:31 20:48	07:22 19:36	08:14 18:28	08:10 16:36	08:45 16:26
24	08:32 17:06	07:37 18:04	06:34 18:55	06:23 20:49	05:31 21:37	05:15 22:03	06:30-06:55/25 21:43	06:32 20:46	07:24 19:34	08:16 18:26	08:11 16:35	08:46 16:26
25	08:30 17:08	07:35 18:06	06:31 18:57	06:21 20:50	05:30 21:39	05:15 22:03	06:30-06:55/25 21:42	06:34 20:44	07:26 19:32	08:18 18:24	08:13 16:34	08:46 16:27
26	08:29 17:10	07:33 18:08	06:29 18:58	06:19 20:52	05:28 21:40	05:16 22:03	06:30-06:55/25 21:40	06:36 20:41	07:27 19:29	08:19 18:22	08:15 16:33	08:46 16:28
27	08:28 17:12	07:31 18:10	07:27 20:00	06:17 20:54	05:27 21:42	05:16 22:03	06:31-06:55/24 21:39	06:37 20:39	07:29 19:27	08:21 18:20	08:16 16:32	08:47 16:28
28	08:26 17:14	07:29 18:12	07:24 20:02	06:15 20:56	05:26 21:43	05:17 22:03	06:31-06:54/23 21:37	06:39 20:37	07:31 19:25	08:23 18:18	08:18 16:31	08:47 16:29
29	08:25 17:16	07:22 18:04	07:22 20:04	06:13 20:57	05:25 21:44	05:17 22:03	06:33-06:54/21 21:36	06:41 20:35	07:32 19:22	08:25 18:16	08:19 16:30	08:47 16:30
30	08:23 17:17	07:20 18:05	07:20 20:05	06:11 20:59	05:24 21:45	05:18 22:03	06:33-06:53/20 21:34	06:42 20:33	07:34 19:20	07:27 17:14	08:21 16:29	08:47 16:31
31	08:22 17:19	07:17 18:07	07:17 20:07	06:11 21:47	05:23 21:47	05:18 21:32	06:33-06:53/20 21:32	06:44 20:30	07:28 17:12	07:28 17:12	08:21 16:32	08:47 16:32
Potential sun hours	256	276	366	416	486	501	505	456	382	332	265	242
Sum of minutes with flicker	0	0	0	0	0	483	67	0	0	0	0	0

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

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

SHADOW - Calendar per WTG

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-04 - VESTAS V136-4.2 4200 136.0 !OI hub: 152,0 m (TOT: 220,0 m) (206)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47 16:33	08:20 17:21	07:26 18:14	07:15 20:09	08:21-08:58/37 21:01	06:09 21:48
2	08:47 16:34	08:19 17:23	07:24 18:15	07:13 20:10	08:22-08:57/35 21:02	07:03-07:46/43 21:49
3	08:47 16:35	08:17 17:25	07:22 18:17	07:10 20:12	08:22-08:55/33 21:04	07:02-07:46/44 21:50
4	08:47 16:36	08:16 17:27	07:20 18:19	07:08 20:14	08:22-08:54/32 21:06	07:01-07:46/45 21:51
5	08:47 16:37	08:14 17:29	07:18 18:21	07:06 20:16	08:24-08:53/29 21:08	07:01-07:46/45 21:52
6	08:46 16:39	08:12 17:30	07:15 18:23	07:03 20:17	08:25-08:52/27 21:09	07:01-07:47/46 21:53
7	08:46 16:40	08:10 17:32	07:13 18:25	07:01 20:19	08:26-08:49/23 21:11	07:00-07:47/47 21:54
8	08:45 16:41	08:09 17:34	07:11 18:26	06:59 20:21	08:28-08:46/18 21:13	06:59-07:47/48 21:55
9	08:45 16:43	08:07 17:36	07:08 18:28	06:56 20:23	08:32-08:42/10 21:14	07:00-07:47/47 21:56
10	08:44 16:44	08:05 17:38	07:06 18:30	06:54 20:24	06:59-07:47/48 21:16	06:59-07:47/48 21:57
11	08:44 16:45	08:03 17:40	07:04 18:32	06:52 20:26	07:00-07:47/47 21:17	06:59-07:47/47 21:57
12	08:43 16:47	08:01 17:42	07:02 18:34	06:50 20:28	06:59-07:47/48 21:19	06:59-07:47/48 21:58
13	08:42 16:48	07:59 17:44	06:59 18:35	06:47 20:30	07:00-07:47/47 21:21	06:59-07:47/47 21:59
14	08:42 16:50	07:58 17:46	06:57 18:37	06:45 20:31	06:59-07:46/47 21:22	06:59-07:46/47 22:00
15	08:41 16:51	07:56 17:48	06:55 18:39	06:43 20:33	07:00-07:47/47 21:24	06:59-07:47/47 22:00
16	08:40 16:53	07:54 17:49	06:52 18:41	06:41 20:35	06:59-07:46/47 21:25	06:59-07:46/47 22:01
17	08:39 16:55	07:52 17:51	06:50 18:42	06:38 20:37	07:00-07:46/46 21:27	06:59-07:46/46 22:01
18	08:38 16:56	07:50 17:53	06:48 18:44	06:36 20:38	07:01-07:46/45 21:29	06:59-07:46/45 22:02
19	08:37 16:58	07:48 17:55	06:45 18:46	06:34 20:40	07:00-07:45/45 21:30	06:59-07:45/45 22:02
20	08:36 17:00	07:46 17:57	06:43 18:48	06:32 20:42	07:01-07:45/44 21:32	06:59-07:45/44 22:02
21	08:35 17:01	07:44 17:59	06:41 18:50	06:30 20:43	07:02-07:44/42 21:33	06:59-07:44/42 22:03
22	08:34 17:03	07:41 18:01	06:38 18:51	06:27 20:45	07:02-07:44/42 21:35	06:59-07:44/42 22:03
23	08:33 17:05	07:39 18:03	06:36 18:53	06:25 20:47	07:03-07:44/41 21:36	06:59-07:44/41 22:03
24	08:32 17:06	07:37 18:04	06:34 18:55	06:23 20:49	07:04-07:43/39 21:37	06:59-07:43/39 22:03
25	08:30 17:08	07:35 18:06	06:31 18:57	06:21 20:50	07:04-07:43/39 21:39	06:59-07:43/39 22:03
26	08:29 17:10	07:33 18:08	06:29 18:58	06:19 20:52	06:10-06:19/9 21:40	06:04-06:35/31 22:03
27	08:28 17:12	07:31 18:10	07:27 20:00	06:17 20:54	06:09-06:21/12 21:41	06:05-06:35/30 22:03
28	08:26 17:14	07:29 18:12	07:24 20:02	06:15 20:56	06:08-06:23/15 21:43	06:05-06:35/30 22:03
29	08:25 17:16		07:22 20:04	06:13 20:57	07:06-07:43/37 21:44	06:06-06:36/30 22:03
30	08:23 17:17		07:20 20:05	06:11 20:59	07:04-07:44/40 21:45	06:06-06:35/29 22:03
31	08:22 17:19		07:17 20:07		06:05-06:25/20 21:47	
Potential sun hours	256	276	366	416	486	501
Sum of minutes with flicker	0	0	533	481	1417	1102

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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-04 - VESTAS V136-4.2 4200 136.0 !OI! hub: 152,0 m (TOT: 220,0 m) (206)

Assumptions for shadow calculations

Reference year for calendar

2022

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	05:18 06:06-06:36/30 22:03 07:26-07:32/6	05:55 07:10-07:58/48 21:31	06:46 20:28	07:36 19:18	07:30 17:10	08:22 16:28
2	05:19 06:07-06:36/29 22:02 07:25-07:34/9	05:57 07:10-07:57/47 21:29	06:47 20:26	07:37 19:15	07:32 17:08	08:24 16:28
3	05:20 06:07-06:36/29 22:02 07:23-07:35/12	05:58 07:09-07:57/48 21:27	06:49 20:23	07:39 19:13	07:34 17:06	08:25 16:27
4	05:20 06:07-06:36/29 22:02 07:23-07:37/14	06:00 07:10-07:57/47 21:26	06:51 08:29-08:39/10 20:21	07:41 19:11	07:36 17:05	08:27 16:26
5	05:21 06:08-06:36/28 22:01 07:22-07:38/16	06:01 07:09-07:57/48 21:24	06:52 08:25-08:43/18 20:19	07:42 19:08	07:38 17:03	08:28 16:26
6	05:22 06:09-06:36/27 22:01 07:21-07:40/19	06:03 07:10-07:57/47 21:22	06:54 08:22-08:45/23 20:16	07:44 19:06	07:39 17:01	08:29 16:25
7	05:23 06:08-06:35/27 22:00 07:20-07:40/20	06:05 07:10-07:56/46 21:20	06:56 08:20-08:47/27 20:14	07:46 19:04	07:41 16:59	08:31 16:25
8	05:24 06:09-06:35/26 21:59 07:19-07:41/22	06:06 07:10-07:56/46 21:18	06:57 08:19-08:48/29 20:12	07:48 19:01	07:43 16:58	08:32 16:25
9	05:25 06:09-06:35/26 21:59 07:19-07:43/24	06:08 07:10-07:56/46 21:16	06:59 08:17-08:48/31 20:09	07:49 18:59	07:45 16:56	08:33 16:24
10	05:26 06:10-06:35/25 21:58 07:18-07:44/26	06:09 07:11-07:55/44 21:15	07:01 08:16-08:50/34 20:07	07:51 18:57	07:47 16:54	08:34 16:24
11	05:27 06:11-06:35/24 21:57 07:18-07:45/27	06:11 07:11-07:54/43 21:13	07:02 08:14-08:49/35 20:05	07:53 18:55	07:48 16:53	08:35 16:24
12	05:28 06:12-06:35/23 21:56 07:17-07:46/29	06:13 07:12-07:54/42 21:11	07:04 08:13-08:50/37 20:02	07:54 18:52	07:50 16:51	08:36 16:24
13	05:29 06:13-06:34/21 21:55 07:17-07:47/30	06:14 07:12-07:53/41 21:09	07:06 08:13-08:51/38 20:00	07:56 18:50	07:52 16:49	08:37 16:23
14	05:30 06:14-06:34/20 21:55 07:16-07:48/32	06:16 07:13-07:52/39 21:07	07:07 08:12-08:50/38 19:58	07:58 18:48	07:54 16:48	08:38 16:23
15	05:31 06:15-06:33/18 21:54 07:15-07:49/34	06:18 07:13-07:51/38 21:05	07:09 08:11-08:50/39 19:55	08:00 18:46	07:56 16:46	08:39 16:23
16	05:33 06:16-06:32/16 21:53 07:15-07:49/34	06:19 07:15-07:50/35 21:03	07:11 08:10-08:50/40 19:53	08:01 18:43	07:57 16:45	08:40 16:24
17	05:34 06:17-06:31/14 21:52 07:14-07:50/36	06:21 07:16-07:48/32 21:01	07:12 08:10-08:50/40 19:51	08:03 18:41	07:59 16:44	08:41 16:24
18	05:35 06:18-06:29/11 21:50 07:14-07:51/37	06:22 07:17-07:47/30 20:59	07:14 08:11-08:50/39 19:48	08:05 18:39	08:01 16:42	08:42 16:24
19	05:36 06:21-06:27/6 21:49 07:14-07:52/38	06:24 07:19-07:44/25 20:57	07:15 08:10-08:48/38 19:46	08:07 18:37	08:03 16:41	08:43 16:24
20	05:38 07:13-07:53/40 21:48	06:26 07:21-07:42/21 20:54	07:17 08:10-08:48/38 19:44	08:09 18:35	08:04 16:40	08:43 16:24
21	05:39 07:13-07:53/40 21:47	06:27 07:24-07:38/14 20:52	07:19 08:11-08:48/37 19:41	08:10 18:32	08:06 16:38	08:44 16:25
22	05:40 07:12-07:53/41 21:46	06:29 20:50	07:20 08:10-08:46/36 19:39	08:12 18:30	08:08 16:37	08:44 16:25
23	05:42 07:12-07:55/43 21:44	06:31 20:48	07:22 08:11-08:45/34 19:36	08:14 18:28	08:10 16:36	08:45 16:26
24	05:43 07:12-07:55/43 21:43	06:32 20:46	07:24 08:12-08:44/32 19:34	08:16 18:26	08:11 16:35	08:45 16:26
25	05:45 07:11-07:55/44 21:41	06:34 20:44	07:25 08:12-08:42/30 19:32	08:18 18:24	08:13 16:34	08:46 16:27
26	05:46 07:11-07:55/44 21:40	06:36 20:41	07:27 08:14-08:40/26 19:29	08:19 18:22	08:14 16:33	08:46 16:28
27	05:47 07:11-07:56/45 21:39	06:37 20:39	07:29 08:16-08:38/22 19:27	08:21 18:20	08:16 16:32	08:47 16:28
28	05:49 07:10-07:56/46 21:37	06:39 20:37	07:31 08:17-08:34/17 19:25	08:23 18:18	08:18 16:31	08:47 16:29
29	05:50 07:10-07:56/46 21:36	06:41 20:35	07:32 08:22-08:30/8 19:22	08:25 18:16	08:19 16:30	08:47 16:30
30	05:52 07:10-07:57/47 21:34	06:42 20:33	07:34 19:20	07:27 17:14	08:21 16:29	08:47 16:31
31	05:53 07:10-07:57/47 21:32	06:44 20:30		07:28 17:12		08:47 16:32
Potential sun hours	505	456	382	332	265	242
Sum of minutes with flicker	1420	827	796	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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-05 - VESTAS V136-4.2 4200 136.0 !OI hub: 152,0 m (TOT: 220,0 m) (207)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47 16:33	08:20 17:21	07:26 08:27-08:45/18 18:14	07:15 20:09	06:09 07:00-07:33/33 21:01	05:22 21:48
2	08:47 16:34	08:19 17:23	07:24 08:29-08:43/14 18:15	07:13 20:10	06:07 07:00-07:33/33 21:02	05:21 21:49
3	08:47 16:35	08:17 17:25	07:22 08:32-08:38/6 18:17	07:10 20:12	06:05 07:00-07:32/32 21:04	05:21 21:50
4	08:47 16:36	08:16 17:27	07:20 18:19	07:08 20:14	06:03 07:00-07:32/32 21:06	05:20 21:51
5	08:46 16:37	08:14 17:29	07:18 18:21	07:06 20:16	06:01 07:00-07:31/31 21:07	05:19 21:52
6	08:46 16:39	08:12 17:30	07:15 07:54-08:01/7 18:23	07:03 20:17	05:59 07:01-07:31/30 21:09	05:18 21:53
7	08:46 16:40	08:10 17:32	07:13 07:50-08:05/15 18:25	07:01 07:35-07:43/8 20:19	05:58 07:01-07:30/29 21:11	05:18 21:54
8	08:45 16:41	08:09 17:34	07:11 07:48-08:08/20 18:26	06:59 07:33-07:45/12 20:21	05:56 07:01-07:28/27 21:12	05:17 21:55
9	08:45 16:43	08:07 17:36	07:08 07:45-08:08/23 18:28	06:56 07:31-07:47/16 20:23	05:54 07:03-07:28/25 21:14	05:17 21:56
10	08:44 16:44	08:05 17:38	07:06 07:44-08:10/26 18:30	06:54 07:29-07:48/19 20:24	05:52 07:03-07:27/24 21:16	05:16 21:57
11	08:44 16:45	08:03 17:40	07:04 07:43-08:11/28 18:32	06:52 07:26-07:48/22 20:26	05:50 07:05-07:26/21 21:17	05:16 21:57
12	08:43 16:47	08:01 17:42	07:02 07:41-08:11/30 18:34	06:50 07:24-07:48/24 20:28	05:49 07:06-07:24/18 21:19	05:15 21:58
13	08:42 16:48	07:59 17:44	06:59 07:41-08:12/31 18:35	06:47 07:23-07:48/25 20:30	05:47 07:08-07:22/14 21:21	05:15 21:59
14	08:42 16:50	07:58 08:35-08:42/7 17:46	06:57 07:40-08:12/32 18:37	06:45 07:23-07:49/26 20:31	05:45 07:11-07:19/8 21:22	05:15 22:00
15	08:41 16:51	07:56 08:33-08:45/12 17:48	06:55 07:39-08:11/32 18:39	06:43 07:22-07:48/26 20:33	05:44 21:24	05:15 22:00
16	08:40 16:53	07:54 08:31-08:47/16 17:49	06:52 07:39-08:11/32 18:41	06:41 07:21-07:47/26 20:35	05:42 21:25	05:14 22:01
17	08:39 16:55	07:52 08:29-08:48/19 17:51	06:50 07:38-08:10/32 18:42	06:38 07:22-07:47/25 20:37	05:41 21:27	05:14 22:01
18	08:38 16:56	07:50 08:27-08:49/22 17:53	06:48 07:39-08:10/31 18:44	06:36 07:14-07:46/32 20:38	05:39 21:29	05:14 22:02
19	08:37 16:58	07:48 08:25-08:50/25 17:55	06:45 07:39-08:10/31 18:46	06:34 07:11-07:45/34 20:40	05:38 21:30	05:14 22:02
20	08:36 17:00	07:46 08:24-08:49/25 17:57	06:43 07:39-08:08/29 18:48	06:32 07:08-07:44/36 20:42	05:36 21:32	05:14 22:02
21	08:35 17:01	07:43 08:24-08:50/26 17:59	06:41 07:40-08:07/27 18:50	06:30 07:06-07:43/37 20:43	05:35 21:33	05:14 22:03
22	08:34 17:03	07:41 08:24-08:50/26 18:01	06:38 07:41-08:06/25 18:51	06:27 07:05-07:41/36 20:45	05:34 21:34	05:15 22:03
23	08:33 17:05	07:39 08:24-08:50/26 18:03	06:36 07:41-08:04/23 18:53	06:25 07:04-07:39/35 20:47	05:32 21:36	05:15 22:03
24	08:32 17:06	07:37 08:23-08:49/26 18:04	06:34 07:43-08:02/19 18:55	06:23 07:03-07:32/29 20:49	05:31 21:37	05:15 22:03
25	08:30 17:08	07:35 08:24-08:49/25 18:06	06:31 07:44-07:58/14 18:57	06:21 07:02-07:33/31 20:50	05:30 21:39	05:15 22:03
26	08:29 17:10	07:33 08:24-08:49/25 18:08	06:29 07:50-07:53/3 18:58	06:19 07:01-07:33/32 20:52	05:28 21:40	05:16 22:03
27	08:28 17:12	07:31 08:25-08:48/23 18:10	07:27 20:00	06:17 07:00-07:33/33 20:54	05:27 21:41	05:16 22:03
28	08:26 17:14	07:29 08:25-08:46/21 18:12	07:24 20:02	06:15 07:00-07:33/33 20:56	05:26 21:43	05:17 22:03
29	08:25 17:16		07:22 20:03	06:13 06:59-07:33/34 20:57	05:25 21:44	05:17 22:03
30	08:23 17:17		07:20 20:05	06:11 06:59-07:33/34 20:59	05:24 21:45	05:18 22:03
31	08:22 17:19		07:17 20:07		05:23 21:46	
Potential sun hours	256	276	366	416	486	501
Sum of minutes with flicker	0	324	548	665	357	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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-05 - VESTAS V136-4.2 4200 136.0 !OI hub: 152,0 m (TOT: 220,0 m) (207)

Assumptions for shadow calculations

Reference year for calendar

2022

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	05:18 22:03	05:55 07:18-07:33/15 21:31	06:46 07:24-07:48/24 20:28	07:36 08:19-08:51/32 19:18	07:30 17:10	08:22 16:28
2	05:19 22:02	05:57 07:16-07:35/19 21:29	06:47 07:25-07:47/22 20:26	07:37 08:20-08:50/30 19:15	07:32 17:08	08:24 16:28
3	05:20 22:02	05:58 07:15-07:37/22 21:27	06:49 07:27-07:46/19 20:23	07:39 08:20-08:49/29 19:13	07:34 17:06	08:25 16:27
4	05:20 22:01	06:00 07:13-07:37/24 21:26	06:51 07:28-07:44/16 20:21	07:41 08:21-08:48/27 19:11	07:36 17:05	08:27 16:26
5	05:21 22:01	06:01 07:12-07:38/26 21:24	06:52 07:30-07:42/12 20:19	07:42 08:21-08:46/25 19:08	07:38 17:03	08:28 16:26
6	05:22 22:01	06:03 07:11-07:39/28 21:22	06:54 07:31-07:39/8 20:16	07:44 08:23-08:45/22 19:06	07:39 17:01	08:29 16:25
7	05:23 22:00	06:05 07:10-07:39/29 21:20	06:56 07:33-07:35/2 20:14	07:46 08:25-08:43/18 19:04	07:41 16:59	08:30 16:25
8	05:24 21:59	06:06 07:10-07:40/30 21:18	06:57 20:12	07:48 08:28-08:40/12 19:01	07:43 16:58	08:32 16:25
9	05:25 21:59	06:08 07:09-07:40/31 21:16	06:59 20:09	07:49 18:59	07:45 16:56	08:33 16:24
10	05:26 21:58	06:09 07:09-07:41/32 21:15	07:01 20:07	07:51 18:57	07:47 16:54	08:34 16:24
11	05:27 21:57	06:11 07:08-07:41/33 21:13	07:02 20:05	07:53 18:54	07:48 16:53	08:35 16:24
12	05:28 21:56	06:13 07:08-07:42/34 21:11	07:04 20:02	07:54 09:04-09:14/10 18:52	07:50 16:51	08:36 16:24
13	05:29 21:55	06:14 07:07-07:41/34 21:09	07:06 20:00	07:56 09:01-09:17/16 18:50	07:52 16:49	08:37 16:23
14	05:30 21:55	06:16 07:08-07:41/33 21:07	07:07 19:58	07:58 09:00-09:19/19 18:48	07:54 16:48	08:38 16:23
15	05:31 21:54	06:18 07:07-07:41/34 21:05	07:09 19:55	08:00 08:58-09:20/22 18:46	07:56 16:46	08:39 16:23
16	05:33 21:53	06:19 07:08-07:41/33 21:03	07:10 19:53	08:01 08:57-09:21/24 18:43	07:57 16:45	08:40 16:24
17	05:34 21:51	06:21 07:07-07:40/33 21:01	07:12 19:51	08:03 08:55-09:20/25 18:41	07:59 16:44	08:41 16:24
18	05:35 21:50	06:22 07:08-07:40/32 20:59	07:14 19:48	08:05 08:55-09:21/26 18:39	08:01 16:42	08:42 16:24
19	05:36 21:49	06:24 07:08-07:38/30 20:56	07:15 08:33-08:45/12 19:46	08:07 08:54-09:21/27 18:37	08:03 16:41	08:43 16:24
20	05:38 21:48	06:26 07:08-07:41/33 20:54	07:17 08:30-08:48/18 19:44	08:09 08:54-09:21/27 18:35	08:04 16:40	08:43 16:24
21	05:39 21:47	06:27 07:09-07:44/35 20:52	07:19 08:28-08:50/22 19:41	08:10 08:54-09:21/27 18:32	08:06 16:38	08:44 16:25
22	05:40 21:46	06:29 07:10-07:46/36 20:50	07:20 08:26-08:50/24 19:39	08:12 08:54-09:20/26 18:30	08:08 16:37	08:44 16:25
23	05:42 21:44	06:31 07:11-07:48/37 20:48	07:22 08:24-08:52/28 19:36	08:14 08:54-09:20/26 18:28	08:10 16:36	08:45 16:26
24	05:43 21:43	06:32 07:12-07:48/36 20:46	07:24 08:23-08:52/29 19:34	08:16 08:55-09:19/24 18:26	08:11 16:35	08:45 16:26
25	05:45 21:41	06:34 07:15-07:49/34 20:44	07:25 08:22-08:52/30 19:32	08:17 08:57-09:18/21 18:24	08:13 16:34	08:46 16:27
26	05:46 21:40	06:36 07:18-07:49/31 20:41	07:27 08:21-08:53/32 19:29	08:19 08:59-09:17/18 18:22	08:14 16:33	08:46 16:28
27	05:47 21:39	06:37 07:24-07:50/26 20:39	07:29 08:21-08:53/32 19:27	08:21 09:01-09:16/15 18:20	08:16 16:32	08:46 16:28
28	05:49 21:37	06:39 07:23-07:49/26 20:37	07:31 08:20-08:52/32 19:25	08:23 09:03-09:14/11 18:18	08:18 16:31	08:47 16:29
29	05:50 21:36	06:41 07:23-07:49/26 20:35	07:32 08:20-08:52/32 19:22	08:25 09:05-09:11/6 18:16	08:19 16:30	08:47 16:30
30	05:52 21:34	06:42 07:22-07:48/26 20:32	07:34 08:20-08:52/32 19:20	07:27 17:14	08:21 16:29	08:47 16:31
31	05:53 07:20-07:30/10 21:32	06:44 07:23-07:48/25 20:30		07:28 17:12		08:47 16:32
Potential sun hours	505	456	382	332	265	242
Sum of minutes with flicker	10	923	426	565	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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-06 - VESTAS V136-4.2 4200 136.0 !OI! hub: 152,0 m (TOT: 220,0 m) (217)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47 16:33	08:20 17:21	07:26 18:14	07:15 20:09	06:09 21:01	05:22 06:16-06:46/30 21:48
2	08:47 16:34	08:19 17:23	07:24 18:15	07:13 20:10	06:07 21:02	05:21 06:17-06:47/30 21:49
3	08:47 16:35	08:17 17:25	07:22 18:17	07:10 20:12	06:05 21:04	05:21 06:17-06:46/29 21:50
4	08:47 16:36	08:15 17:27	07:20 18:19	07:08 20:14	06:03 21:06	05:20 06:17-06:46/29 21:51
5	08:46 16:37	08:14 17:29	07:17 18:21	07:06 20:16	06:01 21:07	05:19 06:18-06:46/28 21:52
6	08:46 16:39	08:12 17:30	07:15 18:23	07:03 20:17	05:59 21:09	05:18 06:18-06:46/28 21:53
7	08:46 16:40	08:10 17:32	07:13 18:25	07:01 20:19	05:58 21:11	05:18 06:19-06:46/27 21:54
8	08:45 16:41	08:09 17:34	07:11 18:26	06:59 20:21	05:56 21:12	05:17 06:18-06:46/28 21:55
9	08:45 16:43	08:07 17:36	07:08 18:28	06:56 20:23	05:54 21:14	05:17 06:19-06:46/27 21:56
10	08:44 16:44	08:05 17:38	07:06 18:30	06:54 20:24	05:52 21:16	05:16 06:20-06:47/27 21:57
11	08:44 16:45	08:03 08:41-08:42/1 17:40	07:04 07:39-07:41/2 18:32	06:52 20:26	05:50 21:17	05:16 06:19-06:46/27 21:57
12	08:43 16:47	08:01 08:39-08:44/5 17:42	07:02 07:36-07:42/6 18:34	06:50 20:28	05:49 06:27-06:34/7 21:19	05:15 06:20-06:46/26 21:58
13	08:42 16:48	07:59 08:37-08:46/9 17:44	06:59 07:34-07:43/9 18:35	06:47 20:30	05:47 06:26-06:37/11 21:21	05:15 06:21-06:46/25 21:59
14	08:42 16:50	07:58 08:35-08:47/12 17:46	06:57 07:32-07:44/12 18:37	06:45 20:31	05:45 06:24-06:38/14 21:22	05:15 06:21-06:47/26 21:59
15	08:41 16:51	07:56 08:33-08:48/15 17:48	06:55 07:29-07:44/15 18:39	06:43 20:33	05:44 06:23-06:40/17 21:24	05:15 06:22-06:47/25 22:00
16	08:40 16:53	07:54 08:31-08:49/18 17:49	06:52 07:27-07:45/18 18:41	06:41 20:35	05:42 06:21-06:41/20 21:25	05:14 06:22-06:47/25 22:01
17	08:39 16:55	07:52 08:29-08:49/20 17:51	06:50 07:24-07:45/21 18:42	06:38 20:36	05:41 06:20-06:42/22 21:27	05:14 06:22-06:47/25 22:01
18	08:38 16:56	07:50 08:27-08:50/23 17:53	06:48 07:22-07:46/24 18:44	06:36 20:38	05:39 06:19-06:43/24 21:28	05:14 06:23-06:47/24 22:02
19	08:37 16:58	07:48 08:26-08:50/24 17:55	06:45 07:21-07:46/25 18:46	06:34 20:40	05:38 06:17-06:43/26 21:30	05:14 06:23-06:47/24 22:02
20	08:36 17:00	07:46 08:26-08:49/23 17:57	06:43 07:20-07:45/25 18:48	06:32 20:42	05:36 06:17-06:44/27 21:32	05:14 06:23-06:47/24 22:02
21	08:35 17:01	07:43 08:26-08:48/22 17:59	06:41 07:20-07:45/25 18:49	06:30 20:43	05:35 06:16-06:44/28 21:33	05:14 06:23-06:47/24 22:03
22	08:34 17:03	07:41 08:27-08:48/21 18:01	06:38 07:20-07:45/25 18:51	06:27 20:45	05:34 06:16-06:45/29 21:34	05:15 06:23-06:47/24 22:03
23	08:33 17:05	07:39 08:28-08:47/19 18:03	06:36 07:20-07:43/23 18:53	06:25 20:47	05:32 06:16-06:45/29 21:36	05:15 06:23-06:47/24 22:03
24	08:32 17:06	07:37 08:28-08:45/17 18:04	06:34 07:21-07:42/21 18:55	06:23 20:49	05:31 06:16-06:46/30 21:37	05:15 06:24-06:48/24 22:03
25	08:30 17:08	07:35 08:30-08:43/13 18:06	06:31 07:21-07:40/19 18:56	06:21 20:50	05:30 06:16-06:46/30 21:39	05:15 06:24-06:48/24 22:03
26	08:29 17:10	07:33 08:33-08:40/7 18:08	06:29 07:22-07:39/17 18:58	06:19 20:52	05:28 06:16-06:46/30 21:40	05:16 06:23-06:48/25 22:03
27	08:28 17:12	07:31 18:10	07:27 08:25-08:36/11 20:00	06:17 20:54	05:27 06:16-06:46/30 21:41	05:16 06:24-06:49/25 22:03
28	08:26 17:14	07:29 18:12	07:24 20:02	06:15 20:55	05:26 06:16-06:46/30 21:43	05:17 06:24-06:49/25 22:03
29	08:25 17:16		07:22 20:03	06:13 20:57	05:25 06:16-06:46/30 21:44	05:17 06:24-06:50/26 22:03
30	08:23 17:17		07:20 20:05	06:11 20:59	05:24 06:16-06:46/30 21:45	05:18 06:24-06:50/26 22:03
31	08:22 17:19		07:17 20:07		05:23 06:16-06:46/30 21:46	
Potential sun hours	256	276	366	416	486	501
Sum of minutes with flicker	0	249	298	0	494	781

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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-06 - VESTAS V136-4.2 4200 136.0 !OI hub: 152,0 m (TOT: 220,0 m) (217)

Assumptions for shadow calculations

Reference year for calendar

2022

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	05:18 06:24-06:50/26 22:03	05:55 06:37-06:47/10 21:31	06:46 20:28	07:36 08:12-08:23/11 19:18	07:30 17:10	08:22 16:28
2	05:19 06:25-06:51/26 22:02	05:57 06:40-06:42/2 21:29	06:47 20:26	07:37 08:14-08:22/8 19:15	07:32 17:08	08:24 16:28
3	05:20 06:24-06:51/27 22:02	05:58 21:27	06:49 20:23	07:39 08:16-08:20/4 19:13	07:34 17:06	08:25 16:27
4	05:20 06:24-06:51/27 22:01	06:00 21:26	06:51 20:21	07:41 19:11	07:36 17:05	08:26 16:26
5	05:21 06:25-06:52/27 22:01	06:01 21:24	06:52 20:19	07:42 19:08	07:38 17:03	08:28 16:26
6	05:22 06:25-06:53/28 22:00	06:03 21:22	06:54 20:16	07:44 19:06	07:39 17:01	08:29 16:25
7	05:23 06:24-06:52/28 22:00	06:05 21:20	06:56 20:14	07:46 19:04	07:41 16:59	08:30 16:25
8	05:24 06:24-06:53/29 21:59	06:06 21:18	06:57 20:12	07:47 19:01	07:43 16:58	08:32 16:25
9	05:25 06:24-06:53/29 21:59	06:08 21:16	06:59 20:09	07:49 18:59	07:45 16:56	08:33 16:24
10	05:26 06:24-06:54/30 21:58	06:09 21:15	07:01 20:07	07:51 18:57	07:47 16:54	08:34 16:24
11	05:27 06:24-06:54/30 21:57	06:11 21:13	07:02 20:05	07:53 18:54	07:48 16:53	08:35 16:24
12	05:28 06:25-06:54/29 21:56	06:13 21:11	07:04 20:02	07:54 18:52	07:50 16:51	08:36 16:24
13	05:29 06:25-06:54/29 21:55	06:14 21:09	07:06 20:00	07:56 18:50	07:52 16:49	08:37 16:23
14	05:30 06:25-06:55/30 21:54	06:16 21:07	07:07 19:58	07:58 18:48	07:54 16:48	08:38 16:23
15	05:31 06:25-06:55/30 21:54	06:18 21:05	07:09 19:55	08:00 18:46	07:56 16:46	08:39 16:23
16	05:33 06:25-06:55/30 21:52	06:19 21:03	07:10 19:53	08:01 18:43	07:57 16:45	08:40 16:24
17	05:34 06:25-06:55/30 21:51	06:21 21:01	07:12 08:14-08:24/10 19:51	08:03 09:03-09:13/10 18:41	07:59 16:44	08:41 16:24
18	05:35 06:25-06:55/30 21:50	06:22 20:59	07:14 08:11-08:27/16 19:48	08:05 09:00-09:15/15 18:39	08:01 16:42	08:42 16:24
19	05:36 06:26-06:55/29 21:49	06:24 20:56	07:15 08:09-08:27/18 19:46	08:07 08:59-09:17/18 18:37	08:03 16:41	08:43 16:24
20	05:38 06:26-06:55/29 21:48	06:26 20:54	07:17 08:07-08:29/22 19:44	08:08 08:58-09:18/20 18:35	08:04 16:40	08:43 16:24
21	05:39 06:26-06:55/29 21:47	06:27 20:52	07:19 08:07-08:30/23 19:41	08:10 08:57-09:18/21 18:32	08:06 16:38	08:44 16:25
22	05:40 06:26-06:55/29 21:45	06:29 20:50	07:20 08:05-08:29/24 19:39	08:12 08:56-09:19/23 18:30	08:08 16:37	08:44 16:25
23	05:42 06:27-06:55/28 21:44	06:31 20:48	07:22 08:05-08:30/25 19:36	08:14 08:56-09:19/23 18:28	08:09 16:36	08:45 16:26
24	05:43 06:27-06:54/27 21:43	06:32 20:46	07:24 08:03-08:29/26 19:34	08:16 08:56-09:19/23 18:26	08:11 16:35	08:45 16:26
25	05:45 06:27-06:54/27 21:41	06:34 20:44	07:25 08:03-08:29/26 19:32	08:17 08:57-09:19/22 18:24	08:13 16:34	08:46 16:27
26	05:46 06:28-06:53/25 21:40	06:36 20:41	07:27 08:04-08:28/24 19:29	08:19 08:59-09:19/20 18:22	08:14 16:33	08:46 16:28
27	05:47 06:30-06:53/23 21:39	06:37 20:39	07:29 08:06-08:28/22 19:27	08:21 09:01-09:18/17 18:20	08:16 16:32	08:46 16:28
28	05:49 06:31-06:52/21 21:37	06:39 20:37	07:30 08:07-08:26/19 19:25	08:23 09:03-09:18/15 18:18	08:18 16:31	08:47 16:29
29	05:50 06:32-06:51/19 21:35	06:41 20:35	07:32 08:09-08:25/16 19:22	08:25 09:05-09:17/12 18:16	08:19 16:30	08:47 16:30
30	05:52 06:34-06:50/16 21:34	06:42 20:32	07:34 08:11-08:24/13 19:20	07:27 08:07-08:15/8 17:14	08:21 16:29	08:47 16:31
31	05:53 06:35-06:48/13 21:32	06:44 20:30		07:28 08:09-08:14/5 17:12		08:47 16:32
Potential sun hours	505	456	382	332	265	242
Sum of minutes with flicker	830	12	284	275	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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-07 - VESTAS V136-4.2 4200 136.0 !OI hub: 152,0 m (TOT: 220,0 m) (216)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47 16:33	08:20 17:21	07:26 18:14	07:15 20:09	06:09 21:01	05:22 21:48
2	08:47 16:34	08:19 17:23	07:24 18:15	07:13 20:10	06:07 21:02	05:21 21:49
3	08:47 16:35	08:17 17:25	07:22 18:17	07:10 20:12	06:05 21:04	05:21 21:50
4	08:47 16:36	08:15 17:27	07:20 18:19	07:08 20:14	06:03 21:06	05:20 21:51
5	08:46 16:37	08:14 17:29	07:17 18:21	07:06 20:16	06:01 21:07	05:19 21:52
6	08:46 16:39	08:12 17:30	07:15 18:23	07:03 20:17	05:59 21:09	05:18 21:53
7	08:46 16:40	08:10 17:32	07:13 18:25	07:01 20:19	05:58 21:11	05:18 21:54
8	08:45 16:41	08:09 17:34	07:11 18:26	06:59 20:21	05:56 21:12	05:17 21:55
9	08:45 16:43	08:07 17:36	07:08 18:28	06:56 20:23	05:54 21:14	05:17 21:56
10	08:44 16:44	08:05 17:38	07:06 18:30	06:54 20:24	05:52 21:16	05:16 21:57
11	08:44 16:45	08:03 17:40	07:04 18:32	06:52 20:26	05:50 21:17	05:16 21:57
12	08:43 16:47	08:01 17:42	07:02 18:34	06:50 20:28	05:49 21:19	05:15 21:58
13	08:42 16:48	07:59 17:44	06:59 18:35	06:47 20:30	05:47 21:21	05:15 21:59
14	08:42 16:50	07:57 17:46	06:57 18:37	06:45 20:31	05:45 21:22	05:15 21:59
15	08:41 16:51	07:56 17:48	06:55 18:39	06:43 20:33	05:44 21:24	05:15 22:00
16	08:40 16:53	07:54 17:49	06:52 18:41	06:41 20:35	05:42 21:25	05:14 22:01
17	08:39 16:55	07:52 17:51	06:50 18:42	06:38 20:36	05:41 21:27	05:14 22:01
18	08:38 16:56	07:50 17:53	06:48 18:44	06:36 20:38	05:39 21:28	05:14 22:02
19	08:37 16:58	07:48 17:55	06:45 18:46	06:34 20:40	05:38 21:30	05:14 22:02
20	08:36 17:00	07:46 17:57	06:43 18:48	06:32 20:42	05:36 21:31	05:14 22:02
21	08:35 17:01	07:43 17:59	06:41 18:49	06:30 20:43	05:35 21:33	05:14 22:03
22	08:34 17:03	07:41 18:01	06:38 18:51	06:27 20:45	05:34 21:34	05:15 22:03
23	08:33 17:05	07:39 18:03	06:36 18:53	06:25 20:47	05:32 21:36	05:15 22:03
24	08:31 17:06	07:37 18:04	06:34 18:55	06:23 20:49	05:31 21:37	05:15 22:03
25	08:30 17:08	07:35 18:06	06:31 18:56	06:21 20:50	05:30 21:39	05:15 22:03
26	08:29 17:10	07:33 18:08	06:29 18:58	06:19 20:52	05:28 21:40	05:16 22:03
27	08:28 17:12	07:31 18:10	07:27 20:00	06:17 20:54	05:27 21:41	05:16 22:03
28	08:26 17:14	07:29 18:12	07:24 20:02	06:15 20:55	05:26 21:43	05:17 22:03
29	08:25 17:16		07:22 20:03	06:13 20:57	05:25 21:44	05:17 22:03
30	08:23 17:17		07:20 20:05	06:11 20:59	05:24 21:45	05:18 22:03
31	08:22 17:19		07:17 20:07		05:23 21:46	05:18 22:03
Potential sun hours	256	276	366	416	486	501
Sum of minutes with flicker	0	95	37	775	1687	1813

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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-07 - VESTAS V136-4.2 4200 136.0 !OI hub: 152,0 m (TOT: 220,0 m) (216)

Assumptions for shadow calculations

Reference year for calendar

2022

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	05:18 06:13-06:46/33 22:02 07:35-08:03/28	05:55 07:25-08:22/57 21:31	06:46 07:34-07:56/22 20:28	07:36 19:18	07:30 17:10	08:22 16:28
2	05:19 06:14-06:46/32 22:02 07:35-08:04/29	05:57 07:25-08:22/57 21:29	06:47 07:32-07:55/23 20:26	07:37 19:15	07:32 17:08	08:24 16:28
3	05:20 06:14-06:45/31 22:02 07:34-08:04/30	05:58 07:24-08:22/58 21:27	06:49 07:32-07:56/24 20:23	07:39 19:13	07:34 17:06	08:25 16:27
4	05:20 06:15-06:45/30 22:01 07:34-08:05/31	06:00 07:25-08:22/57 21:26	06:51 07:31-07:55/24 20:21	07:41 19:11	07:36 17:05	08:26 16:26
5	05:21 06:15-06:45/30 22:01 07:34-08:06/32	06:01 07:24-08:22/58 21:24	06:52 07:31-07:55/24 20:19	07:42 19:08	07:37 17:03	08:28 16:26
6	05:22 06:16-06:45/29 22:00 07:34-08:07/33	06:03 07:25-08:22/57 21:22	06:54 07:31-07:54/23 20:16	07:44 19:06	07:39 17:01	08:29 16:25
7	05:23 06:16-06:44/28 22:00 07:32-08:07/35	06:05 07:25-08:22/57 21:20	06:56 07:33-07:54/21 20:14	07:46 19:04	07:41 16:59	08:30 16:25
8	05:24 06:17-06:44/27 21:59 07:32-08:08/36	06:06 07:25-08:22/57 21:18	06:57 07:35-07:53/18 20:12	07:47 19:01	07:43 16:58	08:32 16:25
9	05:25 06:18-06:44/26 21:59 07:32-08:09/37	06:08 07:25-08:21/56 21:16	06:59 07:36-07:51/15 20:09	07:49 18:59	07:45 16:56	08:33 16:24
10	05:26 06:18-06:43/25 21:58 07:32-08:10/38	06:09 07:26-08:21/55 21:15	07:01 07:38-07:50/12 20:07	07:51 18:57	07:47 16:54	08:34 16:24
11	05:27 06:19-06:43/24 21:57 07:31-08:11/40	06:11 07:25-08:20/55 21:13	07:02 07:39-07:47/8 20:05	07:53 08:47-08:50/3 18:54	07:48 16:53	08:35 16:24
12	05:28 06:20-06:42/22 21:56 07:31-08:11/40	06:13 07:26-08:20/54 21:11	07:04 07:41-07:45/4 20:02	07:54 08:43-08:54/11 18:52	07:50 16:51	08:36 16:24
13	05:29 06:22-06:41/19 21:55 07:31-08:12/41	06:14 07:26-08:19/53 21:09	07:06 20:00	07:56 08:41-08:55/14 18:50	07:52 16:49	08:37 16:23
14	05:30 06:23-06:40/17 21:54 07:30-08:13/43	06:16 07:27-08:19/52 21:07	07:07 19:58	07:58 08:40-08:56/16 18:48	07:54 16:48	08:38 16:23
15	05:31 06:25-06:38/13 21:53 07:30-08:14/44	06:18 07:27-08:18/51 21:05	07:09 19:55	08:00 08:39-08:57/18 18:46	07:56 16:46	08:39 16:23
16	05:33 06:27-06:36/9 21:52 07:29-08:14/45	06:19 07:28-08:17/49 21:03	07:10 19:53	08:01 08:40-08:57/17 18:43	07:57 16:45	08:40 16:24
17	05:34 07:29-08:15/46 21:51	06:21 07:28-08:16/48 21:01	07:12 19:51	08:03 08:41-08:56/15 18:41	07:59 16:44	08:41 16:24
18	05:35 07:28-08:15/47 21:50	06:22 07:29-08:15/46 20:59	07:14 19:48	08:05 08:43-08:56/13 18:39	08:01 16:42	08:42 16:24
19	05:36 07:29-08:17/48 21:49	06:24 07:30-08:13/43 20:56	07:15 19:46	08:07 08:45-08:56/11 18:37	08:03 16:41	08:42 16:24
20	05:38 07:28-08:17/49 21:48	06:26 07:31-08:12/41 20:54	07:17 19:43	08:08 08:47-08:55/8 18:35	08:04 16:40	08:43 16:24
21	05:39 07:28-08:18/50 21:47	06:27 07:32-08:10/38 20:52	07:19 19:41	08:10 08:49-08:55/6 18:32	08:06 16:38	08:44 16:25
22	05:40 07:27-08:18/51 21:45	06:29 07:34-08:09/35 20:50	07:20 19:39	08:12 08:51-08:53/2 18:30	08:08 16:37	08:44 16:25
23	05:42 07:28-08:19/51 21:44	06:31 07:35-08:06/31 20:48	07:22 19:36	08:14 18:28	08:09 16:36	08:45 16:26
24	05:43 07:27-08:19/52 21:43	06:32 07:38-08:04/26 20:46	07:24 19:34	08:16 18:26	08:11 16:35	08:45 16:26
25	05:45 07:26-08:20/54 21:41	06:34 07:41-08:01/20 20:44	07:25 19:32	08:17 18:24	08:13 16:34	08:46 16:27
26	05:46 07:26-08:20/54 21:40	06:36 07:45-07:54/9 20:41	07:27 19:29	08:19 18:22	08:14 16:33	08:46 16:28
27	05:47 07:26-08:21/55 21:38	06:37 20:39	07:29 19:27	08:21 18:20	08:16 16:32	08:46 16:28
28	05:49 07:26-08:21/55 21:37	06:39 07:39-07:50/11 20:37	07:30 19:25	08:23 18:18	08:18 16:31	08:47 16:29
29	05:50 07:25-08:21/56 21:35	06:41 07:37-07:53/16 20:35	07:32 19:22	08:25 18:16	08:19 16:30	08:47 16:30
30	05:52 07:26-08:22/56 21:34	06:42 07:35-07:53/18 20:32	07:34 19:20	07:27 17:14	08:21 16:29	08:47 16:31
31	05:53 07:25-08:21/56 21:32	06:44 07:34-07:55/21 20:30		07:28 17:12		08:47 16:32
Potential sun hours	505	456	382	332	266	242
Sum of minutes with flicker	1757	1286	218	134	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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-08 - VESTAS V136-4.2 4200 136.0 !OI hub: 152,0 m (TOT: 220,0 m) (218)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47 16:33	08:20 17:21	07:26 08:08-08:35/27 18:14	07:15 07:51-08:15/24 20:09	06:09 21:01	05:22 21:48
2	08:47 16:34	08:19 17:23	07:24 08:07-08:36/29 18:15	07:12 07:49-08:16/27 20:10	06:07 21:02	05:21 21:49
3	08:47 16:35	08:17 17:25	07:22 08:05-08:36/31 18:17	07:10 07:47-08:16/29 20:12	06:05 21:04	05:21 21:50
4	08:47 16:36	08:15 17:27	07:20 08:04-08:37/33 18:19	07:08 07:47-08:17/30 20:14	06:03 21:06	05:20 21:51
5	08:46 16:37	08:14 17:29	07:17 08:04-08:38/34 18:21	07:06 07:46-08:17/31 20:16	06:01 21:07	05:19 21:52
6	08:46 16:39	08:12 17:30	07:15 08:03-08:37/34 18:23	07:03 07:46-08:17/31 20:17	05:59 21:09	05:18 21:53
7	08:46 16:40	08:10 17:32	07:13 08:03-08:37/34 18:25	07:01 07:45-08:16/31 20:19	05:58 21:11	05:18 21:54
8	08:45 16:41	08:09 17:34	07:11 08:03-08:38/35 18:26	06:59 07:45-08:16/31 20:21	05:56 21:12	05:17 21:55
9	08:45 16:43	08:07 17:36	07:08 08:02-08:37/35 18:28	06:56 07:45-08:16/31 20:23	05:54 21:14	05:17 21:56
10	08:44 16:44	08:05 17:38	07:06 08:02-08:37/35 18:30	06:54 07:44-08:15/31 20:24	05:52 21:16	05:16 21:57
11	08:44 16:45	08:03 17:40	07:04 08:02-08:36/34 18:32	06:52 07:44-08:14/30 20:26	05:50 21:17	05:16 21:57
12	08:43 16:47	08:01 17:42	07:02 08:02-08:35/33 18:34	06:50 07:45-08:13/28 20:28	05:49 21:19	05:15 21:58
13	08:42 16:48	07:59 17:44	06:59 08:03-08:34/31 18:35	06:47 07:46-08:12/26 20:29	05:47 21:21	05:15 21:59
14	08:42 16:50	07:57 17:46	06:57 08:03-08:32/29 18:37	06:45 07:47-08:11/24 20:31	05:45 21:22	05:15 21:59
15	08:41 16:51	07:56 17:48	06:55 08:04-08:31/27 18:39	06:43 07:48-08:10/22 20:33	05:44 21:24	05:15 22:00
16	08:40 16:53	07:54 17:49	06:52 08:05-08:30/25 18:41	06:41 07:48-08:07/19 20:35	05:42 21:25	05:14 22:01
17	08:39 16:55	07:52 17:51	06:50 08:06-08:27/21 18:42	06:38 07:51-08:04/13 20:36	05:41 21:27	05:14 22:01
18	08:38 16:56	07:50 17:53	06:48 08:08-08:25/17 18:44	06:36 07:55-07:59/4 20:38	05:39 21:28	05:14 22:01
19	08:37 16:58	07:48 17:55	06:45 08:12-08:21/9 18:46	06:34 20:40	05:38 21:30	05:14 22:02
20	08:36 17:00	07:45 17:57	06:43 18:48	06:32 20:42	05:36 21:31	05:14 22:02
21	08:35 17:01	07:43 17:59	06:41 18:49	06:30 20:43	05:35 21:33	05:14 22:02
22	08:34 17:03	07:41 18:01	06:38 18:51	06:27 20:45	05:34 21:34	05:15 22:03
23	08:33 17:05	07:39 18:03	06:36 18:53	06:25 20:47	05:32 21:36	05:15 22:03
24	08:31 17:06	07:37 18:04	06:34 18:55	06:23 20:49	05:31 21:37	05:15 22:03
25	08:30 17:08	07:35 08:20-08:24/4 18:06	06:31 18:56	06:21 20:50	05:30 21:39	05:15 22:03
26	08:29 17:10	07:33 08:15-08:29/14 18:08	06:29 18:58	06:19 20:52	05:28 21:40	05:16 22:03
27	08:28 17:12	07:31 08:12-08:32/20 18:10	07:27 20:00	06:17 20:54	05:27 21:41	05:16 22:03
28	08:26 17:14	07:29 08:09-08:33/24 18:12	07:24 20:02	06:15 20:55	05:26 21:43	05:17 22:03
29	08:25 17:16		07:22 07:58-08:09/11 20:03	06:13 20:57	05:25 21:44	05:17 22:03
30	08:23 17:17		07:19 07:55-08:12/17 20:05	06:11 20:59	05:24 21:45	05:18 22:03
31	08:22 17:19		07:17 07:52-08:13/21 20:07		05:23 21:46	
Potential sun hours	256	276	366	416	486	501
Sum of minutes with flicker	0	62	737	462	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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-08 - VESTAS V136-4.2 4200 136.0 !OI! hub: 152,0 m (TOT: 220,0 m) (218)

Assumptions for shadow calculations

Reference year for calendar

2022

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	05:18 22:02	05:55 21:31	06:46 07:44-08:12/28 20:28	07:36 08:42-09:13/31 19:18 08:12-08:28/16	07:30 17:10	08:22 16:28
2	05:19 22:02	05:57 21:29	06:47 07:43-08:13/30 20:26	07:37 08:41-09:14/33 19:15 08:14-08:27/13	07:32 17:08	08:24 16:28
3	05:20 22:02	05:58 21:27	06:49 07:43-08:14/31 20:23	07:39 08:40-09:14/34 19:13 08:16-08:27/11	07:34 17:06	08:25 16:27
4	05:20 22:01	06:00 21:25	06:51 07:42-08:13/31 20:21	07:41 08:40-09:14/34 19:11 08:18-08:26/8	07:36 17:05	08:26 16:26
5	05:21 22:01	06:01 21:24	06:52 07:42-08:13/31 20:19	07:42 08:39-09:14/35 19:08 08:19-08:24/5	07:37 17:03	08:28 16:26
6	05:22 22:00	06:03 21:22	06:54 07:41-08:12/31 20:16	07:44 08:39-09:14/35 19:06 08:21-08:22/1	07:39 17:01	08:29 16:25
7	05:23 22:00	06:05 21:20	06:56 07:41-08:12/31 20:14	07:46 08:39-09:14/35 19:04	07:41 16:59	08:30 16:25
8	05:24 21:59	06:06 21:18	06:57 07:40-08:11/31 20:12	07:47 08:39-09:13/34 19:01	07:43 16:58	08:32 16:25
9	05:25 21:59	06:08 21:16	06:59 07:41-08:11/30 20:09	07:49 08:39-09:13/34 18:59	07:45 16:56	08:33 16:24
10	05:26 21:58	06:09 21:14	07:01 07:42-08:10/28 20:07	07:51 08:38-09:11/33 18:57	07:47 16:54	08:34 16:24
11	05:27 21:57	06:11 21:13	07:02 07:42-08:08/26 20:05	07:53 08:39-09:11/32 18:54	07:48 16:53	08:35 16:24
12	05:28 21:56	06:13 21:11	07:04 07:43-08:07/24 20:02	07:54 08:40-09:10/30 18:52	07:50 16:51	08:36 16:24
13	05:29 21:55	06:14 21:09	07:05 07:43-08:05/22 20:00	07:56 08:41-09:09/28 18:50	07:52 16:49	08:37 16:23
14	05:30 21:54	06:16 21:07	07:07 07:45-08:03/18 19:58	07:58 08:42-09:07/25 18:48	07:54 16:48	08:38 16:23
15	05:31 21:53	06:18 21:05	07:09 07:48-08:00/12 19:55	08:00 08:43-09:06/23 18:45	07:56 16:46	08:39 16:23
16	05:33 21:52	06:19 21:03	07:10 19:53	08:01 08:44-09:02/18 18:43	07:57 16:45	08:40 16:24
17	05:34 21:51	06:21 21:01	07:12 19:51	08:03 08:47-08:59/12 18:41	07:59 16:44	08:41 16:24
18	05:35 21:50	06:22 20:58	07:14 19:48	08:05 18:39	08:01 16:42	08:42 16:24
19	05:36 21:49	06:24 20:56	07:15 19:46	08:07 18:37	08:03 16:41	08:42 16:24
20	05:38 21:48	06:26 20:54	07:17 19:43	08:08 18:35	08:04 16:40	08:43 16:24
21	05:39 21:47	06:27 20:52	07:19 19:41	08:10 18:32	08:06 16:38	08:44 16:25
22	05:40 21:45	06:29 20:50	07:20 19:39	08:12 18:30	08:08 16:37	08:44 16:25
23	05:42 21:44	06:31 20:48	07:22 19:36	08:14 18:28	08:09 16:36	08:45 16:26
24	05:43 21:43	06:32 20:46	07:24 19:34	08:16 18:26	08:11 16:35	08:45 16:26
25	05:45 21:41	06:34 20:44	07:25 08:58-09:01/3 19:32 08:18-08:22/4	08:17 18:24	08:13 16:34	08:46 16:27
26	05:46 21:40	06:36 07:57-08:03/6 20:41	07:27 08:52-09:07/15 19:29 08:15-08:26/11	08:19 18:22	08:14 16:33	08:46 16:28
27	05:47 21:38	06:37 07:53-08:07/14 20:39	07:29 08:48-09:08/20 19:27 08:13-08:27/14	08:21 18:20	08:16 16:32	08:46 16:28
28	05:49 21:37	06:39 07:50-08:09/19 20:37	07:30 08:46-09:10/24 19:25 08:11-08:27/16	08:23 18:18	08:18 16:31	08:47 16:29
29	05:50 21:35	06:41 07:49-08:11/22 20:35	07:32 08:45-09:12/27 19:22 08:10-08:28/18	08:25 18:16	08:19 16:30	08:47 16:30
30	05:52 21:34	06:42 07:47-08:11/24 20:32	07:34 08:44-09:13/29 19:20 08:11-08:29/18	07:26 17:14	08:21 16:29	08:47 16:31
31	05:53 21:32	06:44 07:46-08:12/26 20:30		07:28 17:12		08:47 16:32
Potential sun hours	505	456	382	332	266	242
Sum of minutes with flicker	0	111	603	560	0	0

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

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

Project:

Almere_Slagschaduw_uitgebreid_v3

Licensed user:

Arcadis

Beaulieustraat 22

NL-6814 DV Arnhem

+31 (0)6 2706 2060

Erik Koppen / erik.koppen@arcadis.com

Calculated:

26-10-2021 16:02/3.5.552



SHADOW - Calendar per WTG

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-09 - VESTAS V136-4.2 4200 136.0 I/OI hub: 152,0 m (TOT: 220,0 m) (208)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47 16:33	08:20 17:21	07:26 18:14	08:02-08:13/11 18:14	06:09 20:09	05:22 21:01	05:18 21:48	05:55 22:02	06:46 21:31	07:35 19:18	07:30 17:10	08:14-08:37/23 16:28
2	08:47 16:34	08:19 17:23	08:59-09:01/2 18:15	07:24 18:10	08:00-08:14/14 20:10	06:07 21:02	05:21 21:49	05:57 22:02	06:47 21:29	07:37 19:15	08:35-08:44/9 17:08	08:14-08:37/23 16:28
3	08:47 16:35	08:17 17:25	08:57-09:03/6 18:17	07:22 18:17	07:57-08:14/17 18:21	06:05 20:12	05:21 21:04	05:58 21:50	06:49 22:02	07:39 19:13	08:33-08:47/14 17:06	08:15-08:37/22 16:27
4	08:47 16:36	08:15 17:27	08:55-09:04/9 18:19	07:20 18:19	07:55-08:14/19 18:21	06:03 20:14	05:20 21:06	06:00 21:51	06:51 22:01	07:41 19:11	08:31-08:48/17 17:05	08:17-08:37/20 16:26
5	08:46 16:37	08:14 17:29	08:53-09:05/12 18:21	07:17 18:21	07:53-08:15/22 18:21	06:01 20:16	05:19 21:07	06:01 21:52	06:52 22:01	07:42 19:08	08:29-08:48/19 17:03	08:19-08:36/17 16:26
6	08:46 16:39	08:12 17:30	08:51-09:06/15 18:23	07:15 18:23	07:51-08:14/23 18:23	05:59 20:17	05:18 21:09	05:22 21:53	06:03 22:00	06:54 19:06	07:44 17:01	08:28-08:49/21 16:25
7	08:46 16:40	08:10 17:32	08:49-09:07/18 18:25	07:13 18:25	07:51-08:14/23 18:25	05:58 20:19	05:18 21:11	05:23 21:54	06:05 22:00	06:56 19:04	07:46 17:04	08:27-08:50/23 16:25
8	08:45 16:41	08:09 17:34	08:47-09:07/20 18:26	07:11 18:26	07:52-08:13/21 18:26	05:56 20:21	05:17 21:12	05:24 21:55	06:06 21:59	06:57 19:01	07:47 17:01	08:27-08:50/23 16:25
9	08:45 16:43	08:07 17:36	08:45-09:07/22 18:28	07:08 18:28	07:51-08:12/21 18:28	05:54 20:23	05:17 21:14	05:25 21:56	06:08 21:16	06:59 19:09	07:49 17:01	08:27-08:50/23 16:24
10	08:44 16:44	08:05 17:38	08:44-09:08/24 18:30	07:06 18:30	07:52-08:11/19 18:30	05:52 20:24	05:16 21:16	05:26 21:56	06:09 21:14	07:01 18:57	07:51 16:54	08:28-08:49/21 16:24
11	08:44 16:45	08:03 17:40	08:44-09:08/24 18:32	07:04 18:32	07:54-08:09/15 18:32	05:50 20:26	05:16 21:17	05:27 21:57	06:11 21:13	07:02 18:54	07:53 16:53	08:30-08:48/18 16:23
12	08:43 16:47	08:01 17:42	08:44-09:08/24 18:34	07:01 18:34	07:55-08:06/11 18:34	05:49 20:28	05:15 21:19	05:28 21:58	06:13 21:11	07:04 18:52	07:54 16:51	08:32-08:48/16 16:24
13	08:42 16:48	07:59 17:44	08:45-09:07/22 18:35	06:59 18:35	07:55-08:06/11 18:35	05:47 20:29	05:15 21:21	05:29 21:59	06:14 21:55	07:05 19:00	07:56 18:50	08:34-08:47/13 16:23
14	08:42 16:50	07:57 17:46	08:46-09:07/21 18:37	06:57 18:37	07:56-08:07/12 18:37	05:45 20:31	05:15 21:22	05:30 21:59	06:16 21:54	07:07 19:58	07:58 18:48	08:36-08:45/9 16:23
15	08:41 16:51	07:55 17:47	08:46-09:06/20 18:39	06:55 18:39	07:57-08:08/13 18:39	05:44 20:33	05:15 21:24	05:31 22:00	06:18 21:53	07:09 19:55	08:00 18:45	08:38-08:44/6 16:23
16	08:40 16:53	07:54 17:49	08:48-09:05/17 18:41	06:52 18:41	07:58-08:09/14 18:41	05:42 20:35	05:14 21:25	05:33 22:00	06:19 21:52	07:10 19:53	08:01 18:43	08:39-08:40/1 16:24
17	08:39 16:55	07:52 17:51	08:49-09:04/15 18:42	06:50 18:42	07:59-08:10/16 18:42	05:41 20:36	05:14 21:27	05:34 22:01	06:21 21:51	07:12 19:51	08:03 18:41	08:40-08:41/2 16:24
18	08:38 16:56	07:50 17:53	08:52-09:01/9 18:44	06:48 18:44	08:00-09:01/17 18:44	05:39 20:38	05:14 21:28	05:35 22:01	06:22 21:50	07:14 19:48	08:05 18:39	08:41-08:42/3 16:24
19	08:37 16:58	07:48 17:55	08:53-09:02/18 18:46	06:45 18:46	08:01-09:02/18 18:46	05:38 20:40	05:14 21:30	05:36 22:02	06:24 21:49	07:15 19:46	08:07 18:37	08:42-08:43/4 16:24
20	08:36 17:00	07:45 17:57	08:54-09:03/19 18:48	06:43 18:48	08:02-09:03/19 18:48	05:36 20:42	05:14 21:31	05:38 22:02	06:26 21:48	07:17 19:43	08:08 18:35	08:43-08:44/5 16:24
21	08:35 17:01	07:43 17:59	08:55-09:04/20 18:49	06:41 18:49	08:03-09:04/20 18:49	05:35 20:43	05:14 21:33	05:39 22:02	06:27 21:47	07:19 19:41	08:10 18:32	08:44-08:45/6 16:25
22	08:34 17:03	07:41 18:01	08:56-09:03/21 18:51	06:38 18:51	08:04-09:05/21 18:51	05:34 20:45	05:15 21:34	05:40 22:03	06:29 21:45	07:20 19:39	08:12 18:30	08:45-08:46/7 16:25
23	08:33 17:05	07:39 18:03	08:57-09:04/22 18:53	06:36 18:53	08:05-09:06/22 18:53	05:32 20:47	05:15 21:36	05:42 22:03	06:31 21:44	07:22 19:36	08:14 18:28	08:46-08:47/8 16:26
24	08:31 17:06	07:37 18:04	08:58-09:05/23 18:55	06:34 18:55	08:06-09:07/23 18:55	05:31 20:49	05:15 21:37	05:43 22:03	06:32 21:43	07:24 19:34	08:16 18:26	08:47-08:48/9 16:26
25	08:30 17:08	07:35 18:06	08:59-09:06/24 18:56	06:31 18:56	08:07-09:08/24 18:56	05:30 20:50	05:15 21:39	05:45 22:03	06:34 21:41	07:25 19:32	08:17 18:24	08:48-08:49/10 16:27
26	08:29 17:10	07:33 18:08	09:00-09:07/25 18:58	06:29 18:58	08:08-09:09/25 18:58	05:28 20:52	05:16 21:40	05:46 22:03	06:36 20:41	07:27 19:29	08:19 18:22	08:49-08:50/11 16:28
27	08:28 17:12	07:31 18:10	09:01-09:08/26 19:00	06:27 19:00	08:09-09:10/26 19:00	05:27 20:54	05:16 21:41	05:47 22:03	06:37 21:38	07:29 19:27	08:21 18:20	08:50-08:51/12 16:28
28	08:26 17:14	07:28 18:12	09:02-09:09/27 19:02	06:25 19:02	08:10-09:11/27 19:02	05:26 20:55	05:17 21:43	05:49 22:03	06:39 21:37	07:30 19:25	08:23 18:18	08:51-08:52/13 16:29
29	08:25 17:16	07:26 18:13	09:03-09:10/28 19:03	06:23 19:03	08:11-09:12/28 19:03	05:25 20:57	05:17 21:44	05:50 22:03	06:41 21:35	07:32 19:22	08:25 18:16	08:52-08:53/14 16:30
30	08:23 17:17	07:24 18:14	09:04-09:11/29 19:04	06:21 19:04	08:12-09:13/29 19:04	05:24 20:59	05:18 21:45	05:52 22:03	06:42 21:34	07:34 19:20	08:26 17:14	08:53-08:54/15 16:31
31	08:22 17:19	07:22 18:15	09:05-09:12/30 19:05	06:19 19:05	08:13-09:14/30 19:05	05:23 21:00	05:19 21:46	05:53 22:03	06:44 21:32	07:28 17:12	08:27 16:32	08:54-08:55/16 16:32
Potential sun hours	256	276	290	216	416	486	501	505	456	382	332	266
Sum of minutes with flicker	0	290	216	0	0	0	0	0	0	365	149	0

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

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

Project:

Almere_Slagschaduw_uitgebreid_v3

Licensed user:

Arcadis

Beaulieustraat 22

NL-6814 DV Arnhem

+31 (0)6 2706 2060

Erik Koppen / erik.koppen@arcadis.com

Calculated:

26-10-2021 16:02/3.5.552



SHADOW - Calendar per WTG

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-10 - VESTAS V136-4.2 4200 136.0 !OI hub: 152,0 m (TOT: 220,0 m) (209)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47 16:33	08:20 17:21	07:26 18:14	07:15 20:09	06:09 21:01		05:22 21:47	06:30-07:26/56 22:02	05:18 22:02	06:38-07:19/41 21:31	06:46 20:28	07:35 19:17	07:30 17:10
2	08:47 16:34	08:19 17:23	07:24 18:15	07:12 20:10	06:07 21:02		05:21 21:49	06:31-07:27/56 22:02	05:19 22:02	06:40-07:34/54 21:29	05:57 20:26	07:04-07:15/11 19:15	07:37 17:08
3	08:47 16:35	08:17 17:25	07:22 18:17	07:10 20:12	06:05 21:04		05:21 21:50	06:32-07:27/55 22:02	05:20 22:02	06:39-07:33/54 21:27	05:58 20:23	06:39-07:01/22 19:13	07:39 17:06
4	08:47 16:36	08:15 17:27	07:20 18:19	07:08 20:14	06:03 21:06		05:20 21:51	06:32-07:27/55 22:01	05:20 21:25	06:40-07:34/54 21:25	06:00 20:21	06:41-07:01/20 19:10	07:41 17:05
5	08:46 16:37	08:14 17:29	07:17 18:21	07:06 20:16	06:01 21:07		05:19 21:52	06:34-07:28/54 22:01	05:21 22:01	06:40-07:34/54 21:24	06:01 20:19	06:42-07:00/18 19:08	07:42 17:03
6	08:46 16:39	08:12 17:30	07:15 18:23	07:03 20:17	05:59 21:09	06:37-06:45/8	05:18 21:53	06:34-07:27/53 22:00	05:22 21:22	06:41-07:34/53 21:22	06:03 20:16	06:44-06:59/15 19:06	07:44 17:01
7	08:46 16:40	08:10 17:32	07:13 18:25	07:01 20:19	05:58 21:11	06:35-06:47/12	05:18 21:54	06:35-07:28/53 22:00	05:23 21:20	06:40-07:34/54 21:20	06:05 20:14	06:45-06:56/11 19:04	07:46 16:59
8	08:45 16:41	08:09 17:34	07:11 18:26	06:59 20:21	05:56 21:12	06:33-06:49/16	05:17 21:55	06:34-07:28/54 21:59	05:24 21:59	06:40-07:34/54 21:18	06:06 20:12	06:47-06:54/7 19:01	07:47 16:58
9	08:45 16:43	08:07 17:36	07:08 18:28	06:56 20:23	05:54 21:14	06:32-06:50/18	05:17 21:56	06:35-07:29/54 21:58	05:25 21:58	06:40-07:34/54 21:16	06:08 20:09	06:59 18:59	07:49 16:56
10	08:44 16:44	08:05 17:38	07:06 18:30	06:54 20:24	05:52 21:16	06:30-06:51/21	05:16 21:56	06:35-07:29/54 21:58	05:26 21:14	06:40-07:34/54 21:14	06:09 20:07	07:01 18:57	07:51 16:54
11	08:44 16:45	08:03 17:40	07:04 18:32	06:52 20:26	05:50 21:17	06:29-06:52/23	05:16 21:57	06:35-07:29/54 21:57	05:27 21:57	06:39-07:34/55 21:13	06:11 20:05	07:02 18:54	07:53 16:53
12	08:43 16:47	08:01 17:42	07:01 18:34	06:49 20:28	05:49 21:19	06:27-07:06/39	05:15 21:58	06:35-07:29/54 21:56	05:28 21:11	06:39-07:34/55 21:11	06:13 20:02	07:04 18:52	07:54 16:51
13	08:42 16:48	07:59 17:44	06:59 18:35	06:47 20:29	05:47 21:21	06:27-07:10/43	05:15 21:59	06:35-07:30/55 21:55	05:29 21:55	06:38-07:34/56 21:09	07:05 20:00	07:56 18:50	07:52 16:49
14	08:42 16:50	07:57 17:46	06:57 18:37	06:45 20:31	05:45 21:22	06:26-07:11/45	05:15 21:59	06:36-07:30/54 21:54	05:30 21:07	06:38-07:34/56 21:07	07:07 19:58	07:58 18:48	07:54 16:48
15	08:41 16:51	07:55 17:47	06:55 18:39	06:43 20:33	05:44 21:24	06:26-07:14/48	05:15 22:00	06:36-07:30/54 21:53	05:31 21:05	06:37-07:34/57 21:05	07:09 19:55	08:00 18:45	07:55 16:46
16	08:40 16:53	07:53 17:49	06:52 18:41	06:41 20:35	05:42 21:25	06:25-07:15/50	05:14 22:00	06:36-07:31/55 21:52	05:33 21:03	06:37-07:33/56 21:03	07:10 19:53	08:01 18:43	07:57 16:45
17	08:39 16:55	07:52 17:51	06:50 18:42	06:38 20:36	05:41 21:27	06:25-07:16/51	05:14 22:01	06:36-07:31/55 21:51	05:34 21:01	06:37-07:33/56 21:01	07:12 19:51	08:03 18:41	07:59 16:44
18	08:38 16:56	07:50 17:53	06:48 18:44	06:36 20:38	05:39 21:28	06:26-07:18/52	05:14 22:01	06:37-07:31/54 21:50	05:35 20:58	06:36-07:33/57 20:58	07:14 19:48	08:05 18:39	08:01 16:42
19	08:37 16:58	07:47 17:55	06:45 18:46	06:34 20:40	05:38 21:30	06:25-07:18/53	05:14 22:02	06:37-07:31/54 21:49	05:36 20:56	06:37-07:33/56 20:56	07:15 19:46	08:07 18:37	08:03 16:41
20	08:36 17:00	07:45 17:57	06:43 18:48	06:32 20:42	05:36 21:31	06:25-07:19/54	05:14 22:02	06:37-07:31/54 21:48	05:38 20:54	06:36-07:33/57 20:54	07:17 19:43	08:08 18:35	08:04 16:40
21	08:35 17:01	07:43 17:59	06:41 18:49	06:30 20:43	05:35 21:33	06:25-07:20/55	05:14 22:02	06:37-07:31/54 21:47	05:39 20:52	06:36-07:32/56 20:52	07:19 19:41	08:10 18:32	08:06 16:38
22	08:34 17:03	07:41 18:01	06:38 18:51	06:27 20:45	05:34 21:34	06:26-07:21/55	05:15 22:03	06:37-07:31/54 21:45	05:40 20:50	06:36-07:31/55 20:50	07:20 19:39	08:12 18:30	08:08 16:37
23	08:33 17:05	07:39 18:02	06:36 18:53	06:25 20:47	05:32 21:36	06:26-07:22/56	05:15 22:03	06:37-07:31/54 21:44	05:42 20:48	06:36-07:31/55 20:48	07:22 19:36	08:14 18:28	08:09 16:36
24	08:31 17:06	07:37 18:04	06:34 18:55	06:23 20:48	05:31 21:37	06:27-07:23/56	05:15 22:03	06:38-07:32/54 21:43	05:43 20:46	06:36-07:30/54 20:46	07:24 19:34	08:16 18:26	08:11 16:35
25	08:30 17:08	07:35 18:06	06:31 18:56	06:21 20:50	05:30 21:39	06:27-07:23/56	05:15 22:03	06:38-07:32/54 21:41	05:45 20:43	06:36-07:29/53 20:43	07:25 19:32	08:17 18:24	08:13 16:34
26	08:29 17:10	07:33 18:08	06:29 18:58	06:19 20:52	05:28 21:40	06:27-07:24/57	05:16 22:03	06:37-07:32/55 21:40	05:46 20:41	06:35-07:28/53 20:41	07:27 19:29	08:19 18:22	08:14 16:33
27	08:27 17:12	07:31 18:10	06:26 19:00	06:17 20:54	05:27 21:41	06:28-07:24/56	05:16 22:03	06:38-07:33/55 21:38	05:47 20:39	06:36-07:28/52 20:39	07:29 19:27	08:21 18:20	08:16 16:32
28	08:26 17:14	07:28 18:12	06:24 20:02	06:15 20:55	05:26 21:43	06:28-07:25/57	05:17 22:03	06:38-07:33/55 21:37	05:49 20:37	06:36-07:26/50 20:37	07:30 19:25	08:23 18:18	08:17 16:31
29	08:25 17:16		07:22 20:03	06:13 20:57	05:25 21:44	06:29-07:25/56	05:17 22:03	06:39-07:33/54 21:35	05:50 20:35	06:36-07:24/48 20:35	07:32 19:22	08:25 18:16	08:19 16:30
30	08:23 17:17		07:19 20:05	06:11 20:59	05:24 21:45	06:29-07:25/56	05:18 22:03	06:38-07:33/55 21:34	05:52 20:32	06:37-07:23/46 20:32	07:34 19:20	08:26 17:14	08:21 16:29
31	08:22 17:19		07:17 20:07		05:23 21:46	06:30-07:26/56		05:53 21:32	06:36-07:21/45 20:30	06:44 19:20		07:28 17:12	
Potential sun hours	256	276	366	416	486		501	505	456	382	332	266	242
Sum of minutes with flicker	0	0	0	0	1149		1631	1667	170	0	0	0	0

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

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

SHADOW - Calendar per WTG

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-11 - VESTAS V136-4.2 4200 136.0 !OI! hub: 152,0 m (TOT: 220,0 m) (210)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47 16:33	08:20 17:21	07:26 18:14	07:15 20:09	07:53-08:18/25 21:01	06:09 21:47
2	08:47 16:34	08:19 17:23	07:24 18:15	07:12 20:10	07:53-08:18/25 21:02	06:07 21:49
3	08:47 16:35	08:17 17:25	07:22 18:17	07:10 20:12	07:52-08:16/24 21:04	06:05 21:50
4	08:47 16:36	08:15 17:27	07:20 18:19	07:08 20:14	07:53-08:16/23 21:06	06:03 21:51
5	08:46 16:37	08:14 17:29	07:17 18:21	07:06 20:16	07:54-08:15/21 21:07	06:01 21:52
6	08:46 16:39	08:12 17:30	07:15 18:23	07:03 20:17	07:54-08:13/19 21:09	05:59 21:53
7	08:46 16:40	08:10 17:32	07:13 18:25	07:01 20:19	07:55-08:11/16 21:11	05:58 21:54
8	08:45 16:41	08:08 17:34	07:11 18:26	06:59 20:21	07:57-08:09/12 21:12	05:56 21:55
9	08:45 16:43	08:07 17:36	07:08 18:28	06:56 20:22	05:54 21:14	05:57 21:56
10	08:44 16:44	08:05 17:38	07:06 18:30	06:54 20:24	05:52 21:16	06:34-06:40/6 21:56
11	08:44 16:45	08:03 17:40	07:04 18:32	06:52 20:26	05:50 21:17	06:01-06:23/22 21:57
12	08:43 16:47	08:01 17:42	07:01 18:34	06:49 20:28	05:49 21:19	06:01-06:24/23 21:58
13	08:42 16:48	07:59 17:44	06:59 18:35	06:47 20:29	05:47 21:20	06:29-06:46/17 21:59
14	08:42 16:50	07:57 17:46	06:57 18:37	06:45 20:31	05:45 21:22	06:01-06:25/24 21:59
15	08:41 16:51	07:55 17:47	06:55 18:39	06:43 20:33	05:44 21:24	06:28-06:48/20 21:59
16	08:40 16:53	07:53 17:49	06:52 18:41	06:41 20:35	05:42 21:25	06:01-06:26/25 22:00
17	08:39 16:55	07:51 17:51	06:50 18:42	06:38 20:36	05:41 21:27	06:27-06:50/23 22:01
18	08:38 16:56	07:49 17:53	06:48 18:44	06:36 20:38	05:39 21:28	06:01-06:51/50 22:01
19	08:37 16:58	07:47 17:55	06:45 18:46	06:34 20:40	05:38 21:30	06:02-06:52/50 22:02
20	08:36 17:00	07:45 17:57	06:43 18:48	06:32 20:42	05:36 21:31	06:02-06:52/50 22:02
21	08:35 17:01	07:43 17:59	06:41 18:49	06:30 20:43	05:35 21:33	06:02-06:52/50 22:02
22	08:34 17:03	07:41 18:01	06:38 18:51	06:27 20:45	05:34 21:34	06:02-06:52/50 22:03
23	08:33 17:05	07:39 18:02	06:36 18:53	06:25 20:47	05:32 21:36	06:02-06:52/50 22:03
24	08:31 17:06	07:37 18:04	06:34 18:55	06:23 20:48	05:31 21:37	06:03-06:53/50 22:03
25	08:30 17:08	07:35 18:06	06:31 18:56	06:21 20:50	05:30 21:39	06:02-06:52/50 22:03
26	08:29 17:10	07:33 18:08	06:29 18:58	06:19 20:52	05:29 21:40	06:02-06:52/50 22:03
27	08:27 17:12	07:31 18:10	06:26 20:00	06:17 20:54	05:27 21:41	06:03-06:52/49 22:03
28	08:26 17:14	07:28 18:12	06:24 20:02	06:15 20:55	05:26 21:43	06:03-06:28/25 22:03
29	08:25 17:16		06:22 20:03	06:13 20:57	05:25 21:44	06:30-06:52/22 22:03
30	08:23 17:17		06:19 20:05	06:11 20:59	05:24 21:45	06:04-06:29/25 22:03
31	08:22 17:19		06:17 20:07		05:23 21:46	06:31-06:52/21 22:03
Potential sun hours	256	276	366	416	486	501
Sum of minutes with flicker	0	0	867	165	0	1088

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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-11 - VESTAS V136-4.2 4200 136.0 !OI! hub: 152,0 m (TOT: 220,0 m) (210)

Assumptions for shadow calculations

Reference year for calendar

2022

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

SHADOW - Calendar per WTG

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-12 - VESTAS V136-4.2 4200 136.0 !OI hub: 152,0 m (TOT: 220,0 m) (211)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47 16:33	08:20 09:14-09:42/28 17:21	07:26 08:06-08:41/35 18:14	07:15 07:52-08:13/21 20:09	06:09 21:00	05:22 21:47
2	08:47 16:34	08:19 09:15-09:42/27 17:23	07:24 08:07-08:44/37 18:15	07:12 07:50-08:15/25 20:10	06:07 21:02	05:21 21:49
3	08:47 16:35	08:17 09:15-09:42/27 17:25	07:22 08:07-08:46/39 18:17	07:10 07:48-08:15/27 20:12	06:05 21:04	05:21 21:50
4	08:46 16:36	08:15 09:15-09:41/26 17:27	07:20 08:08-08:47/39 18:19	07:08 07:47-08:16/29 20:14	06:03 21:06	05:20 21:51
5	08:46 16:37	08:14 09:16-09:41/25 17:29	07:17 08:10-08:49/39 18:21	07:06 07:46-08:17/31 20:16	06:01 21:07	05:19 21:52
6	08:46 16:39	08:12 09:17-09:40/23 17:30	07:15 08:10-08:49/39 18:23	07:03 07:44-08:16/32 20:17	05:59 21:09	05:18 21:53
7	08:46 16:40	08:10 09:18-09:39/21 17:32	07:13 08:09-08:51/42 18:25	07:01 07:44-08:17/33 20:19	05:58 21:11	05:18 21:54
8	08:45 16:41	08:08 09:19-09:38/19 17:34	07:11 08:08-08:52/44 18:26	06:59 07:43-08:17/34 20:21	05:56 21:12	05:17 21:55
9	08:45 16:43	08:07 09:21-09:36/15 17:36	07:08 08:06-08:51/45 18:28	06:56 07:43-08:17/34 20:22	05:54 21:14	05:17 21:56
10	08:44 16:44	08:05 09:24-09:33/9 17:38	07:06 08:06-08:52/46 18:30	06:54 07:42-08:16/34 20:24	05:52 21:16	05:16 21:56
11	08:44 16:45	08:03 17:40	07:04 08:04-08:52/48 18:32	06:52 07:42-08:16/34 20:26	05:50 21:17	05:16 21:57
12	08:43 16:47	08:01 17:42	07:01 08:04-08:52/48 18:33	06:49 07:42-08:16/34 20:28	05:49 21:19	05:15 21:58
13	08:42 16:48	07:59 17:44	06:59 08:04-08:53/49 18:35	06:47 07:42-08:15/33 20:29	05:47 21:20	05:15 21:59
14	08:41 16:50	07:57 17:46	06:57 08:03-08:52/49 18:37	06:45 07:42-08:14/32 20:31	05:45 21:22	05:15 21:59
15	08:41 16:51	07:55 17:47	06:55 08:03-08:52/49 18:39	06:43 07:43-08:14/31 20:33	05:44 21:24	05:15 22:00
16	08:40 09:24-09:25/1 16:53	07:53 17:49	06:52 08:03-08:52/49 18:41	06:41 07:43-08:12/29 20:35	05:42 21:25	05:14 22:00
17	08:39 09:23-09:29/6 16:55	07:51 17:51	06:50 08:02-08:51/49 18:42	06:38 07:44-08:10/26 20:36	05:41 21:27	05:14 22:01
18	08:38 09:22-09:31/9 16:56	07:49 17:53	06:48 08:02-08:50/48 18:44	06:36 07:45-08:09/24 20:38	05:39 21:28	05:14 22:01
19	08:37 09:21-09:33/12 16:58	07:47 17:55	06:45 08:03-08:50/47 18:46	06:34 07:46-08:07/21 20:40	05:38 21:30	05:14 22:02
20	08:36 09:19-09:34/15 17:00	07:45 17:57	06:43 08:02-08:49/47 18:48	06:32 07:48-08:04/16 20:42	05:36 21:31	05:14 22:02
21	08:35 09:18-09:36/18 17:01	07:43 08:20-08:23/3 17:59	06:41 08:03-08:48/45 18:49	06:30 07:51-08:01/10 20:43	05:35 21:33	05:14 22:02
22	08:34 09:16-09:36/20 17:03	07:41 08:18-08:25/7 18:01	06:38 08:02-08:46/44 18:51	06:27 20:45	05:34 21:34	05:15 22:03
23	08:33 09:15-09:38/23 17:05	07:39 08:16-08:27/11 18:02	06:36 08:03-08:45/42 18:53	06:25 20:47	05:32 21:36	05:15 22:03
24	08:31 09:14-09:39/25 17:07	07:37 08:13-08:27/14 18:04	06:34 08:04-08:44/40 18:55	06:23 20:48	05:31 21:37	05:15 22:03
25	08:30 09:14-09:39/25 17:08	07:35 08:11-08:27/16 18:06	06:31 08:05-08:42/37 18:56	06:21 20:50	05:30 21:38	05:15 22:03
26	08:29 09:14-09:41/27 17:10	07:33 08:09-08:28/19 18:08	06:29 08:06-08:40/34 18:58	06:19 20:52	05:29 21:40	05:16 22:03
27	08:27 09:13-09:41/28 17:12	07:31 08:06-08:27/21 18:10	07:26 09:08-09:38/30 20:00	06:17 20:54	05:27 21:41	05:16 22:03
28	08:26 09:13-09:41/28 17:14	07:28 08:06-08:37/31 18:12	07:24 09:09-09:35/26 20:02	06:15 20:55	05:26 21:43	05:17 22:03
29	08:25 09:14-09:42/28 17:16		07:22 09:11-09:32/21 20:03	06:13 20:57	05:25 21:44	05:17 22:03
30	08:23 09:14-09:42/28 17:17		07:19 08:00-08:07/7 20:05	06:11 20:59	05:24 21:45	05:18 22:03
31	08:22 09:13-09:42/29 17:19		07:17 07:55-08:10/15 20:07		05:23 21:46	
Potential sun hours	256	276	366	416	486	501
Sum of minutes with flicker	322	342	1240	590	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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-12 - VESTAS V136-4.2 4200 136.0 !OI hub: 152,0 m (TOT: 220,0 m) (211)

Assumptions for shadow calculations

Reference year for calendar

2022

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	05:18 22:02	05:55 21:30	06:46 07:41-08:15/34 20:28	07:35 08:43-09:31/48 19:17	07:30 17:10	08:22 16:28
2	05:19 22:02	05:57 21:29	06:47 07:41-08:15/34 20:26	07:37 08:43-09:31/48 19:15	07:32 08:53-09:03/10 17:08	08:23 16:28
3	05:20 22:02	05:58 21:27	06:49 07:41-08:15/34 20:23	07:39 08:43-09:31/48 19:13	07:34 08:51-09:06/15 17:06	08:25 16:27
4	05:20 22:01	06:00 21:25	06:51 07:40-08:14/34 20:21	07:41 08:42-09:29/47 19:10	07:36 08:49-09:08/19 17:05	08:26 16:26
5	05:21 22:01	06:01 21:24	06:52 07:40-08:14/34 20:19	07:42 08:43-09:29/46 19:08	07:37 08:48-09:09/21 17:03	08:28 16:26
6	05:22 22:00	06:03 21:22	06:54 07:40-08:13/33 20:16	07:44 08:44-09:28/44 19:06	07:39 08:47-09:10/23 17:01	08:29 16:25
7	05:23 22:00	06:05 21:20	06:56 07:40-08:13/33 20:14	07:46 08:44-09:27/43 19:04	07:41 08:46-09:11/25 16:59	08:30 16:25
8	05:24 21:59	06:06 21:18	06:57 07:40-08:11/31 20:12	07:47 08:45-09:26/41 19:01	07:43 08:45-09:11/26 16:58	08:32 16:25
9	05:25 21:58	06:08 21:16	06:59 07:41-08:10/29 20:09	07:49 08:45-09:24/39 18:59	07:45 08:45-09:12/27 16:56	08:33 16:24
10	05:26 21:58	06:09 21:14	07:01 07:42-08:09/27 20:07	07:51 08:43-09:22/39 18:57	07:46 08:45-09:12/27 16:54	08:34 16:24
11	05:27 21:57	06:11 21:12	07:02 07:42-08:07/25 20:05	07:53 08:42-09:21/39 18:54	07:48 08:45-09:13/28 16:53	08:35 16:24
12	05:28 21:56	06:13 21:11	07:04 07:44-08:05/21 20:02	07:54 08:41-09:19/38 18:52	07:50 08:45-09:14/29 16:51	08:36 16:24
13	05:29 21:55	06:14 21:09	07:05 07:46-08:02/16 20:00	07:56 08:40-09:16/36 18:50	07:52 08:46-09:14/28 16:49	08:37 16:23
14	05:30 21:54	06:16 21:07	07:07 07:49-07:59/10 19:58	08:39-09:13/34 18:48	08:46-09:14/28 16:48	08:38 16:23
15	05:31 21:53	06:18 21:05	07:09 09:02-09:21/19 19:55	08:00 09:01-09:06/5 18:45	08:46-09:14/28 16:46	08:39 16:23
16	05:33 21:52	06:19 21:03	07:10 08:59-09:23/24 19:53	08:01 08:39-08:59/20 18:43	08:46-09:14/28 16:45	08:40 16:24
17	05:34 21:51	06:21 21:00	07:12 08:56-09:26/30 19:51	08:03 08:41-08:59/18 18:41	08:47-09:14/27 16:44	08:41 16:24
18	05:35 21:50	06:22 20:58	07:14 08:54-09:27/33 19:48	08:05 08:43-08:58/15 18:39	08:01 08:48-09:13/25 16:42	08:42 16:24
19	05:36 21:49	06:24 20:56	07:15 08:52-09:29/37 19:46	08:07 08:45-08:58/13 18:37	08:02 08:48-09:13/25 16:41	08:42 16:24
20	05:38 21:48	06:26 20:54	07:17 08:51-09:30/39 19:43	08:08 08:47-08:57/10 18:35	08:04 08:50-09:13/23 16:40	08:43 16:24
21	05:39 21:47	06:27 20:52	07:19 08:49-09:30/41 19:41	08:10 08:49-08:55/6 18:32	08:06 08:52-09:12/20 16:38	08:44 16:25
22	05:40 21:45	06:29 20:50	07:20 08:48-09:31/43 19:39	08:12 08:51-08:53/2 18:30	08:08 08:54-09:12/18 16:37	08:44 16:25
23	05:42 21:44	06:31 07:54-08:05/11 20:48	07:22 08:48-09:32/44 19:36	08:14 18:28	08:09 08:55-09:10/15 16:36	08:45 16:26
24	05:43 21:43	06:32 07:51-08:09/18 20:46	07:24 08:46-09:32/46 19:34	08:16 18:26	08:11 08:57-09:10/13 16:35	08:45 16:26
25	05:45 21:41	06:34 07:50-08:11/21 20:43	07:25 08:45-09:33/48 19:32	08:17 18:24	08:13 08:59-09:09/10 16:34	08:46 16:27
26	05:46 21:40	06:36 07:47-08:12/25 20:41	07:27 08:45-09:33/48 19:29	08:19 18:22	08:14 09:01-09:07/6 16:33	08:46 16:28
27	05:47 21:38	06:37 07:46-08:13/27 20:39	07:29 08:44-09:32/48 19:27	08:21 18:20	08:16 09:03-09:05/2 16:32	08:46 16:28
28	05:49 21:37	06:39 07:45-08:13/28 20:37	07:30 08:44-09:33/49 19:25	08:23 18:18	08:17 16:31	08:46 16:29
29	05:50 21:35	06:41 07:44-08:14/30 20:35	07:32 08:43-09:33/50 19:22	08:25 18:16	08:19 16:30	08:47 16:30
30	05:52 21:34	06:42 07:42-08:14/32 20:32	07:34 08:43-09:33/50 19:20	07:26 17:14	08:20 16:29	08:47 16:31
31	05:54 21:32	06:44 07:42-08:15/33 20:30		07:28 17:12		08:47 16:32
Potential sun hours	505	456	382	332	266	242
Sum of minutes with flicker	0	225	1053	700	546	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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-13 - VESTAS V136-4.2 4200 136.0 !OI! hub: 152,0 m (TOT: 220,0 m) (212)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47 09:43-10:11/28 16:33	08:20 09:55-10:17/22 17:21	07:26 08:27-08:53/26 18:14	07:15 07:56-08:15/19 20:09	06:09 21:00	05:22 06:25-07:10/45 21:47
2	08:47 09:43-10:12/29 16:34	08:19 09:58-10:16/18 17:23	07:24 08:29-08:52/23 18:15	07:12 07:57-08:14/17 20:10	06:07 06:44-06:48/4 21:02	05:21 06:26-07:11/45 21:49
3	08:47 09:43-10:12/29 16:35	08:17 10:00-10:13/13 17:25	07:22 08:29-08:49/20 18:17	07:10 07:57-08:13/16 20:12	06:05 06:42-06:49/7 21:04	05:21 06:26-07:11/45 21:50
4	08:46 09:43-10:13/30 16:36	08:15 10:05-10:08/3 17:27	07:20 08:32-08:47/15 18:19	07:08 07:59-08:12/13 20:14	06:03 06:40-06:50/10 21:06	05:20 06:25-07:11/46 21:51
5	08:46 09:43-10:13/30 16:37	08:14 10:05-10:08/3 17:29	07:17 08:35-08:43/8 18:21	07:06 08:00-08:10/10 20:16	06:01 06:38-06:50/12 21:07	05:19 06:26-07:11/45 21:52
6	08:46 09:43-10:15/32 16:39	08:12 10:05-10:08/3 17:30	07:15 08:35-08:43/8 18:23	07:03 08:00-08:06/6 20:17	05:59 06:37-06:52/15 21:09	05:18 06:26-07:11/45 21:53
7	08:46 09:43-10:15/32 16:40	08:10 10:05-10:08/3 17:32	07:13 08:35-08:43/8 18:25	07:01 08:00-08:06/6 20:19	05:58 06:35-06:52/17 21:11	05:18 06:26-07:12/46 21:54
8	08:45 09:44-10:16/32 16:41	08:08 10:05-10:08/3 17:34	07:11 08:35-08:43/8 18:26	06:59 08:00-08:06/6 20:21	05:56 06:33-06:52/19 21:12	05:17 06:26-07:12/46 21:55
9	08:45 09:44-10:17/33 16:43	08:07 10:05-10:08/3 17:36	07:08 08:35-08:43/8 18:28	06:56 08:00-08:06/6 20:22	05:54 06:32-06:52/20 21:14	05:17 06:26-07:12/46 21:56
10	08:44 09:44-10:17/33 16:44	08:05 10:05-10:08/3 17:38	07:06 08:35-08:43/8 18:30	06:54 08:00-08:06/6 20:24	05:52 06:30-06:52/22 21:16	05:16 06:27-07:13/46 21:56
11	08:44 09:44-10:17/33 16:45	08:03 10:05-10:08/3 17:40	07:04 08:35-08:43/8 18:32	06:52 08:00-08:06/6 20:26	05:50 06:29-06:52/23 21:17	05:16 06:26-07:12/46 21:57
12	08:43 09:44-10:18/34 16:47	08:01 10:05-10:08/3 17:42	07:01 08:35-08:43/8 18:34	06:49 08:00-08:06/6 20:28	05:49 06:29-06:52/23 21:19	05:15 06:27-07:13/46 21:58
13	08:42 09:44-10:18/34 16:48	07:59 08:39-08:45/6 17:44	06:59 08:35-08:43/8 18:35	06:47 08:00-08:06/6 20:29	05:47 06:29-06:52/23 21:20	05:15 06:27-07:13/46 21:59
14	08:41 09:44-10:19/35 16:50	07:57 08:35-08:45/6 17:46	06:57 08:35-08:43/8 18:37	06:45 08:00-08:06/6 20:31	05:45 06:29-06:54/25 21:22	05:15 06:27-07:14/47 21:59
15	08:41 09:44-10:20/36 16:51	07:55 08:33-08:51/18 17:48	06:55 08:33-08:51/18 18:39	06:43 08:00-08:06/6 20:33	05:44 06:30-06:57/27 21:24	05:15 06:28-07:14/46 22:00
16	08:40 09:45-10:20/35 16:53	07:53 08:31-08:53/22 17:49	06:52 08:31-08:53/22 18:41	06:41 08:00-08:06/6 20:35	05:42 06:30-06:58/28 21:25	05:14 06:28-07:14/46 22:00
17	08:39 09:45-10:21/36 16:55	07:51 08:30-08:54/24 17:51	06:50 08:30-08:54/24 18:42	06:38 08:00-08:06/6 20:36	05:41 06:31-07:00/29 21:27	05:14 06:28-07:15/47 22:01
18	08:38 09:46-10:21/35 16:56	07:49 08:28-08:54/26 17:53	06:48 08:28-08:54/26 18:44	06:36 08:00-08:06/6 20:38	05:39 06:32-07:02/30 21:28	05:14 06:28-07:15/47 22:01
19	08:37 09:46-10:22/36 16:58	07:47 08:27-08:55/28 17:55	06:45 08:27-08:55/28 18:46	06:34 08:00-08:06/6 20:40	05:38 06:31-07:02/31 21:30	05:14 06:28-07:15/47 22:02
20	08:36 09:46-10:21/35 17:00	07:45 08:27-08:56/29 17:57	06:43 08:27-08:56/29 18:48	06:32 08:00-08:06/6 20:42	05:36 06:30-07:03/33 21:31	05:14 06:28-07:15/47 22:02
21	08:35 09:46-10:22/36 17:01	07:43 08:26-08:56/30 17:59	06:41 08:26-08:56/30 18:49	06:30 08:00-08:06/6 20:43	05:35 06:30-07:04/34 21:33	05:14 06:28-07:15/47 22:02
22	08:34 09:46-10:22/36 17:03	07:41 08:26-08:57/31 18:01	06:38 08:26-08:57/31 18:51	06:27 08:00-08:06/6 20:45	05:34 06:29-07:05/36 21:34	05:15 06:28-07:15/47 22:03
23	08:33 09:47-10:22/35 17:05	07:39 08:25-08:56/31 18:02	06:36 08:25-08:56/31 18:53	06:25 08:00-08:06/6 20:47	05:32 06:29-07:06/37 21:36	05:15 06:28-07:15/47 22:03
24	08:31 09:48-10:22/34 17:07	07:37 08:25-08:56/31 18:04	06:34 07:08-07:12/4 18:55	06:23 07:08-07:12/4 20:48	05:31 06:28-07:07/39 21:37	05:15 06:29-07:16/47 22:03
25	08:30 09:48-10:22/34 17:08	07:35 08:26-08:56/30 18:06	06:31 07:05-07:14/9 18:56	06:21 07:05-07:14/9 20:50	05:30 06:28-07:08/40 21:38	05:15 06:29-07:16/47 22:03
26	08:29 09:49-10:21/32 17:10	07:33 08:26-08:56/30 18:08	06:29 07:03-07:15/12 18:58	06:19 07:03-07:15/12 20:52	05:29 06:27-07:08/41 21:40	05:16 06:29-07:16/47 22:03
27	08:27 09:50-10:22/32 17:12	07:31 08:26-08:54/28 18:10	07:26 08:01-08:16/15 20:00	06:17 08:01-08:16/15 20:54	05:27 06:27-07:09/42 21:41	05:16 06:30-07:16/46 22:03
28	08:26 09:50-10:21/31 17:14	07:28 08:26-08:54/28 18:12	07:24 07:58-08:16/18 20:02	06:15 07:58-08:16/18 20:55	05:26 06:27-07:09/42 21:42	05:17 06:30-07:16/46 22:03
29	08:25 09:52-10:21/29 17:16		07:22 07:56-08:16/20 20:03	06:13 07:56-08:16/20 20:57	05:25 06:26-07:09/43 21:44	05:17 06:30-07:17/47 22:03
30	08:23 09:53-10:20/27 17:17		07:19 07:55-08:16/21 20:05	06:11 07:55-08:16/21 20:59	05:24 06:26-07:09/43 21:45	05:18 06:30-07:16/46 22:03
31	08:22 09:54-10:18/24 17:19		07:17 07:55-08:15/20 20:07		05:23 06:26-07:10/44 21:46	
Potential sun hours	256	276	366	416	486	501
Sum of minutes with flicker	1007	462	211	81	839	1387

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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-13 - VESTAS V136-4.2 4200 136.0 !OI! hub: 152,0 m (TOT: 220,0 m) (212)

Assumptions for shadow calculations

Reference year for calendar

2022

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	05:18 06:31-07:17/46 22:02	05:55 06:40-07:02/22 21:30	06:46 20:28	07:35 19:17	07:30 17:10	08:22 09:26-10:00/34 16:28
2	05:19 06:31-07:18/47 22:02	05:57 06:39-07:02/23 21:29	06:47 20:26	07:37 19:15	07:32 17:08	08:23 09:26-10:00/34 16:28
3	05:20 06:31-07:17/46 22:02	05:58 06:40-07:03/23 21:27	06:49 20:23	07:39 19:13	07:34 17:06	08:25 09:27-10:00/33 16:27
4	05:20 06:31-07:18/47 22:01	06:00 06:41-07:02/21 21:25	06:51 20:21	07:41 19:10	07:36 17:05	08:26 09:28-10:01/33 16:26
5	05:21 06:32-07:18/46 22:01	06:01 06:42-07:02/20 21:24	06:52 20:19	07:42 19:08	07:37 17:03	08:28 09:28-10:00/32 16:26
6	05:22 06:32-07:18/46 22:00	06:03 06:44-07:02/18 21:22	06:54 20:16	07:44 19:06	07:39 17:01	08:29 09:29-10:01/32 16:25
7	05:23 06:32-07:18/46 22:00	06:05 06:45-07:01/16 21:20	06:56 07:56-08:02/6 20:14	07:46 19:04	07:41 16:59	08:30 09:29-10:01/32 16:25
8	05:24 06:32-07:18/46 21:59	06:06 06:47-07:01/14 21:18	06:57 07:54-08:04/10 20:12	07:47 19:01	07:43 09:34-09:39/5 16:58	08:31 09:30-10:00/30 16:25
9	05:25 06:33-07:18/45 21:58	06:08 06:48-07:00/12 21:16	06:59 07:53-08:06/13 20:09	07:49 18:59	07:45 09:30-09:43/13 16:56	08:33 09:31-10:01/30 16:24
10	05:26 06:33-07:18/45 21:58	06:09 06:50-06:59/9 21:14	07:01 07:52-08:07/15 20:07	07:51 09:07-09:19/12 18:57	07:46 09:27-09:46/19 16:54	08:34 09:32-10:01/29 16:24
11	05:27 06:33-07:18/45 21:57	06:11 06:51-06:57/6 21:12	07:02 07:50-08:07/17 20:05	07:53 09:05-09:22/17 18:54	07:48 09:26-09:48/22 16:53	08:35 09:32-10:01/29 16:24
12	05:28 06:34-07:18/44 21:56	06:13 06:53-06:56/3 21:10	07:04 07:48-08:07/19 20:02	07:54 09:03-09:24/21 18:52	07:50 09:26-09:50/24 16:51	08:36 09:33-10:01/28 16:24
13	05:29 06:34-07:18/44 21:55	06:14 21:09	07:05 07:46-08:07/21 20:00	07:56 09:01-09:25/24 18:50	07:52 09:25-09:52/27 16:49	08:37 09:33-10:01/28 16:24
14	05:30 06:34-07:18/44 21:54	06:16 21:07	07:07 07:45-08:07/22 19:58	07:58 09:00-09:26/26 18:48	07:54 09:24-09:53/29 16:48	08:38 09:35-10:02/27 16:23
15	05:31 06:35-07:18/43 21:53	06:18 21:05	07:09 07:46-08:07/21 19:55	08:00 08:58-09:26/28 18:45	07:55 09:23-09:54/31 16:46	08:39 09:36-10:03/27 16:23
16	05:33 06:35-07:18/43 21:52	06:19 21:03	07:10 07:47-08:05/18 19:53	08:01 08:58-09:27/29 18:43	07:57 09:23-09:55/32 16:45	08:40 09:35-10:02/27 16:24
17	05:34 06:35-07:17/42 21:51	06:21 21:00	07:12 07:49-08:05/16 19:51	08:03 08:57-09:27/30 18:41	07:59 09:23-09:55/32 16:44	08:41 09:36-10:02/26 16:24
18	05:35 06:36-07:17/41 21:50	06:22 20:58	07:14 07:51-08:04/13 19:48	08:05 08:57-09:27/30 18:39	08:01 09:22-09:56/34 16:42	08:42 09:37-10:03/26 16:24
19	05:36 06:37-07:17/40 21:49	06:24 20:56	07:15 07:52-08:02/10 19:46	08:07 08:57-09:27/30 18:37	08:02 09:22-09:57/35 16:41	08:42 09:38-10:04/26 16:24
20	05:38 06:37-07:17/40 21:48	06:26 20:54	07:17 07:54-08:00/6 19:43	08:08 08:57-09:27/30 18:35	08:04 09:22-09:57/35 16:40	08:43 09:38-10:03/25 16:24
21	05:39 06:38-07:16/38 21:47	06:27 20:52	07:19 19:41	08:10 08:57-09:27/30 18:32	08:06 09:22-09:58/36 16:38	08:44 09:39-10:04/25 16:25
22	05:40 06:38-07:15/37 21:45	06:29 20:50	07:20 19:39	08:12 08:57-09:27/30 18:30	08:08 09:23-09:58/35 16:37	08:44 09:40-10:05/25 16:25
23	05:42 06:40-07:15/35 21:44	06:31 20:48	07:22 19:36	08:14 08:57-09:26/29 18:28	08:09 09:22-09:58/36 16:36	08:45 09:40-10:05/25 16:26
24	05:43 06:40-07:14/34 21:43	06:32 20:46	07:24 19:34	08:16 08:58-09:25/27 18:26	08:11 09:22-09:58/36 16:35	08:45 09:40-10:05/25 16:26
25	05:45 06:41-07:13/32 21:41	06:34 20:43	07:25 19:32	08:17 08:59-09:24/25 18:24	08:13 09:23-09:58/35 16:34	08:46 09:41-10:06/25 16:27
26	05:46 06:42-07:12/30 21:40	06:36 20:41	07:27 19:29	08:19 09:00-09:23/23 18:22	08:14 09:23-09:59/36 16:33	08:46 09:41-10:07/26 16:28
27	05:48 06:42-07:12/30 21:38	06:37 20:39	07:29 19:27	08:21 09:01-09:22/21 18:20	08:16 09:24-09:59/35 16:32	08:46 09:41-10:07/26 16:28
28	05:49 06:41-07:10/29 21:37	06:39 20:37	07:30 19:25	08:23 09:03-09:20/17 18:18	08:17 09:24-10:00/36 16:31	08:46 09:41-10:08/27 16:29
29	05:50 06:41-07:08/27 21:35	06:41 20:35	07:32 19:22	08:25 09:05-09:18/13 18:16	08:19 09:24-09:59/35 16:30	08:47 09:42-10:08/26 16:30
30	05:52 06:40-07:07/27 21:34	06:42 20:32	07:34 19:20	07:26 08:10-08:13/3 17:14	08:20 09:25-10:00/35 16:29	08:47 09:42-10:09/27 16:31
31	05:54 06:39-07:03/24 21:32	06:44 20:30		07:28 17:12		08:47 09:42-10:10/28 16:32
Potential sun hours	505	456	382	332	266	242
Sum of minutes with flicker	1229	187	207	495	693	873

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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-14 - VESTAS V136-4.2 4200 136.0 !OI! hub: 152,0 m (TOT: 220,0 m) (213)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47 09:37-10:03/26 16:33	08:20 17:21	07:26 08:14-08:42/28 18:14	07:15 07:49-08:10/21 20:09 09:20-09:27/7	06:09 21:00	05:22 21:47
2	08:47 09:38-10:04/26 16:34	08:19 17:23	07:24 08:15-08:46/31 18:15	07:12 07:47-08:11/24 20:10	06:07 21:02	05:21 21:49
3	08:47 09:38-10:04/26 16:35	08:17 17:25	07:22 08:16-08:48/32 18:17	07:10 07:45-08:10/25 20:12	06:05 21:04	05:21 21:50
4	08:46 09:38-10:05/27 16:36	08:15 17:27	07:20 08:17-08:50/33 18:19	07:08 07:44-08:10/26 20:14	06:03 21:06	05:20 21:51
5	08:46 09:38-10:05/27 16:38	08:14 17:29	07:17 08:16-08:51/35 18:21	07:06 07:44-08:10/26 20:16	06:01 21:07	05:19 21:52
6	08:46 09:39-10:06/27 16:39	08:12 17:31	07:15 08:13-08:52/39 18:23	07:03 07:44-08:09/25 20:17	05:59 21:09	05:18 21:53
7	08:46 09:39-10:06/27 16:40	08:10 17:32	07:13 08:12-08:53/41 18:25	07:01 07:44-08:08/24 20:19	05:58 21:11	05:18 21:54
8	08:45 09:40-10:07/27 16:41	08:08 17:34	07:11 08:11-08:54/43 18:26	06:59 07:44-08:08/24 20:21	05:56 21:12	05:17 21:55
9	08:45 09:40-10:07/27 16:43	08:07 17:36	07:08 08:09-08:54/45 18:28	06:56 07:45-08:07/22 20:22	05:54 21:14	05:17 21:56
10	08:44 09:41-10:07/26 16:44	08:05 17:38	07:06 08:09-08:55/46 18:30	06:54 07:45-08:04/19 20:24	05:52 21:16	05:16 21:56
11	08:44 09:41-10:07/26 16:45	08:03 17:40	07:04 08:07-08:55/48 18:32	06:52 07:47-08:02/15 20:26	05:50 21:17	05:16 21:57
12	08:43 09:41-10:07/26 16:47	08:01 17:42	07:01 08:07-08:55/48 18:34	06:50 07:49-08:00/11 20:28	05:49 21:19	05:15 21:58
13	08:42 09:42-10:07/25 16:48	07:59 17:44	06:59 08:07-08:56/49 18:35	06:47 20:29	05:47 21:20	05:15 21:59
14	08:41 09:43-10:08/25 16:50	07:57 17:46	06:57 08:05-08:55/50 18:37	06:45 20:31	05:45 06:35-06:36/1 21:22	05:15 21:59
15	08:41 09:43-10:08/25 16:51	07:55 17:48	06:55 08:05-08:55/50 18:39	06:43 20:33	05:44 06:36-06:38/2 21:24	05:15 22:00
16	08:40 09:44-10:08/24 16:53	07:53 17:49	06:52 08:05-08:56/51 18:41	06:41 20:35	05:42 06:37-06:39/2 21:25	05:14 22:00
17	08:39 09:45-10:08/23 16:55	07:51 17:51	06:50 08:04-08:55/51 18:42	06:38 20:36	05:41 06:38-06:41/3 21:27	05:14 22:01
18	08:38 09:46-10:08/22 16:56	07:49 08:27-08:30/3 17:53	06:48 08:04-08:54/50 18:44	06:36 20:38	05:39 06:39-06:42/3 21:28	05:14 22:01
19	08:37 09:47-10:08/21 16:58	07:47 08:24-08:31/7 17:55	06:45 08:05-08:54/49 18:46	06:34 20:40	05:38 06:39-06:42/3 21:30	05:14 22:02
20	08:36 09:48-10:06/18 17:00	07:45 08:22-08:33/11 17:57	06:43 08:04-08:53/49 18:48	06:32 20:42	05:36 06:40-06:43/3 21:31	05:14 22:02
21	08:35 09:49-10:06/17 17:01	07:43 08:20-08:34/14 17:59	06:41 08:05-08:52/47 18:49	06:30 20:43	05:35 06:41-06:44/3 21:33	05:14 22:02
22	08:34 09:50-10:04/14 17:03	07:41 08:18-08:35/17 18:01	06:38 08:04-08:51/47 18:51	06:27 20:45	05:34 06:42-06:45/3 21:34	05:15 22:03
23	08:33 09:53-10:03/10 17:05	07:39 08:16-08:35/19 18:03	06:36 08:05-08:50/45 18:53	06:25 20:47	05:32 06:42-06:45/3 21:36	05:15 22:03
24	08:31 17:07	07:37 08:13-08:35/22 18:04	06:34 08:06-08:49/43 18:55	06:23 20:48	05:31 06:43-06:46/3 21:37	05:15 22:03
25	08:30 17:08	07:35 08:12-08:35/23 18:06	06:31 08:06-08:47/41 18:56	06:21 20:50	05:30 06:44-06:46/2 21:38	05:15 22:03
26	08:29 17:10	07:33 08:12-08:35/23 18:08	06:29 08:07-08:46/39 18:58	06:19 20:52	05:29 06:45-06:46/1 21:40	05:16 22:03
27	08:27 17:12	07:31 08:12-08:34/22 18:10	07:26 09:08-09:44/36 20:00	06:17 20:54	05:27 06:45-06:47/2 21:41	05:16 22:03
28	08:26 17:14	07:28 08:13-08:33/20 18:12	07:24 07:58-08:05/7 20:02 09:08-09:42/34	06:15 20:55	05:26 06:46-06:47/1 21:42	05:17 22:03
29	08:25 17:16		07:22 07:56-08:08/12 20:03 09:10-09:40/30	06:13 20:57	05:25 06:46-06:47/1 21:44	05:17 22:03
30	08:23 17:17		07:19 07:54-08:09/15 20:05 09:12-09:37/25	06:11 20:59	05:24 21:45	05:18 22:03
31	08:22 17:19		07:17 07:51-08:09/18 20:07 09:14-09:33/19		05:23 21:46	
Potential sun hours	256	276	366	416	486	501
Sum of minutes with flicker	542	181	1326	269	36	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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-14 - VESTAS V136-4.2 4200 136.0 !OI hub: 152,0 m (TOT: 220,0 m) (213)

Assumptions for shadow calculations

Reference year for calendar

2022

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	05:18 22:02	05:55 21:30	06:46 20:28	07:48-07:59/11 19:17	07:35 17:10	08:22 16:28
2	05:19 22:02	05:57 21:29	06:47 20:26	07:46-08:01/15 19:15	07:37 17:08	08:23 16:28
3	05:20 22:02	05:58 21:27	06:49 20:23	07:44-08:03/19 19:13	07:39 17:06	08:25 16:27
4	05:21 22:01	06:00 21:25	06:51 20:21	07:42-08:04/22 19:10	07:41 17:05	08:26 16:26
5	05:21 22:01	06:01 21:24	06:52 20:19	07:42-08:05/23 19:08	07:42 17:03	08:28 16:26
6	05:22 22:00	06:03 21:22	06:54 20:16	07:40-08:04/24 19:06	07:44 17:01	08:29 16:25
7	05:23 22:00	06:05 21:20	06:56 20:14	07:40-08:05/25 19:04	07:46 16:59	08:30 16:25
8	05:24 21:59	06:06 21:18	06:57 20:12	07:39-08:04/25 19:01	07:47 16:58	08:31 16:25
9	05:25 21:58	06:08 21:16	06:59 20:09	07:39-08:04/25 18:59	07:49 16:56	08:33 16:24
10	05:26 21:58	06:09 21:14	07:01 20:07	07:39-08:04/25 18:57	07:51 16:54	08:34 16:24
11	05:27 21:57	06:11 21:12	07:02 20:05	07:39-08:03/24 18:54	07:53 16:53	08:35 16:24
12	05:28 21:56	06:13 21:10	07:04 20:02	07:41-08:03/22 18:52	07:54 16:51	08:36 16:24
13	05:29 21:55	06:14 21:09	07:05 20:00	07:42-08:01/19 18:50	07:56 16:49	08:37 16:24
14	05:30 21:54	06:16 21:07	07:07 19:58	07:44-08:00/16 18:48	07:58 16:48	08:38 16:24
15	05:31 21:53	06:18 21:05	07:09 19:55	07:46-07:58/12 18:45	08:00 16:46	08:39 16:24
16	05:33 21:52	06:19 21:02	07:10 19:53	07:47-07:55/8 18:43	08:01 16:45	08:40 16:24
17	05:34 21:51	06:21 21:00	07:12 19:51	07:49-07:52/3 18:41	08:03 16:44	08:41 16:24
18	05:35 21:50	06:24 20:58	07:14 19:48	08:54-09:33/39 18:39	08:05 16:42	08:42 16:24
19	05:36 21:49	06:24 20:56	07:15 19:46	08:53-09:34/41 18:37	08:07 16:41	08:42 16:24
20	05:38 21:48	06:26 20:54	07:17 19:43	08:52-09:35/43 18:35	08:08 16:40	08:43 16:25
21	05:39 21:47	06:27 20:52	07:19 19:41	08:51-09:35/44 18:32	08:09 16:38	08:44 16:25
22	05:40 21:45	06:29 20:50	07:20 19:39	08:50-09:36/46 18:30	08:12 16:37	08:44 16:25
23	05:42 21:44	06:31 20:48	07:22 19:36	08:49-09:37/48 18:28	08:14 16:36	08:45 16:26
24	05:43 21:43	06:32 20:46	07:24 19:34	08:48-09:36/48 18:26	08:16 16:35	08:45 16:26
25	05:45 21:41	06:34 20:43	07:25 19:32	08:47-09:37/50 18:24	08:17 16:34	08:46 16:27
26	05:46 21:40	06:36 20:41	07:27 19:29	08:47-09:37/50 18:22	08:19 16:33	08:46 16:28
27	05:48 21:38	06:37 20:39	07:29 19:27	08:46-09:36/50 18:20	08:21 16:32	08:46 16:28
28	05:49 21:37	06:39 20:37	07:30 19:25	08:46-09:36/50 18:18	08:23 16:31	08:46 16:29
29	05:51 21:35	06:41 20:35	07:32 19:22	08:46-09:36/50 18:16	08:25 16:30	08:47 16:30
30	05:52 21:34	06:42 20:32	07:34 19:20	08:46-09:36/50 17:14	08:26 16:29	08:47 16:31
31	05:54 21:32	06:44 20:30		07:28 17:12		08:47 16:32
Potential sun hours	505	456	382	332	266	242
Sum of minutes with flicker	34	0	1071	734	223	789

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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-15 - VESTAS V136-4.2 4200 136.0 !OI! hub: 152,0 m (TOT: 220,0 m) (214)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47 16:33	08:20 17:21	07:26 18:14	08:11-08:39/28 20:09	07:15 21:00	08:00-08:26/26 21:00
2	08:47 16:34	08:19 17:23	07:24 18:15	08:11-08:38/27 20:10	07:12 21:02	07:58-08:27/29 21:02
3	08:47 16:35	08:17 17:25	07:22 18:17	08:10-08:37/27 20:12	07:10 21:04	07:55-08:28/33 21:04
4	08:46 16:36	08:15 17:27	07:20 18:19	08:11-08:37/26 20:14	07:08 21:06	07:54-08:29/35 21:06
5	08:46 16:38	08:14 17:29	07:17 18:21	08:12-08:36/24 20:16	07:06 21:07	07:53-08:30/37 21:07
6	08:46 16:39	08:12 17:31	07:15 18:23	08:12-08:34/22 20:17	07:03 21:09	07:51-08:30/39 21:09
7	08:46 16:40	08:10 17:32	07:13 18:25	08:14-08:32/18 20:19	07:01 21:11	07:51-08:30/39 21:11
8	08:45 16:41	08:08 17:34	07:11 18:26	08:16-08:31/15 20:21	06:59 21:12	07:50-08:31/41 21:12
9	08:45 16:43	08:07 17:36	07:08 18:28	08:18-08:26/8 20:22	06:56 21:14	07:50-08:31/41 21:14
10	08:44 09:30-09:32/2 16:44	08:05 17:38	07:06 18:30	06:54 20:24	07:48-08:30/42 21:16	05:52 21:56
11	08:44 09:29-09:33/4 16:46	08:03 17:40	07:04 18:32	06:52 20:26	07:48-08:30/42 21:17	05:51 21:57
12	08:43 09:28-09:34/6 16:47	08:01 17:42	07:01 18:34	06:50 20:28	07:48-08:30/42 21:19	05:49 21:58
13	08:42 09:27-09:35/8 16:48	07:59 17:44	06:59 18:35	06:47 20:29	07:48-08:30/42 21:20	05:47 21:59
14	08:41 09:26-09:36/10 16:50	07:57 17:46	06:57 18:37	06:45 20:31	07:48-08:29/41 21:22	05:46 21:59
15	08:41 09:25-09:37/12 16:52	07:55 17:48	06:55 18:39	06:43 20:33	07:48-08:29/41 21:24	05:44 22:00
16	08:40 09:24-09:38/14 16:53	07:53 17:49	06:52 18:41	06:41 20:35	07:48-08:27/39 21:25	05:42 22:00
17	08:39 09:23-09:39/16 16:55	07:51 17:51	06:50 18:42	06:38 20:36	07:48-08:27/39 21:27	05:41 22:01
18	08:38 09:22-09:39/17 16:56	07:49 17:53	06:48 18:44	06:36 20:38	07:48-08:26/38 21:28	05:39 22:01
19	08:37 09:21-09:40/19 16:58	07:47 08:25-08:26/1 17:55	06:45 18:46	06:34 20:40	07:49-08:25/36 21:30	05:38 22:02
20	08:36 09:19-09:40/21 17:00	07:45 08:22-08:32/10 17:57	06:43 18:48	06:32 20:42	07:50-08:24/34 21:31	05:36 22:02
21	08:35 09:18-09:41/23 17:01	07:43 08:20-08:34/14 17:59	06:41 18:49	06:30 20:43	07:51-08:22/31 21:33	05:35 22:02
22	08:34 09:18-09:40/22 17:03	07:41 08:18-08:36/18 18:01	06:38 18:51	06:28 20:45	07:52-08:21/29 21:34	05:34 22:03
23	08:33 09:19-09:41/22 17:05	07:39 08:15-08:36/21 18:03	06:36 18:53	06:25 20:47	07:53-08:19/26 21:36	05:32 22:03
24	08:31 09:20-09:41/21 17:07	07:37 08:13-08:37/24 18:04	06:34 18:55	06:23 20:48	07:55-08:17/22 21:37	05:31 22:03
25	08:30 09:20-09:41/21 17:08	07:35 08:12-08:38/26 18:06	06:31 18:56	06:21 20:50	07:57-08:14/17 21:38	05:30 22:03
26	08:29 09:20-09:40/20 17:10	07:33 08:12-08:39/27 18:08	06:29 18:58	06:19 20:52	08:00-08:10/10 21:40	05:29 22:03
27	08:27 09:21-09:40/19 17:12	07:31 08:10-08:38/28 18:10	07:27 20:00	06:17 20:54	05:27 21:41	05:16 22:03
28	08:26 09:22-09:39/17 17:14	07:28 08:10-08:38/28 18:12	07:24 20:02	06:15 20:55	05:26 21:42	05:17 22:03
29	08:25 09:24-09:39/15 17:16		07:22 20:03	06:13 20:57	05:25 21:44	05:17 22:03
30	08:23 09:25-09:38/13 17:17		07:19 08:06-08:21/15 20:05	06:11 20:59	05:24 21:45	05:18 22:02
31	08:22 09:27-09:35/8 17:19		07:17 08:02-08:23/21 20:07		05:23 21:46	
Potential sun hours	256	276	366	416	486	501
Sum of minutes with flicker	330	197	231	891	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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-15 - VESTAS V136-4.2 4200 136.0 !OI hub: 152,0 m (TOT: 220,0 m) (214)

Assumptions for shadow calculations

Reference year for calendar

2022

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	05:18 22:02	05:55 21:30	06:46 07:47-08:29/42 20:28	07:35 19:18	07:30 17:10	08:22 09:10-09:16/6 16:29
2	05:19 22:02	05:57 21:29	06:47 07:47-08:29/42 20:26	07:37 19:15	07:32 17:08	08:23 09:11-09:16/5 16:28
3	05:20 22:02	05:58 21:27	06:49 07:47-08:29/42 20:23	07:39 19:13	07:34 17:07	08:25 09:13-09:16/3 16:27
4	05:21 22:01	06:00 21:25	06:51 07:47-08:28/41 20:21	07:41 19:11	07:36 17:05	08:26 09:15-09:16/1 16:27
5	05:21 22:01	06:01 21:24	06:52 07:47-08:28/41 20:19	07:42 19:08	07:37 17:03	08:28 16:26
6	05:22 22:00	06:03 21:22	06:54 07:47-08:26/39 20:16	07:44 08:53-09:05/12 19:06	07:39 17:01	08:29 16:25
7	05:23 22:00	06:05 21:20	06:56 07:47-08:26/39 20:14	07:46 08:51-09:08/17 19:04	07:41 16:59	08:30 16:25
8	05:24 21:59	06:06 21:18	06:57 07:47-08:24/37 20:12	07:47 08:49-09:09/20 19:01	07:43 16:58	08:31 16:25
9	05:25 21:58	06:08 21:16	06:59 07:48-08:23/35 20:09	07:49 08:47-09:09/22 18:59	07:45 16:56	08:33 16:24
10	05:26 21:58	06:09 21:14	07:01 07:49-08:22/33 20:07	07:51 08:46-09:10/24 18:57	07:46 16:54	08:34 16:24
11	05:27 21:57	06:11 21:12	07:02 07:50-08:20/30 20:05	07:53 08:45-09:11/26 18:54	07:48 16:53	08:35 16:24
12	05:28 21:56	06:13 21:10	07:04 07:52-08:18/26 20:02	07:54 08:44-09:11/27 18:52	07:50 08:59-09:07/8 16:51	08:36 16:24
13	05:29 21:55	06:14 21:09	07:05 07:53-08:15/22 20:00	07:56 08:44-09:12/28 18:50	07:52 08:57-09:10/13 16:49	08:37 16:24
14	05:30 21:54	06:16 21:07	07:07 07:56-08:12/16 19:58	07:58 08:44-09:12/28 18:48	07:54 08:56-09:11/15 16:48	08:38 16:24
15	05:31 21:53	06:18 21:05	07:09 08:01-08:07/6 19:55	08:00 08:44-09:12/28 18:45	07:55 08:55-09:12/17 16:46	08:39 16:24
16	05:33 21:52	06:19 21:02	07:10 19:53	08:01 08:43-09:10/27 18:43	07:57 08:54-09:13/19 16:45	08:40 16:24
17	05:34 21:51	06:21 21:00	07:12 19:51	08:03 08:43-09:10/27 18:41	07:59 08:54-09:14/20 16:44	08:41 16:24
18	05:35 21:50	06:23 08:06-08:18/12 20:58	07:14 19:48	08:05 08:44-09:09/25 18:39	08:01 08:54-09:15/21 16:42	08:42 16:24
19	05:36 21:49	06:24 08:02-08:20/18 20:56	07:15 19:46	08:07 08:45-09:08/23 18:37	08:02 08:54-09:15/21 16:41	08:42 16:24
20	05:38 21:48	06:26 08:00-08:23/23 20:54	07:17 19:43	08:08 08:47-09:07/20 18:35	08:04 08:54-09:16/22 16:40	08:43 16:25
21	05:39 21:47	06:27 07:57-08:24/27 20:52	07:19 19:41	08:10 08:49-09:06/17 18:32	08:06 08:54-09:16/22 16:38	08:44 16:25
22	05:40 21:45	06:29 07:56-08:26/30 20:50	07:20 19:39	08:12 08:51-09:04/13 18:30	08:08 08:54-09:17/23 16:37	08:44 16:25
23	05:42 21:44	06:31 07:54-08:26/32 20:48	07:22 19:36	08:14 08:53-09:01/8 18:28	08:09 08:55-09:16/21 16:36	08:45 16:26
24	05:43 21:43	06:32 07:53-08:28/35 20:46	07:24 19:34	08:16 18:26	08:11 08:57-09:16/19 16:35	08:45 16:26
25	05:45 21:41	06:34 07:53-08:29/36 20:43	07:25 19:32	08:17 18:24	08:13 08:59-09:17/18 16:34	08:46 16:27
26	05:46 21:40	06:36 07:51-08:29/38 20:41	07:27 19:29	08:19 18:22	08:14 09:01-09:17/16 16:33	08:46 16:28
27	05:48 21:38	06:37 07:51-08:30/39 20:39	07:29 19:27	08:21 18:20	08:16 09:03-09:17/14 16:32	08:46 16:28
28	05:49 21:37	06:39 07:49-08:29/40 20:37	07:30 19:25	08:23 18:18	08:17 09:05-09:17/12 16:31	08:46 16:29
29	05:51 21:35	06:41 07:49-08:30/41 20:35	07:32 19:22	08:25 18:16	08:19 09:06-09:16/10 16:30	08:47 16:30
30	05:52 21:34	06:42 07:48-08:29/41 20:32	07:34 19:20	07:26 17:14	08:20 09:08-09:16/8 16:29	08:47 16:31
31	05:54 21:32	06:44 07:48-08:30/42 20:30		07:28 17:12		08:47 16:32
Potential sun hours	505	456	382	332	266	242
Sum of minutes with flicker	0	454	491	392	319	15

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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-16 - VESTAS V136-4.2 4200 136.0 !OI! hub: 152,0 m (TOT: 220,0 m) (215)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47 09:35-09:59/24 16:33	08:20 09:28-10:11/43 17:21	07:26 07:15 18:14	07:15 20:09 17:21	06:09 21:00 17:21	05:22 21:47 17:21	05:18 22:02 17:18	05:55 21:30 17:18	06:46 20:28 17:18	07:35 19:18 17:10	07:30 08:56-09:45/49 17:10	08:22 09:19-09:48/29 16:29
2	08:47 09:35-09:59/24 16:34	08:19 09:28-10:13/45 17:23	07:24 07:13 18:15	07:13 20:07 17:23	06:07 21:02 17:23	05:22 21:49 17:23	05:19 22:02 17:15	05:57 21:29 17:15	06:47 20:26 17:15	07:37 19:15 17:08	07:32 08:56-09:45/49 17:08	08:23 09:19-09:47/28 16:28
3	08:47 09:35-10:00/25 16:35	08:17 09:28-10:13/45 17:25	07:22 07:10 18:17	07:10 20:12 17:25	06:05 21:04 17:25	05:21 21:50 17:25	05:20 22:02 17:13	05:58 21:27 17:13	06:49 20:23 17:13	07:39 19:13 17:07	07:34 08:56-09:45/49 17:07	08:25 09:20-09:48/28 16:27
4	08:46 09:36-10:01/25 16:36	08:15 09:27-10:14/47 17:27	07:20 07:08 18:19	07:08 20:14 17:27	06:03 21:06 17:27	05:20 21:51 17:27	05:21 22:01 17:11	06:00 21:25 17:11	06:51 20:21 17:11	07:41 19:11 17:05	07:36 08:56-09:45/49 17:05	08:26 09:21-09:49/28 16:27
5	08:46 09:35-10:01/26 16:38	08:14 09:27-10:14/47 17:29	07:17 07:06 18:21	07:06 20:16 17:29	06:01 21:07 17:29	05:19 21:52 17:29	05:21 22:01 17:19	06:01 21:24 17:19	06:52 20:19 17:19	07:42 19:08 17:03	07:37 08:56-09:45/49 17:03	08:28 09:21-09:48/27 16:26
6	08:46 09:36-10:03/27 16:39	08:12 09:26-10:15/49 17:31	07:15 07:03 18:23	07:03 20:17 17:31	05:59 21:09 17:31	05:19 21:53 17:31	05:22 22:00 17:22	06:03 21:22 17:22	06:54 20:16 17:22	07:44 19:06 17:01	07:39 08:56-09:44/48 17:01	08:29 09:22-09:49/27 16:26
7	08:46 09:36-10:03/27 16:40	08:10 09:26-10:15/49 17:32	07:13 07:01 18:25	07:01 20:19 17:32	05:58 21:11 17:32	05:18 21:54 17:32	05:23 22:00 17:20	06:05 21:20 17:20	06:56 20:14 17:20	07:46 19:04 16:59	07:41 08:57-09:44/47 16:59	08:30 09:22-09:49/27 16:25
8	08:45 09:36-10:03/27 16:41	08:08 09:26-10:15/49 17:34	07:11 07:00 18:26	06:59 20:21 17:34	05:56 21:12 17:34	05:17 21:55 17:34	05:24 21:59 17:28	06:06 21:18 17:28	06:57 20:09 17:28	07:47 19:01 16:58	07:43 08:57-09:44/47 16:58	08:31 09:23-09:49/26 16:25
9	08:45 09:37-10:04/27 16:43	08:07 09:26-10:15/49 17:36	07:08 07:00 18:28	06:56 20:22 17:36	05:54 21:14 17:36	05:17 21:55 17:36	05:25 21:58 17:26	06:08 21:16 17:26	06:59 20:09 17:26	07:49 18:59 16:56	07:45 08:58-09:43/45 16:56	08:33 09:24-09:50/26 16:24
10	08:44 09:37-10:05/28 16:44	08:05 09:26-10:15/49 17:38	07:06 07:00 18:30	06:54 20:24 17:38	05:52 21:16 17:38	05:16 21:56 17:38	05:26 21:58 17:14	06:09 21:14 17:14	07:01 20:07 17:14	07:51 18:57 16:54	07:46 08:58-09:43/45 16:54	08:34 09:24-09:49/25 16:24
11	08:44 09:37-10:05/28 16:46	08:03 09:26-10:15/49 17:40	07:04 07:00 18:32	06:52 20:26 17:40	05:51 21:17 17:40	05:16 21:57 17:40	05:27 21:57 17:12	06:11 21:12 17:12	07:02 20:05 17:12	07:53 18:54 16:53	07:48 08:59-09:42/43 16:53	08:35 09:25-09:49/24 16:24
12	08:43 09:37-10:05/28 16:47	08:01 09:26-10:15/49 17:42	07:01 07:00 18:34	06:50 20:28 17:42	05:49 21:19 17:42	05:16 21:58 17:42	05:28 21:56 17:10	06:13 21:10 17:10	07:04 20:02 17:10	07:54 18:52 16:51	07:50 09:00-09:42/42 16:51	08:36 09:25-09:50/25 16:24
13	08:42 09:38-10:06/28 16:48	07:59 09:26-10:15/49 17:44	06:59 07:00 18:35	06:47 20:29 17:44	05:47 21:20 17:44	05:15 21:59 17:44	05:29 21:55 17:19	06:14 21:09 17:19	07:06 20:00 17:19	07:56 18:50 16:50	07:52 09:02-09:42/40 16:50	08:37 09:26-09:50/24 16:24
14	08:41 09:38-10:06/28 16:50	07:57 09:27-10:15/48 17:46	06:57 07:00 18:37	06:45 20:31 17:46	05:46 21:22 17:46	05:15 21:59 17:46	05:30 21:54 17:17	06:16 21:07 17:17	07:07 20:00 17:17	07:58 18:48 16:48	07:54 09:03-09:41/38 16:48	08:38 09:27-09:50/23 16:24
15	08:41 09:38-10:07/29 16:52	07:55 09:27-10:15/48 17:48	06:55 07:00 18:39	06:43 20:33 17:48	05:44 21:24 17:48	05:15 22:00 17:48	05:31 21:53 17:15	06:18 21:05 17:15	07:09 20:00 17:15	08:00 18:46 16:47	07:55 09:04-09:40/36 16:47	08:39 09:28-09:50/22 16:24
16	08:40 09:39-10:07/28 16:53	07:53 09:28-10:14/46 17:49	06:52 07:00 18:41	06:41 20:35 17:49	05:42 21:25 17:49	05:15 22:00 17:49	05:33 21:52 17:13	06:19 21:02 17:13	07:10 20:00 17:13	08:01 18:43 16:45	07:57 09:05-09:40/35 16:45	08:40 09:29-09:51/22 16:24
17	08:39 09:40-10:07/27 16:55	07:51 09:28-10:14/46 17:51	06:50 07:00 18:42	06:38 20:36 17:51	05:41 21:27 17:51	05:14 22:01 17:51	05:34 21:51 17:19	06:21 21:00 17:19	07:12 20:00 17:19	08:03 18:41 16:44	07:59 09:06-09:39/33 16:44	08:41 09:30-09:51/21 16:24
18	08:38 09:40-10:08/28 16:56	07:49 09:28-10:12/44 17:53	06:48 07:00 18:44	06:36 20:38 17:53	05:39 21:28 17:53	05:14 22:01 17:53	05:35 21:50 17:20	06:23 20:58 17:20	07:14 20:00 17:20	08:05 18:39 16:42	08:05 10:08-10:33/25 16:42	08:42 09:31-09:52/21 16:24
19	08:37 09:40-10:07/27 16:58	07:47 09:29-10:11/42 17:55	06:45 07:00 18:46	06:34 20:40 17:55	05:38 21:30 17:55	05:14 22:02 17:55	05:36 21:49 17:22	06:24 20:56 17:22	07:15 20:00 17:22	08:07 18:37 16:41	08:07 10:06-10:35/29 16:41	08:42 09:32-09:52/20 16:24
20	08:36 09:41-10:08/27 17:00	07:45 09:30-10:10/40 17:57	06:43 07:00 18:48	06:32 20:42 17:57	05:36 21:31 17:57	05:14 22:02 17:57	05:38 21:48 17:24	06:26 20:54 17:24	07:17 20:00 17:24	08:08 18:35 16:40	08:08 10:04-10:37/33 16:40	08:43 09:32-09:52/20 16:25
21	08:35 09:41-10:08/27 17:01	07:43 09:31-10:09/38 17:59	06:41 07:00 18:49	06:30 20:43 17:59	05:35 21:33 17:59	05:15 22:02 17:59	05:39 21:47 17:25	06:27 20:52 17:25	07:19 20:00 17:25	08:10 18:32 16:38	08:10 10:02-10:39/37 16:38	08:44 09:33-09:53/20 16:25
22	08:34 09:38-10:07/29 17:03	07:41 09:32-10:08/36 18:01	06:38 07:00 18:51	06:28 20:45 18:01	05:34 21:34 18:01	05:15 22:03 18:01	05:40 21:45 17:30	06:29 20:50 17:30	07:20 20:00 17:30	08:12 18:30 16:37	08:12 10:01-10:40/39 16:37	08:44 09:34-09:54/20 16:25
23	08:33 09:37-10:07/30 17:05	07:39 09:33-10:05/32 18:03	06:36 07:00 18:53	06:25 20:47 18:03	05:32 21:36 18:03	05:15 22:03 18:03	05:42 21:44 17:36	06:31 20:48 17:36	07:22 20:00 17:36	08:14 18:28 16:36	08:14 10:00-10:41/41 16:36	08:45 09:34-09:54/20 16:26
24	08:31 09:35-10:07/32 17:07	07:37 09:35-10:03/28 18:04	06:34 07:00 18:55	06:23 20:48 18:04	05:31 21:37 18:04	05:15 22:03 18:04	05:43 21:43 17:36	06:32 20:46 17:36	07:24 20:00 17:36	08:16 18:26 16:35	08:16 09:59-10:42/43 16:35	08:45 09:34-09:54/20 16:26
25	08:30 09:34-10:06/32 17:08	07:35 09:37-10:00/23 18:06	06:31 07:00 18:56	06:21 20:50 18:06	05:30 21:38 18:06	05:16 22:03 18:06	05:45 21:41 17:36	06:34 20:43 17:36	07:25 20:00 17:36	08:17 18:24 16:34	08:17 09:58-10:43/45 16:34	08:46 09:35-09:55/20 16:27
26	08:29 09:32-10:05/33 17:10	07:33 09:41-09:56/15 18:08	06:29 07:00 18:58	06:19 20:52 18:08	05:29 21:40 18:08	05:16 22:03 18:08	05:46 21:40 17:36	06:36 20:41 17:36	07:27 20:00 17:36	08:19 18:22 16:33	08:19 09:58-10:43/45 16:33	08:46 09:35-09:55/20 16:28
27	08:27 09:32-10:07/35 17:12	07:31 18:10 17:12	07:27 20:00 17:12	07:17 20:54 17:12	06:17 21:41 17:12	05:16 22:03 17:12	05:48 21:38 17:24	06:37 20:39 17:24	07:29 20:00 17:24	08:21 18:20 16:32	08:21 09:57-10:44/47 16:32	08:46 09:35-09:56/21 16:28
28	08:26 09:31-10:07/36 17:14	07:28 18:12 17:14	07:24 20:00 17:14	07:15 20:55 17:14	06:15 21:42 17:14	05:17 22:03 17:14	05:49 21:37 17:25	06:39 20:37 17:25	07:30 20:00 17:25	08:23 18:18 16:31	08:23 09:57-10:44/47 16:31	08:46 09:35-09:56/21 16:29
29	08:25 09:31-10:09/38 17:16	07:25 18:12 17:16	07:22 20:00 17:16	07:13 20:55 17:16	06:13 21:44 17:16	05:17 22:03 17:16	05:51 21:35 17:22	06:41 20:35 17:22	07:32 20:00 17:22	08:25 18:16 16:30	08:25 09:56-10:45/49 16:30	08:47 09:35-09:57/22 16:30
30	08:23 09:30-10:10/40 17:17	07:23 18:12 17:17	07:20 20:00 17:17	07:11 20:59 17:17	06:11 21:45 17:17	05:18 22:02 17:17	05:52 21:34 17:20	06:42 20:32 17:20	07:34 20:00 17:20	08:26 17:14 16:29	08:26 08:56-09:45/49 16:29	08:20 09:19-09:47/28 16:31
31	08:22 09:29-10:11/42 17:19	07:22 18:12 17:19	07:17 20:00 17:19	07:11 20:59 17:19	06:11 21:46 17:19	05:18 22:02 17:19	05:52 21:32 17:20	06:44 20:30 17:20	07:34 20:00 17:20	08:26 17:12 16:28	08:26 08:56-09:45/49 17:12	08:47 09:35-09:58/23 16:32
Potential sun hours	256	276	366	416	486	501	505	456	382	332	266	242
Sum of minutes with flicker	912	1105	0	0	0	0	0	0	0	604	1116	723

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: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket WTG: A27-17 - VESTAS V136-4.2 4200 136.0 !OI hub: 152,0 m (TOT: 220,0 m) (220)

Assumptions for shadow calculations

Reference year for calendar

2022

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	08:47 16:33	08:20 17:21	07:26 18:14	07:15 20:09	06:09 21:00	05:22 21:47	05:19 22:02	05:55 21:30	06:46 20:28	07:35 19:18	07:30 17:10	08:22 16:29
2	08:47 16:34	08:19 17:23	07:24 18:16	07:13 20:10	06:07 21:02	05:22 21:49	05:19 22:02	05:57 21:29	06:47 20:26	07:37 19:15	07:32 17:08	08:23 16:28
3	08:47 16:35	08:17 17:25	07:22 18:17	07:10 20:12	06:05 21:04	05:21 21:50	05:20 22:02	05:58 21:27	06:49 20:23	07:39 19:13	07:34 17:07	08:25 16:27
4	08:46 16:36	08:15 17:27	07:20 18:19	07:08 20:14	06:03 21:06	05:20 21:51	05:21 22:01	06:00 21:25	06:51 20:21	07:41 19:11	07:36 17:05	08:26 16:27
5	08:46 16:38	08:14 17:29	07:17 18:21	07:06 20:16	06:01 21:07	05:19 21:52	05:21 22:01	06:01 21:24	06:52 20:19	07:42 19:08	07:37 17:03	08:28 16:26
6	08:46 16:39	08:12 17:31	07:15 18:23	07:03 20:17	05:59 21:09	05:19 21:53	05:22 22:00	06:03 21:22	06:54 20:16	07:44 19:06	07:39 17:01	08:29 16:26
7	08:46 16:40	08:10 17:32	07:13 18:25	07:01 20:19	05:58 21:11	05:18 21:54	05:23 22:00	06:05 21:20	06:56 20:14	07:46 19:04	07:41 16:59	08:30 16:25
8	08:45 16:41	08:08 17:34	07:11 18:26	06:59 20:21	05:56 21:12	05:17 21:55	05:24 21:59	06:06 21:18	06:57 20:12	07:47 19:01	07:43 16:58	08:31 16:25
9	08:45 16:43	08:07 17:36	07:08 18:28	06:56 20:23	05:54 21:14	05:17 21:55	05:25 21:58	06:08 21:16	06:59 20:09	07:49 18:59	07:45 16:56	08:33 16:24
10	08:44 16:44	08:05 17:38	07:06 18:30	06:54 20:24	05:52 21:16	05:16 21:56	05:26 21:58	06:09 21:14	07:01 20:07	07:51 18:57	07:46 16:54	08:34 16:24
11	08:44 16:46	08:03 17:40	07:04 18:32	06:52 20:26	05:51 21:17	05:16 21:57	05:27 21:57	06:11 21:12	07:02 20:05	07:53 18:54	07:48 16:53	08:35 16:24
12	08:43 16:47	08:01 17:42	07:01 18:34	06:50 20:28	05:49 21:19	05:16 21:58	05:28 21:56	06:13 21:10	07:04 20:02	07:54 18:52	07:50 16:51	08:36 16:24
13	08:42 16:49	07:59 17:44	06:59 18:35	06:47 20:29	05:47 21:20	05:15 21:59	05:29 21:55	06:14 21:09	07:06 20:00	07:56 18:50	07:52 16:50	08:37 16:24
14	08:41 16:50	07:57 17:46	06:57 18:37	06:45 20:31	05:46 21:22	05:15 21:59	05:30 21:54	06:16 21:07	07:07 19:58	07:58 18:48	07:54 16:48	08:38 16:24
15	08:41 16:52	07:55 17:48	06:55 18:39	06:43 20:33	05:44 21:24	05:15 22:00	05:32 21:53	06:18 21:05	07:09 19:55	08:00 18:46	07:55 16:47	08:39 16:24
16	08:40 16:53	07:53 17:49	06:52 18:41	06:41 20:35	05:42 21:25	05:15 22:00	05:33 21:52	06:19 21:03	07:10 19:53	08:01 18:43	07:57 16:45	08:40 16:24
17	08:39 16:55	07:51 17:51	06:50 18:42	06:38 20:36	05:41 21:27	05:14 22:01	05:34 21:51	06:21 21:00	07:12 19:51	08:03 18:41	07:59 16:44	08:41 16:24
18	08:38 16:56	07:49 17:53	06:48 18:44	06:36 20:38	05:39 21:28	05:14 22:01	05:35 21:50	06:23 20:58	07:14 19:48	08:05 18:39	08:01 16:42	08:42 16:24
19	08:37 16:58	07:47 17:55	06:45 18:46	06:34 20:40	05:38 21:30	05:14 22:02	05:36 21:49	06:24 20:56	07:15 19:46	08:07 18:37	08:02 16:41	08:42 16:24
20	08:36 17:00	07:45 17:57	06:43 18:48	06:32 20:42	05:36 21:31	05:14 22:02	05:38 21:48	06:26 20:54	07:17 19:43	08:08 18:35	08:04 16:40	08:43 16:25
21	08:35 17:01	07:43 17:59	06:41 18:49	06:30 20:43	05:35 21:33	05:15 22:02	05:39 21:47	06:28 20:52	07:19 19:41	08:10 18:33	08:06 16:38	08:44 16:25
22	08:34 17:03	07:41 18:01	06:38 18:51	06:28 20:45	05:34 21:34	05:15 22:03	05:41 21:45	06:29 20:50	07:20 19:39	08:12 18:30	08:08 16:37	08:44 16:25
23	08:33 17:05	07:39 18:03	06:36 18:53	06:25 20:47	05:32 21:36	05:15 22:03	05:42 21:44	06:31 20:48	07:22 19:36	08:14 18:28	08:09 16:36	08:45 16:26
24	08:31 17:07	07:37 18:04	06:34 18:55	06:23 20:48	05:31 21:37	05:15 22:03	05:43 21:43	06:32 20:46	07:24 19:34	08:16 18:26	08:11 16:35	08:45 16:26
25	08:30 17:08	07:35 18:06	06:31 18:56	06:21 20:50	05:30 21:38	05:16 22:03	05:45 21:41	06:34 20:43	07:25 19:32	08:17 18:24	08:13 16:34	08:46 16:27
26	08:29 17:10	07:33 18:08	06:29 18:58	06:19 20:52	05:29 21:40	05:16 22:03	05:46 21:40	06:36 20:41	07:27 19:29	08:19 18:22	08:14 16:33	08:46 16:28
27	08:27 17:12	07:31 18:10	07:27 20:00	06:17 20:54	05:28 21:41	05:16 22:03	05:48 21:38	06:37 20:39	07:29 19:27	08:21 18:20	08:16 16:32	08:46 16:28
28	08:26 17:14	07:28 18:12	07:24 20:02	06:15 20:55	05:26 21:42	05:17 22:03	05:49 21:37	06:39 20:37	07:30 19:25	08:23 18:18	08:17 16:31	08:46 16:29
29	08:25 17:16		07:22 20:03	06:13 20:57	05:25 21:44	05:17 22:03	05:51 21:35	06:41 20:35	07:32 19:22	08:25 18:16	08:19 16:30	08:47 16:30
30	08:23 17:17		07:20 20:05	06:11 20:59	05:24 21:45	05:18 22:02	05:52 21:34	06:42 20:32	07:34 19:20	07:26 17:14	08:20 16:29	08:47 16:31
31	08:22 17:19		07:17 20:07		05:23 21:46		05:54 21:32	06:44 20:30		07:28 17:12		08:47 16:32
Potential sun hours	256	276	366	416	486	501	505	456	382	332	266	242
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	191

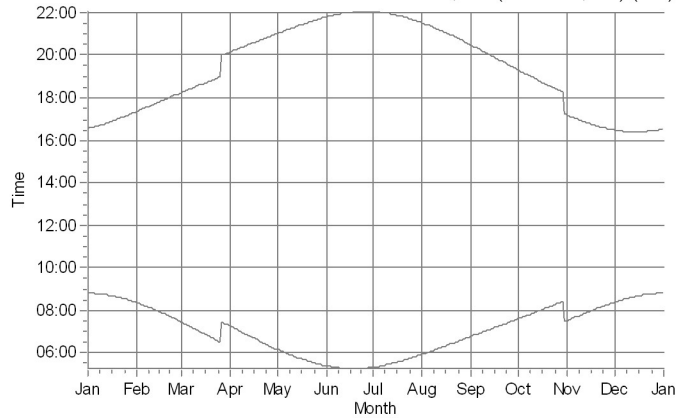
Table layout: For each day in each month the following matrix apply

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

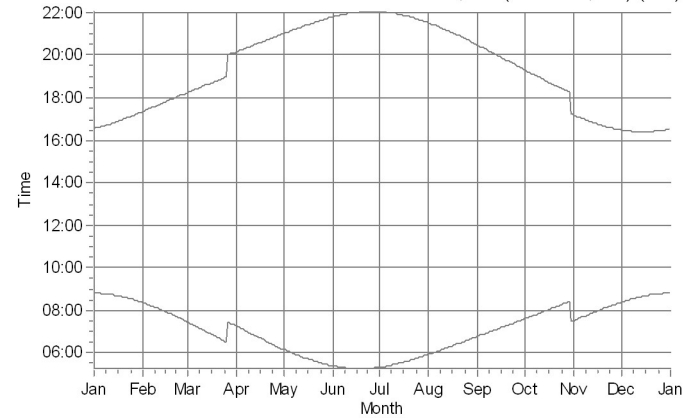
SHADOW - Calendar per WTG, graphical

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket

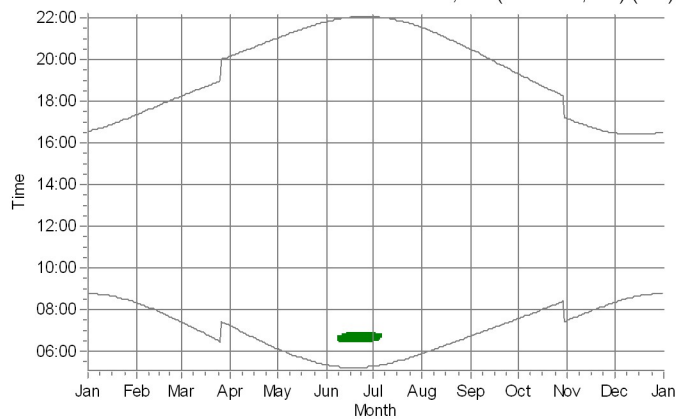
A27-01: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (204)



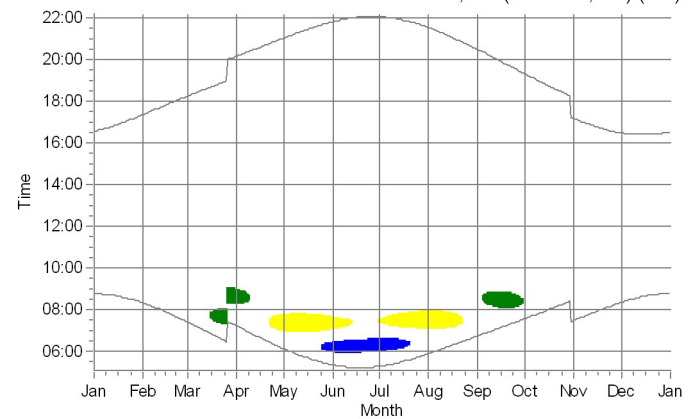
A27-02: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (219)



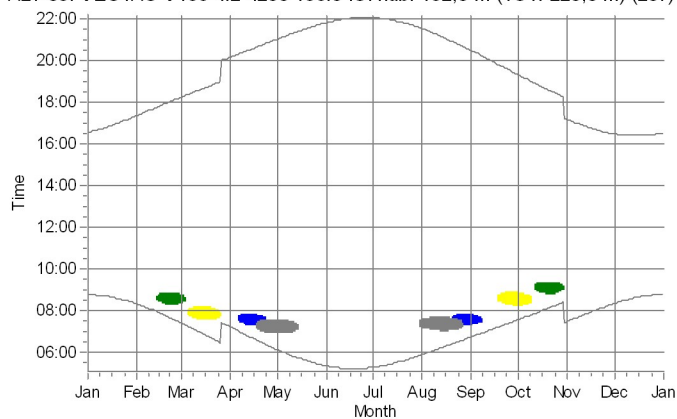
A27-03: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (205)



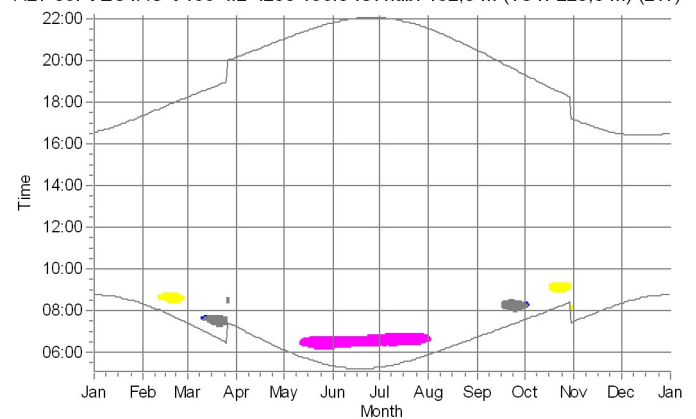
A27-04: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (206)



A27-05: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (207)



A27-06: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (217)



Shadow receptors

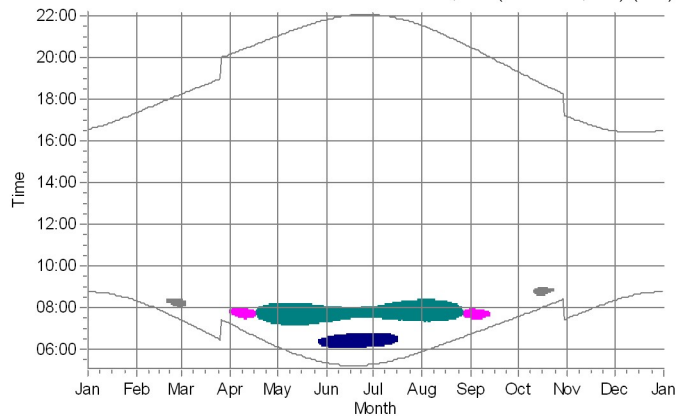
- 01: Shadow Receptor: 5,0 × 2,0 Azimuth: 0,0° Slope: 90,0° (633)
- 02: Shadow Receptor: 6,0 × 2,5 Azimuth: 0,0° Slope: 90,0° (631)
- 03: Shadow Receptor: 3,0 × 2,0 Azimuth: 0,0° Slope: 90,0° (632)

- 04: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 30,0° (634)
- 05: Shadow Receptor: 4,0 × 2,0 Azimuth: 0,0° Slope: 90,0° (635)

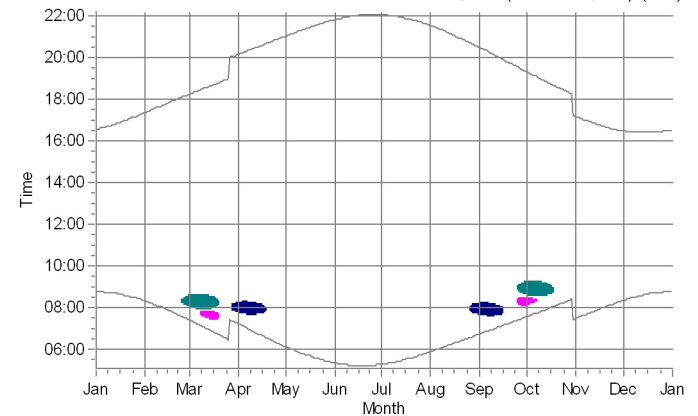
SHADOW - Calendar per WTG, graphical

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket

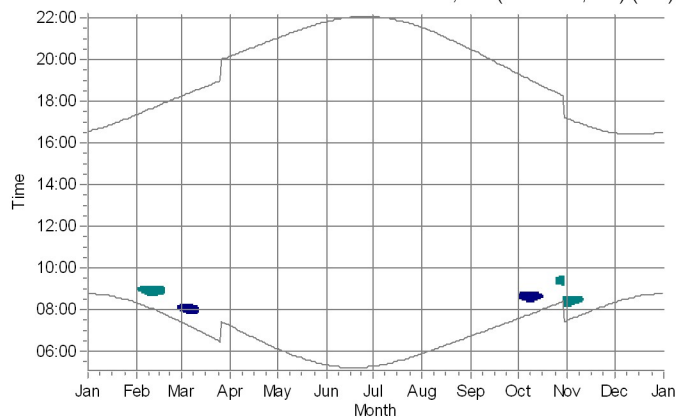
A27-07: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (216)



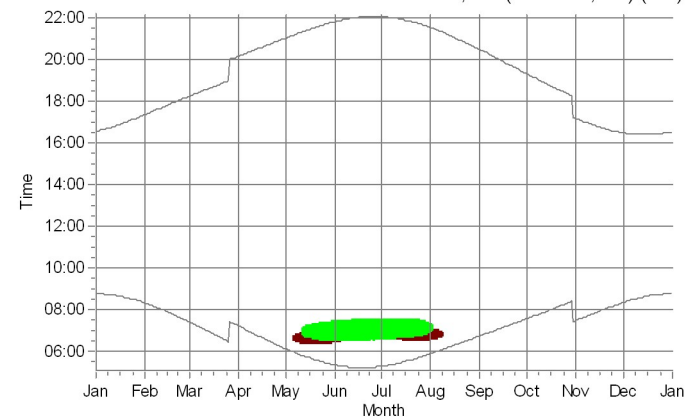
A27-08: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (218)



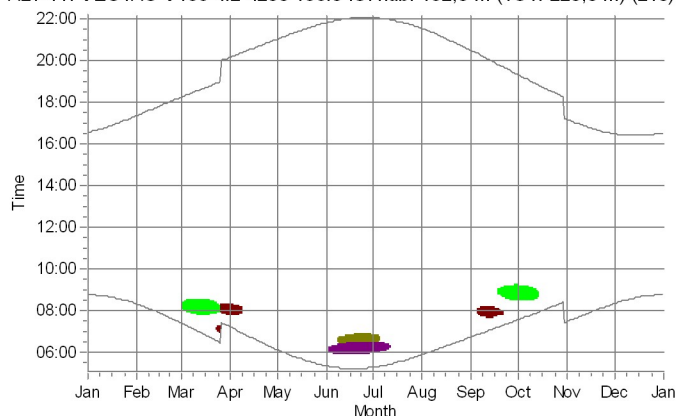
A27-09: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (208)



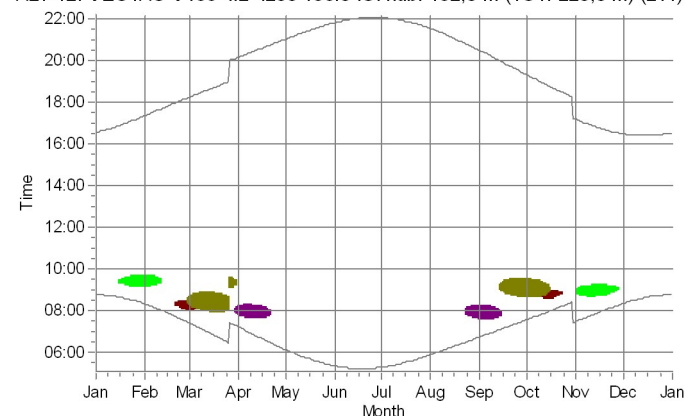
A27-10: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (209)



A27-11: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (210)



A27-12: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (211)



Shadow receptors

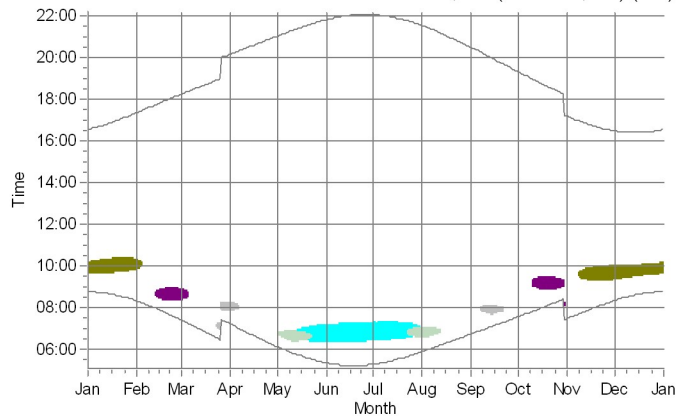
- 04: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 30,0° (634)
- 05: Shadow Receptor: 4,0 × 2,0 Azimuth: 0,0° Slope: 90,0° (635)
- 06: Shadow Receptor: 3,0 × 2,0 Azimuth: 0,0° Slope: 90,0° (636)
- 07: Shadow Receptor: 6,0 × 2,5 Azimuth: 0,0° Slope: 90,0° (637)

- 08: Shadow Receptor: 3,0 × 0,7 Azimuth: 0,0° Slope: 90,0° (638)
- 09: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (639)
- 10: Shadow Receptor: 4,0 × 1,5 Azimuth: 0,0° Slope: 90,0° (644)
- 11: Shadow Receptor: 5,0 × 2,0 Azimuth: 0,0° Slope: 90,0° (645)

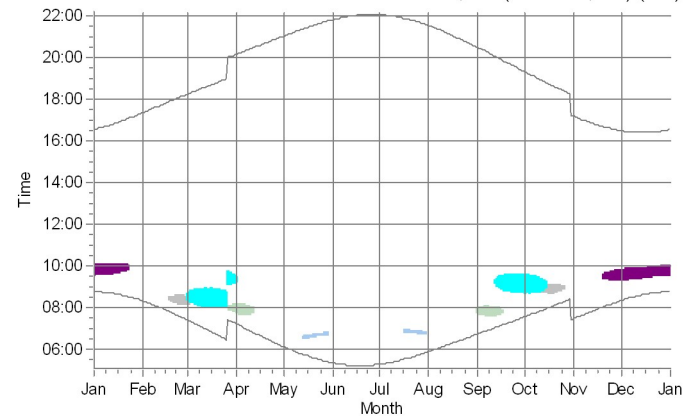
SHADOW - Calendar per WTG, graphical

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket

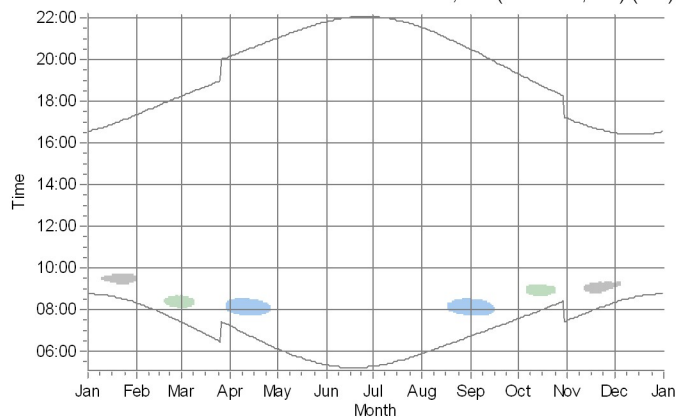
A27-13: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (212)



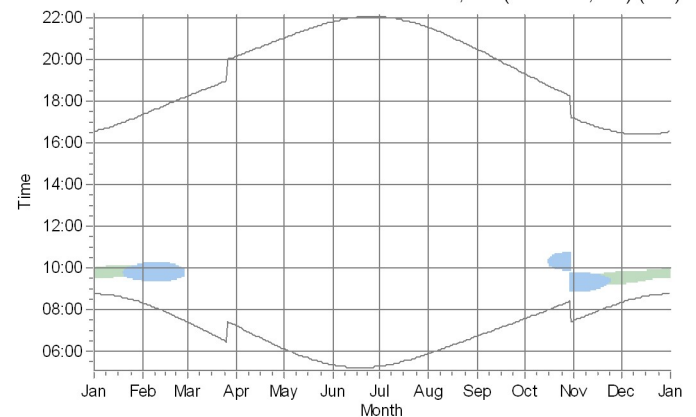
A27-14: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (213)



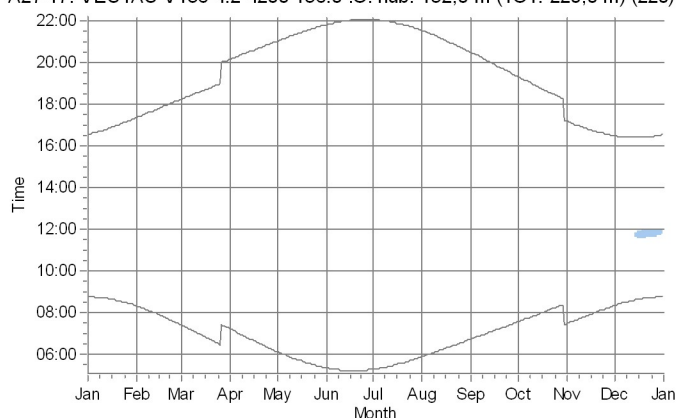
A27-15: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (214)



A27-16: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (215)



A27-17: VESTAS V136-4.2 4200 136.0 !O! hub: 152,0 m (TOT: 220,0 m) (220)



Shadow receptors

- 10: Shadow Receptor: 4,0 × 1,5 Azimuth: 0,0° Slope: 90,0° (644)
- 11: Shadow Receptor: 5,0 × 2,0 Azimuth: 0,0° Slope: 90,0° (645)
- 12: Shadow Receptor: 4,5 × 1,5 Azimuth: 0,0° Slope: 90,0° (640)

- 13: Shadow Receptor: 4,0 × 2,0 Azimuth: 0,0° Slope: 90,0° (641)
- 14: Shadow Receptor: 6,0 × 3,0 Azimuth: 0,0° Slope: 90,0° (642)
- 15: Shadow Receptor: 4,0 × 1,5 Azimuth: 0,0° Slope: 90,0° (643)

SHADOW - Map

Calculation: Conform beleidsregel slagschaduw Oosterwold - Vestas V136, hoogteligging o.b.v. AHN3, tijdstap 1 min. t.b.v. toetsing goedkeuring softwarepakket



0 500 1000 1500 2000 m

Map: EMD OpenStreetMap, Print scale 1:40.000, Map center Dutch Stereo-RD/NAP 2008 East: 150.896 North: 484.318

New WTG

Shadow receptor

Flicker map level: Height Contours: CONTOURLINE_ONLINEDATA AHN3