

Project:

4 vėjo jėgainės

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2017.03.13 14:26 / 1

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**Infraplanas**

K. Donelaicio str. 55-2

LT-44245 Kaunas

+370 37 407548

Calculated:

2017.03.13 14:16/2.7.490

**SHADOW - Main Result****Assumptions for shadow calculations**

Maximum distance for influence

Calculate only when more than 20 % of sun is covered by the blade

Please look in WTG table

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

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

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

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

The WTG is always operating

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values.

A WTG will be visible if it is visible from any part of the receiver window. The

ZVI calculation is based on the following assumptions:

Height contours used:

Obstacles used in calculation

Eye height: 1,5 m

Grid resolution: 10 m



Scale 1:20.000

New WTG

Shadow receptor

**WTGs**

Lithuania LKS94				WTG type							Shadow data		
East	North	Z	Row data/Description	Valid	Manufact.	Type-generator	Power, rated	Rotor diameter	Hub height		Calculation distance	RPM	
Lithuania LKS94		[m]					[kW]	[m]	[m]		[m]	[RPM]	
1	407.669	6.133.560	47,0 E-40 250 kW	No	ENERCON	E-40/5.40-500	500	40,3	63,0		897	38,0	
2	407.877	6.133.605	47,0 E-40 250 kW	No	ENERCON	E-40/5.40-500	500	40,3	63,0		897	38,0	
3	407.847	6.133.448	47,0 E-40 250 kW	No	ENERCON	E-40/5.40-500	500	40,3	63,0		897	38,0	
4	407.640	6.133.391	47,0 E-40 250 kW	No	ENERCON	E-40/5.40-500	500	40,3	63,0		897	38,0	

**Shadow receptor-Input**

Lithuania LKS94												
No.	Name	East	North	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode		
				[m]	[m]	[m]	[m]	[°]	[°]			
A	Užkertių k. 4	408.428	6.133.423	46,0	1,0	1,0	1,0	-50,0	90,0	"Green house mode"		
B	Užkertių k. 3	408.291	6.133.219	46,0	1,0	1,0	1,0	-180,0	90,0	"Green house mode"		
C	Užkertių k. 1	406.843	6.133.718	46,0	1,0	1,0	1,0	-180,0	90,0	"Green house mode"		

**Calculation Results**

Shadow receptor

**Shadow, worst case**

No.	Name	Shadow hours per year	Shadow days per year	Max shadow hours per day
		[h/year]	[days/year]	[h/day]
A	Užkertių k. 4	15:52	81	0:17
B	Užkertių k. 3	21:31	79	0:27
C	Užkertių k. 1	4:11	30	0:12

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**SHADOW - Main Result**

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

No.	Name	Worst case	Expected
		[h/year]	[h/year]
1	E-40 250 kW	10:43	
2	E-40 250 kW	5:57	
3	E- 40 250 kW	18:28	
4	E-40 250 kW	8:31	

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Calculated:

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**SHADOW - Calendar****Shadow receptor: A - Užkertių k. 4****Assumptions for shadow calculations**

Maximum distance for influence 2.000 m  
 Minimum sun height over horizon for influence 3 °  
 Day step for calculation 1 days  
 Time step for calculation 1 minutes

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

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

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

The WTG is always operating

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:57 16:10	08:24 17:04	07:23 18:04	07:04 20:06	19:18 (3) 21:05	20:01 (2) 21:59	04:58 22:15	04:53 21:36	05:36 20:26	06:34 19:44 (1)	07:31 19:08	07:33 16:54
2	08:57 16:11	08:22 17:06	07:21 18:06	07:02 20:08	19:16 (3) 21:07	20:01 (2) 22:00	04:57 22:14	04:54 21:34	05:37 20:23	06:36 19:43 (1)	07:33 19:06	07:35 16:52
3	08:57 16:12	08:20 17:08	07:18 18:08	06:59 20:10	19:15 (3) 21:09	20:01 (2) 22:02	04:56 22:14	04:54 21:32	05:39 20:21	06:38 19:51 (1)	07:35 19:03	07:37 16:50
4	08:57 16:14	08:19 17:11	07:16 18:10	06:57 20:12	19:15 (3) 21:11	20:02 (2) 22:03	04:55 22:13	04:55 21:30	05:41 20:18	06:40 19:13 (3)	07:37 19:01	07:39 16:48
5	08:56 16:15	08:17 17:13	07:13 18:12	06:54 20:14	19:14 (3) 21:13	20:03 (2) 22:04	04:54 22:13	04:56 21:28	05:43 20:16	06:42 19:12 (3)	07:39 19:03	07:41 16:48
6	08:56 16:16	08:15 17:15	07:11 18:14	06:51 20:16	19:15 (3) 21:15	20:05 (2) 22:05	04:53 22:12	04:57 21:26	05:45 20:20 (2)	06:43 19:11 (3)	07:41 19:03	07:43 16:44
7	08:55 16:18	08:13 17:17	07:08 18:16	06:49 20:18	19:15 (3) 21:17	20:05 (2) 22:06	04:52 22:11	04:58 21:24	05:47 20:23 (2)	06:45 19:12 (3)	07:43 19:03	07:46 16:42
8	08:55 16:19	08:11 17:19	07:06 18:18	06:46 20:20	19:16 (3) 21:19	20:07 (2) 22:07	04:52 22:10	04:59 21:22	05:49 20:24 (2)	06:47 19:15 (3)	07:45 19:03	07:48 16:40
9	08:54 16:21	08:09 17:21	07:03 18:20	06:44 20:22	19:17 (3) 21:21	20:08 (2) 22:08	04:51 22:10	05:00 21:20	05:50 20:25 (2)	06:49 19:16 (3)	07:47 19:03	07:50 16:38
10	08:53 16:22	08:07 17:23	07:01 18:22	06:41 20:24	19:45 (1) 21:23	20:09 (2) 22:09	04:50 22:09	05:02 21:18	05:52 20:26 (2)	06:51 19:17 (3)	07:49 19:03	07:52 16:36
11	08:53 16:24	08:04 17:26	06:58 18:24	06:39 20:26	19:45 (1) 21:24	20:09 (2) 22:10	04:50 22:08	05:03 21:16	05:54 20:26 (2)	06:53 19:18 (3)	07:50 19:03	07:54 16:34
12	08:52 16:26	08:02 17:28	06:56 18:26	06:36 20:28	19:43 (1) 21:26	20:10 (2) 22:11	04:49 22:07	05:04 21:14	05:56 20:29 (2)	06:55 19:19 (3)	07:52 19:03	07:56 16:32
13	08:51 16:27	08:00 17:30	06:53 18:28	06:34 20:30	19:43 (1) 21:28	20:11 (2) 22:12	04:49 22:06	05:05 21:11	05:58 20:26 (2)	06:57 19:18 (3)	07:54 19:03	07:58 16:30
14	08:50 16:29	07:58 17:32	06:51 18:30	06:31 20:32	19:43 (1) 21:30	20:12 (2) 22:12	04:49 22:05	05:07 21:09	06:00 20:28 (2)	06:59 19:20 (4)	07:56 19:03	08:00 16:29
15	08:49 16:31	07:56 17:34	06:48 18:32	06:29 20:34	19:44 (1) 21:32	20:13 (2) 22:13	04:48 22:03	05:08 21:07	06:02 20:25 (2)	07:00 19:06 (4)	07:58 19:03	08:02 16:27
16	08:48 16:32	07:54 17:36	06:45 18:34	06:26 20:36	19:44 (1) 21:34	20:14 (2) 22:14	04:48 22:02	05:09 21:05	06:04 20:24 (2)	07:02 19:07 (4)	08:00 19:03	08:04 16:25
17	08:47 16:34	07:51 17:38	06:43 18:36	06:24 20:38	19:47 (1) 21:35	20:15 (2) 22:14	04:48 22:01	05:11 21:02	06:05 20:23 (2)	07:04 19:08 (4)	08:02 19:03	08:06 16:24
18	08:45 16:36	07:49 17:41	06:40 18:38	06:21 20:40	19:49 (1) 21:37	20:16 (2) 22:15	04:48 22:01	05:12 21:09	06:07 20:21 (2)	07:06 19:08 (4)	08:04 19:03	08:08 16:22
19	08:44 16:38	07:47 17:43	06:38 18:40	06:19 20:42	19:51 (1) 21:39	20:17 (2) 22:15	04:48 22:01	05:14 21:00	06:09 20:23 (2)	07:08 19:08 (4)	08:06 19:03	08:10 16:20
20	08:43 16:40	07:45 17:45	06:35 18:42	06:17 20:44	19:51 (1) 21:41	20:18 (2) 22:15	04:48 22:01	05:15 21:07	06:11 20:25 (2)	07:10 19:06 (4)	08:08 19:03	08:12 16:19
21	08:42 16:42	07:42 17:47	06:33 18:44	18:15 (4) 20:45	06:14 21:42	20:19 (2) 22:16	04:48 22:01	05:17 21:05	06:13 20:26 (2)	07:12 19:07 (4)	08:11 19:03	08:14 16:18
22	08:40 16:44	07:40 17:49	06:30 18:46	18:10 (4) 20:47	06:12 21:44	20:20 (2) 22:16	04:48 22:01	05:19 21:04	06:15 20:24 (2)	07:14 19:08 (4)	08:13 19:03	08:16 16:16
23	08:39 16:46	07:38 17:51	06:27 18:48	18:10 (4) 20:49	06:09 21:46	20:21 (2) 22:16	04:49 22:01	05:20 21:02	06:17 20:26 (2)	07:16 19:09 (4)	08:15 19:03	08:18 16:15
24	08:37 16:48	07:35 17:53	06:25 18:50	18:08 (4) 20:51	06:07 21:47	20:22 (2) 22:16	04:49 22:01	05:22 21:04	06:19 20:27 (2)	07:18 19:10 (4)	08:17 19:03	08:19 16:12
25	08:36 16:50	07:33 17:55	06:22 18:52	18:08 (4) 20:53	06:05 21:49	20:23 (2) 22:16	04:49 22:01	05:24 21:06	06:21 20:28 (2)	07:19 19:11 (4)	08:21 19:03	08:24 16:10
26	08:34 16:52	07:30 17:57	06:20 18:54	18:08 (4) 20:55	06:02 21:50	20:24 (2) 22:16	04:50 22:01	05:25 21:07	06:23 20:29 (2)	07:21 19:13 (4)	08:23 19:03	08:27 16:08
27	08:33 16:54	07:28 17:59	06:17 18:56	18:08 (4) 20:57	06:00 21:52	20:25 (2) 22:16	04:50 22:01	05:27 21:09	06:25 20:30 (2)	07:23 19:15 (4)	08:25 19:03	08:29 16:05
28	08:31 16:56	07:26 18:02	06:14 18:58	18:10 (4) 20:59	05:58 21:53	20:26 (2) 22:16	04:51 22:01	05:29 21:11	06:26 20:31 (2)	07:25 19:17 (4)	08:27 19:03	08:31 16:03
29	08:29 16:58	07:22 18:00	07:12 20:00	18:17 (4) 20:56	05:56 21:51	20:27 (2) 22:15	04:51 22:01	05:30 21:14	06:28 20:33 (2)	07:27 19:19 (4)	08:28 19:03	08:32 16:00
30	08:28 17:00	07:09 20:02	07:09 20:02	19:23 (3) 21:03	05:53 21:53	20:28 (2) 22:15	04:52 22:01	05:32 21:16	06:30 20:34 (2)	07:29 19:21 (4)	08:30 19:03	08:34 16:00
31	08:26 17:02	07:07 20:04	07:07 20:04	19:19 (3) 21:03	05:53 21:53	20:29 (2) 22:15	04:53 22:01	05:34 21:18	06:32 20:36 (2)	07:31 19:23 (4)	08:31 19:03	08:35 16:00
Potential sun hours	242	269	366	423	501	520	521	465	243	240	326	224
Total, worst case			85	304	80							

**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)

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**SHADOW - Calendar****Shadow receptor: B - Užkertenų k. 3****Assumptions for shadow calculations**

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The WTG is always operating

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2	08:57 16:11	08:22 17:06	07:21 18:06	07:02 20:08	05:49 21:07	04:57 22:00	20:31 (3) 22:14	04:54 21:34	05:38 20:23	06:36 20:23	07:33 19:06	07:35 16:52
3	08:57 16:12	08:20 17:09	07:18 18:08	06:59 20:10	05:47 21:09	04:56 22:02	20:33 (3) 22:14	04:54 21:32	05:39 20:21	06:38 20:21	07:35 19:03	07:37 16:50
4	08:57 16:14	08:19 17:11	07:16 18:10	06:57 20:12	05:45 21:11	04:55 22:03	20:33 (3) 22:13	04:55 21:30	05:41 20:42 (3)	06:40 20:42 (3)	07:37 19:01	07:39 16:48
5	08:56 16:15	08:17 17:13	07:13 18:12	06:54 20:14	05:42 21:13	04:54 22:04	20:34 (3) 22:13	04:56 21:28	05:43 20:47 (3)	06:42 20:47 (3)	07:39 18:58	07:41 16:46
6	08:56 16:16	08:15 17:15	07:11 18:14	06:51 20:16	05:40 21:15	04:53 22:05	20:36 (3) 22:12	04:57 21:26	05:45 20:49 (3)	06:43 20:49 (3)	07:41 18:56	07:43 16:44
7	08:55 16:18	08:13 17:17	07:08 18:16	06:49 20:18	05:38 21:17	04:52 22:06	20:36 (3) 22:11	04:58 21:24	05:47 20:50 (3)	06:45 20:50 (3)	07:43 18:53	07:46 16:42
8	08:55 16:19	08:11 17:19	07:06 18:18	06:46 20:20	05:36 21:19	04:52 22:07	20:38 (3) 22:10	04:59 21:22	05:49 20:51 (3)	06:47 20:51 (3)	07:48 18:51	07:48 16:40
9	08:54 16:21	08:09 17:21	07:03 18:20	06:44 20:22	05:34 21:21	04:51 22:08	05:00 22:10	05:50 21:20	05:50 20:52 (3)	06:49 20:52 (3)	07:50 18:48	07:50 16:38
10	08:53 16:22	08:07 17:23	07:01 18:22	06:41 20:24	05:32 21:23	04:50 22:09	05:02 22:09	05:52 21:18	05:52 20:53 (3)	06:49 20:53 (3)	07:52 18:46	07:52 16:36
11	08:53 16:24	08:04 17:26	06:58 18:24	06:39 20:26	05:30 21:24	04:50 22:10	05:03 22:10	05:54 21:16	05:54 20:54 (3)	06:53 20:54 (3)	07:50 18:43	07:54 16:34
12	08:52 16:26	08:02 17:28	06:56 18:26	06:36 20:28	05:28 21:26	04:50 22:11	05:04 22:07	05:56 21:14	05:56 20:54 (3)	06:55 20:54 (3)	07:52 18:41	07:56 16:32
13	08:51 16:27	08:00 17:30	06:53 18:28	06:34 20:30	05:26 21:28	04:49 22:12	05:05 22:06	05:58 21:11	05:58 20:55 (3)	06:57 20:55 (3)	07:54 18:38	07:58 16:30
14	08:50 16:29	07:58 17:32	06:51 18:30	06:31 20:32	05:25 21:30	04:49 22:12	05:07 22:05	06:00 21:09	06:00 20:55 (3)	06:59 20:55 (3)	07:56 18:36	08:00 16:29
15	08:49 16:31	07:56 17:34	06:48 18:32	06:29 20:34	05:23 21:32	04:49 22:13	05:08 22:03	06:02 21:07	06:02 20:56 (3)	07:01 20:56 (3)	07:58 18:33	08:02 16:27
16	08:48 16:32	07:54 17:36	06:45 18:34	06:26 20:36	05:21 21:34	04:48 22:14	05:09 22:02	06:04 21:05	06:04 20:56 (3)	07:02 20:56 (3)	08:00 18:31	08:04 16:25
17	08:47 16:34	07:51 17:38	06:43 18:36	06:24 20:38	05:19 21:35	04:48 22:14	05:11 22:01	06:06 21:02	06:06 20:56 (3)	07:04 21:02	08:02 18:28	08:06 16:24
18	08:45 16:36	07:49 17:41	06:40 18:38	06:21 20:40	05:17 21:37	04:48 22:15	05:12 21:59	06:07 21:01	06:07 21:01 (1)	07:06 21:00	08:04 18:26	08:08 16:22
19	08:44 16:38	07:47 17:43	06:38 18:40	06:19 20:42	05:16 21:39	04:48 22:15	05:14 21:58	06:09 21:02	06:09 21:02 (1)	07:08 20:58	08:06 18:23	08:10 16:21
20	08:43 16:40	07:45 17:45	06:35 18:42	06:17 20:44	05:14 21:41	04:48 22:15	05:15 21:57	06:11 21:02	06:11 21:02 (1)	07:10 20:55	08:08 18:19	08:12 16:19
21	08:42 16:42	07:42 17:47	06:33 18:44	06:14 20:46	05:12 21:42	04:48 22:16	05:17 21:55	06:13 21:03	06:13 21:03 (1)	07:12 20:53	08:11 18:19	08:14 16:18
22	08:40 16:44	07:40 17:49	06:30 18:46	06:12 20:47	05:11 21:44	04:48 22:16	05:19 21:54	06:15 21:03	06:15 21:03 (1)	07:14 20:50	08:13 18:16	08:16 16:16
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24	08:37 16:48	07:35 17:53	06:25 18:50	06:07 20:51	05:08 21:47	04:49 22:16	05:22 21:51	06:19 21:04	06:19 21:04 (1)	07:18 20:46	08:17 18:12	08:19 16:14
25	08:36 16:50	07:33 17:55	06:22 18:52	06:05 20:53	05:06 21:49	04:50 22:16	05:24 21:49	06:21 21:05	06:21 21:05 (1)	07:19 20:43	08:17 18:09	08:21 16:12
26	08:34 16:52	07:30 17:57	06:20 18:54	06:02 20:55	05:05 21:50	04:50 22:16	05:25 21:47	06:23 21:04	06:23 21:04 (1)	07:21 20:41	08:19 18:07	08:23 16:11
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28	08:31 16:56	07:26 18:02	06:15 18:58	05:58 20:59	05:02 21:53	04:51 22:16	05:29 21:44	06:26 21:04	06:26 21:04 (1)	07:23 20:36	08:19 18:03	08:27 16:09
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30	08:28 17:00	07:09 18:02	05:53 19:02	05:53 21:03	05:00 21:56	04:52 22:15	05:32 21:40	06:30 21:03	06:30 21:03 (1)	07:29 20:31	08:20 18:00	08:30 16:07
31	08:26 17:02	07:07 18:04	05:54 19:04	05:54 21:04	04:59 21:58	04:59 22:16	05:34 21:38	06:32 21:02	06:32 21:02 (1)	07:31 20:28	08:21 18:00	08:31 16:08
Potential sun hours	242	269	366	423	501	520	521	465	384	326	253	224
Total, worst case				120	441	82	519	129				

**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		

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LT-44245 Kaunas

+370 37 407548

Calculated:

2017.03.13 14:16/2.7.490

**SHADOW - Calendar****Shadow receptor: C - Užkertenų k. 1****Assumptions for shadow calculations**

Maximum distance for influence 2.000 m  
 Minimum sun height over horizon for influence 3 °  
 Day step for calculation 1 days  
 Time step for calculation 1 minutes

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

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

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

The WTG is always operating

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:58 16:10	08:24 17:04	07:23 18:04	07:58 (4) 20:06	05:51 21:05	04:58 21:59	04:53 22:15	05:36 21:36	06:34 20:26	07:31 19:09	07:59 (1) 16:54	08:32 16:06
2	08:57 16:11	08:22 17:06	07:21 18:06	07:58 (4) 20:08	05:49 21:07	04:57 22:00	04:54 22:14	05:38 21:35	06:36 20:23	07:33 19:06	08:04 (1) 16:54	08:33 16:05
3	08:57 16:12	08:21 17:09	07:18 18:08	06:59 20:10	05:47 21:09	04:56 22:02	04:54 22:14	05:39 21:33	06:38 20:21	07:35 19:03		08:35 16:04
4	08:57 16:14	08:19 17:11	07:16 18:10	06:57 20:12	05:45 21:11	04:55 22:03	04:55 22:13	05:41 21:31	06:40 20:18	07:37 19:01		08:37 16:04
5	08:56 16:15	08:17 17:13	07:13 18:12	06:54 20:14	05:43 21:13	04:54 22:04	04:56 22:13	05:43 21:29	06:42 20:16	07:39 18:58		08:38 16:03
6	08:56 16:16	08:15 17:15	07:11 18:14	06:52 20:16	05:40 21:15	04:53 22:05	04:57 22:12	05:45 21:27	06:44 20:13	07:41 18:56		08:40 16:02
7	08:55 16:18	08:13 17:17	07:08 18:16	06:49 20:18	05:38 21:17	04:52 22:06	04:58 22:11	05:47 21:24	06:45 20:11	07:43 18:53		08:41 16:02
8	08:55 16:19	08:11 17:19	07:06 18:18	06:46 20:20	05:36 21:19	04:52 22:07	04:59 22:11	05:49 21:22	06:47 20:08	07:45 18:51		08:42 16:01
9	08:54 16:21	08:09 17:21	07:03 18:20	06:44 20:22	05:34 21:21	04:51 22:08	05:00 22:10	05:50 21:20	06:49 20:06	07:47 18:48		08:44 16:01
10	08:53 16:22	08:07 17:24	07:01 18:22	06:41 20:24	05:32 21:23	04:51 22:09	05:02 22:09	05:52 21:18	06:51 20:03	07:49 18:46		08:45 16:01
11	08:53 16:24	08:05 17:26	06:58 18:24	06:39 20:26	05:30 21:25	04:50 22:10	05:03 22:08	05:54 21:16	06:53 20:00	07:51 18:43	08:34 (4) 16:34	08:46 16:00
12	08:52 16:26	08:02 17:28	06:56 18:26	06:36 20:28	05:28 21:26	04:50 22:11	05:04 22:07	05:56 21:14	06:55 19:58	07:53 18:41	3 08:37 (4) 16:34	08:47 16:00
13	08:51 16:27	08:00 17:30	06:53 18:28	06:34 20:30	05:27 21:28	04:49 22:12	05:05 22:06	05:58 21:11	06:57 19:55	07:55 18:38	8 08:40 (4) 16:32	08:48 16:00
14	08:50 16:29	07:58 17:32	06:51 18:30	06:31 20:32	05:25 21:30	04:49 22:12	05:07 22:05	06:00 21:09	06:59 19:53	07:57 18:36	10 08:40 (4) 16:31	08:49 16:00
15	08:49 16:31	07:56 17:34	06:48 18:32	06:29 20:34	05:23 21:32	04:49 22:13	05:08 22:03	06:02 21:07	07:01 19:50	07:59 18:33	11 08:40 (4) 16:27	08:50 16:00
16	08:48 16:33	07:54 17:36	06:46 18:34	06:26 20:36	05:21 21:34	04:48 22:14	05:10 22:02	06:04 21:05	07:02 19:47	08:01 18:31	10 08:29 (4) 16:25	08:51 16:00
17	08:47 16:34	07:51 17:38	06:43 18:36	06:24 20:38	05:19 21:35	04:48 22:14	05:11 22:01	06:06 21:02	07:04 19:45	08:03 18:28	7 08:31 (4) 16:24	08:52 16:00
18	08:46 16:36	07:49 17:41	06:40 18:38	06:22 20:40	05:18 21:37	04:48 22:15	05:12 22:00	06:07 21:00	07:06 19:42	08:05 18:26	3 08:36 (4) 16:22	08:53 16:00
19	08:44 16:38	07:47 17:43	06:38 18:40	06:19 20:42	05:16 21:39	04:48 22:15	05:14 21:58	06:09 20:58	07:08 19:40	08:07 18:24		08:54 16:00
20	08:43 16:40	07:45 17:45	06:35 18:42	06:17 20:44	05:14 21:41	04:48 22:15	05:16 21:57	06:11 20:55	07:10 19:37	08:09 18:21		08:55 16:01
21	08:42 16:42	07:42 17:47	06:33 18:44	06:14 20:46	05:13 21:42	04:48 22:16	05:17 21:55	06:13 20:53	07:12 19:34	08:11 18:19		08:56 16:01
22	08:40 16:44	07:40 17:49	06:30 18:46	06:12 20:48	05:11 21:44	04:48 22:16	05:19 21:54	06:15 20:51	07:14 19:32	08:13 18:16		08:56 16:01
23	08:39 16:46	07:38 17:51	06:27 18:48	06:10 20:50	05:09 21:46	04:49 22:16	05:20 21:52	06:17 20:48	07:16 19:29	08:15 18:14		08:56 16:02
24	08:38 16:48	07:35 17:53	06:25 18:50	06:07 20:52	05:08 21:47	04:49 22:16	05:22 21:51	06:19 20:46	07:18 19:27	08:17 18:12		08:57 16:03
25	08:36 16:50	07:33 17:55	06:22 18:52	06:05 20:54	05:07 21:49	04:49 22:16	05:24 21:49	06:21 20:43	07:20 19:24	08:19 18:06	7 07:59 (1) 17:10	08:57 16:03
26	08:34 16:52	07:30 17:57	06:20 18:54	06:03 20:55	05:05 21:51	04:50 22:16	05:25 21:47	06:23 20:41	07:21 19:21	08:21 18:07	10 07:57 (1) 17:07	08:57 16:04
27	08:33 16:54	07:28 18:00	06:17 18:56	06:00 20:57	05:04 21:52	04:50 22:16	05:27 21:46	06:25 20:38	07:23 19:19	08:23 18:07	11 07:56 (1) 17:05	08:57 16:05
28	08:31 16:56	07:26 18:02	06:15 18:58	05:58 20:59	05:03 21:54	04:51 22:16	05:29 21:44	06:26 20:36	07:25 19:16	08:25 18:07	11 07:56 (1) 17:03	08:58 16:06
29	08:30 16:58		06:12 19:00	05:56 21:01	05:01 21:55	04:51 22:16	05:30 21:42	06:28 20:33	07:27 19:14	08:28 18:07	11 07:56 (1) 17:01	08:58 16:07
30	08:28 17:00		06:09 20:02	05:53 21:03	05:00 21:56	04:52 22:15	05:32 21:40	06:30 20:31	07:29 19:11	08:30 18:06	9 07:57 (1) 16:58	08:58 16:07
31	08:26 17:02		06:07 20:04		04:59 21:58		05:34 21:38	06:32 20:28		08:31 18:06		08:58 16:09
Potential sun hours	242	269	366	423	501	520	521	465	384	326	253	224
Total, worst case		45	79						59	68		

**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		

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**Infraplanas**

K. Donelaičio str. 55-2

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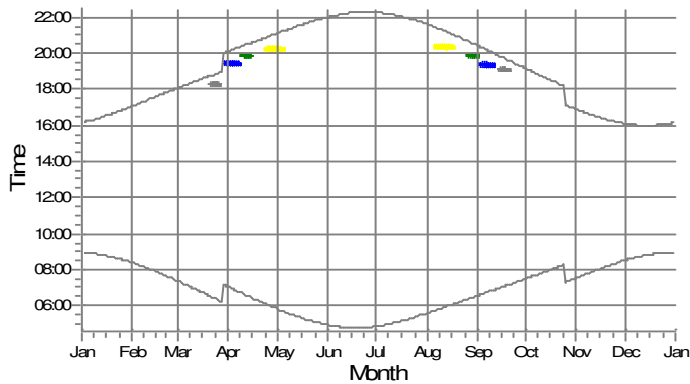
+370 37 407548

Calculated:

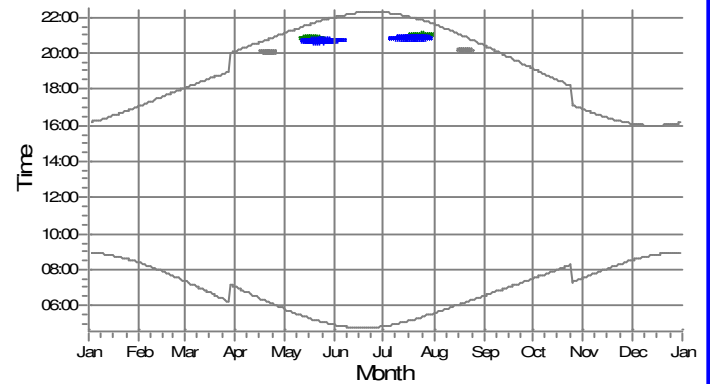
2017.03.13 14:16/2.7.490

**SHADOW - Calendar, graphical**

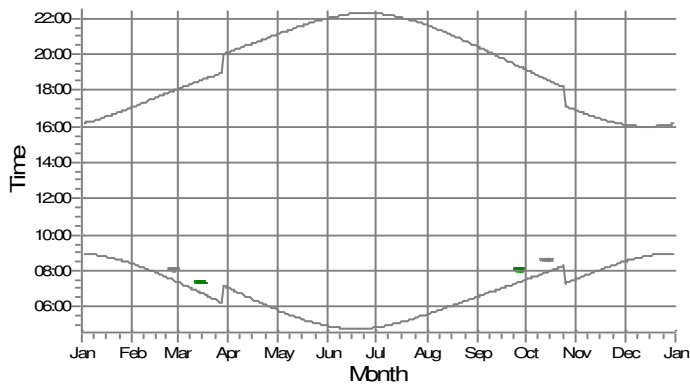
A: Užkertenų k. 4



B: Užkertenų k. 3



C: Užkertenų k. 1



WTGs



1: E-40 250 kW



2: E-40 250 kW



3: E-40 250 kW



4: E-40 250 kW

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**Infraplanas**

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Calculated:

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**SHADOW - Calendar per WTG**

WTG: 1 - E-40 250 kW

**Assumptions for shadow calculations**

Maximum distance for influence 2.000 m  
 Minimum sun height over horizon for influence 3 °  
 Day step for calculation 1 days  
 Time step for calculation 1 minutes

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

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

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

The WTG is always operating

	January	February	March	April	May	June
1	08:58 16:10	08:24 17:04	07:23 18:04	07:04 20:06	05:51 21:05	04:58 21:59
2	08:57 16:11	08:22 17:06	07:21 18:06	07:02 20:08	05:49 21:07	04:57 22:00
3	08:57 16:12	08:21 17:09	07:18 18:08	06:59 20:10	05:47 21:09	04:56 22:02
4	08:57 16:14	08:19 17:11	07:16 18:10	06:57 20:12	05:45 21:11	04:55 22:03
5	08:56 16:15	08:17 17:13	07:13 18:12	06:54 20:14	05:43 21:13	04:54 22:04
6	08:56 16:16	08:15 17:15	07:11 18:14	06:51 20:16	05:40 21:15	04:53 22:05
7	08:55 16:18	08:13 17:17	07:08 18:16	06:49 20:18	05:38 21:17	04:52 22:06
8	08:55 16:19	08:11 17:19	07:06 18:18	06:46 20:20	05:36 21:19	04:52 22:07
9	08:54 16:21	08:09 17:21	07:03 18:20	06:44 19:47-19:53/6 20:22	05:34 21:21	04:51 22:08
10	08:53 16:22	08:07 17:23	07:01 18:22	06:41 19:45-19:55/10 20:24	05:32 21:23	04:50 22:09
11	08:53 16:24	08:05 17:26	06:58 18:24	06:39 19:45-19:56/11 20:26	05:30 20:46-20:48/2 21:24	04:50 22:10
12	08:52 16:26	08:02 17:28	06:56 07:20-07:22/2 18:26	06:36 19:43-19:56/13 20:28	05:28 20:43-20:51/8 21:26	04:50 22:11
13	08:51 16:27	08:00 17:30	06:53 07:18-07:25/7 18:28	06:34 19:43-19:56/13 20:30	05:26 20:42-20:52/10 21:28	04:49 22:12
14	08:50 16:29	07:58 17:32	06:51 07:15-07:26/11 18:30	06:31 19:43-19:55/12 20:32	05:25 20:42-20:53/11 21:30	04:49 22:12
15	08:49 16:31	07:56 17:34	06:48 07:15-07:26/11 18:32	06:29 19:44-19:54/10 20:34	05:23 20:41-20:54/13 21:32	04:49 22:13
16	08:48 16:33	07:54 17:36	06:45 07:14-07:26/12 18:34	06:26 19:44-19:52/8 20:36	05:21 20:40-20:54/14 21:34	04:48 22:14
17	08:47 16:34	07:51 17:38	06:43 07:14-07:24/10 18:36	06:24 19:47-19:49/2 20:38	05:19 20:40-20:54/14 21:35	04:48 22:14
18	08:46 16:36	07:49 17:41	06:40 07:16-07:24/8 18:38	06:22 20:40	05:17 20:40-20:54/14 21:37	04:48 22:15
19	08:44 16:38	07:47 17:43	06:38 07:18-07:20/2 18:40	06:19 20:42	05:16 20:40-20:54/14 21:39	04:48 22:15
20	08:43 16:40	07:45 17:45	06:35 18:42	06:17 20:44	05:14 20:40-20:54/14 21:41	04:48 22:15
21	08:42 16:42	07:42 17:47	06:33 18:44	06:14 20:46	05:13 20:41-20:54/13 21:42	04:48 22:16
22	08:40 16:44	07:40 17:49	06:30 18:46	06:12 20:48	05:11 20:41-20:53/12 21:44	04:48 22:16
23	08:39 16:46	07:38 17:51	06:27 18:48	06:10 20:50	05:09 20:42-20:53/11 21:46	04:49 22:16
24	08:37 16:48	07:35 17:53	06:25 18:50	06:07 20:51	05:08 20:43-20:52/9 21:47	04:49 22:16
25	08:36 16:50	07:33 17:55	06:22 18:52	06:05 20:53	05:06 20:44-20:52/8 21:49	04:49 22:16
26	08:34 16:52	07:30 17:57	06:20 18:54	06:02 20:55	05:05 20:45-20:49/4 21:50	04:50 22:16
27	08:33 16:54	07:28 17:59	06:17 18:56	06:00 20:57	05:04 21:52	04:50 22:16
28	08:31 16:56	07:26 18:02	06:15 18:58	05:58 20:59	05:02 21:53	04:51 22:16
29	08:29 16:58		07:12 20:00	05:56 21:01	05:01 21:55	04:51 22:15
30	08:28 17:00		07:09 20:02	05:53 21:03	05:00 21:56	04:52 22:15
31	08:26 17:02		07:07 20:04		04:59 21:58	
Potential sun hours	242	269	366	423	501	520
Sum of minutes with flicker	0	0	63	85	171	0

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

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



Project:

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Calculated:

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**SHADOW - Calendar per WTG**

WTG: 1 - E-40 250 kW

**Assumptions for shadow calculations**

Maximum distance for influence 2.000 m  
 Minimum sun height over horizon for influence 3 °  
 Day step for calculation 1 days  
 Time step for calculation 1 minutes

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

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

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

The WTG is always operating

	July	August	September	October	November	December
1	04:53 22:15	05:36 20:54-21:01/7 21:36	06:34 19:44-19:55/11 20:26	07:31 07:59-08:04/5 19:08	07:33 16:54	08:32 16:06
2	04:54 22:14	05:38 21:34	06:36 19:43-19:53/10 20:23	07:33 19:06	07:35 16:52	08:33 16:05
3	04:54 22:14	05:39 21:33	06:38 19:45-19:51/6 20:21	07:35 19:03	07:37 16:50	08:35 16:04
4	04:55 22:13	05:41 21:31	06:40 20:18	07:37 19:01	07:39 16:48	08:37 16:04
5	04:56 22:13	05:43 21:29	06:42 20:16	07:39 18:58	07:41 16:46	08:38 16:03
6	04:57 22:12	05:45 21:26	06:44 20:13	07:41 18:56	07:44 16:44	08:39 16:02
7	04:58 22:11	05:47 21:24	06:45 20:11	07:43 18:53	07:46 16:42	08:41 16:02
8	04:59 22:11	05:49 21:22	06:47 20:08	07:45 18:51	07:48 16:40	08:42 16:01
9	05:00 22:10	05:50 21:20	06:49 20:05	07:47 18:48	07:50 16:38	08:44 16:01
10	05:02 22:09	05:52 21:18	06:51 20:03	07:49 18:46	07:52 16:36	08:45 16:00
11	05:03 22:08	05:54 21:16	06:53 20:00	07:51 18:43	07:54 16:34	08:46 16:00
12	05:04 22:07	05:56 21:14	06:55 19:58	07:53 18:41	07:56 16:32	08:47 16:00
13	05:05 22:06	05:58 21:11	06:57 19:55	07:54 18:38	07:58 16:30	08:48 16:00
14	05:07 22:05	06:00 21:09	06:59 19:53	07:56 18:36	08:00 16:29	08:49 16:00
15	05:08 22:03	06:02 21:07	07:01 19:50	07:58 18:33	08:02 16:27	08:50 16:00
16	05:10 22:02	06:04 21:05	07:02 19:47	08:00 18:31	08:04 16:25	08:51 16:00
17	05:11 22:01	06:06 21:02	07:04 19:45	08:02 18:28	08:06 16:24	08:52 16:00
18	05:12 20:55-21:01/6 22:00	06:07 21:00	07:06 19:42	08:04 18:26	08:08 16:22	08:53 16:00
19	05:14 20:53-21:02/9 21:58	06:09 20:58	07:08 19:40	08:07 18:24	08:10 16:21	08:54 16:00
20	05:15 20:52-21:02/10 21:57	06:11 20:55	07:10 19:37	08:09 18:21	08:12 16:19	08:54 16:01
21	05:17 20:52-21:03/11 21:55	06:13 20:53	07:12 19:34	08:11 18:19	08:14 16:18	08:55 16:01
22	05:19 20:51-21:03/12 21:54	06:15 20:50	07:14 19:32	08:13 18:16	08:16 16:16	08:56 16:01
23	05:20 20:51-21:04/13 21:52	06:17 20:48	07:16 19:29	08:15 18:14	08:18 16:15	08:56 16:02
24	05:22 20:50-21:04/14 21:51	06:19 20:46	07:18 19:27	08:17 18:12	08:19 16:14	08:57 16:03
25	05:24 20:51-21:05/14 21:49	06:21 20:43	07:20 07:59-08:06/7 19:24	07:19 17:09	08:21 16:12	08:57 16:03
26	05:25 20:50-21:04/14 21:47	06:23 19:49-19:53/4 20:41	07:21 07:57-08:07/10 19:21	07:21 17:07	08:23 16:11	08:57 16:04
27	05:27 20:51-21:05/14 21:46	06:25 19:47-19:55/8 20:38	07:23 07:56-08:07/11 19:19	07:23 17:05	08:25 16:10	08:57 16:05
28	05:29 20:50-21:04/14 21:44	06:26 19:44-19:55/11 20:36	07:25 07:56-08:07/11 19:16	07:25 17:03	08:27 16:09	08:58 16:06
29	05:30 20:51-21:04/13 21:42	06:28 19:44-19:56/12 20:33	07:27 07:56-08:07/11 19:14	07:27 17:00	08:28 16:08	08:58 16:06
30	05:32 20:52-21:03/11 21:40	06:30 19:43-19:56/13 20:31	07:29 07:57-08:06/9 19:11	07:29 16:58	08:30 16:07	08:58 16:07
31	05:34 20:52-21:02/10 21:38	06:32 19:43-19:56/13 20:28		16:56		16:08
Potential sun hours	521	465	384	326	253	224
Sum of minutes with flicker	165	68	86	5	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:

4 vėjo jėgainės

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**SHADOW - Calendar per WTG****WTG: 2 - E-40 250 kW****Assumptions for shadow calculations**

Maximum distance for influence 2.000 m  
 Minimum sun height over horizon for influence 3 °  
 Day step for calculation 1 days  
 Time step for calculation 1 minutes

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

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

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

The WTG is always operating

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:58 16:10	08:24 17:04	07:23 18:04	07:04 20:06	05:51 20:01-20:17/16 21:05	04:58 21:59	04:53 22:15	05:36 21:36	06:34 20:26	07:31 19:08	07:33 16:54	08:32 16:06
2	08:57 16:11	08:22 17:06	07:21 18:06	07:02 20:08	05:49 20:01-20:17/16 21:07	04:57 22:00	04:54 22:14	05:38 21:34	06:36 20:23	07:33 19:06	07:35 16:52	08:33 16:05
3	08:57 16:12	08:21 17:09	07:18 18:08	06:59 20:10	05:47 20:01-20:16/15 21:09	04:56 22:02	04:54 22:14	05:39 21:33	06:38 20:21	07:35 19:03	07:37 16:50	08:35 16:04
4	08:57 16:14	08:19 17:11	07:16 18:10	06:57 20:12	05:45 20:02-20:16/14 21:11	04:55 22:03	04:55 22:13	05:41 21:31	06:40 20:18	07:37 19:01	07:39 16:48	08:37 16:04
5	08:56 16:15	08:17 17:13	07:13 18:12	06:54 20:14	05:42 20:03-20:14/11 21:13	04:54 22:04	04:56 22:13	05:43 21:29	06:42 20:16	07:39 18:58	07:41 16:46	08:38 16:03
6	08:56 16:16	08:15 17:15	07:11 18:14	06:51 20:16	05:40 20:05-20:13/8 21:15	04:53 22:05	04:57 22:12	05:45 20:16-20:20/4 21:26	06:44 20:13	07:41 18:56	07:44 16:44	08:39 16:02
7	08:55 16:18	08:13 17:17	07:08 18:16	06:49 20:18	05:38 21:17	04:52 22:06	04:58 22:11	05:47 20:13-20:23/10 21:24	06:45 20:11	07:43 18:53	07:46 16:42	08:41 16:02
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16	08:48 16:32	07:54 17:36	06:45 18:34	06:26 20:36	05:21 21:34	04:48 22:14	05:09 22:02	06:04 20:09-20:24/15 21:05	07:02 19:47	08:00 18:31	08:04 16:25	08:51 16:00
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Potential sun hours	242	269	366	423	501	520	521	465	384	326	253	224
Sum of minutes with flicker	0	0	0	95	80	0	0	182	0	0	0	0

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

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

Project:

4 vėjo jėgainės

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2017.03.13 14:26 / 10

Licensed user:

**Infraplanas**

K. Donelaicio str. 55-2

LT-44245 Kaunas

+370 37 407548

Calculated:

2017.03.13 14:16/2.7.490

**SHADOW - Calendar per WTG****WTG: 3 - E- 40 250 kW****Assumptions for shadow calculations**

Maximum distance for influence 2.000 m  
 Minimum sun height over horizon for influence 3 °  
 Day step for calculation 1 days  
 Time step for calculation 1 minutes

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

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

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

The WTG is always operating

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:58 16:10	08:24 17:04	07:23 18:04	07:04 20:06	19:18-19:31/13 21:05	05:51 21:59	04:58 21:59	04:53 22:15	05:36 21:36	06:34 20:26	07:31 19:08	07:33 16:54
2	08:57 16:11	08:22 17:06	07:21 18:06	07:02 20:08	19:16-19:31/15 21:07	05:49 21:07	04:57 22:00	04:54 22:14	05:38 21:34	06:36 20:23	07:33 19:06	07:35 16:52
3	08:57 16:12	08:20 17:09	07:18 18:08	06:59 20:10	19:15-19:31/16 21:09	05:47 21:09	04:56 22:02	04:54 22:14	05:39 21:33	06:38 20:21	19:15-19:23/8 19:03	07:35 16:50
4	08:57 16:14	08:19 17:11	07:16 18:10	06:57 20:12	19:15-19:31/16 21:11	05:45 21:11	04:55 22:03	04:55 22:13	05:41 21:31	06:40 20:18	19:13-19:25/12 19:01	07:37 16:48
5	08:56 16:15	08:17 17:13	07:13 18:12	06:54 20:14	19:14-19:30/16 21:13	05:43 21:13	04:54 22:04	04:56 22:13	05:43 21:29	06:42 20:16	19:12-19:26/14 18:58	07:39 16:46
6	08:56 16:16	08:15 17:15	07:11 18:14	06:51 20:16	19:15-19:30/15 21:15	05:40 21:15	04:53 22:05	04:57 22:12	05:45 21:26	06:44 20:13	19:11-19:26/15 18:56	07:41 16:44
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8	08:55 16:19	08:11 17:19	07:06 18:18	06:46 20:20	19:16-19:28/12 21:19	05:36 21:19	04:52 22:07	04:59 22:11	05:49 21:22	06:47 20:08	19:09-19:25/16 18:51	07:45 16:40
9	08:54 16:21	08:09 17:21	07:03 18:20	06:44 20:22	19:17-19:25/8 21:21	05:34 21:21	04:51 22:08	05:00 22:10	05:50 21:20	06:49 20:05	19:09-19:25/16 18:48	07:47 16:38
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17	08:47 16:34	07:51 17:38	06:43 18:36	06:24 20:38	19:17-19:25/8 21:36	05:19 21:36	04:48 22:14	05:11 22:01	05:57 21:02	07:04 20:00	19:14-19:18/4 18:28	08:02 16:24
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19	08:44 16:38	07:47 17:43	06:38 18:40	06:19 20:42	19:17-19:25/8 21:39	05:16 21:39	04:48 22:15	05:14 21:58	05:54 21:00	07:08 20:00	19:14-19:18/4 18:24	08:06 16:20
20	08:43 16:40	07:45 17:45	06:35 18:42	06:17 20:44	19:17-19:25/8 21:41	05:14 21:41	04:48 22:15	05:15 21:57	05:53 21:00	07:10 20:00	19:14-19:18/4 18:22	08:09 16:19
21	08:42 16:42	07:42 17:47	06:33 18:44	06:14 20:46	19:17-19:25/8 21:42	05:12 21:42	04:48 22:16	05:17 21:55	05:51 21:00	07:12 20:00	19:14-19:18/4 18:20	08:11 16:18
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27	08:33 16:54	07:28 17:59	06:17 18:56	06:00 20:57	19:17-19:25/8 21:52	05:04 21:52	04:50 22:16	05:27 21:46	05:35 21:00	07:23 20:00	19:14-19:18/4 18:08	08:25 16:10
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31	08:26 17:02	07:25 18:00	06:12 19:00	05:53 21:03	19:17-19:25/8 21:56	05:00 21:56	04:52 22:15	05:32 21:40	05:28 21:00	07:29 20:00	19:14-19:18/4 18:02	08:30 16:07
Potential sun hours	242	269	366	423	501	520	521	465	384	326	253	224
Sum of minutes with flicker	0	0	13	124	333	82	417	0	139	0	0	0

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

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

Project:

4 vějo jégainés

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2017.03.13 14:26 / 11

Licensed user:

**Infraplanas**

K. Donelaicio str. 55-2

LT-44245 Kaunas

+370 37 407548

Calculated:

2017.03.13 14:16/2.7.490

**SHADOW - Calendar per WTG****WTG: 4 - E-40 250 kW****Assumptions for shadow calculations**

Maximum distance for influence 2.000 m  
 Minimum sun height over horizon for influence 3 °  
 Day step for calculation 1 days  
 Time step for calculation 1 minutes

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

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

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

The WTG is always operating

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:58 16:10	08:24 17:04	07:23 18:04	07:04 20:06	05:51 21:05	04:58 21:59	04:53 22:15	05:36 21:36	06:34 20:26	07:31 19:08	07:33 16:54	08:32 16:06
2	08:57 16:11	08:22 17:06	07:21 18:06	07:02 20:08	05:49 21:07	04:57 22:00	04:54 22:14	05:38 21:34	06:36 20:23	07:33 19:06	07:35 16:52	08:33 16:05
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17	08:47 16:34	07:51 17:38	06:43 18:36	06:24 20:38	05:19 21:35	04:48 22:14	05:11 22:01	06:06 21:02	07:04 19:45	07:58 18:28	08:31-08:38/7	08:52 16:24
18	08:46 16:36	07:49 17:41	06:40 18:38	06:22 20:40	05:17 21:37	04:48 22:15	05:12 22:00	06:07 21:00	07:06 19:42	07:58 18:26	08:33-08:36/3	08:53 16:22
19	08:44 16:38	07:47 17:43	06:38 18:40	06:19 20:42	05:16 21:39	04:48 22:15	05:14 21:58	06:09 20:58	07:08 19:40	07:58 18:24	08:33-08:36/3	08:54 16:21
20	08:43 16:40	07:45 17:45	06:35 18:42	06:17 20:44	05:14 21:41	04:48 22:15	05:15 21:57	06:11 20:55	07:10 19:37	07:58 18:21	08:33-08:36/3	08:55 16:19
21	08:42 16:42	07:42 17:47	06:33 18:44	06:14 20:46	05:13 21:42	04:48 22:16	05:17 21:55	06:13 20:53	07:12 19:34	07:58 18:19	08:33-08:36/3	08:55 16:18
22	08:40 16:44	07:40 17:49	06:30 18:46	06:12 20:48	05:11 21:44	04:48 22:16	05:19 21:54	06:15 20:50	07:14 19:32	07:58 18:16	08:33-08:36/3	08:56 16:16
23	08:39 16:46	07:38 17:51	06:27 18:48	06:10 20:49	05:09 21:46	04:49 22:16	05:20 21:52	06:17 20:48	07:16 19:29	07:58 18:14	08:33-08:36/3	08:56 16:15
24	08:37 16:48	07:35 17:53	06:25 18:50	06:07 20:51	05:08 21:47	04:49 22:16	05:22 21:51	06:19 20:46	07:18 19:27	07:58 18:12	08:33-08:36/3	08:57 16:14
25	08:36 16:50	07:33 17:55	06:22 18:52	06:05 20:53	05:07 21:49	04:49 22:16	05:24 21:49	06:21 20:43	07:20 19:24	07:58 18:09	08:33-08:36/3	08:57 16:12
26	08:34 16:52	07:30 17:57	06:20 18:54	06:02 20:55	05:05 21:50	04:50 22:16	05:25 21:47	06:23 20:41	07:21 19:21	07:58 18:07	08:33-08:36/3	08:57 16:11
27	08:33 16:54	07:28 17:59	06:17 18:56	06:00 20:57	05:04 21:52	04:50 22:16	05:27 21:46	06:25 20:38	07:23 19:19	07:58 18:05	08:33-08:36/3	08:57 16:10
28	08:31 16:56	07:26 18:02	06:15 18:58	05:58 20:59	05:02 21:53	04:51 22:16	05:29 21:44	06:26 20:36	07:25 19:16	07:58 18:03	08:33-08:36/3	08:57 16:09
29	08:29 16:58	07:24 18:00	06:13 18:56	05:56 20:57	05:01 21:55	04:51 22:15	05:30 21:42	06:28 20:33	07:27 19:14	07:58 18:01	08:33-08:36/3	08:57 16:08
30	08:28 17:00	07:23 18:00	06:12 18:57	05:55 21:03	05:00 21:56	04:52 22:15	05:32 21:40	06:30 20:31	07:29 19:11	07:58 18:00	08:33-08:36/3	08:57 16:07
31	08:26 17:02	07:21 18:00	06:11 18:57	05:54 21:02	04:59 21:58	04:53 22:15	05:34 21:38	06:32 20:28	07:31 19:08	07:58 18:00	08:33-08:36/3	08:57 16:08
Potential sun hours	242	269	366	423	501	520	521	465	384	326	253	224
Sum of minutes with flicker	0	45	87	120	0	0	0	122	74	63	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:

4 vėjo jėgainės

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**Infraplanas**

K. Donelaičio str. 55-2

LT-44245 Kaunas

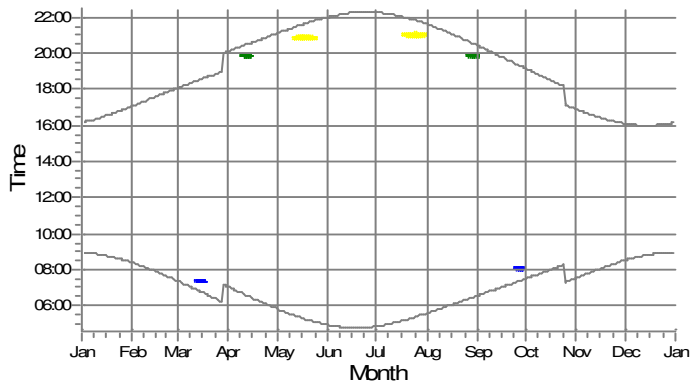
+370 37 407548

Calculated:

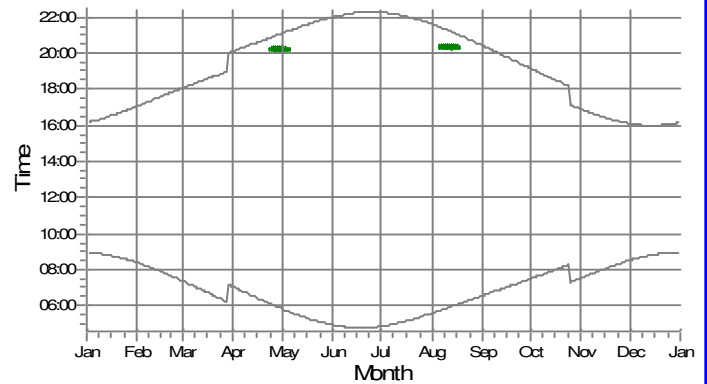
2017.03.13 14:16/2.7.490

**SHADOW - Calendar per WTG, graphical**

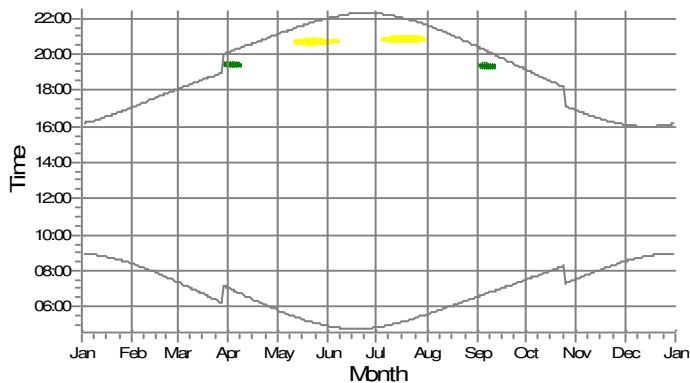
1: E-40 250 kW



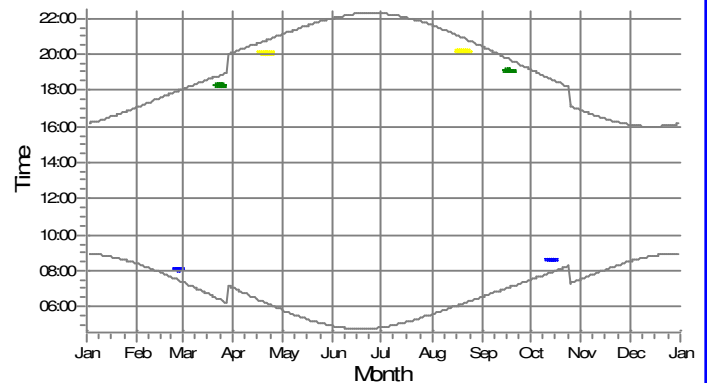
2: E-40 250 kW



3: E-40 250 kW



4: E-40 250 kW



Shadow receptor



A: Užkertenų k. 4



B: Užkertenų k. 3



C: Užkertenų k. 1



Project:

4 vėjo jėgainės

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**Infraplanas**

K. Donelaičio str. 55-2

LT-44245 Kaunas

+370 37 407548

Calculated:

2017.03.13 14:16/2.7.490

**SHADOW - Map**

0 250 500 750 1000m

Map: 003 , Print scale 1:20.000, Map center Lithuania LKS94 East: 407.790 North: 6.133.470

New WTG

Shadow receptor

Isolines showing shadow in Hours per year, worst case

0

10

30

100