Attachment 7

Glare Analysis

FORGESOLAR GLARE ANALYSIS

Project: **Rhudes Creek Solar**
Proposed utility-scale project in Hardin County, Kentucky

Site configuration: **Rhudes Creek_v3_Arrays 1-7_0 deg**
Analysis conducted by Alan Plumeau (aplumeau@trccompanies.com) at 01:01 on 05 Jul, 2021.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
2-mile flight path(s)	PASS	Flight path receptor(s) do not receive yellow glare
ATCT(s)	N/A	No ATCT receptors designated

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63276 can be read at https://www.federalregister.gov/d/2013-24729

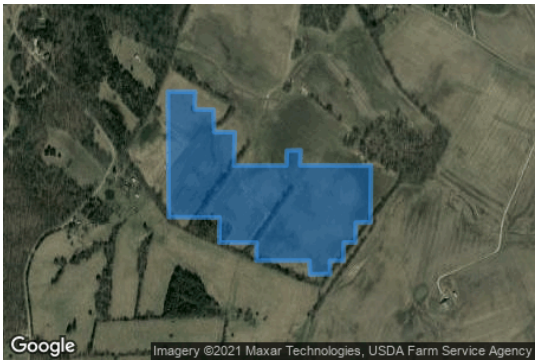
SITE CONFIGURATION

Analysis Parameters

DNI: peaks at 1,000.0 W/m^2
Time interval: 1 min
Ocular transmission coefficient: 0.5
Pupil diameter: 0.002 m
Eye focal length: 0.017 m
Sun subtended angle: 9.3 mrad
Site Config ID: 56038.9913

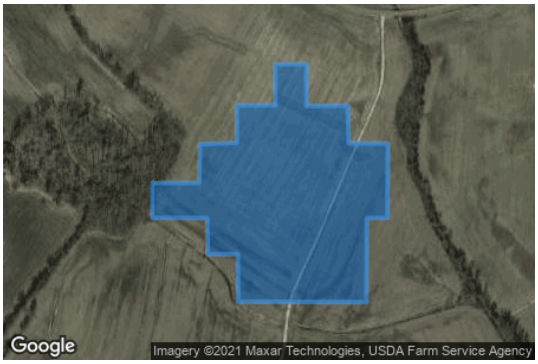
PV Array(s)

Name: PV array 1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



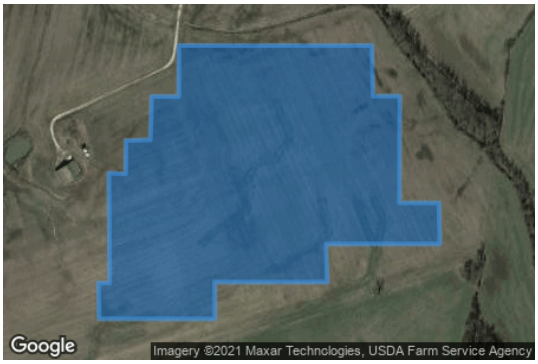
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.662651	-86.010935	711.53	9.00	720.53
2	37.662643	-86.009945	706.84	9.00	715.84
3	37.662142	-86.009961	711.98	9.00	720.98
4	37.662128	-86.009272	710.08	9.00	719.08
5	37.661493	-86.009255	705.58	9.00	714.58
6	37.661482	-86.008505	710.50	9.00	719.50
7	37.660531	-86.008531	708.15	9.00	717.15
8	37.660530	-86.006632	701.29	9.00	710.29
9	37.660958	-86.006618	699.68	9.00	708.68
10	37.660972	-86.006117	701.11	9.00	710.11
11	37.660534	-86.006131	703.65	9.00	712.65
12	37.660530	-86.003556	704.42	9.00	713.42
13	37.658903	-86.003581	711.58	9.00	720.58
14	37.658896	-86.004114	711.71	9.00	720.71
15	37.658327	-86.004120	713.24	9.00	722.24
16	37.658326	-86.004547	715.71	9.00	724.71
17	37.657803	-86.004561	716.42	9.00	725.42
18	37.657806	-86.005053	720.02	9.00	729.02
19	37.657421	-86.005044	721.09	9.00	730.09
20	37.657413	-86.005776	723.72	9.00	732.72
21	37.657806	-86.005795	725.16	9.00	734.16
22	37.657810	-86.007725	726.60	9.00	735.60
23	37.658322	-86.007715	720.80	9.00	729.80
24	37.658326	-86.009072	740.92	9.00	749.92
25	37.659042	-86.009055	721.81	9.00	730.81
26	37.659054	-86.010901	711.33	9.00	720.33

Name: PV array 2
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



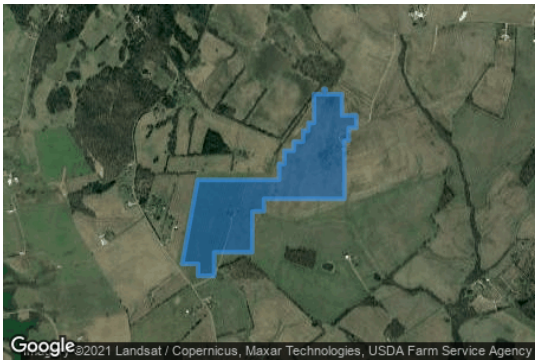
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.660181	-86.001263	707.49	9.00	716.49
2	37.660683	-86.001260	705.01	9.00	714.01
3	37.660684	-86.000408	709.97	9.00	718.97
4	37.661239	-86.000394	717.94	9.00	726.94
5	37.661258	-85.999726	725.20	9.00	734.20
6	37.661794	-85.999725	734.83	9.00	743.83
7	37.661794	-85.999027	729.70	9.00	738.70
8	37.662381	-85.999031	731.09	9.00	740.09
9	37.662384	-85.998464	734.15	9.00	743.15
10	37.661784	-85.998463	723.97	9.00	732.97
11	37.661790	-85.997711	716.98	9.00	725.98
12	37.661252	-85.997697	711.65	9.00	720.65
13	37.661248	-85.996984	708.16	9.00	717.16
14	37.660182	-85.996993	707.44	9.00	716.44
15	37.660178	-85.997366	707.32	9.00	716.32
16	37.658976	-85.997373	708.19	9.00	717.19
17	37.658984	-85.999703	700.03	9.00	709.03
18	37.659662	-85.999708	702.35	9.00	711.35
19	37.659664	-86.000257	704.54	9.00	713.54
20	37.660180	-86.000263	704.55	9.00	713.55

Name: PV array 3
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



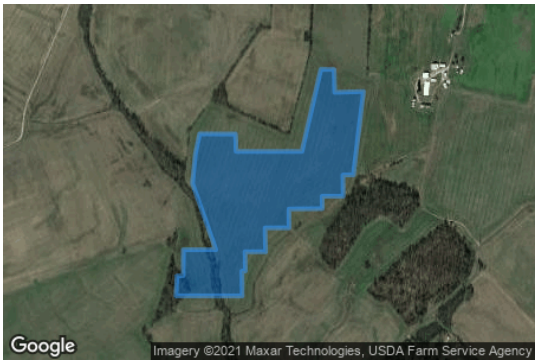
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.658353	-85.998802	705.87	9.00	714.87
2	37.658354	-85.995299	702.40	9.00	711.40
3	37.657627	-85.995279	706.26	9.00	715.26
4	37.657630	-85.994792	704.88	9.00	713.88
5	37.656099	-85.994799	708.66	9.00	717.67
6	37.656100	-85.994083	707.06	9.00	716.06
7	37.655511	-85.994065	711.83	9.00	720.83
8	37.655510	-85.996133	720.37	9.00	729.37
9	37.654964	-85.996109	725.62	9.00	734.62
10	37.654964	-85.998153	746.75	9.00	755.75
11	37.654436	-85.998149	752.44	9.00	761.44
12	37.654440	-86.000251	731.24	9.00	740.24
13	37.654956	-86.000265	732.14	9.00	741.14
14	37.654952	-86.000058	734.90	9.00	743.90
15	37.656527	-86.000075	724.80	9.00	733.80
16	37.656516	-85.999769	725.45	9.00	734.45
17	37.656992	-85.999765	716.08	9.00	725.08
18	37.657004	-85.999322	718.09	9.00	727.09
19	37.657626	-85.999299	710.79	9.00	719.79
20	37.657622	-85.998805	710.62	9.00	719.62

Name: PV array 4
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



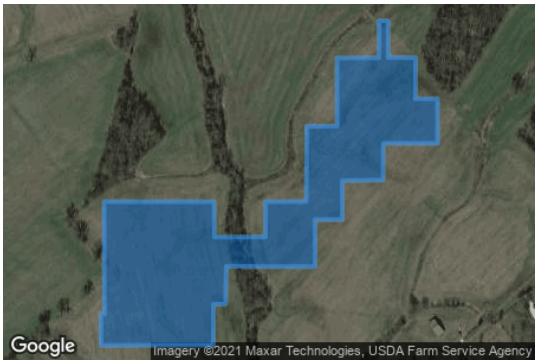
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.659661	-86.002994	707.14	9.00	716.14
2	37.659678	-86.002258	705.86	9.00	714.86
3	37.659979	-86.002281	706.38	9.00	715.38
4	37.659972	-86.002147	705.82	9.00	714.82
5	37.659670	-86.002135	706.28	9.00	715.28
6	37.659666	-86.000969	705.11	9.00	714.11
7	37.658453	-86.000950	708.10	9.00	717.10
8	37.658464	-85.999930	705.28	9.00	714.28
9	37.657736	-85.999915	709.38	9.00	718.38
10	37.657740	-86.000467	709.84	9.00	718.84
11	37.657012	-86.000459	718.66	9.00	727.66
12	37.657002	-86.000789	723.41	9.00	732.41
13	37.653667	-86.000785	728.95	9.00	737.95
14	37.653670	-86.006624	731.35	9.00	740.35
15	37.652968	-86.006615	740.65	9.00	749.65
16	37.652947	-86.007456	732.63	9.00	741.63
17	37.650611	-86.007475	759.38	9.00	768.38
18	37.650612	-86.010223	740.96	9.00	749.96
19	37.649262	-86.010227	742.15	9.00	751.15
20	37.649260	-86.011405	728.45	9.00	737.45
21	37.649945	-86.011397	728.21	9.00	737.21
22	37.649952	-86.012561	727.09	9.00	736.09
23	37.654760	-86.011434	763.21	9.00	772.21
24	37.654762	-86.005525	725.02	9.00	734.02
25	37.655679	-86.005530	720.19	9.00	729.19
26	37.655680	-86.005134	722.59	9.00	731.59
27	37.656432	-86.005130	716.32	9.00	725.32
28	37.656430	-86.004466	718.67	9.00	727.67
29	37.656956	-86.004465	713.72	9.00	722.72
30	37.656960	-86.003778	715.47	9.00	724.47
31	37.657590	-86.003780	711.76	9.00	720.76
32	37.657584	-86.003389	712.80	9.00	721.80
33	37.658027	-86.003393	708.74	9.00	717.74
34	37.658030	-86.002969	712.02	9.00	721.02

Name: PV array 5
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



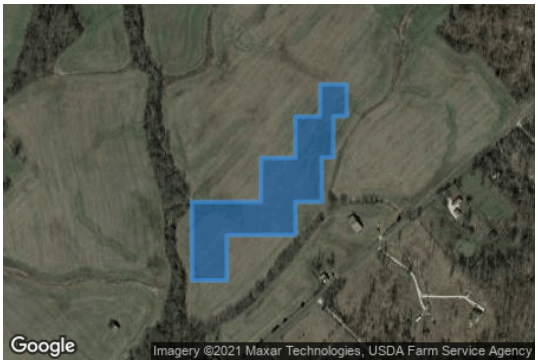
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.658244	-85.992442	723.13	9.00	732.13
2	37.658240	-85.991140	718.94	9.00	727.94
3	37.657742	-85.991120	715.81	9.00	724.82
4	37.657740	-85.988731	730.66	9.00	739.66
5	37.660089	-85.988043	744.99	9.00	753.99
6	37.660085	-85.987564	744.55	9.00	753.55
7	37.659430	-85.987539	748.54	9.00	757.54
8	37.659458	-85.986497	743.62	9.00	752.62
9	37.657068	-85.986861	731.14	9.00	740.14
10	37.657066	-85.987241	731.79	9.00	740.79
11	37.656458	-85.987235	722.71	9.00	731.71
12	37.656456	-85.988000	724.50	9.00	733.50
13	37.656104	-85.987989	718.45	9.00	727.45
14	37.656092	-85.989203	715.97	9.00	724.97
15	37.655554	-85.989199	712.59	9.00	721.59
16	37.655550	-85.990069	715.87	9.00	724.87
17	37.654867	-85.990049	707.74	9.00	716.75
18	37.654870	-85.990794	709.57	9.00	718.57
19	37.654317	-85.990785	709.02	9.00	718.02
20	37.654316	-85.990906	708.55	9.00	717.55
21	37.653604	-85.990899	705.71	9.00	714.71
22	37.653604	-85.993300	716.75	9.00	725.75
23	37.654174	-85.993265	717.82	9.00	726.83
24	37.654180	-85.993039	716.00	9.00	725.00
25	37.654925	-85.993034	706.81	9.00	715.81
26	37.654926	-85.991854	704.28	9.00	713.28
27	37.656827	-85.992704	707.22	9.00	716.22
28	37.657677	-85.992596	711.88	9.00	720.88

Name: PV array 6
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.652786	-85.993852	715.77	9.00	724.77
2	37.652788	-85.991855	702.24	9.00	711.24
3	37.652279	-85.991847	700.92	9.00	709.92
4	37.652283	-85.990923	697.34	9.00	706.34
5	37.652788	-85.990922	696.96	9.00	705.96
6	37.652790	-85.990183	703.39	9.00	712.39
7	37.653865	-85.990175	704.30	9.00	713.30
8	37.653870	-85.989623	704.68	9.00	713.68
9	37.654845	-85.989625	709.78	9.00	718.78
10	37.654848	-85.988861	712.44	9.00	721.44
11	37.655379	-85.988863	716.07	9.00	725.07
12	37.655376	-85.988697	718.25	9.00	727.25
13	37.654852	-85.988695	713.93	9.00	722.93
14	37.654848	-85.988197	720.97	9.00	729.97
15	37.654260	-85.988203	714.70	9.00	723.70
16	37.654260	-85.987800	721.73	9.00	730.73
17	37.653621	-85.987799	717.66	9.00	726.66
18	37.653622	-85.988784	710.82	9.00	719.83
19	37.653096	-85.988787	710.24	9.00	719.24
20	37.653088	-85.989528	710.09	9.00	719.09
21	37.652528	-85.989527	709.36	9.00	718.36
22	37.652530	-85.990023	706.00	9.00	715.00
23	37.651856	-85.990022	704.61	9.00	713.61
24	37.651860	-85.991636	700.97	9.00	709.97
25	37.651322	-85.991645	697.29	9.00	706.29
26	37.651318	-85.991869	699.46	9.00	708.46
27	37.650733	-85.991870	697.32	9.00	706.32
28	37.650728	-85.993908	711.26	9.00	720.26
29	37.651173	-85.993907	721.10	9.00	730.10
30	37.651175	-85.993847	721.96	9.00	730.96

Name: PV array 7
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.652989	-85.988450	712.26	9.00	721.26
2	37.652988	-85.987972	714.66	9.00	723.66
3	37.652532	-85.987965	707.88	9.00	716.88
4	37.652532	-85.988209	712.84	9.00	721.85
5	37.651946	-85.988215	702.78	9.00	711.78
6	37.651940	-85.988422	705.21	9.00	714.21
7	37.651306	-85.988417	700.54	9.00	709.54
8	37.651306	-85.988900	704.35	9.00	713.35
9	37.650833	-85.988897	698.58	9.00	707.58
10	37.650830	-85.990145	699.86	9.00	708.86
11	37.650179	-85.990143	696.47	9.00	705.47
12	37.650180	-85.990775	691.08	9.00	700.08
13	37.651306	-85.990780	694.74	9.00	703.74
14	37.651308	-85.989528	705.58	9.00	714.58
15	37.651936	-85.989520	710.03	9.00	719.03
16	37.651938	-85.988897	710.87	9.00	719.87
17	37.652528	-85.988903	715.00	9.00	724.00
18	37.652530	-85.988450	716.33	9.00	725.33
19	37.652530	-85.988450	716.33	9.00	725.33
20	37.652528	-85.988450	716.33	9.00	725.33

Flight Path Receptor(s)

Name: EKX Runway 23
Description:
Threshold height: 30 ft
Direction: 227.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°

Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	37.691507	-85.917731	770.64	30.00	800.64
Two-mile	37.711226	-85.890978	745.84	608.26	1354.10

Name: EKX Runway 5
Description:
Threshold height: 49 ft
Direction: 47.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°

Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	37.680546	-85.932333	751.39	49.00	800.39
Two-mile	37.660828	-85.959082	694.10	659.75	1353.85

Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	37.665118	-86.000164	735.72	6.00
OP 2	2	37.665154	-86.000182	736.74	16.00
OP 3	3	37.646994	-85.982340	750.74	6.00
OP 4	4	37.646994	-85.982329	750.54	16.00
OP 5	5	37.651055	-85.982995	744.16	6.00
OP 6	6	37.651021	-85.983005	744.32	16.00
OP 7	7	37.635969	-86.019095	704.01	6.00
OP 8	8	37.635965	-86.019111	704.05	16.00
OP 9	9	37.668838	-85.992461	725.46	6.00
OP 10	10	37.668851	-85.992439	725.36	16.00
OP 11	11	37.649925	-85.999946	728.69	6.00
OP 12	12	37.649925	-85.999946	728.69	16.00
OP 13	13	37.647332	-86.011354	746.93	6.00
OP 14	14	37.647340	-86.011381	746.72	16.00
OP 15	15	37.653195	-86.014569	745.80	6.00
OP 16	16	37.653204	-86.014516	746.01	16.00
OP 17	17	37.665804	-86.009069	717.19	6.00
OP 18	18	37.659876	-85.976089	723.83	6.00
OP 19	19	37.654159	-85.958354	709.21	6.00
OP 20	20	37.642335	-85.970821	706.91	6.00

GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
PV array 1	SA tracking	SA tracking	4,526	8,189	-
PV array 2	SA tracking	SA tracking	3,605	1,542	-
PV array 3	SA tracking	SA tracking	1,669	496	-
PV array 4	SA tracking	SA tracking	1,423	12,580	-
PV array 5	SA tracking	SA tracking	2,132	8,905	-
PV array 6	SA tracking	SA tracking	3,460	13,297	-
PV array 7	SA tracking	SA tracking	3,089	9,562	-

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
EKX Runway 23	6053	0
EKX Runway 5	0	0
OP 1	0	1785
OP 2	0	2563
OP 3	706	2249
OP 4	813	2420
OP 5	771	8862
OP 6	671	9922
OP 7	0	0
OP 8	0	0
OP 9	112	1096
OP 10	114	1141
OP 11	220	2806
OP 12	227	3109
OP 13	1368	1109
OP 14	1400	1171

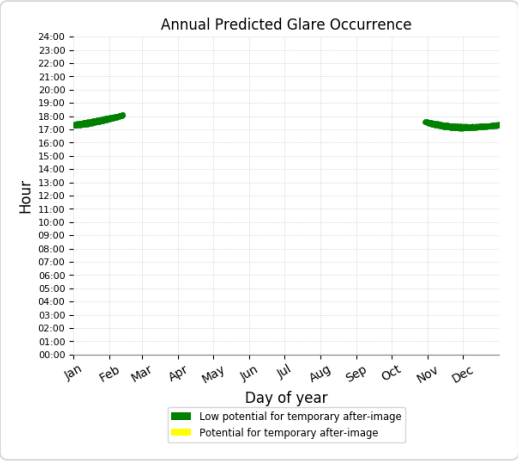
Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
OP 15	1988	7007
OP 16	1988	8572
OP 17	53	133
OP 18	1373	626
OP 19	1311	0
OP 20	736	0

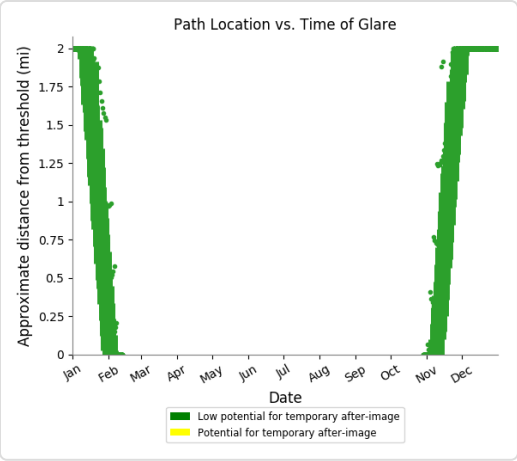
Results for: PV array 1

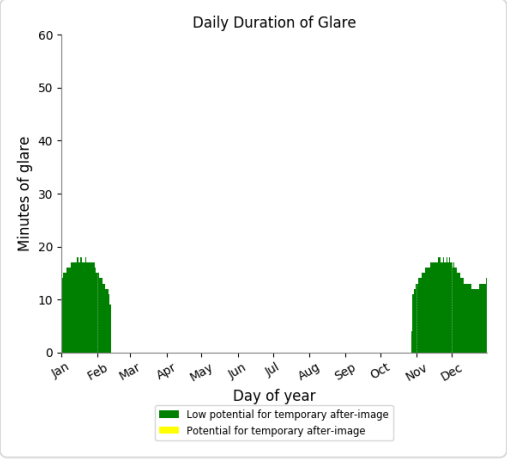
Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	1615	0
EKX Runway 5	0	0
OP 1	0	1785
OP 2	0	1938
OP 3	312	131
OP 4	417	153
OP 5	532	779
OP 6	446	881
OP 7	0	0
OP 8	0	0
OP 9	112	1096
OP 10	114	1141
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	80
OP 16	0	80
OP 17	0	0
OP 18	531	125
OP 19	447	0
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
1615 minutes of green glare





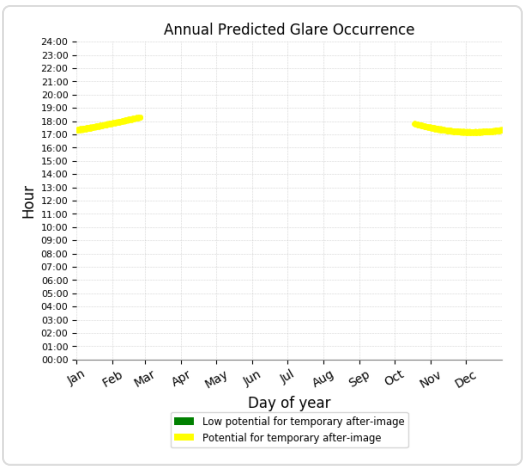


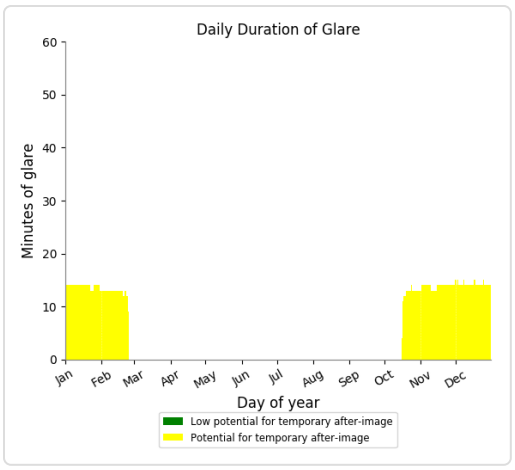
Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

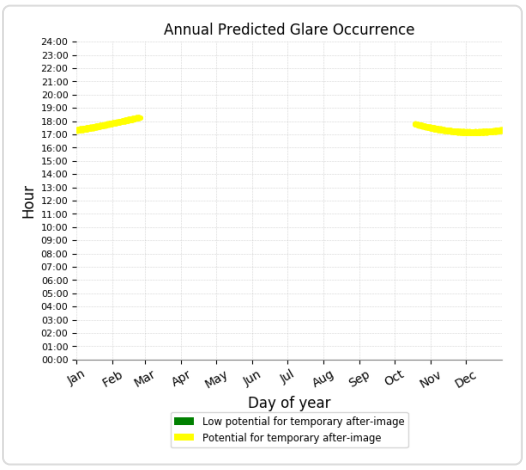
1785 minutes of yellow glare
0 minutes of green glare

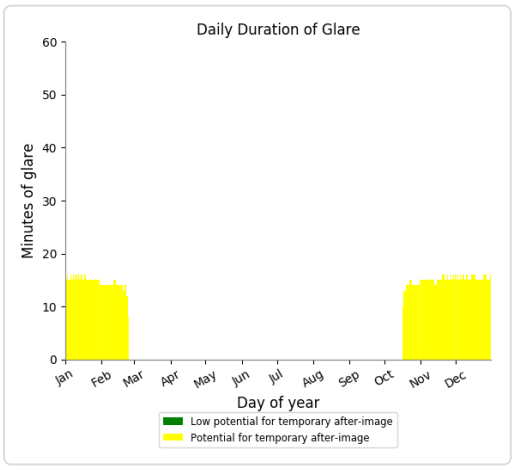




Point Receptor: OP 2

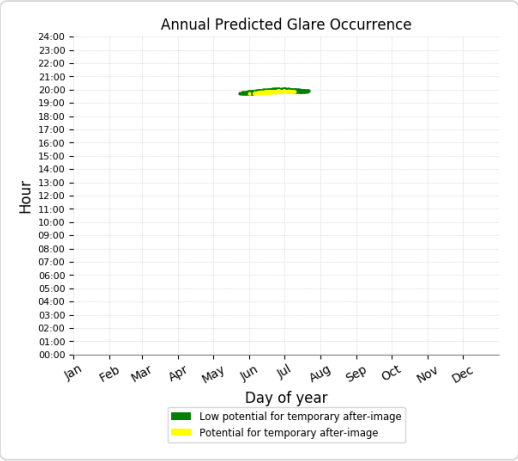
1938 minutes of yellow glare
0 minutes of green glare

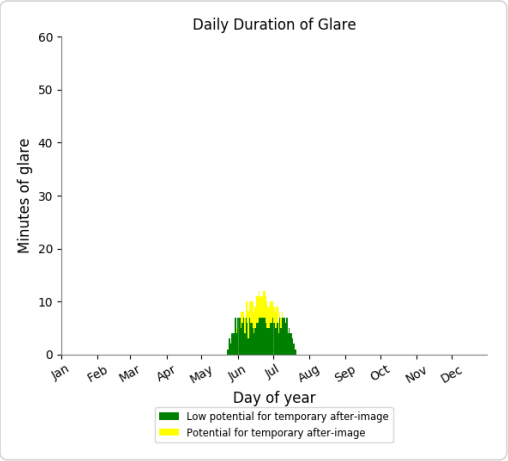




Point Receptor: OP 3

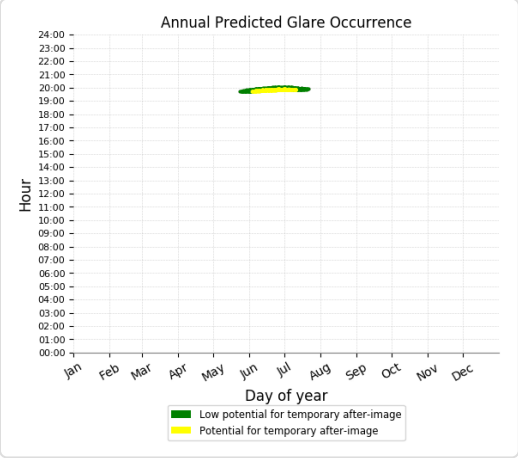
131 minutes of yellow glare
312 minutes of green glare

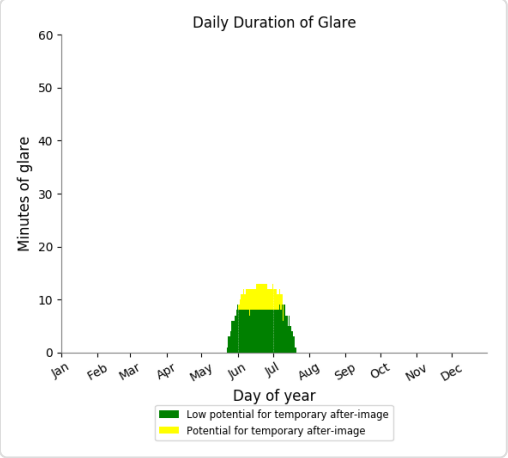




Point Receptor: OP 4

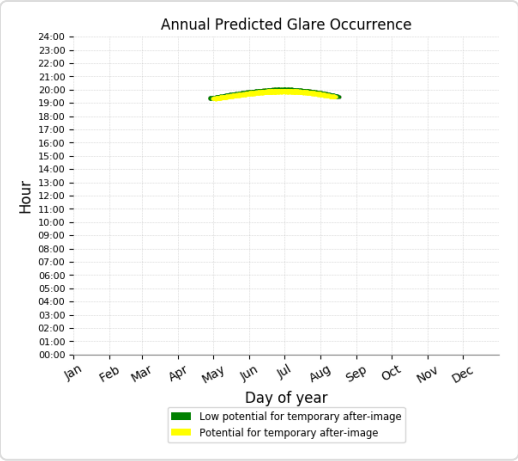
153 minutes of yellow glare
417 minutes of green glare

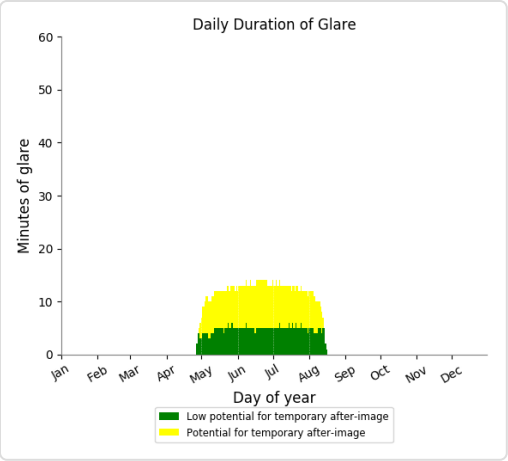




Point Receptor: OP 5

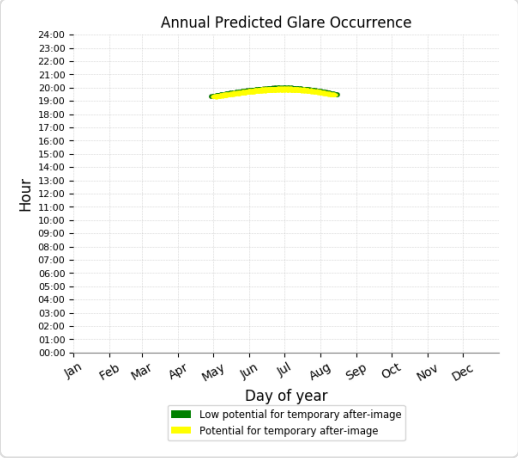
779 minutes of yellow glare
532 minutes of green glare

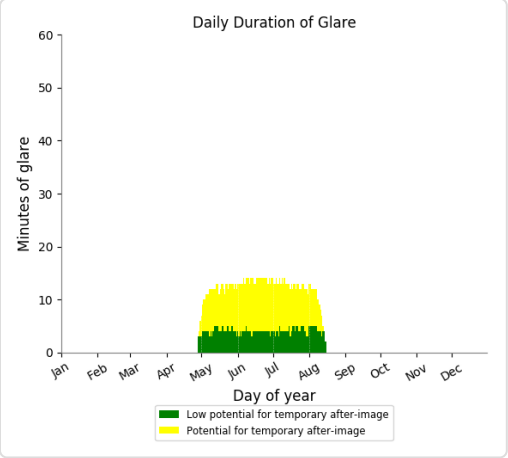




Point Receptor: OP 6

881 minutes of yellow glare
446 minutes of green glare





Point Receptor: OP 7

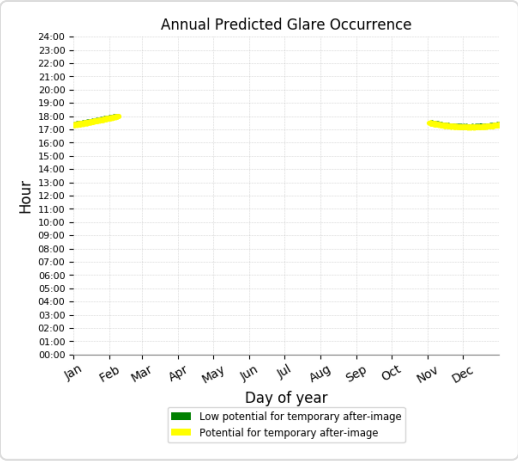
0 minutes of yellow glare
0 minutes of green glare

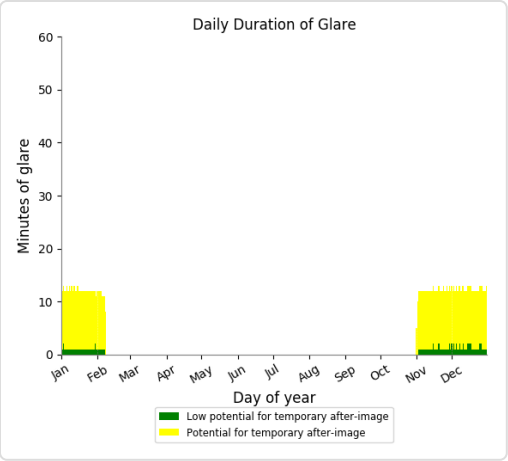
Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

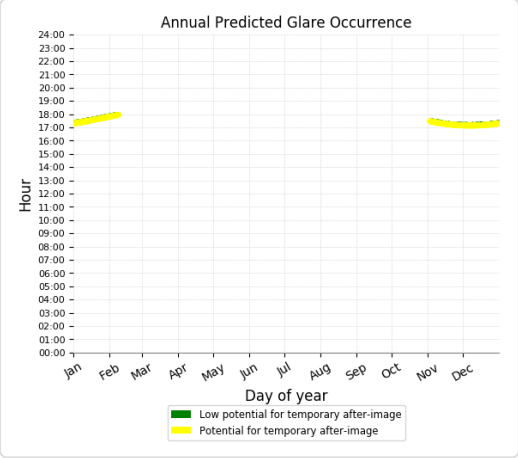
1096 minutes of yellow glare
112 minutes of green glare

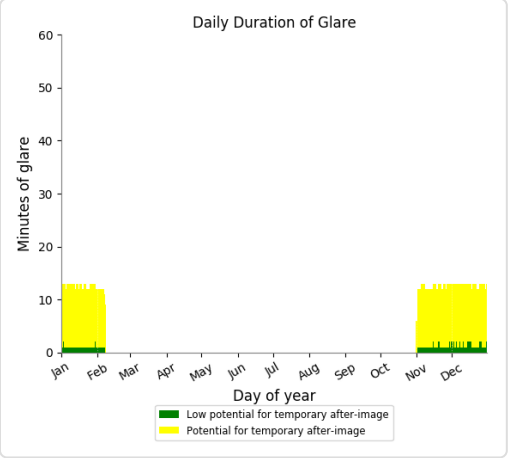




Point Receptor: OP 10

1141 minutes of yellow glare
114 minutes of green glare





Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

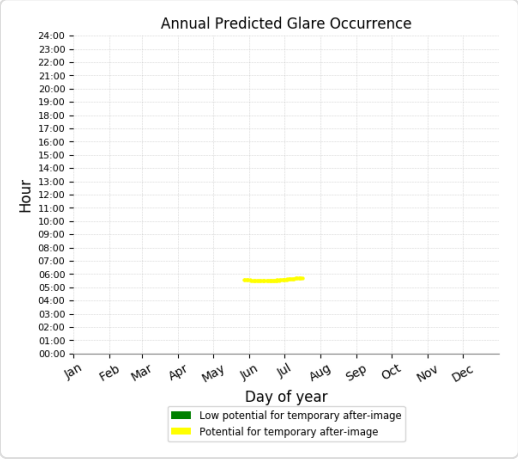
0 minutes of yellow glare
0 minutes of green glare

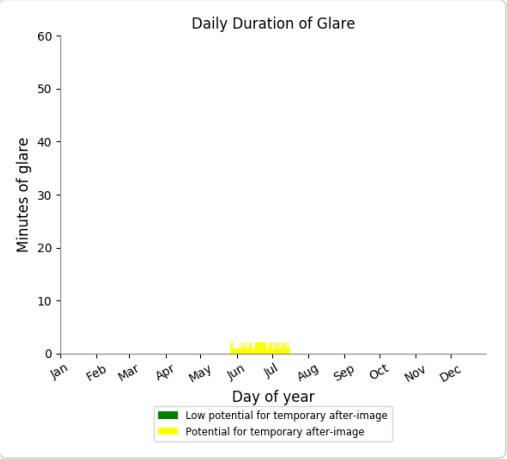
Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

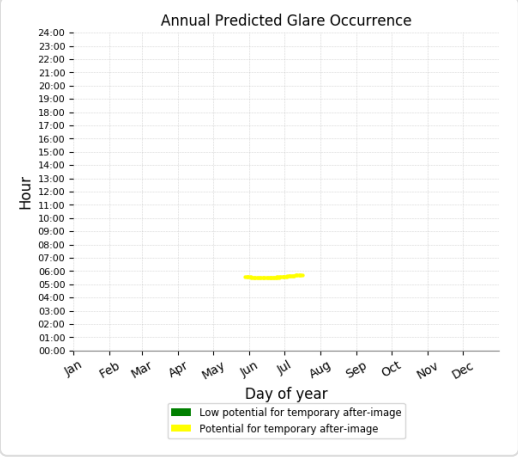
80 minutes of yellow glare
0 minutes of green glare

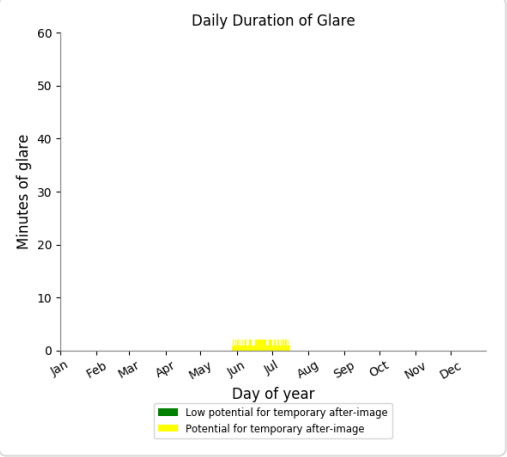




Point Receptor: OP 16

80 minutes of yellow glare
0 minutes of green glare



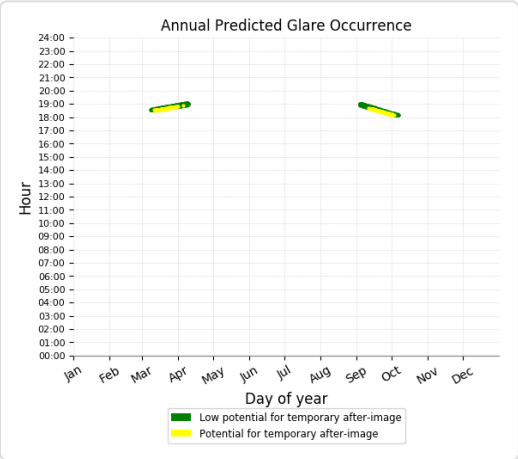


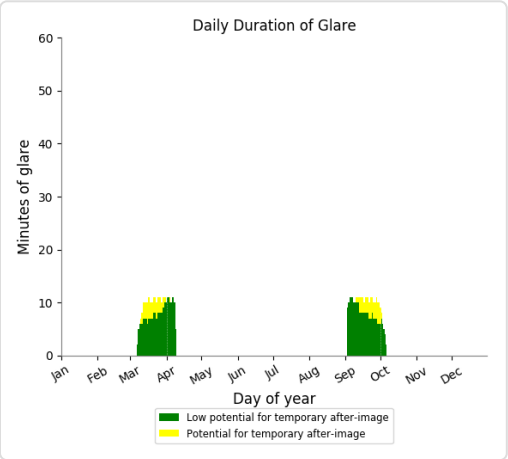
Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

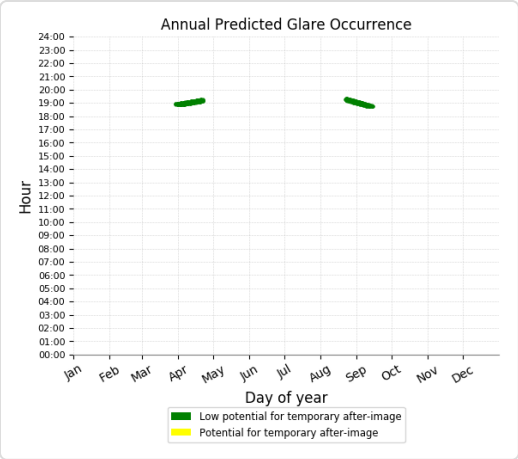
125 minutes of yellow glare
531 minutes of green glare

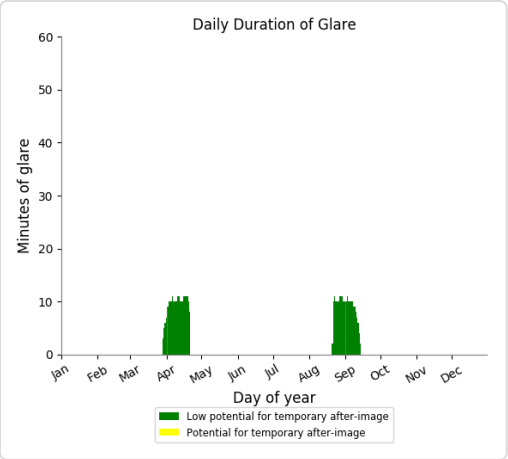




Point Receptor: OP 19

0 minutes of yellow glare
447 minutes of green glare





Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 2

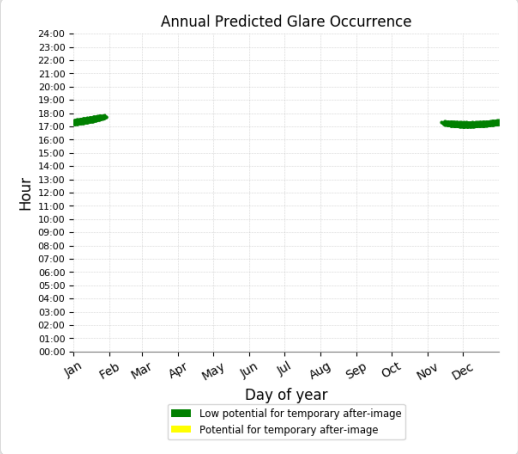
Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	1045	0

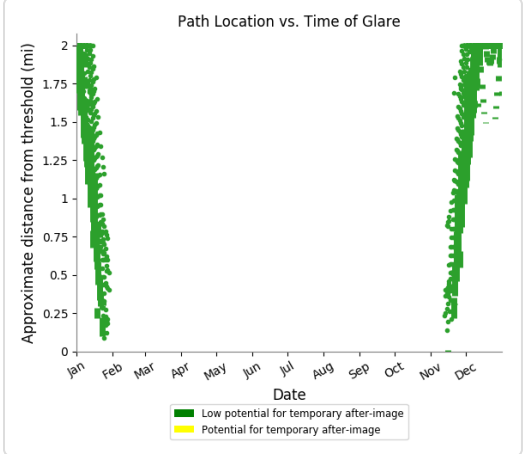
Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	173	0
OP 6	162	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	555	667
OP 16	546	730
OP 17	53	133
OP 18	628	12
OP 19	443	0
OP 20	0	0

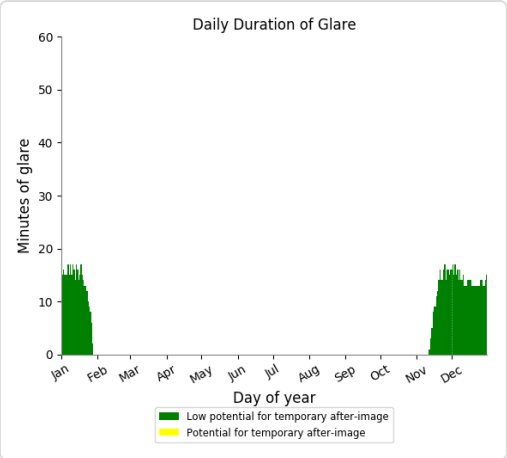
Flight Path: EKX Runway 23

0 minutes of yellow glare

1045 minutes of green glare







Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

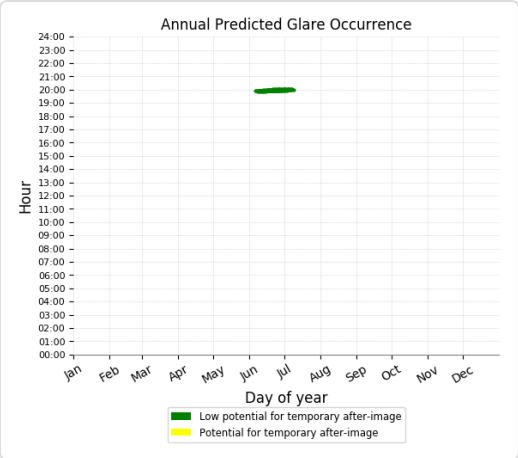
0 minutes of yellow glare
0 minutes of green glare

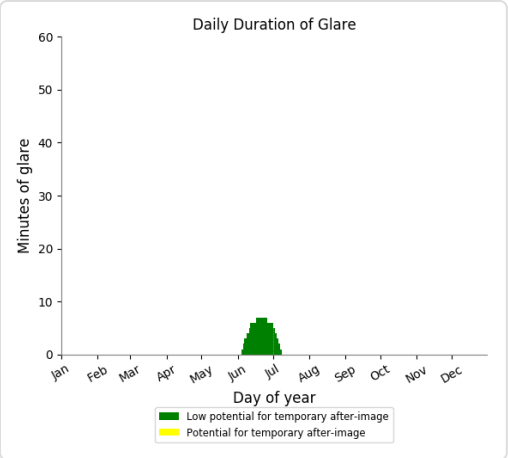
Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

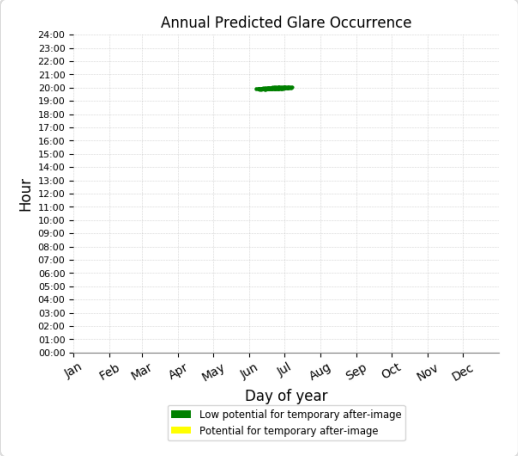
0 minutes of yellow glare
173 minutes of green glare

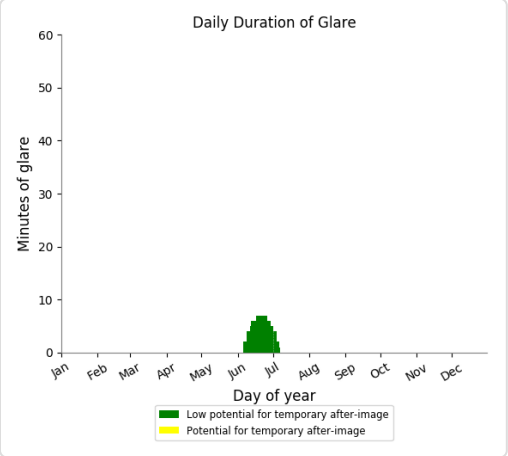




Point Receptor: OP 6

0 minutes of yellow glare
162 minutes of green glare





Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

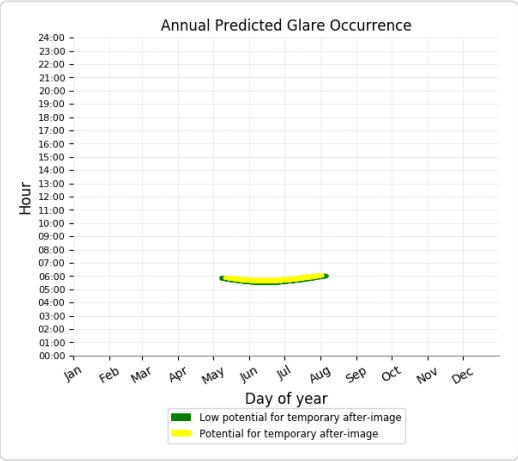
0 minutes of yellow glare
0 minutes of green glare

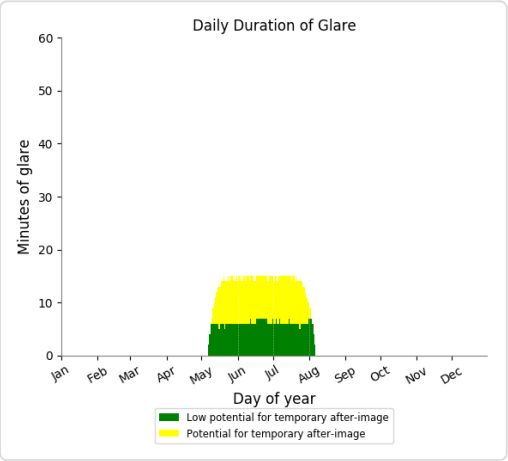
Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

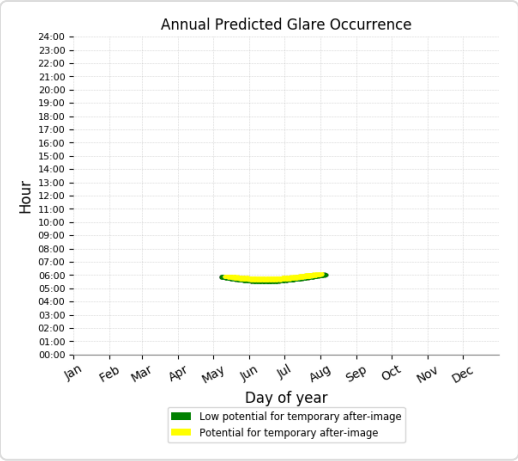
667 minutes of yellow glare
555 minutes of green glare

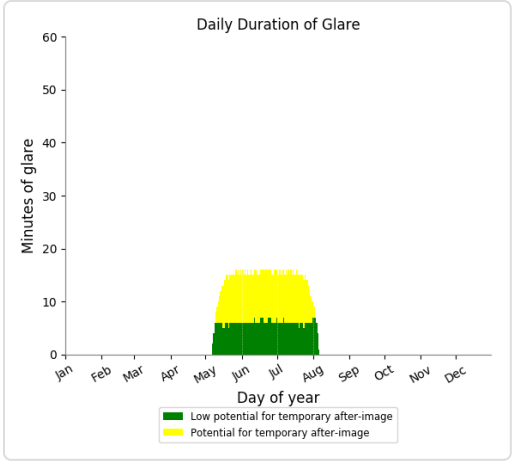




Point Receptor: OP 16

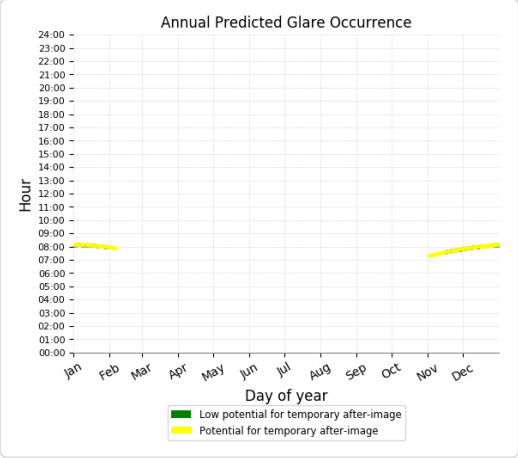
730 minutes of yellow glare
546 minutes of green glare

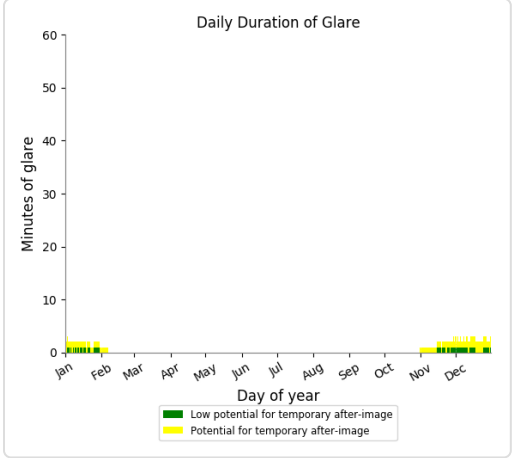




Point Receptor: OP 17

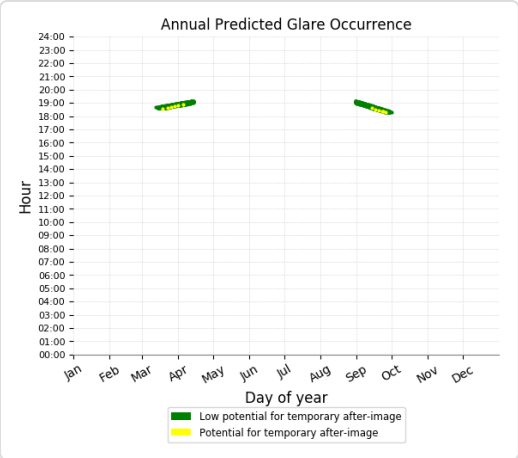
133 minutes of yellow glare
53 minutes of green glare

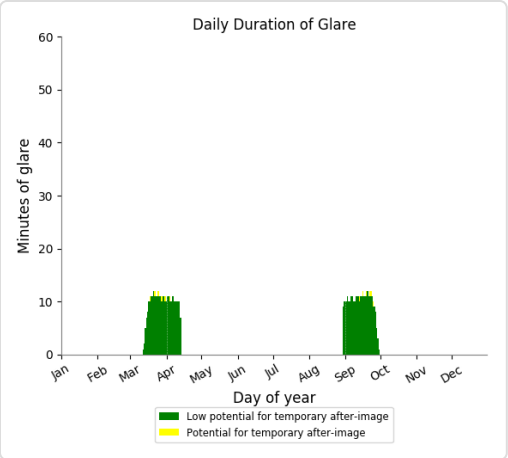




Point Receptor: OP 18

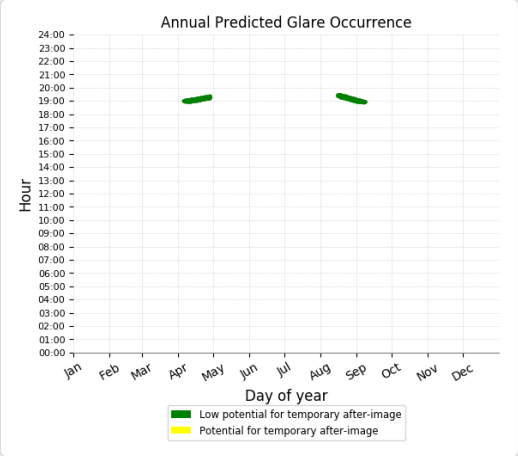
12 minutes of yellow glare
628 minutes of green glare

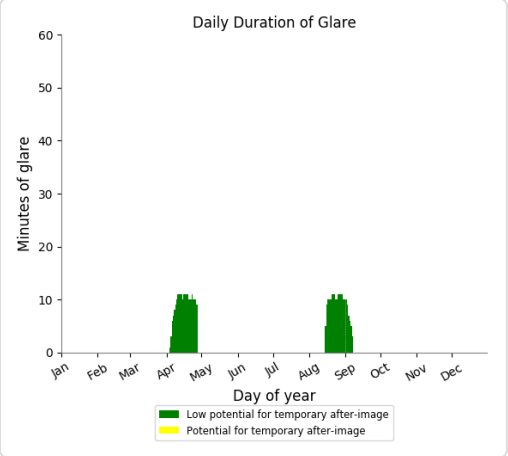




Point Receptor: OP 19

0 minutes of yellow glare
443 minutes of green glare





Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 3

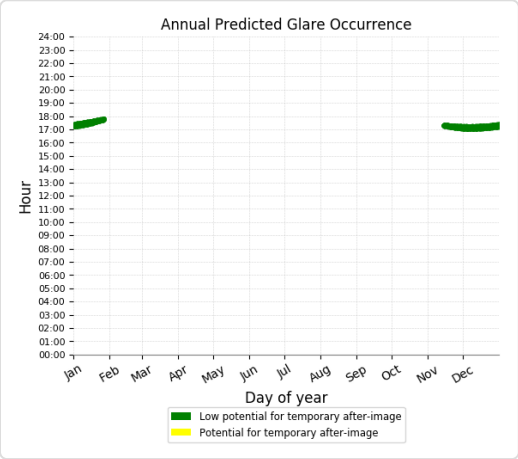
Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	1265	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0

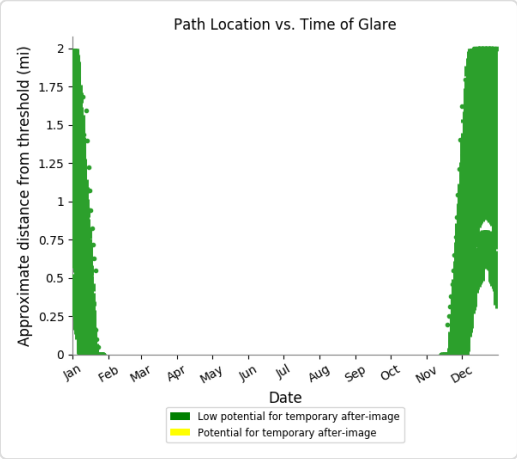
Receptor	Green Glare (min)	Yellow Glare (min)
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	60	0
OP 14	62	0
OP 15	31	1
OP 16	30	6
OP 17	0	0
OP 18	214	489
OP 19	7	0
OP 20	0	0

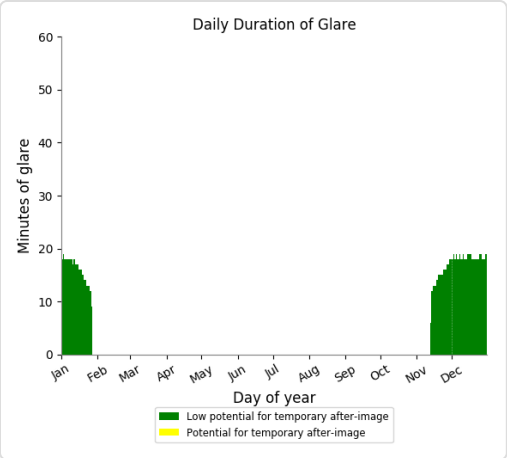
Flight Path: EKX Runway 23

0 minutes of yellow glare

1265 minutes of green glare







Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

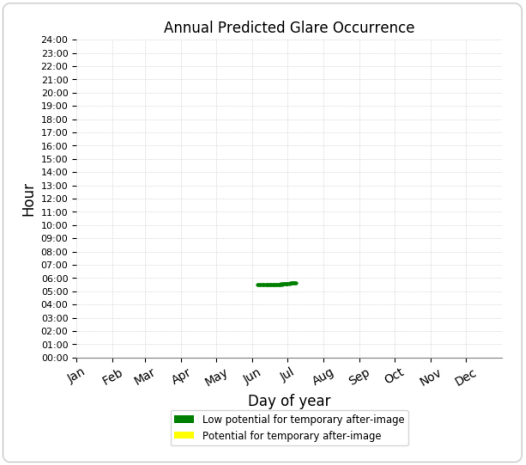
0 minutes of yellow glare
0 minutes of green glare

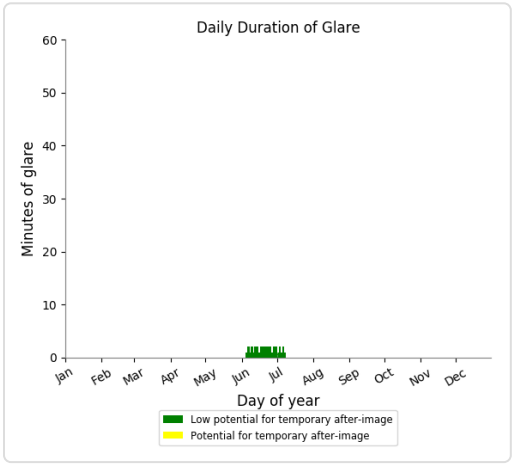
Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

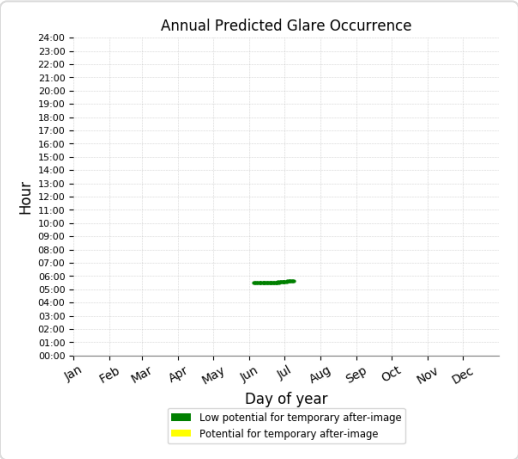
0 minutes of yellow glare
60 minutes of green glare

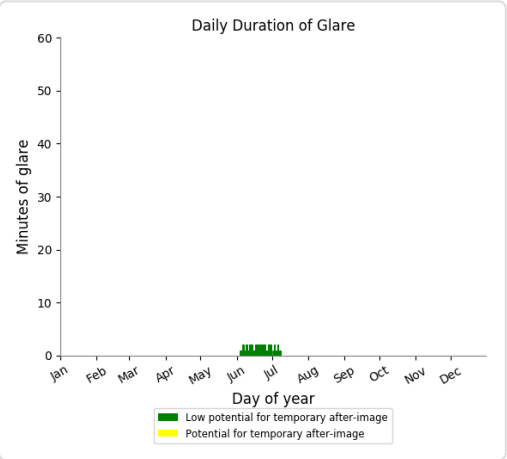




Point Receptor: OP 14

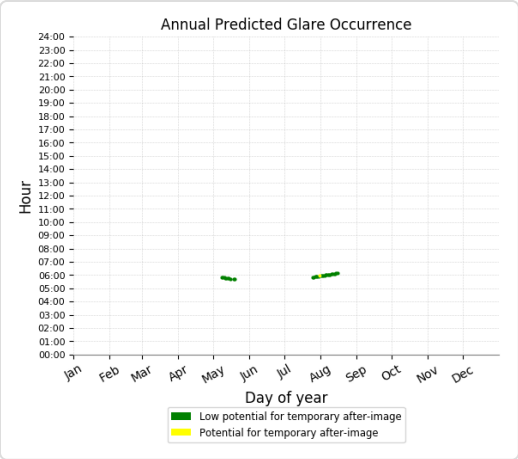
0 minutes of yellow glare
62 minutes of green glare

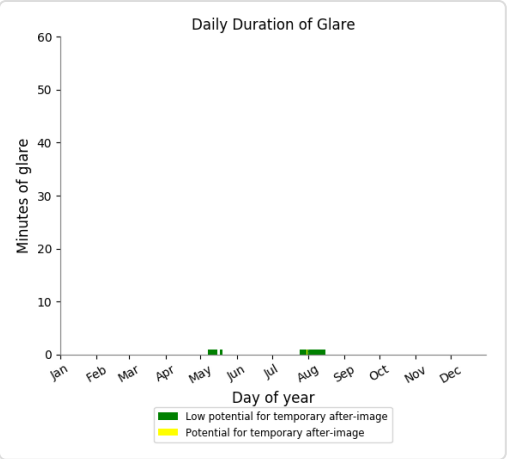




Point Receptor: OP 15

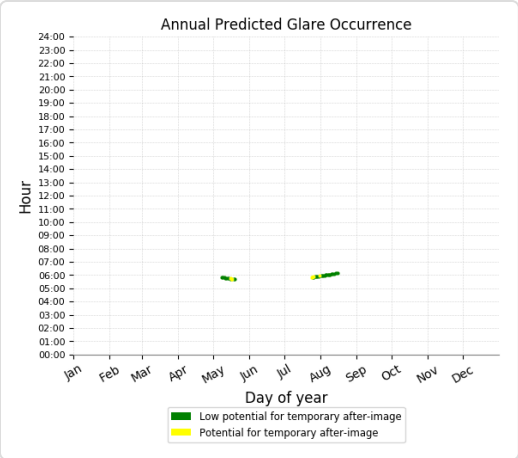
1 minutes of yellow glare
31 minutes of green glare

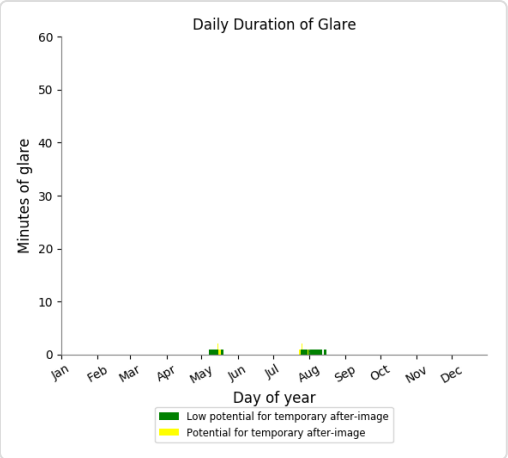




Point Receptor: OP 16

6 minutes of yellow glare
30 minutes of green glare



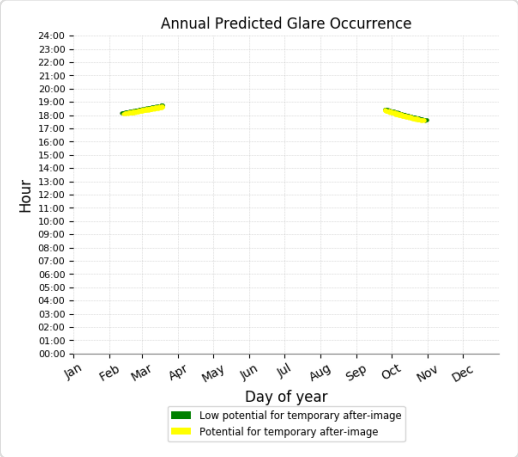


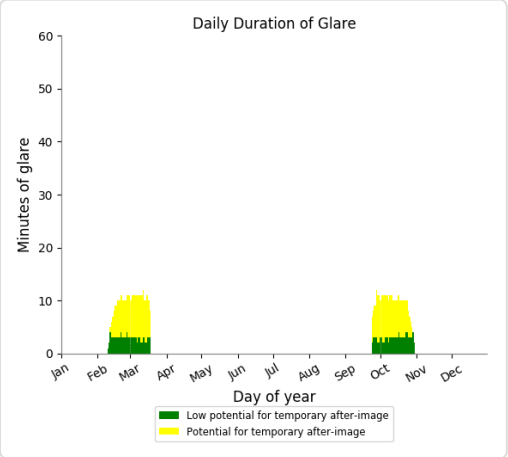
Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

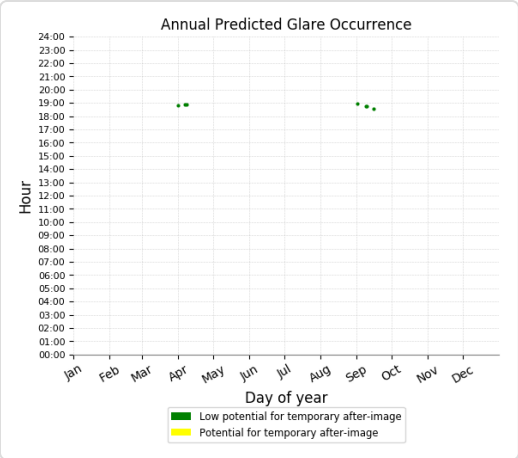
489 minutes of yellow glare
214 minutes of green glare

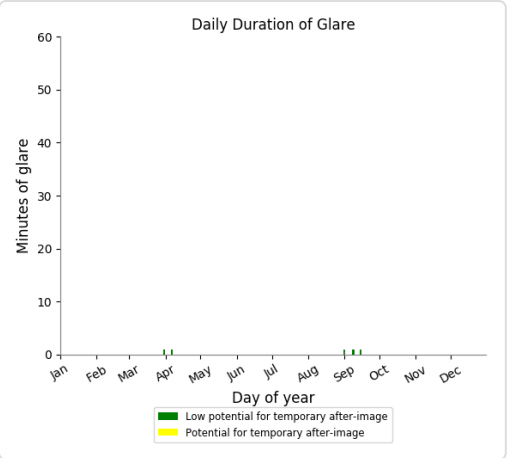




Point Receptor: OP 19

0 minutes of yellow glare
7 minutes of green glare





Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

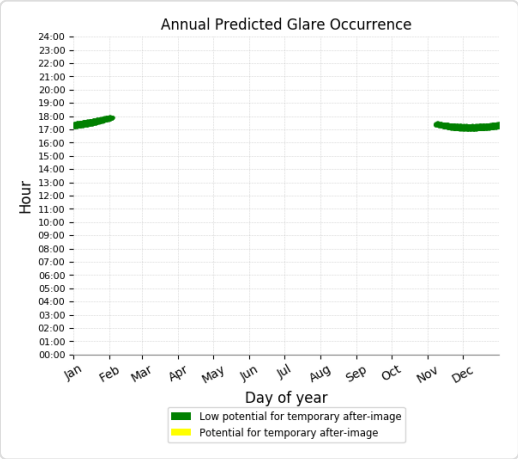
Results for: PV array 4

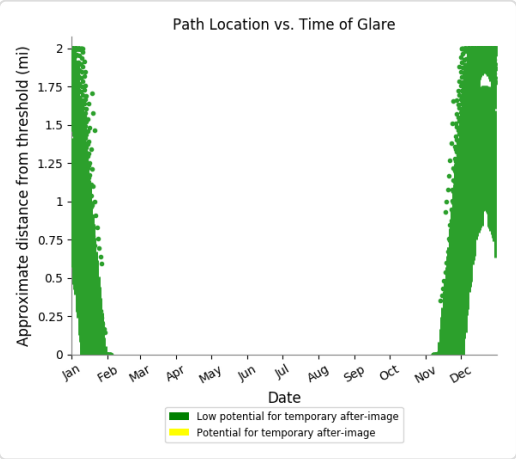
Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	1423	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	5574
OP 16	0	7006
OP 17	0	0
OP 18	0	0
OP 19	0	0

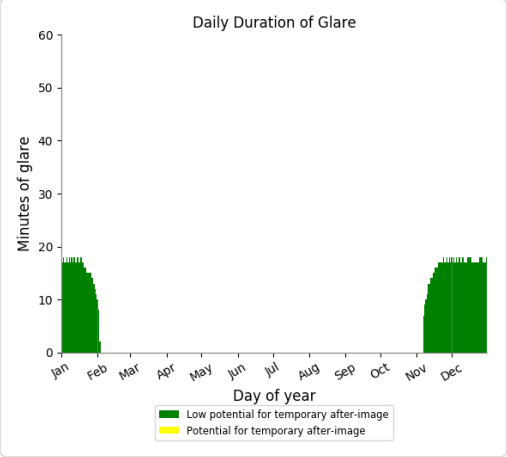
Receptor	Green Glare (min)	Yellow Glare (min)
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
1423 minutes of green glare







Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

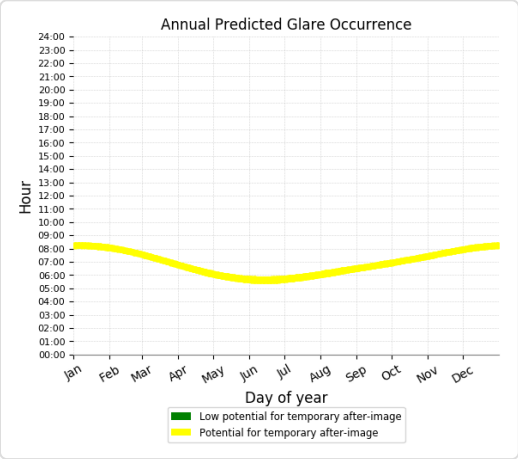
0 minutes of yellow glare
0 minutes of green glare

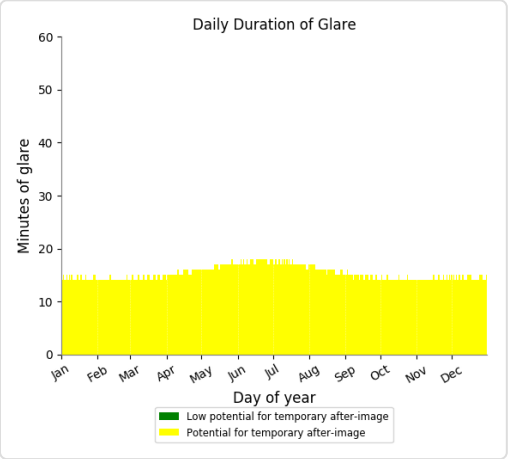
Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

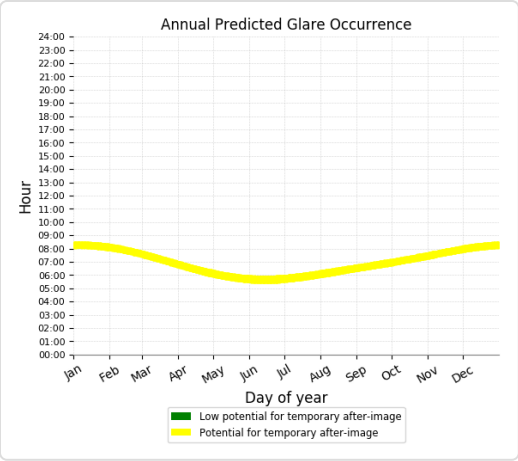
5574 minutes of yellow glare
0 minutes of green glare

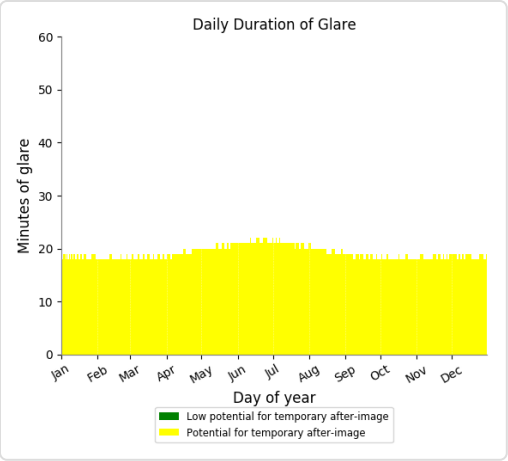




Point Receptor: OP 16

7006 minutes of yellow glare
0 minutes of green glare





Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 5

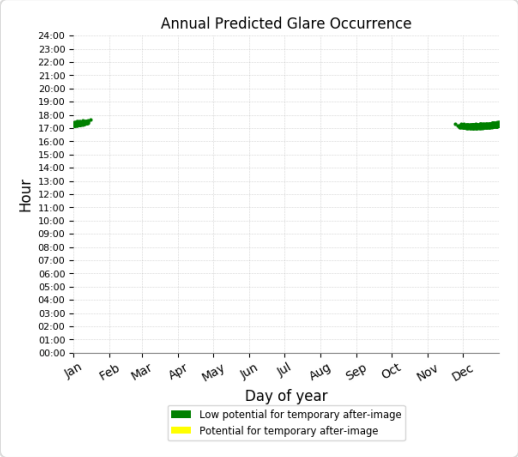
Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	631	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	625
OP 3	0	0
OP 4	0	0
OP 5	0	1681
OP 6	0	1850

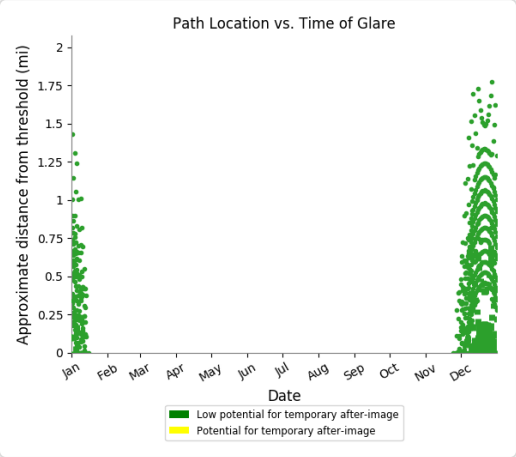
Receptor	Green Glare (min)	Yellow Glare (min)
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	756
OP 12	0	810
OP 13	353	908
OP 14	357	949
OP 15	396	637
OP 16	395	689
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0

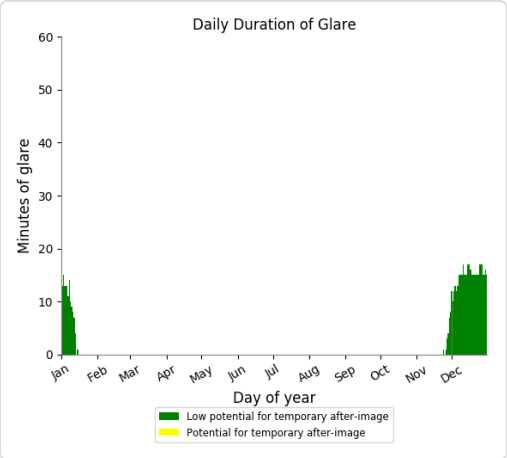
Flight Path: EKX Runway 23

0 minutes of yellow glare

631 minutes of green glare







Flight Path: EKX Runway 5

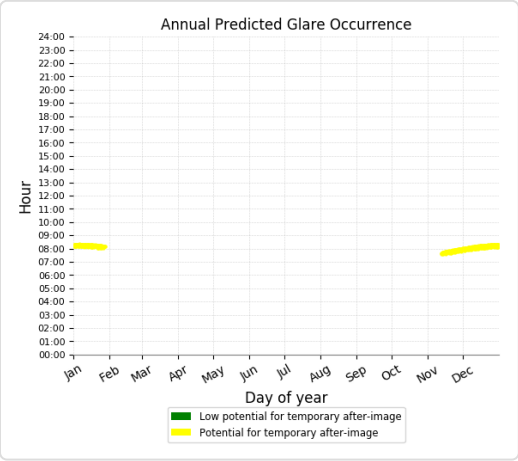
0 minutes of yellow glare
0 minutes of green glare

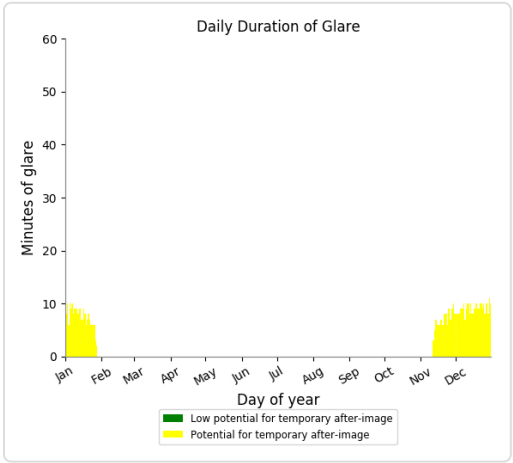
Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

625 minutes of yellow glare
0 minutes of green glare





Point Receptor: OP 3

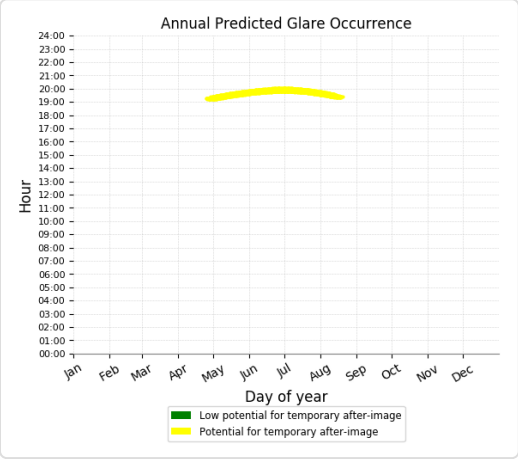
0 minutes of yellow glare
0 minutes of green glare

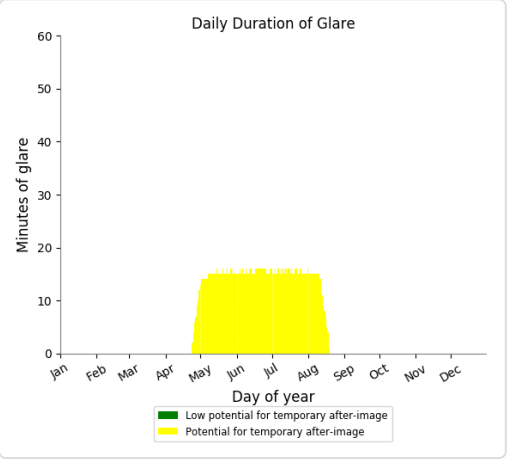
Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

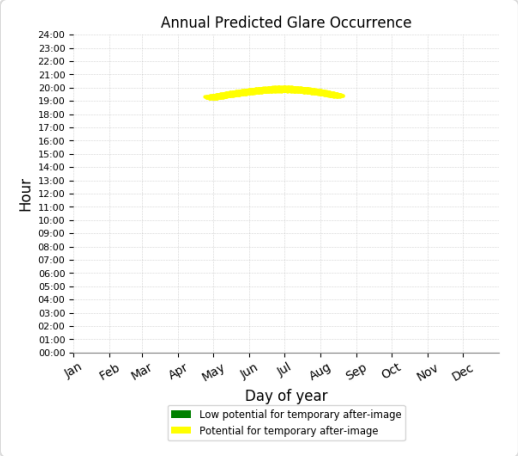
1681 minutes of yellow glare
0 minutes of green glare

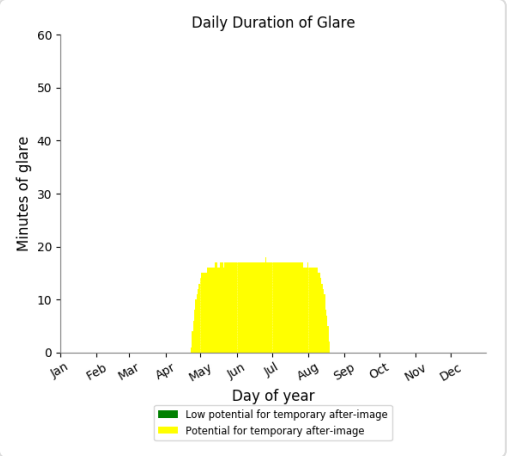




Point Receptor: OP 6

1850 minutes of yellow glare
0 minutes of green glare





Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

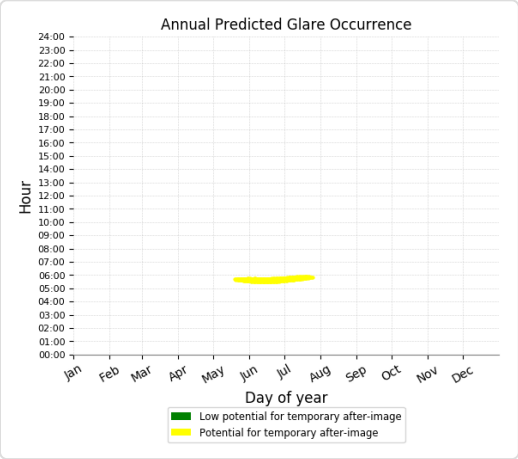
0 minutes of yellow glare
0 minutes of green glare

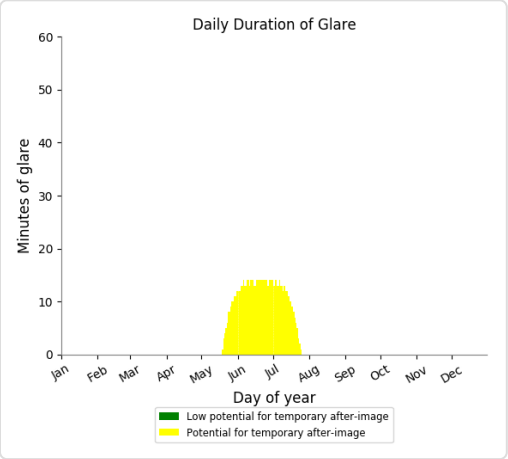
Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

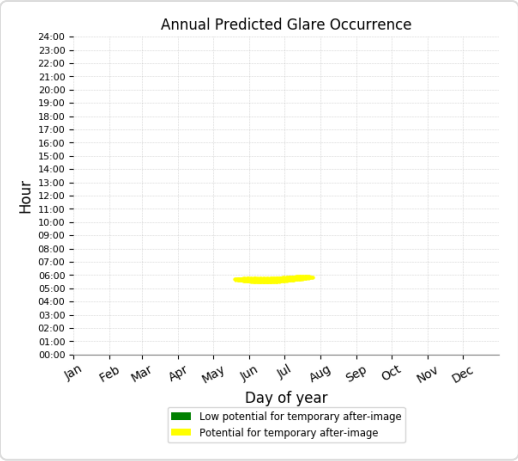
756 minutes of yellow glare
0 minutes of green glare

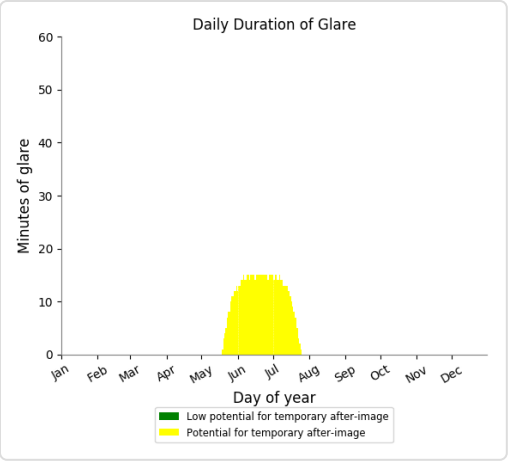




Point Receptor: OP 12

810 minutes of yellow glare
0 minutes of green glare

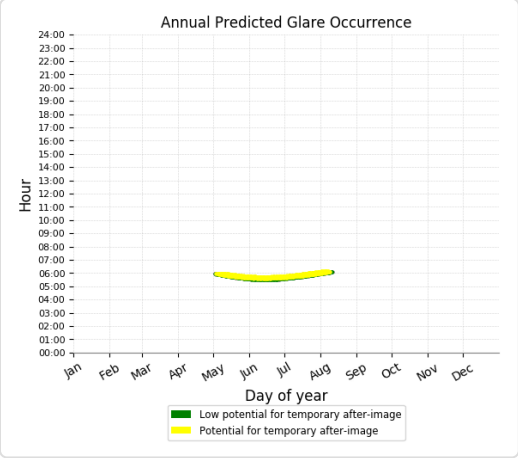


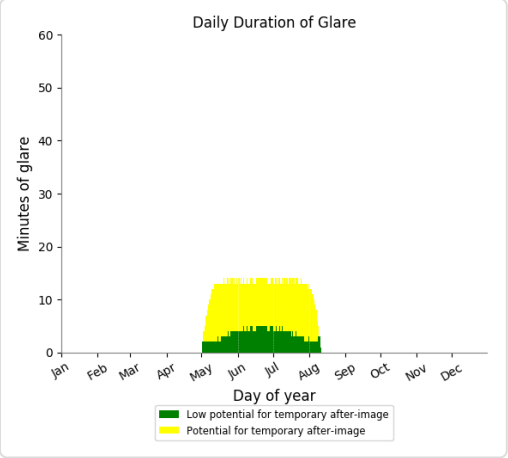


Point Receptor: OP 13

908 minutes of yellow glare

353 minutes of green glare

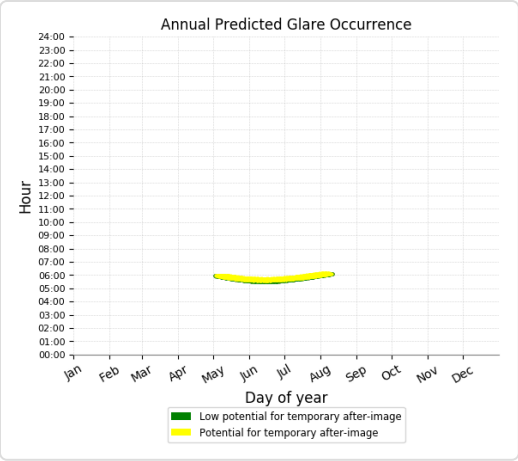


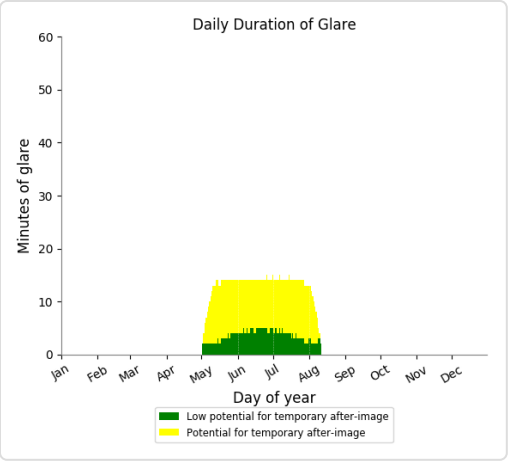


Point Receptor: OP 14

949 minutes of yellow glare

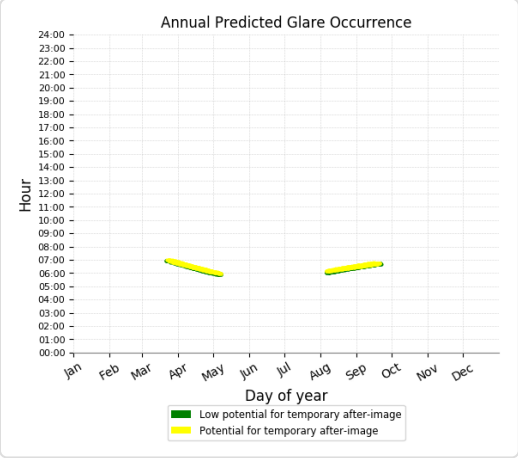
357 minutes of green glare

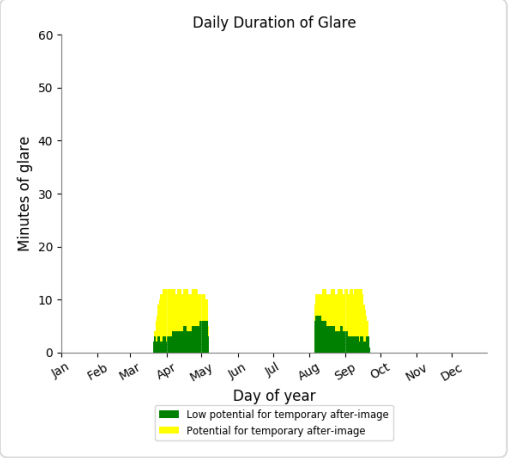




Point Receptor: OP 15

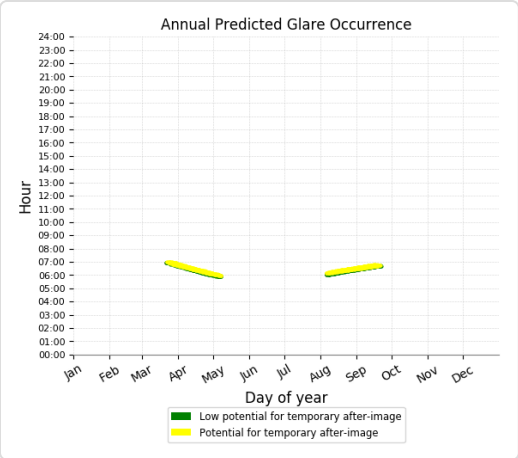
637 minutes of yellow glare
396 minutes of green glare

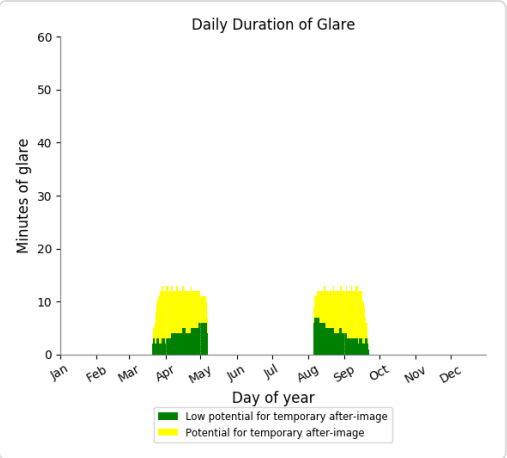




Point Receptor: OP 16

689 minutes of yellow glare
395 minutes of green glare





Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 6

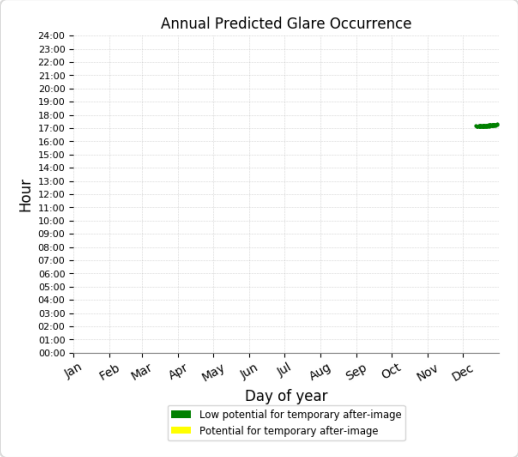
Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	74	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	54	1280
OP 4	54	1368
OP 5	0	2739
OP 6	0	3029

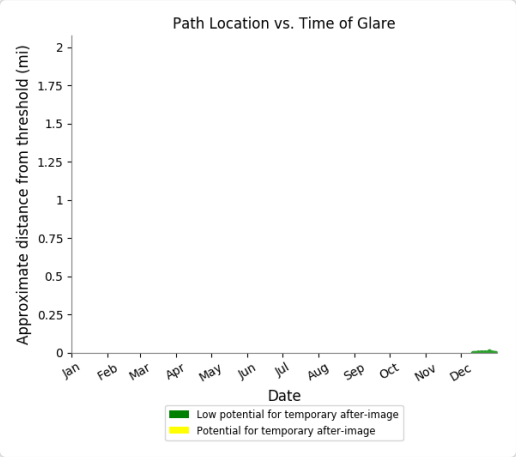
Receptor	Green Glare (min)	Yellow Glare (min)
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	4	2050
OP 12	5	2299
OP 13	850	201
OP 14	874	222
OP 15	768	48
OP 16	777	61
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0

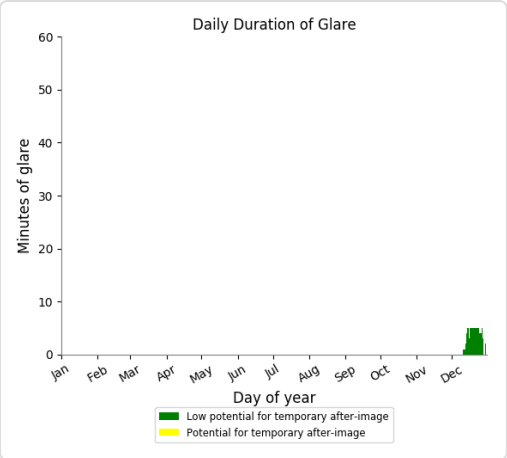
Flight Path: EKX Runway 23

0 minutes of yellow glare

74 minutes of green glare







Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

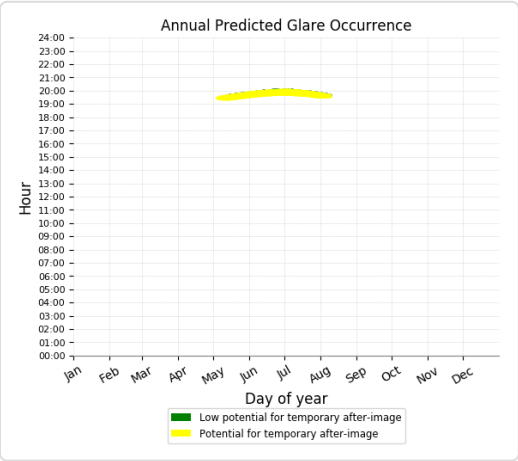
0 minutes of yellow glare
0 minutes of green glare

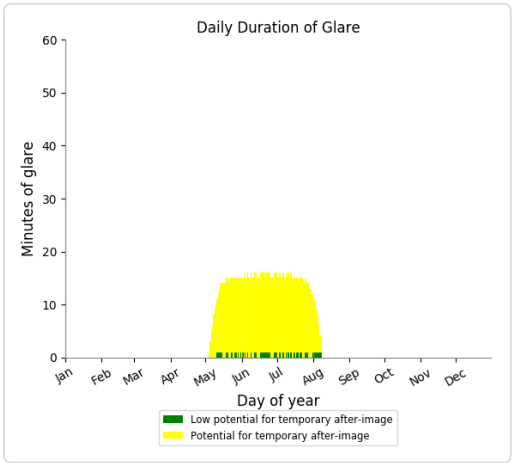
Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

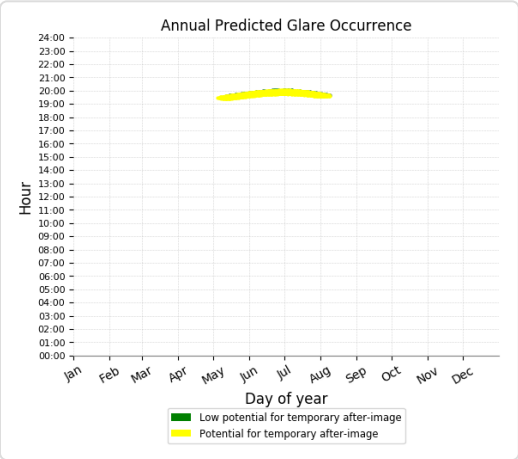
1280 minutes of yellow glare
54 minutes of green glare

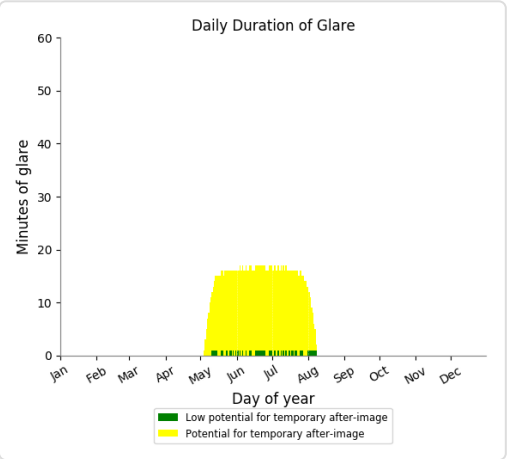




Point Receptor: OP 4

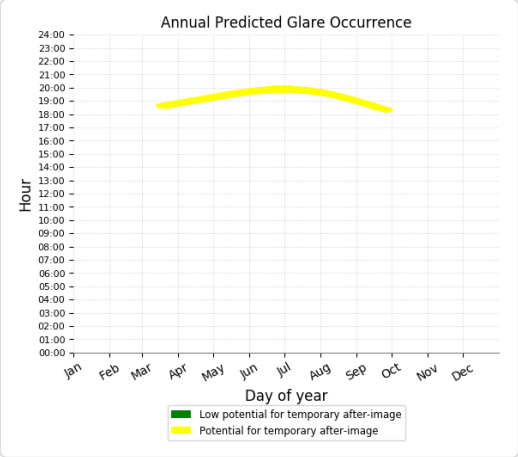
1368 minutes of yellow glare
54 minutes of green glare

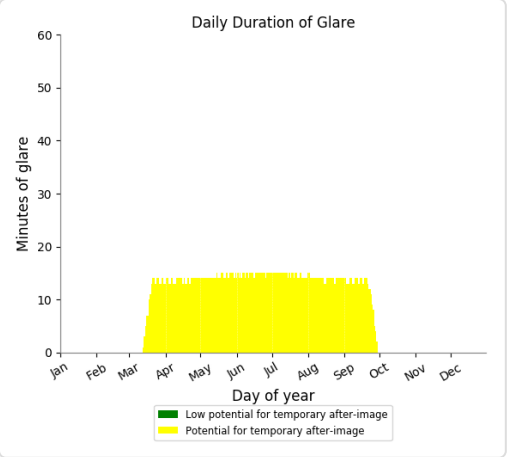




Point Receptor: OP 5

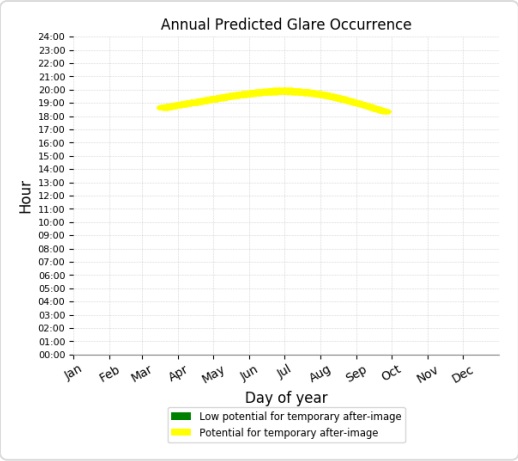
2739 minutes of yellow glare
0 minutes of green glare

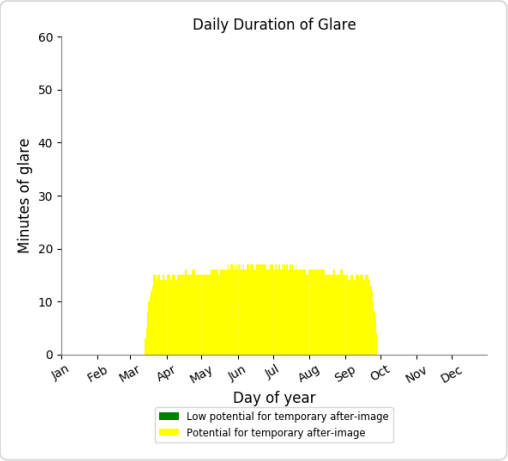




Point Receptor: OP 6

3029 minutes of yellow glare
0 minutes of green glare





Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

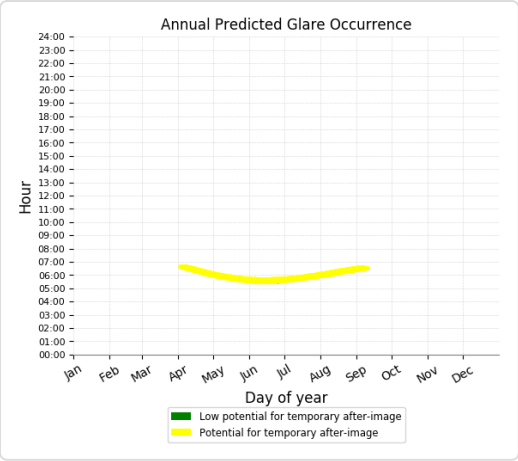
0 minutes of yellow glare
0 minutes of green glare

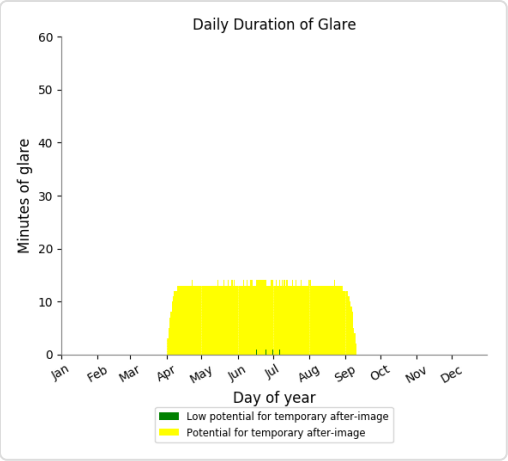
Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

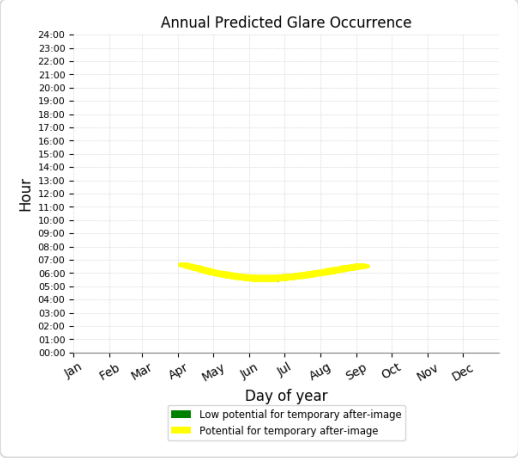
2050 minutes of yellow glare
4 minutes of green glare

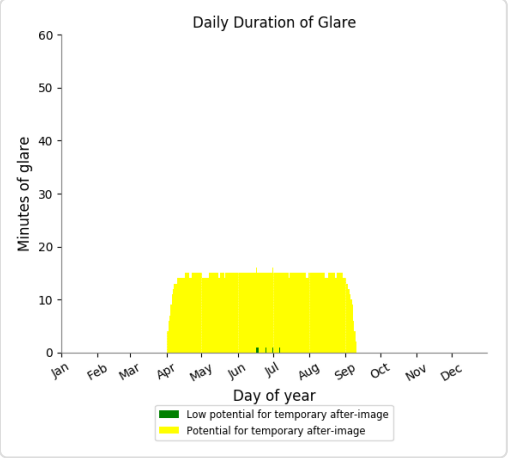




Point Receptor: OP 12

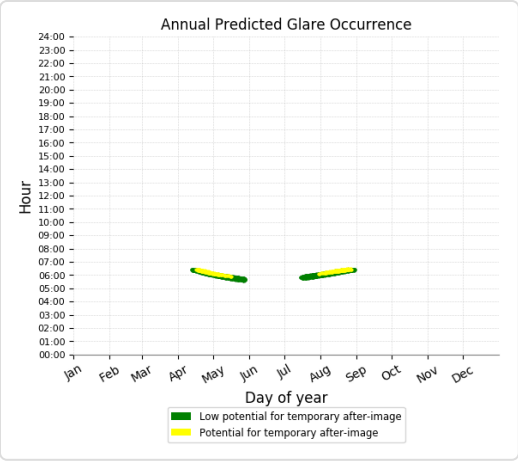
2299 minutes of yellow glare
5 minutes of green glare

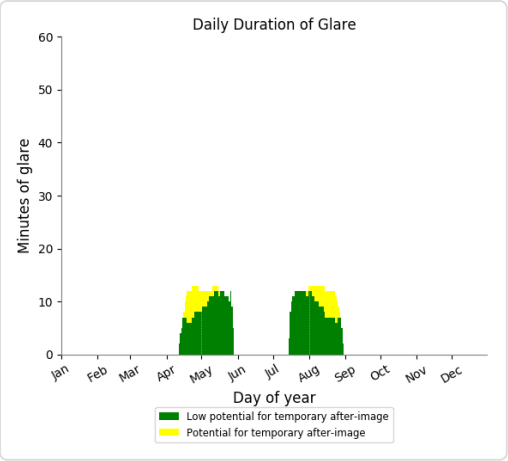




Point Receptor: OP 13

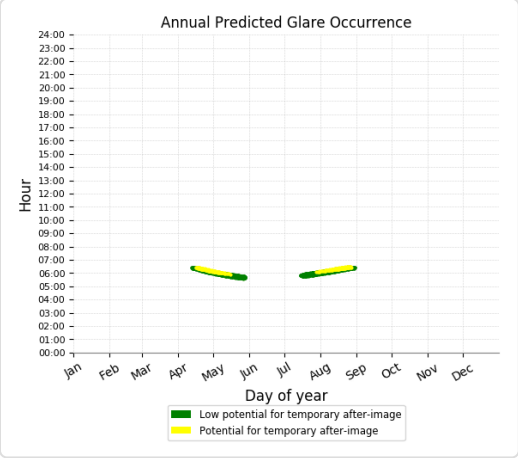
201 minutes of yellow glare
850 minutes of green glare

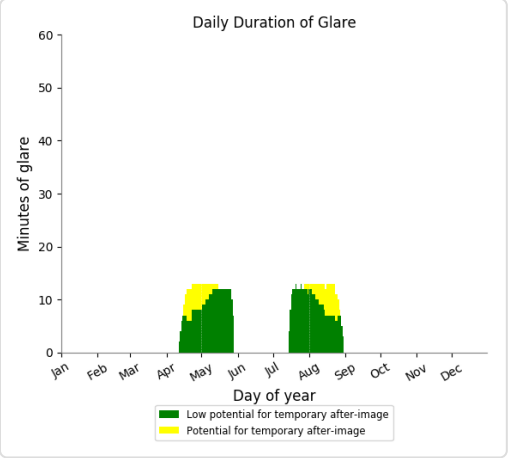




Point Receptor: OP 14

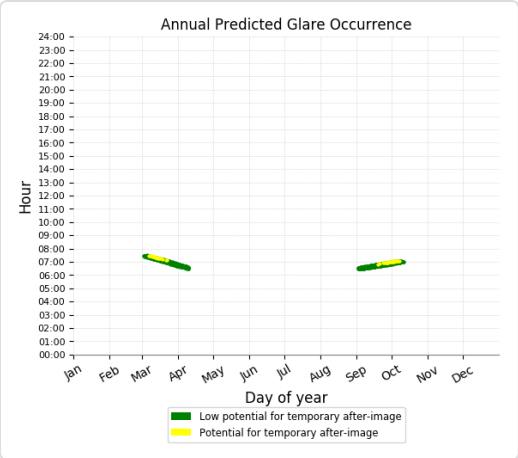
222 minutes of yellow glare
874 minutes of green glare

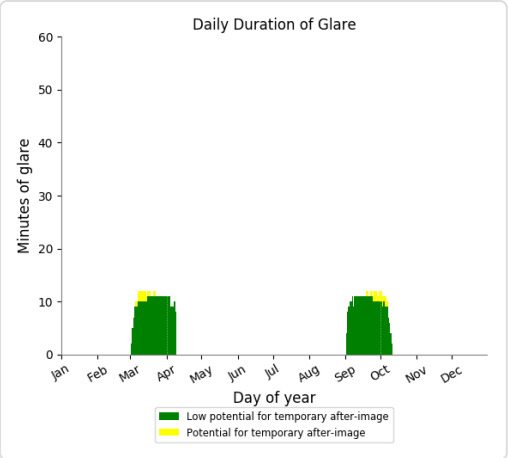




Point Receptor: OP 15

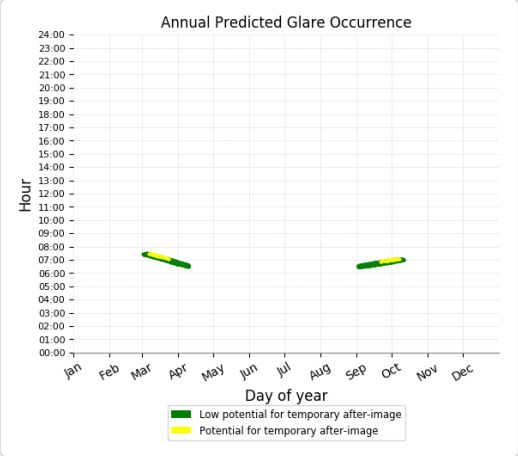
48 minutes of yellow glare
768 minutes of green glare

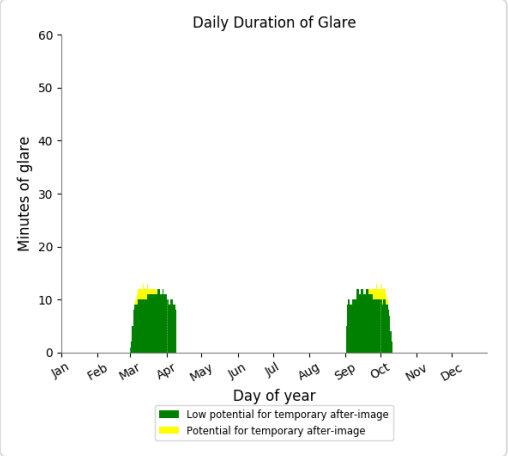




Point Receptor: OP 16

61 minutes of yellow glare
777 minutes of green glare





Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 7

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	340	838
OP 4	342	899
OP 5	66	3663
OP 6	63	4162
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	216	0
OP 12	222	0
OP 13	105	0
OP 14	107	0
OP 15	238	0
OP 16	240	0
OP 17	0	0
OP 18	0	0
OP 19	414	0
OP 20	736	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
0 minutes of green glare

Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare

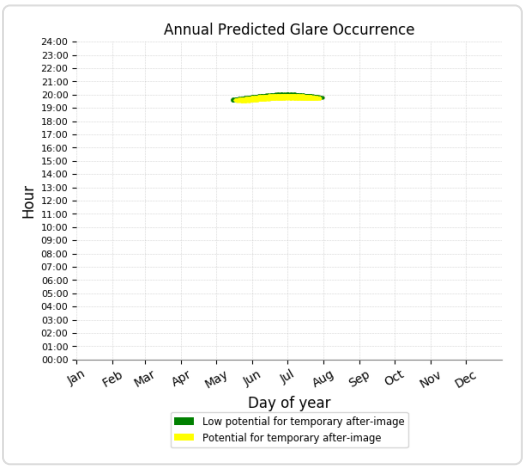
0 minutes of green glare

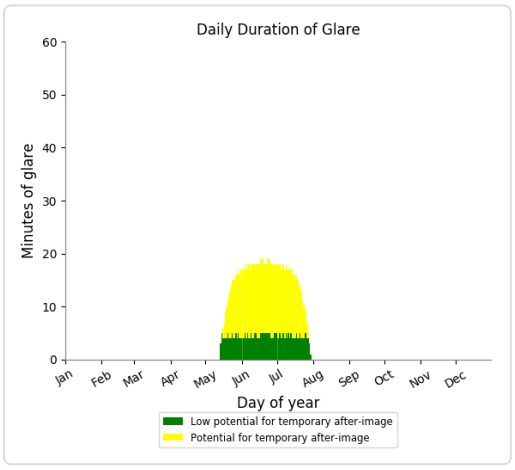
Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

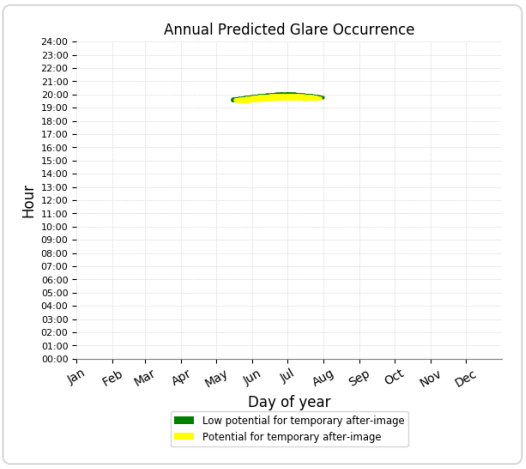
838 minutes of yellow glare
340 minutes of green glare

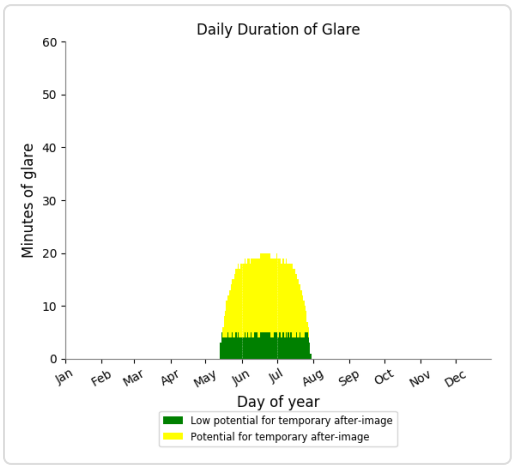




Point Receptor: OP 4

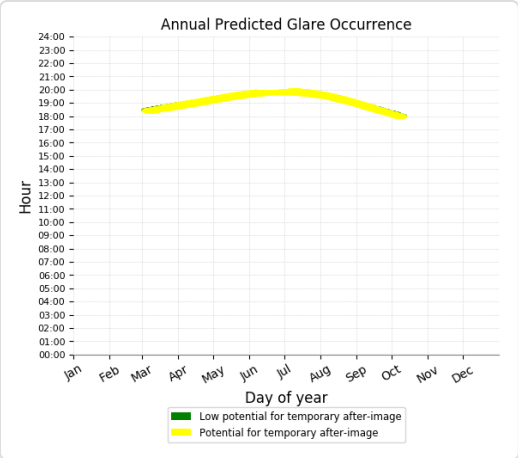
899 minutes of yellow glare
342 minutes of green glare

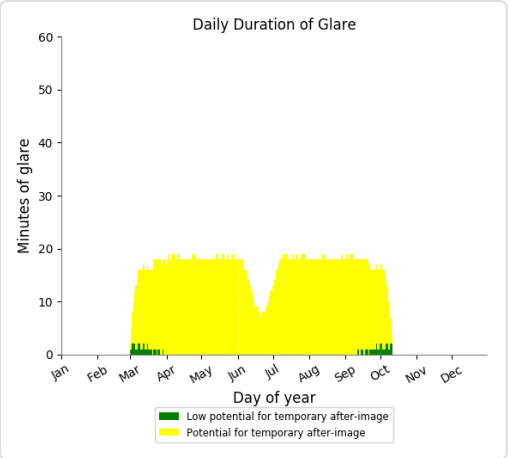




Point Receptor: OP 5

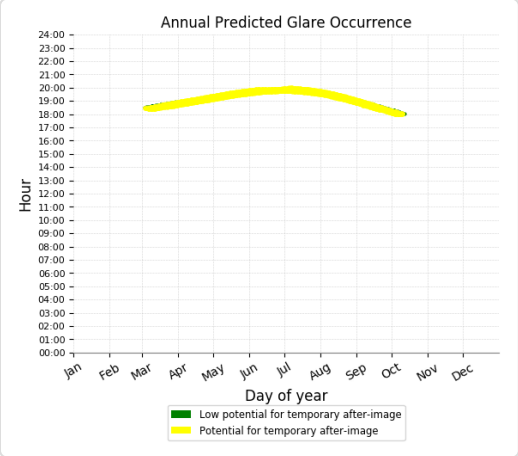
3663 minutes of yellow glare
66 minutes of green glare

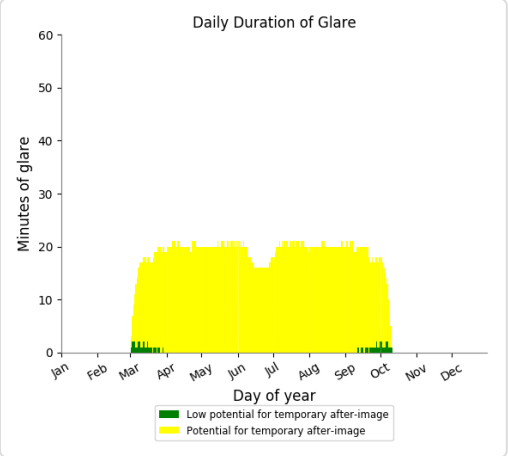




Point Receptor: OP 6

4162 minutes of yellow glare
63 minutes of green glare





Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

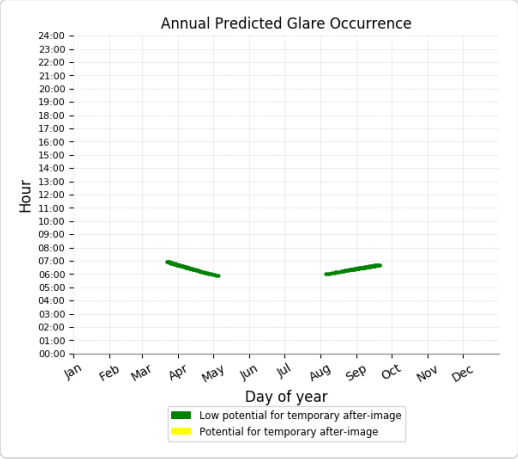
0 minutes of yellow glare
0 minutes of green glare

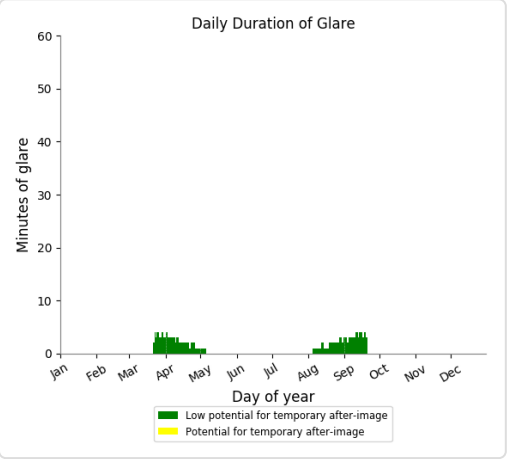
Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

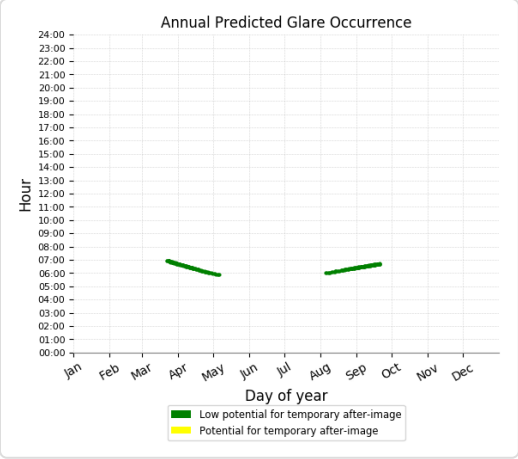
0 minutes of yellow glare
216 minutes of green glare

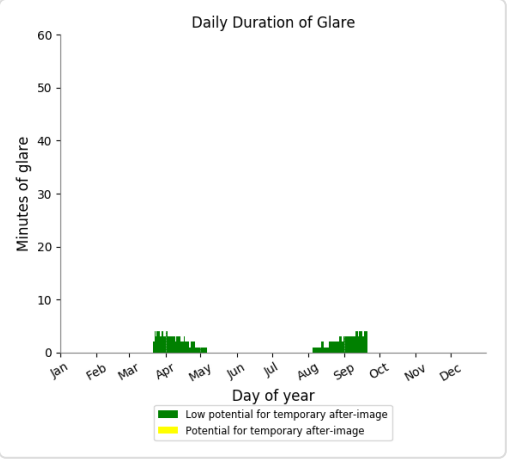




Point Receptor: OP 12

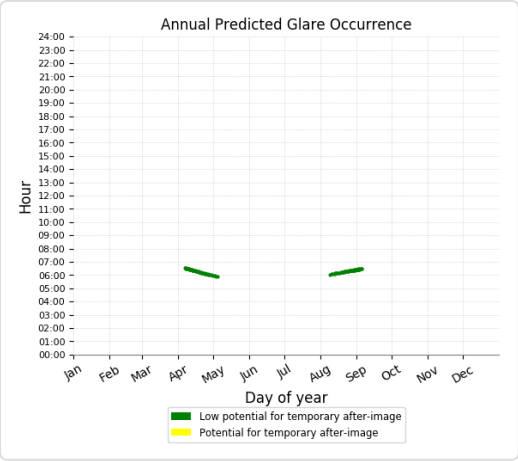
0 minutes of yellow glare
222 minutes of green glare

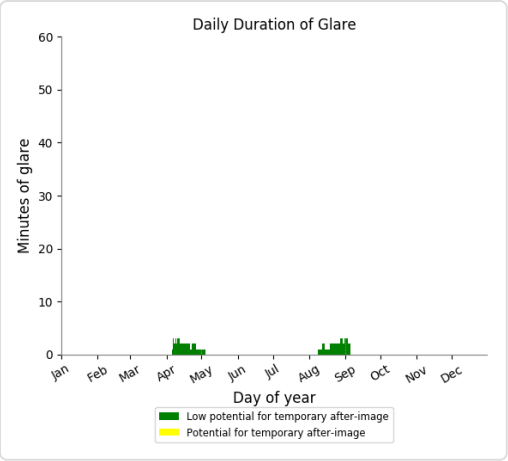




Point Receptor: OP 13

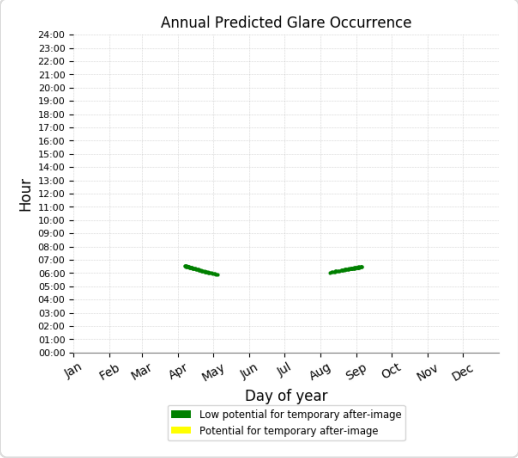
0 minutes of yellow glare
105 minutes of green glare

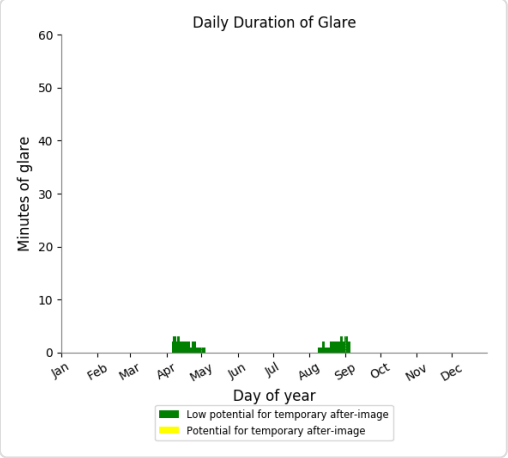




Point Receptor: OP 14

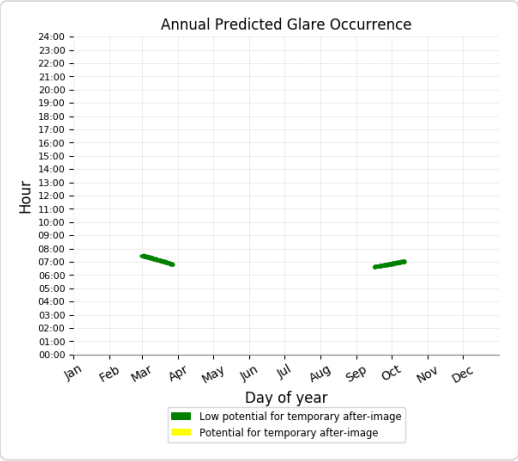
0 minutes of yellow glare
107 minutes of green glare

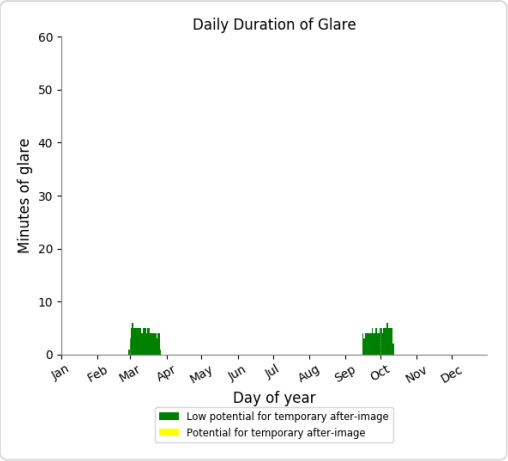




Point Receptor: OP 15

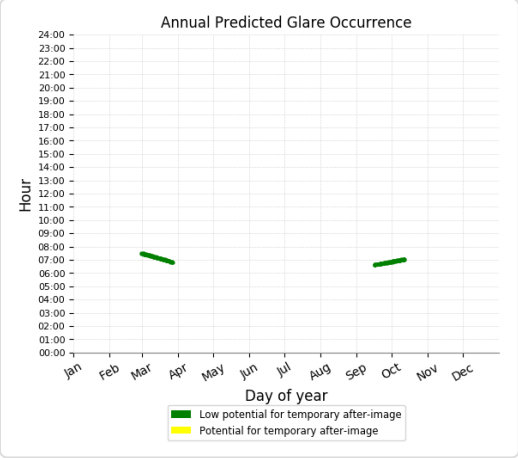
0 minutes of yellow glare
238 minutes of green glare

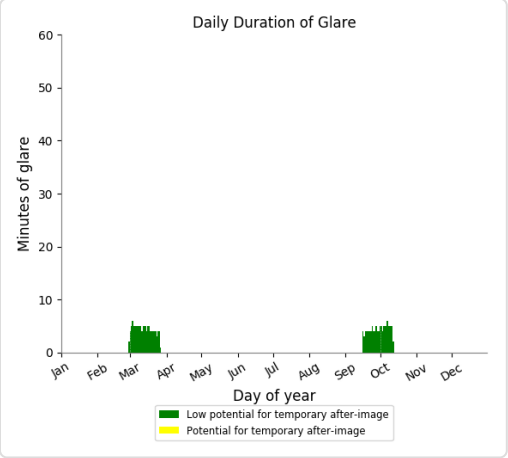




Point Receptor: OP 16

0 minutes of yellow glare
240 minutes of green glare





Point Receptor: OP 17

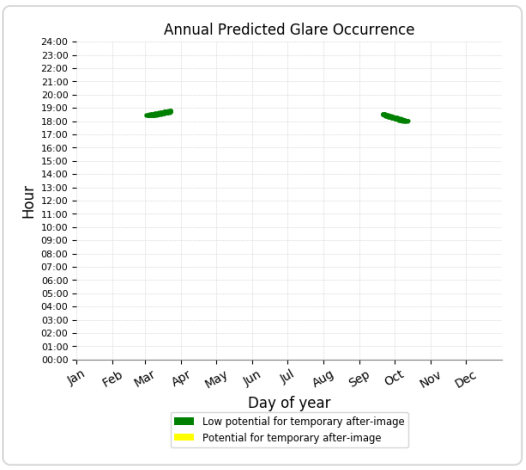
0 minutes of yellow glare
0 minutes of green glare

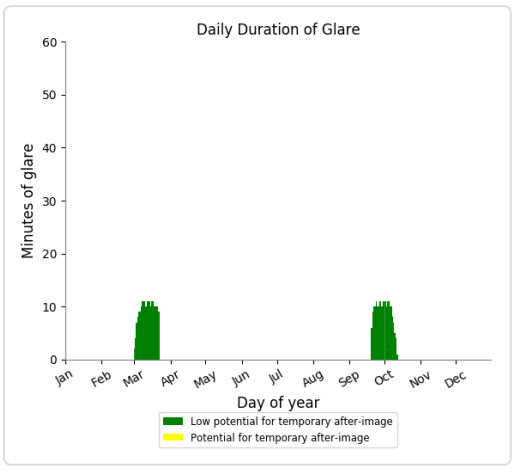
Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
414 minutes of green glare

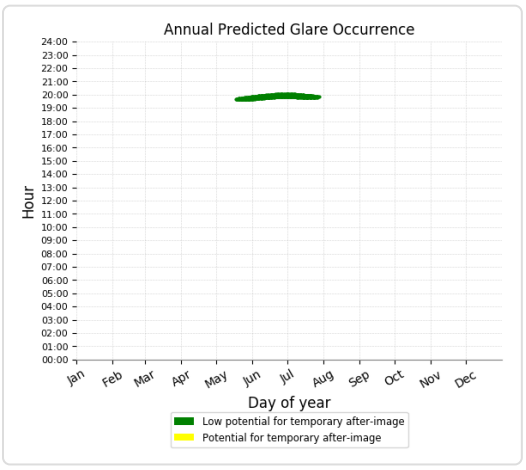


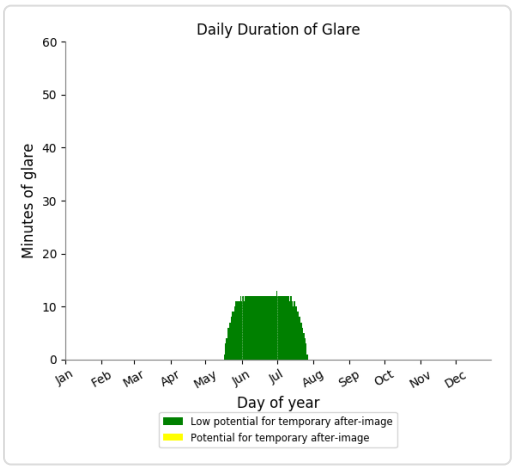


Point Receptor: OP 20

0 minutes of yellow glare

736 minutes of green glare





Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual results and glare occurrence may differ.
Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
Refer to the Help page at **www.forgesolar.com/help/** for assumptions and limitations not listed here.

FORGESOLAR GLARE ANALYSIS

Project: **Rhudes Creek Solar**
Proposed utility-scale project in Hardin County, Kentucky

Site configuration: **Rhudes Creek_v3_Arrays 8-11_0 deg**
Analysis conducted by Alan Plumeau (aplumeau@trccompanies.com) at 01:26 on 05 Jul, 2021.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
2-mile flight path(s)	PASS	Flight path receptor(s) do not receive yellow glare
ATCT(s)	N/A	No ATCT receptors designated

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63276 can be read at https://www.federalregister.gov/d/2013-24729

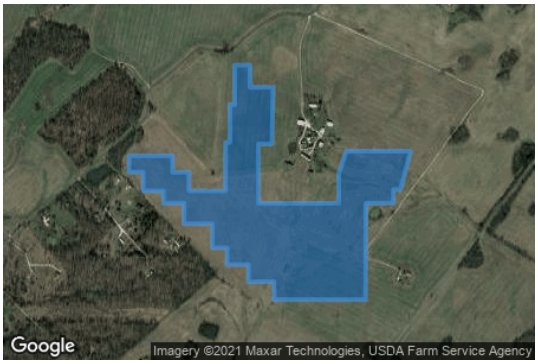
SITE CONFIGURATION

Analysis Parameters

DNI: peaks at 1,000.0 W/m^2
Time interval: 1 min
Ocular transmission coefficient: 0.5
Pupil diameter: 0.002 m
Eye focal length: 0.017 m
Sun subtended angle: 9.3 mrad
Site Config ID: 56040.9913

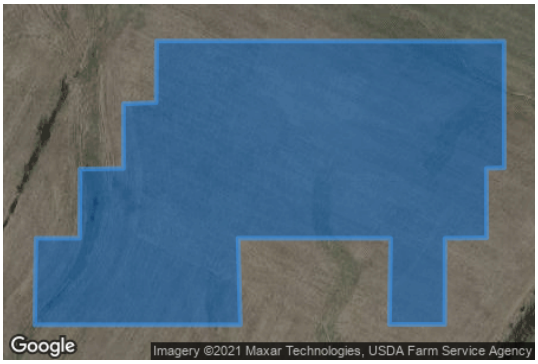
PV Array(s)

Name: PV array 10
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



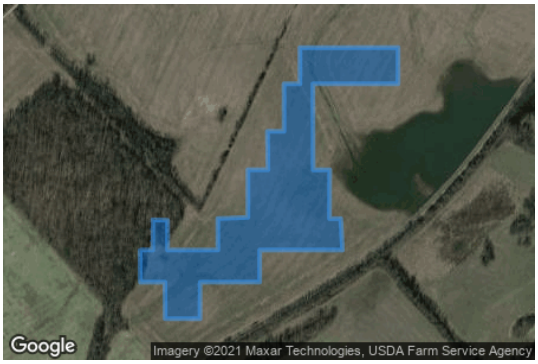
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.653103	-85.983028	722.92	9.00	731.92
2	37.653100	-85.981448	742.25	9.00	751.25
3	37.652624	-85.981451	741.10	9.00	750.10
4	37.652630	-85.980856	742.41	9.00	751.41
5	37.652094	-85.980857	750.67	9.00	759.67
6	37.652090	-85.979532	755.91	9.00	764.92
7	37.653479	-85.979529	755.42	9.00	764.42
8	37.653479	-85.979375	753.87	9.00	762.87
9	37.654564	-85.979367	755.55	9.00	764.55
10	37.654560	-85.979199	755.96	9.00	764.96
11	37.655691	-85.979199	748.80	9.00	757.81
12	37.655691	-85.978637	737.18	9.00	746.18
13	37.655058	-85.978640	736.01	9.00	745.01
14	37.655061	-85.977801	729.80	9.00	738.80
15	37.653433	-85.977843	757.32	9.00	766.32
16	37.653430	-85.978329	759.23	9.00	768.23
17	37.651736	-85.978330	749.90	9.00	758.90
18	37.651739	-85.975422	741.49	9.00	750.49
19	37.652578	-85.975423	733.22	9.00	742.22
20	37.653231	-85.975147	732.75	9.00	741.75
21	37.653229	-85.972809	727.59	9.00	736.59
22	37.652128	-85.973179	717.46	9.00	726.47
23	37.652129	-85.973432	717.91	9.00	726.91
24	37.651740	-85.973437	714.91	9.00	723.91
25	37.651740	-85.974436	722.73	9.00	731.73
26	37.648976	-85.974443	715.75	9.00	724.76
27	37.648980	-85.977767	743.44	9.00	752.44
28	37.649493	-85.977769	746.58	9.00	755.58
29	37.649488	-85.978702	732.46	9.00	741.47
30	37.649983	-85.978701	737.93	9.00	746.93
31	37.649981	-85.979475	737.89	9.00	746.89
32	37.650463	-85.979470	742.16	9.00	751.16
33	37.650460	-85.980007	745.54	9.00	754.54
34	37.651152	-85.980009	752.59	9.00	761.59
35	37.651150	-85.981042	746.07	9.00	755.07
36	37.651742	-85.981039	751.83	9.00	760.83
37	37.651740	-85.981788	745.91	9.00	754.91
38	37.652090	-85.981790	745.22	9.00	754.22
39	37.652090	-85.982522	736.04	9.00	745.04
40	37.652630	-85.982523	731.03	9.00	740.03
41	37.652630	-85.983031	725.47	9.00	734.47

Name: PV array 11a
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



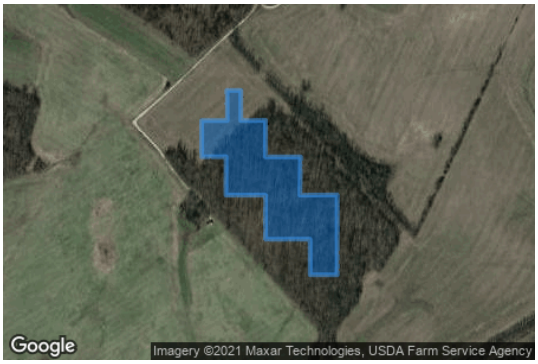
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.647933	-85.978206	728.00	9.00	737.00
2	37.647930	-85.975052	715.27	9.00	724.27
3	37.647024	-85.975050	720.52	9.00	729.52
4	37.647020	-85.975213	720.73	9.00	729.73
5	37.646523	-85.975210	728.55	9.00	737.55
6	37.646520	-85.975588	728.77	9.00	737.77
7	37.645903	-85.975590	717.95	9.00	726.95
8	37.645903	-85.976093	713.37	9.00	722.37
9	37.646520	-85.976082	721.89	9.00	730.89
10	37.646520	-85.977466	723.78	9.00	732.78
11	37.645900	-85.977444	715.83	9.00	724.83
12	37.645900	-85.979311	712.21	9.00	721.22
13	37.646520	-85.979300	721.79	9.00	730.79
14	37.646520	-85.978903	716.71	9.00	725.71
15	37.647016	-85.978900	720.18	9.00	729.18
16	37.647020	-85.978506	721.32	9.00	730.32
17	37.647483	-85.978506	724.62	9.00	733.62
18	37.647491	-85.978210	727.20	9.00	736.20

Name: PV array 11b
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.645648	-85.979740	710.38	9.00	719.38
2	37.645650	-85.977959	713.20	9.00	722.20
3	37.645130	-85.977960	709.85	9.00	718.85
4	37.645130	-85.979504	707.88	9.00	716.88
5	37.643898	-85.979500	711.07	9.00	720.07
6	37.643900	-85.979200	705.35	9.00	714.35
7	37.643200	-85.979204	707.91	9.00	716.91
8	37.643200	-85.979000	705.21	9.00	714.21
9	37.642750	-85.978968	714.50	9.00	723.50
10	37.642750	-85.980470	713.42	9.00	722.42
11	37.642292	-85.980470	706.30	9.00	715.31
12	37.642290	-85.981553	699.03	9.00	708.03
13	37.641765	-85.981553	701.42	9.00	710.42
14	37.641765	-85.982186	696.70	9.00	705.70
15	37.642290	-85.982190	699.13	9.00	708.13
16	37.642290	-85.982637	695.39	9.00	704.39
17	37.642751	-85.982640	697.38	9.00	706.38
18	37.642750	-85.982412	698.40	9.00	707.40
19	37.643184	-85.982410	704.70	9.00	713.70
20	37.643176	-85.982144	710.16	9.00	719.16
21	37.642750	-85.982144	702.05	9.00	711.05
22	37.642750	-85.981230	705.68	9.00	714.68
23	37.643201	-85.981232	711.81	9.00	720.82
24	37.643218	-85.980684	716.64	9.00	725.64
25	37.643900	-85.980684	728.50	9.00	737.50
26	37.643900	-85.980320	730.94	9.00	739.94
27	37.644450	-85.980330	733.92	9.00	742.92
28	37.644450	-85.980030	731.60	9.00	740.60
29	37.645130	-85.980030	716.94	9.00	725.94
30	37.645130	-85.979740	710.89	9.00	719.89

Name: PV array 11c
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

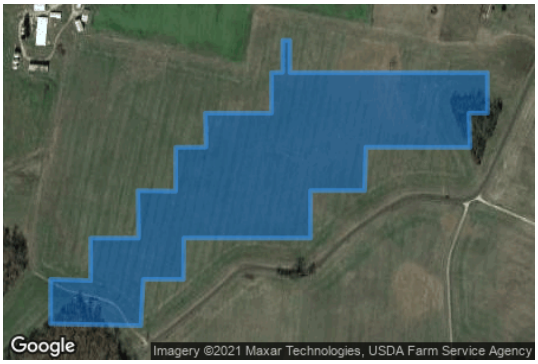


Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.645410	-85.984970	729.64	9.00	738.64
2	37.645410	-85.984718	727.97	9.00	736.97
3	37.644977	-85.984718	721.24	9.00	730.25
4	37.644980	-85.984270	727.52	9.00	736.52
5	37.644459	-85.984270	726.98	9.00	735.99
6	37.644459	-85.983635	723.15	9.00	732.15
7	37.643910	-85.983646	716.37	9.00	725.37
8	37.643915	-85.982970	711.24	9.00	720.24
9	37.642768	-85.982970	705.15	9.00	714.15
10	37.642770	-85.983460	704.92	9.00	713.92
11	37.643280	-85.983463	707.86	9.00	716.86
12	37.643278	-85.984270	714.92	9.00	723.92
13	37.643910	-85.984270	723.95	9.00	732.95
14	37.643910	-85.984990	717.23	9.00	726.23
15	37.644460	-85.984987	716.78	9.00	725.78
16	37.644460	-85.985427	717.56	9.00	726.56
17	37.644977	-85.985430	725.27	9.00	734.27
18	37.644977	-85.984965	723.57	9.00	732.57

Name: PV array 8a
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

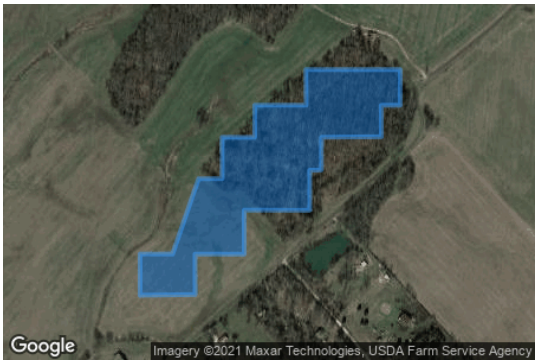
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.658869	-85.983456	733.54	9.00	742.54
2	37.658870	-85.982775	730.30	9.00	739.30
3	37.658398	-85.982770	730.88	9.00	739.88
4	37.658402	-85.982320	733.32	9.00	742.32
5	37.658870	-85.982319	728.03	9.00	737.03
6	37.658870	-85.982020	730.53	9.00	739.53
7	37.658322	-85.982018	738.16	9.00	747.16
8	37.658321	-85.982147	735.39	9.00	744.39
9	37.657990	-85.982150	739.98	9.00	748.98
10	37.657990	-85.982925	738.94	9.00	747.94
11	37.657222	-85.982918	751.70	9.00	760.70
12	37.657220	-85.983891	738.73	9.00	747.73
13	37.657735	-85.983890	736.27	9.00	745.27
14	37.657740	-85.983585	739.59	9.00	748.59
15	37.658400	-85.983580	734.11	9.00	743.11
16	37.658400	-85.983460	734.23	9.00	743.23

Name: PV array 8b
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



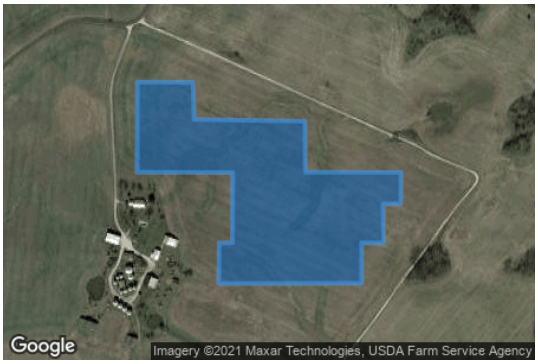
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.659413	-85.979815	730.94	9.00	739.94
2	37.659413	-85.979687	728.32	9.00	737.32
3	37.658950	-85.979687	730.23	9.00	739.23
4	37.658950	-85.976103	712.38	9.00	721.38
5	37.658368	-85.976100	728.72	9.00	737.72
6	37.658370	-85.976436	730.90	9.00	739.90
7	37.657880	-85.976414	721.92	9.00	730.92
8	37.657882	-85.978308	718.15	9.00	727.15
9	37.657260	-85.978330	723.95	9.00	732.95
10	37.657260	-85.979311	723.91	9.00	732.91
11	37.656580	-85.979310	729.82	9.00	738.82
12	37.656580	-85.981610	744.03	9.00	753.03
13	37.655988	-85.981620	740.96	9.00	749.96
14	37.655990	-85.982347	742.64	9.00	751.65
15	37.655327	-85.982392	733.49	9.00	742.49
16	37.655355	-85.984032	751.71	9.00	760.71
17	37.655990	-85.984030	750.27	9.00	759.27
18	37.655973	-85.983302	748.50	9.00	757.50
19	37.656580	-85.983302	748.83	9.00	757.83
20	37.656580	-85.982433	751.61	9.00	760.61
21	37.657260	-85.982444	754.22	9.00	763.22
22	37.657256	-85.981760	751.15	9.00	760.15
23	37.657880	-85.981757	744.74	9.00	753.74
24	37.657884	-85.981210	735.95	9.00	744.95
25	37.658370	-85.981221	742.51	9.00	751.51
26	37.658370	-85.980020	729.66	9.00	738.66
27	37.658950	-85.980019	735.17	9.00	744.17
28	37.658954	-85.979820	733.60	9.00	742.60

Name: PV array 8c
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.654661	-85.985389	728.43	9.00	737.43
2	37.654661	-85.984456	742.38	9.00	751.38
3	37.655170	-85.984460	744.64	9.00	753.64
4	37.655170	-85.982750	733.83	9.00	742.83
5	37.654660	-85.982750	737.80	9.00	746.80
6	37.654660	-85.983093	737.18	9.00	746.18
7	37.654210	-85.983090	732.02	9.00	741.02
8	37.654202	-85.984177	730.51	9.00	739.51
9	37.653735	-85.984180	727.66	9.00	736.66
10	37.653730	-85.984391	728.16	9.00	737.16
11	37.653157	-85.984390	730.88	9.00	739.88
12	37.653160	-85.985582	732.00	9.00	741.00
13	37.652529	-85.985580	719.54	9.00	728.54
14	37.652530	-85.986473	720.31	9.00	729.31
15	37.651951	-85.986470	712.04	9.00	721.04
16	37.651940	-85.987470	705.58	9.00	714.58
17	37.652530	-85.987470	705.22	9.00	714.22
18	37.652530	-85.986880	713.57	9.00	722.57
19	37.653607	-85.986408	718.90	9.00	727.90
20	37.653610	-85.985979	734.06	9.00	743.06
21	37.654202	-85.985980	727.69	9.00	736.69
22	37.654200	-85.985389	737.78	9.00	746.78

Name: PV array 9
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.656283	-85.976339	735.05	9.00	744.05
2	37.656280	-85.975330	724.76	9.00	733.76
3	37.655747	-85.975309	728.51	9.00	737.51
4	37.655723	-85.973299	715.42	9.00	724.42
5	37.654994	-85.973289	720.26	9.00	729.26
6	37.654990	-85.971553	724.01	9.00	733.01
7	37.654542	-85.971560	730.05	9.00	739.05
8	37.654540	-85.971880	733.50	9.00	742.50
9	37.653981	-85.971875	721.20	9.00	730.20
10	37.653980	-85.972269	723.18	9.00	732.18
11	37.653402	-85.972270	730.26	9.00	739.26
12	37.653398	-85.974863	732.71	9.00	741.71
13	37.653980	-85.974855	739.30	9.00	748.30
14	37.653980	-85.974614	736.14	9.00	745.14
15	37.654988	-85.974610	729.05	9.00	738.05
16	37.654992	-85.976345	739.20	9.00	748.20

Flight Path Receptor(s)

Name: EKX Runway 23
Description:
Threshold height: 30 ft
Direction: 227.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°

Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	37.691507	-85.917731	770.64	30.00	800.64
Two-mile	37.711226	-85.890978	745.84	608.26	1354.10

Name: EKX Runway 5
Description:
Threshold height: 49 ft
Direction: 47.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°

Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	37.680546	-85.932333	751.39	49.00	800.39
Two-mile	37.660828	-85.959082	694.10	659.75	1353.85

Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	37.665118	-86.000164	735.72	6.00
OP 2	2	37.665154	-86.000182	736.74	16.00
OP 3	3	37.646994	-85.982340	750.74	6.00
OP 4	4	37.646994	-85.982329	750.54	16.00
OP 5	5	37.651055	-85.982995	744.16	6.00
OP 6	6	37.651021	-85.983005	744.32	16.00
OP 7	7	37.635969	-86.019095	704.01	6.00
OP 8	8	37.635965	-86.019111	704.05	16.00
OP 9	9	37.668838	-85.992461	725.46	6.00
OP 10	10	37.668851	-85.992439	725.36	16.00
OP 11	11	37.649925	-85.999946	728.69	6.00
OP 12	12	37.649925	-85.999946	728.69	16.00
OP 13	13	37.647332	-86.011354	746.93	6.00
OP 14	14	37.647340	-86.011381	746.72	16.00
OP 15	15	37.653195	-86.014569	745.80	6.00
OP 16	16	37.653204	-86.014516	746.01	16.00
OP 17	17	37.665804	-86.009069	717.19	6.00
OP 18	18	37.659876	-85.976089	723.83	6.00
OP 19	19	37.654159	-85.958354	709.21	6.00
OP 20	20	37.642335	-85.970821	706.91	6.00

GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
PV array 10	SA tracking	SA tracking	2	16,881	-
PV array 11a	SA tracking	SA tracking	3,209	9,456	-
PV array 11b	SA tracking	SA tracking	4,115	7,648	-
PV array 11c	SA tracking	SA tracking	911	0	-
PV array 8a	SA tracking	SA tracking	3,793	0	-
PV array 8b	SA tracking	SA tracking	2,512	1,825	-
PV array 8c	SA tracking	SA tracking	3,752	5,930	-
PV array 9	SA tracking	SA tracking	776	497	-

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
EKX Runway 23	780	0
EKX Runway 5	0	0
OP 1	1291	0
OP 2	1340	15
OP 3	0	7776
OP 4	0	8922
OP 5	23	9630
OP 6	31	11185
OP 7	1426	0
OP 8	1456	0
OP 9	0	0
OP 10	0	0
OP 11	1356	278
OP 12	2705	328

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
OP 13	1733	0
OP 14	1871	17
OP 15	1377	0
OP 16	1948	6
OP 17	686	0
OP 18	0	1597
OP 19	944	508
OP 20	103	1975

Results for: PV array 10

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	15
OP 3	0	1834
OP 4	0	2005
OP 5	0	5953
OP 6	0	7051
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	17
OP 15	0	0
OP 16	2	6
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
0 minutes of green glare

Flight Path: EKX Runway 5

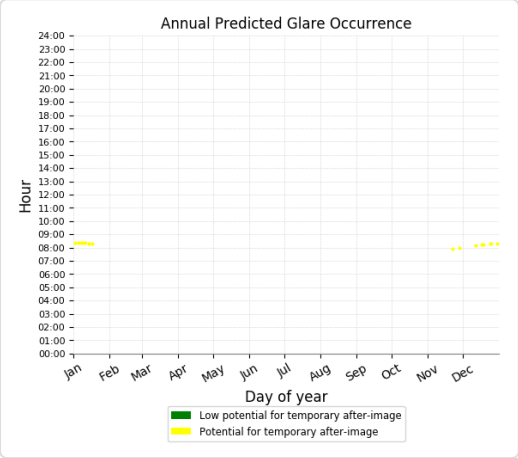
0 minutes of yellow glare
0 minutes of green glare

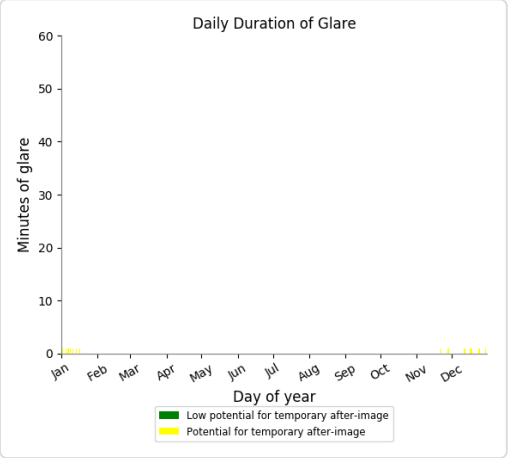
Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

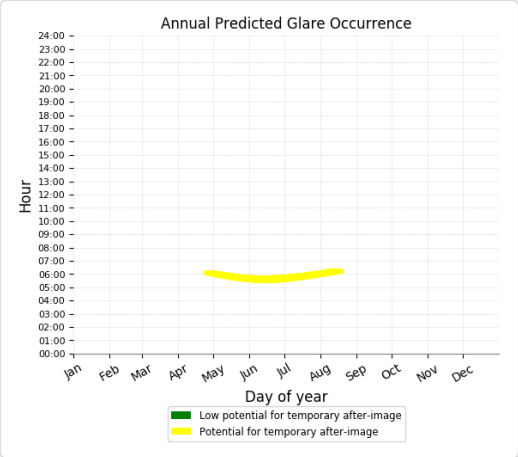
15 minutes of yellow glare
0 minutes of green glare

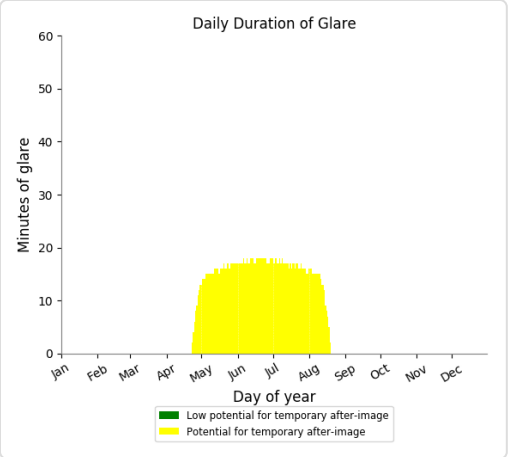




Point Receptor: OP 3

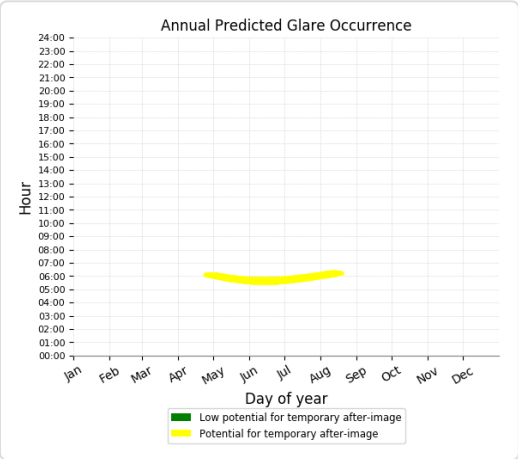
1834 minutes of yellow glare
0 minutes of green glare

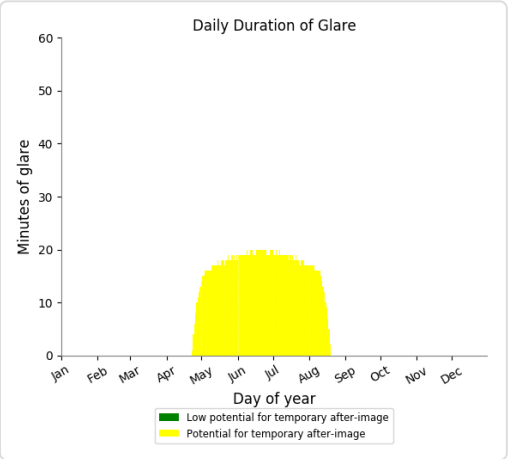




Point Receptor: OP 4

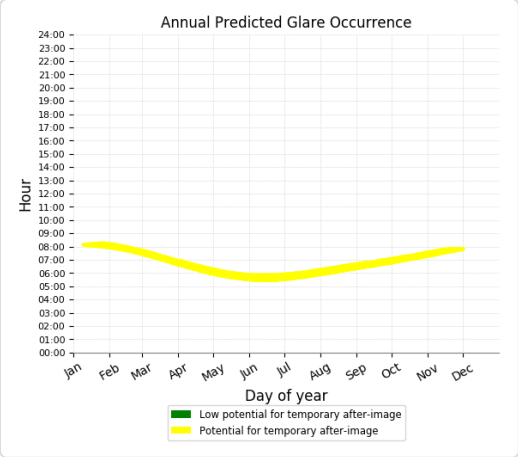
2005 minutes of yellow glare
0 minutes of green glare

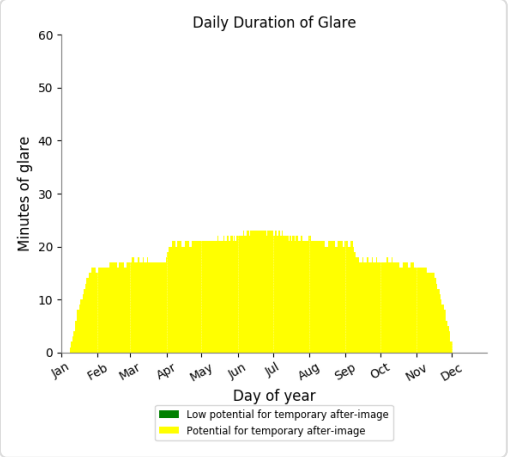




Point Receptor: OP 5

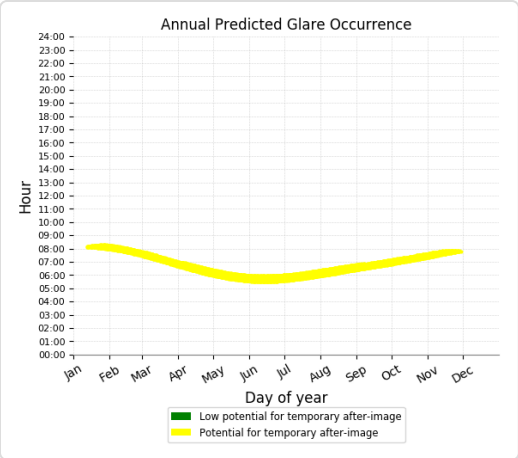
5953 minutes of yellow glare
0 minutes of green glare

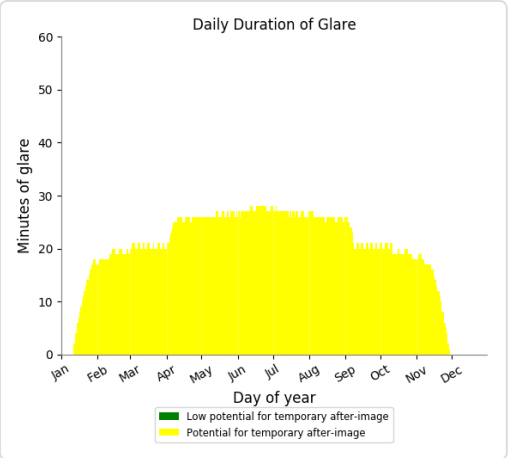




Point Receptor: OP 6

7051 minutes of yellow glare
0 minutes of green glare





Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

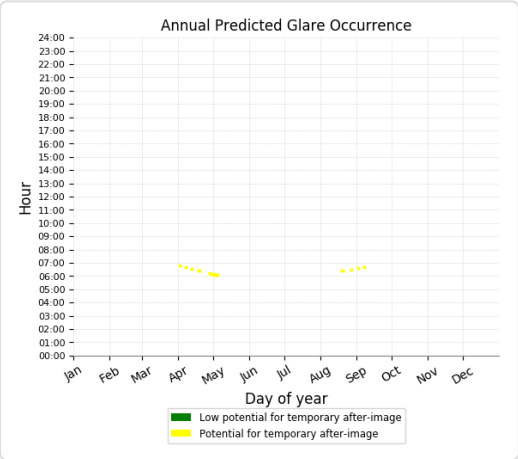
Point Receptor: OP 13

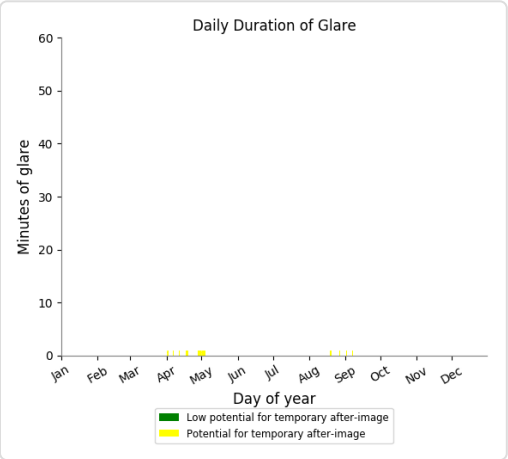
0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

17 minutes of yellow glare

0 minutes of green glare





Point Receptor: OP 15

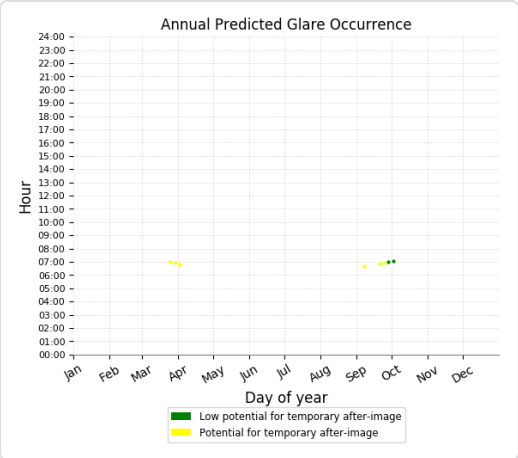
0 minutes of yellow glare

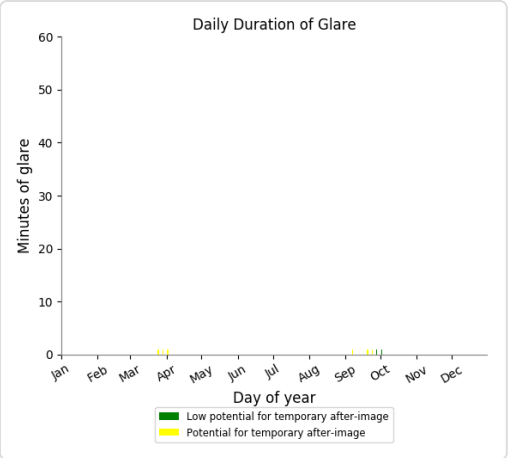
0 minutes of green glare

Point Receptor: OP 16

6 minutes of yellow glare

2 minutes of green glare





Point Receptor: OP 17

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 11a

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	3307
OP 4	0	3879
OP 5	0	1054
OP 6	0	1216
OP 7	376	0
OP 8	374	0
OP 9	0	0
OP 10	0	0
OP 11	447	0
OP 12	518	0
OP 13	351	0
OP 14	360	0
OP 15	400	0
OP 16	378	0
OP 17	5	0
OP 18	0	0
OP 19	0	0
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare

0 minutes of green glare

Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

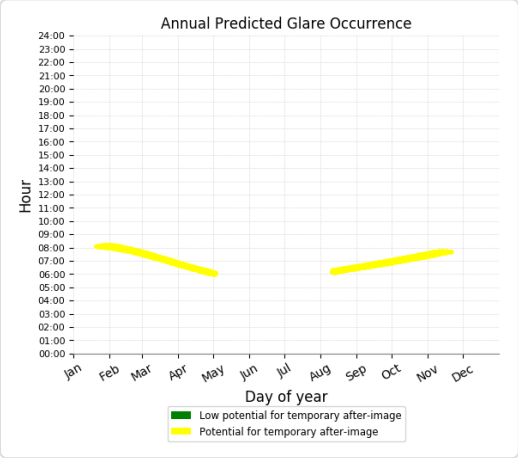
0 minutes of yellow glare
0 minutes of green glare

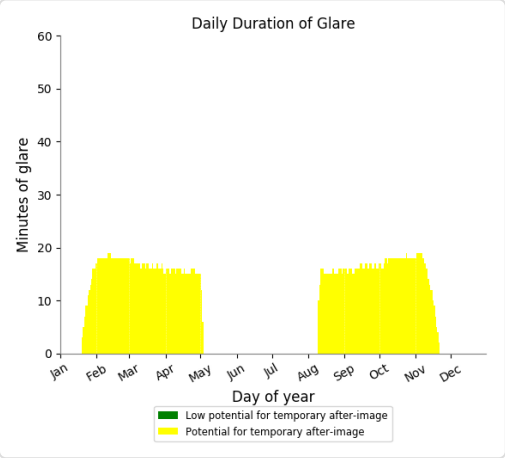
Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

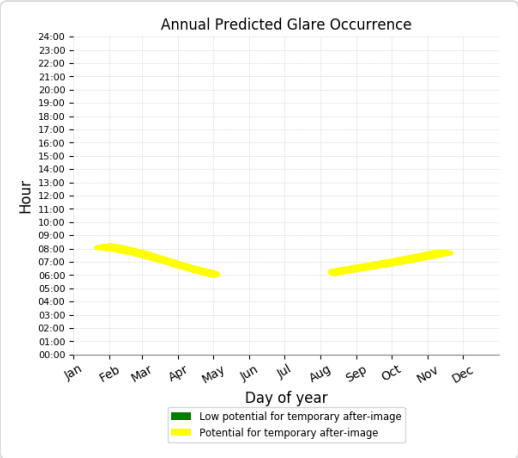
3307 minutes of yellow glare
0 minutes of green glare

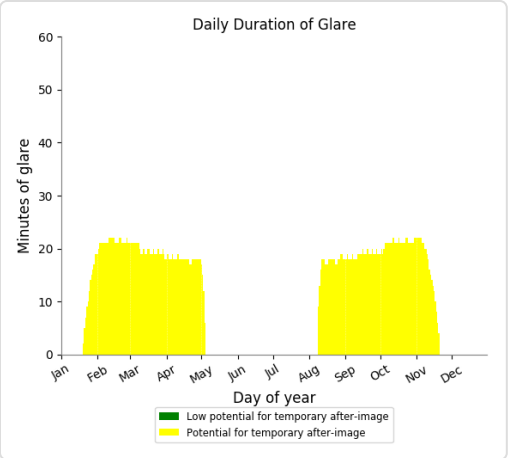




Point Receptor: OP 4

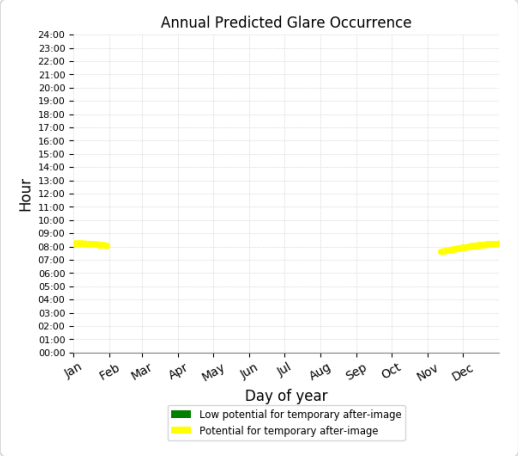
3879 minutes of yellow glare
0 minutes of green glare

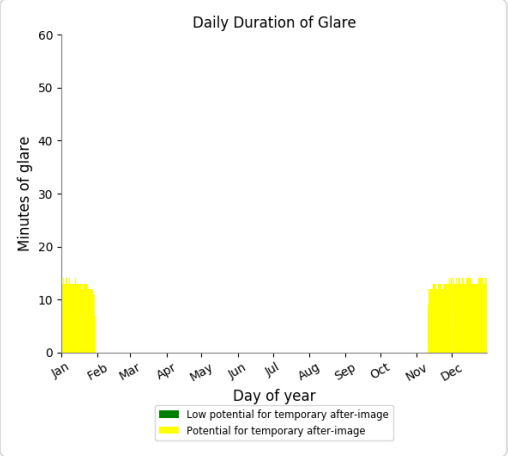




Point Receptor: OP 5

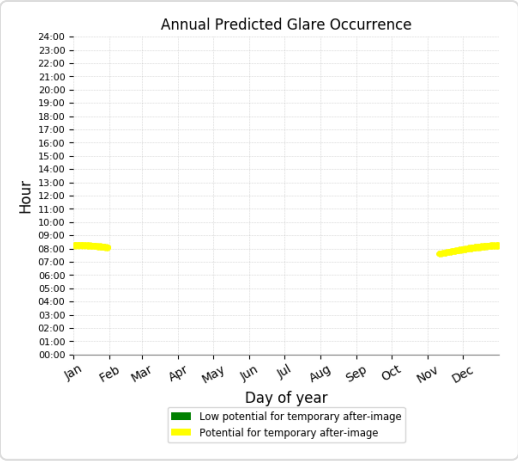
1054 minutes of yellow glare
0 minutes of green glare

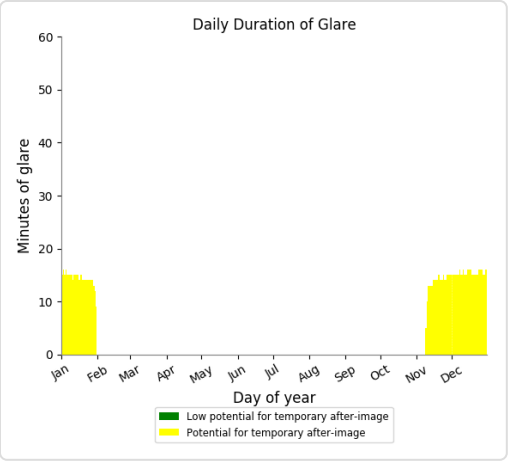




Point Receptor: OP 6

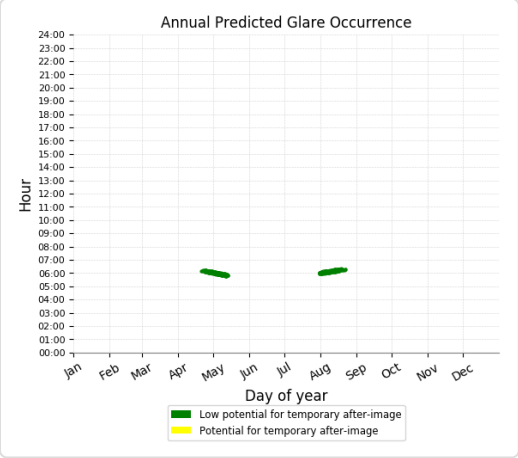
1216 minutes of yellow glare
0 minutes of green glare

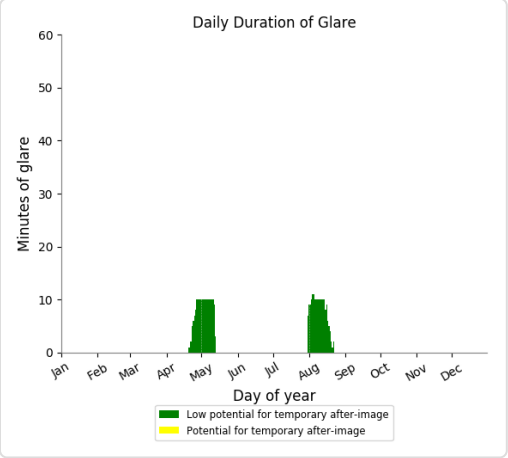




Point Receptor: OP 7

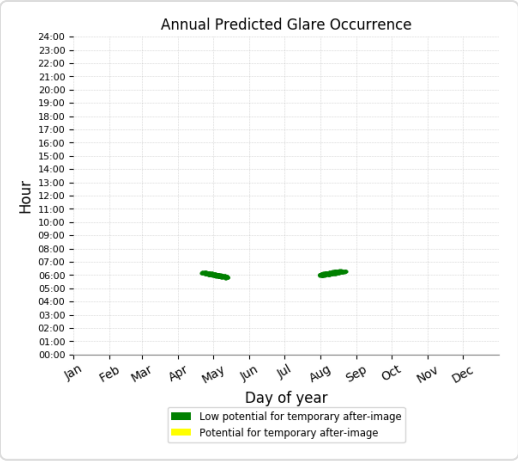
0 minutes of yellow glare
376 minutes of green glare

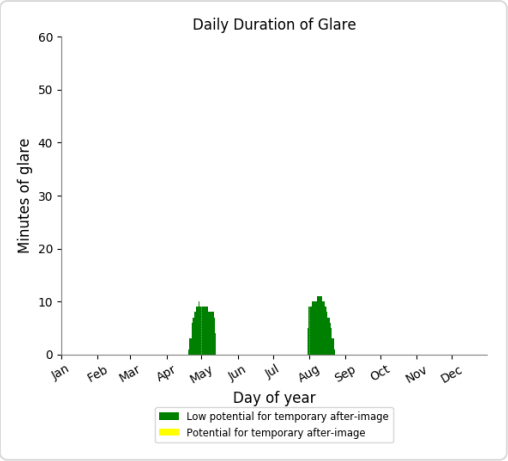




Point Receptor: OP 8

0 minutes of yellow glare
374 minutes of green glare





Point Receptor: OP 9

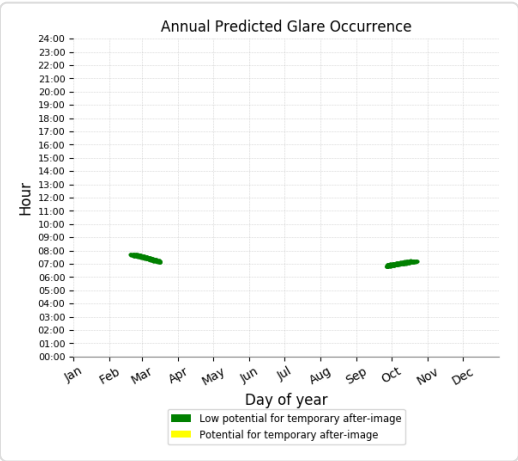
0 minutes of yellow glare
0 minutes of green glare

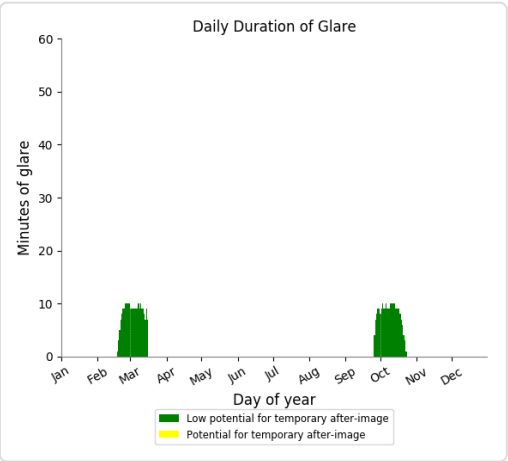
Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

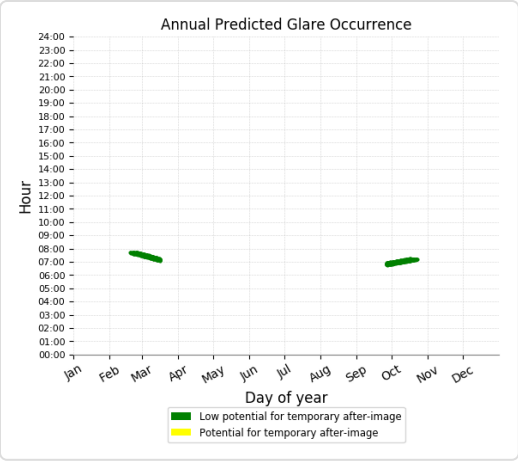
0 minutes of yellow glare
447 minutes of green glare

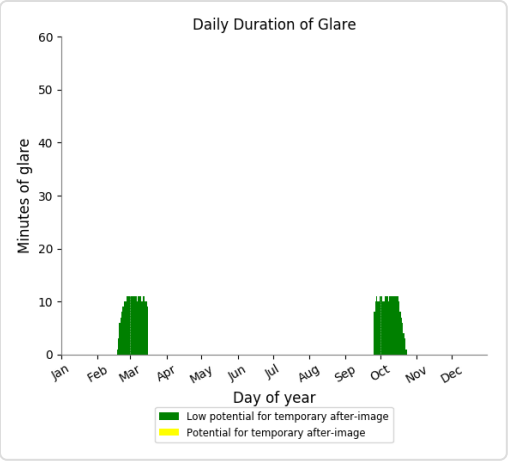




Point Receptor: OP 12

0 minutes of yellow glare
518 minutes of green glare

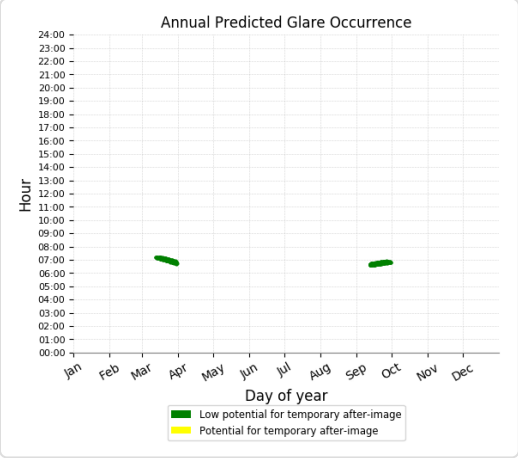


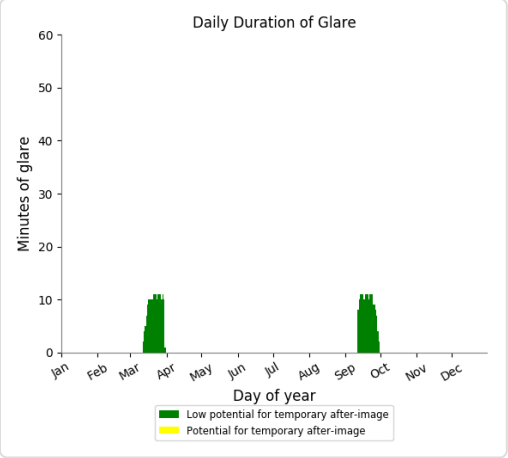


Point Receptor: OP 13

0 minutes of yellow glare

351 minutes of green glare

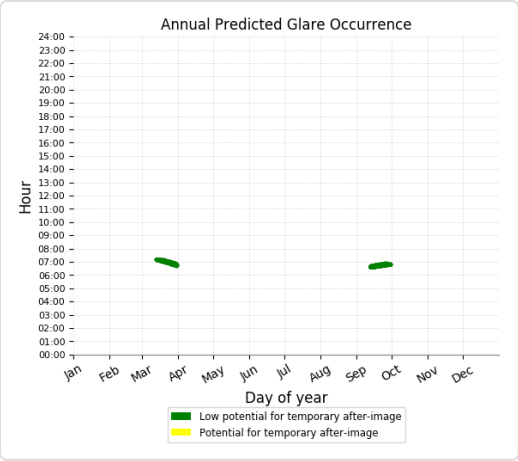


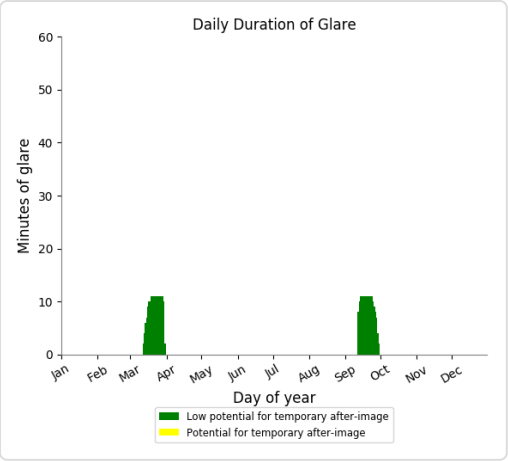


Point Receptor: OP 14

0 minutes of yellow glare

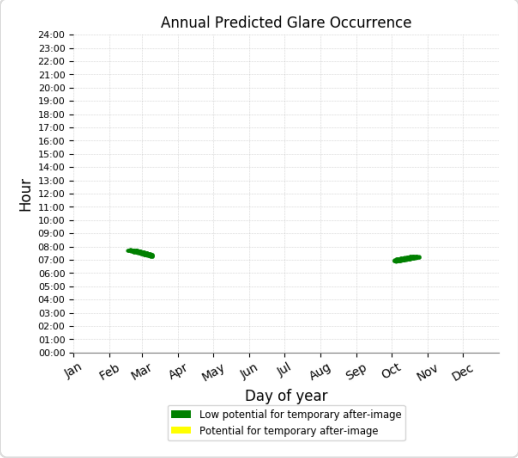
360 minutes of green glare

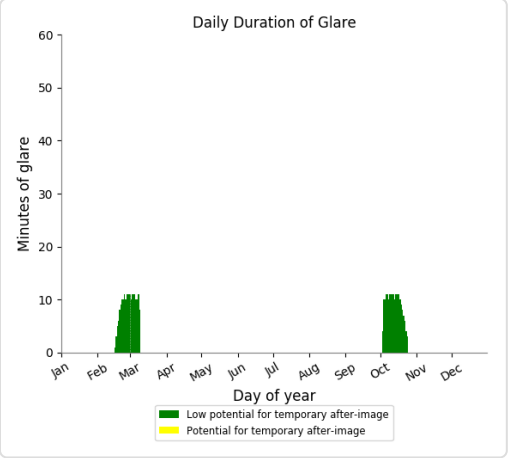




Point Receptor: OP 15

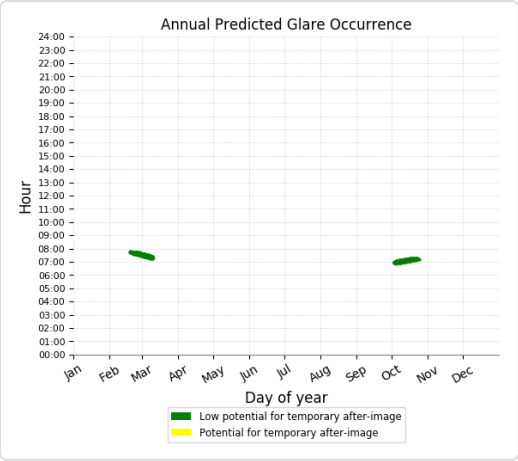
0 minutes of yellow glare
400 minutes of green glare

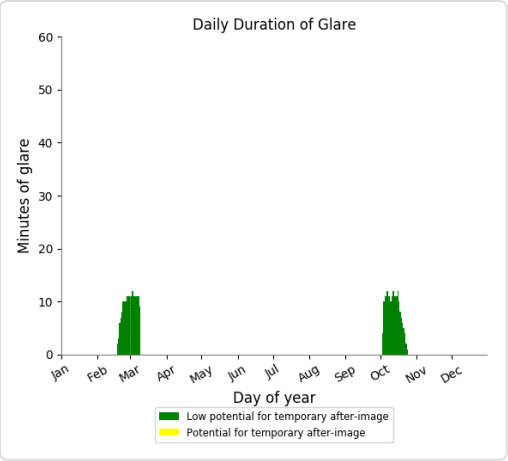




Point Receptor: OP 16

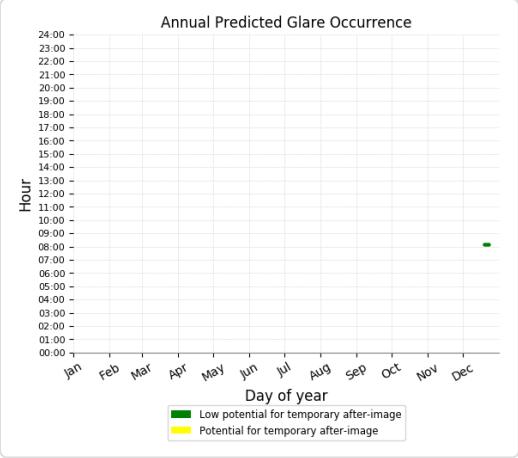
0 minutes of yellow glare
378 minutes of green glare

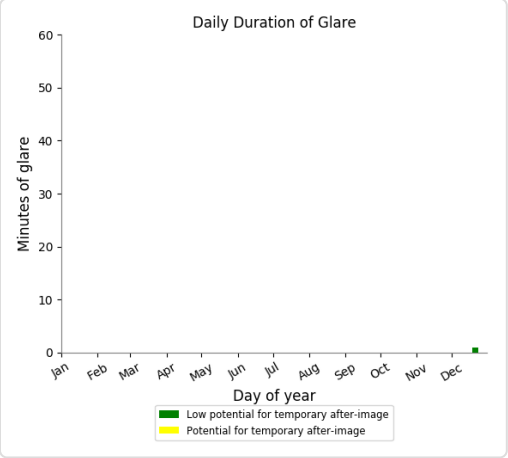




Point Receptor: OP 17

0 minutes of yellow glare
5 minutes of green glare





Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 11b

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	2635
OP 4	0	3038
OP 5	0	0
OP 6	0	0
OP 7	490	0
OP 8	488	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	1255	0
OP 13	559	0
OP 14	666	0
OP 15	0	0
OP 16	554	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	103	1975

Flight Path: EKX Runway 23

0 minutes of yellow glare
0 minutes of green glare

Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

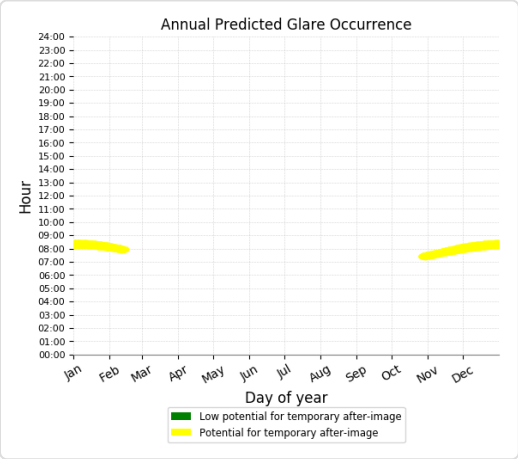
Point Receptor: OP 2

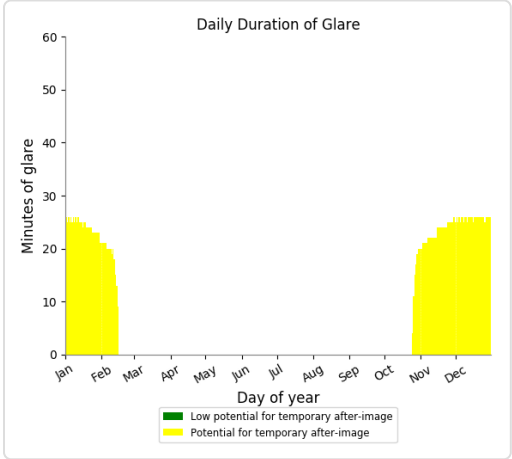
0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 3

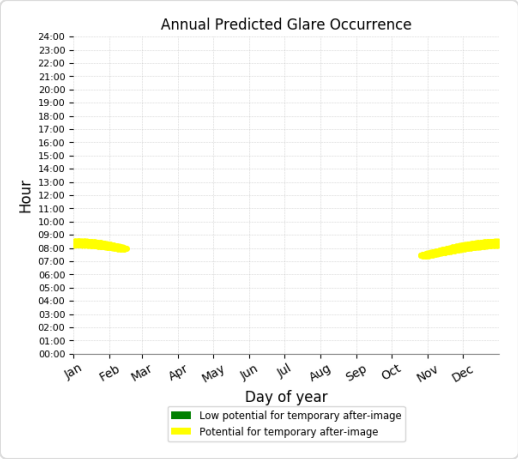
2635 minutes of yellow glare
0 minutes of green glare

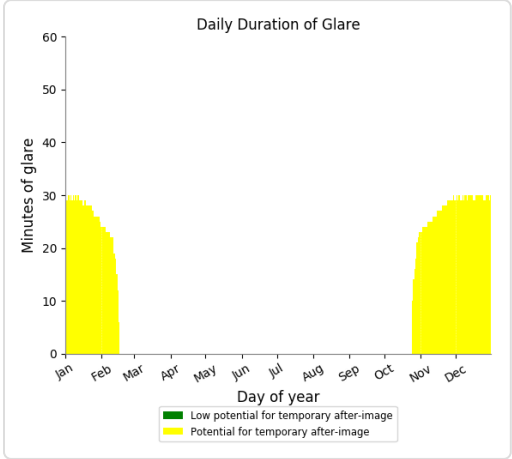




Point Receptor: OP 4

3038 minutes of yellow glare
0 minutes of green glare





Point Receptor: OP 5

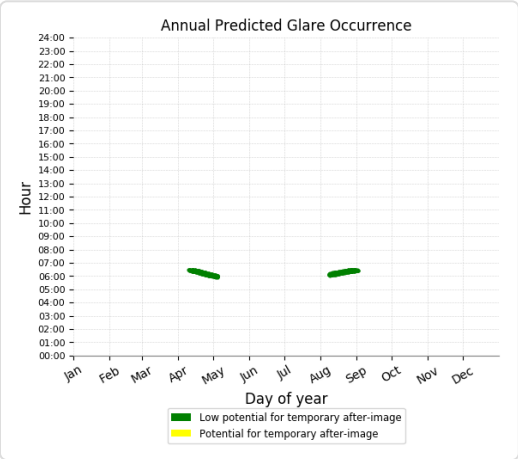
0 minutes of yellow glare
0 minutes of green glare

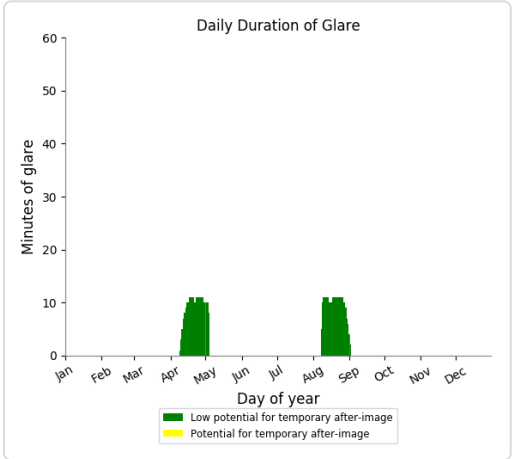
Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

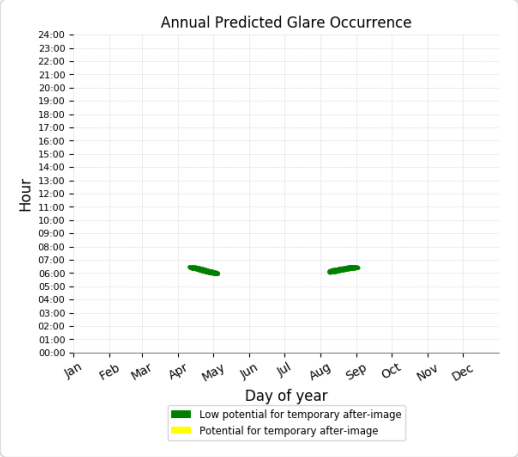
0 minutes of yellow glare
490 minutes of green glare

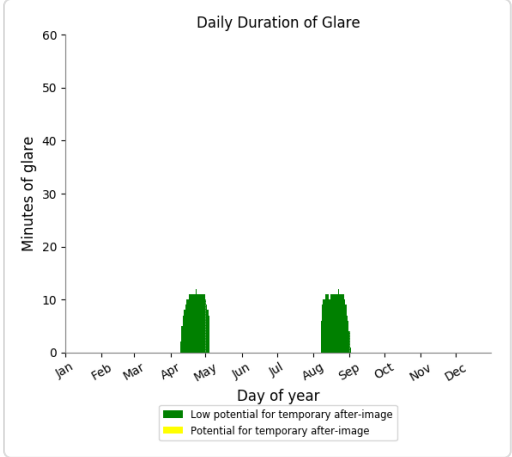




Point Receptor: OP 8

0 minutes of yellow glare
488 minutes of green glare





Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

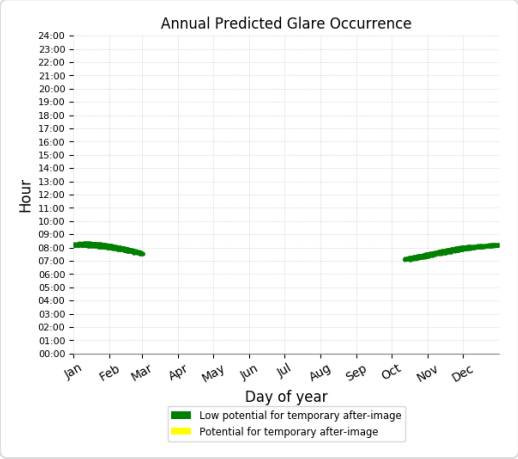
0 minutes of yellow glare
0 minutes of green glare

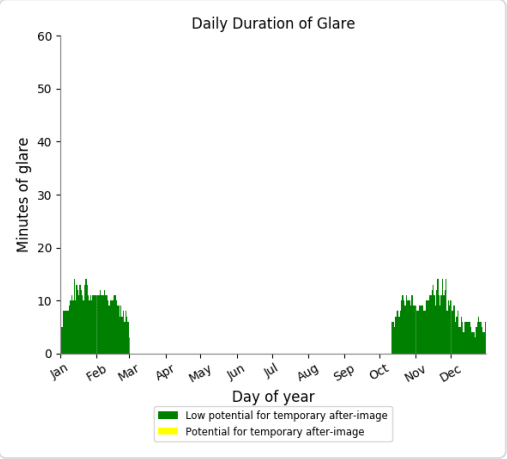
Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

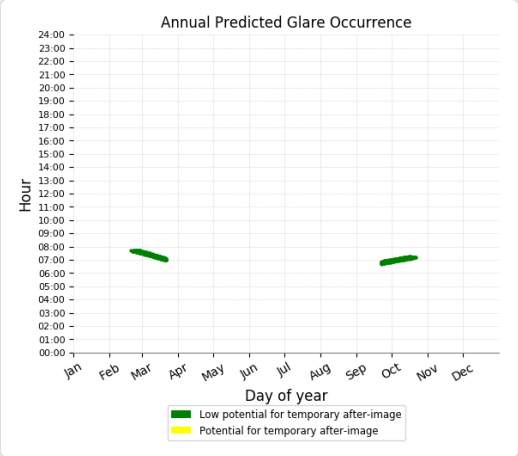
0 minutes of yellow glare
1255 minutes of green glare

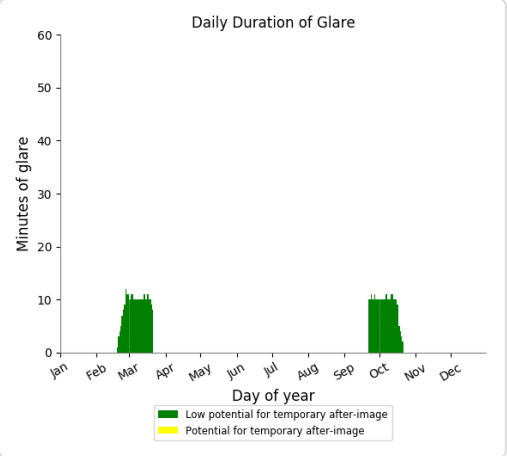




Point Receptor: OP 13

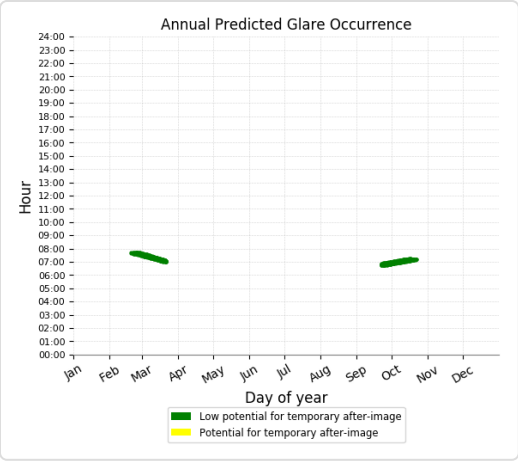
0 minutes of yellow glare
559 minutes of green glare

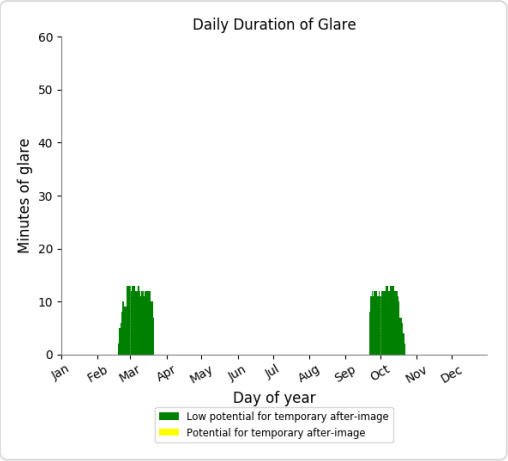




Point Receptor: OP 14

0 minutes of yellow glare
666 minutes of green glare



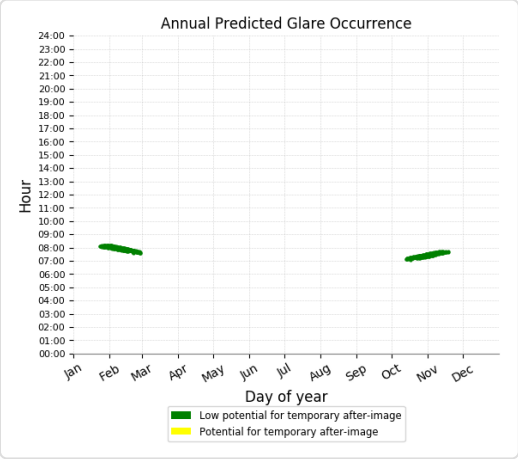


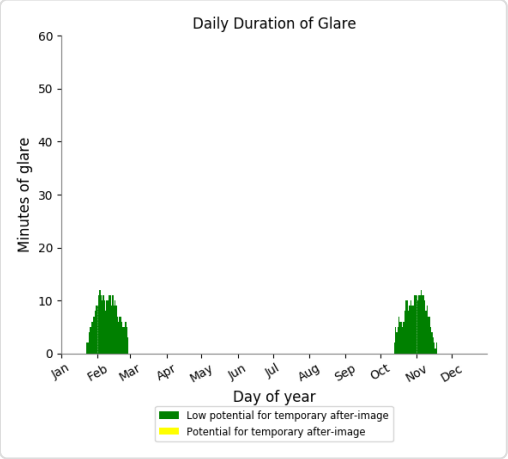
Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
554 minutes of green glare





Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

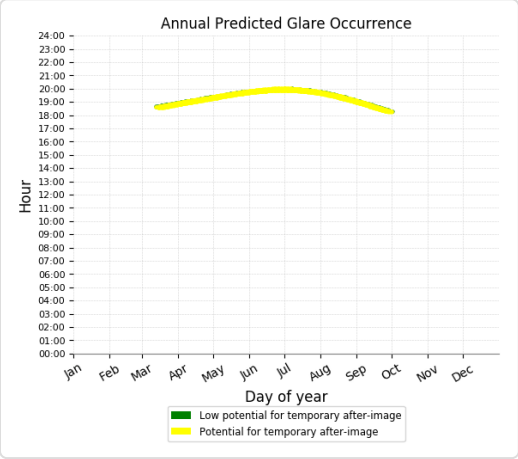
0 minutes of yellow glare
0 minutes of green glare

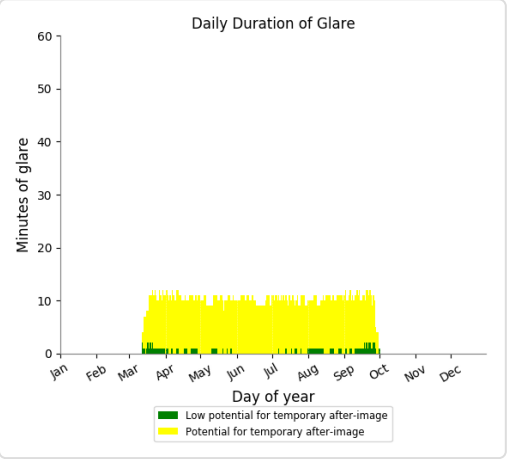
Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

1975 minutes of yellow glare
103 minutes of green glare





Results for: PV array 11c

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	438	0
OP 8	473	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
0 minutes of green glare

Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

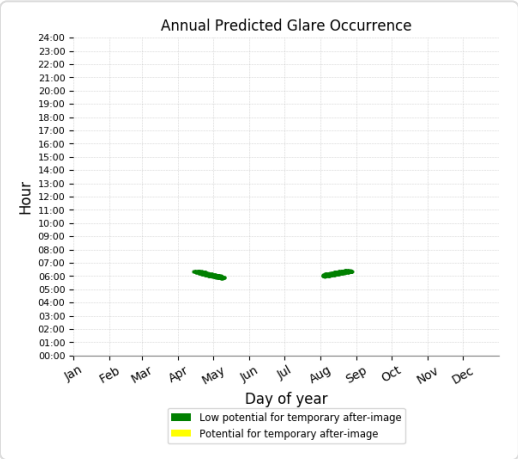
0 minutes of yellow glare
0 minutes of green glare

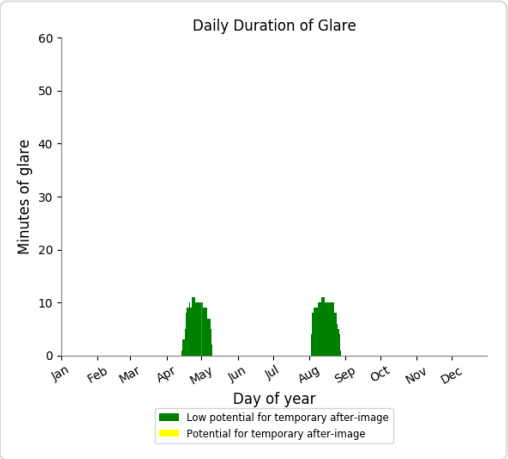
Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

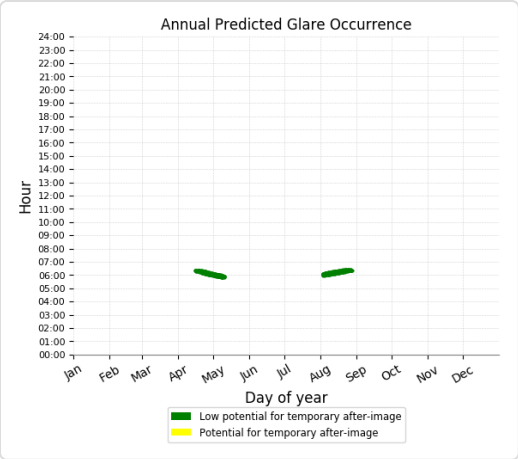
0 minutes of yellow glare
438 minutes of green glare

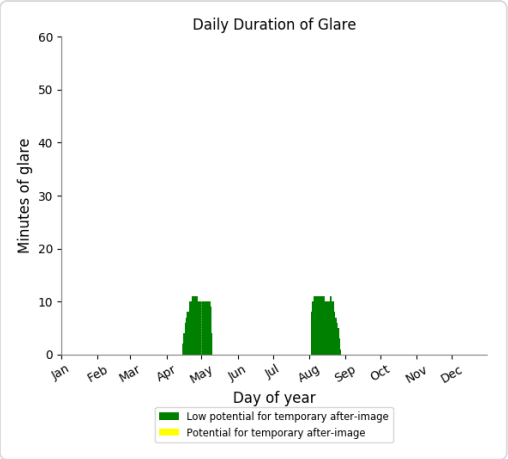




Point Receptor: OP 8

0 minutes of yellow glare
473 minutes of green glare





Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare

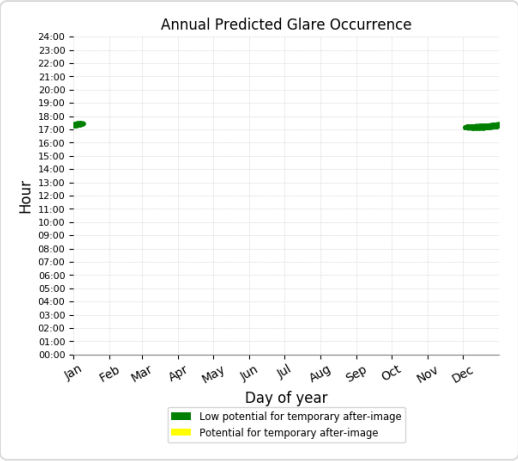
0 minutes of green glare

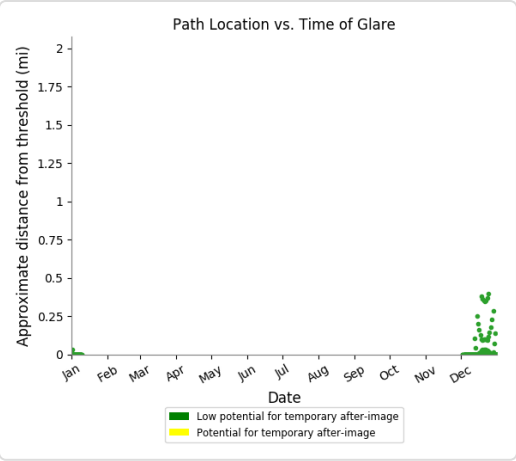
Results for: PV array 8a

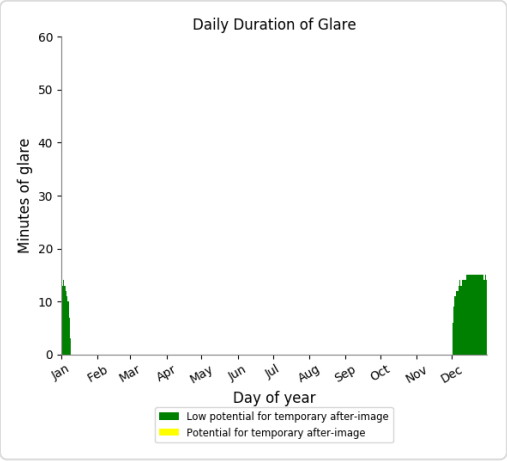
Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	511	0
EKX Runway 5	0	0
OP 1	1037	0
OP 2	1086	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	309	0
OP 16	343	0
OP 17	445	0
OP 18	0	0
OP 19	62	0
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
511 minutes of green glare





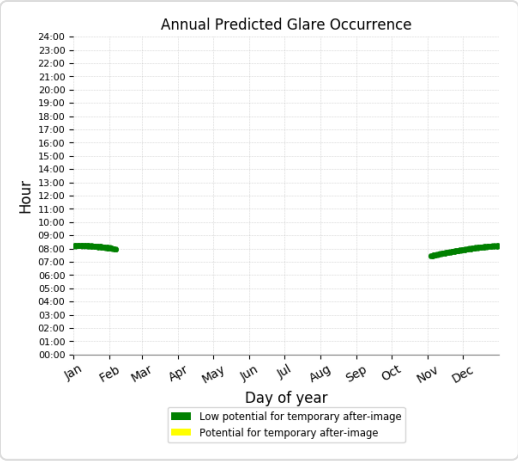


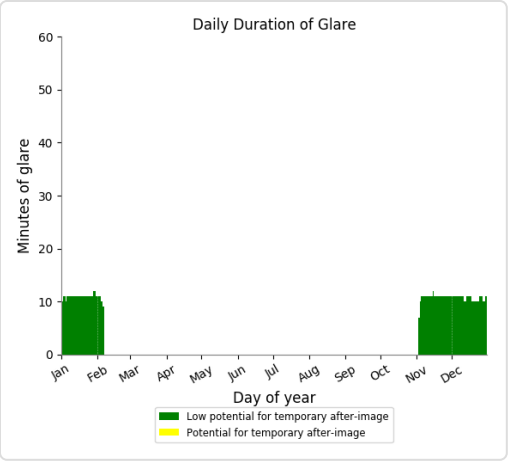
Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

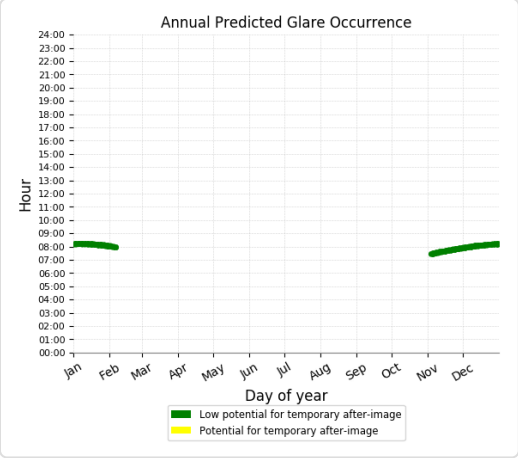
0 minutes of yellow glare
1037 minutes of green glare

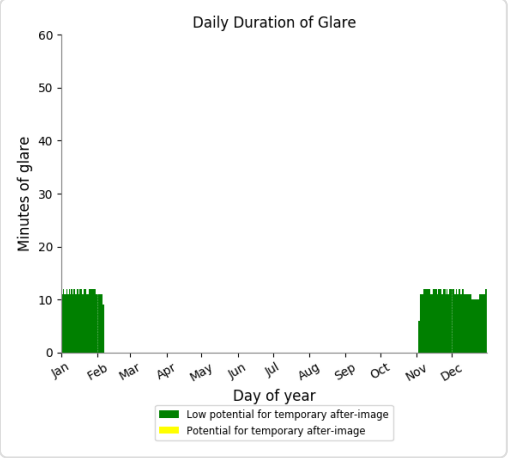




Point Receptor: OP 2

0 minutes of yellow glare
1086 minutes of green glare





Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

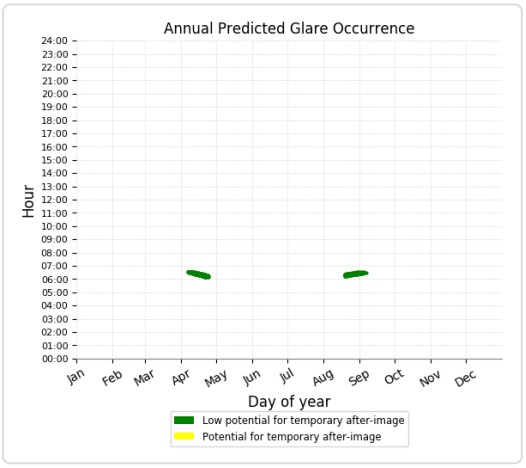
Point Receptor: OP 14

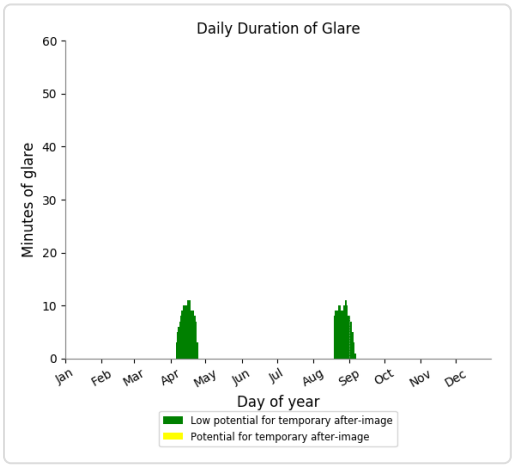
0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare

309 minutes of green glare

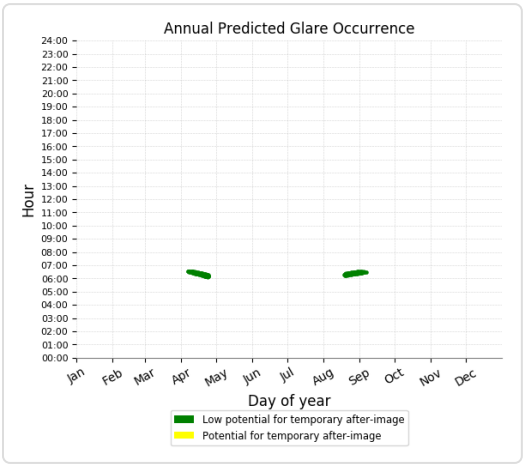


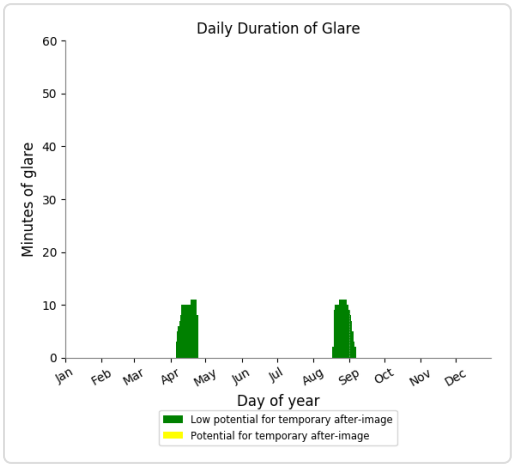


Point Receptor: OP 16

0 minutes of yellow glare

343 minutes of green glare

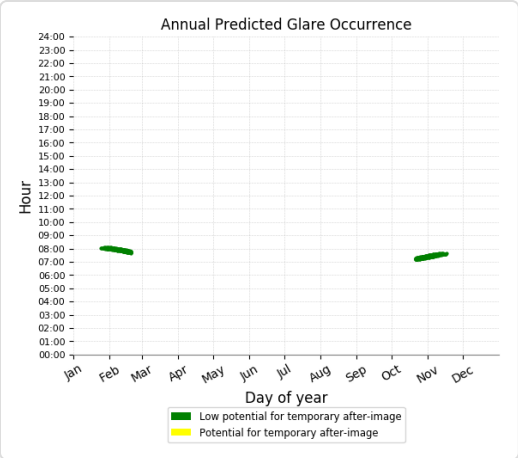


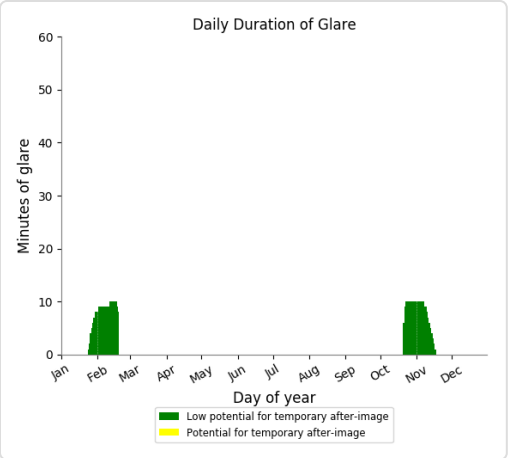


Point Receptor: OP 17

0 minutes of yellow glare

445 minutes of green glare



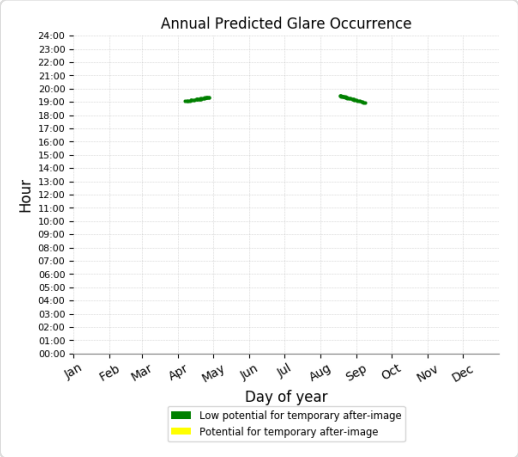


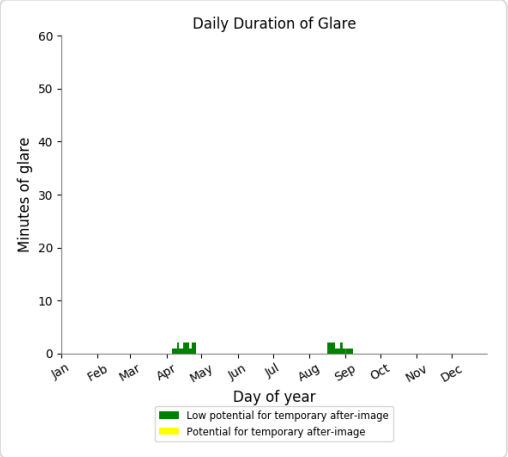
Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
62 minutes of green glare





Point Receptor: OP 20

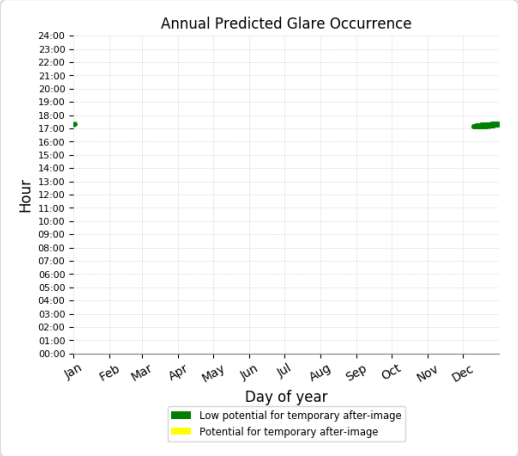
0 minutes of yellow glare
0 minutes of green glare

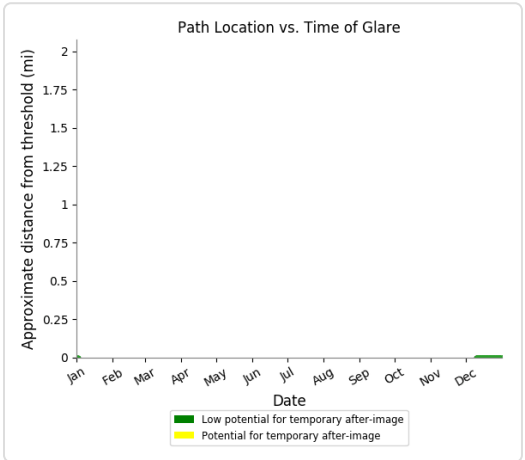
Results for: PV array 8b

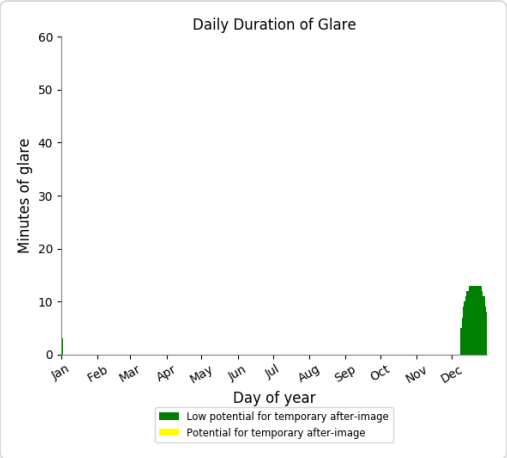
Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	269	0
EKX Runway 5	0	0
OP 1	254	0
OP 2	254	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	196	0
OP 12	196	0
OP 13	152	0
OP 14	152	0
OP 15	124	0
OP 16	105	0
OP 17	236	0
OP 18	0	1597
OP 19	574	228
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
269 minutes of green glare







Flight Path: EKX Runway 5

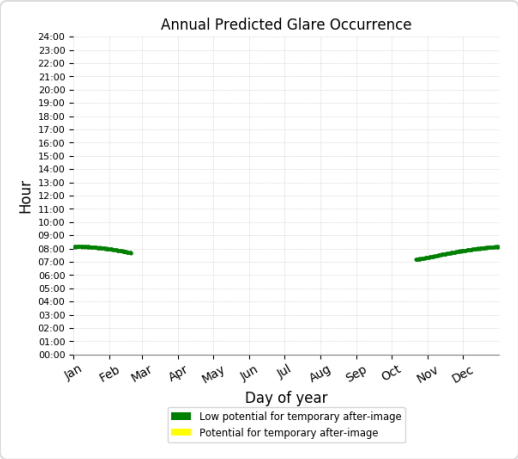
0 minutes of yellow glare

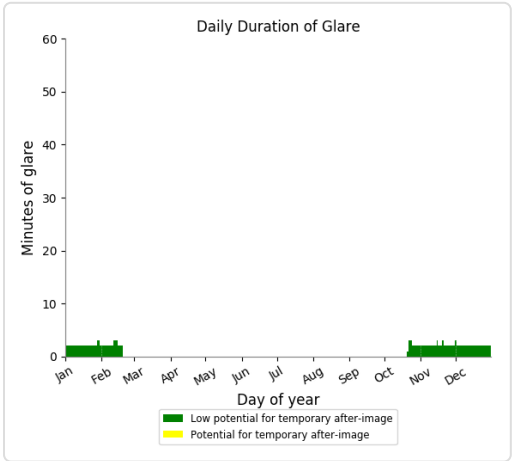
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare

254 minutes of green glare

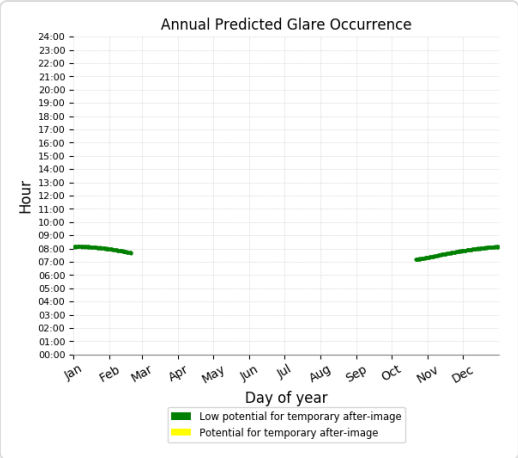


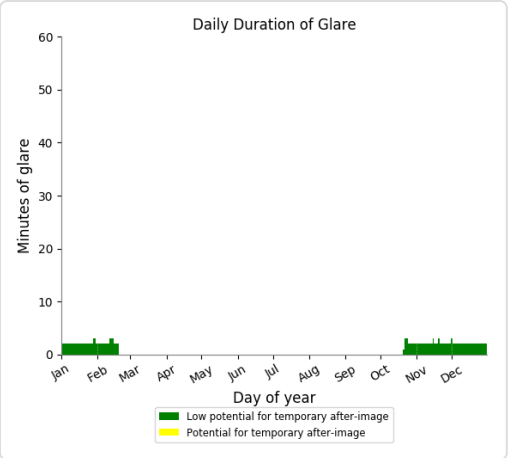


Point Receptor: OP 2

0 minutes of yellow glare

254 minutes of green glare





Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

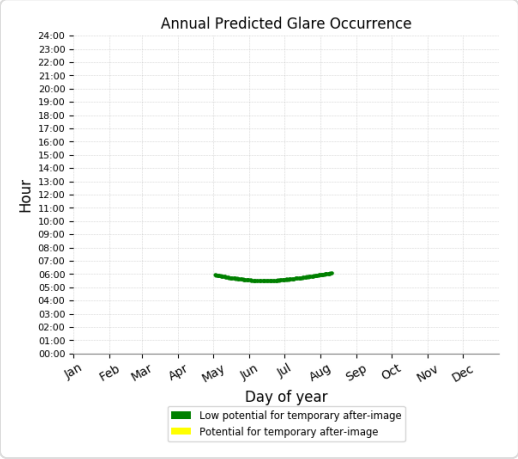
0 minutes of yellow glare
0 minutes of green glare

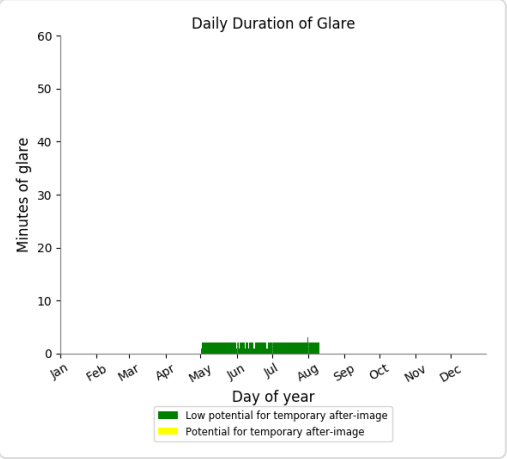
Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

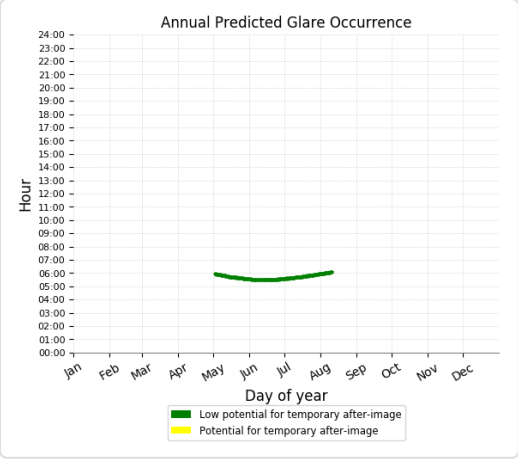
0 minutes of yellow glare
196 minutes of green glare

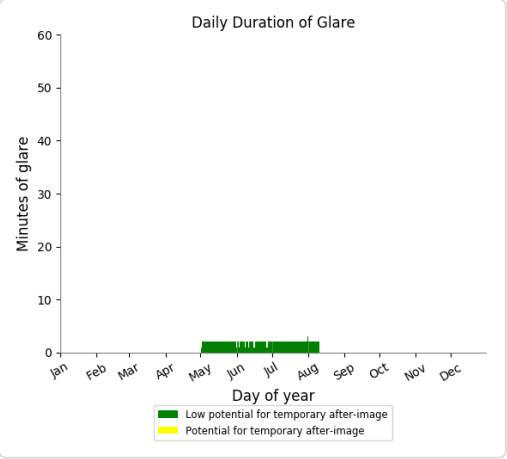




Point Receptor: OP 12

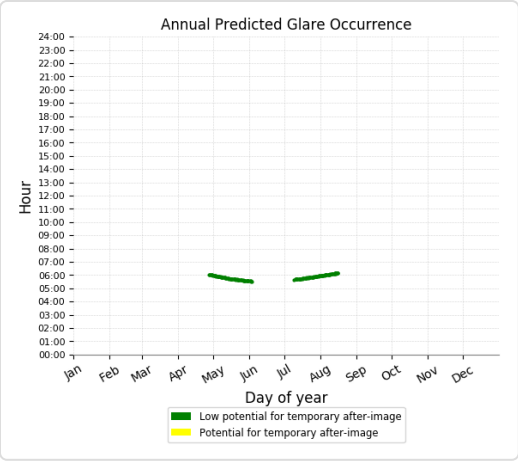
0 minutes of yellow glare
196 minutes of green glare

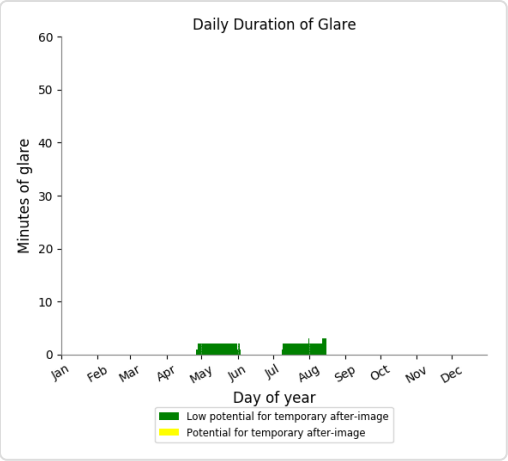




Point Receptor: OP 13

0 minutes of yellow glare
152 minutes of green glare

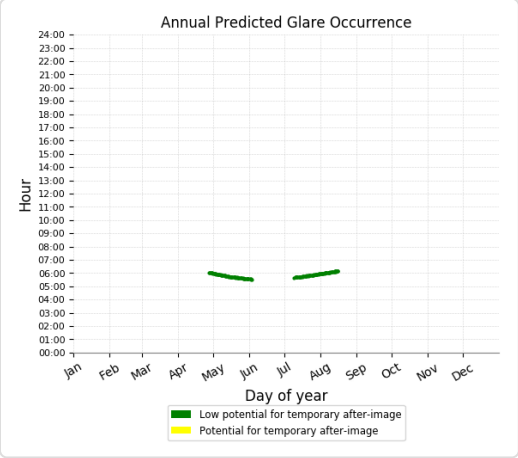


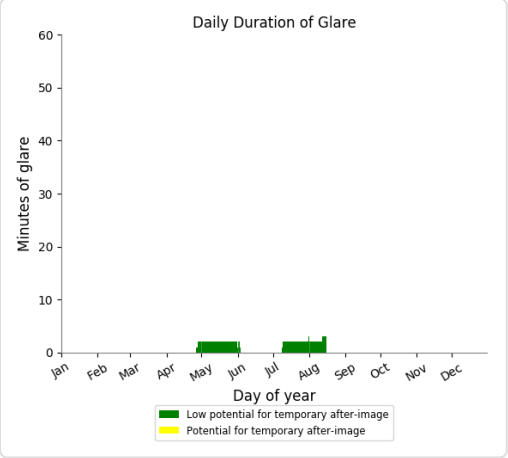


Point Receptor: OP 14

0 minutes of yellow glare

152 minutes of green glare

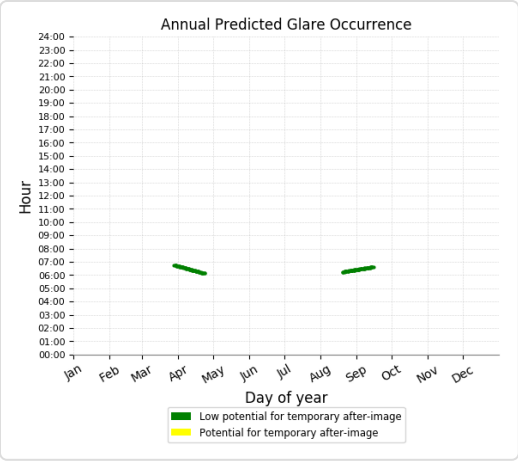


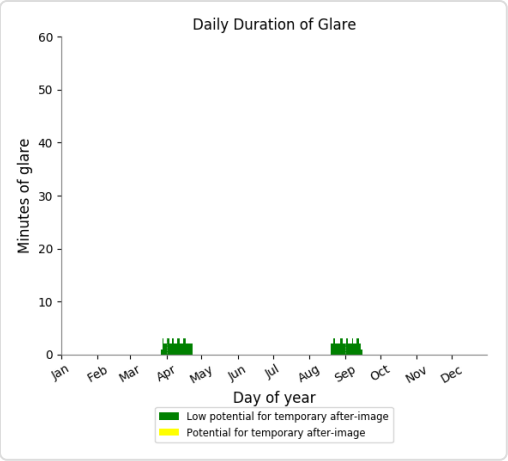


Point Receptor: OP 15

0 minutes of yellow glare

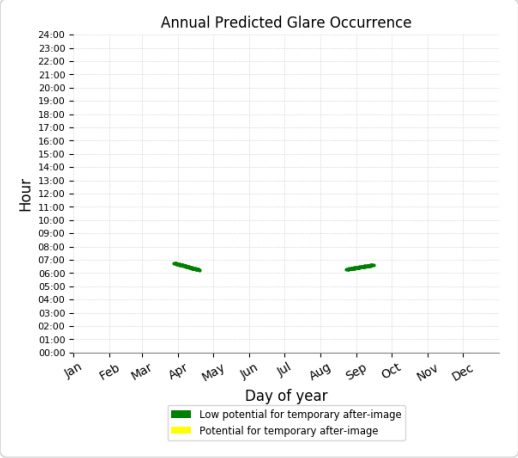
124 minutes of green glare

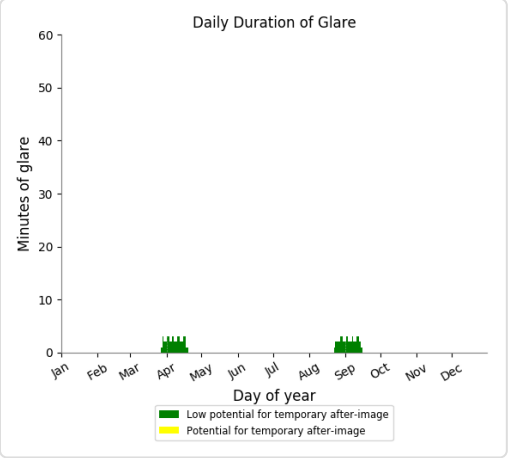




Point Receptor: OP 16

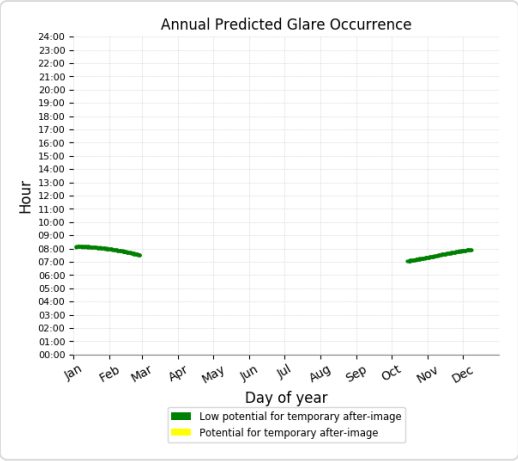
0 minutes of yellow glare
105 minutes of green glare

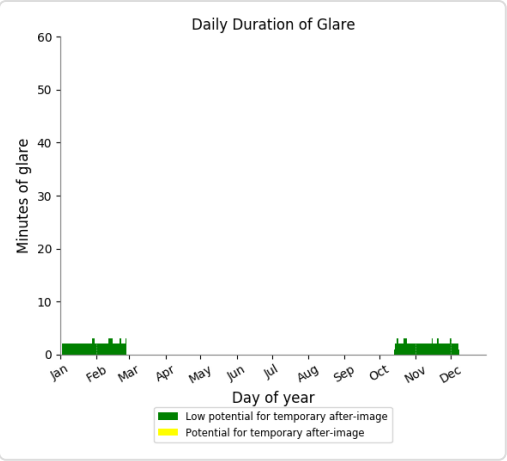




Point Receptor: OP 17

0 minutes of yellow glare
236 minutes of green glare

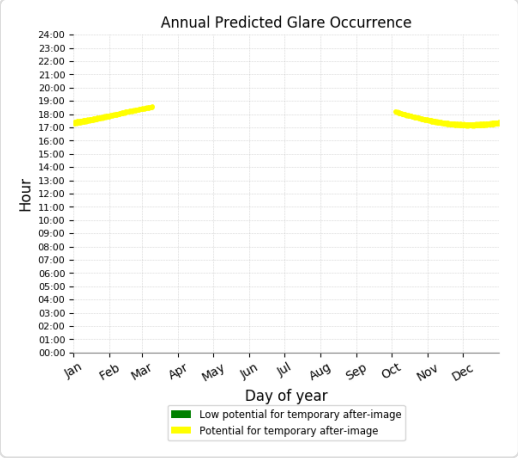


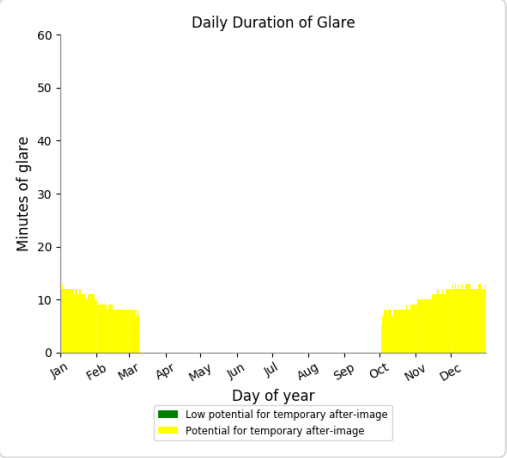


Point Receptor: OP 18

1597 minutes of yellow glare

0 minutes of green glare

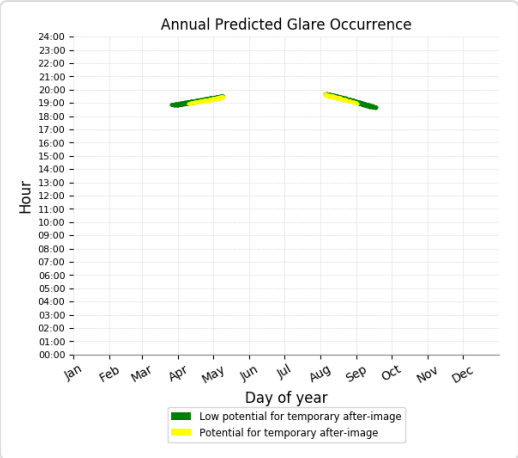


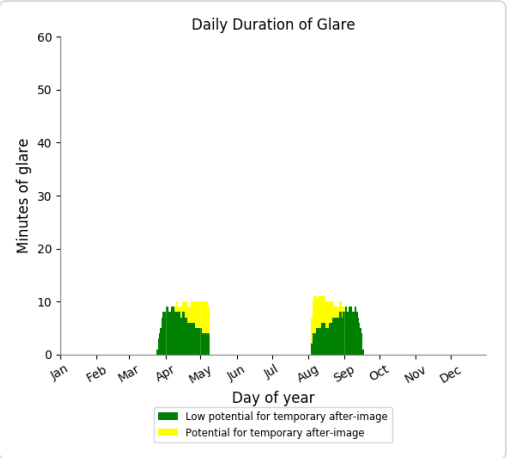


Point Receptor: OP 19

228 minutes of yellow glare

574 minutes of green glare





Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 8c

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	2514
OP 6	0	2810
OP 7	43	0
OP 8	41	0
OP 9	0	0
OP 10	0	0
OP 11	654	278
OP 12	677	328
OP 13	626	0
OP 14	646	0
OP 15	522	0
OP 16	543	0
OP 17	0	0
OP 18	0	0
OP 19	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
0 minutes of green glare

Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

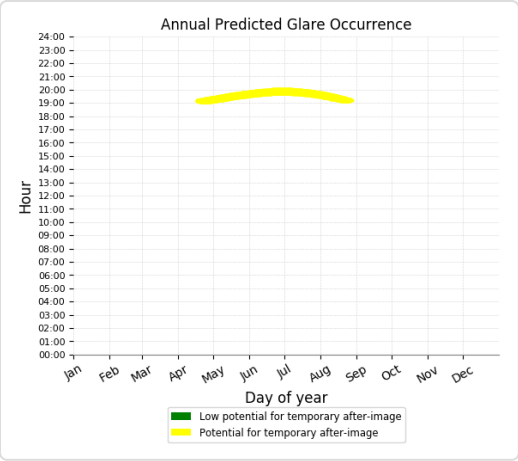
0 minutes of yellow glare
0 minutes of green glare

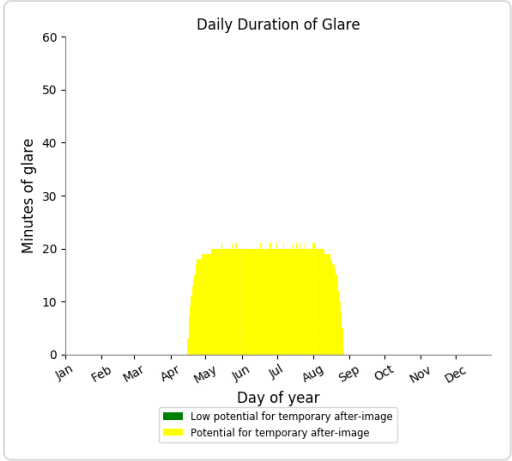
Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

2514 minutes of yellow glare
0 minutes of green glare

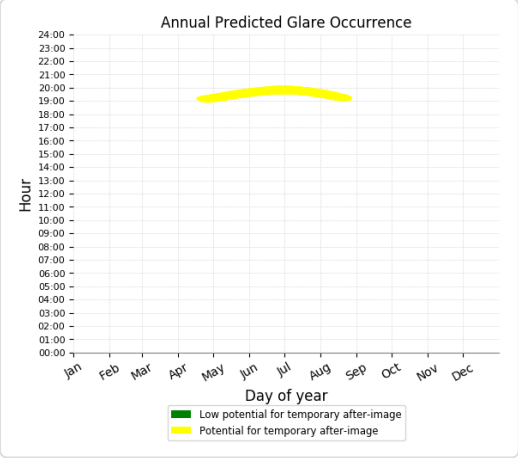


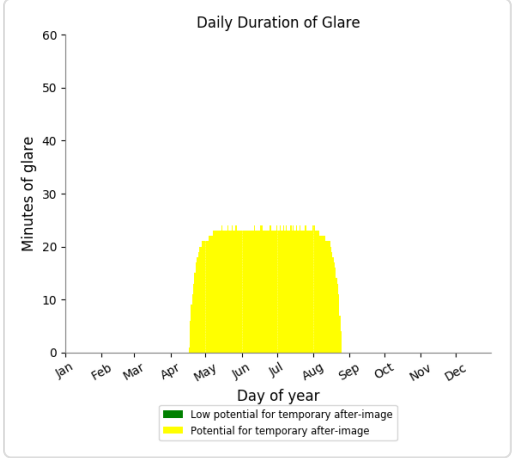


Point Receptor: OP 6

2810 minutes of yellow glare

0 minutes of green glare

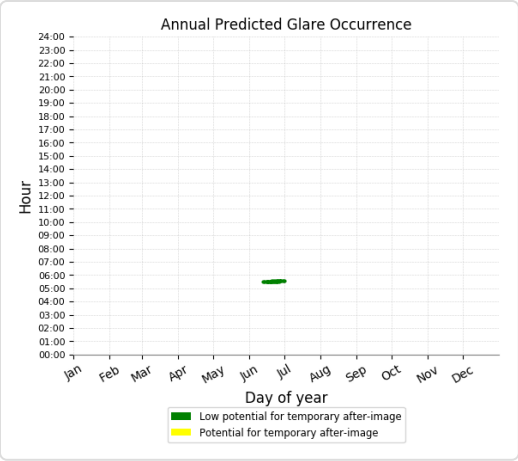


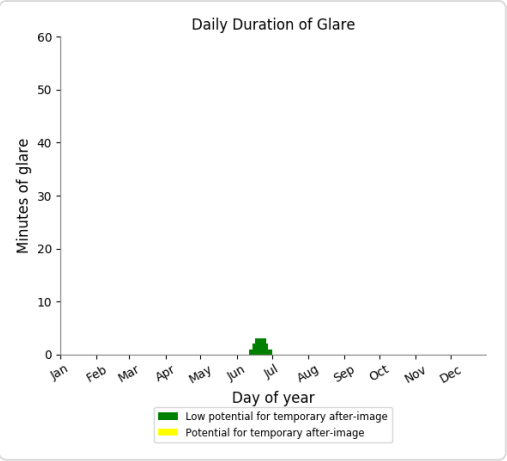


Point Receptor: OP 7

0 minutes of yellow glare

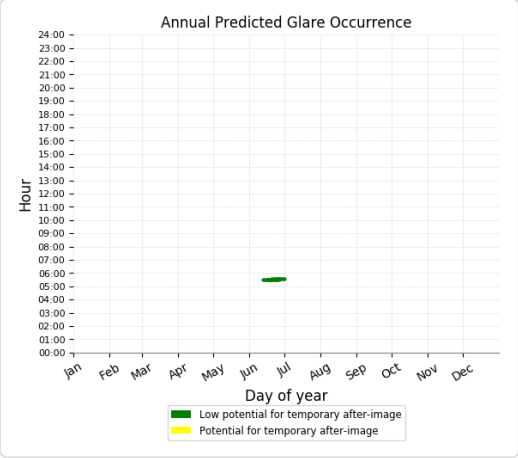
43 minutes of green glare

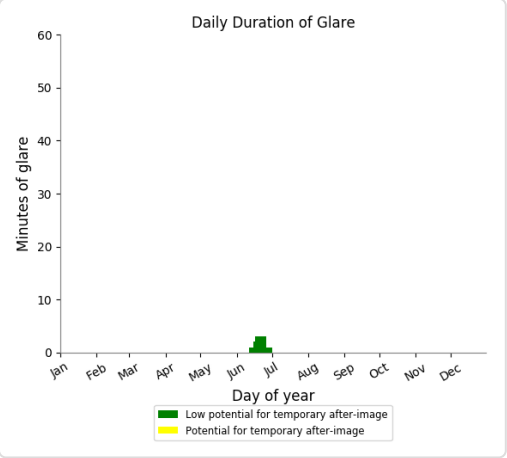




Point Receptor: OP 8

0 minutes of yellow glare
41 minutes of green glare





Point Receptor: OP 9

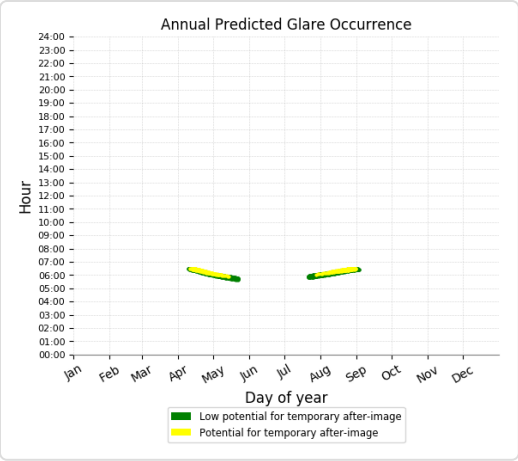
0 minutes of yellow glare
0 minutes of green glare

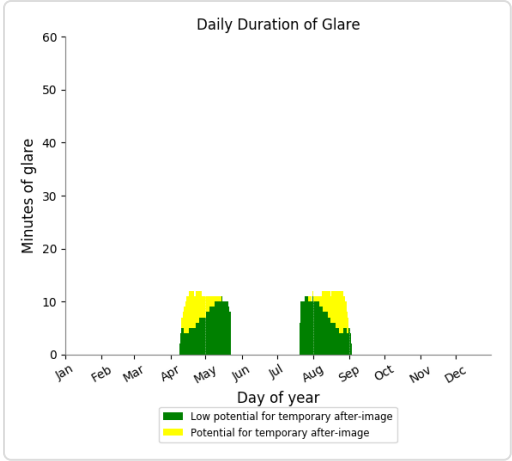
Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

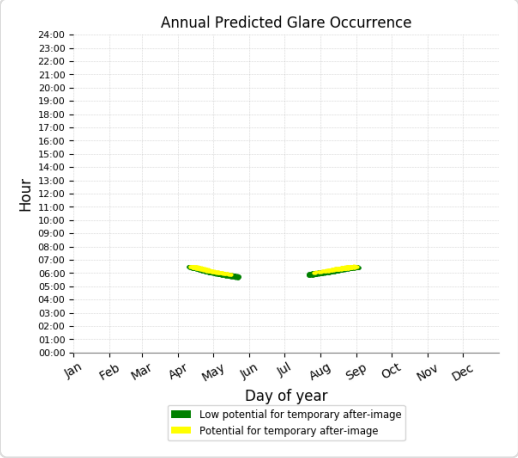
278 minutes of yellow glare
654 minutes of green glare

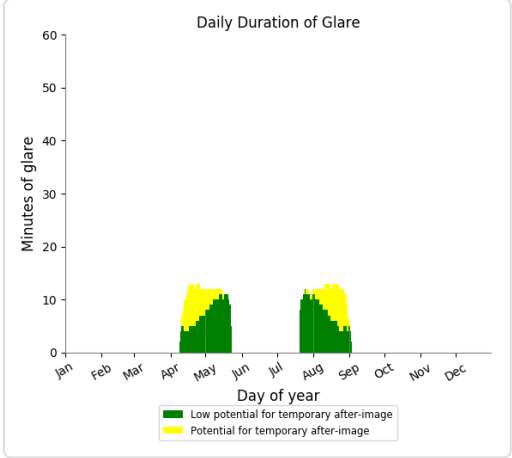




Point Receptor: OP 12

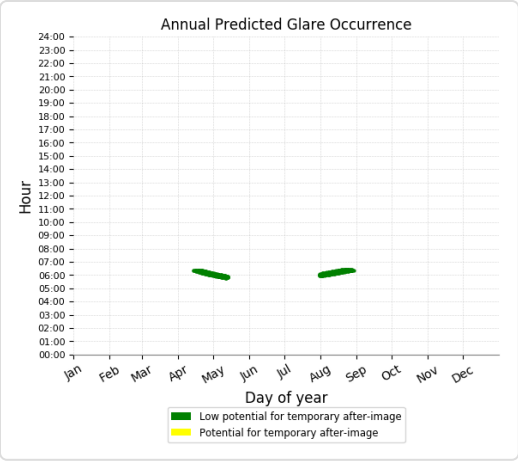
328 minutes of yellow glare
677 minutes of green glare

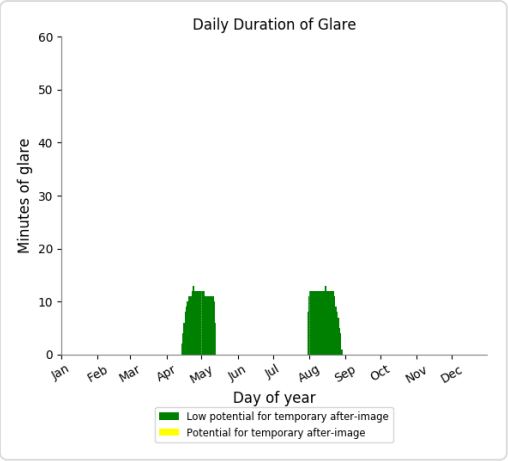




Point Receptor: OP 13

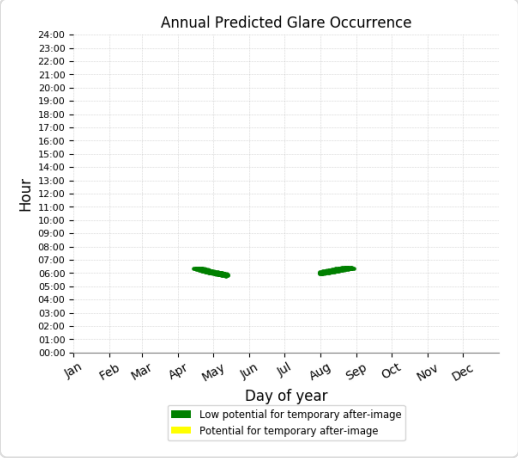
0 minutes of yellow glare
626 minutes of green glare

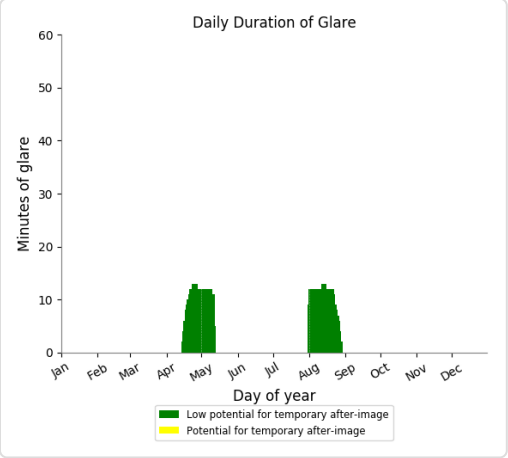




Point Receptor: OP 14

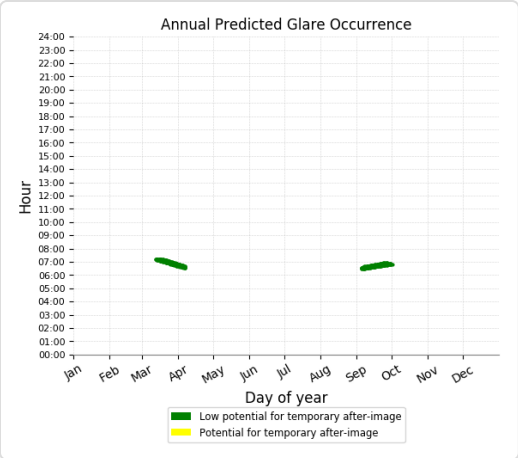
0 minutes of yellow glare
646 minutes of green glare

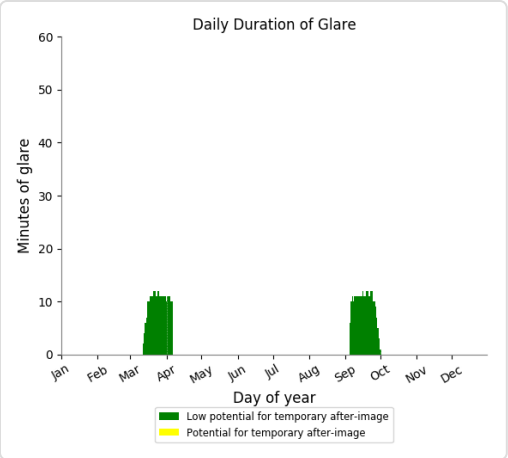




Point Receptor: OP 15

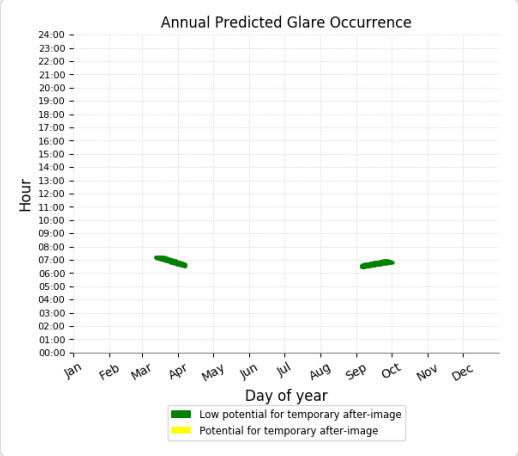
0 minutes of yellow glare
522 minutes of green glare

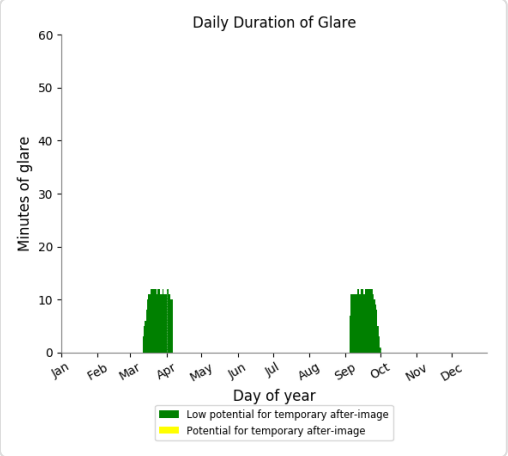




Point Receptor: OP 16

0 minutes of yellow glare
543 minutes of green glare





Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 9

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	23	109
OP 6	31	108
OP 7	79	0
OP 8	80	0
OP 9	0	0
OP 10	0	0
OP 11	59	0
OP 12	59	0
OP 13	45	0
OP 14	47	0
OP 15	22	0
OP 16	23	0
OP 17	0	0
OP 18	0	0
OP 19	308	280
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
0 minutes of green glare

Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

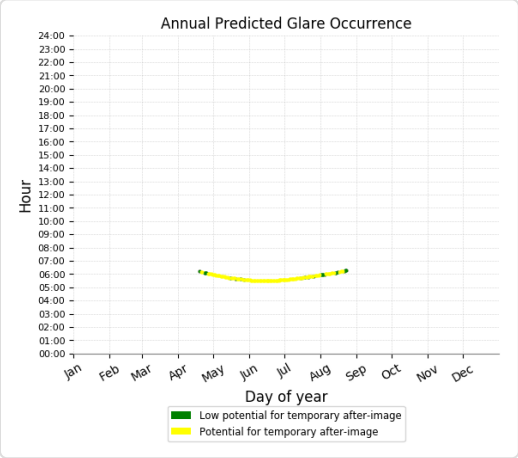
0 minutes of yellow glare
0 minutes of green glare

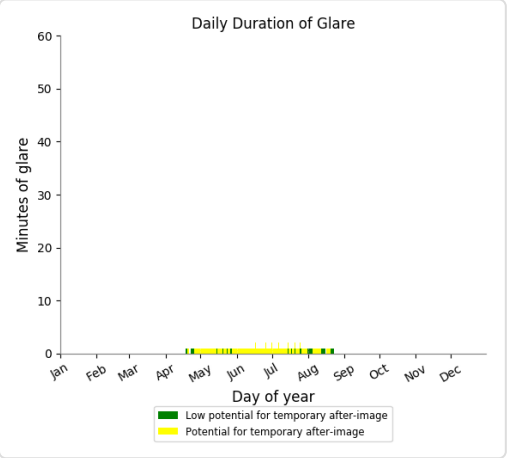
Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

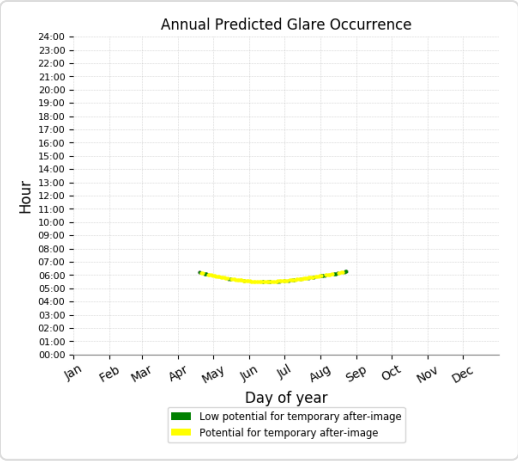
109 minutes of yellow glare
23 minutes of green glare

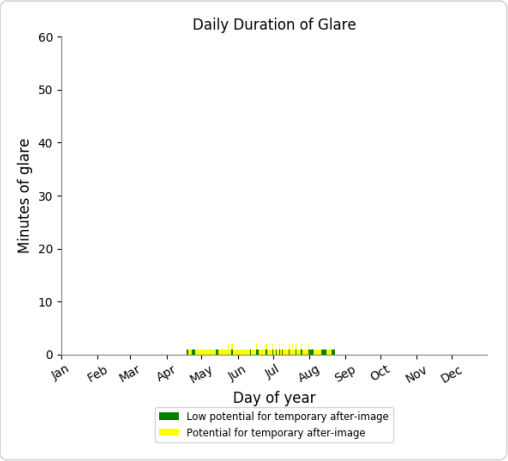




Point Receptor: OP 6

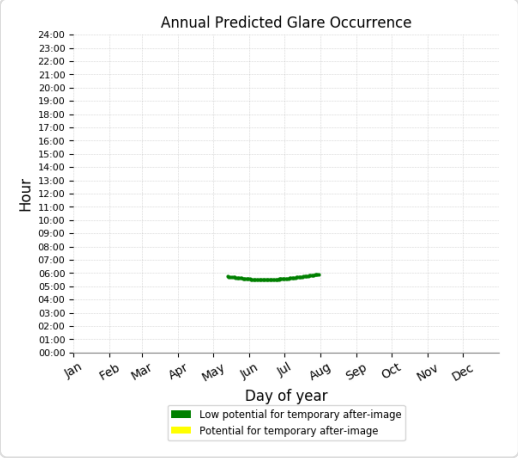
108 minutes of yellow glare
31 minutes of green glare

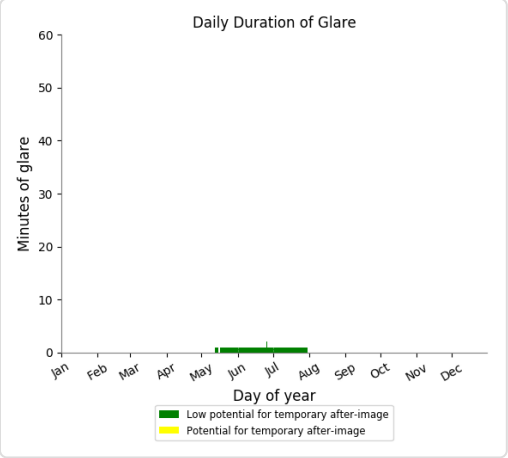




Point Receptor: OP 7

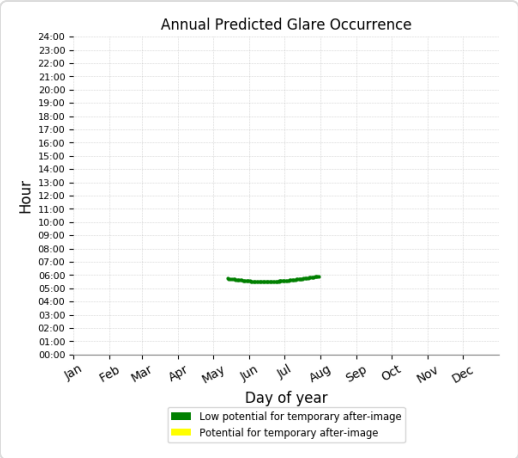
0 minutes of yellow glare
79 minutes of green glare

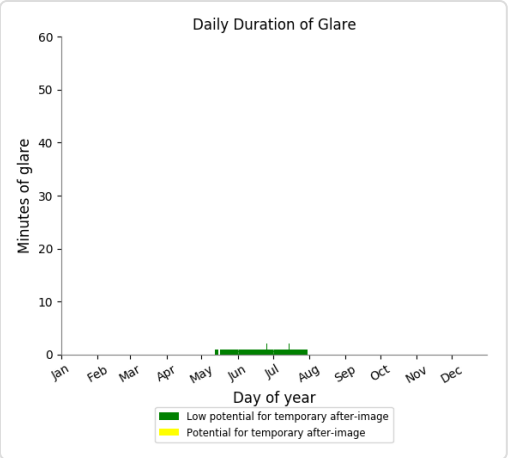




Point Receptor: OP 8

0 minutes of yellow glare
80 minutes of green glare





Point Receptor: OP 9

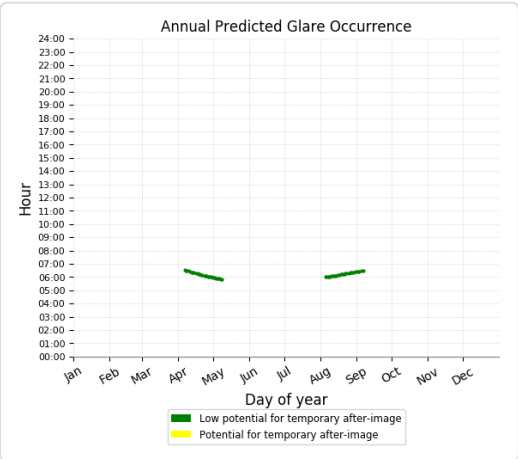
0 minutes of yellow glare
0 minutes of green glare

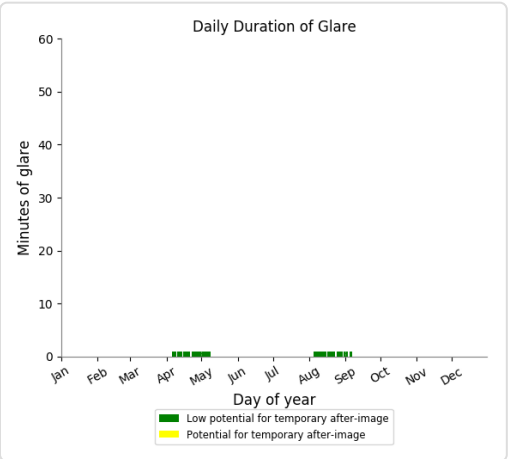
Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

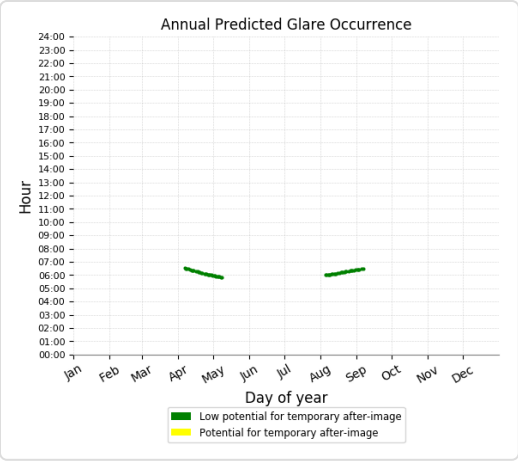
0 minutes of yellow glare
59 minutes of green glare

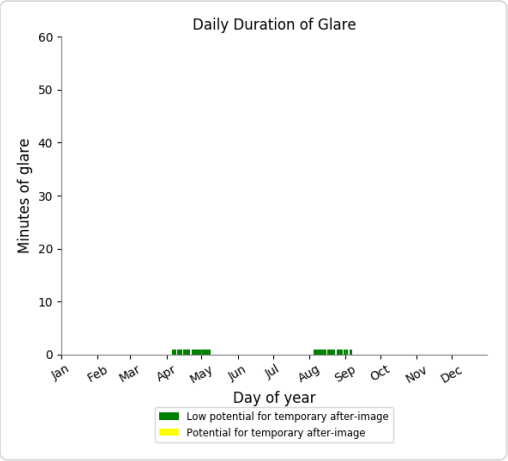




Point Receptor: OP 12

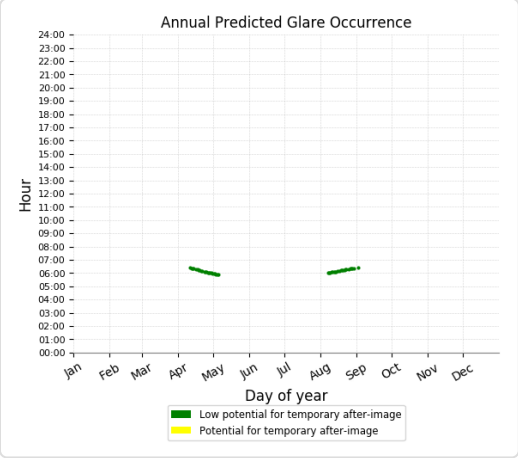
0 minutes of yellow glare
59 minutes of green glare

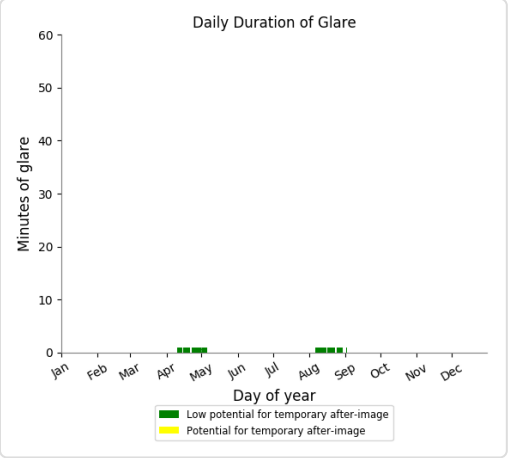




Point Receptor: OP 13

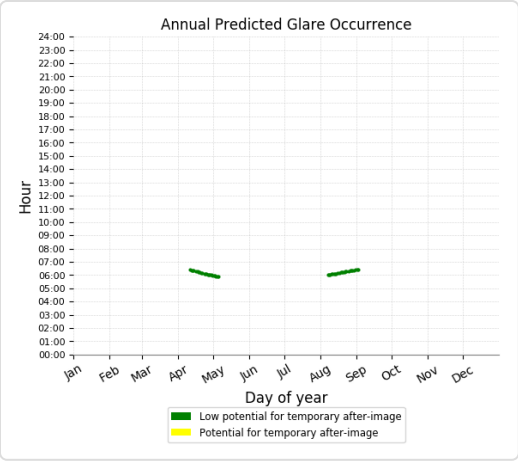
0 minutes of yellow glare
45 minutes of green glare

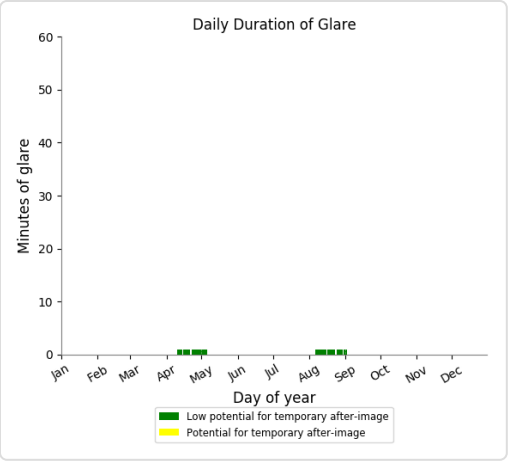




Point Receptor: OP 14

0 minutes of yellow glare
47 minutes of green glare

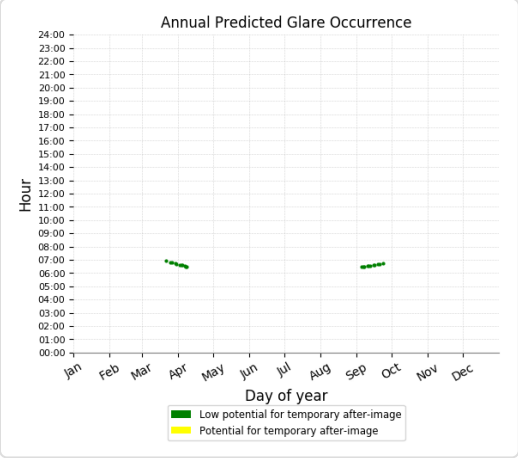


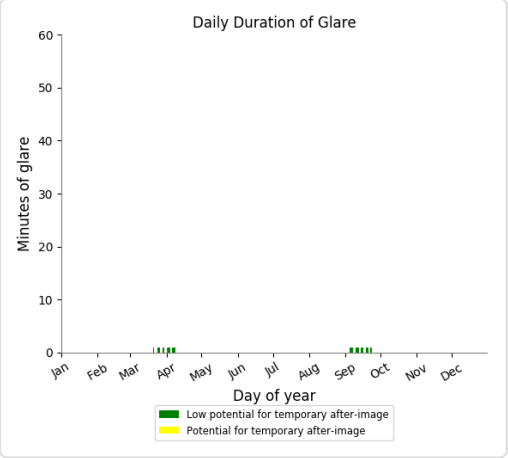


Point Receptor: OP 15

0 minutes of yellow glare

22 minutes of green glare

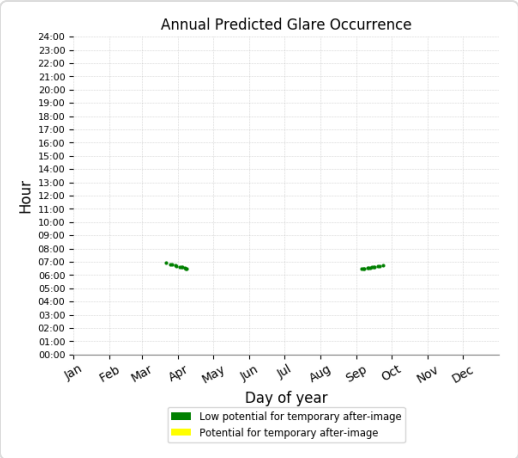


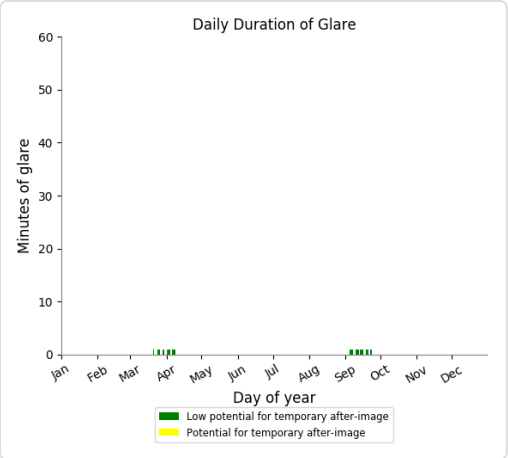


Point Receptor: OP 16

0 minutes of yellow glare

23 minutes of green glare





Point Receptor: OP 17

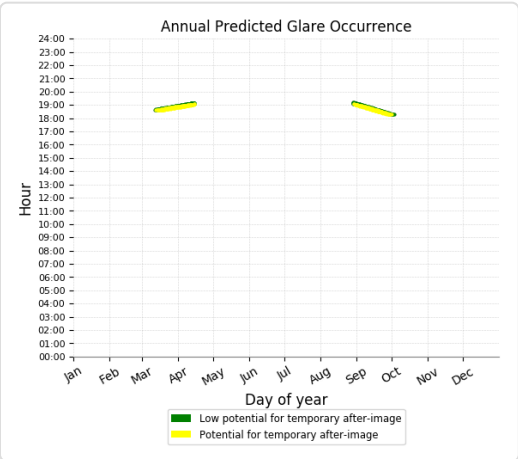
0 minutes of yellow glare
0 minutes of green glare

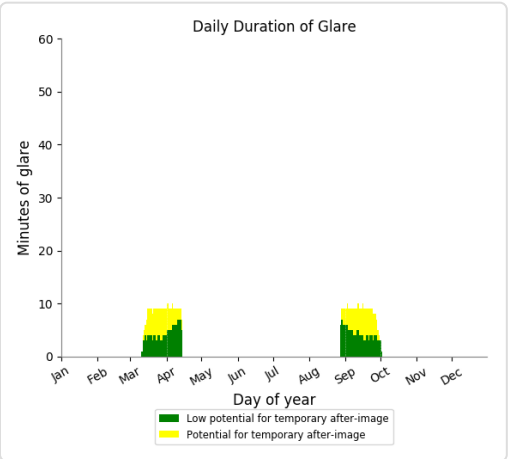
Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

280 minutes of yellow glare
308 minutes of green glare





Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual results and glare occurrence may differ.
Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
Refer to the Help page at **www.forgesolar.com/help/** for assumptions and limitations not listed here.

FORGESOLAR GLARE ANALYSIS

Project: **Rhudes Creek Solar**
Proposed utility-scale project in Hardin County, Kentucky

Site configuration: **Rhudes Creek_v3_Arrays 12-15_0 deg**
Analysis conducted by Alan Plumeau (aplumeau@trccompanies.com) at 01:40 on 05 Jul, 2021.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
2-mile flight path(s)	PASS	Flight path receptor(s) do not receive yellow glare
ATCT(s)	N/A	No ATCT receptors designated

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63276 can be read at https://www.federalregister.gov/d/2013-24729

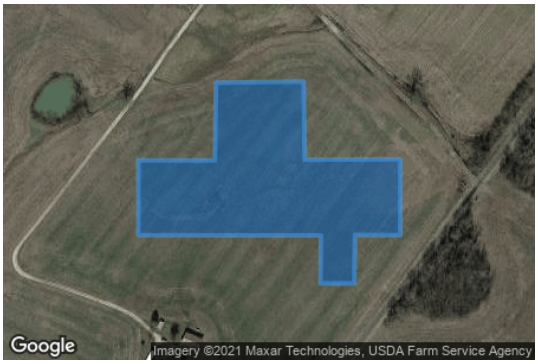
SITE CONFIGURATION

Analysis Parameters

DNI: peaks at 1,000.0 W/m^2
Time interval: 1 min
Ocular transmission coefficient: 0.5
Pupil diameter: 0.002 m
Eye focal length: 0.017 m
Sun subtended angle: 9.3 mrad
Site Config ID: 56041.9913

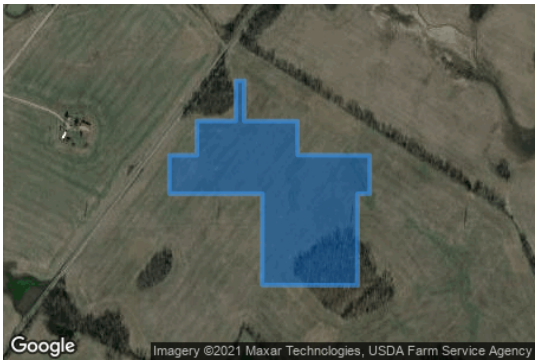
PV Array(s)

Name: PV array 12
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.650986	-85.973350	717.77	9.00	726.77
2	37.650986	-85.972655	711.80	9.00	720.80
3	37.651542	-85.972645	709.43	9.00	718.43
4	37.651550	-85.971849	712.81	9.00	721.81
5	37.650990	-85.971840	707.65	9.00	716.65
6	37.650994	-85.970972	701.93	9.00	710.93
7	37.650450	-85.970973	705.36	9.00	714.36
8	37.650452	-85.971384	705.82	9.00	714.82
9	37.650104	-85.971390	708.30	9.00	717.30
10	37.650104	-85.971697	715.34	9.00	724.34
11	37.650448	-85.971692	708.14	9.00	717.14
12	37.650450	-85.973350	716.84	9.00	725.84

Name: PV array 13
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

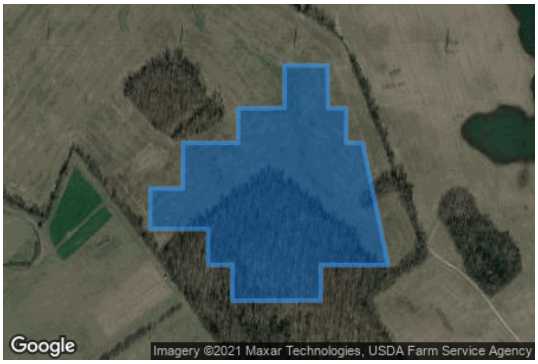


Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.649780	-85.970841	704.60	9.00	713.60
2	37.649780	-85.970134	713.78	9.00	722.78
3	37.650356	-85.970130	709.15	9.00	718.15
4	37.650357	-85.969981	707.45	9.00	716.45
5	37.649778	-85.969981	712.84	9.00	721.84
6	37.649779	-85.969014	700.69	9.00	709.69
7	37.649292	-85.969010	701.28	9.00	710.28
8	37.649287	-85.967703	701.67	9.00	710.68
9	37.648741	-85.967701	712.46	9.00	721.46
10	37.648736	-85.967925	713.59	9.00	722.59
11	37.647426	-85.967924	724.56	9.00	733.56
12	37.647432	-85.969654	711.92	9.00	720.92
13	37.648739	-85.969650	712.38	9.00	721.38
14	37.648738	-85.971338	699.43	9.00	708.43
15	37.649290	-85.971339	700.95	9.00	709.95
16	37.649289	-85.970839	700.28	9.00	709.28

Name: PV array 14
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.647956	-85.971992	696.76	9.00	705.76
2	37.647960	-85.971178	707.11	9.00	716.11
3	37.647308	-85.971180	717.10	9.00	726.11
4	37.647310	-85.970641	708.90	9.00	717.90
5	37.646626	-85.970640	712.39	9.00	721.39
6	37.646628	-85.971326	709.87	9.00	718.88
7	37.646983	-85.971330	720.18	9.00	729.18
8	37.646980	-85.971995	716.77	9.00	725.77

Name: PV array 15
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.646250	-85.968592	704.23	9.00	713.23
2	37.646248	-85.968006	711.61	9.00	720.61
3	37.646903	-85.967997	700.50	9.00	709.50
4	37.646901	-85.967003	707.61	9.00	716.61
5	37.647397	-85.966997	707.69	9.00	716.70
6	37.647401	-85.966157	695.25	9.00	704.25
7	37.648014	-85.966159	696.30	9.00	705.30
8	37.648009	-85.965375	692.83	9.00	701.83
9	37.647400	-85.965370	698.87	9.00	707.87
10	37.647399	-85.965039	696.35	9.00	705.35
11	37.646900	-85.965040	700.74	9.00	709.74
12	37.646901	-85.964741	698.63	9.00	707.63
13	37.645151	-85.964275	722.57	9.00	731.58
14	37.645151	-85.965497	752.08	9.00	761.08
15	37.644645	-85.965500	763.40	9.00	772.40
16	37.644640	-85.967108	729.99	9.00	738.99
17	37.645151	-85.967107	737.02	9.00	746.02
18	37.645152	-85.967547	731.48	9.00	740.48
19	37.645668	-85.967549	725.34	9.00	734.34
20	37.645670	-85.968600	708.47	9.00	717.47
21	37.645670	-85.968600	708.47	9.00	717.47
22	37.645670	-85.968600	708.47	9.00	717.47

Flight Path Receptor(s)

Name: EKX Runway 23
Description:
Threshold height: 30 ft
Direction: 227.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°

Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	37.691507	-85.917731	770.64	30.00	800.64
Two-mile	37.711226	-85.890978	745.84	608.26	1354.10

Name: EKX Runway 5
Description:
Threshold height: 49 ft
Direction: 47.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°

Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	37.680546	-85.932333	751.39	49.00	800.39
Two-mile	37.660828	-85.959082	694.10	659.75	1353.85

Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	37.665118	-86.000164	735.72	6.00
OP 2	2	37.665154	-86.000182	736.74	16.00
OP 3	3	37.646994	-85.982340	750.74	6.00
OP 4	4	37.646994	-85.982329	750.54	16.00
OP 5	5	37.651055	-85.982995	744.16	6.00
OP 6	6	37.651021	-85.983005	744.32	16.00
OP 7	7	37.635969	-86.019095	704.01	6.00
OP 8	8	37.635965	-86.019111	704.05	16.00
OP 9	9	37.668838	-85.992461	725.46	6.00
OP 10	10	37.668851	-85.992439	725.36	16.00
OP 11	11	37.649925	-85.999946	728.69	6.00
OP 12	12	37.649925	-85.999946	728.69	16.00
OP 13	13	37.647332	-86.011354	746.93	6.00
OP 14	14	37.647340	-86.011381	746.72	16.00
OP 15	15	37.653195	-86.014569	745.80	6.00
OP 16	16	37.653204	-86.014516	746.01	16.00
OP 17	17	37.665804	-86.009069	717.19	6.00
OP 18	18	37.659876	-85.976089	723.83	6.00
OP 19	19	37.654159	-85.958354	709.21	6.00
OP 20	20	37.642335	-85.970821	706.91	6.00

GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
PV array 12	SA tracking	SA tracking	2,244	0	-
PV array 13	SA tracking	SA tracking	5,845	3,970	-
PV array 14	SA tracking	SA tracking	4,157	0	-
PV array 15	SA tracking	SA tracking	6,329	3,174	-

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	1118	0
OP 2	1147	0
OP 3	1724	1644
OP 4	1784	1775
OP 5	2011	1365
OP 6	2056	1486
OP 7	102	0
OP 8	102	0
OP 9	0	0
OP 10	0	0
OP 11	921	0
OP 12	1028	0
OP 13	745	0
OP 14	841	0
OP 15	839	0
OP 16	799	0
OP 17	1727	0
OP 18	0	0
OP 19	1631	774
OP 20	0	100

Results for: PV array 12

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	63	0
OP 2	63	0
OP 3	265	0
OP 4	275	0
OP 5	110	0
OP 6	107	0
OP 7	102	0
OP 8	102	0
OP 9	0	0
OP 10	0	0
OP 11	79	0
OP 12	79	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 13	74	0
OP 14	75	0
OP 15	65	0
OP 16	66	0
OP 17	123	0
OP 18	0	0
OP 19	596	0
OP 20	0	0

Flight Path: EKX Runway 23

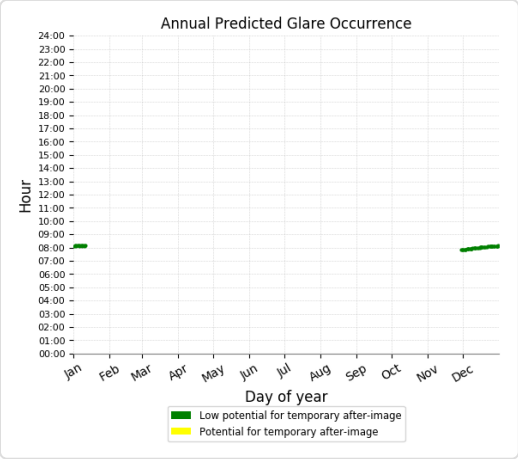
0 minutes of yellow glare
0 minutes of green glare

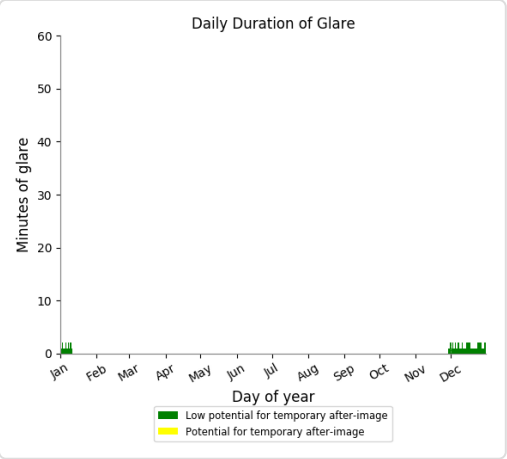
Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

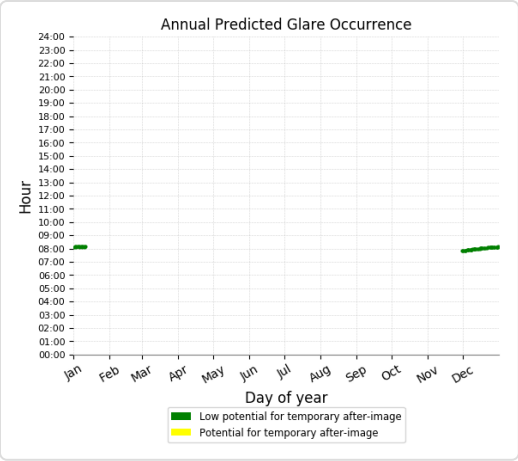
0 minutes of yellow glare
63 minutes of green glare

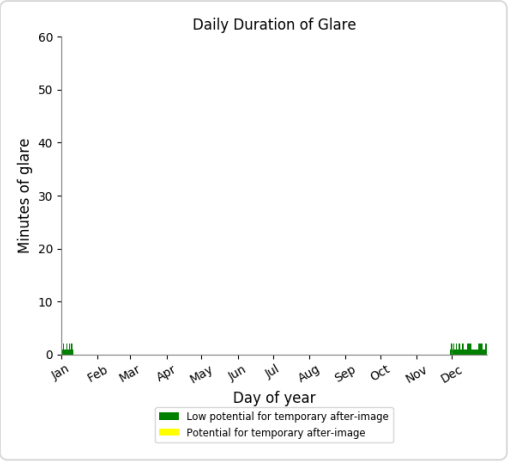




Point Receptor: OP 2

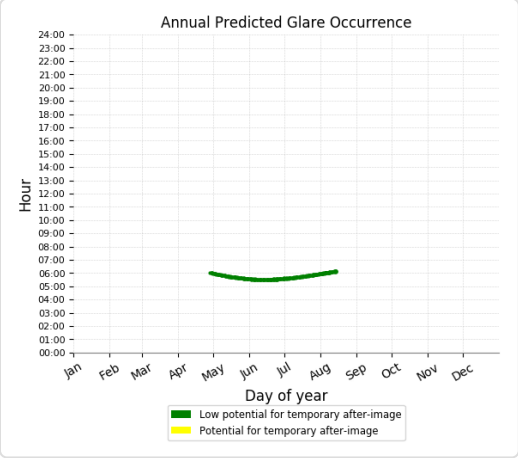
0 minutes of yellow glare
63 minutes of green glare

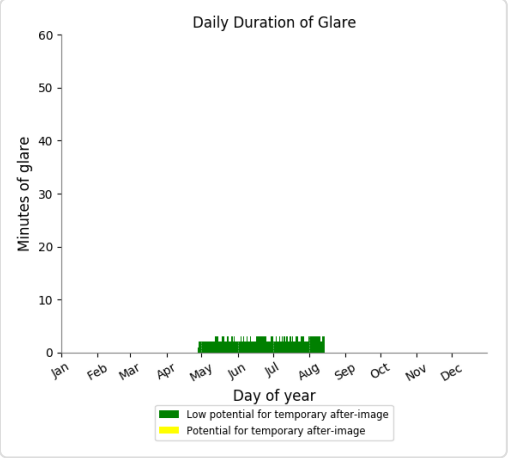




Point Receptor: OP 3

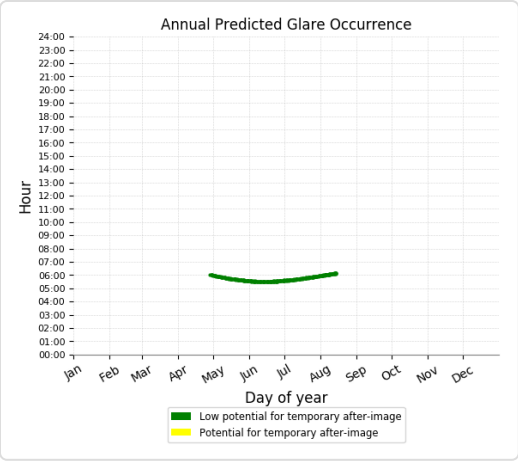
0 minutes of yellow glare
265 minutes of green glare

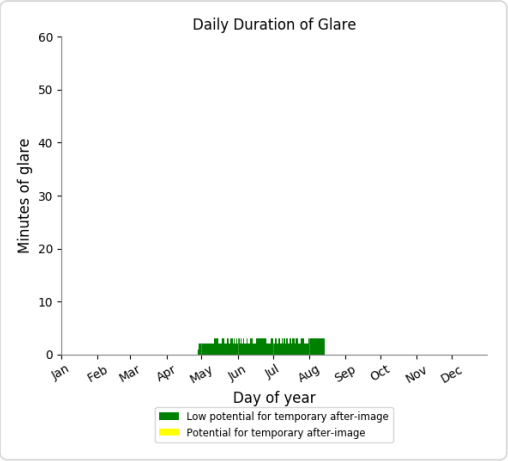




Point Receptor: OP 4

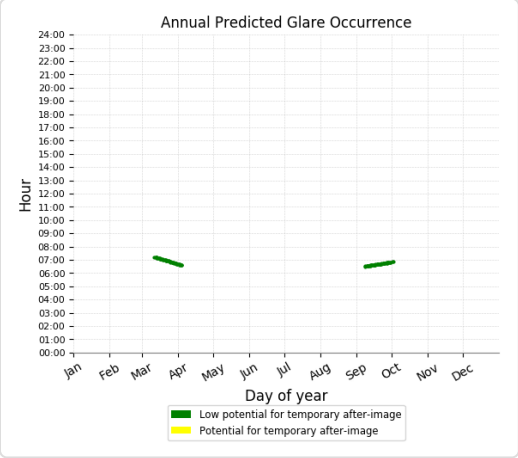
0 minutes of yellow glare
275 minutes of green glare

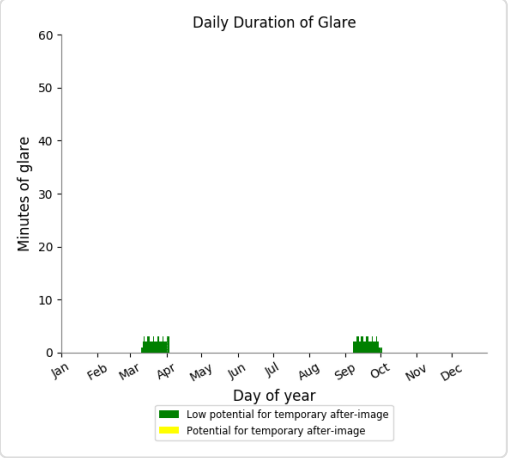




Point Receptor: OP 5

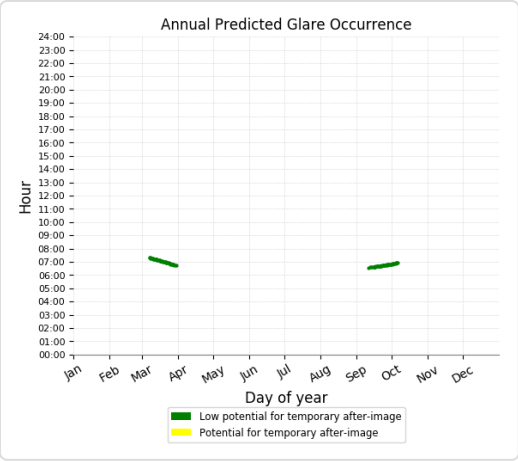
0 minutes of yellow glare
110 minutes of green glare

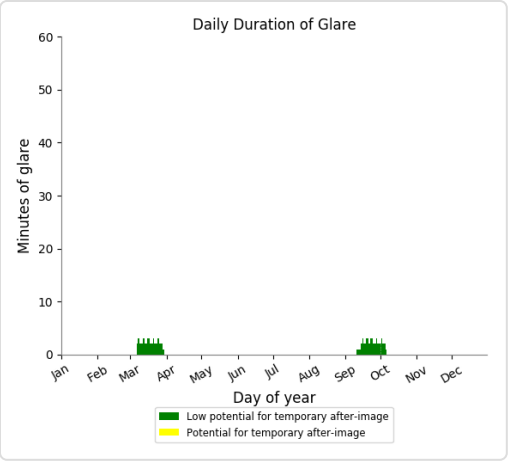




Point Receptor: OP 6

0 minutes of yellow glare
107 minutes of green glare

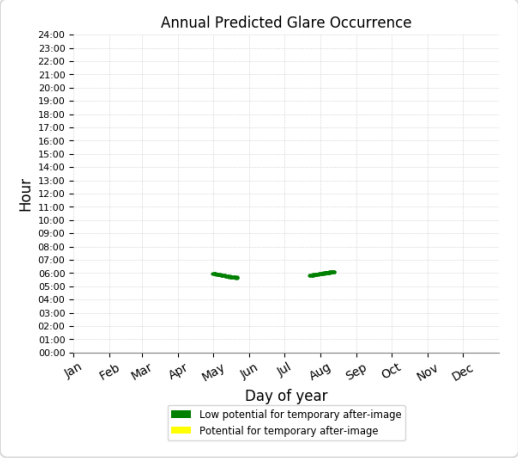


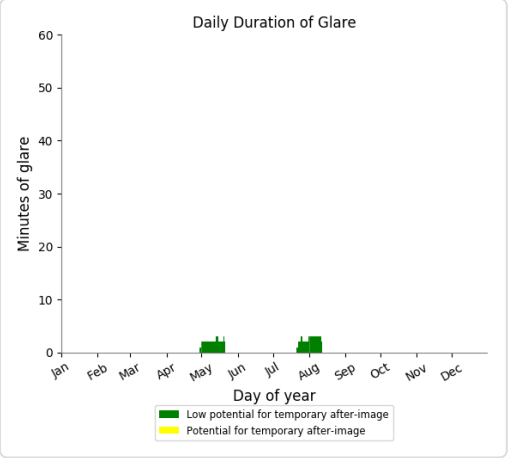


Point Receptor: OP 7

0 minutes of yellow glare

102 minutes of green glare

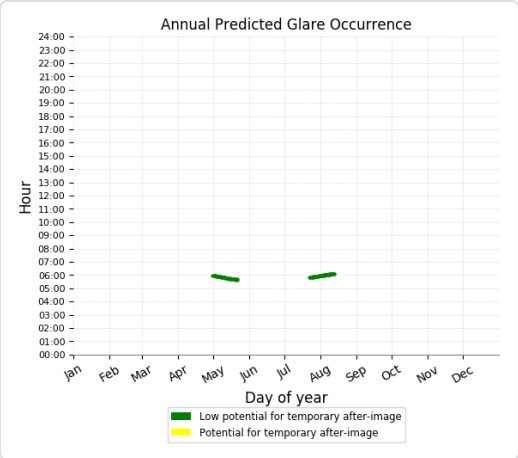


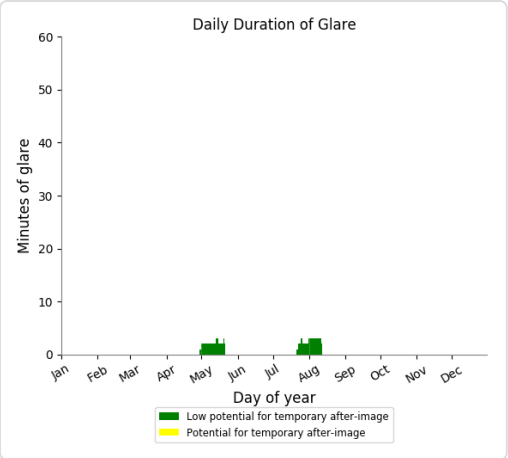


Point Receptor: OP 8

0 minutes of yellow glare

102 minutes of green glare





Point Receptor: OP 9

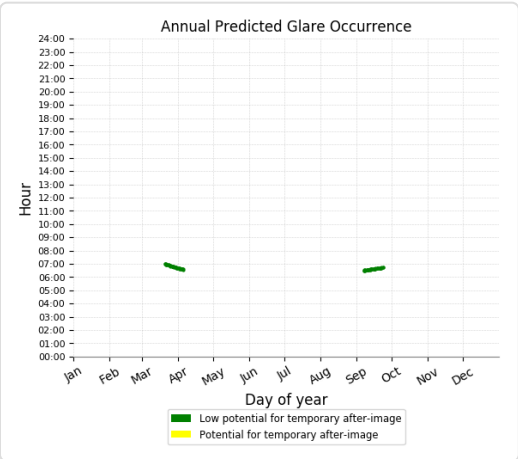
0 minutes of yellow glare
0 minutes of green glare

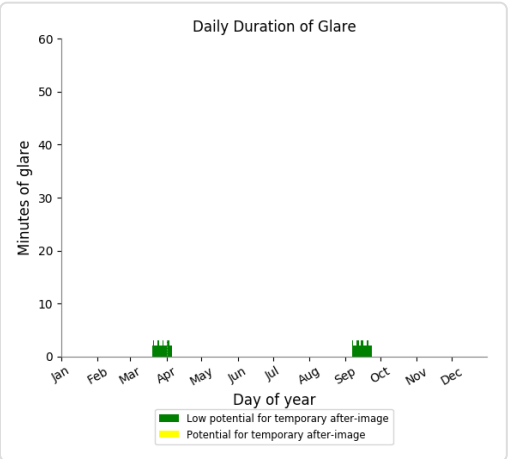
Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

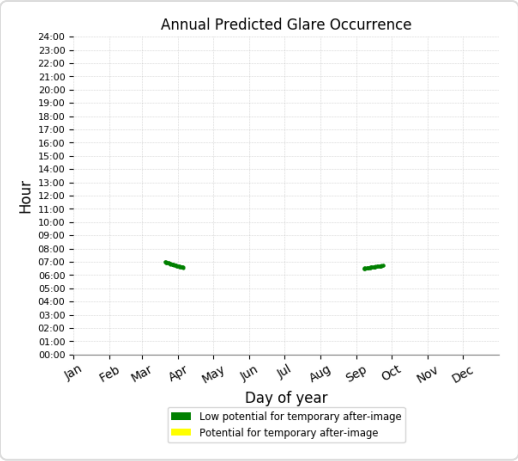
0 minutes of yellow glare
79 minutes of green glare

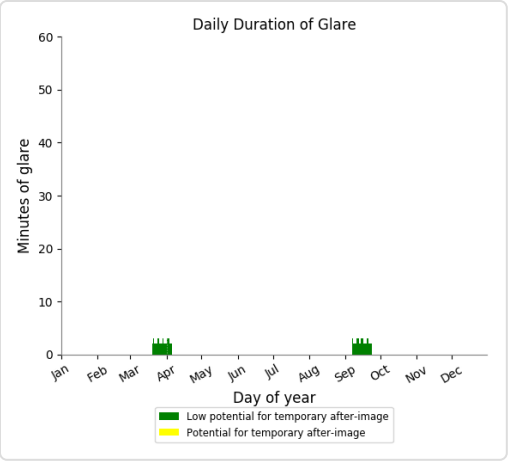




Point Receptor: OP 12

0 minutes of yellow glare
79 minutes of green glare

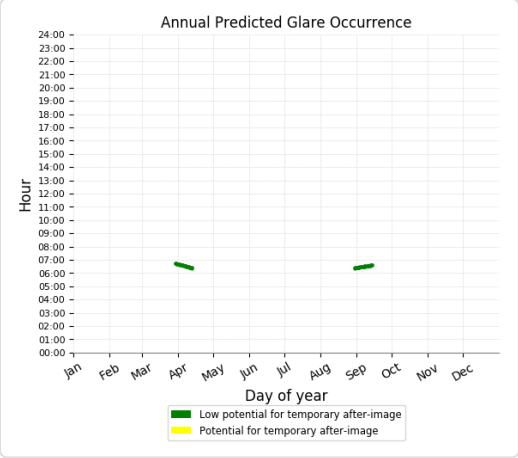


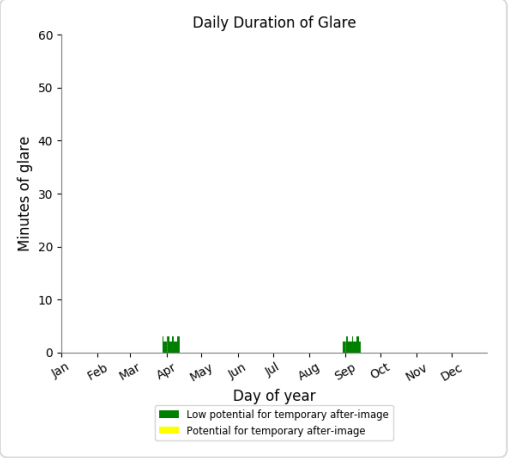


Point Receptor: OP 13

0 minutes of yellow glare

74 minutes of green glare

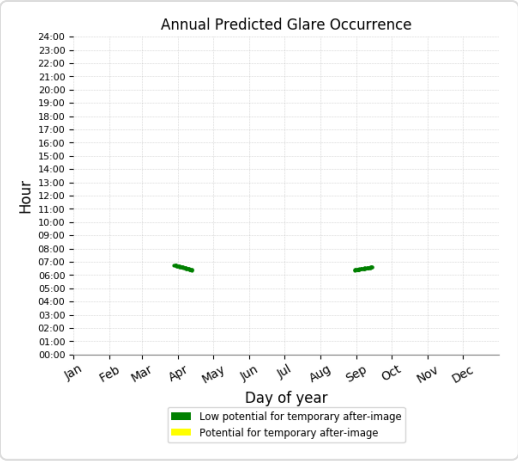


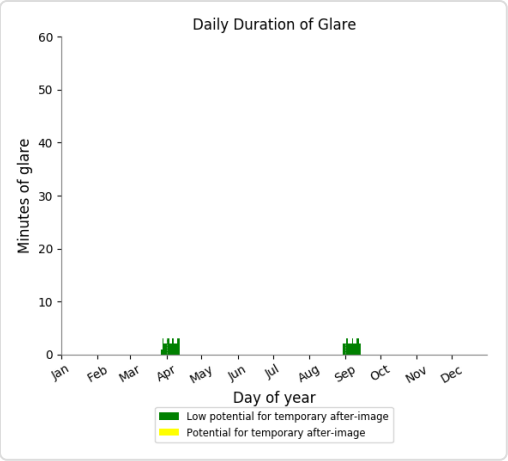


Point Receptor: OP 14

0 minutes of yellow glare

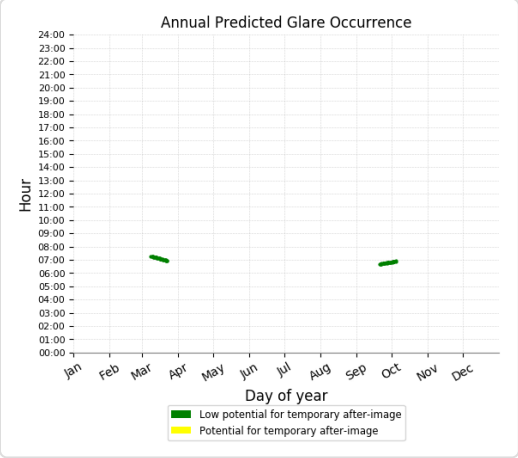
75 minutes of green glare

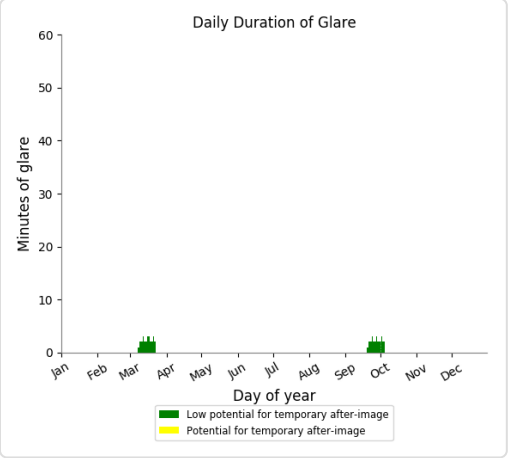




Point Receptor: OP 15

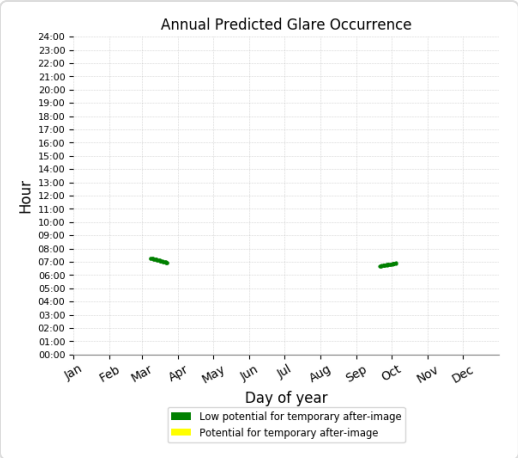
0 minutes of yellow glare
65 minutes of green glare

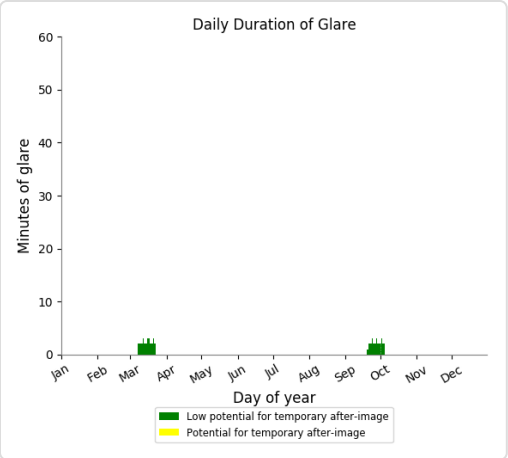




Point Receptor: OP 16

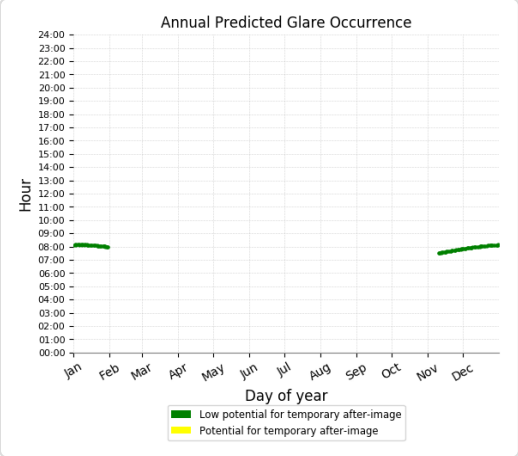
0 minutes of yellow glare
66 minutes of green glare

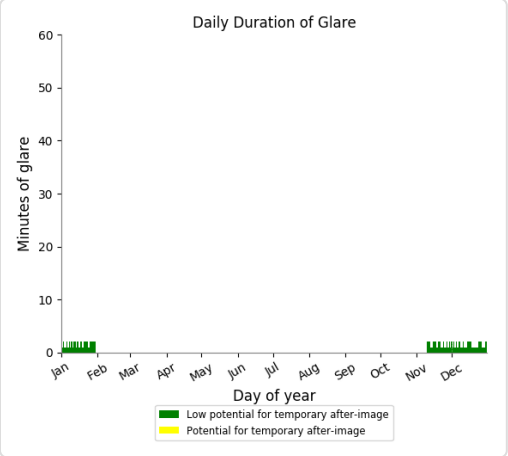




Point Receptor: OP 17

0 minutes of yellow glare
123 minutes of green glare



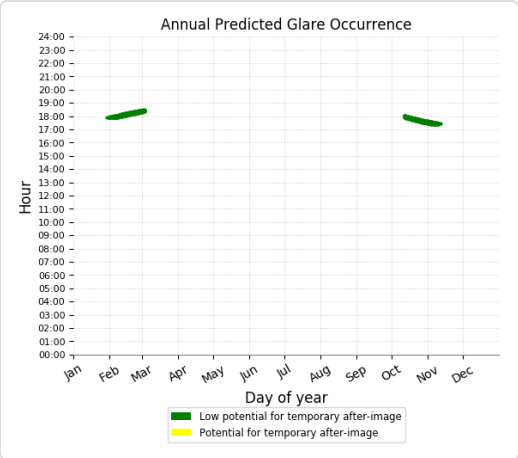


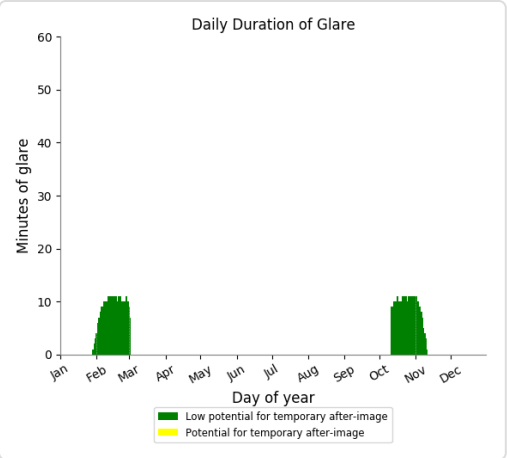
Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
596 minutes of green glare





Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 13

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	527	0
OP 2	542	0
OP 3	397	903
OP 4	397	979
OP 5	432	625
OP 6	424	689
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	343	0
OP 12	434	0
OP 13	302	0
OP 14	360	0
OP 15	358	0
OP 16	304	0
OP 17	699	0
OP 18	0	0
OP 19	326	774

Receptor	Green Glare (min)	Yellow Glare (min)
OP 20	0	0

Flight Path: EKX Runway 23

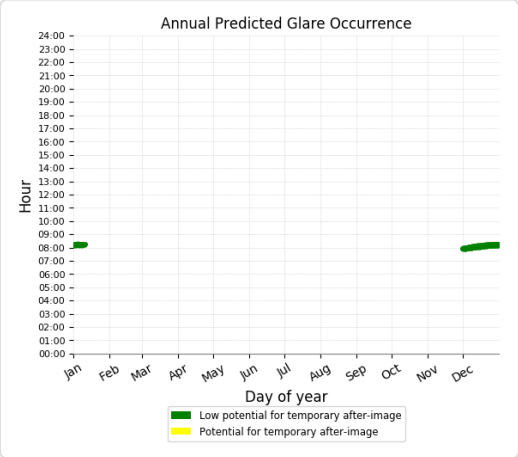
0 minutes of yellow glare
0 minutes of green glare

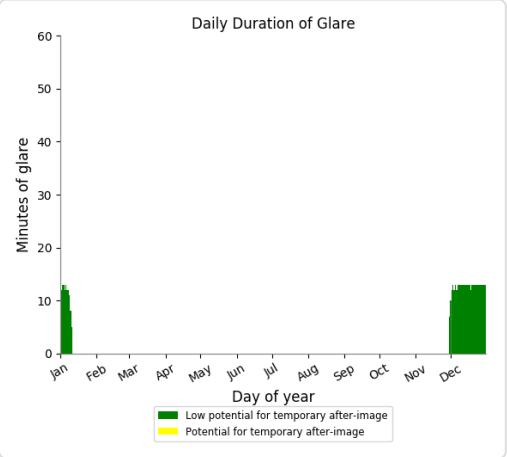
Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

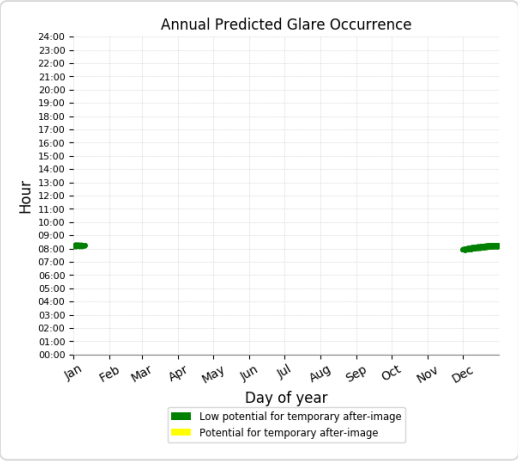
0 minutes of yellow glare
527 minutes of green glare

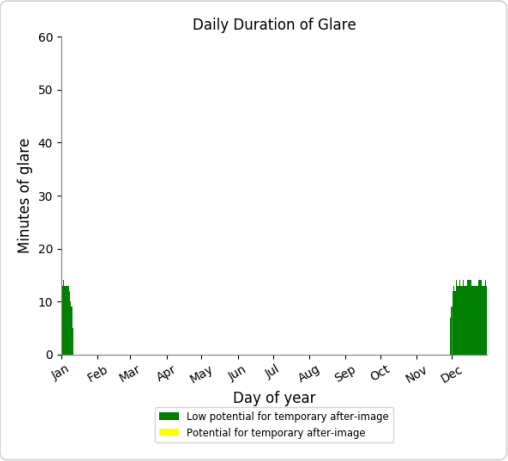




Point Receptor: OP 2

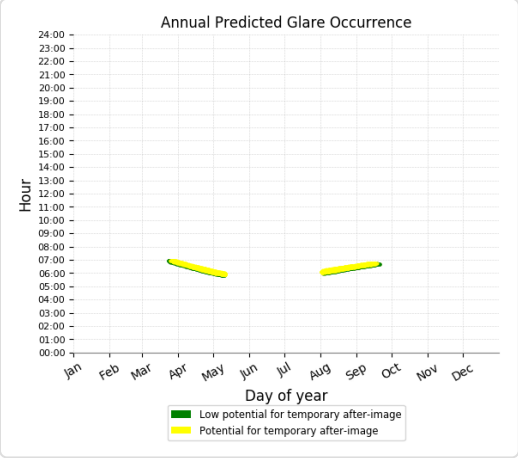
0 minutes of yellow glare
542 minutes of green glare

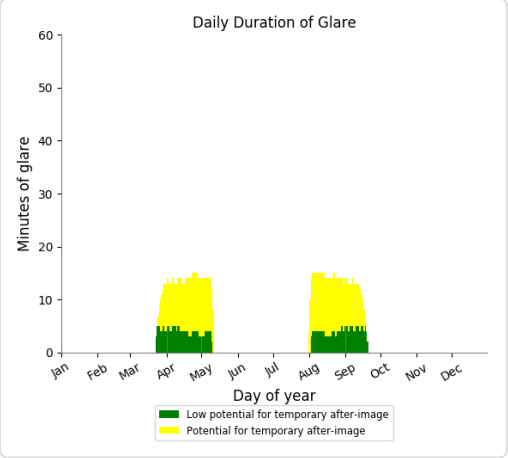




Point Receptor: OP 3

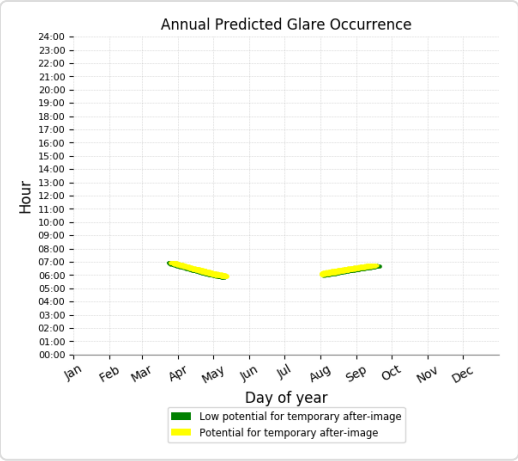
903 minutes of yellow glare
397 minutes of green glare

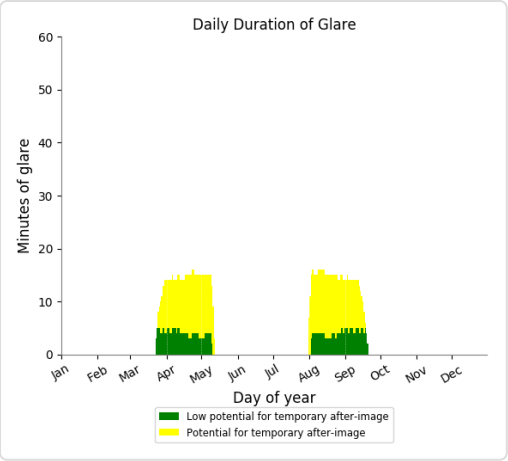




Point Receptor: OP 4

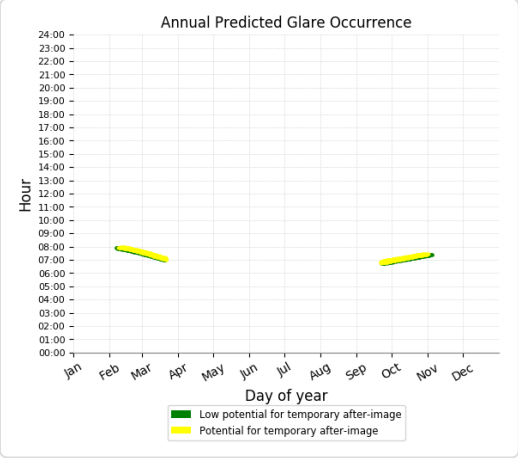
979 minutes of yellow glare
397 minutes of green glare

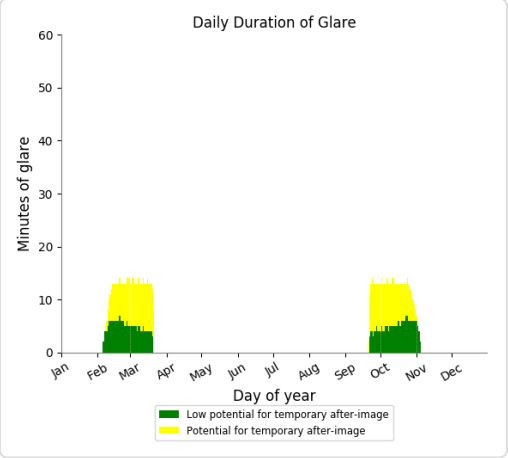




Point Receptor: OP 5

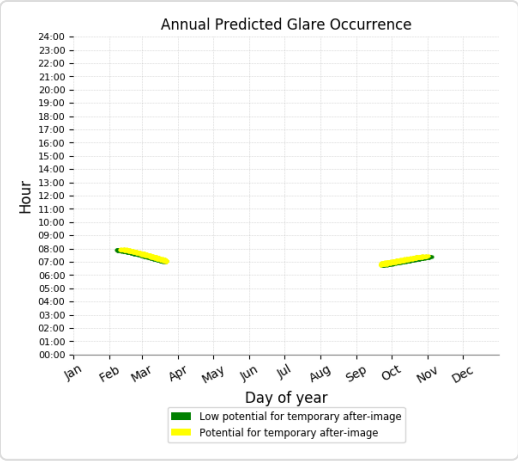
625 minutes of yellow glare
432 minutes of green glare

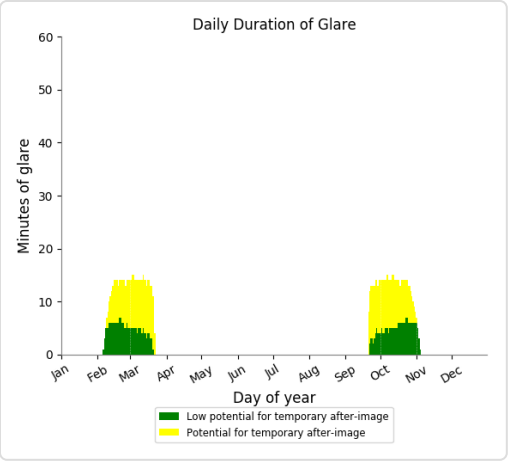




Point Receptor: OP 6

689 minutes of yellow glare
424 minutes of green glare





Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

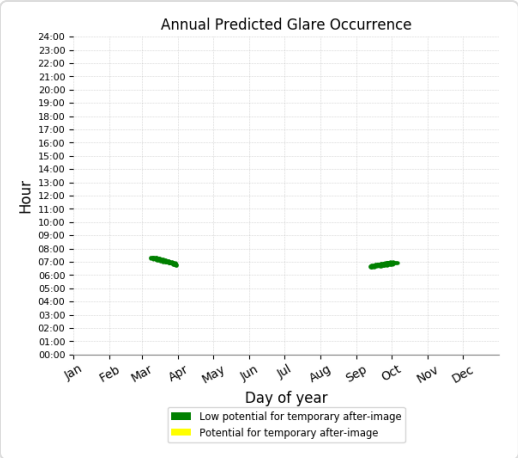
0 minutes of yellow glare
0 minutes of green glare

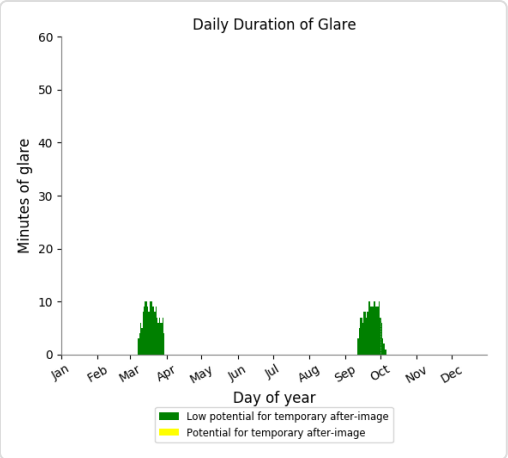
Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
343 minutes of green glare

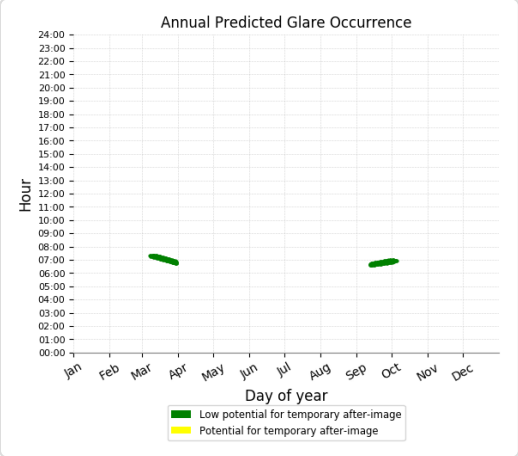


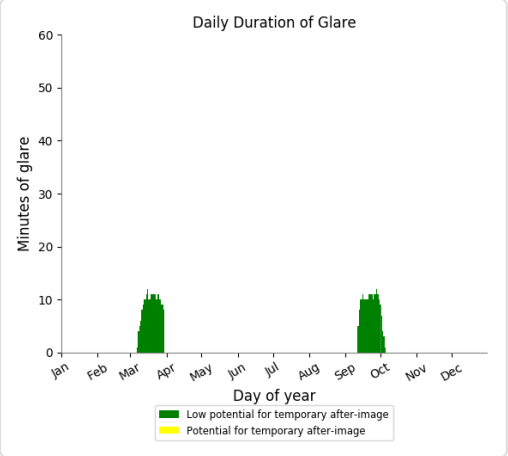


Point Receptor: OP 12

0 minutes of yellow glare

434 minutes of green glare

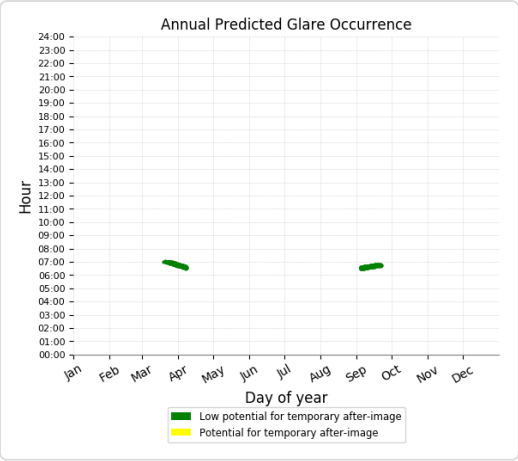


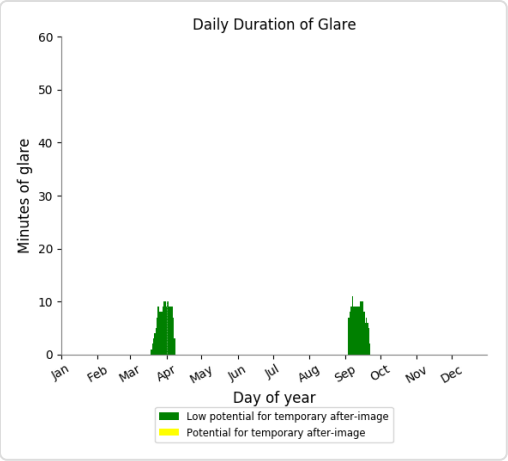


Point Receptor: OP 13

0 minutes of yellow glare

302 minutes of green glare

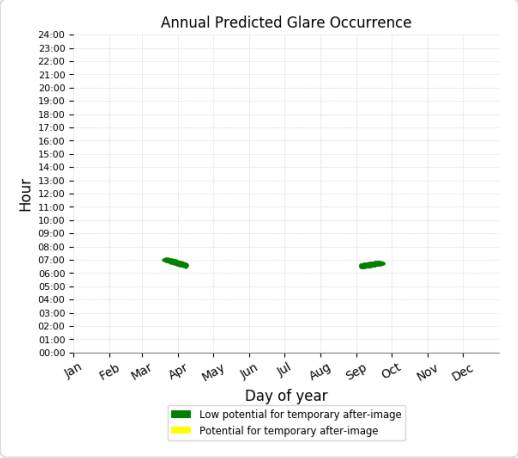


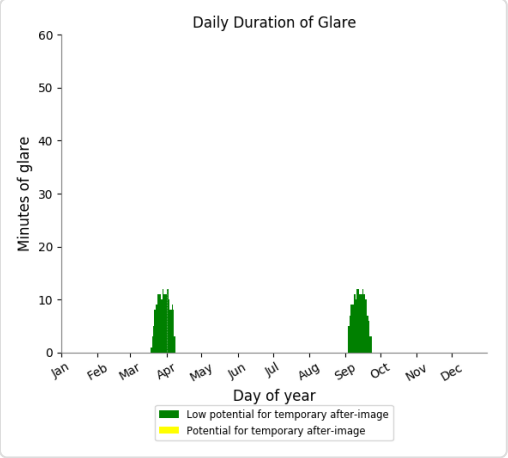


Point Receptor: OP 14

0 minutes of yellow glare

360 minutes of green glare

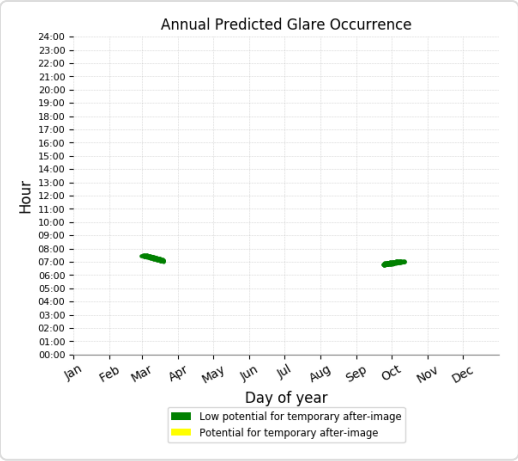


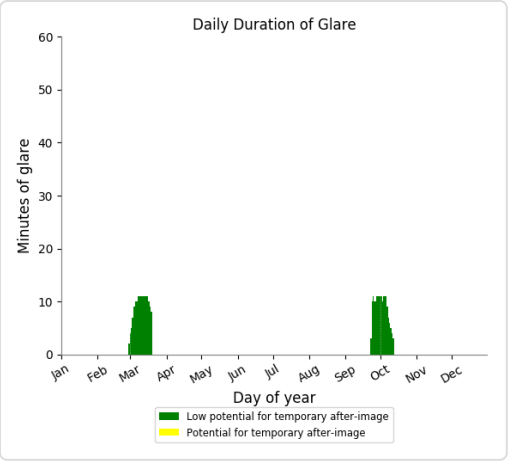


Point Receptor: OP 15

0 minutes of yellow glare

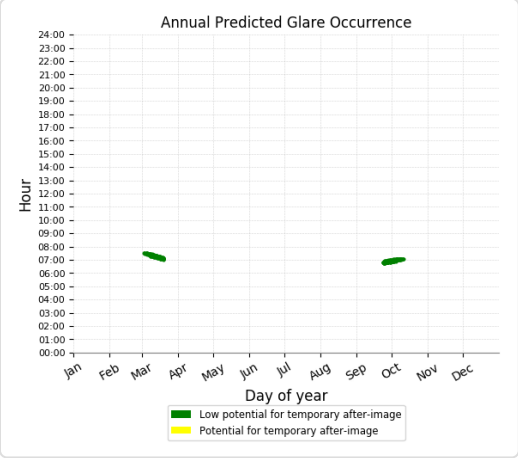
358 minutes of green glare

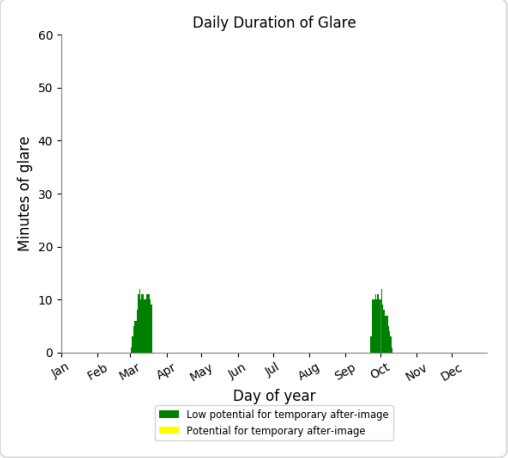




Point Receptor: OP 16

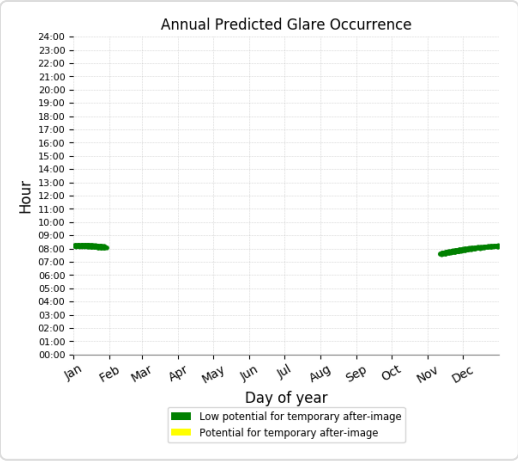
0 minutes of yellow glare
304 minutes of green glare

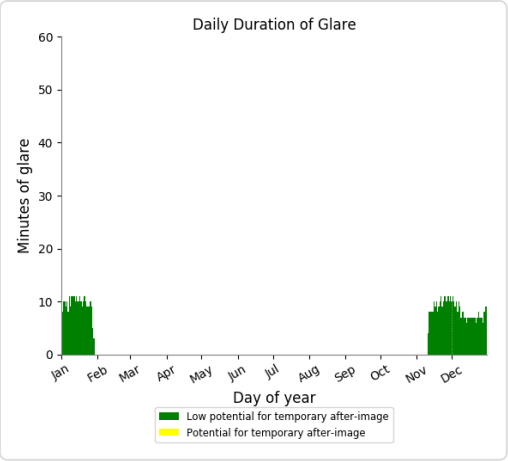




Point Receptor: OP 17

0 minutes of yellow glare
699 minutes of green glare



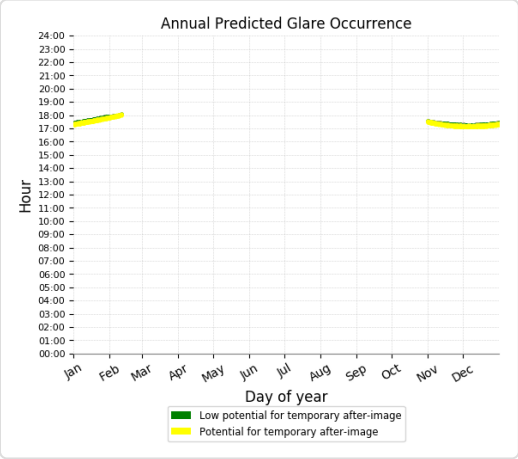


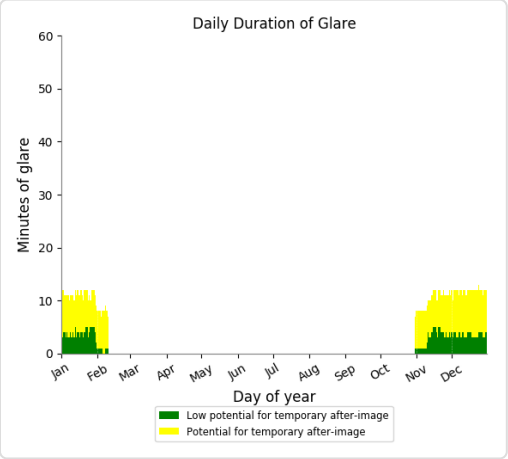
Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

774 minutes of yellow glare
326 minutes of green glare





Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 14

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	771	0
OP 4	820	0
OP 5	899	0
OP 6	958	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	709	0
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
0 minutes of green glare

Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

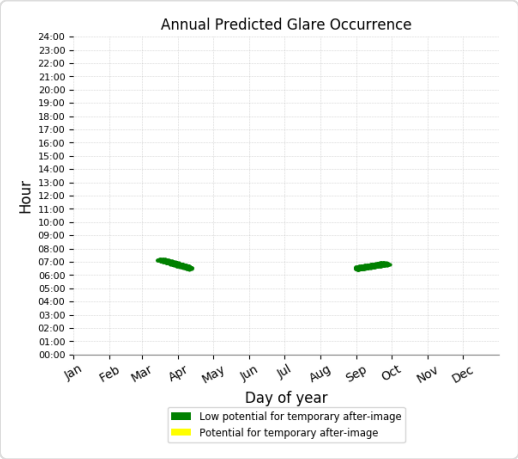
Point Receptor: OP 2

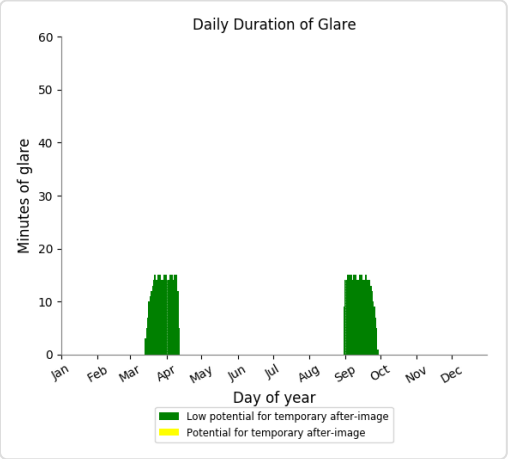
0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 3

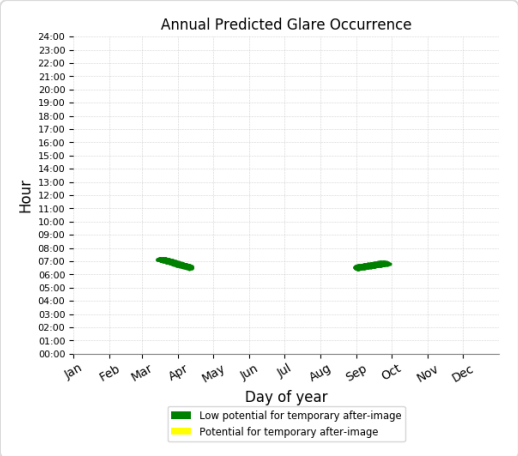
0 minutes of yellow glare
771 minutes of green glare

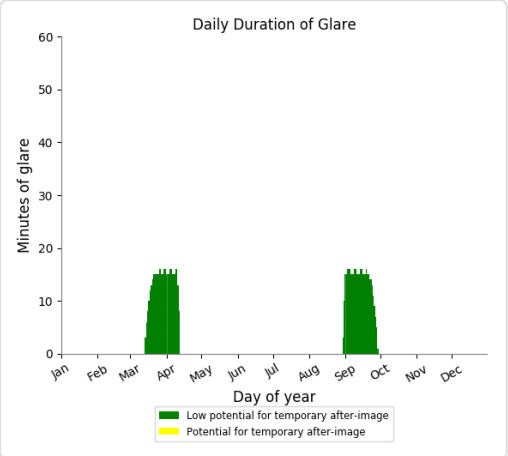




Point Receptor: OP 4

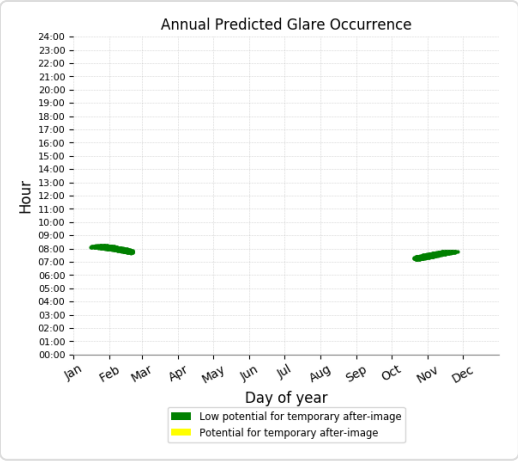
0 minutes of yellow glare
820 minutes of green glare

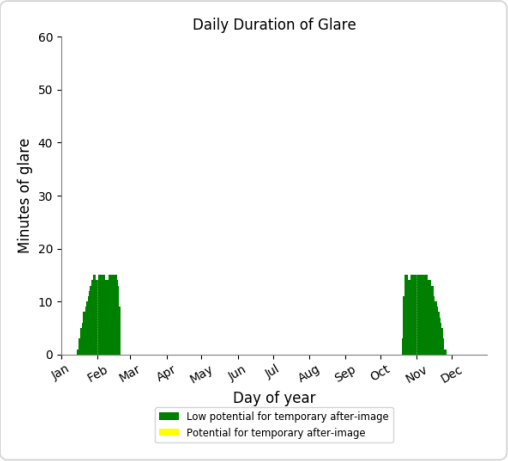




Point Receptor: OP 5

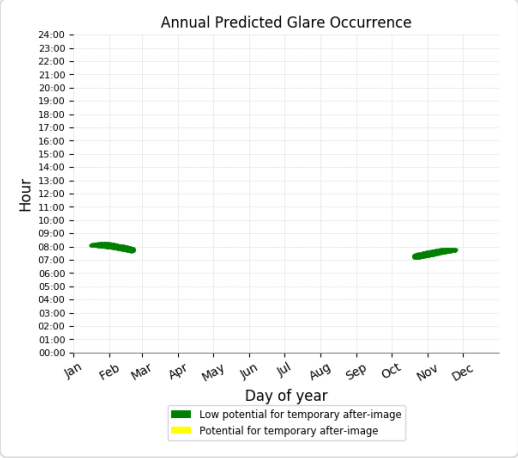
0 minutes of yellow glare
899 minutes of green glare

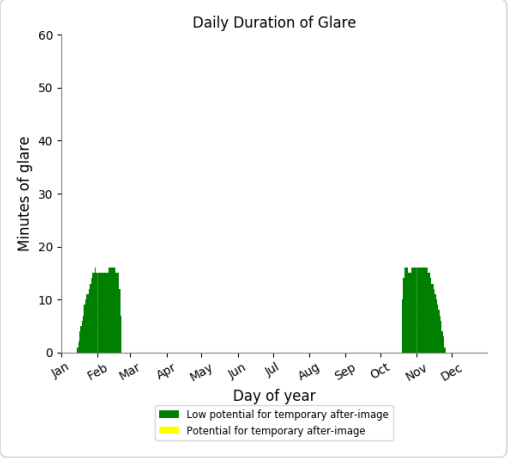




Point Receptor: OP 6

0 minutes of yellow glare
958 minutes of green glare





Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

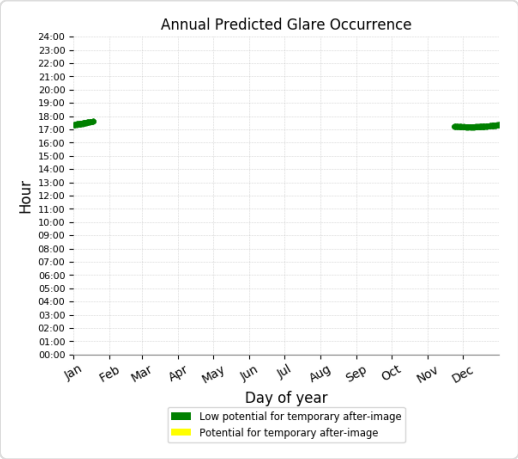
Point Receptor: OP 18

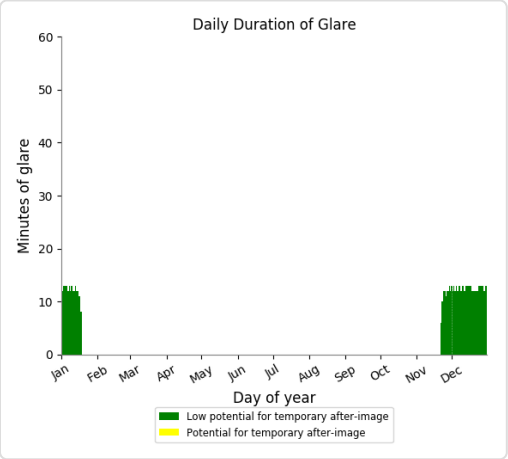
0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare

709 minutes of green glare





Point Receptor: OP 20

0 minutes of yellow glare

0 minutes of green glare

Results for: PV array 15

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	528	0
OP 2	542	0
OP 3	291	741
OP 4	292	796
OP 5	570	740
OP 6	567	797
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	499	0
OP 12	515	0
OP 13	369	0
OP 14	406	0
OP 15	416	0
OP 16	429	0
OP 17	905	0
OP 18	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 19	0	0
OP 20	0	100

Flight Path: EKX Runway 23

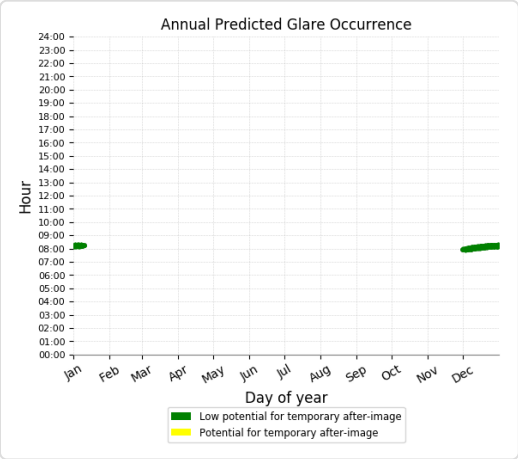
0 minutes of yellow glare
0 minutes of green glare

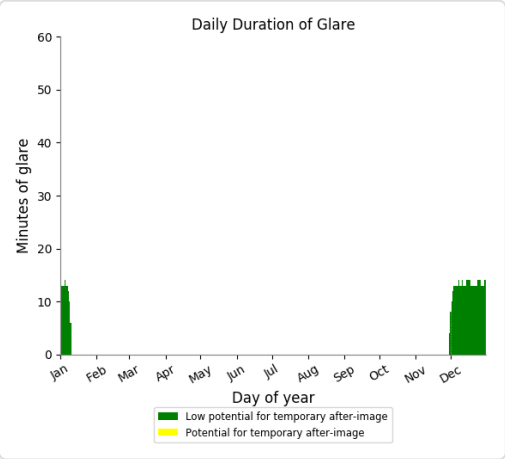
Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

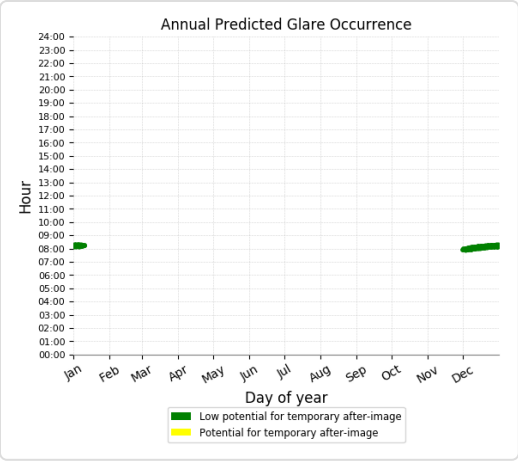
0 minutes of yellow glare
528 minutes of green glare

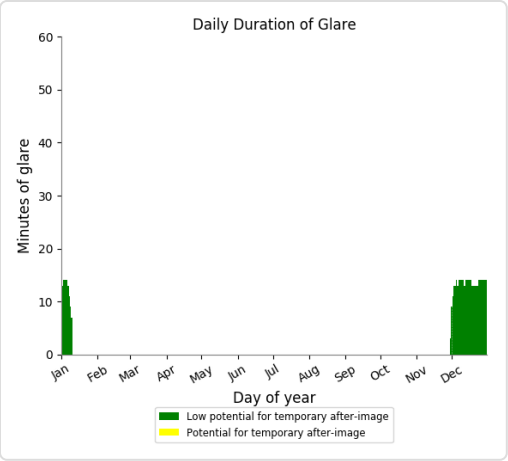




Point Receptor: OP 2

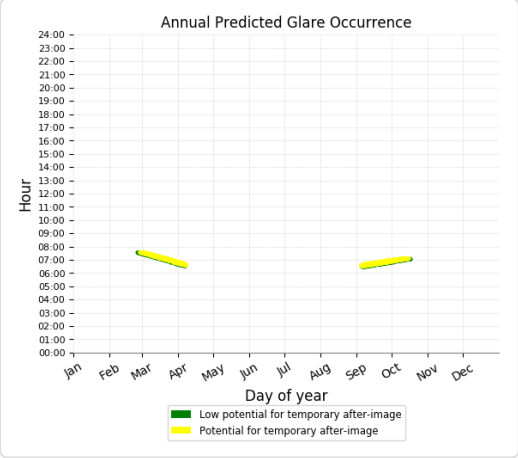
0 minutes of yellow glare
542 minutes of green glare

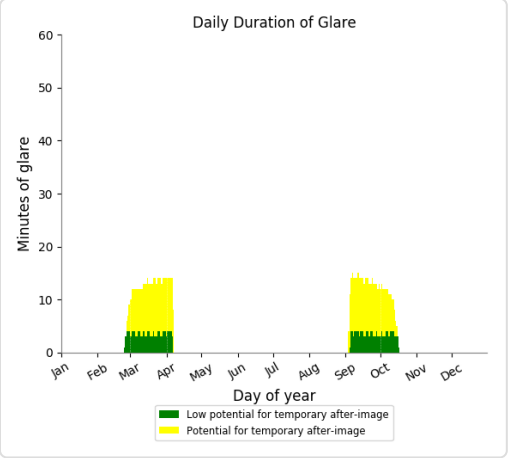




Point Receptor: OP 3

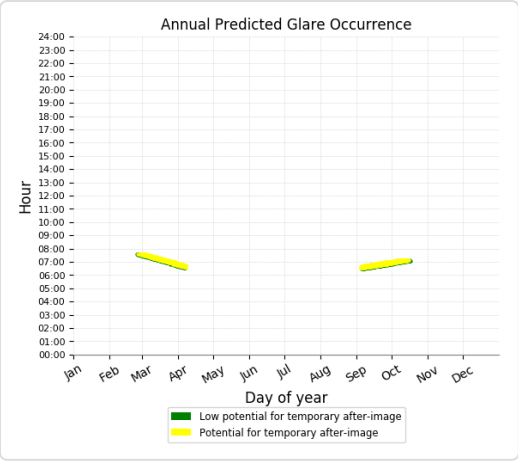
741 minutes of yellow glare
291 minutes of green glare

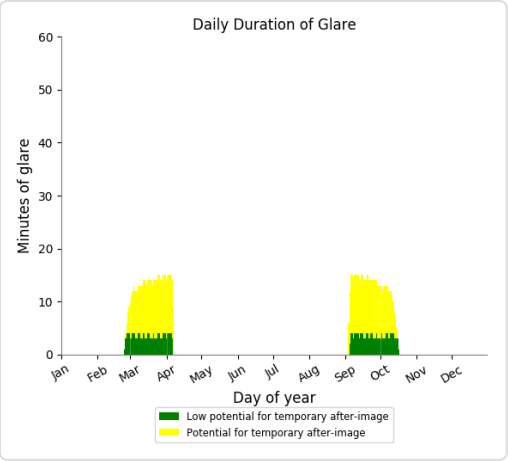




Point Receptor: OP 4

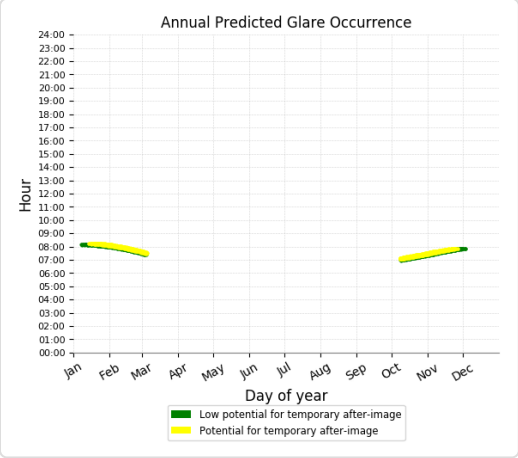
796 minutes of yellow glare
292 minutes of green glare

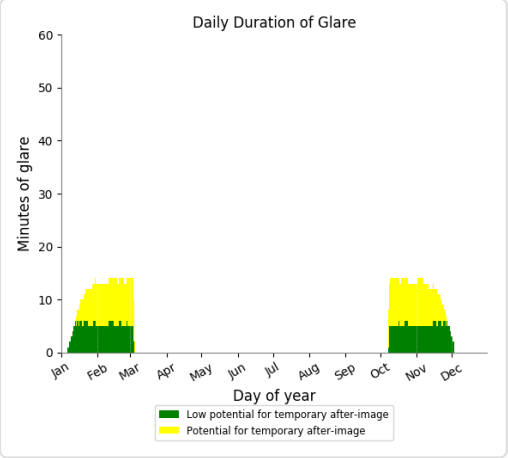




Point Receptor: OP 5

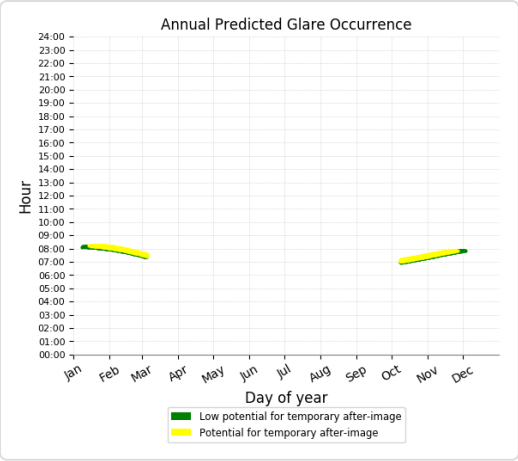
740 minutes of yellow glare
570 minutes of green glare

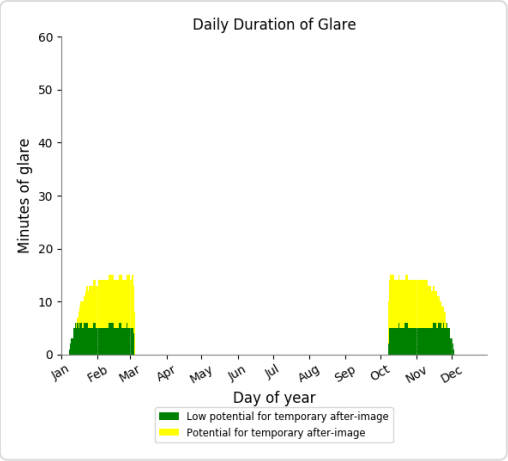




Point Receptor: OP 6

797 minutes of yellow glare
567 minutes of green glare





Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

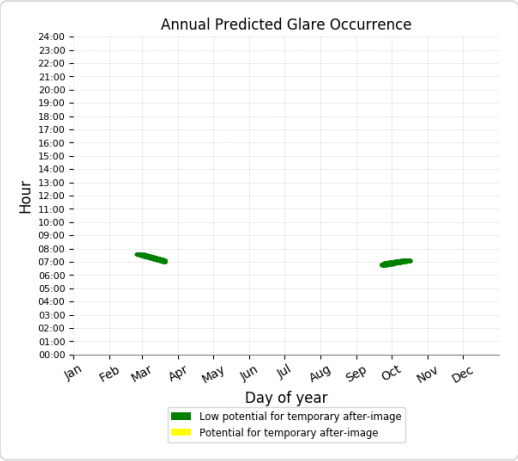
0 minutes of yellow glare
0 minutes of green glare

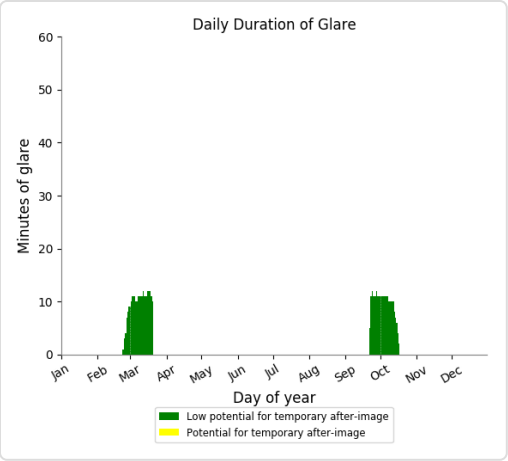
Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
499 minutes of green glare

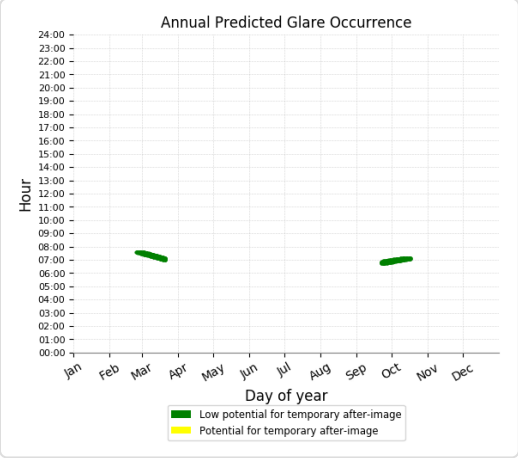


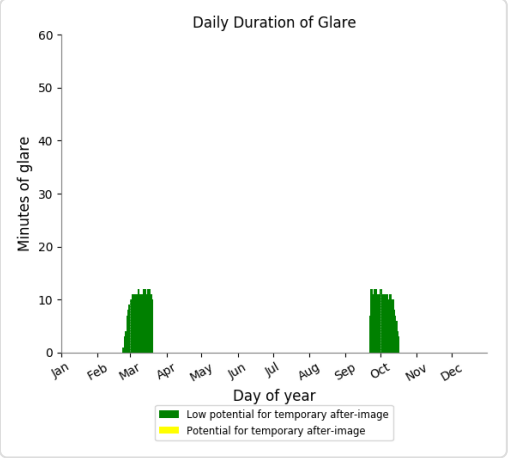


Point Receptor: OP 12

0 minutes of yellow glare

515 minutes of green glare

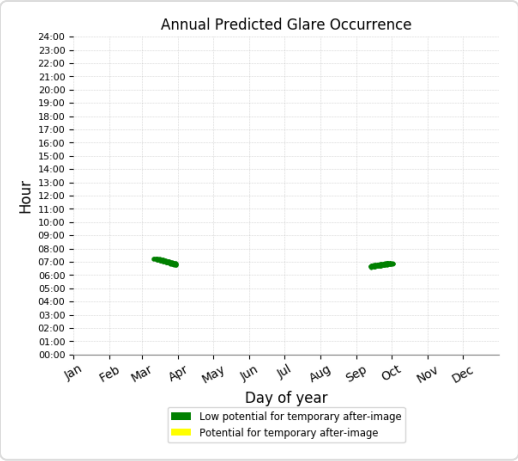


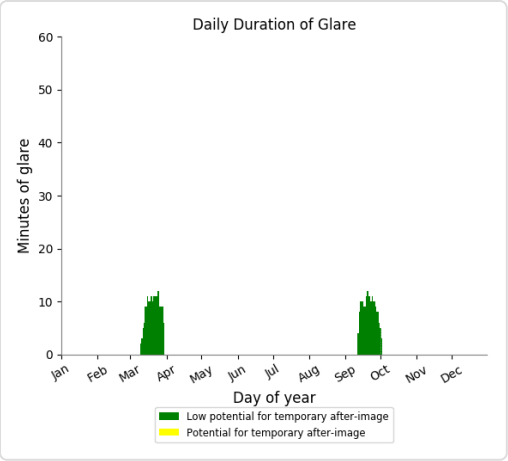


Point Receptor: OP 13

0 minutes of yellow glare

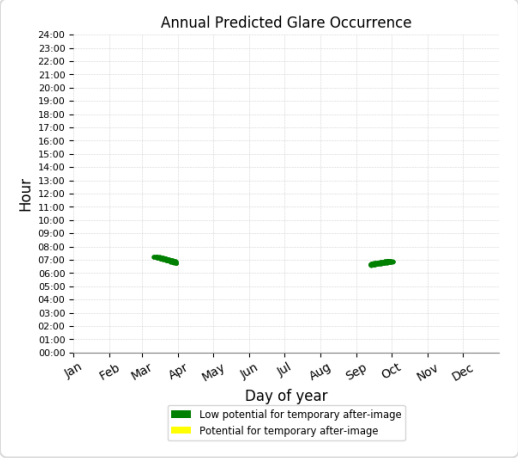
369 minutes of green glare

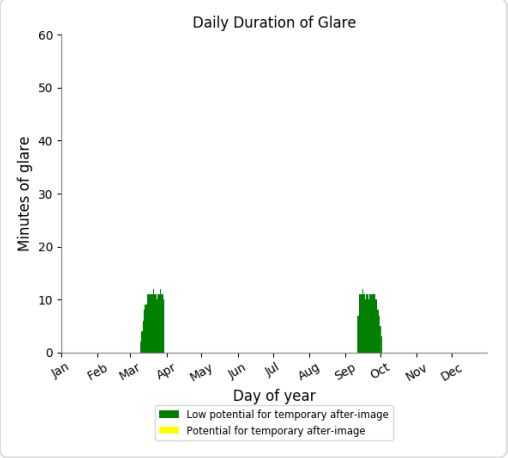




Point Receptor: OP 14

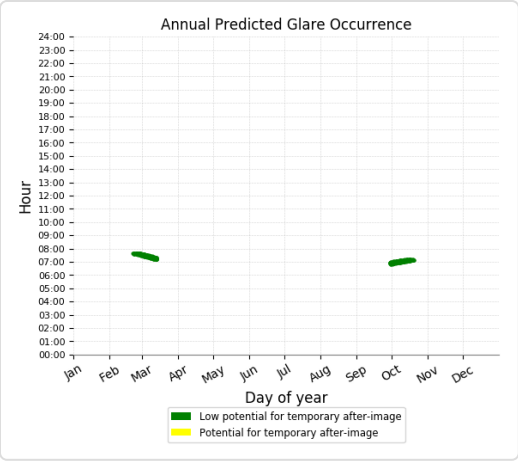
0 minutes of yellow glare
406 minutes of green glare

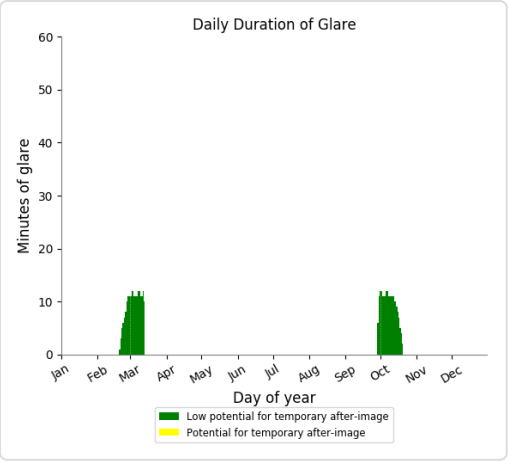




Point Receptor: OP 15

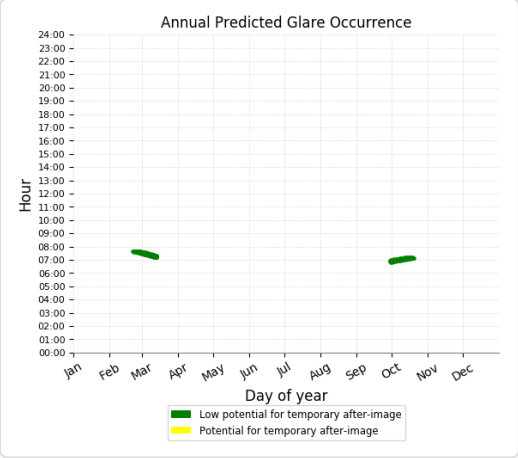
0 minutes of yellow glare
416 minutes of green glare

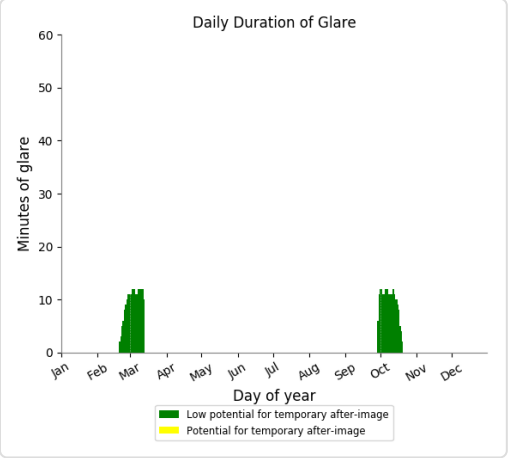




Point Receptor: OP 16

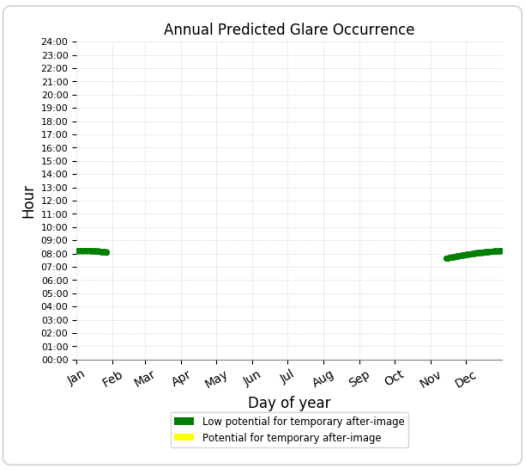
0 minutes of yellow glare
429 minutes of green glare

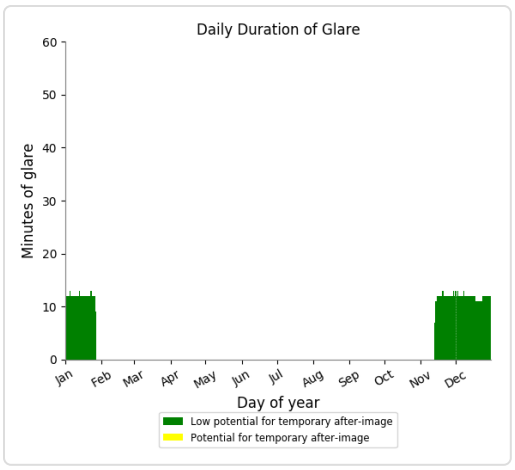




Point Receptor: OP 17

0 minutes of yellow glare
905 minutes of green glare





Point Receptor: OP 18

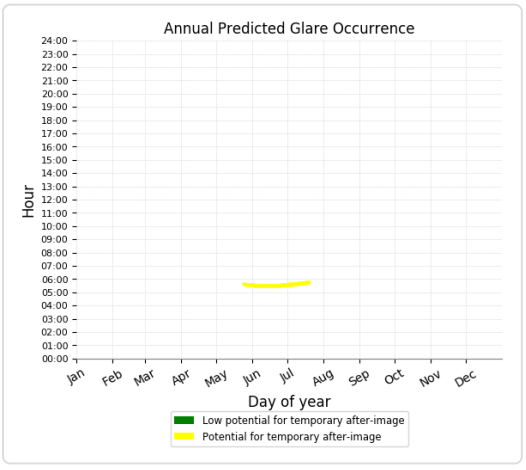
0 minutes of yellow glare
0 minutes of green glare

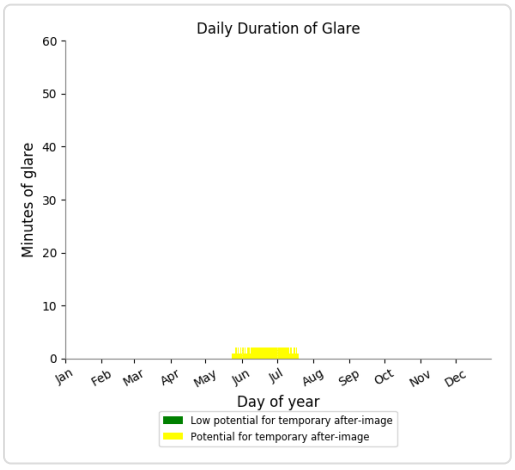
Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

100 minutes of yellow glare
0 minutes of green glare





Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual results and glare occurrence may differ.
Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
Refer to the Help page at **www.forgesolar.com/help/** for assumptions and limitations not listed here.

FORGESOLAR GLARE ANALYSIS

Project: **Rhudes Creek Solar**
Proposed utility-scale project in Hardin County, Kentucky

Site configuration: **Rhudes Creek_v3_Arrays 1-15_10 deg**
Analysis conducted by Alan Plumeau (aplumeau@trccompanies.com) at 00:53 on 05 Jul, 2021.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
2-mile flight path(s)	PASS	Flight path receptor(s) do not receive yellow glare
ATCT(s)	N/A	No ATCT receptors designated

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63276 can be read at https://www.federalregister.gov/d/2013-24729

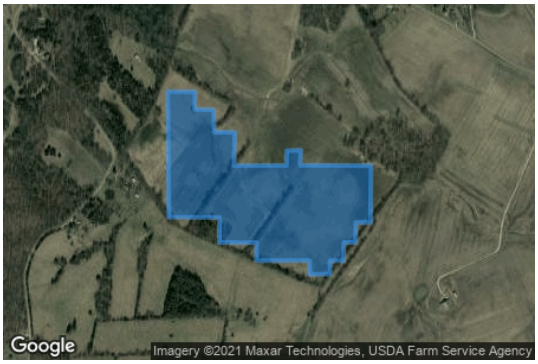
SITE CONFIGURATION

Analysis Parameters

DNI: peaks at 1,000.0 W/m^2
Time interval: 1 min
Ocular transmission coefficient: 0.5
Pupil diameter: 0.002 m
Eye focal length: 0.017 m
Sun subtended angle: 9.3 mrad
Site Config ID: 56036.9913

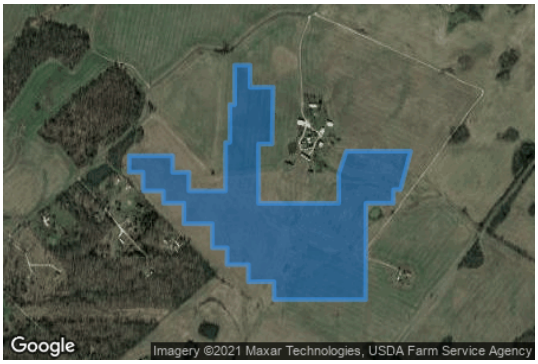
PV Array(s)

Name: PV array 1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



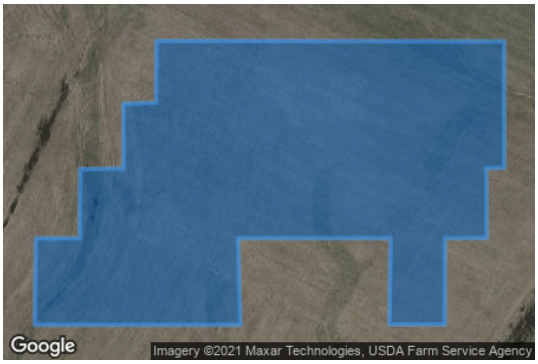
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.662651	-86.010935	711.53	9.00	720.53
2	37.662643	-86.009945	706.84	9.00	715.84
3	37.662142	-86.009961	711.98	9.00	720.98
4	37.662128	-86.009272	710.08	9.00	719.08
5	37.661493	-86.009255	705.58	9.00	714.58
6	37.661482	-86.008505	710.50	9.00	719.50
7	37.660531	-86.008531	708.15	9.00	717.15
8	37.660530	-86.006632	701.29	9.00	710.29
9	37.660958	-86.006618	699.68	9.00	708.68
10	37.660972	-86.006117	701.11	9.00	710.11
11	37.660534	-86.006131	703.65	9.00	712.65
12	37.660530	-86.003556	704.42	9.00	713.42
13	37.658903	-86.003581	711.58	9.00	720.58
14	37.658896	-86.004114	711.71	9.00	720.71
15	37.658327	-86.004120	713.24	9.00	722.24
16	37.658326	-86.004547	715.71	9.00	724.71
17	37.657803	-86.004561	716.42	9.00	725.42
18	37.657806	-86.005053	720.02	9.00	729.02
19	37.657421	-86.005044	721.09	9.00	730.09
20	37.657413	-86.005776	723.72	9.00	732.72
21	37.657806	-86.005795	725.16	9.00	734.16
22	37.657810	-86.007725	726.60	9.00	735.60
23	37.658322	-86.007715	720.80	9.00	729.80
24	37.658326	-86.009072	740.92	9.00	749.92
25	37.659042	-86.009055	721.81	9.00	730.81
26	37.659054	-86.010901	711.33	9.00	720.33

Name: PV array 10
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



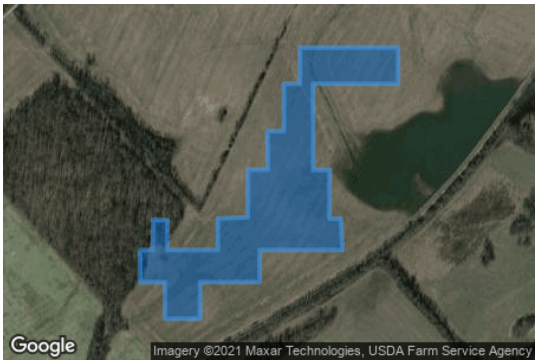
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.653103	-85.983028	722.92	9.00	731.92
2	37.653100	-85.981448	742.25	9.00	751.25
3	37.652624	-85.981451	741.10	9.00	750.10
4	37.652630	-85.980856	742.41	9.00	751.41
5	37.652094	-85.980857	750.67	9.00	759.67
6	37.652090	-85.979532	755.91	9.00	764.92
7	37.653479	-85.979529	755.42	9.00	764.42
8	37.653479	-85.979375	753.87	9.00	762.87
9	37.654564	-85.979367	755.55	9.00	764.55
10	37.654560	-85.979199	755.96	9.00	764.96
11	37.655691	-85.979199	748.80	9.00	757.81
12	37.655691	-85.978637	737.18	9.00	746.18
13	37.655058	-85.978640	736.01	9.00	745.01
14	37.655061	-85.977801	729.80	9.00	738.80
15	37.653433	-85.977843	757.32	9.00	766.32
16	37.653430	-85.978329	759.23	9.00	768.23
17	37.651736	-85.978330	749.90	9.00	758.90
18	37.651739	-85.975422	741.49	9.00	750.49
19	37.652578	-85.975423	733.22	9.00	742.22
20	37.653231	-85.975147	732.75	9.00	741.75
21	37.653229	-85.972809	727.59	9.00	736.59
22	37.652128	-85.973179	717.46	9.00	726.47
23	37.652129	-85.973432	717.91	9.00	726.91
24	37.651740	-85.973437	714.91	9.00	723.91
25	37.651740	-85.974436	722.73	9.00	731.73
26	37.648976	-85.974443	715.75	9.00	724.76
27	37.648980	-85.977767	743.44	9.00	752.44
28	37.649493	-85.977769	746.58	9.00	755.58
29	37.649488	-85.978702	732.46	9.00	741.47
30	37.649983	-85.978701	737.93	9.00	746.93
31	37.649981	-85.979475	737.89	9.00	746.89
32	37.650463	-85.979470	742.16	9.00	751.16
33	37.650460	-85.980007	745.54	9.00	754.54
34	37.651152	-85.980009	752.59	9.00	761.59
35	37.651150	-85.981042	746.07	9.00	755.07
36	37.651742	-85.981039	751.83	9.00	760.83
37	37.651740	-85.981788	745.91	9.00	754.91
38	37.652090	-85.981790	745.22	9.00	754.22
39	37.652090	-85.982522	736.04	9.00	745.04
40	37.652630	-85.982523	731.03	9.00	740.03
41	37.652630	-85.983031	725.47	9.00	734.47

Name: PV array 11a
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



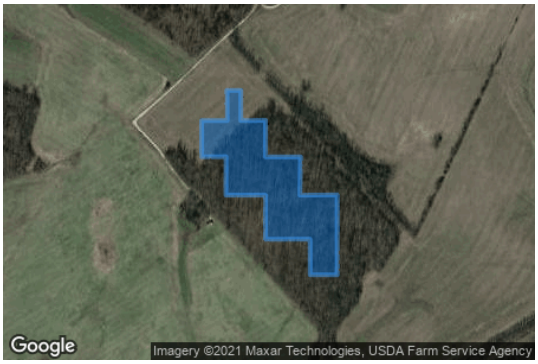
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.647933	-85.978206	728.00	9.00	737.00
2	37.647930	-85.975052	715.27	9.00	724.27
3	37.647024	-85.975050	720.52	9.00	729.52
4	37.647020	-85.975213	720.73	9.00	729.73
5	37.646523	-85.975210	728.55	9.00	737.55
6	37.646520	-85.975588	728.77	9.00	737.77
7	37.645903	-85.975590	717.95	9.00	726.95
8	37.645903	-85.976093	713.37	9.00	722.37
9	37.646520	-85.976082	721.89	9.00	730.89
10	37.646520	-85.977466	723.78	9.00	732.78
11	37.645900	-85.977444	715.83	9.00	724.83
12	37.645900	-85.979311	712.21	9.00	721.22
13	37.646520	-85.979300	721.79	9.00	730.79
14	37.646520	-85.978903	716.71	9.00	725.71
15	37.647016	-85.978900	720.18	9.00	729.18
16	37.647020	-85.978506	721.32	9.00	730.32
17	37.647483	-85.978506	724.62	9.00	733.62
18	37.647491	-85.978210	727.20	9.00	736.20

Name: PV array 11b
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



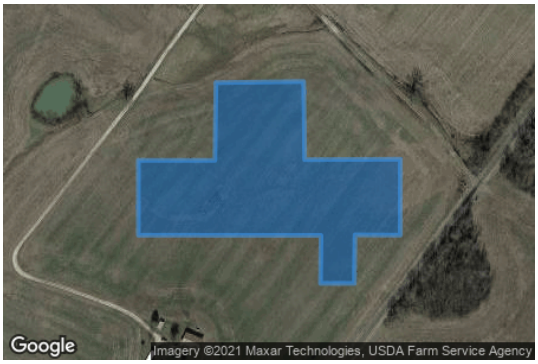
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.645648	-85.979740	710.38	9.00	719.38
2	37.645650	-85.977959	713.20	9.00	722.20
3	37.645130	-85.977960	709.85	9.00	718.85
4	37.645130	-85.979504	707.88	9.00	716.88
5	37.643898	-85.979500	711.07	9.00	720.07
6	37.643900	-85.979200	705.35	9.00	714.35
7	37.643200	-85.979204	707.91	9.00	716.91
8	37.643200	-85.979000	705.21	9.00	714.21
9	37.642750	-85.978968	714.50	9.00	723.50
10	37.642750	-85.980470	713.42	9.00	722.42
11	37.642292	-85.980470	706.30	9.00	715.31
12	37.642290	-85.981553	699.03	9.00	708.03
13	37.641765	-85.981553	701.42	9.00	710.42
14	37.641765	-85.982186	696.70	9.00	705.70
15	37.642290	-85.982190	699.13	9.00	708.13
16	37.642290	-85.982637	695.39	9.00	704.39
17	37.642751	-85.982640	697.38	9.00	706.38
18	37.642750	-85.982412	698.40	9.00	707.40
19	37.643184	-85.982410	704.70	9.00	713.70
20	37.643176	-85.982144	710.16	9.00	719.16
21	37.642750	-85.982144	702.05	9.00	711.05
22	37.642750	-85.981230	705.68	9.00	714.68
23	37.643201	-85.981232	711.81	9.00	720.82
24	37.643218	-85.980684	716.64	9.00	725.64
25	37.643900	-85.980684	728.50	9.00	737.50
26	37.643900	-85.980320	730.94	9.00	739.94
27	37.644450	-85.980330	733.92	9.00	742.92
28	37.644450	-85.980030	731.60	9.00	740.60
29	37.645130	-85.980030	716.94	9.00	725.94
30	37.645130	-85.979740	710.89	9.00	719.89

Name: PV array 11c
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



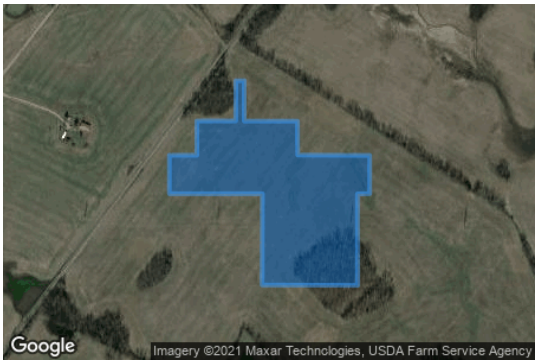
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.645410	-85.984970	729.64	9.00	738.64
2	37.645410	-85.984718	727.97	9.00	736.97
3	37.644977	-85.984718	721.24	9.00	730.25
4	37.644980	-85.984270	727.52	9.00	736.52
5	37.644459	-85.984270	726.98	9.00	735.99
6	37.644459	-85.983635	723.15	9.00	732.15
7	37.643910	-85.983646	716.37	9.00	725.37
8	37.643915	-85.982970	711.24	9.00	720.24
9	37.642768	-85.982970	705.15	9.00	714.15
10	37.642770	-85.983460	704.92	9.00	713.92
11	37.643280	-85.983463	707.86	9.00	716.86
12	37.643278	-85.984270	714.92	9.00	723.92
13	37.643910	-85.984270	723.95	9.00	732.95
14	37.643910	-85.984990	717.23	9.00	726.23
15	37.644460	-85.984987	716.78	9.00	725.78
16	37.644460	-85.985427	717.56	9.00	726.56
17	37.644977	-85.985430	725.27	9.00	734.27
18	37.644977	-85.984965	723.57	9.00	732.57

Name: PV array 12
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.650986	-85.973350	717.77	9.00	726.77
2	37.650986	-85.972655	711.80	9.00	720.80
3	37.651542	-85.972645	709.43	9.00	718.43
4	37.651550	-85.971849	712.81	9.00	721.81
5	37.650990	-85.971840	707.65	9.00	716.65
6	37.650994	-85.970972	701.93	9.00	710.93
7	37.650450	-85.970973	705.36	9.00	714.36
8	37.650452	-85.971384	705.82	9.00	714.82
9	37.650104	-85.971390	708.30	9.00	717.30
10	37.650104	-85.971697	715.34	9.00	724.34
11	37.650448	-85.971692	708.14	9.00	717.14
12	37.650450	-85.973350	716.84	9.00	725.84

Name: PV array 13
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

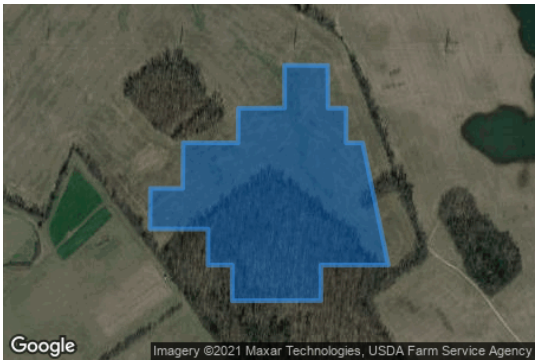


Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.649780	-85.970841	704.60	9.00	713.60
2	37.649780	-85.970134	713.78	9.00	722.78
3	37.650356	-85.970130	709.15	9.00	718.15
4	37.650357	-85.969981	707.45	9.00	716.45
5	37.649778	-85.969981	712.84	9.00	721.84
6	37.649779	-85.969014	700.69	9.00	709.69
7	37.649292	-85.969010	701.28	9.00	710.28
8	37.649287	-85.967703	701.67	9.00	710.68
9	37.648741	-85.967701	712.46	9.00	721.46
10	37.648736	-85.967925	713.59	9.00	722.59
11	37.647426	-85.967924	724.56	9.00	733.56
12	37.647432	-85.969654	711.92	9.00	720.92
13	37.648739	-85.969650	712.38	9.00	721.38
14	37.648738	-85.971338	699.43	9.00	708.43
15	37.649290	-85.971339	700.95	9.00	709.95
16	37.649289	-85.970839	700.28	9.00	709.28

Name: PV array 14
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

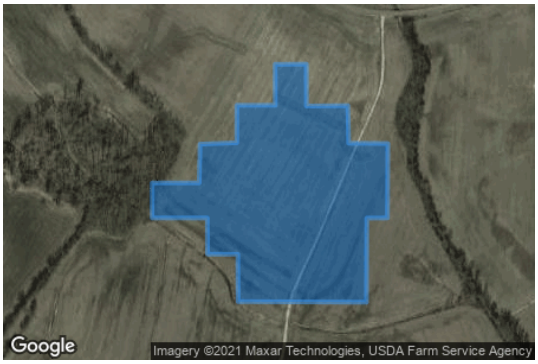
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.647956	-85.971992	696.76	9.00	705.76
2	37.647960	-85.971178	707.11	9.00	716.11
3	37.647308	-85.971180	717.10	9.00	726.11
4	37.647310	-85.970641	708.90	9.00	717.90
5	37.646626	-85.970640	712.39	9.00	721.39
6	37.646628	-85.971326	709.87	9.00	718.88
7	37.646983	-85.971330	720.18	9.00	729.18
8	37.646980	-85.971995	716.77	9.00	725.77

Name: PV array 15
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



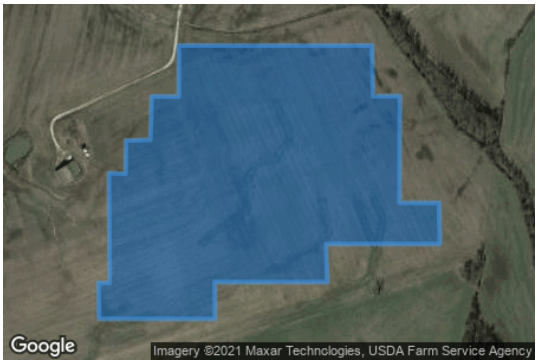
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.646250	-85.968592	704.23	9.00	713.23
2	37.646248	-85.968006	711.61	9.00	720.61
3	37.646903	-85.967997	700.50	9.00	709.50
4	37.646901	-85.967003	707.61	9.00	716.61
5	37.647397	-85.966997	707.69	9.00	716.70
6	37.647401	-85.966157	695.25	9.00	704.25
7	37.648014	-85.966159	696.30	9.00	705.30
8	37.648009	-85.965375	692.83	9.00	701.83
9	37.647400	-85.965370	698.87	9.00	707.87
10	37.647399	-85.965039	696.35	9.00	705.35
11	37.646900	-85.965040	700.74	9.00	709.74
12	37.646901	-85.964741	698.63	9.00	707.63
13	37.645151	-85.964275	722.57	9.00	731.58
14	37.645151	-85.965497	752.08	9.00	761.08
15	37.644645	-85.965500	763.40	9.00	772.40
16	37.644640	-85.967108	729.99	9.00	738.99
17	37.645151	-85.967107	737.02	9.00	746.02
18	37.645152	-85.967547	731.48	9.00	740.48
19	37.645668	-85.967549	725.34	9.00	734.34
20	37.645670	-85.968600	708.47	9.00	717.47
21	37.645670	-85.968600	708.47	9.00	717.47
22	37.645670	-85.968600	708.47	9.00	717.47

Name: PV array 2
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



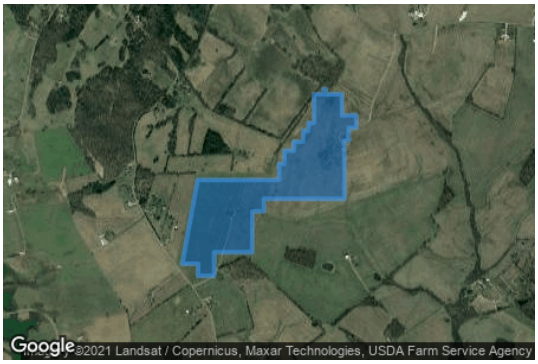
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.660181	-86.001263	707.49	9.00	716.49
2	37.660683	-86.001260	705.01	9.00	714.01
3	37.660684	-86.000408	709.97	9.00	718.97
4	37.661239	-86.000394	717.94	9.00	726.94
5	37.661258	-85.999726	725.20	9.00	734.20
6	37.661794	-85.999725	734.83	9.00	743.83
7	37.661794	-85.999027	729.70	9.00	738.70
8	37.662381	-85.999031	731.09	9.00	740.09
9	37.662384	-85.998464	734.15	9.00	743.15
10	37.661784	-85.998463	723.97	9.00	732.97
11	37.661790	-85.997711	716.98	9.00	725.98
12	37.661252	-85.997697	711.65	9.00	720.65
13	37.661248	-85.996984	708.16	9.00	717.16
14	37.660182	-85.996993	707.44	9.00	716.44
15	37.660178	-85.997366	707.32	9.00	716.32
16	37.658976	-85.997373	708.19	9.00	717.19
17	37.658984	-85.999703	700.03	9.00	709.03
18	37.659662	-85.999708	702.35	9.00	711.35
19	37.659664	-86.000257	704.54	9.00	713.54
20	37.660180	-86.000263	704.55	9.00	713.55

Name: PV array 3
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



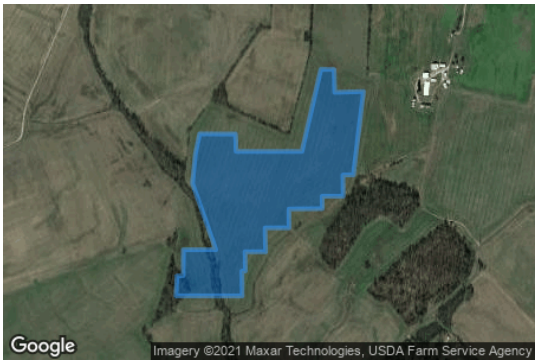
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.658353	-85.998802	705.87	9.00	714.87
2	37.658354	-85.995299	702.40	9.00	711.40
3	37.657627	-85.995279	706.26	9.00	715.26
4	37.657630	-85.994792	704.88	9.00	713.88
5	37.656099	-85.994799	708.66	9.00	717.67
6	37.656100	-85.994083	707.06	9.00	716.06
7	37.655511	-85.994065	711.83	9.00	720.83
8	37.655510	-85.996133	720.37	9.00	729.37
9	37.654964	-85.996109	725.62	9.00	734.62
10	37.654964	-85.998153	746.75	9.00	755.75
11	37.654436	-85.998149	752.44	9.00	761.44
12	37.654440	-86.000251	731.24	9.00	740.24
13	37.654956	-86.000265	732.14	9.00	741.14
14	37.654952	-86.000058	734.90	9.00	743.90
15	37.656527	-86.000075	724.80	9.00	733.80
16	37.656516	-85.999769	725.45	9.00	734.45
17	37.656992	-85.999765	716.08	9.00	725.08
18	37.657004	-85.999322	718.09	9.00	727.09
19	37.657626	-85.999299	710.79	9.00	719.79
20	37.657622	-85.998805	710.62	9.00	719.62

Name: PV array 4
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



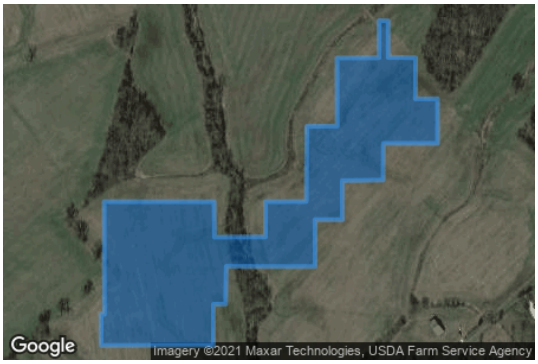
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.659661	-86.002994	707.14	9.00	716.14
2	37.659678	-86.002258	705.86	9.00	714.86
3	37.659979	-86.002281	706.38	9.00	715.38
4	37.659972	-86.002147	705.82	9.00	714.82
5	37.659670	-86.002135	706.28	9.00	715.28
6	37.659666	-86.000969	705.11	9.00	714.11
7	37.658453	-86.000950	708.10	9.00	717.10
8	37.658464	-85.999930	705.28	9.00	714.28
9	37.657736	-85.999915	709.38	9.00	718.38
10	37.657740	-86.000467	709.84	9.00	718.84
11	37.657012	-86.000459	718.66	9.00	727.66
12	37.657002	-86.000789	723.41	9.00	732.41
13	37.653667	-86.000785	728.95	9.00	737.95
14	37.653670	-86.006624	731.35	9.00	740.35
15	37.652968	-86.006615	740.65	9.00	749.65
16	37.652947	-86.007456	732.63	9.00	741.63
17	37.650611	-86.007475	759.38	9.00	768.38
18	37.650612	-86.010223	740.96	9.00	749.96
19	37.649262	-86.010227	742.15	9.00	751.15
20	37.649260	-86.011405	728.45	9.00	737.45
21	37.649945	-86.011397	728.21	9.00	737.21
22	37.649952	-86.012561	727.09	9.00	736.09
23	37.654760	-86.011434	763.21	9.00	772.21
24	37.654762	-86.005525	725.02	9.00	734.02
25	37.655679	-86.005530	720.19	9.00	729.19
26	37.655680	-86.005134	722.59	9.00	731.59
27	37.656432	-86.005130	716.32	9.00	725.32
28	37.656430	-86.004466	718.67	9.00	727.67
29	37.656956	-86.004465	713.72	9.00	722.72
30	37.656960	-86.003778	715.47	9.00	724.47
31	37.657590	-86.003780	711.76	9.00	720.76
32	37.657584	-86.003389	712.80	9.00	721.80
33	37.658027	-86.003393	708.74	9.00	717.74
34	37.658030	-86.002969	712.02	9.00	721.02

Name: PV array 5
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



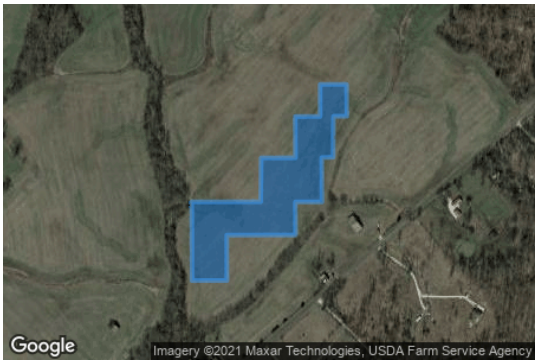
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.658244	-85.992442	723.13	9.00	732.13
2	37.658240	-85.991140	718.94	9.00	727.94
3	37.657742	-85.991120	715.81	9.00	724.82
4	37.657740	-85.988731	730.66	9.00	739.66
5	37.660089	-85.988043	744.99	9.00	753.99
6	37.660085	-85.987564	744.55	9.00	753.55
7	37.659430	-85.987539	748.54	9.00	757.54
8	37.659458	-85.986497	743.62	9.00	752.62
9	37.657068	-85.986861	731.14	9.00	740.14
10	37.657066	-85.987241	731.79	9.00	740.79
11	37.656458	-85.987235	722.71	9.00	731.71
12	37.656456	-85.988000	724.50	9.00	733.50
13	37.656104	-85.987989	718.45	9.00	727.45
14	37.656092	-85.989203	715.97	9.00	724.97
15	37.655554	-85.989199	712.59	9.00	721.59
16	37.655550	-85.990069	715.87	9.00	724.87
17	37.654867	-85.990049	707.74	9.00	716.75
18	37.654870	-85.990794	709.57	9.00	718.57
19	37.654317	-85.990785	709.02	9.00	718.02
20	37.654316	-85.990906	708.55	9.00	717.55
21	37.653604	-85.990899	705.71	9.00	714.71
22	37.653604	-85.993300	716.75	9.00	725.75
23	37.654174	-85.993265	717.82	9.00	726.83
24	37.654180	-85.993039	716.00	9.00	725.00
25	37.654925	-85.993034	706.81	9.00	715.81
26	37.654926	-85.991854	704.28	9.00	713.28
27	37.656827	-85.992704	707.22	9.00	716.22
28	37.657677	-85.992596	711.88	9.00	720.88

Name: PV array 6
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.652786	-85.993852	715.77	9.00	724.77
2	37.652788	-85.991855	702.24	9.00	711.24
3	37.652279	-85.991847	700.92	9.00	709.92
4	37.652283	-85.990923	697.34	9.00	706.34
5	37.652788	-85.990922	696.96	9.00	705.96
6	37.652790	-85.990183	703.39	9.00	712.39
7	37.653865	-85.990175	704.30	9.00	713.30
8	37.653870	-85.989623	704.68	9.00	713.68
9	37.654845	-85.989625	709.78	9.00	718.78
10	37.654848	-85.988861	712.44	9.00	721.44
11	37.655379	-85.988863	716.07	9.00	725.07
12	37.655376	-85.988697	718.25	9.00	727.25
13	37.654852	-85.988695	713.93	9.00	722.93
14	37.654848	-85.988197	720.97	9.00	729.97
15	37.654260	-85.988203	714.70	9.00	723.70
16	37.654260	-85.987800	721.73	9.00	730.73
17	37.653621	-85.987799	717.66	9.00	726.66
18	37.653622	-85.988784	710.82	9.00	719.83
19	37.653096	-85.988787	710.24	9.00	719.24
20	37.653088	-85.989528	710.09	9.00	719.09
21	37.652528	-85.989527	709.36	9.00	718.36
22	37.652530	-85.990023	706.00	9.00	715.00
23	37.651856	-85.990022	704.61	9.00	713.61
24	37.651860	-85.991636	700.97	9.00	709.97
25	37.651322	-85.991645	697.29	9.00	706.29
26	37.651318	-85.991869	699.46	9.00	708.46
27	37.650733	-85.991870	697.32	9.00	706.32
28	37.650728	-85.993908	711.26	9.00	720.26
29	37.651173	-85.993907	721.10	9.00	730.10
30	37.651175	-85.993847	721.96	9.00	730.96

Name: PV array 7
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

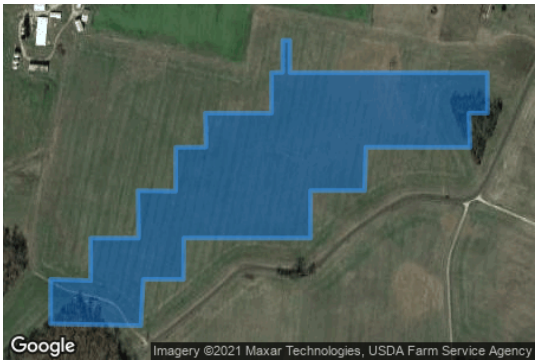


Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.652989	-85.988450	712.26	9.00	721.26
2	37.652988	-85.987972	714.66	9.00	723.66
3	37.652532	-85.987965	707.88	9.00	716.88
4	37.652532	-85.988209	712.84	9.00	721.85
5	37.651946	-85.988215	702.78	9.00	711.78
6	37.651940	-85.988422	705.21	9.00	714.21
7	37.651306	-85.988417	700.54	9.00	709.54
8	37.651306	-85.988900	704.35	9.00	713.35
9	37.650833	-85.988897	698.58	9.00	707.58
10	37.650830	-85.990145	699.86	9.00	708.86
11	37.650179	-85.990143	696.47	9.00	705.47
12	37.650180	-85.990775	691.08	9.00	700.08
13	37.651306	-85.990780	694.74	9.00	703.74
14	37.651308	-85.989528	705.58	9.00	714.58
15	37.651936	-85.989520	710.03	9.00	719.03
16	37.651938	-85.988897	710.87	9.00	719.87
17	37.652528	-85.988903	715.00	9.00	724.00
18	37.652530	-85.988450	716.33	9.00	725.33
19	37.652530	-85.988450	716.33	9.00	725.33
20	37.652528	-85.988450	716.33	9.00	725.33

Name: PV array 8a
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

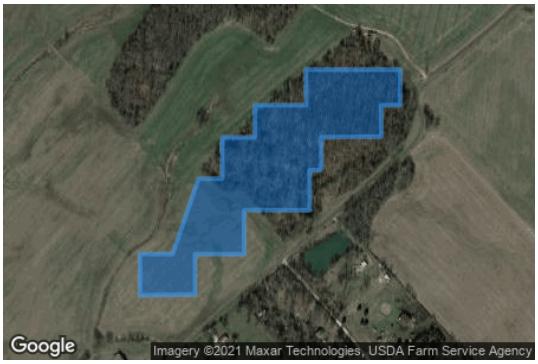
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.658869	-85.983456	733.54	9.00	742.54
2	37.658870	-85.982775	730.30	9.00	739.30
3	37.658398	-85.982770	730.88	9.00	739.88
4	37.658402	-85.982320	733.32	9.00	742.32
5	37.658870	-85.982319	728.03	9.00	737.03
6	37.658870	-85.982020	730.53	9.00	739.53
7	37.658322	-85.982018	738.16	9.00	747.16
8	37.658321	-85.982147	735.39	9.00	744.39
9	37.657990	-85.982150	739.98	9.00	748.98
10	37.657990	-85.982925	738.94	9.00	747.94
11	37.657222	-85.982918	751.70	9.00	760.70
12	37.657220	-85.983891	738.73	9.00	747.73
13	37.657735	-85.983890	736.27	9.00	745.27
14	37.657740	-85.983585	739.59	9.00	748.59
15	37.658400	-85.983580	734.11	9.00	743.11
16	37.658400	-85.983460	734.23	9.00	743.23

Name: PV array 8b
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



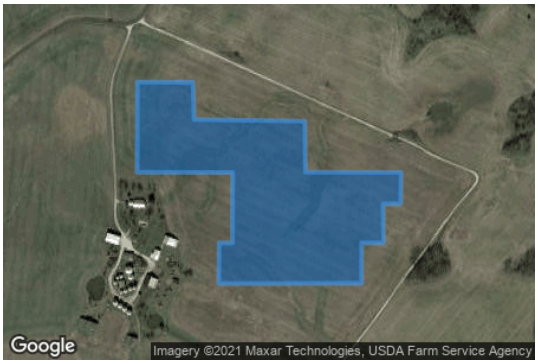
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.659413	-85.979815	730.94	9.00	739.94
2	37.659413	-85.979687	728.32	9.00	737.32
3	37.658950	-85.979687	730.23	9.00	739.23
4	37.658950	-85.976103	712.38	9.00	721.38
5	37.658368	-85.976100	728.72	9.00	737.72
6	37.658370	-85.976436	730.90	9.00	739.90
7	37.657880	-85.976414	721.92	9.00	730.92
8	37.657882	-85.978308	718.15	9.00	727.15
9	37.657260	-85.978330	723.95	9.00	732.95
10	37.657260	-85.979311	723.91	9.00	732.91
11	37.656580	-85.979310	729.82	9.00	738.82
12	37.656580	-85.981610	744.03	9.00	753.03
13	37.655988	-85.981620	740.96	9.00	749.96
14	37.655990	-85.982347	742.64	9.00	751.65
15	37.655327	-85.982392	733.49	9.00	742.49
16	37.655355	-85.984032	751.71	9.00	760.71
17	37.655990	-85.984030	750.27	9.00	759.27
18	37.655973	-85.983302	748.50	9.00	757.50
19	37.656580	-85.983302	748.83	9.00	757.83
20	37.656580	-85.982433	751.61	9.00	760.61
21	37.657260	-85.982444	754.22	9.00	763.22
22	37.657256	-85.981760	751.15	9.00	760.15
23	37.657880	-85.981757	744.74	9.00	753.74
24	37.657884	-85.981210	735.95	9.00	744.95
25	37.658370	-85.981221	742.51	9.00	751.51
26	37.658370	-85.980020	729.66	9.00	738.66
27	37.658950	-85.980019	735.17	9.00	744.17
28	37.658954	-85.979820	733.60	9.00	742.60

Name: PV array 8c
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.654661	-85.985389	728.43	9.00	737.43
2	37.654661	-85.984456	742.38	9.00	751.38
3	37.655170	-85.984460	744.64	9.00	753.64
4	37.655170	-85.982750	733.83	9.00	742.83
5	37.654660	-85.982750	737.80	9.00	746.80
6	37.654660	-85.983093	737.18	9.00	746.18
7	37.654210	-85.983090	732.02	9.00	741.02
8	37.654202	-85.984177	730.51	9.00	739.51
9	37.653735	-85.984180	727.66	9.00	736.66
10	37.653730	-85.984391	728.16	9.00	737.16
11	37.653157	-85.984390	730.88	9.00	739.88
12	37.653160	-85.985582	732.00	9.00	741.00
13	37.652529	-85.985580	719.54	9.00	728.54
14	37.652530	-85.986473	720.31	9.00	729.31
15	37.651951	-85.986470	712.04	9.00	721.04
16	37.651940	-85.987470	705.58	9.00	714.58
17	37.652530	-85.987470	705.22	9.00	714.22
18	37.652530	-85.986880	713.57	9.00	722.57
19	37.653607	-85.986408	718.90	9.00	727.90
20	37.653610	-85.985979	734.06	9.00	743.06
21	37.654202	-85.985980	727.69	9.00	736.69
22	37.654200	-85.985389	737.78	9.00	746.78

Name: PV array 9
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.656283	-85.976339	735.05	9.00	744.05
2	37.656280	-85.975330	724.76	9.00	733.76
3	37.655747	-85.975309	728.51	9.00	737.51
4	37.655723	-85.973299	715.42	9.00	724.42
5	37.654994	-85.973289	720.26	9.00	729.26
6	37.654990	-85.971553	724.01	9.00	733.01
7	37.654542	-85.971560	730.05	9.00	739.05
8	37.654540	-85.971880	733.50	9.00	742.50
9	37.653981	-85.971875	721.20	9.00	730.20
10	37.653980	-85.972269	723.18	9.00	732.18
11	37.653402	-85.972270	730.26	9.00	739.26
12	37.653398	-85.974863	732.71	9.00	741.71
13	37.653980	-85.974855	739.30	9.00	748.30
14	37.653980	-85.974614	736.14	9.00	745.14
15	37.654988	-85.974610	729.05	9.00	738.05
16	37.654992	-85.976345	739.20	9.00	748.20

Flight Path Receptor(s)

Name: EKX Runway 23
Description:
Threshold height: 30 ft
Direction: 227.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°

Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	37.691507	-85.917731	770.64	30.00	800.64
Two-mile	37.711226	-85.890978	745.84	608.26	1354.10

Name: EKX Runway 5
Description:
Threshold height: 49 ft
Direction: 47.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°

Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	37.680546	-85.932333	751.39	49.00	800.39
Two-mile	37.660828	-85.959082	694.10	659.75	1353.85

Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	37.665118	-86.000164	735.72	6.00
OP 2	2	37.665154	-86.000182	736.74	16.00
OP 3	3	37.646994	-85.982340	750.74	6.00
OP 4	4	37.646994	-85.982329	750.54	16.00
OP 5	5	37.651055	-85.982995	744.16	6.00
OP 6	6	37.651021	-85.983005	744.32	16.00
OP 7	7	37.635969	-86.019095	704.01	6.00
OP 8	8	37.635965	-86.019111	704.05	16.00
OP 9	9	37.668838	-85.992461	725.46	6.00
OP 10	10	37.668851	-85.992439	725.36	16.00
OP 11	11	37.649925	-85.999946	728.69	6.00
OP 12	12	37.649925	-85.999946	728.69	16.00
OP 13	13	37.647332	-86.011354	746.93	6.00
OP 14	14	37.647340	-86.011381	746.72	16.00
OP 15	15	37.653195	-86.014569	745.80	6.00
OP 16	16	37.653204	-86.014516	746.01	16.00
OP 17	17	37.665804	-86.009069	717.19	6.00
OP 18	18	37.659876	-85.976089	723.83	6.00
OP 19	19	37.654159	-85.958354	709.21	6.00
OP 20	20	37.642335	-85.970821	706.91	6.00

GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
PV array 1	SA tracking	SA tracking	0	0	-
PV array 10	SA tracking	SA tracking	0	0	-
PV array 11a	SA tracking	SA tracking	0	0	-
PV array 11b	SA tracking	SA tracking	0	0	-
PV array 11c	SA tracking	SA tracking	0	0	-
PV array 12	SA tracking	SA tracking	0	0	-
PV array 13	SA tracking	SA tracking	0	0	-
PV array 14	SA tracking	SA tracking	0	0	-
PV array 15	SA tracking	SA tracking	0	0	-
PV array 2	SA tracking	SA tracking	0	0	-
PV array 3	SA tracking	SA tracking	0	0	-
PV array 4	SA tracking	SA tracking	0	0	-
PV array 5	SA tracking	SA tracking	0	0	-
PV array 6	SA tracking	SA tracking	0	0	-
PV array 7	SA tracking	SA tracking	0	0	-
PV array 8a	SA tracking	SA tracking	0	0	-
PV array 8b	SA tracking	SA tracking	0	0	-
PV array 8c	SA tracking	SA tracking	0	0	-
PV array 9	SA tracking	SA tracking	0	0	-

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0

Results for: PV array 1

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
0 minutes of green glare

Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 10

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
0 minutes of green glare

Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 11a

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
0 minutes of green glare

Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 11b

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
0 minutes of green glare

Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 11c

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
0 minutes of green glare

Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 12

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
0 minutes of green glare

Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 13

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
0 minutes of green glare

Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 14

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
0 minutes of green glare

Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 15

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
0 minutes of green glare

Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 2

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
0 minutes of green glare

Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 3

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
0 minutes of green glare

Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 4

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
0 minutes of green glare

Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 5

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
0 minutes of green glare

Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 6

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
0 minutes of green glare

Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 7

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
0 minutes of green glare

Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 8a

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
0 minutes of green glare

Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 8b

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
0 minutes of green glare

Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 8c

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
0 minutes of green glare

Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 9

Receptor	Green Glare (min)	Yellow Glare (min)
EKX Runway 23	0	0
EKX Runway 5	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0

Flight Path: EKX Runway 23

0 minutes of yellow glare
0 minutes of green glare

Flight Path: EKX Runway 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual results and glare occurrence may differ.
Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
Refer to the Help page at **www.forgesolar.com/help/** for assumptions and limitations not listed here.

FORGESOLAR GLARE ANALYSIS

Project: **Rhudes Creek Solar**
Proposed utility-scale project in Hardin County, Kentucky

Site configuration: **Rhudes Creek_v3_Arrays 1-7_Roads_0 deg**
Analysis conducted by Alan Plumeau (aplumeau@trccompanies.com) at 02:24 on 05 Jul, 2021.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
2-mile flight path(s)	N/A	No flight paths analyzed
ATCT(s)	N/A	No ATCT receptors designated

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63276 can be read at https://www.federalregister.gov/d/2013-24729

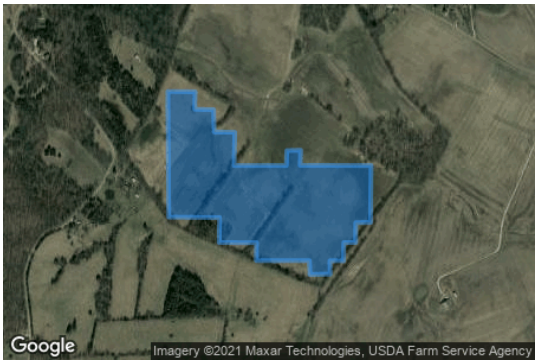
SITE CONFIGURATION

Analysis Parameters

DNI: peaks at 1,000.0 W/m^2
Time interval: 1 min
Ocular transmission coefficient: 0.5
Pupil diameter: 0.002 m
Eye focal length: 0.017 m
Sun subtended angle: 9.3 mrad
Site Config ID: 56032.9913

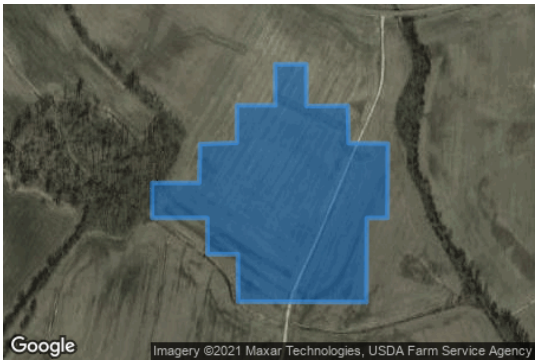
PV Array(s)

Name: PV array 1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



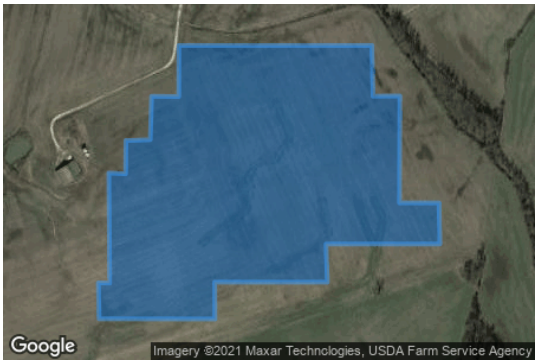
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.662651	-86.010935	711.53	9.00	720.53
2	37.662643	-86.009945	706.84	9.00	715.84
3	37.662142	-86.009961	711.98	9.00	720.98
4	37.662128	-86.009272	710.08	9.00	719.08
5	37.661493	-86.009255	705.58	9.00	714.58
6	37.661482	-86.008505	710.50	9.00	719.50
7	37.660531	-86.008531	708.15	9.00	717.15
8	37.660530	-86.006632	701.29	9.00	710.29
9	37.660958	-86.006618	699.68	9.00	708.68
10	37.660972	-86.006117	701.11	9.00	710.11
11	37.660534	-86.006131	703.65	9.00	712.65
12	37.660530	-86.003556	704.42	9.00	713.42
13	37.658903	-86.003581	711.58	9.00	720.58
14	37.658896	-86.004114	711.71	9.00	720.71
15	37.658327	-86.004120	713.24	9.00	722.24
16	37.658326	-86.004547	715.71	9.00	724.71
17	37.657803	-86.004561	716.42	9.00	725.42
18	37.657806	-86.005053	720.02	9.00	729.02
19	37.657421	-86.005044	721.09	9.00	730.09
20	37.657413	-86.005776	723.72	9.00	732.72
21	37.657806	-86.005795	725.16	9.00	734.16
22	37.657810	-86.007725	726.60	9.00	735.60
23	37.658322	-86.007715	720.80	9.00	729.80
24	37.658326	-86.009072	740.92	9.00	749.92
25	37.659042	-86.009055	721.81	9.00	730.81
26	37.659054	-86.010901	711.33	9.00	720.33

Name: PV array 2
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



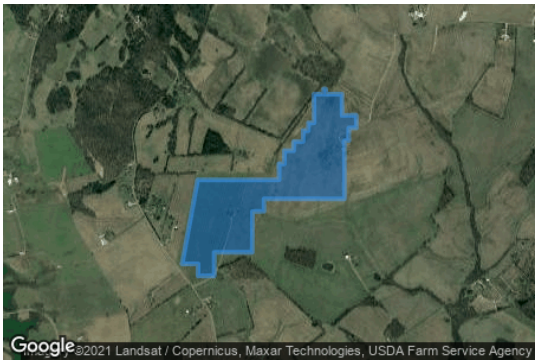
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.660181	-86.001263	707.49	9.00	716.49
2	37.660683	-86.001260	705.01	9.00	714.01
3	37.660684	-86.000408	709.97	9.00	718.97
4	37.661239	-86.000394	717.94	9.00	726.94
5	37.661258	-85.999726	725.20	9.00	734.20
6	37.661794	-85.999725	734.83	9.00	743.83
7	37.661794	-85.999027	729.70	9.00	738.70
8	37.662381	-85.999031	731.09	9.00	740.09
9	37.662384	-85.998464	734.15	9.00	743.15
10	37.661784	-85.998463	723.97	9.00	732.97
11	37.661790	-85.997711	716.98	9.00	725.98
12	37.661252	-85.997697	711.65	9.00	720.65
13	37.661248	-85.996984	708.16	9.00	717.16
14	37.660182	-85.996993	707.44	9.00	716.44
15	37.660178	-85.997366	707.32	9.00	716.32
16	37.658976	-85.997373	708.19	9.00	717.19
17	37.658984	-85.999703	700.03	9.00	709.03
18	37.659662	-85.999708	702.35	9.00	711.35
19	37.659664	-86.000257	704.54	9.00	713.54
20	37.660180	-86.000263	704.55	9.00	713.55

Name: PV array 3
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



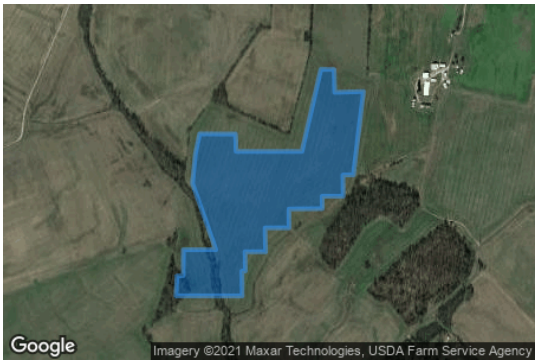
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.658353	-85.998802	705.87	9.00	714.87
2	37.658354	-85.995299	702.40	9.00	711.40
3	37.657627	-85.995279	706.26	9.00	715.26
4	37.657630	-85.994792	704.88	9.00	713.88
5	37.656099	-85.994799	708.66	9.00	717.67
6	37.656100	-85.994083	707.06	9.00	716.06
7	37.655511	-85.994065	711.83	9.00	720.83
8	37.655510	-85.996133	720.37	9.00	729.37
9	37.654964	-85.996109	725.62	9.00	734.62
10	37.654964	-85.998153	746.75	9.00	755.75
11	37.654436	-85.998149	752.44	9.00	761.44
12	37.654440	-86.000251	731.24	9.00	740.24
13	37.654956	-86.000265	732.14	9.00	741.14
14	37.654952	-86.000058	734.90	9.00	743.90
15	37.656527	-86.000075	724.80	9.00	733.80
16	37.656516	-85.999769	725.45	9.00	734.45
17	37.656992	-85.999765	716.08	9.00	725.08
18	37.657004	-85.999322	718.09	9.00	727.09
19	37.657626	-85.999299	710.79	9.00	719.79
20	37.657622	-85.998805	710.62	9.00	719.62

Name: PV array 4
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



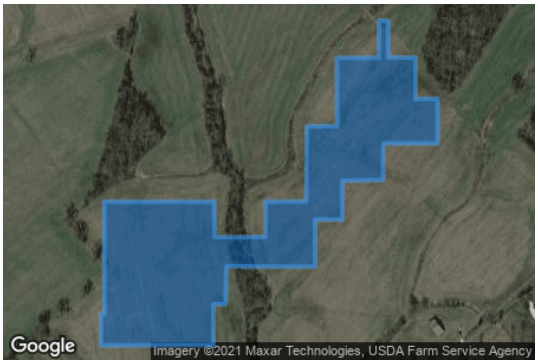
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.659661	-86.002994	707.14	9.00	716.14
2	37.659678	-86.002258	705.86	9.00	714.86
3	37.659979	-86.002281	706.38	9.00	715.38
4	37.659972	-86.002147	705.82	9.00	714.82
5	37.659670	-86.002135	706.28	9.00	715.28
6	37.659666	-86.000969	705.11	9.00	714.11
7	37.658453	-86.000950	708.10	9.00	717.10
8	37.658464	-85.999930	705.28	9.00	714.28
9	37.657736	-85.999915	709.38	9.00	718.38
10	37.657740	-86.000467	709.84	9.00	718.84
11	37.657012	-86.000459	718.66	9.00	727.66
12	37.657002	-86.000789	723.41	9.00	732.41
13	37.653667	-86.000785	728.95	9.00	737.95
14	37.653670	-86.006624	731.35	9.00	740.35
15	37.652968	-86.006615	740.65	9.00	749.65
16	37.652947	-86.007456	732.63	9.00	741.63
17	37.650611	-86.007475	759.38	9.00	768.38
18	37.650612	-86.010223	740.96	9.00	749.96
19	37.649262	-86.010227	742.15	9.00	751.15
20	37.649260	-86.011405	728.45	9.00	737.45
21	37.649945	-86.011397	728.21	9.00	737.21
22	37.649952	-86.012561	727.09	9.00	736.09
23	37.654760	-86.011434	763.21	9.00	772.21
24	37.654762	-86.005525	725.02	9.00	734.02
25	37.655679	-86.005530	720.19	9.00	729.19
26	37.655680	-86.005134	722.59	9.00	731.59
27	37.656432	-86.005130	716.32	9.00	725.32
28	37.656430	-86.004466	718.67	9.00	727.67
29	37.656956	-86.004465	713.72	9.00	722.72
30	37.656960	-86.003778	715.47	9.00	724.47
31	37.657590	-86.003780	711.76	9.00	720.76
32	37.657584	-86.003389	712.80	9.00	721.80
33	37.658027	-86.003393	708.74	9.00	717.74
34	37.658030	-86.002969	712.02	9.00	721.02

Name: PV array 5
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



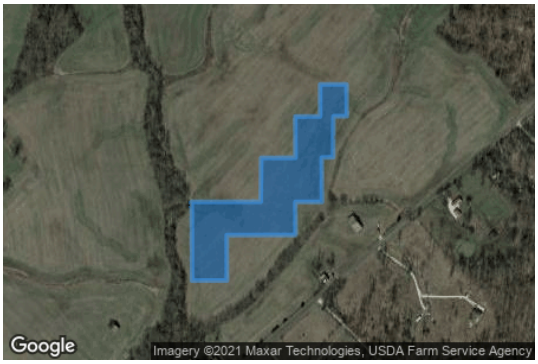
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.658244	-85.992442	723.13	9.00	732.13
2	37.658240	-85.991140	718.94	9.00	727.94
3	37.657742	-85.991120	715.81	9.00	724.82
4	37.657740	-85.988731	730.66	9.00	739.66
5	37.660089	-85.988043	744.99	9.00	753.99
6	37.660085	-85.987564	744.55	9.00	753.55
7	37.659430	-85.987539	748.54	9.00	757.54
8	37.659458	-85.986497	743.62	9.00	752.62
9	37.657068	-85.986861	731.14	9.00	740.14
10	37.657066	-85.987241	731.79	9.00	740.79
11	37.656458	-85.987235	722.71	9.00	731.71
12	37.656456	-85.988000	724.50	9.00	733.50
13	37.656104	-85.987989	718.45	9.00	727.45
14	37.656092	-85.989203	715.97	9.00	724.97
15	37.655554	-85.989199	712.59	9.00	721.59
16	37.655550	-85.990069	715.87	9.00	724.87
17	37.654867	-85.990049	707.74	9.00	716.75
18	37.654870	-85.990794	709.57	9.00	718.57
19	37.654317	-85.990785	709.02	9.00	718.02
20	37.654316	-85.990906	708.55	9.00	717.55
21	37.653604	-85.990899	705.71	9.00	714.71
22	37.653604	-85.993300	716.75	9.00	725.75
23	37.654174	-85.993265	717.82	9.00	726.83
24	37.654180	-85.993039	716.00	9.00	725.00
25	37.654925	-85.993034	706.81	9.00	715.81
26	37.654926	-85.991854	704.28	9.00	713.28
27	37.656827	-85.992704	707.22	9.00	716.22
28	37.657677	-85.992596	711.88	9.00	720.88

Name: PV array 6
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.652786	-85.993852	715.77	9.00	724.77
2	37.652788	-85.991855	702.24	9.00	711.24
3	37.652279	-85.991847	700.92	9.00	709.92
4	37.652283	-85.990923	697.34	9.00	706.34
5	37.652788	-85.990922	696.96	9.00	705.96
6	37.652790	-85.990183	703.39	9.00	712.39
7	37.653865	-85.990175	704.30	9.00	713.30
8	37.653870	-85.989623	704.68	9.00	713.68
9	37.654845	-85.989625	709.78	9.00	718.78
10	37.654848	-85.988861	712.44	9.00	721.44
11	37.655379	-85.988863	716.07	9.00	725.07
12	37.655376	-85.988697	718.25	9.00	727.25
13	37.654852	-85.988695	713.93	9.00	722.93
14	37.654848	-85.988197	720.97	9.00	729.97
15	37.654260	-85.988203	714.70	9.00	723.70
16	37.654260	-85.987800	721.73	9.00	730.73
17	37.653621	-85.987799	717.66	9.00	726.66
18	37.653622	-85.988784	710.82	9.00	719.83
19	37.653096	-85.988787	710.24	9.00	719.24
20	37.653088	-85.989528	710.09	9.00	719.09
21	37.652528	-85.989527	709.36	9.00	718.36
22	37.652530	-85.990023	706.00	9.00	715.00
23	37.651856	-85.990022	704.61	9.00	713.61
24	37.651860	-85.991636	700.97	9.00	709.97
25	37.651322	-85.991645	697.29	9.00	706.29
26	37.651318	-85.991869	699.46	9.00	708.46
27	37.650733	-85.991870	697.32	9.00	706.32
28	37.650728	-85.993908	711.26	9.00	720.26
29	37.651173	-85.993907	721.10	9.00	730.10
30	37.651175	-85.993847	721.96	9.00	730.96

Name: PV array 7
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.652989	-85.988450	712.26	9.00	721.26
2	37.652988	-85.987972	714.66	9.00	723.66
3	37.652532	-85.987965	707.88	9.00	716.88
4	37.652532	-85.988209	712.84	9.00	721.85
5	37.651946	-85.988215	702.78	9.00	711.78
6	37.651940	-85.988422	705.21	9.00	714.21
7	37.651306	-85.988417	700.54	9.00	709.54
8	37.651306	-85.988900	704.35	9.00	713.35
9	37.650833	-85.988897	698.58	9.00	707.58
10	37.650830	-85.990145	699.86	9.00	708.86
11	37.650179	-85.990143	696.47	9.00	705.47
12	37.650180	-85.990775	691.08	9.00	700.08
13	37.651306	-85.990780	694.74	9.00	703.74
14	37.651308	-85.989528	705.58	9.00	714.58
15	37.651936	-85.989520	710.03	9.00	719.03
16	37.651938	-85.988897	710.87	9.00	719.87
17	37.652528	-85.988903	715.00	9.00	724.00
18	37.652530	-85.988450	716.33	9.00	725.33
19	37.652530	-85.988450	716.33	9.00	725.33
20	37.652528	-85.988450	716.33	9.00	725.33

Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	37.665796	-86.003591	712.10	5.00
OP 2	2	37.663086	-85.997117	710.47	5.00
OP 3	3	37.663783	-85.992311	712.81	5.00
OP 4	4	37.663341	-85.984243	730.37	5.00
OP 5	5	37.663970	-85.975316	719.72	5.00
OP 6	6	37.658950	-85.975245	714.89	5.00
OP 7	7	37.657659	-85.975953	733.77	5.00
OP 8	8	37.657166	-85.977316	727.49	5.00
OP 9	9	37.656886	-85.978131	739.19	5.00
OP 10	10	37.656334	-85.979000	738.92	5.00
OP 11	11	37.656096	-85.979526	747.83	5.00
OP 12	12	37.656164	-85.980470	744.93	5.00
OP 13	13	37.655548	-85.981407	738.80	5.00
OP 14	14	37.654894	-85.982405	731.49	5.00
OP 15	15	37.654147	-85.982469	724.53	5.00
OP 16	16	37.651743	-85.985881	701.72	5.00
OP 17	17	37.649398	-85.989228	703.88	5.00
OP 18	18	37.647793	-85.992812	689.53	5.00
OP 19	19	37.643227	-86.001173	705.25	5.00
OP 20	20	37.647016	-86.010443	732.49	5.00
OP 21	21	37.649330	-86.012467	722.89	5.00
OP 22	22	37.652941	-86.015460	733.92	5.00
OP 23	23	37.659804	-86.013475	719.49	5.00
OP 24	24	37.660874	-86.012874	712.82	5.00
OP 25	25	37.645045	-85.954316	691.77	5.00
OP 26	26	37.638962	-85.961226	694.20	5.00
OP 27	27	37.632607	-85.972727	674.04	5.00
OP 28	28	37.628596	-85.983198	677.47	5.00

GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
PV array 1	SA tracking	SA tracking	5,552	8,944	-
PV array 2	SA tracking	SA tracking	8,254	4,055	-
PV array 3	SA tracking	SA tracking	1,684	10,889	-
PV array 4	SA tracking	SA tracking	1	9,432	-
PV array 5	SA tracking	SA tracking	1,684	11,994	-
PV array 6	SA tracking	SA tracking	2,194	340	-
PV array 7	SA tracking	SA tracking	10,132	9,802	-

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
OP 1	0	763
OP 2	0	2048
OP 3	13	2707
OP 4	294	3557
OP 5	1160	828
OP 6	2057	479
OP 7	2638	659
OP 8	2511	813
OP 9	2372	1293
OP 10	2193	1798
OP 11	2013	5295
OP 12	1475	5684
OP 13	1454	5897
OP 14	1121	3630
OP 15	1206	3010
OP 16	0	2836

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	1253	1032
OP 21	1369	1072
OP 22	2023	4331
OP 23	945	3935
OP 24	1019	3789
OP 25	1616	0
OP 26	769	0
OP 27	0	0
OP 28	0	0

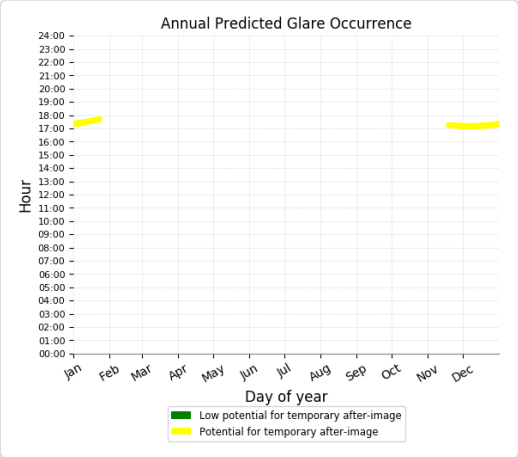
Results for: PV array 1

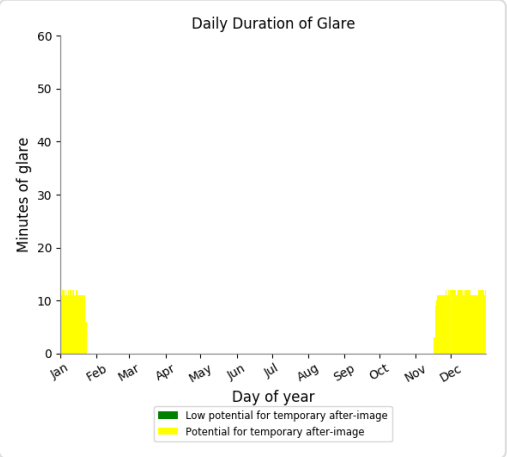
Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	763
OP 2	0	2036
OP 3	13	1873
OP 4	284	734
OP 5	630	85
OP 6	527	74
OP 7	530	123
OP 8	491	173
OP 9	454	238
OP 10	432	290
OP 11	419	343
OP 12	370	394
OP 13	347	439
OP 14	288	488
OP 15	343	470
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	85
OP 23	0	168
OP 24	0	168

Receptor	Green Glare (min)	Yellow Glare (min)
OP 25	424	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

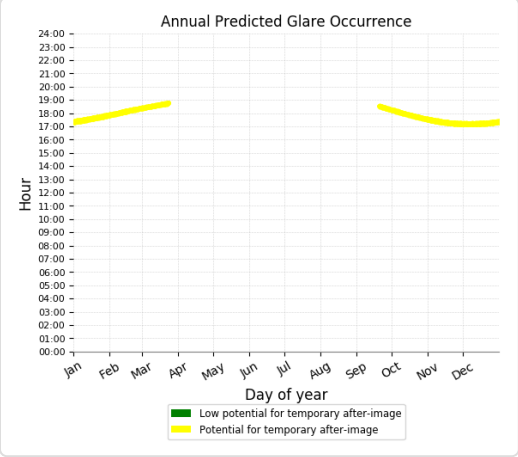
763 minutes of yellow glare
0 minutes of green glare

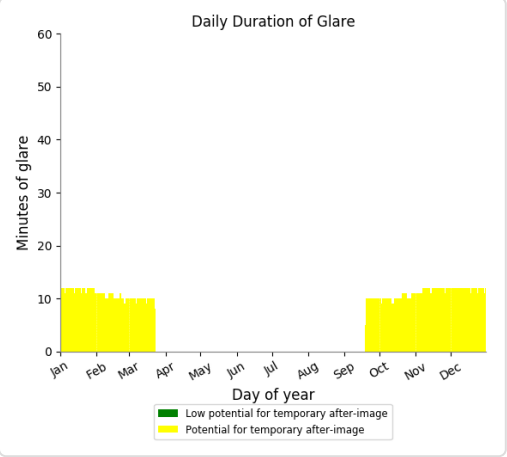




Point Receptor: OP 2

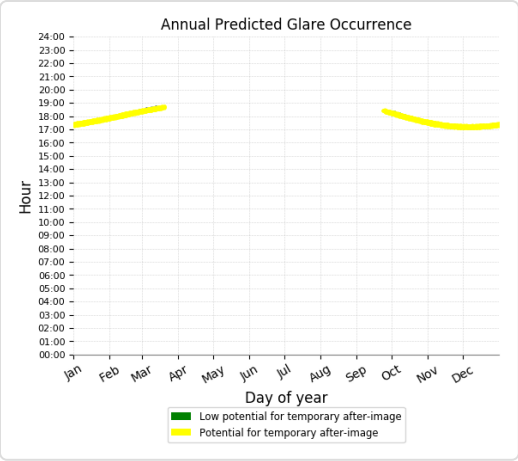
2036 minutes of yellow glare
0 minutes of green glare

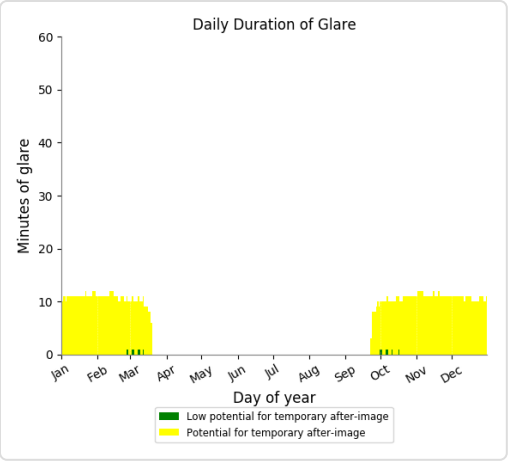




Point Receptor: OP 3

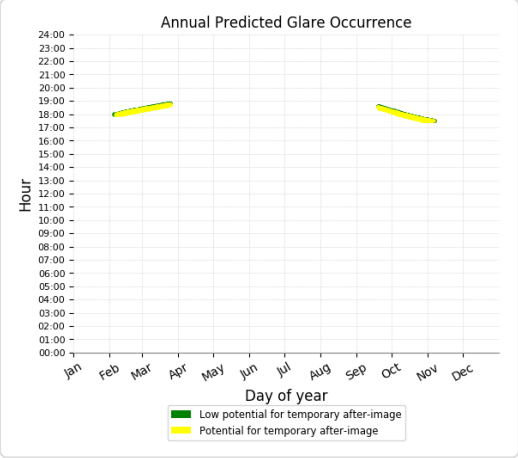
1873 minutes of yellow glare
13 minutes of green glare

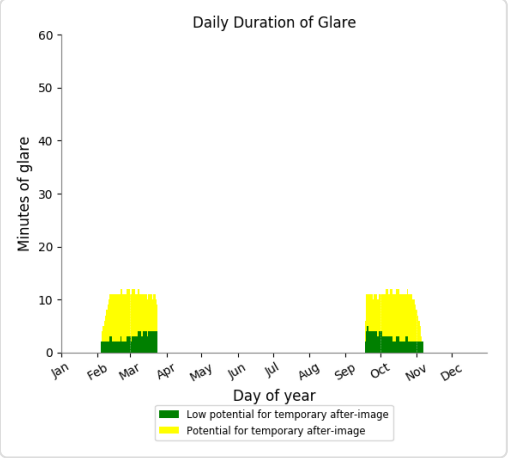




Point Receptor: OP 4

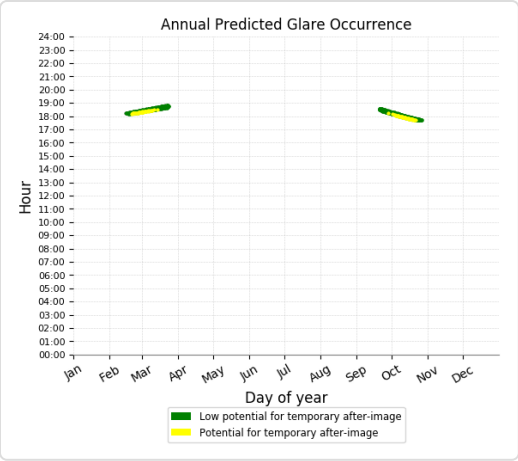
734 minutes of yellow glare
284 minutes of green glare

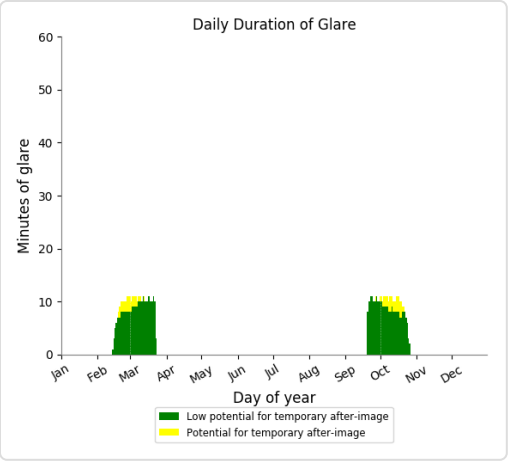




Point Receptor: OP 5

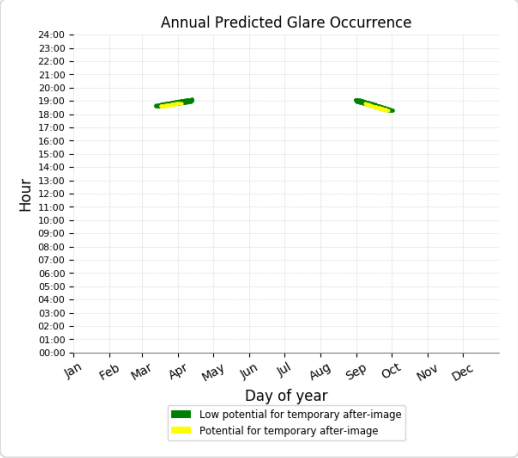
85 minutes of yellow glare
630 minutes of green glare

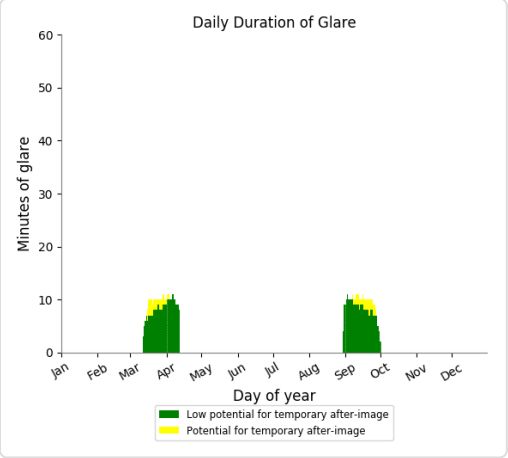




Point Receptor: OP 6

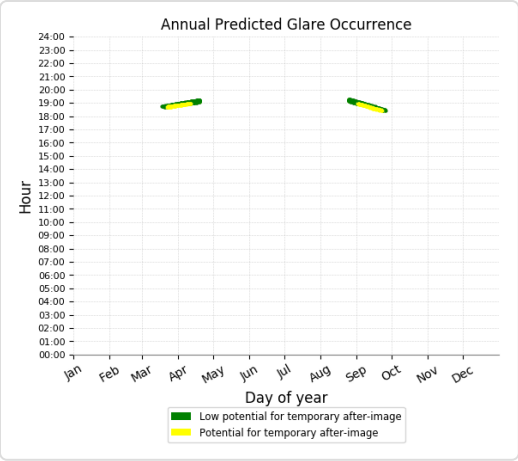
74 minutes of yellow glare
527 minutes of green glare

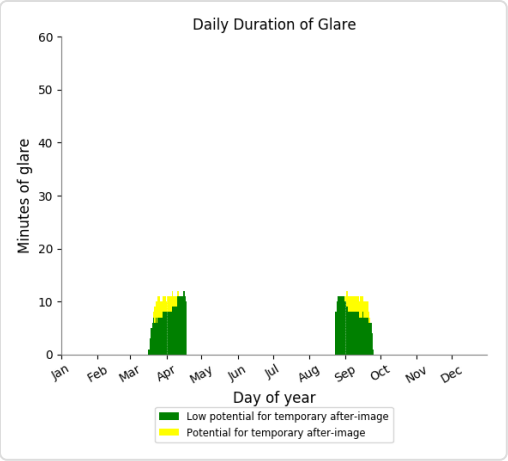




Point Receptor: OP 7

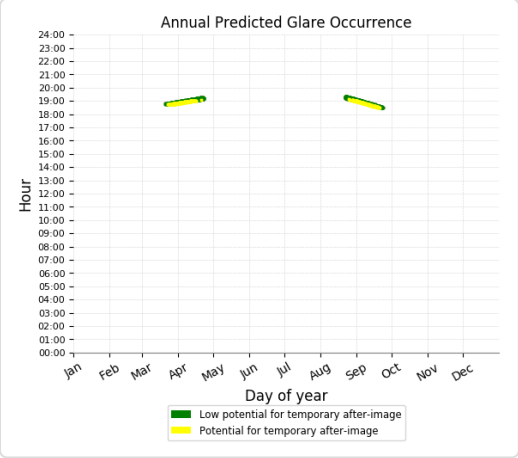
123 minutes of yellow glare
530 minutes of green glare

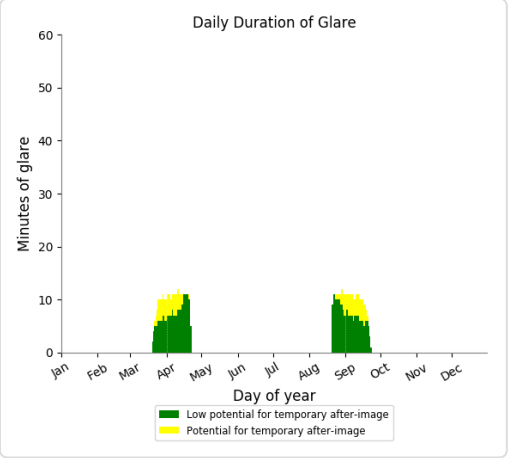




Point Receptor: OP 8

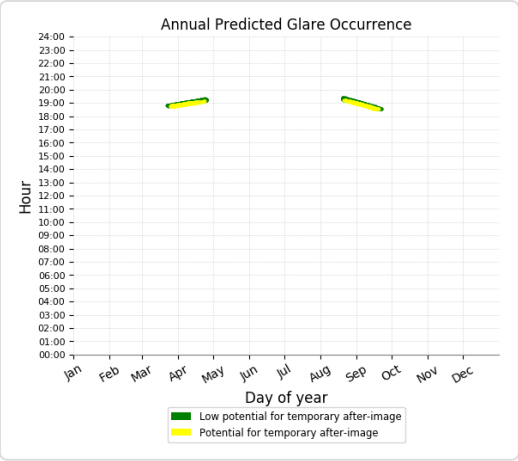
173 minutes of yellow glare
491 minutes of green glare

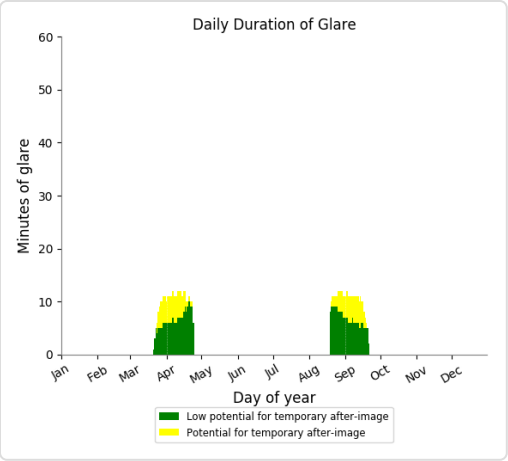




Point Receptor: OP 9

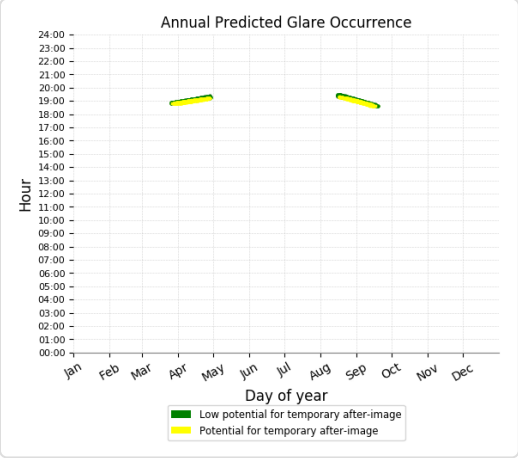
238 minutes of yellow glare
454 minutes of green glare

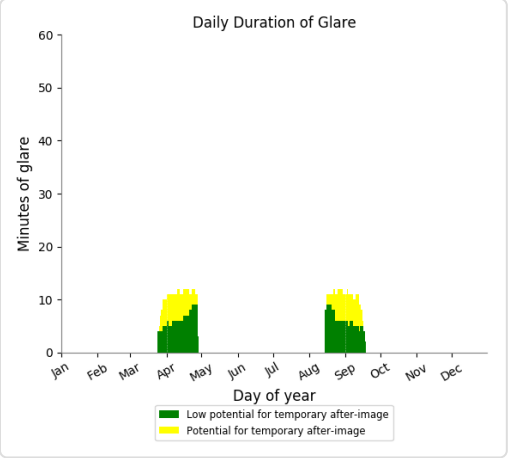




Point Receptor: OP 10

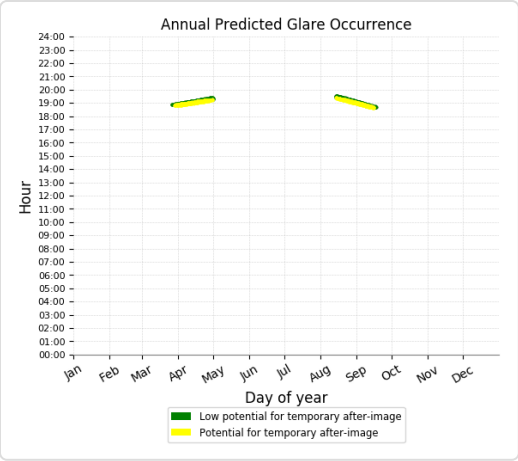
290 minutes of yellow glare
432 minutes of green glare

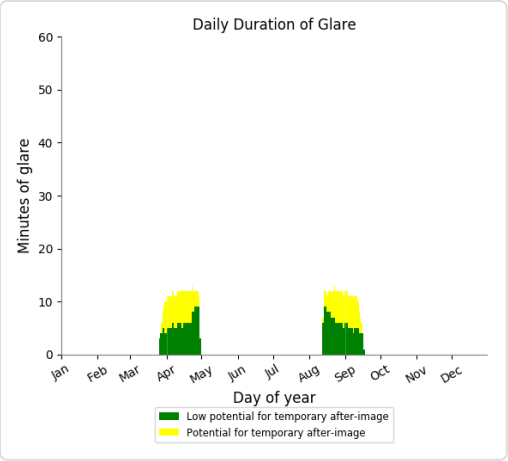




Point Receptor: OP 11

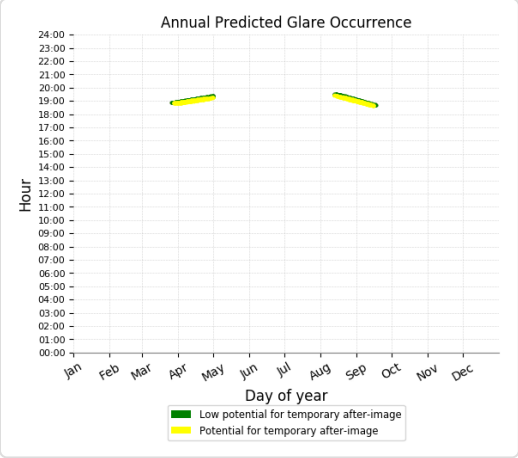
343 minutes of yellow glare
419 minutes of green glare

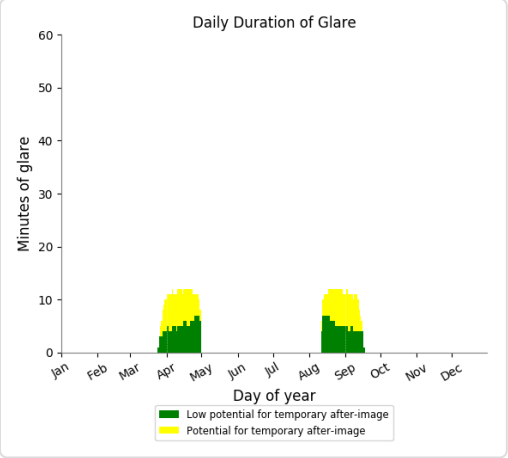




Point Receptor: OP 12

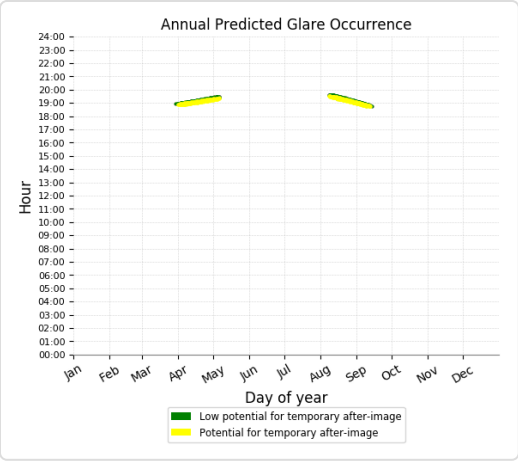
394 minutes of yellow glare
370 minutes of green glare

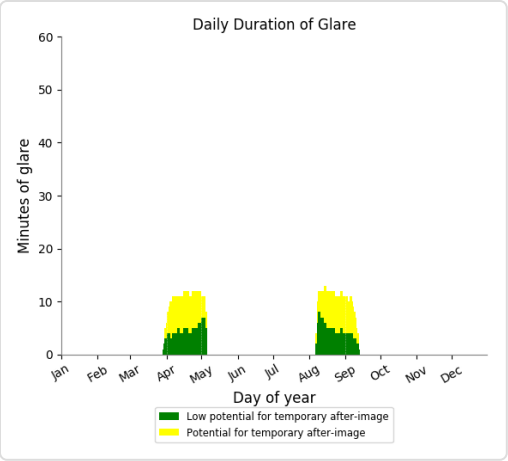




Point Receptor: OP 13

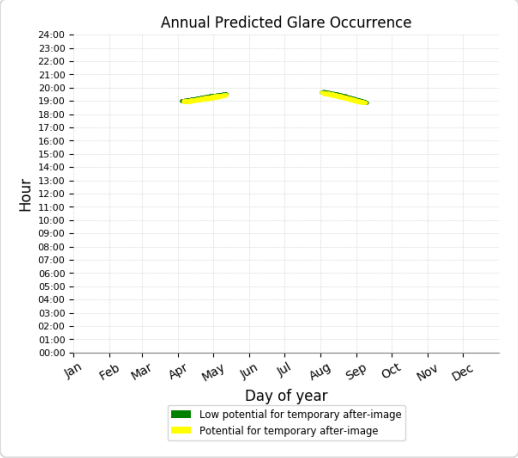
439 minutes of yellow glare
347 minutes of green glare

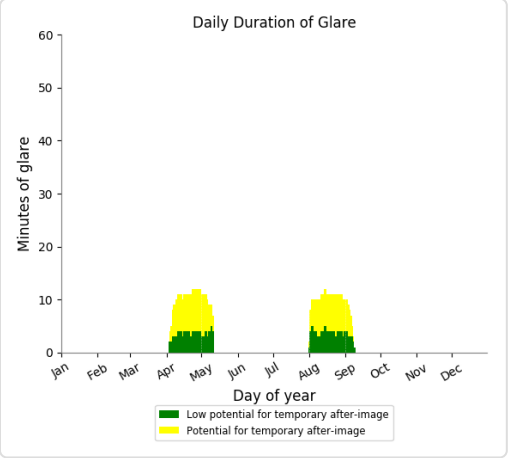




Point Receptor: OP 14

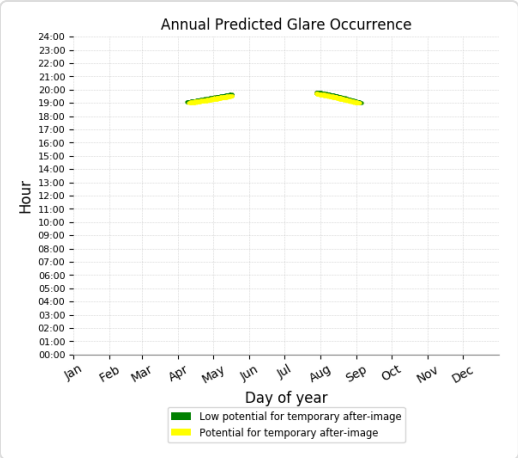
488 minutes of yellow glare
288 minutes of green glare

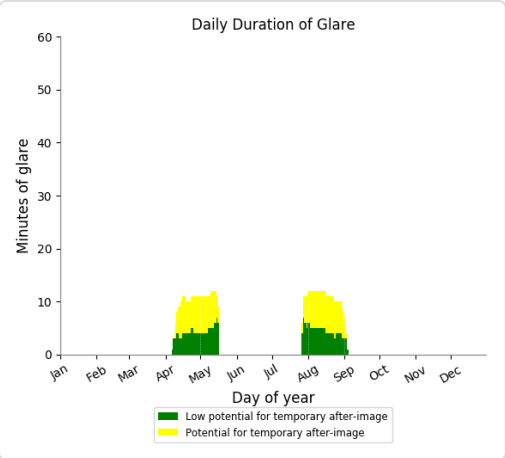




Point Receptor: OP 15

470 minutes of yellow glare
343 minutes of green glare





Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

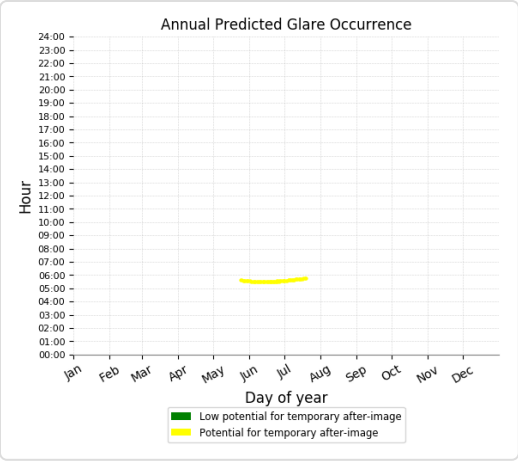
0 minutes of yellow glare
0 minutes of green glare

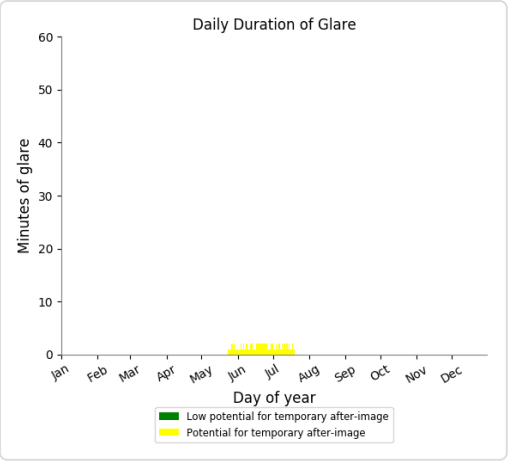
Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

85 minutes of yellow glare
0 minutes of green glare

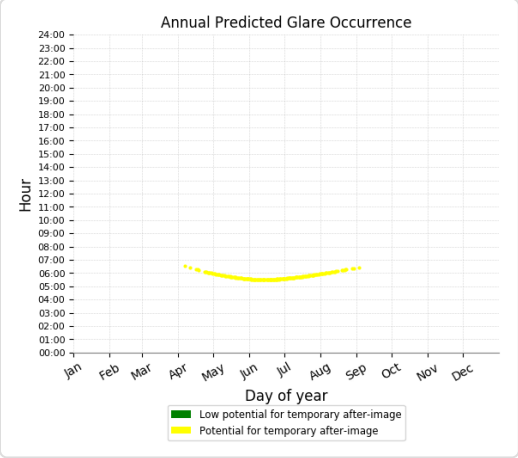


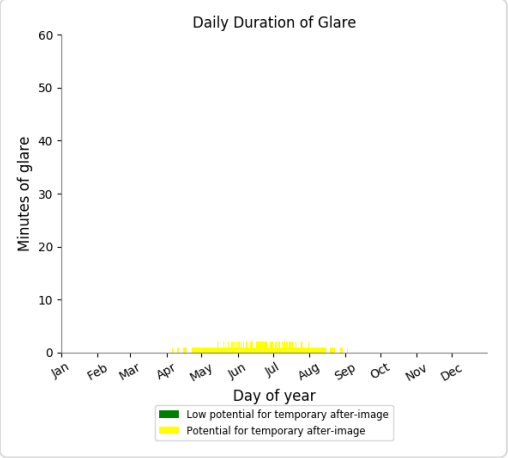


Point Receptor: OP 23

168 minutes of yellow glare

0 minutes of green glare

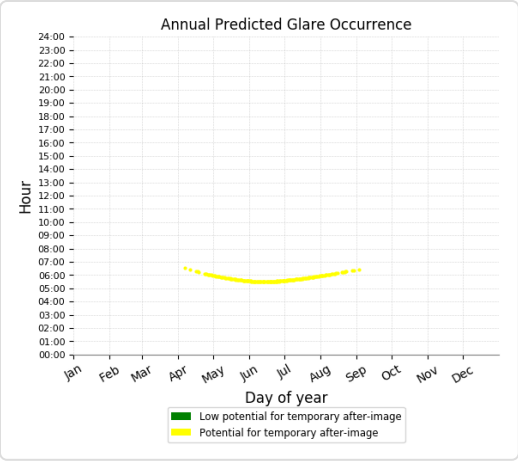


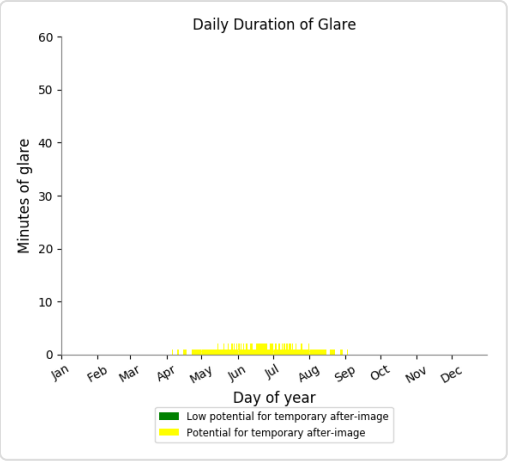


Point Receptor: OP 24

168 minutes of yellow glare

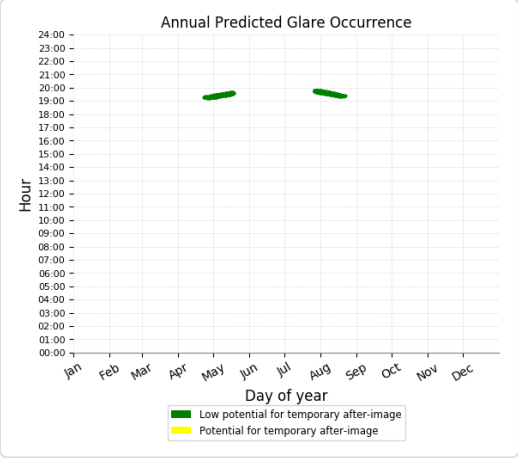
0 minutes of green glare

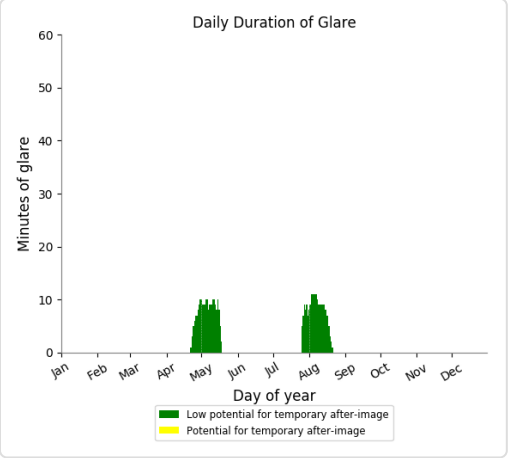




Point Receptor: OP 25

0 minutes of yellow glare
424 minutes of green glare





Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 2

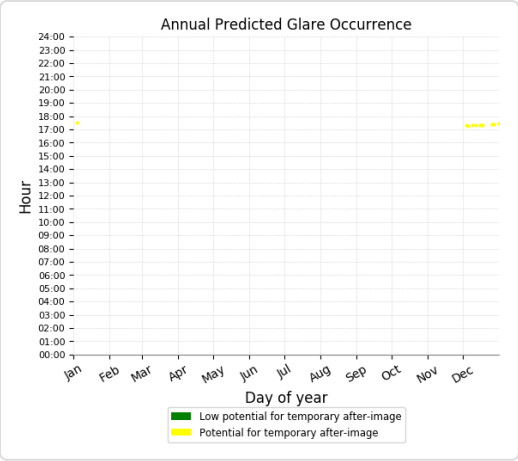
Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	12
OP 3	0	13
OP 4	0	0
OP 5	0	0
OP 6	597	0
OP 7	702	12
OP 8	707	48
OP 9	705	148
OP 10	702	244
OP 11	710	354
OP 12	643	473
OP 13	798	719
OP 14	670	844
OP 15	636	688
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	657	500
OP 23	0	0
OP 24	0	0
OP 25	727	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

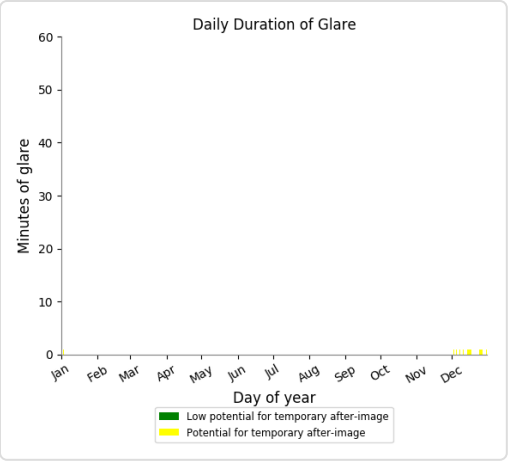
Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

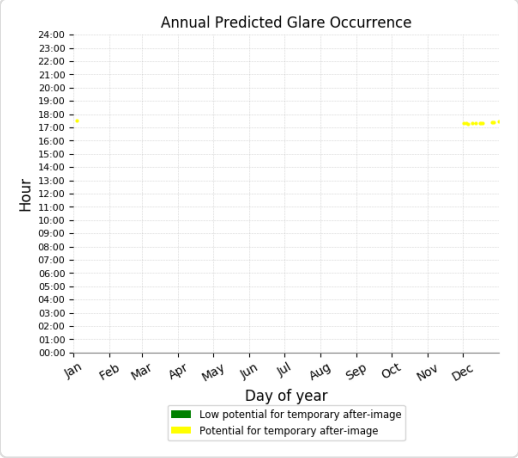
12 minutes of yellow glare
0 minutes of green glare

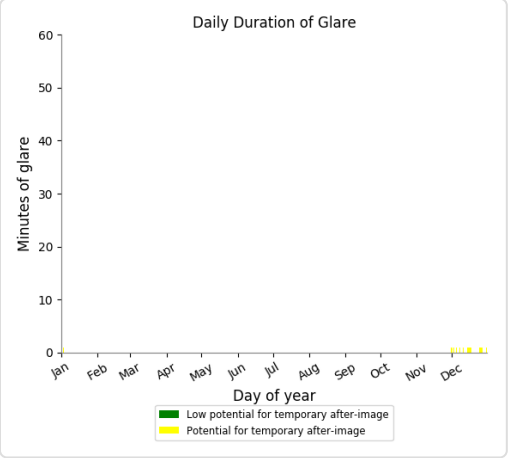




Point Receptor: OP 3

13 minutes of yellow glare
0 minutes of green glare





Point Receptor: OP 4

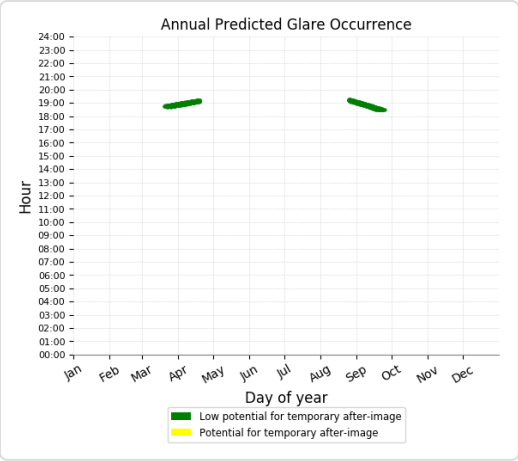
0 minutes of yellow glare
0 minutes of green glare

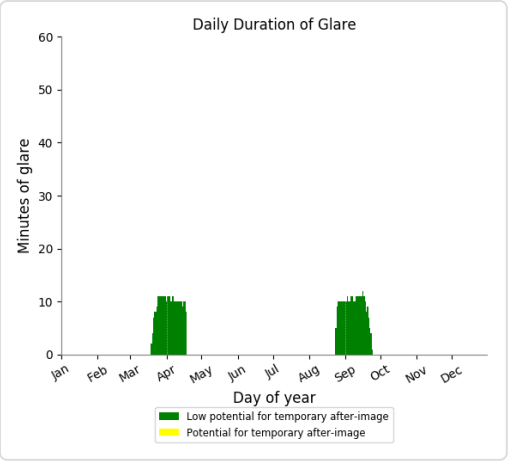
Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

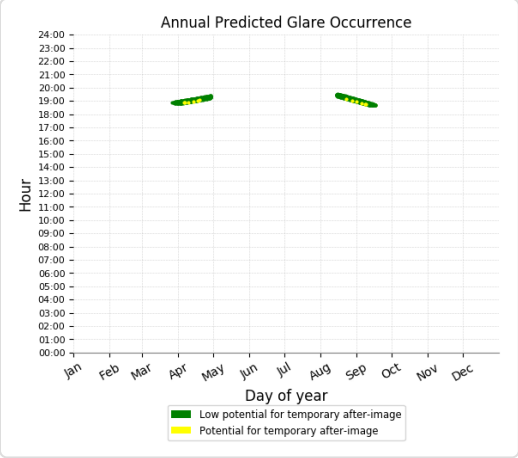
0 minutes of yellow glare
597 minutes of green glare

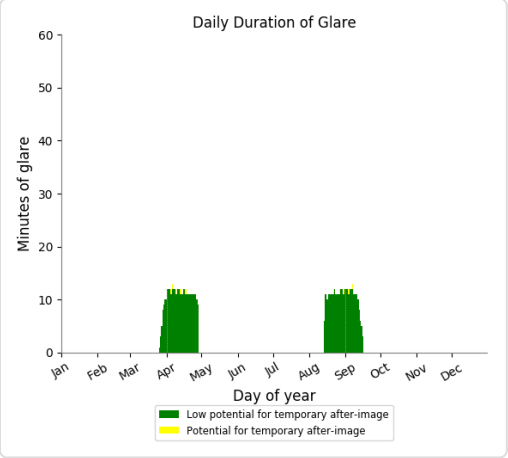




Point Receptor: OP 7

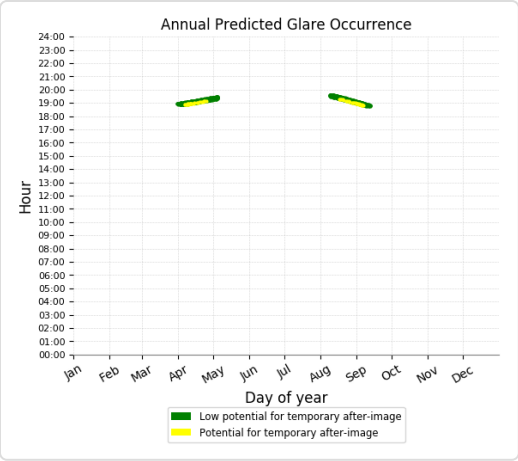
12 minutes of yellow glare
702 minutes of green glare

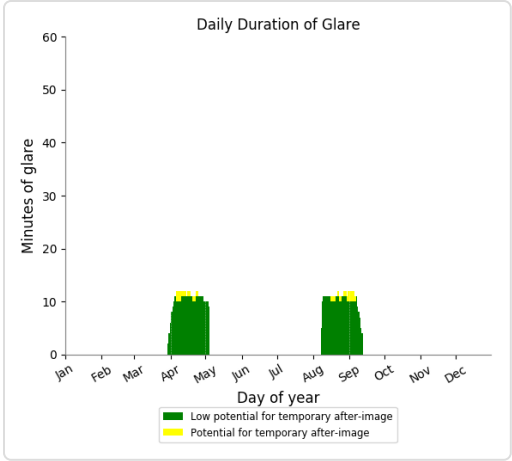




Point Receptor: OP 8

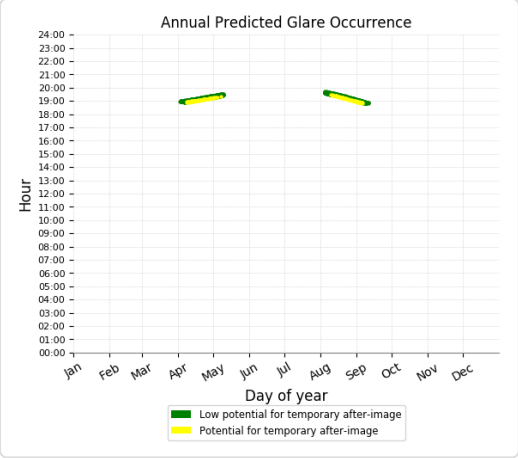
48 minutes of yellow glare
707 minutes of green glare

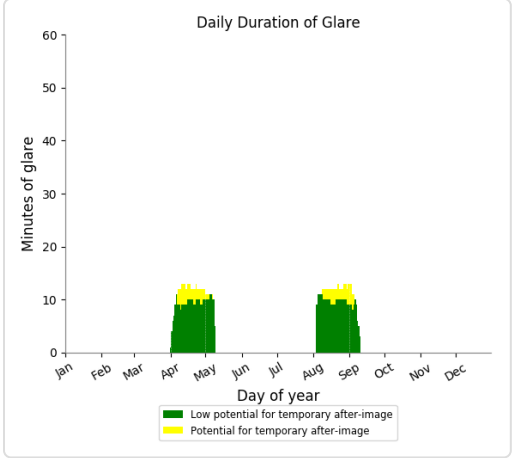




Point Receptor: OP 9

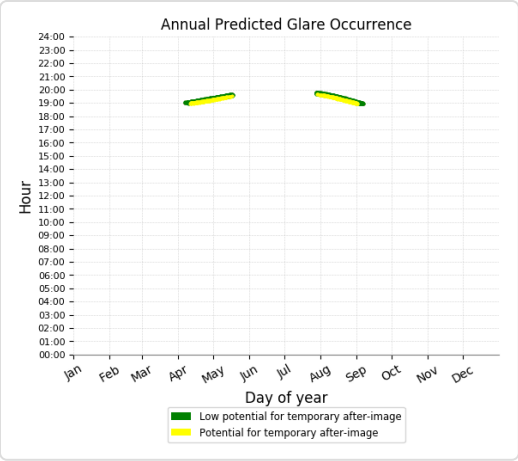
148 minutes of yellow glare
705 minutes of green glare

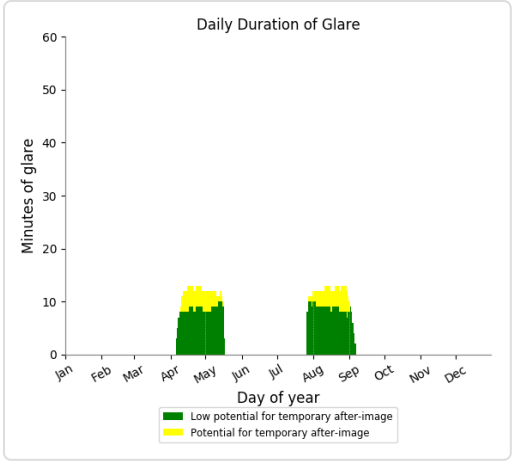




Point Receptor: OP 10

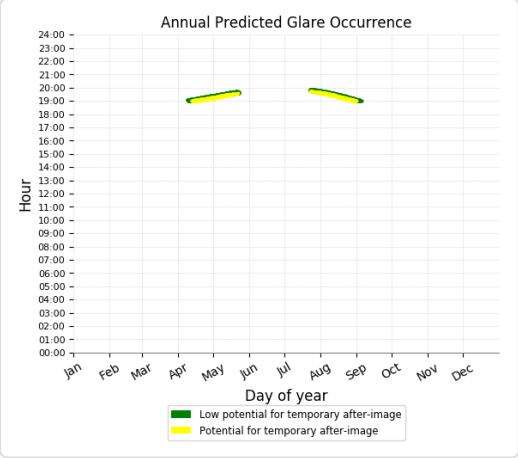
244 minutes of yellow glare
702 minutes of green glare

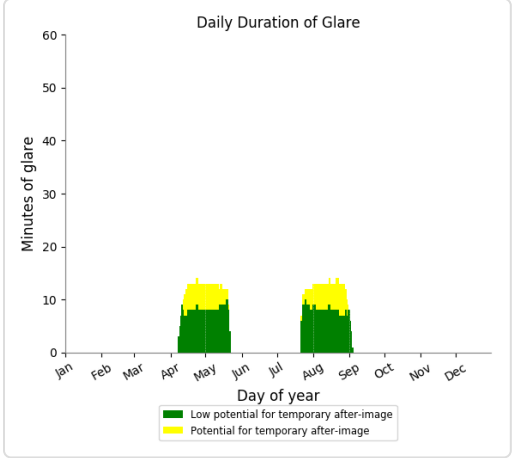




Point Receptor: OP 11

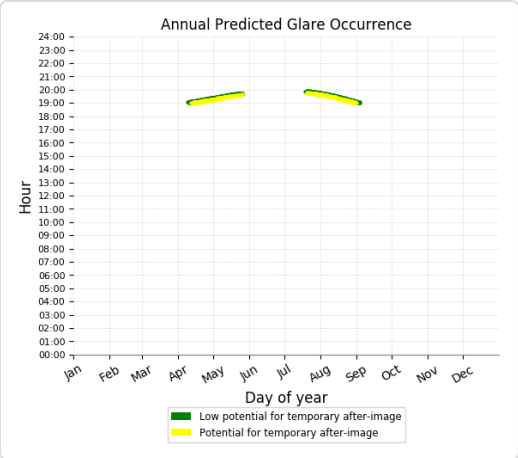
354 minutes of yellow glare
710 minutes of green glare

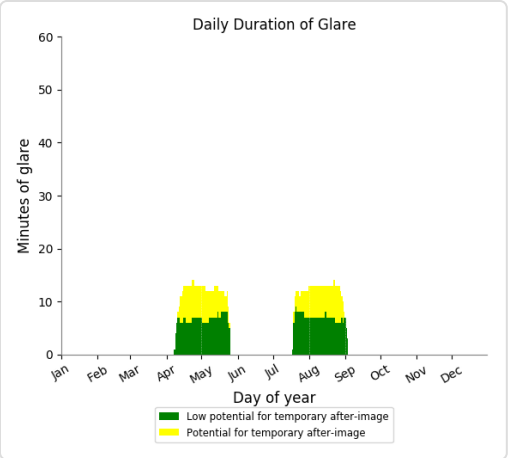




Point Receptor: OP 12

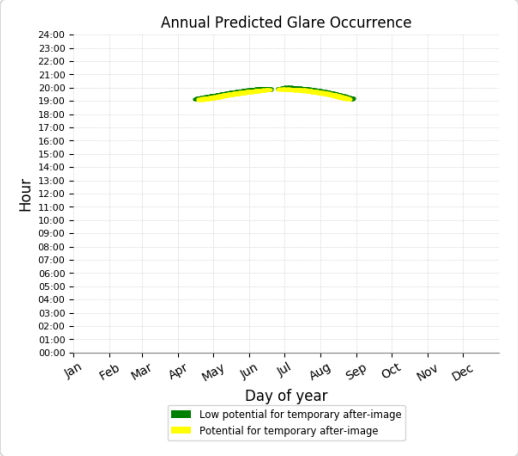
473 minutes of yellow glare
643 minutes of green glare

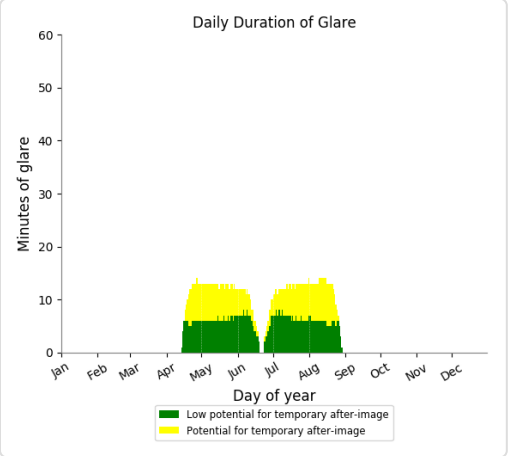




Point Receptor: OP 13

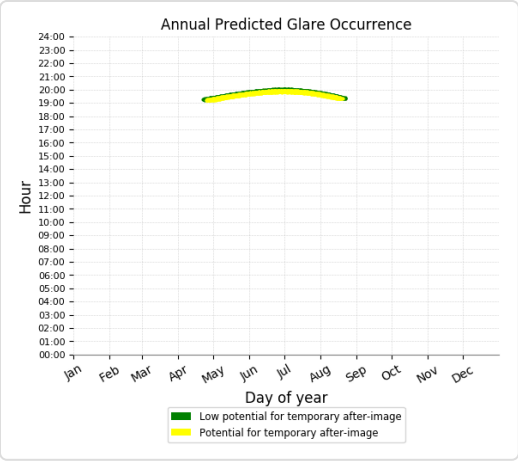
719 minutes of yellow glare
798 minutes of green glare

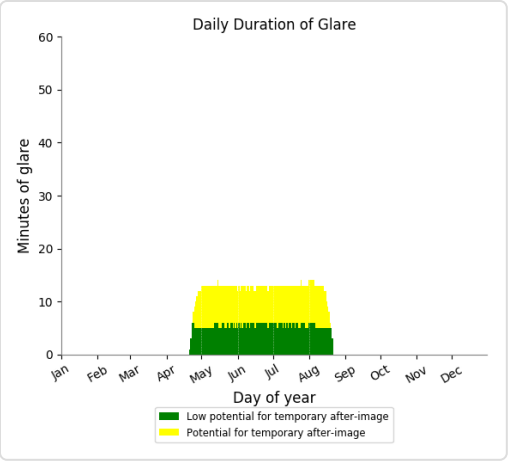




Point Receptor: OP 14

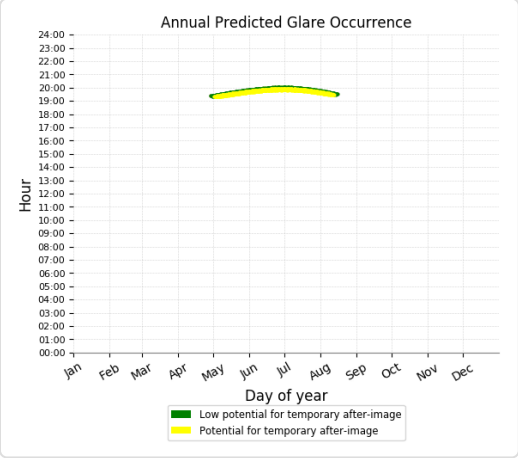
844 minutes of yellow glare
670 minutes of green glare

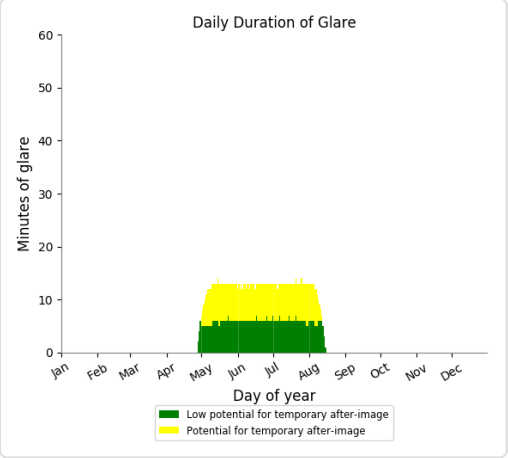




Point Receptor: OP 15

688 minutes of yellow glare
636 minutes of green glare





Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

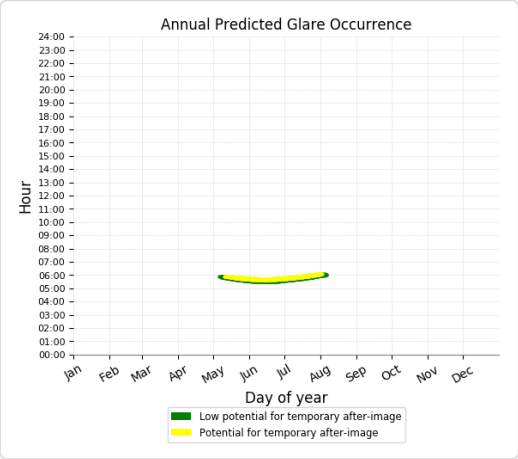
0 minutes of yellow glare
0 minutes of green glare

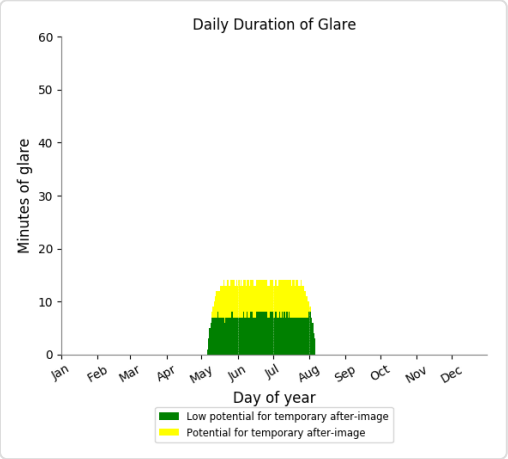
Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

500 minutes of yellow glare
657 minutes of green glare





Point Receptor: OP 23

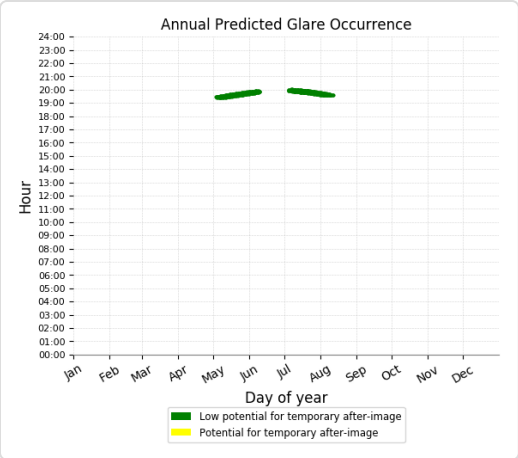
0 minutes of yellow glare
0 minutes of green glare

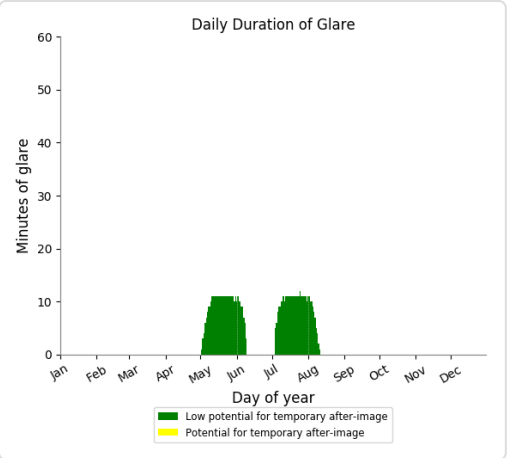
Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
727 minutes of green glare





Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 3

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	9	1293
OP 5	530	743
OP 6	236	405
OP 7	186	524
OP 8	155	569
OP 9	125	708
OP 10	107	785
OP 11	88	887
OP 12	58	951

Receptor	Green Glare (min)	Yellow Glare (min)
OP 13	26	1031
OP 14	7	788
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	82	47
OP 22	32	0
OP 23	14	929
OP 24	29	1229
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

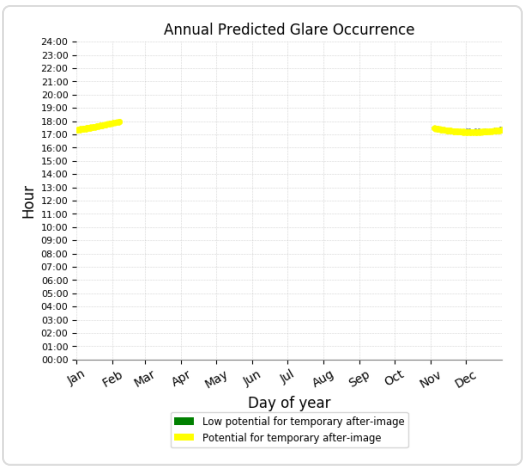
0 minutes of yellow glare
0 minutes of green glare

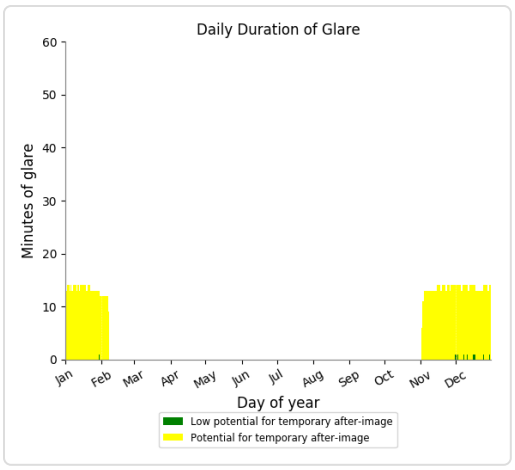
Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

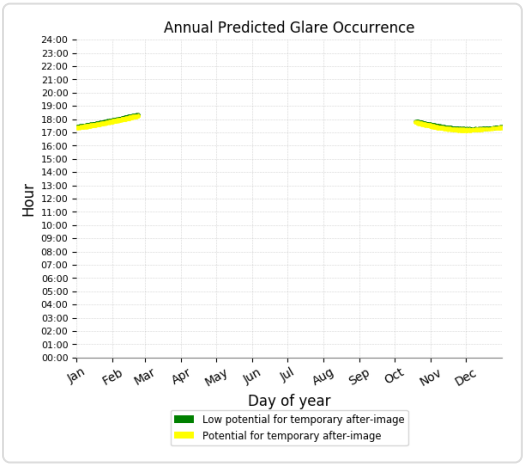
1293 minutes of yellow glare
9 minutes of green glare

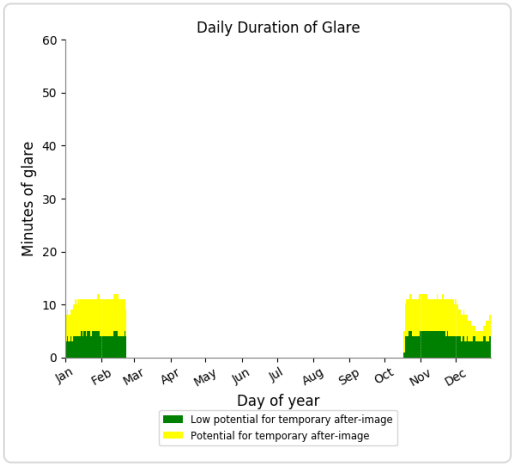




Point Receptor: OP 5

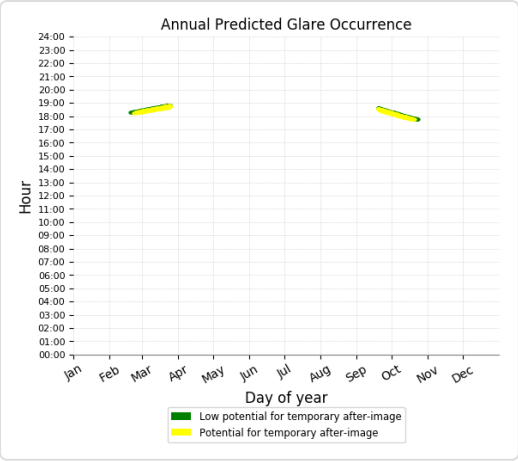
743 minutes of yellow glare
530 minutes of green glare

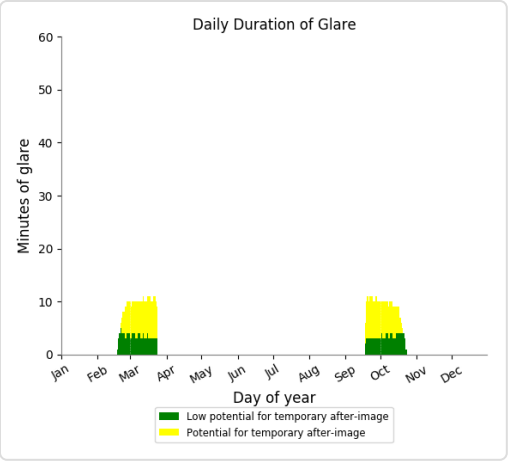




Point Receptor: OP 6

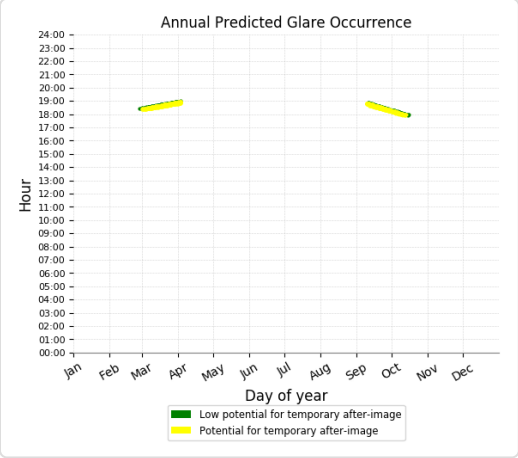
405 minutes of yellow glare
236 minutes of green glare

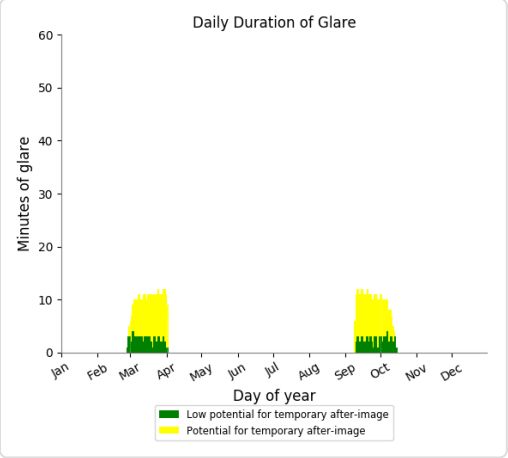




Point Receptor: OP 7

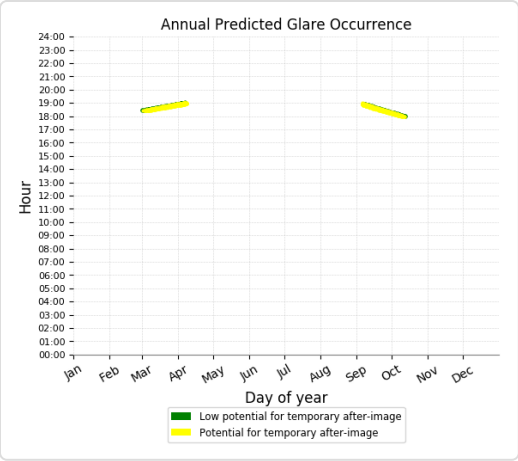
524 minutes of yellow glare
186 minutes of green glare

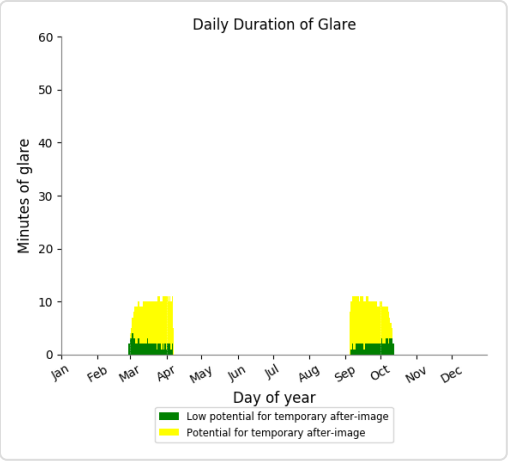




Point Receptor: OP 8

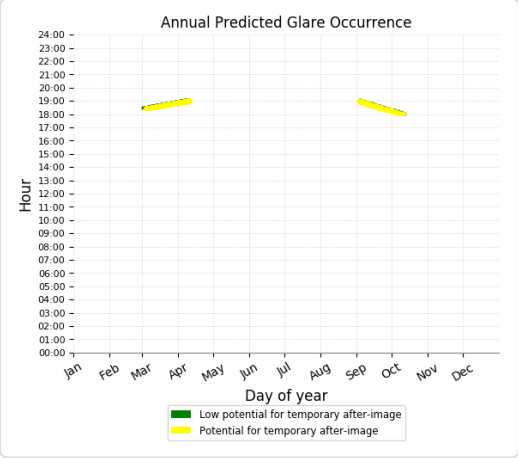
569 minutes of yellow glare
155 minutes of green glare

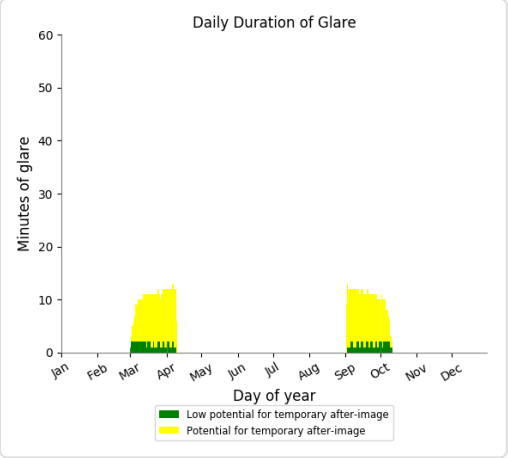




Point Receptor: OP 9

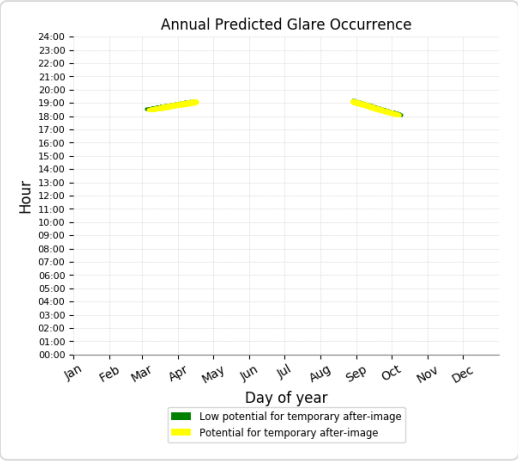
708 minutes of yellow glare
125 minutes of green glare

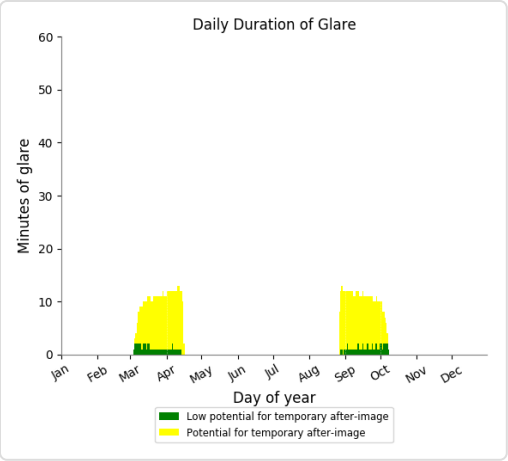




Point Receptor: OP 10

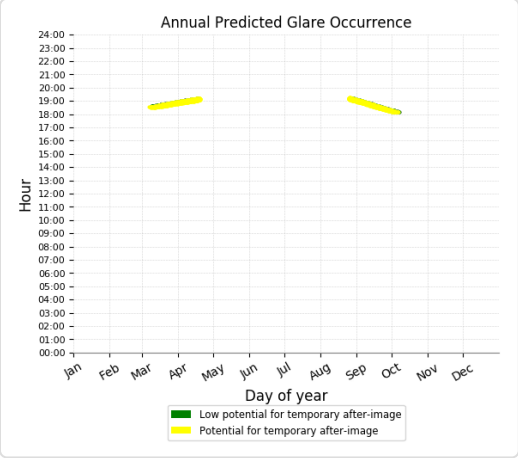
785 minutes of yellow glare
107 minutes of green glare

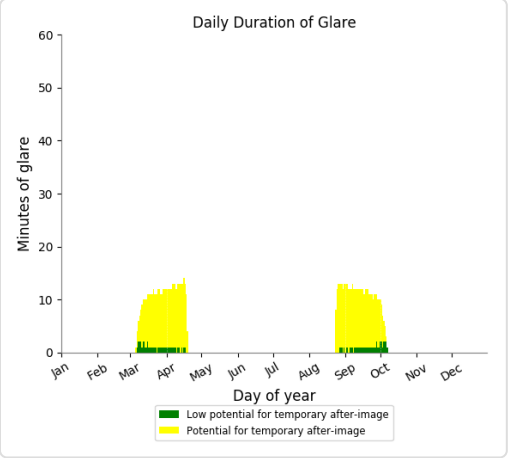




Point Receptor: OP 11

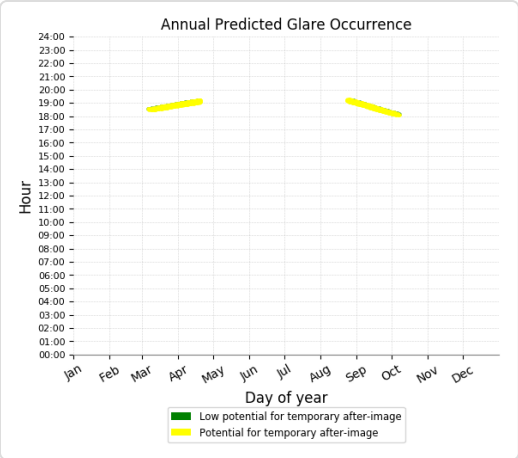
887 minutes of yellow glare
88 minutes of green glare

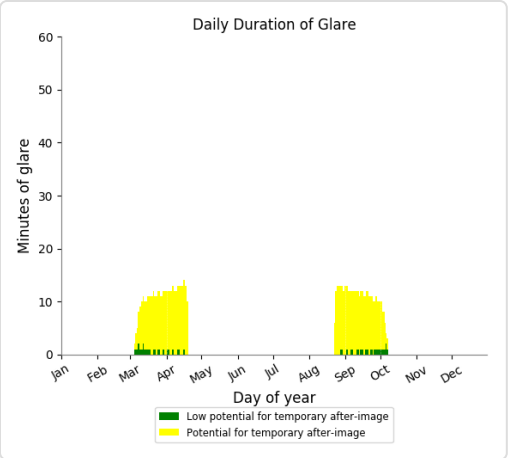




Point Receptor: OP 12

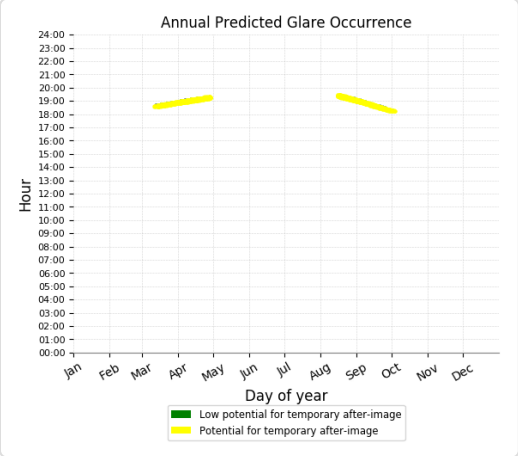
951 minutes of yellow glare
58 minutes of green glare

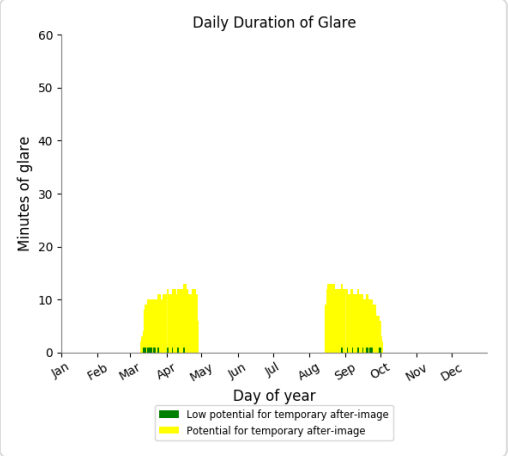




Point Receptor: OP 13

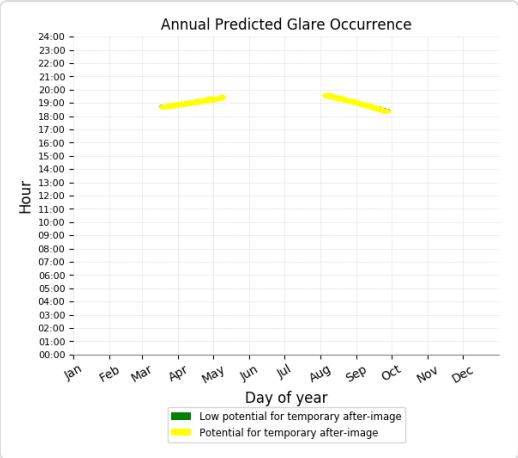
1031 minutes of yellow glare
26 minutes of green glare

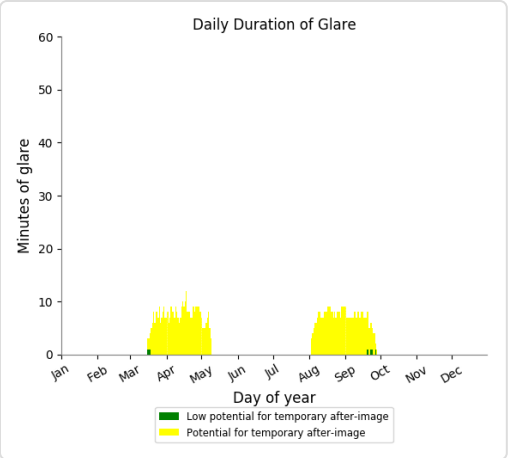




Point Receptor: OP 14

788 minutes of yellow glare
7 minutes of green glare





Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

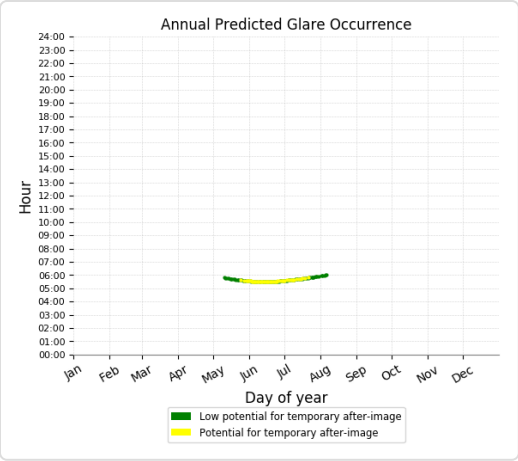
0 minutes of yellow glare
0 minutes of green glare

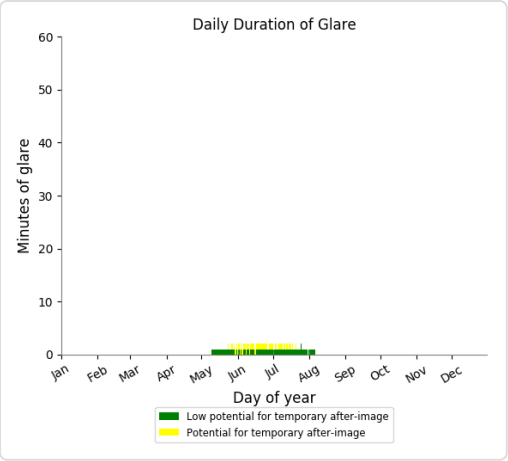
Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

47 minutes of yellow glare
82 minutes of green glare

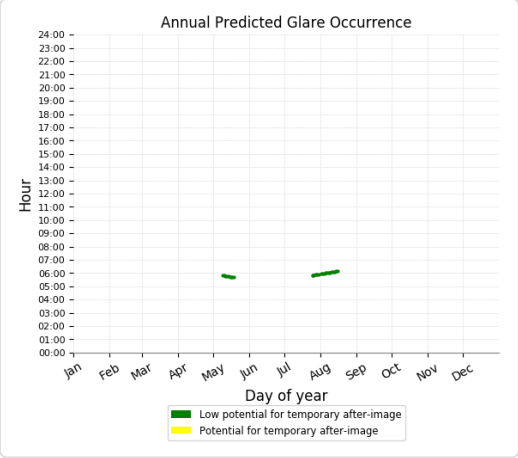


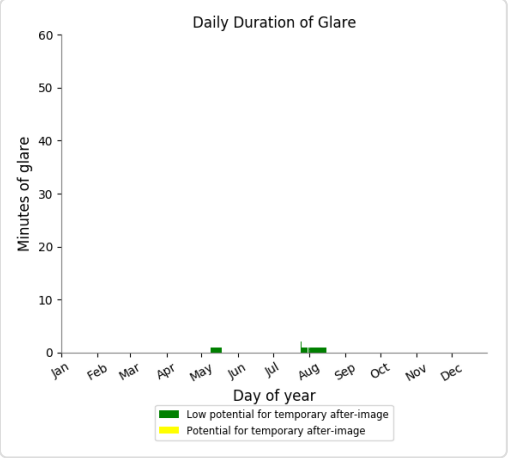


Point Receptor: OP 22

0 minutes of yellow glare

32 minutes of green glare

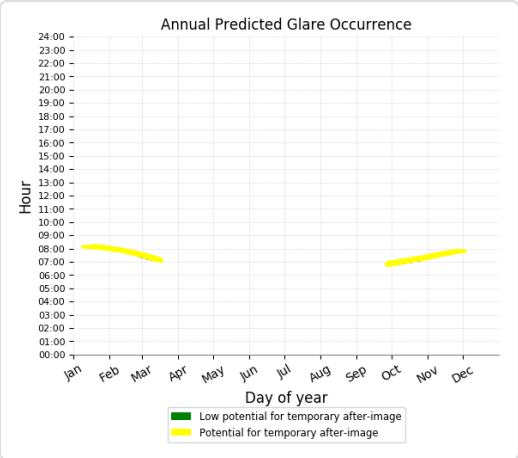


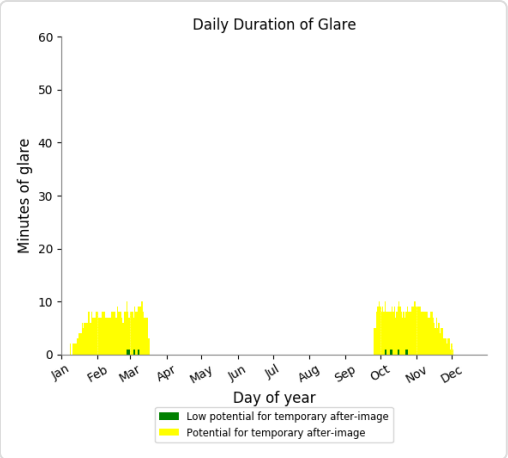


Point Receptor: OP 23

929 minutes of yellow glare

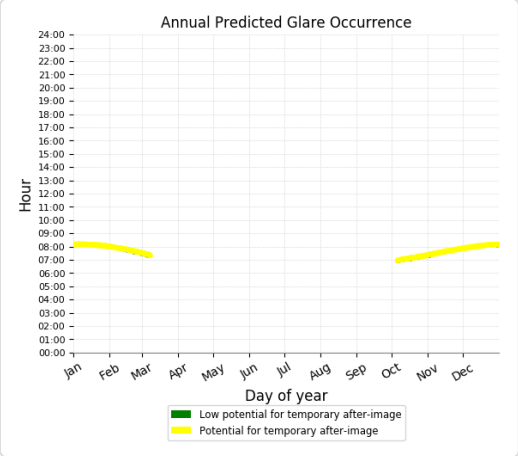
14 minutes of green glare

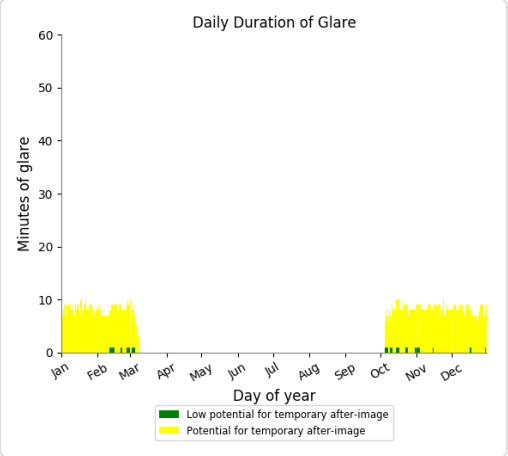




Point Receptor: OP 24

1229 minutes of yellow glare
29 minutes of green glare





Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 4

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	821
OP 4	1	1530
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	3231
OP 23	0	2104
OP 24	0	1746
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

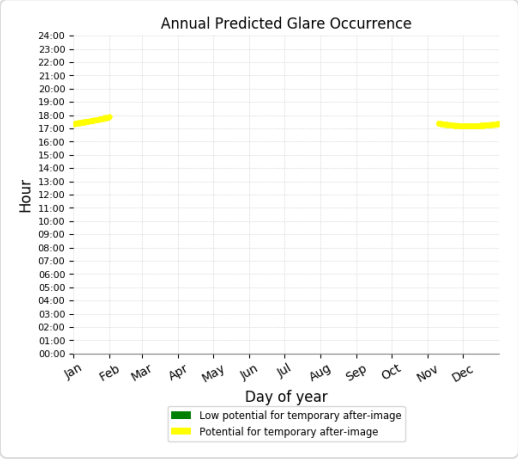
0 minutes of yellow glare
0 minutes of green glare

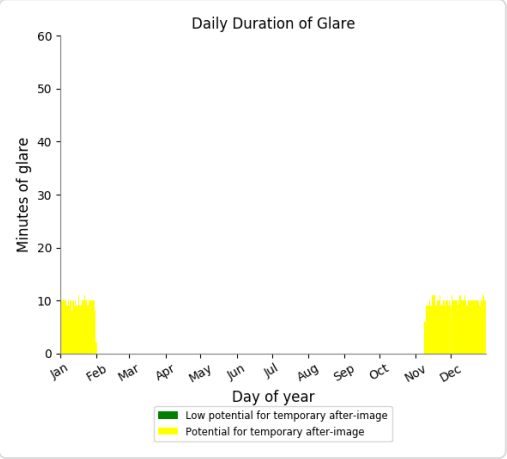
Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

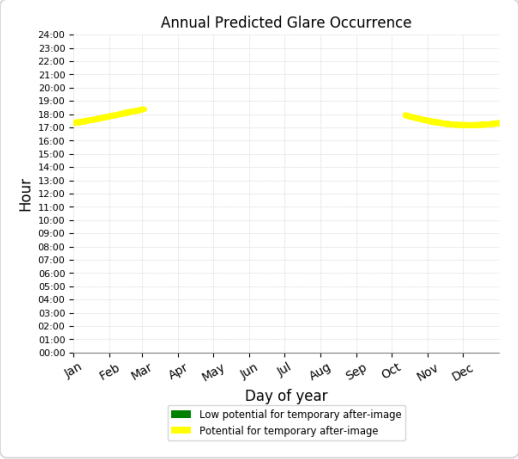
821 minutes of yellow glare
0 minutes of green glare

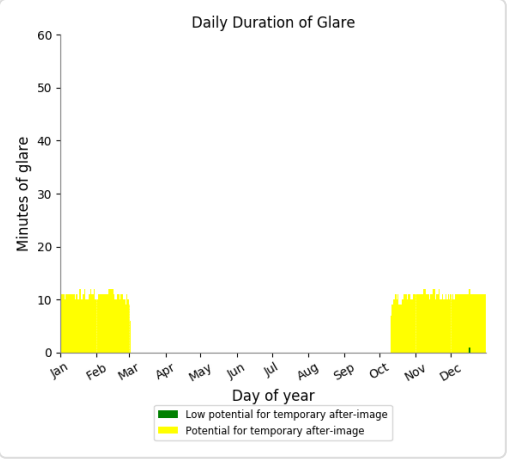




Point Receptor: OP 4

1530 minutes of yellow glare
1 minutes of green glare





Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

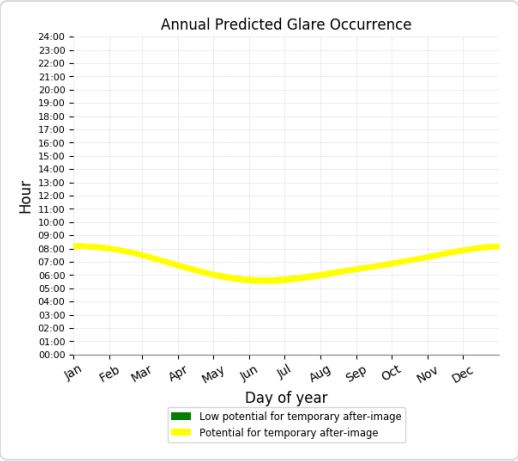
0 minutes of yellow glare
0 minutes of green glare

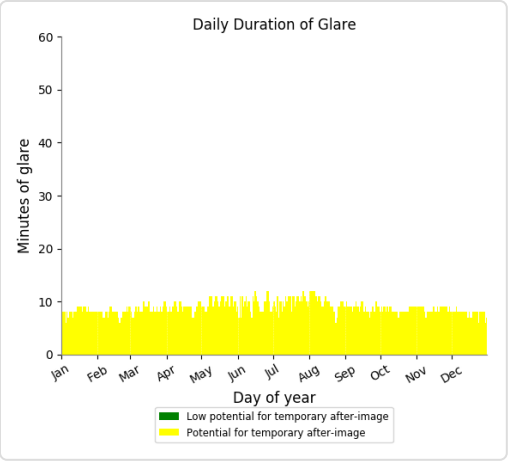
Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

3231 minutes of yellow glare
0 minutes of green glare

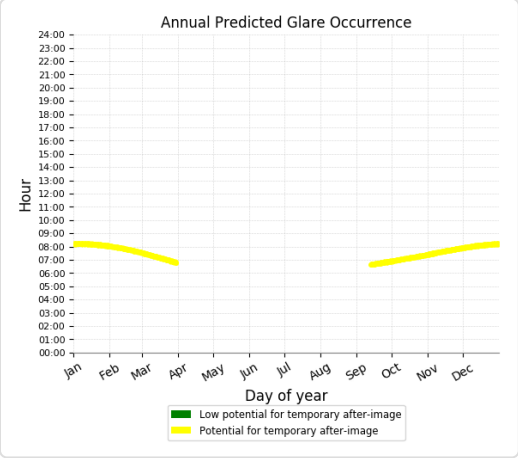


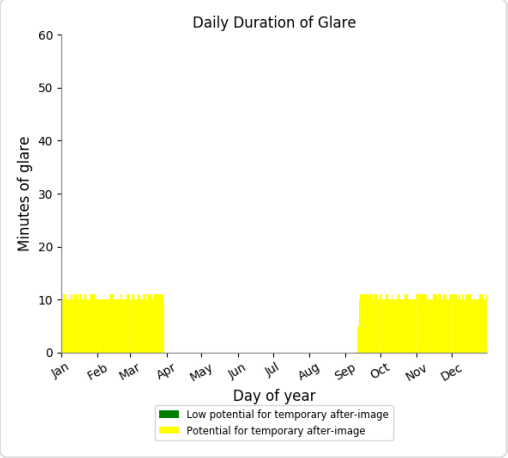


Point Receptor: OP 23

2104 minutes of yellow glare

0 minutes of green glare

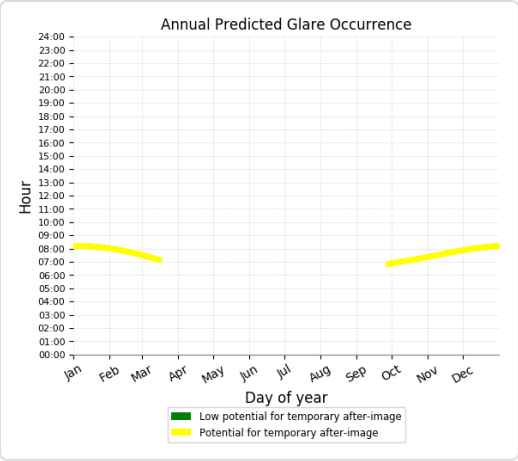


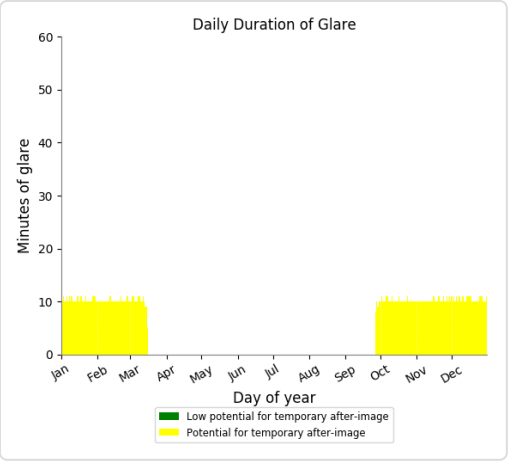


Point Receptor: OP 24

1746 minutes of yellow glare

0 minutes of green glare





Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 5

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 9	0	0
OP 10	0	0
OP 11	0	2904
OP 12	0	2947
OP 13	0	2508
OP 14	0	9
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	257	808
OP 21	517	928
OP 22	438	510
OP 23	269	734
OP 24	203	646
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

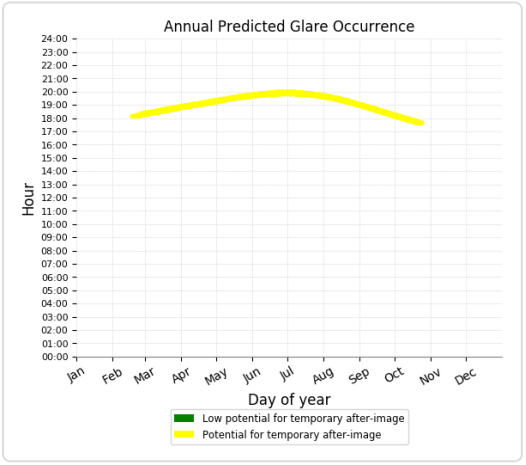
0 minutes of yellow glare
0 minutes of green glare

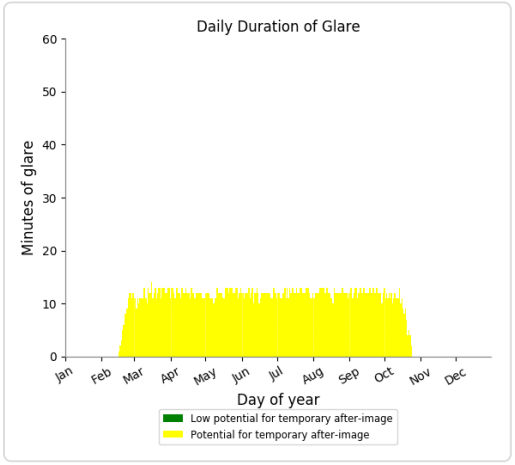
Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

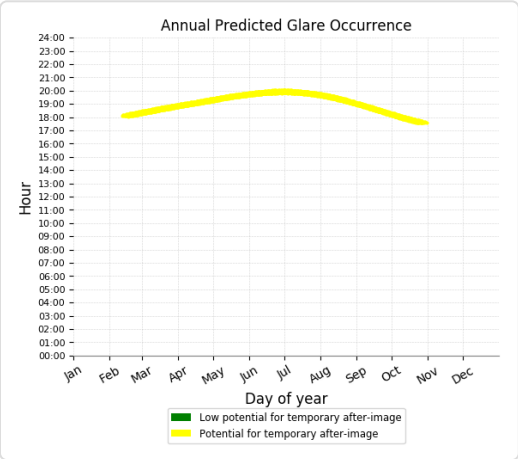
2904 minutes of yellow glare
0 minutes of green glare

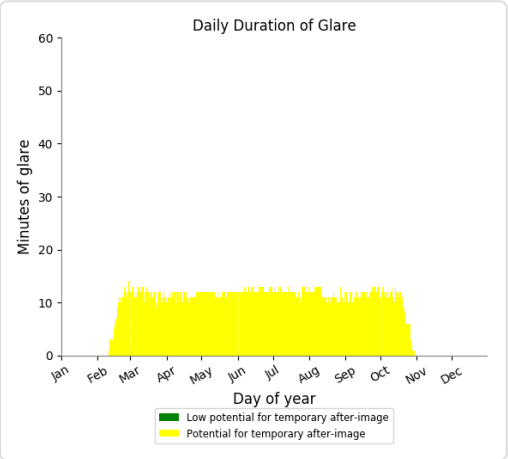




Point Receptor: OP 12

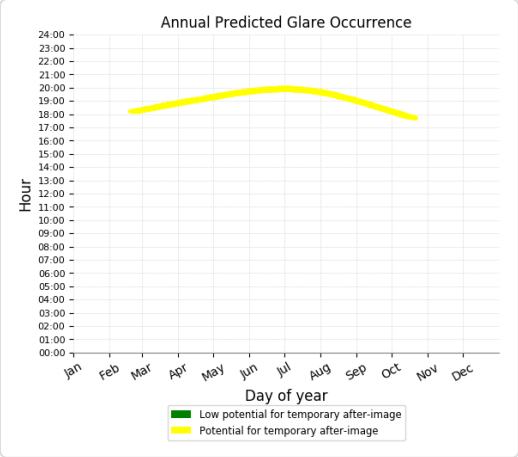
2947 minutes of yellow glare
0 minutes of green glare

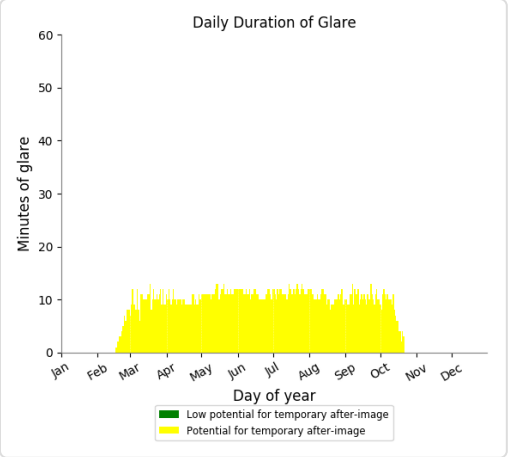




Point Receptor: OP 13

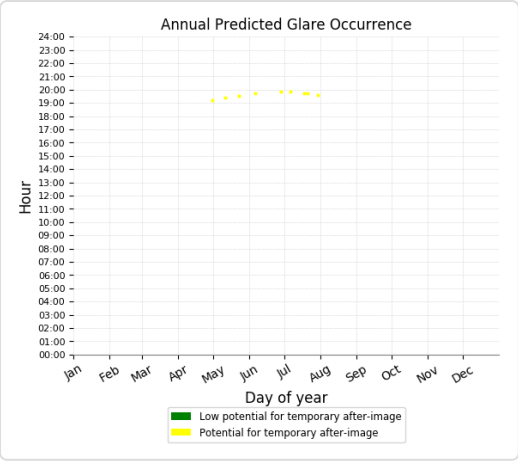
2508 minutes of yellow glare
0 minutes of green glare

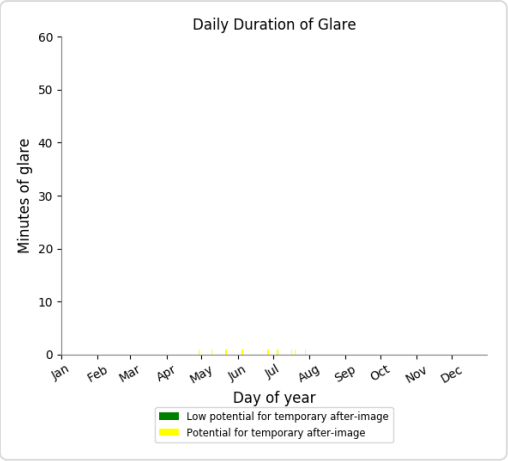




Point Receptor: OP 14

9 minutes of yellow glare
0 minutes of green glare





Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

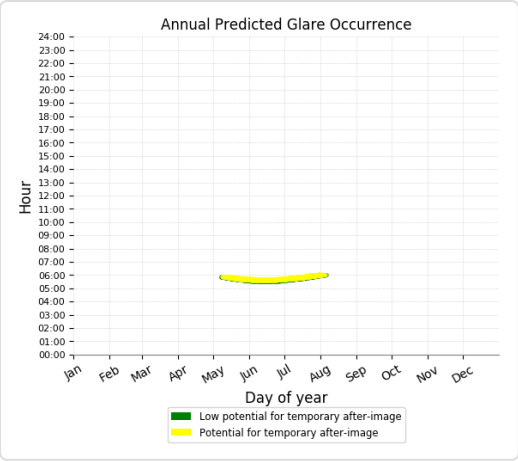
0 minutes of yellow glare
0 minutes of green glare

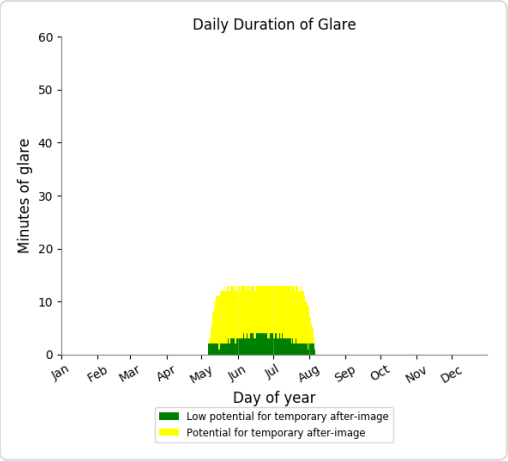
Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

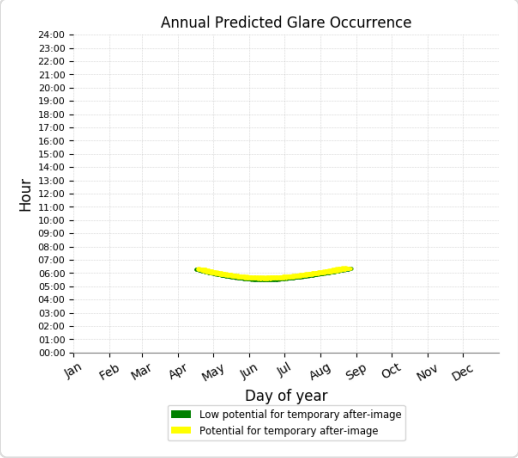
808 minutes of yellow glare
257 minutes of green glare

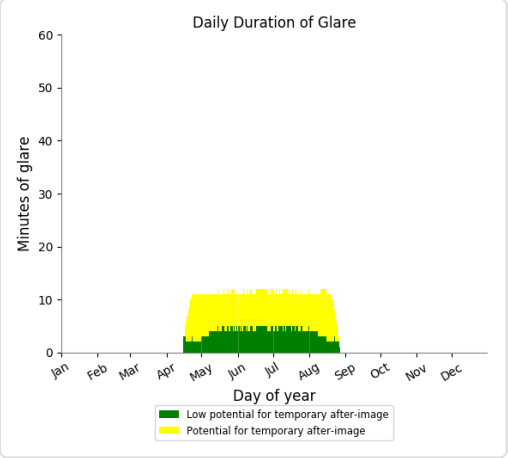




Point Receptor: OP 21

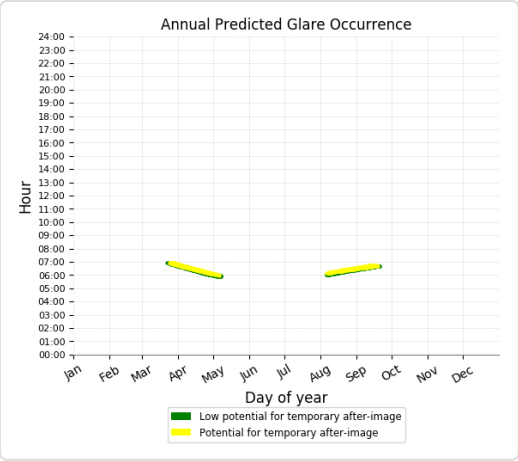
928 minutes of yellow glare
517 minutes of green glare

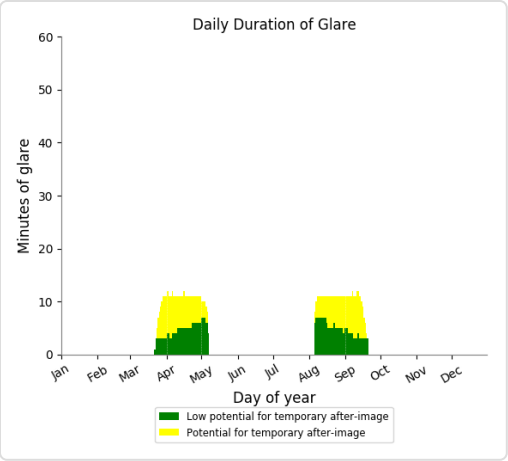




Point Receptor: OP 22

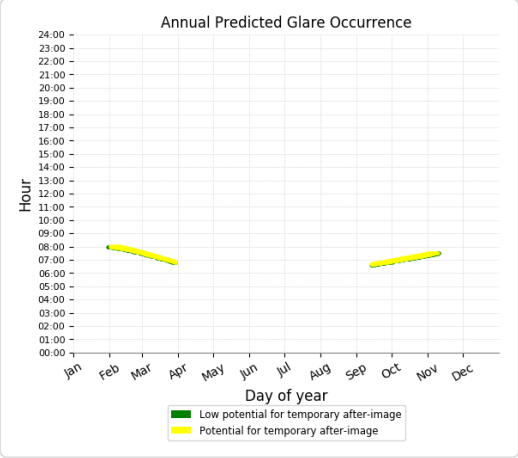
510 minutes of yellow glare
438 minutes of green glare

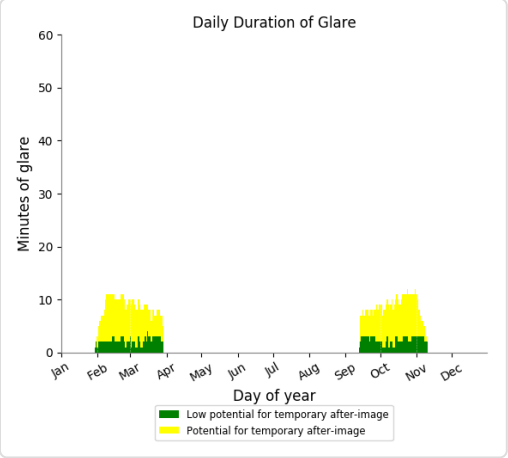




Point Receptor: OP 23

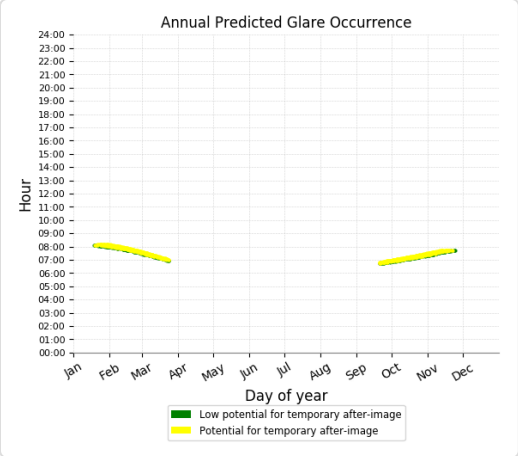
734 minutes of yellow glare
269 minutes of green glare

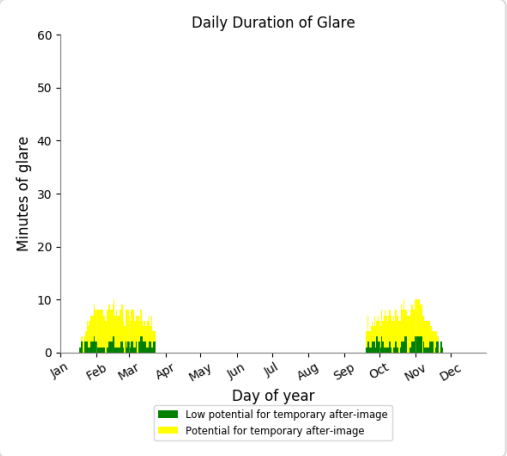




Point Receptor: OP 24

646 minutes of yellow glare
203 minutes of green glare





Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 6

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 9	0	0
OP 10	0	0
OP 11	0	14
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	903	224
OP 21	619	97
OP 22	672	5
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

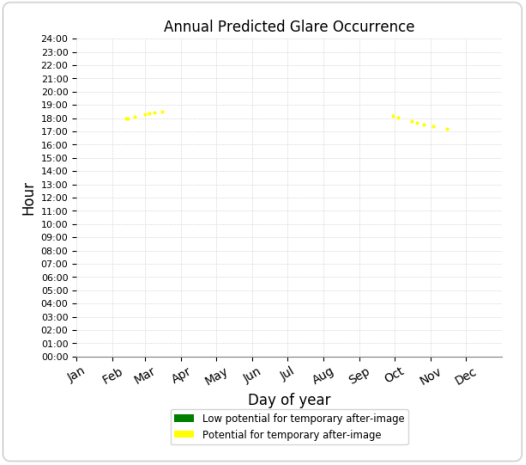
0 minutes of yellow glare
0 minutes of green glare

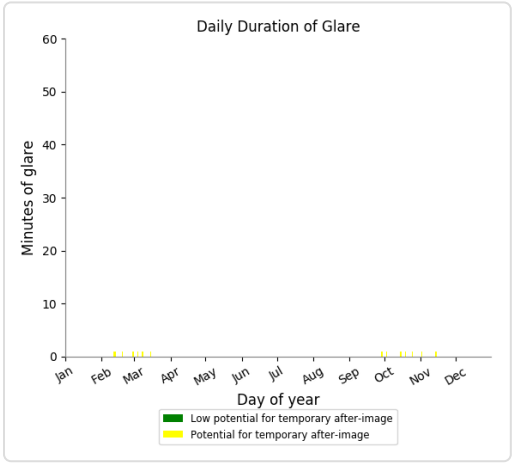
Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

14 minutes of yellow glare
0 minutes of green glare





Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

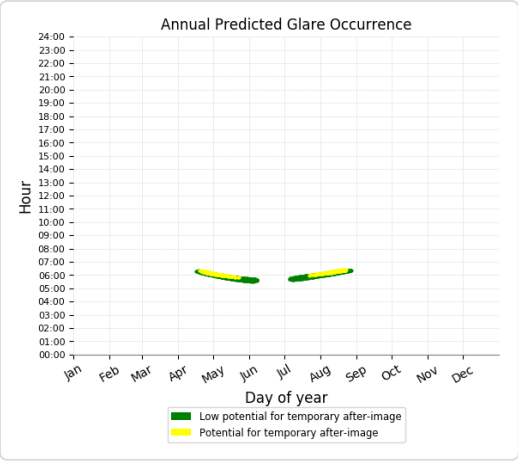
0 minutes of yellow glare
0 minutes of green glare

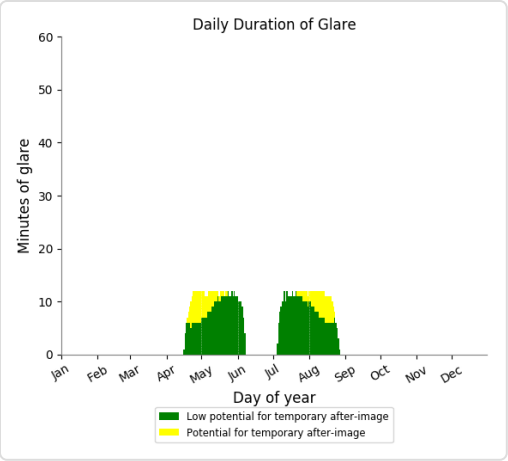
Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

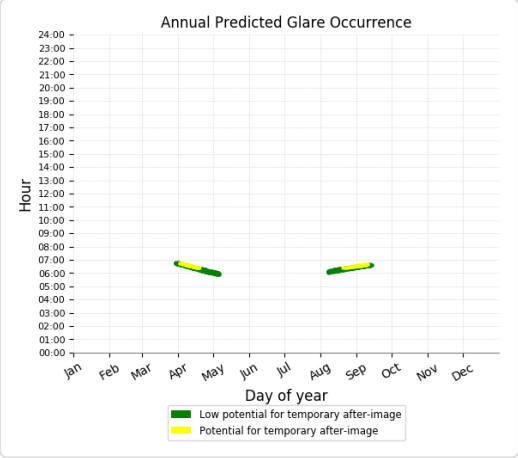
224 minutes of yellow glare
903 minutes of green glare

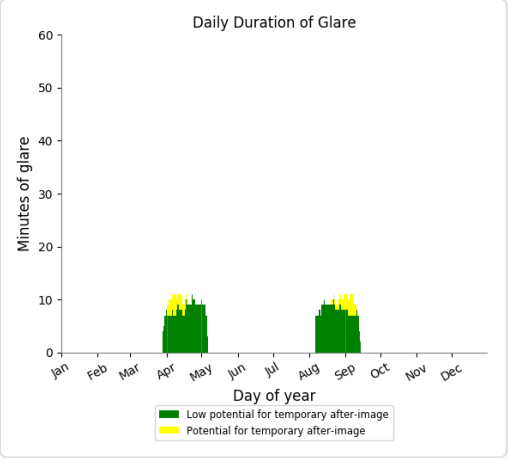




Point Receptor: OP 21

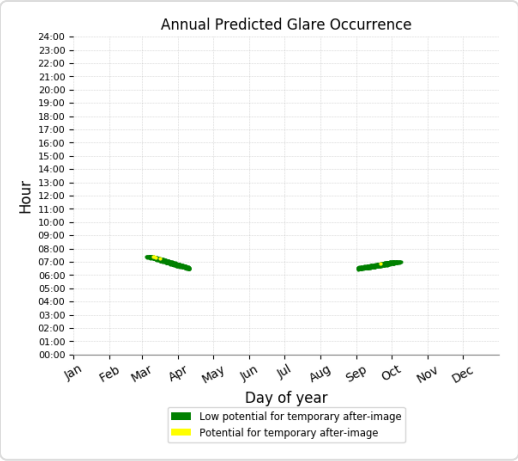
97 minutes of yellow glare
619 minutes of green glare

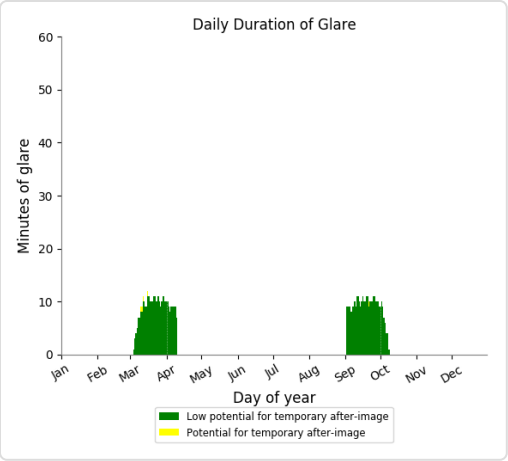




Point Receptor: OP 22

5 minutes of yellow glare
672 minutes of green glare





Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 7

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	697	0
OP 7	1220	0
OP 8	1158	23
OP 9	1088	199
OP 10	952	479
OP 11	796	793
OP 12	404	919
OP 13	283	1200
OP 14	156	1501
OP 15	227	1852
OP 16	0	2836
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	93	0
OP 21	151	0
OP 22	224	0
OP 23	662	0
OP 24	787	0
OP 25	465	0
OP 26	769	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

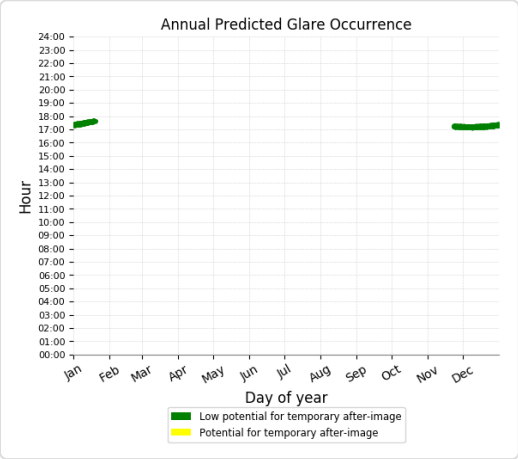
0 minutes of yellow glare
0 minutes of green glare

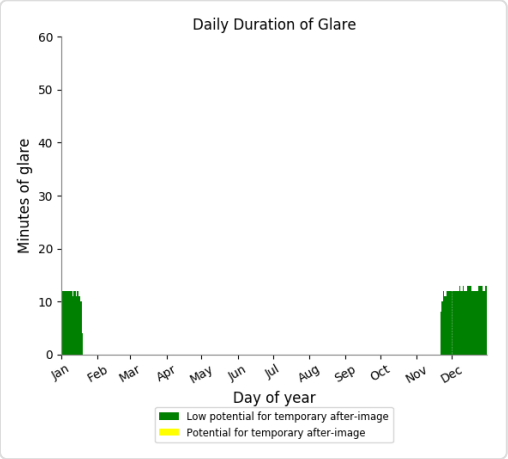
Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

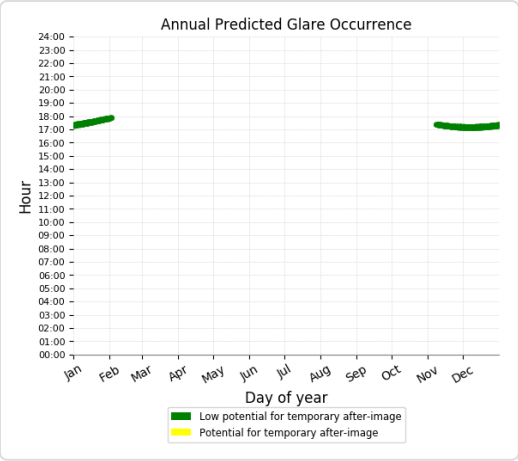
0 minutes of yellow glare
697 minutes of green glare

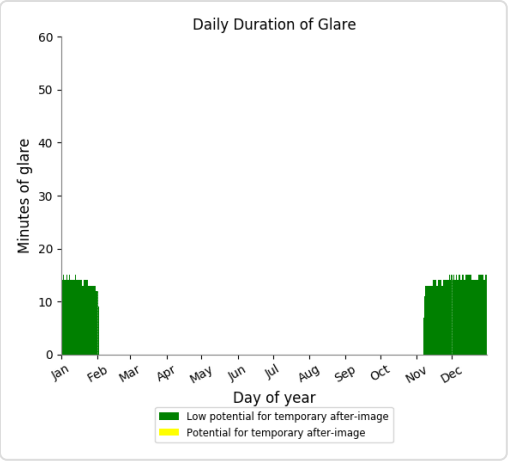




Point Receptor: OP 7

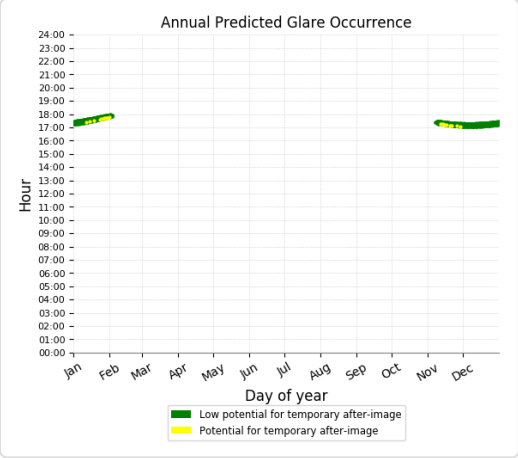
0 minutes of yellow glare
1220 minutes of green glare

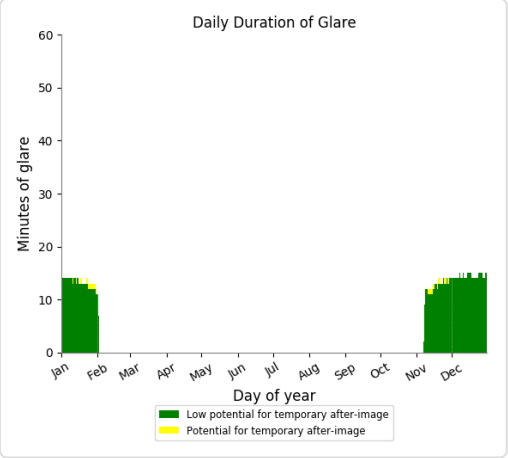




Point Receptor: OP 8

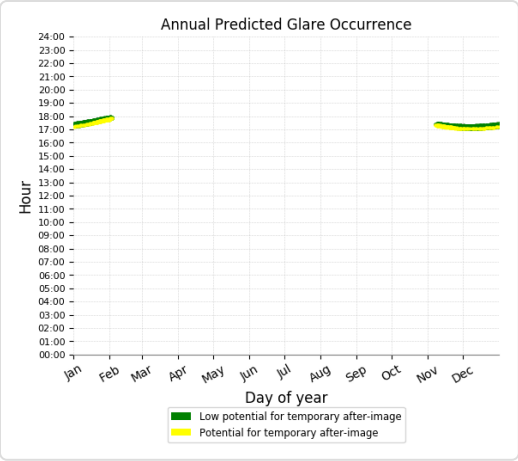
23 minutes of yellow glare
1158 minutes of green glare

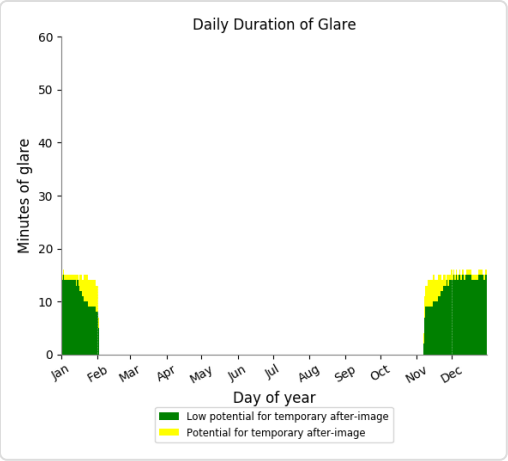




Point Receptor: OP 9

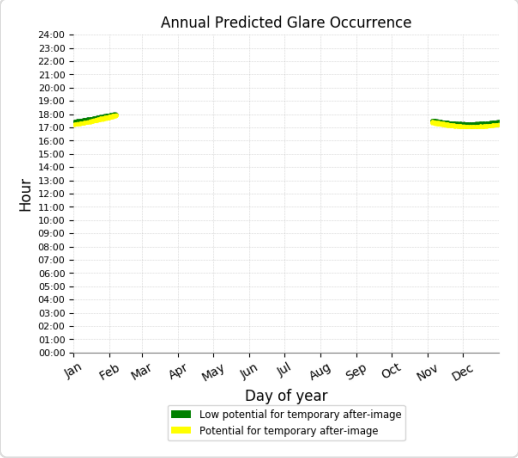
199 minutes of yellow glare
1088 minutes of green glare

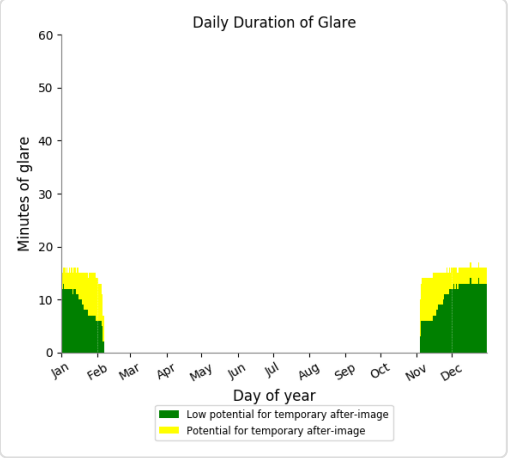




Point Receptor: OP 10

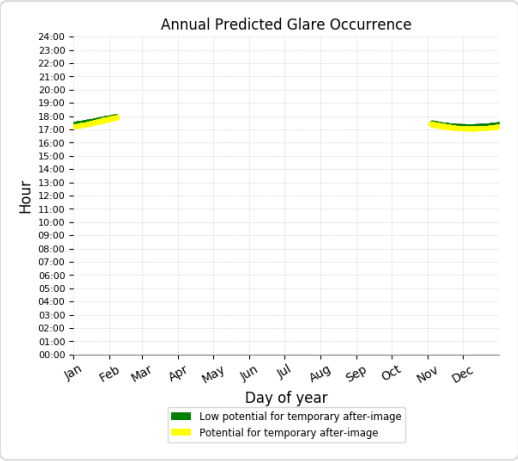
479 minutes of yellow glare
952 minutes of green glare

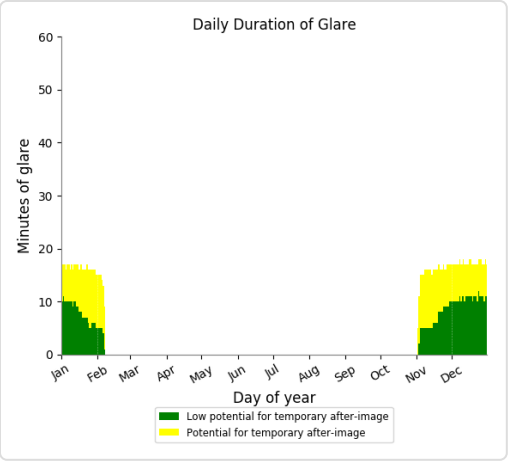




Point Receptor: OP 11

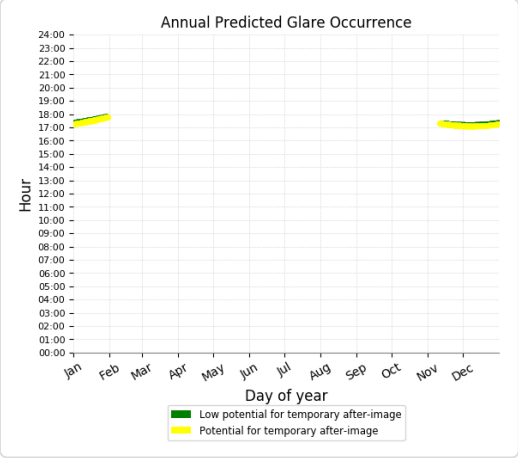
793 minutes of yellow glare
796 minutes of green glare

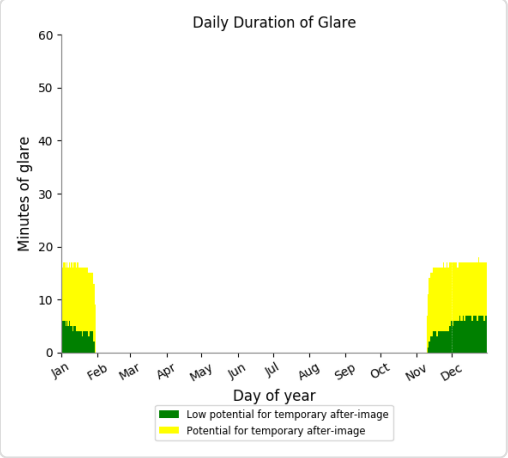




Point Receptor: OP 12

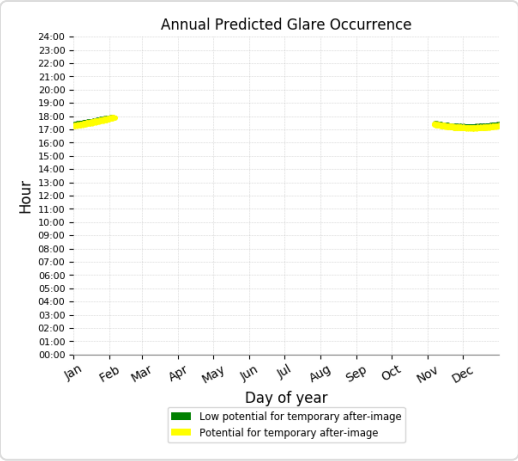
919 minutes of yellow glare
404 minutes of green glare

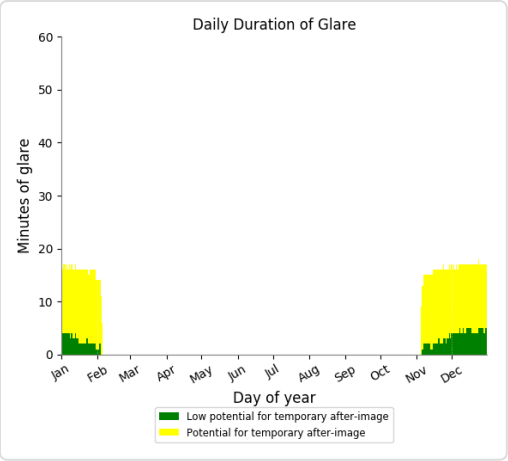




Point Receptor: OP 13

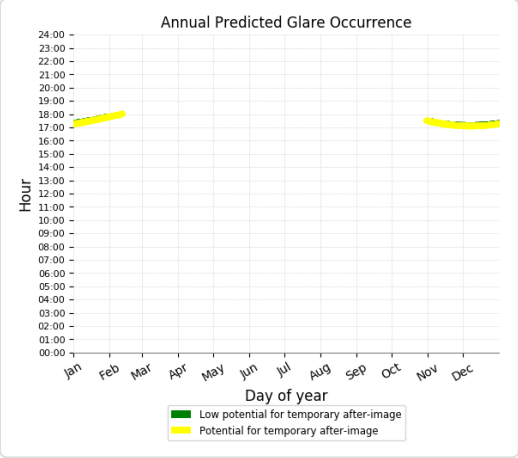
1200 minutes of yellow glare
283 minutes of green glare

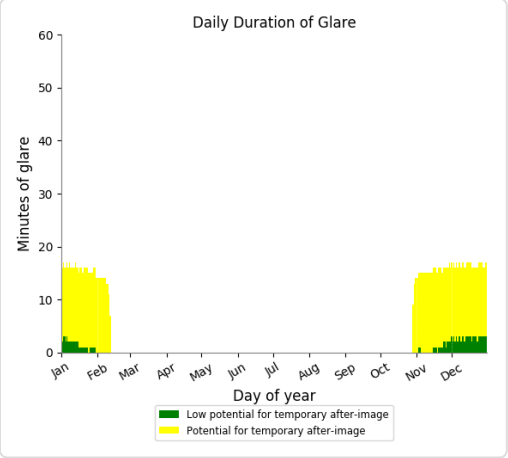




Point Receptor: OP 14

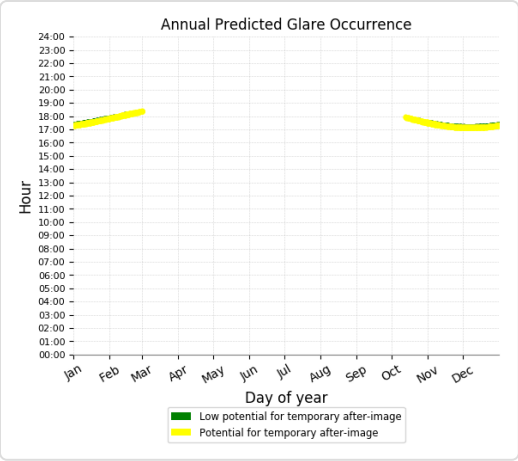
1501 minutes of yellow glare
156 minutes of green glare

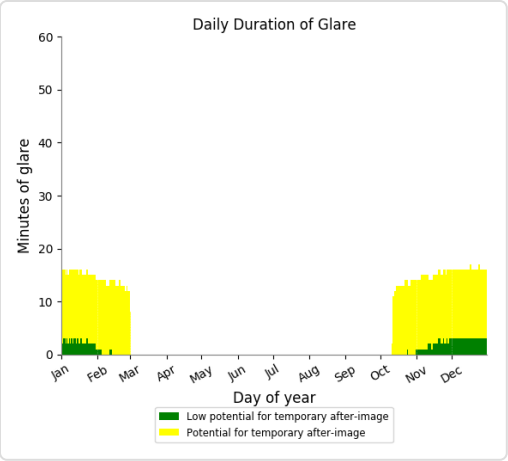




Point Receptor: OP 15

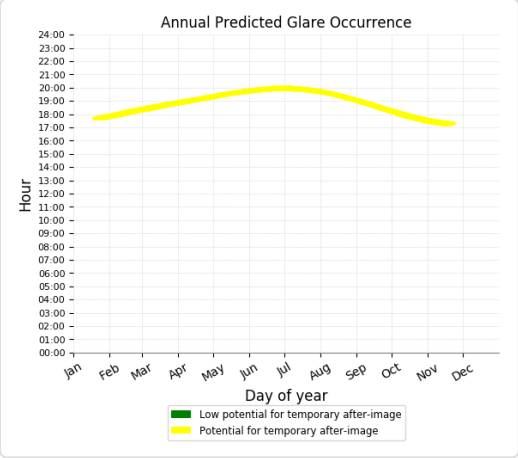
1852 minutes of yellow glare
227 minutes of green glare

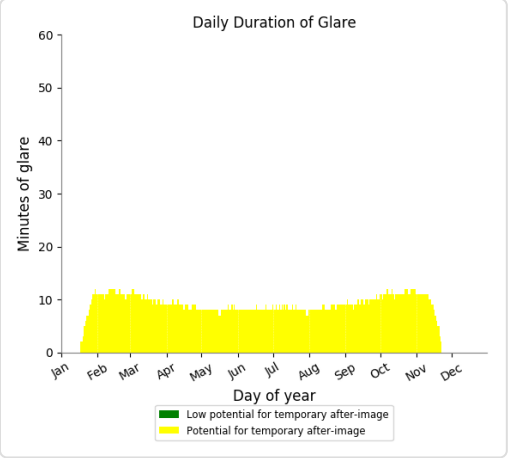




Point Receptor: OP 16

2836 minutes of yellow glare
0 minutes of green glare





Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

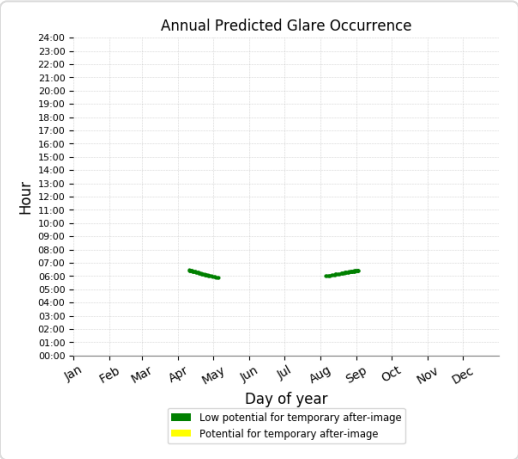
0 minutes of yellow glare
0 minutes of green glare

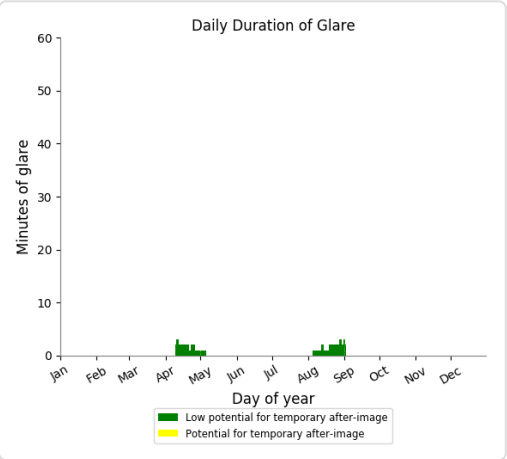
Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

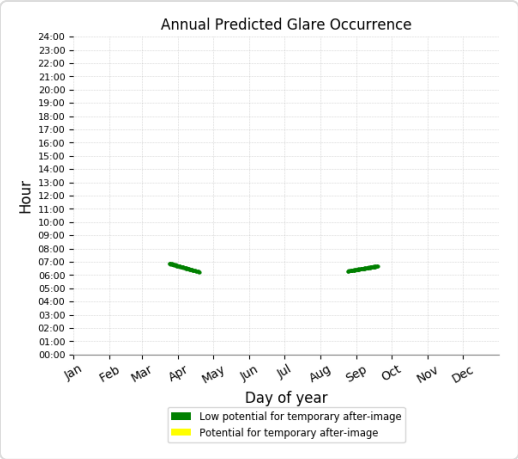
0 minutes of yellow glare
93 minutes of green glare

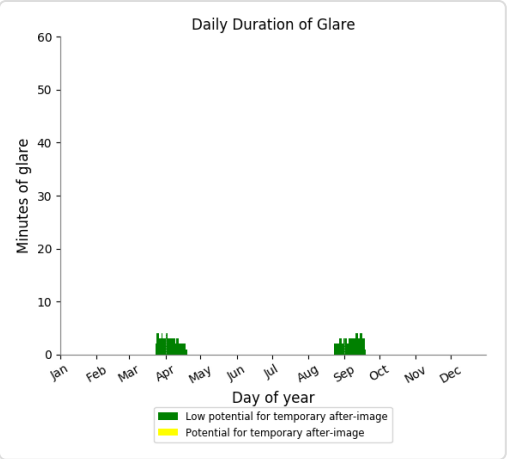




Point Receptor: OP 21

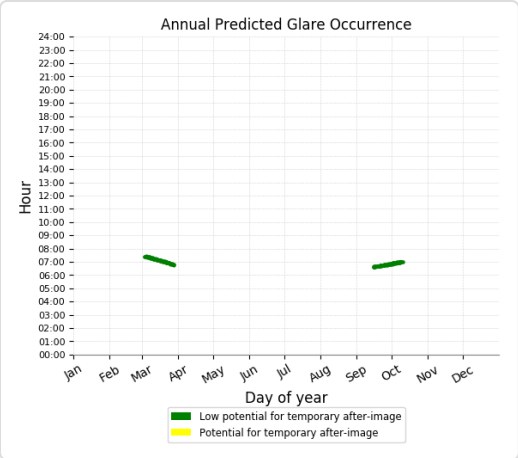
0 minutes of yellow glare
151 minutes of green glare

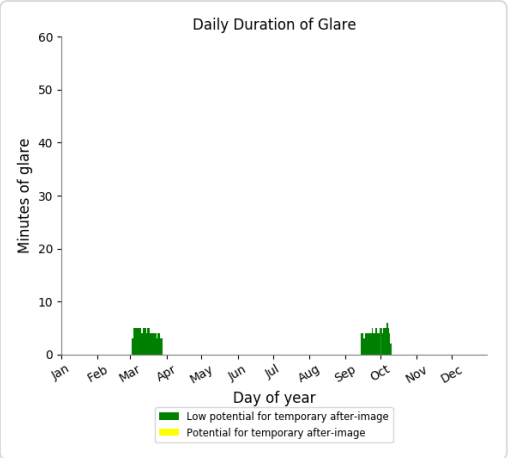




Point Receptor: OP 22

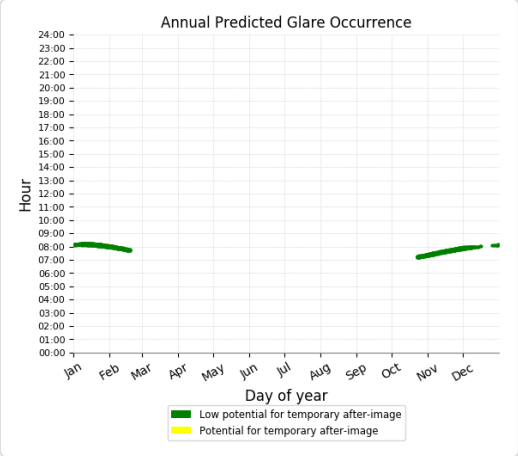
0 minutes of yellow glare
224 minutes of green glare

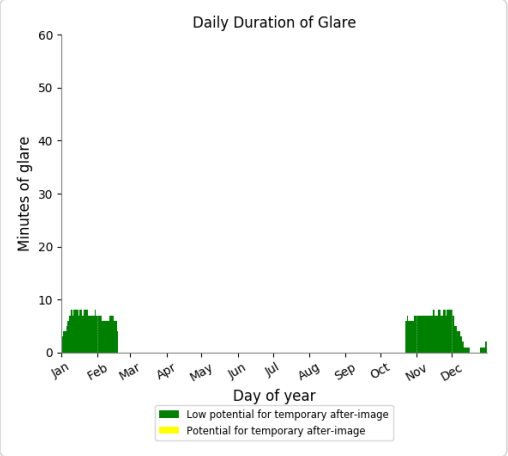




Point Receptor: OP 23

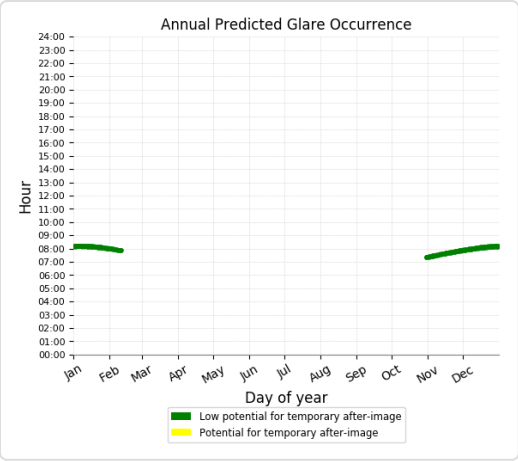
0 minutes of yellow glare
662 minutes of green glare

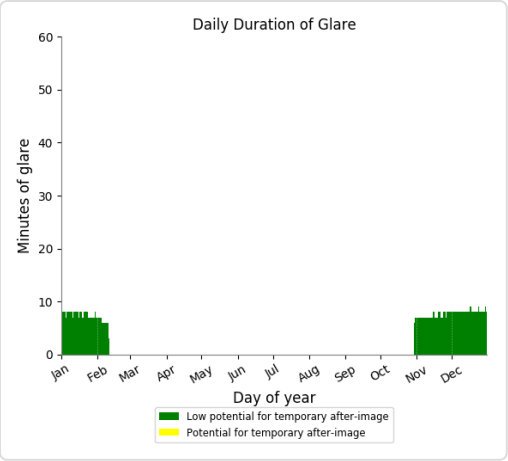




Point Receptor: OP 24

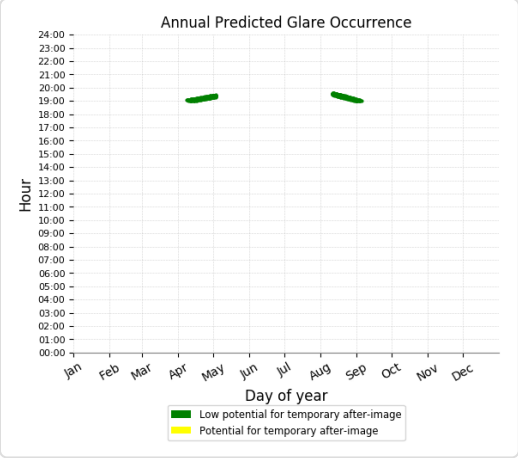
0 minutes of yellow glare
787 minutes of green glare

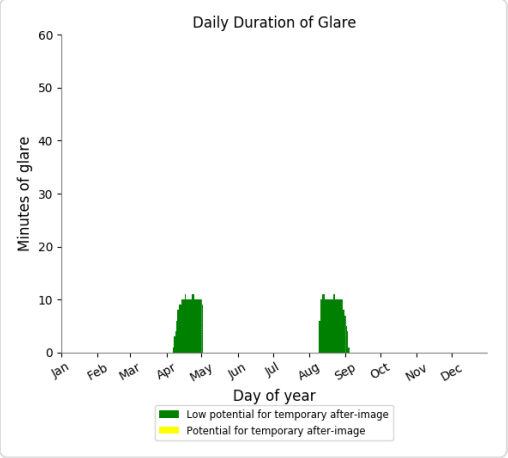




Point Receptor: OP 25

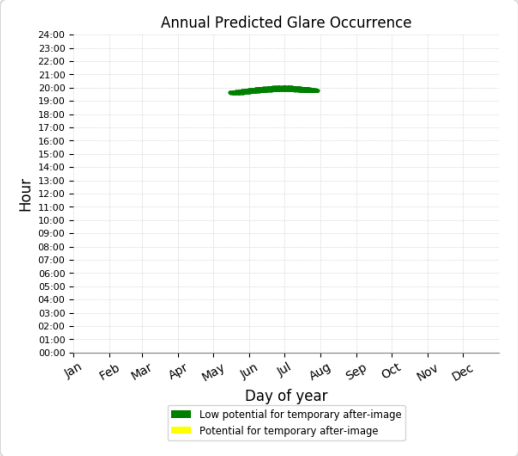
0 minutes of yellow glare
465 minutes of green glare

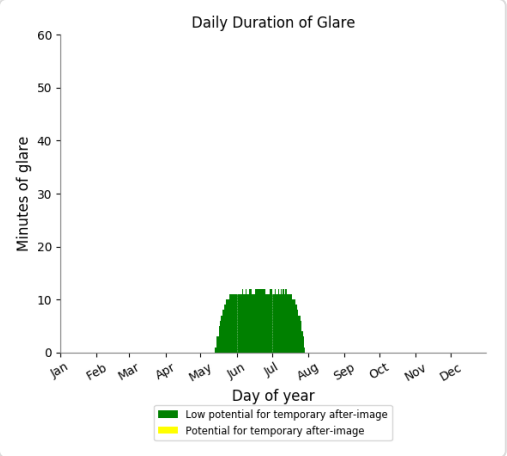




Point Receptor: OP 26

0 minutes of yellow glare
769 minutes of green glare





Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual results and glare occurrence may differ.
Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
Refer to the Help page at **www.forgesolar.com/help/** for assumptions and limitations not listed here.

FORGESOLAR GLARE ANALYSIS

Project: **Rhudes Creek Solar**
Proposed utility-scale project in Hardin County, Kentucky

Site configuration: **Rhudes Creek_v3_Arrays 8-11_Roads_0 deg**
Analysis conducted by Alan Plumeau (aplumeau@trccompanies.com) at 02:38 on 05 Jul, 2021.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
2-mile flight path(s)	N/A	No flight paths analyzed
ATCT(s)	N/A	No ATCT receptors designated

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63276 can be read at https://www.federalregister.gov/d/2013-24729

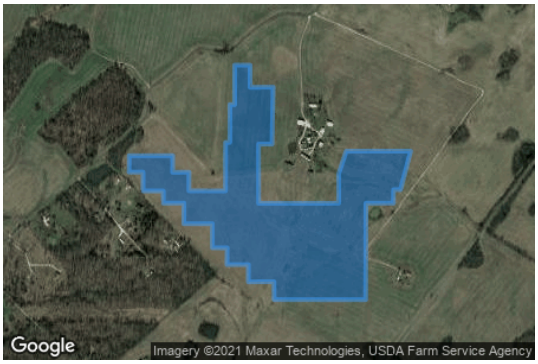
SITE CONFIGURATION

Analysis Parameters

DNI: peaks at 1,000.0 W/m^2
Time interval: 1 min
Ocular transmission coefficient: 0.5
Pupil diameter: 0.002 m
Eye focal length: 0.017 m
Sun subtended angle: 9.3 mrad
Site Config ID: 56033.9913

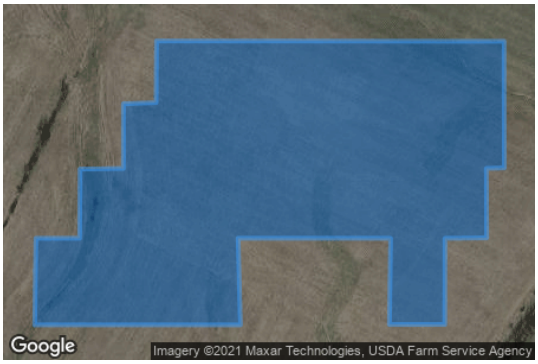
PV Array(s)

Name: PV array 10
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



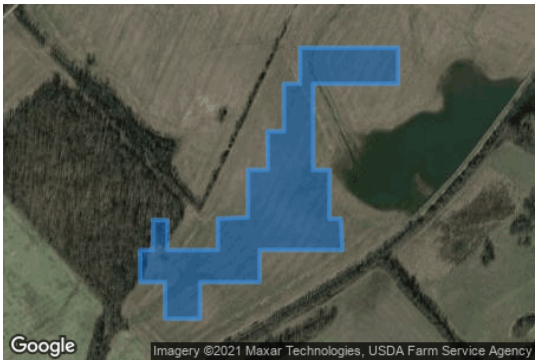
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.653103	-85.983028	722.92	9.00	731.92
2	37.653100	-85.981448	742.25	9.00	751.25
3	37.652624	-85.981451	741.10	9.00	750.10
4	37.652630	-85.980856	742.41	9.00	751.41
5	37.652094	-85.980857	750.67	9.00	759.67
6	37.652090	-85.979532	755.91	9.00	764.92
7	37.653479	-85.979529	755.42	9.00	764.42
8	37.653479	-85.979375	753.87	9.00	762.87
9	37.654564	-85.979367	755.55	9.00	764.55
10	37.654560	-85.979199	755.96	9.00	764.96
11	37.655691	-85.979199	748.80	9.00	757.81
12	37.655691	-85.978637	737.18	9.00	746.18
13	37.655058	-85.978640	736.01	9.00	745.01
14	37.655061	-85.977801	729.80	9.00	738.80
15	37.653433	-85.977843	757.32	9.00	766.32
16	37.653430	-85.978329	759.23	9.00	768.23
17	37.651736	-85.978330	749.90	9.00	758.90
18	37.651739	-85.975422	741.49	9.00	750.49
19	37.652578	-85.975423	733.22	9.00	742.22
20	37.653231	-85.975147	732.75	9.00	741.75
21	37.653229	-85.972809	727.59	9.00	736.59
22	37.652128	-85.973179	717.46	9.00	726.47
23	37.652129	-85.973432	717.91	9.00	726.91
24	37.651740	-85.973437	714.91	9.00	723.91
25	37.651740	-85.974436	722.73	9.00	731.73
26	37.648976	-85.974443	715.75	9.00	724.76
27	37.648980	-85.977767	743.44	9.00	752.44
28	37.649493	-85.977769	746.58	9.00	755.58
29	37.649488	-85.978702	732.46	9.00	741.47
30	37.649983	-85.978701	737.93	9.00	746.93
31	37.649981	-85.979475	737.89	9.00	746.89
32	37.650463	-85.979470	742.16	9.00	751.16
33	37.650460	-85.980007	745.54	9.00	754.54
34	37.651152	-85.980009	752.59	9.00	761.59
35	37.651150	-85.981042	746.07	9.00	755.07
36	37.651742	-85.981039	751.83	9.00	760.83
37	37.651740	-85.981788	745.91	9.00	754.91
38	37.652090	-85.981790	745.22	9.00	754.22
39	37.652090	-85.982522	736.04	9.00	745.04
40	37.652630	-85.982523	731.03	9.00	740.03
41	37.652630	-85.983031	725.47	9.00	734.47

Name: PV array 11a
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



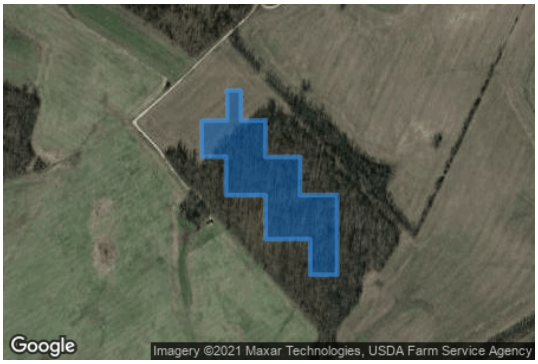
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.647933	-85.978206	728.00	9.00	737.00
2	37.647930	-85.975052	715.27	9.00	724.27
3	37.647024	-85.975050	720.52	9.00	729.52
4	37.647020	-85.975213	720.73	9.00	729.73
5	37.646523	-85.975210	728.55	9.00	737.55
6	37.646520	-85.975588	728.77	9.00	737.77
7	37.645903	-85.975590	717.95	9.00	726.95
8	37.645903	-85.976093	713.37	9.00	722.37
9	37.646520	-85.976082	721.89	9.00	730.89
10	37.646520	-85.977466	723.78	9.00	732.78
11	37.645900	-85.977444	715.83	9.00	724.83
12	37.645900	-85.979311	712.21	9.00	721.22
13	37.646520	-85.979300	721.79	9.00	730.79
14	37.646520	-85.978903	716.71	9.00	725.71
15	37.647016	-85.978900	720.18	9.00	729.18
16	37.647020	-85.978506	721.32	9.00	730.32
17	37.647483	-85.978506	724.62	9.00	733.62
18	37.647491	-85.978210	727.20	9.00	736.20

Name: PV array 11b
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.645648	-85.979740	710.38	9.00	719.38
2	37.645650	-85.977959	713.20	9.00	722.20
3	37.645130	-85.977960	709.85	9.00	718.85
4	37.645130	-85.979504	707.88	9.00	716.88
5	37.643898	-85.979500	711.07	9.00	720.07
6	37.643900	-85.979200	705.35	9.00	714.35
7	37.643200	-85.979204	707.91	9.00	716.91
8	37.643200	-85.979000	705.21	9.00	714.21
9	37.642750	-85.978968	714.50	9.00	723.50
10	37.642750	-85.980470	713.42	9.00	722.42
11	37.642292	-85.980470	706.30	9.00	715.31
12	37.642290	-85.981553	699.03	9.00	708.03
13	37.641765	-85.981553	701.42	9.00	710.42
14	37.641765	-85.982186	696.70	9.00	705.70
15	37.642290	-85.982190	699.13	9.00	708.13
16	37.642290	-85.982637	695.39	9.00	704.39
17	37.642751	-85.982640	697.38	9.00	706.38
18	37.642750	-85.982412	698.40	9.00	707.40
19	37.643184	-85.982410	704.70	9.00	713.70
20	37.643176	-85.982144	710.16	9.00	719.16
21	37.642750	-85.982144	702.05	9.00	711.05
22	37.642750	-85.981230	705.68	9.00	714.68
23	37.643201	-85.981232	711.81	9.00	720.82
24	37.643218	-85.980684	716.64	9.00	725.64
25	37.643900	-85.980684	728.50	9.00	737.50
26	37.643900	-85.980320	730.94	9.00	739.94
27	37.644450	-85.980330	733.92	9.00	742.92
28	37.644450	-85.980030	731.60	9.00	740.60
29	37.645130	-85.980030	716.94	9.00	725.94
30	37.645130	-85.979740	710.89	9.00	719.89

Name: PV array 11c
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

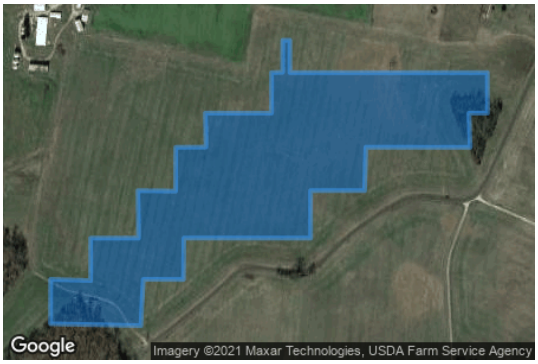


Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.645410	-85.984970	729.64	9.00	738.64
2	37.645410	-85.984718	727.97	9.00	736.97
3	37.644977	-85.984718	721.24	9.00	730.25
4	37.644980	-85.984270	727.52	9.00	736.52
5	37.644459	-85.984270	726.98	9.00	735.99
6	37.644459	-85.983635	723.15	9.00	732.15
7	37.643910	-85.983646	716.37	9.00	725.37
8	37.643915	-85.982970	711.24	9.00	720.24
9	37.642768	-85.982970	705.15	9.00	714.15
10	37.642770	-85.983460	704.92	9.00	713.92
11	37.643280	-85.983463	707.86	9.00	716.86
12	37.643278	-85.984270	714.92	9.00	723.92
13	37.643910	-85.984270	723.95	9.00	732.95
14	37.643910	-85.984990	717.23	9.00	726.23
15	37.644460	-85.984987	716.78	9.00	725.78
16	37.644460	-85.985427	717.56	9.00	726.56
17	37.644977	-85.985430	725.27	9.00	734.27
18	37.644977	-85.984965	723.57	9.00	732.57

Name: PV array 8a
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

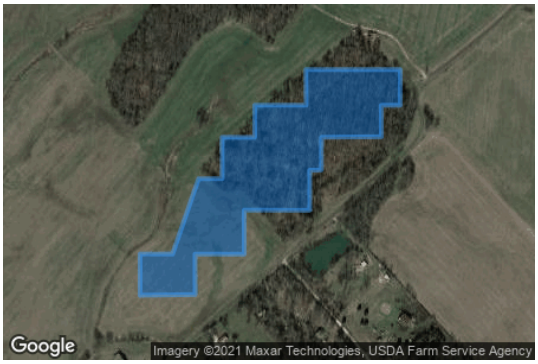
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.658869	-85.983456	733.54	9.00	742.54
2	37.658870	-85.982775	730.30	9.00	739.30
3	37.658398	-85.982770	730.88	9.00	739.88
4	37.658402	-85.982320	733.32	9.00	742.32
5	37.658870	-85.982319	728.03	9.00	737.03
6	37.658870	-85.982020	730.53	9.00	739.53
7	37.658322	-85.982018	738.16	9.00	747.16
8	37.658321	-85.982147	735.39	9.00	744.39
9	37.657990	-85.982150	739.98	9.00	748.98
10	37.657990	-85.982925	738.94	9.00	747.94
11	37.657222	-85.982918	751.70	9.00	760.70
12	37.657220	-85.983891	738.73	9.00	747.73
13	37.657735	-85.983890	736.27	9.00	745.27
14	37.657740	-85.983585	739.59	9.00	748.59
15	37.658400	-85.983580	734.11	9.00	743.11
16	37.658400	-85.983460	734.23	9.00	743.23

Name: PV array 8b
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



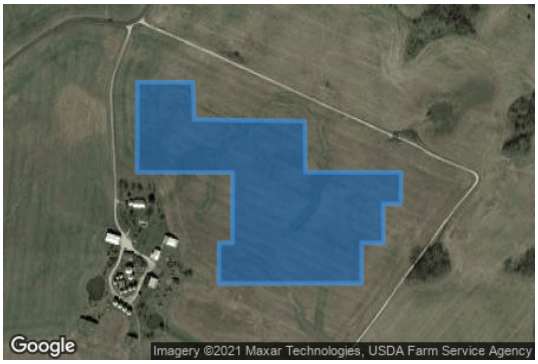
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.659413	-85.979815	730.94	9.00	739.94
2	37.659413	-85.979687	728.32	9.00	737.32
3	37.658950	-85.979687	730.23	9.00	739.23
4	37.658950	-85.976103	712.38	9.00	721.38
5	37.658368	-85.976100	728.72	9.00	737.72
6	37.658370	-85.976436	730.90	9.00	739.90
7	37.657880	-85.976414	721.92	9.00	730.92
8	37.657882	-85.978308	718.15	9.00	727.15
9	37.657260	-85.978330	723.95	9.00	732.95
10	37.657260	-85.979311	723.91	9.00	732.91
11	37.656580	-85.979310	729.82	9.00	738.82
12	37.656580	-85.981610	744.03	9.00	753.03
13	37.655988	-85.981620	740.96	9.00	749.96
14	37.655990	-85.982347	742.64	9.00	751.65
15	37.655327	-85.982392	733.49	9.00	742.49
16	37.655355	-85.984032	751.71	9.00	760.71
17	37.655990	-85.984030	750.27	9.00	759.27
18	37.655973	-85.983302	748.50	9.00	757.50
19	37.656580	-85.983302	748.83	9.00	757.83
20	37.656580	-85.982433	751.61	9.00	760.61
21	37.657260	-85.982444	754.22	9.00	763.22
22	37.657256	-85.981760	751.15	9.00	760.15
23	37.657880	-85.981757	744.74	9.00	753.74
24	37.657884	-85.981210	735.95	9.00	744.95
25	37.658370	-85.981221	742.51	9.00	751.51
26	37.658370	-85.980020	729.66	9.00	738.66
27	37.658950	-85.980019	735.17	9.00	744.17
28	37.658954	-85.979820	733.60	9.00	742.60

Name: PV array 8c
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.654661	-85.985389	728.43	9.00	737.43
2	37.654661	-85.984456	742.38	9.00	751.38
3	37.655170	-85.984460	744.64	9.00	753.64
4	37.655170	-85.982750	733.83	9.00	742.83
5	37.654660	-85.982750	737.80	9.00	746.80
6	37.654660	-85.983093	737.18	9.00	746.18
7	37.654210	-85.983090	732.02	9.00	741.02
8	37.654202	-85.984177	730.51	9.00	739.51
9	37.653735	-85.984180	727.66	9.00	736.66
10	37.653730	-85.984391	728.16	9.00	737.16
11	37.653157	-85.984390	730.88	9.00	739.88
12	37.653160	-85.985582	732.00	9.00	741.00
13	37.652529	-85.985580	719.54	9.00	728.54
14	37.652530	-85.986473	720.31	9.00	729.31
15	37.651951	-85.986470	712.04	9.00	721.04
16	37.651940	-85.987470	705.58	9.00	714.58
17	37.652530	-85.987470	705.22	9.00	714.22
18	37.652530	-85.986880	713.57	9.00	722.57
19	37.653607	-85.986408	718.90	9.00	727.90
20	37.653610	-85.985979	734.06	9.00	743.06
21	37.654202	-85.985980	727.69	9.00	736.69
22	37.654200	-85.985389	737.78	9.00	746.78

Name: PV array 9
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.656283	-85.976339	735.05	9.00	744.05
2	37.656280	-85.975330	724.76	9.00	733.76
3	37.655747	-85.975309	728.51	9.00	737.51
4	37.655723	-85.973299	715.42	9.00	724.42
5	37.654994	-85.973289	720.26	9.00	729.26
6	37.654990	-85.971553	724.01	9.00	733.01
7	37.654542	-85.971560	730.05	9.00	739.05
8	37.654540	-85.971880	733.50	9.00	742.50
9	37.653981	-85.971875	721.20	9.00	730.20
10	37.653980	-85.972269	723.18	9.00	732.18
11	37.653402	-85.972270	730.26	9.00	739.26
12	37.653398	-85.974863	732.71	9.00	741.71
13	37.653980	-85.974855	739.30	9.00	748.30
14	37.653980	-85.974614	736.14	9.00	745.14
15	37.654988	-85.974610	729.05	9.00	738.05
16	37.654992	-85.976345	739.20	9.00	748.20

Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	37.665796	-86.003591	712.10	5.00
OP 2	2	37.663086	-85.997117	710.47	5.00
OP 3	3	37.663783	-85.992311	712.81	5.00
OP 4	4	37.663341	-85.984243	730.37	5.00
OP 5	5	37.663970	-85.975316	719.72	5.00
OP 6	6	37.658950	-85.975245	714.89	5.00
OP 7	7	37.657659	-85.975953	733.77	5.00
OP 8	8	37.657166	-85.977316	727.49	5.00
OP 9	9	37.656886	-85.978131	739.19	5.00
OP 10	10	37.656334	-85.979000	738.92	5.00
OP 11	11	37.656096	-85.979526	747.83	5.00
OP 12	12	37.656164	-85.980470	744.93	5.00
OP 13	13	37.655548	-85.981407	738.80	5.00
OP 14	14	37.654894	-85.982405	731.49	5.00
OP 15	15	37.654147	-85.982469	724.53	5.00
OP 16	16	37.651743	-85.985881	701.72	5.00
OP 17	17	37.649398	-85.989228	703.88	5.00
OP 18	18	37.647793	-85.992812	689.53	5.00
OP 19	19	37.643227	-86.001173	705.25	5.00
OP 20	20	37.647016	-86.010443	732.49	5.00
OP 21	21	37.649330	-86.012467	722.89	5.00
OP 22	22	37.652941	-86.015460	733.92	5.00
OP 23	23	37.659804	-86.013475	719.49	5.00
OP 24	24	37.660874	-86.012874	712.82	5.00
OP 25	25	37.645045	-85.954316	691.77	5.00
OP 26	26	37.638962	-85.961226	694.20	5.00
OP 27	27	37.632607	-85.972727	674.04	5.00
OP 28	28	37.628596	-85.983198	677.47	5.00

GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
PV array 10	SA tracking	SA tracking	0	14,579	-
PV array 11a	SA tracking	SA tracking	2,618	0	-
PV array 11b	SA tracking	SA tracking	2,284	0	-
PV array 11c	SA tracking	SA tracking	0	0	-
PV array 8a	SA tracking	SA tracking	3,278	1,656	-
PV array 8b	SA tracking	SA tracking	2,200	28,942	-
PV array 8c	SA tracking	SA tracking	2,260	1,124	-
PV array 9	SA tracking	SA tracking	1,014	381	-

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
OP 1	1000	0
OP 2	1125	0
OP 3	552	50
OP 4	0	0
OP 5	0	0
OP 6	89	2726
OP 7	176	6379
OP 8	116	3373
OP 9	43	5472
OP 10	1	4464
OP 11	0	7390
OP 12	0	8791
OP 13	0	4007
OP 14	0	3761

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
OP 15	0	255
OP 16	131	14
OP 17	119	0
OP 18	110	0
OP 19	1095	0
OP 20	1777	0
OP 21	985	0
OP 22	1305	0
OP 23	1464	0
OP 24	1137	0
OP 25	1435	0
OP 26	994	0
OP 27	0	0
OP 28	0	0

Results for: PV array 10

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	524
OP 11	0	3349
OP 12	0	3383
OP 13	0	3786
OP 14	0	3537
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

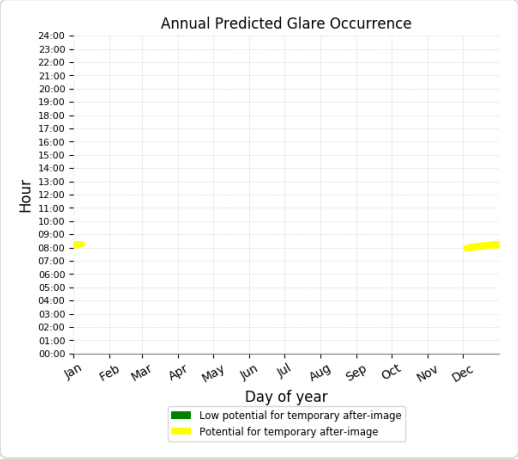
0 minutes of yellow glare
0 minutes of green glare

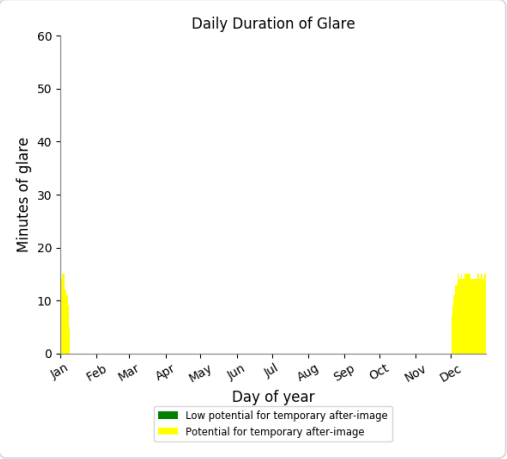
Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

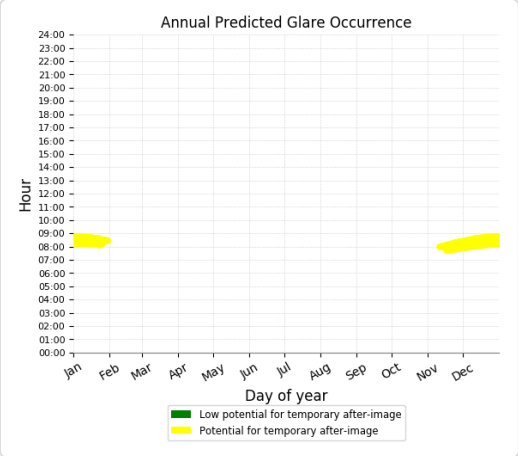
524 minutes of yellow glare
0 minutes of green glare

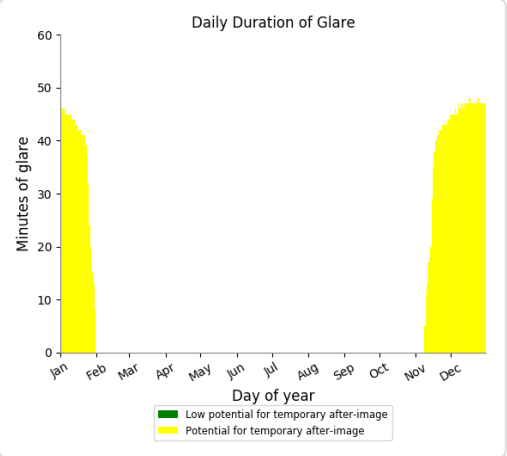




Point Receptor: OP 11

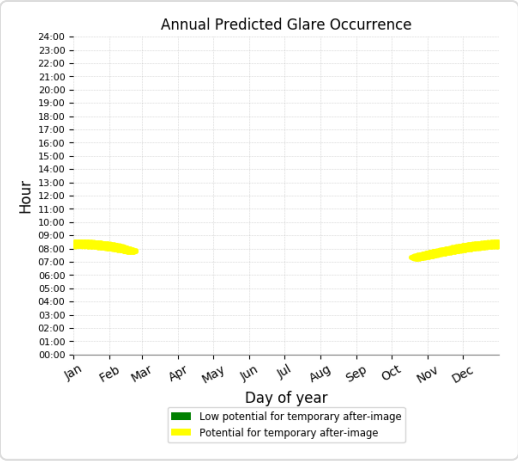
3349 minutes of yellow glare
0 minutes of green glare

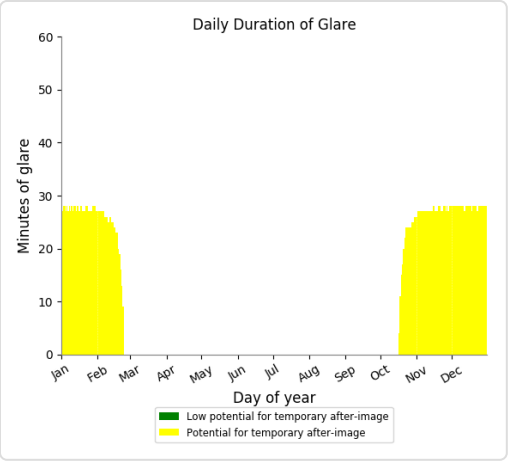




Point Receptor: OP 12

3383 minutes of yellow glare
0 minutes of green glare

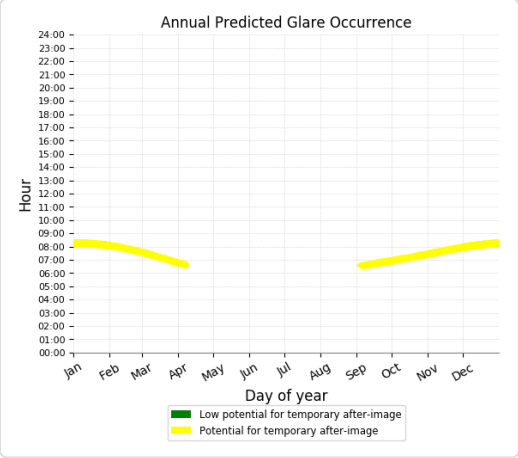


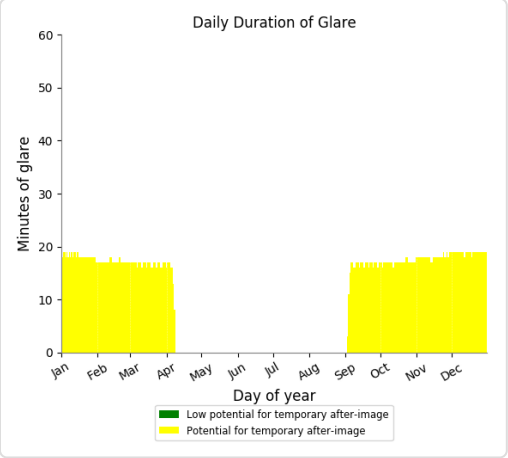


Point Receptor: OP 13

3786 minutes of yellow glare

0 minutes of green glare

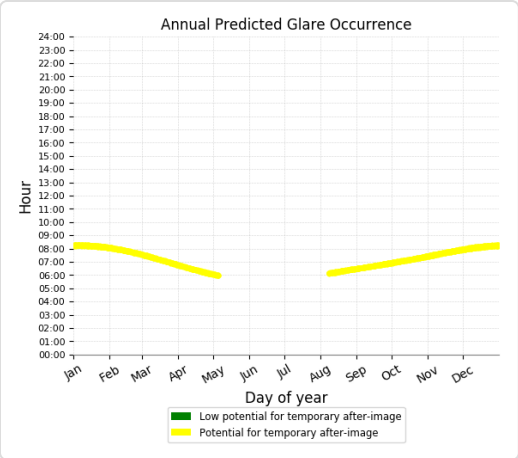


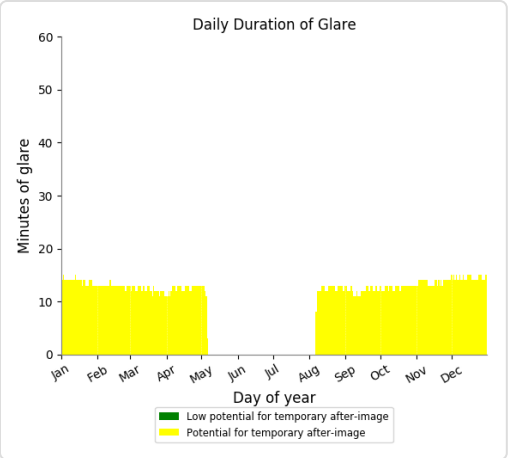


Point Receptor: OP 14

3537 minutes of yellow glare

0 minutes of green glare





Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 11a

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	305	0
OP 20	336	0
OP 21	313	0
OP 22	379	0
OP 23	588	0
OP 24	697	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

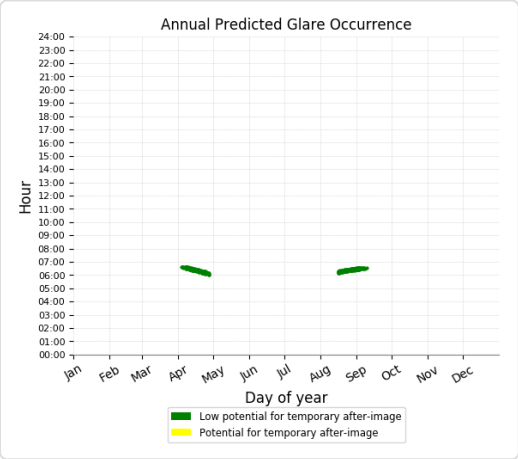
0 minutes of yellow glare
0 minutes of green glare

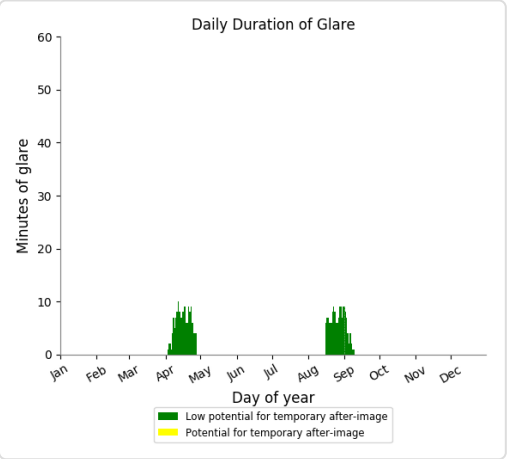
Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

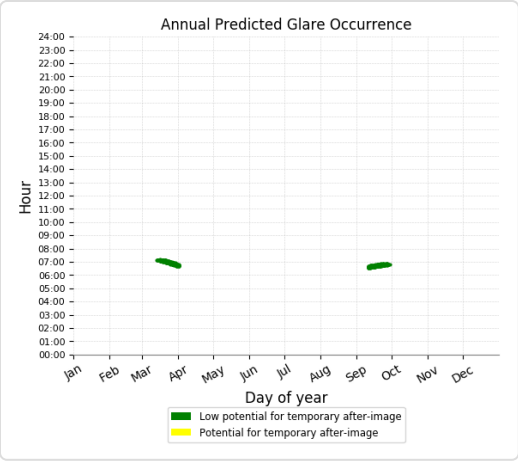
0 minutes of yellow glare
305 minutes of green glare

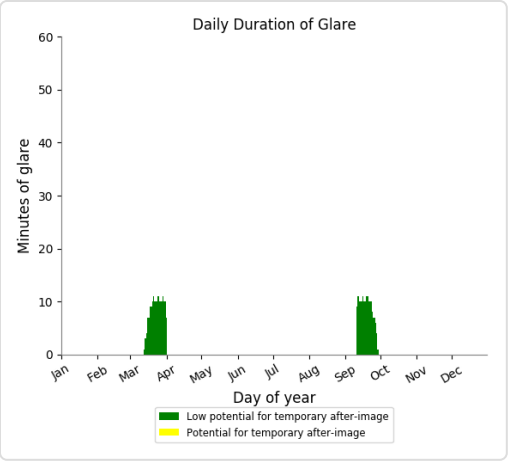




Point Receptor: OP 20

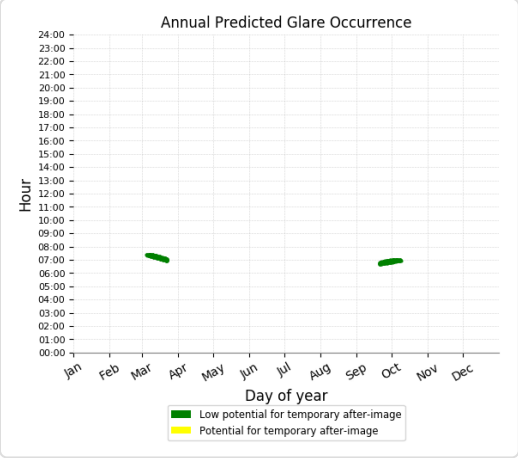
0 minutes of yellow glare
336 minutes of green glare

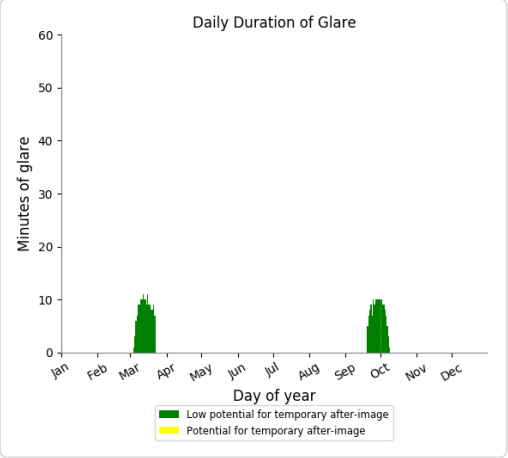




Point Receptor: OP 21

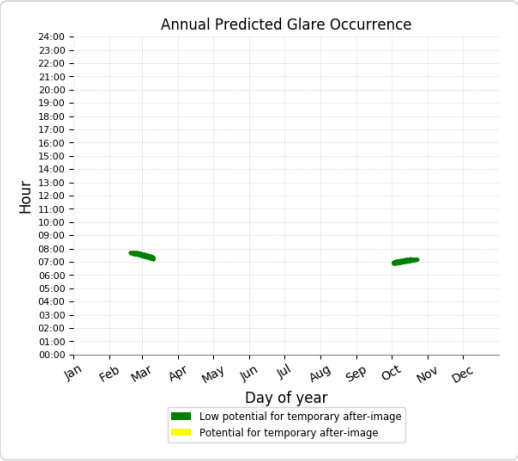
0 minutes of yellow glare
313 minutes of green glare

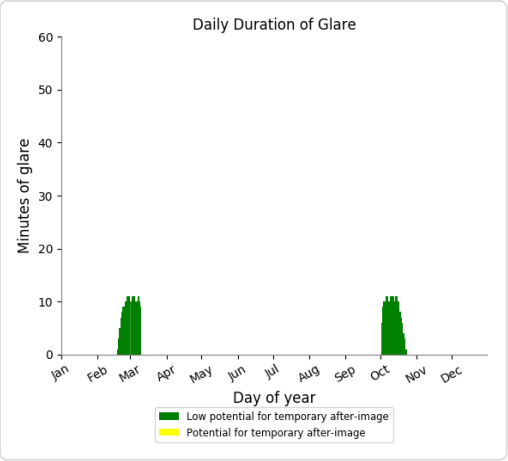




Point Receptor: OP 22

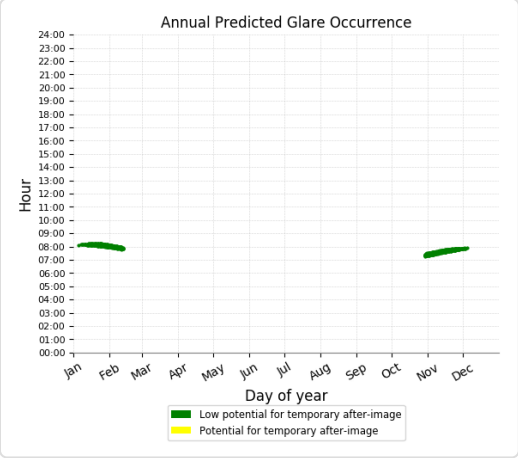
0 minutes of yellow glare
379 minutes of green glare

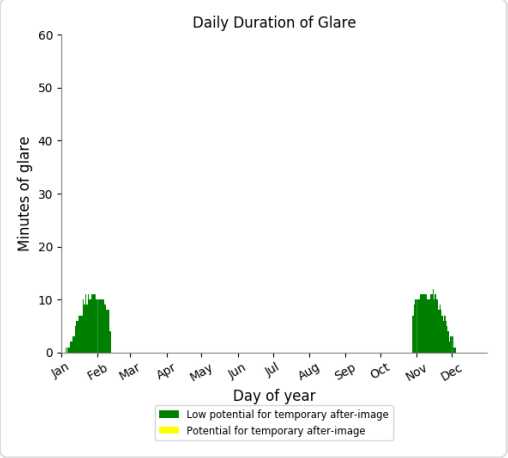




Point Receptor: OP 23

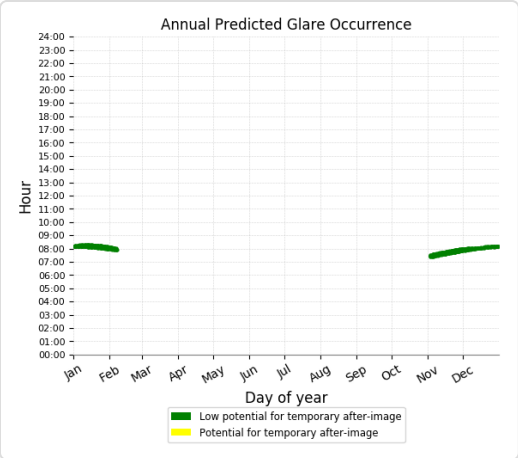
0 minutes of yellow glare
588 minutes of green glare

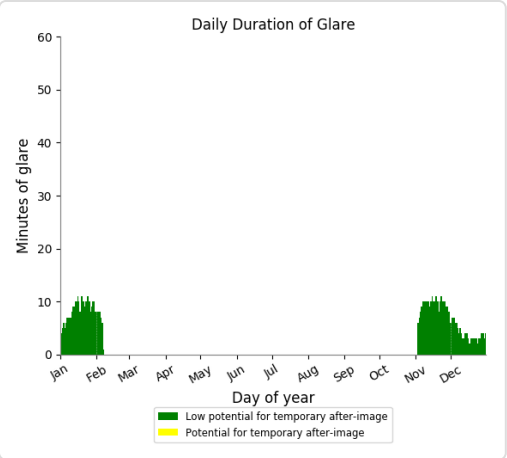




Point Receptor: OP 24

0 minutes of yellow glare
697 minutes of green glare





Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 11b

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	704	0
OP 20	586	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	994	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

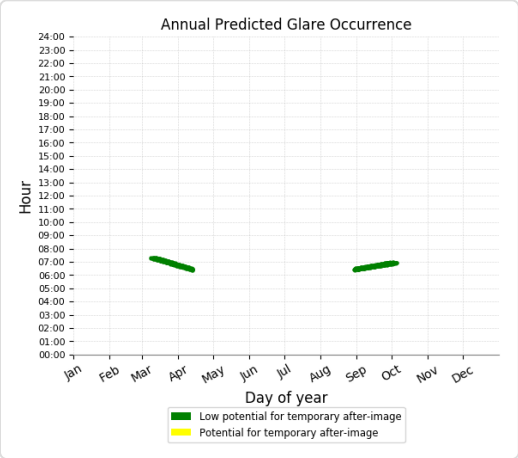
0 minutes of yellow glare
0 minutes of green glare

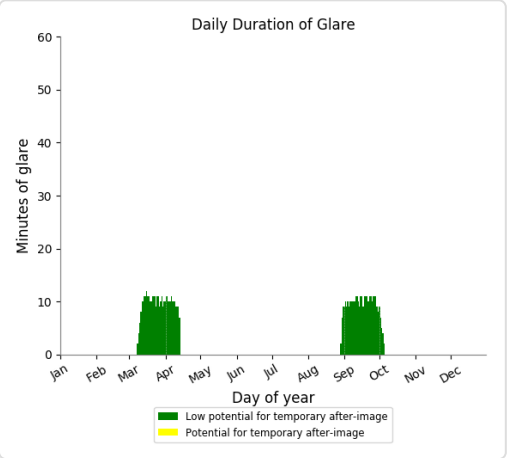
Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

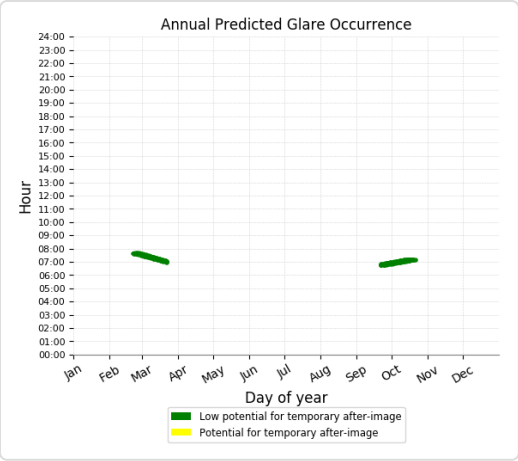
0 minutes of yellow glare
704 minutes of green glare

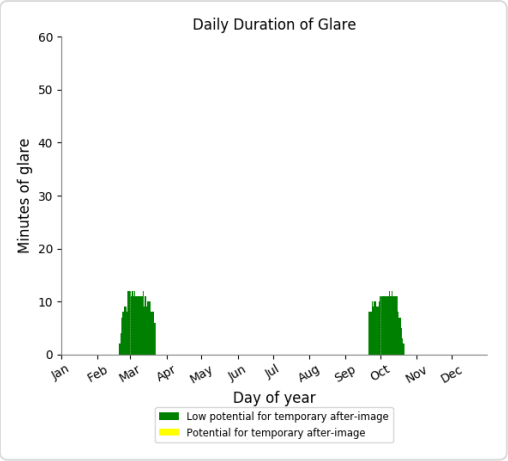




Point Receptor: OP 20

0 minutes of yellow glare
586 minutes of green glare





Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

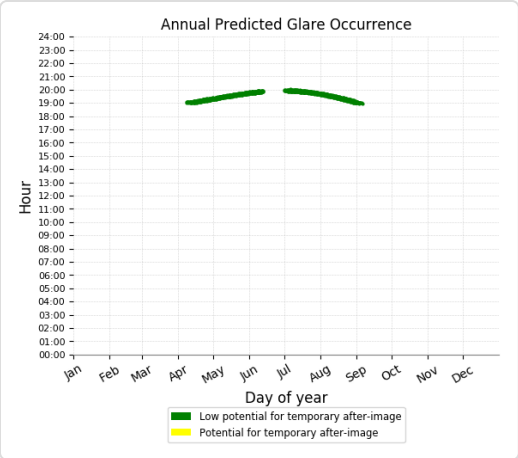
0 minutes of yellow glare
0 minutes of green glare

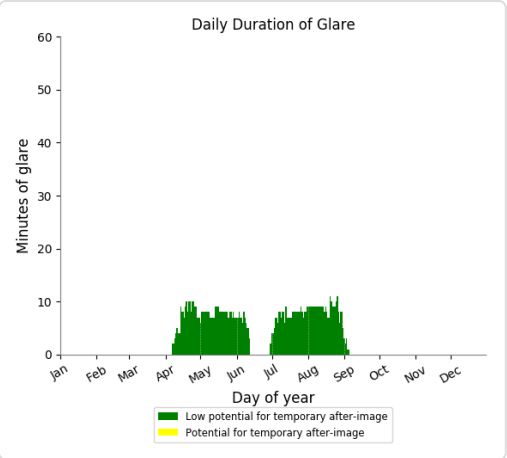
Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
994 minutes of green glare





Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 11c

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

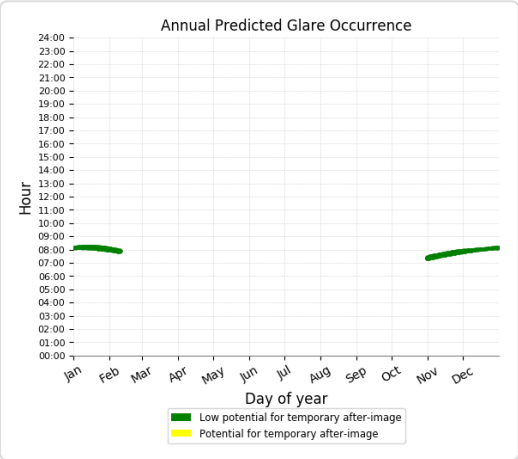
0 minutes of yellow glare
0 minutes of green glare

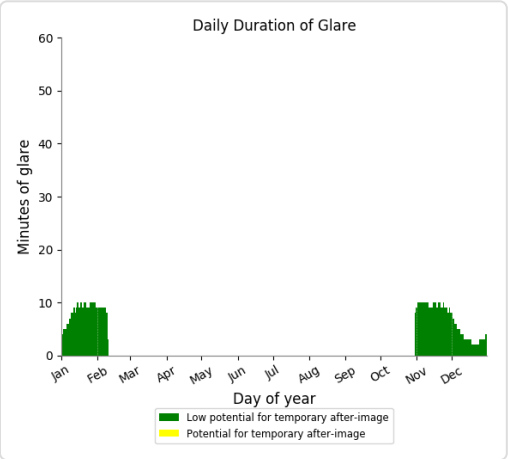
Results for: PV array 8a

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	744	0
OP 2	833	0
OP 3	378	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	68	0
OP 8	98	146
OP 9	43	392
OP 10	1	409
OP 11	0	375
OP 12	0	334
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	308	0
OP 23	286	0
OP 24	291	0
OP 25	228	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

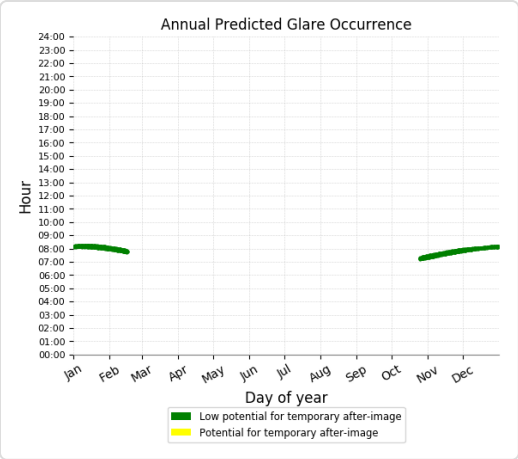
0 minutes of yellow glare
744 minutes of green glare

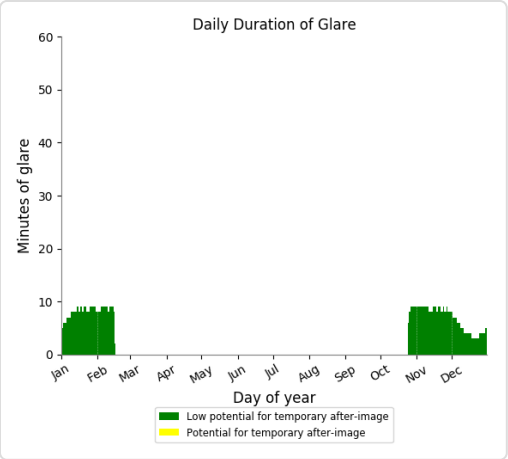




Point Receptor: OP 2

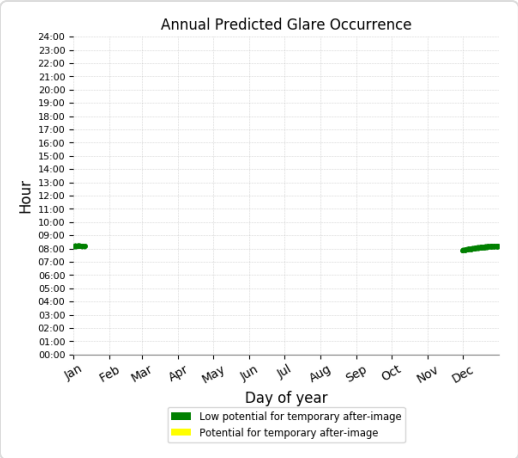
0 minutes of yellow glare
833 minutes of green glare

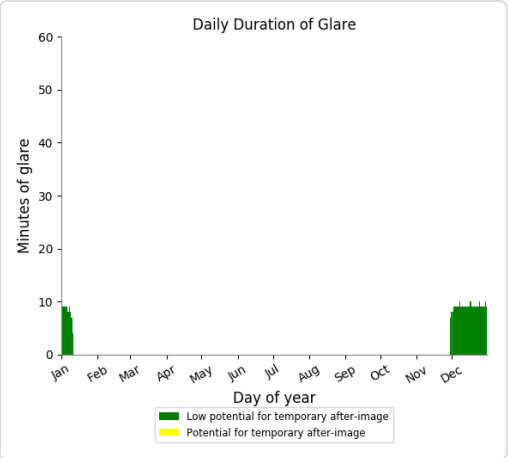




Point Receptor: OP 3

0 minutes of yellow glare
378 minutes of green glare





Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

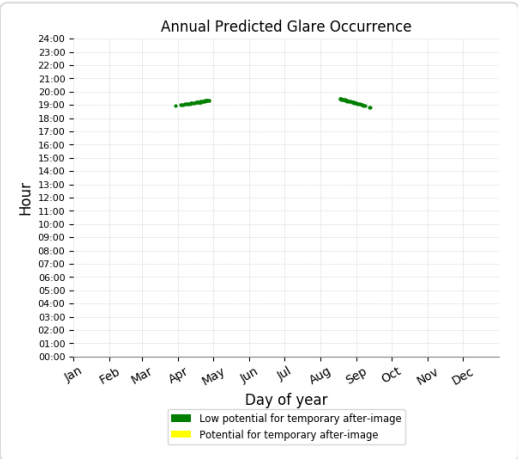
0 minutes of yellow glare
0 minutes of green glare

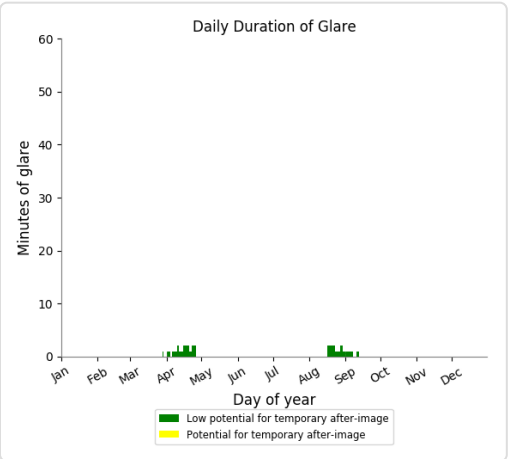
Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

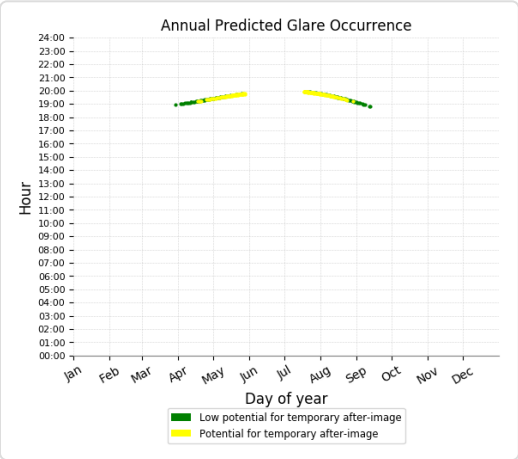
0 minutes of yellow glare
68 minutes of green glare

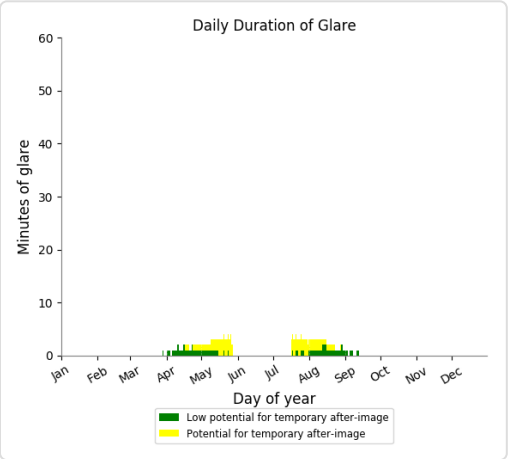




Point Receptor: OP 8

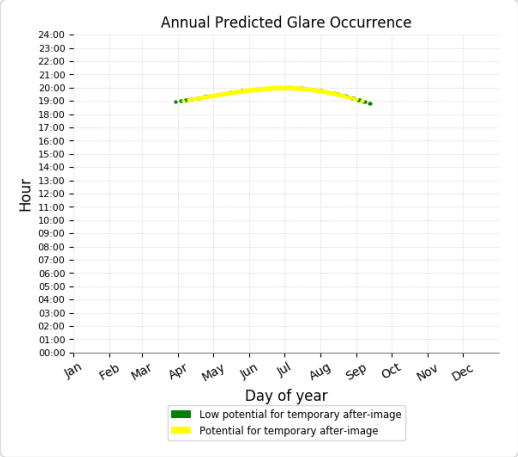
146 minutes of yellow glare
98 minutes of green glare

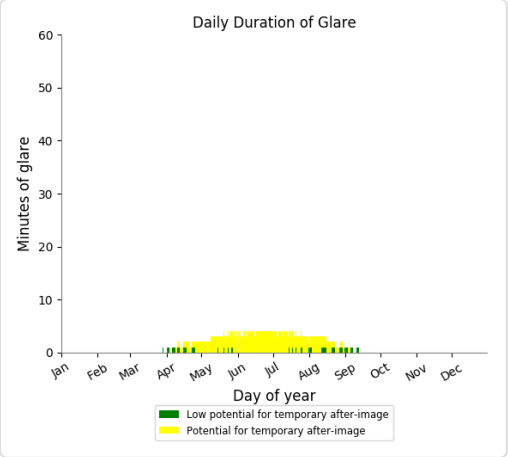




Point Receptor: OP 9

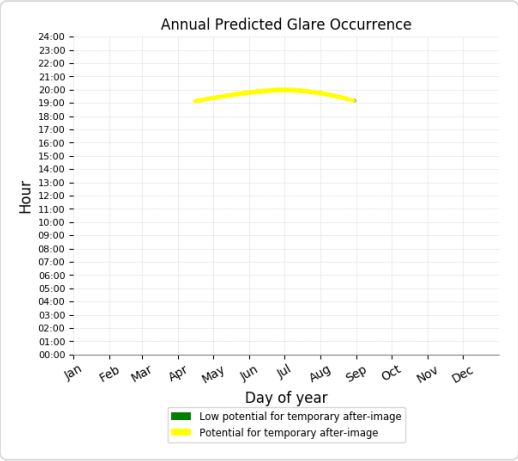
392 minutes of yellow glare
43 minutes of green glare

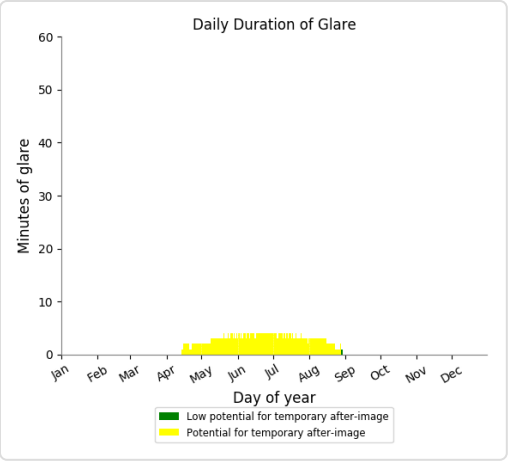




Point Receptor: OP 10

409 minutes of yellow glare
1 minutes of green glare

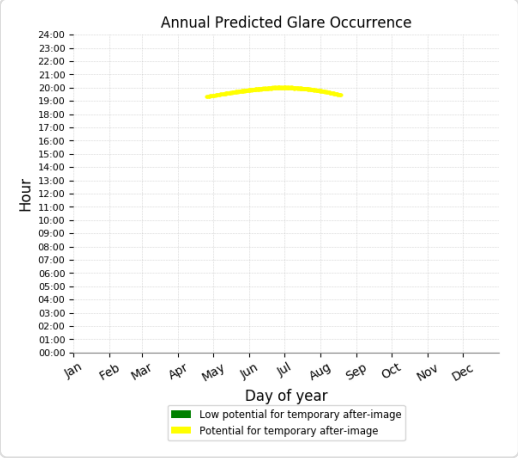


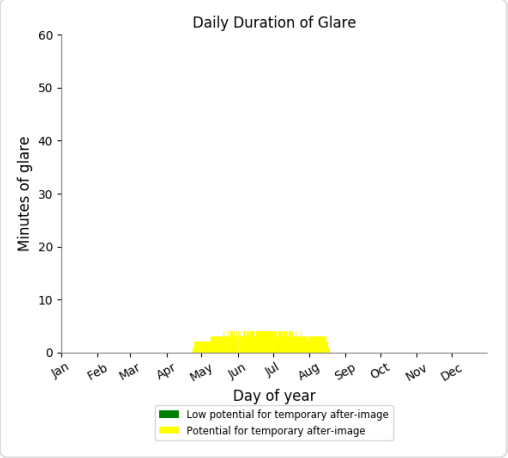


Point Receptor: OP 11

375 minutes of yellow glare

0 minutes of green glare

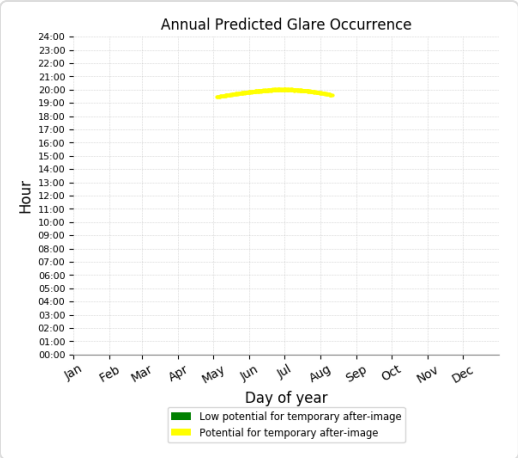


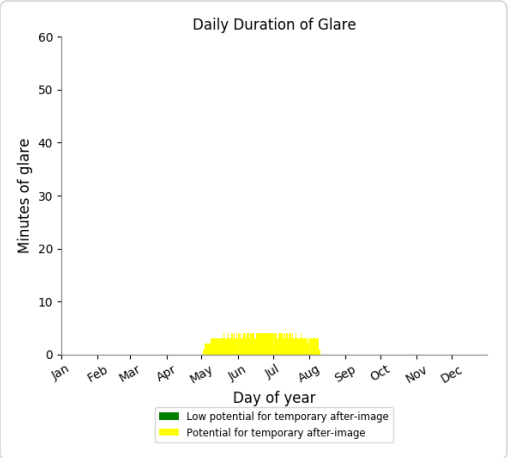


Point Receptor: OP 12

334 minutes of yellow glare

0 minutes of green glare





Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

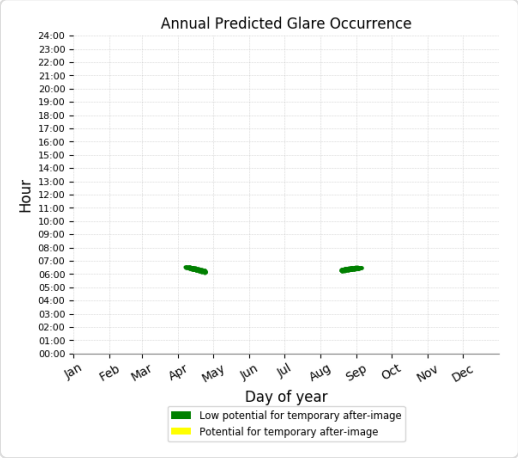
0 minutes of yellow glare
0 minutes of green glare

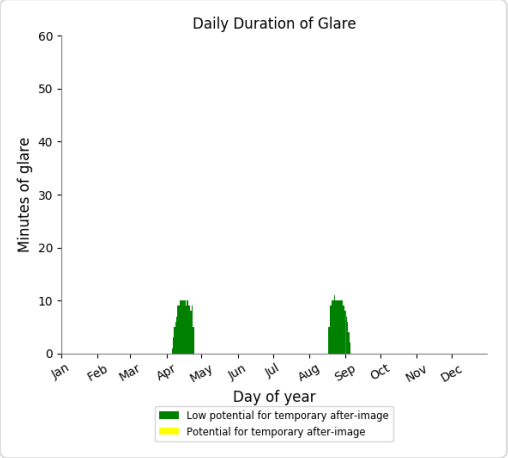
Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

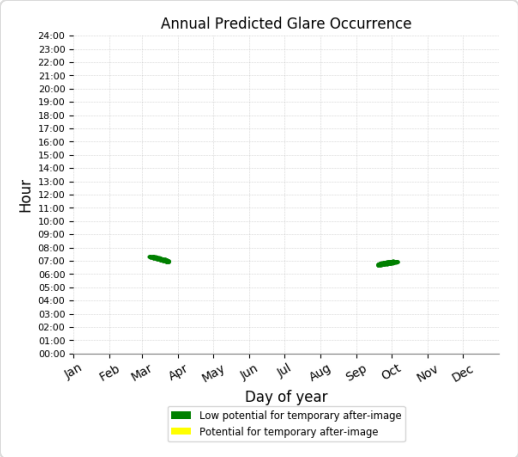
0 minutes of yellow glare
308 minutes of green glare

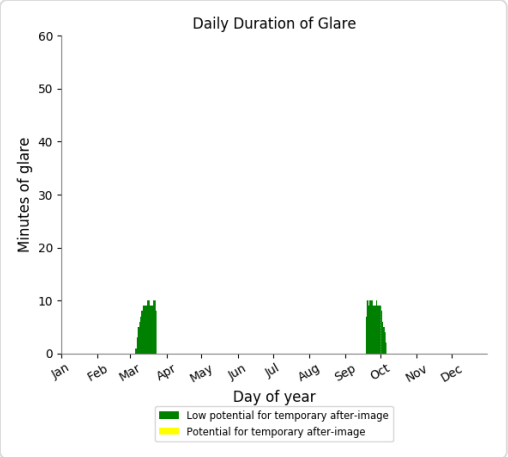




Point Receptor: OP 23

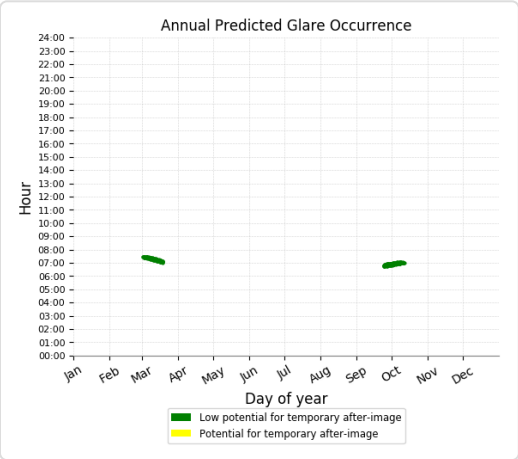
0 minutes of yellow glare
286 minutes of green glare

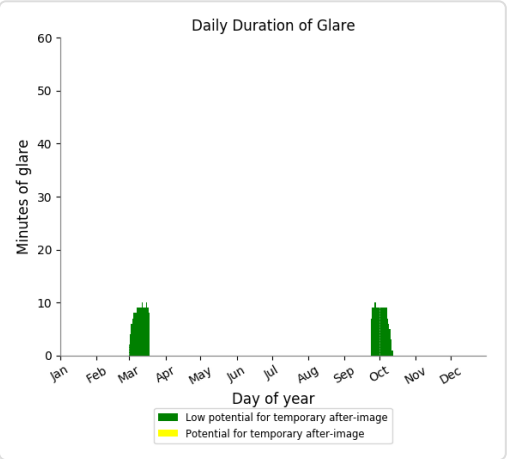




Point Receptor: OP 24

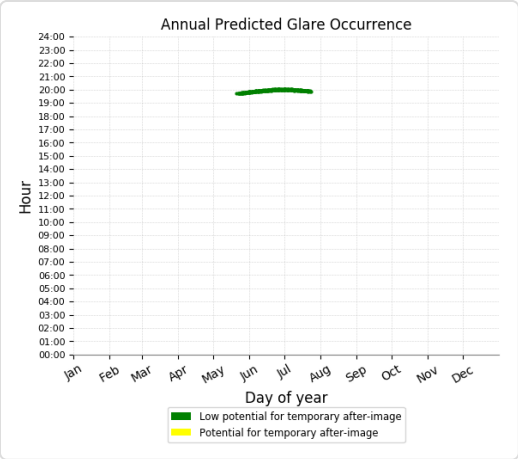
0 minutes of yellow glare
291 minutes of green glare

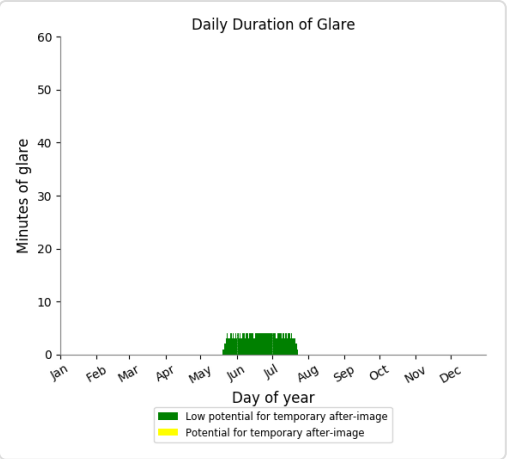




Point Receptor: OP 25

0 minutes of yellow glare
228 minutes of green glare





Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

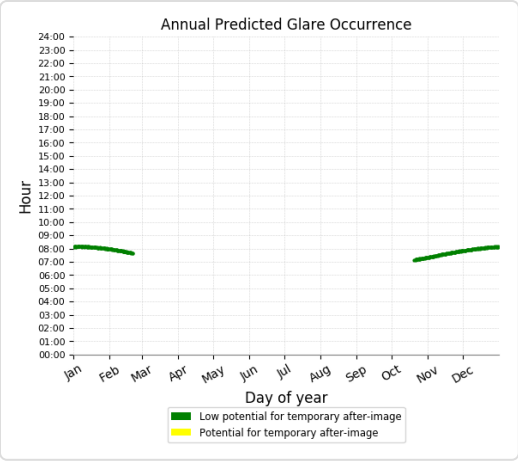
0 minutes of yellow glare
0 minutes of green glare

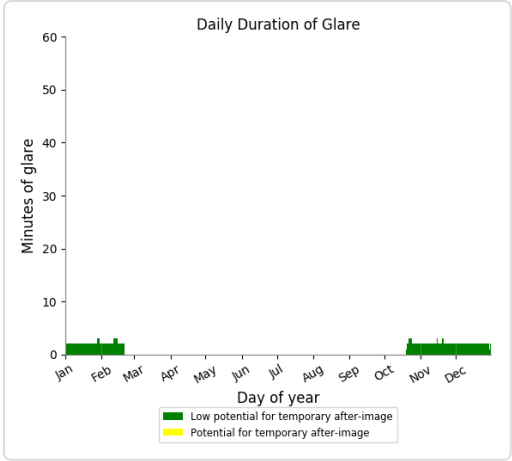
Results for: PV array 8b

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	256	0
OP 2	292	0
OP 3	174	50
OP 4	0	0
OP 5	0	0
OP 6	0	2726
OP 7	0	6364
OP 8	0	3124
OP 9	0	4947
OP 10	0	3368
OP 11	0	3445
OP 12	0	4888
OP 13	0	20
OP 14	0	10
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	180	0
OP 21	129	0
OP 22	122	0
OP 23	140	0
OP 24	146	0
OP 25	761	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

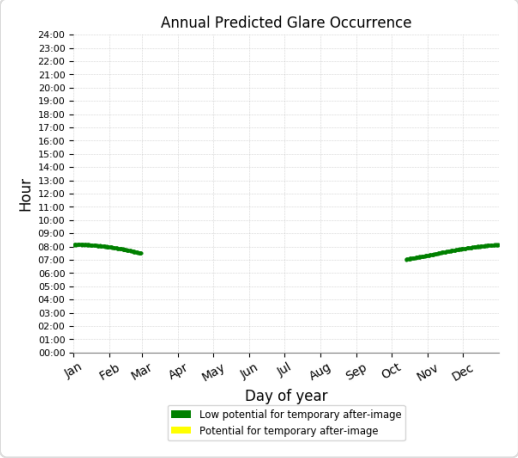
0 minutes of yellow glare
256 minutes of green glare

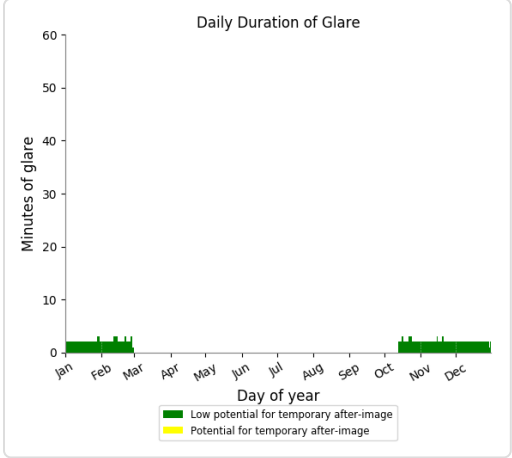




Point Receptor: OP 2

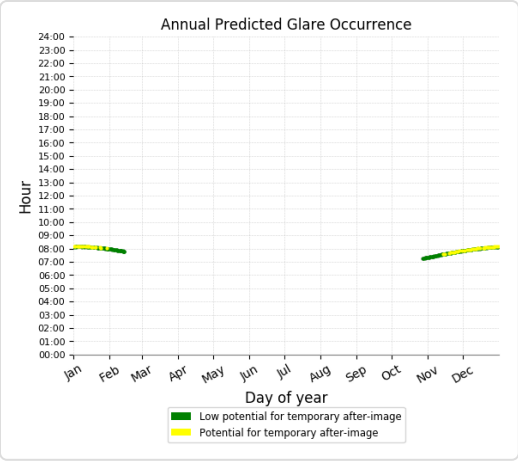
0 minutes of yellow glare
292 minutes of green glare

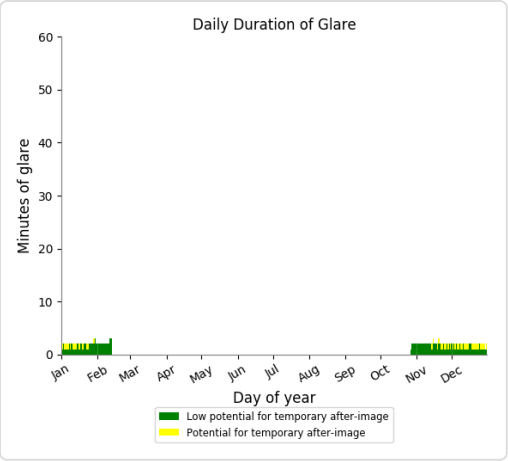




Point Receptor: OP 3

50 minutes of yellow glare
174 minutes of green glare





Point Receptor: OP 4

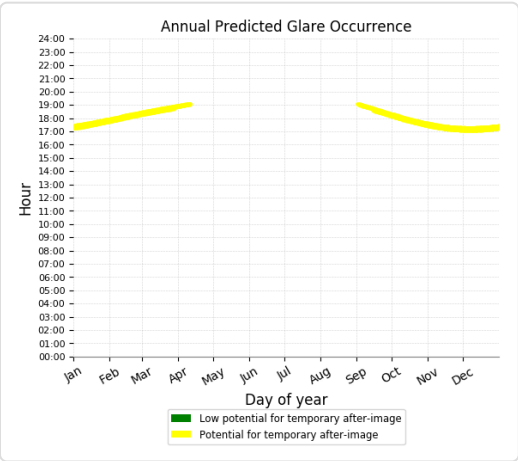
0 minutes of yellow glare
0 minutes of green glare

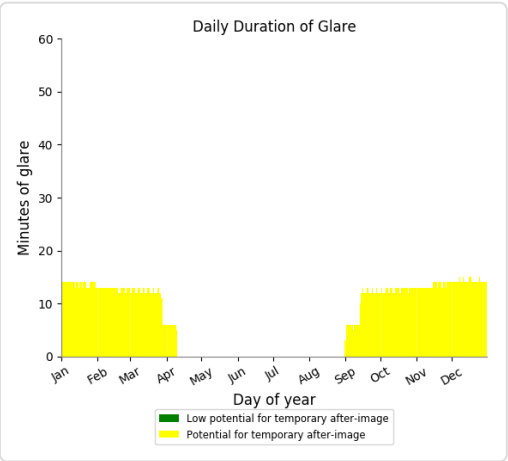
Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

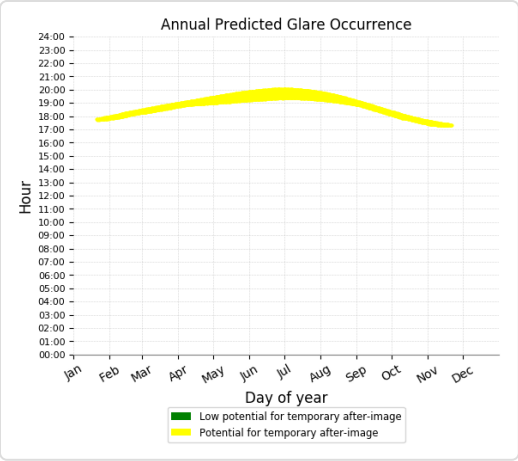
2726 minutes of yellow glare
0 minutes of green glare

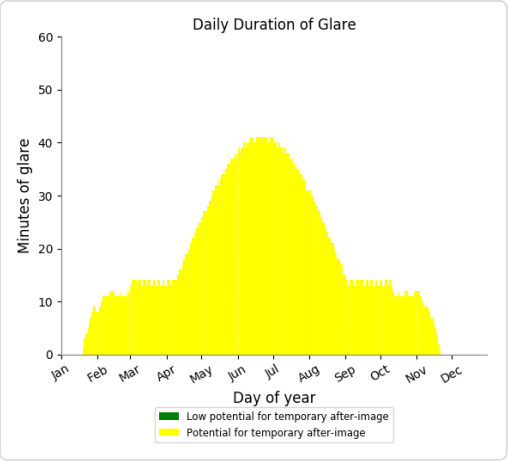




Point Receptor: OP 7

6364 minutes of yellow glare
0 minutes of green glare

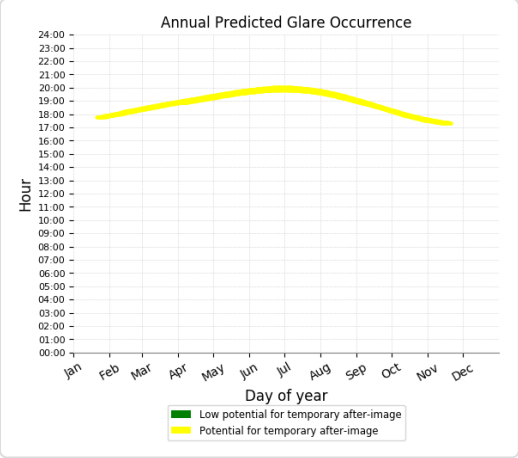


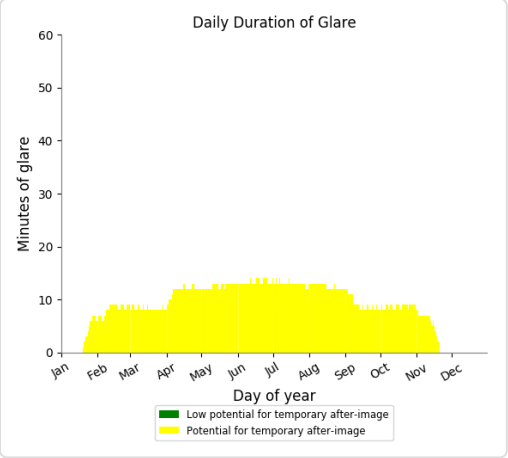


Point Receptor: OP 8

3124 minutes of yellow glare

0 minutes of green glare

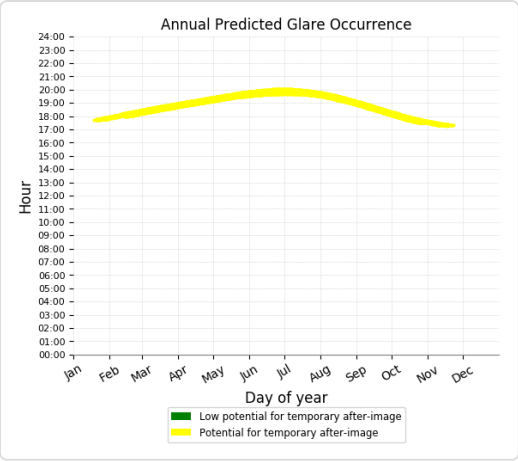


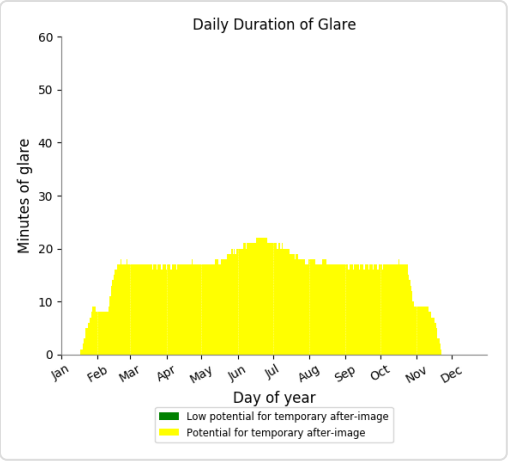


Point Receptor: OP 9

4947 minutes of yellow glare

0 minutes of green glare

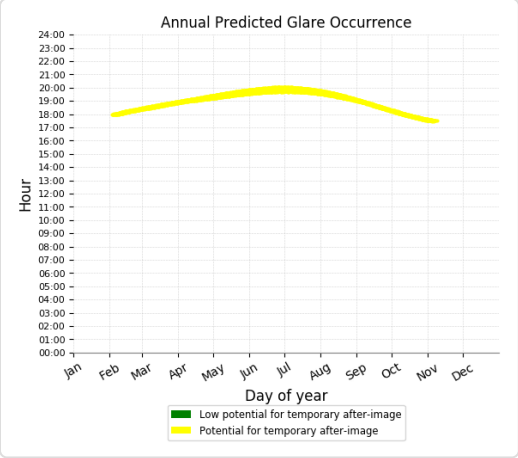


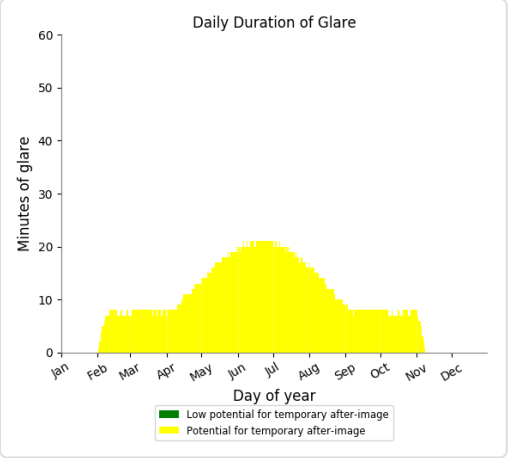


Point Receptor: OP 10

3368 minutes of yellow glare

0 minutes of green glare

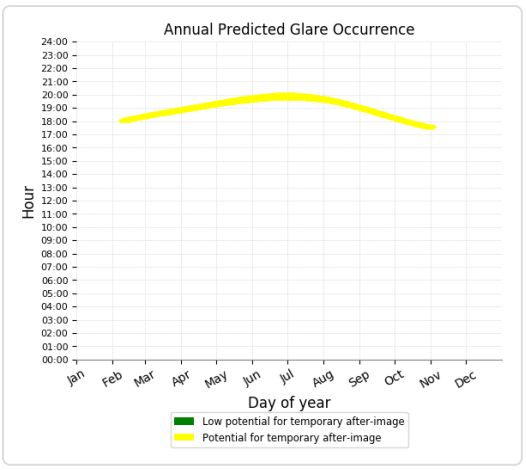


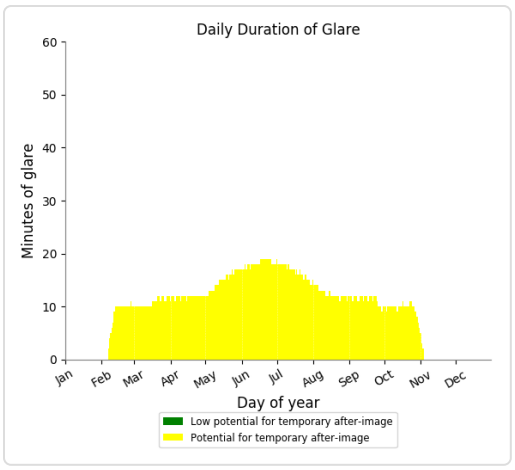


Point Receptor: OP 11

3445 minutes of yellow glare

0 minutes of green glare

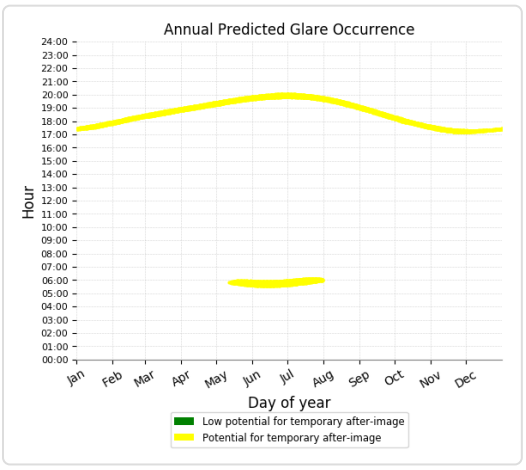


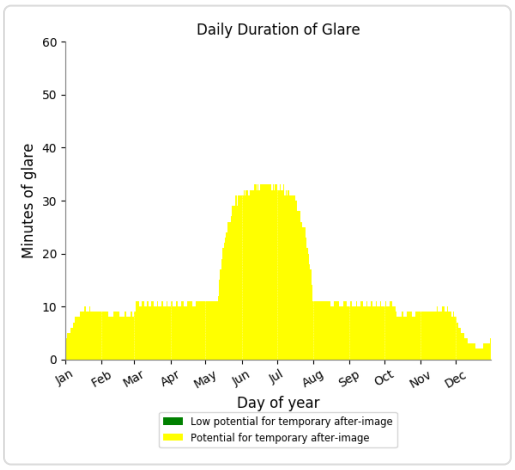


Point Receptor: OP 12

4888 minutes of yellow glare

0 minutes of green glare

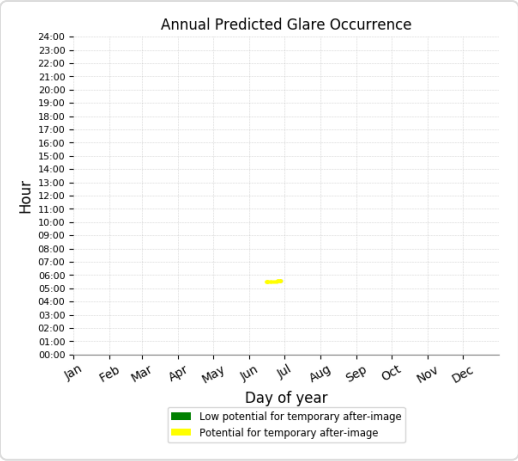


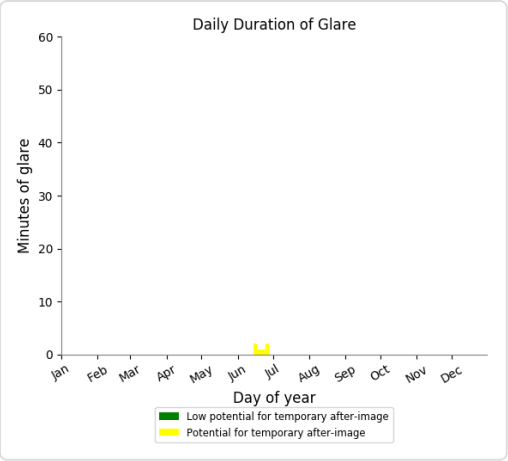


Point Receptor: OP 13

20 minutes of yellow glare

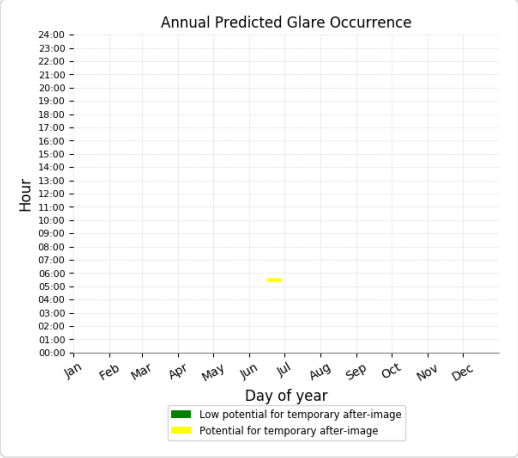
0 minutes of green glare

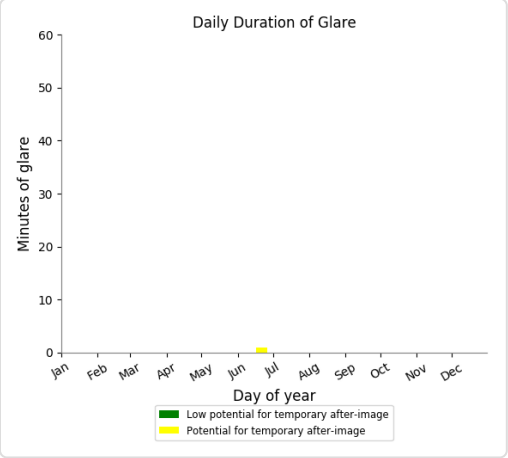




Point Receptor: OP 14

10 minutes of yellow glare
0 minutes of green glare





Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

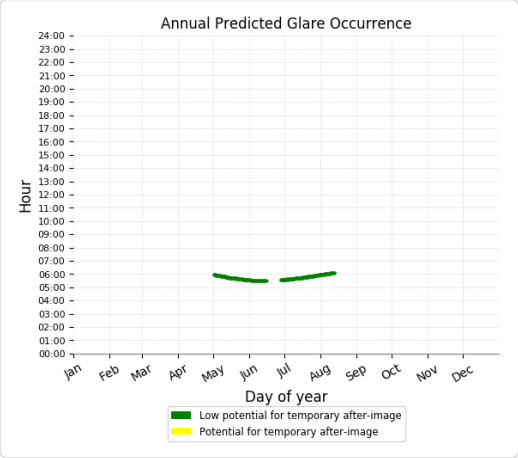
0 minutes of yellow glare
0 minutes of green glare

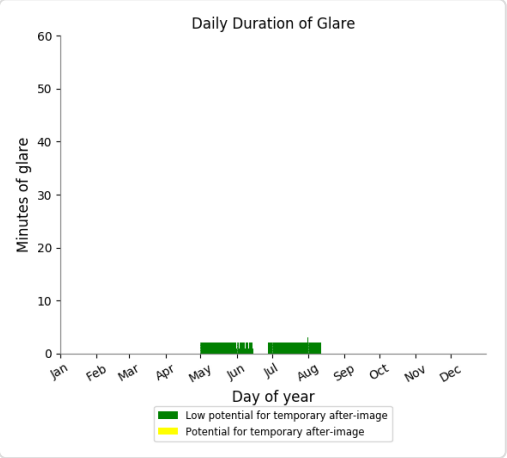
Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

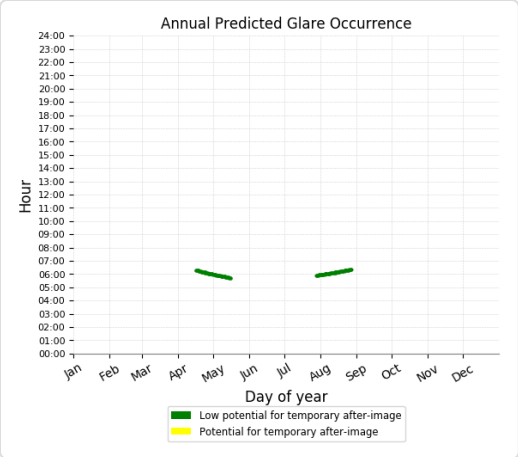
0 minutes of yellow glare
180 minutes of green glare

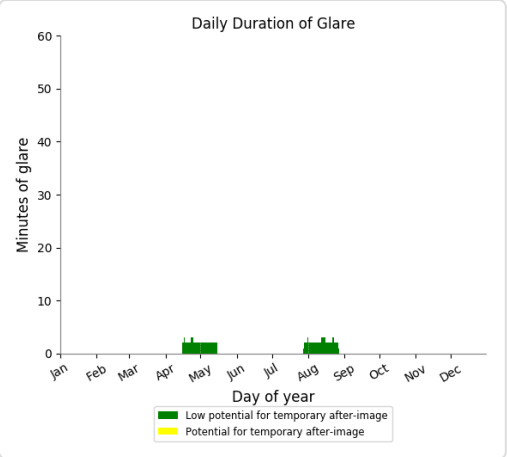




Point Receptor: OP 21

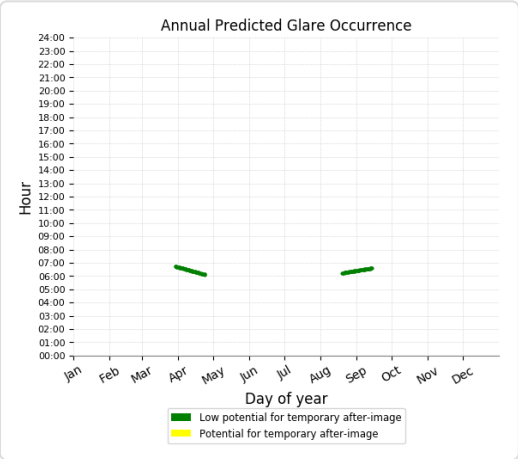
0 minutes of yellow glare
129 minutes of green glare

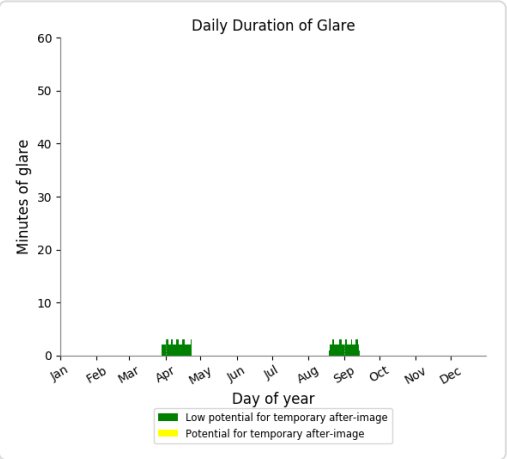




Point Receptor: OP 22

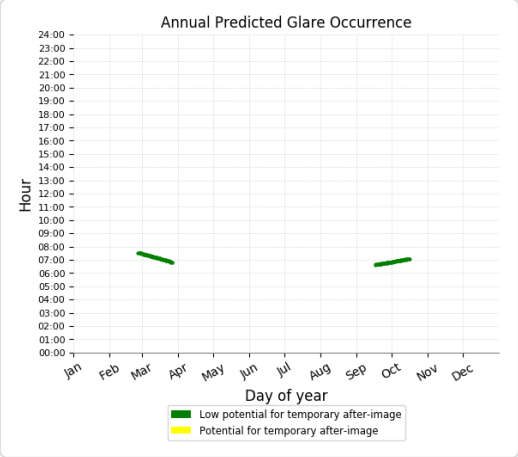
0 minutes of yellow glare
122 minutes of green glare

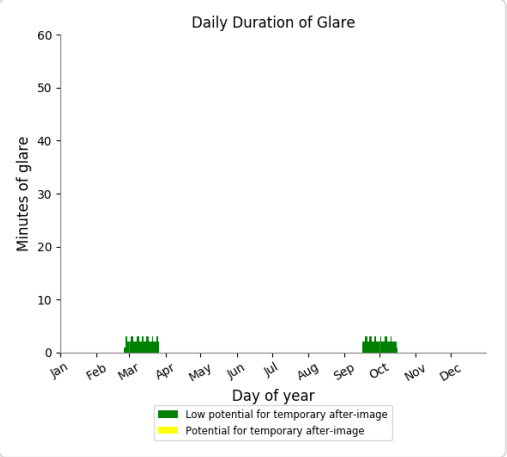




Point Receptor: OP 23

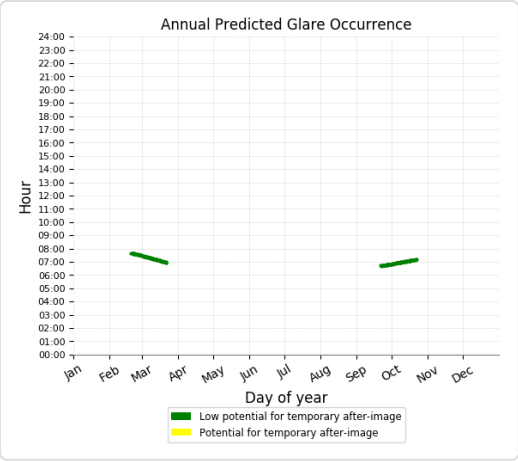
0 minutes of yellow glare
140 minutes of green glare

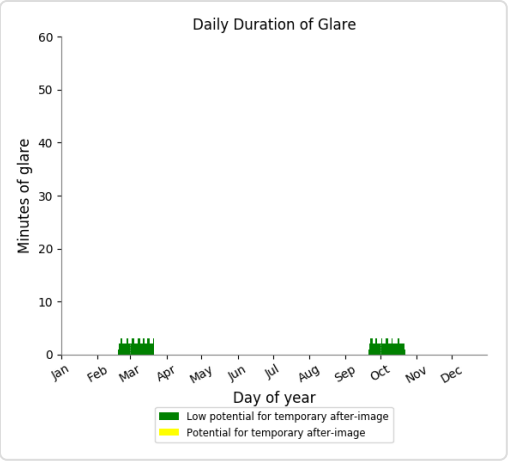




Point Receptor: OP 24

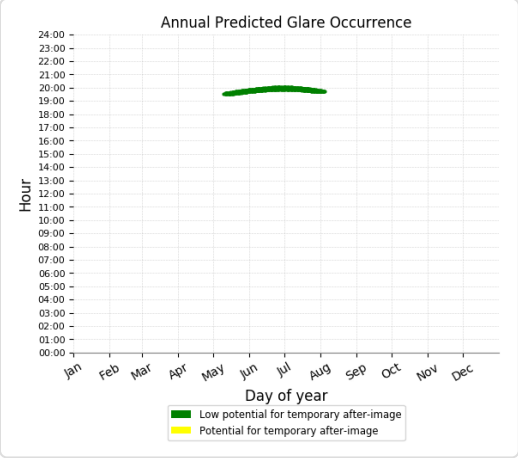
0 minutes of yellow glare
146 minutes of green glare

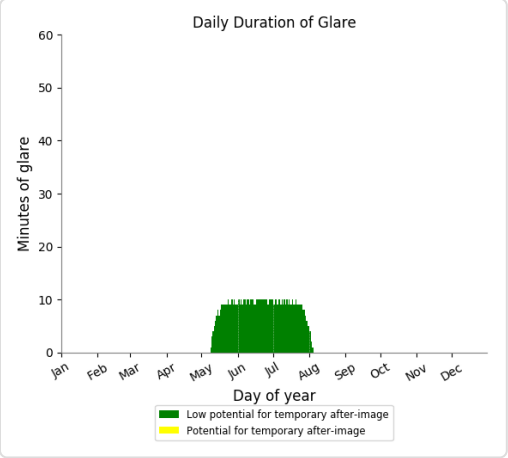




Point Receptor: OP 25

0 minutes of yellow glare
761 minutes of green glare





Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 8c

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	89	0
OP 7	108	15
OP 8	18	103
OP 9	0	131
OP 10	0	138
OP 11	0	158
OP 12	0	150
OP 13	0	148
OP 14	0	142
OP 15	0	139
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	625	0
OP 21	504	0
OP 22	473	0
OP 23	443	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

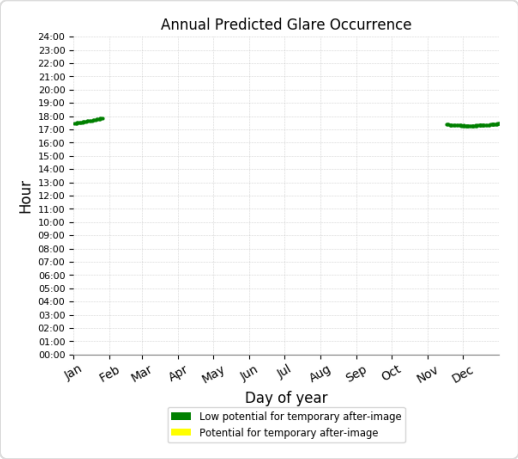
0 minutes of yellow glare
0 minutes of green glare

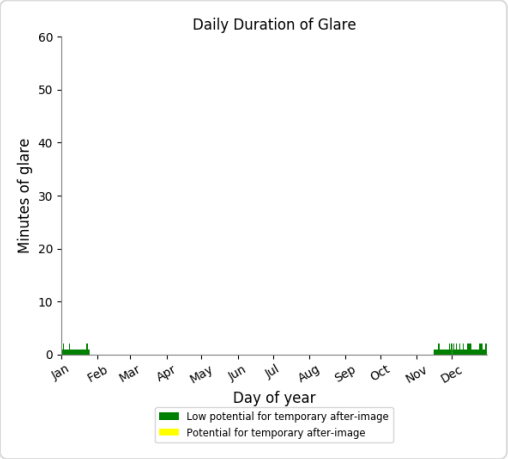
Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

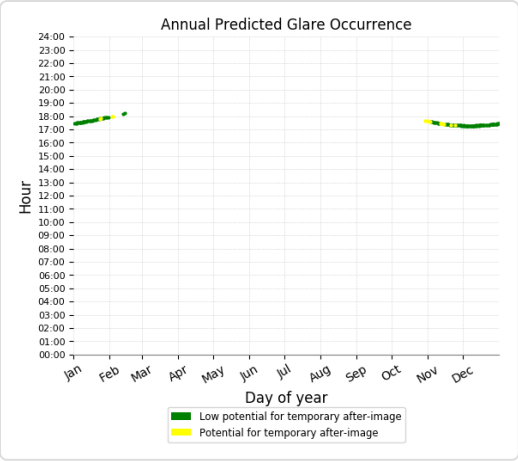
0 minutes of yellow glare
89 minutes of green glare

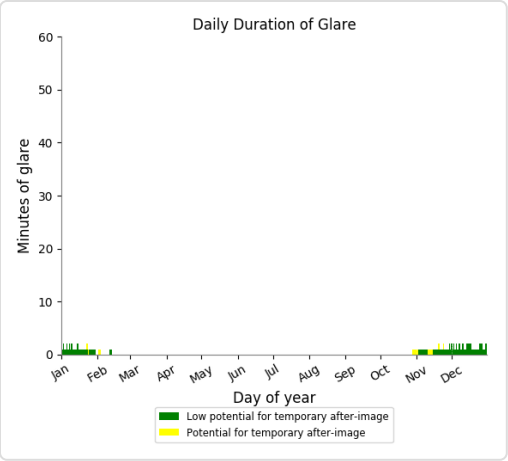




Point Receptor: OP 7

15 minutes of yellow glare
108 minutes of green glare

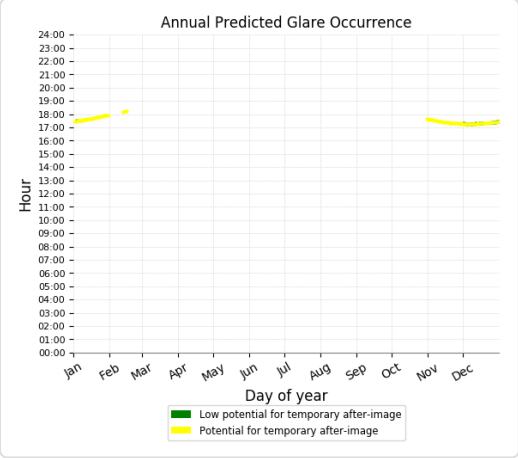


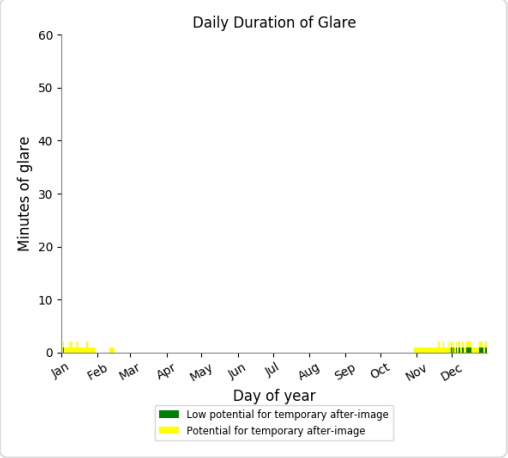


Point Receptor: OP 8

103 minutes of yellow glare

18 minutes of green glare

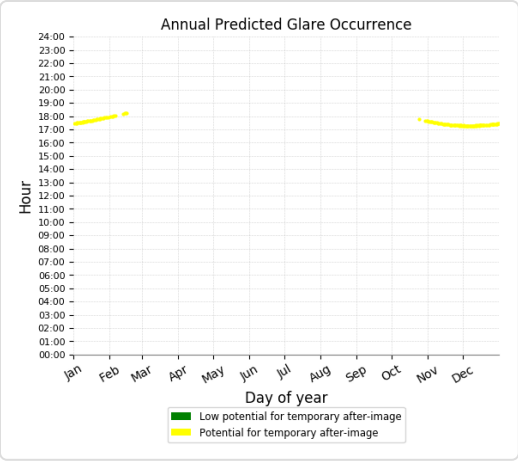


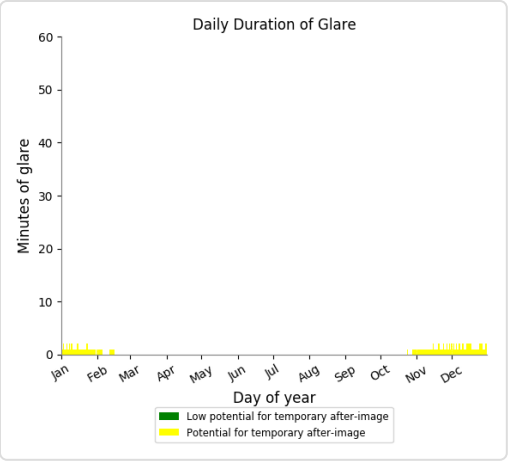


Point Receptor: OP 9

131 minutes of yellow glare

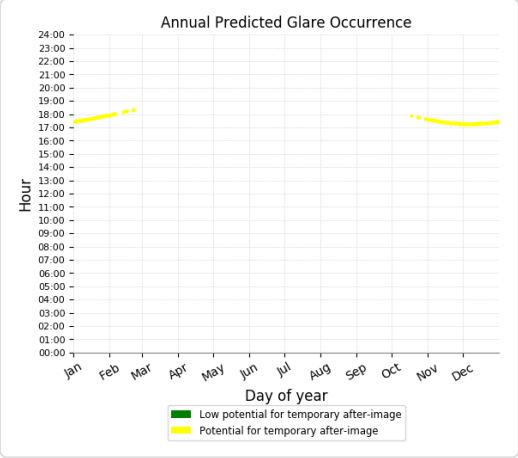
0 minutes of green glare

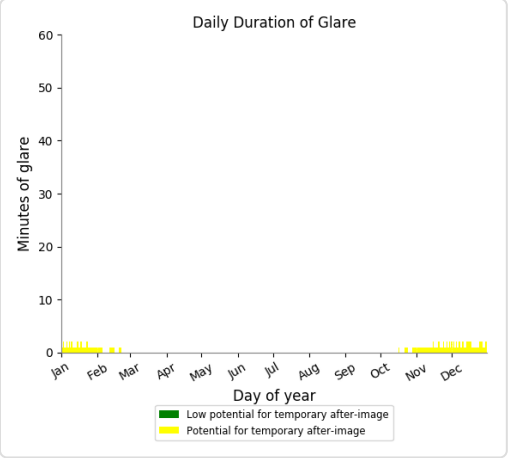




Point Receptor: OP 10

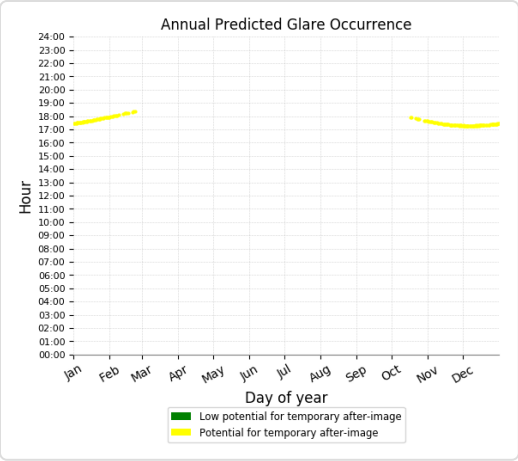
138 minutes of yellow glare
0 minutes of green glare

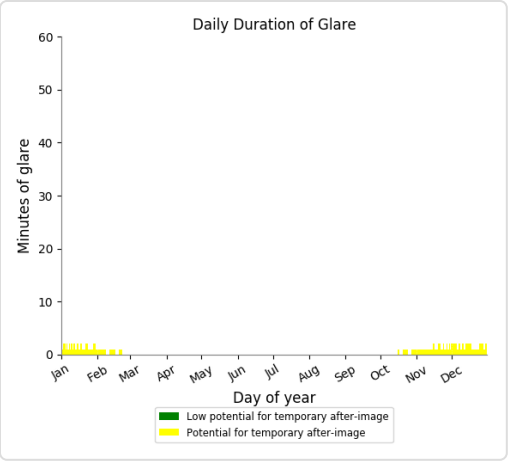




Point Receptor: OP 11

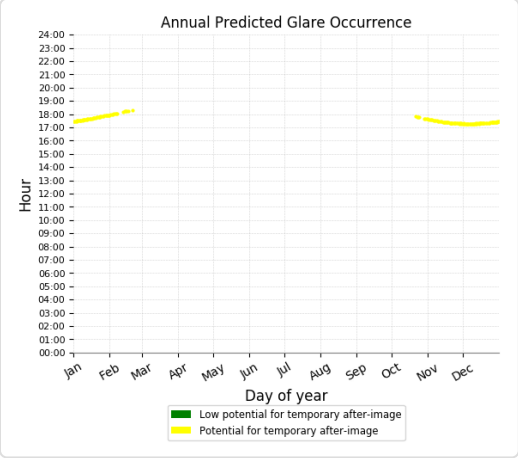
158 minutes of yellow glare
0 minutes of green glare

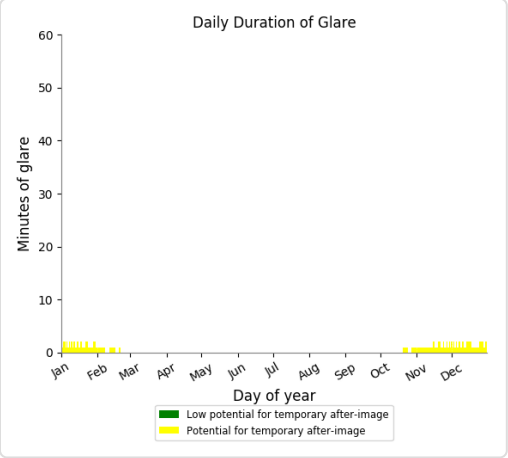




Point Receptor: OP 12

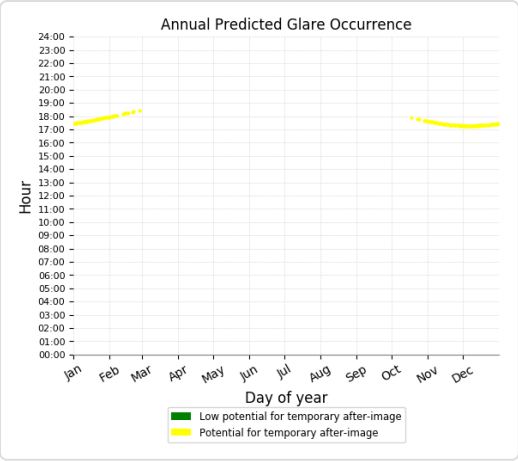
150 minutes of yellow glare
0 minutes of green glare

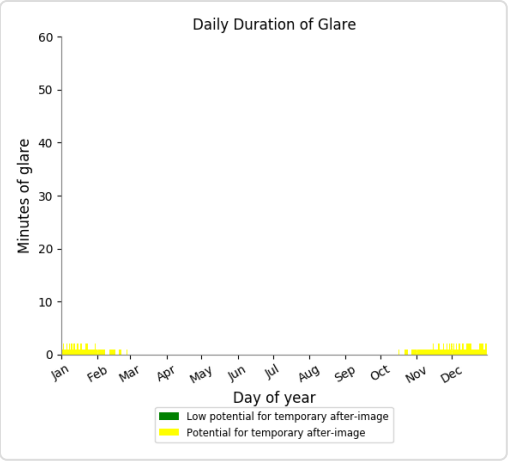




Point Receptor: OP 13

148 minutes of yellow glare
0 minutes of green glare

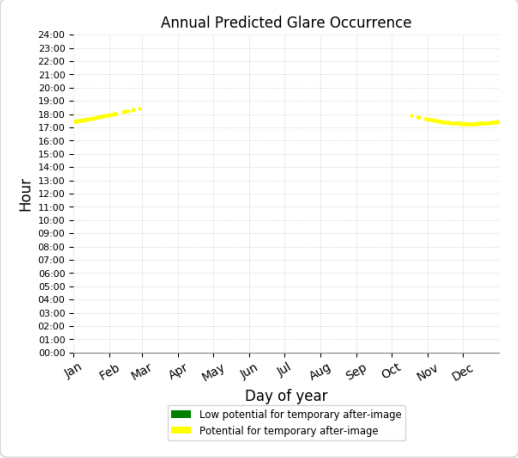


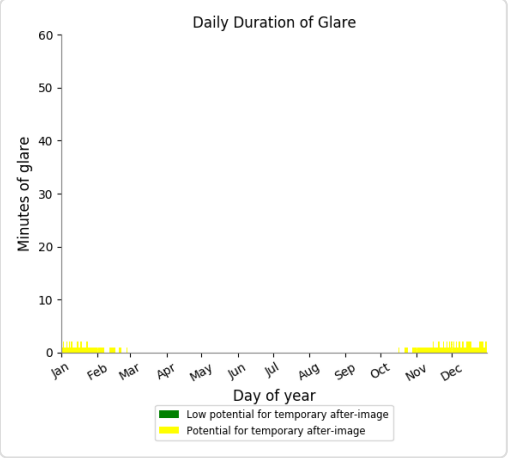


Point Receptor: OP 14

142 minutes of yellow glare

0 minutes of green glare

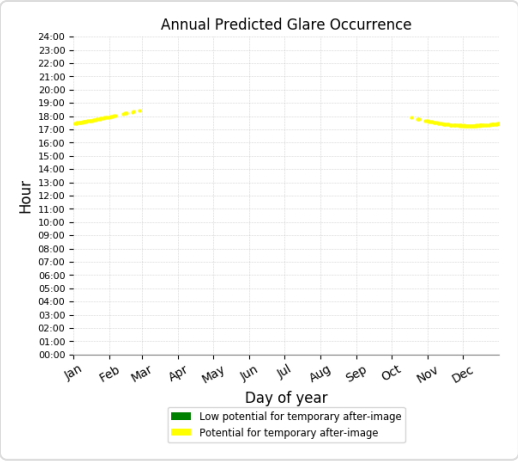


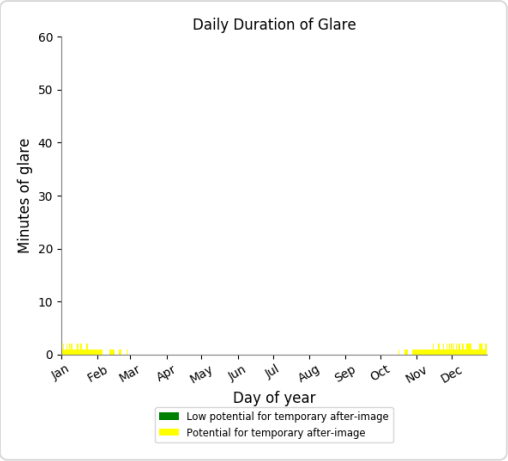


Point Receptor: OP 15

139 minutes of yellow glare

0 minutes of green glare





Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

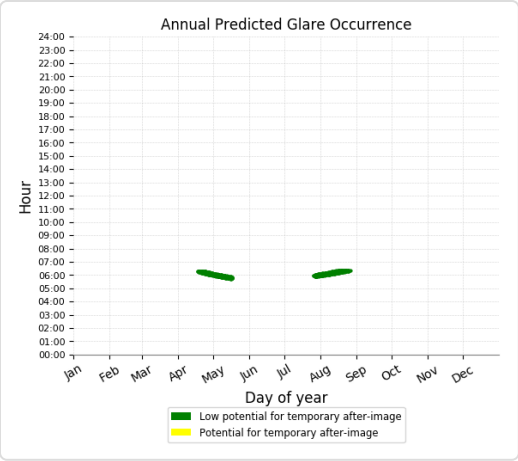
0 minutes of yellow glare
0 minutes of green glare

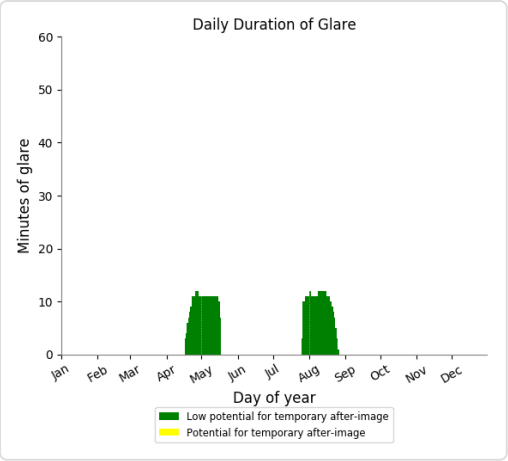
Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

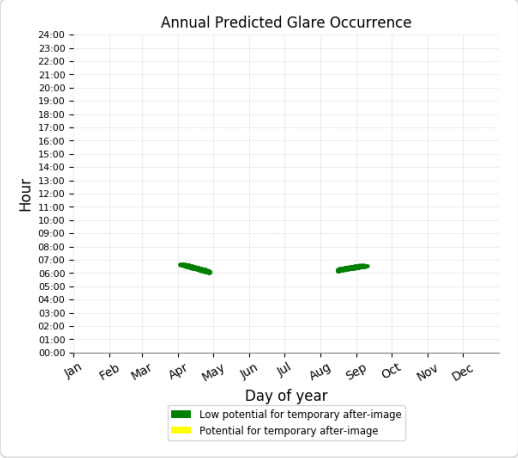
0 minutes of yellow glare
625 minutes of green glare

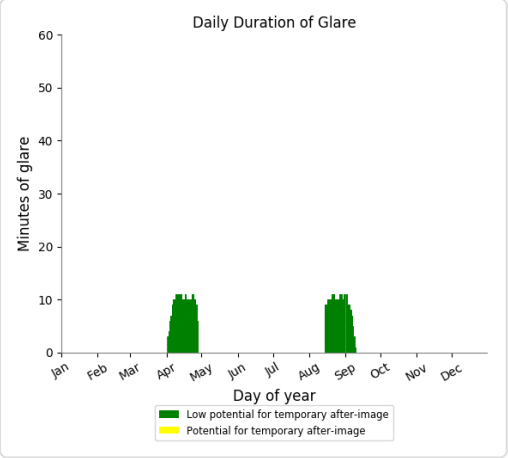




Point Receptor: OP 21

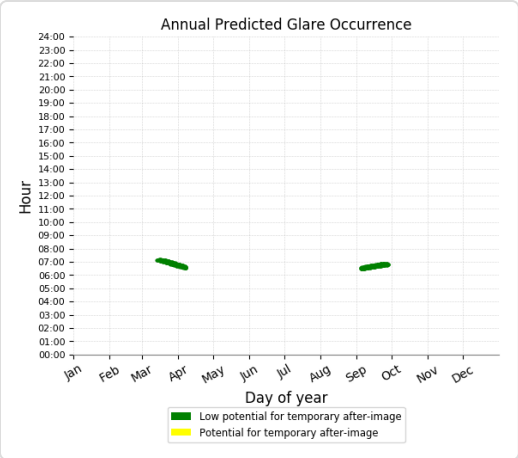
0 minutes of yellow glare
504 minutes of green glare

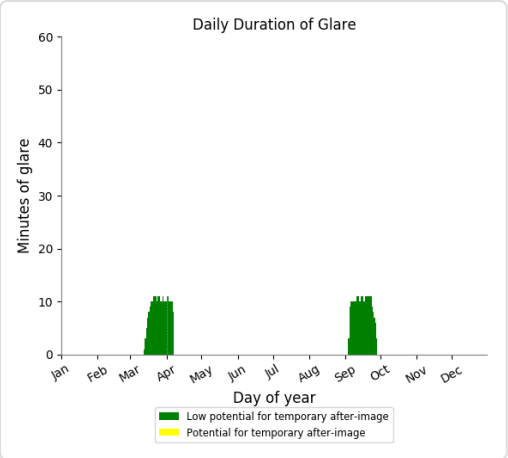




Point Receptor: OP 22

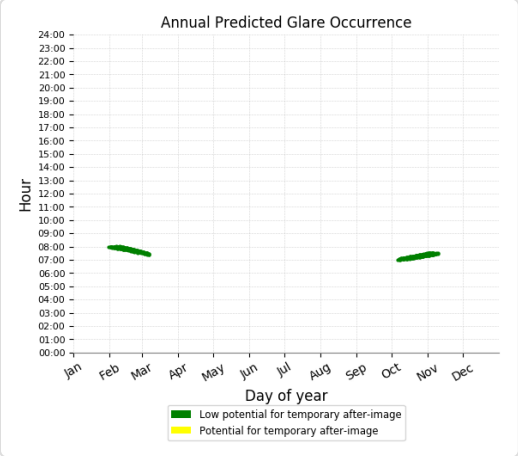
0 minutes of yellow glare
473 minutes of green glare

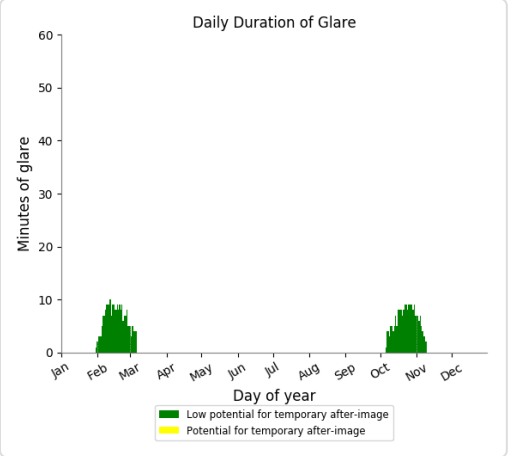




Point Receptor: OP 23

0 minutes of yellow glare
443 minutes of green glare





Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 9

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	2
OP 10	0	25
OP 11	0	63
OP 12	0	36
OP 13	0	53
OP 14	0	72
OP 15	0	116
OP 16	131	14
OP 17	119	0
OP 18	110	0
OP 19	86	0
OP 20	50	0
OP 21	39	0
OP 22	23	0
OP 23	7	0
OP 24	3	0
OP 25	446	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

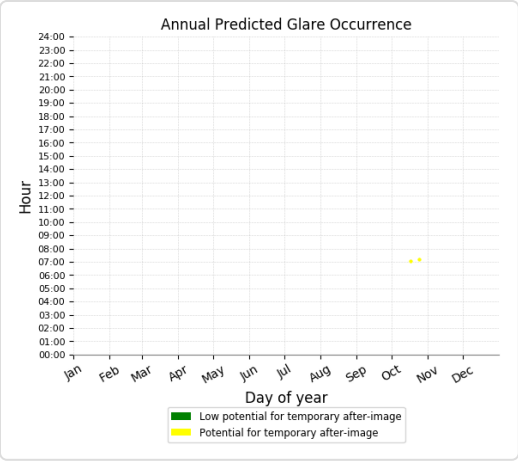
0 minutes of yellow glare
0 minutes of green glare

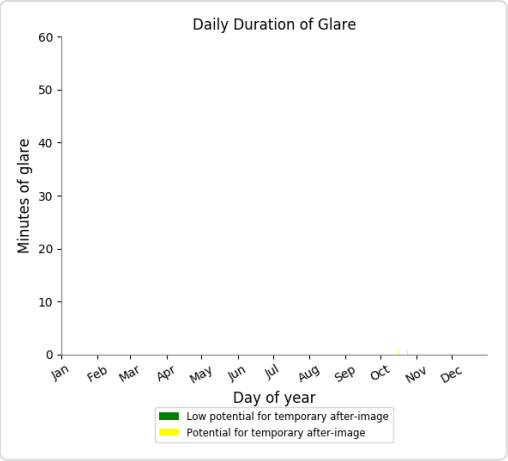
Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

2 minutes of yellow glare
0 minutes of green glare

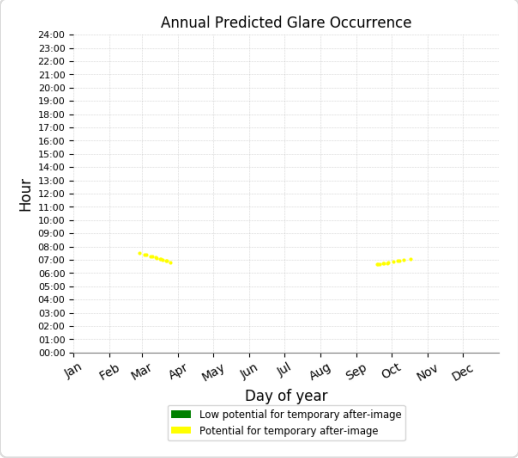


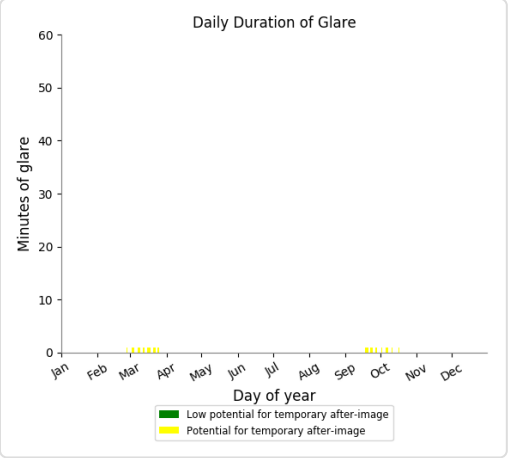


Point Receptor: OP 10

25 minutes of yellow glare

0 minutes of green glare

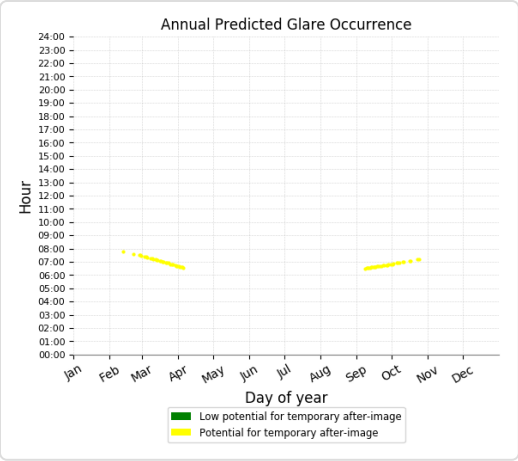


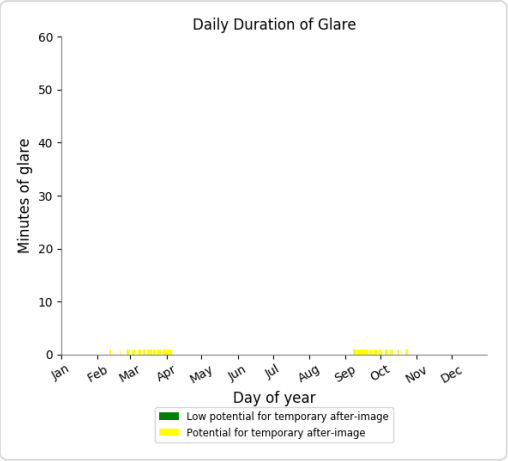


Point Receptor: OP 11

63 minutes of yellow glare

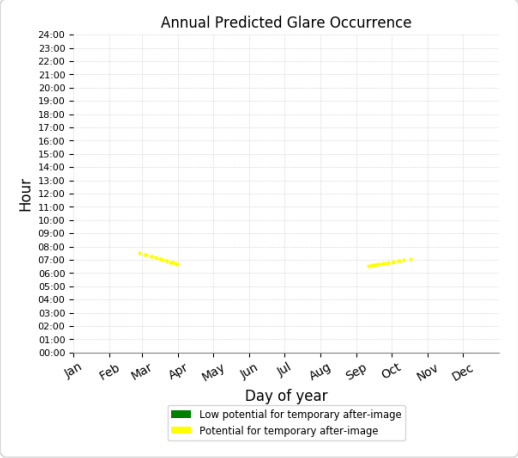
0 minutes of green glare

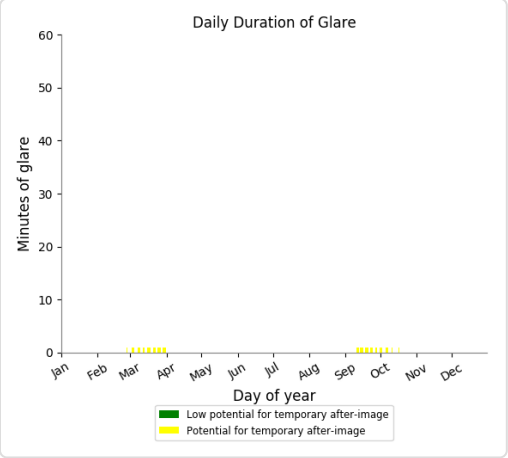




Point Receptor: OP 12

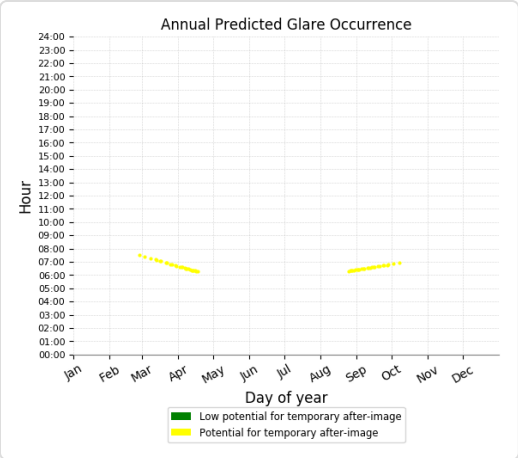
36 minutes of yellow glare
0 minutes of green glare

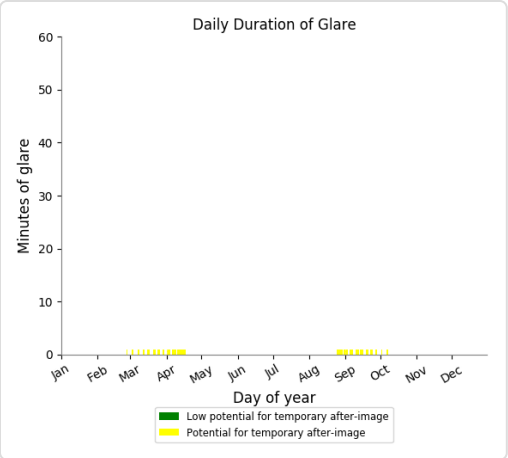




Point Receptor: OP 13

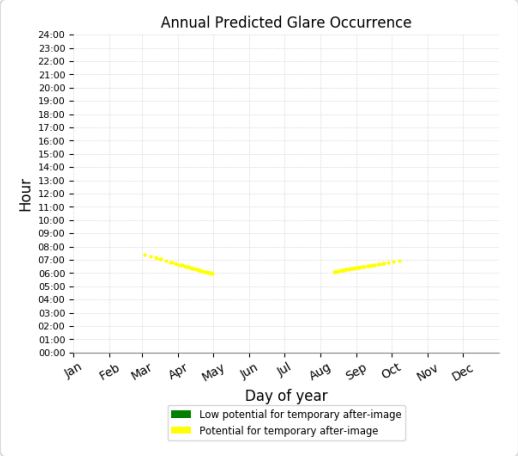
53 minutes of yellow glare
0 minutes of green glare

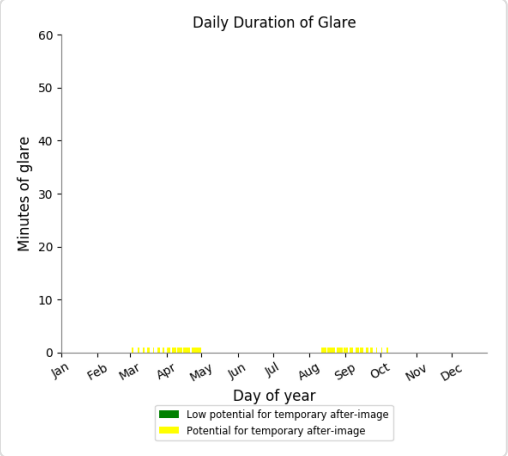




Point Receptor: OP 14

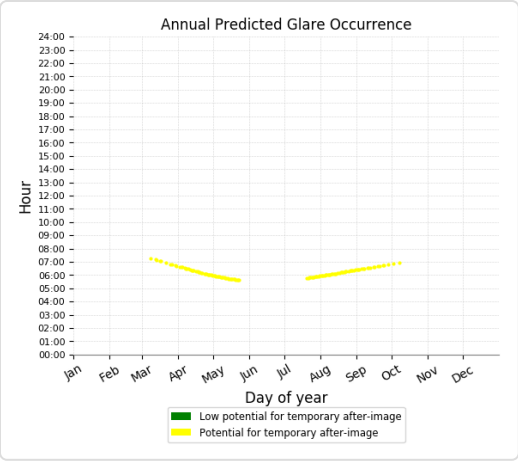
72 minutes of yellow glare
0 minutes of green glare

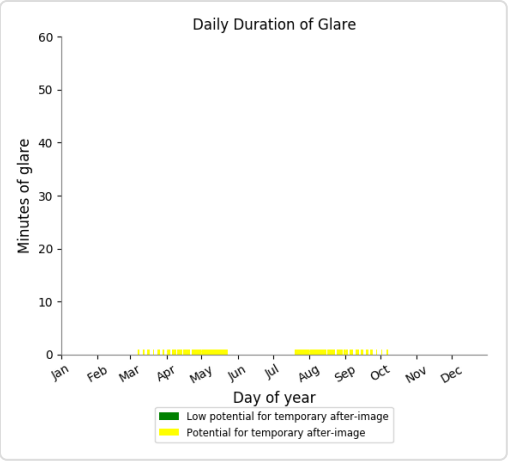




Point Receptor: OP 15

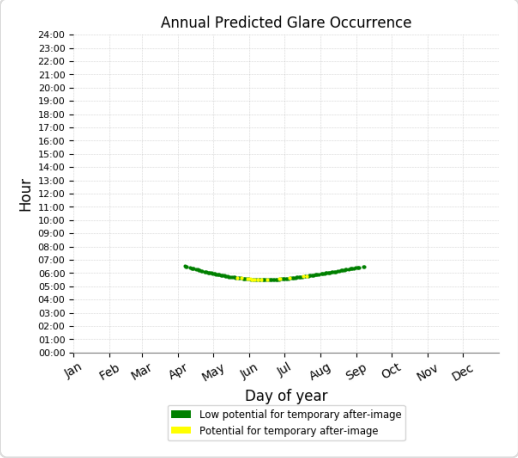
116 minutes of yellow glare
0 minutes of green glare

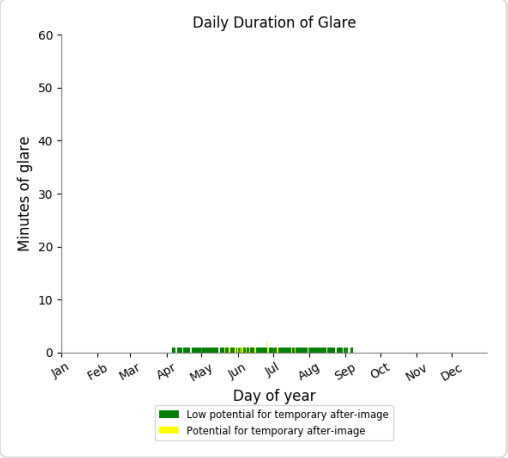




Point Receptor: OP 16

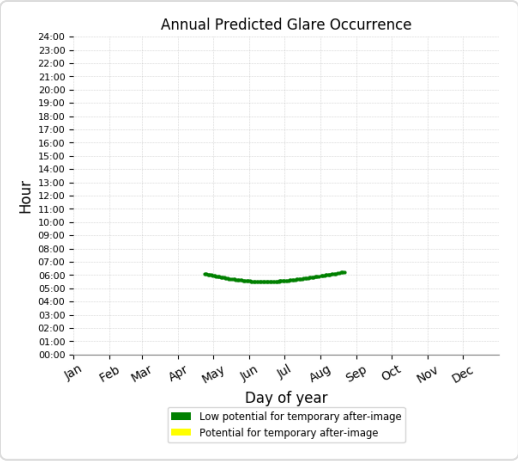
14 minutes of yellow glare
131 minutes of green glare

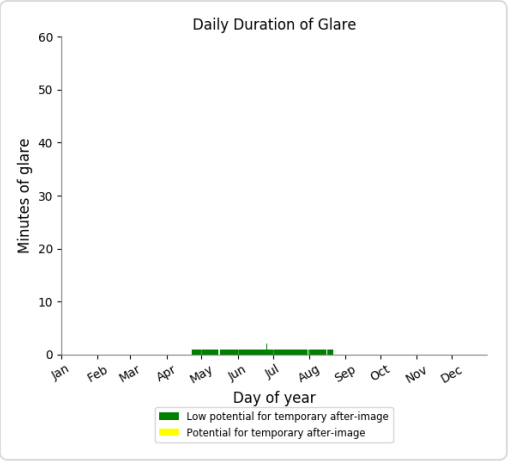




Point Receptor: OP 17

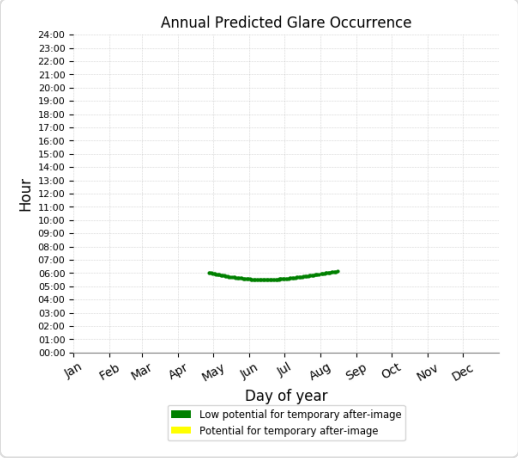
0 minutes of yellow glare
119 minutes of green glare

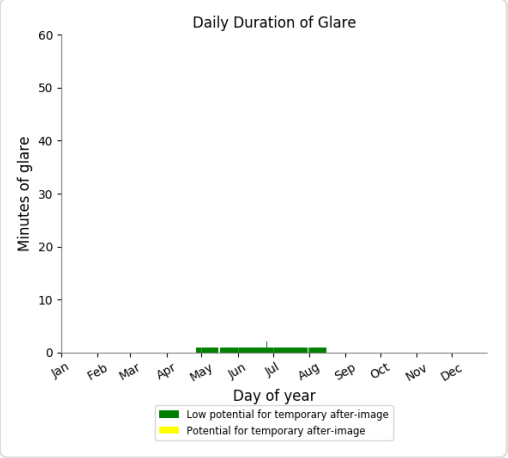




Point Receptor: OP 18

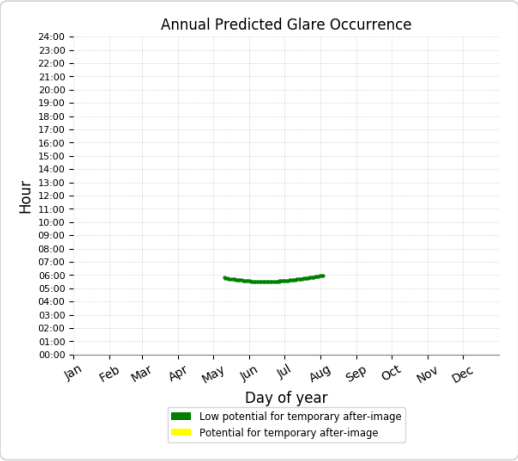
0 minutes of yellow glare
110 minutes of green glare

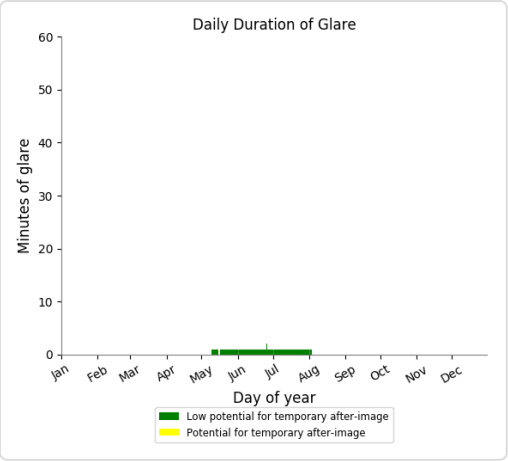




Point Receptor: OP 19

0 minutes of yellow glare
86 minutes of green glare

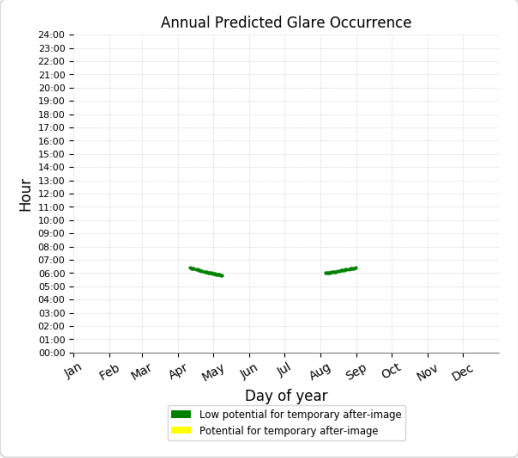


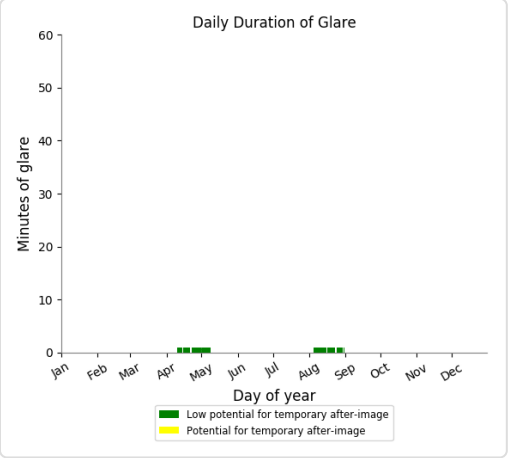


Point Receptor: OP 20

0 minutes of yellow glare

50 minutes of green glare

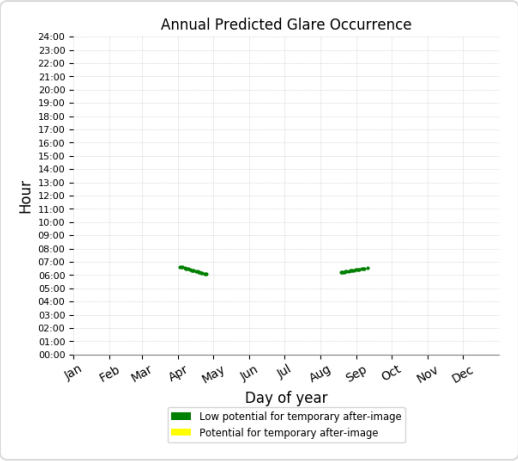


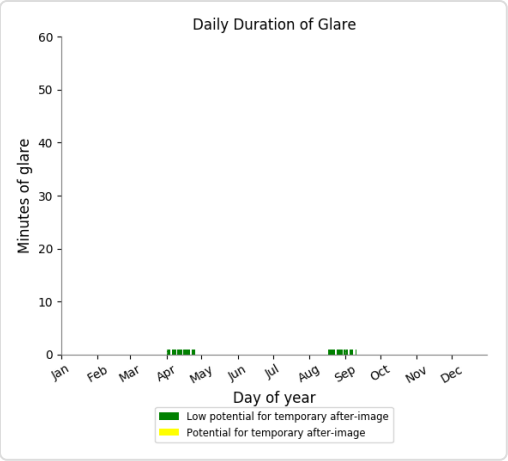


Point Receptor: OP 21

0 minutes of yellow glare

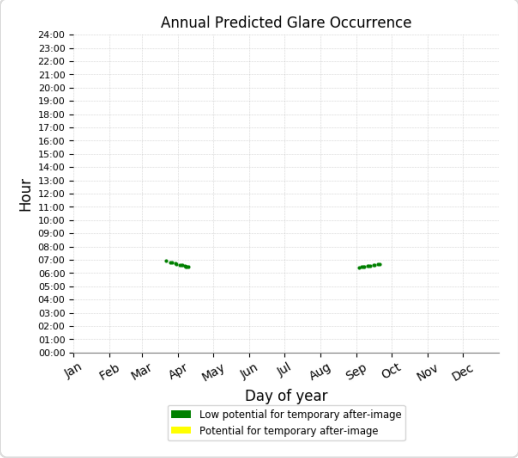
39 minutes of green glare

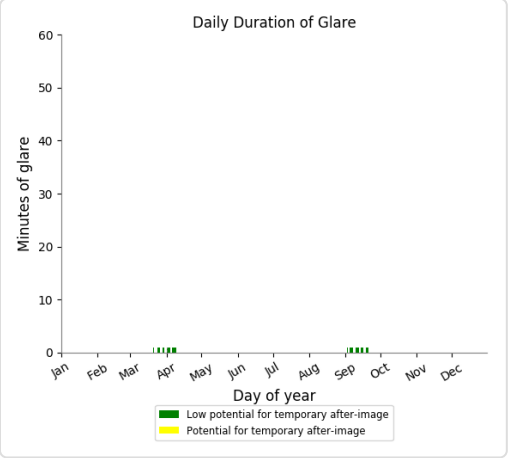




Point Receptor: OP 22

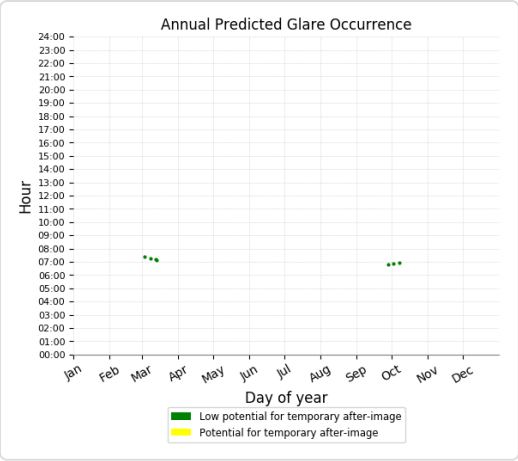
0 minutes of yellow glare
23 minutes of green glare

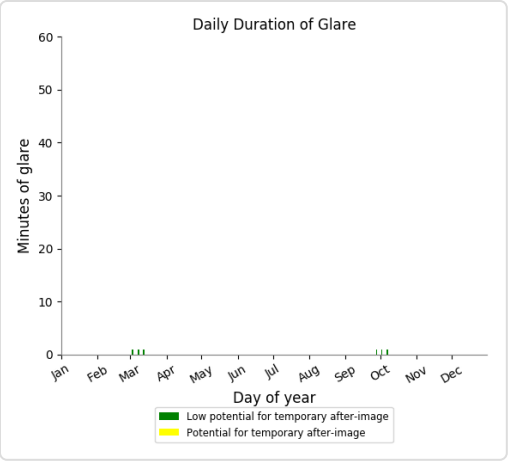




Point Receptor: OP 23

0 minutes of yellow glare
7 minutes of green glare

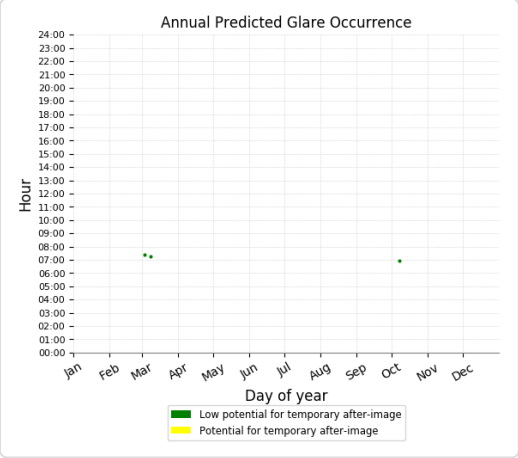


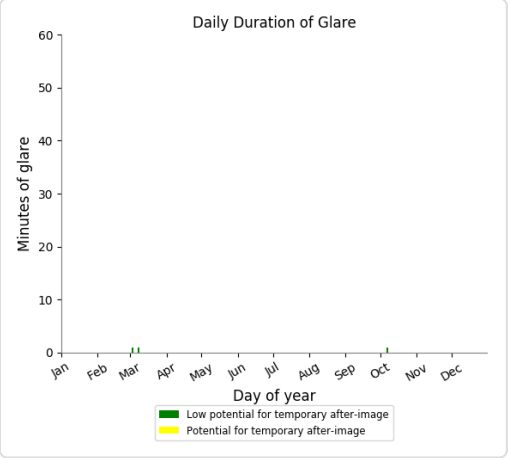


Point Receptor: OP 24

0 minutes of yellow glare

3 minutes of green glare

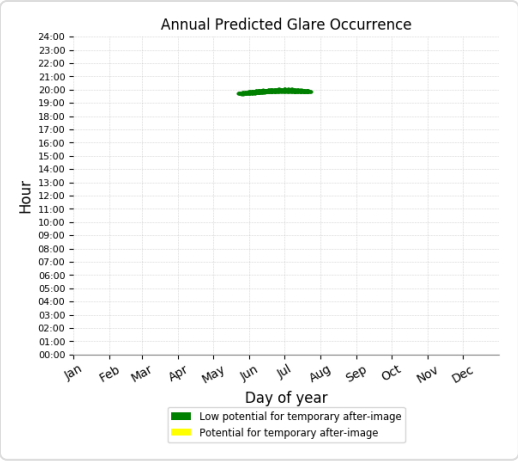


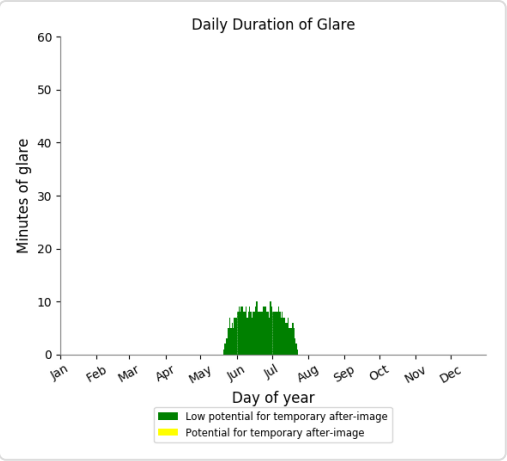


Point Receptor: OP 25

0 minutes of yellow glare

446 minutes of green glare





Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual results and glare occurrence may differ.
Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
Refer to the Help page at **www.forgesolar.com/help/** for assumptions and limitations not listed here.

FORGESOLAR GLARE ANALYSIS

Project: **Rhudes Creek Solar**
Proposed utility-scale project in Hardin County, Kentucky

Site configuration: **Rhudes Creek_v3_Arrays 12-15_Roads_0 deg**
Analysis conducted by Alan Plumeau (aplumeau@trccompanies.com) at 02:58 on 05 Jul, 2021.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
2-mile flight path(s)	N/A	No flight paths analyzed
ATCT(s)	N/A	No ATCT receptors designated

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63276 can be read at https://www.federalregister.gov/d/2013-24729

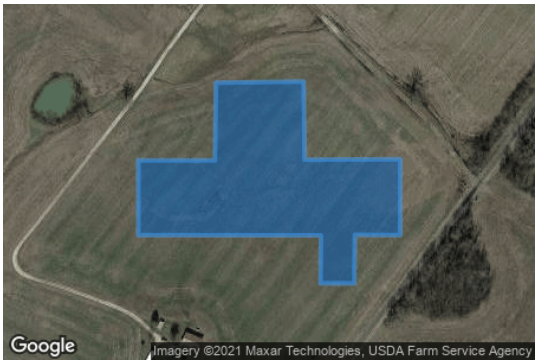
SITE CONFIGURATION

Analysis Parameters

DNI: peaks at 1,000.0 W/m^2
Time interval: 1 min
Ocular transmission coefficient: 0.5
Pupil diameter: 0.002 m
Eye focal length: 0.017 m
Sun subtended angle: 9.3 mrad
Site Config ID: 56034.9913

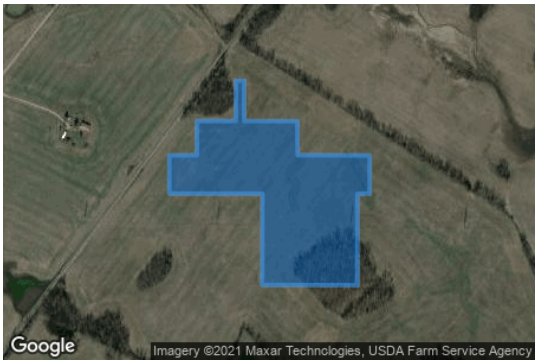
PV Array(s)

Name: PV array 12
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.650986	-85.973350	717.77	9.00	726.77
2	37.650986	-85.972655	711.80	9.00	720.80
3	37.651542	-85.972645	709.43	9.00	718.43
4	37.651550	-85.971849	712.81	9.00	721.81
5	37.650990	-85.971840	707.65	9.00	716.65
6	37.650994	-85.970972	701.93	9.00	710.93
7	37.650450	-85.970973	705.36	9.00	714.36
8	37.650452	-85.971384	705.82	9.00	714.82
9	37.650104	-85.971390	708.30	9.00	717.30
10	37.650104	-85.971697	715.34	9.00	724.34
11	37.650448	-85.971692	708.14	9.00	717.14
12	37.650450	-85.973350	716.84	9.00	725.84

Name: PV array 13
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

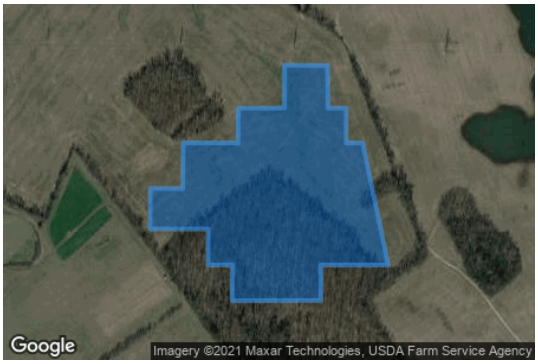


Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.649780	-85.970841	704.60	9.00	713.60
2	37.649780	-85.970134	713.78	9.00	722.78
3	37.650356	-85.970130	709.15	9.00	718.15
4	37.650357	-85.969981	707.45	9.00	716.45
5	37.649778	-85.969981	712.84	9.00	721.84
6	37.649779	-85.969014	700.69	9.00	709.69
7	37.649292	-85.969010	701.28	9.00	710.28
8	37.649287	-85.967703	701.67	9.00	710.68
9	37.648741	-85.967701	712.46	9.00	721.46
10	37.648736	-85.967925	713.59	9.00	722.59
11	37.647426	-85.967924	724.56	9.00	733.56
12	37.647432	-85.969654	711.92	9.00	720.92
13	37.648739	-85.969650	712.38	9.00	721.38
14	37.648738	-85.971338	699.43	9.00	708.43
15	37.649290	-85.971339	700.95	9.00	709.95
16	37.649289	-85.970839	700.28	9.00	709.28

Name: PV array 14
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.647956	-85.971992	696.76	9.00	705.76
2	37.647960	-85.971178	707.11	9.00	716.11
3	37.647308	-85.971180	717.10	9.00	726.11
4	37.647310	-85.970641	708.90	9.00	717.90
5	37.646626	-85.970640	712.39	9.00	721.39
6	37.646628	-85.971326	709.87	9.00	718.88
7	37.646983	-85.971330	720.18	9.00	729.18
8	37.646980	-85.971995	716.77	9.00	725.77

Name: PV array 15
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.646250	-85.968592	704.23	9.00	713.23
2	37.646248	-85.968006	711.61	9.00	720.61
3	37.646903	-85.967997	700.50	9.00	709.50
4	37.646901	-85.967003	707.61	9.00	716.61
5	37.647397	-85.966997	707.69	9.00	716.70
6	37.647401	-85.966157	695.25	9.00	704.25
7	37.648014	-85.966159	696.30	9.00	705.30
8	37.648009	-85.965375	692.83	9.00	701.83
9	37.647400	-85.965370	698.87	9.00	707.87
10	37.647399	-85.965039	696.35	9.00	705.35
11	37.646900	-85.965040	700.74	9.00	709.74
12	37.646901	-85.964741	698.63	9.00	707.63
13	37.645151	-85.964275	722.57	9.00	731.58
14	37.645151	-85.965497	752.08	9.00	761.08
15	37.644645	-85.965500	763.40	9.00	772.40
16	37.644640	-85.967108	729.99	9.00	738.99
17	37.645151	-85.967107	737.02	9.00	746.02
18	37.645152	-85.967547	731.48	9.00	740.48
19	37.645668	-85.967549	725.34	9.00	734.34
20	37.645670	-85.968600	708.47	9.00	717.47
21	37.645670	-85.968600	708.47	9.00	717.47
22	37.645670	-85.968600	708.47	9.00	717.47

Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	37.665796	-86.003591	712.10	5.00
OP 2	2	37.663086	-85.997117	710.47	5.00
OP 3	3	37.663783	-85.992311	712.81	5.00
OP 4	4	37.663341	-85.984243	730.37	5.00
OP 5	5	37.663970	-85.975316	719.72	5.00
OP 6	6	37.658950	-85.975245	714.89	5.00
OP 7	7	37.657659	-85.975953	733.77	5.00
OP 8	8	37.657166	-85.977316	727.49	5.00
OP 9	9	37.656886	-85.978131	739.19	5.00
OP 10	10	37.656334	-85.979000	738.92	5.00
OP 11	11	37.656096	-85.979526	747.83	5.00
OP 12	12	37.656164	-85.980470	744.93	5.00
OP 13	13	37.655548	-85.981407	738.80	5.00
OP 14	14	37.654894	-85.982405	731.49	5.00
OP 15	15	37.654147	-85.982469	724.53	5.00
OP 16	16	37.651743	-85.985881	701.72	5.00
OP 17	17	37.649398	-85.989228	703.88	5.00
OP 18	18	37.647793	-85.992812	689.53	5.00
OP 19	19	37.643227	-86.001173	705.25	5.00
OP 20	20	37.647016	-86.010443	732.49	5.00
OP 21	21	37.649330	-86.012467	722.89	5.00
OP 22	22	37.652941	-86.015460	733.92	5.00
OP 23	23	37.659804	-86.013475	719.49	5.00
OP 24	24	37.660874	-86.012874	712.82	5.00
OP 25	25	37.645045	-85.954316	691.77	5.00
OP 26	26	37.638962	-85.961226	694.20	5.00
OP 27	27	37.632607	-85.972727	674.04	5.00
OP 28	28	37.628596	-85.983198	677.47	5.00

GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
PV array 12	SA tracking	SA tracking	1,938	0	-
PV array 13	SA tracking	SA tracking	3,668	1,701	-
PV array 14	SA tracking	SA tracking	357	0	-
PV array 15	SA tracking	SA tracking	6,344	1,676	-

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
OP 1	1265	0
OP 2	1196	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	828	934
OP 14	1392	1093
OP 15	1514	1247
OP 16	875	99
OP 17	693	2
OP 18	111	0
OP 19	107	0
OP 20	442	0
OP 21	436	0
OP 22	740	0

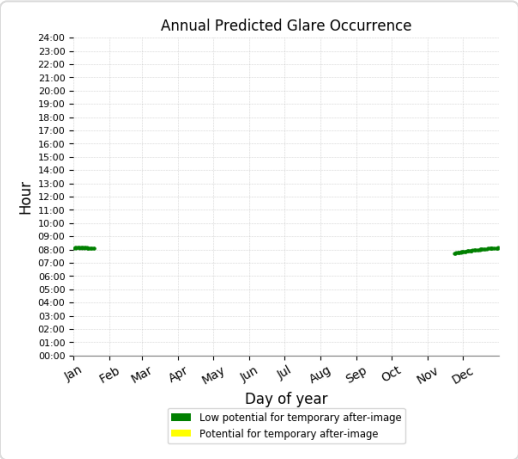
Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
OP 23	857	0
OP 24	900	0
OP 25	951	2
OP 26	0	0
OP 27	0	0
OP 28	0	0

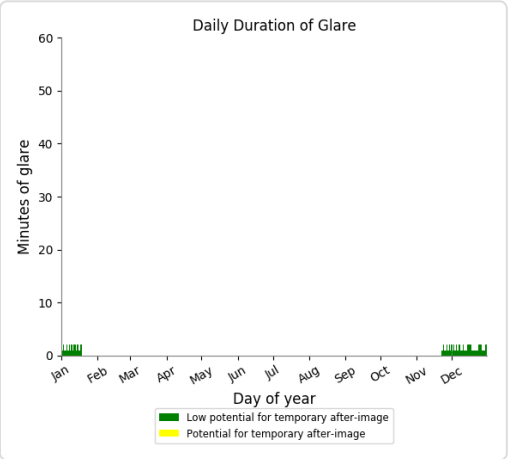
Results for: PV array 12

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	82	0
OP 2	77	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	110	0
OP 14	168	0
OP 15	162	0
OP 16	106	0
OP 17	104	0
OP 18	101	0
OP 19	107	0
OP 20	75	0
OP 21	68	0
OP 22	65	0
OP 23	65	0
OP 24	64	0
OP 25	584	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

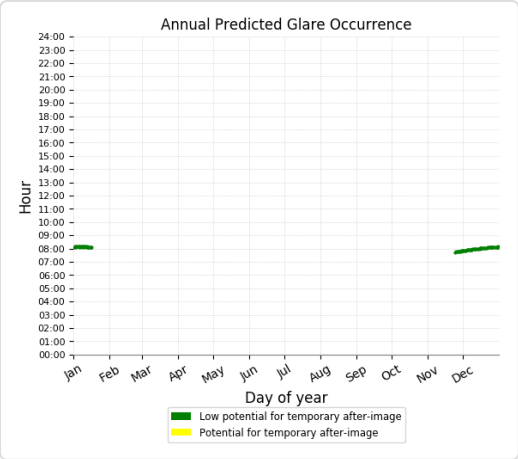
0 minutes of yellow glare
82 minutes of green glare

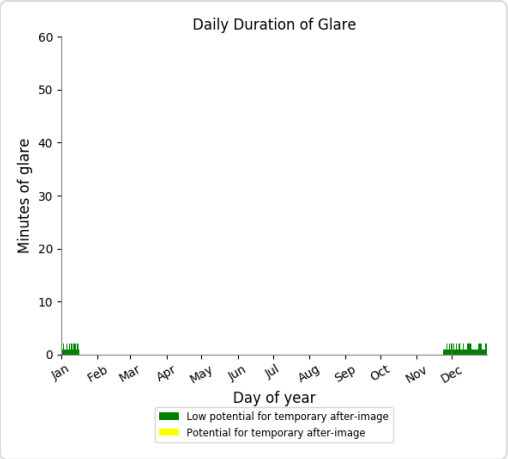




Point Receptor: OP 2

0 minutes of yellow glare
77 minutes of green glare





Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

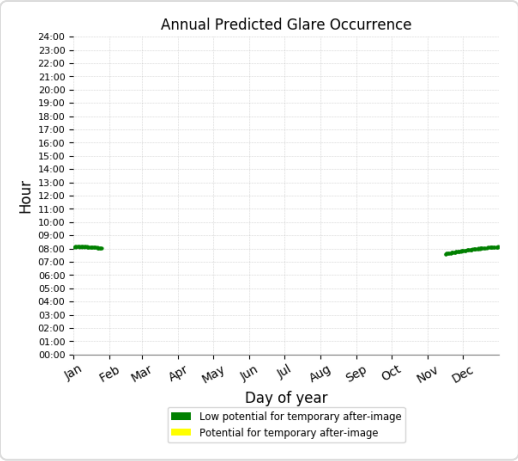
0 minutes of yellow glare
0 minutes of green glare

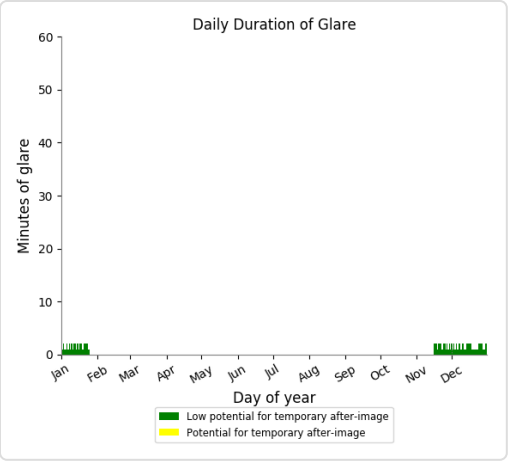
Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
110 minutes of green glare

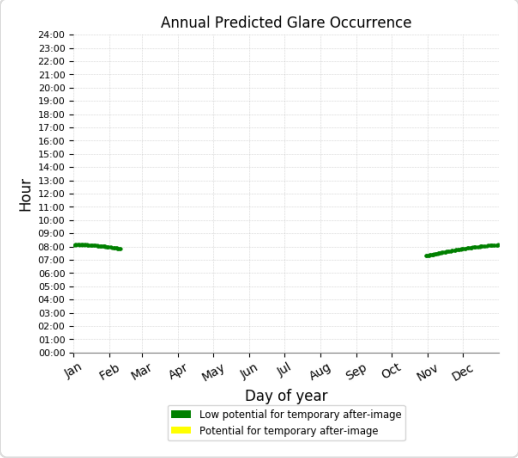


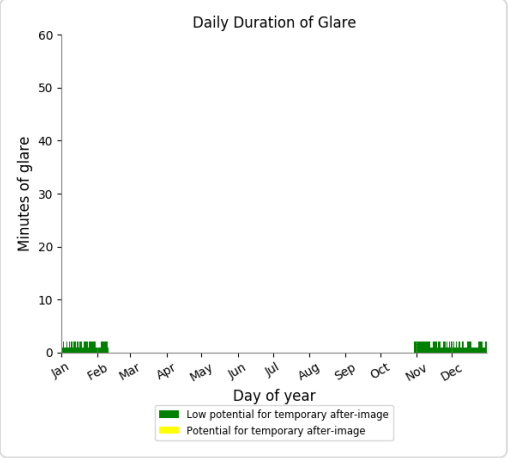


Point Receptor: OP 14

0 minutes of yellow glare

168 minutes of green glare

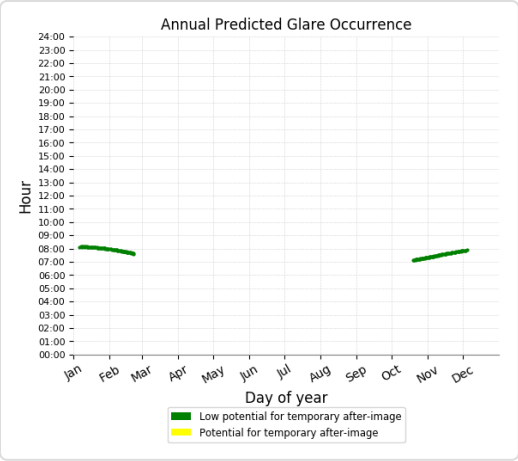


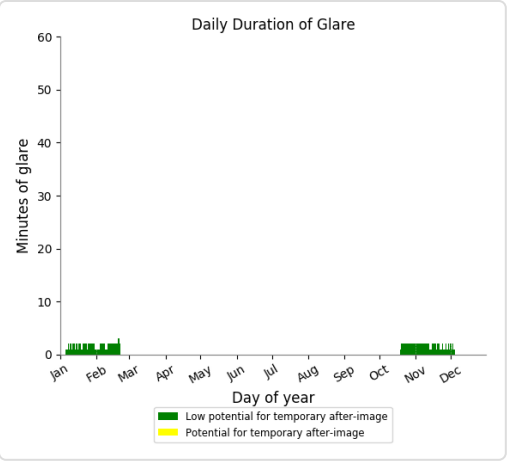


Point Receptor: OP 15

0 minutes of yellow glare

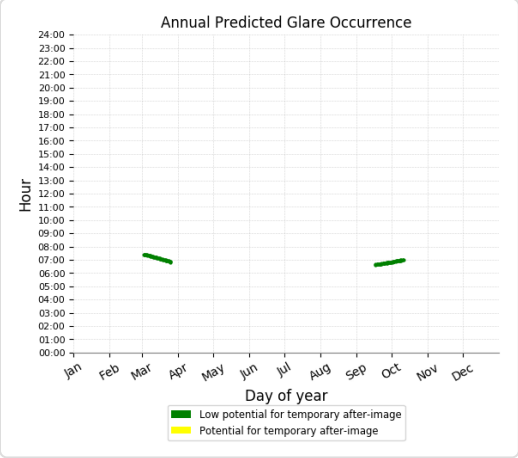
162 minutes of green glare

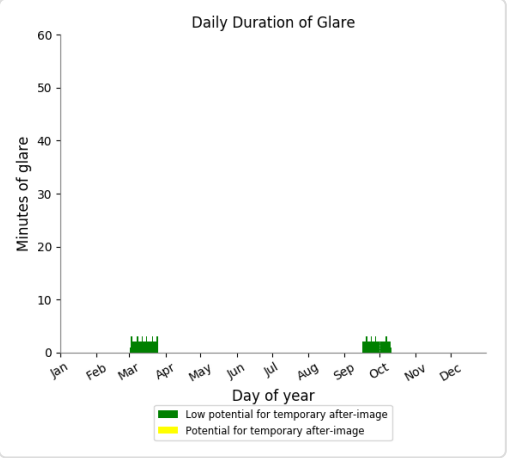




Point Receptor: OP 16

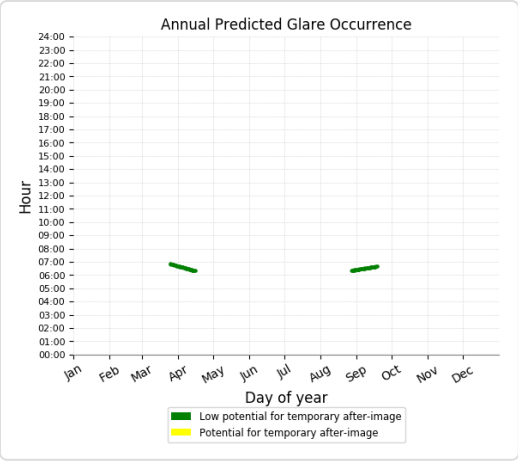
0 minutes of yellow glare
106 minutes of green glare

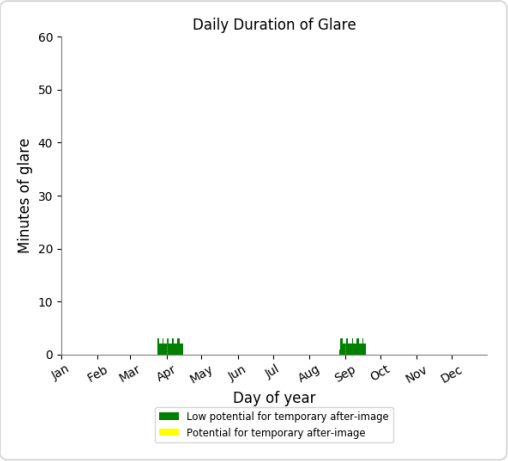




Point Receptor: OP 17

0 minutes of yellow glare
104 minutes of green glare

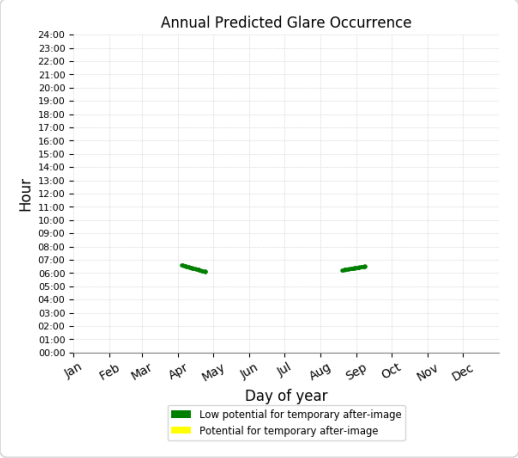


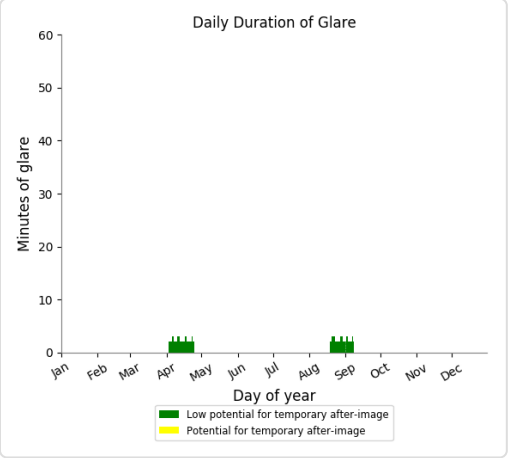


Point Receptor: OP 18

0 minutes of yellow glare

101 minutes of green glare

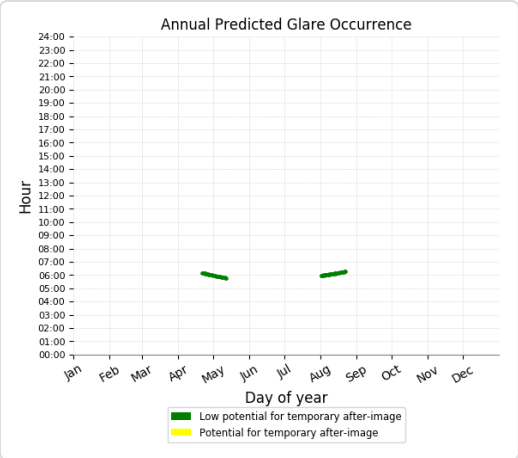


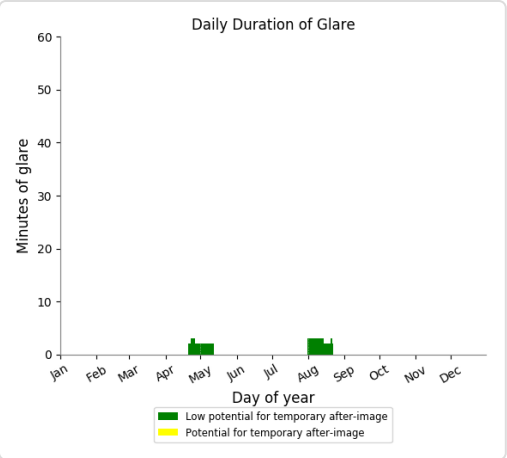


Point Receptor: OP 19

0 minutes of yellow glare

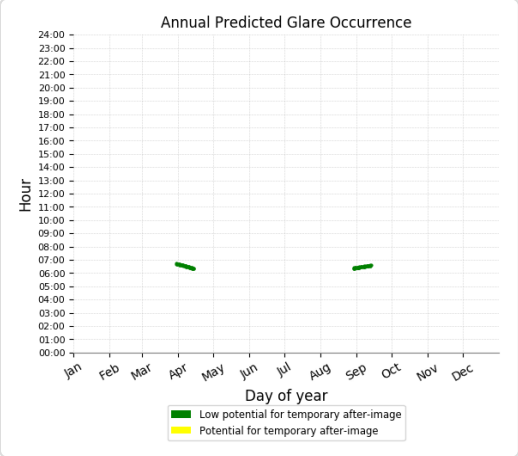
107 minutes of green glare

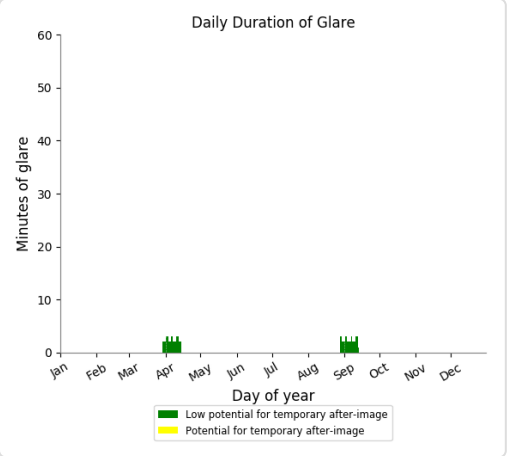




Point Receptor: OP 20

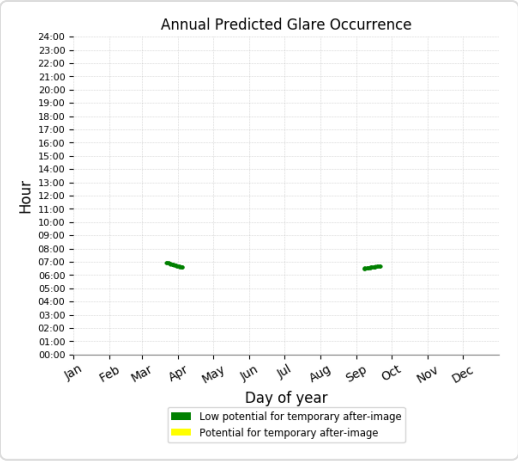
0 minutes of yellow glare
75 minutes of green glare

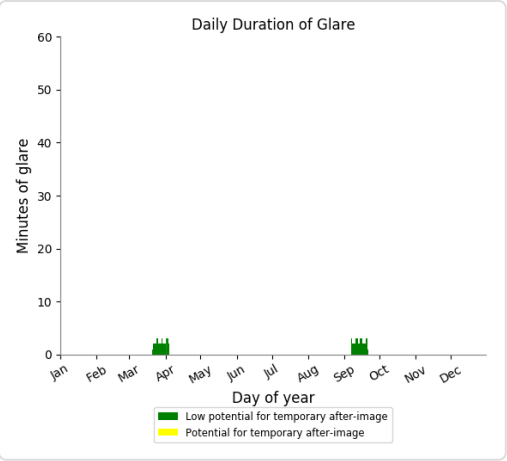




Point Receptor: OP 21

0 minutes of yellow glare
68 minutes of green glare

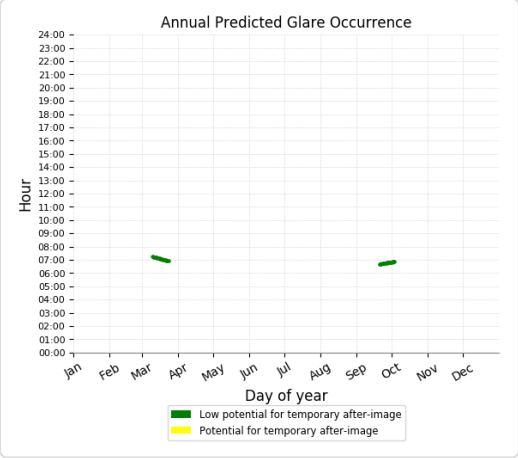


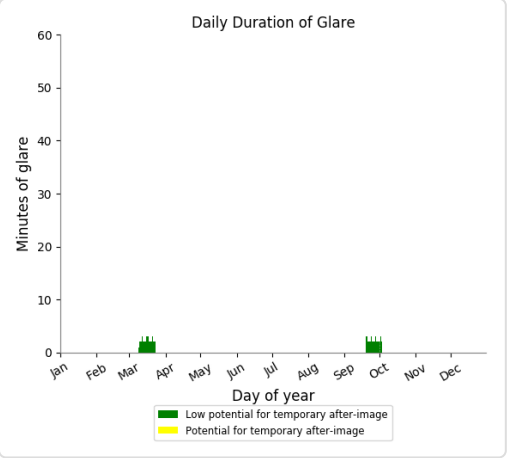


Point Receptor: OP 22

0 minutes of yellow glare

65 minutes of green glare

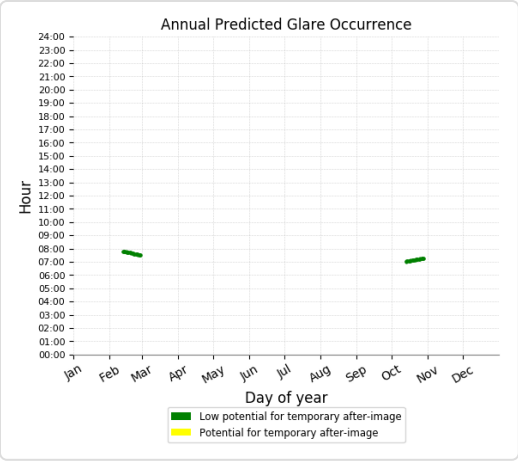


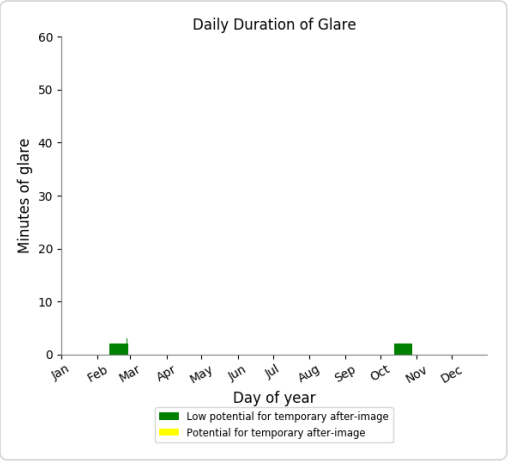


Point Receptor: OP 23

0 minutes of yellow glare

65 minutes of green glare

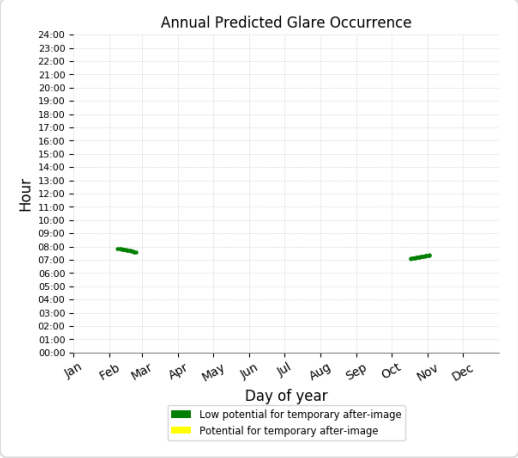


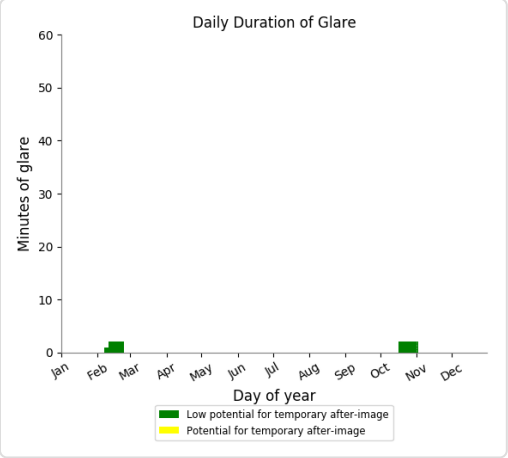


Point Receptor: OP 24

0 minutes of yellow glare

64 minutes of green glare

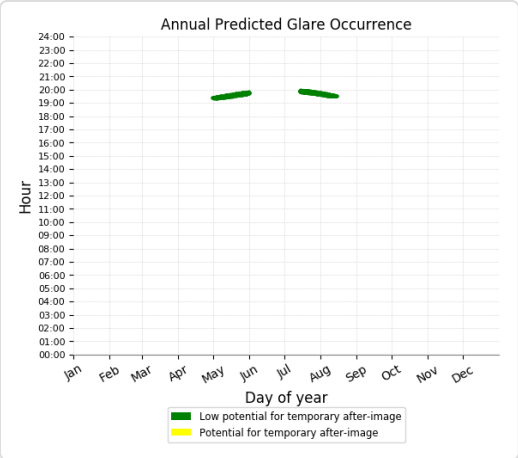


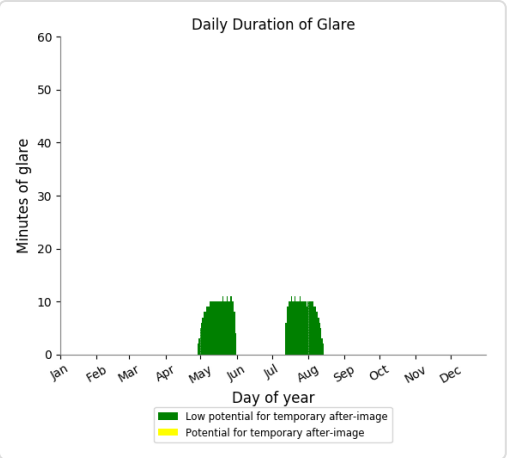


Point Receptor: OP 25

0 minutes of yellow glare

584 minutes of green glare





Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

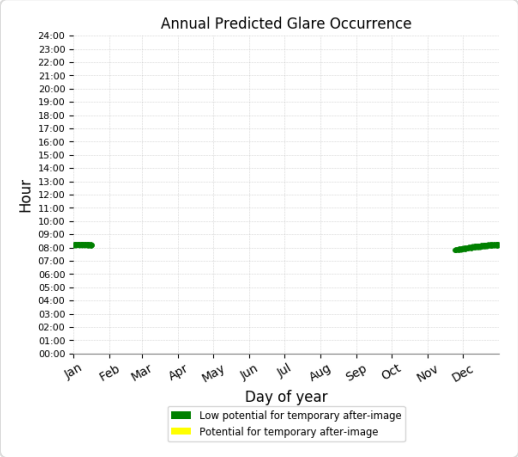
Results for: PV array 13

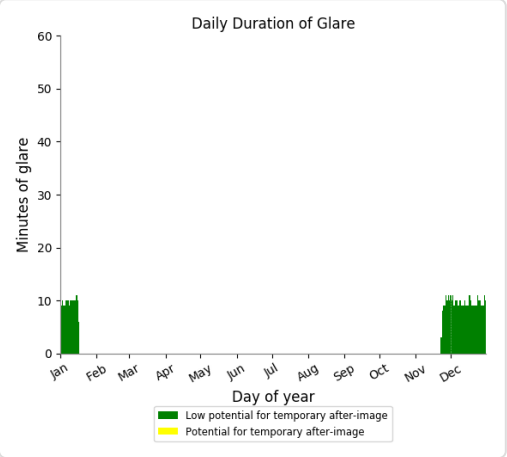
Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	531	0
OP 2	515	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 13	384	469
OP 14	641	583
OP 15	703	649
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	5	0
OP 21	2	0
OP 22	279	0
OP 23	300	0
OP 24	308	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

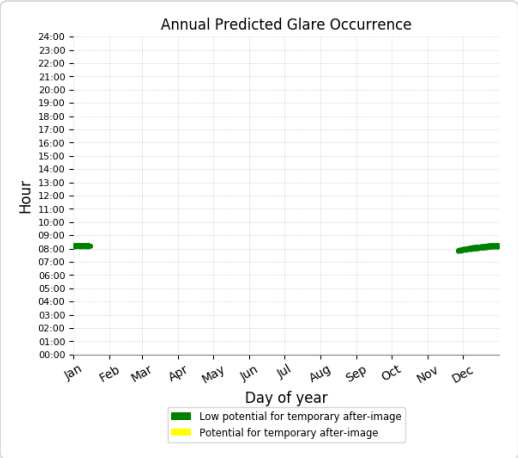
0 minutes of yellow glare
531 minutes of green glare

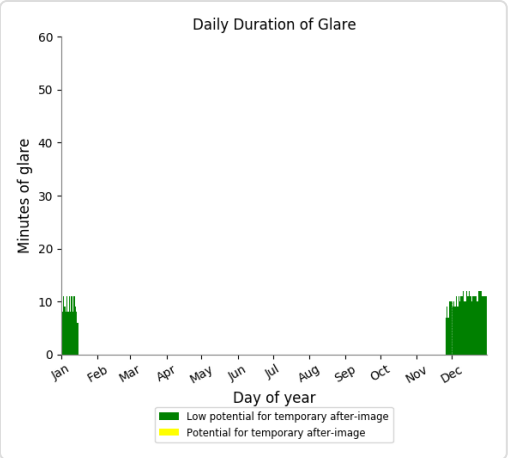




Point Receptor: OP 2

0 minutes of yellow glare
515 minutes of green glare





Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

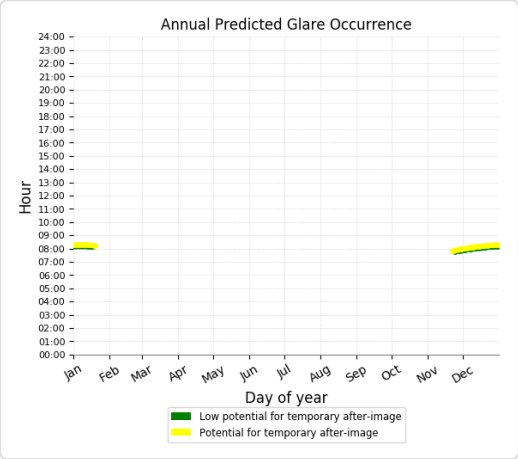
0 minutes of yellow glare
0 minutes of green glare

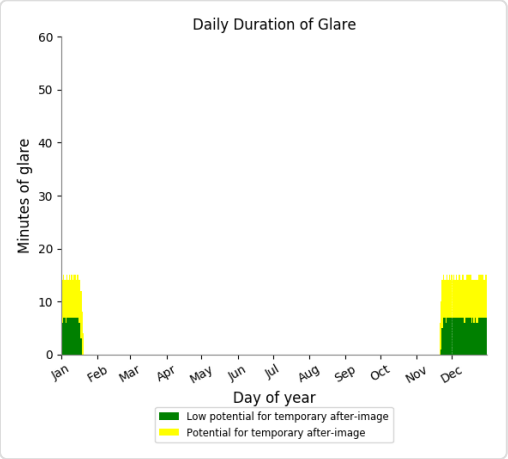
Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

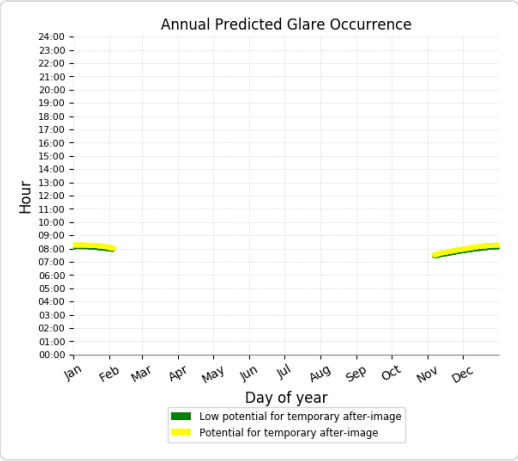
469 minutes of yellow glare
384 minutes of green glare

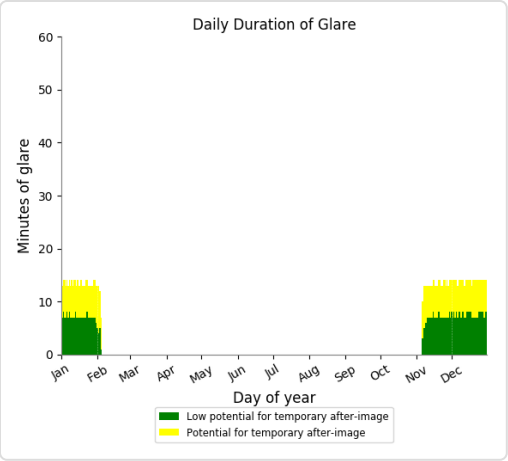




Point Receptor: OP 14

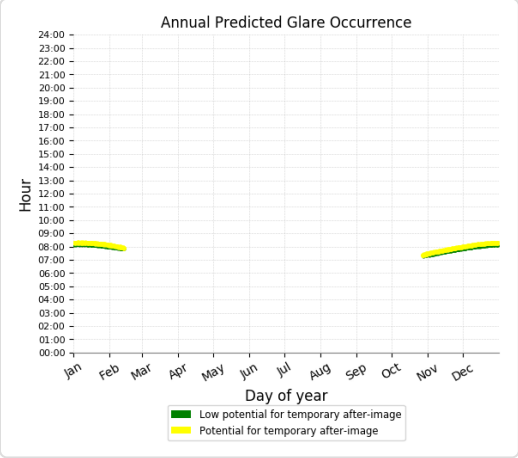
583 minutes of yellow glare
641 minutes of green glare

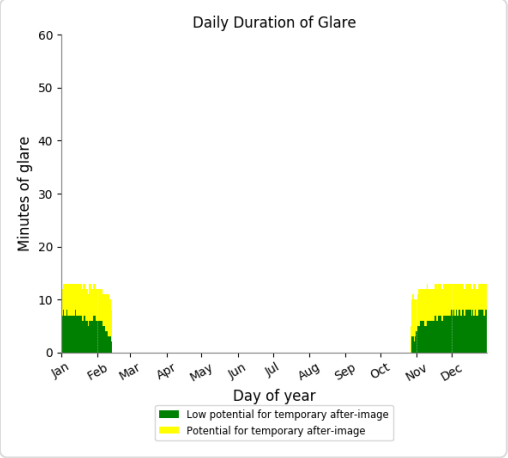




Point Receptor: OP 15

649 minutes of yellow glare
703 minutes of green glare





Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

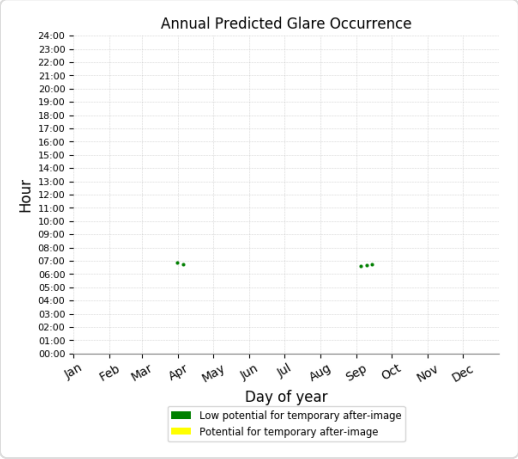
0 minutes of yellow glare
0 minutes of green glare

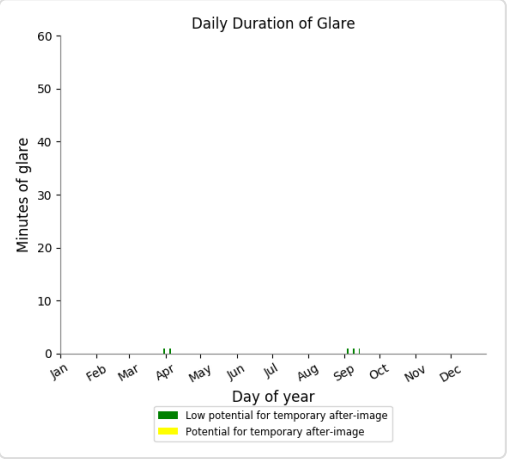
Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

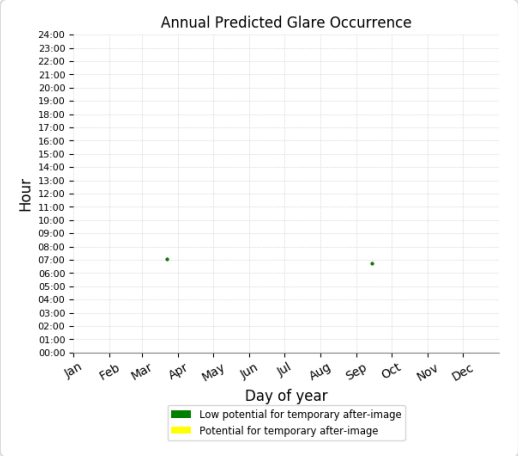
0 minutes of yellow glare
5 minutes of green glare

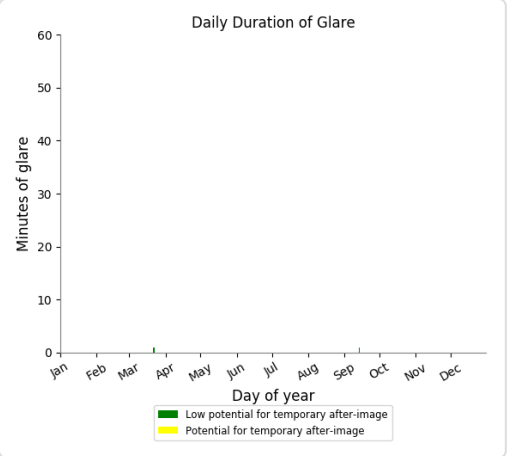




Point Receptor: OP 21

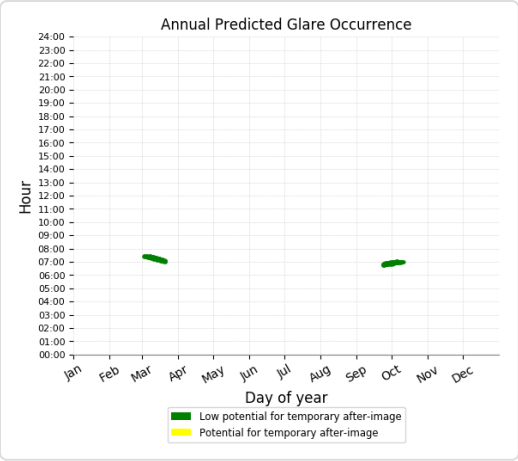
0 minutes of yellow glare
2 minutes of green glare

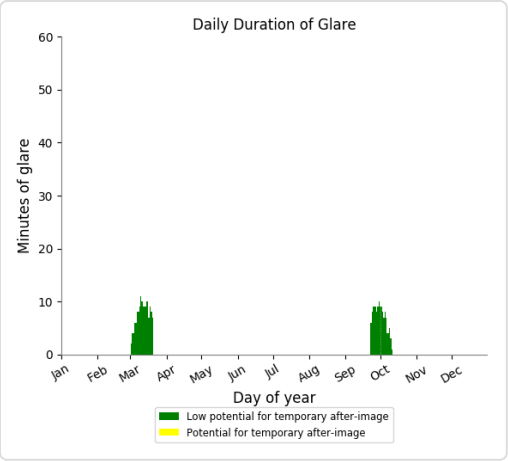




Point Receptor: OP 22

0 minutes of yellow glare
279 minutes of green glare

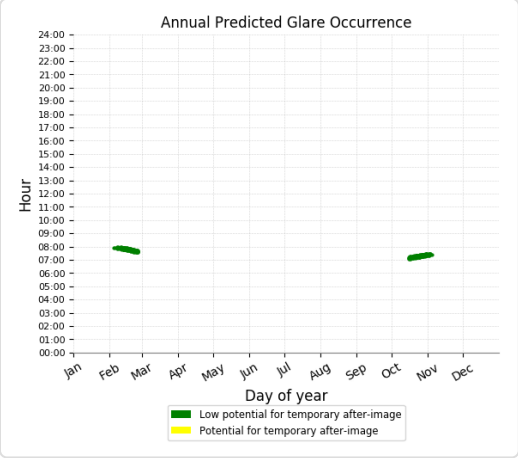


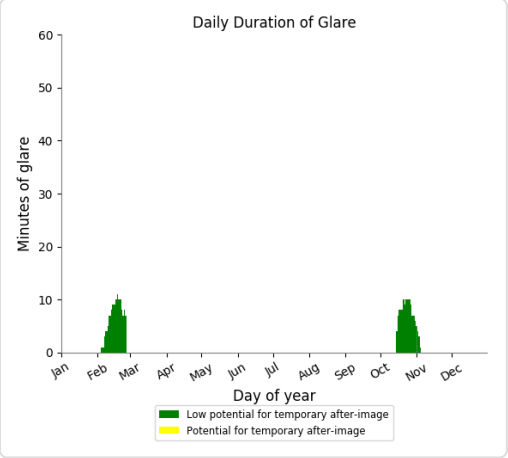


Point Receptor: OP 23

0 minutes of yellow glare

300 minutes of green glare

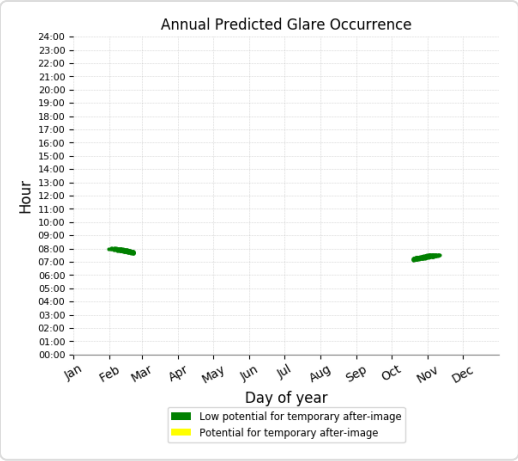


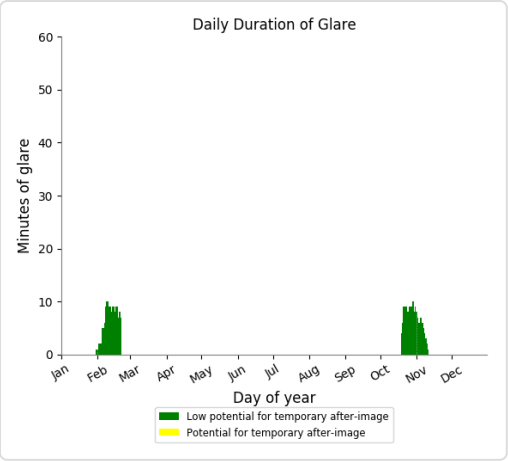


Point Receptor: OP 24

0 minutes of yellow glare

308 minutes of green glare





Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 14

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	357	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

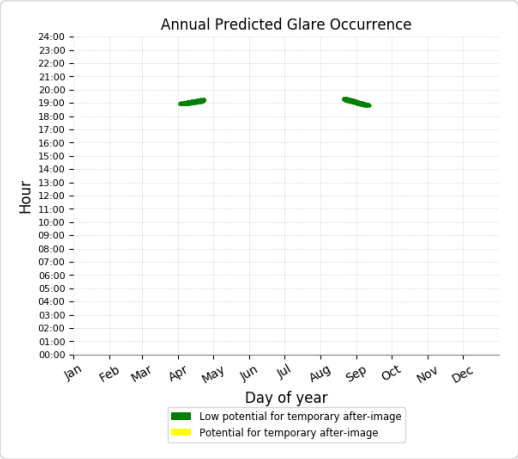
Point Receptor: OP 24

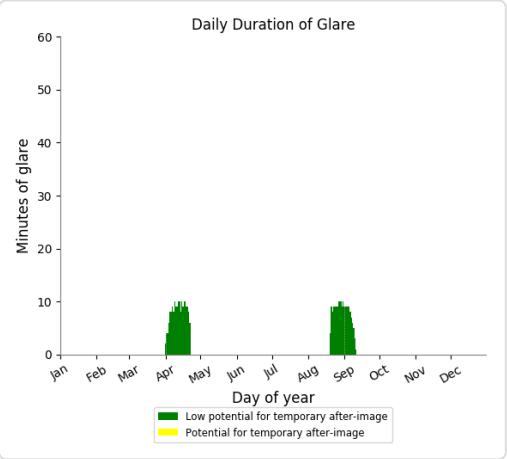
0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
357 minutes of green glare





Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

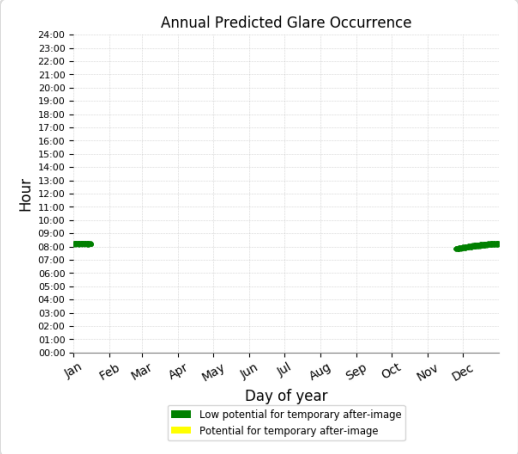
Results for: PV array 15

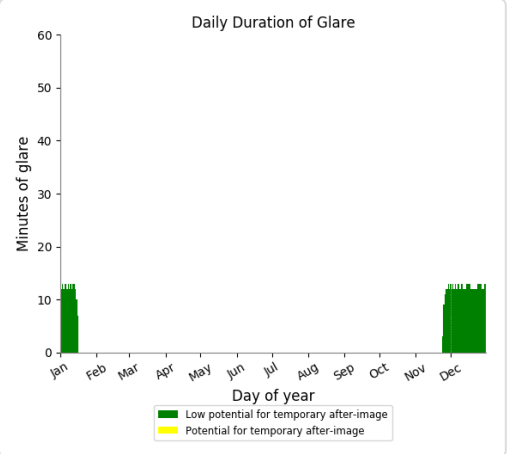
Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	652	0
OP 2	604	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	334	465
OP 14	583	510
OP 15	649	598
OP 16	769	99
OP 17	589	2
OP 18	10	0
OP 19	0	0
OP 20	362	0
OP 21	366	0
OP 22	396	0
OP 23	492	0
OP 24	528	0
OP 25	10	2
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
652 minutes of green glare

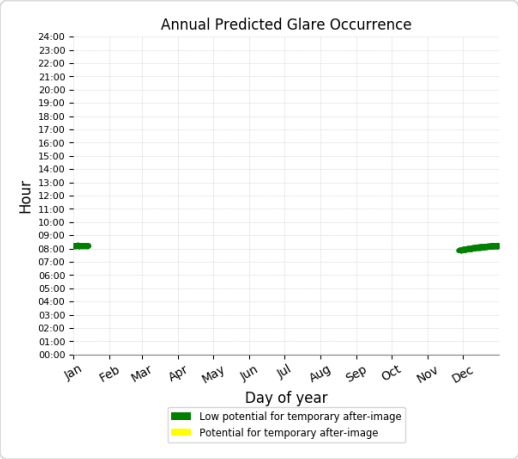


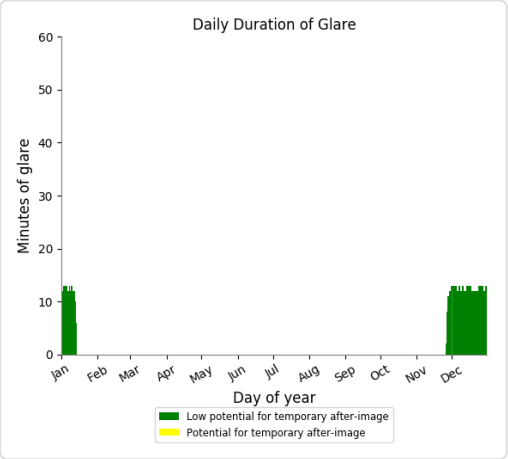


Point Receptor: OP 2

0 minutes of yellow glare

604 minutes of green glare





Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

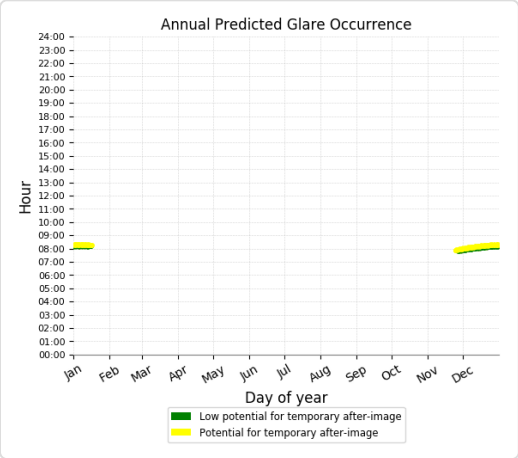
0 minutes of yellow glare
0 minutes of green glare

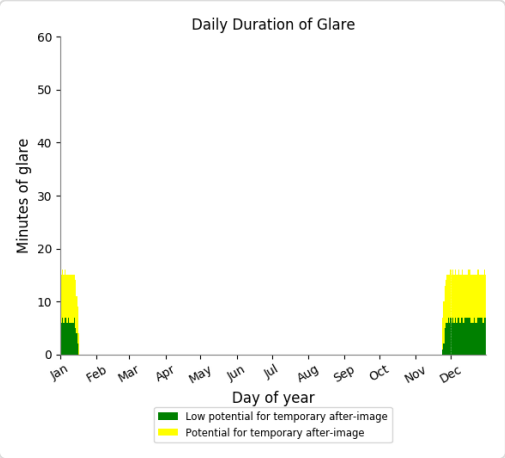
Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

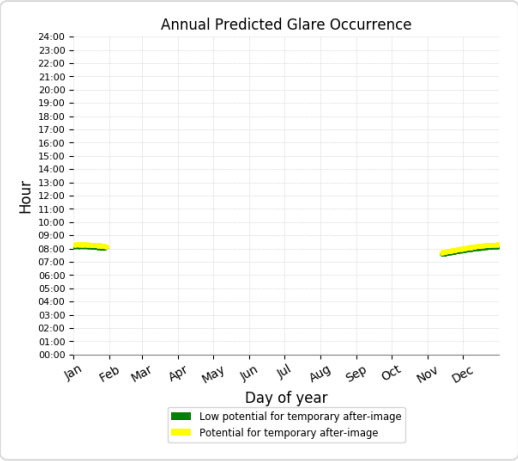
465 minutes of yellow glare
334 minutes of green glare

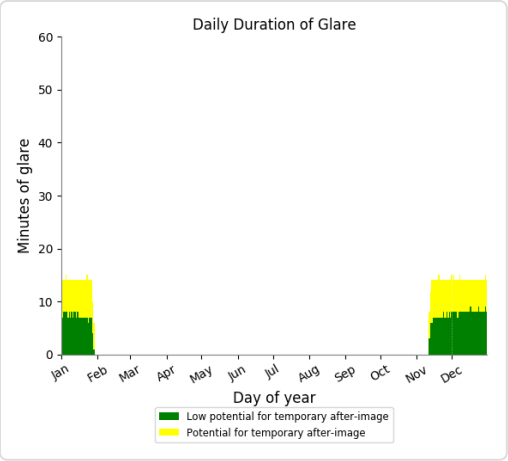




Point Receptor: OP 14

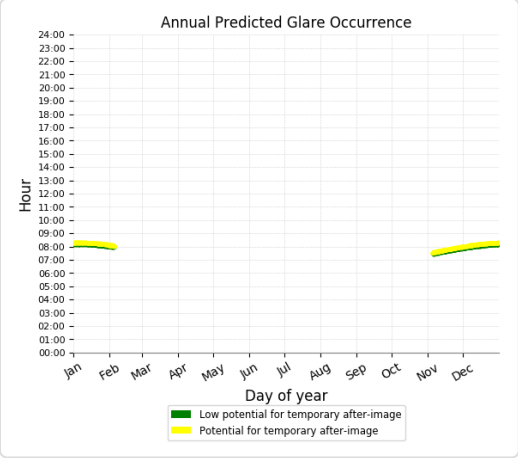
510 minutes of yellow glare
583 minutes of green glare

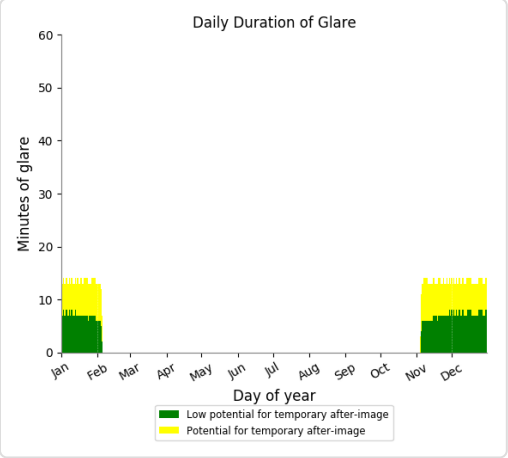




Point Receptor: OP 15

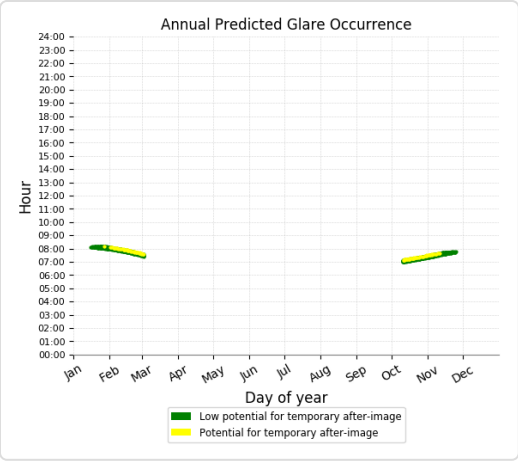
598 minutes of yellow glare
649 minutes of green glare

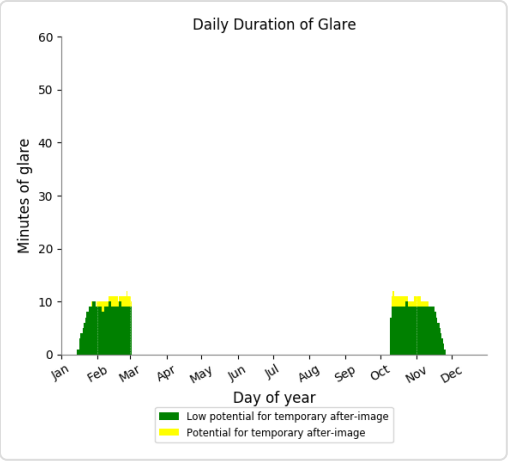




Point Receptor: OP 16

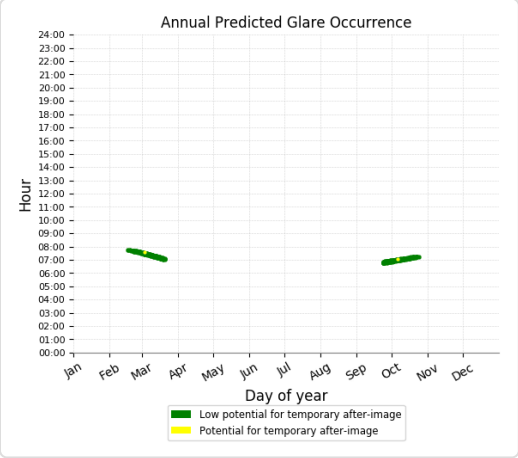
99 minutes of yellow glare
769 minutes of green glare

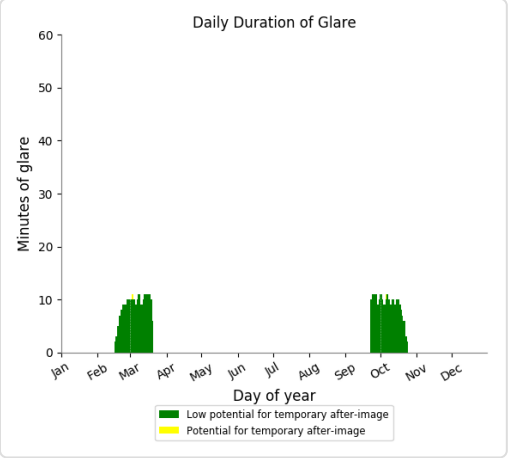




Point Receptor: OP 17

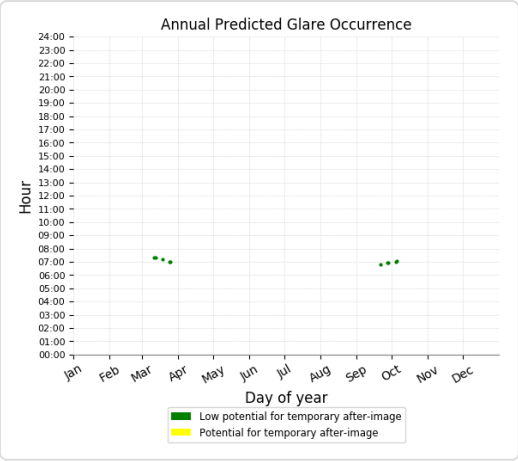
2 minutes of yellow glare
589 minutes of green glare

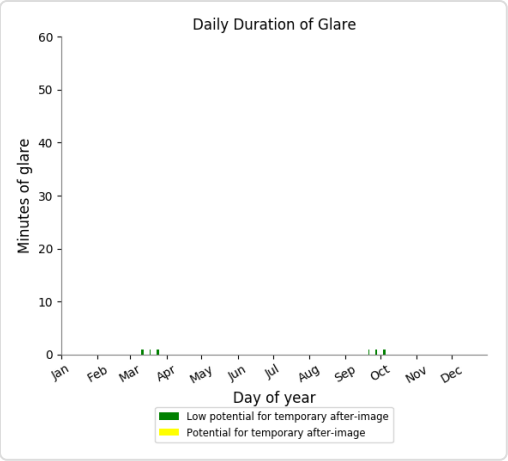




Point Receptor: OP 18

0 minutes of yellow glare
10 minutes of green glare



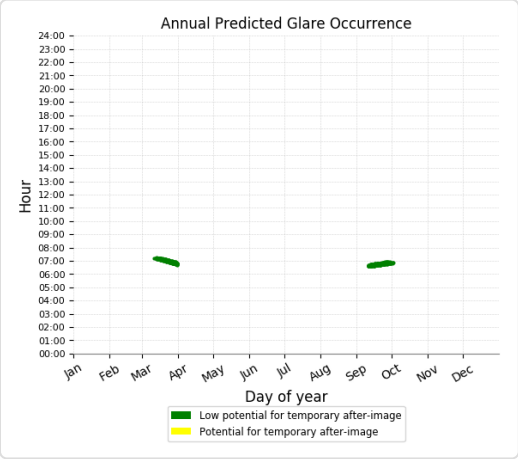


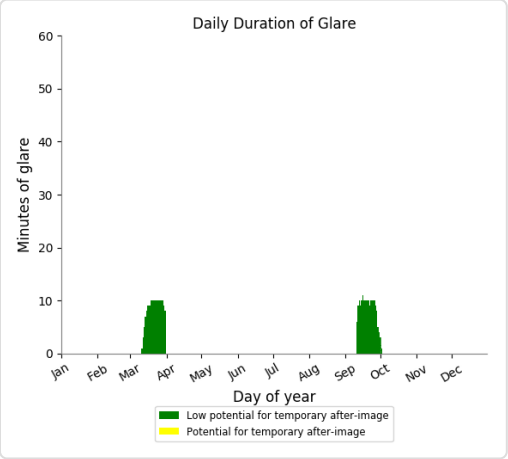
Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

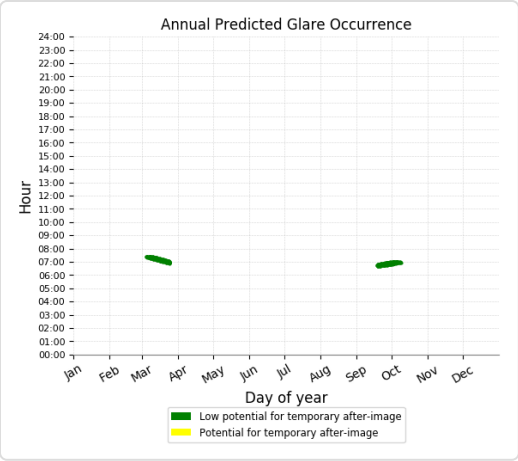
0 minutes of yellow glare
362 minutes of green glare

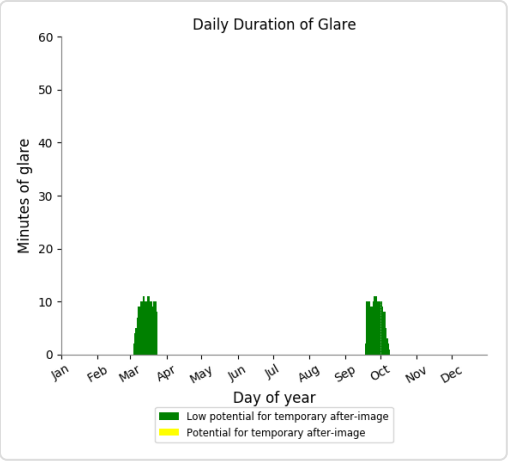




Point Receptor: OP 21

0 minutes of yellow glare
366 minutes of green glare

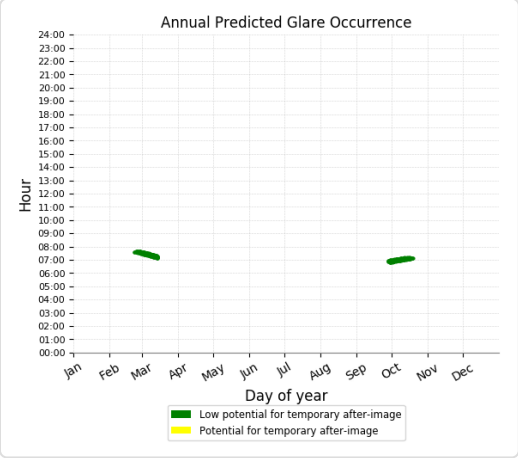


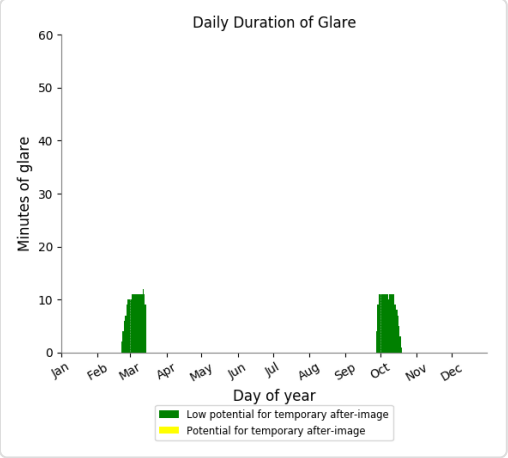


Point Receptor: OP 22

0 minutes of yellow glare

396 minutes of green glare

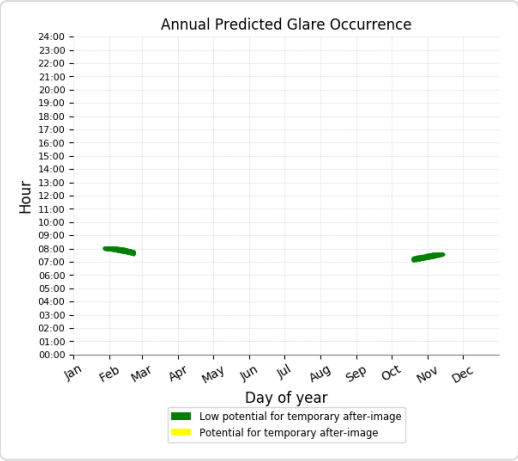


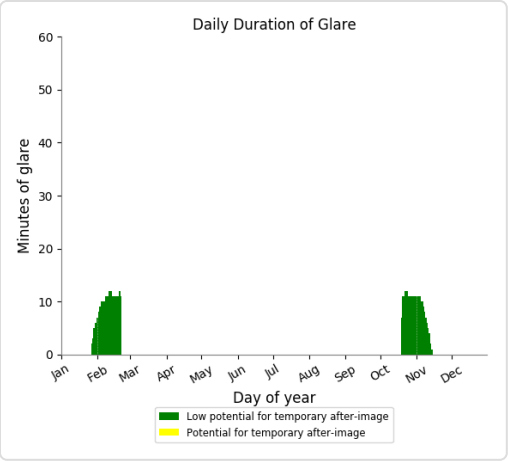


Point Receptor: OP 23

0 minutes of yellow glare

492 minutes of green glare

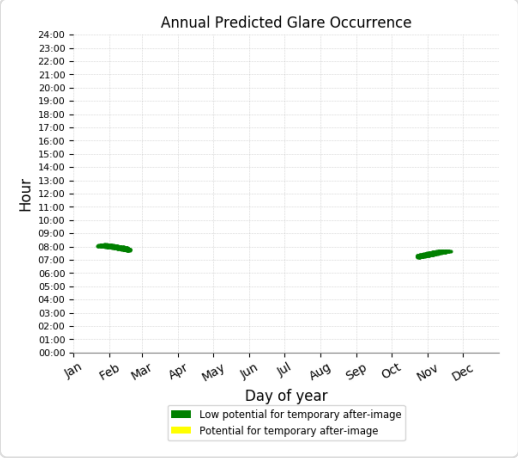


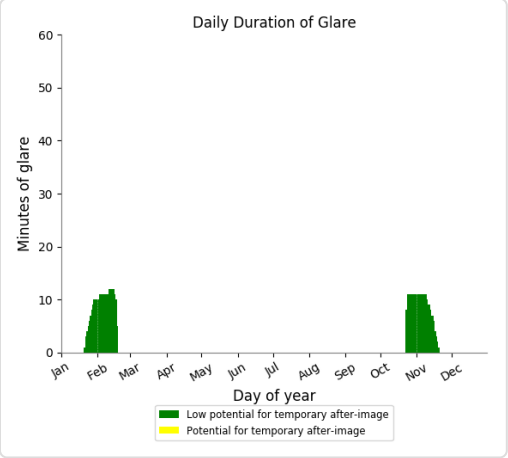


Point Receptor: OP 24

0 minutes of yellow glare

528 minutes of green glare

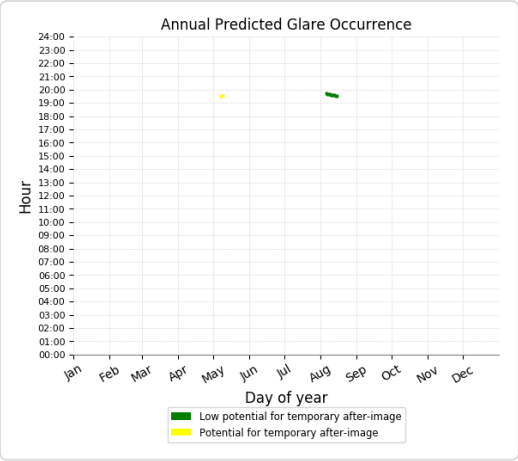


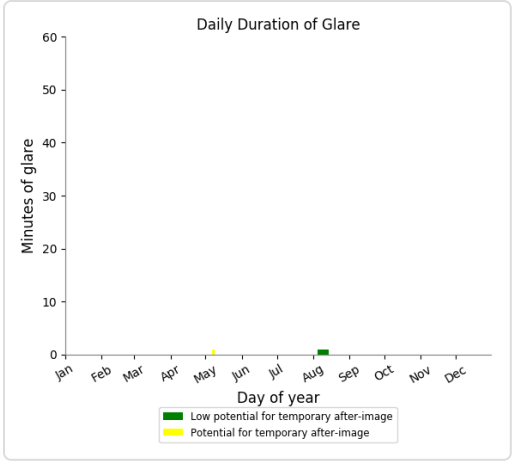


Point Receptor: OP 25

2 minutes of yellow glare

10 minutes of green glare





Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual results and glare occurrence may differ.
Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
Refer to the Help page at **www.forgesolar.com/help/** for assumptions and limitations not listed here.

FORGESOLAR GLARE ANALYSIS

Project: **Rhudes Creek Solar**
Proposed utility-scale project in Hardin County, Kentucky

Site configuration: **Rhudes Creek_Road Points_10 deg**
Analysis conducted by Alan Plumeau (aplumeau@trccompanies.com) at 02:05 on 05 Jul, 2021.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
2-mile flight path(s)	N/A	No flight paths analyzed
ATCT(s)	N/A	No ATCT receptors designated

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63276 can be read at https://www.federalregister.gov/d/2013-24729

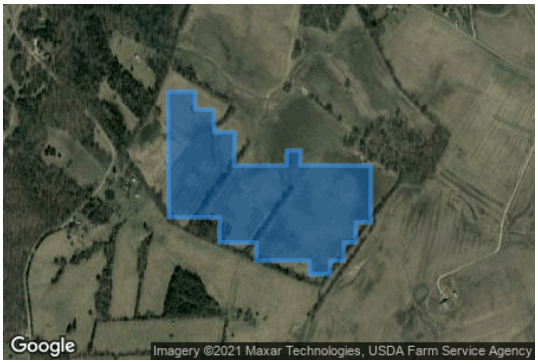
SITE CONFIGURATION

Analysis Parameters

DNI: peaks at 1,000.0 W/m^2
Time interval: 1 min
Ocular transmission coefficient: 0.5
Pupil diameter: 0.002 m
Eye focal length: 0.017 m
Sun subtended angle: 9.3 mrad
Site Config ID: 56031.9913

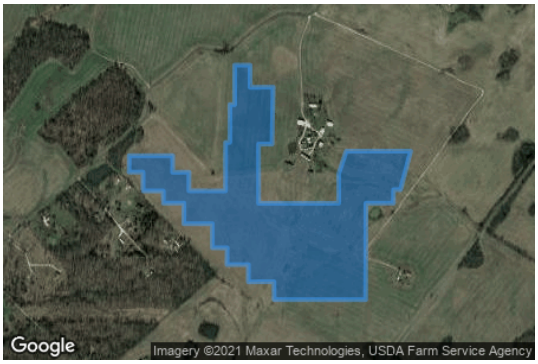
PV Array(s)

Name: PV array 1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



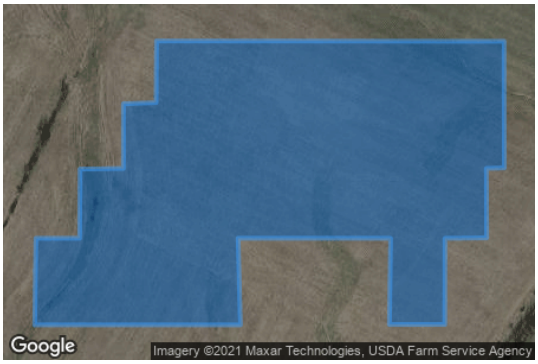
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.662651	-86.010935	711.53	9.00	720.53
2	37.662643	-86.009945	706.84	9.00	715.84
3	37.662142	-86.009961	711.98	9.00	720.98
4	37.662128	-86.009272	710.08	9.00	719.08
5	37.661493	-86.009255	705.58	9.00	714.58
6	37.661482	-86.008505	710.50	9.00	719.50
7	37.660531	-86.008531	708.15	9.00	717.15
8	37.660530	-86.006632	701.29	9.00	710.29
9	37.660958	-86.006618	699.68	9.00	708.68
10	37.660972	-86.006117	701.11	9.00	710.11
11	37.660534	-86.006131	703.65	9.00	712.65
12	37.660530	-86.003556	704.42	9.00	713.42
13	37.658903	-86.003581	711.58	9.00	720.58
14	37.658896	-86.004114	711.71	9.00	720.71
15	37.658327	-86.004120	713.24	9.00	722.24
16	37.658326	-86.004547	715.71	9.00	724.71
17	37.657803	-86.004561	716.42	9.00	725.42
18	37.657806	-86.005053	720.02	9.00	729.02
19	37.657421	-86.005044	721.09	9.00	730.09
20	37.657413	-86.005776	723.72	9.00	732.72
21	37.657806	-86.005795	725.16	9.00	734.16
22	37.657810	-86.007725	726.60	9.00	735.60
23	37.658322	-86.007715	720.80	9.00	729.80
24	37.658326	-86.009072	740.92	9.00	749.92
25	37.659042	-86.009055	721.81	9.00	730.81
26	37.659054	-86.010901	711.33	9.00	720.33

Name: PV array 10
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



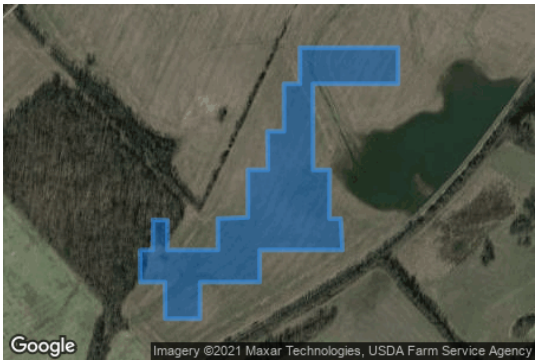
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.653103	-85.983028	722.92	9.00	731.92
2	37.653100	-85.981448	742.25	9.00	751.25
3	37.652624	-85.981451	741.10	9.00	750.10
4	37.652630	-85.980856	742.41	9.00	751.41
5	37.652094	-85.980857	750.67	9.00	759.67
6	37.652090	-85.979532	755.91	9.00	764.92
7	37.653479	-85.979529	755.42	9.00	764.42
8	37.653479	-85.979375	753.87	9.00	762.87
9	37.654564	-85.979367	755.55	9.00	764.55
10	37.654560	-85.979199	755.96	9.00	764.96
11	37.655691	-85.979199	748.80	9.00	757.81
12	37.655691	-85.978637	737.18	9.00	746.18
13	37.655058	-85.978640	736.01	9.00	745.01
14	37.655061	-85.977801	729.80	9.00	738.80
15	37.653433	-85.977843	757.32	9.00	766.32
16	37.653430	-85.978329	759.23	9.00	768.23
17	37.651736	-85.978330	749.90	9.00	758.90
18	37.651739	-85.975422	741.49	9.00	750.49
19	37.652578	-85.975423	733.22	9.00	742.22
20	37.653231	-85.975147	732.75	9.00	741.75
21	37.653229	-85.972809	727.59	9.00	736.59
22	37.652128	-85.973179	717.46	9.00	726.47
23	37.652129	-85.973432	717.91	9.00	726.91
24	37.651740	-85.973437	714.91	9.00	723.91
25	37.651740	-85.974436	722.73	9.00	731.73
26	37.648976	-85.974443	715.75	9.00	724.76
27	37.648980	-85.977767	743.44	9.00	752.44
28	37.649493	-85.977769	746.58	9.00	755.58
29	37.649488	-85.978702	732.46	9.00	741.47
30	37.649983	-85.978701	737.93	9.00	746.93
31	37.649981	-85.979475	737.89	9.00	746.89
32	37.650463	-85.979470	742.16	9.00	751.16
33	37.650460	-85.980007	745.54	9.00	754.54
34	37.651152	-85.980009	752.59	9.00	761.59
35	37.651150	-85.981042	746.07	9.00	755.07
36	37.651742	-85.981039	751.83	9.00	760.83
37	37.651740	-85.981788	745.91	9.00	754.91
38	37.652090	-85.981790	745.22	9.00	754.22
39	37.652090	-85.982522	736.04	9.00	745.04
40	37.652630	-85.982523	731.03	9.00	740.03
41	37.652630	-85.983031	725.47	9.00	734.47

Name: PV array 11a
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



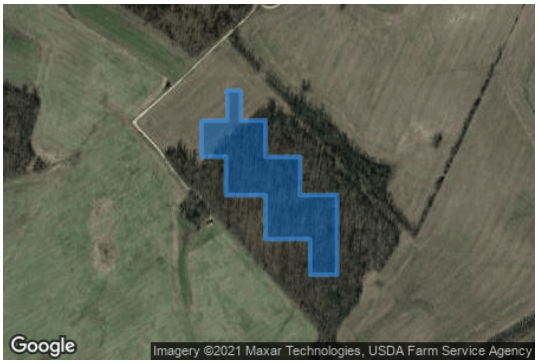
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.647933	-85.978206	728.00	9.00	737.00
2	37.647930	-85.975052	715.27	9.00	724.27
3	37.647024	-85.975050	720.52	9.00	729.52
4	37.647020	-85.975213	720.73	9.00	729.73
5	37.646523	-85.975210	728.55	9.00	737.55
6	37.646520	-85.975588	728.77	9.00	737.77
7	37.645903	-85.975590	717.95	9.00	726.95
8	37.645903	-85.976093	713.37	9.00	722.37
9	37.646520	-85.976082	721.89	9.00	730.89
10	37.646520	-85.977466	723.78	9.00	732.78
11	37.645900	-85.977444	715.83	9.00	724.83
12	37.645900	-85.979311	712.21	9.00	721.22
13	37.646520	-85.979300	721.79	9.00	730.79
14	37.646520	-85.978903	716.71	9.00	725.71
15	37.647016	-85.978900	720.18	9.00	729.18
16	37.647020	-85.978506	721.32	9.00	730.32
17	37.647483	-85.978506	724.62	9.00	733.62
18	37.647491	-85.978210	727.20	9.00	736.20

Name: PV array 11b
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



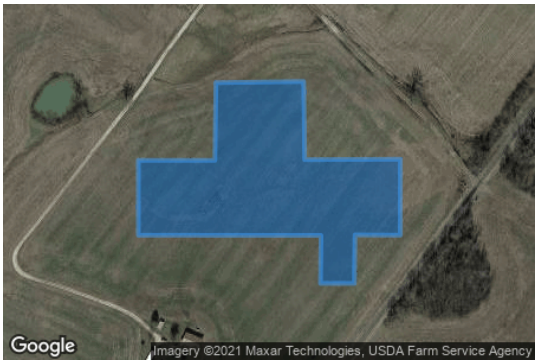
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.645648	-85.979740	710.38	9.00	719.38
2	37.645650	-85.977959	713.20	9.00	722.20
3	37.645130	-85.977960	709.85	9.00	718.85
4	37.645130	-85.979504	707.88	9.00	716.88
5	37.643898	-85.979500	711.07	9.00	720.07
6	37.643900	-85.979200	705.35	9.00	714.35
7	37.643200	-85.979204	707.91	9.00	716.91
8	37.643200	-85.979000	705.21	9.00	714.21
9	37.642750	-85.978968	714.50	9.00	723.50
10	37.642750	-85.980470	713.42	9.00	722.42
11	37.642292	-85.980470	706.30	9.00	715.31
12	37.642290	-85.981553	699.03	9.00	708.03
13	37.641765	-85.981553	701.42	9.00	710.42
14	37.641765	-85.982186	696.70	9.00	705.70
15	37.642290	-85.982190	699.13	9.00	708.13
16	37.642290	-85.982637	695.39	9.00	704.39
17	37.642751	-85.982640	697.38	9.00	706.38
18	37.642750	-85.982412	698.40	9.00	707.40
19	37.643184	-85.982410	704.70	9.00	713.70
20	37.643176	-85.982144	710.16	9.00	719.16
21	37.642750	-85.982144	702.05	9.00	711.05
22	37.642750	-85.981230	705.68	9.00	714.68
23	37.643201	-85.981232	711.81	9.00	720.82
24	37.643218	-85.980684	716.64	9.00	725.64
25	37.643900	-85.980684	728.50	9.00	737.50
26	37.643900	-85.980320	730.94	9.00	739.94
27	37.644450	-85.980330	733.92	9.00	742.92
28	37.644450	-85.980030	731.60	9.00	740.60
29	37.645130	-85.980030	716.94	9.00	725.94
30	37.645130	-85.979740	710.89	9.00	719.89

Name: PV array 11c
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



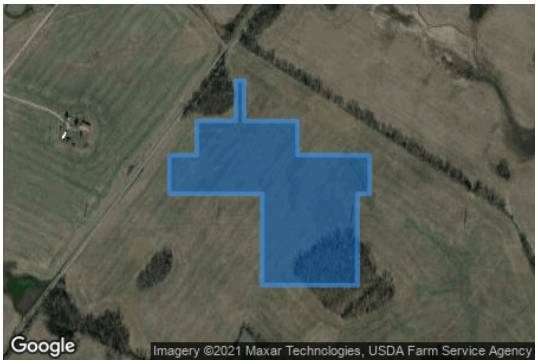
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.645410	-85.984970	729.64	9.00	738.64
2	37.645410	-85.984718	727.97	9.00	736.97
3	37.644977	-85.984718	721.24	9.00	730.25
4	37.644980	-85.984270	727.52	9.00	736.52
5	37.644459	-85.984270	726.98	9.00	735.99
6	37.644459	-85.983635	723.15	9.00	732.15
7	37.643910	-85.983646	716.37	9.00	725.37
8	37.643915	-85.982970	711.24	9.00	720.24
9	37.642768	-85.982970	705.15	9.00	714.15
10	37.642770	-85.983460	704.92	9.00	713.92
11	37.643280	-85.983463	707.86	9.00	716.86
12	37.643278	-85.984270	714.92	9.00	723.92
13	37.643910	-85.984270	723.95	9.00	732.95
14	37.643910	-85.984990	717.23	9.00	726.23
15	37.644460	-85.984987	716.78	9.00	725.78
16	37.644460	-85.985427	717.56	9.00	726.56
17	37.644977	-85.985430	725.27	9.00	734.27
18	37.644977	-85.984965	723.57	9.00	732.57

Name: PV array 12
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.650986	-85.973350	717.77	9.00	726.77
2	37.650986	-85.972655	711.80	9.00	720.80
3	37.651542	-85.972645	709.43	9.00	718.43
4	37.651550	-85.971849	712.81	9.00	721.81
5	37.650990	-85.971840	707.65	9.00	716.65
6	37.650994	-85.970972	701.93	9.00	710.93
7	37.650450	-85.970973	705.36	9.00	714.36
8	37.650452	-85.971384	705.82	9.00	714.82
9	37.650104	-85.971390	708.30	9.00	717.30
10	37.650104	-85.971697	715.34	9.00	724.34
11	37.650448	-85.971692	708.14	9.00	717.14
12	37.650450	-85.973350	716.84	9.00	725.84

Name: PV array 13
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

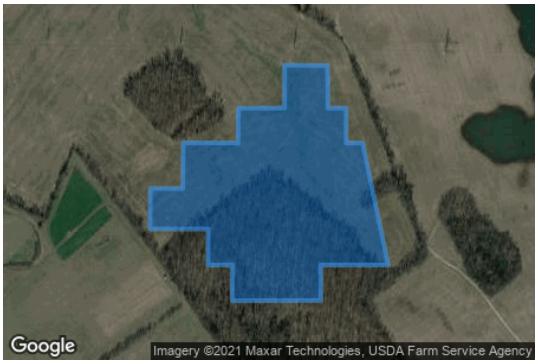


Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.649780	-85.970841	704.60	9.00	713.60
2	37.649780	-85.970134	713.78	9.00	722.78
3	37.650356	-85.970130	709.15	9.00	718.15
4	37.650357	-85.969981	707.45	9.00	716.45
5	37.649778	-85.969981	712.84	9.00	721.84
6	37.649779	-85.969014	700.69	9.00	709.69
7	37.649292	-85.969010	701.28	9.00	710.28
8	37.649287	-85.967703	701.67	9.00	710.68
9	37.648741	-85.967701	712.46	9.00	721.46
10	37.648736	-85.967925	713.59	9.00	722.59
11	37.647426	-85.967924	724.56	9.00	733.56
12	37.647432	-85.969654	711.92	9.00	720.92
13	37.648739	-85.969650	712.38	9.00	721.38
14	37.648738	-85.971338	699.43	9.00	708.43
15	37.649290	-85.971339	700.95	9.00	709.95
16	37.649289	-85.970839	700.28	9.00	709.28

Name: PV array 14
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

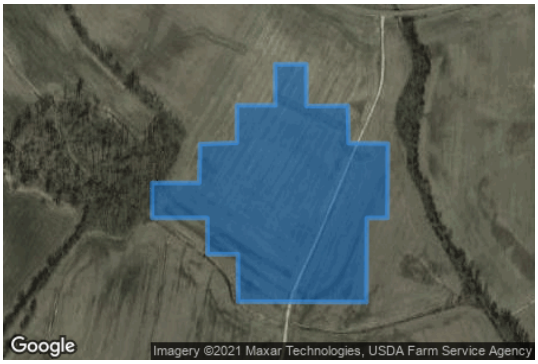
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.647956	-85.971992	696.76	9.00	705.76
2	37.647960	-85.971178	707.11	9.00	716.11
3	37.647308	-85.971180	717.10	9.00	726.11
4	37.647310	-85.970641	708.90	9.00	717.90
5	37.646626	-85.970640	712.39	9.00	721.39
6	37.646628	-85.971326	709.87	9.00	718.88
7	37.646983	-85.971330	720.18	9.00	729.18
8	37.646980	-85.971995	716.77	9.00	725.77

Name: PV array 15
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



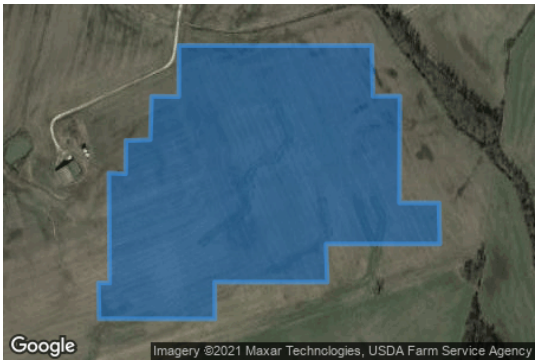
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.646250	-85.968592	704.23	9.00	713.23
2	37.646248	-85.968006	711.61	9.00	720.61
3	37.646903	-85.967997	700.50	9.00	709.50
4	37.646901	-85.967003	707.61	9.00	716.61
5	37.647397	-85.966997	707.69	9.00	716.70
6	37.647401	-85.966157	695.25	9.00	704.25
7	37.648014	-85.966159	696.30	9.00	705.30
8	37.648009	-85.965375	692.83	9.00	701.83
9	37.647400	-85.965370	698.87	9.00	707.87
10	37.647399	-85.965039	696.35	9.00	705.35
11	37.646900	-85.965040	700.74	9.00	709.74
12	37.646901	-85.964741	698.63	9.00	707.63
13	37.645151	-85.964275	722.57	9.00	731.58
14	37.645151	-85.965497	752.08	9.00	761.08
15	37.644645	-85.965500	763.40	9.00	772.40
16	37.644640	-85.967108	729.99	9.00	738.99
17	37.645151	-85.967107	737.02	9.00	746.02
18	37.645152	-85.967547	731.48	9.00	740.48
19	37.645668	-85.967549	725.34	9.00	734.34
20	37.645670	-85.968600	708.47	9.00	717.47
21	37.645670	-85.968600	708.47	9.00	717.47
22	37.645670	-85.968600	708.47	9.00	717.47

Name: PV array 2
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



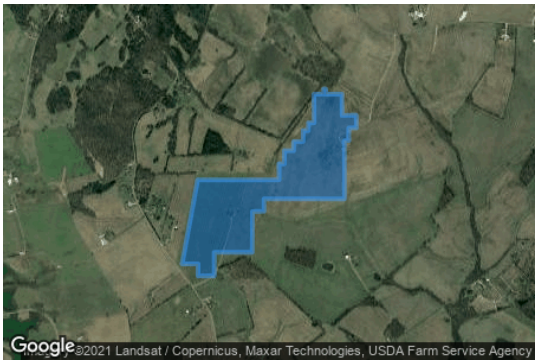
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.660181	-86.001263	707.49	9.00	716.49
2	37.660683	-86.001260	705.01	9.00	714.01
3	37.660684	-86.000408	709.97	9.00	718.97
4	37.661239	-86.000394	717.94	9.00	726.94
5	37.661258	-85.999726	725.20	9.00	734.20
6	37.661794	-85.999725	734.83	9.00	743.83
7	37.661794	-85.999027	729.70	9.00	738.70
8	37.662381	-85.999031	731.09	9.00	740.09
9	37.662384	-85.998464	734.15	9.00	743.15
10	37.661784	-85.998463	723.97	9.00	732.97
11	37.661790	-85.997711	716.98	9.00	725.98
12	37.661252	-85.997697	711.65	9.00	720.65
13	37.661248	-85.996984	708.16	9.00	717.16
14	37.660182	-85.996993	707.44	9.00	716.44
15	37.660178	-85.997366	707.32	9.00	716.32
16	37.658976	-85.997373	708.19	9.00	717.19
17	37.658984	-85.999703	700.03	9.00	709.03
18	37.659662	-85.999708	702.35	9.00	711.35
19	37.659664	-86.000257	704.54	9.00	713.54
20	37.660180	-86.000263	704.55	9.00	713.55

Name: PV array 3
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



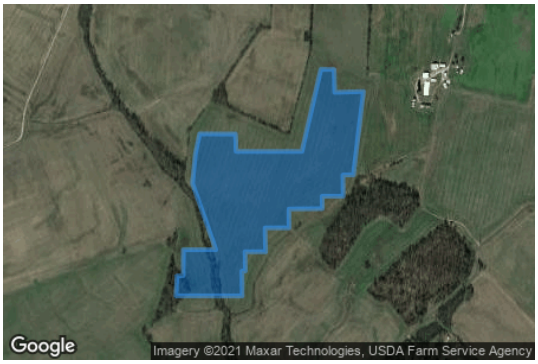
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.658353	-85.998802	705.87	9.00	714.87
2	37.658354	-85.995299	702.40	9.00	711.40
3	37.657627	-85.995279	706.26	9.00	715.26
4	37.657630	-85.994792	704.88	9.00	713.88
5	37.656099	-85.994799	708.66	9.00	717.67
6	37.656100	-85.994083	707.06	9.00	716.06
7	37.655511	-85.994065	711.83	9.00	720.83
8	37.655510	-85.996133	720.37	9.00	729.37
9	37.654964	-85.996109	725.62	9.00	734.62
10	37.654964	-85.998153	746.75	9.00	755.75
11	37.654436	-85.998149	752.44	9.00	761.44
12	37.654440	-86.000251	731.24	9.00	740.24
13	37.654956	-86.000265	732.14	9.00	741.14
14	37.654952	-86.000058	734.90	9.00	743.90
15	37.656527	-86.000075	724.80	9.00	733.80
16	37.656516	-85.999769	725.45	9.00	734.45
17	37.656992	-85.999765	716.08	9.00	725.08
18	37.657004	-85.999322	718.09	9.00	727.09
19	37.657626	-85.999299	710.79	9.00	719.79
20	37.657622	-85.998805	710.62	9.00	719.62

Name: PV array 4
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



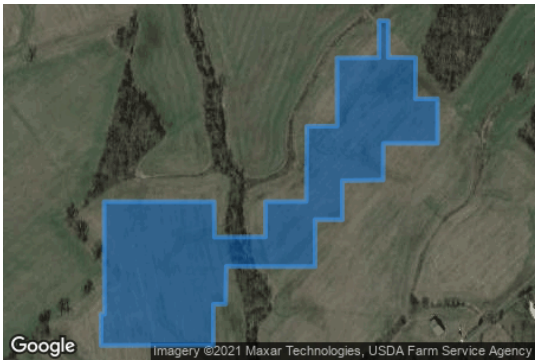
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.659661	-86.002994	707.14	9.00	716.14
2	37.659678	-86.002258	705.86	9.00	714.86
3	37.659979	-86.002281	706.38	9.00	715.38
4	37.659972	-86.002147	705.82	9.00	714.82
5	37.659670	-86.002135	706.28	9.00	715.28
6	37.659666	-86.000969	705.11	9.00	714.11
7	37.658453	-86.000950	708.10	9.00	717.10
8	37.658464	-85.999930	705.28	9.00	714.28
9	37.657736	-85.999915	709.38	9.00	718.38
10	37.657740	-86.000467	709.84	9.00	718.84
11	37.657012	-86.000459	718.66	9.00	727.66
12	37.657002	-86.000789	723.41	9.00	732.41
13	37.653667	-86.000785	728.95	9.00	737.95
14	37.653670	-86.006624	731.35	9.00	740.35
15	37.652968	-86.006615	740.65	9.00	749.65
16	37.652947	-86.007456	732.63	9.00	741.63
17	37.650611	-86.007475	759.38	9.00	768.38
18	37.650612	-86.010223	740.96	9.00	749.96
19	37.649262	-86.010227	742.15	9.00	751.15
20	37.649260	-86.011405	728.45	9.00	737.45
21	37.649945	-86.011397	728.21	9.00	737.21
22	37.649952	-86.012561	727.09	9.00	736.09
23	37.654760	-86.011434	763.21	9.00	772.21
24	37.654762	-86.005525	725.02	9.00	734.02
25	37.655679	-86.005530	720.19	9.00	729.19
26	37.655680	-86.005134	722.59	9.00	731.59
27	37.656432	-86.005130	716.32	9.00	725.32
28	37.656430	-86.004466	718.67	9.00	727.67
29	37.656956	-86.004465	713.72	9.00	722.72
30	37.656960	-86.003778	715.47	9.00	724.47
31	37.657590	-86.003780	711.76	9.00	720.76
32	37.657584	-86.003389	712.80	9.00	721.80
33	37.658027	-86.003393	708.74	9.00	717.74
34	37.658030	-86.002969	712.02	9.00	721.02

Name: PV array 5
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



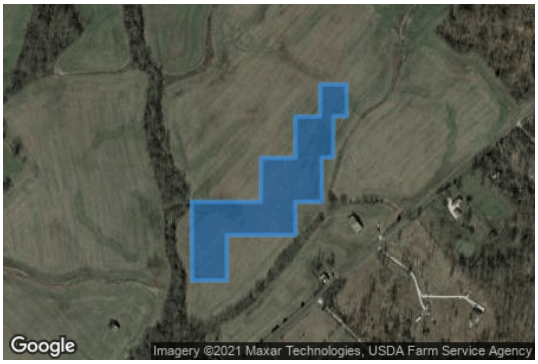
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.658244	-85.992442	723.13	9.00	732.13
2	37.658240	-85.991140	718.94	9.00	727.94
3	37.657742	-85.991120	715.81	9.00	724.82
4	37.657740	-85.988731	730.66	9.00	739.66
5	37.660089	-85.988043	744.99	9.00	753.99
6	37.660085	-85.987564	744.55	9.00	753.55
7	37.659430	-85.987539	748.54	9.00	757.54
8	37.659458	-85.986497	743.62	9.00	752.62
9	37.657068	-85.986861	731.14	9.00	740.14
10	37.657066	-85.987241	731.79	9.00	740.79
11	37.656458	-85.987235	722.71	9.00	731.71
12	37.656456	-85.988000	724.50	9.00	733.50
13	37.656104	-85.987989	718.45	9.00	727.45
14	37.656092	-85.989203	715.97	9.00	724.97
15	37.655554	-85.989199	712.59	9.00	721.59
16	37.655550	-85.990069	715.87	9.00	724.87
17	37.654867	-85.990049	707.74	9.00	716.75
18	37.654870	-85.990794	709.57	9.00	718.57
19	37.654317	-85.990785	709.02	9.00	718.02
20	37.654316	-85.990906	708.55	9.00	717.55
21	37.653604	-85.990899	705.71	9.00	714.71
22	37.653604	-85.993300	716.75	9.00	725.75
23	37.654174	-85.993265	717.82	9.00	726.83
24	37.654180	-85.993039	716.00	9.00	725.00
25	37.654925	-85.993034	706.81	9.00	715.81
26	37.654926	-85.991854	704.28	9.00	713.28
27	37.656827	-85.992704	707.22	9.00	716.22
28	37.657677	-85.992596	711.88	9.00	720.88

Name: PV array 6
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.652786	-85.993852	715.77	9.00	724.77
2	37.652788	-85.991855	702.24	9.00	711.24
3	37.652279	-85.991847	700.92	9.00	709.92
4	37.652283	-85.990923	697.34	9.00	706.34
5	37.652788	-85.990922	696.96	9.00	705.96
6	37.652790	-85.990183	703.39	9.00	712.39
7	37.653865	-85.990175	704.30	9.00	713.30
8	37.653870	-85.989623	704.68	9.00	713.68
9	37.654845	-85.989625	709.78	9.00	718.78
10	37.654848	-85.988861	712.44	9.00	721.44
11	37.655379	-85.988863	716.07	9.00	725.07
12	37.655376	-85.988697	718.25	9.00	727.25
13	37.654852	-85.988695	713.93	9.00	722.93
14	37.654848	-85.988197	720.97	9.00	729.97
15	37.654260	-85.988203	714.70	9.00	723.70
16	37.654260	-85.987800	721.73	9.00	730.73
17	37.653621	-85.987799	717.66	9.00	726.66
18	37.653622	-85.988784	710.82	9.00	719.83
19	37.653096	-85.988787	710.24	9.00	719.24
20	37.653088	-85.989528	710.09	9.00	719.09
21	37.652528	-85.989527	709.36	9.00	718.36
22	37.652530	-85.990023	706.00	9.00	715.00
23	37.651856	-85.990022	704.61	9.00	713.61
24	37.651860	-85.991636	700.97	9.00	709.97
25	37.651322	-85.991645	697.29	9.00	706.29
26	37.651318	-85.991869	699.46	9.00	708.46
27	37.650733	-85.991870	697.32	9.00	706.32
28	37.650728	-85.993908	711.26	9.00	720.26
29	37.651173	-85.993907	721.10	9.00	730.10
30	37.651175	-85.993847	721.96	9.00	730.96

Name: PV array 7
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

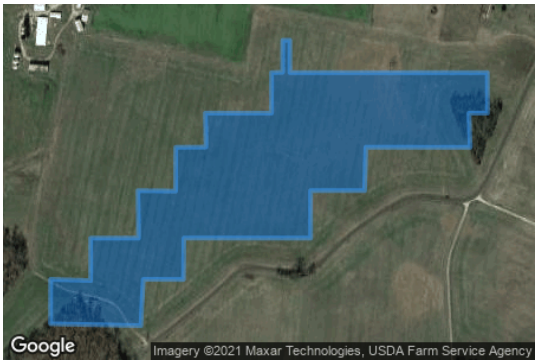


Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.652989	-85.988450	712.26	9.00	721.26
2	37.652988	-85.987972	714.66	9.00	723.66
3	37.652532	-85.987965	707.88	9.00	716.88
4	37.652532	-85.988209	712.84	9.00	721.85
5	37.651946	-85.988215	702.78	9.00	711.78
6	37.651940	-85.988422	705.21	9.00	714.21
7	37.651306	-85.988417	700.54	9.00	709.54
8	37.651306	-85.988900	704.35	9.00	713.35
9	37.650833	-85.988897	698.58	9.00	707.58
10	37.650830	-85.990145	699.86	9.00	708.86
11	37.650179	-85.990143	696.47	9.00	705.47
12	37.650180	-85.990775	691.08	9.00	700.08
13	37.651306	-85.990780	694.74	9.00	703.74
14	37.651308	-85.989528	705.58	9.00	714.58
15	37.651936	-85.989520	710.03	9.00	719.03
16	37.651938	-85.988897	710.87	9.00	719.87
17	37.652528	-85.988903	715.00	9.00	724.00
18	37.652530	-85.988450	716.33	9.00	725.33
19	37.652530	-85.988450	716.33	9.00	725.33
20	37.652528	-85.988450	716.33	9.00	725.33

Name: PV array 8a
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

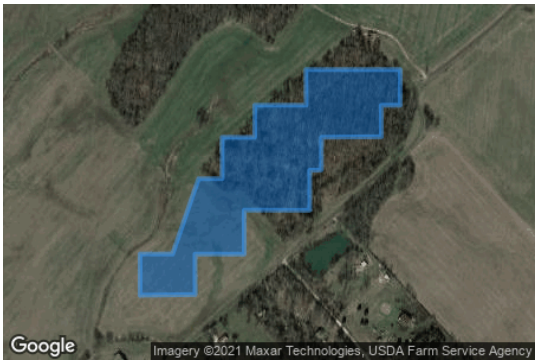
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.658869	-85.983456	733.54	9.00	742.54
2	37.658870	-85.982775	730.30	9.00	739.30
3	37.658398	-85.982770	730.88	9.00	739.88
4	37.658402	-85.982320	733.32	9.00	742.32
5	37.658870	-85.982319	728.03	9.00	737.03
6	37.658870	-85.982020	730.53	9.00	739.53
7	37.658322	-85.982018	738.16	9.00	747.16
8	37.658321	-85.982147	735.39	9.00	744.39
9	37.657990	-85.982150	739.98	9.00	748.98
10	37.657990	-85.982925	738.94	9.00	747.94
11	37.657222	-85.982918	751.70	9.00	760.70
12	37.657220	-85.983891	738.73	9.00	747.73
13	37.657735	-85.983890	736.27	9.00	745.27
14	37.657740	-85.983585	739.59	9.00	748.59
15	37.658400	-85.983580	734.11	9.00	743.11
16	37.658400	-85.983460	734.23	9.00	743.23

Name: PV array 8b
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



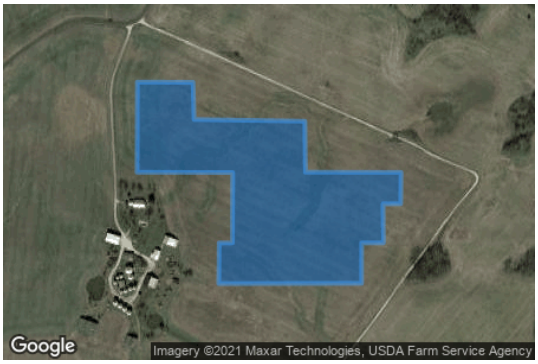
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.659413	-85.979815	730.94	9.00	739.94
2	37.659413	-85.979687	728.32	9.00	737.32
3	37.658950	-85.979687	730.23	9.00	739.23
4	37.658950	-85.976103	712.38	9.00	721.38
5	37.658368	-85.976100	728.72	9.00	737.72
6	37.658370	-85.976436	730.90	9.00	739.90
7	37.657880	-85.976414	721.92	9.00	730.92
8	37.657882	-85.978308	718.15	9.00	727.15
9	37.657260	-85.978330	723.95	9.00	732.95
10	37.657260	-85.979311	723.91	9.00	732.91
11	37.656580	-85.979310	729.82	9.00	738.82
12	37.656580	-85.981610	744.03	9.00	753.03
13	37.655988	-85.981620	740.96	9.00	749.96
14	37.655990	-85.982347	742.64	9.00	751.65
15	37.655327	-85.982392	733.49	9.00	742.49
16	37.655355	-85.984032	751.71	9.00	760.71
17	37.655990	-85.984030	750.27	9.00	759.27
18	37.655973	-85.983302	748.50	9.00	757.50
19	37.656580	-85.983302	748.83	9.00	757.83
20	37.656580	-85.982433	751.61	9.00	760.61
21	37.657260	-85.982444	754.22	9.00	763.22
22	37.657256	-85.981760	751.15	9.00	760.15
23	37.657880	-85.981757	744.74	9.00	753.74
24	37.657884	-85.981210	735.95	9.00	744.95
25	37.658370	-85.981221	742.51	9.00	751.51
26	37.658370	-85.980020	729.66	9.00	738.66
27	37.658950	-85.980019	735.17	9.00	744.17
28	37.658954	-85.979820	733.60	9.00	742.60

Name: PV array 8c
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.654661	-85.985389	728.43	9.00	737.43
2	37.654661	-85.984456	742.38	9.00	751.38
3	37.655170	-85.984460	744.64	9.00	753.64
4	37.655170	-85.982750	733.83	9.00	742.83
5	37.654660	-85.982750	737.80	9.00	746.80
6	37.654660	-85.983093	737.18	9.00	746.18
7	37.654210	-85.983090	732.02	9.00	741.02
8	37.654202	-85.984177	730.51	9.00	739.51
9	37.653735	-85.984180	727.66	9.00	736.66
10	37.653730	-85.984391	728.16	9.00	737.16
11	37.653157	-85.984390	730.88	9.00	739.88
12	37.653160	-85.985582	732.00	9.00	741.00
13	37.652529	-85.985580	719.54	9.00	728.54
14	37.652530	-85.986473	720.31	9.00	729.31
15	37.651951	-85.986470	712.04	9.00	721.04
16	37.651940	-85.987470	705.58	9.00	714.58
17	37.652530	-85.987470	705.22	9.00	714.22
18	37.652530	-85.986880	713.57	9.00	722.57
19	37.653607	-85.986408	718.90	9.00	727.90
20	37.653610	-85.985979	734.06	9.00	743.06
21	37.654202	-85.985980	727.69	9.00	736.69
22	37.654200	-85.985389	737.78	9.00	746.78

Name: PV array 9
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Resting angle: 10.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.656283	-85.976339	735.05	9.00	744.05
2	37.656280	-85.975330	724.76	9.00	733.76
3	37.655747	-85.975309	728.51	9.00	737.51
4	37.655723	-85.973299	715.42	9.00	724.42
5	37.654994	-85.973289	720.26	9.00	729.26
6	37.654990	-85.971553	724.01	9.00	733.01
7	37.654542	-85.971560	730.05	9.00	739.05
8	37.654540	-85.971880	733.50	9.00	742.50
9	37.653981	-85.971875	721.20	9.00	730.20
10	37.653980	-85.972269	723.18	9.00	732.18
11	37.653402	-85.972270	730.26	9.00	739.26
12	37.653398	-85.974863	732.71	9.00	741.71
13	37.653980	-85.974855	739.30	9.00	748.30
14	37.653980	-85.974614	736.14	9.00	745.14
15	37.654988	-85.974610	729.05	9.00	738.05
16	37.654992	-85.976345	739.20	9.00	748.20

Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	37.665796	-86.003591	712.10	5.00
OP 2	2	37.663086	-85.997117	710.47	5.00
OP 3	3	37.663783	-85.992311	712.81	5.00
OP 4	4	37.663341	-85.984243	730.37	5.00
OP 5	5	37.663970	-85.975316	719.72	5.00
OP 6	6	37.658950	-85.975245	714.89	5.00
OP 7	7	37.657659	-85.975953	733.77	5.00
OP 8	8	37.657166	-85.977316	727.49	5.00
OP 9	9	37.656886	-85.978131	739.19	5.00
OP 10	10	37.656334	-85.979000	738.92	5.00
OP 11	11	37.656096	-85.979526	747.83	5.00
OP 12	12	37.656164	-85.980470	744.93	5.00
OP 13	13	37.655548	-85.981407	738.80	5.00
OP 14	14	37.654894	-85.982405	731.49	5.00
OP 15	15	37.654147	-85.982469	724.53	5.00
OP 16	16	37.651743	-85.985881	701.72	5.00
OP 17	17	37.649398	-85.989228	703.88	5.00
OP 18	18	37.647793	-85.992812	689.53	5.00
OP 19	19	37.643227	-86.001170	705.25	5.00
OP 20	20	37.647016	-86.010443	732.49	5.00
OP 21	21	37.649330	-86.012467	722.89	5.00
OP 22	22	37.652941	-86.015460	733.92	5.00
OP 23	23	37.659804	-86.013475	719.49	5.00
OP 24	24	37.660874	-86.012874	712.82	5.00
OP 25	25	37.645045	-85.954316	691.77	5.00
OP 26	26	37.638962	-85.961226	694.20	5.00
OP 27	27	37.632607	-85.972727	674.04	5.00
OP 28	28	37.628596	-85.983198	677.47	5.00

GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
PV array 1	SA tracking	SA tracking	0	0	-
PV array 10	SA tracking	SA tracking	0	0	-
PV array 11a	SA tracking	SA tracking	0	0	-
PV array 11b	SA tracking	SA tracking	0	0	-
PV array 11c	SA tracking	SA tracking	0	0	-
PV array 12	SA tracking	SA tracking	0	0	-
PV array 13	SA tracking	SA tracking	0	0	-
PV array 14	SA tracking	SA tracking	0	0	-
PV array 15	SA tracking	SA tracking	0	0	-
PV array 2	SA tracking	SA tracking	0	0	-
PV array 3	SA tracking	SA tracking	0	0	-
PV array 4	SA tracking	SA tracking	0	0	-
PV array 5	SA tracking	SA tracking	0	0	-
PV array 6	SA tracking	SA tracking	0	0	-
PV array 7	SA tracking	SA tracking	0	0	-
PV array 8a	SA tracking	SA tracking	0	0	-
PV array 8b	SA tracking	SA tracking	0	0	-
PV array 8c	SA tracking	SA tracking	0	0	-
PV array 9	SA tracking	SA tracking	0	0	-

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Results for: PV array 1

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 10

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 11a

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 11b

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 11c

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 12

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 13

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 14

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 15

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 2

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 3

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 4

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 5

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 6

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 7

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 8a

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 8b

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 8c

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 9

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual results and glare occurrence may differ.
Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
Refer to the Help page at **www.forgesolar.com/help/** for assumptions and limitations not listed here.