

# **Gate Burton Energy Park Environmental Statement**

Volume 3, Appendix 15-D: Glint and Glare Assessment Part 3 Document Reference: EN010131/APP/3.3 January 2023

APFP Regulation 5(2)(a)
Planning Act 2008
Infrastrcuture Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

# ANNEX F: ROAD RECEPTOR GLARE RESULTS 5 DEGREES (1 – 48)



ForgeSolar

# **Gate Burton Solar Farm**

# Gate Burton Road 5 Deg Receptors 1 - 48

Created Oct. 11, 2022 Updated Jan. 16, 2023 Time-step 1 minute Timezone offset UTC0 Site ID 77372.13697

Project type Advanced Project status: active Category 100 MW to 1 GW

#### Misc. Analysis Settings

DNI: varies (1,000.0 W/m^2 peak) Ocular transmission coefficient: 0.5 Pupil diameter: 0.002 m Eye focal length: 0.017 m Sun subtended angle: 9.3 mrad PV Analysis Methodology: **Version 2** Enhanced subtended angle calculation: **On** 

# Summary of Results Glare with potential for temporary after-image predicted

PV Name	Tilt	Orientation	Orientation "Green" Glare		Energy Produced
	deg	deg	min	min	kWh
PV array 1	5.0	180.0	56,868	4,409	-
PV array 2	5.0	180.0	15,300	324	-
PV array 3	5.0	180.0	34,737	0	-
PV array 4	5.0	180.0	50,468	10,575	-

# **Component Data**

## PV Array(s)

Total PV footprint area: 5,140,930 m^2

Name: PV array 1

Footprint area: 1,573,549 m^2 Axis tracking: Fixed (no rotation)
Tilt: 5.0 deg
Orientation: 180.0 deg

Rated power: -

Panel material: Light textured glass with AR coating Vary reflectivity with sun position? Yes Correlate slope error with surface type? Yes Slope error: 9.16 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.360192	-0.741025	25.41	3.50	28.91
2	53.359039	-0.745360	26.99	3.50	30.49
3	53.355274	-0.742871	26.84	3.50	30.34
1	53.356581	-0.739094	24.70	3.50	28.20
5	53.356478	-0.738021	24.81	3.50	28.31
6	53.352329	-0.737721	29.21	3.50	32.71
7	53.348998	-0.739266	31.01	3.50	34.51
3	53.348998	-0.740424	32.14	3.50	35.64
)	53.349818	-0.742828	34.61	3.50	38.11
0	53.350254	-0.745016	33.08	3.50	36.58
1	53.349203	-0.744330	34.60	3.50	38.10
2	53.346590	-0.744029	28.55	3.50	32.05
3	53.346488	-0.745403	28.80	3.50	32.30
4	53.344669	-0.744587	24.81	3.50	28.31
5	53.344387	-0.745188	24.56	3.50	28.06
6	53.341056	-0.743085	25.45	3.50	28.95
7	53.340313	-0.741111	27.40	3.50	30.90
8	53.340877	-0.738107	28.71	3.50	32.21
9	53.339775	-0.737377	30.21	3.50	33.71
0	53.340518	-0.734631	28.33	3.50	31.83
1	53.340236	-0.734031	23.85	3.50	27.35
2	53.338673	-0.731069	23.65	3.50	25.27
3	53.338673	-0.730382	21.77	3.50	25.27
24	53.336931	-0.735360	27.60	3.50	31.10
25	53.335009	-0.734760	26.31	3.50	29.81
26	53.334753	-0.736433	27.68	3.50	31.18
27	53.333881	-0.737077	27.50	3.50	31.00
28	53.333420	-0.739652	29.81	3.50	33.31
29	53.332754	-0.739394	29.45	3.50	32.95
30	53.332600	-0.738794	29.26	3.50	32.76
31	53.332779	-0.736390	26.51	3.50	30.01
32	53.332933	-0.729395	19.56	3.50	23.06
33	53.333061	-0.727850	16.21	3.50	19.71
34	53.332933	-0.726563	15.33	3.50	18.83
35	53.333548	-0.725275	15.51	3.50	19.01
36	53.332830	-0.723945	18.56	3.50	22.06
37	53.333317	-0.722357	17.17	3.50	20.67
38	53.334317	-0.723087	13.53	3.50	17.03
19	53.334368	-0.724546	13.39	3.50	16.89
0	53.335701	-0.725189	12.00	3.50	15.50
1	53.336854	-0.724589	13.00	3.50	16.50
2	53.342850	-0.728408	22.84	3.50	26.34
3	53.342517	-0.730940	25.16	3.50	28.66
4	53.340954	-0.730468	22.88	3.50	26.38
5	53.340954	-0.731713	25.55	3.50	29.05
6	53.341261	-0.731713	26.10	3.50	29.60
7	53.344131	-0.732442	20.10	3.50	24.06
8					
	53.344771	-0.729524 -0.730039	20.05	3.50	23.55
9	53.345540	-0.730039	21.29	3.50	24.79
0	53.344874	-0.733944	23.89	3.50	27.39
1	53.345027	-0.735060	24.67	3.50	28.17
2	53.343823	-0.734888	21.25	3.50	24.75
3	53.343695	-0.735832	21.78	3.50	25.28
4	53.344976	-0.736176	23.90	3.50	27.40
5	53.344951	-0.738107	22.26	3.50	25.76
6	53.345540	-0.738150	22.93	3.50	26.43
57	53.345489	-0.736862	24.00	3.50	27.50
58	53.346718	-0.737377	21.53	3.50	25.03
59	53.346975	-0.736605	22.40	3.50	25.90
0	53.347487	-0.736691	23.03	3.50	26.53
1	53.347154	-0.731026	24.81	3.50	28.31
52	53.353865	-0.735446	22.92	3.50	26.42
3	53.354146	-0.736433	22.20	3.50	25.70
4	53.355350	-0.736476	22.00	3.50	25.50

65	53.356938	-0.737420	23.31	3.50	26.81
66	53.356785	-0.738278	24.11	3.50	27.61
67	53.356810	-0.738750	24.03	3.50	27.53

Name: PV array 2

Footprint area: 3,187,939 m^2 Axis tracking: Fixed (no rotation)
Tilt: 5.0 deg
Orientation: 180.0 deg

Rated power: -

Panel material: Light textured glass with AR coating Vary reflectivity with sun position? Yes Correlate slope error with surface type? Yes Slope error: 9.16 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.353754	-0.734662	23.97	3.50	27.47
2	53.338935	-0.725169	13.57	3.50	17.07
3	53.338615	-0.723559	12.00	3.50	15.50
1	53.339140	-0.723624	12.00	3.50	15.50
5	53.339294	-0.722401	12.00	3.50	15.50
;	53.338666	-0.722207	11.79	3.50	15.29
<b>'</b>	53.338269	-0.722744	12.00	3.50	15.50
8	53.337500	-0.722165	11.72	3.50	15.22
)	53.337064	-0.723066	12.31	3.50	15.81
0	53.336155	-0.723452	13.00	3.50	16.50
1	53.333515	-0.721671	15.87	3.50	19.37
2	53.334143	-0.718045	11.00	3.50	14.50
3	53.334745	-0.718538	11.00	3.50	14.50
4	53.334950	-0.718152	11.00	3.50	14.50
5	53.335783	-0.717959	10.14	3.50	13.64
6	53.336616	-0.718345	9.24	3.50	12.74
7	53.336975	-0.718216	9.59	3.50	13.09
8	53.337667	-0.718688	10.61	3.50	14.11
9	53.337897	-0.717723	10.95	3.50	14.45
0	53.337859	-0.716392	9.89	3.50	13.39
21	53.337269	-0.715341	9.24	3.50	12.74
22	53.336116	-0.715856	9.81	3.50	13.31
23	53.334809	-0.714955	10.90	3.50	14.40
24	53.335732	-0.710949	11.21	3.50	14.71
25	53.336244	-0.710563	11.08	3.50	14.58
26	53.336552	-0.709983	11.04	3.50	14.54
.7	53.337564	-0.710155	12.22	3.50	15.72
28	53.337603	-0.709511	12.51	3.50	16.01
29	53.338410	-0.709061	13.25	3.50	16.75
30	53.339153	-0.709211	13.80	3.50	17.30
31	53.339178	-0.705520	14.81	3.50	18.31
32	53.341318	-0.704426	14.16	3.50	17.66
33	53.341254	-0.703460	15.00	3.50	18.50
34	53.338320	-0.701636	14.00	3.50	17.50
5	53.337731	-0.702967	14.70	3.50	18.20
36	53.337052	-0.702516	14.29	3.50	17.79
37	53.337039	-0.698825	16.56	3.50	20.06
38	53.337128	-0.696336	19.06	3.50	22.56
39	53.336962	-0.695049	20.32	3.50	23.82
10	53.337295	-0.693182	19.41	3.50	22.91
11	53.339883	-0.694727	14.00	3.50	17.50
12	53.341087	-0.692023	13.00	3.50	16.50
13	53.341664	-0.692109	13.00	3.50	16.50
4	53.344277	-0.696465	12.00	3.50	15.50
5	53.348287	-0.697817	13.08	3.50	16.58
6	53.349350	-0.697602	14.02	3.50	17.52
7	53.349516	-0.698224	14.00	3.50	17.50
18	53.349427	-0.702924	17.52	3.50	21.02
.9	53.348914	-0.705091	17.98	3.50	21.48
0	53.349222	-0.705305	18.00	3.50	21.50
1	53.349183	-0.706464	18.00	3.50	21.50
2	53.346980	-0.706421	17.00	3.50	20.50
3	53.346378	-0.713138	13.88	3.50	17.38
4	53.347505	-0.713910	14.28	3.50	17.78
5	53.347505	-0.714983	14.25	3.50	17.75
6	53.349030	-0.715498	16.00	3.50	19.50
57	53.349004	-0.720004	22.46	3.50	25.96
58	53.350848	-0.719789	21.00	3.50	24.50
59	53.352872	-0.719747	19.04	3.50	22.54
30	53.353564	-0.719918	18.54	3.50	22.04
61	53.352898	-0.721678	18.21	3.50	21.71
52	53.352782	-0.724574	17.76	3.50	21.26
3	53.353359	-0.728244	19.54	3.50	23.04
	53.353961	-0.728887	19.19	3.50	22.69

65	53.354166	-0.729746	19.36	3.50	22.86
66	53.354179	-0.734016	22.69	3.50	26.19

Name: PV array 3 Footprint area: 162,584 m^2 Axis tracking: Fixed (no rotation) Tilt: 5.0 deg Orientation: 180.0 deg

Rated power: -

Panel material: Light textured glass with AR coating Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes Slope error: 9.16 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.355703	-0.727643	18.87	3.50	22.37
2	53.355177	-0.725669	17.24	3.50	20.74
3	53.355088	-0.721935	18.98	3.50	22.48
4	53.355101	-0.720734	21.71	3.50	25.21
5	53.356125	-0.721034	21.89	3.50	25.39
6	53.357483	-0.721120	19.10	3.50	22.60
7	53.357534	-0.722836	18.29	3.50	21.79
8	53.359083	-0.721849	18.14	3.50	21.64
9	53.359544	-0.722107	16.73	3.50	20.23
10	53.359762	-0.721485	16.64	3.50	20.14
11	53.359583	-0.720734	17.67	3.50	21.17
12	53.360402	-0.719875	17.29	3.50	20.79
13	53.360313	-0.723673	16.00	3.50	19.50
14	53.360044	-0.724832	16.19	3.50	19.69
15	53.357585	-0.725175	17.45	3.50	20.95

Name: PV array 4 Footprint area: 216,857 m^2 Axis tracking: Fixed (no rotation)

Tilt: 5.0 deg

Orientation: 180.0 deg

Rated power: -

Panel material: Light textured glass with AR coating

Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes

Slope error: 9.16 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.360082	-0.727836	17.00	3.50	20.50
2	53.360851	-0.728501	17.37	3.50	20.87
3	53.360710	-0.729596	18.17	3.50	21.67
4	53.361107	-0.729660	18.75	3.50	22.25
5	53.361952	-0.729424	19.00	3.50	22.50
6	53.362874	-0.729510	19.31	3.50	22.81
7	53.363335	-0.730003	20.12	3.50	23.62
8	53.363591	-0.729209	19.64	3.50	23.14
9	53.364052	-0.725733	17.95	3.50	21.45
10	53.364410	-0.720433	15.80	3.50	19.30
11	53.362554	-0.719918	16.00	3.50	19.50
12	53.360671	-0.724210	16.71	3.50	20.21

# **Discrete Observation Receptors**

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	m	m	m
OP 1	53.367985	-0.749333	22.18	1.50	23.68
OP 2	53.367582	-0.746158	26.44	1.50	27.94
OP 3	53.365994	-0.744055	24.46	1.50	25.96
OP 4	53.364381	-0.742875	27.57	1.50	29.07
OP 5	53.362736	-0.741180	27.12	1.50	28.62
OP 6	53.362102	-0.737929	26.06	1.50	27.56
OP 7	53.361526	-0.735643	25.72	1.50	27.22
OP 8	53.360687	-0.732833	22.52	1.50	24.02
OP 9	53.359464	-0.730998	18.26	1.50	19.76
OP 10	53.359848	-0.728133	17.26	1.50	18.76
OP 11	53.360219	-0.725197	16.53	1.50	18.03
OP 12	53.360520	-0.721892	16.00	1.50	17.50
OP 13	53.360606	-0.719121	16.98	1.50	18.48
OP 14	53.360478	-0.716535	17.83	1.50	19.33
OP 15	53.360312	-0.713424	18.59	1.50	20.09
OP 16	53.360120	-0.710184	17.46	1.50	18.96
OP 17	53.359966	-0.706858	16.56	1.50	18.06
OP 18	53.357057	-0.689995	23.85	1.50	25.35
OP 19	53.355264	-0.690950	21.00	1.50	22.50
OP 20	53.353204	-0.691175	21.80	1.50	23.30
DP 20 DP 21			21.62	1.50	23.12
OP 21	53.351407	-0.690950 -0.689834	23.04		
	53.350215			1.50	24.54
OP 23	53.350431	-0.687710	22.36	1.50	23.86
OP 24	53.348598	-0.686276	21.00	1.50	22.50
OP 25	53.346722	-0.685064	16.69	1.50	18.19
OP 26	53.344973	-0.684055	15.81	1.50	17.31
OP 27	53.343333	-0.682907	15.41	1.50	16.91
OP 28	53.341751	-0.681609	12.85	1.50	14.35
OP 29	53.340105	-0.680354	11.97	1.50	13.47
OP 30	53.338433	-0.678498	12.14	1.50	13.64
OP 31	53.364211	-0.757510	9.01	1.50	10.51
OP 32	53.362418	-0.757982	9.49	1.50	10.99
OP 33	53.360561	-0.758454	10.80	1.50	12.30
OP 34	53.358692	-0.758666	9.21	1.50	10.71
OP 35	53.356899	-0.758494	11.12	1.50	12.62
DP 36	53.355209	-0.757743	13.61	1.50	15.11
OP 37	53.353826	-0.755876	17.49	1.50	18.99
OP 38	53.352302	-0.755619	17.55	1.50	19.05
OP 39	53.350611	-0.754203	21.00	1.50	22.50
OP 40	53.348882	-0.753516	20.11	1.50	21.61
P 41	53.347204	-0.754181	17.00	1.50	18.50
)P 42	53.345500	-0.754310	17.00	1.50	18.50
OP 43	53.343604	-0.753688	17.39	1.50	18.89
)P 44	53.342128	-0.752840	18.00	1.50	19.50
OP 45	53.340436	-0.751553	16.54	1.50	18.04
OP 46	53.338822	-0.749815	18.31	1.50	19.81
)P 47	53.337349	-0.748098	20.37	1.50	21.87
)P 48	53.335978	-0.746167	23.07	1.50	24.57

# **Summary of PV Glare Analysis**

PV configuration and total predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	5.0	180.0	56,868	4,409	-	-
PV array 2	5.0	180.0	15,300	324	-	-
PV array 3	5.0	180.0	34,737	0	-	-
PV array 4	5.0	180.0	50,468	10,575	-	-

#### Distinct glare per month

Excludes overlapping glare from PV array for multiple receptors at matching time(s)

PV	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pv-array-1 (green)	0	29	424	819	1088	934	1077	942	559	133	0	0
pv-array-1 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-2 (green)	0	0	252	548	1049	1269	1170	734	363	38	0	0
pv-array-2 (yellow)	0	0	0	57	82	31	61	83	1	0	0	0
pv-array-3 (green)	0	46	433	788	1126	1246	1207	941	548	170	0	0
pv-array-3 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-4 (green)	0	54	745	1092	1530	1829	1714	1250	934	211	0	0
pv-array-4 (yellow)	0	0	23	248	319	325	320	310	92	0	0	0

# **PV & Receptor Analysis Results**

Results for each PV array and receptor

## PV array 1 potential temporary after-image

•		V. II
Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	128	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	229	0
OP: OP 13	414	0
OP: OP 14	542	0
OP: OP 15	615	0
OP: OP 16	671	0
OP: OP 17	653	0
OP: OP 18	1216	0
OP: OP 19	1403	0

OP: OP 20	1710	0
OP: OP 21	2071	0
OP: OP 22	2291	0
OP: OP 23	2172	0
OP: OP 24	2442	0
OP: OP 25	2416	0
OP: OP 26	2708	0
OP: OP 27	3156	0
OP: OP 28	3275	0
OP: OP 29	3912	0
OP: OP 30	3889	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	0	0
OP: OP 34	90	0
OP: OP 35	370	0
OP: OP 36	1069	0
OP: OP 37	1988	0
OP: OP 38	1988	0
OP: OP 39	1986	0
OP: OP 40	1995	0
OP: OP 41	1988	0
OP: OP 42	1867	121
OP: OP 43	1059	929
OP: OP 44	978	1010
OP: OP 45	1073	915
OP: OP 46	959	1029
OP: OP 47	1591	405
OP: OP 48	1954	0

## PV array 1 - OP Receptor (OP 1)

No glare found

#### PV array 1 - OP Receptor (OP 2)

No glare found

#### PV array 1 - OP Receptor (OP 3)

No glare found

#### PV array 1 - OP Receptor (OP 4)

No glare found

#### PV array 1 - OP Receptor (OP 5)

No glare found

#### PV array 1 - OP Receptor (OP 6)

No glare found

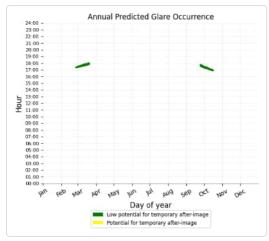
#### PV array 1 - OP Receptor (OP 7)

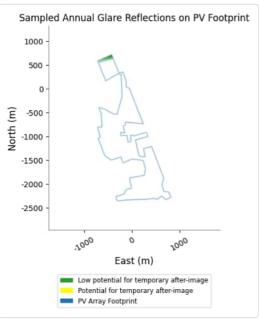
No glare found

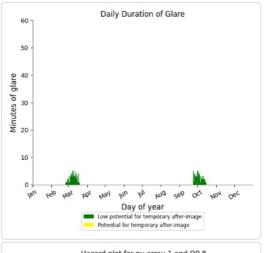
#### PV array 1 - OP Receptor (OP 8)

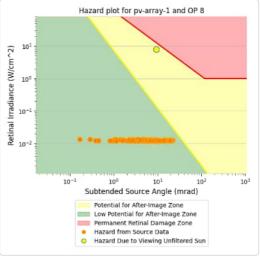
- PV array is expected to produce the following glare for receptors at this location:

   128 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.









# PV array 1 - OP Receptor (OP 9)

No glare found

#### PV array 1 - OP Receptor (OP 10)

No glare found

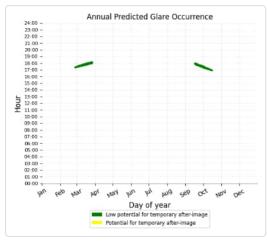
#### PV array 1 - OP Receptor (OP 11)

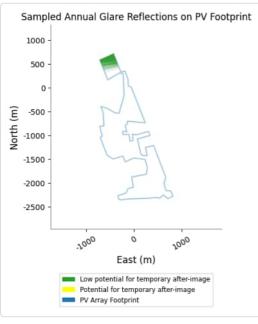
No glare found

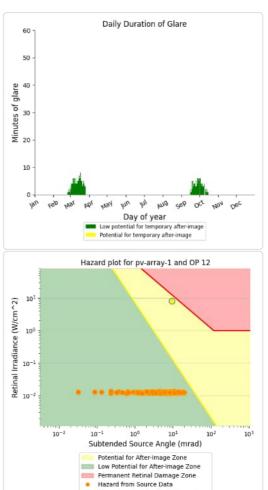
#### PV array 1 - OP Receptor (OP 12)

PV array is expected to produce the following glare for receptors at this location:

- 229 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



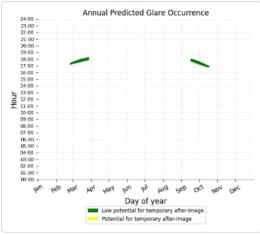


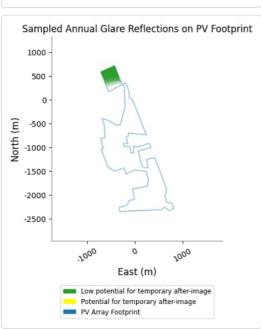


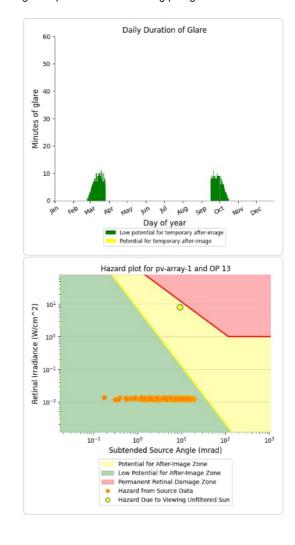
Hazard Due to Viewing Unfiltered Sun

#### PV array 1 - OP Receptor (OP 13)

- PV array is expected to produce the following glare for receptors at this location:
   414 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.



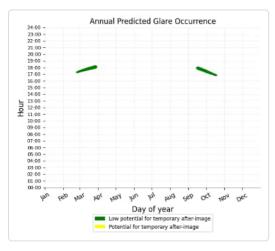


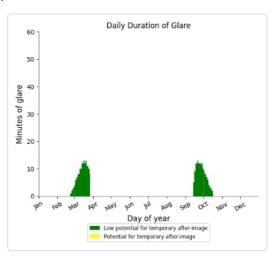


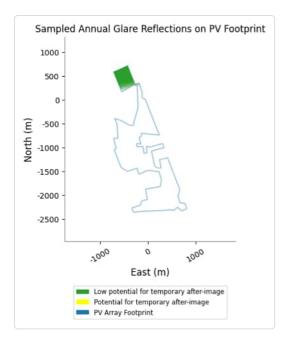
#### PV array 1 - OP Receptor (OP 14)

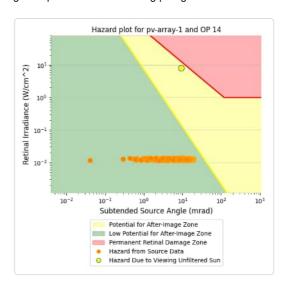
- PV array is expected to produce the following glare for receptors at this location:

   542 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



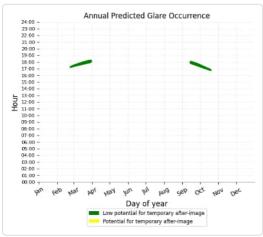


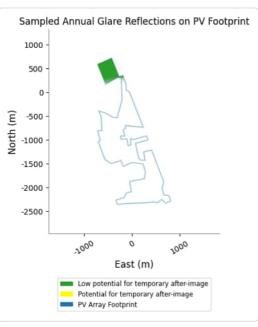


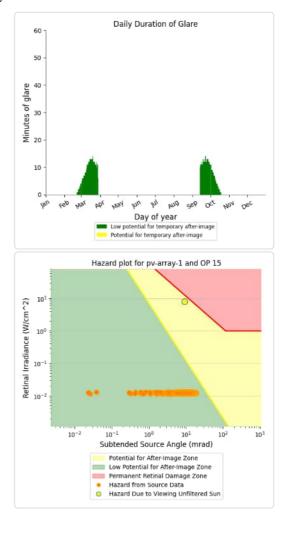


# PV array 1 - OP Receptor (OP 15)

- PV array is expected to produce the following glare for receptors at this location:
   • 615 minutes of "green" glare with low potential to cause temporary after-image.
   • 0 minutes of "yellow" glare with potential to cause temporary after-image.



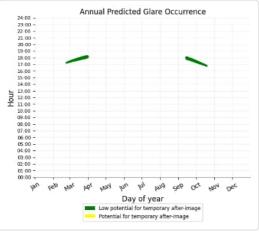


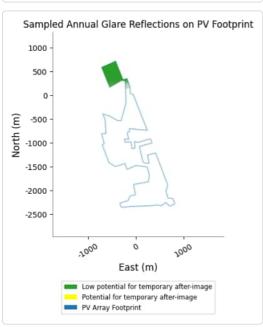


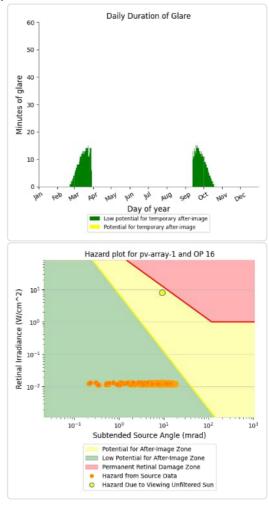
#### PV array 1 - OP Receptor (OP 16)

PV array is expected to produce the following glare for receptors at this location:

• 671 minutes of "green" glare with low potential to cause temporary after-image.

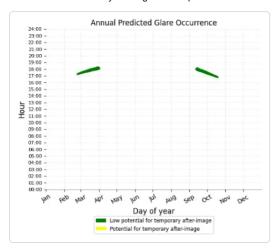


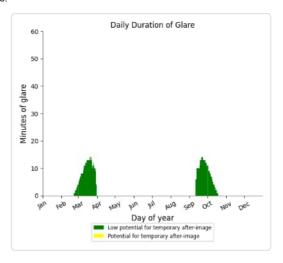


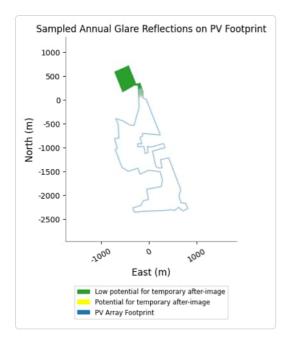


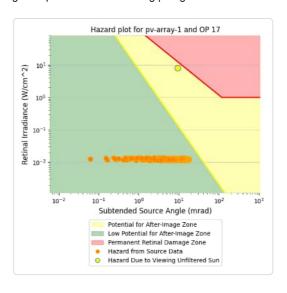
#### PV array 1 - OP Receptor (OP 17)

- 653 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





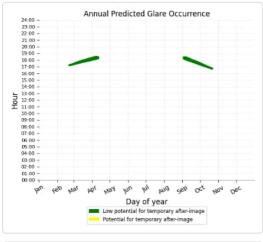


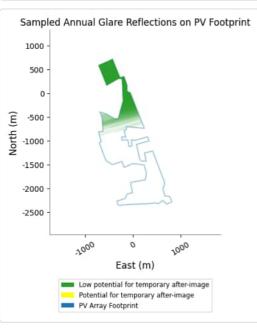


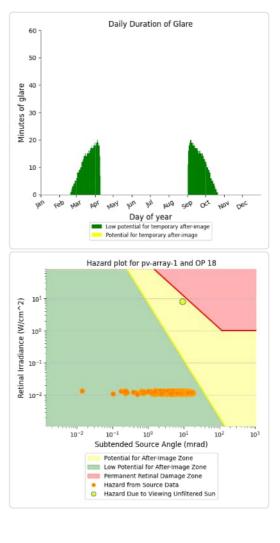
# PV array 1 - OP Receptor (OP 18)

- PV array is expected to produce the following glare for receptors at this location:

   1,216 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



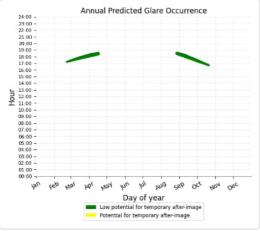


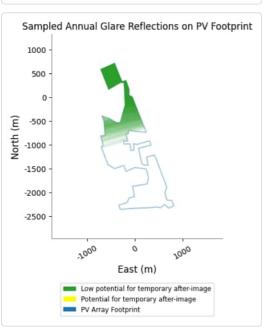


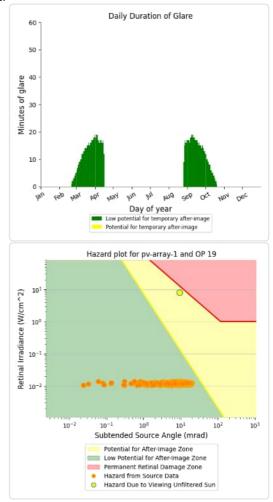
#### PV array 1 - OP Receptor (OP 19)

PV array is expected to produce the following glare for receptors at this location:

• 1,403 minutes of "green" glare with low potential to cause temporary after-image.

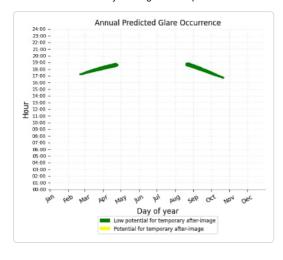


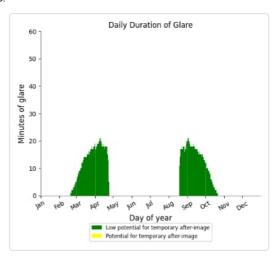


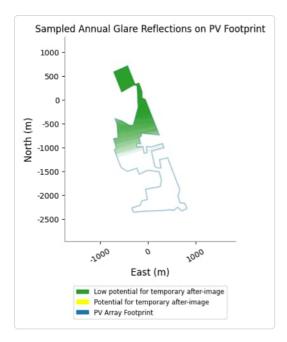


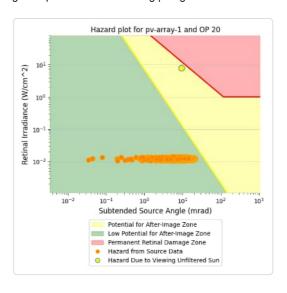
#### PV array 1 - OP Receptor (OP 20)

- 1,710 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



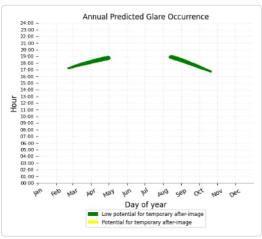


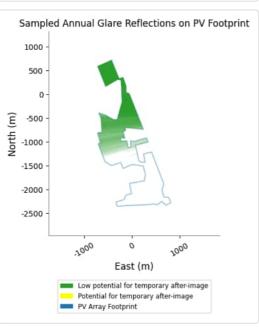


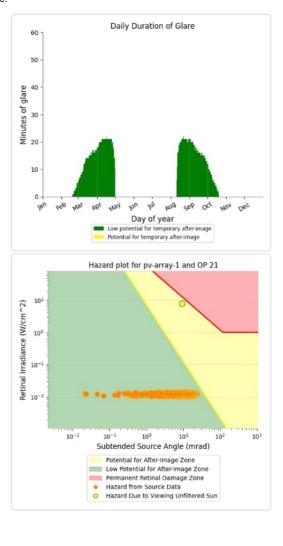


# PV array 1 - OP Receptor (OP 21)

- PV array is expected to produce the following glare for receptors at this location:
   2,071 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



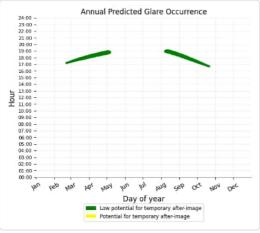


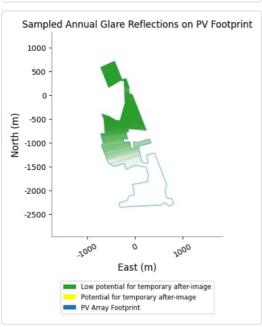


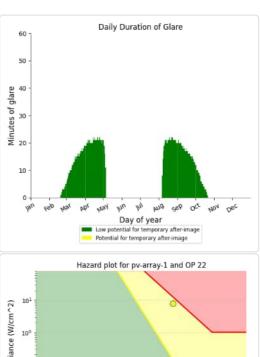
#### PV array 1 - OP Receptor (OP 22)

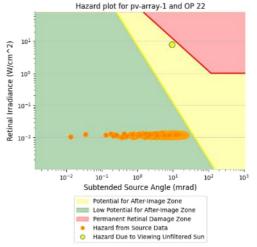
PV array is expected to produce the following glare for receptors at this location:

• 2,291 minutes of "green" glare with low potential to cause temporary after-image.



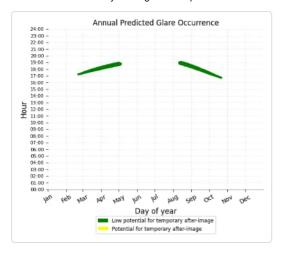


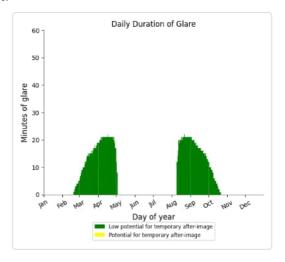


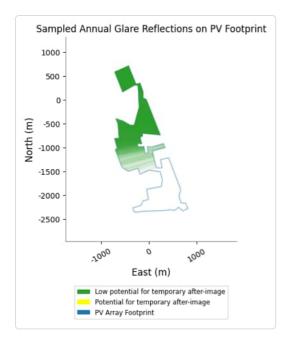


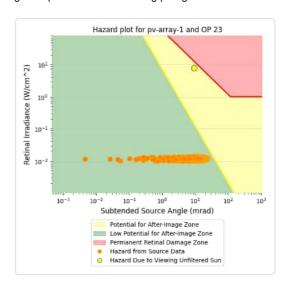
#### PV array 1 - OP Receptor (OP 23)

- 2,172 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





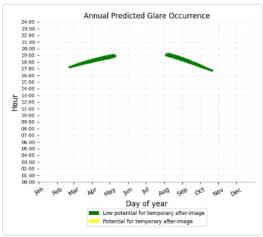


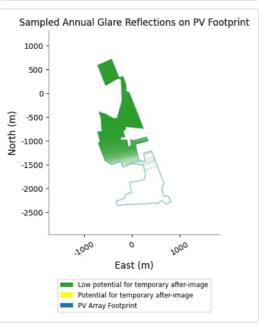


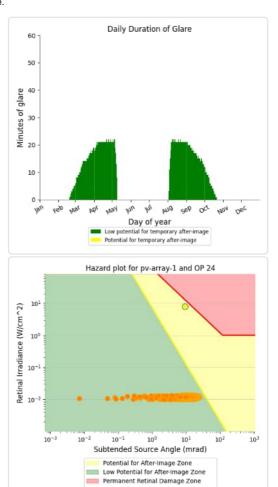
# PV array 1 - OP Receptor (OP 24)

- PV array is expected to produce the following glare for receptors at this location:

   2,442 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.





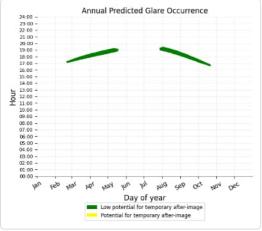


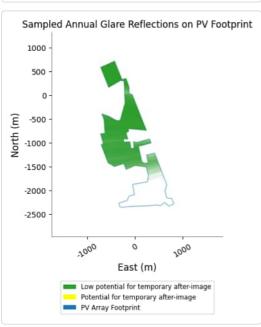
Hazard from Source Data Hazard Due to Viewing Unfiltered Sun

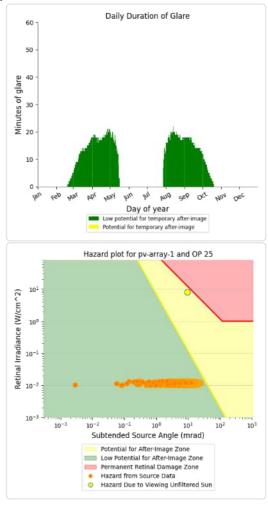
#### PV array 1 - OP Receptor (OP 25)

PV array is expected to produce the following glare for receptors at this location:

• 2,416 minutes of "green" glare with low potential to cause temporary after-image.

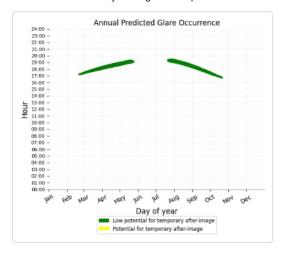


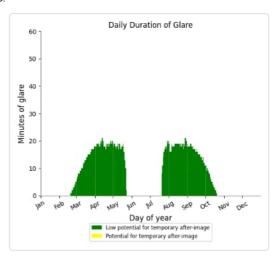


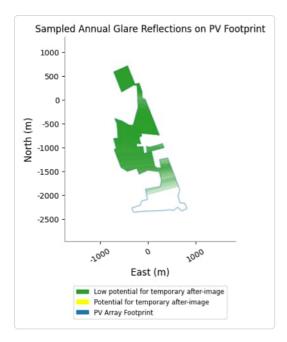


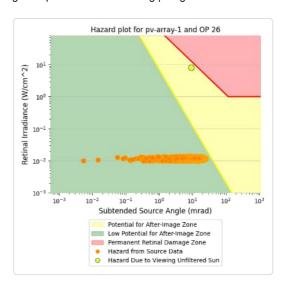
#### PV array 1 - OP Receptor (OP 26)

- 2,708 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





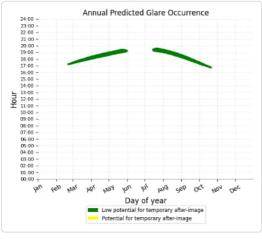


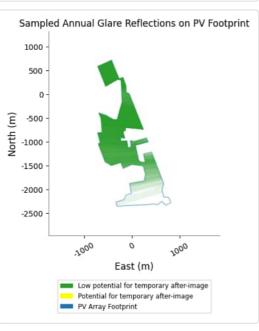


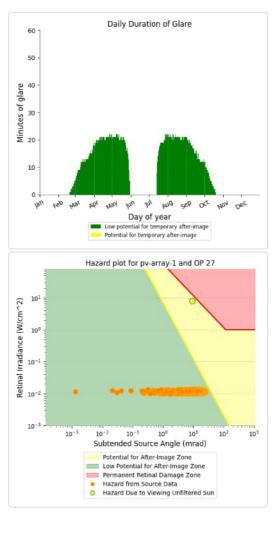
# PV array 1 - OP Receptor (OP 27)

- PV array is expected to produce the following glare for receptors at this location:

   3,156 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



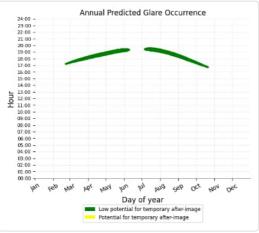


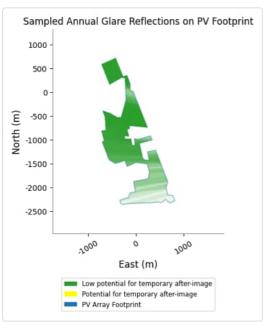


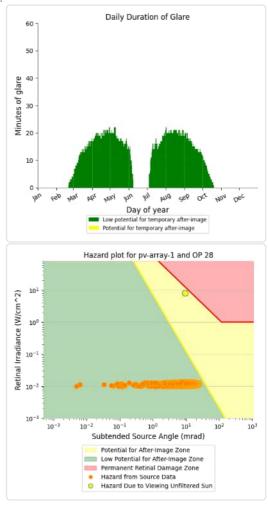
#### PV array 1 - OP Receptor (OP 28)

PV array is expected to produce the following glare for receptors at this location:

• 3,275 minutes of "green" glare with low potential to cause temporary after-image.

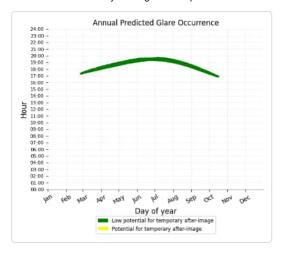


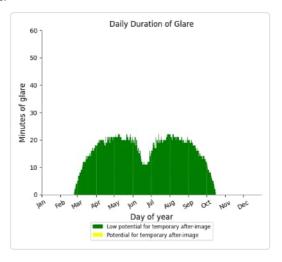


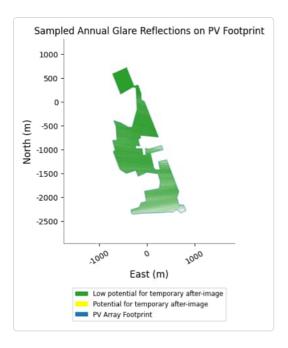


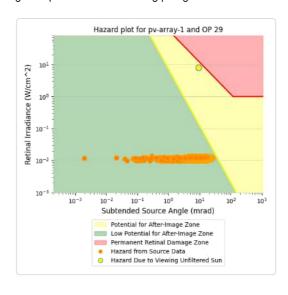
#### PV array 1 - OP Receptor (OP 29)

- 3,912 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





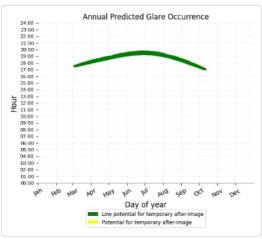


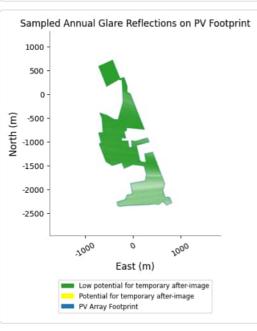


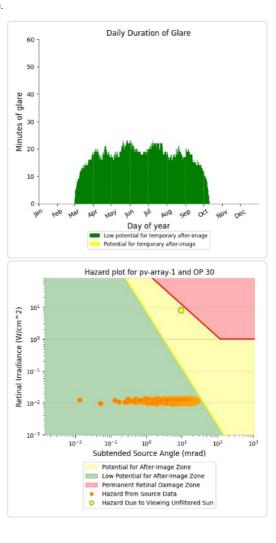
## PV array 1 - OP Receptor (OP 30)

- PV array is expected to produce the following glare for receptors at this location:

   3,889 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.







PV array 1 - OP Receptor (OP 31)

No glare found

#### PV array 1 - OP Receptor (OP 32)

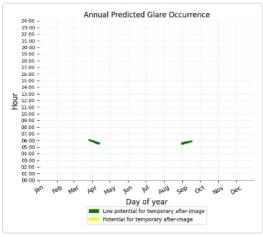
No glare found

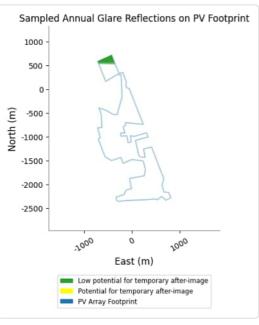
#### PV array 1 - OP Receptor (OP 33)

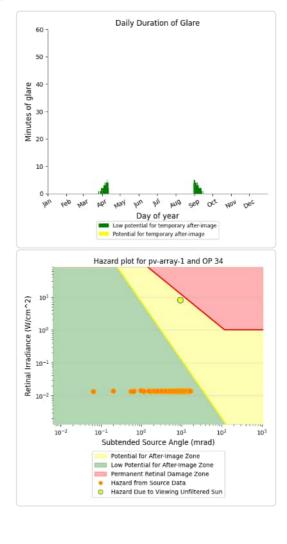
No glare found

#### PV array 1 - OP Receptor (OP 34)

- PV array is expected to produce the following glare for receptors at this location:
   • 90 minutes of "green" glare with low potential to cause temporary after-image.
   • 0 minutes of "yellow" glare with potential to cause temporary after-image.

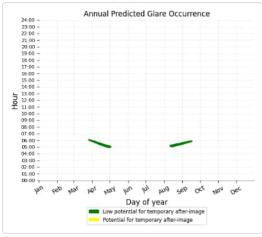


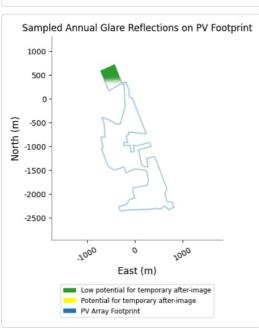


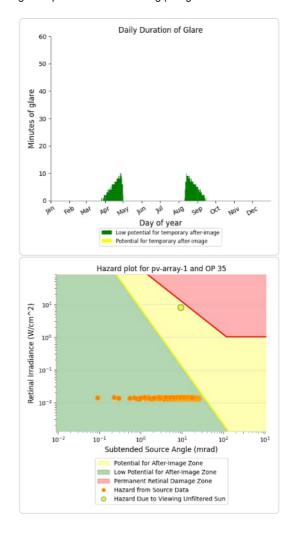


#### PV array 1 - OP Receptor (OP 35)

- 370 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



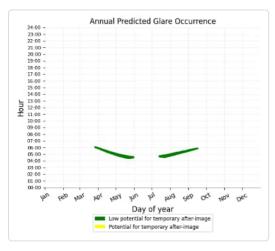


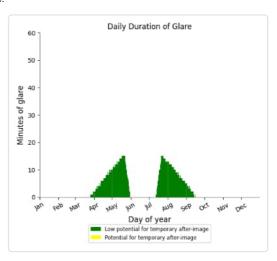


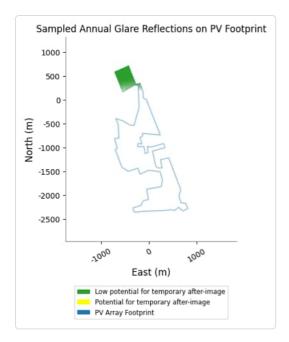
#### PV array 1 - OP Receptor (OP 36)

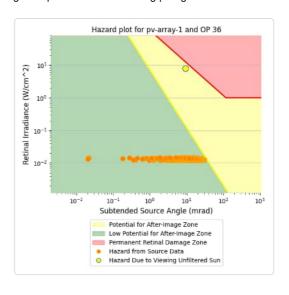
- PV array is expected to produce the following glare for receptors at this location:

   1,069 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.





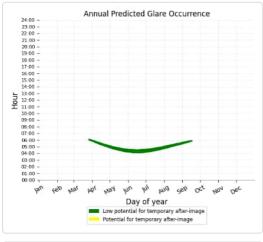


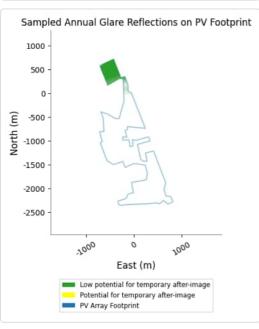


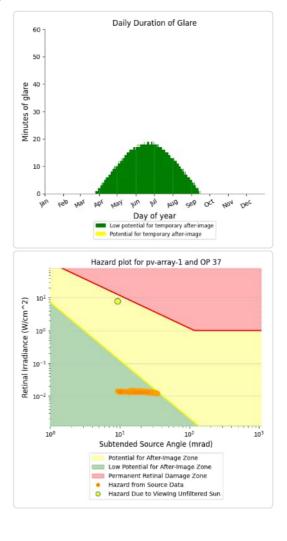
# PV array 1 - OP Receptor (OP 37)

- PV array is expected to produce the following glare for receptors at this location:

   1,988 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



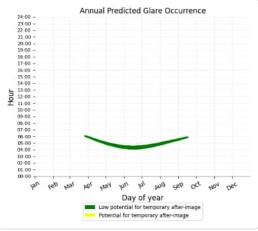


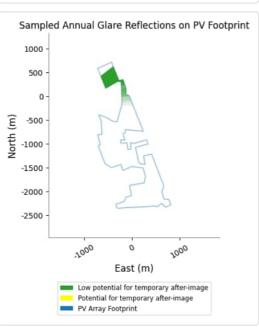


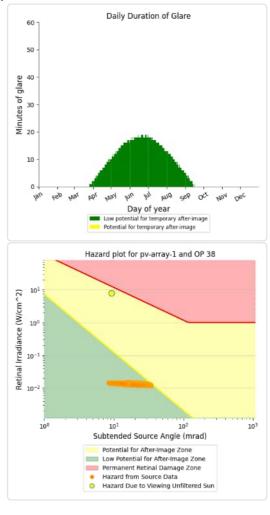
#### PV array 1 - OP Receptor (OP 38)

PV array is expected to produce the following glare for receptors at this location:

• 1,988 minutes of "green" glare with low potential to cause temporary after-image.

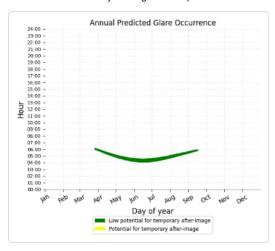


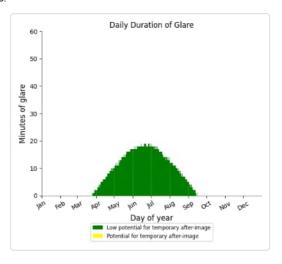


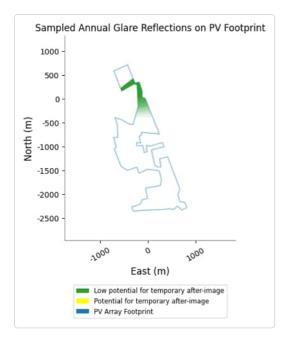


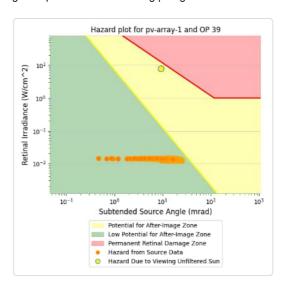
#### PV array 1 - OP Receptor (OP 39)

- 1,986 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





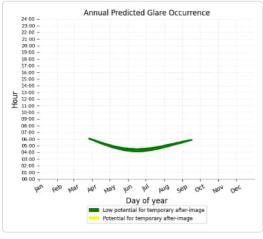


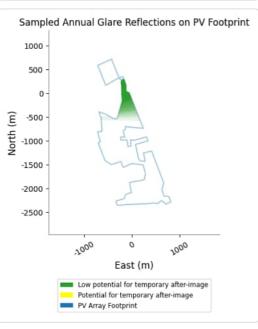


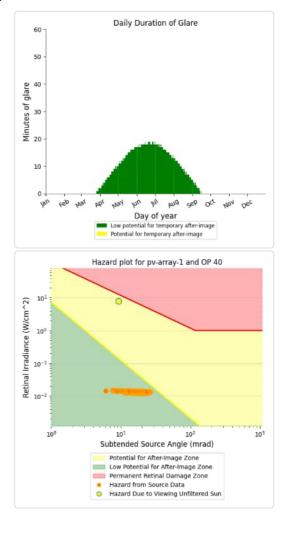
# PV array 1 - OP Receptor (OP 40)

- PV array is expected to produce the following glare for receptors at this location:

   1,995 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



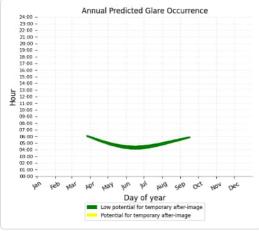


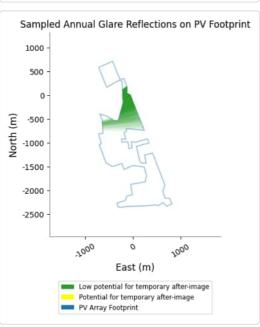


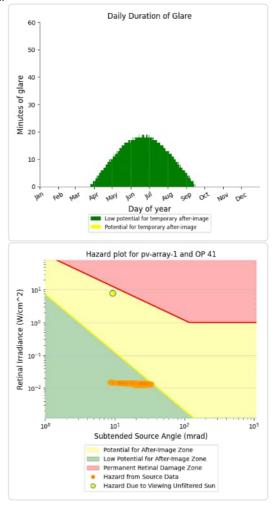
#### PV array 1 - OP Receptor (OP 41)

PV array is expected to produce the following glare for receptors at this location:

• 1,988 minutes of "green" glare with low potential to cause temporary after-image.

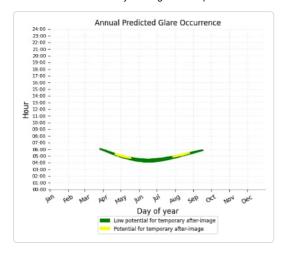


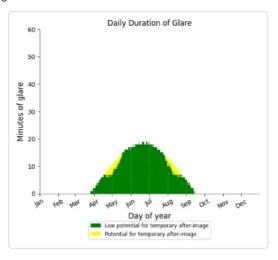


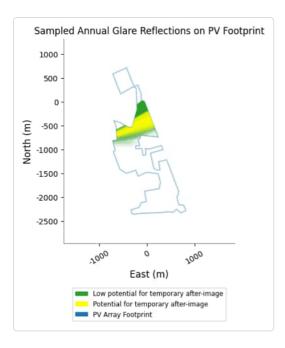


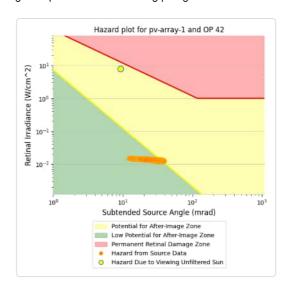
#### PV array 1 - OP Receptor (OP 42)

- 1,867 minutes of "green" glare with low potential to cause temporary after-image.
- 121 minutes of "yellow" glare with potential to cause temporary after-image.



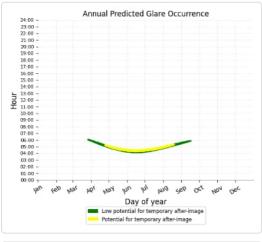


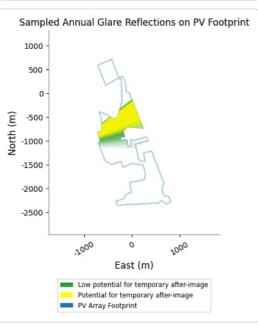


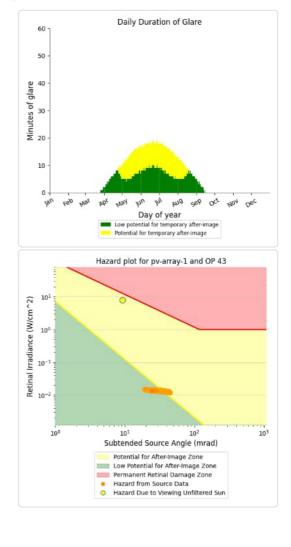


# PV array 1 - OP Receptor (OP 43)

- PV array is expected to produce the following glare for receptors at this location:
   1,059 minutes of "green" glare with low potential to cause temporary after-image.
   929 minutes of "yellow" glare with potential to cause temporary after-image.



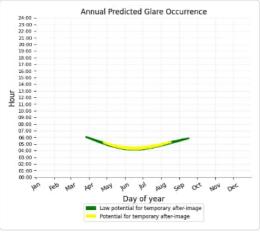


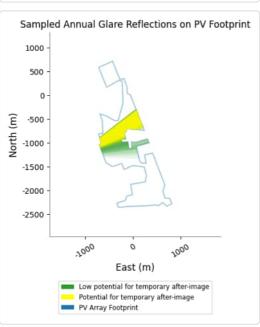


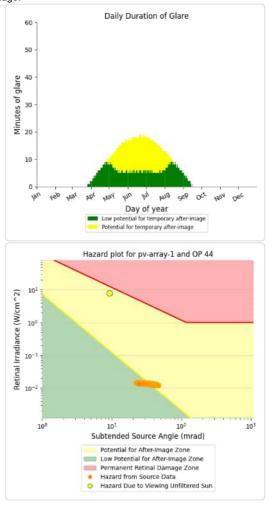
#### PV array 1 - OP Receptor (OP 44)

PV array is expected to produce the following glare for receptors at this location:

• 978 minutes of "green" glare with low potential to cause temporary after-image.

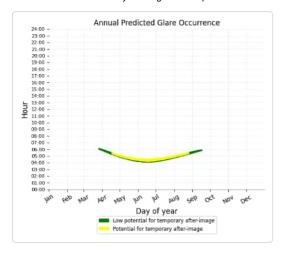


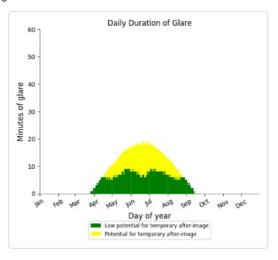


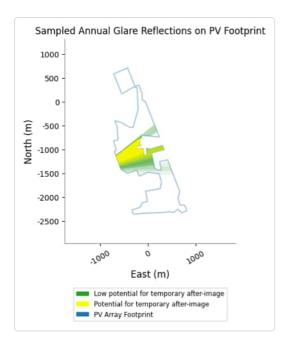


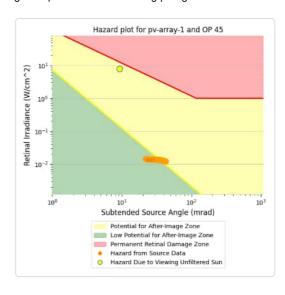
#### PV array 1 - OP Receptor (OP 45)

- 1,073 minutes of "green" glare with low potential to cause temporary after-image.
- 915 minutes of "yellow" glare with potential to cause temporary after-image.





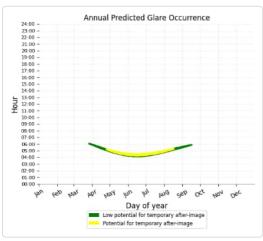


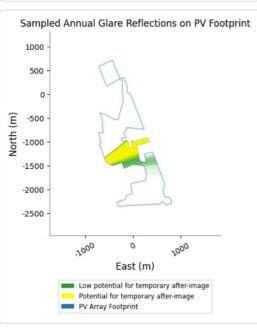


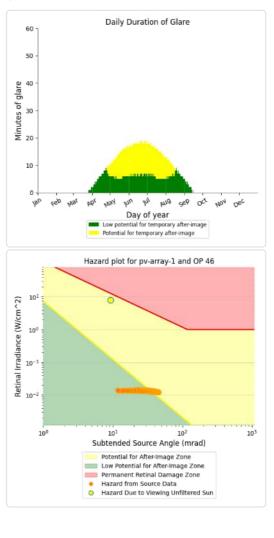
# PV array 1 - OP Receptor (OP 46)

- PV array is expected to produce the following glare for receptors at this location:

   959 minutes of "green" glare with low potential to cause temporary after-image.
   1,029 minutes of "yellow" glare with potential to cause temporary after-image.



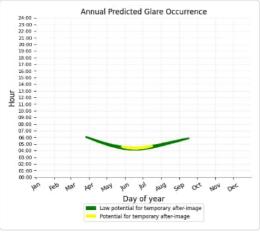


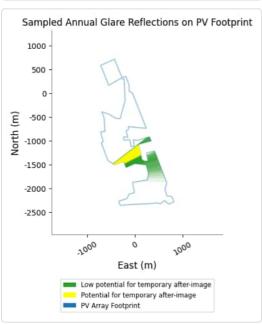


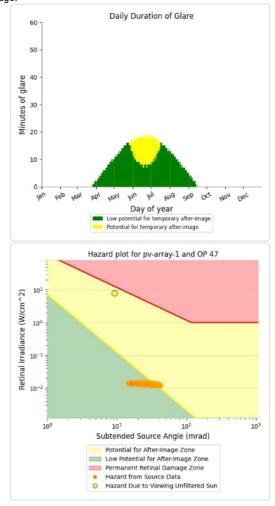
#### PV array 1 - OP Receptor (OP 47)

PV array is expected to produce the following glare for receptors at this location:

• 1,591 minutes of "green" glare with low potential to cause temporary after-image.

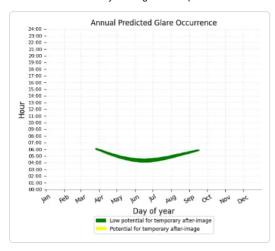


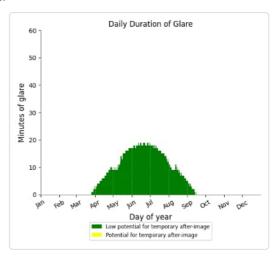


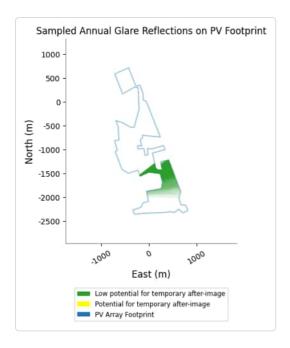


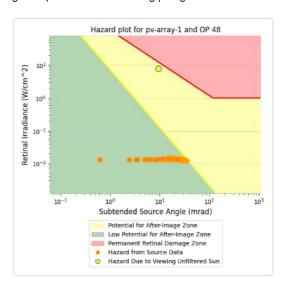
#### PV array 1 - OP Receptor (OP 48)

- 1,954 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.









 $PV\ array\ 2\quad {\it potential\ temporary\ after-image}$ 

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0
OP: OP 21	10	0
OP: OP 22	14	0
OP: OP 23	0	0
OP: OP 24	46	0
OP: OP 25	249	0
OP: OP 26	804	0
OP: OP 27	1376	0
OP: OP 28	1461	0
OP: OP 29	1463	9
OP: OP 30	1381	79
OP: OP 31	0	0
OP: OP 32	0	0

OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	0	0
OP: OP 38	16	0
OP: OP 39	78	0
OP: OP 40	199	0
OP: OP 41	702	0
OP: OP 42	919	0
OP: OP 43	860	0
OP: OP 44	990	0
OP: OP 45	1284	0
OP: OP 46	889	0
OP: OP 47	0	0
OP: OP 48	2559	236

/16/23, 3:41 PM
PV array 2 - OP Receptor (OP 1)  No glare found
PV array 2 - OP Receptor (OP 2)  No glare found
PV array 2 - OP Receptor (OP 3)  No glare found
PV array 2 - OP Receptor (OP 4)  No glare found
PV array 2 - OP Receptor (OP 5)  No glare found
PV array 2 - OP Receptor (OP 6) No glare found
PV array 2 - OP Receptor (OP 7) No glare found
PV array 2 - OP Receptor (OP 8)  No glare found
PV array 2 - OP Receptor (OP 9)  No glare found
PV array 2 - OP Receptor (OP 10) No glare found
PV array 2 - OP Receptor (OP 11)  No glare found
PV array 2 - OP Receptor (OP 12)  No glare found
PV array 2 - OP Receptor (OP 13)  No glare found
PV array 2 - OP Receptor (OP 14)  No glare found
PV array 2 - OP Receptor (OP 15)  No glare found
PV array 2 - OP Receptor (OP 16)  No glare found
PV array 2 - OP Receptor (OP 17)

No glare found

No glare found

No glare found

PV array 2 - OP Receptor (OP 18)

PV array 2 - OP Receptor (OP 19)

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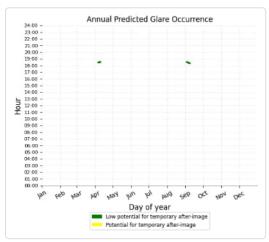
# PV array 2 - OP Receptor (OP 20)

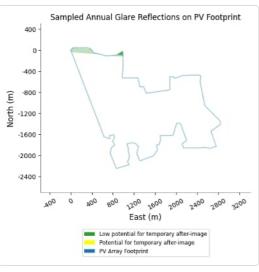
No glare found

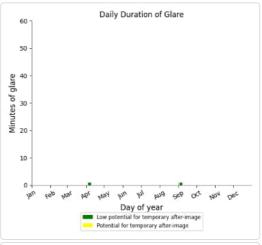
#### PV array 2 - OP Receptor (OP 21)

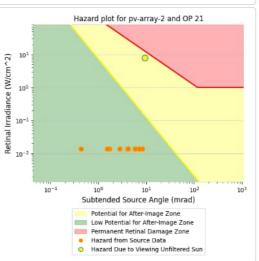
- PV array is expected to produce the following glare for receptors at this location:

   10 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



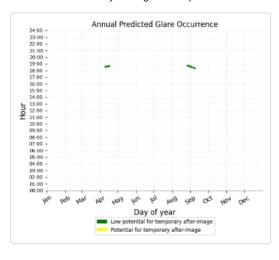


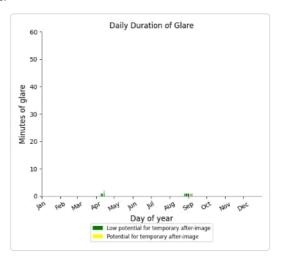


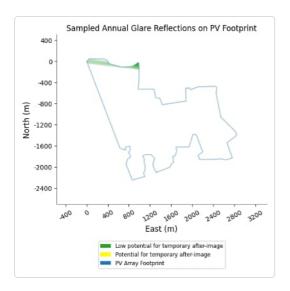


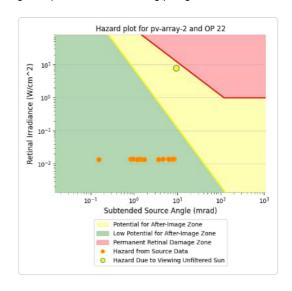
## PV array 2 - OP Receptor (OP 22)

- 14 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.









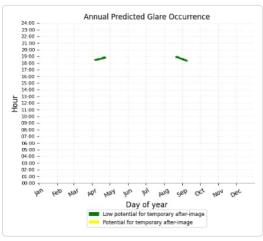
### PV array 2 - OP Receptor (OP 23)

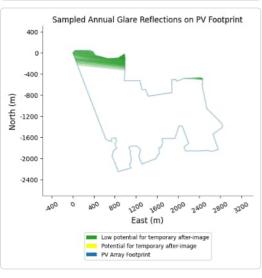
No glare found

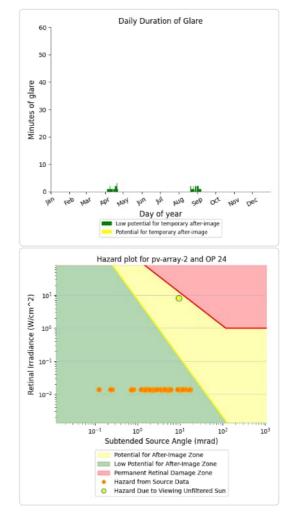
### PV array 2 - OP Receptor (OP 24)

- PV array is expected to produce the following glare for receptors at this location:

   46 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



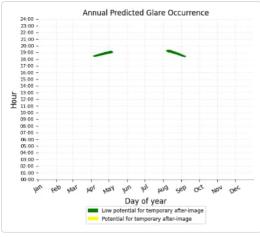


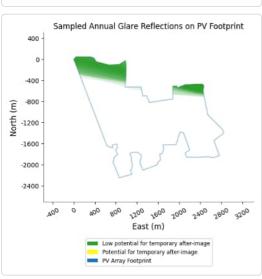


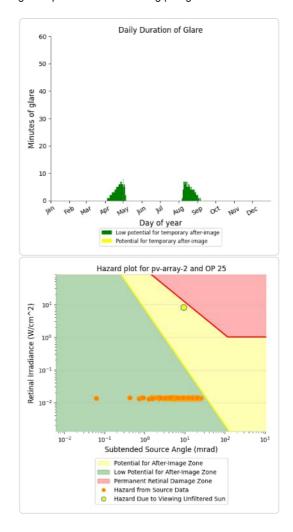
## PV array 2 - OP Receptor (OP 25)

- PV array is expected to produce the following glare for receptors at this location:

   249 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.

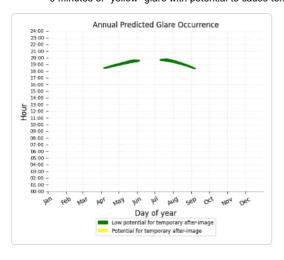


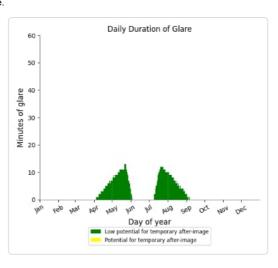


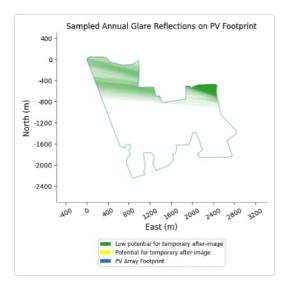


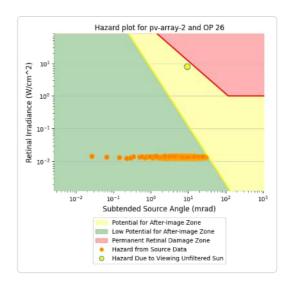
## PV array 2 - OP Receptor (OP 26)

- 804 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





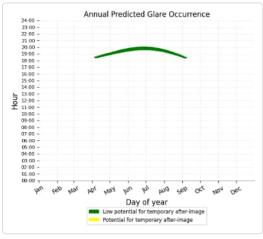


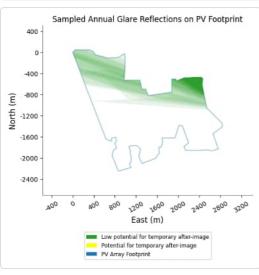


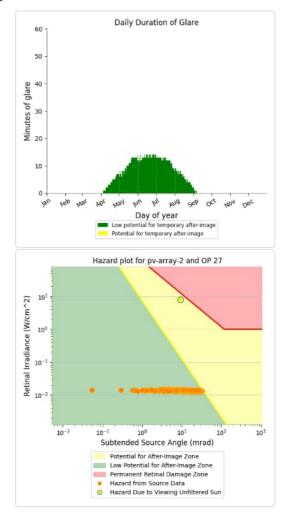
### PV array 2 - OP Receptor (OP 27)

PV array is expected to produce the following glare for receptors at this location:

- 1,376 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

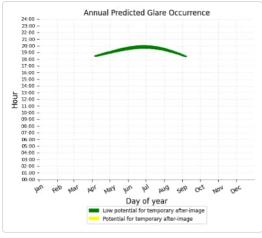


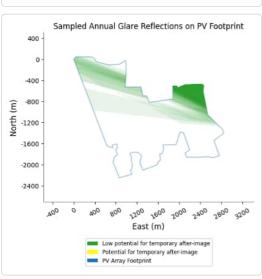


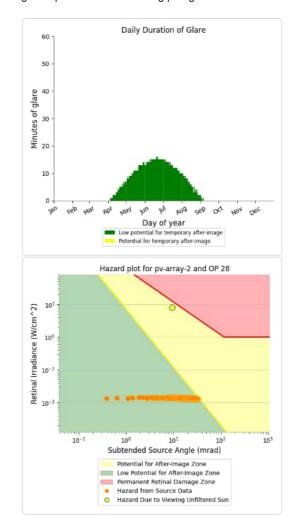


### PV array 2 - OP Receptor (OP 28)

- 1,461 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



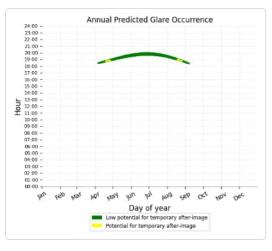


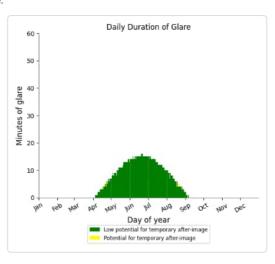


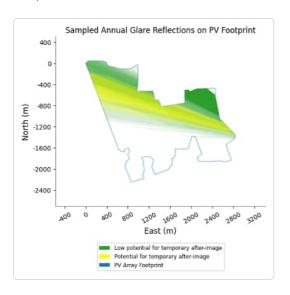
## PV array 2 - OP Receptor (OP 29)

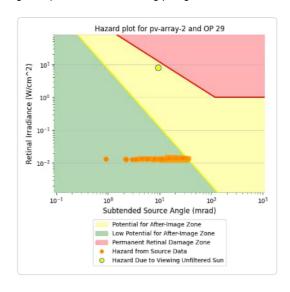
- PV array is expected to produce the following glare for receptors at this location:

   1,463 minutes of "green" glare with low potential to cause temporary after-image.
  - 9 minutes of "yellow" glare with potential to cause temporary after-image.





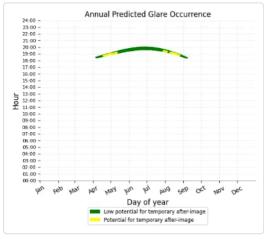


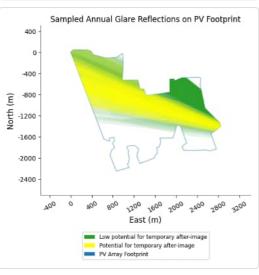


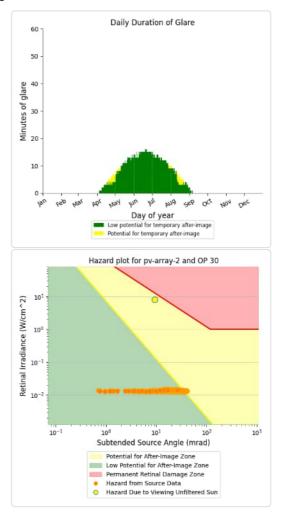
### PV array 2 - OP Receptor (OP 30)

PV array is expected to produce the following glare for receptors at this location:

- 1,381 minutes of "green" glare with low potential to cause temporary after-image.
  - 79 minutes of "yellow" glare with potential to cause temporary after-image.







PV array 2 - OP Receptor (OP 31)

No glare found

PV array 2 - OP Receptor (OP 32)

No glare found

PV array 2 - OP Receptor (OP 33)

No glare found

### PV array 2 - OP Receptor (OP 34)

No glare found

### PV array 2 - OP Receptor (OP 35)

No glare found

#### PV array 2 - OP Receptor (OP 36)

No glare found

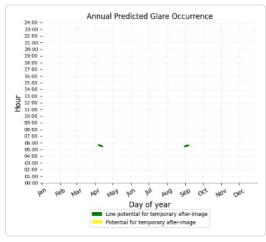
#### PV array 2 - OP Receptor (OP 37)

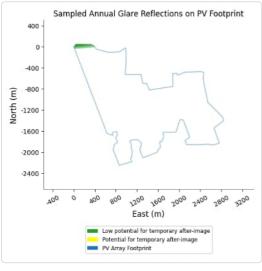
No glare found

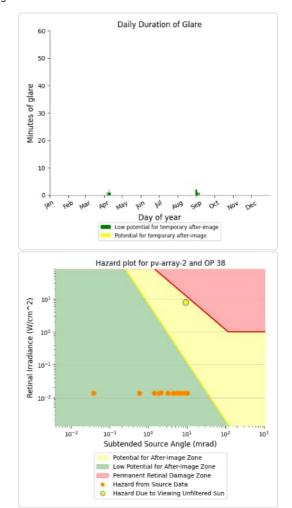
#### PV array 2 - OP Receptor (OP 38)

PV array is expected to produce the following glare for receptors at this location:

- 16 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.

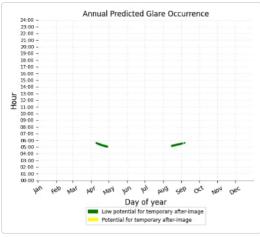


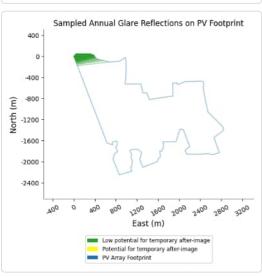


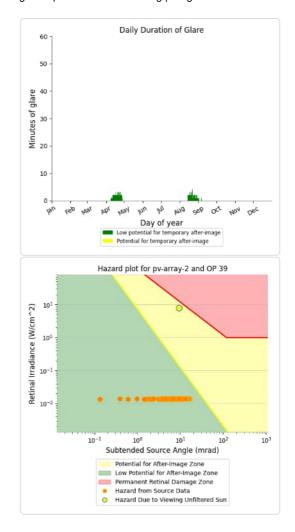


### PV array 2 - OP Receptor (OP 39)

- 78 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.

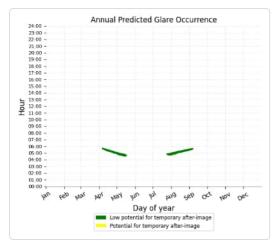


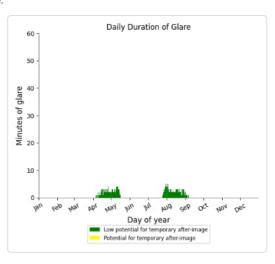


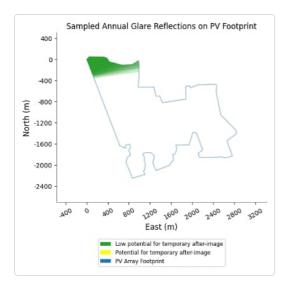


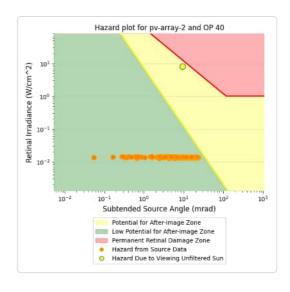
## PV array 2 - OP Receptor (OP 40)

- 199 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





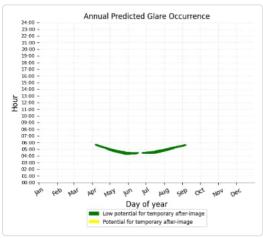


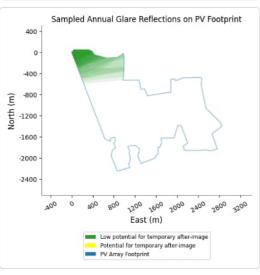


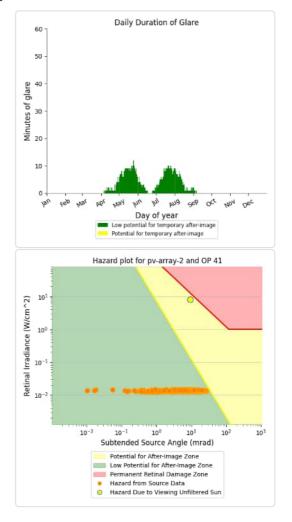
### PV array 2 - OP Receptor (OP 41)

PV array is expected to produce the following glare for receptors at this location:

- 702 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

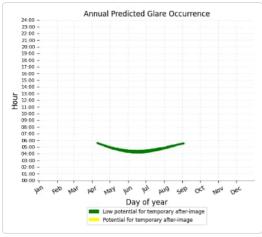


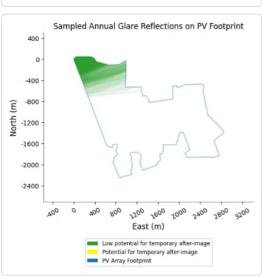


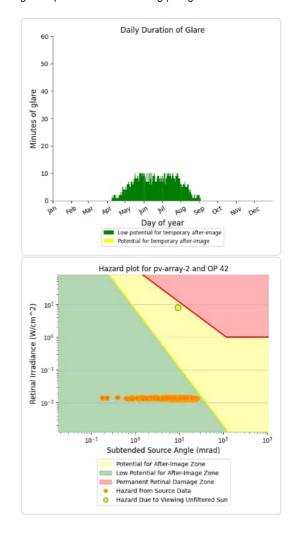


### PV array 2 - OP Receptor (OP 42)

- 919 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

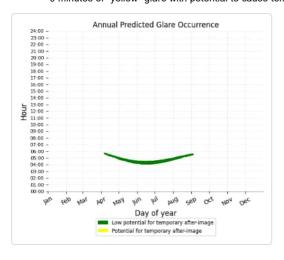


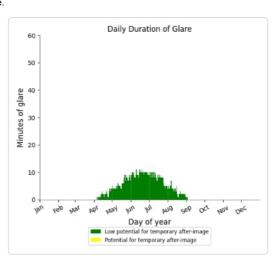


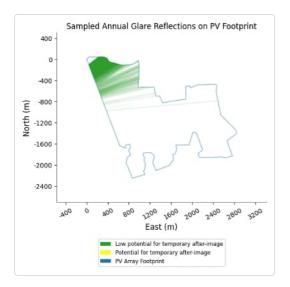


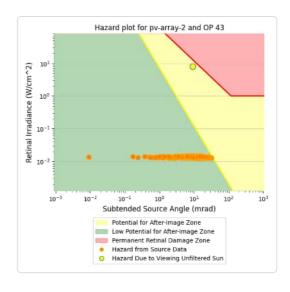
## PV array 2 - OP Receptor (OP 43)

- 860 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





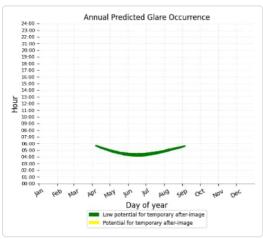


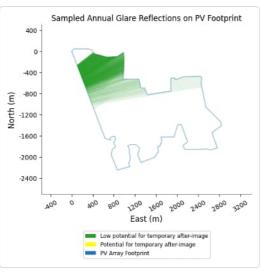


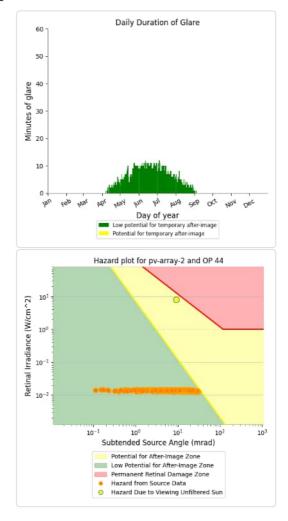
### PV array 2 - OP Receptor (OP 44)

PV array is expected to produce the following glare for receptors at this location:

- 990 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

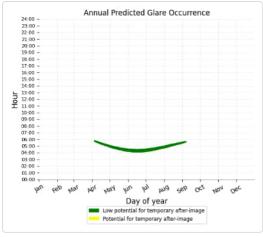


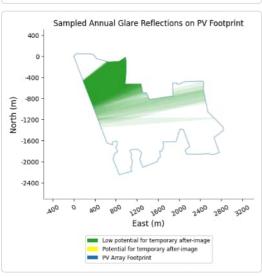


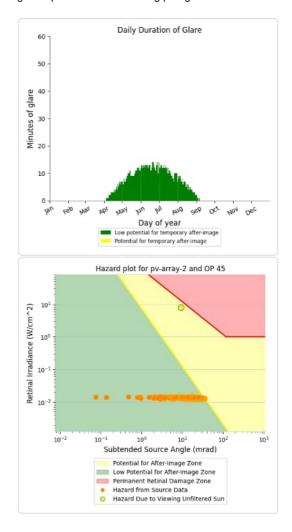


### PV array 2 - OP Receptor (OP 45)

- 1,284 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

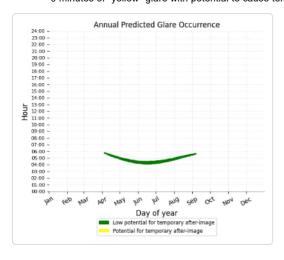


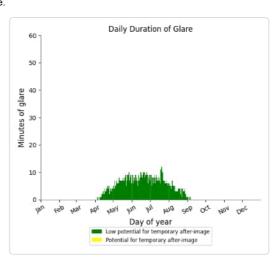


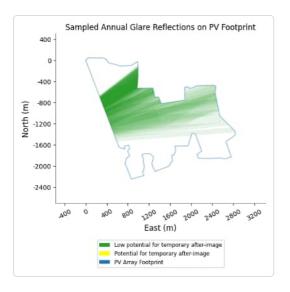


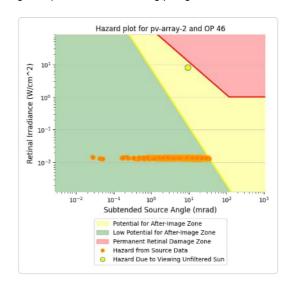
## PV array 2 - OP Receptor (OP 46)

- 889 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 2 - OP Receptor (OP 47)

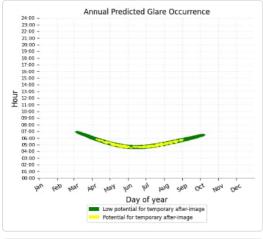
No glare found

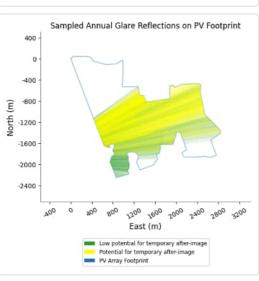
### PV array 2 - OP Receptor (OP 48)

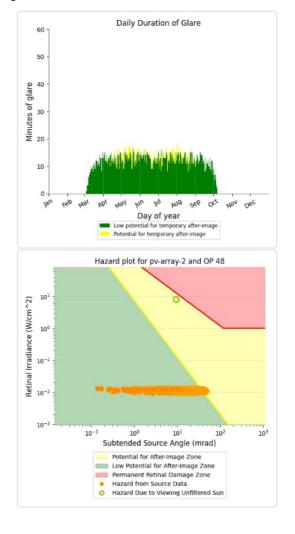
PV array is expected to produce the following glare for receptors at this location:

• 2,559 minutes of "green" glare with low potential to cause temporary after-image.

- 236 minutes of "yellow" glare with potential to cause temporary after-image.







PV array 3 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0

OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	70	0
OP: OP 5	300	0
OP: OP 6	373	0
OP: OP 7	512	0
OP: OP 8	710	0
OP: OP 9	672	0
OP: OP 10	1	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	8	0
OP: OP 16	19	0
OP: OP 17	22	0
OP: OP 18	125	0
OP: OP 19	328	0
OP: OP 20	625	0
OP: OP 21	995	0
OP: OP 22	1349	0
OP: OP 23	994	0
OP: OP 24	1478	0
OP: OP 25	1788	0
OP: OP 26	1698	0
OP: OP 27	1555	0
OP: OP 28	1488	0
OP: OP 29	1358	0
OP: OP 30	1173	0
OP: OP 31	185	0
OP: OP 32	373	0
OP: OP 33	610	0
OP: OP 34	702	0
OP: OP 35	1001	0
OP: OP 36	1091	0
OP: OP 37	1404	0
OP: OP 38	1638	0
OP: OP 39	2628	0
OP: OP 40	2504	0
OP: OP 41	2017	0
OP: OP 42	1724	0
OP: OP 43	989	0
OP: OP 44	230	0
OP: OP 45	0	0
OP: OP 46	0	0
OP: OP 47		
	0	0
OP: OP 48	0	0

### PV array 3 - OP Receptor (OP 1)

No glare found

### PV array 3 - OP Receptor (OP 2)

No glare found

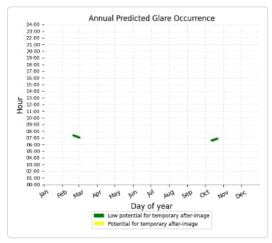
### PV array 3 - OP Receptor (OP 3)

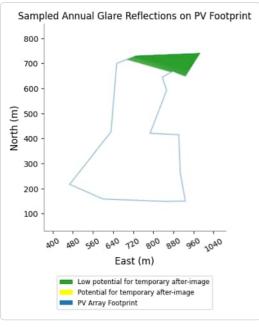
No glare found

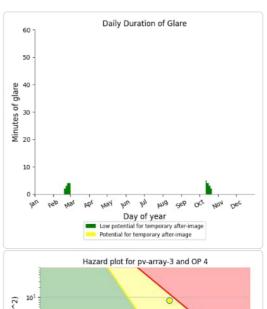
## PV array 3 - OP Receptor (OP 4)

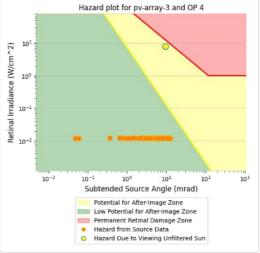
PV array is expected to produce the following glare for receptors at this location:

- 70 minutes of "green" glare with low potential to cause temporary after-image.
  0 minutes of "yellow" glare with potential to cause temporary after-image.



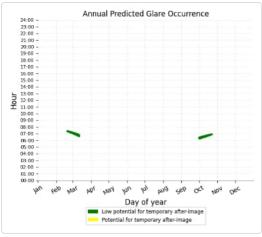


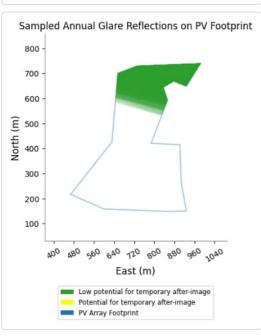


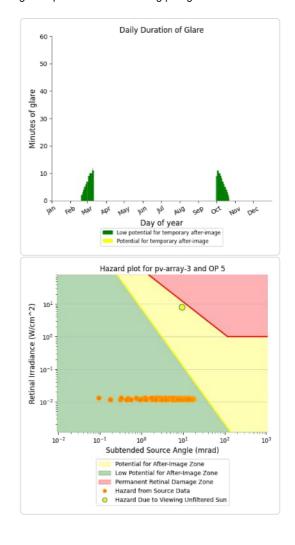


### PV array 3 - OP Receptor (OP 5)

- 300 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

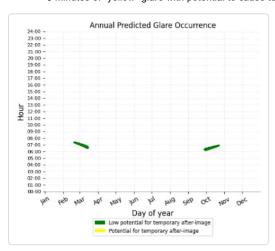


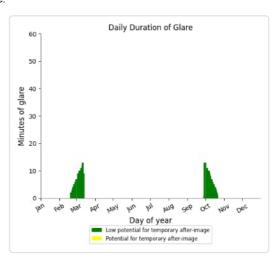


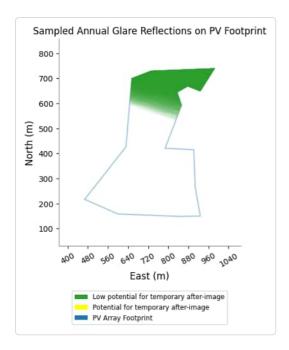


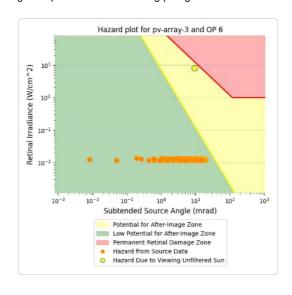
### PV array 3 - OP Receptor (OP 6)

- 373 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.







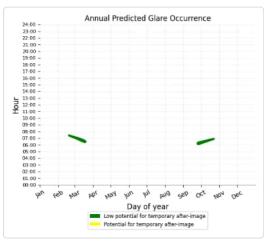


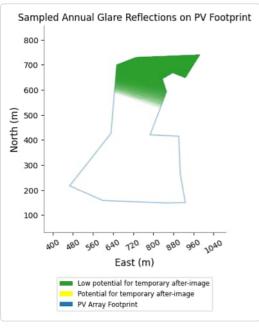
# PV array 3 - OP Receptor (OP 7)

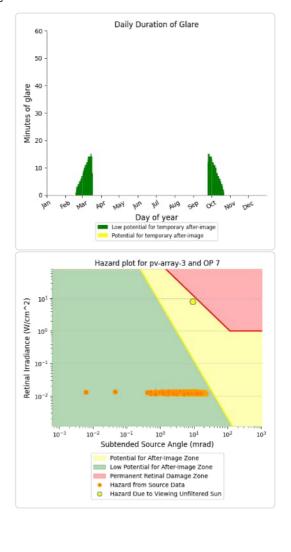
PV array is expected to produce the following glare for receptors at this location:

- 512 minutes of "green" glare with low potential to cause temporary after-image.

  0 minutes of "yellow" glare with potential to cause temporary after-image.





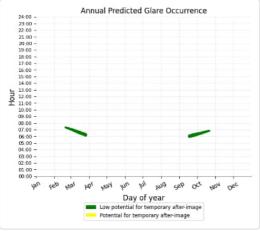


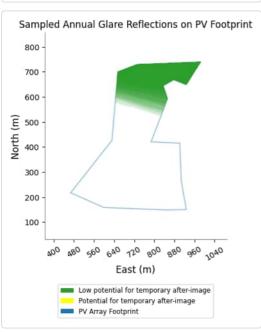
## PV array 3 - OP Receptor (OP 8)

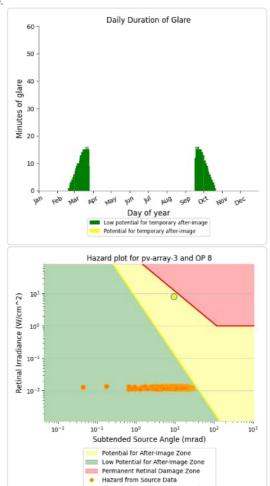
PV array is expected to produce the following glare for receptors at this location:

710 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.



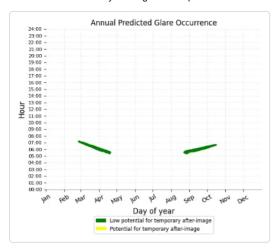


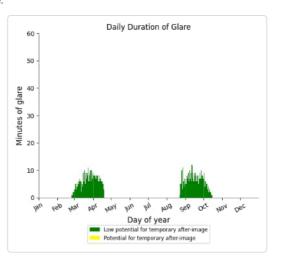


## PV array 3 - OP Receptor (OP 9)

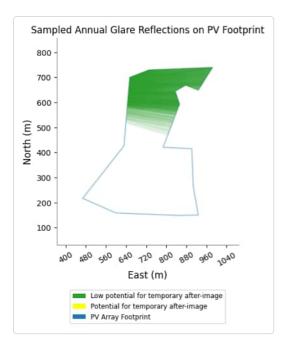
- PV array is expected to produce the following glare for receptors at this location:

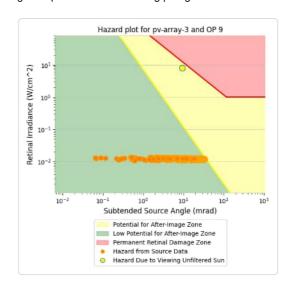
   672 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.





Hazard Due to Viewing Unfiltered Sun

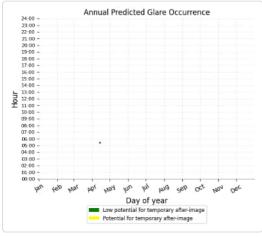


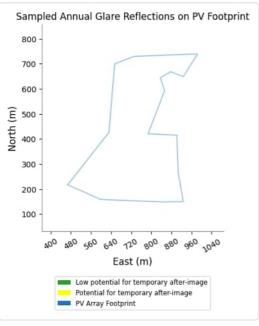


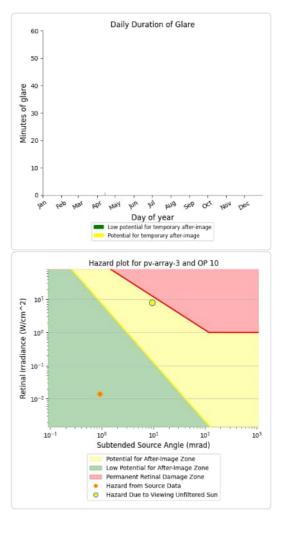
# PV array 3 - OP Receptor (OP 10)

PV array is expected to produce the following glare for receptors at this location:

- 1 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.







PV array 3 - OP Receptor (OP 11)

No glare found

### PV array 3 - OP Receptor (OP 12)

No glare found

### PV array 3 - OP Receptor (OP 13)

No glare found

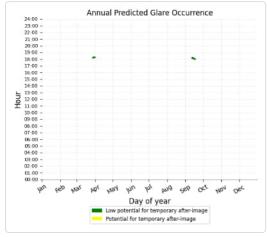
#### PV array 3 - OP Receptor (OP 14)

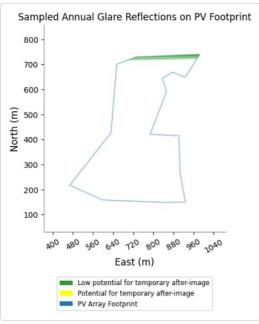
No glare found

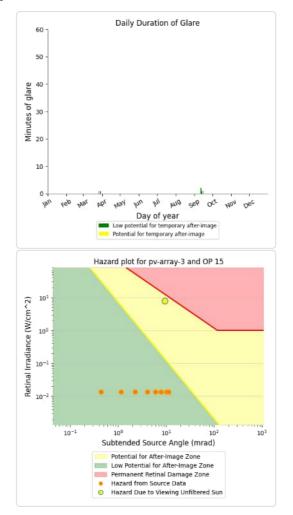
#### PV array 3 - OP Receptor (OP 15)

PV array is expected to produce the following glare for receptors at this location:

- 8 minutes of "green" glare with low potential to cause temporary after-image.
  0 minutes of "yellow" glare with potential to cause temporary after-image.





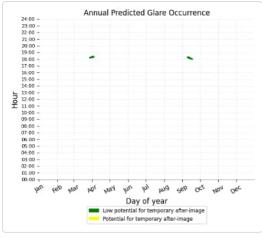


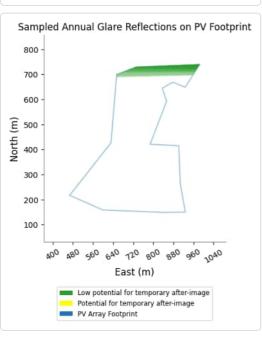
## PV array 3 - OP Receptor (OP 16)

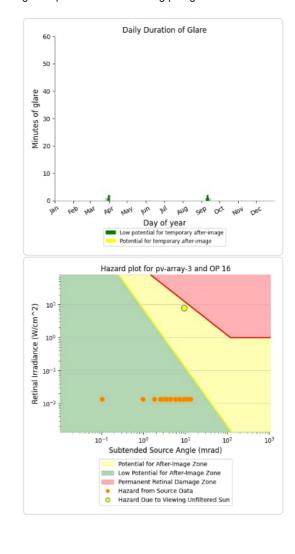
PV array is expected to produce the following glare for receptors at this location:

• 19 minutes of "green" glare with low potential to cause temporary after-image.

- 0 minutes of "yellow" glare with potential to cause temporary after-image.

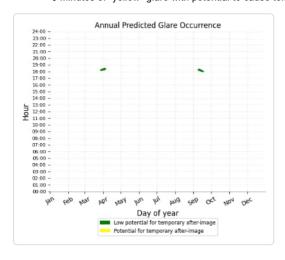


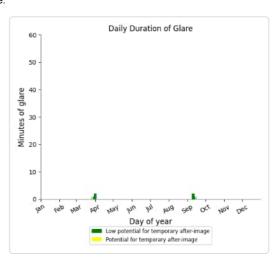


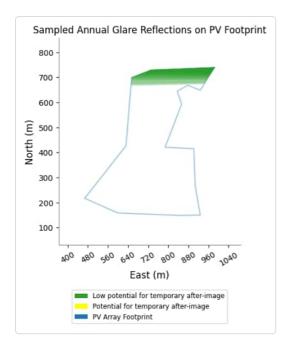


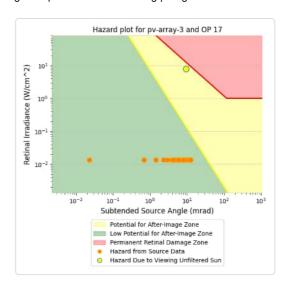
### PV array 3 - OP Receptor (OP 17)

- 22 minutes of "green" glare with low potential to cause temporary after-image.
  0 minutes of "yellow" glare with potential to cause temporary after-image.







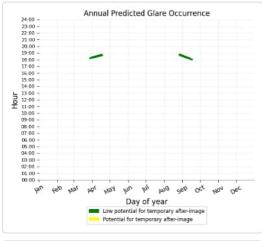


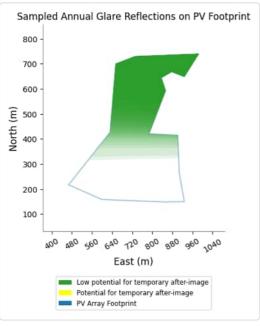
# PV array 3 - OP Receptor (OP 18)

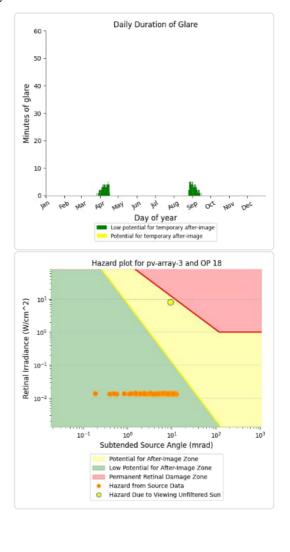
PV array is expected to produce the following glare for receptors at this location:

- 125 minutes of "green" glare with low potential to cause temporary after-image.

  0 minutes of "yellow" glare with potential to cause temporary after-image.





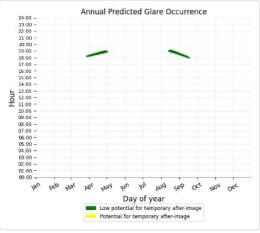


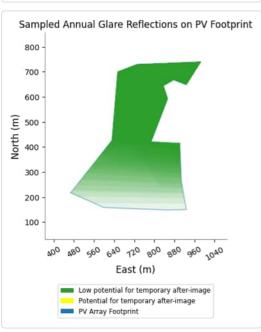
## PV array 3 - OP Receptor (OP 19)

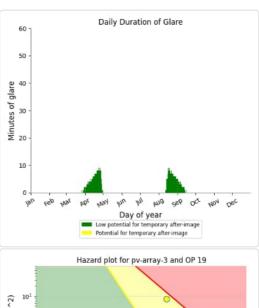
PV array is expected to produce the following glare for receptors at this location:

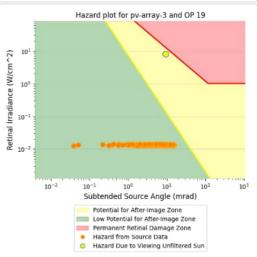
328 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.





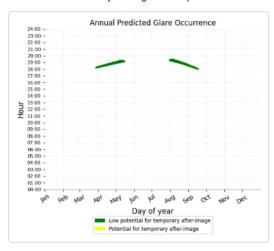


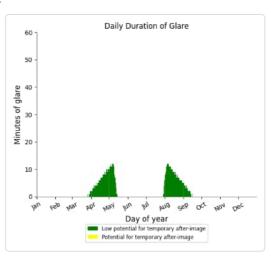


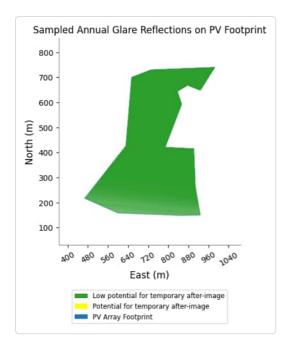
## PV array 3 - OP Receptor (OP 20)

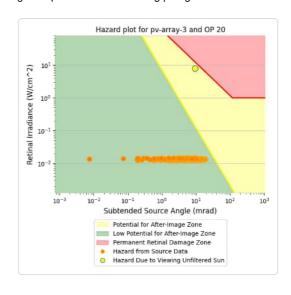
- PV array is expected to produce the following glare for receptors at this location:

   625 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.







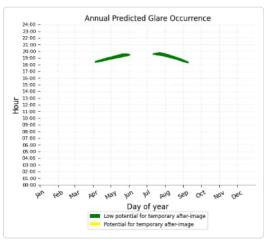


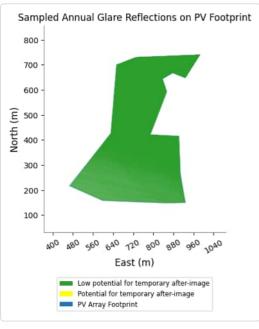
# PV array 3 - OP Receptor (OP 21)

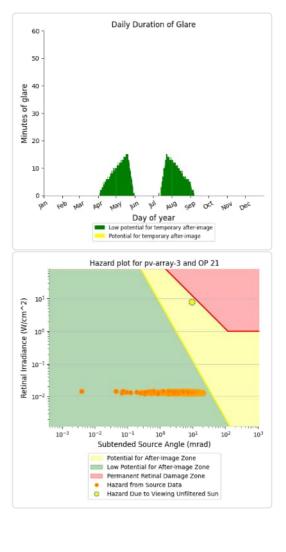
PV array is expected to produce the following glare for receptors at this location:

- 995 minutes of "green" glare with low potential to cause temporary after-image.

  0 minutes of "yellow" glare with potential to cause temporary after-image.





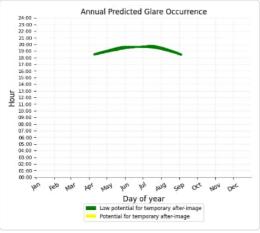


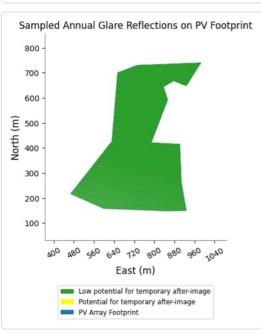
#### PV array 3 - OP Receptor (OP 22)

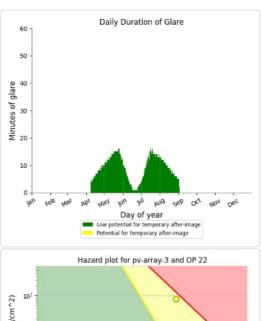
PV array is expected to produce the following glare for receptors at this location:

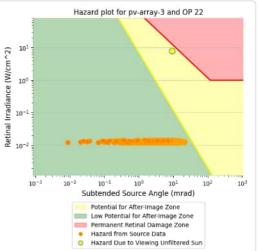
1,349 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.





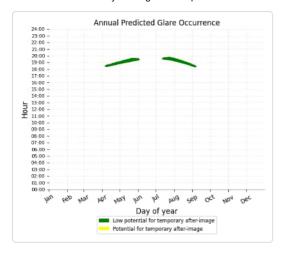


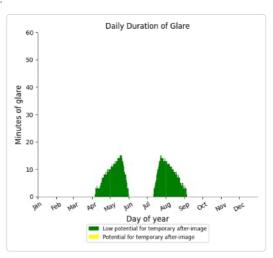


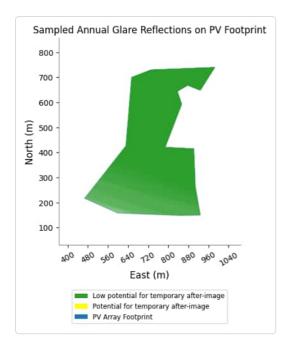
## PV array 3 - OP Receptor (OP 23)

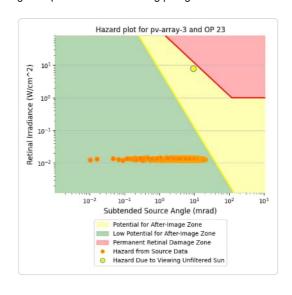
- PV array is expected to produce the following glare for receptors at this location:

   994 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.





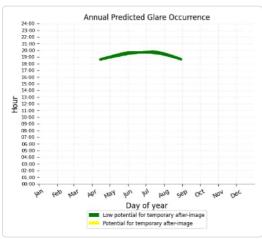


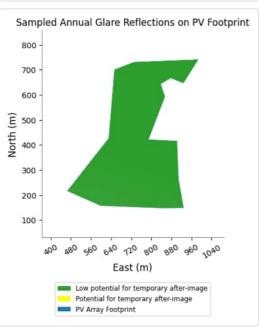


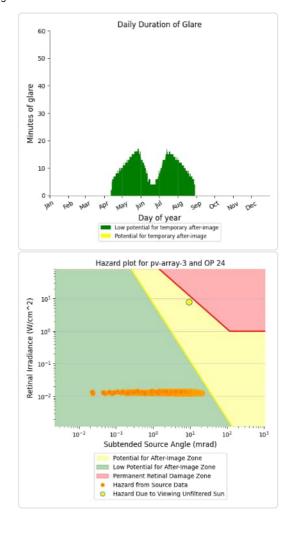
# PV array 3 - OP Receptor (OP 24)

PV array is expected to produce the following glare for receptors at this location:

- 1,478 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.





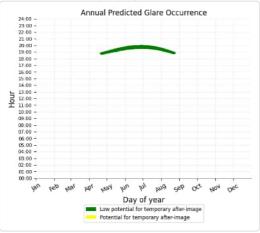


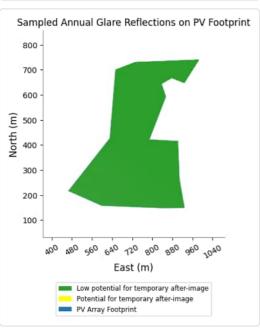
## PV array 3 - OP Receptor (OP 25)

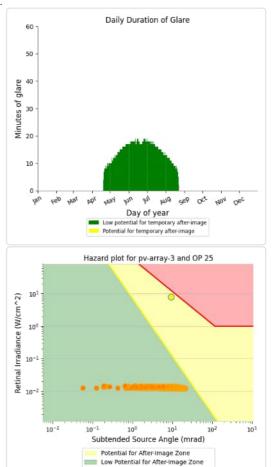
PV array is expected to produce the following glare for receptors at this location:

1,788 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.







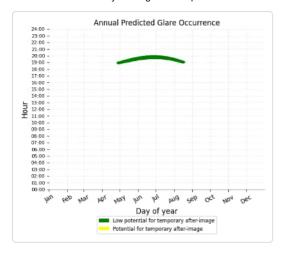
Permanent Retinal Damage Zone
 Hazard from Source Data

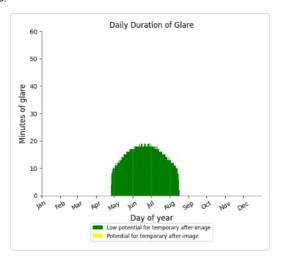
Hazard Due to Viewing Unfiltered Sun

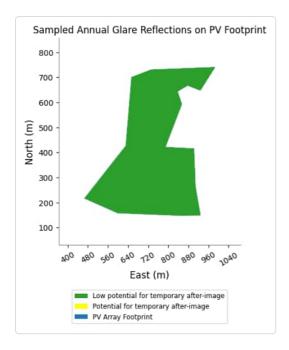
## PV array 3 - OP Receptor (OP 26)

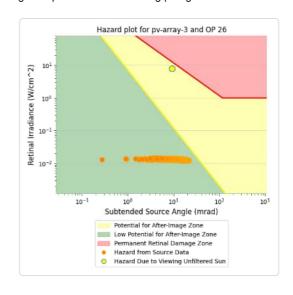
- PV array is expected to produce the following glare for receptors at this location:

   1,698 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.





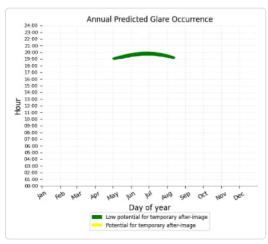


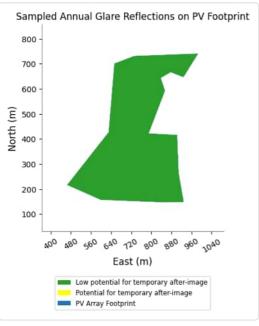


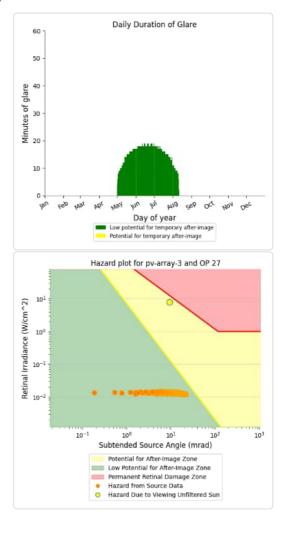
# PV array 3 - OP Receptor (OP 27)

PV array is expected to produce the following glare for receptors at this location:

- 1,555 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.





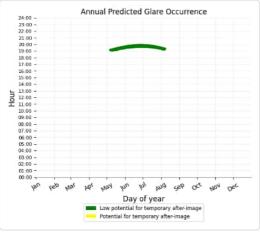


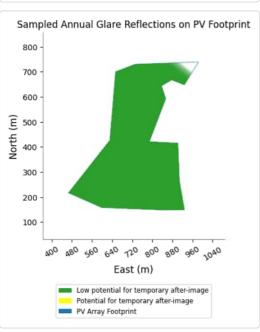
## PV array 3 - OP Receptor (OP 28)

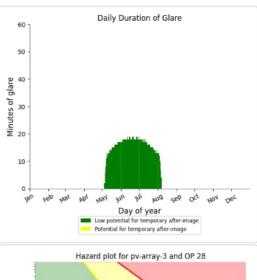
PV array is expected to produce the following glare for receptors at this location:

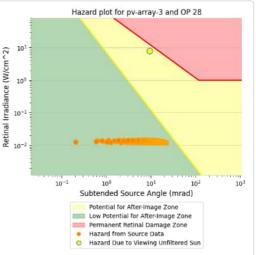
1,488 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.





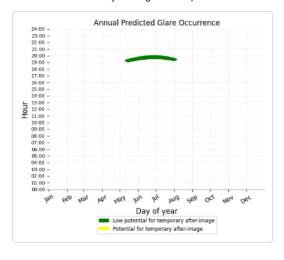


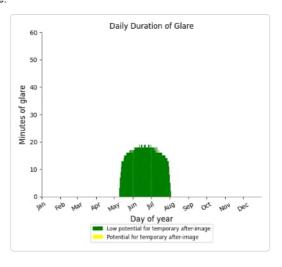


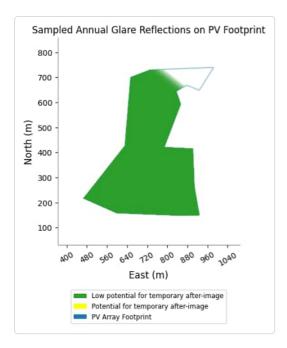
## PV array 3 - OP Receptor (OP 29)

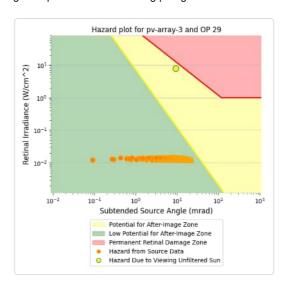
- PV array is expected to produce the following glare for receptors at this location:

   1,358 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.





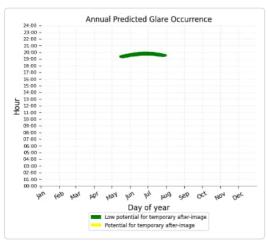


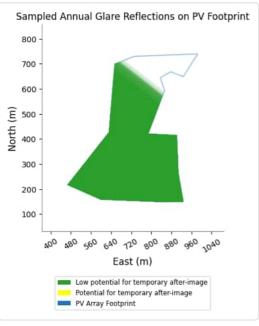


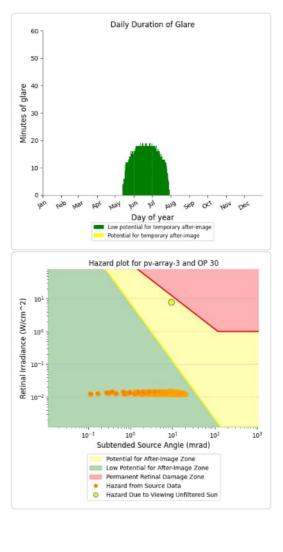
# PV array 3 - OP Receptor (OP 30)

PV array is expected to produce the following glare for receptors at this location:

- 1,173 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.







## PV array 3 - OP Receptor (OP 31)

PV array is expected to produce the following glare for receptors at this location:

185 minutes of "green" glare with low potential to cause temporary after-image.

10-2

10-1

100

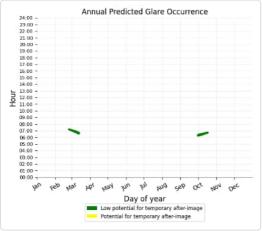
101

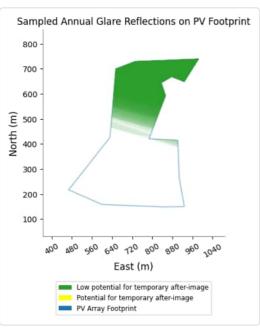
Subtended Source Angle (mrad) Potential for After-Image Zone
Low Potential for After-Image Zone

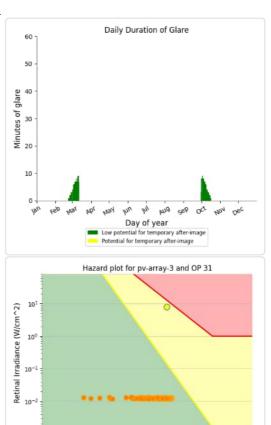
Permanent Retinal Damage Zone
 Hazard from Source Data

Hazard Due to Viewing Unfiltered Sun

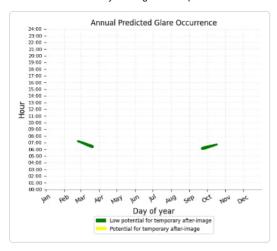
• 0 minutes of "yellow" glare with potential to cause temporary after-image.

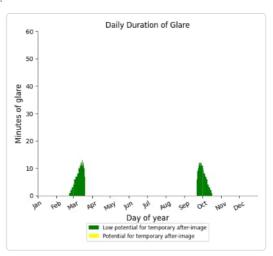


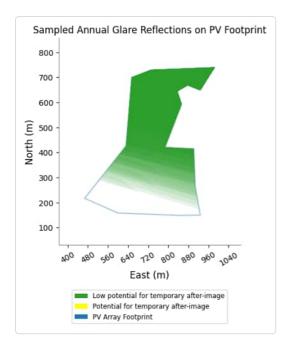


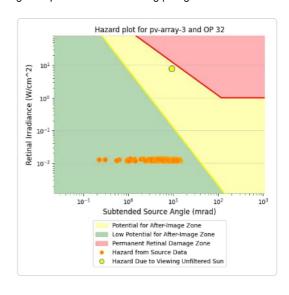


## PV array 3 - OP Receptor (OP 32)







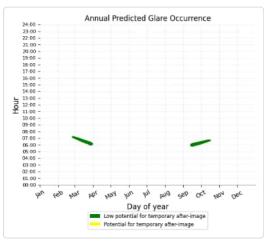


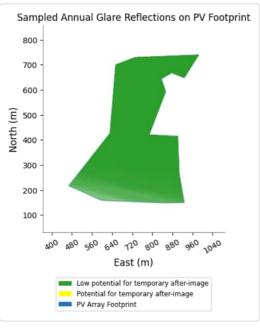
# PV array 3 - OP Receptor (OP 33)

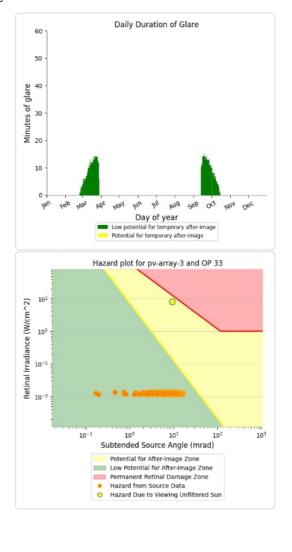
PV array is expected to produce the following glare for receptors at this location:

- 610 minutes of "green" glare with low potential to cause temporary after-image.

  0 minutes of "yellow" glare with potential to cause temporary after-image.





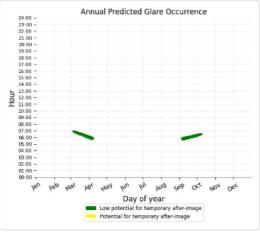


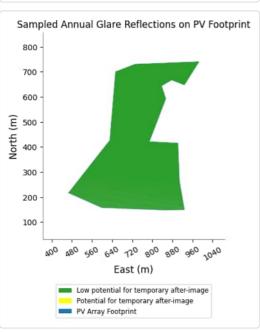
## PV array 3 - OP Receptor (OP 34)

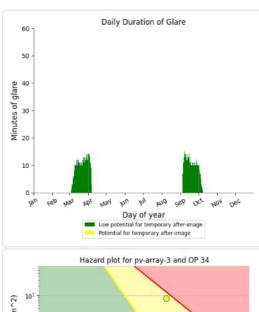
PV array is expected to produce the following glare for receptors at this location:

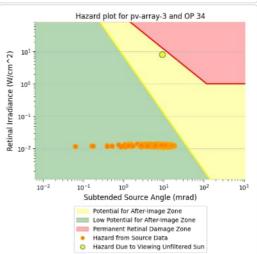
702 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.





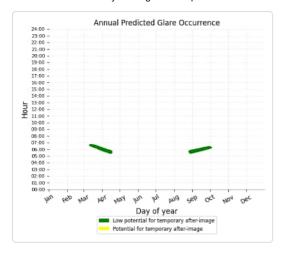


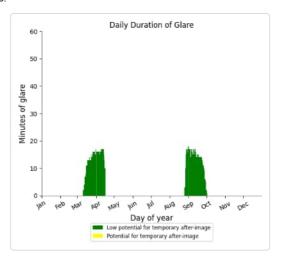


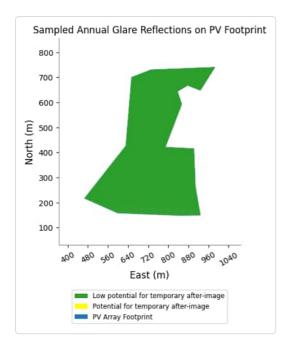
## PV array 3 - OP Receptor (OP 35)

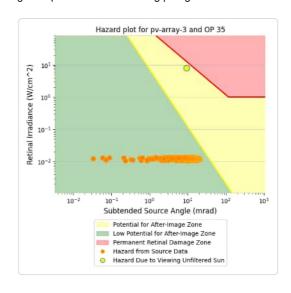
- PV array is expected to produce the following glare for receptors at this location:

   1,001 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.





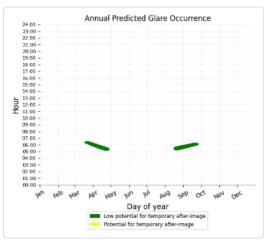


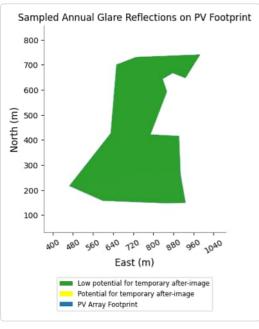


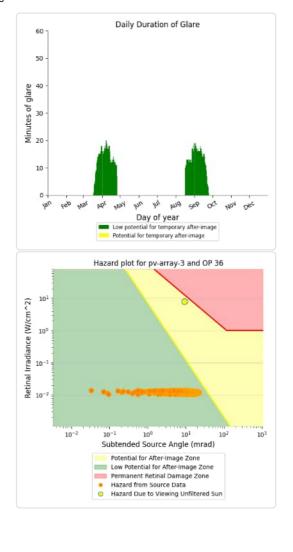
# PV array 3 - OP Receptor (OP 36)

PV array is expected to produce the following glare for receptors at this location:

- 1,091 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.





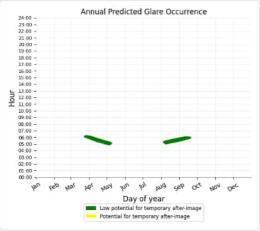


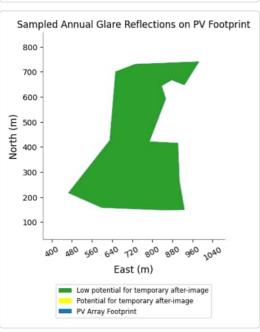
#### PV array 3 - OP Receptor (OP 37)

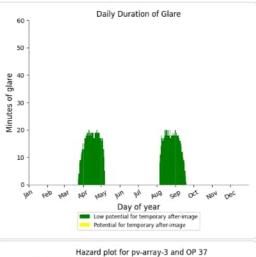
PV array is expected to produce the following glare for receptors at this location:

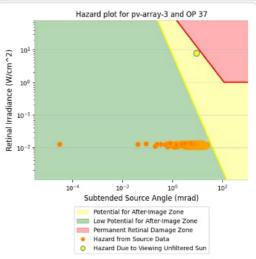
1,404 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.





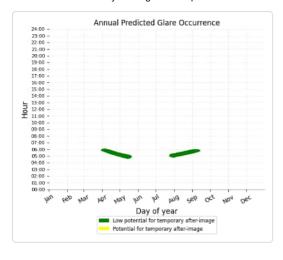


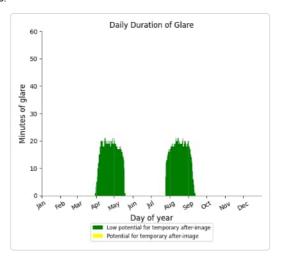


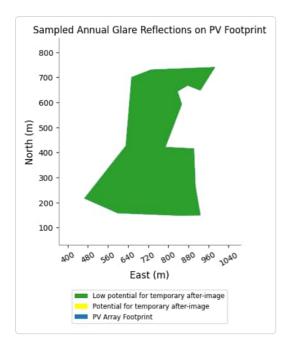
#### PV array 3 - OP Receptor (OP 38)

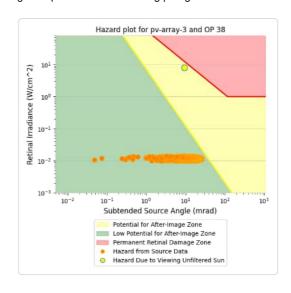
- PV array is expected to produce the following glare for receptors at this location:

   1,638 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.





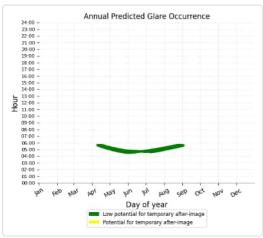


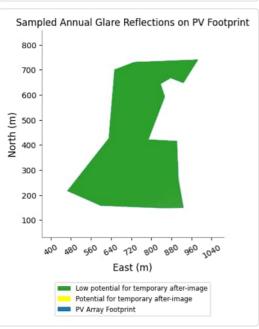


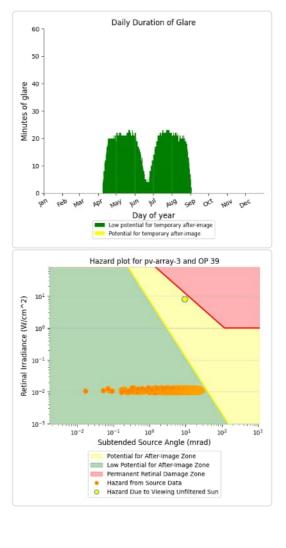
# PV array 3 - OP Receptor (OP 39)

PV array is expected to produce the following glare for receptors at this location:

- 2,628 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.





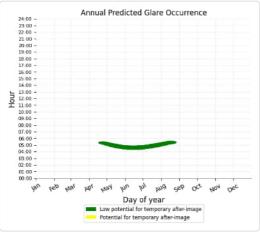


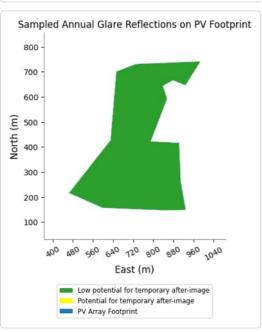
#### PV array 3 - OP Receptor (OP 40)

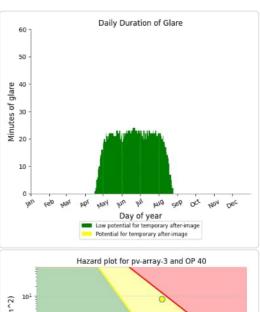
PV array is expected to produce the following glare for receptors at this location:

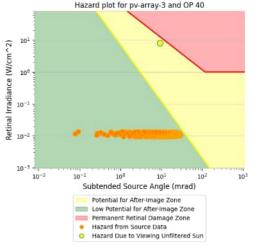
2,504 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.





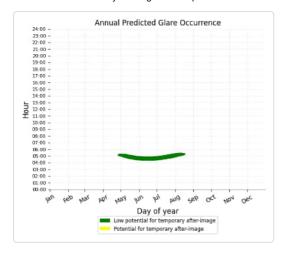


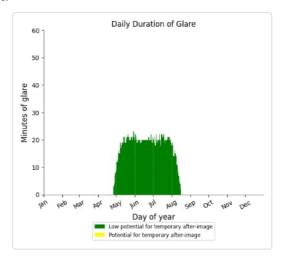


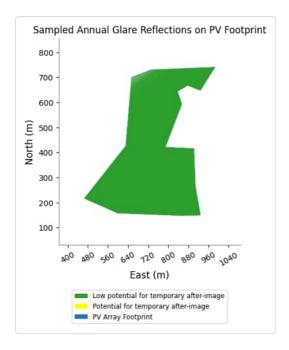
#### PV array 3 - OP Receptor (OP 41)

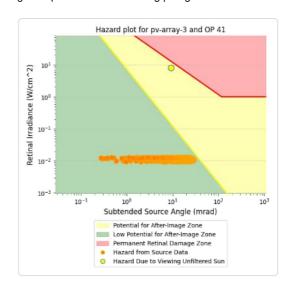
- PV array is expected to produce the following glare for receptors at this location:

   2,017 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.





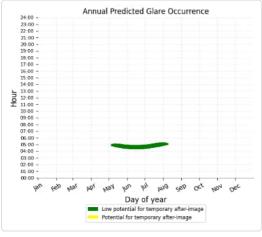


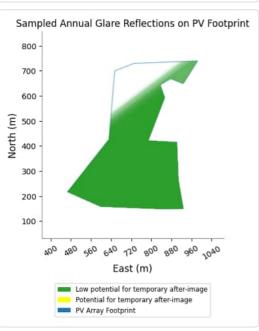


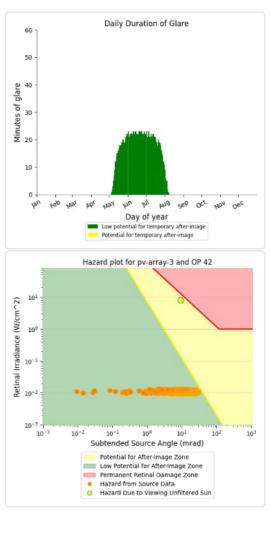
# PV array 3 - OP Receptor (OP 42)

PV array is expected to produce the following glare for receptors at this location:

- 1,724 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.





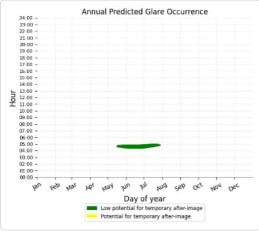


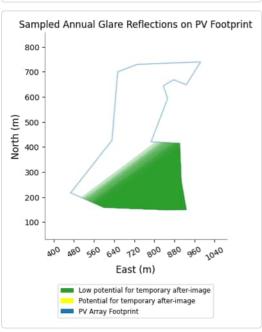
#### PV array 3 - OP Receptor (OP 43)

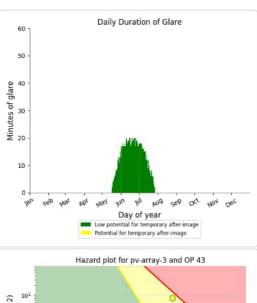
PV array is expected to produce the following glare for receptors at this location:

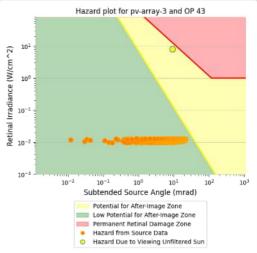
989 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.





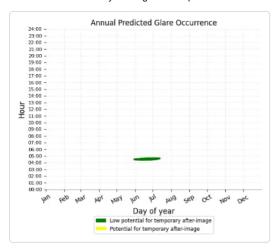


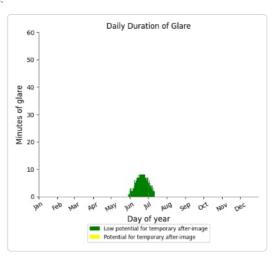


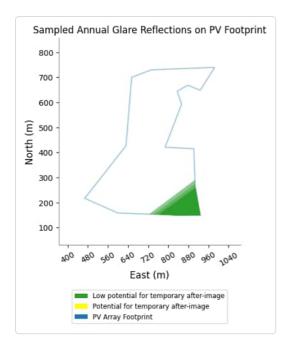
#### PV array 3 - OP Receptor (OP 44)

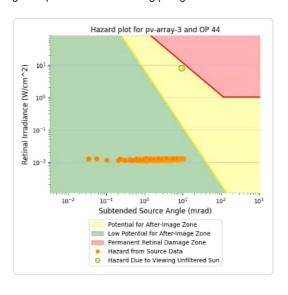
- PV array is expected to produce the following glare for receptors at this location:

   230 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 3 - OP Receptor (OP 45)

No glare found

## PV array 3 - OP Receptor (OP 46)

No glare found

## PV array 3 - OP Receptor (OP 47)

No glare found

## PV array 3 - OP Receptor (OP 48)

No glare found

PV array 4 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)		
OP: OP 1	0	0		
OP: OP 2	0	0		
OP: OP 3	0	0		
OP: OP 4	0	0		
OP: OP 5	15	0		
OP: OP 6	1550	161		
OP: OP 7	3456	791		
OP: OP 8	2712	1312		
OP: OP 9	1073	487		
OP: OP 10	622	927		
OP: OP 11	817	641		
OP: OP 12	851	191		
OP: OP 13	1894	2184		
OP: OP 14	1899	2361		
OP: OP 15	2698	1314		
OP: OP 16	3641 206			
OP: OP 17	3610 0			
OP: OP 18	1891 0			
OP: OP 19	2488	0		
OP: OP 20	2916	0		
OP: OP 21	2470	0		

OP: OP 22	2141	0
OP: OP 23	2437	0
OP: OP 24	2070	0
OP: OP 25	1710	0
OP: OP 26	1232	0
OP: OP 27	900	0
OP: OP 28	396	0
OP: OP 29	246	0
OP: OP 30	81	0
OP: OP 31	0	0
OP: OP 32	4	0
OP: OP 33	84	0
OP: OP 34	211	0
OP: OP 35	370	0
OP: OP 36	663	0
OP: OP 37	1082	0
OP: OP 38	1108	0
OP: OP 39	556	0
OP: OP 40	401	0
OP: OP 41	173	0
OP: OP 42	0	0
OP: OP 43	0	0
OP: OP 44	0	0
OP: OP 45	0	0
OP: OP 46	0	0
OP: OP 47	0	0
OP: OP 48	0	0

### PV array 4 - OP Receptor (OP 1)

No glare found

#### PV array 4 - OP Receptor (OP 2)

No glare found

#### PV array 4 - OP Receptor (OP 3)

No glare found

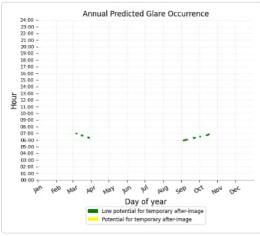
#### PV array 4 - OP Receptor (OP 4)

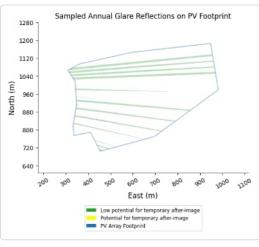
No glare found

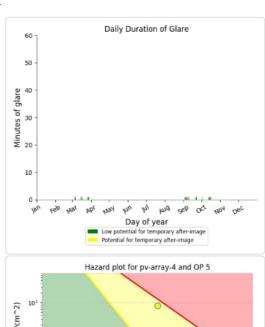
#### PV array 4 - OP Receptor (OP 5)

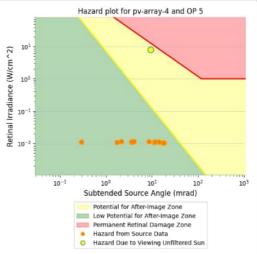
PV array is expected to produce the following glare for receptors at this location:

- 15 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.







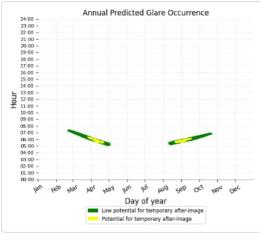


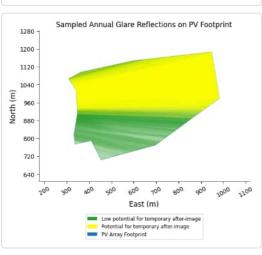
#### PV array 4 - OP Receptor (OP 6)

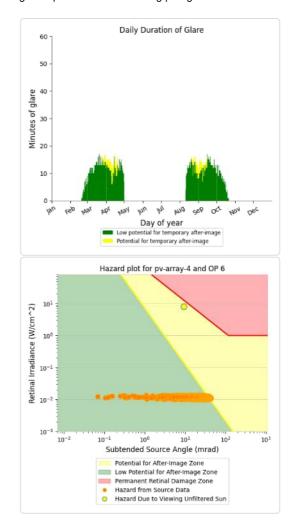
PV array is expected to produce the following glare for receptors at this location:

• 1,550 minutes of "green" glare with low potential to cause temporary after-image.

- 161 minutes of "yellow" glare with potential to cause temporary after-image.

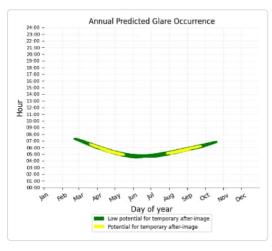


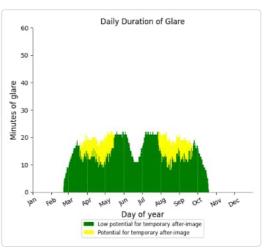


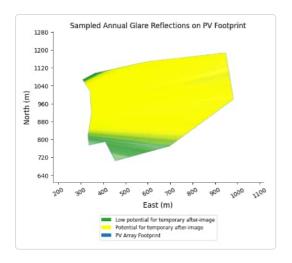


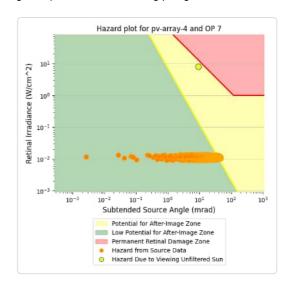
#### PV array 4 - OP Receptor (OP 7)

- 3,456 minutes of "green" glare with low potential to cause temporary after-image. 791 minutes of "yellow" glare with potential to cause temporary after-image.





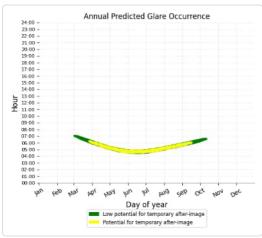


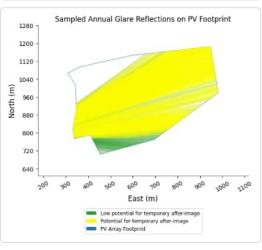


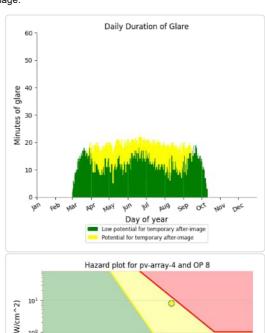
#### PV array 4 - OP Receptor (OP 8)

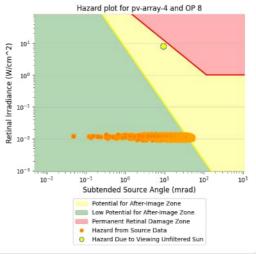
PV array is expected to produce the following glare for receptors at this location:

- 2,712 minutes of "green" glare with low potential to cause temporary after-image.
- 1,312 minutes of "yellow" glare with potential to cause temporary after-image.





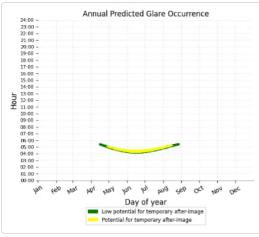


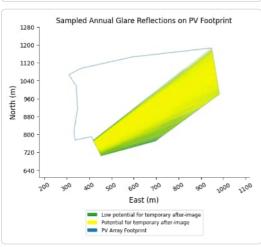


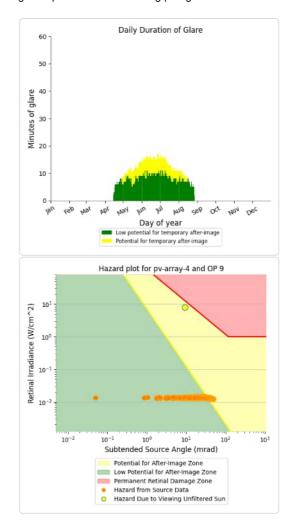
#### PV array 4 - OP Receptor (OP 9)

- PV array is expected to produce the following glare for receptors at this location:

   1,073 minutes of "green" glare with low potential to cause temporary after-image.
   487 minutes of "yellow" glare with potential to cause temporary after-image.

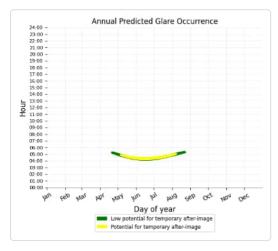


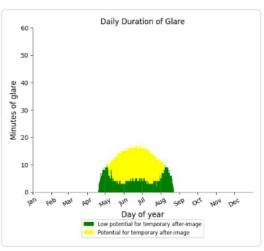


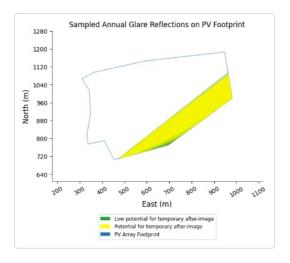


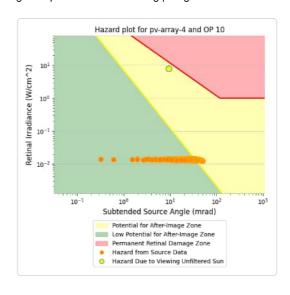
#### PV array 4 - OP Receptor (OP 10)

- 622 minutes of "green" glare with low potential to cause temporary after-image. 927 minutes of "yellow" glare with potential to cause temporary after-image.





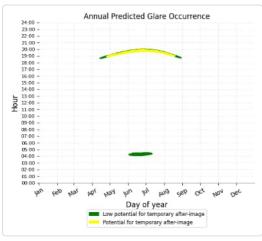


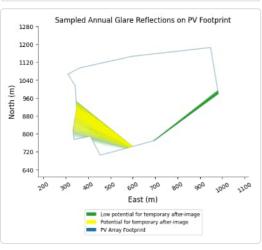


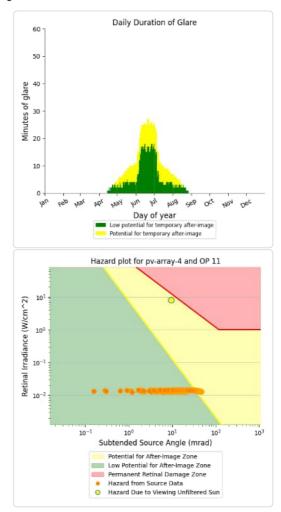
### PV array 4 - OP Receptor (OP 11)

PV array is expected to produce the following glare for receptors at this location:

- 817 minutes of "green" glare with low potential to cause temporary after-image.
- 641 minutes of "yellow" glare with potential to cause temporary after-image.



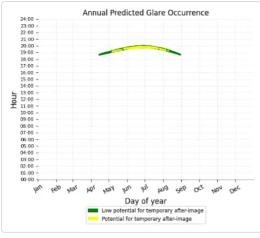


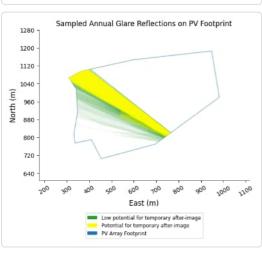


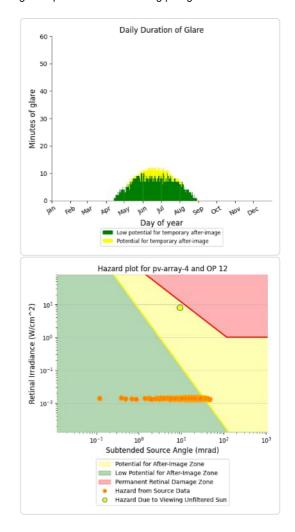
#### PV array 4 - OP Receptor (OP 12)

- PV array is expected to produce the following glare for receptors at this location:

   851 minutes of "green" glare with low potential to cause temporary after-image.
   191 minutes of "yellow" glare with potential to cause temporary after-image.

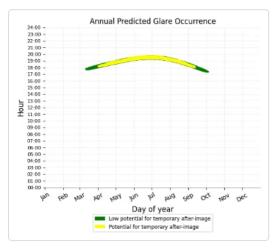


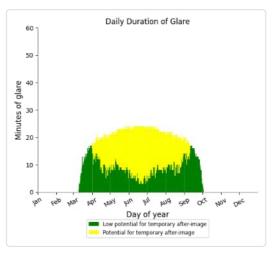


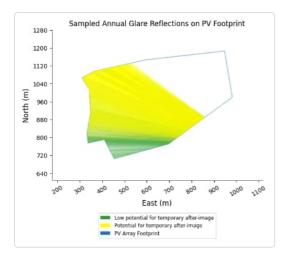


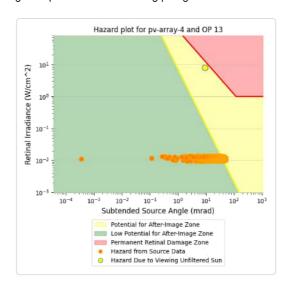
#### PV array 4 - OP Receptor (OP 13)

- 1,894 minutes of "green" glare with low potential to cause temporary after-image.
- 2,184 minutes of "yellow" glare with potential to cause temporary after-image.





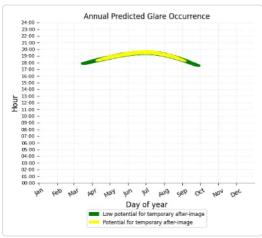


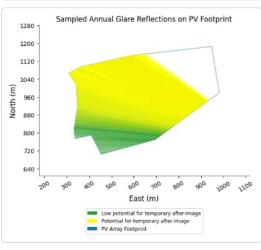


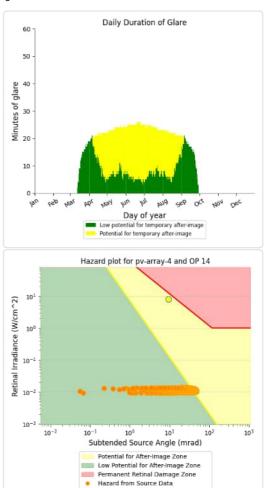
#### PV array 4 - OP Receptor (OP 14)

PV array is expected to produce the following glare for receptors at this location:

- 1,899 minutes of "green" glare with low potential to cause temporary after-image.
- 2,361 minutes of "yellow" glare with potential to cause temporary after-image.





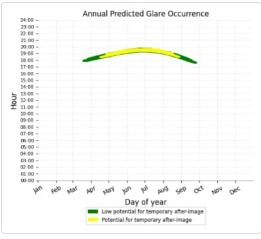


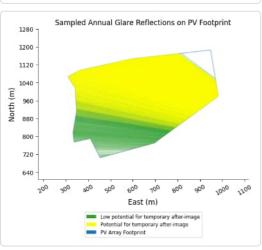
Hazard Due to Viewing Unfiltered Sun

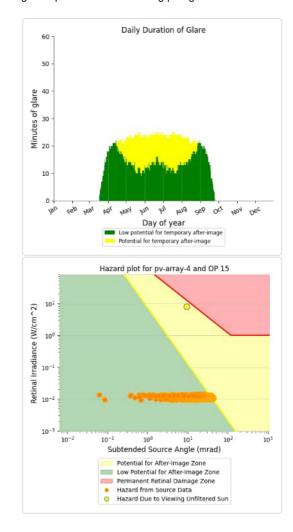
#### PV array 4 - OP Receptor (OP 15)

- PV array is expected to produce the following glare for receptors at this location:

   2,698 minutes of "green" glare with low potential to cause temporary after-image.
   1,314 minutes of "yellow" glare with potential to cause temporary after-image.

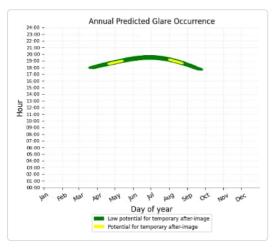


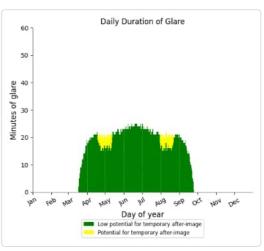


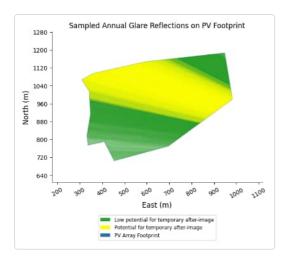


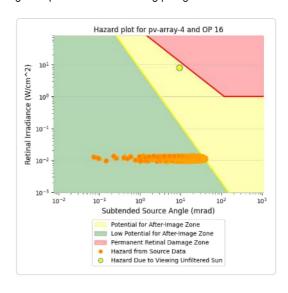
#### PV array 4 - OP Receptor (OP 16)

- 3,641 minutes of "green" glare with low potential to cause temporary after-image. 206 minutes of "yellow" glare with potential to cause temporary after-image.





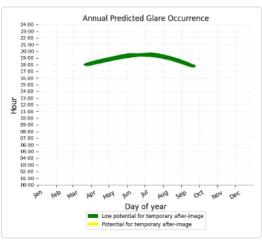


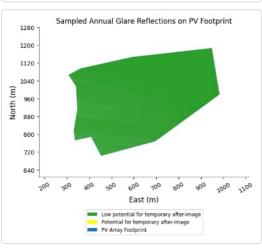


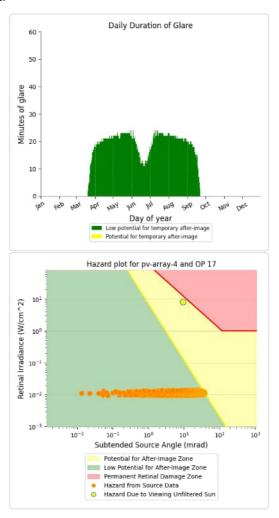
#### PV array 4 - OP Receptor (OP 17)

PV array is expected to produce the following glare for receptors at this location:

- 3,610 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



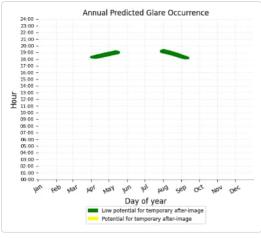


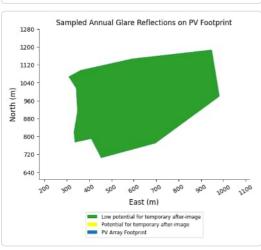


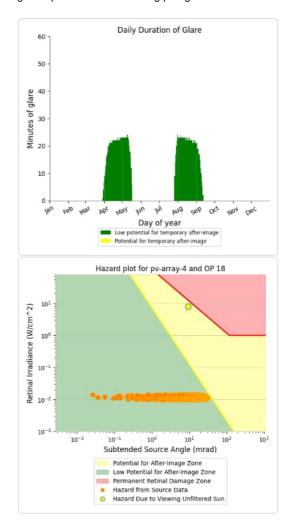
#### PV array 4 - OP Receptor (OP 18)

- PV array is expected to produce the following glare for receptors at this location:

   1,891 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.

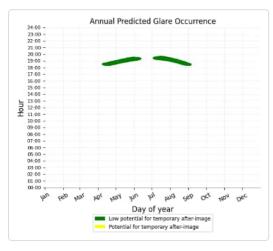


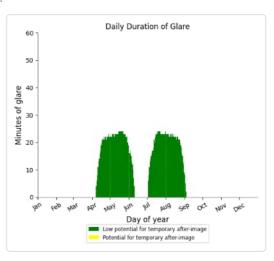


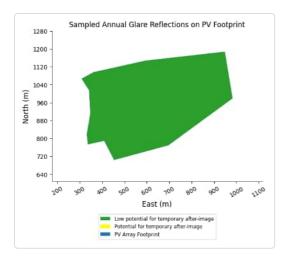


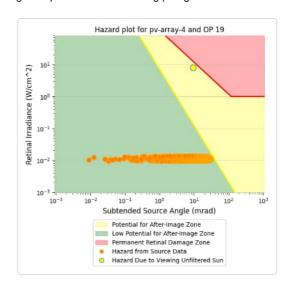
#### PV array 4 - OP Receptor (OP 19)

- 2,488 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





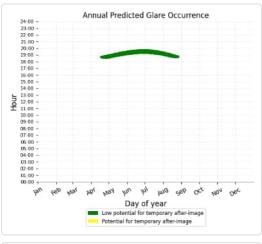


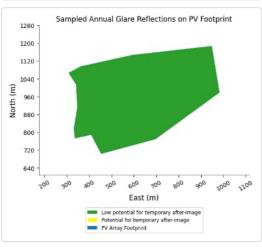


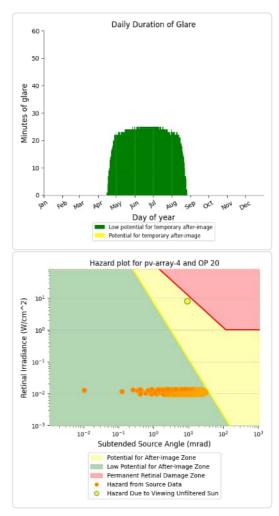
#### PV array 4 - OP Receptor (OP 20)

PV array is expected to produce the following glare for receptors at this location:

- 2,916 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



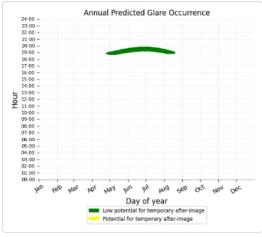


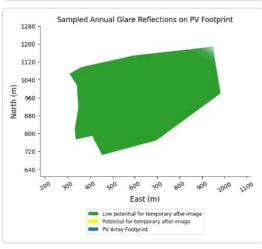


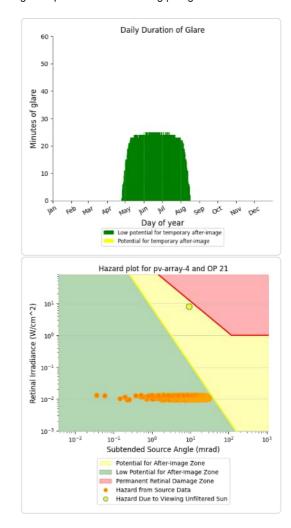
#### PV array 4 - OP Receptor (OP 21)

- PV array is expected to produce the following glare for receptors at this location:

   2,470 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.

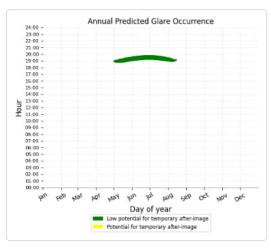


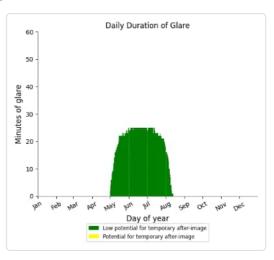


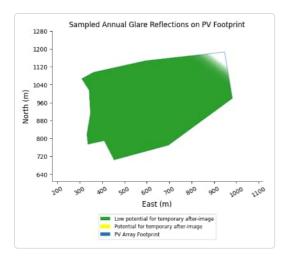


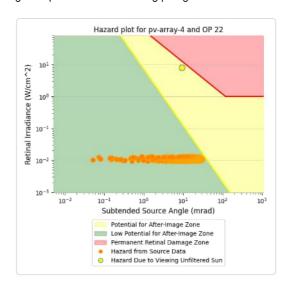
#### PV array 4 - OP Receptor (OP 22)

- 2,141 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image. 2,141 minutes of "green" glare with low potential to cause temporary after-image.





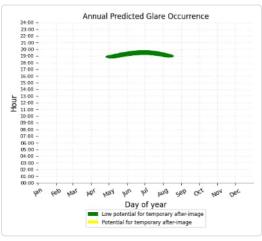


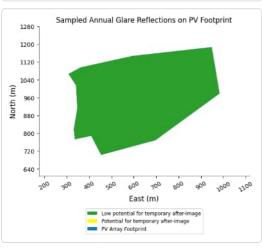


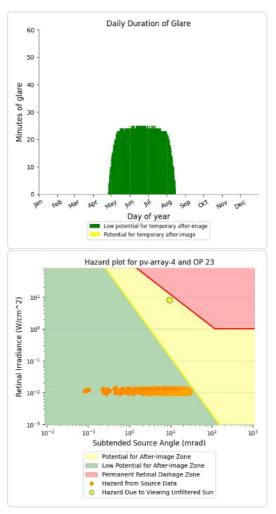
#### PV array 4 - OP Receptor (OP 23)

PV array is expected to produce the following glare for receptors at this location:

- 2,437 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



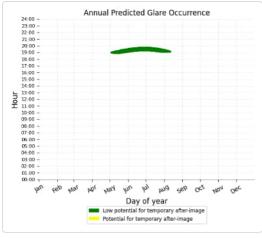


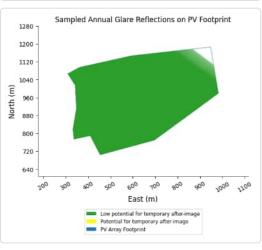


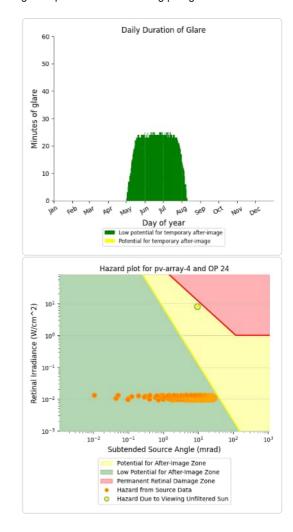
#### PV array 4 - OP Receptor (OP 24)

- PV array is expected to produce the following glare for receptors at this location:

   2,070 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.

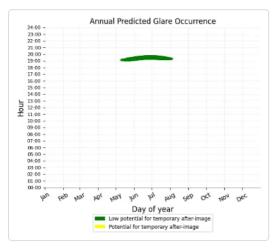


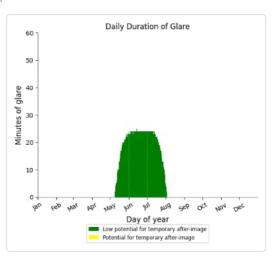


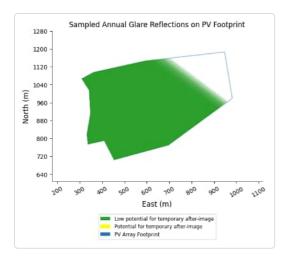


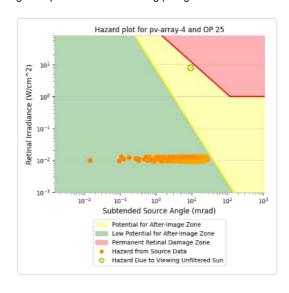
#### PV array 4 - OP Receptor (OP 25)

- 1,710 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





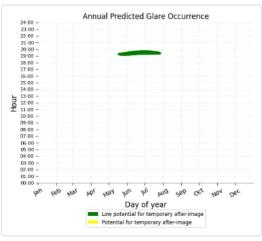


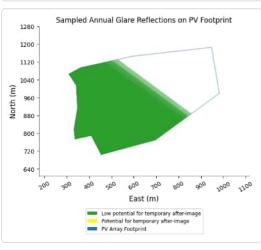


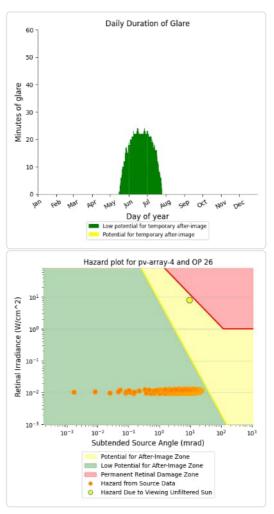
#### PV array 4 - OP Receptor (OP 26)

PV array is expected to produce the following glare for receptors at this location:

- 1,232 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

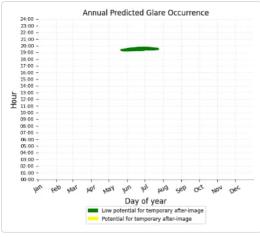


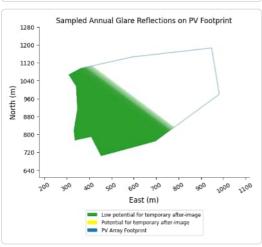


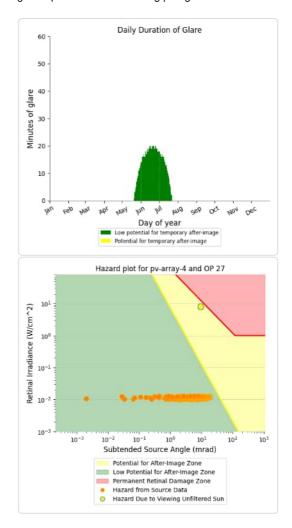


#### PV array 4 - OP Receptor (OP 27)

- 900 minutes of "green" glare with low potential to cause temporary after-image.
  0 minutes of "yellow" glare with potential to cause temporary after-image.

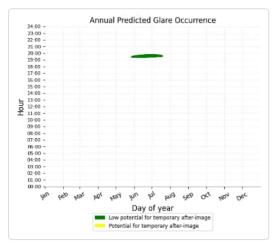


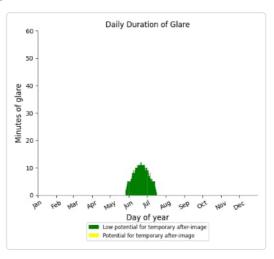


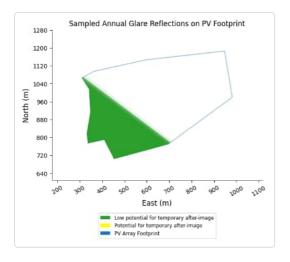


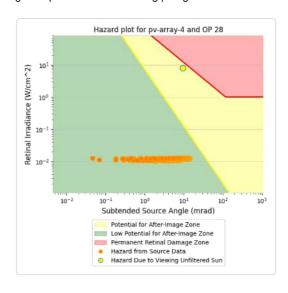
#### PV array 4 - OP Receptor (OP 28)

- 396 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





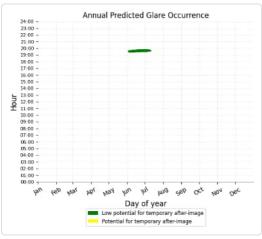


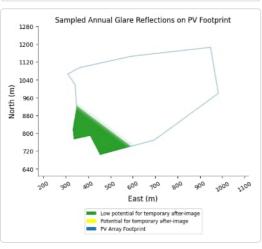


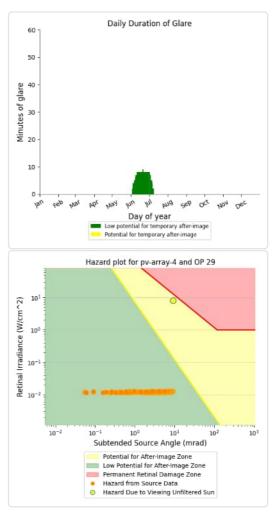
#### PV array 4 - OP Receptor (OP 29)

PV array is expected to produce the following glare for receptors at this location:

- 246 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

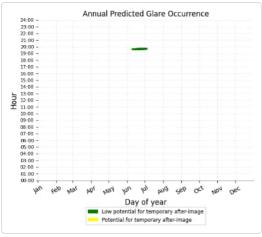


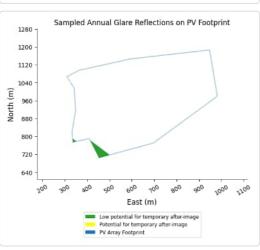


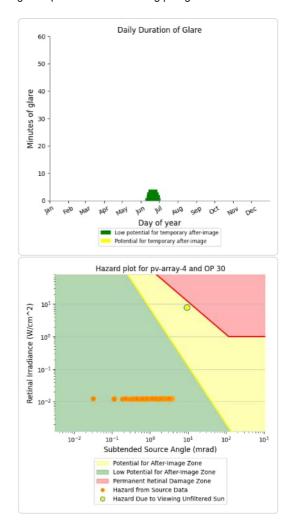


#### PV array 4 - OP Receptor (OP 30)

- PV array is expected to produce the following glare for receptors at this location:
   81 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.





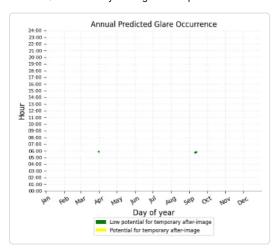


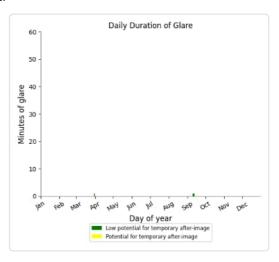
#### PV array 4 - OP Receptor (OP 31)

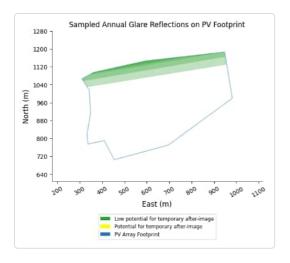
No glare found

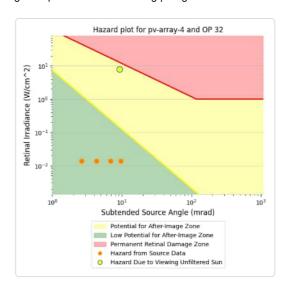
#### PV array 4 - OP Receptor (OP 32)

- 4 minutes of "green" glare with low potential to cause temporary after-image.
  0 minutes of "yellow" glare with potential to cause temporary after-image.





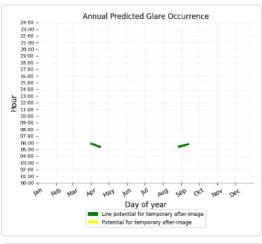


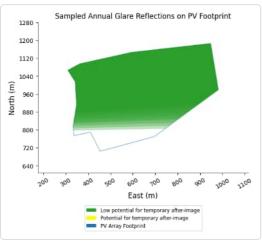


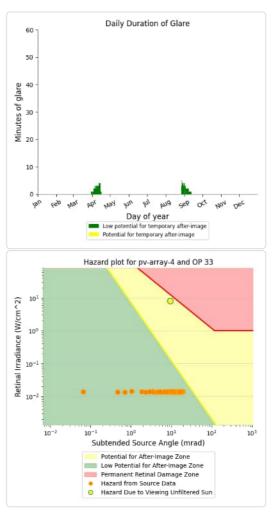
#### PV array 4 - OP Receptor (OP 33)

PV array is expected to produce the following glare for receptors at this location:

- 84 minutes of "green" glare with low potential to cause temporary after-image.
  0 minutes of "yellow" glare with potential to cause temporary after-image.

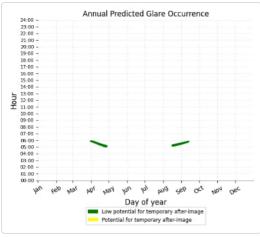


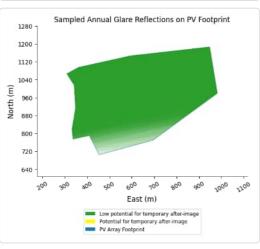


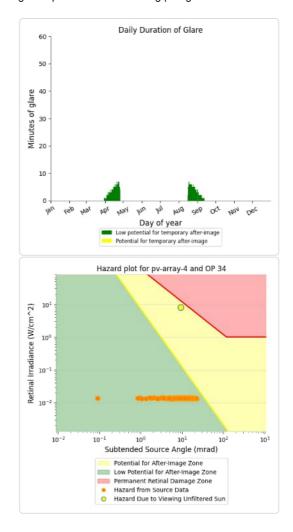


#### PV array 4 - OP Receptor (OP 34)

- 211 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

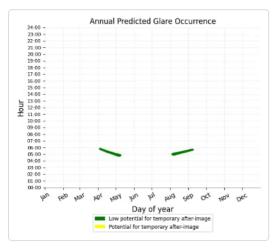


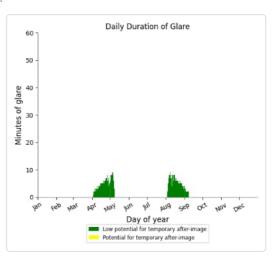


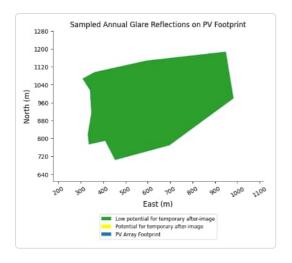


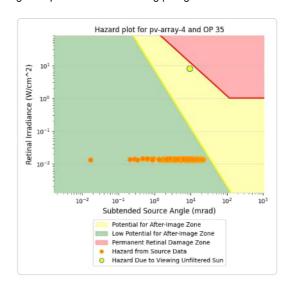
#### PV array 4 - OP Receptor (OP 35)

- 370 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





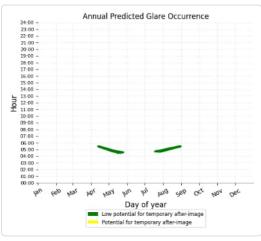


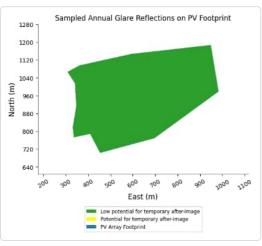


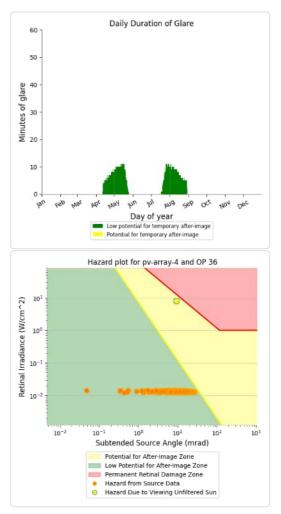
#### PV array 4 - OP Receptor (OP 36)

PV array is expected to produce the following glare for receptors at this location:

- 663 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

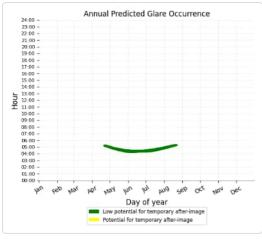


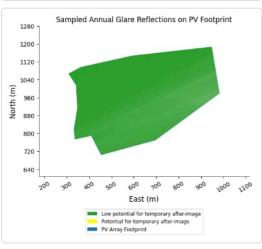


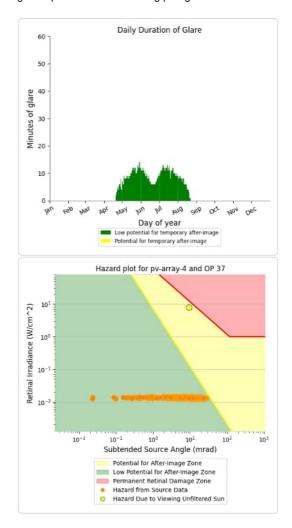


#### PV array 4 - OP Receptor (OP 37)

- PV array is expected to produce the following glare for receptors at this location:
   1,082 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.

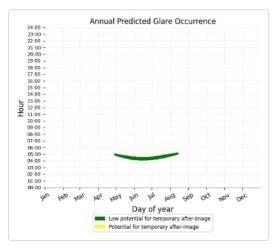


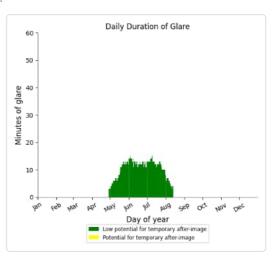


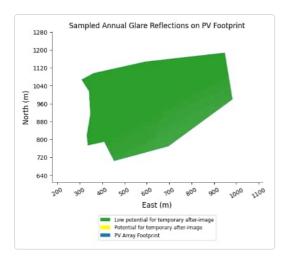


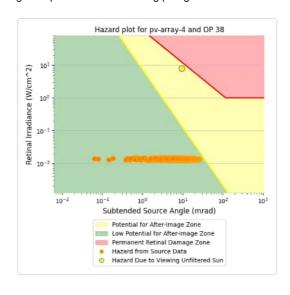
#### PV array 4 - OP Receptor (OP 38)

- 1,108 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





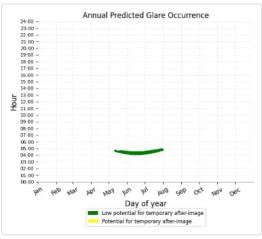


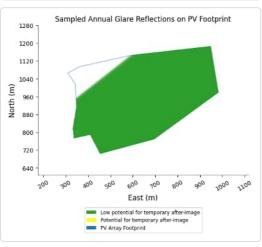


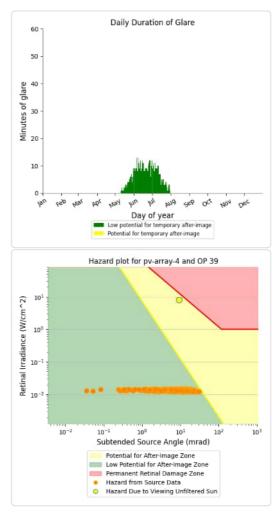
#### PV array 4 - OP Receptor (OP 39)

PV array is expected to produce the following glare for receptors at this location:

- 556 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



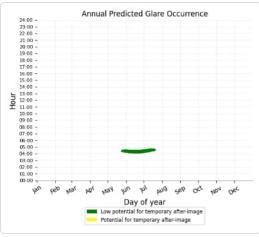


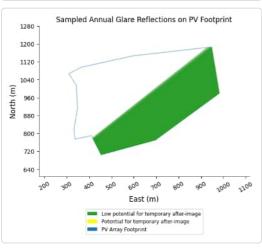


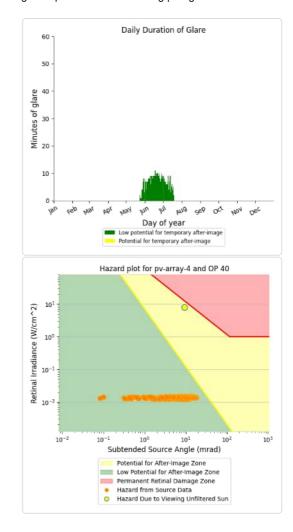
#### PV array 4 - OP Receptor (OP 40)

- PV array is expected to produce the following glare for receptors at this location:

   401 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.

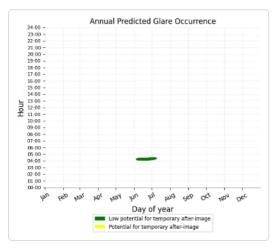


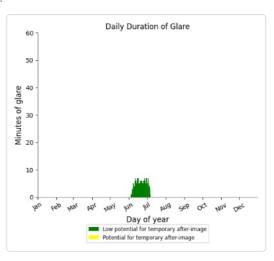


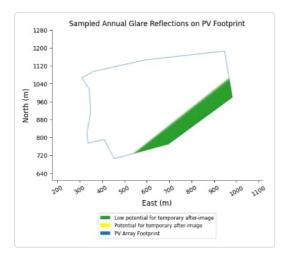


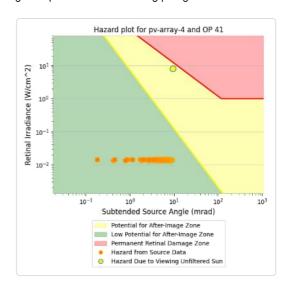
#### PV array 4 - OP Receptor (OP 41)

- 173 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 4 - OP Receptor (OP 42)

No glare found

PV array 4 - OP Receptor (OP 43)

No glare found

PV array 4 - OP Receptor (OP 44)

No glare found

PV array 4 - OP Receptor (OP 45)

No glare found

PV array 4 - OP Receptor (OP 46)

No glare found

PV array 4 - OP Receptor (OP 47)

No glare found

PV array 4 - OP Receptor (OP 48)

No glare found

# **Assumptions**

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not automatically account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more
  rigorous modeling methods.
- Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results fo 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.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a
  continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Refer to the Help page for detailed assumptions and limitations not listed here.

# ANNEX G: ROAD RECEPTOR GLARE RESULTS 45 DEGREES (1-48)



ForgeSolar

# **Gate Burton Solar Farm**

# Gate Burton Road 45 Deg Receptors 1 - 48

Created Jan. 16, 2023 Updated Jan. 16, 2023 Time-step 1 minute Timezone offset UTC0 Site ID 82489.13697

Project type Advanced Project status: active Category 100 MW to 1 GW

#### Misc. Analysis Settings

DNI: varies (1,000.0 W/m^2 peak) Ocular transmission coefficient: 0.5 Pupil diameter: 0.002 m Eye focal length: 0.017 m Sun subtended angle: 9.3 mrad PV Analysis Methodology: **Version 2** Enhanced subtended angle calculation: **On** 

# Summary of Results Glare with potential for temporary after-image predicted

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV array 1	45.0	180.0	68,779	13,517	-
PV array 2	45.0	180.0	33,818	7,979	-
PV array 3	45.0	180.0	40,822	187	-
PV array 4	45.0	180.0	55,309	10,305	-

# **Component Data**

## PV Array(s)

Total PV footprint area: 5,140,153 m^2

Name: PV array 1

Footprint area: 1,573,310 m<sup>2</sup>2
Axis tracking: Fixed (no rotation)
Tilt: 45.0 deg
Orientation: 180.0 deg

Rated power: -

Panel material: Light textured glass with AR coating Vary reflectivity with sun position? Yes Correlate slope error with surface type? Yes Slope error: 9.16 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.360192	-0.741025	25.41	3.50	28.91
2	53.359039	-0.745360	26.99	3.50	30.49
3	53.355274	-0.742871	26.84	3.50	30.34
1	53.356581	-0.739094	24.70	3.50	28.20
5	53.356478	-0.738021	24.81	3.50	28.31
6	53.352329	-0.737721	29.21	3.50	32.71
7	53.348998	-0.739266	31.01	3.50	34.51
3	53.348998	-0.740424	32.14	3.50	35.64
)	53.349818	-0.742828	34.61	3.50	38.11
0	53.350254	-0.745016	33.08	3.50	36.58
1	53.349203	-0.744330	34.60	3.50	38.10
2	53.346590	-0.744029	28.55	3.50	32.05
3	53.346488	-0.745403	28.80	3.50	32.30
4	53.344669	-0.744587	24.81	3.50	28.31
5	53.344387	-0.745188	24.56	3.50	28.06
6	53.341056	-0.743085	25.45	3.50	28.95
7	53.340313	-0.741111	27.40	3.50	30.90
8	53.340877	-0.738107	28.71	3.50	32.21
9	53.339775	-0.737377	30.21	3.50	33.71
0	53.340518	-0.734631	28.33	3.50	31.83
1	53.340236	-0.734031	23.85	3.50	27.35
2	53.338673	-0.731069	23.65	3.50	25.27
3	53.338673	-0.730382	21.77	3.50	25.27
24	53.336931	-0.735360	27.60	3.50	31.10
25	53.335009	-0.734760	26.31	3.50	29.81
26	53.334753	-0.736433	27.68	3.50	31.18
27	53.333881	-0.737077	27.50	3.50	31.00
28	53.333420	-0.739652	29.81	3.50	33.31
29	53.332754	-0.739394	29.45	3.50	32.95
30	53.332600	-0.738794	29.26	3.50	32.76
31	53.332779	-0.736390	26.51	3.50	30.01
32	53.332933	-0.729395	19.56	3.50	23.06
33	53.333061	-0.727850	16.21	3.50	19.71
34	53.332933	-0.726563	15.33	3.50	18.83
35	53.333548	-0.725275	15.51	3.50	19.01
36	53.332830	-0.723945	18.56	3.50	22.06
37	53.333317	-0.722357	17.17	3.50	20.67
38	53.334317	-0.723087	13.53	3.50	17.03
19	53.334368	-0.724546	13.39	3.50	16.89
0	53.335701	-0.725189	12.00	3.50	15.50
1	53.336854	-0.724589	13.00	3.50	16.50
2	53.342850	-0.728408	22.84	3.50	26.34
3	53.342517	-0.730940	25.16	3.50	28.66
4	53.340954	-0.730468	22.88	3.50	26.38
5	53.340954	-0.731713	25.55	3.50	29.05
6	53.341261	-0.731713	26.10	3.50	29.60
7	53.344131	-0.732442	20.10	3.50	24.06
8					
	53.344771	-0.729524 -0.730039	20.05	3.50	23.55
9	53.345540	-0.730039	21.29	3.50	24.79
0	53.344874	-0.733944	23.89	3.50	27.39
1	53.345027	-0.735060	24.67	3.50	28.17
2	53.343823	-0.734888	21.25	3.50	24.75
3	53.343695	-0.735832	21.78	3.50	25.28
4	53.344976	-0.736176	23.90	3.50	27.40
5	53.344951	-0.738107	22.26	3.50	25.76
6	53.345540	-0.738150	22.93	3.50	26.43
57	53.345489	-0.736862	24.00	3.50	27.50
58	53.346718	-0.737377	21.53	3.50	25.03
59	53.346975	-0.736605	22.40	3.50	25.90
0	53.347487	-0.736691	23.03	3.50	26.53
1	53.347154	-0.731026	24.81	3.50	28.31
52	53.353865	-0.735446	22.92	3.50	26.42
3	53.354146	-0.736433	22.20	3.50	25.70
4	53.355350	-0.736476	22.00	3.50	25.50

65	53.356938	-0.737420	23.31	3.50	26.81
66	53.356785	-0.738278	24.11	3.50	27.61
67	53.356810	-0.738750	24.03	3.50	27.53

Name: PV array 2

Footprint area: 3,187,459 m^2 Axis tracking: Fixed (no rotation)
Tilt: 45.0 deg
Orientation: 180.0 deg

Rated power: -

Panel material: Light textured glass with AR coating Vary reflectivity with sun position? Yes Correlate slope error with surface type? Yes Slope error: 9.16 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.353754	-0.734662	23.97	3.50	27.47
2	53.338935	-0.725169	13.57	3.50	17.07
3	53.338615	-0.723559	12.00	3.50	15.50
4	53.339140	-0.723624	12.00	3.50	15.50
5	53.339294	-0.722401	12.00	3.50	15.50
6	53.338666	-0.722207	11.79	3.50	15.29
7	53.338269	-0.722744	12.00	3.50	15.50
8	53.337500	-0.722165	11.72	3.50	15.22
9	53.337064	-0.723066	12.31	3.50	15.81
10	53.336155	-0.723452	13.00	3.50	16.50
11	53.333515	-0.721671	15.87	3.50	19.37
12	53.334143	-0.718045	11.00	3.50	14.50
13	53.334745	-0.718538	11.00	3.50	14.50
14	53.334950	-0.718152	11.00	3.50	14.50
15	53.335783	-0.717959	10.14	3.50	13.64
16	53.336616	-0.718345	9.24	3.50	12.74
17	53.336975	-0.718216	9.59	3.50	13.09
18	53.337667	-0.718688	10.61	3.50	14.11
19	53.337897	-0.717723	10.95	3.50	14.45
20	53.337859	-0.716392	9.89	3.50	13.39
21	53.337269	-0.715341	9.24	3.50	12.74
22	53.336116	-0.715856	9.81	3.50	13.31
23	53.334809	-0.714955	10.90	3.50	14.40
24	53.335732	-0.710949	11.21	3.50	14.71
25	53.336244	-0.710563	11.08	3.50	14.58
26	53.336552	-0.709983	11.04	3.50	14.54
27	53.337564	-0.710155	12.22	3.50	15.72
28	53.337603	-0.709511	12.51	3.50	16.01
29	53.338410	-0.709061	13.25	3.50	16.75
30	53.339153	-0.709211	13.80	3.50	17.30
31	53.339178	-0.705520	14.81	3.50	18.31
32	53.341318	-0.704426	14.16	3.50	17.66
33	53.341254	-0.703460	15.00	3.50	18.50
34	53.338320	-0.701636	14.00	3.50	17.50
35	53.337731	-0.702967	14.70	3.50	18.20
36	53.337052	-0.702516	14.29	3.50	17.79
37	53.337039	-0.698825	16.56	3.50	20.06
38	53.337128	-0.696336	19.06	3.50	22.56
39	53.336962	-0.695049	20.32	3.50	23.82
40	53.337295	-0.693182	19.41	3.50	22.91
<del>1</del> 0 11	53.339883	-0.694727	14.00	3.50	17.50
	53.341087				
12		-0.692023	13.00	3.50	16.50
13 14	53.341664	-0.692109 -0.696465	13.00	3.50	16.50 15.50
	53.344277	-0.696465			
15 16	53.348287	-0.697817	13.08	3.50	16.58
16	53.349350	-0.697602	14.02	3.50	17.52
17	53.349516	-0.698224	14.00	3.50	17.50
18	53.349427	-0.702924	17.52	3.50	21.02
19	53.348914	-0.705091	17.98	3.50	21.48
50	53.349222	-0.705305	18.00	3.50	21.50
51	53.349183	-0.706464	18.00	3.50	21.50
52	53.346980	-0.706421	17.00	3.50	20.50
53	53.346378	-0.713138	13.88	3.50	17.38
54	53.347505	-0.713910	14.28	3.50	17.78
55	53.347505	-0.714983	14.25	3.50	17.75
56	53.349030	-0.715498	16.00	3.50	19.50
57	53.349004	-0.720004	22.46	3.50	25.96
58	53.350848	-0.719789	21.00	3.50	24.50
59	53.352872	-0.719747	19.04	3.50	22.54
30	53.353564	-0.719918	18.54	3.50	22.04
61	53.352898	-0.721678	18.21	3.50	21.71
62	53.352782	-0.724574	17.76	3.50	21.26
33	53.353359	-0.728244	19.54	3.50	23.04
64	53.353961	-0.728887	19.19	3.50	22.69

65	53.354166	-0.729746	19.36	3.50	22.86
66	53.354179	-0.734016	22.69	3.50	26.19

Name: PV array 3 Footprint area: 162,560 m^2 Axis tracking: Fixed (no rotation) Tilt: 45.0 deg Orientation: 180.0 deg

Rated power: -

Panel material: Light textured glass with AR coating

Vary reflectivity with sun position? Yes Correlate slope error with surface type? Yes Slope error: 9.16 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.355703	-0.727643	18.87	3.50	22.37
2	53.355177	-0.725669	17.24	3.50	20.74
3	53.355088	-0.721935	18.98	3.50	22.48
4	53.355101	-0.720734	21.71	3.50	25.21
5	53.356125	-0.721034	21.89	3.50	25.39
6	53.357483	-0.721120	19.10	3.50	22.60
7	53.357534	-0.722836	18.29	3.50	21.79
8	53.359083	-0.721849	18.14	3.50	21.64
9	53.359544	-0.722107	16.73	3.50	20.23
10	53.359762	-0.721485	16.64	3.50	20.14
11	53.359583	-0.720734	17.67	3.50	21.17
12	53.360402	-0.719875	17.29	3.50	20.79
13	53.360313	-0.723673	16.00	3.50	19.50
14	53.360044	-0.724832	16.19	3.50	19.69
15	53.357585	-0.725175	17.45	3.50	20.95

Name: PV array 4 Footprint area: 216,824 m^2 Axis tracking: Fixed (no rotation)

Tilt: 45.0 deg

Orientation: 180.0 deg

Rated power: -

Panel material: Light textured glass with AR coating

Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes

Slope error: 9.16 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.360082	-0.727836	17.00	3.50	20.50
2	53.360851	-0.728501	17.37	3.50	20.87
3	53.360710	-0.729596	18.17	3.50	21.67
4	53.361107	-0.729660	18.75	3.50	22.25
5	53.361952	-0.729424	19.00	3.50	22.50
6	53.362874	-0.729510	19.31	3.50	22.81
7	53.363335	-0.730003	20.12	3.50	23.62
8	53.363591	-0.729209	19.64	3.50	23.14
9	53.364052	-0.725733	17.95	3.50	21.45
10	53.364410	-0.720433	15.80	3.50	19.30
11	53.362554	-0.719918	16.00	3.50	19.50
12	53.360671	-0.724210	16.71	3.50	20.21

## **Discrete Observation Receptors**

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	m	m	m
OP 1	53.367985	-0.749333	22.18	1.50	23.68
OP 2	53.367582	-0.746158	26.44	1.50	27.94
OP 3	53.365994	-0.744055	24.46	1.50	25.96
OP 4	53.364381	-0.742875	27.57	1.50	29.07
OP 5	53.362736	-0.741180	27.12	1.50	28.62
OP 6	53.362102	-0.737929	26.06	1.50	27.56
OP 7	53.361526	-0.735643	25.72	1.50	27.22
OP 8	53.360687	-0.732833	22.52	1.50	24.02
OP 9	53.359464	-0.730998	18.26	1.50	19.76
OP 10	53.359848	-0.728133	17.26	1.50	18.76
OP 11	53.360219	-0.725197	16.53	1.50	18.03
OP 12	53.360520	-0.721892	16.00	1.50	17.50
OP 13	53.360606	-0.719121	16.98	1.50	18.48
OP 14	53.360478	-0.716535	17.83	1.50	19.33
OP 15	53.360312	-0.713424	18.59	1.50	20.09
OP 16	53.360120	-0.710184	17.46	1.50	18.96
OP 17	53.359966	-0.706858	16.56	1.50	18.06
OP 18	53.357057	-0.689995	23.85	1.50	25.35
OP 19	53.355264	-0.690950	21.00	1.50	22.50
OP 20	53.353376	-0.691175	21.80	1.50	23.30
OP 21	53.351407	-0.690950	21.62	1.50	23.12
OP 22	53.350215	-0.689834	23.04	1.50	24.54
OP 23			22.36	1.50	23.86
OP 23 OP 24	53.350431	-0.687710	21.00	1.50	22.50
OP 25	53.348598	-0.686276	16.69	1.50	18.19
	53.346722	-0.685064			
OP 26	53.344973	-0.684055	15.81	1.50	17.31
OP 27	53.343333	-0.682907	15.41	1.50	16.91
OP 28	53.341751	-0.681609	12.85	1.50	14.35
OP 29	53.340105	-0.680354	11.97	1.50	13.47
OP 30	53.338433	-0.678498	12.14	1.50	13.64
OP 31	53.364211	-0.757510	9.01	1.50	10.51
OP 32	53.362418	-0.757982	9.49	1.50	10.99
OP 33	53.360561	-0.758454	10.80	1.50	12.30
OP 34	53.358692	-0.758666	9.21	1.50	10.71
OP 35	53.356899	-0.758494	11.12	1.50	12.62
OP 36	53.355209	-0.757743	13.61	1.50	15.11
OP 37	53.353826	-0.755876	17.49	1.50	18.99
OP 38	53.352302	-0.755619	17.55	1.50	19.05
OP 39	53.350611	-0.754203	21.00	1.50	22.50
OP 40	53.348882	-0.753516	20.11	1.50	21.61
)P 41	53.347204	-0.754181	17.00	1.50	18.50
OP 42	53.345500	-0.754310	17.00	1.50	18.50
OP 43	53.343604	-0.753688	17.39	1.50	18.89
)P 44	53.342128	-0.752840	18.00	1.50	19.50
OP 45	53.340436	-0.751553	16.54	1.50	18.04
)P 46	53.338822	-0.749815	18.31	1.50	19.81
)P 47	53.337349	-0.748098	20.37	1.50	21.87
)P 48	53.335978	-0.746167	23.07	1.50	24.57

# **Summary of PV Glare Analysis**

PV configuration and total predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	45.0	180.0	68,779	13,517	-	-
PV array 2	45.0	180.0	33,818	7,979	-	-
PV array 3	45.0	180.0	40,822	187	-	-
PV array 4	45.0	180.0	55,309	10,305	-	-

## Distinct glare per month

Excludes overlapping glare from PV array for multiple receptors at matching time(s)

PV	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pv-array-1 (green)	0	0	291	1326	1449	1407	1497	1368	774	0	0	0
pv-array-1 (yellow)	0	0	17	122	0	0	0	39	96	0	0	0
pv-array-2 (green)	0	0	209	713	1215	1666	1538	770	459	0	0	0
pv-array-2 (yellow)	0	0	22	574	363	0	158	606	187	0	0	0
pv-array-3 (green)	0	0	286	1458	1276	1301	1316	1434	766	0	0	0
pv-array-3 (yellow)	0	0	3	3	0	0	0	0	6	0	0	0
pv-array-4 (green)	0	0	433	1607	2041	2266	2151	1833	922	0	0	0
pv-array-4 (yellow)	0	0	52	373	390	142	310	465	166	0	0	0

## **PV & Receptor Analysis Results**

Results for each PV array and receptor

## PV array 1 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	429	0
OP: OP 10	69	0
OP: OP 11	4	0
OP: OP 12	18	0
OP: OP 13	26	0
OP: OP 14	58	0
OP: OP 15	134	0
OP: OP 16	167	0
OP: OP 17	162	0
OP: OP 18	635	0
OP: OP 19	891	0

OP: OP 20	1180	0
OP: OP 21	1521	0
OP: OP 22	1705	0
OP: OP 23	1529	0
OP: OP 24	1826	0
OP: OP 25	2070	0
OP: OP 26	2326	0
OP: OP 27	2737	0
OP: OP 28	2816	0
OP: OP 29	2916	0
OP: OP 30	3412	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	10	0
OP: OP 34	813	0
OP: OP 35	1737	260
OP: OP 36	3931	287
OP: OP 37	4001	0
OP: OP 38	3881	0
OP: OP 39	3617	0
OP: OP 40	3296	533
OP: OP 41	2972	1349
OP: OP 42	2396	1907
OP: OP 43	2091	2346
OP: OP 44	2186	2277
OP: OP 45	2216	2345
OP: OP 46	2253	1939
OP: OP 47	3658	0
OP: OP 48	3090	274

PV array 1 - OP Receptor (OP 1)

No glare found

PV array 1 - OP Receptor (OP 2)

No glare found

PV array 1 - OP Receptor (OP 3)

No glare found

PV array 1 - OP Receptor (OP 4)

No glare found

PV array 1 - OP Receptor (OP 5)

No glare found

PV array 1 - OP Receptor (OP 6)

No glare found

PV array 1 - OP Receptor (OP 7)

No glare found

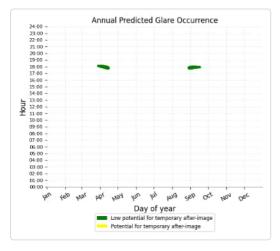
PV array 1 - OP Receptor (OP 8)

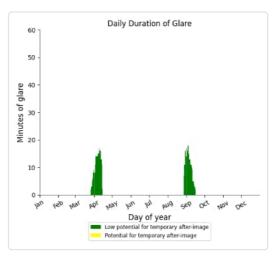
No glare found

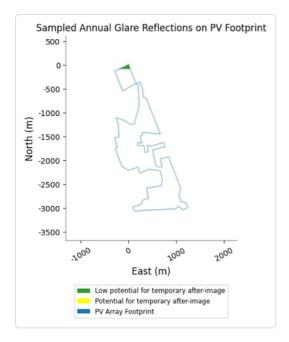
#### PV array 1 - OP Receptor (OP 9)

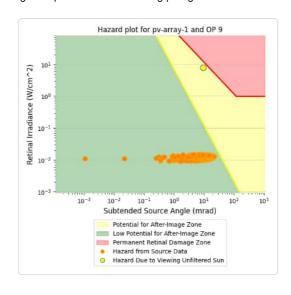
- PV array is expected to produce the following glare for receptors at this location:

   429 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.

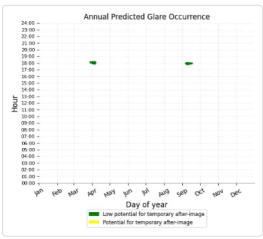


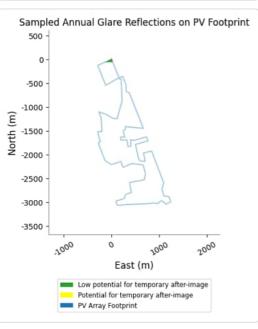


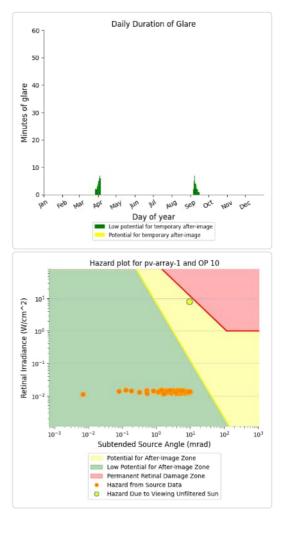




## PV array 1 - OP Receptor (OP 10)



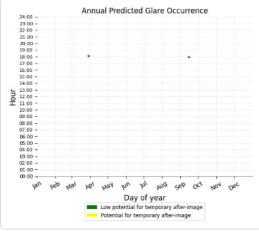


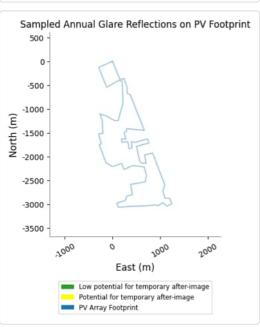


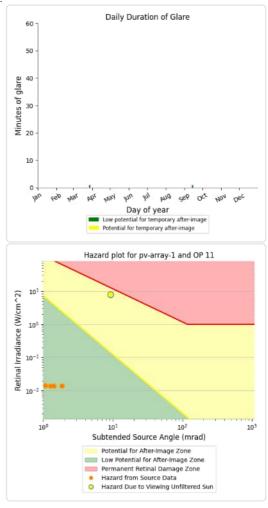
## PV array 1 - OP Receptor (OP 11)

PV array is expected to produce the following glare for receptors at this location:

4 minutes of "green" glare with low potential to cause temporary after-image.

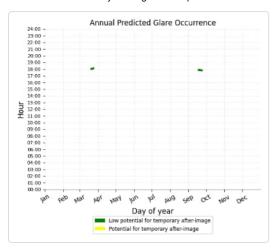


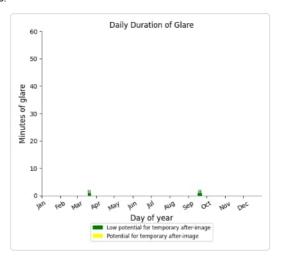


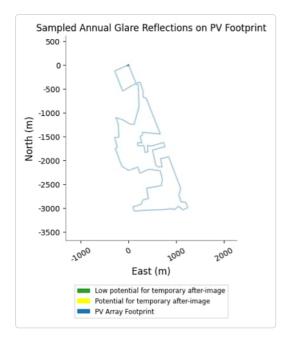


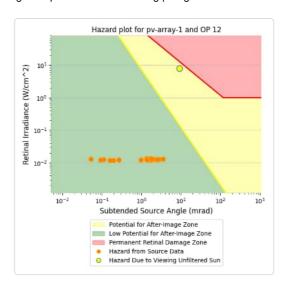
## PV array 1 - OP Receptor (OP 12)

- 18 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





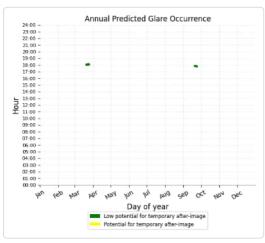


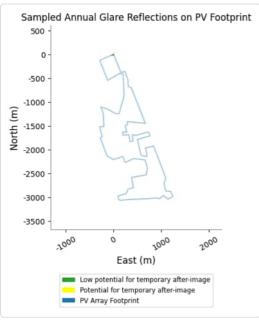


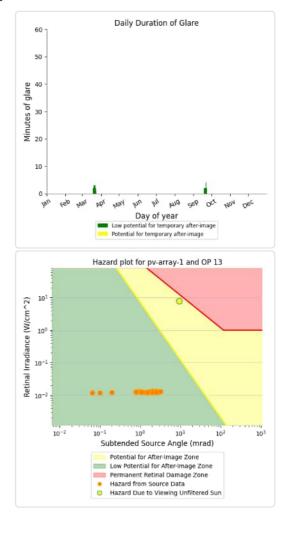
## PV array 1 - OP Receptor (OP 13)

- PV array is expected to produce the following glare for receptors at this location:

   26 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.



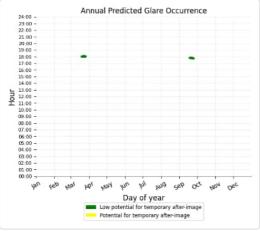


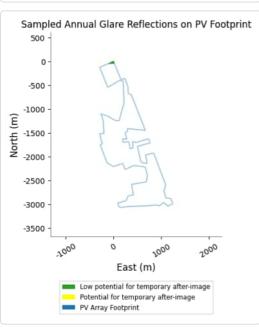


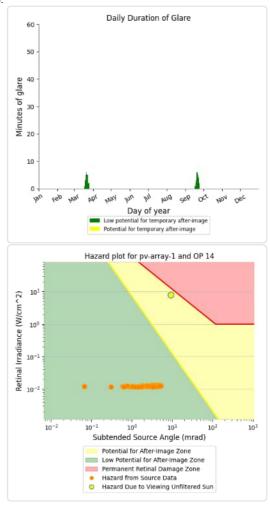
## PV array 1 - OP Receptor (OP 14)

PV array is expected to produce the following glare for receptors at this location:

• 58 minutes of "green" glare with low potential to cause temporary after-image.

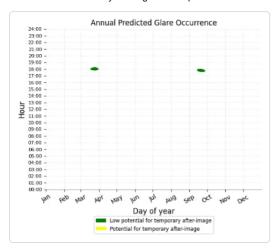


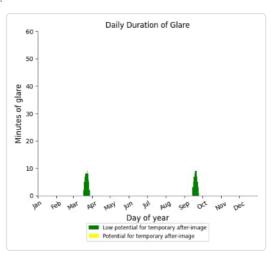


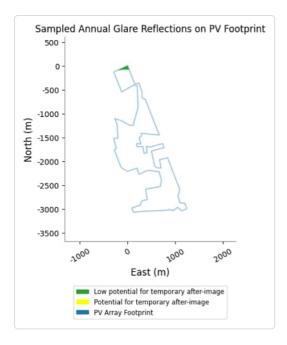


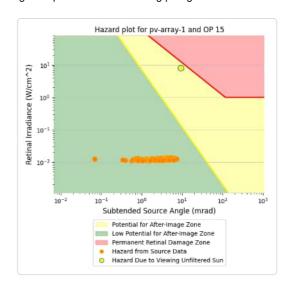
## PV array 1 - OP Receptor (OP 15)

- 134 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



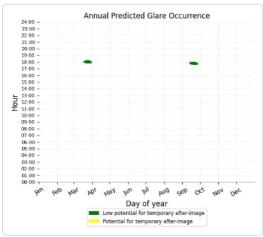


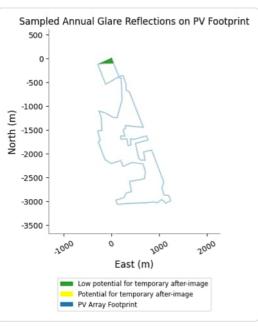


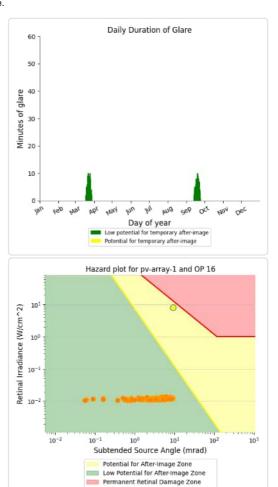


## PV array 1 - OP Receptor (OP 16)

PV array is expected to produce the following glare for receptors at this location:
 • 167 minutes of "green" glare with low potential to cause temporary after-image.
 • 0 minutes of "yellow" glare with potential to cause temporary after-image.





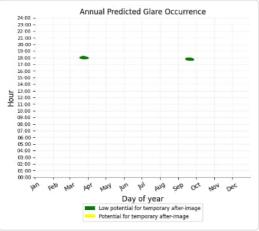


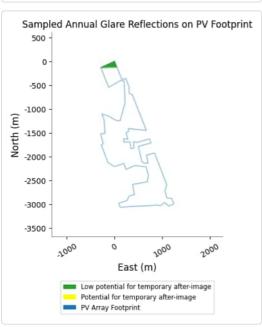
Hazard from Source Data Hazard Due to Viewing Unfiltered Sun

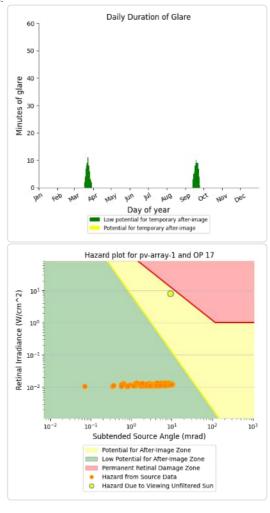
## PV array 1 - OP Receptor (OP 17)

PV array is expected to produce the following glare for receptors at this location:

• 162 minutes of "green" glare with low potential to cause temporary after-image.

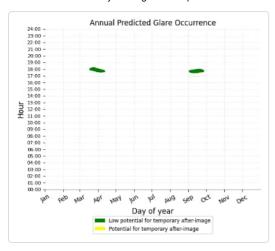


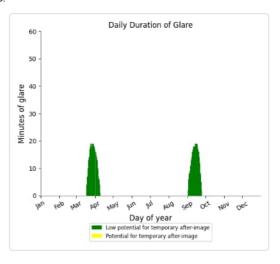


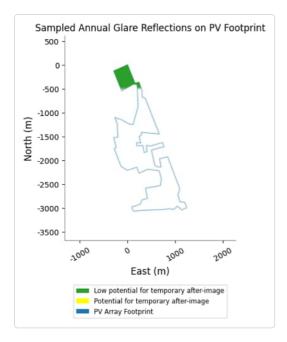


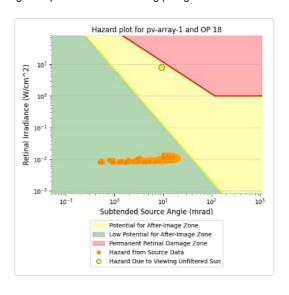
## PV array 1 - OP Receptor (OP 18)

- 635 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.





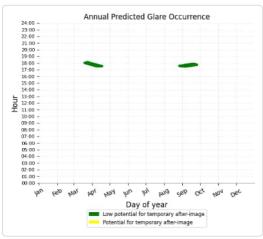


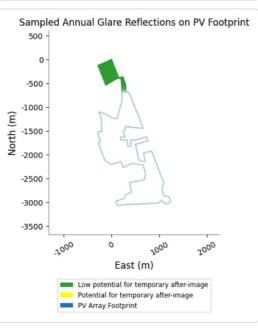


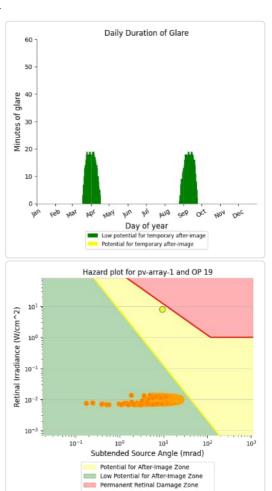
## PV array 1 - OP Receptor (OP 19)

PV array is expected to produce the following glare for receptors at this location:

 891 minutes of "green" glare with low potential to cause temporary after-image.
 0 minutes of "yellow" glare with potential to cause temporary after-image.





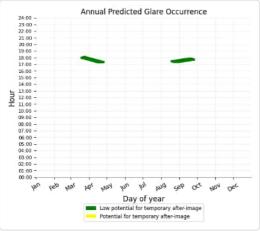


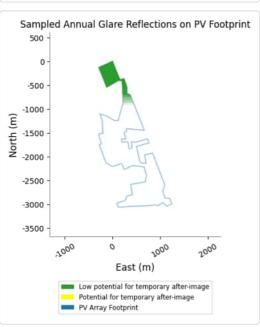
Hazard from Source Data Hazard Due to Viewing Unfiltered Sun

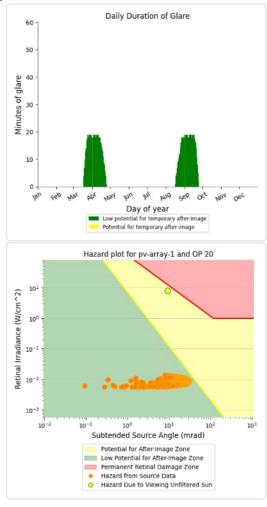
## PV array 1 - OP Receptor (OP 20)

PV array is expected to produce the following glare for receptors at this location:

• 1,180 minutes of "green" glare with low potential to cause temporary after-image.

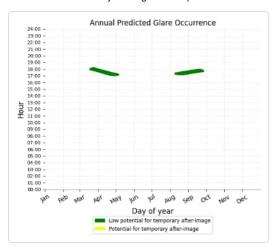


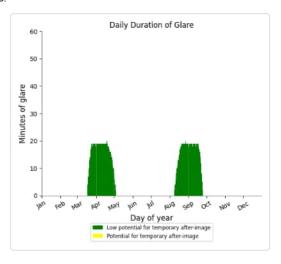


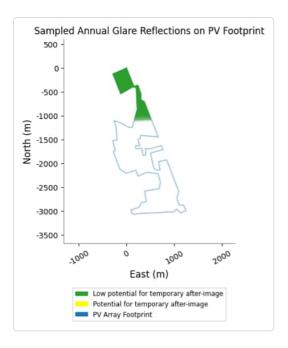


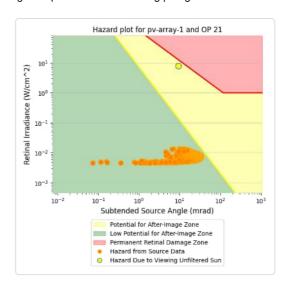
## PV array 1 - OP Receptor (OP 21)

- 1,521 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





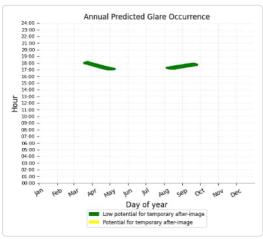


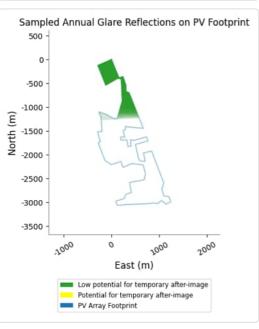


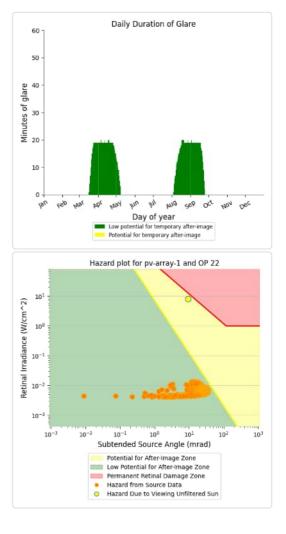
#### PV array 1 - OP Receptor (OP 22)

- PV array is expected to produce the following glare for receptors at this location:

   1,705 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



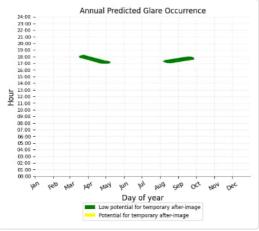


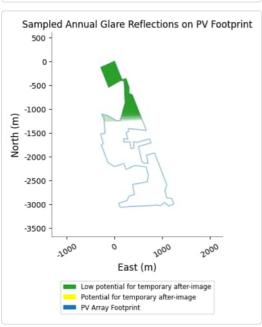


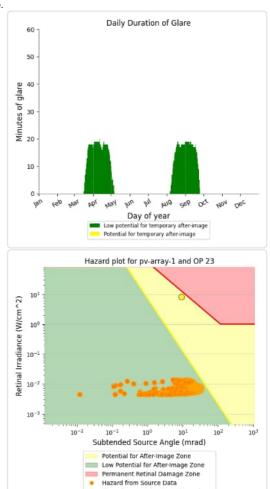
## PV array 1 - OP Receptor (OP 23)

PV array is expected to produce the following glare for receptors at this location:

• 1,529 minutes of "green" glare with low potential to cause temporary after-image.



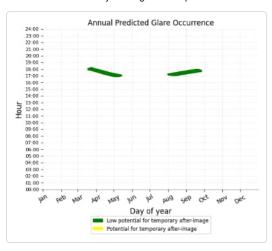


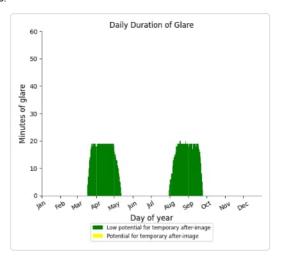


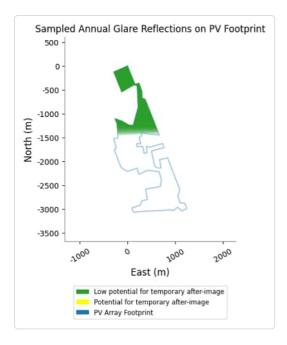
Hazard Due to Viewing Unfiltered Sun

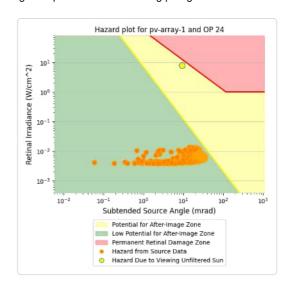
## PV array 1 - OP Receptor (OP 24)

- 1,826 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



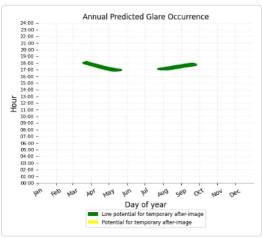


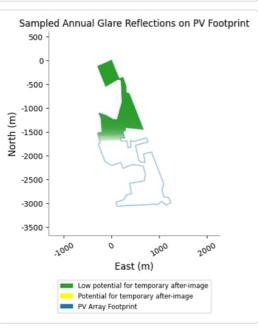


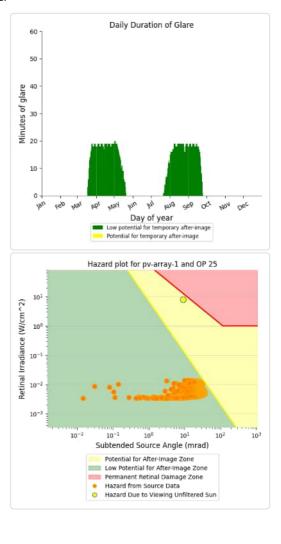


## PV array 1 - OP Receptor (OP 25)

- PV array is expected to produce the following glare for receptors at this location:
   2,070 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



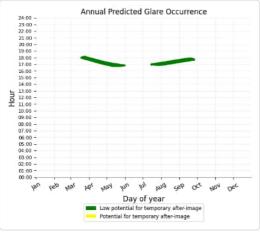


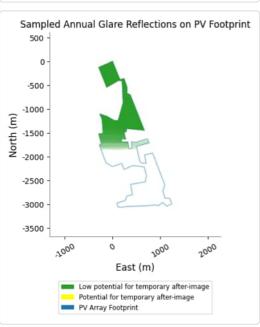


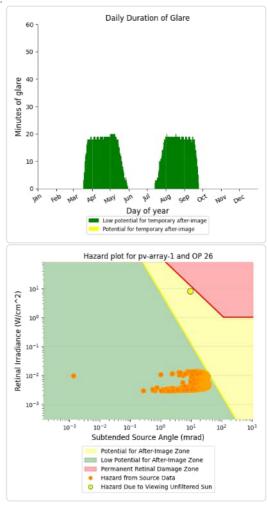
## PV array 1 - OP Receptor (OP 26)

PV array is expected to produce the following glare for receptors at this location:

• 2,326 minutes of "green" glare with low potential to cause temporary after-image.

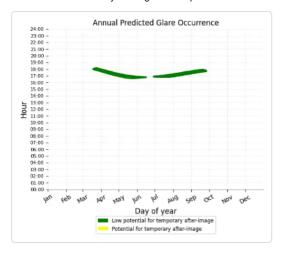


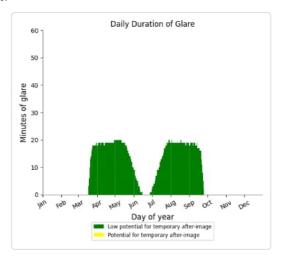


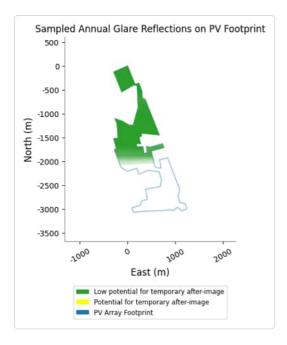


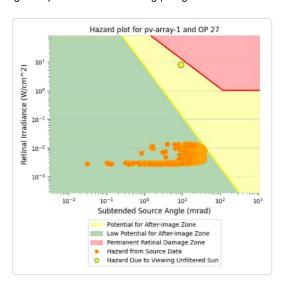
## PV array 1 - OP Receptor (OP 27)

- 2,737 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





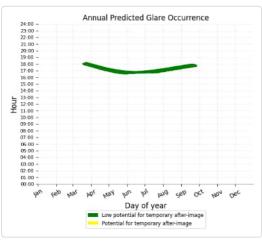


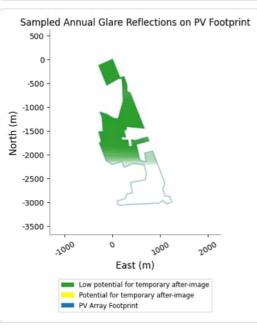


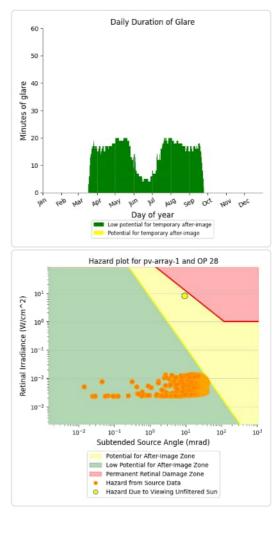
## PV array 1 - OP Receptor (OP 28)

- PV array is expected to produce the following glare for receptors at this location:

   2,816 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



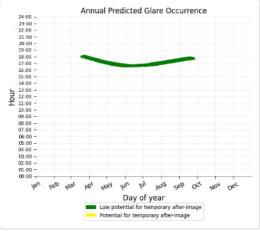


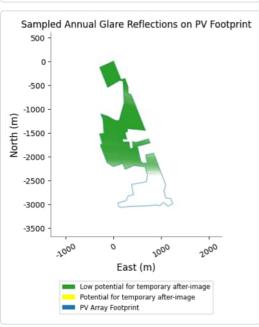


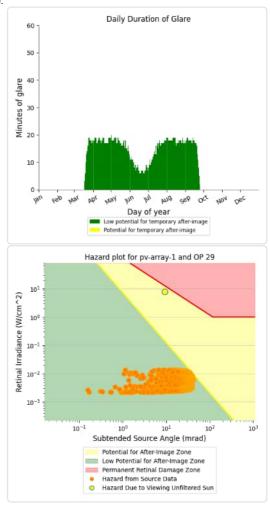
## PV array 1 - OP Receptor (OP 29)

PV array is expected to produce the following glare for receptors at this location:

• 2,916 minutes of "green" glare with low potential to cause temporary after-image.

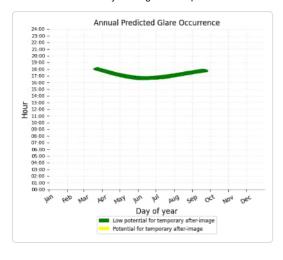


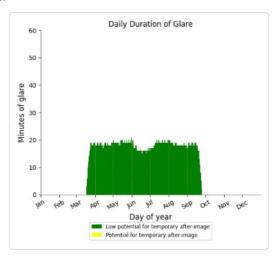


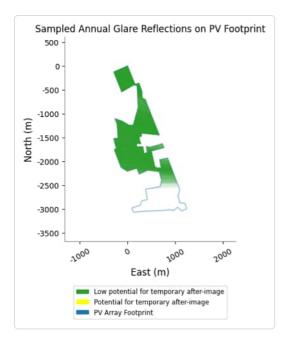


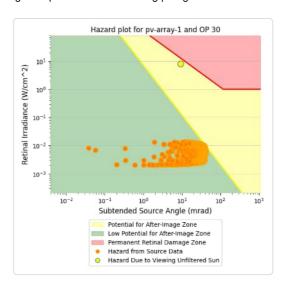
## PV array 1 - OP Receptor (OP 30)

- 3,412 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.









## PV array 1 - OP Receptor (OP 31)

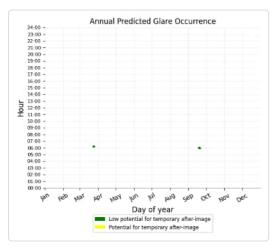
No glare found

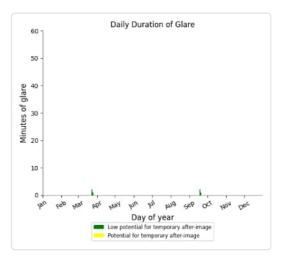
#### PV array 1 - OP Receptor (OP 32)

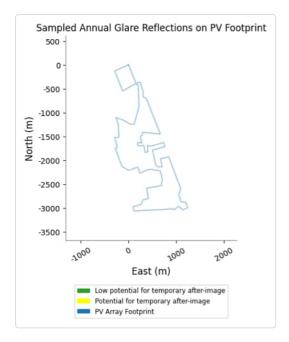
No glare found

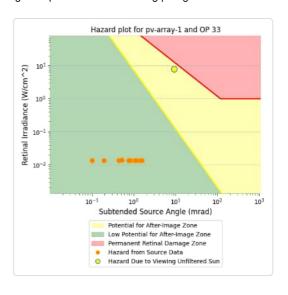
## PV array 1 - OP Receptor (OP 33)

- 10 minutes of "green" glare with low potential to cause temporary after-image.
  0 minutes of "yellow" glare with potential to cause temporary after-image.



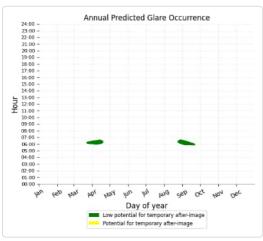


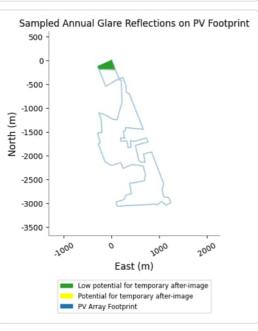


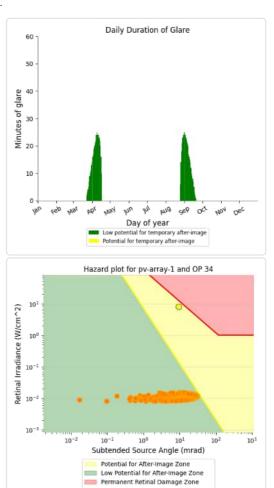


## PV array 1 - OP Receptor (OP 34)

- PV array is expected to produce the following glare for receptors at this location:
   813 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.





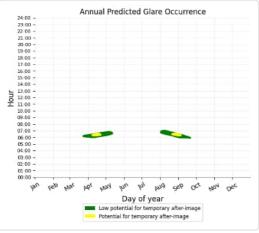


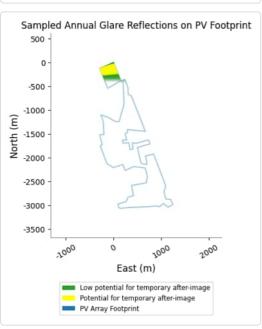
Hazard from Source Data Hazard Due to Viewing Unfiltered Sun

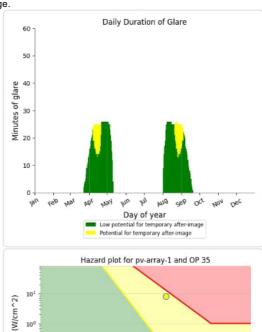
## PV array 1 - OP Receptor (OP 35)

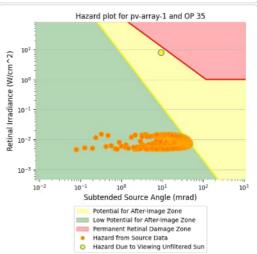
PV array is expected to produce the following glare for receptors at this location:

• 1,737 minutes of "green" glare with low potential to cause temporary after-image.



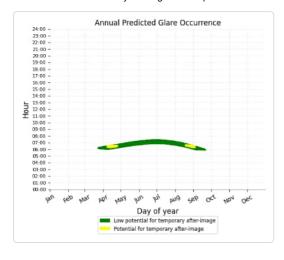


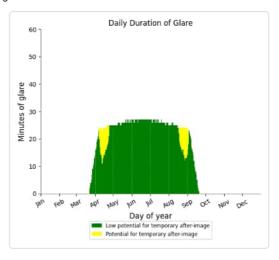


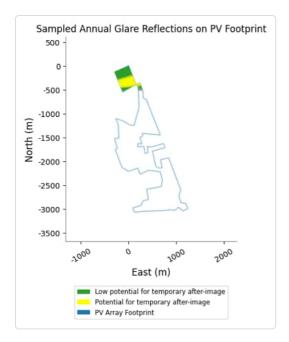


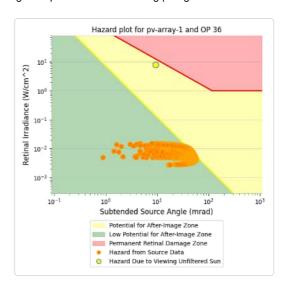
## PV array 1 - OP Receptor (OP 36)

- 3,931 minutes of "green" glare with low potential to cause temporary after-image.
- 287 minutes of "yellow" glare with potential to cause temporary after-image.





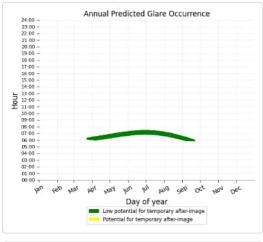


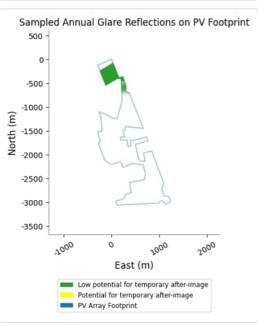


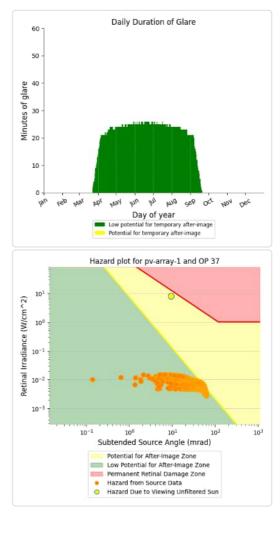
## PV array 1 - OP Receptor (OP 37)

- PV array is expected to produce the following glare for receptors at this location:

   4,001 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



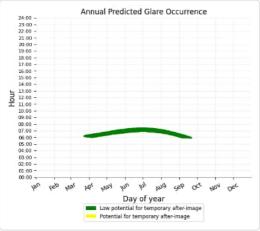


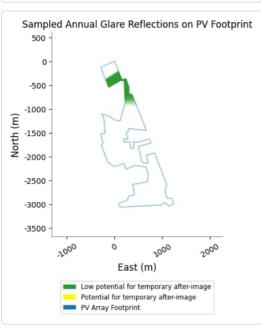


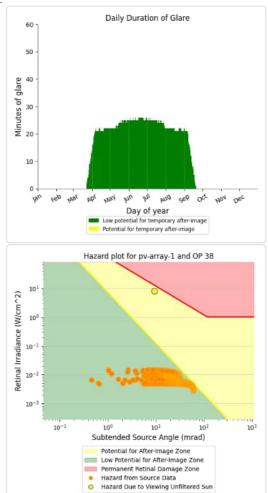
## PV array 1 - OP Receptor (OP 38)

PV array is expected to produce the following glare for receptors at this location:

• 3,881 minutes of "green" glare with low potential to cause temporary after-image.

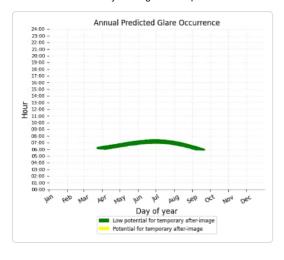


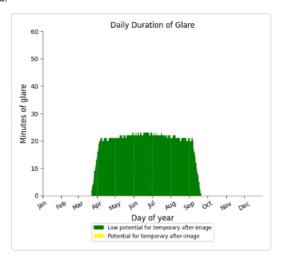


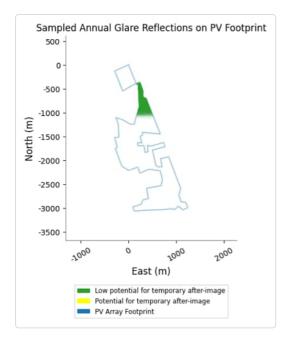


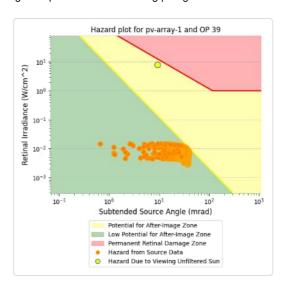
## PV array 1 - OP Receptor (OP 39)

- 3,617 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





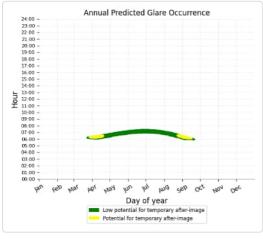


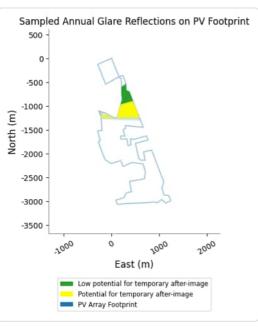


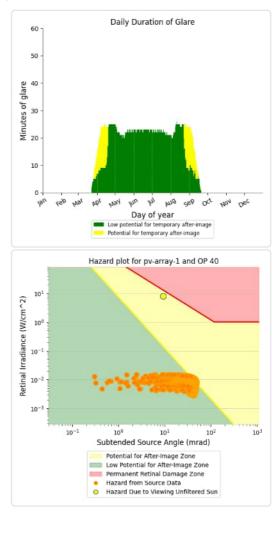
## PV array 1 - OP Receptor (OP 40)

- PV array is expected to produce the following glare for receptors at this location:

   3,296 minutes of "green" glare with low potential to cause temporary after-image.
  - 533 minutes of "yellow" glare with potential to cause temporary after-image.



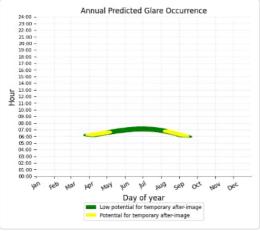


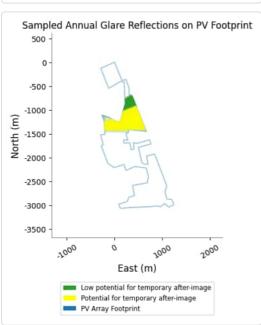


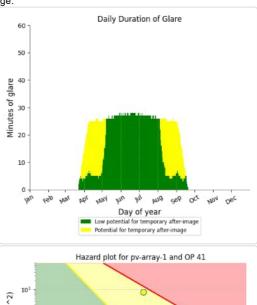
## PV array 1 - OP Receptor (OP 41)

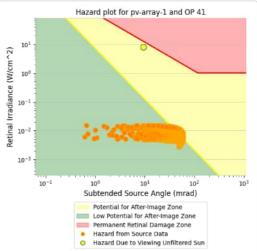
PV array is expected to produce the following glare for receptors at this location:

• 2,972 minutes of "green" glare with low potential to cause temporary after-image.



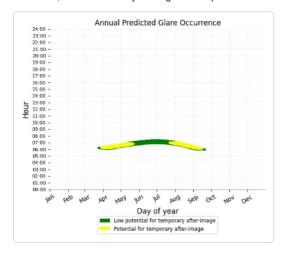


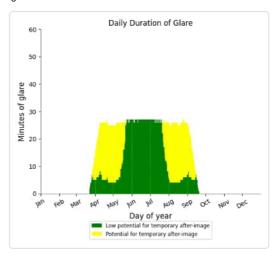


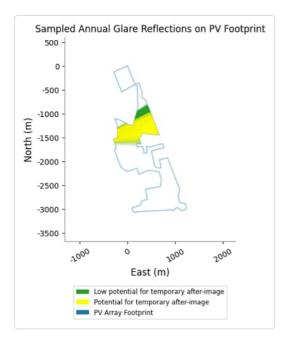


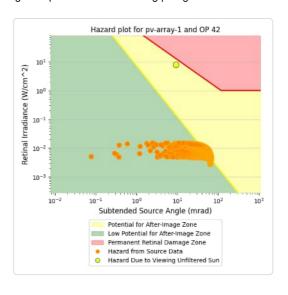
## PV array 1 - OP Receptor (OP 42)

- 2,396 minutes of "green" glare with low potential to cause temporary after-image.
- 1,907 minutes of "yellow" glare with potential to cause temporary after-image.





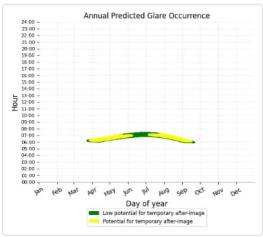


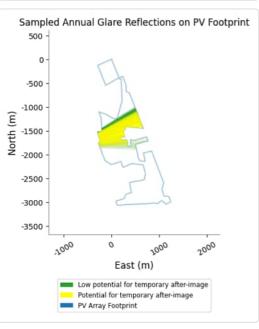


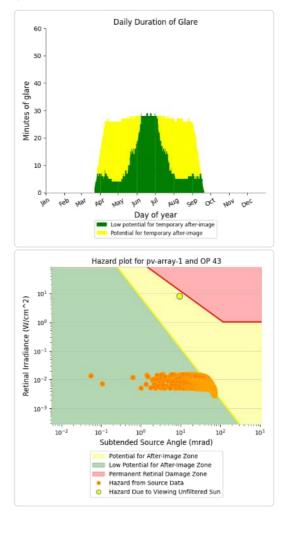
#### PV array 1 - OP Receptor (OP 43)

- PV array is expected to produce the following glare for receptors at this location:

   2,091 minutes of "green" glare with low potential to cause temporary after-image.
   2,346 minutes of "yellow" glare with potential to cause temporary after-image.







## PV array 1 - OP Receptor (OP 44)

PV array is expected to produce the following glare for receptors at this location:

• 2,186 minutes of "green" glare with low potential to cause temporary after-image.

10

10-1

100

101

Subtended Source Angle (mrad)

Potential for After-Image Zone

Low Potential for After-Image Zone

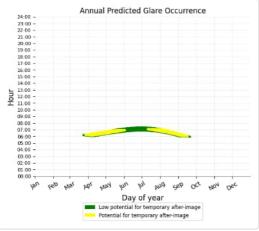
Permanent Retinal Damage Zone

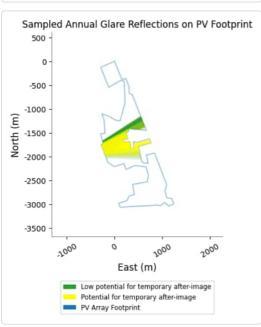
Hazard from Source Data

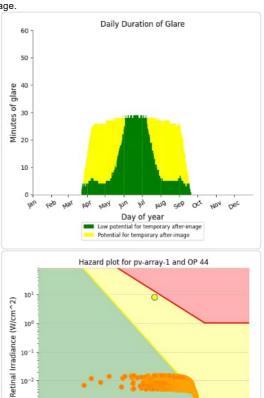
Hazard Due to Viewing Unfiltered Sun

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• 2,277 minutes of "yellow" glare with potential to cause temporary after-image.

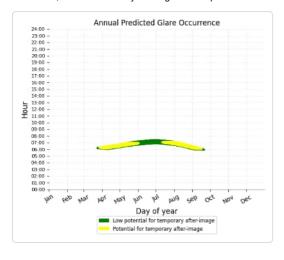


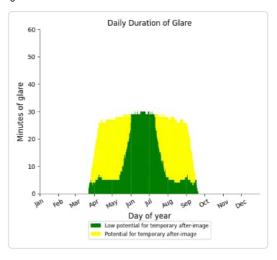


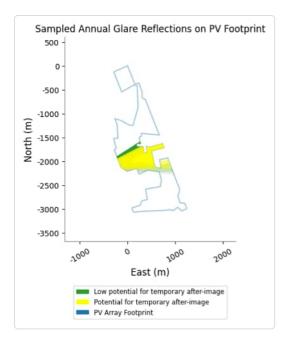


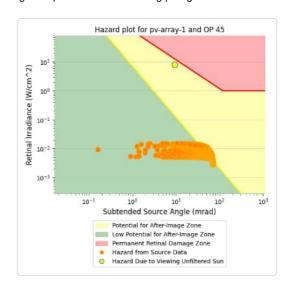
## PV array 1 - OP Receptor (OP 45)

- 2,216 minutes of "green" glare with low potential to cause temporary after-image.
- 2,345 minutes of "yellow" glare with potential to cause temporary after-image.





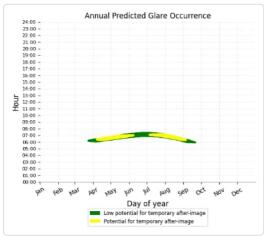


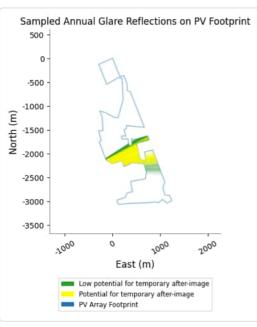


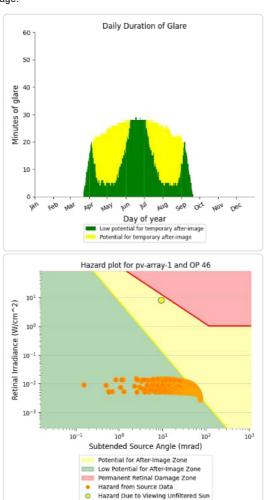
## PV array 1 - OP Receptor (OP 46)

- PV array is expected to produce the following glare for receptors at this location:

   2,253 minutes of "green" glare with low potential to cause temporary after-image.
   1,939 minutes of "yellow" glare with potential to cause temporary after-image.



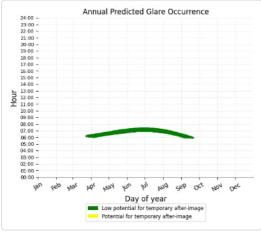


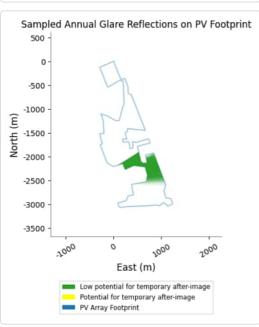


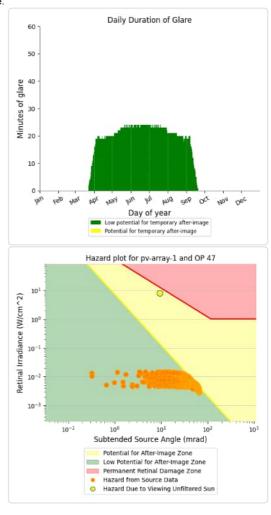
## PV array 1 - OP Receptor (OP 47)

PV array is expected to produce the following glare for receptors at this location:

• 3,658 minutes of "green" glare with low potential to cause temporary after-image.

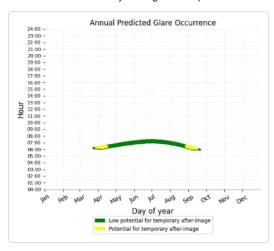


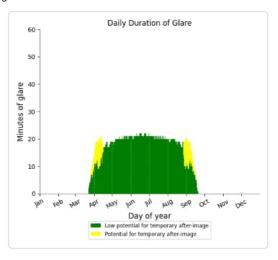


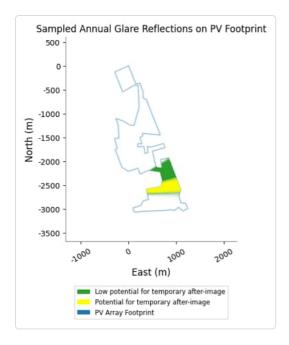


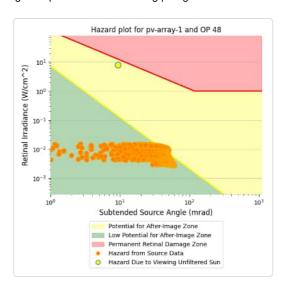
## PV array 1 - OP Receptor (OP 48)

- 3,090 minutes of "green" glare with low potential to cause temporary after-image.
- 274 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 2 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)	
OP: OP 1	0	0	
OP: OP 2	0	0	
OP: OP 3	0	0	
OP: OP 4	0	0	
OP: OP 5	0	0	
OP: OP 6	0	0	
OP: OP 7	0	0	
OP: OP 8	0	0	
OP: OP 9	0	0	
OP: OP 10	0	0	
OP: OP 11	0	0	
OP: OP 12	0	0	
OP: OP 13	0	0	
OP: OP 14	0	0	
OP: OP 15	0	0	
OP: OP 16	0	0	
OP: OP 17	0	0	
OP: OP 18	0	0	
OP: OP 19	0	0	
OP: OP 20	55	0	
OP: OP 21	314	0	
OP: OP 22	346	0	
OP: OP 23	352	0	
OP: OP 24	790	11	
OP: OP 25	1397	387	
OP: OP 26	2533	782	
OP: OP 27	2629	673	
OP: OP 28	2109	1316	
OP: OP 29	1931	1530	
OP: OP 30	1955	1448	
OP: OP 31	0	0	
OP: OP 32	0	0	

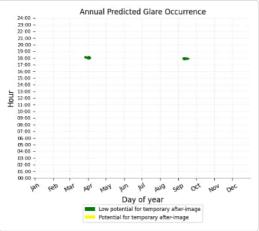
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	71	0
OP: OP 38	594	0
OP: OP 39	850	25
OP: OP 40	1733	137
OP: OP 41	2605	184
OP: OP 42	2492	269
OP: OP 43	2284	281
OP: OP 44	2203	229
OP: OP 45	2328	390
OP: OP 46	1927	186
OP: OP 47	9	0
OP: OP 48	2311	131

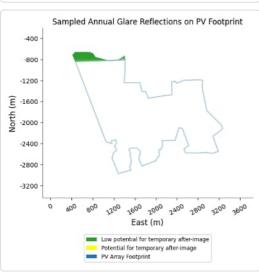
PV array 2 - OP Receptor (OP 1)  No glare found
PV array 2 - OP Receptor (OP 2)  No glare found
PV array 2 - OP Receptor (OP 3)  No glare found
PV array 2 - OP Receptor (OP 4) No glare found
PV array 2 - OP Receptor (OP 5)  No glare found
PV array 2 - OP Receptor (OP 6)  No glare found
PV array 2 - OP Receptor (OP 7)  No glare found
PV array 2 - OP Receptor (OP 8)  No glare found
PV array 2 - OP Receptor (OP 9)  No glare found
PV array 2 - OP Receptor (OP 10) No glare found
PV array 2 - OP Receptor (OP 11)  No glare found
PV array 2 - OP Receptor (OP 12)  No glare found
PV array 2 - OP Receptor (OP 13) No glare found
PV array 2 - OP Receptor (OP 14) No glare found
PV array 2 - OP Receptor (OP 15) No glare found
PV array 2 - OP Receptor (OP 16) No glare found
PV array 2 - OP Receptor (OP 17) No glare found
PV array 2 - OP Receptor (OP 18) No glare found

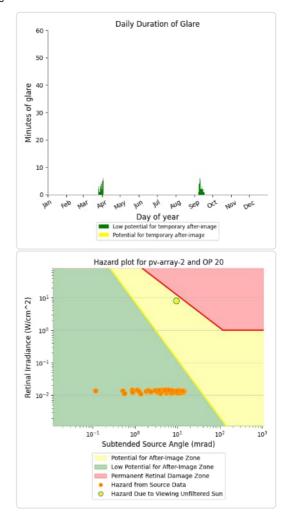
PV array 2 - OP Receptor (OP 19)

No glare found

# PV array 2 - OP Receptor (OP 20)

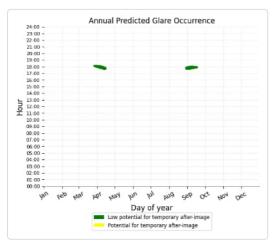


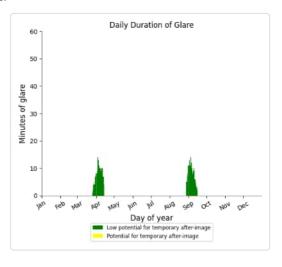


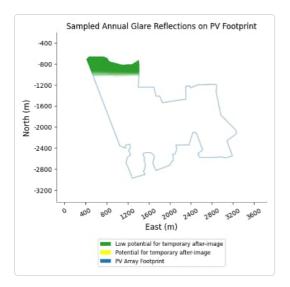


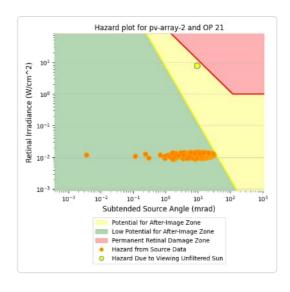
### PV array 2 - OP Receptor (OP 21)

- 314 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





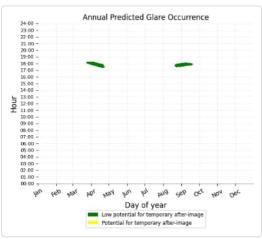


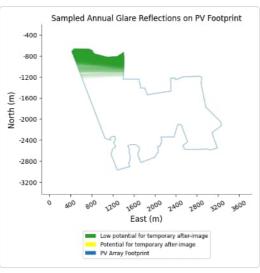


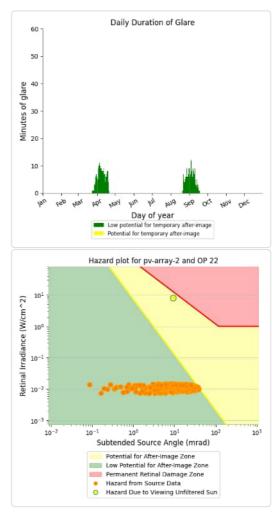
### PV array 2 - OP Receptor (OP 22)

PV array is expected to produce the following glare for receptors at this location:

- 346 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

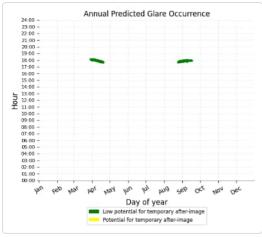


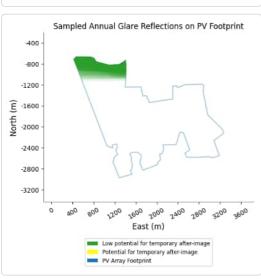


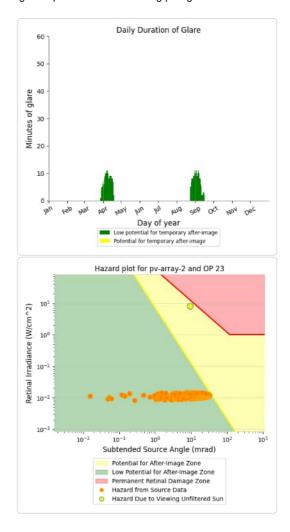


### PV array 2 - OP Receptor (OP 23)

- 352 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

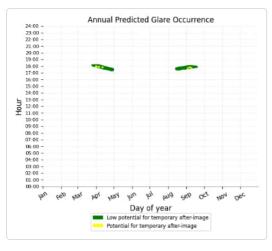


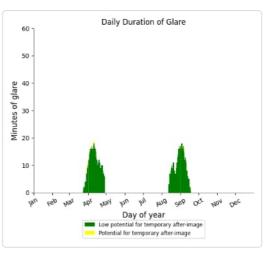


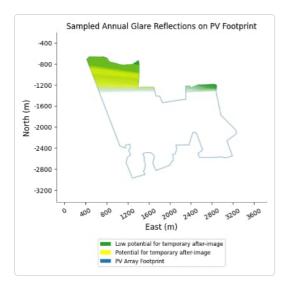


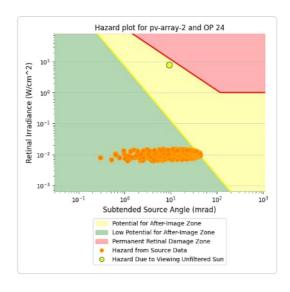
# PV array 2 - OP Receptor (OP 24)

- 790 minutes of "green" glare with low potential to cause temporary after-image.
- 11 minutes of "yellow" glare with potential to cause temporary after-image.





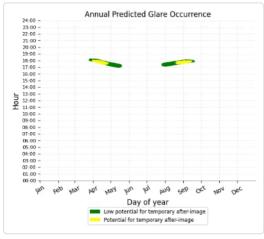


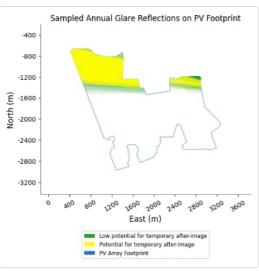


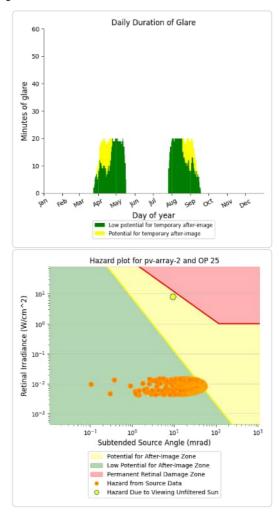
### PV array 2 - OP Receptor (OP 25)

PV array is expected to produce the following glare for receptors at this location:

- 1,397 minutes of "green" glare with low potential to cause temporary after-image.
- 387 minutes of "yellow" glare with potential to cause temporary after-image.

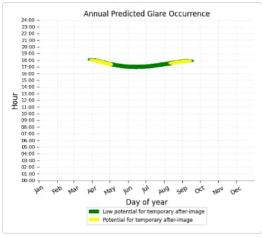


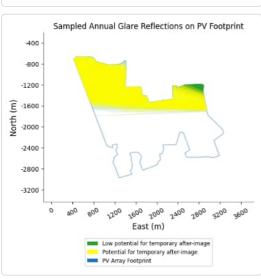


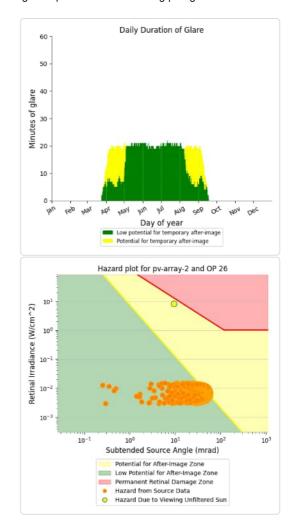


### PV array 2 - OP Receptor (OP 26)

- 2,533 minutes of "green" glare with low potential to cause temporary after-image.
- 782 minutes of "yellow" glare with potential to cause temporary after-image.



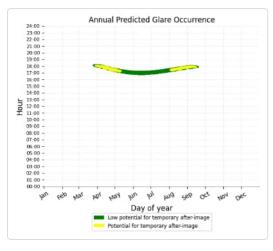


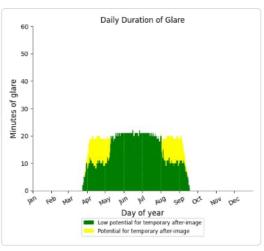


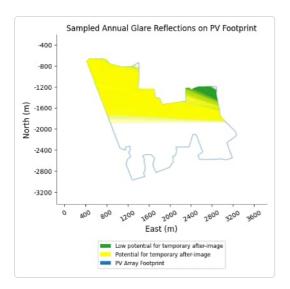
# PV array 2 - OP Receptor (OP 27)

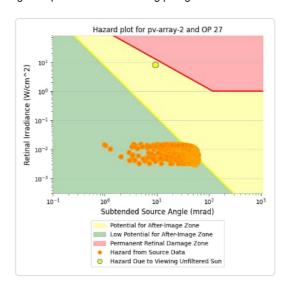
- PV array is expected to produce the following glare for receptors at this location:

   2,629 minutes of "green" glare with low potential to cause temporary after-image.
  - 673 minutes of "yellow" glare with potential to cause temporary after-image.







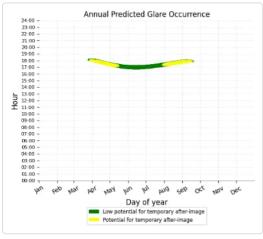


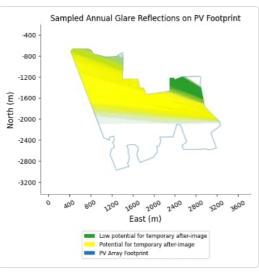
### PV array 2 - OP Receptor (OP 28)

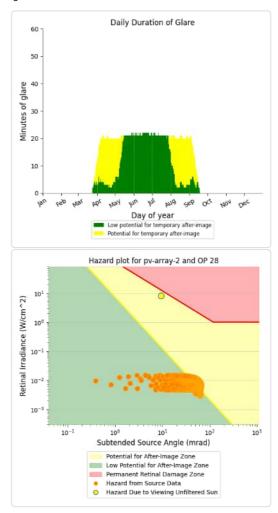
PV array is expected to produce the following glare for receptors at this location:

- 2,109 minutes of "green" glare with low potential to cause temporary after-image.

  1,316 minutes of "yellow" glare with potential to cause temporary after-image.

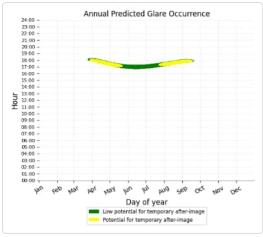


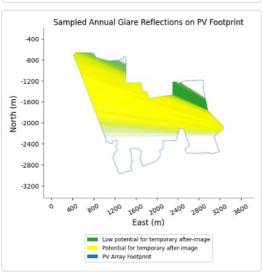


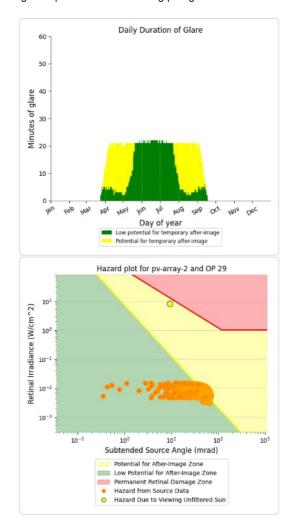


### PV array 2 - OP Receptor (OP 29)

- 1,931 minutes of "green" glare with low potential to cause temporary after-image.
  1,530 minutes of "yellow" glare with potential to cause temporary after-image.

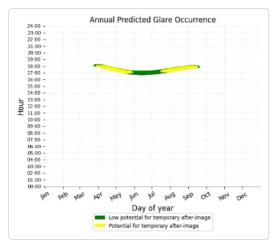


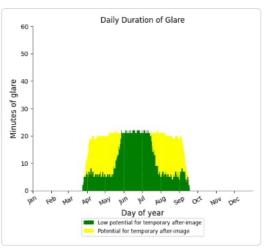


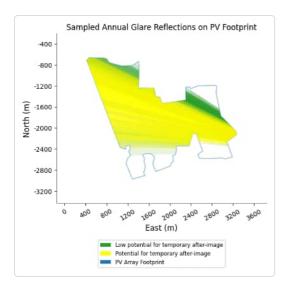


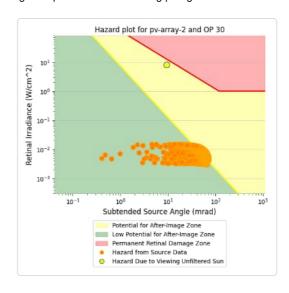
# PV array 2 - OP Receptor (OP 30)

- PV array is expected to produce the following glare for receptors at this location:
   1,955 minutes of "green" glare with low potential to cause temporary after-image.
   1,448 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 2 - OP Receptor (OP 31)

No glare found

PV array 2 - OP Receptor (OP 32)

No glare found

PV array 2 - OP Receptor (OP 33)

No glare found

PV array 2 - OP Receptor (OP 34)

No glare found

PV array 2 - OP Receptor (OP 35)

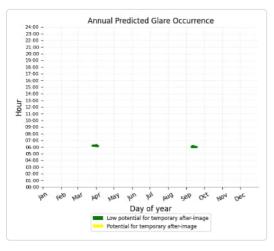
No glare found

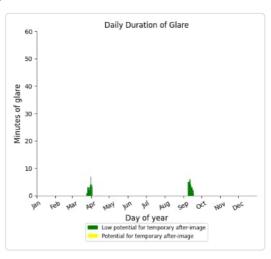
PV array 2 - OP Receptor (OP 36)

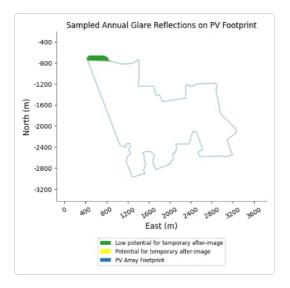
No glare found

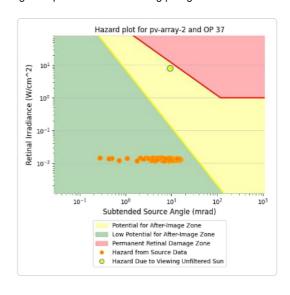
### PV array 2 - OP Receptor (OP 37)

- 71 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.





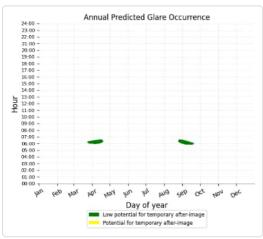


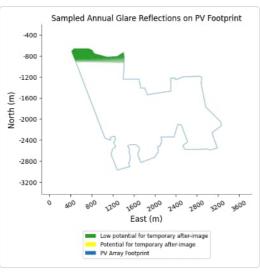


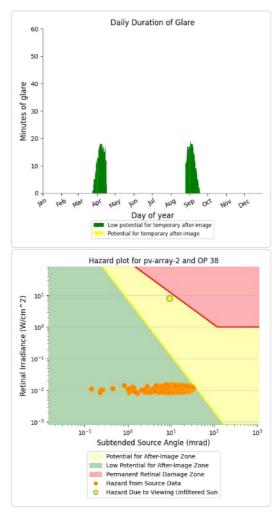
### PV array 2 - OP Receptor (OP 38)

PV array is expected to produce the following glare for receptors at this location:

- 594 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

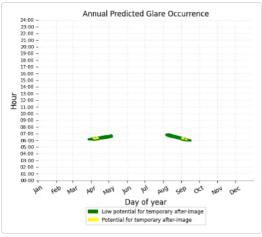


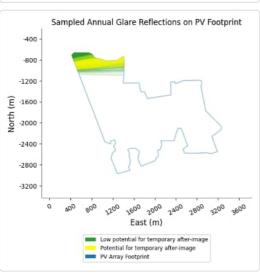


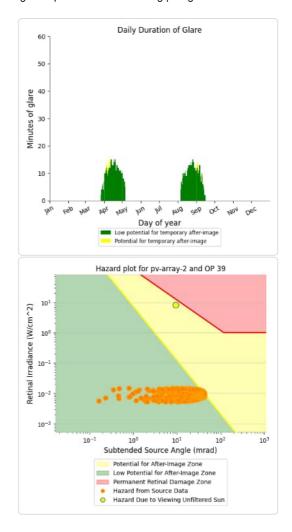


### PV array 2 - OP Receptor (OP 39)

- 850 minutes of "green" glare with low potential to cause temporary after-image. 25 minutes of "yellow" glare with potential to cause temporary after-image.



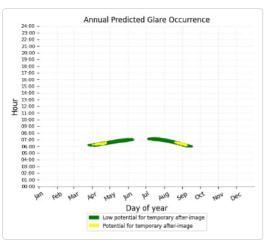


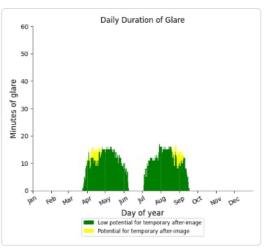


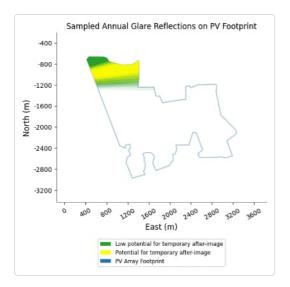
# PV array 2 - OP Receptor (OP 40)

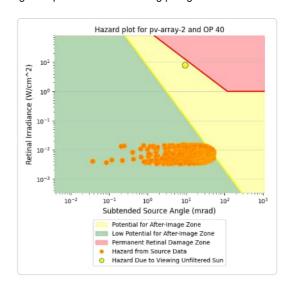
- PV array is expected to produce the following glare for receptors at this location:

   1,733 minutes of "green" glare with low potential to cause temporary after-image.
  - 137 minutes of "yellow" glare with potential to cause temporary after-image.





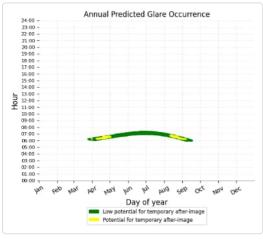


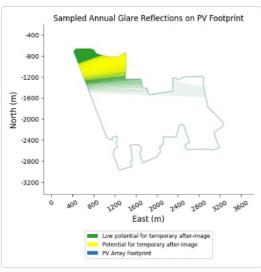


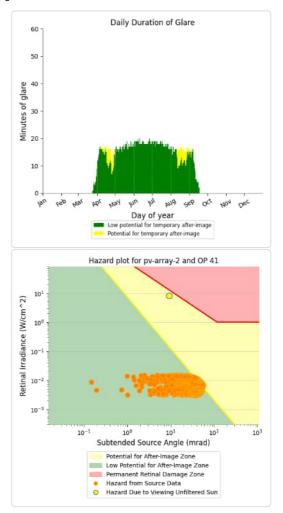
### PV array 2 - OP Receptor (OP 41)

PV array is expected to produce the following glare for receptors at this location:

- 2,605 minutes of "green" glare with low potential to cause temporary after-image.
- 184 minutes of "yellow" glare with potential to cause temporary after-image.

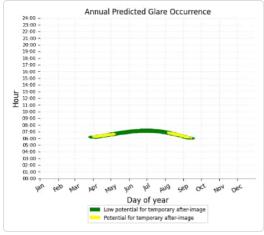


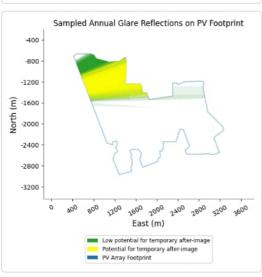


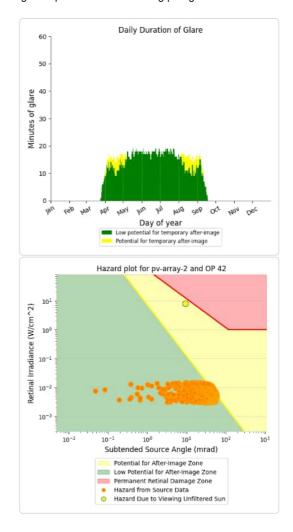


# PV array 2 - OP Receptor (OP 42)

- 2,492 minutes of "green" glare with low potential to cause temporary after-image.
- 269 minutes of "yellow" glare with potential to cause temporary after-image.



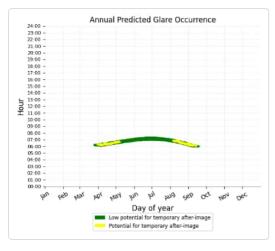


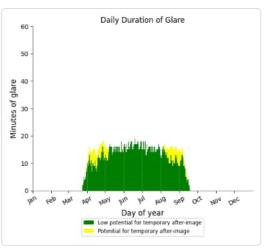


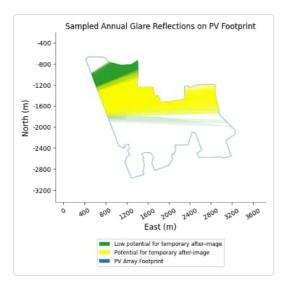
# PV array 2 - OP Receptor (OP 43)

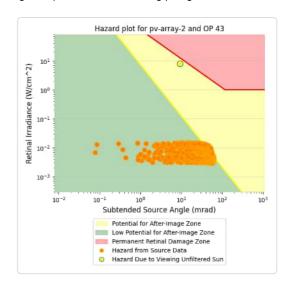
- PV array is expected to produce the following glare for receptors at this location:

   2,284 minutes of "green" glare with low potential to cause temporary after-image.
  - 281 minutes of "yellow" glare with potential to cause temporary after-image.





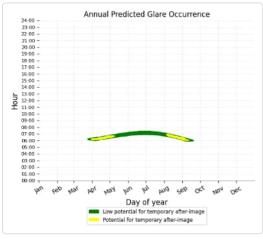


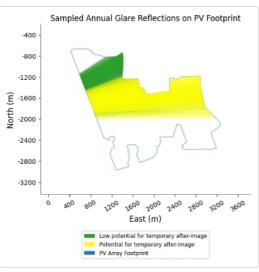


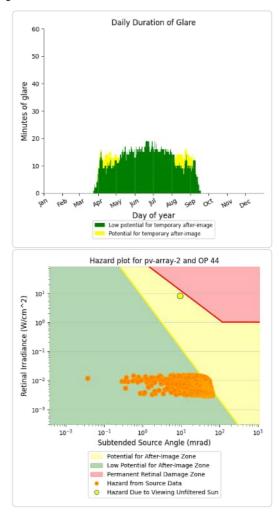
### PV array 2 - OP Receptor (OP 44)

PV array is expected to produce the following glare for receptors at this location:

- 2,203 minutes of "green" glare with low potential to cause temporary after-image.
- 229 minutes of "yellow" glare with potential to cause temporary after-image.

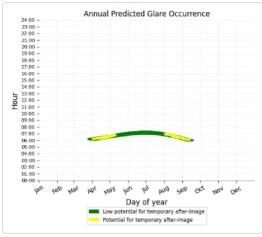


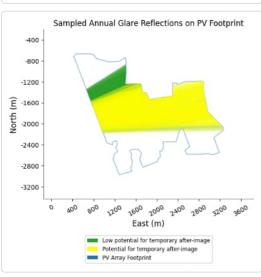


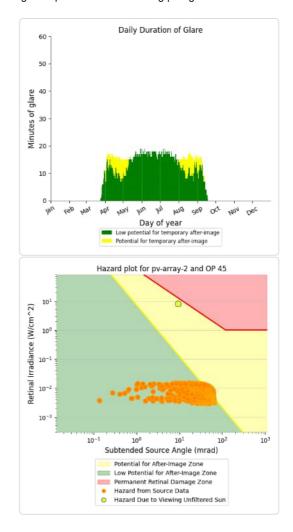


### PV array 2 - OP Receptor (OP 45)

- 2,328 minutes of "green" glare with low potential to cause temporary after-image.
- 390 minutes of "yellow" glare with potential to cause temporary after-image.



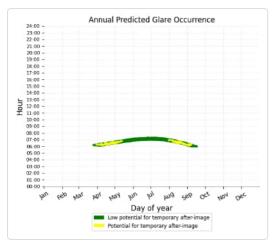


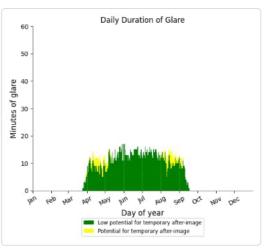


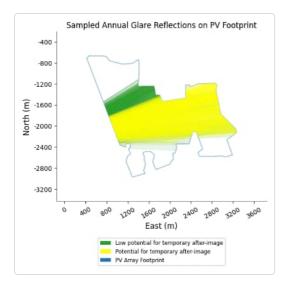
# PV array 2 - OP Receptor (OP 46)

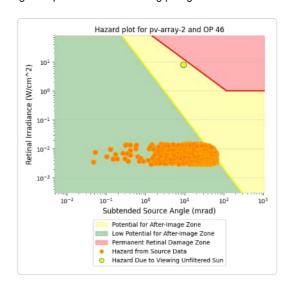
- PV array is expected to produce the following glare for receptors at this location:

   1,927 minutes of "green" glare with low potential to cause temporary after-image.
  - 186 minutes of "yellow" glare with potential to cause temporary after-image.





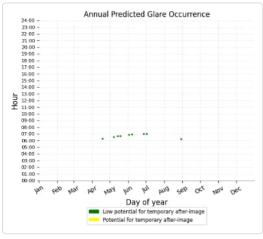


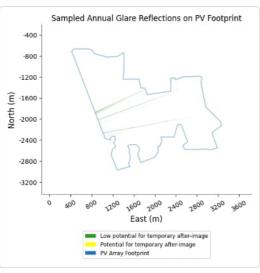


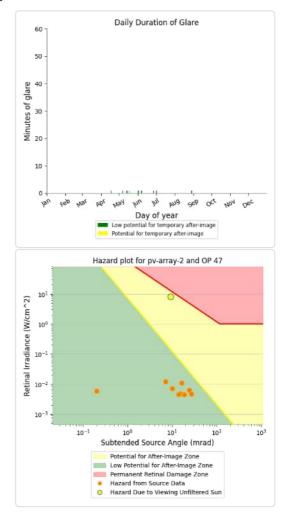
### PV array 2 - OP Receptor (OP 47)

PV array is expected to produce the following glare for receptors at this location:

- 9 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

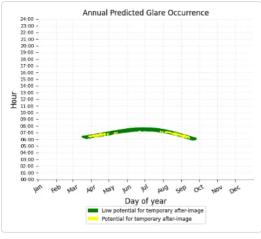


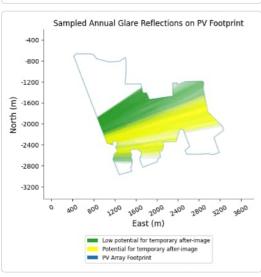


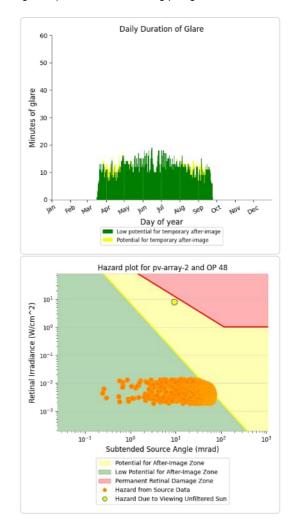


### PV array 2 - OP Receptor (OP 48)

- 2,311 minutes of "green" glare with low potential to cause temporary after-image.
- 131 minutes of "yellow" glare with potential to cause temporary after-image.







PV array 3 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	41	0
OP: OP 9	409	18
OP: OP 10	557	163
OP: OP 11	526	6
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	7	0
OP: OP 15	170	0
OP: OP 16	276	0
OP: OP 17	308	0
OP: OP 18	858	0
OP: OP 19	1487	0
OP: OP 20	2230	0
OP: OP 21	2899	0
OP: OP 22	2699	0

OP: OP 23	2760	0
OP: OP 24	2578	0
OP: OP 25	2245	0
OP: OP 26	1980	0
OP: OP 27	1630	0
OP: OP 28	1323	0
OP: OP 29	915	0
OP: OP 30	551	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	108	0
OP: OP 34	302	0
OP: OP 35	736	0
OP: OP 36	1099	0
OP: OP 37	1560	0
OP: OP 38	1614	0
OP: OP 39	2469	0
OP: OP 40	2278	0
OP: OP 41	1939	0
OP: OP 42	1383	0
OP: OP 43	849	0
OP: OP 44	36	0
OP: OP 45	0	0
OP: OP 46	0	0
OP: OP 47	0	0
OP: OP 48	0	0

### PV array 3 - OP Receptor (OP 1)

No glare found

### PV array 3 - OP Receptor (OP 2)

No glare found

### PV array 3 - OP Receptor (OP 3)

No glare found

# PV array 3 - OP Receptor (OP 4)

No glare found

### PV array 3 - OP Receptor (OP 5)

No glare found

#### PV array 3 - OP Receptor (OP 6)

No glare found

### PV array 3 - OP Receptor (OP 7)

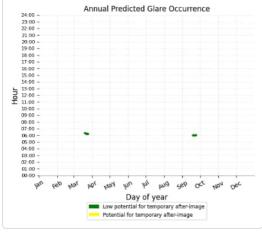
No glare found

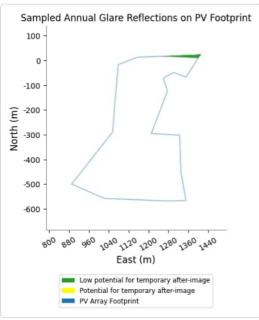
### PV array 3 - OP Receptor (OP 8)

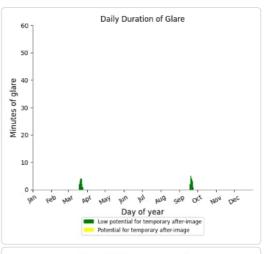
PV array is expected to produce the following glare for receptors at this location:

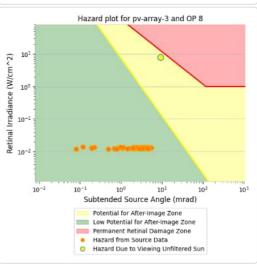
• 41 minutes of "green" glare with low potential to cause temporary after-image.

- 0 minutes of "yellow" glare with potential to cause temporary after-image.





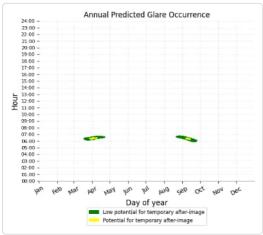


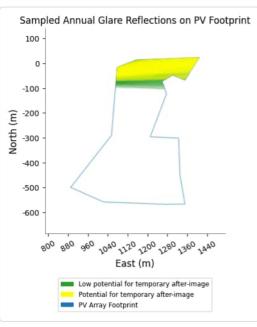


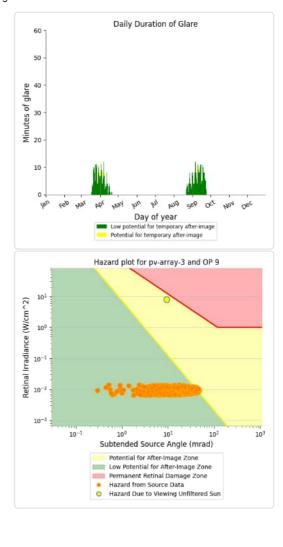
# PV array 3 - OP Receptor (OP 9)

- PV array is expected to produce the following glare for receptors at this location:

   409 minutes of "green" glare with low potential to cause temporary after-image.
   18 minutes of "yellow" glare with potential to cause temporary after-image.

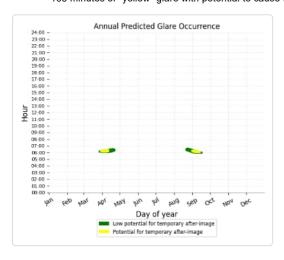


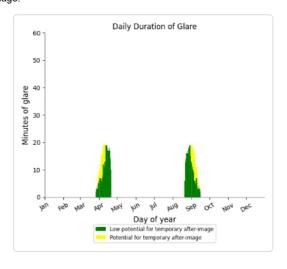


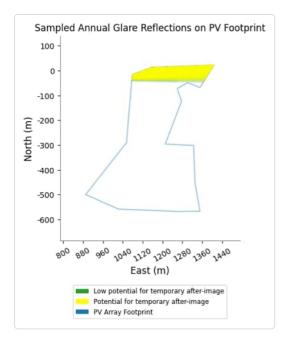


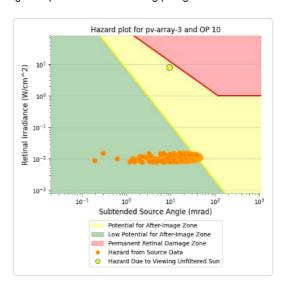
### PV array 3 - OP Receptor (OP 10)

- 557 minutes of "green" glare with low potential to cause temporary after-image. 163 minutes of "yellow" glare with potential to cause temporary after-image.





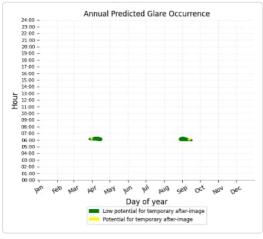


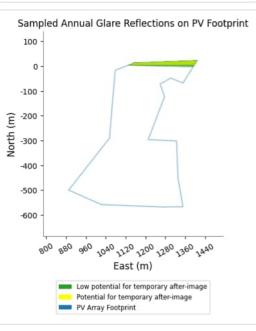


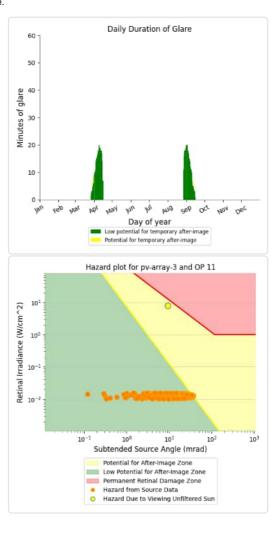
### PV array 3 - OP Receptor (OP 11)

PV array is expected to produce the following glare for receptors at this location:

- 526 minutes of "green" glare with low potential to cause temporary after-image.
- 6 minutes of "yellow" glare with potential to cause temporary after-image.







PV array 3 - OP Receptor (OP 12)

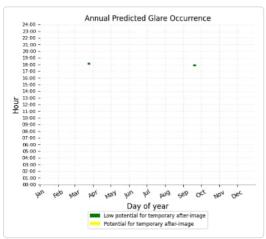
No glare found

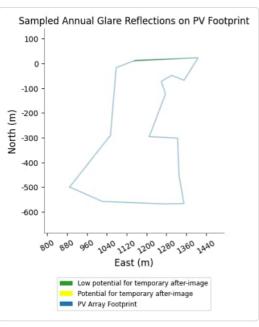
# PV array 3 - OP Receptor (OP 13)

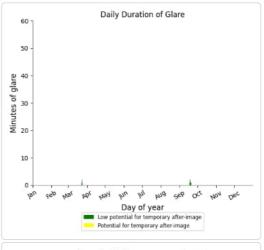
No glare found

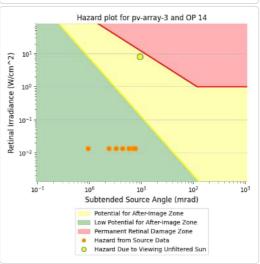
### PV array 3 - OP Receptor (OP 14)

PV array is expected to produce the following glare for receptors at this location:
 7 minutes of "green" glare with low potential to cause temporary after-image.
 0 minutes of "yellow" glare with potential to cause temporary after-image.



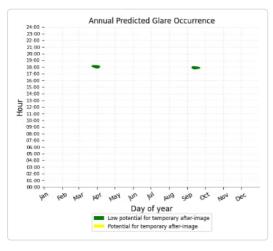


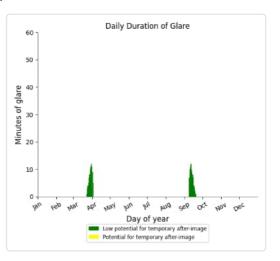


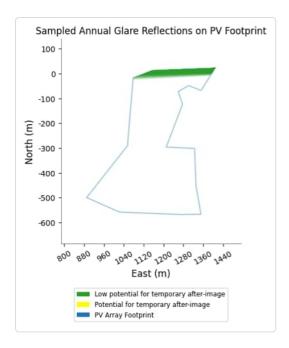


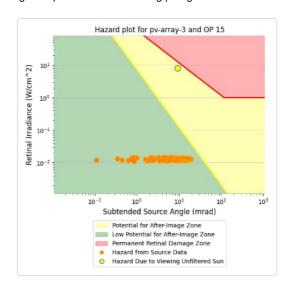
### PV array 3 - OP Receptor (OP 15)

- 170 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





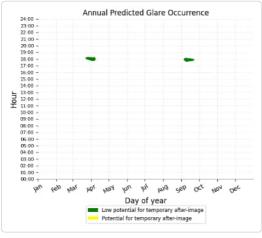


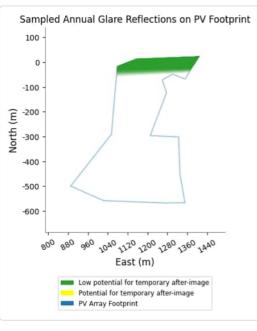


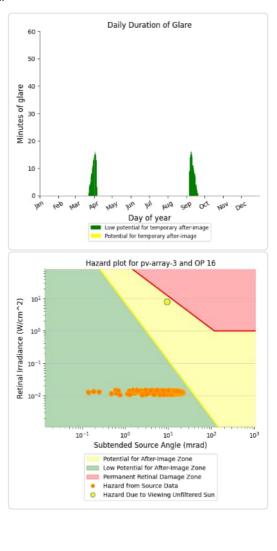
#### PV array 3 - OP Receptor (OP 16)

PV array is expected to produce the following glare for receptors at this location:

- 276 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





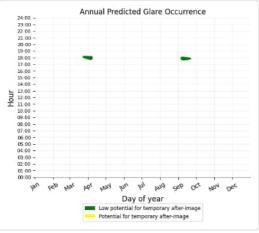


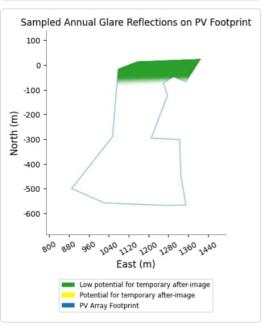
### PV array 3 - OP Receptor (OP 17)

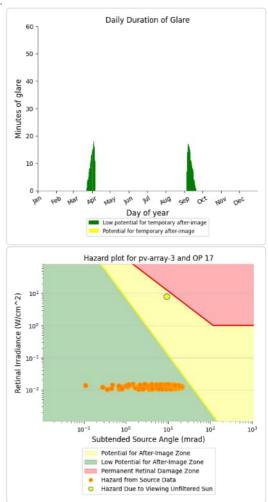
PV array is expected to produce the following glare for receptors at this location:

308 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.

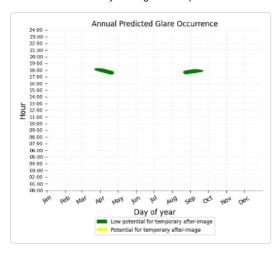


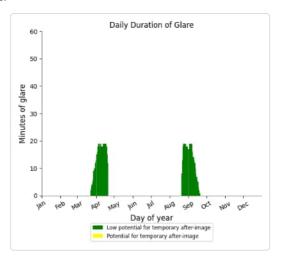


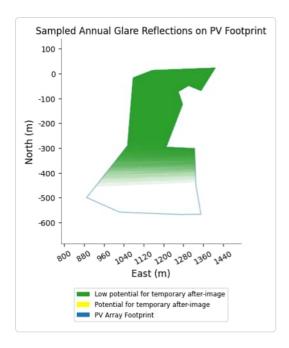


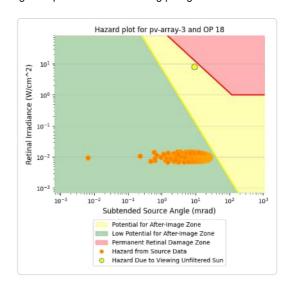
# PV array 3 - OP Receptor (OP 18)

- 858 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.





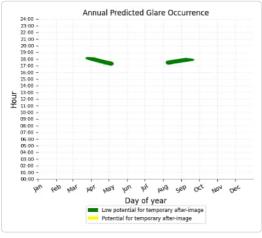


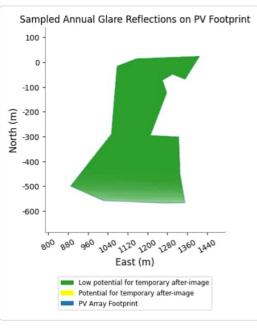


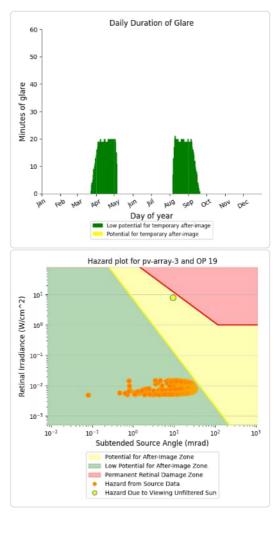
### PV array 3 - OP Receptor (OP 19)

PV array is expected to produce the following glare for receptors at this location:

- 1,487 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.







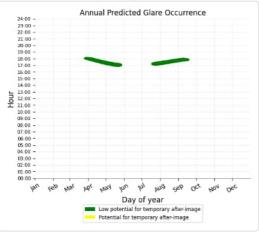
### PV array 3 - OP Receptor (OP 20)

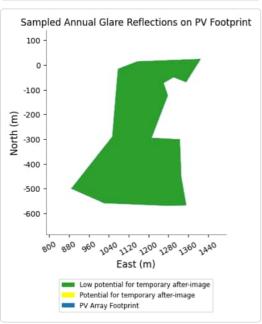
PV array is expected to produce the following glare for receptors at this location:

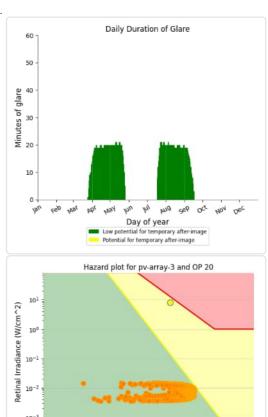
2,230 minutes of "green" glare with low potential to cause temporary after-image.

10-2

• 0 minutes of "yellow" glare with potential to cause temporary after-image.







100

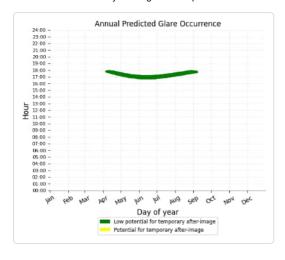
Potential for After-Image Zone
Low Potential for After-Image Zone Permanent Retinal Damage Zone
 Hazard from Source Data

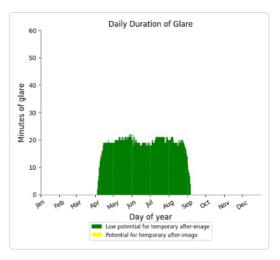
Hazard Due to Viewing Unfiltered Sun

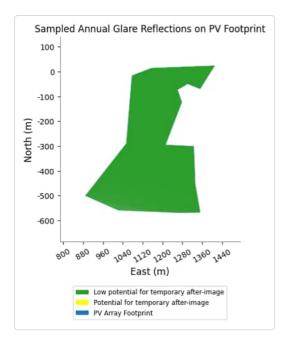
101 Subtended Source Angle (mrad)

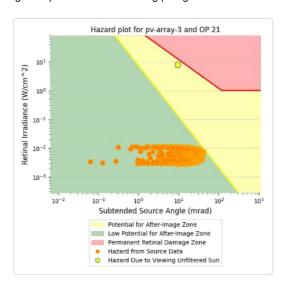
# PV array 3 - OP Receptor (OP 21)

- 2,899 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.





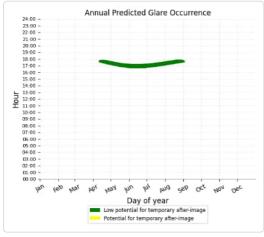


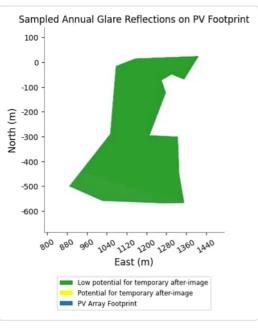


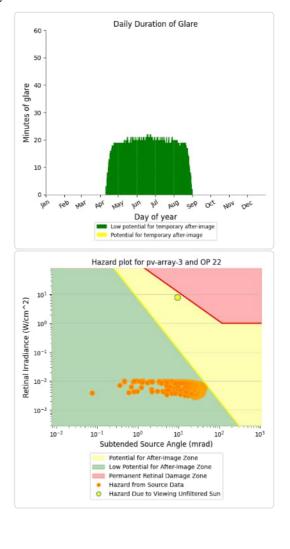
### PV array 3 - OP Receptor (OP 22)

PV array is expected to produce the following glare for receptors at this location:

- 2,699 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





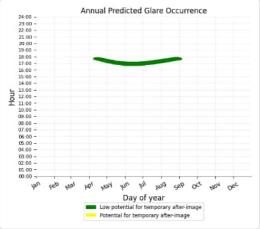


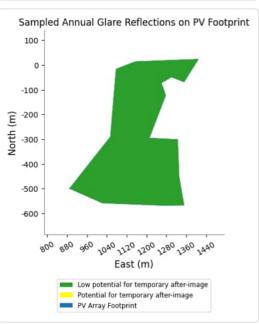
### PV array 3 - OP Receptor (OP 23)

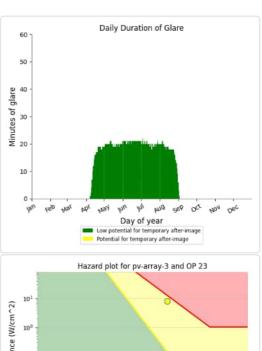
PV array is expected to produce the following glare for receptors at this location:

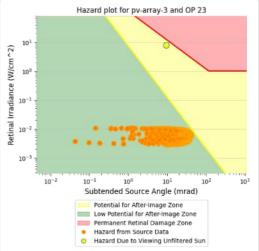
2,760 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.



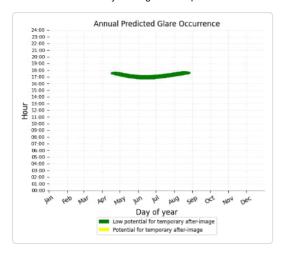


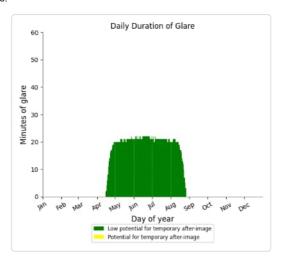


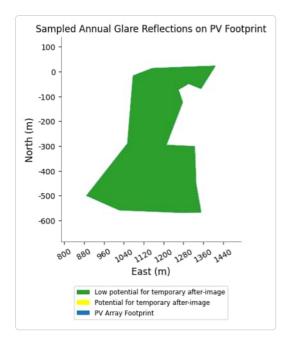


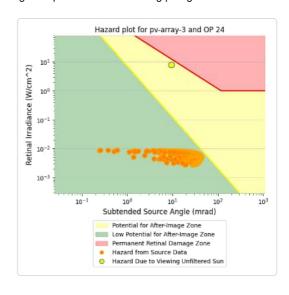
# PV array 3 - OP Receptor (OP 24)

- 2,578 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.





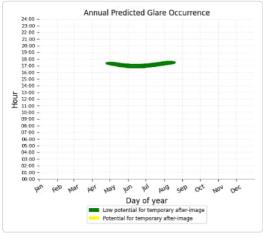


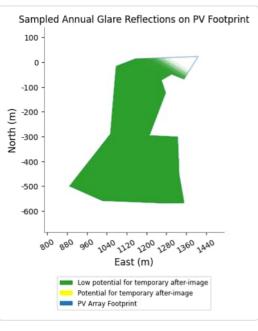


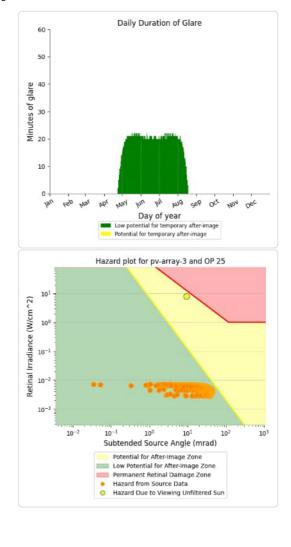
### PV array 3 - OP Receptor (OP 25)

PV array is expected to produce the following glare for receptors at this location:

- 2,245 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





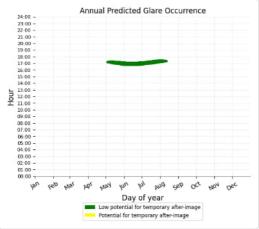


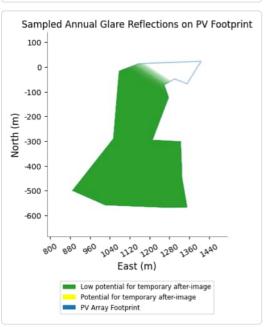
### PV array 3 - OP Receptor (OP 26)

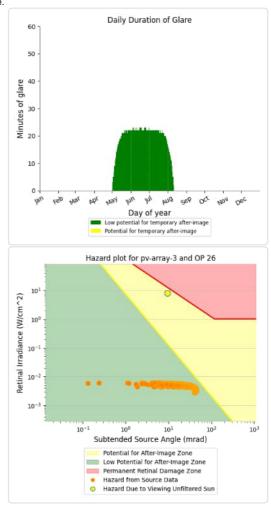
PV array is expected to produce the following glare for receptors at this location:

1,980 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.

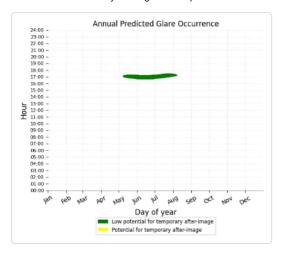


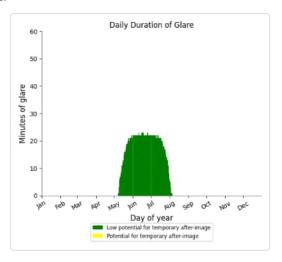


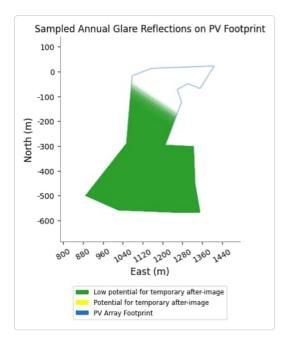


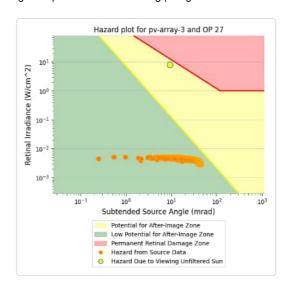
# PV array 3 - OP Receptor (OP 27)

- 1,630 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.





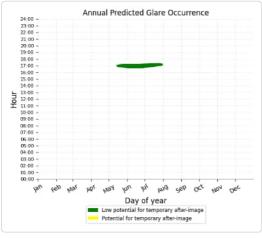


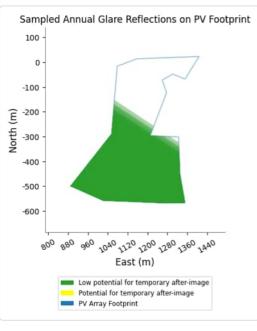


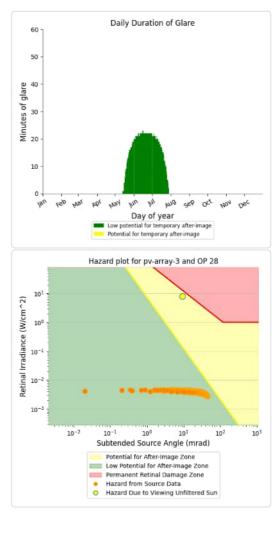
### PV array 3 - OP Receptor (OP 28)

PV array is expected to produce the following glare for receptors at this location:

- 1,323 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





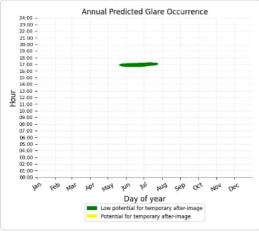


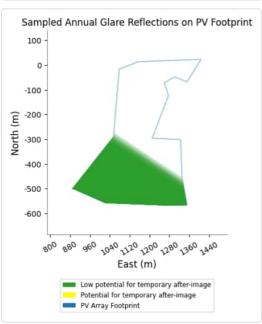
### PV array 3 - OP Receptor (OP 29)

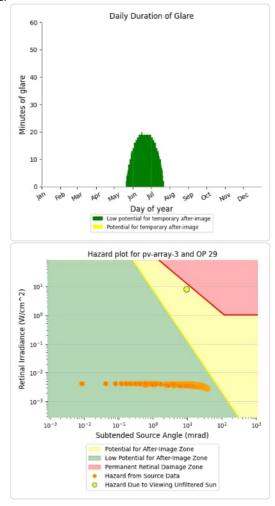
PV array is expected to produce the following glare for receptors at this location:

915 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.

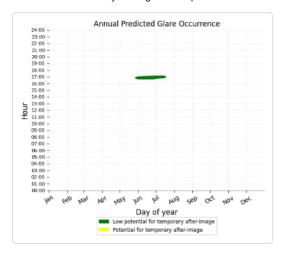


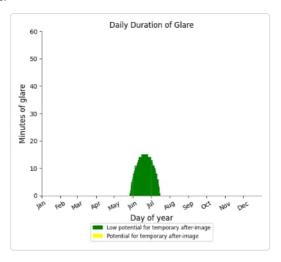


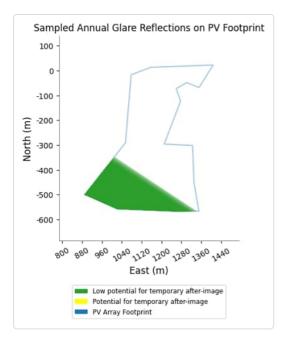


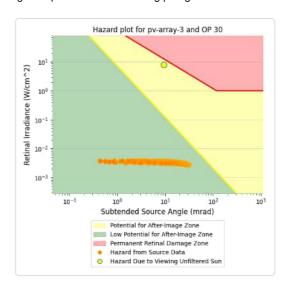
# PV array 3 - OP Receptor (OP 30)

- 551 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.









# PV array 3 - OP Receptor (OP 31)

No glare found

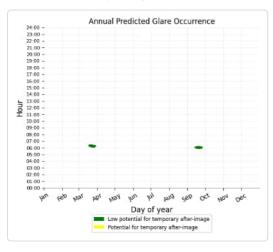
### PV array 3 - OP Receptor (OP 32)

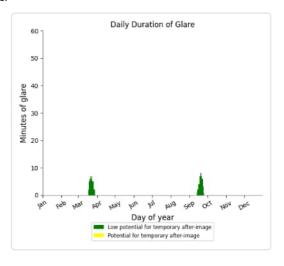
No glare found

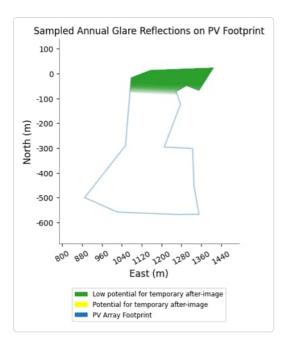
# PV array 3 - OP Receptor (OP 33)

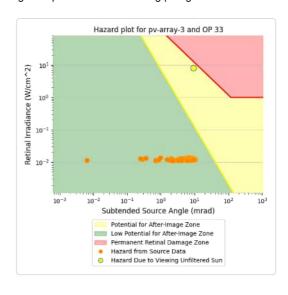
- PV array is expected to produce the following glare for receptors at this location:

  108 minutes of "green" glare with low potential to cause temporary after-image.
  0 minutes of "yellow" glare with potential to cause temporary after-image.





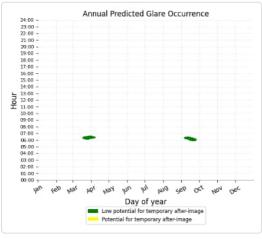


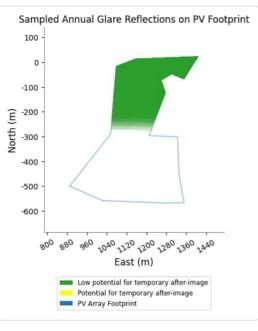


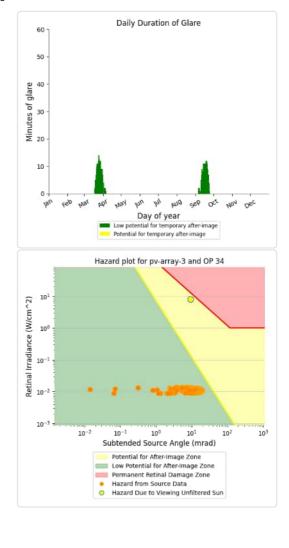
### PV array 3 - OP Receptor (OP 34)

PV array is expected to produce the following glare for receptors at this location:

- 302 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





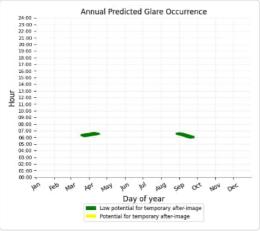


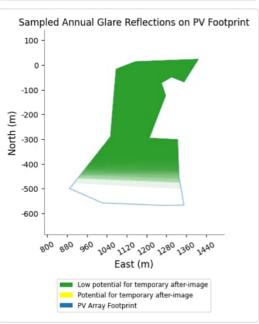
### PV array 3 - OP Receptor (OP 35)

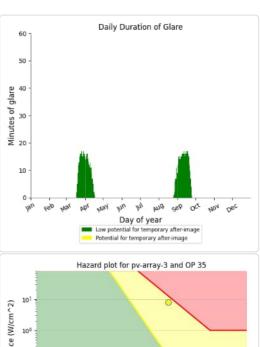
PV array is expected to produce the following glare for receptors at this location:

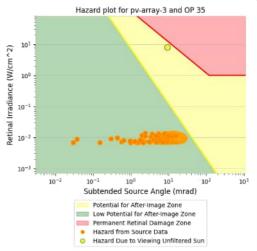
736 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.





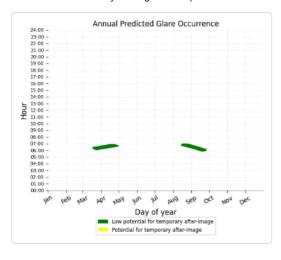


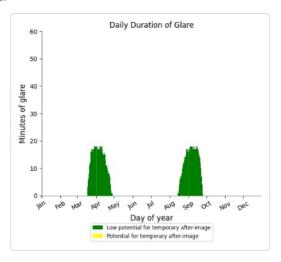


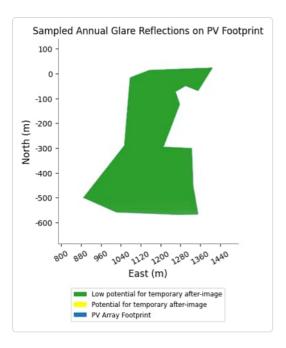
# PV array 3 - OP Receptor (OP 36)

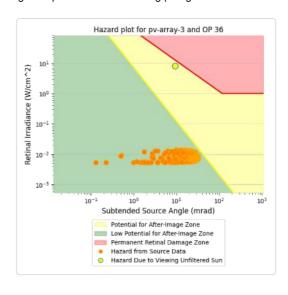
- 1,099 minutes of "green" glare with low potential to cause temporary after-image.

  0 minutes of "yellow" glare with potential to cause temporary after-image.





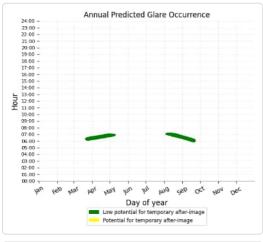


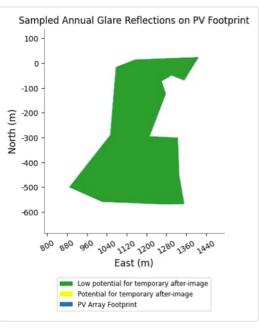


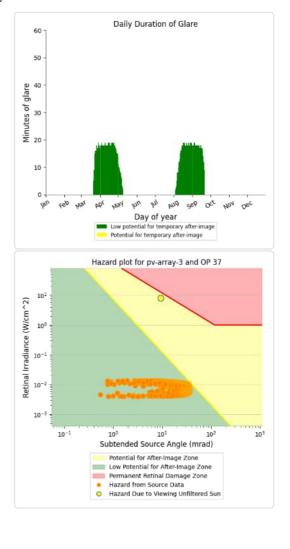
### PV array 3 - OP Receptor (OP 37)

PV array is expected to produce the following glare for receptors at this location:

- 1,560 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





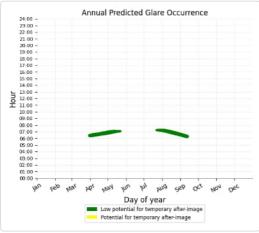


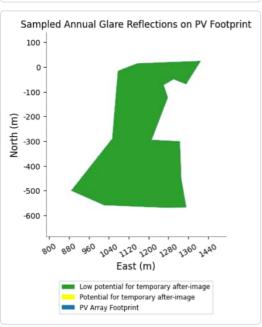
### PV array 3 - OP Receptor (OP 38)

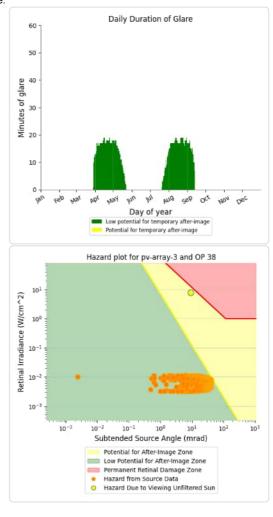
PV array is expected to produce the following glare for receptors at this location:

1,614 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.

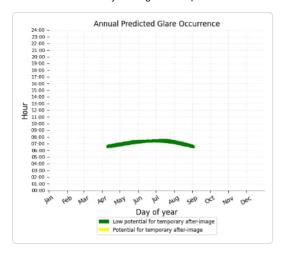


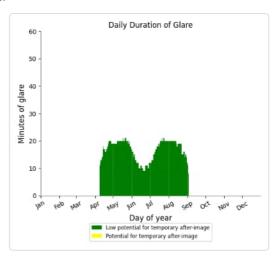


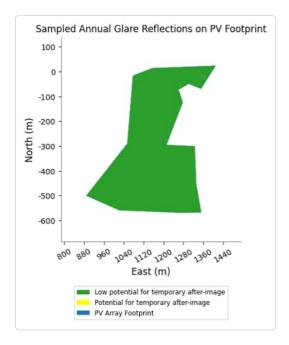


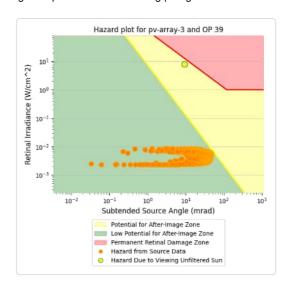
# PV array 3 - OP Receptor (OP 39)

- 2,469 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.





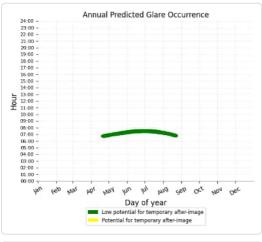


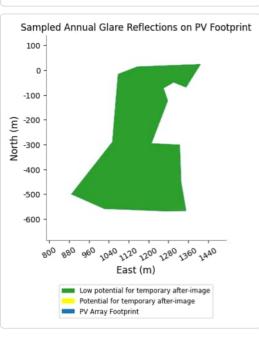


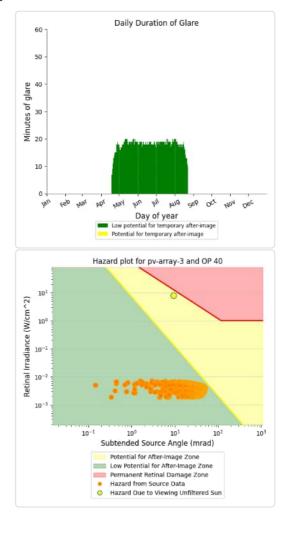
# PV array 3 - OP Receptor (OP 40)

PV array is expected to produce the following glare for receptors at this location:

- 2,278 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





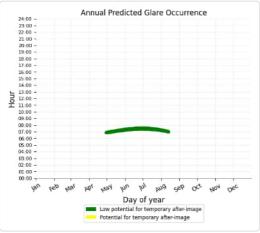


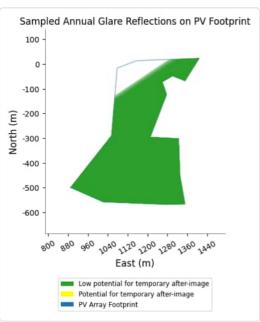
# PV array 3 - OP Receptor (OP 41)

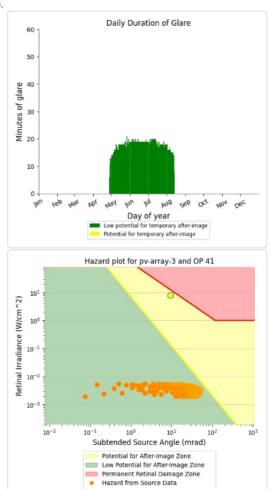
PV array is expected to produce the following glare for receptors at this location:

1,939 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.





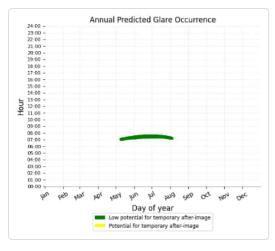


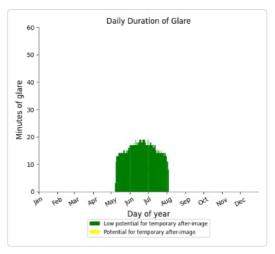
Hazard Due to Viewing Unfiltered Sun

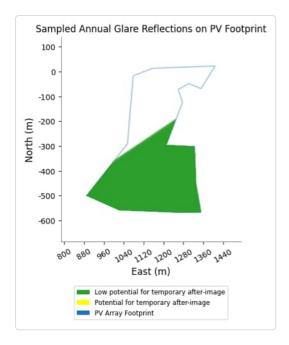
# PV array 3 - OP Receptor (OP 42)

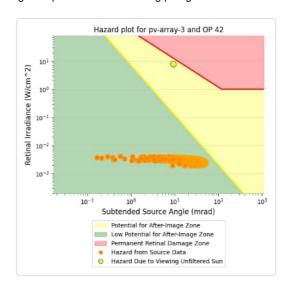
- 1,383 minutes of "green" glare with low potential to cause temporary after-image.

  0 minutes of "yellow" glare with potential to cause temporary after-image.





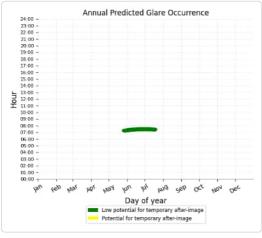


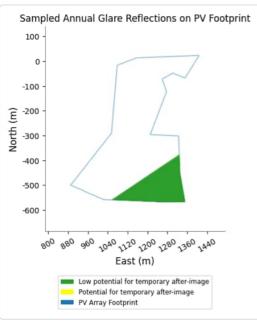


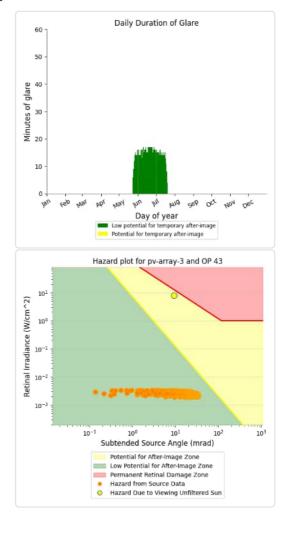
# PV array 3 - OP Receptor (OP 43)

PV array is expected to produce the following glare for receptors at this location:

- 849 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





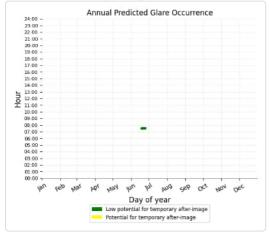


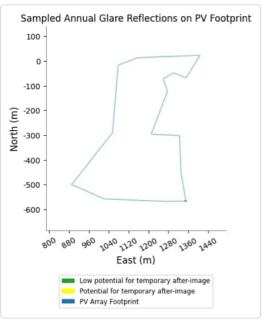
# PV array 3 - OP Receptor (OP 44)

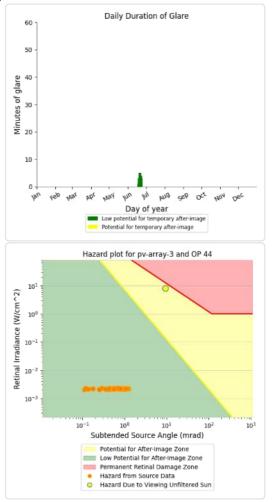
PV array is expected to produce the following glare for receptors at this location:

36 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.







PV array 3 - OP Receptor (OP 45)

No glare found

PV array 3 - OP Receptor (OP 46)

No glare found

PV array 3 - OP Receptor (OP 47)

No glare found

PV array 3 - OP Receptor (OP 48)

No glare found

PV array 4 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	5	0
OP: OP 6	762	142
OP: OP 7	2273	572
OP: OP 8	2740	258

OP: OP 9	1551	784
OP: OP 10	1451	829
OP: OP 11	915	3023
OP: OP 12	1728	1117
OP: OP 13	2505	897
OP: OP 14	2803	1039
OP: OP 15	3038	853
OP: OP 16	3165	512
OP: OP 17	2812	279
OP: OP 18	1866	0
OP: OP 19	2540	0
OP: OP 20	2566	0
OP: OP 21	2327	0
OP: OP 22	2129	0
OP: OP 23	2278	0
OP: OP 24	1954	0
OP: OP 25	1444	0
OP: OP 26	1172	0
OP: OP 27	819	0
OP: OP 28	247	0
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	85	0
OP: OP 32	327	0
OP: OP 33	838	0
OP: OP 34	1372	0
OP: OP 35	1600	0
OP: OP 36	2405	0
OP: OP 37	1904	0
OP: OP 38	1357	0
OP: OP 39	331	0
OP: OP 40	0	0
OP: OP 41	0	0
OP: OP 42	0	0
OP: OP 43	0	0
OP: OP 44	0	0
OP: OP 45	0	0
OP: OP 46	0	0
OP: OP 47	0	0
OP: OP 48	0	0

# PV array 4 - OP Receptor (OP 1)

No glare found

# PV array 4 - OP Receptor (OP 2)

No glare found

#### PV array 4 - OP Receptor (OP 3)

No glare found

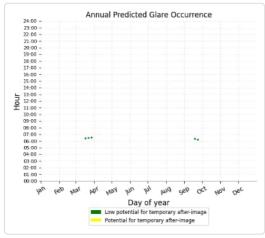
# PV array 4 - OP Receptor (OP 4)

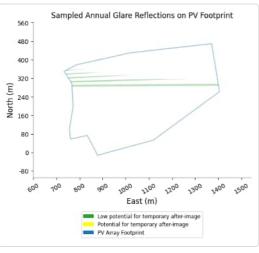
No glare found

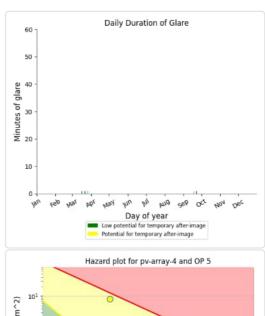
# PV array 4 - OP Receptor (OP 5)

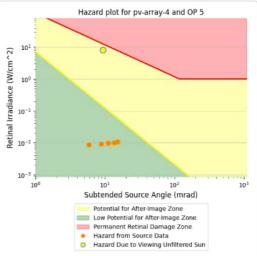
PV array is expected to produce the following glare for receptors at this location:

- 5 minutes of "green" glare with low potential to cause temporary after-image.
  0 minutes of "yellow" glare with potential to cause temporary after-image.



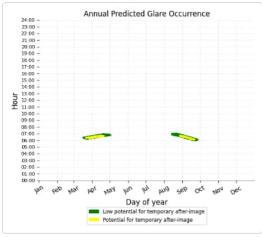


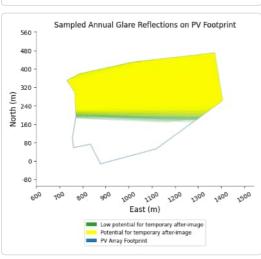


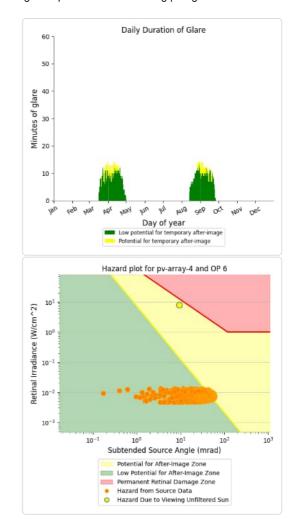


# PV array 4 - OP Receptor (OP 6)

- 762 minutes of "green" glare with low potential to cause temporary after-image.
  142 minutes of "yellow" glare with potential to cause temporary after-image.

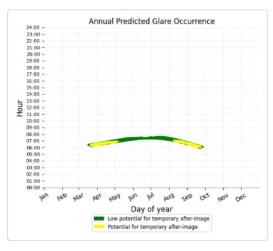


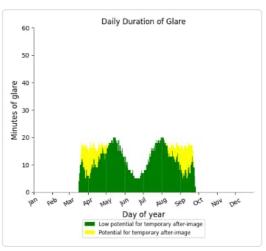


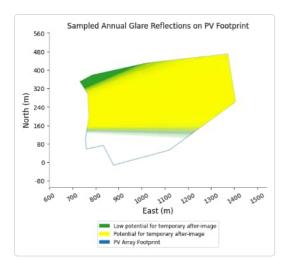


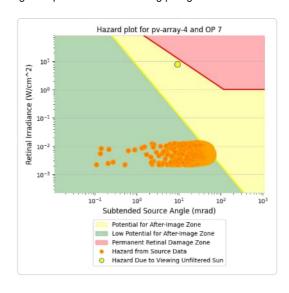
# PV array 4 - OP Receptor (OP 7)

- 2,273 minutes of "green" glare with low potential to cause temporary after-image.
- 572 minutes of "yellow" glare with potential to cause temporary after-image.





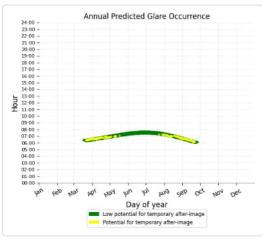


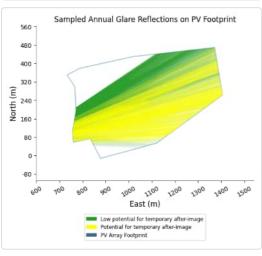


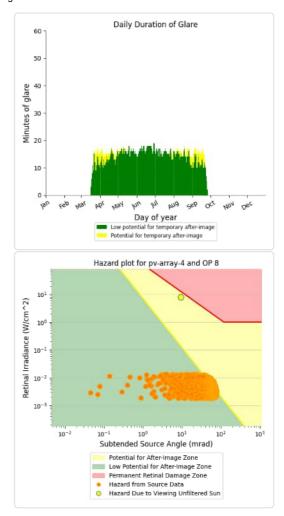
# PV array 4 - OP Receptor (OP 8)

PV array is expected to produce the following glare for receptors at this location:

- 2,740 minutes of "green" glare with low potential to cause temporary after-image.
- 258 minutes of "yellow" glare with potential to cause temporary after-image.



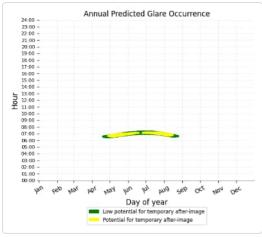


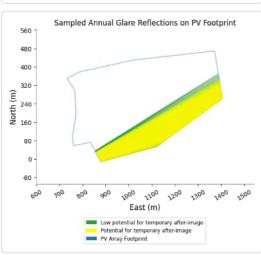


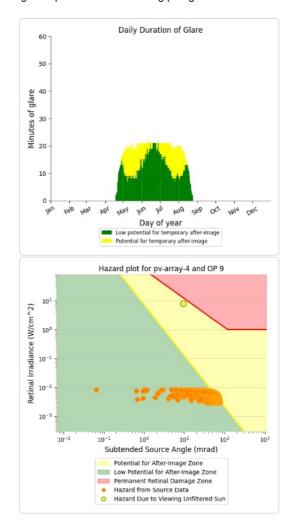
# PV array 4 - OP Receptor (OP 9)

- PV array is expected to produce the following glare for receptors at this location:

   1,551 minutes of "green" glare with low potential to cause temporary after-image.
   784 minutes of "yellow" glare with potential to cause temporary after-image.

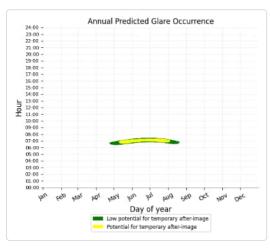


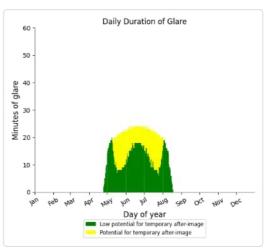


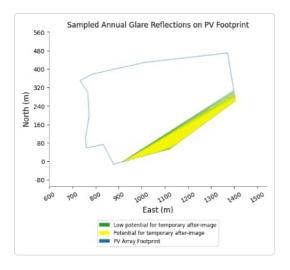


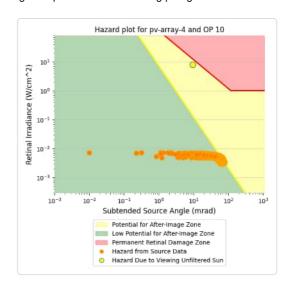
# PV array 4 - OP Receptor (OP 10)

- 1,451 minutes of "green" glare with low potential to cause temporary after-image.
- 829 minutes of "yellow" glare with potential to cause temporary after-image.





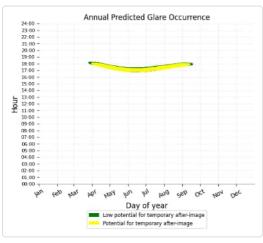


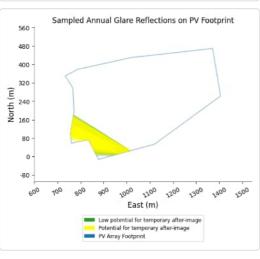


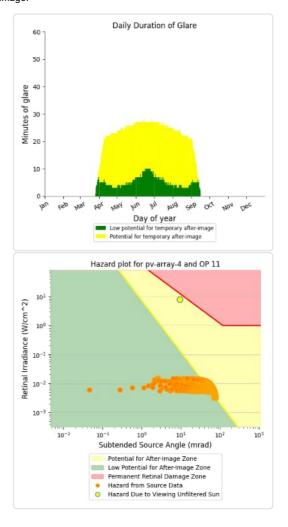
# PV array 4 - OP Receptor (OP 11)

PV array is expected to produce the following glare for receptors at this location:

- 915 minutes of "green" glare with low potential to cause temporary after-image.
- 3,023 minutes of "yellow" glare with potential to cause temporary after-image.

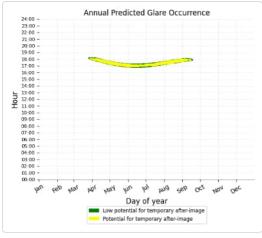


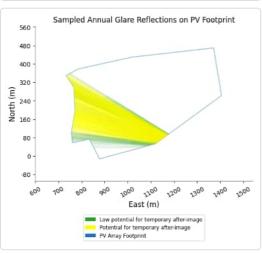


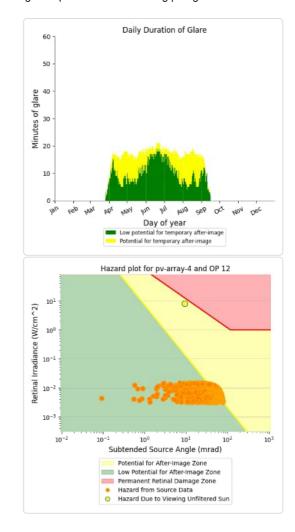


# PV array 4 - OP Receptor (OP 12)

- PV array is expected to produce the following glare for receptors at this location:
   1,728 minutes of "green" glare with low potential to cause temporary after-image.
   1,117 minutes of "yellow" glare with potential to cause temporary after-image.

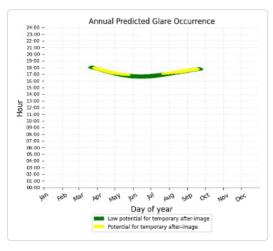


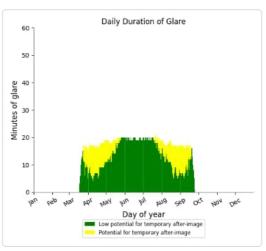


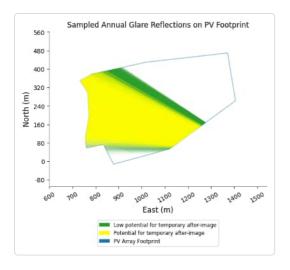


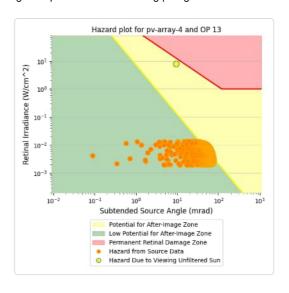
# PV array 4 - OP Receptor (OP 13)

- 2,505 minutes of "green" glare with low potential to cause temporary after-image. 897 minutes of "yellow" glare with potential to cause temporary after-image.





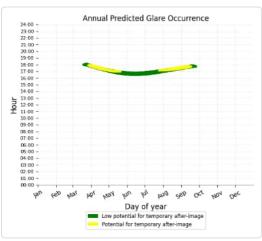


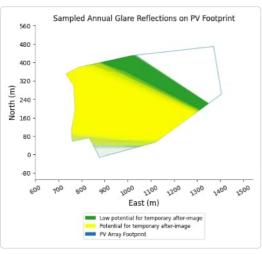


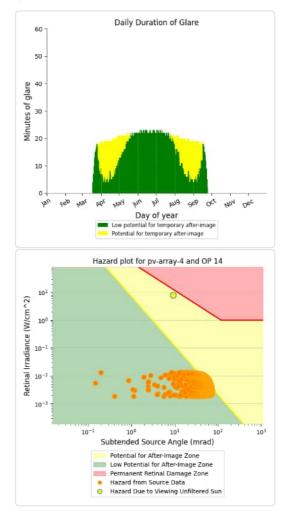
# PV array 4 - OP Receptor (OP 14)

PV array is expected to produce the following glare for receptors at this location:

- 2,803 minutes of "green" glare with low potential to cause temporary after-image.
- 1,039 minutes of "yellow" glare with potential to cause temporary after-image.

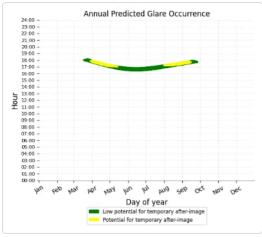


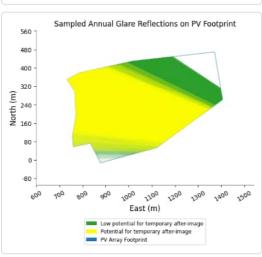


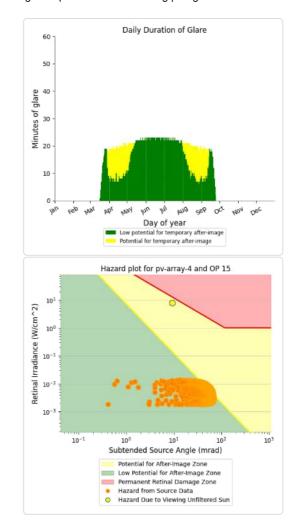


# PV array 4 - OP Receptor (OP 15)

- 3,038 minutes of "green" glare with low potential to cause temporary after-image. 853 minutes of "yellow" glare with potential to cause temporary after-image.

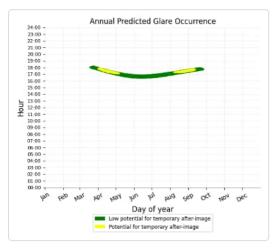


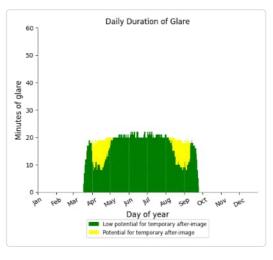


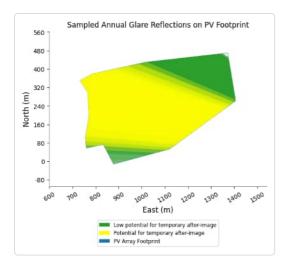


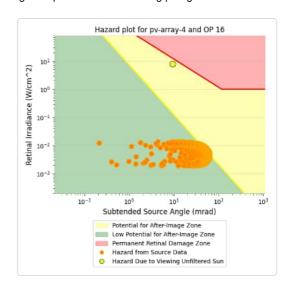
# PV array 4 - OP Receptor (OP 16)

- 3,165 minutes of "green" glare with low potential to cause temporary after-image.
- 512 minutes of "yellow" glare with potential to cause temporary after-image.





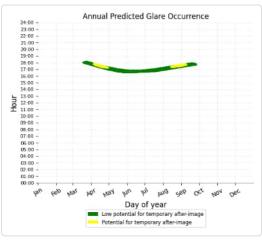


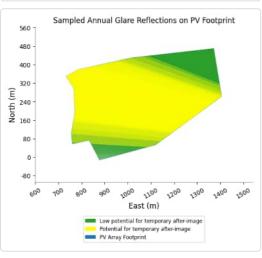


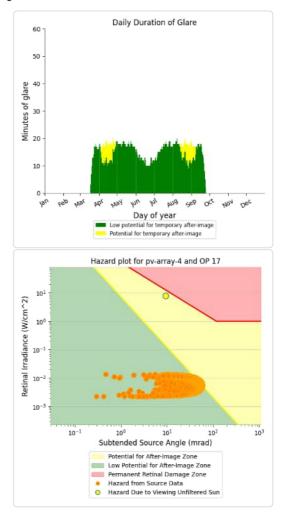
# PV array 4 - OP Receptor (OP 17)

PV array is expected to produce the following glare for receptors at this location:

- 2,812 minutes of "green" glare with low potential to cause temporary after-image.
- 279 minutes of "yellow" glare with potential to cause temporary after-image.



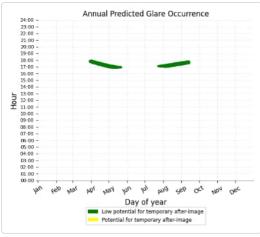


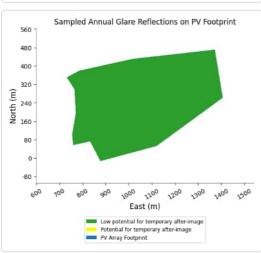


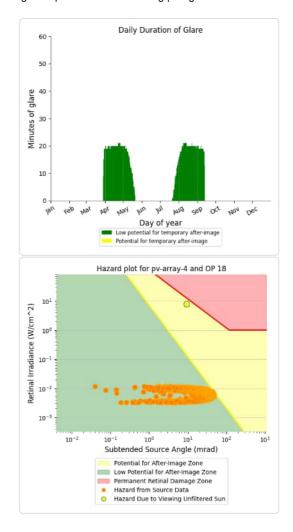
# PV array 4 - OP Receptor (OP 18)

- PV array is expected to produce the following glare for receptors at this location:

   1,866 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.

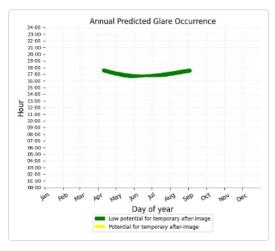


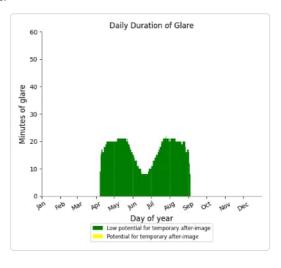


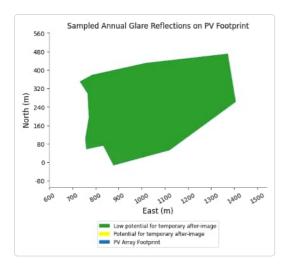


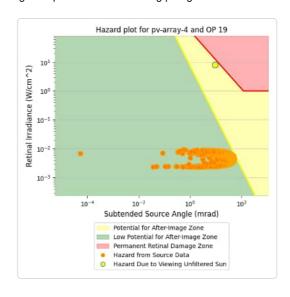
# PV array 4 - OP Receptor (OP 19)

- 2,540 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



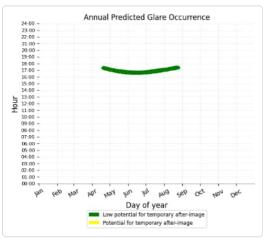


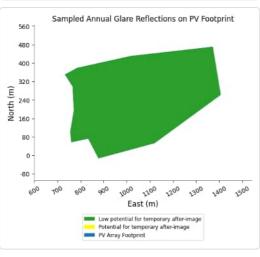


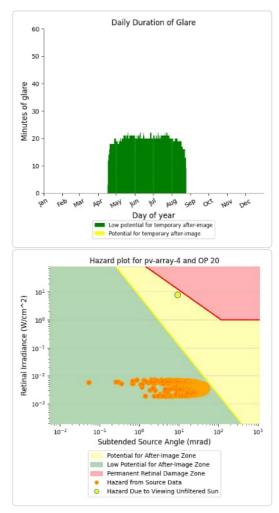


# PV array 4 - OP Receptor (OP 20)

- PV array is expected to produce the following glare for receptors at this location:
   • 2,566 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



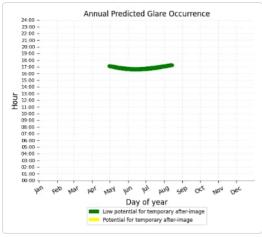


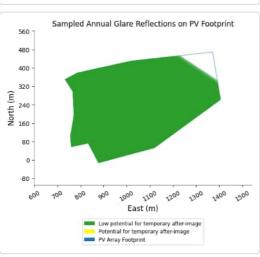


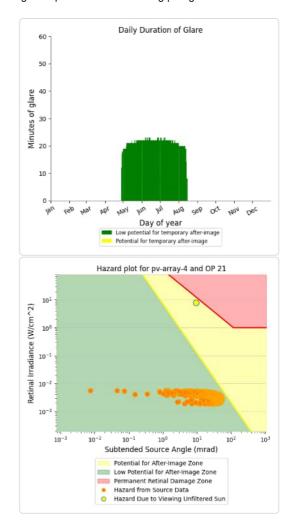
# PV array 4 - OP Receptor (OP 21)

- PV array is expected to produce the following glare for receptors at this location:

   2,327 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.

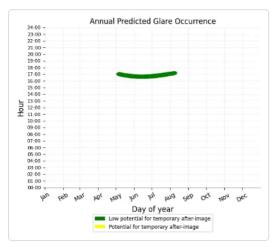


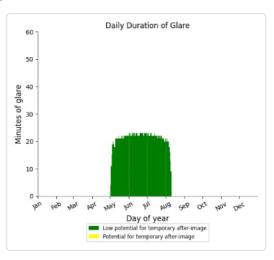


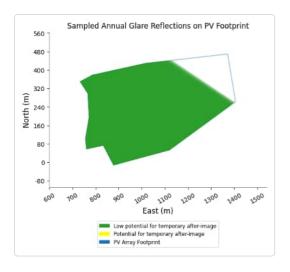


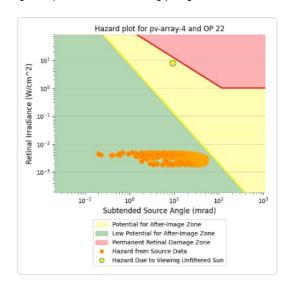
# PV array 4 - OP Receptor (OP 22)

- 2,129 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image. 2,129 minutes of "green" glare with low potential to cause temporary after-image.





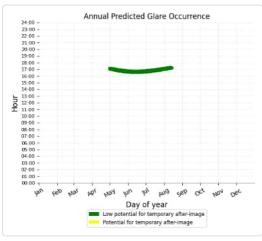


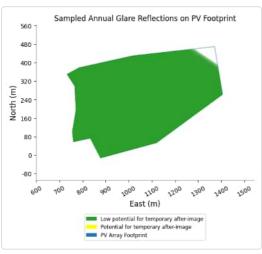


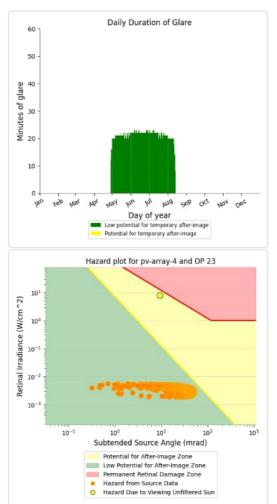
# PV array 4 - OP Receptor (OP 23)

PV array is expected to produce the following glare for receptors at this location:

- 2,278 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



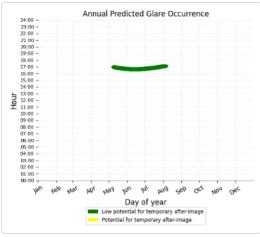


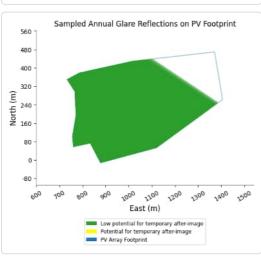


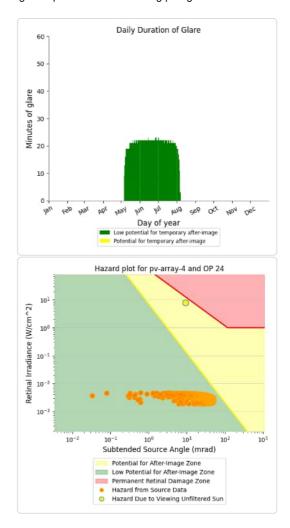
# PV array 4 - OP Receptor (OP 24)

- PV array is expected to produce the following glare for receptors at this location:

   1,954 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.

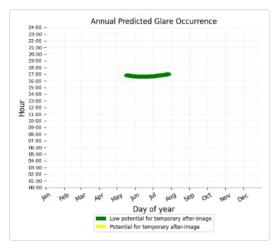


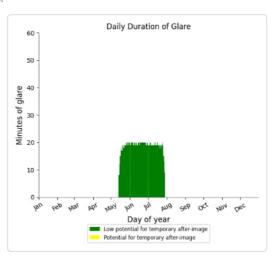


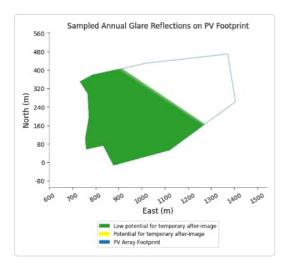


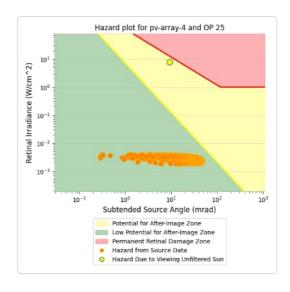
# PV array 4 - OP Receptor (OP 25)

- 1,444 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





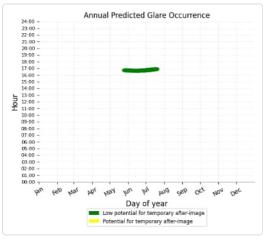


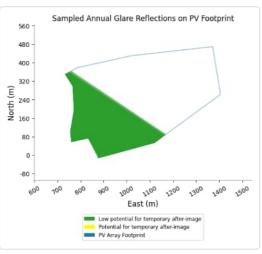


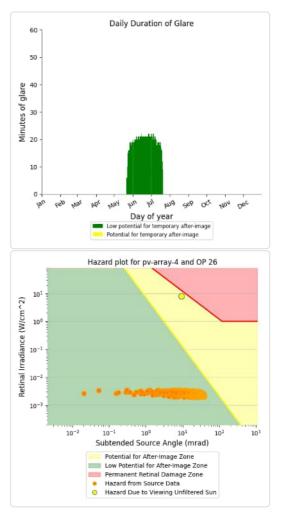
# PV array 4 - OP Receptor (OP 26)

PV array is expected to produce the following glare for receptors at this location:

- 1,172 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

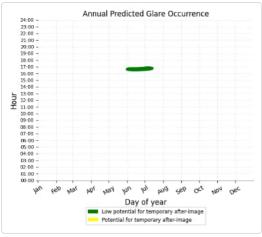


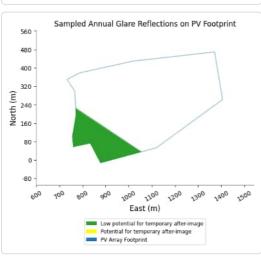


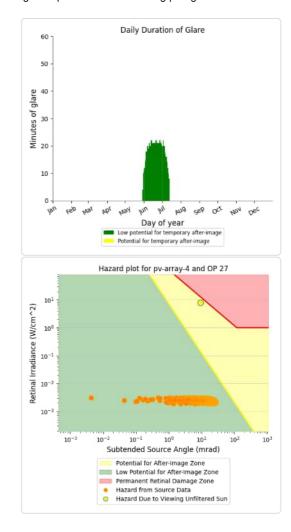


# PV array 4 - OP Receptor (OP 27)

- 819 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.

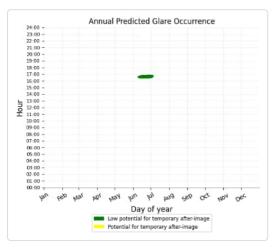


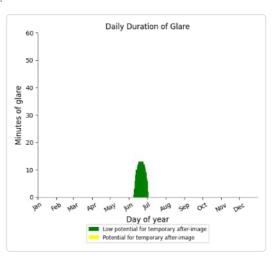


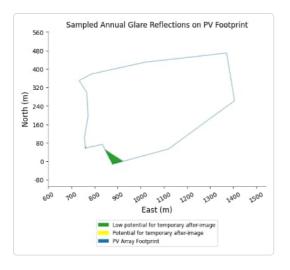


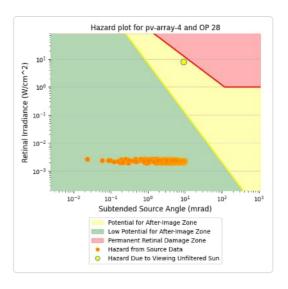
# PV array 4 - OP Receptor (OP 28)

- 247 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "vellow" glare with potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.









# PV array 4 - OP Receptor (OP 29)

No glare found

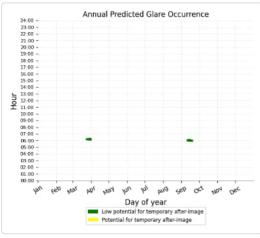
#### PV array 4 - OP Receptor (OP 30)

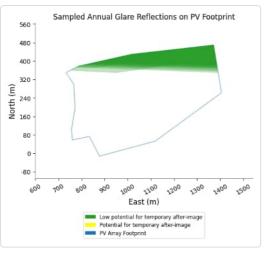
No glare found

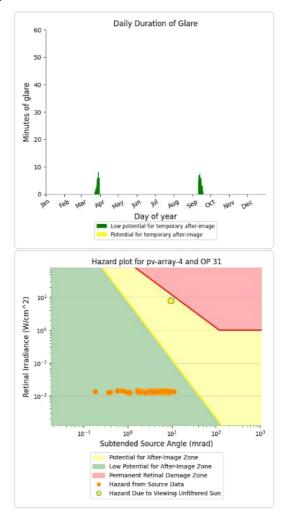
# PV array 4 - OP Receptor (OP 31)

PV array is expected to produce the following glare for receptors at this location:

- 85 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.

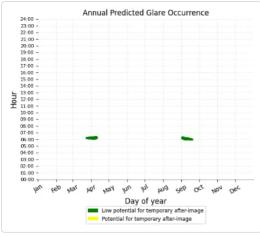


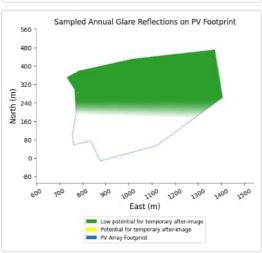


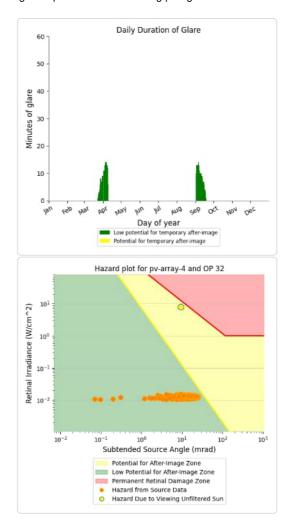


# PV array 4 - OP Receptor (OP 32)

- 327 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

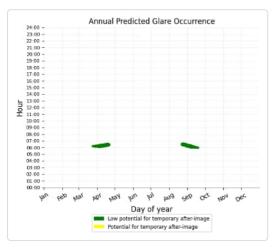


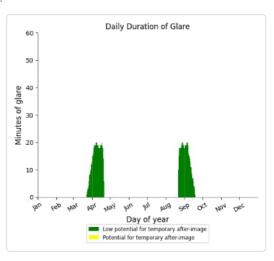


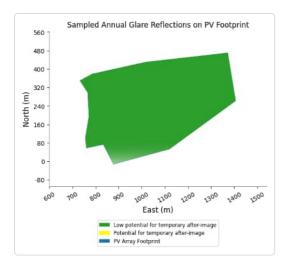


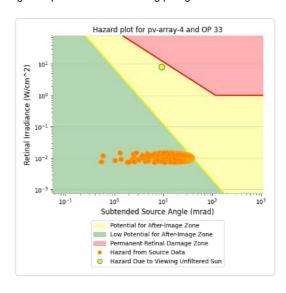
# PV array 4 - OP Receptor (OP 33)

- 838 minutes of "green" glare with low potential to cause temporary after-image.
  0 minutes of "vellow" glare with potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





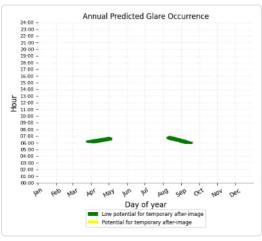


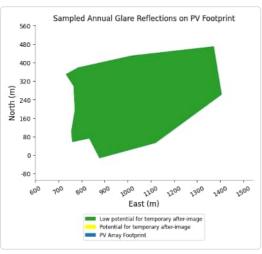


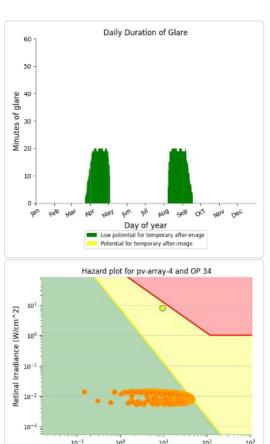
# PV array 4 - OP Receptor (OP 34)

PV array is expected to produce the following glare for receptors at this location:

- 1,372 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.







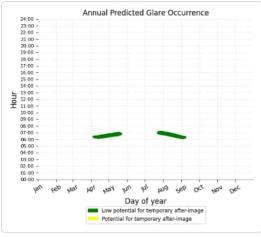
Subtended Source Angle (mrad)

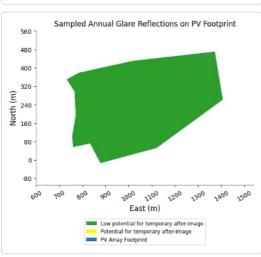
Potential for After-Image Zone

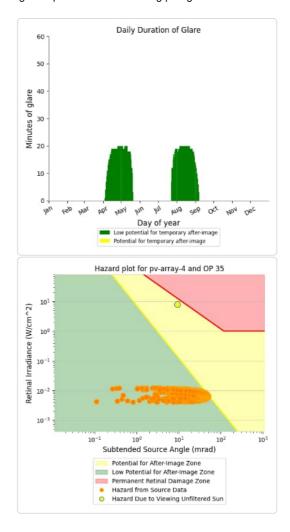
Low Potential for After-Image Zone
Permanent Retinal Damage Zone Hazard from Source Data Hazard Due to Viewing Unfiltered Sun

# PV array 4 - OP Receptor (OP 35)

- PV array is expected to produce the following glare for receptors at this location:
   • 1,600 minutes of "green" glare with low potential to cause temporary after-image.
   • 0 minutes of "yellow" glare with potential to cause temporary after-image.

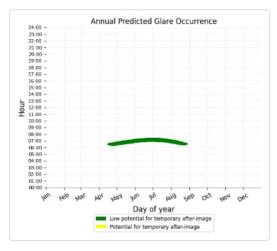


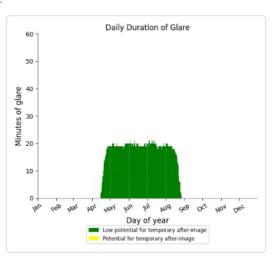


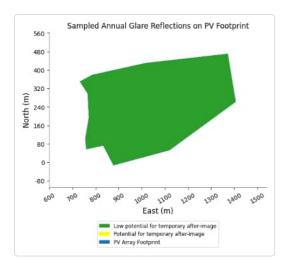


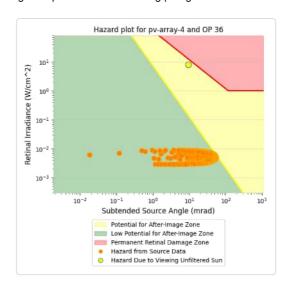
# PV array 4 - OP Receptor (OP 36)

- 2,405 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





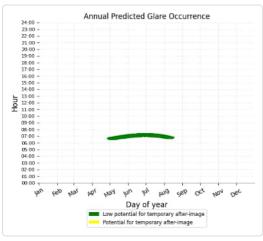


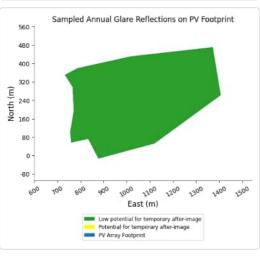


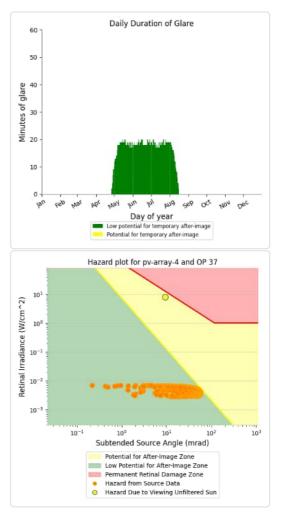
# PV array 4 - OP Receptor (OP 37)

PV array is expected to produce the following glare for receptors at this location:

- 1,904 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



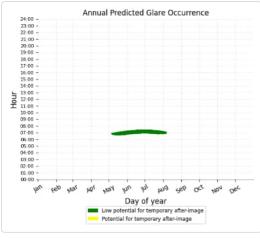


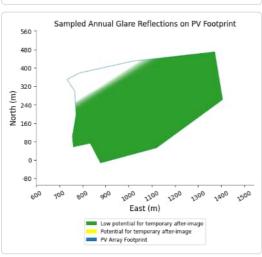


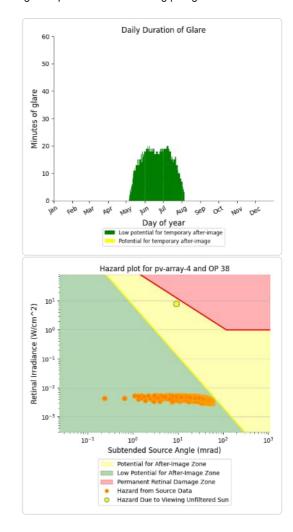
# PV array 4 - OP Receptor (OP 38)

- 1,357 minutes of "green" glare with low potential to cause temporary after-image.

  0 minutes of "yellow" glare with potential to cause temporary after-image.

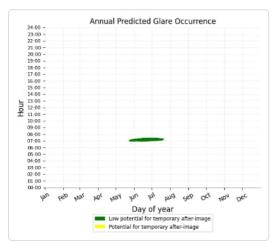


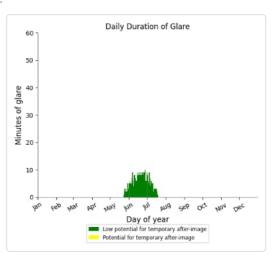


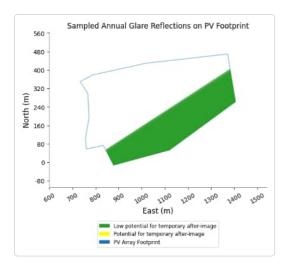


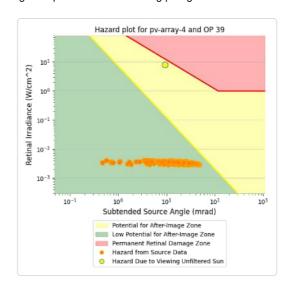
# PV array 4 - OP Receptor (OP 39)

- 331 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 4 - OP Receptor (OP 40)

No glare found

PV array 4 - OP Receptor (OP 41)

No glare found

PV array 4 - OP Receptor (OP 42)

No glare found

PV array 4 - OP Receptor (OP 43)

No glare found

PV array 4 - OP Receptor (OP 44)

No glare found

PV array 4 - OP Receptor (OP 45)

No glare found

PV array 4 - OP Receptor (OP 46)

No glare found

PV array 4 - OP Receptor (OP 47)

No glare found

PV array 4 - OP Receptor (OP 48)

No glare found

# **Assumptions**

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not automatically account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response
- time. Actual values and results may vary.

  The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods
- Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results fo 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.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Refer to the Help page for detailed assumptions and limitations not listed here.

# ANNEX H: ROAD RECEPTOR GLARE RESULTS 5 DEGREES (49 – 95)



ForgeSolar

# **Gate Burton Solar Farm**

# Gate Burton Road 5 Deg Receptors 49 - 95

Created Oct. 11, 2022 Updated Jan. 16, 2023 Time-step 1 minute Timezone offset UTC0 Site ID 77378.13697

Project type Advanced Project status: active Category 100 MW to 1 GW

# Misc. Analysis Settings

DNI: varies (1,000.0 W/m^2 peak) Ocular transmission coefficient: 0.5 Pupil diameter: 0.002 m Eye focal length: 0.017 m Sun subtended angle: 9.3 mrad PV Analysis Methodology: **Version 2** Enhanced subtended angle calculation: **On** 

# Summary of Results Glare with potential for temporary after-image predicted

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV array 1	5.0	180.0	91,441	33,368	-
PV array 2	5.0	180.0	40,637	22,841	-
PV array 3	5.0	180.0	24,550	0	-
PV array 4	5.0	180.0	18,574	3,388	-

# **Component Data**

# PV Array(s)

Total PV footprint area: 5,142,648 m^2

Name: PV array 1

Footprint area: 1,575,267 m<sup>2</sup>
Axis tracking: Fixed (no rotation)
Tilt: 5.0 deg
Orientation: 180.0 deg

Rated power: -

Panel material: Light textured glass with AR coating Vary reflectivity with sun position? Yes Correlate slope error with surface type? Yes Slope error: 9.16 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.360232	-0.740903	25.47	3.50	28.97
2	53.359054	-0.745302	26.80	3.50	30.30
3	53.355391	-0.742813	26.70	3.50	30.20
1	53.356633	-0.739036	24.55	3.50	28.05
5	53.356582	-0.738200	24.70	3.50	28.20
6	53.356159	-0.738007	25.64	3.50	29.14
7	53.352414	-0.737723	29.07	3.50	32.57
3	53.348930	-0.739310	30.73	3.50	34.23
	53.349007	-0.740297	32.37	3.50	35.87
0	53.349903	-0.742787	34.85	3.50	38.35
1	53.350262	-0.745040	33.09	3.50	36.59
2	53.349301	-0.744439	34.53	3.50	38.03
3	53.346522	-0.744074	28.32	3.50	31.82
4	53.346457	-0.745254	28.89	3.50	32.39
15	53.344613	-0.744589	24.72	3.50	28.22
6	53.344421	-0.745147	24.56	3.50	28.06
7	53.340962	-0.743108	25.60	3.50	29.10
8	53.340219	-0.741263	27.50	3.50	31.00
9	53.340744	-0.738302	29.14	3.50	32.64
0	53.339719	-0.737143	31.13	3.50	34.63
:1	53.340321	-0.734976	30.36	3.50	33.86
2	53.340129	-0.730985	23.59	3.50	27.09
3	53.338566	-0.730405	21.87	3.50	25.37
24	53.338220	-0.730749	23.44	3.50	26.94
25	53.337451	-0.730599	20.63	3.50	24.13
26	53.336854	-0.735417	27.26	3.50	30.76
27	53.334932	-0.735009	26.65	3.50	30.15
.8	53.334727	-0.736705	27.93	3.50	31.43
.9	53.334009	-0.737220	27.75	3.50	31.25
30	53.333522	-0.739666	29.78	3.50	33.28
31	53.332728	-0.739387	29.42	3.50	32.92
32	53.332612	-0.738593	29.42	3.50	32.92
33	53.332741	-0.736984	27.18	3.50	30.68
34	53.332894	-0.733636	26.64	3.50	30.14
15	53.333945	-0.733808	26.55	3.50	30.05
36	53.334035	-0.731619	23.69	3.50	27.19
37	53.332907	-0.730975	23.45	3.50	26.95
38	53.332946	-0.729087	18.94	3.50	22.44
39	53.333035	-0.727907	16.36	3.50	19.86
0	53.332881	-0.726984	15.63	3.50	19.13
1	53.332984	-0.726062	15.82	3.50	19.32
2	53.333676	-0.725268	15.15	3.50	18.65
3	53.332869	-0.724087	18.22	3.50	21.72
4	53.333304	-0.722371	17.26	3.50	20.76
5	53.334393	-0.722907	13.33	3.50	16.83
6	53.334176	-0.724452	13.94	3.50	17.44
7	53.334944	-0.724924	12.36	3.50	15.86
8	53.336277	-0.725375	12.59	3.50	16.09
.9	53.337135	-0.724774	13.00	3.50	16.50
0	53.342818	-0.728465	22.89	3.50	26.39
i1	53.342485	-0.730932	25.23	3.50	28.73
52	53.340999	-0.730546	23.29	3.50	26.79
3	53.340948	-0.730340	25.28	3.50	28.78
4	53.341102	-0.731403	25.99	3.50	29.49
5	53.344052	-0.732220	20.61	3.50	24.11
56 57	53.344744	-0.729516 -0.730096	20.09	3.50	23.59
57	53.345461	-0.730096	21.23	3.50	24.73
i8	53.345320	-0.731641	22.66	3.50	26.16
i9	53.344923	-0.734130	24.13	3.50	27.63
0	53.345026	-0.735074	24.67	3.50	28.17
1	53.343847	-0.734945	21.36	3.50	24.86
2	53.343719	-0.735868	21.82	3.50	25.32
3	53.344962	-0.736147	23.93	3.50	27.43
4	53.344987	-0.738142	22.28	3.50	25.78

65	53.345487	-0.738357	23.00	3.50	26.50
66	53.345436	-0.736812	23.93	3.50	27.43
67	53.346614	-0.737155	22.17	3.50	25.67
68	53.347024	-0.736511	22.61	3.50	26.11
69	53.347383	-0.736511	23.13	3.50	26.63
70	53.347165	-0.731018	24.74	3.50	28.24
71	53.353620	-0.735181	23.48	3.50	26.98
72	53.354146	-0.736275	22.11	3.50	25.61
73	53.355362	-0.736447	22.00	3.50	25.50
74	53.356950	-0.737434	23.30	3.50	26.80
75	53.356707	-0.738078	24.26	3.50	27.76
76	53.356822	-0.738743	24.00	3.50	27.50

Name: PV array 2 Footprint area: 3,187,939 m^2 Axis tracking: Fixed (no rotation)
Tilt: 5.0 deg
Orientation: 180.0 deg

Rated power: -

Panel material: Light textured glass with AR coating Vary reflectivity with sun position? Yes Correlate slope error with surface type? Yes Slope error: 9.16 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.353754	-0.734662	23.97	3.50	27.47
2	53.338935	-0.725169	13.57	3.50	17.07
3	53.338615	-0.723559	12.00	3.50	15.50
4	53.339140	-0.723624	12.00	3.50	15.50
5	53.339294	-0.722401	12.00	3.50	15.50
6	53.338666	-0.722207	11.79	3.50	15.29
7	53.338269	-0.722744	12.00	3.50	15.50
8	53.337500	-0.722165	11.72	3.50	15.22
9	53.337064	-0.723066	12.31	3.50	15.81
10	53.336155	-0.723452	13.00	3.50	16.50
11	53.333515	-0.721671	15.87	3.50	19.37
12	53.334143	-0.718045	11.00	3.50	14.50
13	53.334745	-0.718538	11.00	3.50	14.50
14	53.334950	-0.718152	11.00	3.50	14.50
15	53.335783	-0.717959	10.14	3.50	13.64
16	53.336616	-0.718345	9.24	3.50	12.74
17	53.336975	-0.718216	9.59	3.50	13.09
18	53.337667	-0.718688	10.61	3.50	14.11
19	53.337897	-0.717723	10.95	3.50	14.45
20	53.337859	-0.716392	9.89	3.50	13.39
21	53.337269	-0.715341	9.24	3.50	12.74
22	53.336116	-0.715856	9.81	3.50	13.31
23	53.334809	-0.714955	10.90	3.50	14.40
24	53.335732	-0.710949	11.21	3.50	14.71
25	53.336244	-0.710563	11.08	3.50	14.58
26	53.336552	-0.709983	11.04	3.50	14.54
27	53.337564	-0.710155	12.22	3.50	15.72
28	53.337603	-0.709511	12.51	3.50	16.01
29	53.338410	-0.709061	13.25	3.50	16.75
30	53.339153	-0.709211	13.80	3.50	17.30
31	53.339178	-0.705520	14.81	3.50	18.31
32	53.341318	-0.704426	14.16	3.50	17.66
33	53.341254	-0.703460	15.00	3.50	18.50
34	53.338320	-0.701636	14.00	3.50	17.50
35	53.337731	-0.702967	14.70	3.50	18.20
36	53.337052	-0.702516	14.29	3.50	17.79
37	53.337039	-0.698825	16.56	3.50	20.06
38	53.337128	-0.696336	19.06	3.50	22.56
39	53.336962	-0.695049	20.32	3.50	23.82
40	53.337295	-0.693182	19.41	3.50	22.91
41	53.339883	-0.694727	14.00	3.50	17.50
12	53.341087	-0.692023	13.00	3.50	16.50
43	53.341664	-0.692023		3.50	16.50
+3 44	53.344277	-0.692109	13.00	3.50	15.50
<del>14</del> 45				3.50	16.58
45 46	53.348287	-0.697817 -0.697602	13.08	3.50	17.52
46 47	53.349350 53.349516	-0.698224	14.02		
				3.50	17.50
48 40	53.349427	-0.702924	17.52	3.50	21.02
49 	53.348914	-0.705091	17.98	3.50	21.48
50	53.349222	-0.705305	18.00	3.50	21.50
51	53.349183	-0.706464	18.00	3.50	21.50
52	53.346980	-0.706421	17.00	3.50	20.50
53	53.346378	-0.713138	13.88	3.50	17.38
54	53.347505	-0.713910	14.28	3.50	17.78
55	53.347505	-0.714983	14.25	3.50	17.75
56	53.349030	-0.715498	16.00	3.50	19.50
57	53.349004	-0.720004	22.46	3.50	25.96
58	53.350848	-0.719789	21.00	3.50	24.50
59	53.352872	-0.719747	19.04	3.50	22.54
60	53.353564	-0.719918	18.54	3.50	22.04
61	53.352898	-0.721678	18.21	3.50	21.71
62	53.352782	-0.724574	17.76	3.50	21.26
63	53.353359	-0.728244	19.54	3.50	23.04
	53.353961	-0.728887	19.19	3.50	22.69

65	53.354166	-0.729746	19.36	3.50	22.86
66	53.354179	-0.734016	22.69	3.50	26.19

Name: PV array 3 Footprint area: 162,584 m^2 Axis tracking: Fixed (no rotation) Tilt: 5.0 deg Orientation: 180.0 deg

Rated power: -

Panel material: Light textured glass with AR coating

Vary reflectivity with sun position? Yes Correlate slope error with surface type? Yes Slope error: 9.16 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.355703	-0.727643	18.87	3.50	22.37
2	53.355177	-0.725669	17.24	3.50	20.74
3	53.355088	-0.721935	18.98	3.50	22.48
4	53.355101	-0.720734	21.71	3.50	25.21
5	53.356125	-0.721034	21.89	3.50	25.39
6	53.357483	-0.721120	19.10	3.50	22.60
7	53.357534	-0.722836	18.29	3.50	21.79
8	53.359083	-0.721849	18.14	3.50	21.64
9	53.359544	-0.722107	16.73	3.50	20.23
10	53.359762	-0.721485	16.64	3.50	20.14
11	53.359583	-0.720734	17.67	3.50	21.17
12	53.360402	-0.719875	17.29	3.50	20.79
13	53.360313	-0.723673	16.00	3.50	19.50
14	53.360044	-0.724832	16.19	3.50	19.69
15	53.357585	-0.725175	17.45	3.50	20.95

Name: PV array 4 Footprint area: 216,857 m^2 Axis tracking: Fixed (no rotation)

Tilt: 5.0 deg

Orientation: 180.0 deg

Rated power: -

Panel material: Light textured glass with AR coating

Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes

Slope error: 9.16 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.360082	-0.727836	17.00	3.50	20.50
2	53.360851	-0.728501	17.37	3.50	20.87
3	53.360710	-0.729596	18.17	3.50	21.67
4	53.361107	-0.729660	18.75	3.50	22.25
5	53.361952	-0.729424	19.00	3.50	22.50
6	53.362874	-0.729510	19.31	3.50	22.81
7	53.363335	-0.730003	20.12	3.50	23.62
8	53.363591	-0.729209	19.64	3.50	23.14
9	53.364052	-0.725733	17.95	3.50	21.45
10	53.364410	-0.720433	15.80	3.50	19.30
11	53.362554	-0.719918	16.00	3.50	19.50
12	53.360671	-0.724210	16.71	3.50	20.21

## **Discrete Observation Receptors**

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	m	m	m
OP 1	53.334394	-0.744587	20.12	1.50	21.62
OP 2	53.333151	-0.743235	16.65	1.50	18.15
OP 3	53.331511	-0.742592	13.33	1.50	14.83
OP 4	53.329640	-0.741488	14.08	1.50	15.58
OP 5	53.328076	-0.740479	12.84	1.50	14.34
OP 6	53.326231	-0.740372	9.77	1.50	11.27
OP 7	53.328243	-0.738419	21.55	1.50	23.05
OP 8	53.353350	-0.754385	20.13	1.50	21.63
OP 9	53.353753	-0.751020	28.27	1.50	29.77
OP 10	53.354144	-0.748177	27.40	1.50	28.90
OP 11	53.354810	-0.746814	25.85	1.50	27.35
OP 12	53.356315	-0.747909	24.24	1.50	25.74
OP 13	53.358530	-0.747973	25.67	1.50	27.17
OP 14	53.359260	-0.745570	28.49	1.50	29.99
OP 15	53.359945	-0.742201	25.06	1.50	26.56
OP 16	53.360566	-0.740162	26.00	1.50	27.50
OP 17	53.361482	-0.737330	25.92	1.50	27.42
OP 18	53.361956	-0.733135	24.68	1.50	26.18
OP 19	53.363031	-0.730957	21.83	1.50	23.33
OP 20	53.363780	-0.728951	19.47	1.50	20.97
OP 21	53.364408	-0.725593	18.11	1.50	19.61
OP 22	53.332106	-0.740618	24.28	1.50	25.78
OP 23	53.332452	-0.737699	29.34	1.50	30.84
OP 24	53.332618	-0.734524	27.00	1.50	28.50
OP 25	53.332708	-0.731434	24.92	1.50	26.42
OP 26	53.332759	-0.728751	18.54	1.50	20.04
OP 27	53.332631	-0.725662	16.91	1.50	18.41
OP 28	53.332939	-0.722550	18.63	1.50	20.13
OP 29	53.333643	-0.719847	14.71	1.50	16.21
OP 30	53.334130	-0.717250	11.00	1.50	12.50
OP 31	53.334694	-0.714160	11.25	1.50	12.75
OP 32	53.335335	-0.711821	11.80	1.50	13.30
OP 33	53.336065	-0.709096	12.30	1.50	13.80
OP 34	53.336885	-0.705856	12.54	1.50	14.04
OP 35	53.336911	-0.702863	14.49	1.50	15.99
OP 36	53.336911	-0.699784	15.49	1.50	16.99
OP 37	53.337020	-0.697005	18.25	1.50	19.75
OP 38	53.337013	-0.693947	20.22	1.50	21.72
OP 39	53.337481	-0.691286	17.51	1.50	19.01
OP 40	53.338403	-0.691404	17.00	1.50	18.50
OP 41	53.340908	-0.691297	13.00	1.50	14.50
OP 42	53.342825	-0.691110	14.13	1.50	15.63
OP 43	53.344382	-0.691088	15.62	1.50	17.12
OP 44	53.346137	-0.691603	17.69	1.50	19.19
OP 45	53.347649	-0.690053	22.96	1.50	24.46
OP 46	53.349532	-0.690374	22.58	1.50	24.08
	55.54555Z	0.000014	22.00	1.00	24.00

# **Summary of PV Glare Analysis**

PV configuration and total predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	5.0	180.0	91,441	33,368	-	-
PV array 2	5.0	180.0	40,637	22,841	-	-
PV array 3	5.0	180.0	24,550	0	-	-
PV array 4	5.0	180.0	18,574	3,388	-	-

#### Distinct glare per month

Excludes overlapping glare from PV array for multiple receptors at matching time(s)

PV	Jan	Eab										
		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pv-array-1 (green)	0	29	602	1218	1291	1326	1331	1213	964	142	0	0
pv-array-1 (yellow)	0	0	0	477	1244	1512	1431	823	38	0	0	0
pv-array-2 (green)	0	35	403	725	580	464	507	738	517	135	0	0
pv-array-2 (yellow)	0	0	0	52	388	338	385	181	0	0	0	0
pv-array-3 (green)	0	46	460	839	849	546	646	984	590	168	0	0
pv-array-3 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-4 (green)	0	106	346	428	1220	1334	1327	694	344	237	0	0
pv-array-4 (yellow)	0	0	215	414	560	329	475	523	298	33	0	0

## **PV & Receptor Analysis Results**

Results for each PV array and receptor

### PV array 1 potential temporary after-image

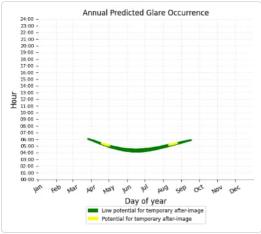
Component	Green glare (min)	Yellow glare (min)
OP: OP 1	1967	49
OP: OP 2	1151	878
OP: OP 3	661	1354
OP: OP 4	1587	283
OP: OP 5	1557	0
OP: OP 6	991	0
OP: OP 7	1349	0
OP: OP 8	2033	0
OP: OP 9	1871	187
OP: OP 10	1567	504
OP: OP 11	1102	967
OP: OP 12	1001	1056
OP: OP 13	536	81
OP: OP 14	467	21
OP: OP 15	550	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0

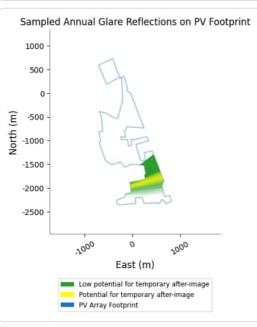
OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	702	1346
OP: OP 23	2629	5924
OP: OP 24	2971	6318
OP: OP 25	2853	6304
OP: OP 26	1068	2029
OP: OP 27	1382	1628
OP: OP 28	2367	3846
OP: OP 29	3	0
OP: OP 30	594	34
OP: OP 31	58	0
OP: OP 32	3021	297
OP: OP 33	3462	239
OP: OP 34	3719	23
OP: OP 35	4277	0
OP: OP 36	4281	0
OP: OP 37	4446	0
OP: OP 38	4529	0
OP: OP 39	4280	0
OP: OP 40	4454	0
OP: OP 41	4157	0
OP: OP 42	3917	0
OP: OP 43	3455	0
OP: OP 44	3210	0
OP: OP 45	2813	0
OP: OP 46	2432	0
OP: OP 47	1971	0

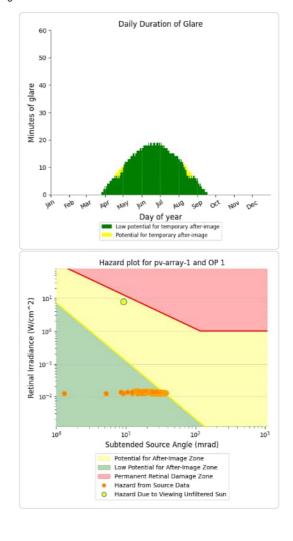
#### PV array 1 - OP Receptor (OP 1)

PV array is expected to produce the following glare for receptors at this location:

- 1,967 minutes of "green" glare with low potential to cause temporary after-image.
- 49 minutes of "yellow" glare with potential to cause temporary after-image.

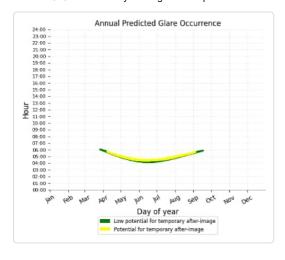


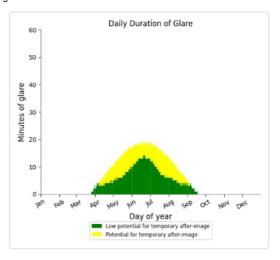


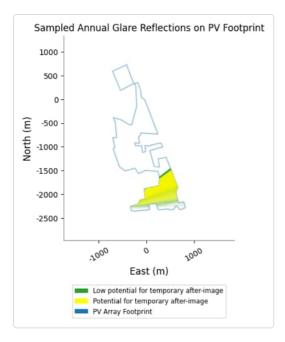


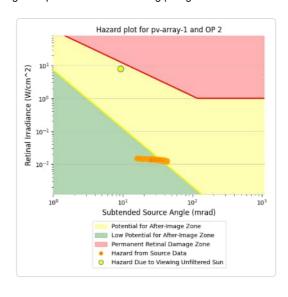
#### PV array 1 - OP Receptor (OP 2)

- 1,151 minutes of "green" glare with low potential to cause temporary after-image.
- 878 minutes of "yellow" glare with potential to cause temporary after-image.





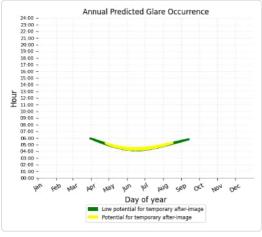


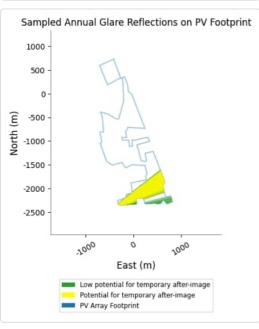


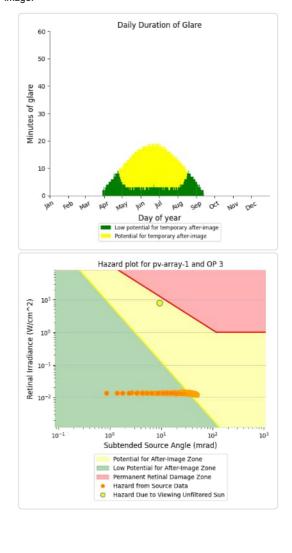
## PV array 1 - OP Receptor (OP 3)

- PV array is expected to produce the following glare for receptors at this location:

   661 minutes of "green" glare with low potential to cause temporary after-image.
   1,354 minutes of "yellow" glare with potential to cause temporary after-image.





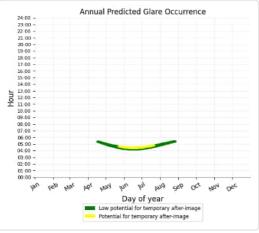


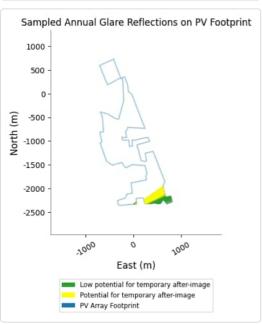
#### PV array 1 - OP Receptor (OP 4)

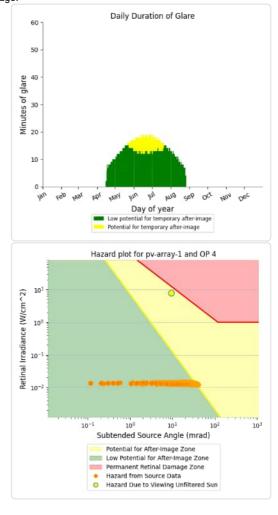
PV array is expected to produce the following glare for receptors at this location:

• 1,587 minutes of "green" glare with low potential to cause temporary after-image.

• 283 minutes of "yellow" glare with potential to cause temporary after-image.

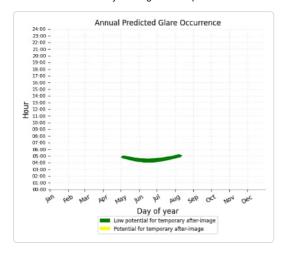


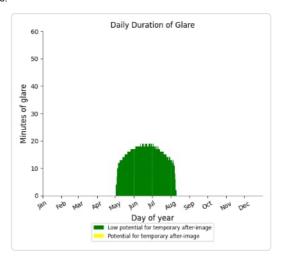


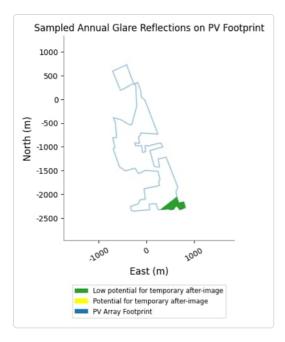


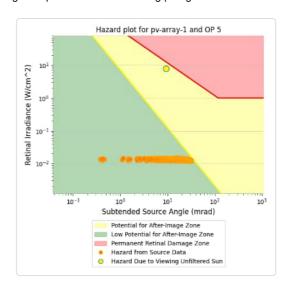
#### PV array 1 - OP Receptor (OP 5)

- 1,557 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





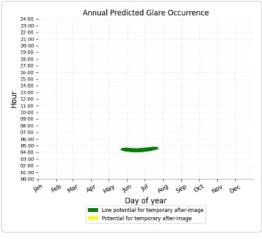


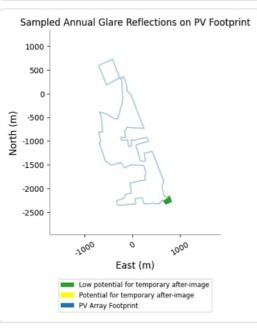


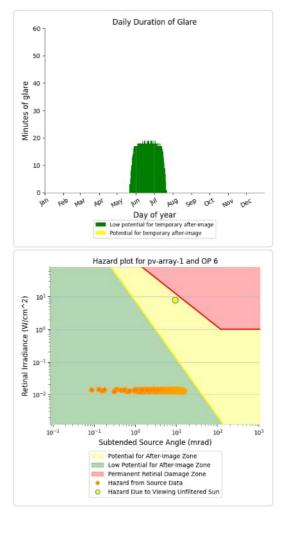
## PV array 1 - OP Receptor (OP 6)

- PV array is expected to produce the following glare for receptors at this location:

   991 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.





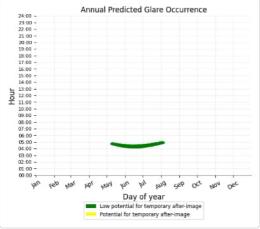


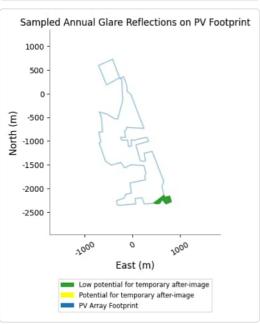
#### PV array 1 - OP Receptor (OP 7)

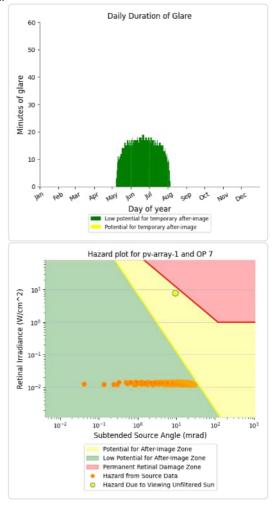
PV array is expected to produce the following glare for receptors at this location:

• 1,349 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.

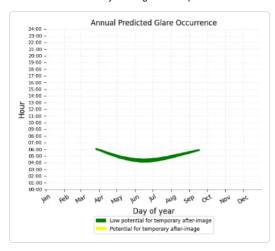


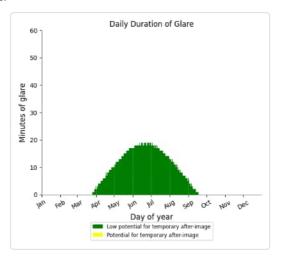


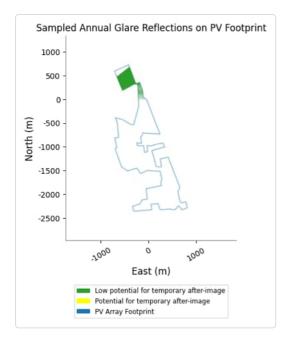


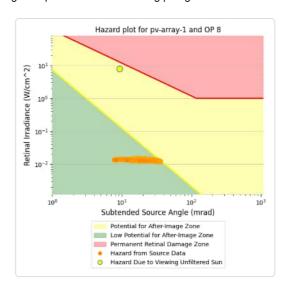
## PV array 1 - OP Receptor (OP 8)

- 2,033 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





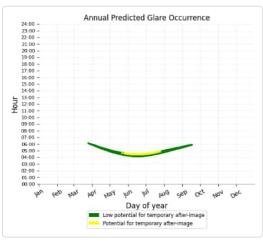


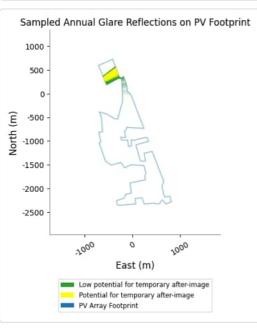


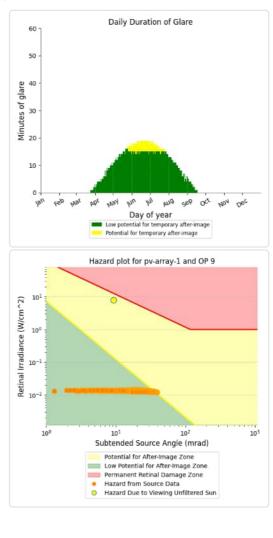
## PV array 1 - OP Receptor (OP 9)

- PV array is expected to produce the following glare for receptors at this location:

   1,871 minutes of "green" glare with low potential to cause temporary after-image.
   187 minutes of "yellow" glare with potential to cause temporary after-image.





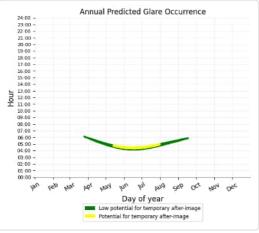


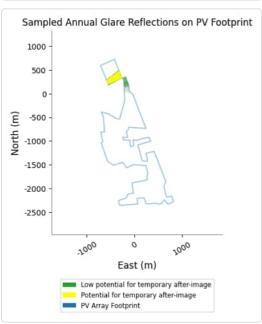
#### PV array 1 - OP Receptor (OP 10)

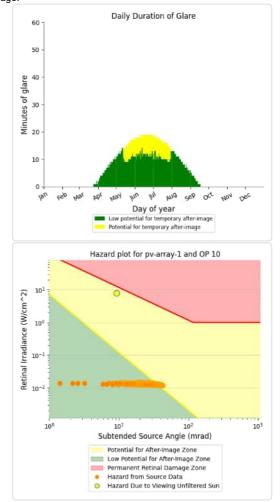
PV array is expected to produce the following glare for receptors at this location:

• 1,567 minutes of "green" glare with low potential to cause temporary after-image.

• 504 minutes of "yellow" glare with potential to cause temporary after-image.

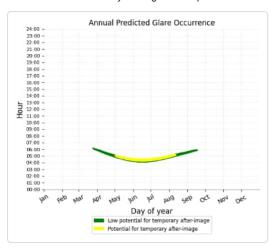


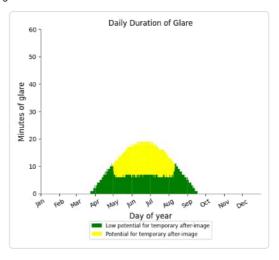


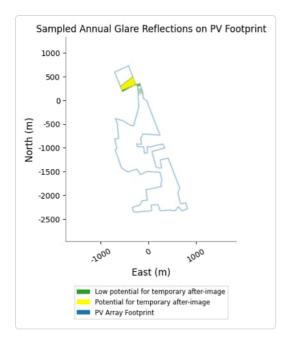


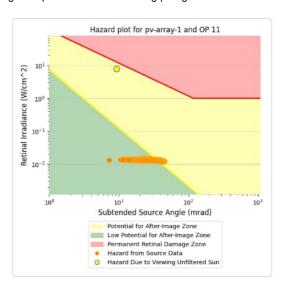
#### PV array 1 - OP Receptor (OP 11)

- 1,102 minutes of "green" glare with low potential to cause temporary after-image.
- 967 minutes of "yellow" glare with potential to cause temporary after-image.



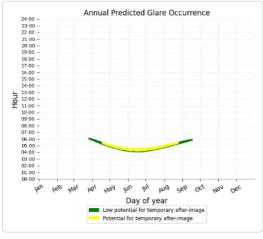


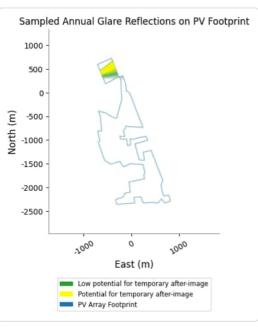


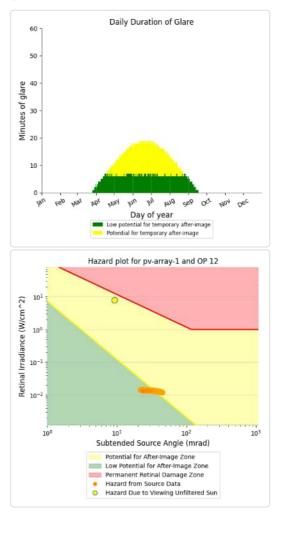


## PV array 1 - OP Receptor (OP 12)

- PV array is expected to produce the following glare for receptors at this location:
   1,001 minutes of "green" glare with low potential to cause temporary after-image.
   1,056 minutes of "yellow" glare with potential to cause temporary after-image.





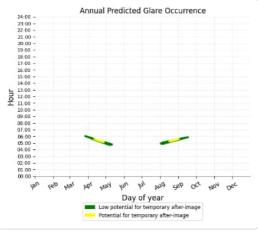


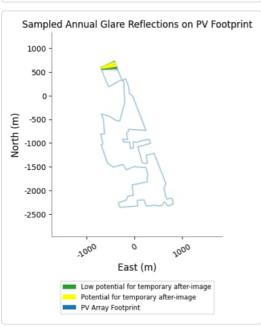
#### PV array 1 - OP Receptor (OP 13)

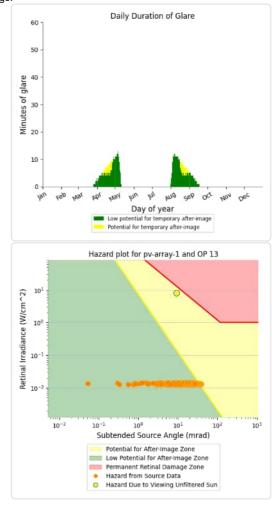
PV array is expected to produce the following glare for receptors at this location:

• 536 minutes of "green" glare with low potential to cause temporary after-image.

• 81 minutes of "yellow" glare with potential to cause temporary after-image.

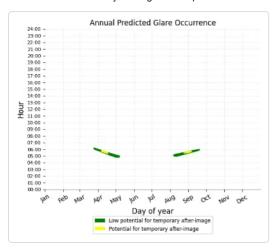


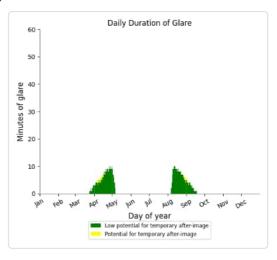


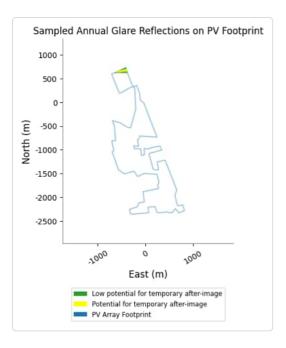


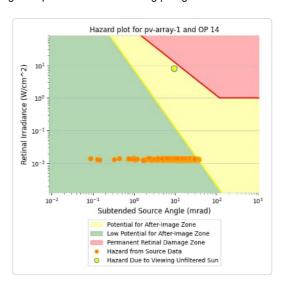
#### PV array 1 - OP Receptor (OP 14)

- 467 minutes of "green" glare with low potential to cause temporary after-image.
- 21 minutes of "yellow" glare with potential to cause temporary after-image.

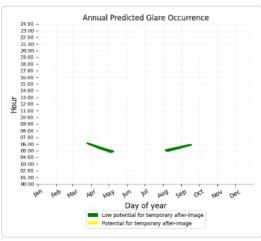




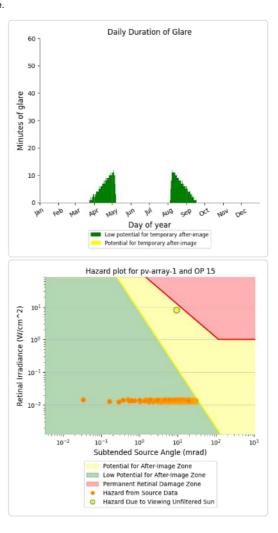




## PV array 1 - OP Receptor (OP 15)







PV array 1 - OP Receptor (OP 16)

No glare found

PV array 1 - OP Receptor (OP 17)

No glare found

PV array 1 - OP Receptor (OP 18)

No glare found

PV array 1 - OP Receptor (OP 19)

No glare found

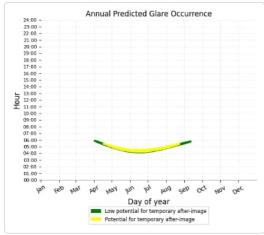
PV array 1 - OP Receptor (OP 20)

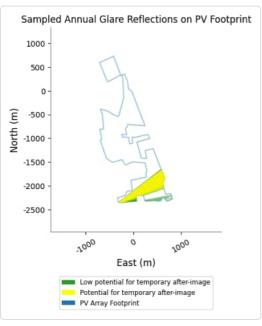
No glare found

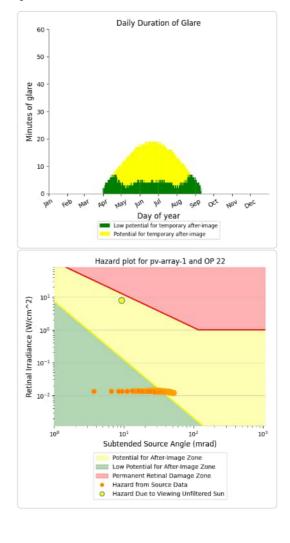
PV array 1 - OP Receptor (OP 21)

No glare found

#### PV array 1 - OP Receptor (OP 22)

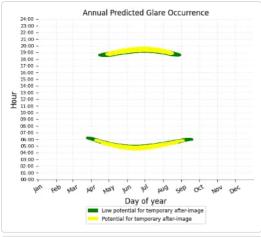


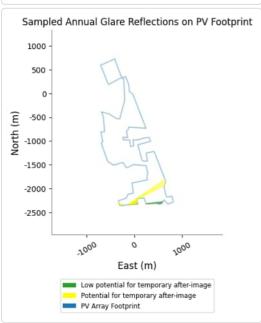


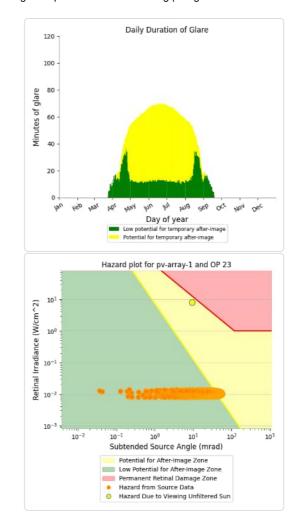


#### PV array 1 - OP Receptor (OP 23)

- 2,629 minutes of "green" glare with low potential to cause temporary after-image.
- 5,924 minutes of "yellow" glare with potential to cause temporary after-image.

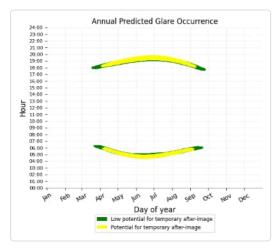


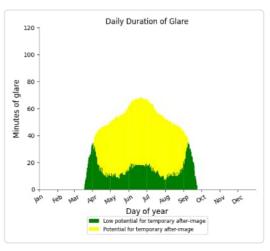


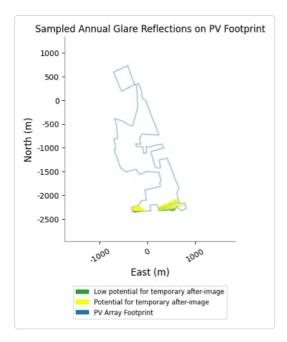


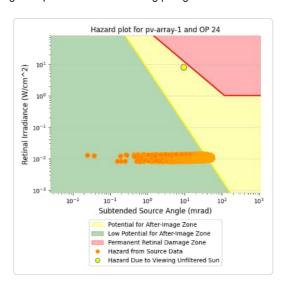
## PV array 1 - OP Receptor (OP 24)

- 2,971 minutes of "green" glare with low potential to cause temporary after-image. 6,318 minutes of "yellow" glare with potential to cause temporary after-image.





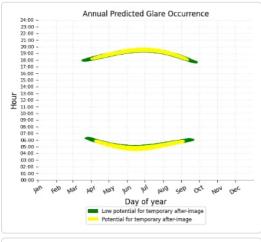


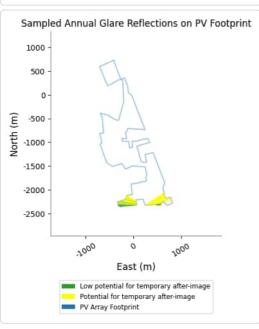


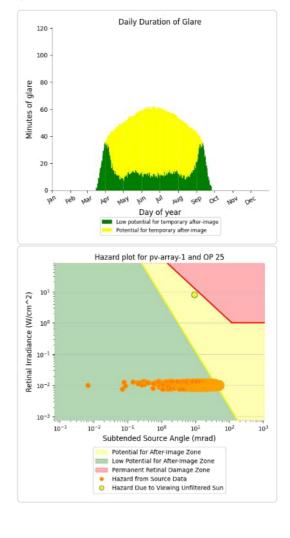
## PV array 1 - OP Receptor (OP 25)

- PV array is expected to produce the following glare for receptors at this location:

   2,853 minutes of "green" glare with low potential to cause temporary after-image.
   6,304 minutes of "yellow" glare with potential to cause temporary after-image.

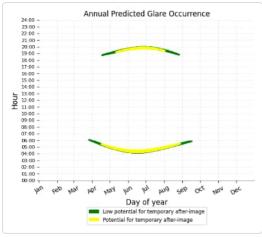


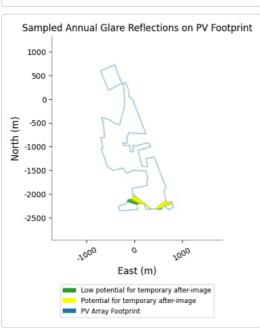


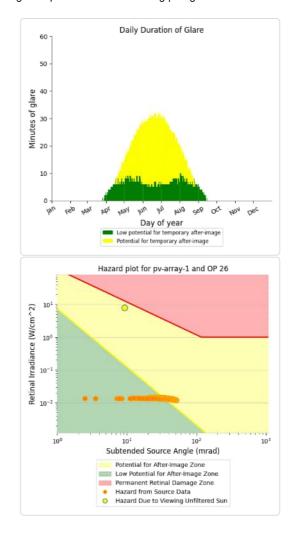


#### PV array 1 - OP Receptor (OP 26)

- 1,068 minutes of "green" glare with low potential to cause temporary after-image. 2,029 minutes of "yellow" glare with potential to cause temporary after-image.

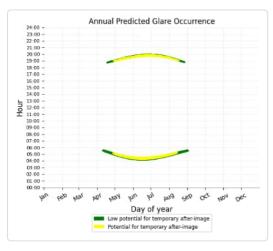


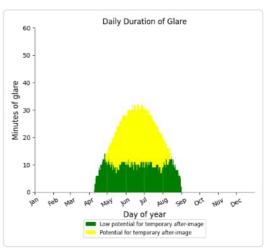


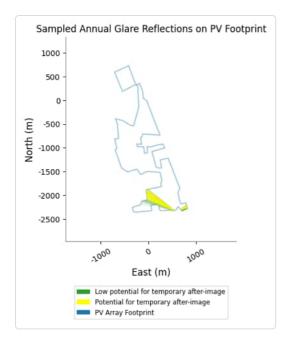


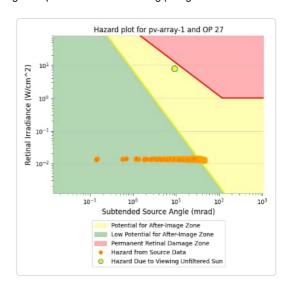
#### PV array 1 - OP Receptor (OP 27)

- PV array is expected to produce the following glare for receptors at this location:
   1,382 minutes of "green" glare with low potential to cause temporary after-image.
   1,628 minutes of "yellow" glare with potential to cause temporary after-image.





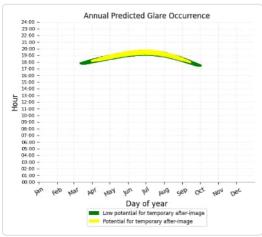


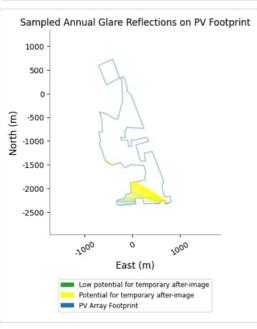


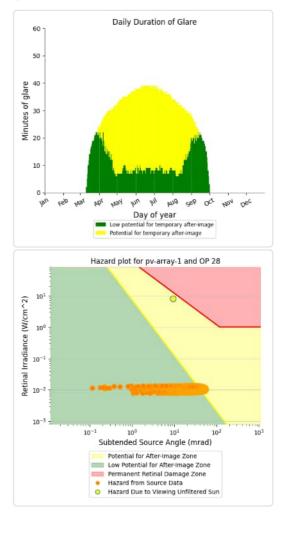
## PV array 1 - OP Receptor (OP 28)

- PV array is expected to produce the following glare for receptors at this location:

   2,367 minutes of "green" glare with low potential to cause temporary after-image.
   3,846 minutes of "yellow" glare with potential to cause temporary after-image.





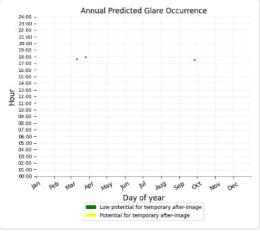


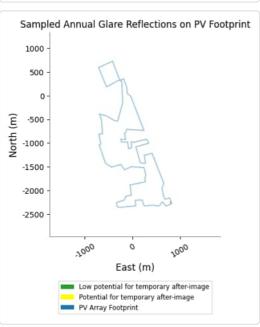
#### PV array 1 - OP Receptor (OP 29)

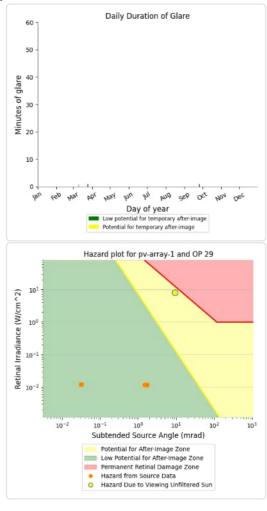
PV array is expected to produce the following glare for receptors at this location:

• 3 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.

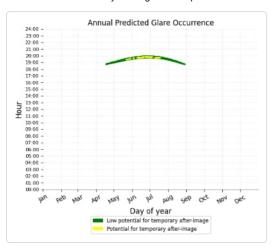


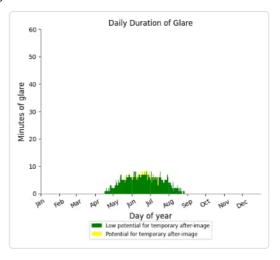


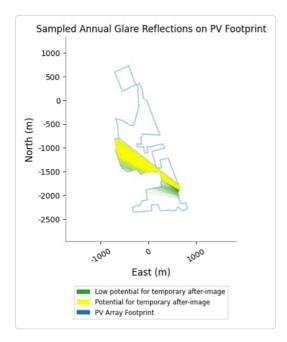


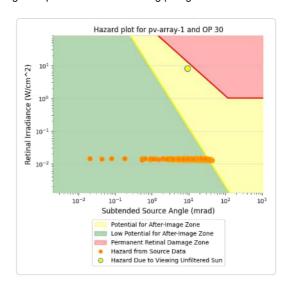
#### PV array 1 - OP Receptor (OP 30)

- 594 minutes of "green" glare with low potential to cause temporary after-image.
  - 34 minutes of "yellow" glare with potential to cause temporary after-image.

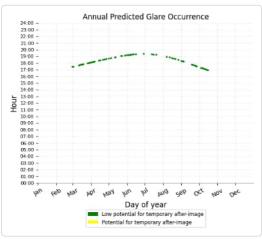


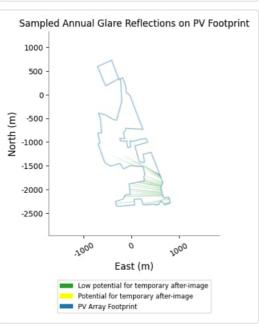


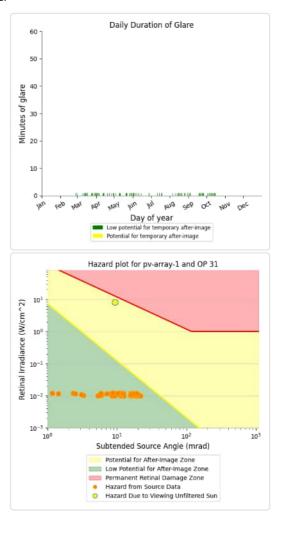




## PV array 1 - OP Receptor (OP 31)





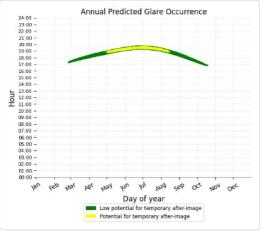


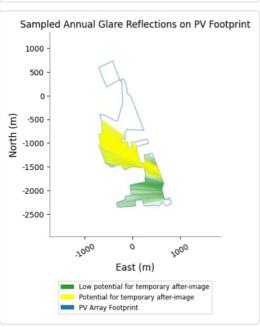
#### PV array 1 - OP Receptor (OP 32)

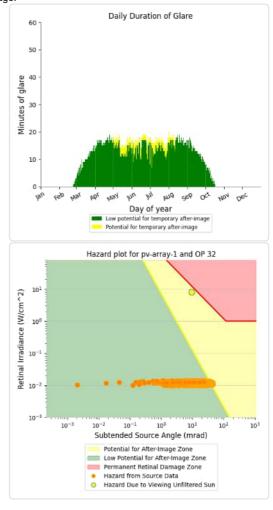
PV array is expected to produce the following glare for receptors at this location:

• 3,021 minutes of "green" glare with low potential to cause temporary after-image.

• 297 minutes of "yellow" glare with potential to cause temporary after-image.

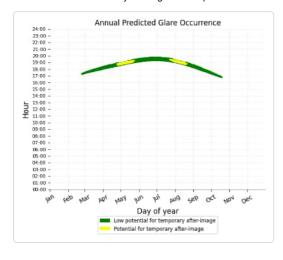


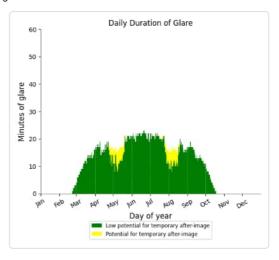


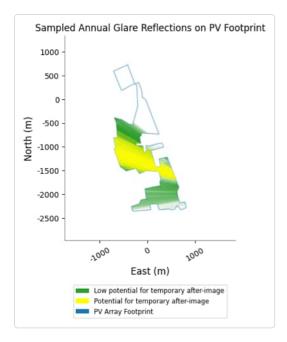


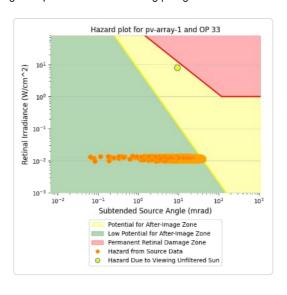
#### PV array 1 - OP Receptor (OP 33)

- 3,462 minutes of "green" glare with low potential to cause temporary after-image.
- 239 minutes of "yellow" glare with potential to cause temporary after-image.





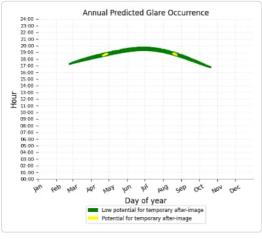


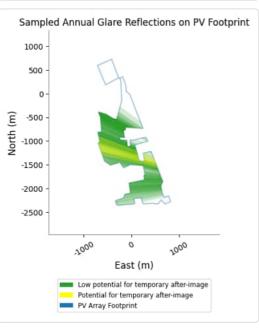


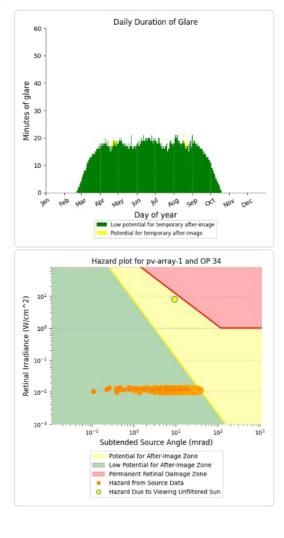
## PV array 1 - OP Receptor (OP 34)

- PV array is expected to produce the following glare for receptors at this location:

   3,719 minutes of "green" glare with low potential to cause temporary after-image.
  - 23 minutes of "yellow" glare with potential to cause temporary after-image.





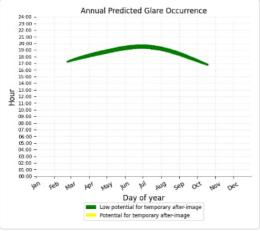


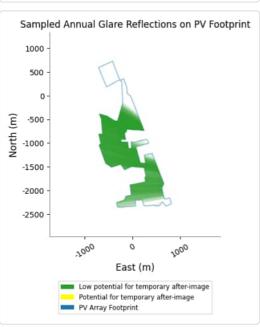
#### PV array 1 - OP Receptor (OP 35)

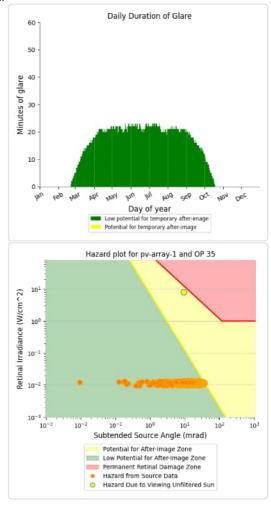
PV array is expected to produce the following glare for receptors at this location:

• 4,277 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.

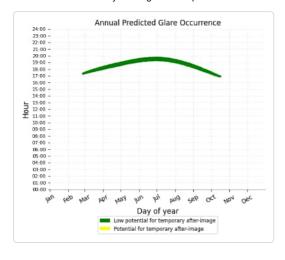


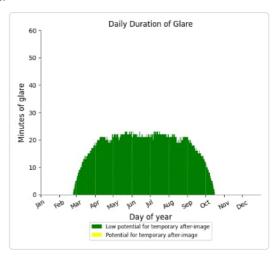


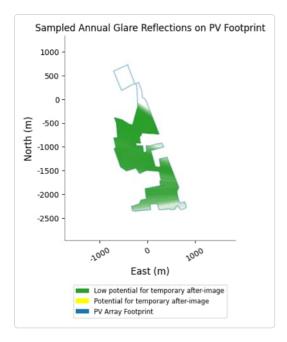


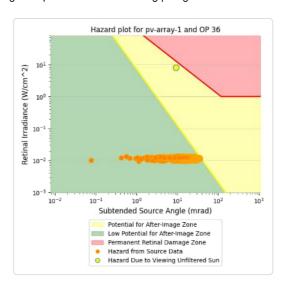
#### PV array 1 - OP Receptor (OP 36)

- 4,281 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





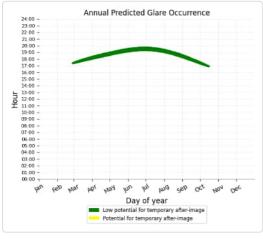


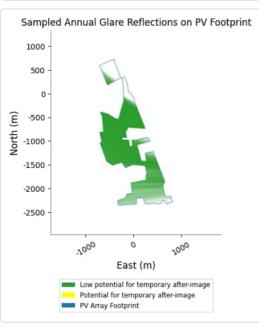


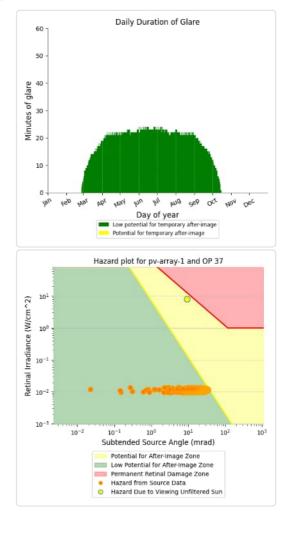
## PV array 1 - OP Receptor (OP 37)

- PV array is expected to produce the following glare for receptors at this location:

   4,446 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.





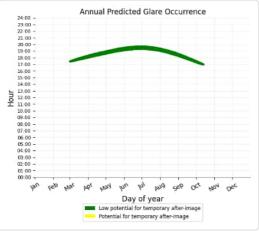


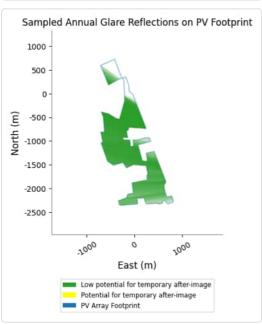
#### PV array 1 - OP Receptor (OP 38)

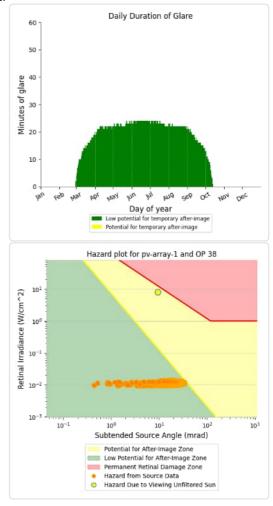
PV array is expected to produce the following glare for receptors at this location:

• 4,529 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.

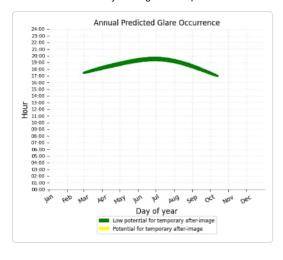


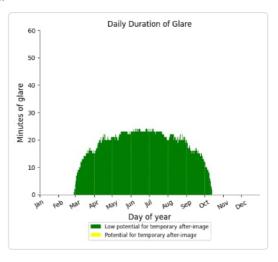


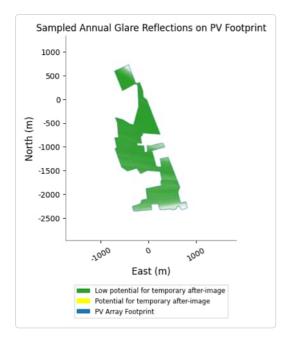


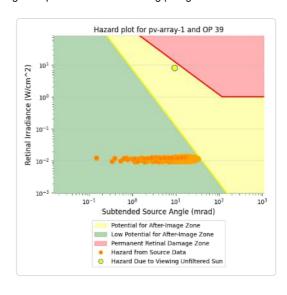
#### PV array 1 - OP Receptor (OP 39)

- 4,280 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





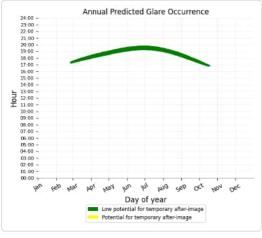


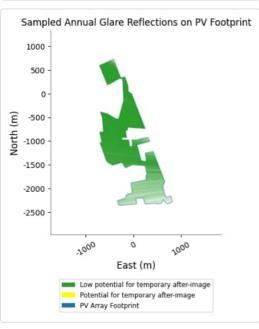


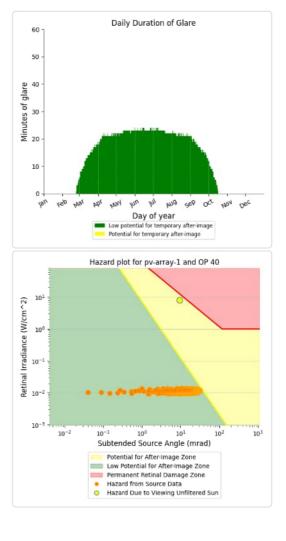
## PV array 1 - OP Receptor (OP 40)

- PV array is expected to produce the following glare for receptors at this location:

   4,454 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.





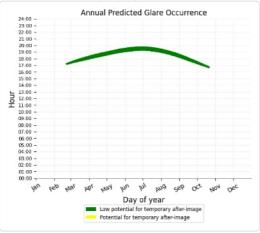


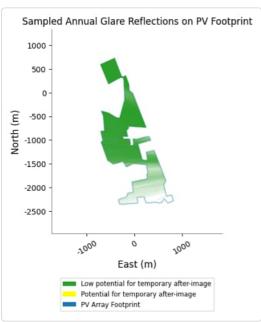
#### PV array 1 - OP Receptor (OP 41)

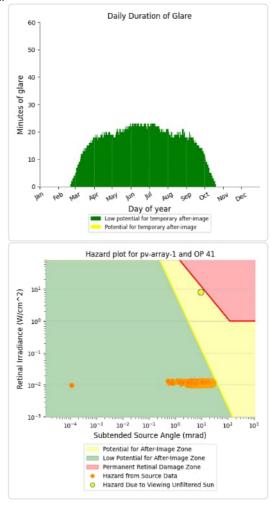
PV array is expected to produce the following glare for receptors at this location:

• 4,157 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.

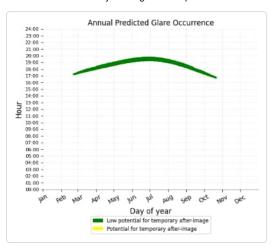


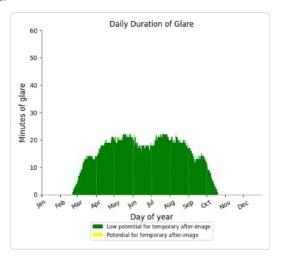


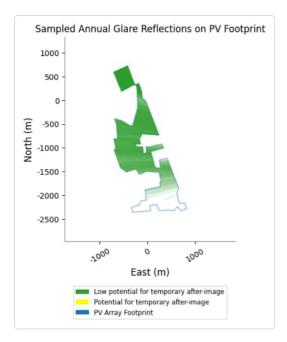


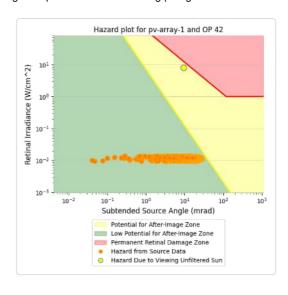
#### PV array 1 - OP Receptor (OP 42)

- 3,917 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





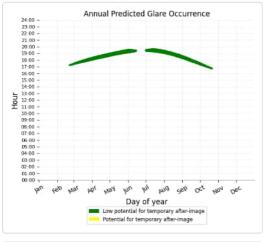


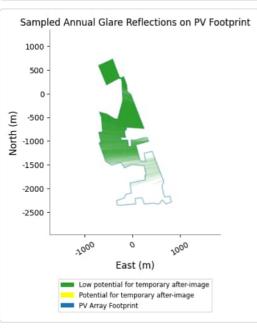


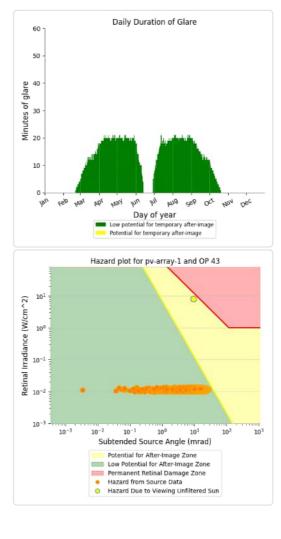
## PV array 1 - OP Receptor (OP 43)

- PV array is expected to produce the following glare for receptors at this location:

   3,455 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.





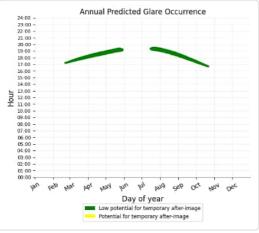


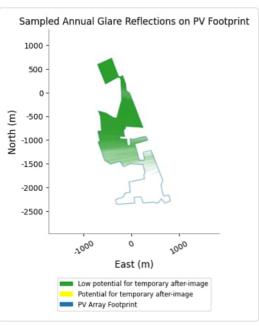
#### PV array 1 - OP Receptor (OP 44)

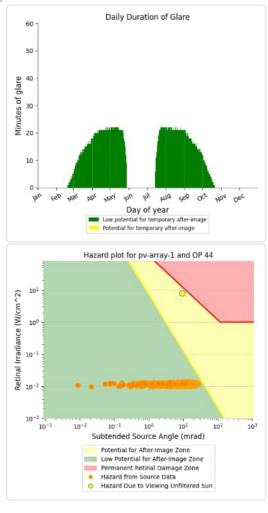
PV array is expected to produce the following glare for receptors at this location:

• 3,210 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.

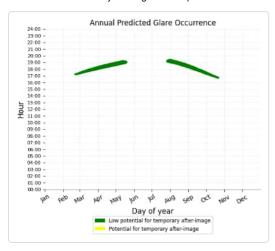


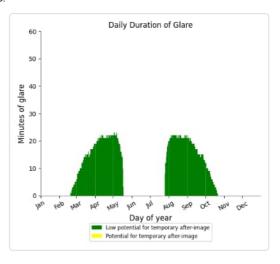


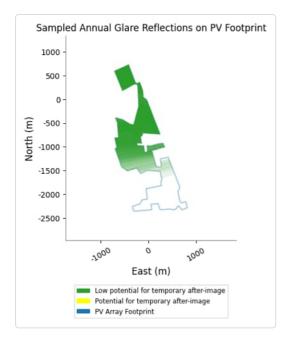


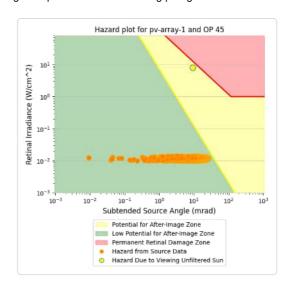
#### PV array 1 - OP Receptor (OP 45)

- 2,813 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





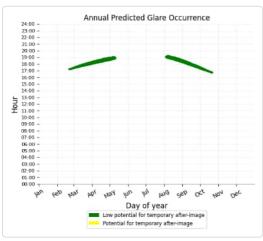


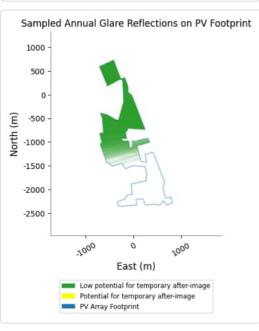


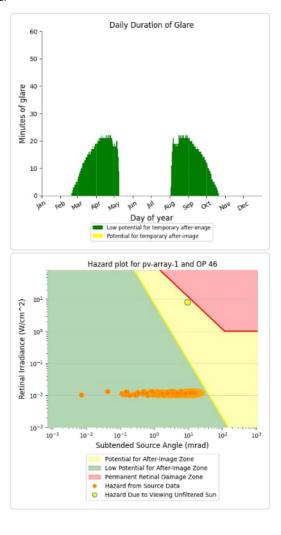
## PV array 1 - OP Receptor (OP 46)

- PV array is expected to produce the following glare for receptors at this location:

   2,432 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



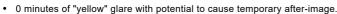


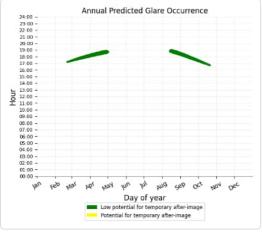


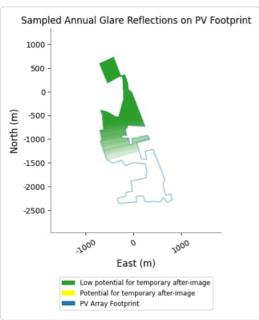
#### PV array 1 - OP Receptor (OP 47)

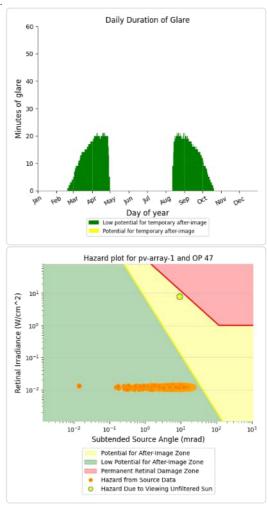
PV array is expected to produce the following glare for receptors at this location:

• 1,971 minutes of "green" glare with low potential to cause temporary after-image.









## PV array 2 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	1043	72
OP: OP 3	1205	130
OP: OP 4	989	178
OP: OP 5	1055	103
OP: OP 6	1073	68
OP: OP 7	1206	61
OP: OP 8	0	0
OP: OP 9	831	0
OP: OP 10	599	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	7	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0

OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	2312	693
OP: OP 23	1685	1909
OP: OP 24	1921	1659
OP: OP 25	2300	987
OP: OP 26	1270	105
OP: OP 27	995	425
OP: OP 28	1082	253
OP: OP 29	2121	722
OP: OP 30	1833	1003
OP: OP 31	2133	708
OP: OP 32	1914	927
OP: OP 33	1183	1659
OP: OP 34	999	1846
OP: OP 35	992	1860
OP: OP 36	1186	1673
OP: OP 37	1445	1442
OP: OP 38	1710	735
OP: OP 39	749	753
OP: OP 40	577	919
OP: OP 41	604	865
OP: OP 42	879	592
OP: OP 43	988	485
OP: OP 44	1470	9
OP: OP 45	245	0
OP: OP 46	27	0
OP: OP 47	9	0

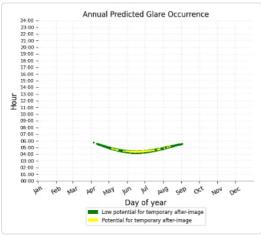
#### PV array 2 - OP Receptor (OP 1)

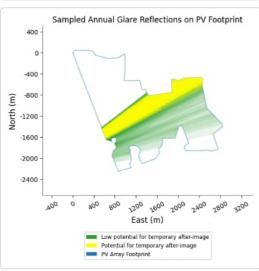
No glare found

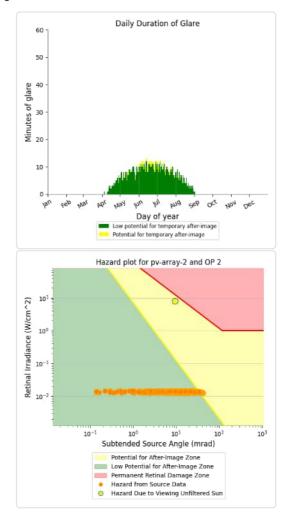
#### PV array 2 - OP Receptor (OP 2)

PV array is expected to produce the following glare for receptors at this location:

- 1,043 minutes of "green" glare with low potential to cause temporary after-image.
- 72 minutes of "yellow" glare with potential to cause temporary after-image.

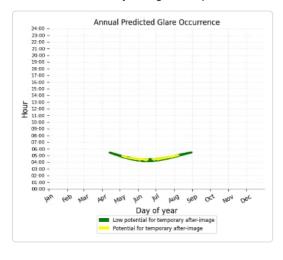


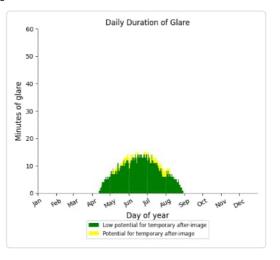


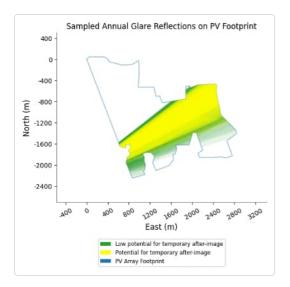


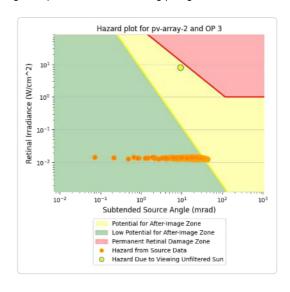
#### PV array 2 - OP Receptor (OP 3)

- 1,205 minutes of "green" glare with low potential to cause temporary after-image.
- 130 minutes of "yellow" glare with potential to cause temporary after-image.





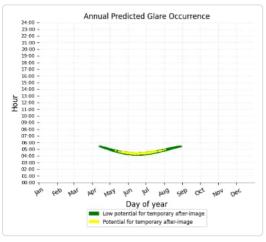


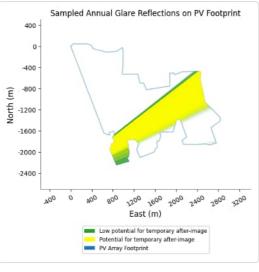


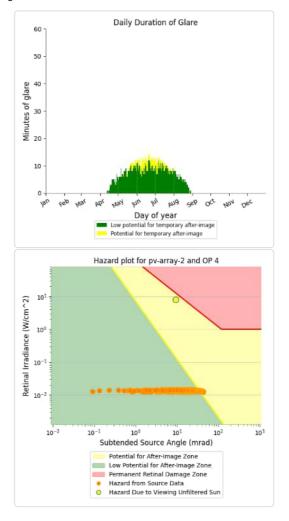
#### PV array 2 - OP Receptor (OP 4)

PV array is expected to produce the following glare for receptors at this location:

- 989 minutes of "green" glare with low potential to cause temporary after-image.
   178 minutes of "yellow" glare with potential to cause temporary after-image.

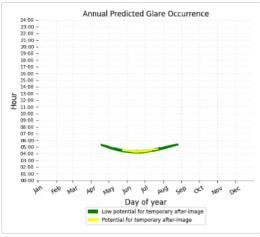


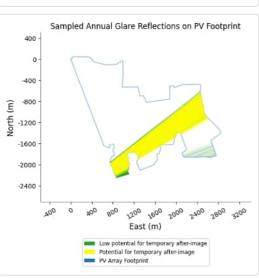


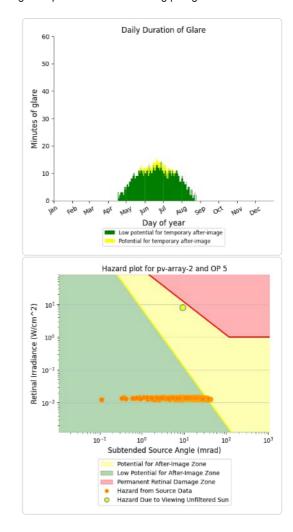


#### PV array 2 - OP Receptor (OP 5)

- 1,055 minutes of "green" glare with low potential to cause temporary after-image.
- 103 minutes of "yellow" glare with potential to cause temporary after-image.



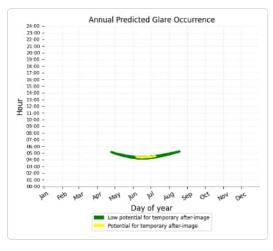


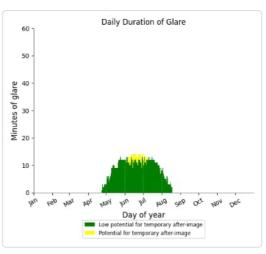


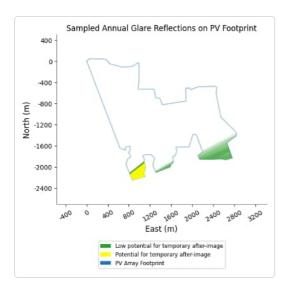
## PV array 2 - OP Receptor (OP 6)

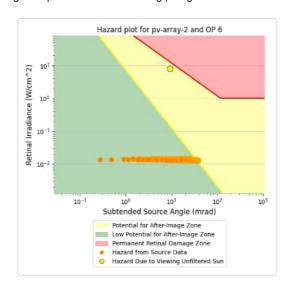
- PV array is expected to produce the following glare for receptors at this location:

   1,073 minutes of "green" glare with low potential to cause temporary after-image.
  - 68 minutes of "yellow" glare with potential to cause temporary after-image.





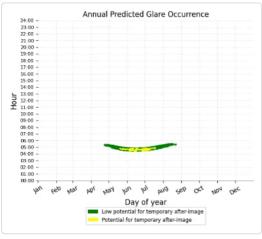


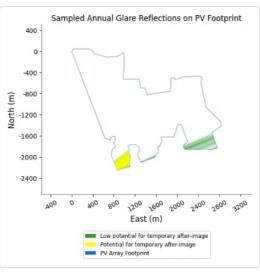


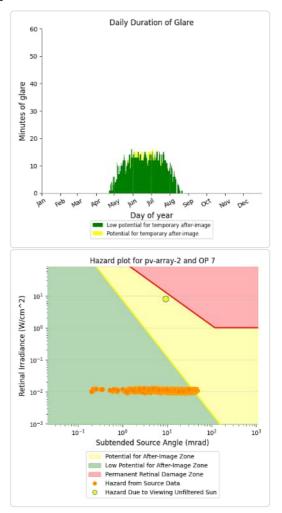
### PV array 2 - OP Receptor (OP 7)

PV array is expected to produce the following glare for receptors at this location:

- 1,206 minutes of "green" glare with low potential to cause temporary after-image.
- 61 minutes of "yellow" glare with potential to cause temporary after-image.







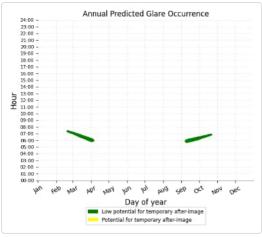
PV array 2 - OP Receptor (OP 8)

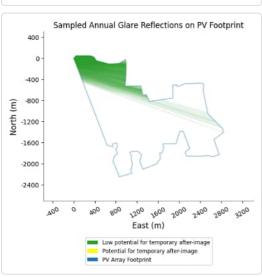
No glare found

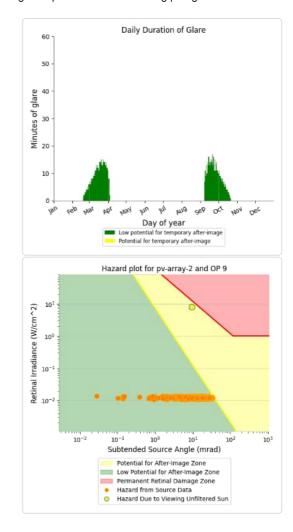
## PV array 2 - OP Receptor (OP 9)

- PV array is expected to produce the following glare for receptors at this location:

   831 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.

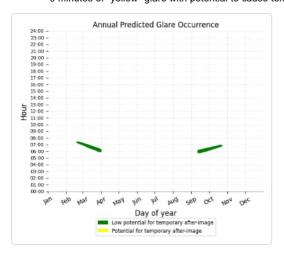


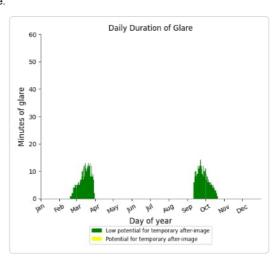


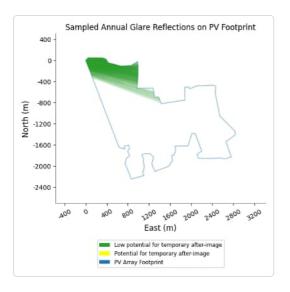


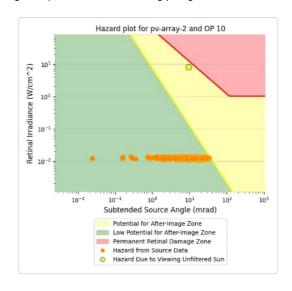
## PV array 2 - OP Receptor (OP 10)

- 599 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 2 - OP Receptor (OP 11)

No glare found

## PV array 2 - OP Receptor (OP 12)

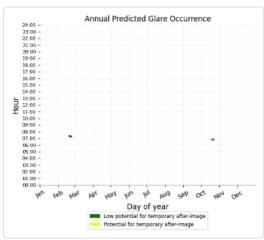
No glare found

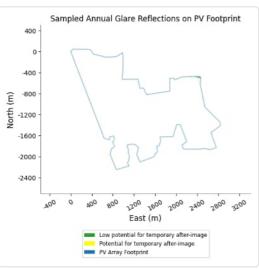
#### PV array 2 - OP Receptor (OP 13)

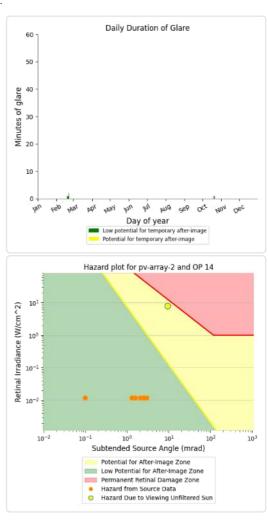
No glare found

### PV array 2 - OP Receptor (OP 14)

- 7 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.







### PV array 2 - OP Receptor (OP 15)

No glare found

### PV array 2 - OP Receptor (OP 16)

No glare found

### PV array 2 - OP Receptor (OP 17)

No glare found

#### PV array 2 - OP Receptor (OP 18)

No glare found

### PV array 2 - OP Receptor (OP 19)

No glare found

### PV array 2 - OP Receptor (OP 20)

No glare found

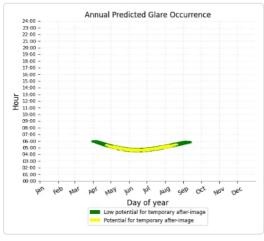
## PV array 2 - OP Receptor (OP 21)

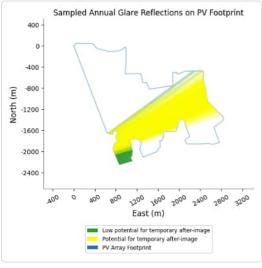
No glare found

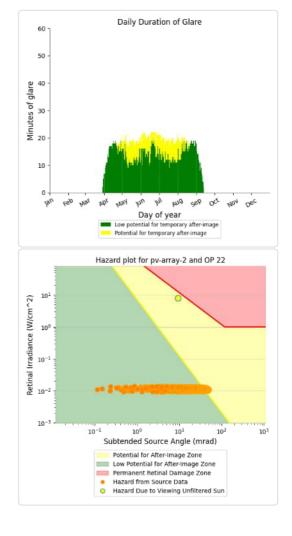
### PV array 2 - OP Receptor (OP 22)

PV array is expected to produce the following glare for receptors at this location:

- 2,312 minutes of "green" glare with low potential to cause temporary after-image.
- 693 minutes of "yellow" glare with potential to cause temporary after-image.



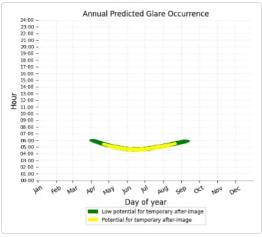


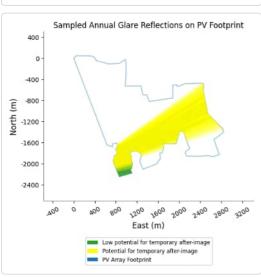


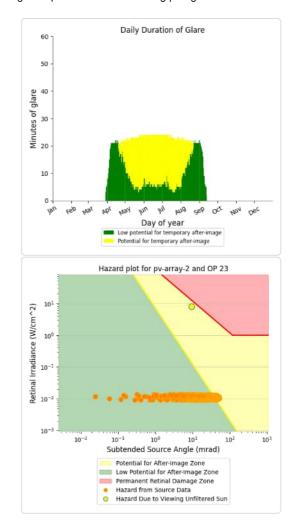
### PV array 2 - OP Receptor (OP 23)

- PV array is expected to produce the following glare for receptors at this location:

   1,685 minutes of "green" glare with low potential to cause temporary after-image.
  - 1,909 minutes of "yellow" glare with potential to cause temporary after-image.



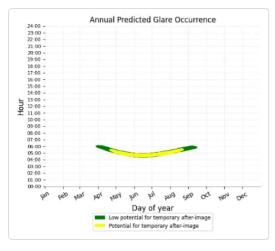


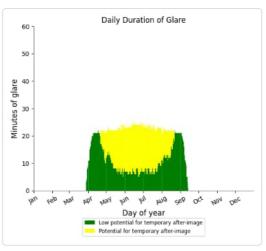


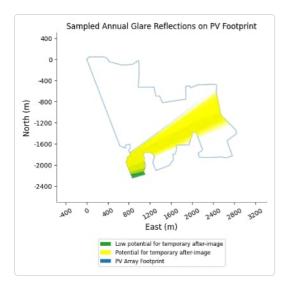
## PV array 2 - OP Receptor (OP 24)

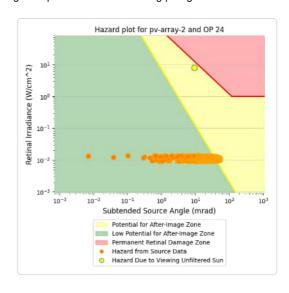
- PV array is expected to produce the following glare for receptors at this location:

   1,921 minutes of "green" glare with low potential to cause temporary after-image.
   1,659 minutes of "yellow" glare with potential to cause temporary after-image.





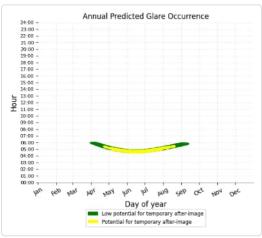


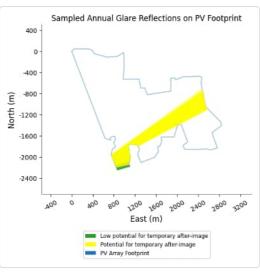


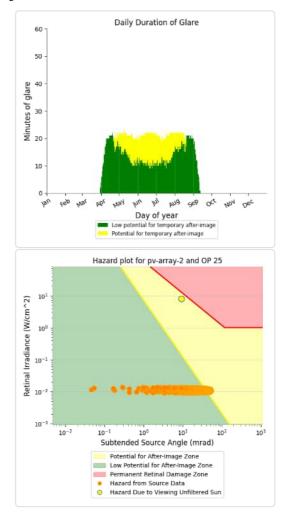
### PV array 2 - OP Receptor (OP 25)

PV array is expected to produce the following glare for receptors at this location:

- 2,300 minutes of "green" glare with low potential to cause temporary after-image.
  - 987 minutes of "yellow" glare with potential to cause temporary after-image.

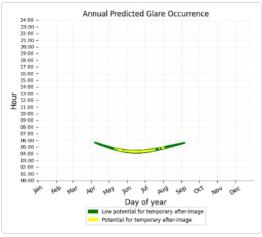


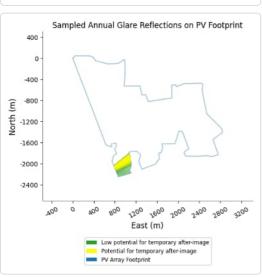


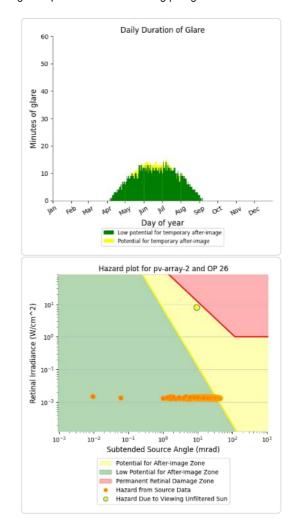


### PV array 2 - OP Receptor (OP 26)

- 1,270 minutes of "green" glare with low potential to cause temporary after-image.
- 105 minutes of "yellow" glare with potential to cause temporary after-image.

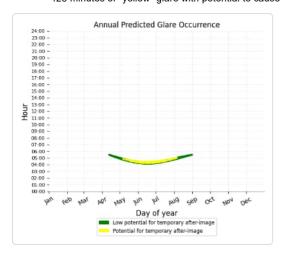


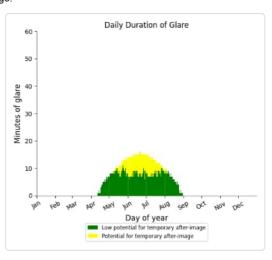


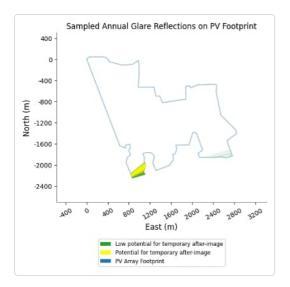


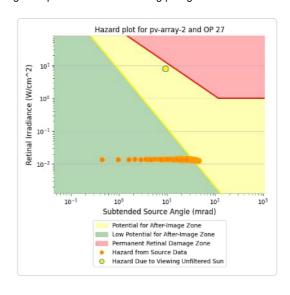
## PV array 2 - OP Receptor (OP 27)

- 995 minutes of "green" glare with low potential to cause temporary after-image.
  425 minutes of "yellow" glare with potential to cause temporary after-image.





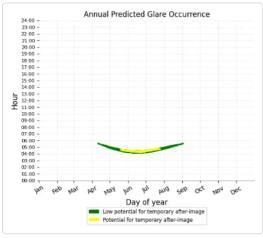


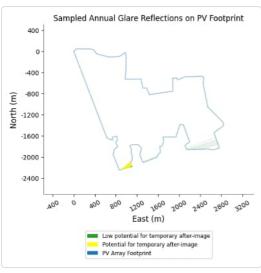


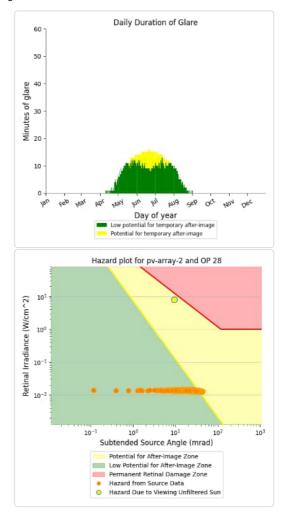
### PV array 2 - OP Receptor (OP 28)

PV array is expected to produce the following glare for receptors at this location:

- 1,082 minutes of "green" glare with low potential to cause temporary after-image.
- 253 minutes of "yellow" glare with potential to cause temporary after-image.

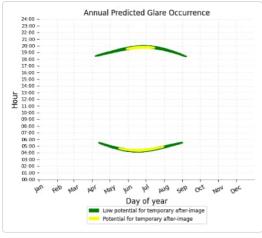


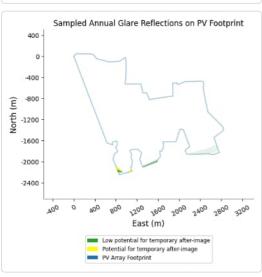


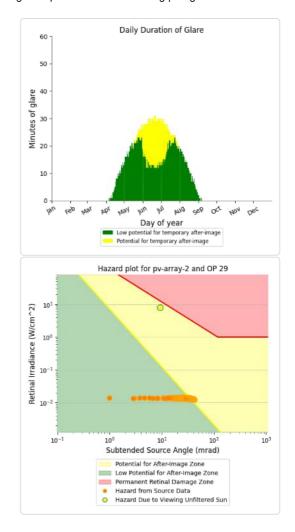


### PV array 2 - OP Receptor (OP 29)

- 2,121 minutes of "green" glare with low potential to cause temporary after-image.
- 722 minutes of "yellow" glare with potential to cause temporary after-image.



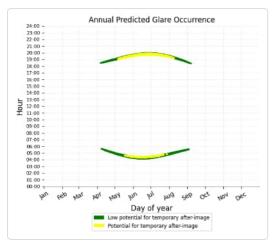


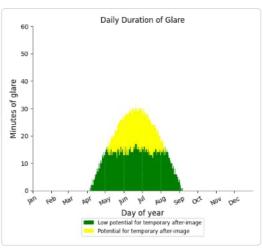


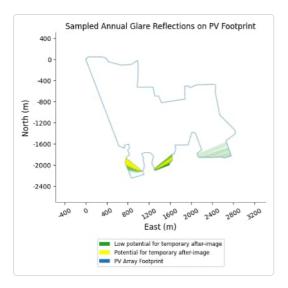
## PV array 2 - OP Receptor (OP 30)

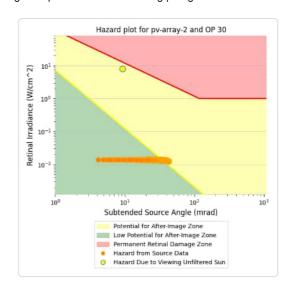
- PV array is expected to produce the following glare for receptors at this location:

   1,833 minutes of "green" glare with low potential to cause temporary after-image.
   1,003 minutes of "yellow" glare with potential to cause temporary after-image.





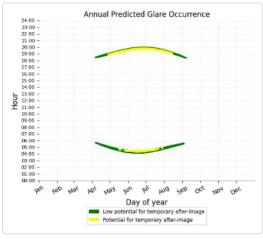


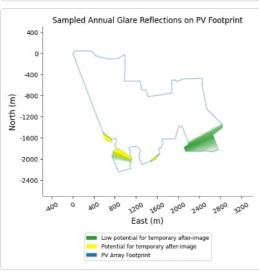


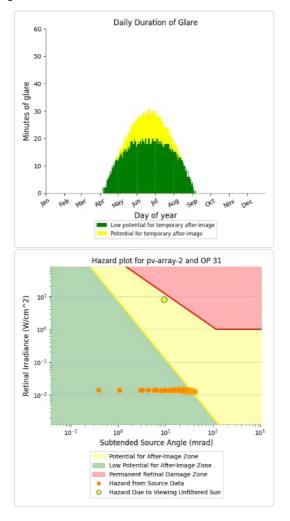
### PV array 2 - OP Receptor (OP 31)

PV array is expected to produce the following glare for receptors at this location:

- 2,133 minutes of "green" glare with low potential to cause temporary after-image.
- 708 minutes of "yellow" glare with potential to cause temporary after-image.

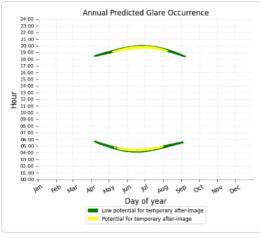


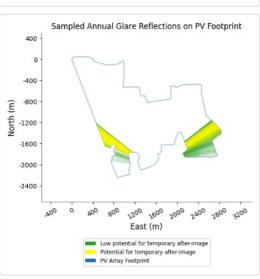


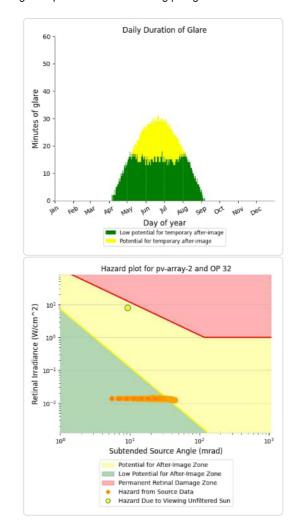


## PV array 2 - OP Receptor (OP 32)

- 1,914 minutes of "green" glare with low potential to cause temporary after-image.
- 927 minutes of "yellow" glare with potential to cause temporary after-image.

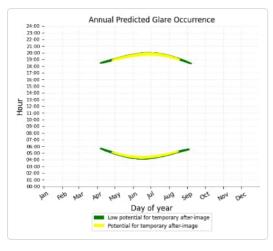


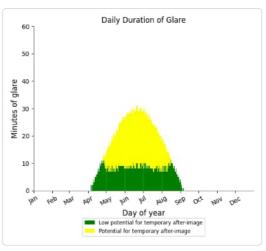


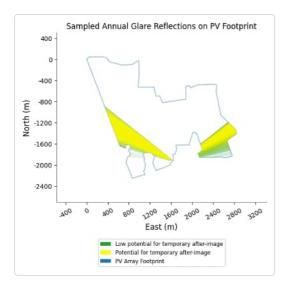


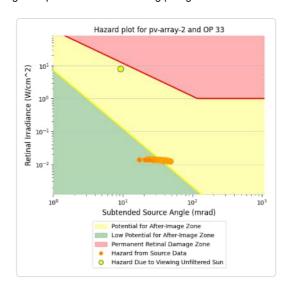
## PV array 2 - OP Receptor (OP 33)

- PV array is expected to produce the following glare for receptors at this location:
   1,183 minutes of "green" glare with low potential to cause temporary after-image.
   1,659 minutes of "yellow" glare with potential to cause temporary after-image.





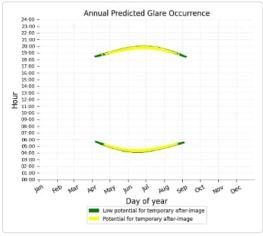


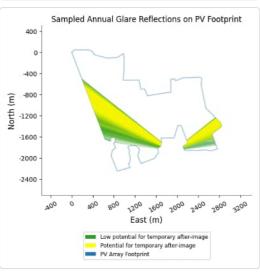


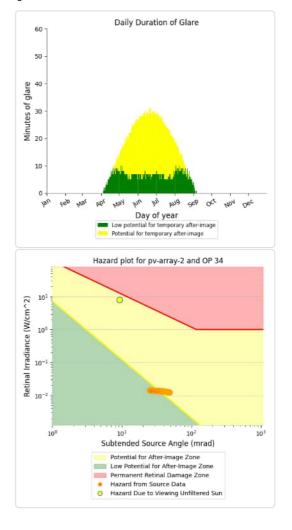
### PV array 2 - OP Receptor (OP 34)

PV array is expected to produce the following glare for receptors at this location:

- 999 minutes of "green" glare with low potential to cause temporary after-image.
  - 1,846 minutes of "yellow" glare with potential to cause temporary after-image.

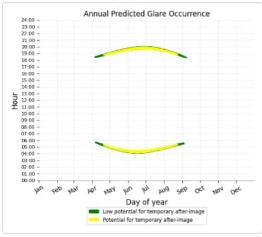


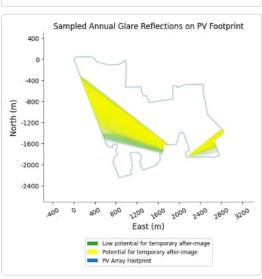


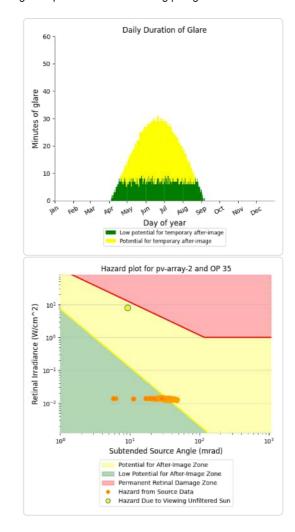


### PV array 2 - OP Receptor (OP 35)

- 992 minutes of "green" glare with low potential to cause temporary after-image.
- 1,860 minutes of "yellow" glare with potential to cause temporary after-image.

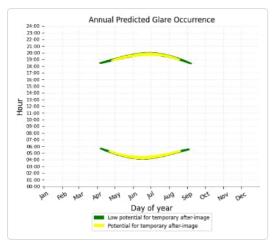


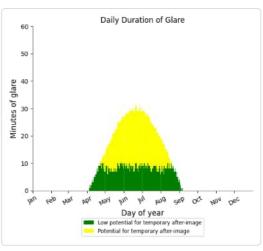


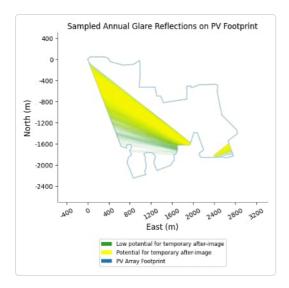


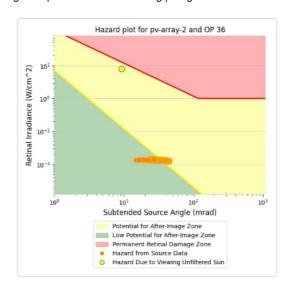
## PV array 2 - OP Receptor (OP 36)

- PV array is expected to produce the following glare for receptors at this location:
   1,186 minutes of "green" glare with low potential to cause temporary after-image.
   1,673 minutes of "yellow" glare with potential to cause temporary after-image.





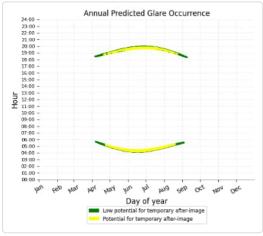


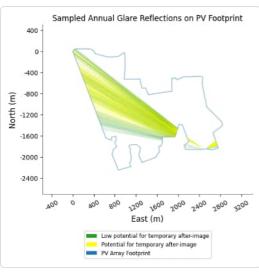


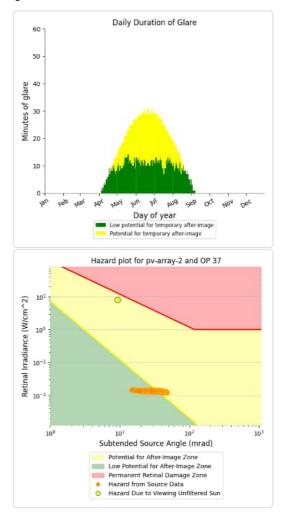
### PV array 2 - OP Receptor (OP 37)

PV array is expected to produce the following glare for receptors at this location:

- 1,445 minutes of "green" glare with low potential to cause temporary after-image.
  1,442 minutes of "yellow" glare with potential to cause temporary after-image.

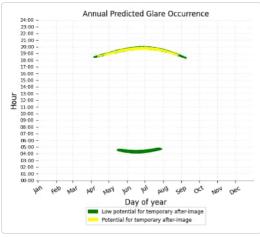


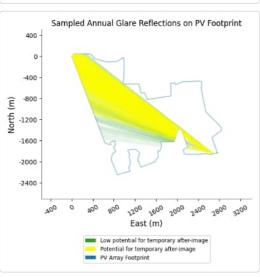


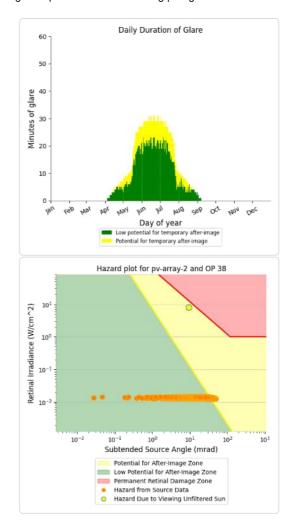


### PV array 2 - OP Receptor (OP 38)

- 1,710 minutes of "green" glare with low potential to cause temporary after-image.
- 735 minutes of "yellow" glare with potential to cause temporary after-image.

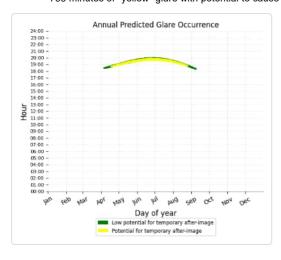


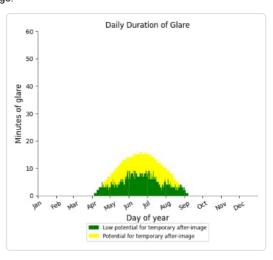


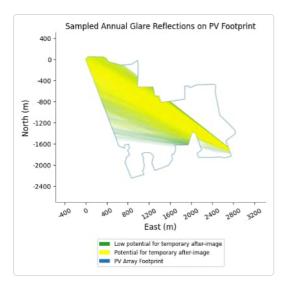


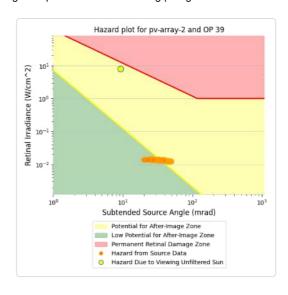
## PV array 2 - OP Receptor (OP 39)

- 749 minutes of "green" glare with low potential to cause temporary after-image.
  753 minutes of "yellow" glare with potential to cause temporary after-image.





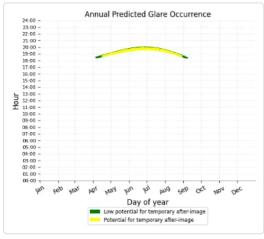


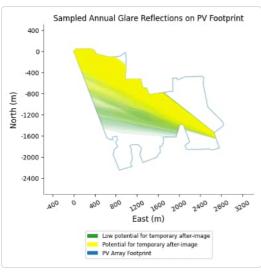


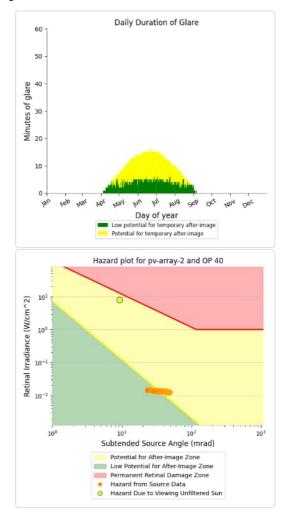
### PV array 2 - OP Receptor (OP 40)

PV array is expected to produce the following glare for receptors at this location:

- 577 minutes of "green" glare with low potential to cause temporary after-image. 919 minutes of "yellow" glare with potential to cause temporary after-image.

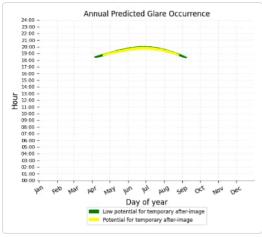


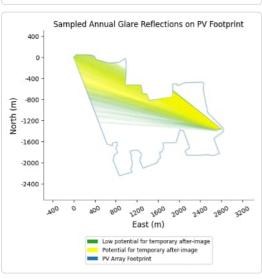


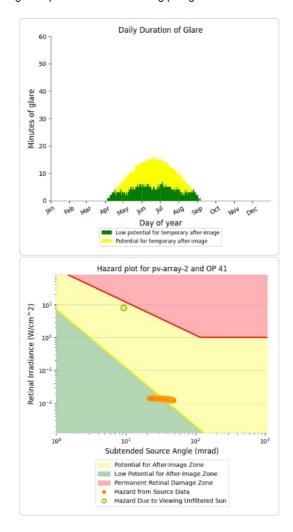


### PV array 2 - OP Receptor (OP 41)

- 604 minutes of "green" glare with low potential to cause temporary after-image. 865 minutes of "yellow" glare with potential to cause temporary after-image.

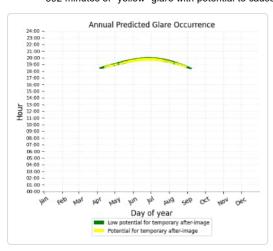


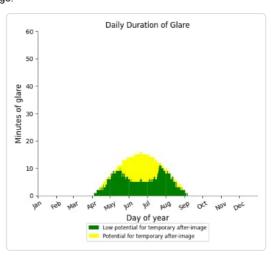


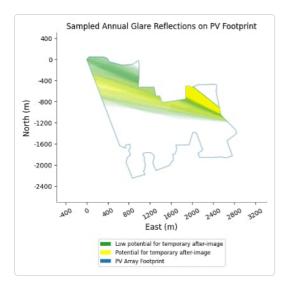


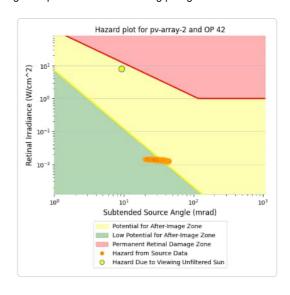
## PV array 2 - OP Receptor (OP 42)

- 879 minutes of "green" glare with low potential to cause temporary after-image.
  592 minutes of "yellow" glare with potential to cause temporary after-image.





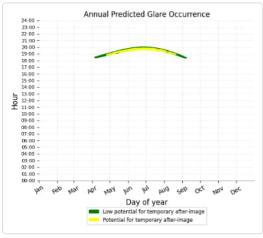


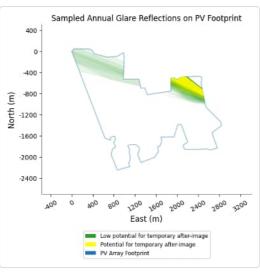


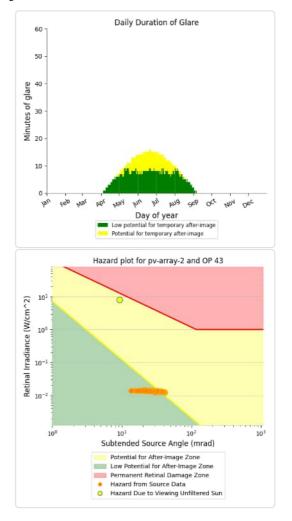
### PV array 2 - OP Receptor (OP 43)

PV array is expected to produce the following glare for receptors at this location:

- 988 minutes of "green" glare with low potential to cause temporary after-image.
   485 minutes of "yellow" glare with potential to cause temporary after-image.

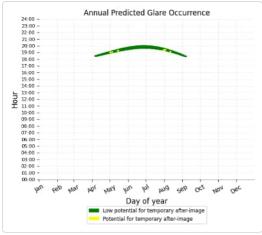


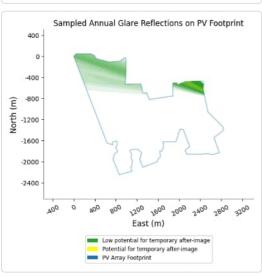


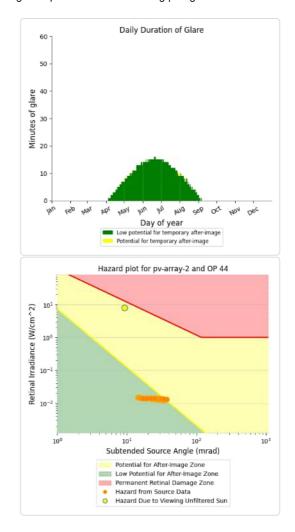


### PV array 2 - OP Receptor (OP 44)

- 1,470 minutes of "green" glare with  $\widetilde{\text{low}}$  potential to cause temporary after-image.
- 9 minutes of "yellow" glare with potential to cause temporary after-image.

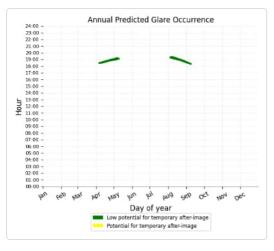


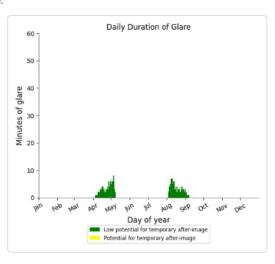


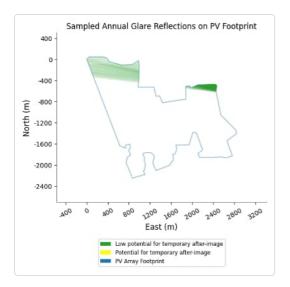


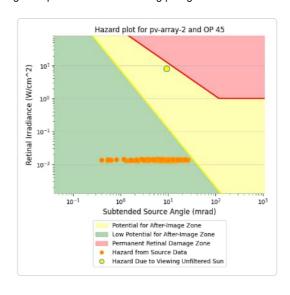
## PV array 2 - OP Receptor (OP 45)

- 245 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





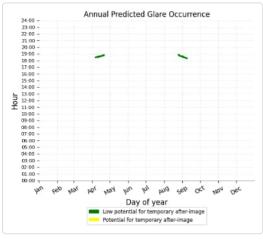


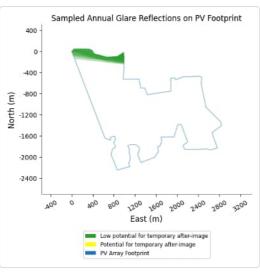


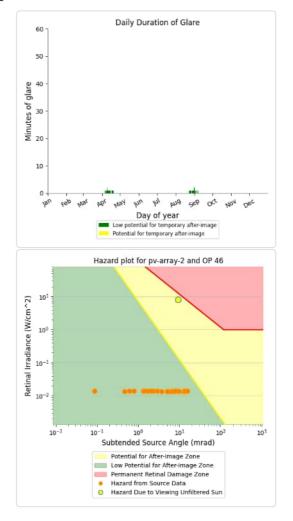
### PV array 2 - OP Receptor (OP 46)

PV array is expected to produce the following glare for receptors at this location:

- 27 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

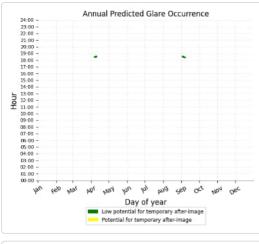


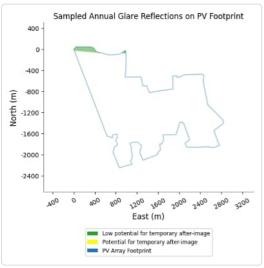


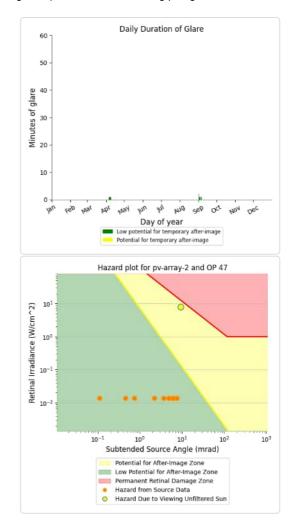


### PV array 2 - OP Receptor (OP 47)

- 9 minutes of "green" glare with low potential to cause temporary after-image.
  0 minutes of "yellow" glare with potential to cause temporary after-image.







**PV array 3** low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	1585	0
OP: OP 9	2081	0
OP: OP 10	2296	0
OP: OP 11	2165	0
OP: OP 12	1728	0
OP: OP 13	1357	0
OP: OP 14	1293	0
OP: OP 15	1022	0
OP: OP 16	859	0
OP: OP 17	552	0
OP: OP 18	258	0
OP: OP 19	0	0
OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	0	0

OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0
OP: OP 27	0	0
OP: OP 28	0	0
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	0	0
OP: OP 38	0	0
OP: OP 39	0	0
OP: OP 40	0	0
OP: OP 41	885	0
OP: OP 42	1252	0
OP: OP 43	1459	0
OP: OP 44	1633	0
OP: OP 45	1701	0
OP: OP 46	1660	0
OP: OP 47	764	0

## PV array 3 - OP Receptor (OP 1)

No glare found

### PV array 3 - OP Receptor (OP 2)

No glare found

### PV array 3 - OP Receptor (OP 3)

No glare found

## PV array 3 - OP Receptor (OP 4)

No glare found

### PV array 3 - OP Receptor (OP 5)

No glare found

#### PV array 3 - OP Receptor (OP 6)

No glare found

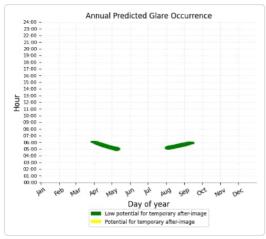
### PV array 3 - OP Receptor (OP 7)

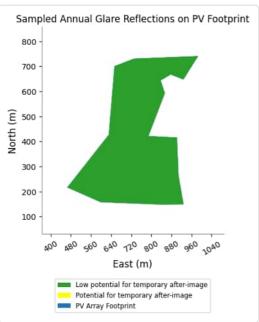
No glare found

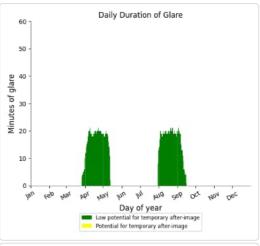
#### PV array 3 - OP Receptor (OP 8)

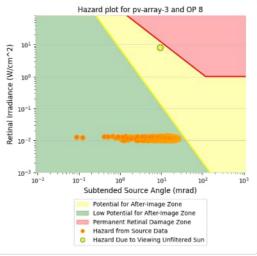
- PV array is expected to produce the following glare for receptors at this location:

   1,585 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.





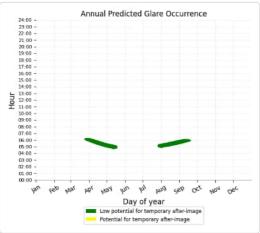


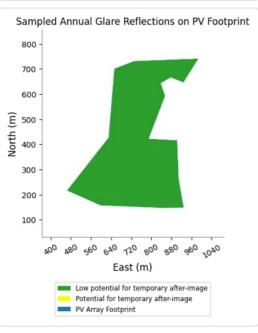


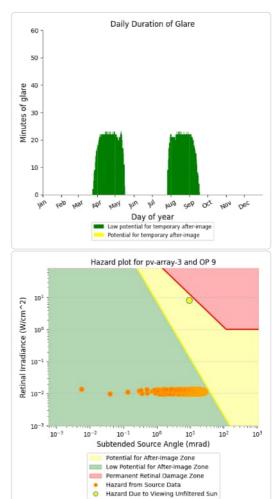
## PV array 3 - OP Receptor (OP 9)

- PV array is expected to produce the following glare for receptors at this location:

   2,081 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.

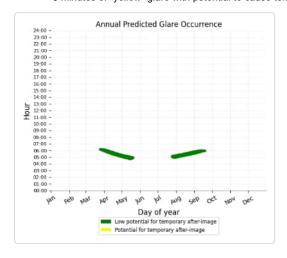


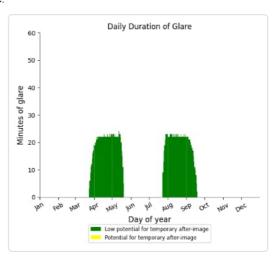


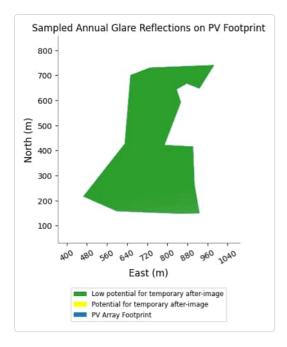


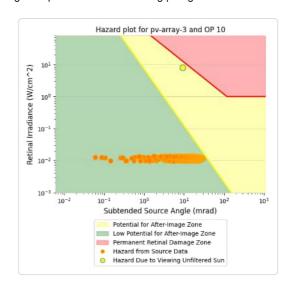
### PV array 3 - OP Receptor (OP 10)

- 2,296 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





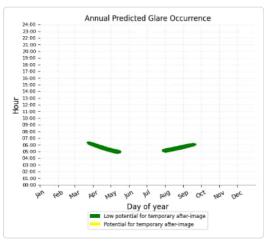


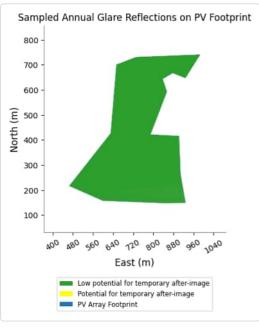


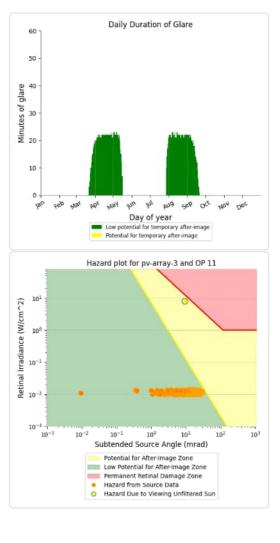
# PV array 3 - OP Receptor (OP 11)

PV array is expected to produce the following glare for receptors at this location:

- 2,165 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.





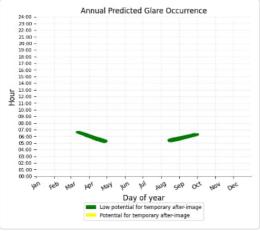


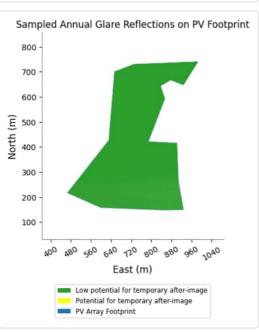
## PV array 3 - OP Receptor (OP 12)

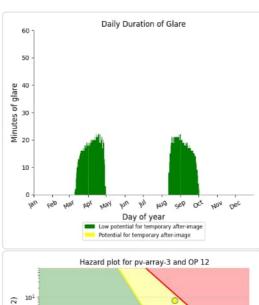
PV array is expected to produce the following glare for receptors at this location:

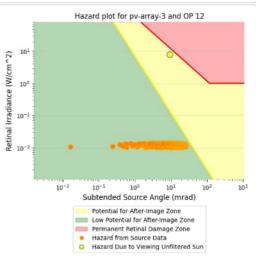
1,728 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.





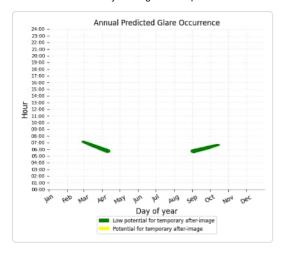


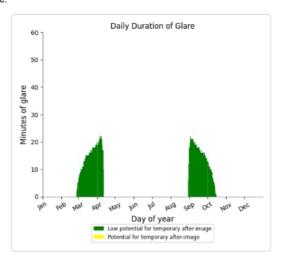


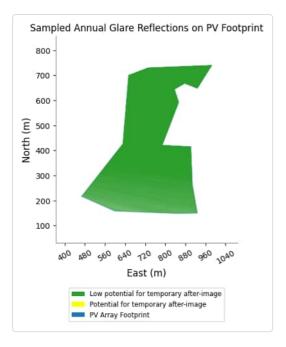
## PV array 3 - OP Receptor (OP 13)

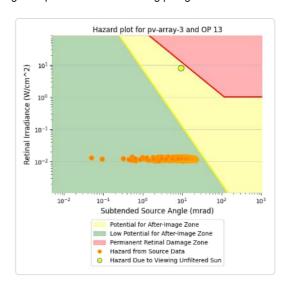
- PV array is expected to produce the following glare for receptors at this location:

   1,357 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.





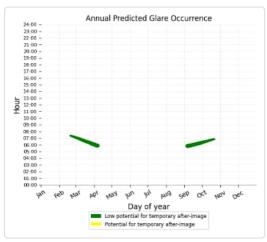


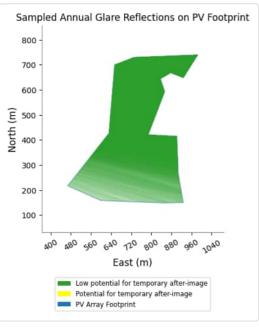


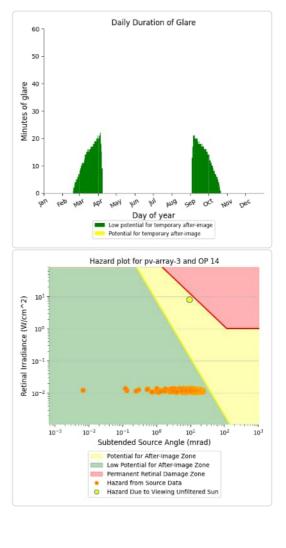
# PV array 3 - OP Receptor (OP 14)

PV array is expected to produce the following glare for receptors at this location:

- 1,293 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.





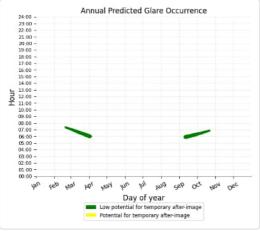


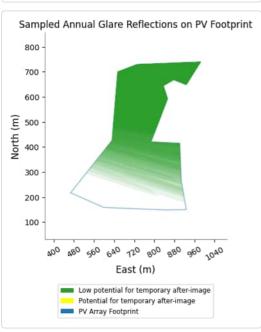
## PV array 3 - OP Receptor (OP 15)

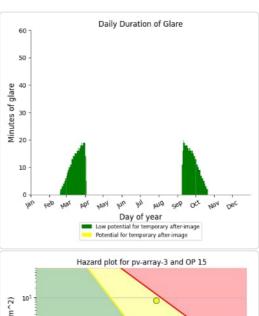
PV array is expected to produce the following glare for receptors at this location:

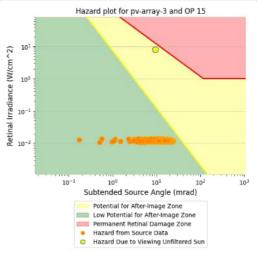
1,022 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.

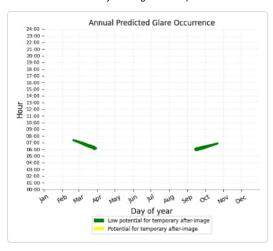


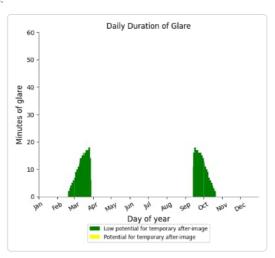


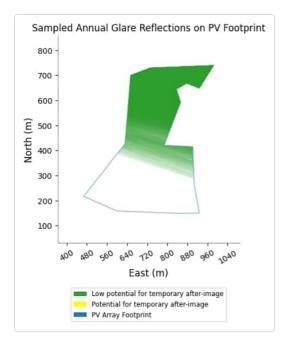


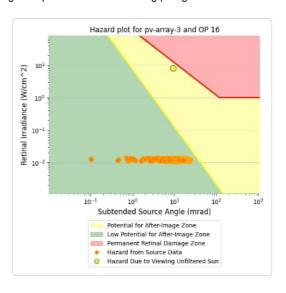


## PV array 3 - OP Receptor (OP 16)







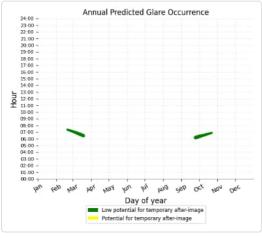


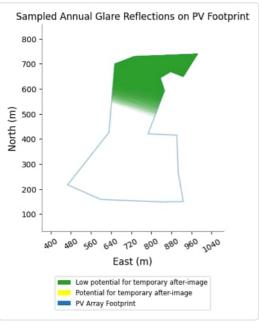
# PV array 3 - OP Receptor (OP 17)

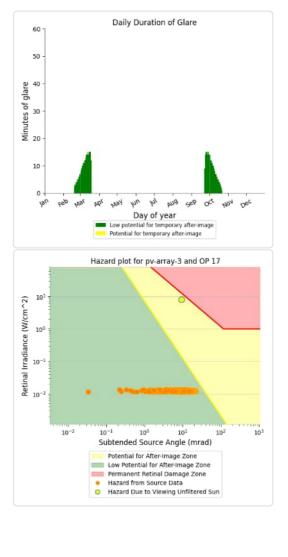
PV array is expected to produce the following glare for receptors at this location:

- 552 minutes of "green" glare with low potential to cause temporary after-image.

  0 minutes of "yellow" glare with potential to cause temporary after-image.





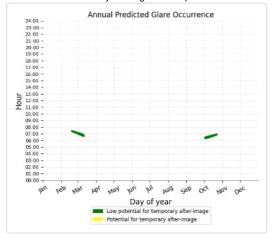


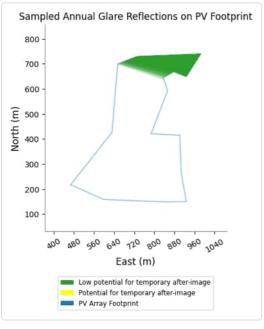
## PV array 3 - OP Receptor (OP 18)

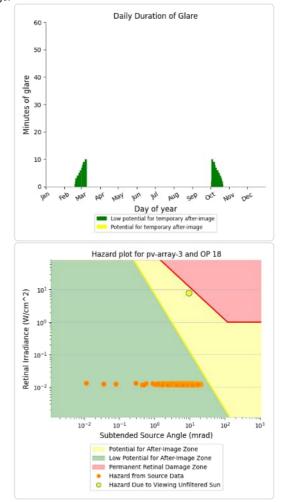
PV array is expected to produce the following glare for receptors at this location:

258 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.







PV array 3 - OP Receptor (OP 19)

No glare found

PV array 3 - OP Receptor (OP 20)

No glare found

PV array 3 - OP Receptor (OP 21)

No glare found

PV array 3 - OP Receptor (OP 22)

No glare found

PV array 3 - OP Receptor (OP 23)

No glare found

PV array 3 - OP Receptor (OP 24)

No glare found

PV array 3 - OP Receptor (OP 25)

No glare found

PV array 3 - OP Receptor (OP 26)

No glare found

PV array 3 - OP Receptor (OP 27)

No glare found

PV array 3 - OP Receptor (OP 28)

No glare found

PV array 3 - OP Receptor (OP 29)

No glare found

PV array 3 - OP Receptor (OP 30)

No glare found

PV array 3 - OP Receptor (OP 31)

No glare found

PV array 3 - OP Receptor (OP 32)

No glare found

PV array 3 - OP Receptor (OP 33)

No glare found

PV array 3 - OP Receptor (OP 34)

No glare found

PV array 3 - OP Receptor (OP 35)

No glare found

PV array 3 - OP Receptor (OP 36)

No glare found

PV array 3 - OP Receptor (OP 37)

No glare found

PV array 3 - OP Receptor (OP 38)

No glare found

PV array 3 - OP Receptor (OP 39)

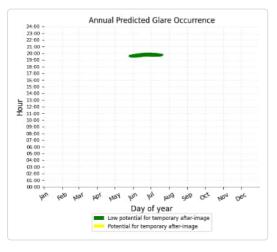
No glare found

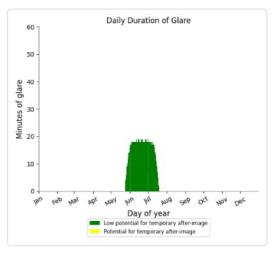
PV array 3 - OP Receptor (OP 40)

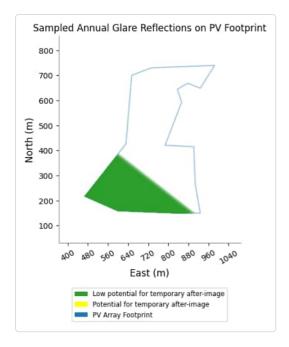
No glare found

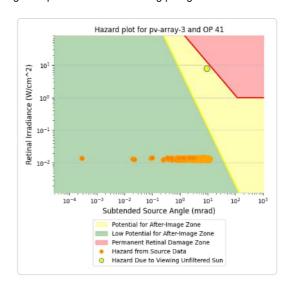
## PV array 3 - OP Receptor (OP 41)

- 885 minutes of "green" glare with low potential to cause temporary after-image. 885 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.





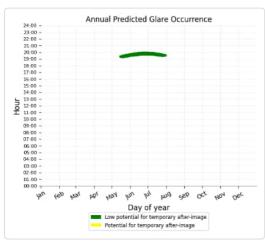


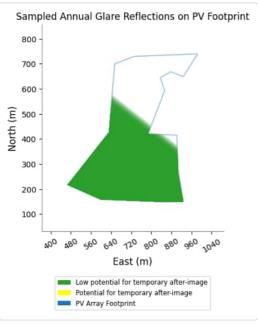


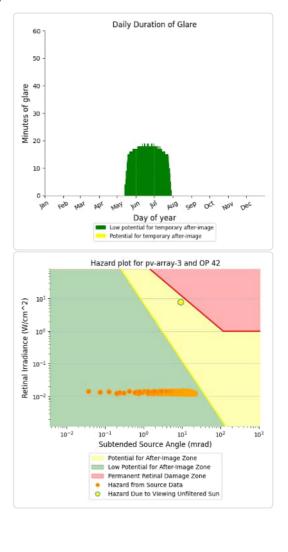
# PV array 3 - OP Receptor (OP 42)

PV array is expected to produce the following glare for receptors at this location:

- 1,252 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.





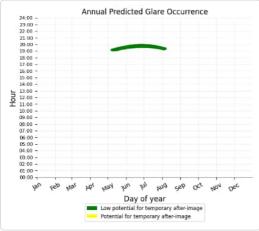


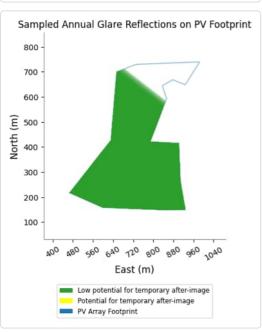
## PV array 3 - OP Receptor (OP 43)

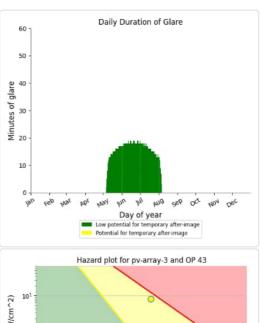
PV array is expected to produce the following glare for receptors at this location:

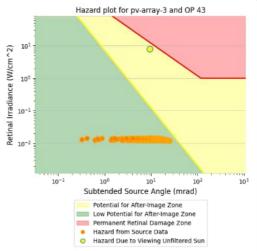
1,459 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.





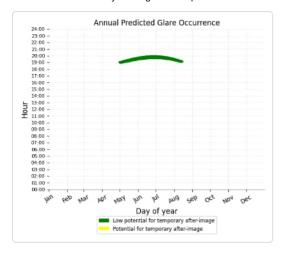


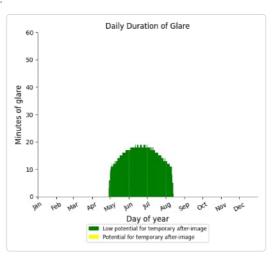


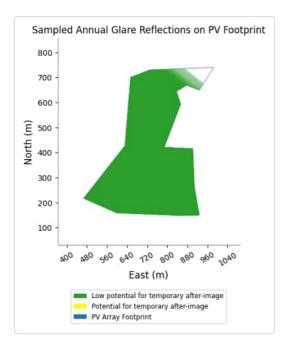
## PV array 3 - OP Receptor (OP 44)

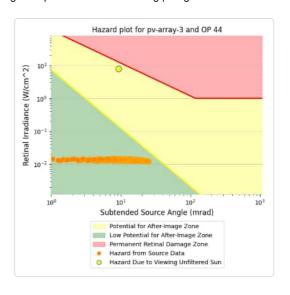
- PV array is expected to produce the following glare for receptors at this location:

   1,633 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.





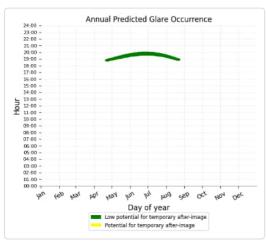


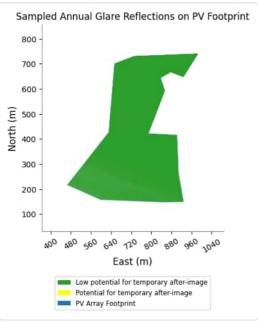


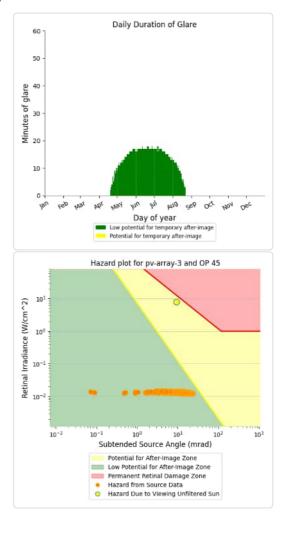
# PV array 3 - OP Receptor (OP 45)

PV array is expected to produce the following glare for receptors at this location:

- 1,701 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.





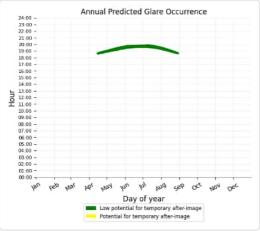


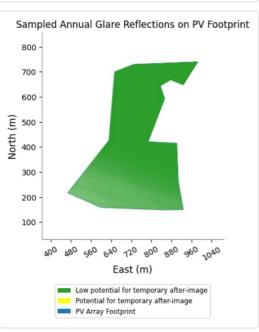
## PV array 3 - OP Receptor (OP 46)

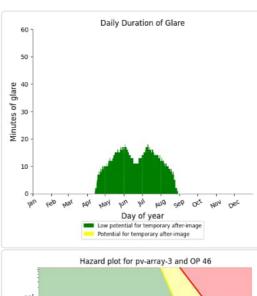
PV array is expected to produce the following glare for receptors at this location:

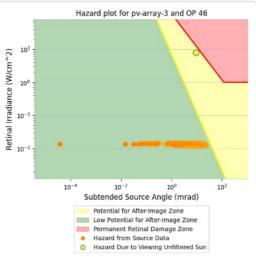
1,660 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.





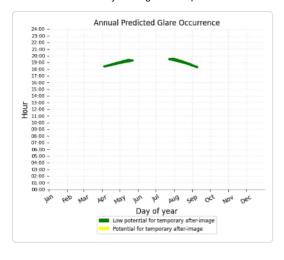


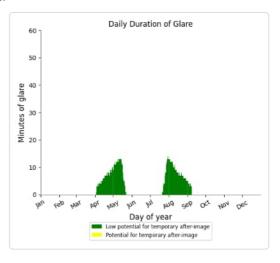


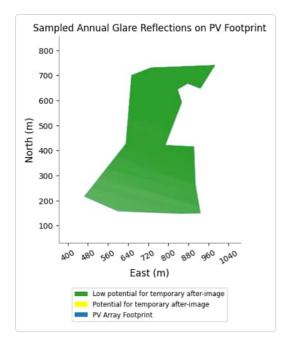
## PV array 3 - OP Receptor (OP 47)

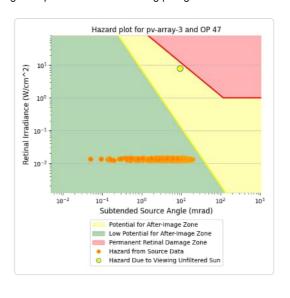
- PV array is expected to produce the following glare for receptors at this location:

   764 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 4 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	860	0
OP: OP 9	1206	0
OP: OP 10	1321	13
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	1283	10
OP: OP 15	0	0
OP: OP 16	1363	70
OP: OP 17	2271	448
OP: OP 18	2270	2769
OP: OP 19	800	78
OP: OP 20	55	0
OP: OP 21	0	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0
OP: OP 27	0	0
OP: OP 28	0	0
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	0
OP: OP 32	0	0

0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
207	0
749	0
1570	0
2046	0
2573	0
	0 0 0 0 0 0 0 0 0 0 0 0 0 207 749 1570 2046

### PV array 4 - OP Receptor (OP 1)

No glare found

### PV array 4 - OP Receptor (OP 2)

No glare found

#### PV array 4 - OP Receptor (OP 3)

No glare found

### PV array 4 - OP Receptor (OP 4)

No glare found

### PV array 4 - OP Receptor (OP 5)

No glare found

### PV array 4 - OP Receptor (OP 6)

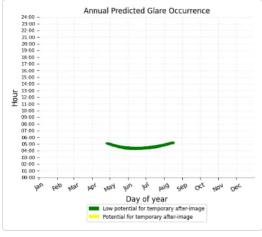
No glare found

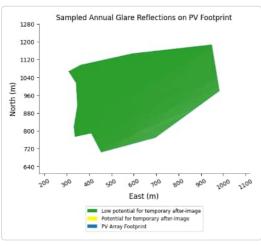
#### PV array 4 - OP Receptor (OP 7)

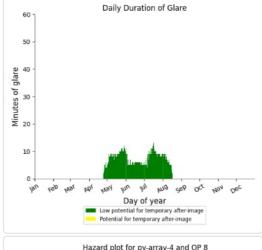
No glare found

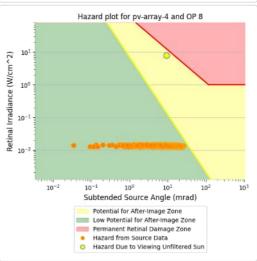
### PV array 4 - OP Receptor (OP 8)

- PV array is expected to produce the following glare for receptors at this location:
   860 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.







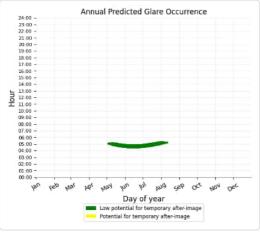


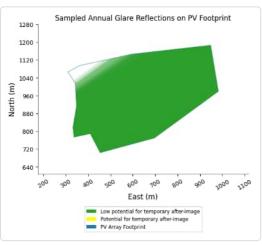
## PV array 4 - OP Receptor (OP 9)

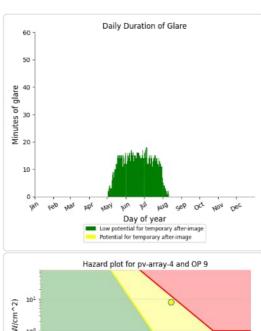
PV array is expected to produce the following glare for receptors at this location:

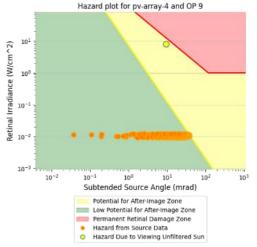
1,206 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.





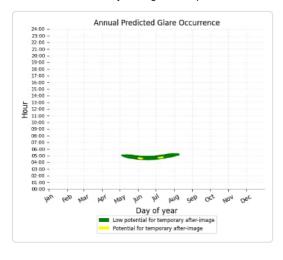


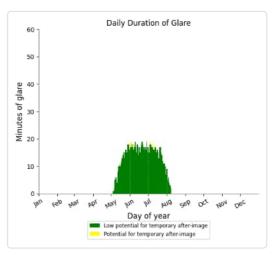


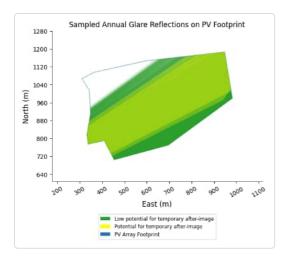
### PV array 4 - OP Receptor (OP 10)

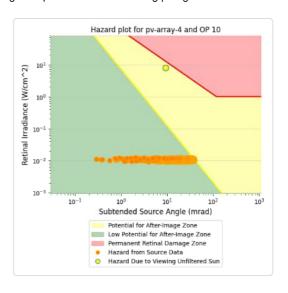
- PV array is expected to produce the following glare for receptors at this location:

   1,321 minutes of "green" glare with low potential to cause temporary after-image. 1,321 minutes of "green" glare with low potential to cause temporary after-image.
  13 minutes of "yellow" glare with potential to cause temporary after-image.









### PV array 4 - OP Receptor (OP 11)

No glare found

### PV array 4 - OP Receptor (OP 12)

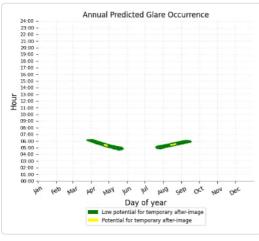
No glare found

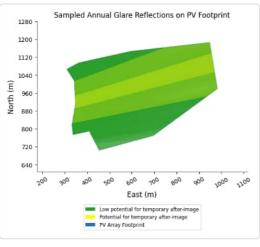
### PV array 4 - OP Receptor (OP 13)

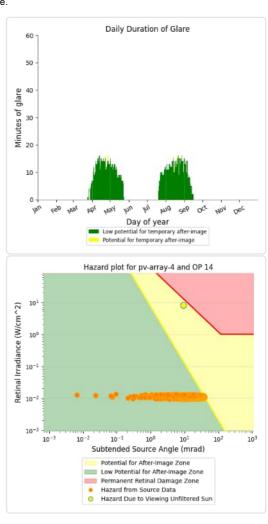
No glare found

### PV array 4 - OP Receptor (OP 14)

- PV array is expected to produce the following glare for receptors at this location:
   1,283 minutes of "green" glare with low potential to cause temporary after-image.
  - 10 minutes of "yellow" glare with potential to cause temporary after-image.







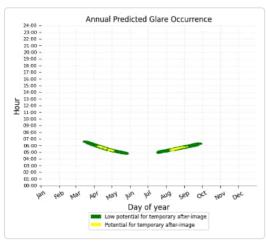
# PV array 4 - OP Receptor (OP 15)

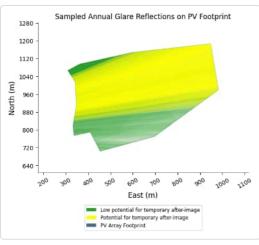
No glare found

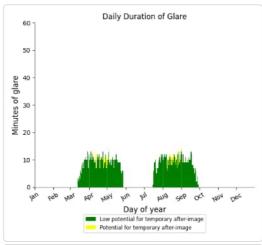
### PV array 4 - OP Receptor (OP 16)

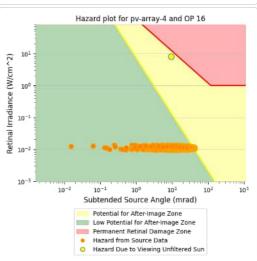
- PV array is expected to produce the following glare for receptors at this location:

   1,363 minutes of "green" glare with low potential to cause temporary after-image.
  - 70 minutes of "yellow" glare with potential to cause temporary after-image.





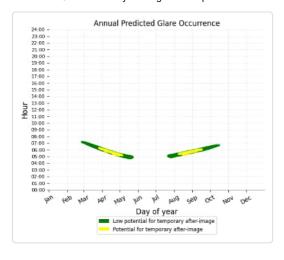


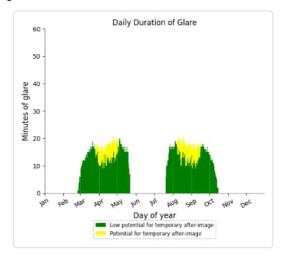


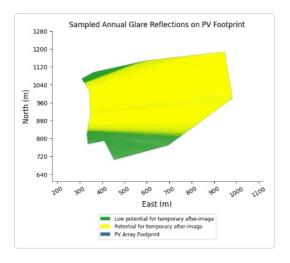
### PV array 4 - OP Receptor (OP 17)

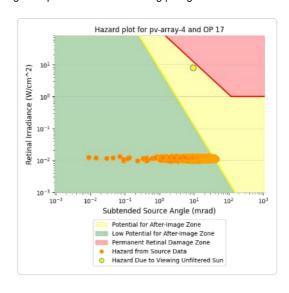
- PV array is expected to produce the following glare for receptors at this location:

   2,271 minutes of "green" glare with low potential to cause temporary after-image.
  - 448 minutes of "yellow" glare with potential to cause temporary after-image.





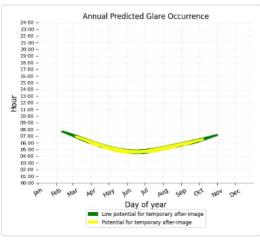


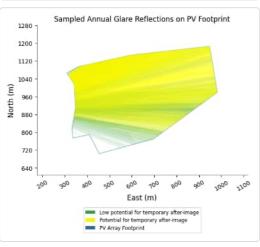


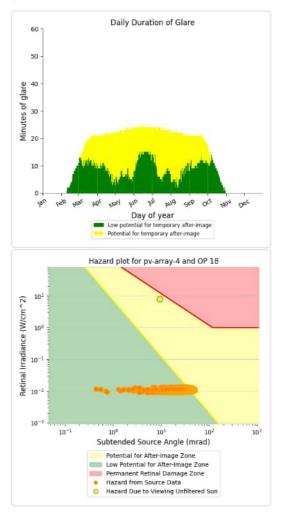
### PV array 4 - OP Receptor (OP 18)

PV array is expected to produce the following glare for receptors at this location:

- 2,270 minutes of "green" glare with low potential to cause temporary after-image.
- 2,769 minutes of "yellow" glare with potential to cause temporary after-image.

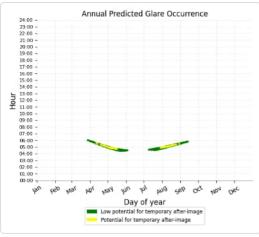


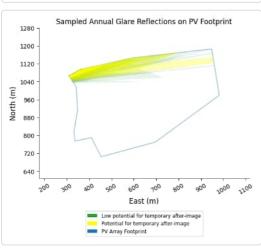


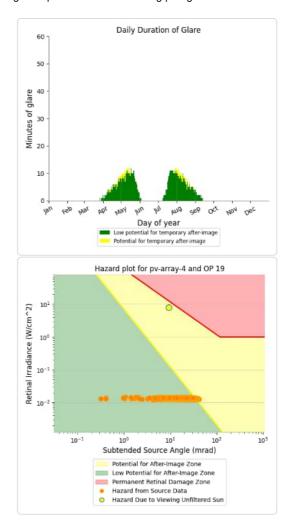


### PV array 4 - OP Receptor (OP 19)

- 800 minutes of "green" glare with low potential to cause temporary after-image.
  78 minutes of "yellow" glare with potential to cause temporary after-image.

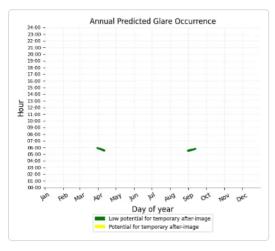


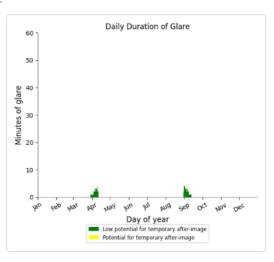


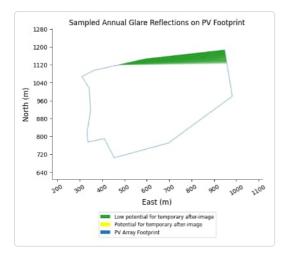


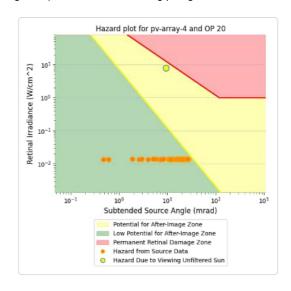
### PV array 4 - OP Receptor (OP 20)

- 55 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 4 - OP Receptor (OP 21)
No glare found

PV array 4 - OP Receptor (OP 22)

No glare found

No glare found

PV array 4 - OP Receptor (OP 23)

PV array 4 - OP Receptor (OP 24)
No glare found

PV array 4 - OP Receptor (OP 25)

No glare found

PV array 4 - OP Receptor (OP 26)
No glare found

PV array 4 - OP Receptor (OP 27)
No glare found

PV array 4 - OP Receptor (OP 28)
No glare found

PV array 4 - OP Receptor (OP 29)
No glare found

PV array 4 - OP Receptor (OP 30)
No glare found

PV array 4 - OP Receptor (OP 31)
No glare found

PV array 4 - OP Receptor (OP 32)

No glare found

PV array 4 - OP Receptor (OP 33)
No glare found

PV array 4 - OP Receptor (OP 34)
No glare found

PV array 4 - OP Receptor (OP 35)

No glare found

### PV array 4 - OP Receptor (OP 36)

No glare found

### PV array 4 - OP Receptor (OP 37)

No glare found

### PV array 4 - OP Receptor (OP 38)

No glare found

### PV array 4 - OP Receptor (OP 39)

No glare found

### PV array 4 - OP Receptor (OP 40)

No glare found

### PV array 4 - OP Receptor (OP 41)

No glare found

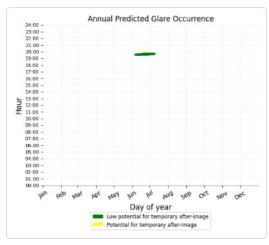
#### PV array 4 - OP Receptor (OP 42)

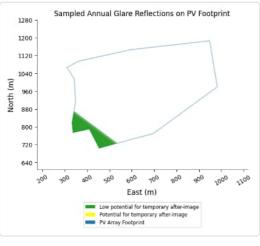
No glare found

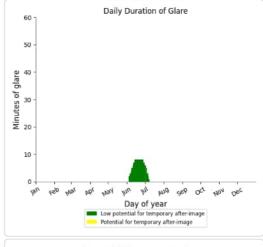
### PV array 4 - OP Receptor (OP 43)

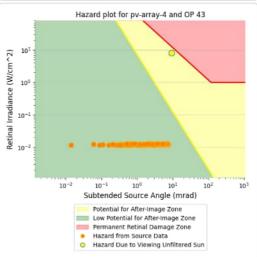
- PV array is expected to produce the following glare for receptors at this location:

   207 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.







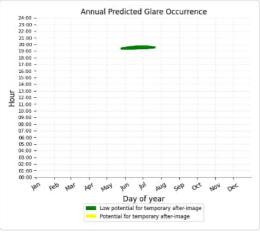


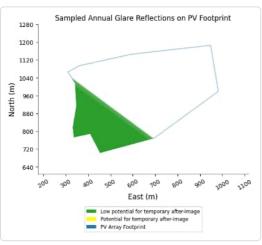
## PV array 4 - OP Receptor (OP 44)

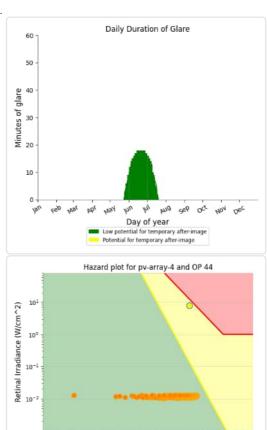
PV array is expected to produce the following glare for receptors at this location:

749 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.







10-2

10-3

10-1

100

Subtended Source Angle (mrad)

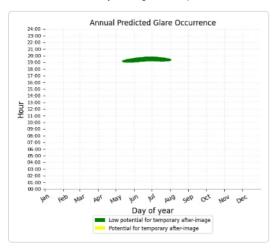
Potential for After-Image Zone
Low Potential for After-Image Zone Permanent Retinal Damage Zone
Hazard from Source Data Hazard Due to Viewing Unfiltered Sun

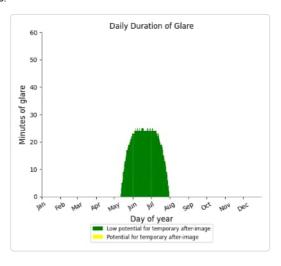
101

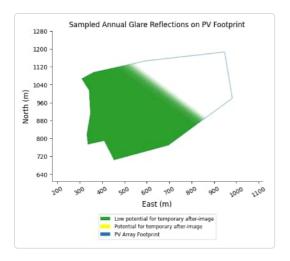
103

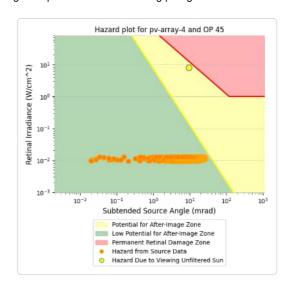
### PV array 4 - OP Receptor (OP 45)

- 1,570 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.





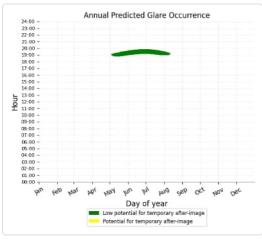


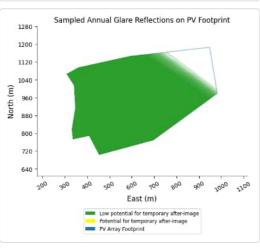


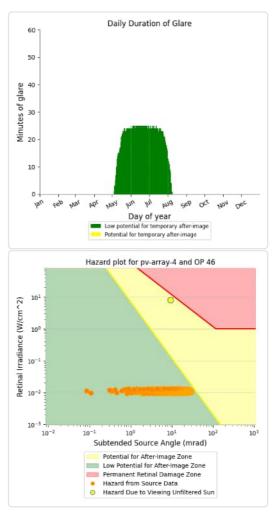
### PV array 4 - OP Receptor (OP 46)

PV array is expected to produce the following glare for receptors at this location:

- 2,046 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



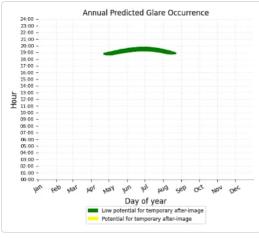


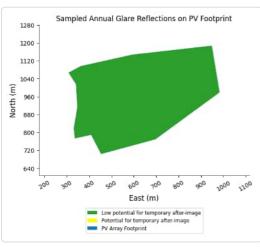


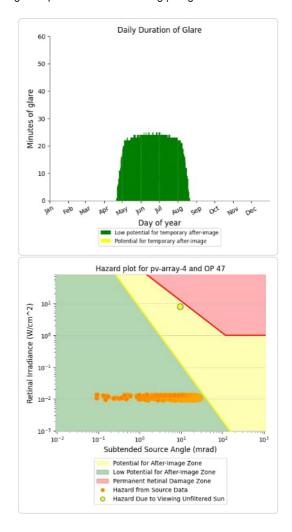
### PV array 4 - OP Receptor (OP 47)

- PV array is expected to produce the following glare for receptors at this location:

   2,573 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.







# **Assumptions**

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not automatically account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and
- geographic obstructions.

  Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response
- time. Actual values and results may vary.

  The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
- Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results fo
- 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.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum,
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Refer to the Help page for detailed assumptions and limitations not listed here.

# ANNEX I: ROAD RECEPTOR GLARE RESULTS 45 DEGREES (49 – 95)



ForgeSolar

# **Gate Burton Solar Farm**

# Gate Burton Road 45 Deg Receptors 49 - 95

Created Jan. 16, 2023 Updated Jan. 16, 2023 Time-step 1 minute Timezone offset UTC0 Site ID 82490.13697

Project type Advanced Project status: active Category 100 MW to 1 GW

### Misc. Analysis Settings

DNI: varies (1,000.0 W/m^2 peak) Ocular transmission coefficient: 0.5 Pupil diameter: 0.002 m Eye focal length: 0.017 m Sun subtended angle: 9.3 mrad PV Analysis Methodology: **Version 2** Enhanced subtended angle calculation: **On** 

# Summary of Results Glare with potential for temporary after-image predicted

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV array 1	45.0	180.0	115,291	35,768	-
PV array 2	45.0	180.0	88,206	95,948	-
PV array 3	45.0	180.0	22,392	0	-
PV array 4	45.0	180.0	18,652	2,683	-

# **Component Data**

## PV Array(s)

Total PV footprint area: 5,141,866 m^2

Name: PV array 1

Footprint area: 1,575,027 m<sup>2</sup> Axis tracking: Fixed (no rotation) Tilt: 45.0 deg Orientation: 180.0 deg

Rated power: -

Panel material: Light textured glass with AR coating Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes Slope error: 9.16 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.360232	-0.740903	25.47	3.50	28.97
2	53.359054	-0.745302	26.80	3.50	30.30
3	53.355391	-0.742813	26.70	3.50	30.20
1	53.356633	-0.739036	24.55	3.50	28.05
5	53.356582	-0.738200	24.70	3.50	28.20
3	53.356159	-0.738007	25.64	3.50	29.14
7	53.352414	-0.737723	29.07	3.50	32.57
3	53.348930	-0.739310	30.73	3.50	34.23
)	53.349007	-0.740297	32.37	3.50	35.87
0	53.349903	-0.742787	34.85	3.50	38.35
1	53.350262	-0.745040	33.09	3.50	36.59
2	53.349301	-0.744439	34.53	3.50	38.03
3	53.346522	-0.744074	28.32	3.50	31.82
4	53.346457	-0.745254	28.89	3.50	32.39
5	53.344613	-0.744589	24.72	3.50	28.22
6	53.344421	-0.745147	24.56	3.50	28.06
7	53.340962	-0.743108	25.60	3.50	29.10
8	53.340219	-0.741263	27.50	3.50	31.00
9	53.340744	-0.738302	29.14	3.50	32.64
0	53.339719	-0.737143	31.13	3.50	34.63
1	53.340321	-0.734976	30.36	3.50	33.86
2	53.340129	-0.730985	23.59	3.50	27.09
3	53.338566	-0.730405	21.87	3.50	25.37
4	53.338220	-0.730749	23.44	3.50	26.94
25	53.337451	-0.730599	20.63	3.50	24.13
26	53.336854	-0.735417	27.26	3.50	30.76
27	53.334932	-0.735009	26.65	3.50	30.15
:8	53.334727	-0.736705	27.93	3.50	31.43
9	53.334009	-0.737220	27.75	3.50	31.25
0	53.333522	-0.739666	29.78	3.50	33.28
31	53.332728	-0.739387	29.42	3.50	32.92
32	53.332612	-0.738593	29.42	3.50	32.92
33	53.332741	-0.736984	27.18	3.50	30.68
34	53.332894	-0.733636	26.64	3.50	30.14
5 5	53.333945	-0.733808		3.50	
36	53.333945		26.55 23.69	3.50	30.05 27.19
		-0.731619			
37	53.332907	-0.730975	23.45	3.50	26.95
38	53.332946	-0.729087	18.94	3.50	22.44
9	53.333035	-0.727907	16.36	3.50	19.86
.0	53.332881	-0.726984	15.63	3.50	19.13
1	53.332984	-0.726062	15.82	3.50	19.32
2	53.333676	-0.725268	15.15	3.50	18.65
3	53.332869	-0.724087	18.22	3.50	21.72
4	53.333304	-0.722371	17.26	3.50	20.76
5	53.334393	-0.722907	13.33	3.50	16.83
6	53.334176	-0.724452	13.94	3.50	17.44
7	53.334944	-0.724924	12.36	3.50	15.86
8	53.336277	-0.725375	12.59	3.50	16.09
9	53.337135	-0.724774	13.00	3.50	16.50
0	53.342818	-0.728465	22.89	3.50	26.39
1	53.342485	-0.730932	25.23	3.50	28.73
2	53.340999	-0.730546	23.29	3.50	26.79
3	53.340948	-0.731405	25.28	3.50	28.78
4	53.341102	-0.732220	25.99	3.50	29.49
5	53.344052	-0.733572	20.61	3.50	24.11
6	53.344744	-0.729516	20.09	3.50	23.59
57	53.345461	-0.730096	21.23	3.50	24.73
58	53.345320	-0.731641	22.66	3.50	26.16
59	53.344923	-0.734130	24.13	3.50	27.63
60	53.345026	-0.735074	24.67	3.50	28.17
1	53.343847	-0.734945	21.36	3.50	24.86
52	53.343719	-0.735868	21.82	3.50	25.32
3	53.344962	-0.736147	23.93	3.50	27.43
			40.00	0.00	

65	53.345487	-0.738357	23.00	3.50	26.50
66	53.345436	-0.736812	23.93	3.50	27.43
67	53.346614	-0.737155	22.17	3.50	25.67
68	53.347024	-0.736511	22.61	3.50	26.11
69	53.347383	-0.736511	23.13	3.50	26.63
70	53.347165	-0.731018	24.74	3.50	28.24
71	53.353620	-0.735181	23.48	3.50	26.98
72	53.354146	-0.736275	22.11	3.50	25.61
73	53.355362	-0.736447	22.00	3.50	25.50
74	53.356950	-0.737434	23.30	3.50	26.80
75	53.356707	-0.738078	24.26	3.50	27.76
76	53.356822	-0.738743	24.00	3.50	27.50

Name: PV array 2 Footprint area: 3,187,456 m^2 Axis tracking: Fixed (no rotation) Tilt: 45.0 deg Orientation: 180.0 deg

Rated power: -Panel material: Light textured glass with AR coating Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes Slope error: 9.16 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation	
	deg	deg	m	m	m	
1	53.353754	-0.734662	23.97	3.50	27.47	
2	53.338935	-0.725169	13.57	3.50	17.07	
3	53.338615	-0.723559	12.00	3.50	15.50	
4	53.339140	-0.723624	12.00	3.50	15.50	
5	53.339294	-0.722401	12.00	3.50	15.50	
6	53.338666	-0.722207	11.79	3.50	15.29	
7	53.338269	-0.722744	12.00	3.50	15.50	
8	53.337500	-0.722165	11.72	3.50	15.22	
9	53.337064	-0.723066	12.31	3.50	15.81	
10	53.336155	-0.723452	13.00	3.50	16.50	
11	53.333515	-0.721671	15.87	3.50	19.37	
12	53.334143	-0.718045	11.00	3.50	14.50	
13	53.334745	-0.718538	11.00	3.50	14.50	
14	53.334950	-0.718152	11.00	3.50	14.50	
15	53.335783	-0.717959	10.14	3.50	13.64	
16	53.336616	-0.718345	9.24	3.50	12.74	
17	53.336975	-0.718216	9.59	3.50	13.09	
18	53.337667	-0.718688	10.61	3.50	14.11	
19	53.337897	-0.717723	10.95	3.50	14.45	
20	53.337859	-0.716392	9.89	3.50	13.39	
21	53.337269	-0.715341	9.24	3.50	12.74	
22	53.336116	-0.715856	9.81	3.50	13.31	
23	53.334809	-0.714955	10.90	3.50	14.40	
24	53.335732	-0.710949	11.21	3.50	14.71	
25	53.336244	-0.710563	11.08	3.50	14.58	
26	53.336552	-0.709983	11.04	3.50	14.54	
27	53.337564	-0.710155	12.22	3.50	15.72	
28	53.337603	-0.709511	12.51	3.50	16.01	
29	53.338410	-0.709061	13.25	3.50	16.75	
30	53.339153	-0.709211	13.80	3.50	17.30	
31	53.339178	-0.705520	14.81	3.50	18.31	
32	53.341318	-0.704426	14.16	3.50	17.66	
33	53.341254	-0.703460	15.00	3.50	18.50	
34	53.338320	-0.701636	14.00	3.50	17.50	
35	53.337731	-0.702967	14.70	3.50	18.20	
36	53.337052	-0.702516	14.29	3.50	17.79	
37	53.337039	-0.698825	16.56	3.50	20.06	
38	53.337128	-0.696336	19.06	3.50	22.56	
39	53.336962	-0.695049	20.32	3.50	23.82	
40	53.337295	-0.693182	19.41	3.50	22.91	
41	53.339883	-0.694727	14.00	3.50	17.50	
12	53.341087	-0.692023	13.00	3.50	16.50	
43	53.341664	-0.692023		3.50	16.50	
+3 44	53.344277	-0.692109	13.00	3.50	15.50	
<del>14</del> 45				3.50	16.58	
45 46	53.348287	-0.697817 -0.697602	13.08	3.50	17.52	
46 47	53.349350 53.349516	-0.698224	14.02			
				3.50	17.50	
48 40	53.349427	-0.702924	17.52	3.50	21.02	
49	53.348914	-0.705091	17.98	3.50	21.48	
50	53.349222	-0.705305	18.00	3.50	21.50	
51	53.349183	-0.706464	18.00	3.50	21.50	
52	53.346980	-0.706421	17.00	3.50	20.50	
53	53.346378	-0.713138	13.88	3.50	17.38	
54	53.347505	-0.713910	14.28	3.50	17.78	
55	53.347505	-0.714983	14.25	3.50	17.75	
56	53.349030	-0.715498	16.00	3.50	19.50	
57	53.349004	-0.720004	22.46	3.50	25.96	
58	53.350848	-0.719789	21.00	3.50	24.50	
59	53.352872	-0.719747	19.04	3.50	22.54	
60	53.353564	-0.719918	18.54	3.50	22.04	
61	53.352898	-0.721678	18.21	3.50	21.71	
62	53.352782	-0.724574	17.76	3.50	21.26	
63	53.353359	-0.728244	19.54	3.50	23.04	
	53.353961	-0.728887	19.19	3.50	22.69	

65	53.354166	-0.729746	19.36	3.50	22.86
66	53.354179	-0.734016	22.69	3.50	26.19

Name: PV array 3 Footprint area: 162,560 m^2 Axis tracking: Fixed (no rotation) Tilt: 45.0 deg Orientation: 180.0 deg

Rated power: -

Panel material: Light textured glass with AR coating Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes Slope error: 9.16 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.355703	-0.727643	18.87	3.50	22.37
2	53.355177	-0.725669	17.24	3.50	20.74
3	53.355088	-0.721935	18.98	3.50	22.48
4	53.355101	-0.720734	21.71	3.50	25.21
5	53.356125	-0.721034	21.89	3.50	25.39
6	53.357483	-0.721120	19.10	3.50	22.60
7	53.357534	-0.722836	18.29	3.50	21.79
8	53.359083	-0.721849	18.14	3.50	21.64
9	53.359544	-0.722107	16.73	3.50	20.23
10	53.359762	-0.721485	16.64	3.50	20.14
11	53.359583	-0.720734	17.67	3.50	21.17
12	53.360402	-0.719875	17.29	3.50	20.79
13	53.360313	-0.723673	16.00	3.50	19.50
14	53.360044	-0.724832	16.19	3.50	19.69
15	53.357585	-0.725175	17.45	3.50	20.95

Name: PV array 4 Footprint area: 216,824 m^2 Axis tracking: Fixed (no rotation)

Tilt: 45.0 deg Orientation: 180.0 deg

Rated power: -

Panel material: Light textured glass with AR coating

Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes

Slope error: 9.16 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.360082	-0.727836	17.00	3.50	20.50
2	53.360851	-0.728501	17.37	3.50	20.87
3	53.360710	-0.729596	18.17	3.50	21.67
4	53.361107	-0.729660	18.75	3.50	22.25
5	53.361952	-0.729424	19.00	3.50	22.50
6	53.362874	-0.729510	19.31	3.50	22.81
7	53.363335	-0.730003	20.12	3.50	23.62
8	53.363591	-0.729209	19.64	3.50	23.14
9	53.364052	-0.725733	17.95	3.50	21.45
10	53.364410	-0.720433	15.80	3.50	19.30
11	53.362554	-0.719918	16.00	3.50	19.50
12	53.360671	-0.724210	16.71	3.50	20.21

# **Discrete Observation Receptors**

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation	
	deg	deg	m	m	m	
OP 1	53.334394	-0.744587	20.12	1.50	21.62	
OP 2	53.333151	-0.743235	16.65	1.50	18.15	
OP 3	53.331511	-0.742592	13.33	1.50	14.83	
OP 4	53.329640	-0.741488	14.08	1.50	15.58	
OP 5	53.328076	-0.740479	12.84	1.50	14.34	
OP 6	53.326231	-0.740372	9.77	1.50	11.27	
OP 7	53.328243	-0.738419	21.55	1.50	23.05	
OP 8	53.353350	-0.754385	20.13	1.50	21.63	
OP 9	53.353753	-0.751020	28.27	1.50	29.77	
OP 10	53.354144	-0.748177	27.40	1.50	28.90	
OP 11	53.354810	-0.746814	25.85	1.50	27.35	
OP 12	53.356315	-0.747909	24.24	1.50	25.74	
OP 13	53.358530	-0.747973	25.67	1.50	27.17	
OP 14	53.359260	-0.745570	28.49	1.50	29.99	
OP 15	53.359945	-0.742201	25.06	1.50	26.56	
OP 16	53.360566	-0.740162	26.00	1.50	27.50	
OP 17	53.361482	-0.737330	25.92	1.50	27.42	
OP 18	53.361956	-0.733135	24.68	1.50	26.18	
OP 19	53.363031	-0.730957	21.83	1.50	23.33	
OP 20	53.363780	-0.728951	19.47	1.50	20.97	
OP 21	53.364408	-0.725593	18.11	1.50	19.61	
OP 22	53.332106	-0.740618	24.28	1.50	25.78	
OP 23	53.332452	-0.737699	29.34	1.50	30.84	
OP 24	53.332618	-0.734524	27.00	1.50	28.50	
OP 25	53.332708	-0.731434	24.92	1.50	26.42	
OP 26	53.332759	-0.728751	18.54	1.50	20.04	
OP 27	53.332631	-0.725662	16.91	1.50	18.41	
OP 28	53.332939	-0.722550	18.63	1.50	20.13	
OP 29	53.333643	-0.719847	14.71	1.50	16.21	
OP 30	53.334130	-0.717250	11.00	1.50	12.50	
OP 31	53.334694	-0.714160	11.25	1.50	12.75	
OP 32	53.335335	-0.711821	11.80	1.50	13.30	
OP 33	53.336065	-0.709096	12.30	1.50	13.80	
OP 34	53.336885	-0.705856	12.54	1.50	14.04	
OP 35	53.336911	-0.702863	14.49	1.50	15.99	
OP 36	53.336911	-0.699784	15.49	1.50	16.99	
OP 36 OP 37	53.337020	-0.697005	18.25	1.50	19.75	
OP 38	53.337013	-0.693947	20.22	1.50	21.72	
OP 39	53.337481	-0.691286 -0.691404	17.51	1.50	19.01	
OP 40			17.00	1.50	18.50	
OP 41	53.340908	-0.691297	13.00	1.50	14.50	
OP 42	53.342825	-0.691110	14.13	1.50	15.63	
OP 43	53.344382	-0.691088	15.62	1.50	17.12	
OP 44	53.346137	-0.691603	17.69	1.50	19.19	
OP 45	53.347649	-0.690053	22.96	1.50	24.46	
OP 46	53.349532	-0.690374	22.58	1.50	24.08	
OP 47	53.351044	-0.686126	18.19	1.50	19.69	

# **Summary of PV Glare Analysis**

PV configuration and total predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	45.0	180.0	115,291	35,768	-	-
PV array 2	45.0	180.0	88,206	95,948	-	-
PV array 3	45.0	180.0	22,392	0	-	-
PV array 4	45.0	180.0	18,652	2,683	-	-

### Distinct glare per month

Excludes overlapping glare from PV array for multiple receptors at matching time(s)

PV         Jan         Feb         Mar         Apr         May         Jun         Jul         Aug         Sep           pv-array-1 (green)         0         0         586         1625         2627         3616         3056         1984         1159           pv-array-1 (yellow)         0         0         14         1139         881         25         387         1345         296           pv-array-2 (green)         0         0         254         1056         1856         2469         2223         1225         640           pv-array-2 (yellow)         0         0         16         991         2149         2367         2335         1558         183           pv-array-3 (green)         0         0         236         1052         1005         668         794         1247         514           pv-array-3 (yellow)         0						
pv-array-1 (yellow)         0         0         14         1139         881         25         387         1345         296           pv-array-2 (green)         0         0         254         1056         1856         2469         2223         1225         640           pv-array-2 (yellow)         0         0         16         991         2149         2367         2335         1558         183           pv-array-3 (green)         0         0         236         1052         1005         668         794         1247         514           pv-array-3 (yellow)         0         0         0         0         0         0         0         0           pv-array-4 (green)         0         0         117         561         1627         1874         1814         993         254	p Oct	Sep	Sep	Oct	Nov	Dec
pv-array-2 (green)         0         0         254         1056         1856         2469         2223         1225         640           pv-array-2 (yellow)         0         0         16         991         2149         2367         2335         1558         183           pv-array-3 (green)         0         0         236         1052         1005         668         794         1247         514           pv-array-3 (yellow)         0         0         0         0         0         0         0         0           pv-array-4 (green)         0         0         117         561         1627         1874         1814         993         254	59 0	1159	1159	0	0	0
pv-array-2 (yellow)       0       0       16       991       2149       2367       2335       1558       183         pv-array-3 (green)       0       0       236       1052       1005       668       794       1247       514         pv-array-3 (yellow)       0       0       0       0       0       0       0       0       0         pv-array-4 (green)       0       0       117       561       1627       1874       1814       993       254	6 0	296	296	0	0	0
pv-array-3 (green)       0       0       236       1052       1005       668       794       1247       514         pv-array-3 (yellow)       0       0       0       0       0       0       0       0       0         pv-array-4 (green)       0       0       117       561       1627       1874       1814       993       254	0 0	640	640	0	0	0
pv-array-3 (yellow)       0       0       0       0       0       0       0       0       0       0         pv-array-4 (green)       0       0       117       561       1627       1874       1814       993       254	3 0	183	183	0	0	0
pv-array-4 (green) 0 0 117 561 1627 1874 1814 993 254	4 0	514	514	0	0	0
	0	0	0	0	0	0
py-array-4 (yellow) 0 0 180 587 221 0 93 444 429	64 0	254	254	0	0	0
p. aa, . (ja.)	9 0	429	429	0	0	0

# **PV & Receptor Analysis Results**

Results for each PV array and receptor

## PV array 1 potential temporary after-image

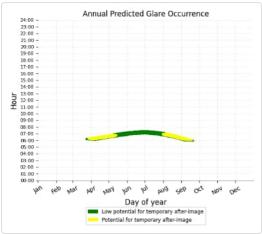
Component	Green glare (min)	Yellow glare (min)
OP: OP 1	2262	1496
OP: OP 2	2139	2412
OP: OP 3	1817	2872
OP: OP 4	2666	0
OP: OP 5	1549	0
OP: OP 6	9	0
OP: OP 7	636	0
OP: OP 8	3905	0
OP: OP 9	3442	0
OP: OP 10	3525	0
OP: OP 11	3164	797
OP: OP 12	2113	2303
OP: OP 13	1183	1666
OP: OP 14	854	1074
OP: OP 15	1719	2089
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0

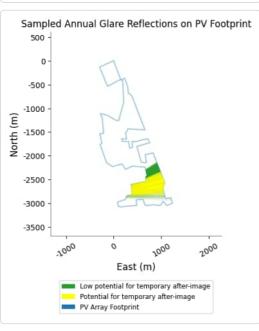
OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	1651	2501
OP: OP 23	7970	1158
OP: OP 24	7201	2634
OP: OP 25	6804	2704
OP: OP 26	3493	5435
OP: OP 27	3638	3046
OP: OP 28	4422	1662
OP: OP 29	9	0
OP: OP 30	2146	557
OP: OP 31	35	0
OP: OP 32	2740	147
OP: OP 33	3004	210
OP: OP 34	2818	116
OP: OP 35	3091	132
OP: OP 36	3352	205
OP: OP 37	3525	216
OP: OP 38	3577	181
OP: OP 39	3648	86
OP: OP 40	3557	69
OP: OP 41	3516	0
OP: OP 42	3425	0
OP: OP 43	2704	0
OP: OP 44	2617	0
OP: OP 45	2119	0
OP: OP 46	1820	0
OP: OP 47	1426	0

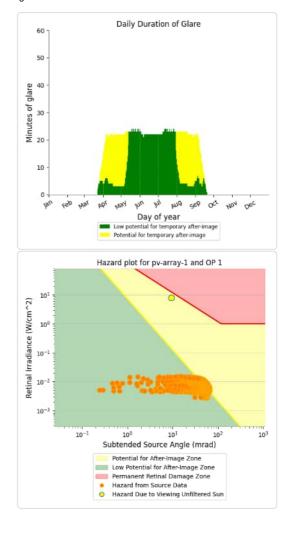
#### PV array 1 - OP Receptor (OP 1)

PV array is expected to produce the following glare for receptors at this location:

- 2,262 minutes of "green" glare with low potential to cause temporary after-image.
  1,496 minutes of "yellow" glare with potential to cause temporary after-image.

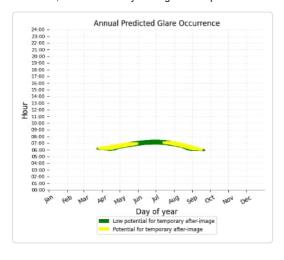


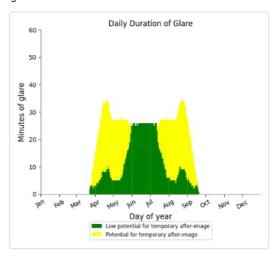


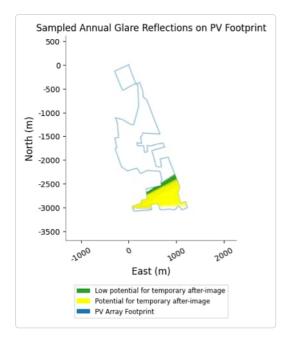


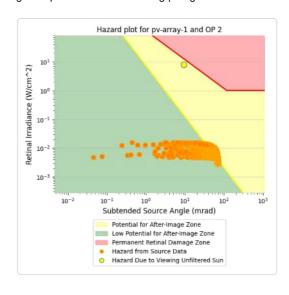
### PV array 1 - OP Receptor (OP 2)

- 2,139 minutes of "green" glare with low potential to cause temporary after-image. 2,412 minutes of "yellow" glare with potential to cause temporary after-image.





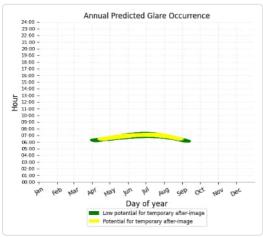


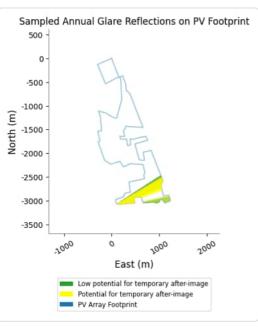


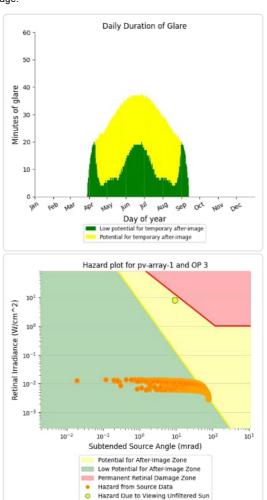
# PV array 1 - OP Receptor (OP 3)

- PV array is expected to produce the following glare for receptors at this location:

   1,817 minutes of "green" glare with low potential to cause temporary after-image.
   2,872 minutes of "yellow" glare with potential to cause temporary after-image.





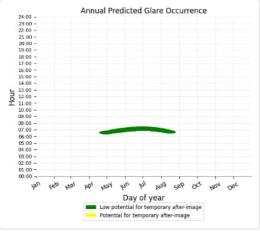


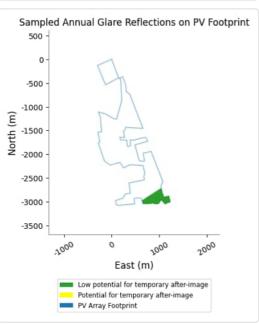
### PV array 1 - OP Receptor (OP 4)

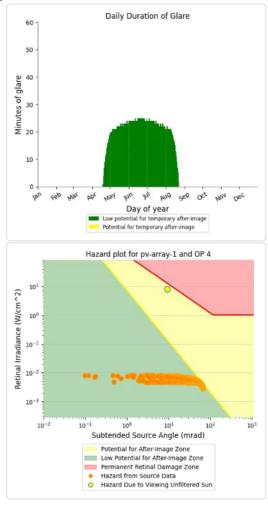
PV array is expected to produce the following glare for receptors at this location:

• 2,666 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.

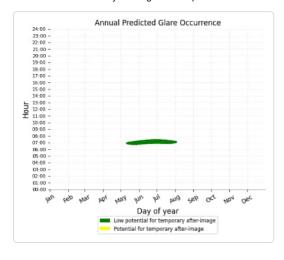


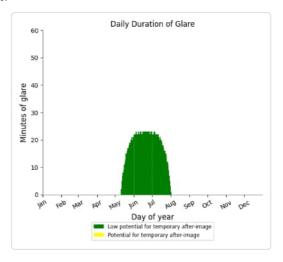


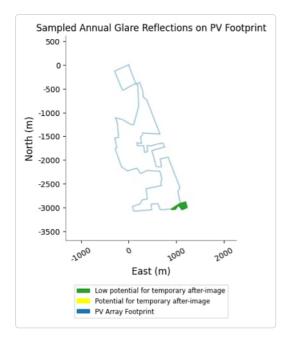


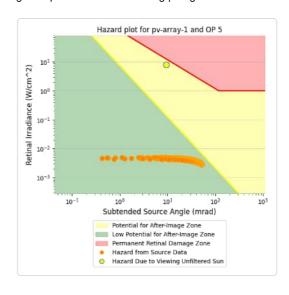
### PV array 1 - OP Receptor (OP 5)

- 1,549 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



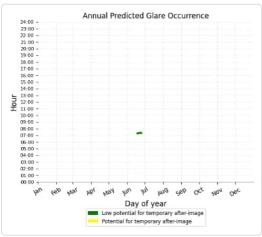


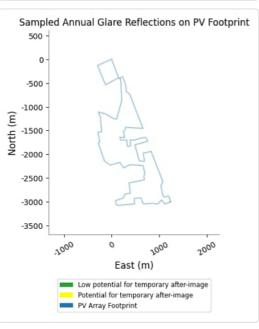


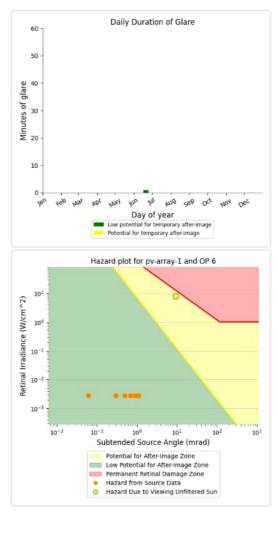


## PV array 1 - OP Receptor (OP 6)

PV array is expected to produce the following glare for receptors at this location:
 9 minutes of "green" glare with low potential to cause temporary after-image.
 0 minutes of "yellow" glare with potential to cause temporary after-image.





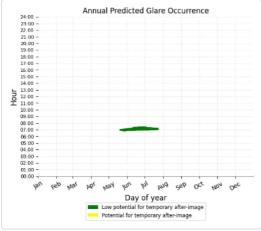


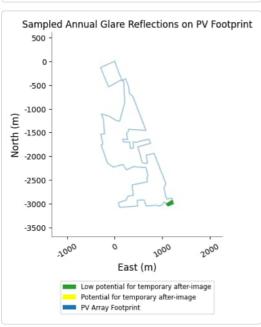
### PV array 1 - OP Receptor (OP 7)

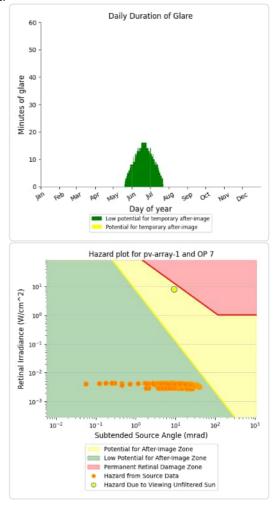
PV array is expected to produce the following glare for receptors at this location:

• 636 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.

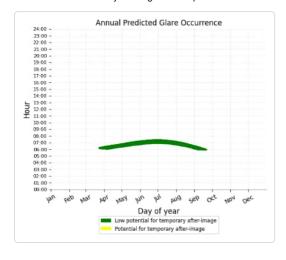


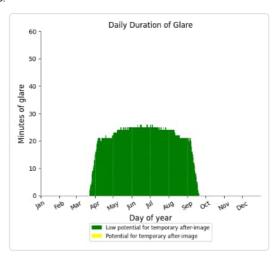


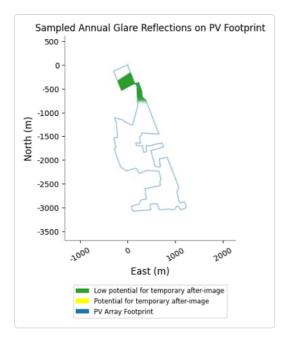


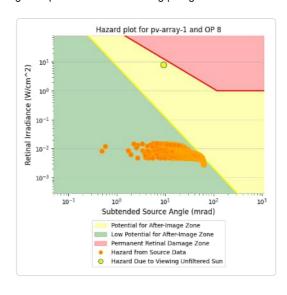
### PV array 1 - OP Receptor (OP 8)

- 3,905 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





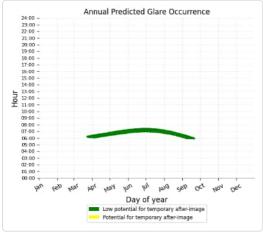


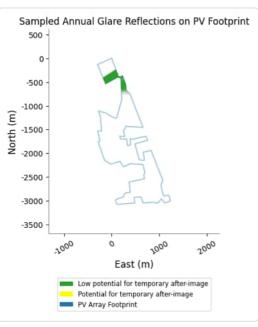


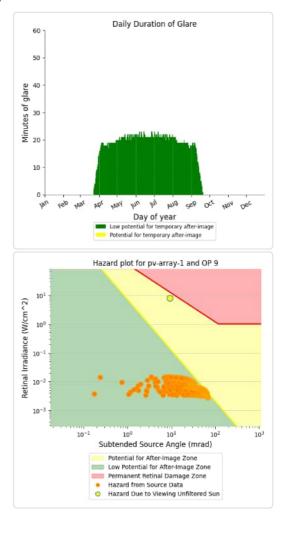
### PV array 1 - OP Receptor (OP 9)

- PV array is expected to produce the following glare for receptors at this location:

   3,442 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.





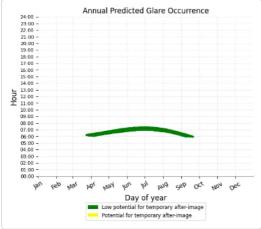


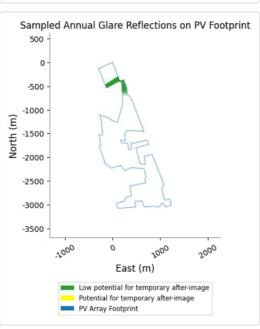
### PV array 1 - OP Receptor (OP 10)

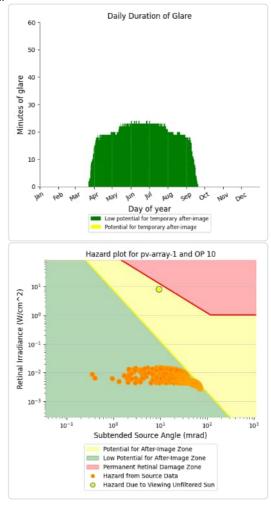
PV array is expected to produce the following glare for receptors at this location:

• 3,525 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.

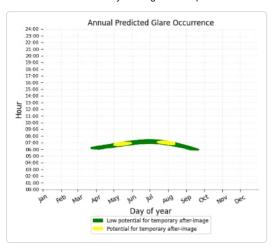


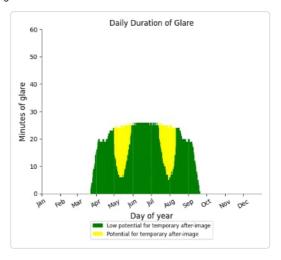


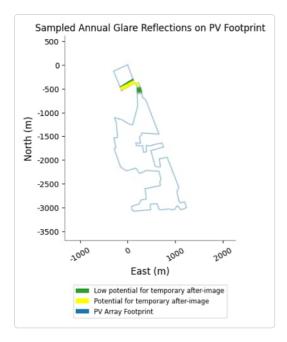


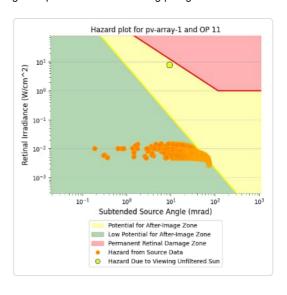
### PV array 1 - OP Receptor (OP 11)

- 3,164 minutes of "green" glare with low potential to cause temporary after-image.
- 797 minutes of "yellow" glare with potential to cause temporary after-image.





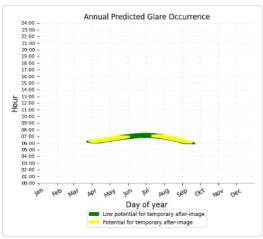


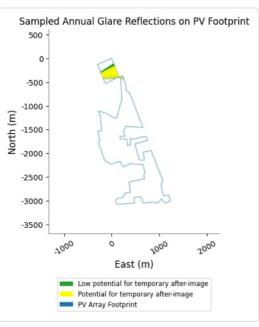


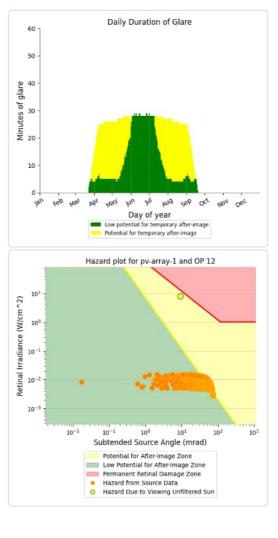
## PV array 1 - OP Receptor (OP 12)

- PV array is expected to produce the following glare for receptors at this location:

   2,113 minutes of "green" glare with low potential to cause temporary after-image.
   2,303 minutes of "yellow" glare with potential to cause temporary after-image.





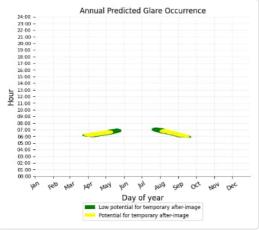


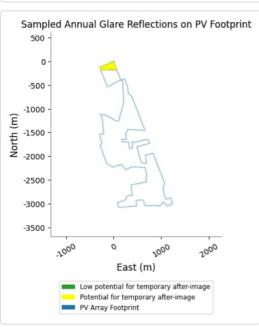
### PV array 1 - OP Receptor (OP 13)

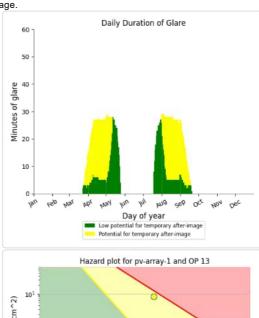
PV array is expected to produce the following glare for receptors at this location:

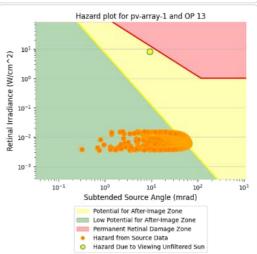
• 1,183 minutes of "green" glare with low potential to cause temporary after-image.

• 1,666 minutes of "yellow" glare with potential to cause temporary after-image.



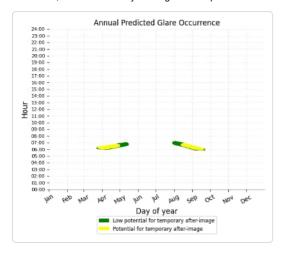


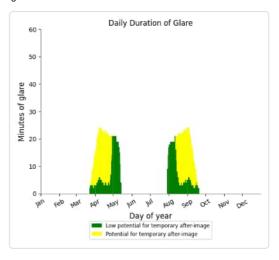


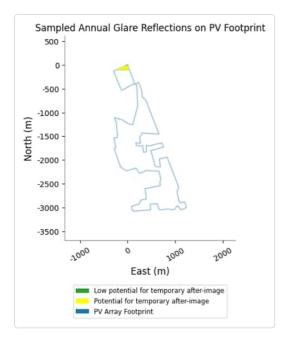


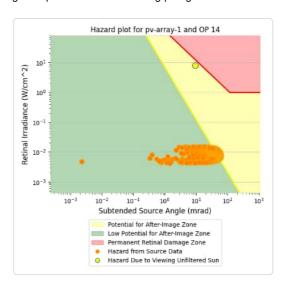
### PV array 1 - OP Receptor (OP 14)

- 854 minutes of "green" glare with low potential to cause temporary after-image.
  - 1,074 minutes of "yellow" glare with potential to cause temporary after-image.





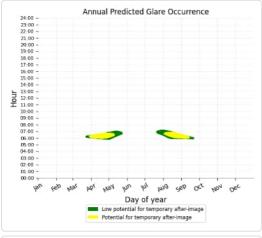


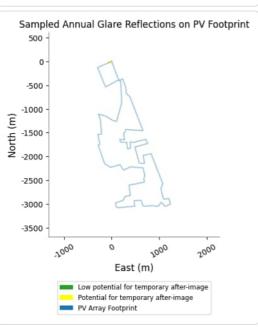


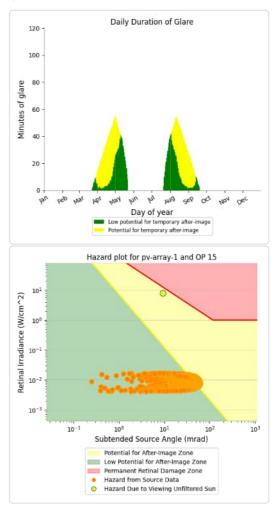
## PV array 1 - OP Receptor (OP 15)

- PV array is expected to produce the following glare for receptors at this location:

   1,719 minutes of "green" glare with low potential to cause temporary after-image.
   2,089 minutes of "yellow" glare with potential to cause temporary after-image.







PV array 1 - OP Receptor (OP 16)

No glare found

PV array 1 - OP Receptor (OP 17)

No glare found

PV array 1 - OP Receptor (OP 18)

No glare found

PV array 1 - OP Receptor (OP 19)

No glare found

PV array 1 - OP Receptor (OP 20)

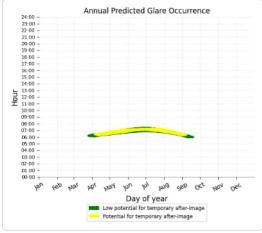
No glare found

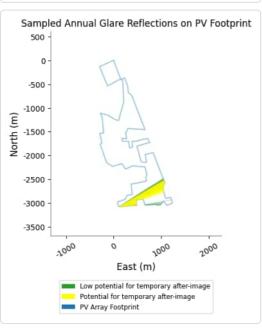
PV array 1 - OP Receptor (OP 21)

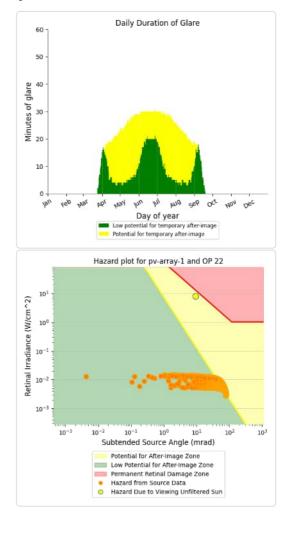
No glare found

### PV array 1 - OP Receptor (OP 22)

- PV array is expected to produce the following glare for receptors at this location:
   • 1,651 minutes of "green" glare with low potential to cause temporary after-image.
   • 2,501 minutes of "yellow" glare with potential to cause temporary after-image.

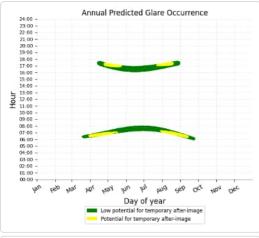


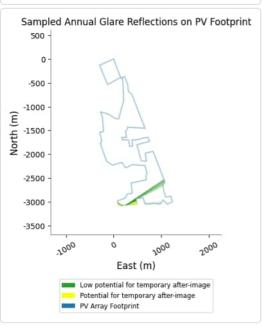


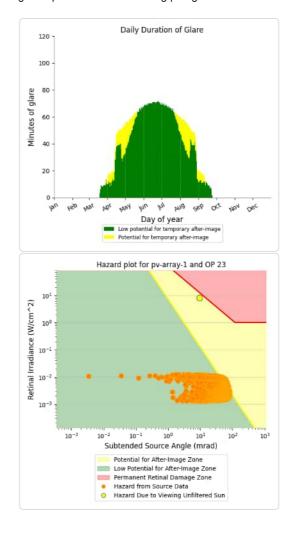


### PV array 1 - OP Receptor (OP 23)

- 7,970 minutes of "green" glare with low potential to cause temporary after-image.
- 1,158 minutes of "yellow" glare with potential to cause temporary after-image.

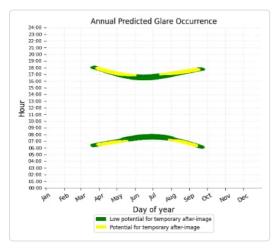


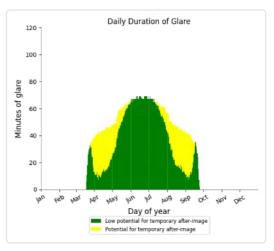


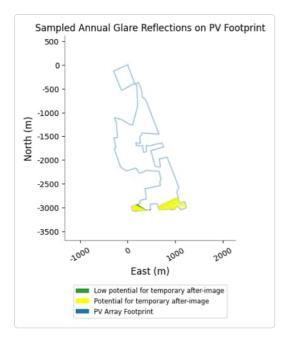


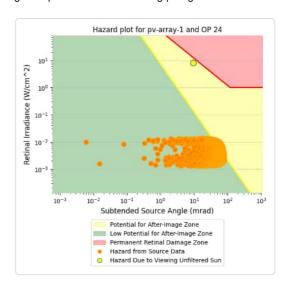
### PV array 1 - OP Receptor (OP 24)

- 7,201 minutes of "green" glare with low potential to cause temporary after-image. 2,634 minutes of "yellow" glare with potential to cause temporary after-image.





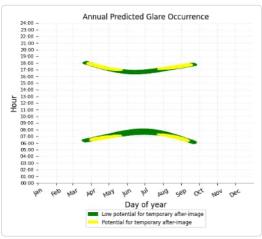


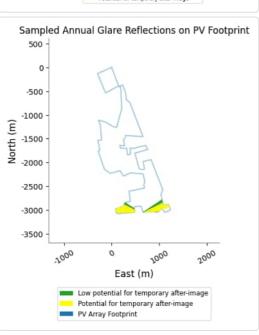


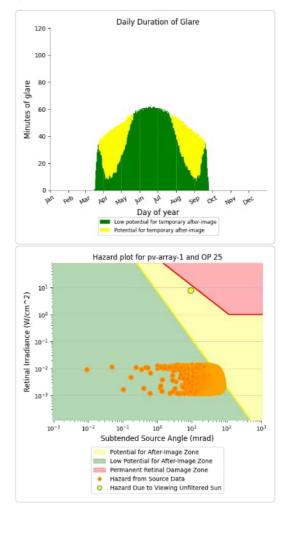
### PV array 1 - OP Receptor (OP 25)

- PV array is expected to produce the following glare for receptors at this location:

   6,804 minutes of "green" glare with low potential to cause temporary after-image.
   2,704 minutes of "yellow" glare with potential to cause temporary after-image.

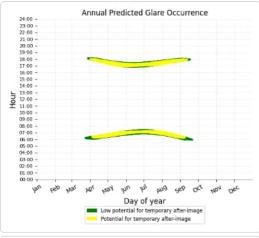


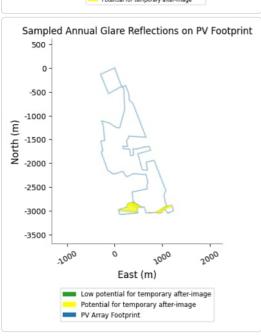


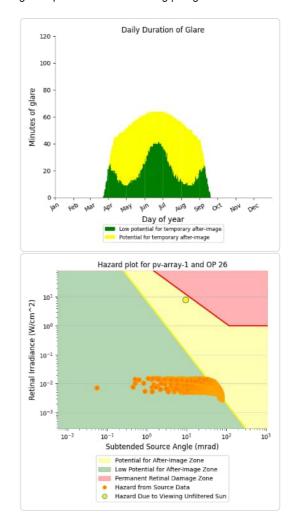


#### PV array 1 - OP Receptor (OP 26)

- 3,493 minutes of "green" glare with low potential to cause temporary after-image.
  5,435 minutes of "yellow" glare with potential to cause temporary after-image.

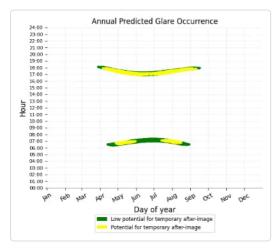


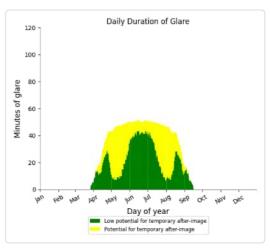


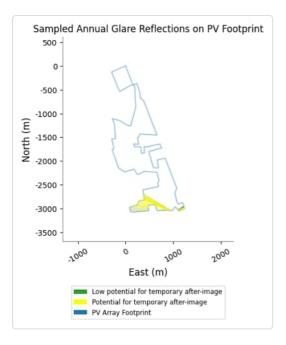


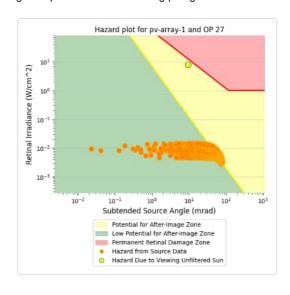
### PV array 1 - OP Receptor (OP 27)

- 3,638 minutes of "green" glare with low potential to cause temporary after-image. 3,046 minutes of "yellow" glare with potential to cause temporary after-image.





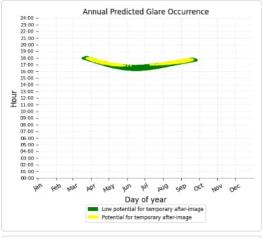


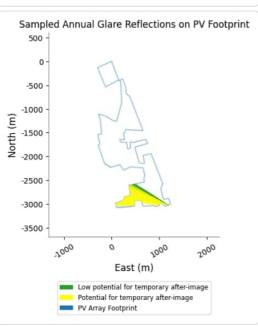


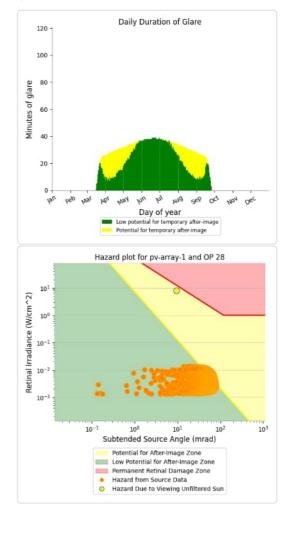
### PV array 1 - OP Receptor (OP 28)

- PV array is expected to produce the following glare for receptors at this location:

   4,422 minutes of "green" glare with low potential to cause temporary after-image.
   1,662 minutes of "yellow" glare with potential to cause temporary after-image.

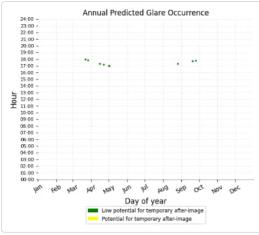


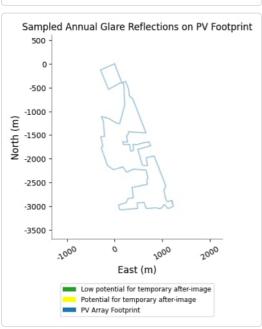


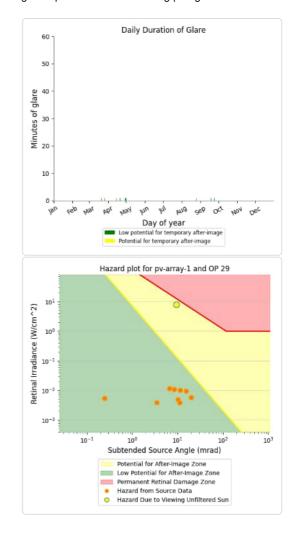


#### PV array 1 - OP Receptor (OP 29)

- 9 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.



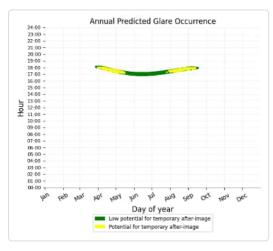


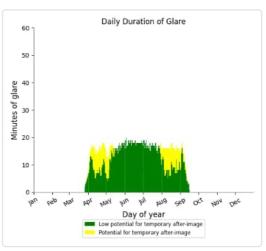


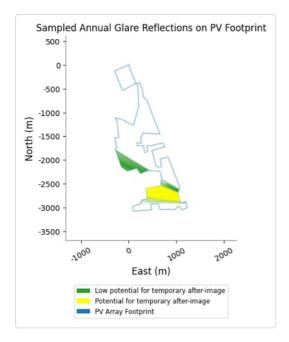
### PV array 1 - OP Receptor (OP 30)

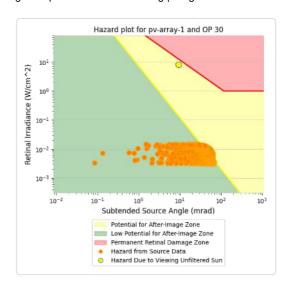
- PV array is expected to produce the following glare for receptors at this location:

   2,146 minutes of "green" glare with low potential to cause temporary after-image.
  - 557 minutes of "yellow" glare with potential to cause temporary after-image.

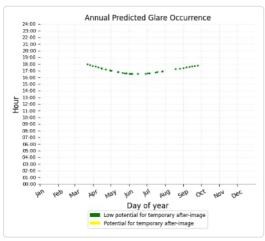


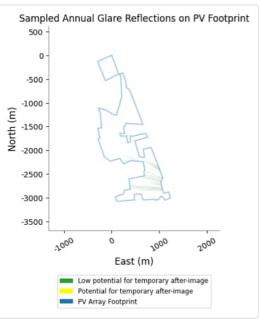


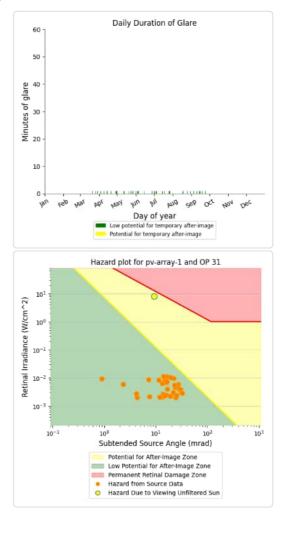




# PV array 1 - OP Receptor (OP 31)





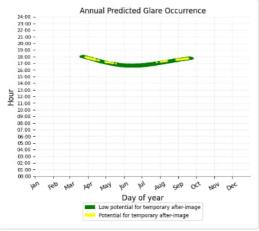


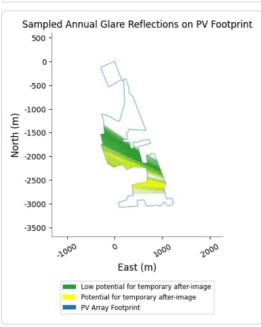
### PV array 1 - OP Receptor (OP 32)

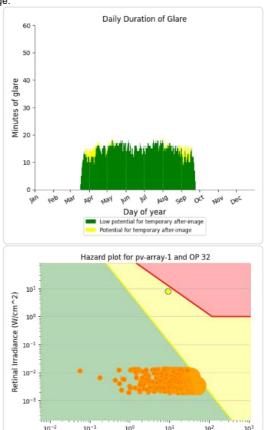
PV array is expected to produce the following glare for receptors at this location:

• 2,740 minutes of "green" glare with low potential to cause temporary after-image.

• 147 minutes of "yellow" glare with potential to cause temporary after-image.







Subtended Source Angle (mrad)

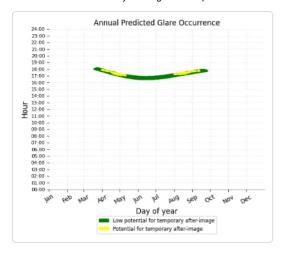
Potential for After-Image Zone
Low Potential for After-Image Zone

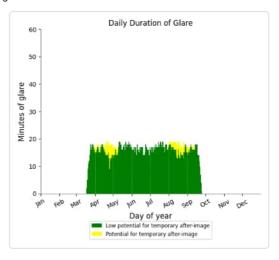
Permanent Retinal Damage Zone
 Hazard from Source Data

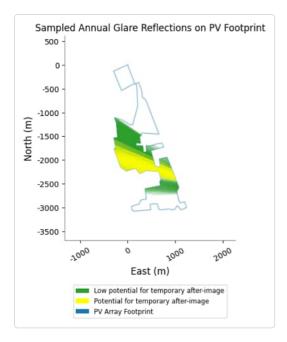
Hazard Due to Viewing Unfiltered Sun

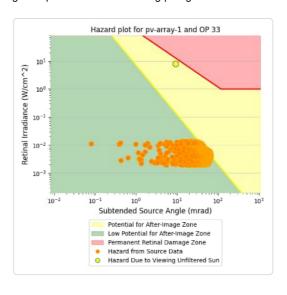
### PV array 1 - OP Receptor (OP 33)

- 3,004 minutes of "green" glare with low potential to cause temporary after-image.
- 210 minutes of "yellow" glare with potential to cause temporary after-image.





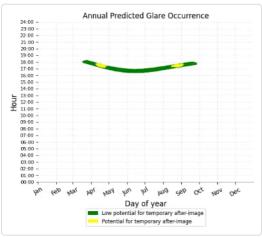


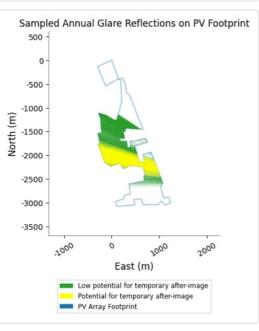


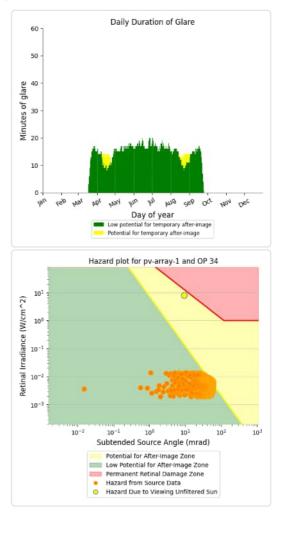
# PV array 1 - OP Receptor (OP 34)

- PV array is expected to produce the following glare for receptors at this location:

   2,818 minutes of "green" glare with low potential to cause temporary after-image.
   116 minutes of "yellow" glare with potential to cause temporary after-image.







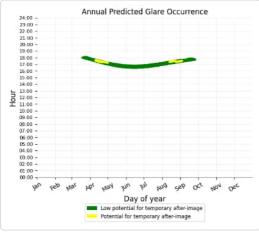
### PV array 1 - OP Receptor (OP 35)

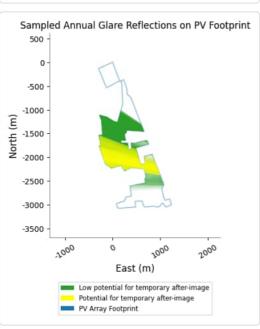
PV array is expected to produce the following glare for receptors at this location:

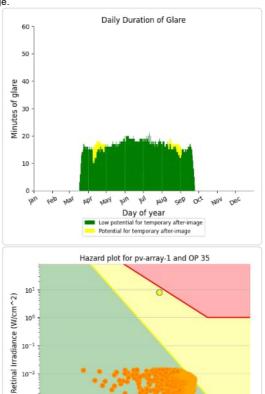
• 3,091 minutes of "green" glare with low potential to cause temporary after-image.

10

• 132 minutes of "yellow" glare with potential to cause temporary after-image.







100 101 1 Subtended Source Angle (mrad)

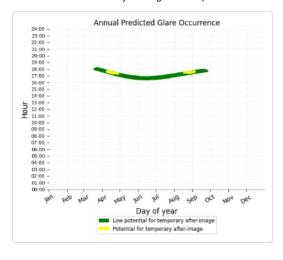
Potential for After-Image Zone
Low Potential for After-Image Zone

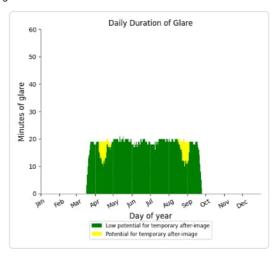
Permanent Retinal Damage Zone
Hazard from Source Data

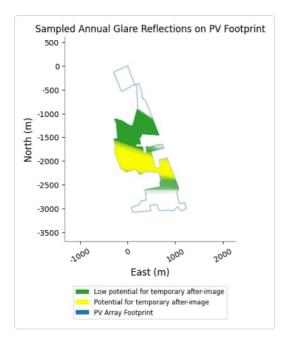
Hazard Due to Viewing Unfiltered Sun

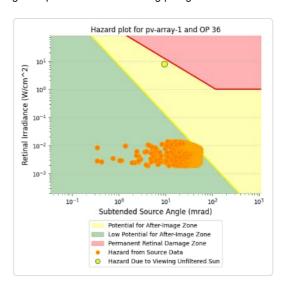
### PV array 1 - OP Receptor (OP 36)

- 3,352 minutes of "green" glare with low potential to cause temporary after-image.
- 205 minutes of "yellow" glare with potential to cause temporary after-image.





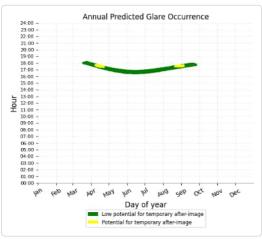


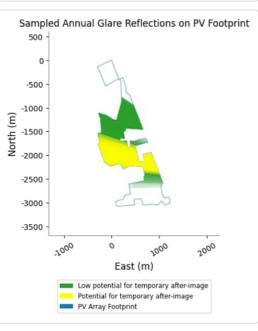


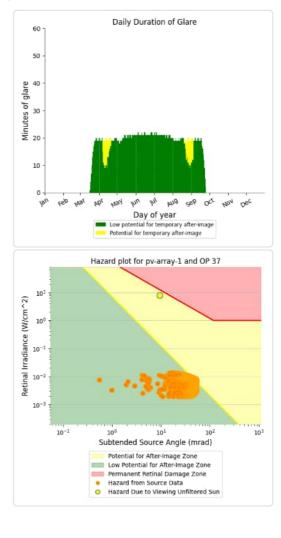
# PV array 1 - OP Receptor (OP 37)

- PV array is expected to produce the following glare for receptors at this location:

   3,525 minutes of "green" glare with low potential to cause temporary after-image.
   216 minutes of "yellow" glare with potential to cause temporary after-image.





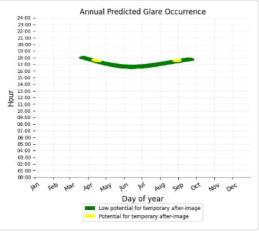


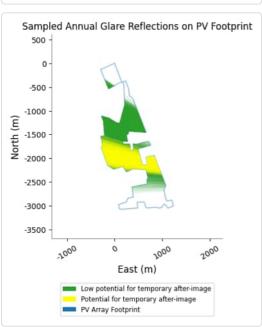
### PV array 1 - OP Receptor (OP 38)

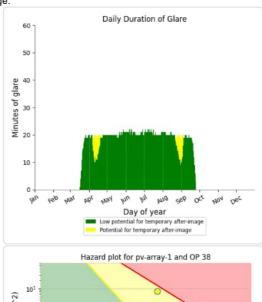
PV array is expected to produce the following glare for receptors at this location:

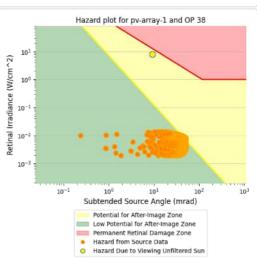
• 3,577 minutes of "green" glare with low potential to cause temporary after-image.

• 181 minutes of "yellow" glare with potential to cause temporary after-image.



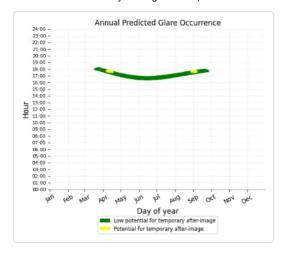


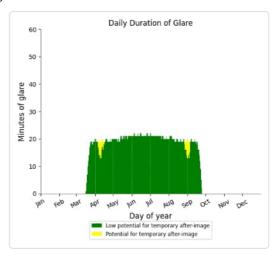


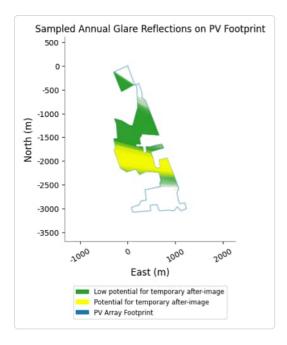


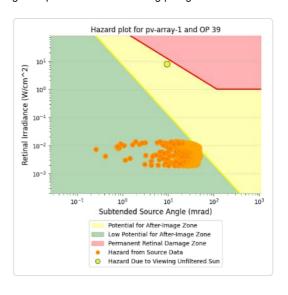
### PV array 1 - OP Receptor (OP 39)

- 3,648 minutes of "green" glare with low potential to cause temporary after-image.
- 86 minutes of "yellow" glare with potential to cause temporary after-image.





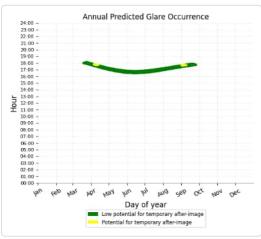


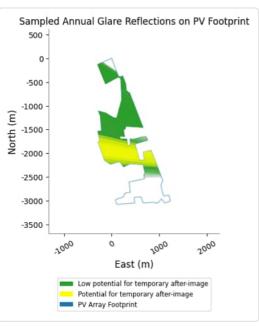


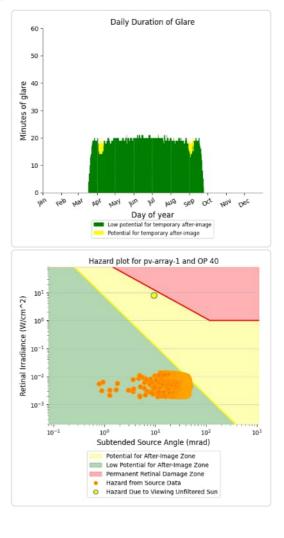
# PV array 1 - OP Receptor (OP 40)

- PV array is expected to produce the following glare for receptors at this location:

   3,557 minutes of "green" glare with low potential to cause temporary after-image.
  - 69 minutes of "yellow" glare with potential to cause temporary after-image.





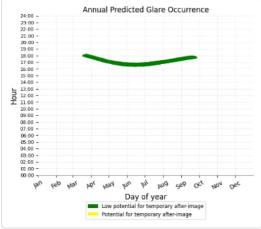


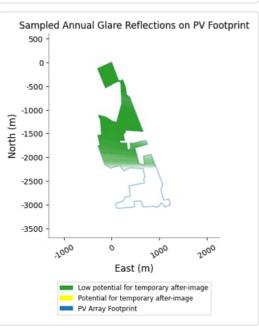
### PV array 1 - OP Receptor (OP 41)

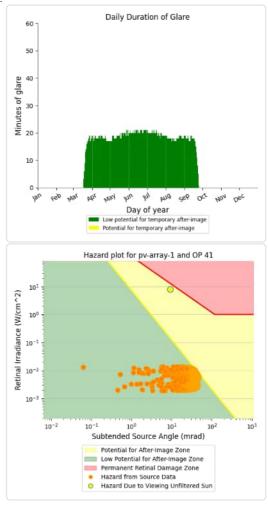
PV array is expected to produce the following glare for receptors at this location:

• 3,516 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.

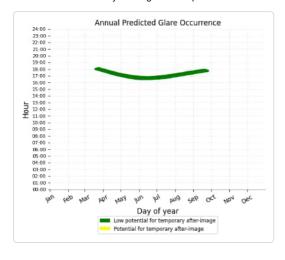


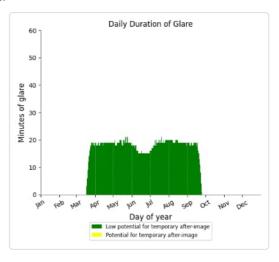


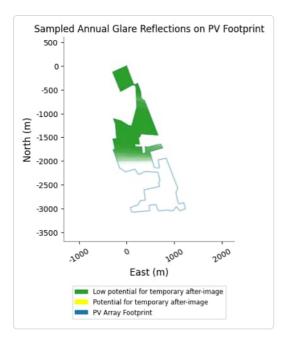


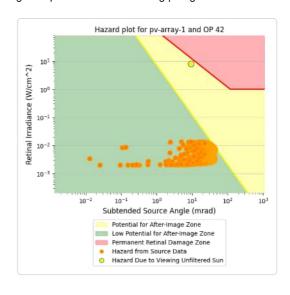
### PV array 1 - OP Receptor (OP 42)

- 3,425 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





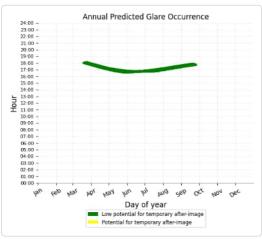


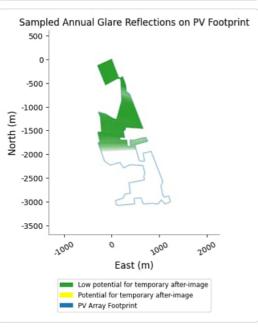


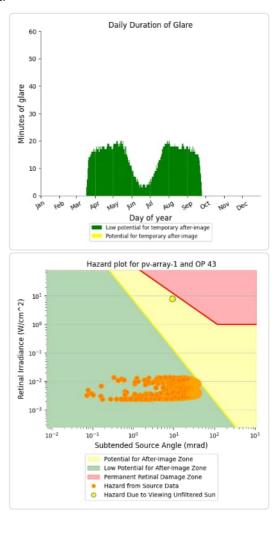
### PV array 1 - OP Receptor (OP 43)

- PV array is expected to produce the following glare for receptors at this location:

   2,704 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.





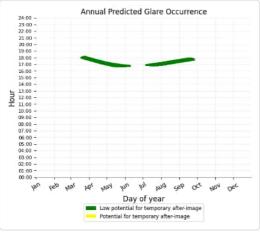


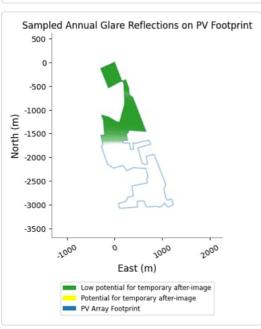
### PV array 1 - OP Receptor (OP 44)

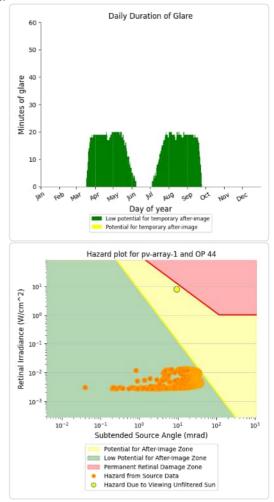
PV array is expected to produce the following glare for receptors at this location:

• 2,617 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.

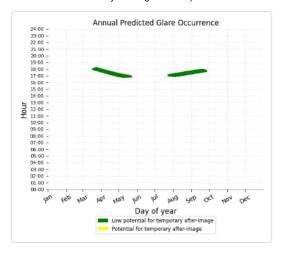


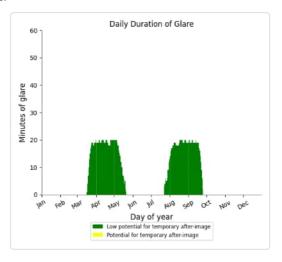


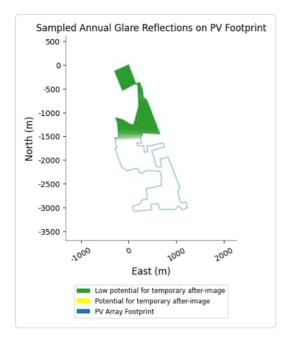


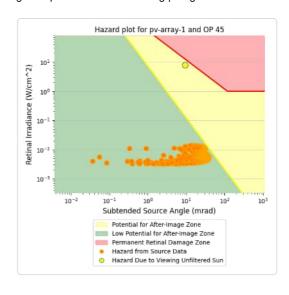
### PV array 1 - OP Receptor (OP 45)

- 2,119 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





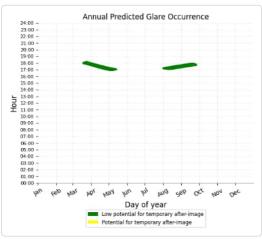


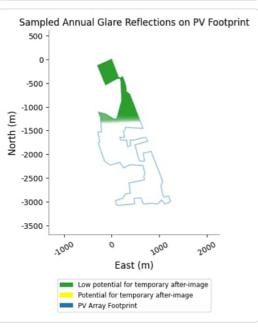


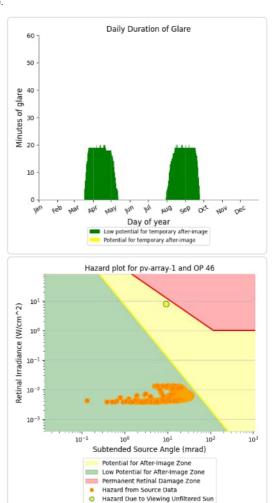
### PV array 1 - OP Receptor (OP 46)

- PV array is expected to produce the following glare for receptors at this location:

   1,820 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.





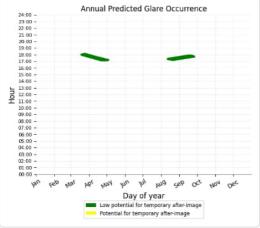


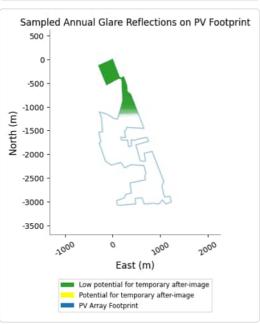
### PV array 1 - OP Receptor (OP 47)

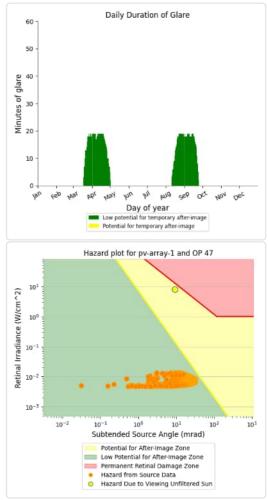
PV array is expected to produce the following glare for receptors at this location:

• 1,426 minutes of "green" glare with low potential to cause temporary after-image.









# PV array 2 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	2095	296
OP: OP 3	2130	369
OP: OP 4	1941	14
OP: OP 5	1824	0
OP: OP 6	1410	0
OP: OP 7	1464	0
OP: OP 8	251	0
OP: OP 9	270	0
OP: OP 10	74	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0

OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	2580	90
OP: OP 23	3174	318
OP: OP 24	3232	212
OP: OP 25	3063	164
OP: OP 26	2261	250
OP: OP 27	2391	145
OP: OP 28	2115	0
OP: OP 29	5810	6395
OP: OP 30	4992	6880
OP: OP 31	7988	3888
OP: OP 32	3844	9022
OP: OP 33	3428	7375
OP: OP 34	2481	6903
OP: OP 35	3238	8900
OP: OP 36	4497	11832
OP: OP 37	4538	11345
OP: OP 38	2698	3691
OP: OP 39	1725	2629
OP: OP 40	1406	2858
OP: OP 41	2132	7135
OP: OP 42	2217	2140
OP: OP 43	2272	1637
OP: OP 44	2441	1276
OP: OP 45	1422	184
OP: OP 46	448	0
OP: OP 47	354	0

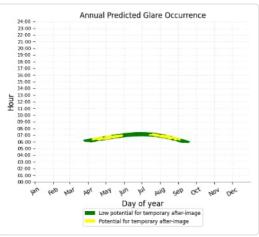
#### PV array 2 - OP Receptor (OP 1)

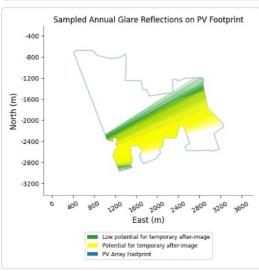
No glare found

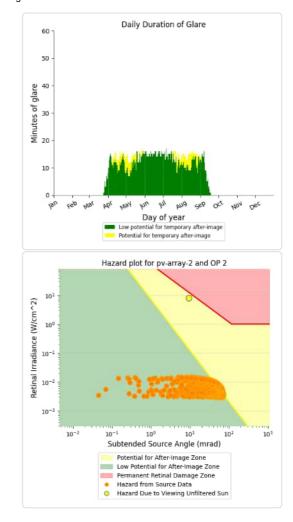
### PV array 2 - OP Receptor (OP 2)

PV array is expected to produce the following glare for receptors at this location:

- 2,095 minutes of "green" glare with low potential to cause temporary after-image. 296 minutes of "yellow" glare with potential to cause temporary after-image.

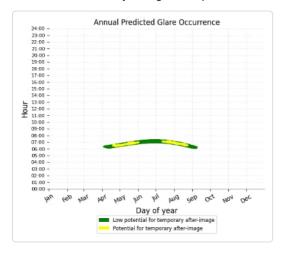


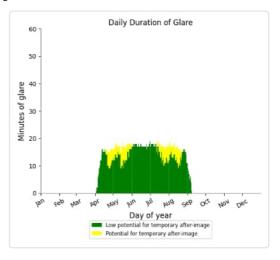


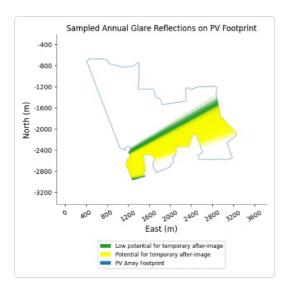


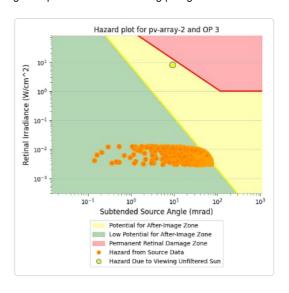
### PV array 2 - OP Receptor (OP 3)

- 2,130 minutes of "green" glare with low potential to cause temporary after-image.
- 369 minutes of "yellow" glare with potential to cause temporary after-image.





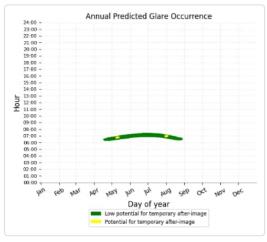


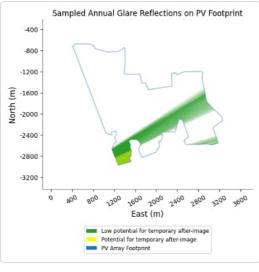


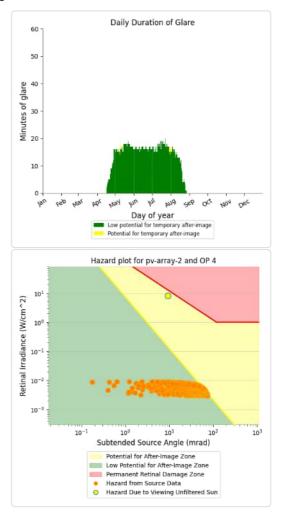
### PV array 2 - OP Receptor (OP 4)

PV array is expected to produce the following glare for receptors at this location:

- 1,941 minutes of "green" glare with low potential to cause temporary after-image.
- 14 minutes of "yellow" glare with potential to cause temporary after-image.

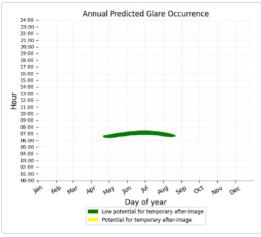


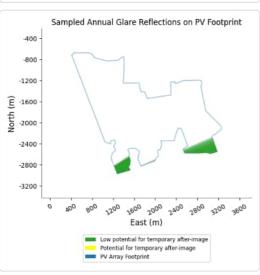


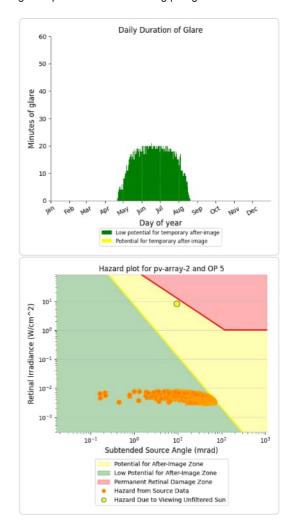


# PV array 2 - OP Receptor (OP 5)

- 1,824 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



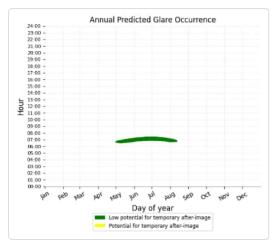


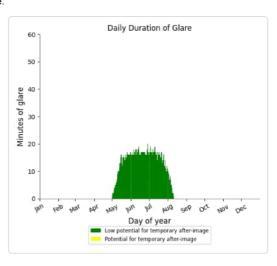


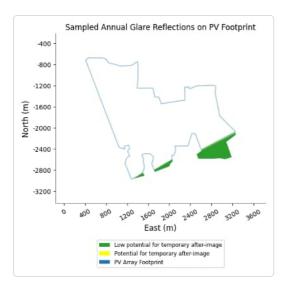
### PV array 2 - OP Receptor (OP 6)

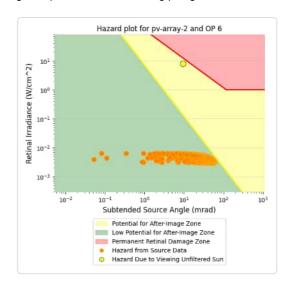
- PV array is expected to produce the following glare for receptors at this location:

   1,410 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.





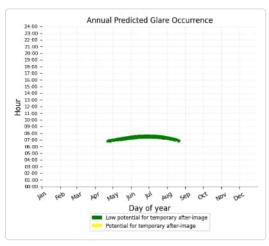


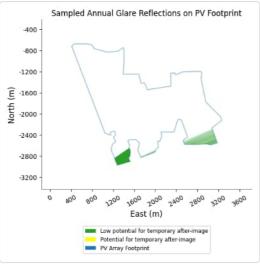


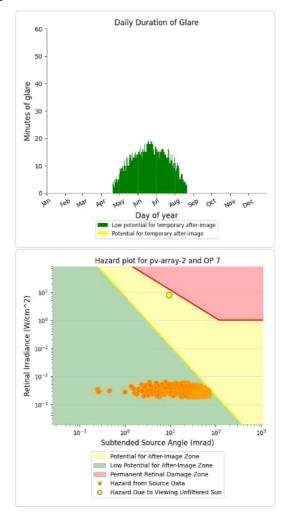
### PV array 2 - OP Receptor (OP 7)

PV array is expected to produce the following glare for receptors at this location:

- 1,464 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

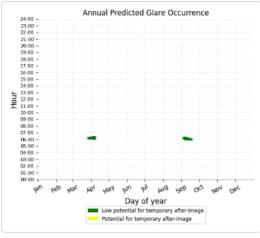


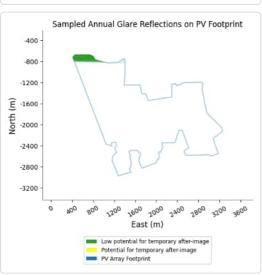


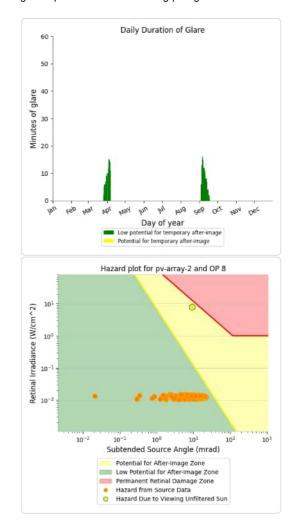


### PV array 2 - OP Receptor (OP 8)

- 251 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

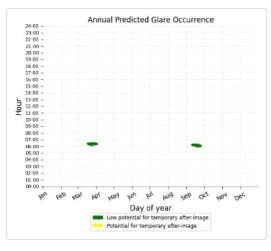


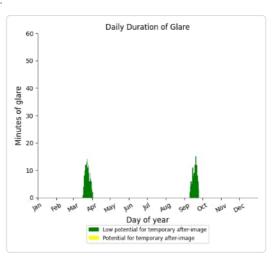


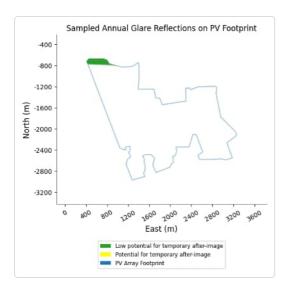


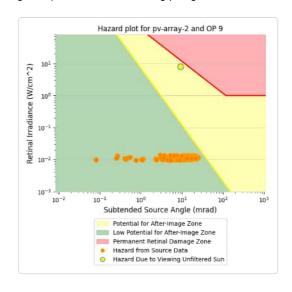
### PV array 2 - OP Receptor (OP 9)

- 270 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





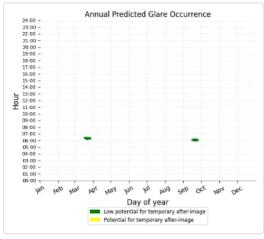


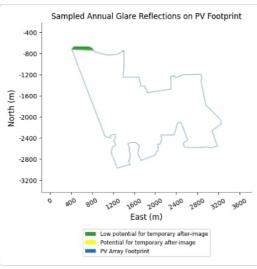


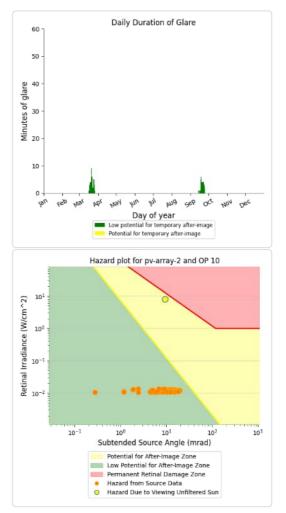
### PV array 2 - OP Receptor (OP 10)

PV array is expected to produce the following glare for receptors at this location:

- 74 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.







PV array 2 - OP Receptor (OP 11)

No glare found

### PV array 2 - OP Receptor (OP 12)

No glare found

# PV array 2 - OP Receptor (OP 13)

No glare found

### PV array 2 - OP Receptor (OP 14)

No glare found

### PV array 2 - OP Receptor (OP 15)

No glare found

### PV array 2 - OP Receptor (OP 16)

No glare found

#### PV array 2 - OP Receptor (OP 17)

No glare found

### PV array 2 - OP Receptor (OP 18)

No glare found

### PV array 2 - OP Receptor (OP 19)

No glare found

### PV array 2 - OP Receptor (OP 20)

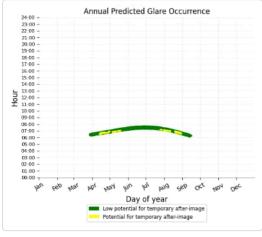
No glare found

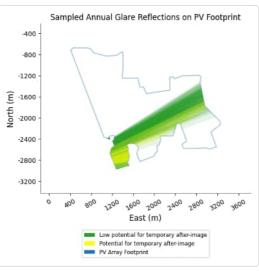
### PV array 2 - OP Receptor (OP 21)

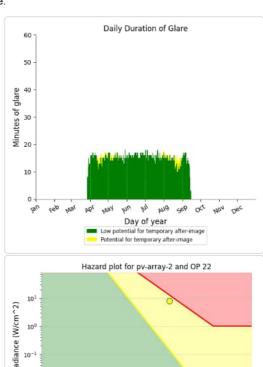
No glare found

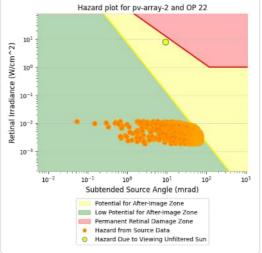
#### PV array 2 - OP Receptor (OP 22)

- 2,580 minutes of "green" glare with low potential to cause temporary after-image.
- 90 minutes of "yellow" glare with potential to cause temporary after-image.





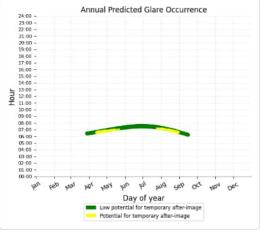


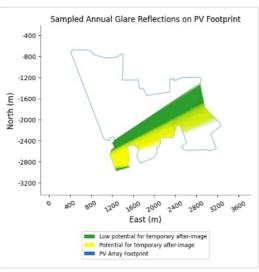


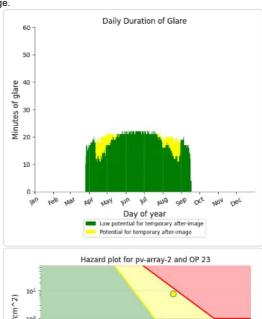
PV array 2 - OP Receptor (OP 23)

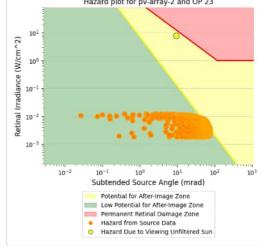
PV array is expected to produce the following glare for receptors at this location:

- 3,174 minutes of "green" glare with low potential to cause temporary after-image.
  318 minutes of "yellow" glare with potential to cause temporary after-image.



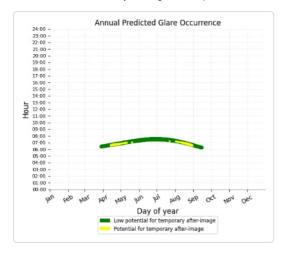


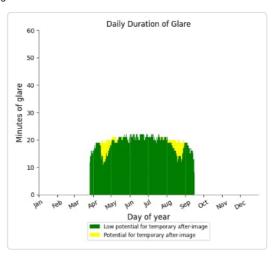


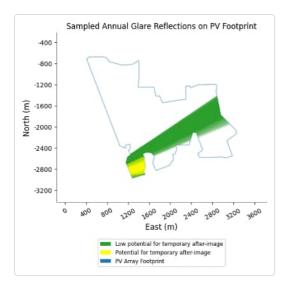


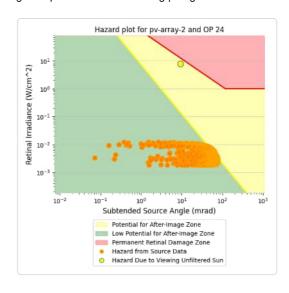
### PV array 2 - OP Receptor (OP 24)

- 3,232 minutes of "green" glare with low potential to cause temporary after-image.
- 212 minutes of "yellow" glare with potential to cause temporary after-image.





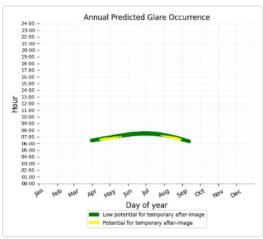


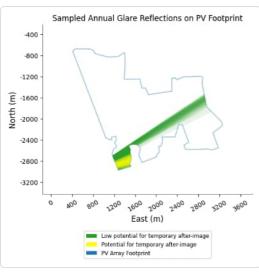


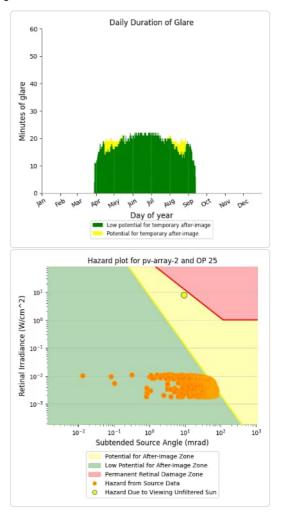
### PV array 2 - OP Receptor (OP 25)

PV array is expected to produce the following glare for receptors at this location:

- 3,063 minutes of "green" glare with low potential to cause temporary after-image.
- 164 minutes of "yellow" glare with potential to cause temporary after-image.

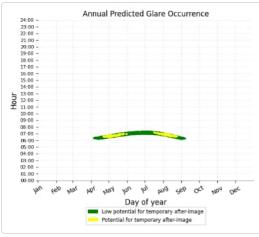


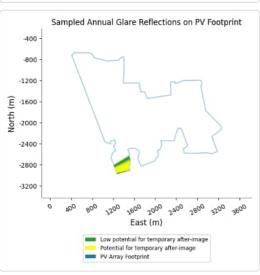


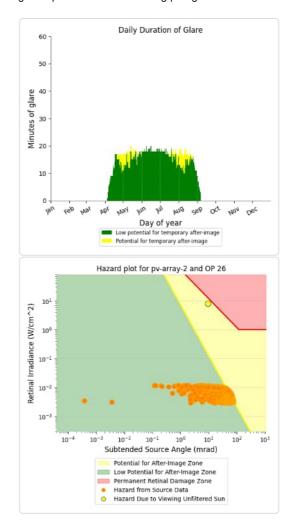


### PV array 2 - OP Receptor (OP 26)

- 2,261 minutes of "green" glare with low potential to cause temporary after-image.
- 250 minutes of "yellow" glare with potential to cause temporary after-image.



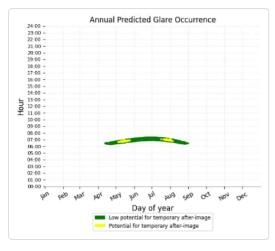


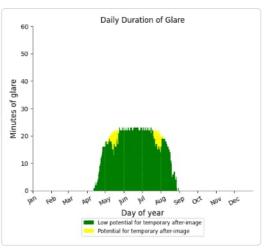


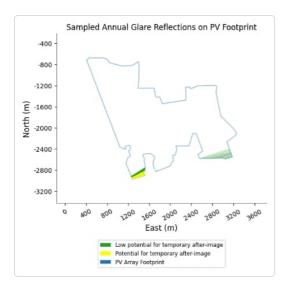
### PV array 2 - OP Receptor (OP 27)

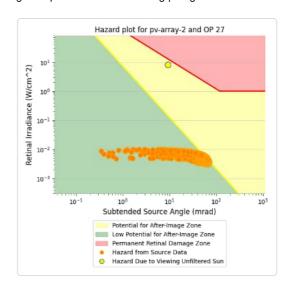
- PV array is expected to produce the following glare for receptors at this location:

   2,391 minutes of "green" glare with low potential to cause temporary after-image.
  - 145 minutes of "yellow" glare with potential to cause temporary after-image.





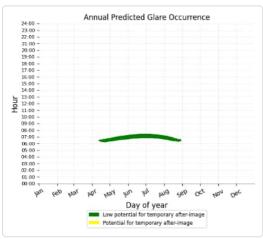


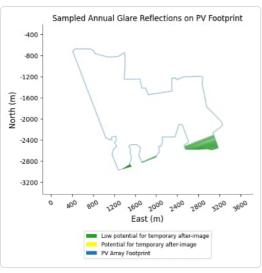


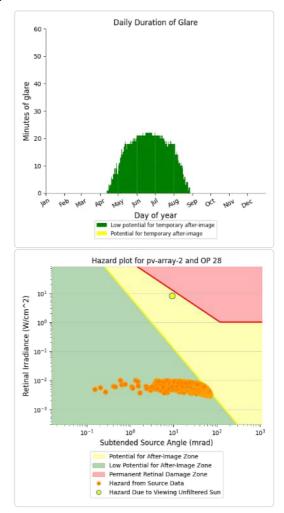
### PV array 2 - OP Receptor (OP 28)

PV array is expected to produce the following glare for receptors at this location:

- 2,115 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

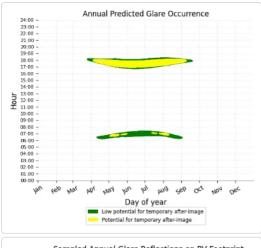


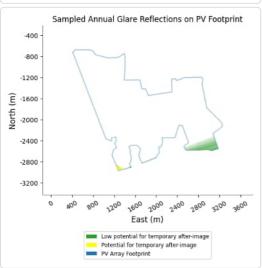


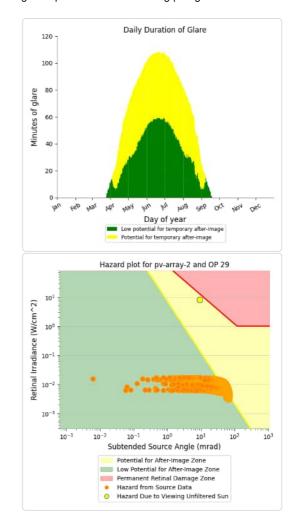


### PV array 2 - OP Receptor (OP 29)

- 5,810 minutes of "green" glare with low potential to cause temporary after-image.
  6,395 minutes of "yellow" glare with potential to cause temporary after-image.

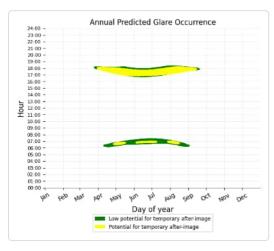


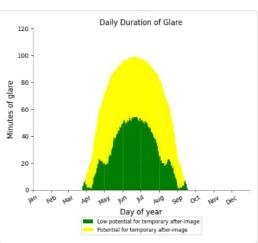


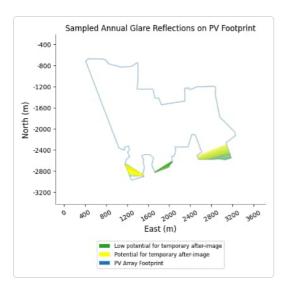


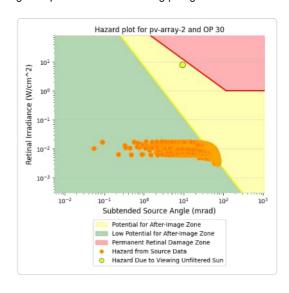
# PV array 2 - OP Receptor (OP 30)

- 4,992 minutes of "green" glare with low potential to cause temporary after-image.
- 6,880 minutes of "yellow" glare with potential to cause temporary after-image.





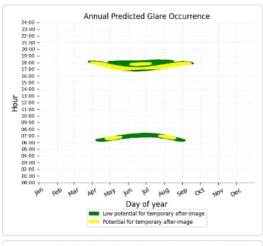


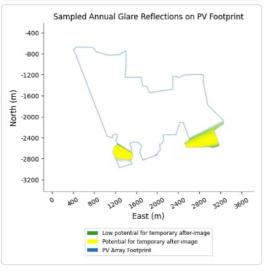


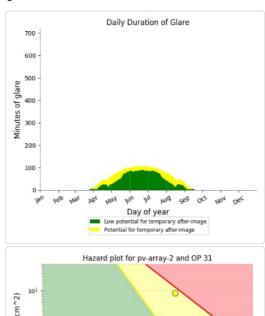
### PV array 2 - OP Receptor (OP 31)

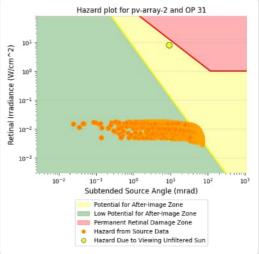
PV array is expected to produce the following glare for receptors at this location:

- 7,988 minutes of "green" glare with low potential to cause temporary after-image.
  3,888 minutes of "yellow" glare with potential to cause temporary after-image.



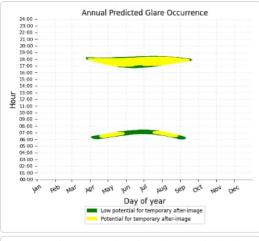


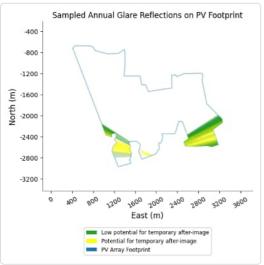


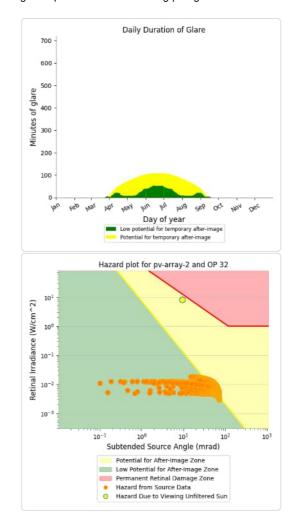


### PV array 2 - OP Receptor (OP 32)

- 3,844 minutes of "green" glare with low potential to cause temporary after-image. 9,022 minutes of "yellow" glare with potential to cause temporary after-image.

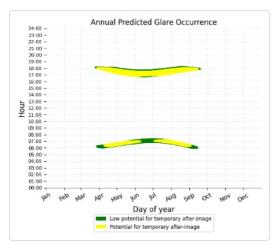


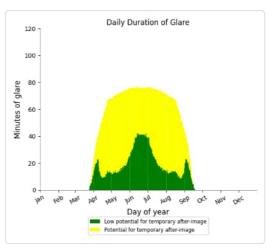


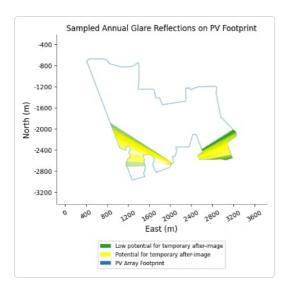


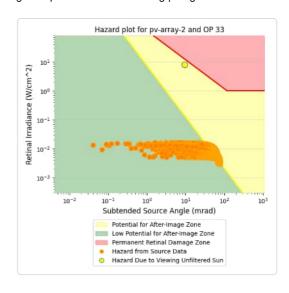
# PV array 2 - OP Receptor (OP 33)

- 3,428 minutes of "green" glare with low potential to cause temporary after-image.
- 7,375 minutes of "yellow" glare with potential to cause temporary after-image.





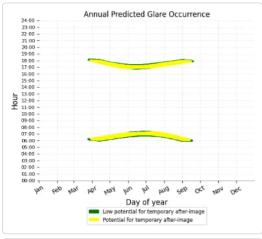


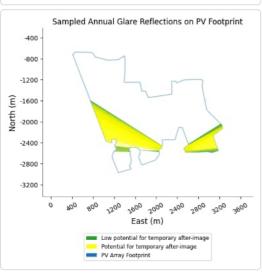


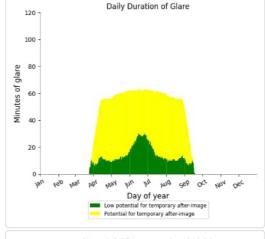
### PV array 2 - OP Receptor (OP 34)

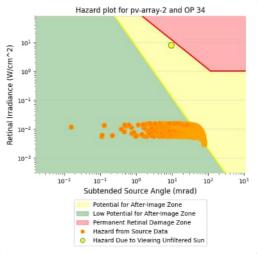
PV array is expected to produce the following glare for receptors at this location:

- 2,481 minutes of "green" glare with low potential to cause temporary after-image. 6,903 minutes of "yellow" glare with potential to cause temporary after-image.



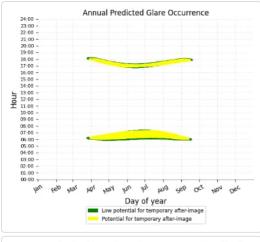


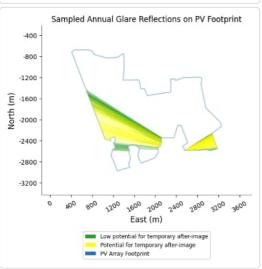


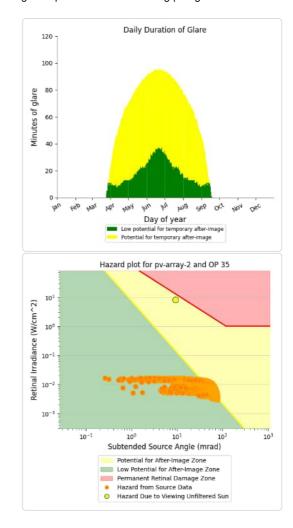


# PV array 2 - OP Receptor (OP 35)

- 3,238 minutes of "green" glare with low potential to cause temporary after-image. 8,900 minutes of "yellow" glare with potential to cause temporary after-image.

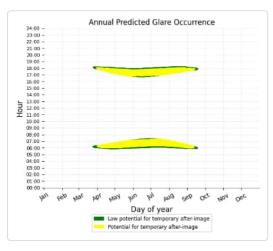


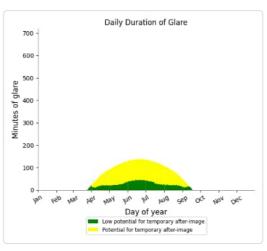


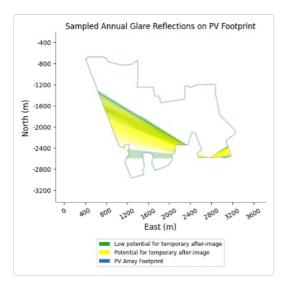


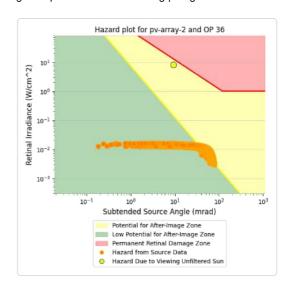
# PV array 2 - OP Receptor (OP 36)

- 4,497 minutes of "green" glare with low potential to cause temporary after-image.
- 11,832 minutes of "yellow" glare with potential to cause temporary after-image.





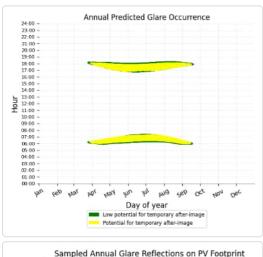


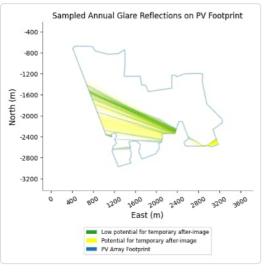


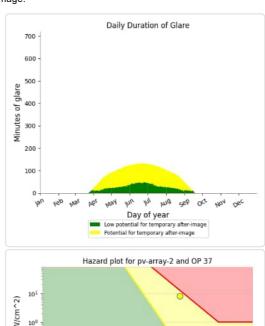
### PV array 2 - OP Receptor (OP 37)

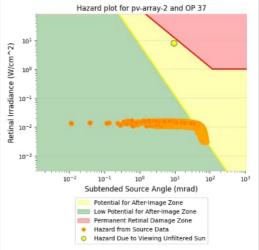
PV array is expected to produce the following glare for receptors at this location:

- 4,538 minutes of "green" glare with low potential to cause temporary after-image.
- 11,345 minutes of "yellow" glare with potential to cause temporary after-image.



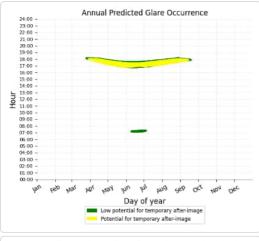


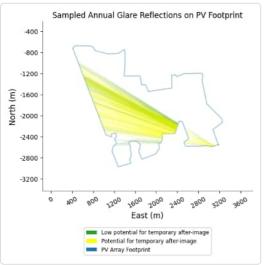


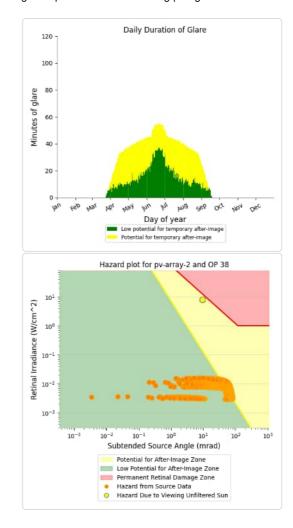


### PV array 2 - OP Receptor (OP 38)

- 2,698 minutes of "green" glare with low potential to cause temporary after-image. 3,691 minutes of "yellow" glare with potential to cause temporary after-image.

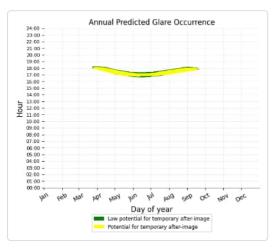


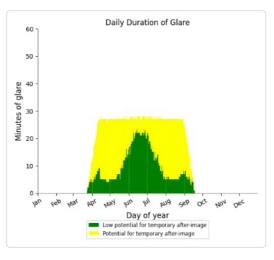


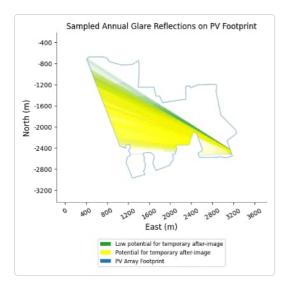


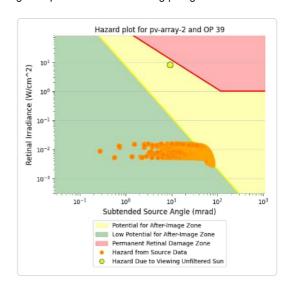
# PV array 2 - OP Receptor (OP 39)

- 1,725 minutes of "green" glare with low potential to cause temporary after-image.
- 2,629 minutes of "yellow" glare with potential to cause temporary after-image.





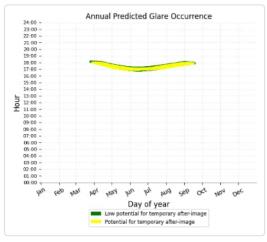


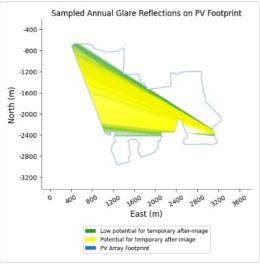


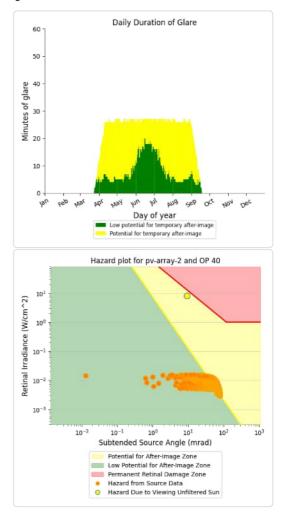
### PV array 2 - OP Receptor (OP 40)

PV array is expected to produce the following glare for receptors at this location:

- 1,406 minutes of "green" glare with low potential to cause temporary after-image.
  2,858 minutes of "yellow" glare with potential to cause temporary after-image.

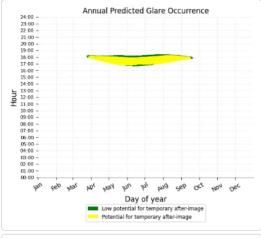


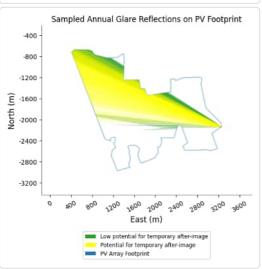


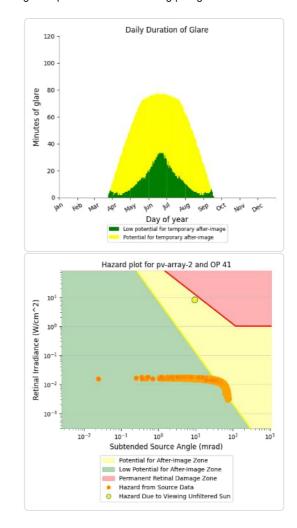


### PV array 2 - OP Receptor (OP 41)

- 2,132 minutes of "green" glare with low potential to cause temporary after-image.
  7,135 minutes of "yellow" glare with potential to cause temporary after-image.

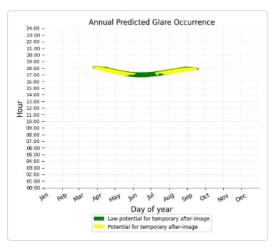


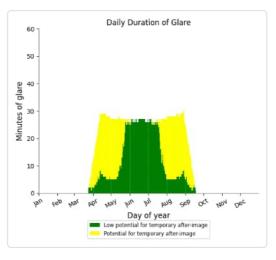


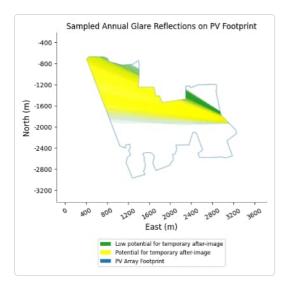


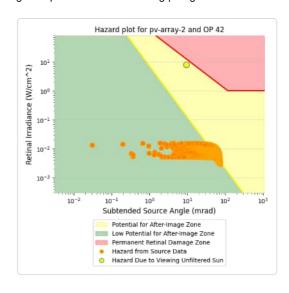
## PV array 2 - OP Receptor (OP 42)

- 2,217 minutes of "green" glare with low potential to cause temporary after-image.
- 2,140 minutes of "yellow" glare with potential to cause temporary after-image.





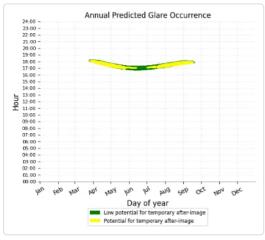


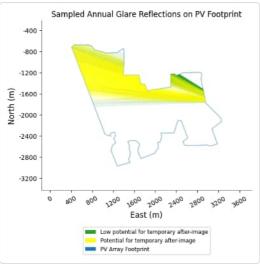


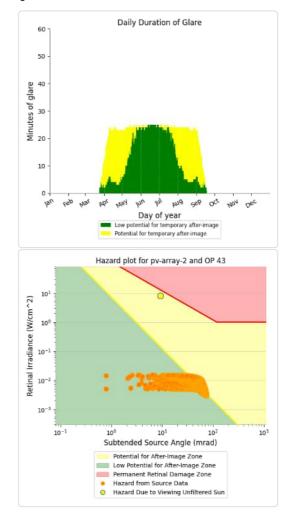
## PV array 2 - OP Receptor (OP 43)

PV array is expected to produce the following glare for receptors at this location:

- 2,272 minutes of "green" glare with low potential to cause temporary after-image.
  1,637 minutes of "yellow" glare with potential to cause temporary after-image.

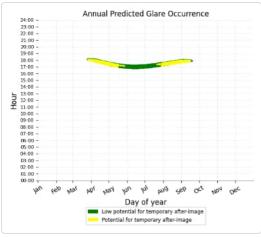


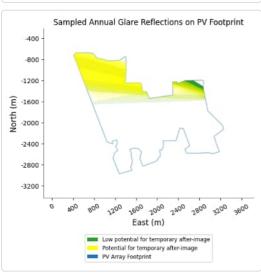


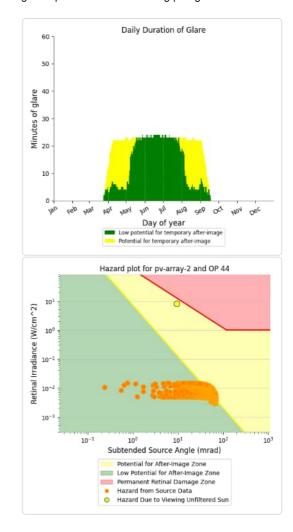


## PV array 2 - OP Receptor (OP 44)

- 2,441 minutes of "green" glare with low potential to cause temporary after-image. 1,276 minutes of "yellow" glare with potential to cause temporary after-image.



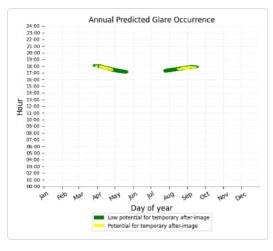


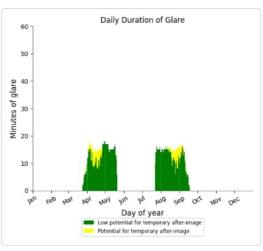


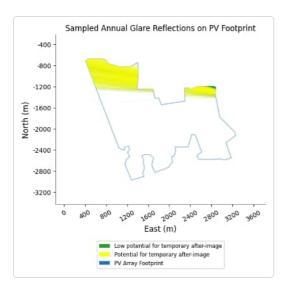
## PV array 2 - OP Receptor (OP 45)

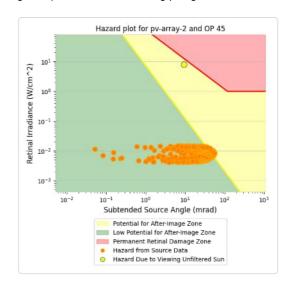
- PV array is expected to produce the following glare for receptors at this location:

   1,422 minutes of "green" glare with low potential to cause temporary after-image.
  - 184 minutes of "yellow" glare with potential to cause temporary after-image.





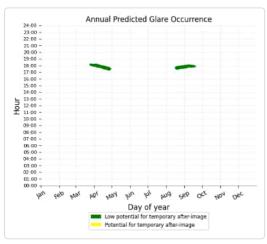


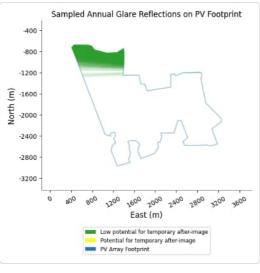


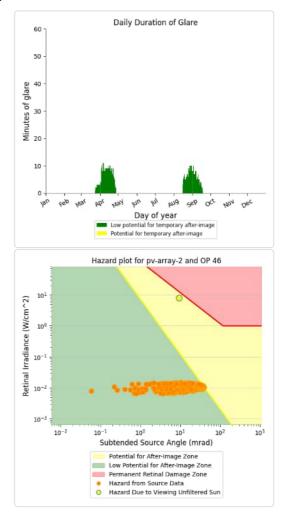
## PV array 2 - OP Receptor (OP 46)

PV array is expected to produce the following glare for receptors at this location:

- 448 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

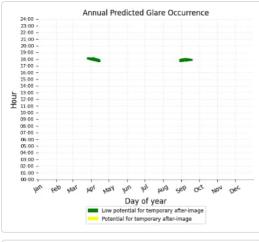


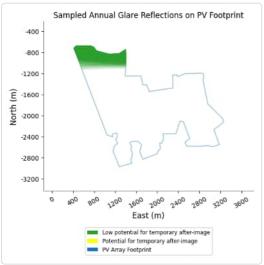


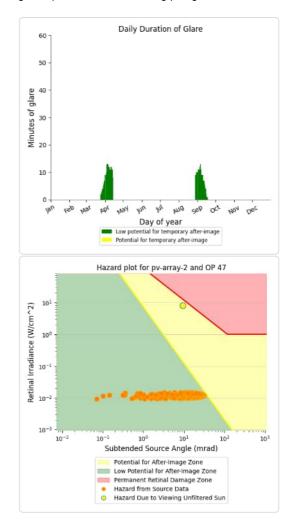


## PV array 2 - OP Receptor (OP 47)

- 354 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.







**PV array 3** low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)	
OP: OP 1	0		
OP: OP 2	0	0	
OP: OP 3	0	0	
OP: OP 4	0	0	
OP: OP 5	0	0	
OP: OP 6	0	0	
OP: OP 7	0	0	
OP: OP 8	1661	0	
OP: OP 9	2124	0	
OP: OP 10	2328	0	
OP: OP 11	2155	0	
OP: OP 12	1461	0	
OP: OP 13	753	0	
OP: OP 14	586	0	
OP: OP 15	352	0	
OP: OP 16	134	0	
OP: OP 17	0	0	
OP: OP 18	0	0	
OP: OP 19	0	0	
OP: OP 20	0	0	
OP: OP 21	0	0	
OP: OP 22	0	0	

OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0
OP: OP 27	0	0
OP: OP 28	0	0
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	0	0
OP: OP 38	0	0
OP: OP 39	0	0
OP: OP 40	0	0
OP: OP 41	0	0
OP: OP 42	541	0
OP: OP 43	1236	0
OP: OP 44	1763	0
OP: OP 45	2191	0
OP: OP 46	2623	0
OP: OP 47	2484	0

## PV array 3 - OP Receptor (OP 1)

No glare found

## PV array 3 - OP Receptor (OP 2)

No glare found

## PV array 3 - OP Receptor (OP 3)

No glare found

## PV array 3 - OP Receptor (OP 4)

No glare found

## PV array 3 - OP Receptor (OP 5)

No glare found

#### PV array 3 - OP Receptor (OP 6)

No glare found

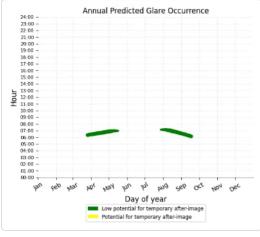
## PV array 3 - OP Receptor (OP 7)

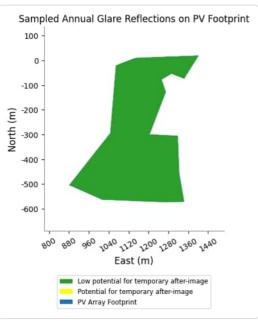
No glare found

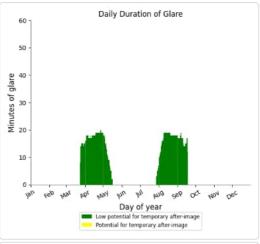
#### PV array 3 - OP Receptor (OP 8)

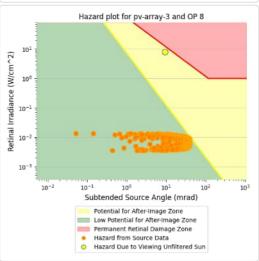
- PV array is expected to produce the following glare for receptors at this location:

   1,661 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.





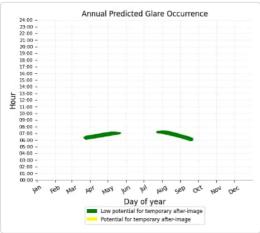


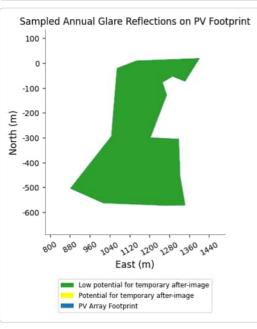


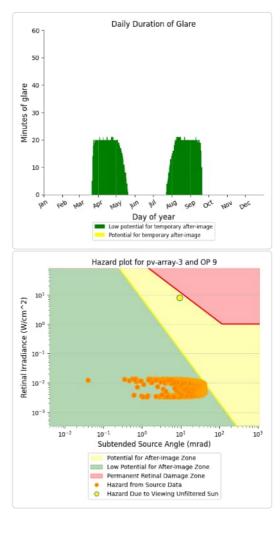
## PV array 3 - OP Receptor (OP 9)

- PV array is expected to produce the following glare for receptors at this location:

   2,124 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.

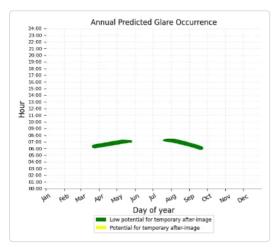


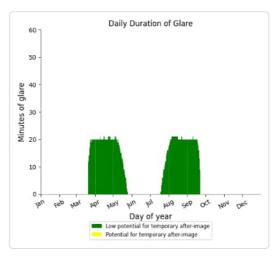


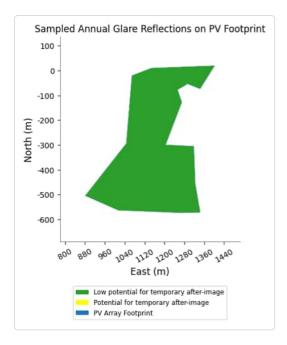


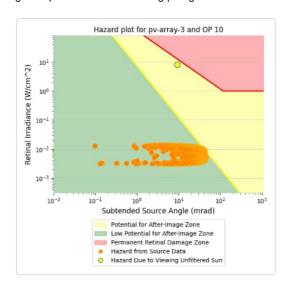
## PV array 3 - OP Receptor (OP 10)

- 2,328 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





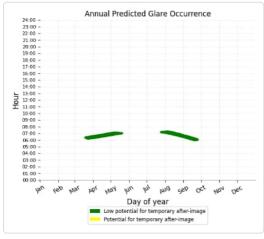


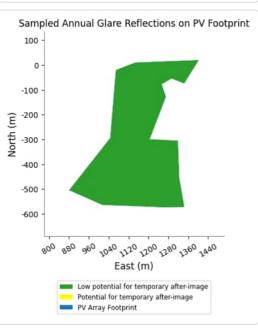


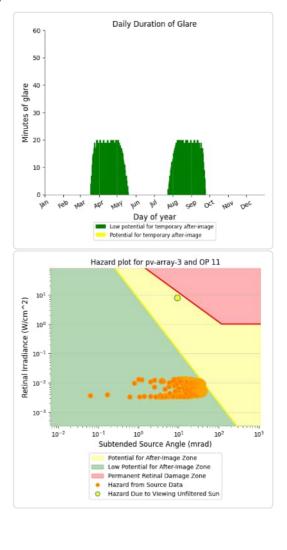
## PV array 3 - OP Receptor (OP 11)

PV array is expected to produce the following glare for receptors at this location:

- 2,155 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





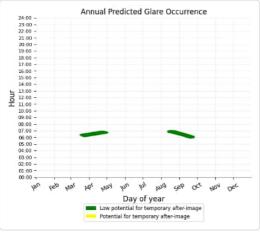


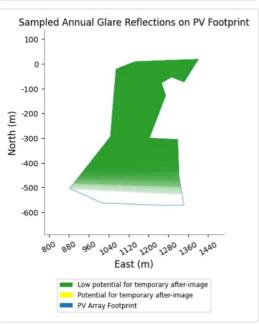
## PV array 3 - OP Receptor (OP 12)

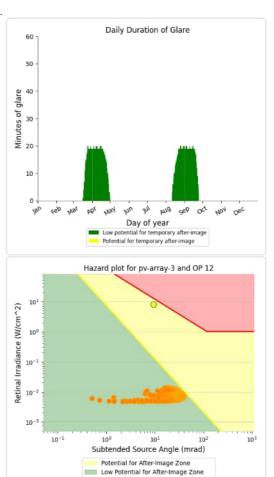
PV array is expected to produce the following glare for receptors at this location:

1,461 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.





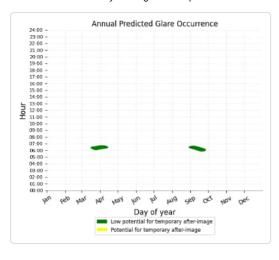


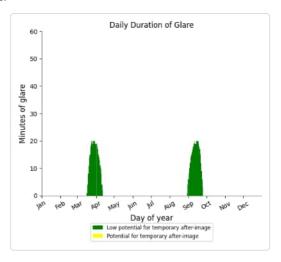
Permanent Retinal Damage Zone
Hazard from Source Data

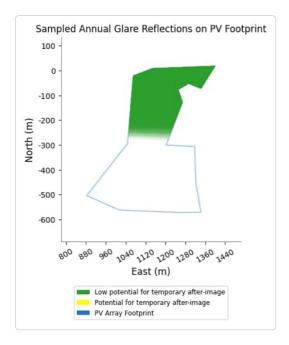
Hazard Due to Viewing Unfiltered Sun

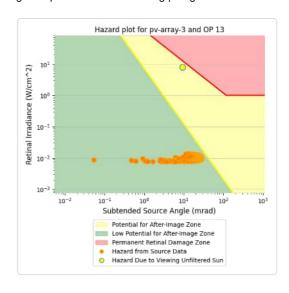
## PV array 3 - OP Receptor (OP 13)

- 753 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.





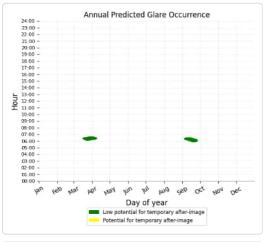


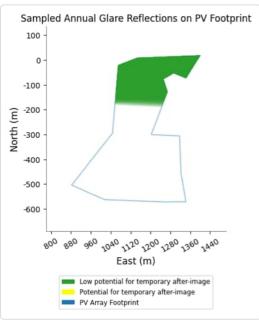


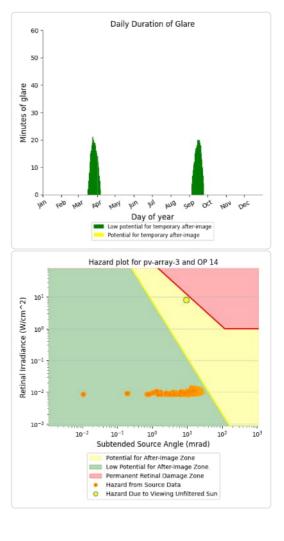
## PV array 3 - OP Receptor (OP 14)

PV array is expected to produce the following glare for receptors at this location:

- 586 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





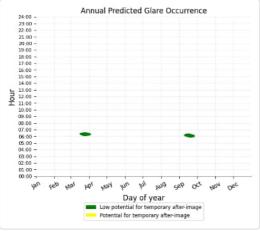


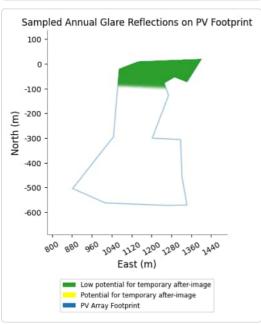
## PV array 3 - OP Receptor (OP 15)

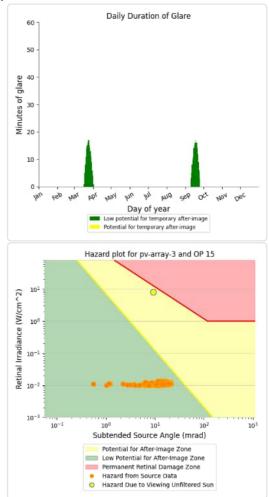
PV array is expected to produce the following glare for receptors at this location:

352 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.

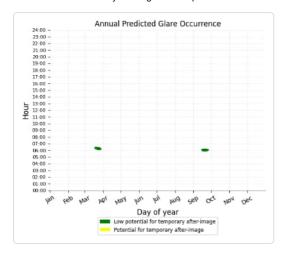


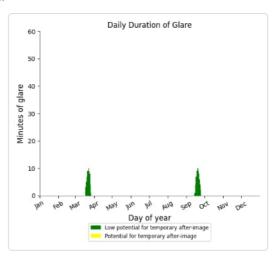


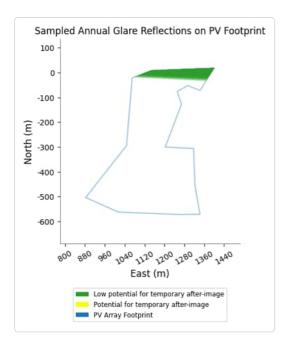


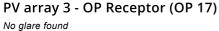
## PV array 3 - OP Receptor (OP 16)

- 134 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 3 - OP Receptor (OP 18)

No glare found

PV array 3 - OP Receptor (OP 19)
No glare found

PV array 3 - OP Receptor (OP 20)
No glare found

PV array 3 - OP Receptor (OP 21)
No glare found

PV array 3 - OP Receptor (OP 22)

No glare found

PV array 3 - OP Receptor (OP 23)
No glare found

PV array 3 - OP Receptor (OP 24)
No glare found

PV array 3 - OP Receptor (OP 25)
No glare found

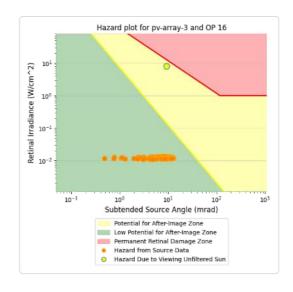
PV array 3 - OP Receptor (OP 26)
No glare found

PV array 3 - OP Receptor (OP 27)
No glare found

PV array 3 - OP Receptor (OP 28)
No glare found

PV array 3 - OP Receptor (OP 29)
No glare found

PV array 3 - OP Receptor (OP 30)



No glare found

PV array 3 - OP Receptor (OP 31)

No glare found

PV array 3 - OP Receptor (OP 32)

No glare found

PV array 3 - OP Receptor (OP 33)

No glare found

PV array 3 - OP Receptor (OP 34)

No glare found

PV array 3 - OP Receptor (OP 35)

No glare found

PV array 3 - OP Receptor (OP 36)

No glare found

PV array 3 - OP Receptor (OP 37)

No glare found

PV array 3 - OP Receptor (OP 38)

No glare found

PV array 3 - OP Receptor (OP 39)

No glare found

PV array 3 - OP Receptor (OP 40)

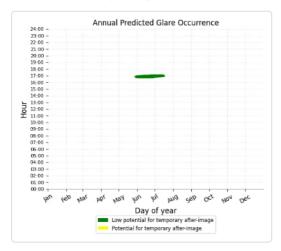
No glare found

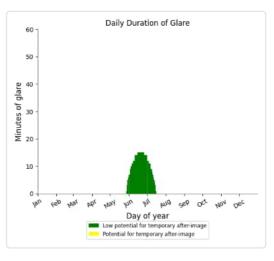
PV array 3 - OP Receptor (OP 41)

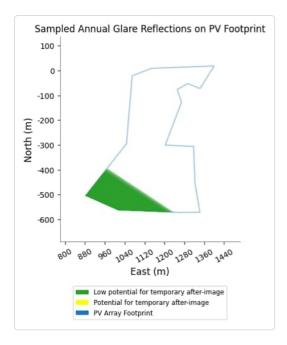
No glare found

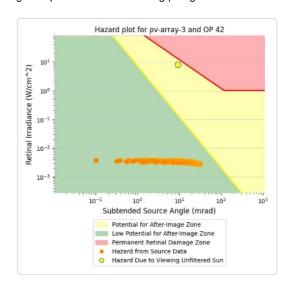
## PV array 3 - OP Receptor (OP 42)

- 541 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.





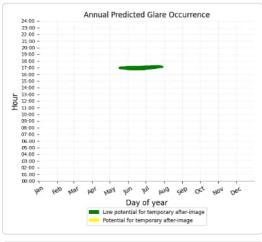


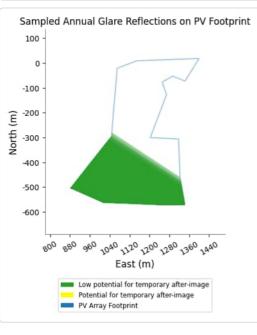


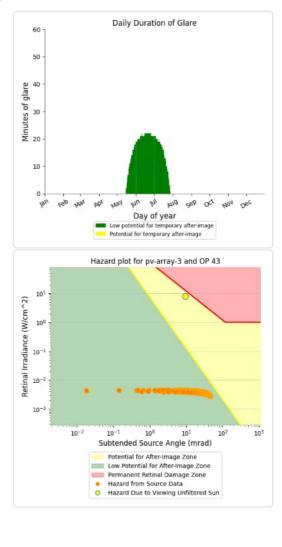
## PV array 3 - OP Receptor (OP 43)

PV array is expected to produce the following glare for receptors at this location:

- 1,236 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





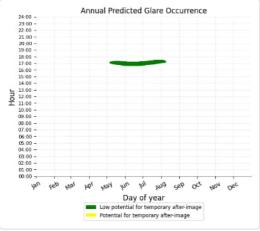


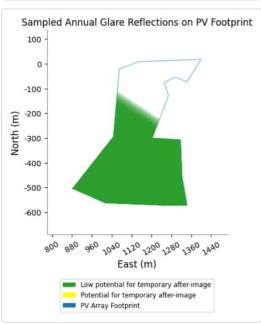
## PV array 3 - OP Receptor (OP 44)

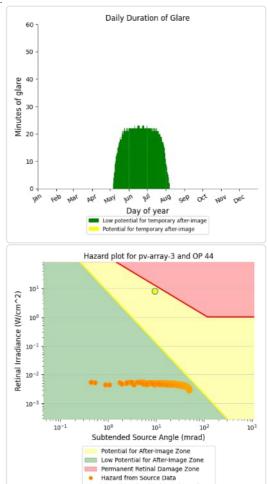
PV array is expected to produce the following glare for receptors at this location:

1,763 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.



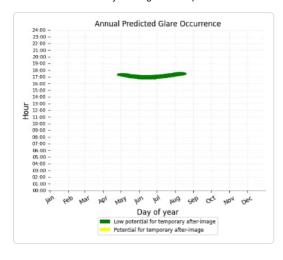


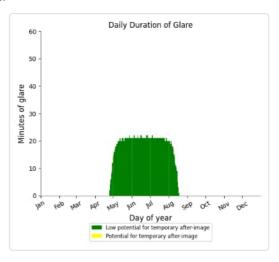


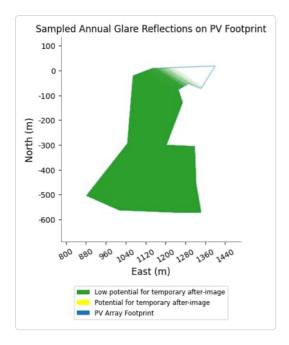
Hazard Due to Viewing Unfiltered Sun

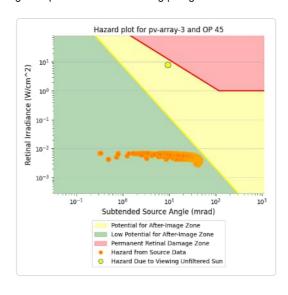
## PV array 3 - OP Receptor (OP 45)

- 2,191 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.





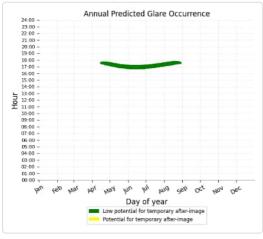


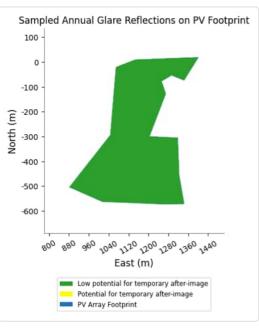


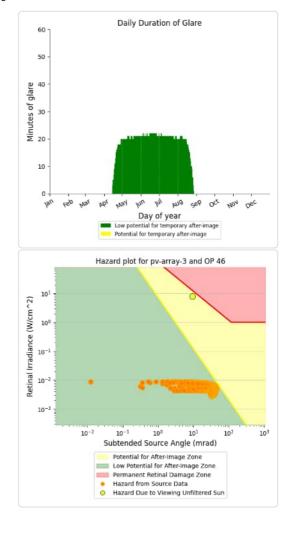
## PV array 3 - OP Receptor (OP 46)

PV array is expected to produce the following glare for receptors at this location:

- 2,623 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





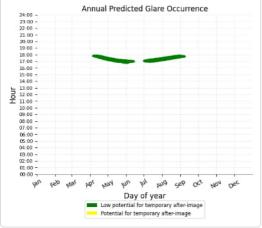


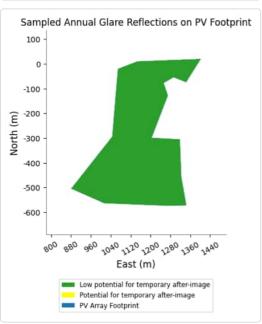
## PV array 3 - OP Receptor (OP 47)

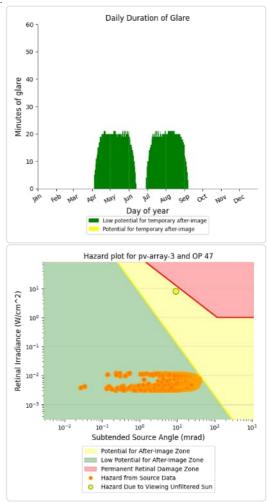
PV array is expected to produce the following glare for receptors at this location:

2,484 minutes of "green" glare with low potential to cause temporary after-image.









## PV array 4 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)	
OP: OP 1	0		
OP: OP 2	0	0	
OP: OP 3	0	0	
OP: OP 4	0	0	
OP: OP 5	0	0	
OP: OP 6	0	0	
OP: OP 7	0	0	
OP: OP 8	1443	0	
OP: OP 9	1041	0	
OP: OP 10	1178	0	
OP: OP 11	29	0	
OP: OP 12	24	0	
OP: OP 13	22 0		
OP: OP 14	1082 22		
OP: OP 15	3	0	
OP: OP 16	1195	107	
OP: OP 17	1395 416		
OP: OP 18	2667	1138	
OP: OP 19	1722	754	

OP: OP 20	434	246
OP: OP 21	56	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0
OP: OP 27	0	0
OP: OP 28	0	0
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	0	0
OP: OP 38	0	0
OP: OP 39	0	0
OP: OP 40	0	0
OP: OP 41	0	0
OP: OP 42	0	0
OP: OP 43	0	0
OP: OP 44	612	0
OP: OP 45	1391	0
OP: OP 46	1943	0
OP: OP 47	2415	0

## PV array 4 - OP Receptor (OP 1)

No glare found

## PV array 4 - OP Receptor (OP 2)

No glare found

#### PV array 4 - OP Receptor (OP 3)

No glare found

## PV array 4 - OP Receptor (OP 4)

No glare found

## PV array 4 - OP Receptor (OP 5)

No glare found

#### PV array 4 - OP Receptor (OP 6)

No glare found

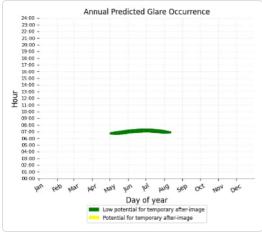
#### PV array 4 - OP Receptor (OP 7)

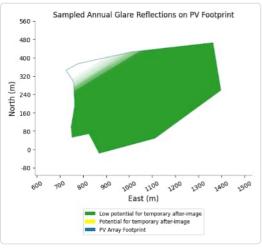
No glare found

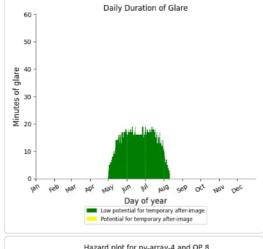
#### PV array 4 - OP Receptor (OP 8)

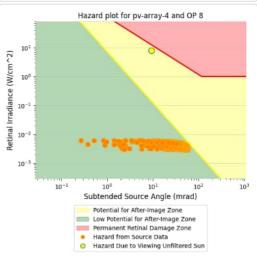
- PV array is expected to produce the following glare for receptors at this location:

   1,443 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.







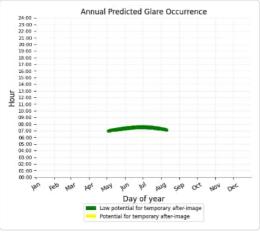


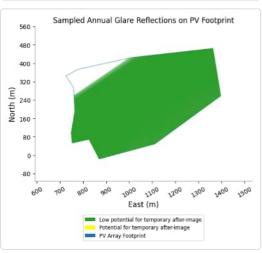
## PV array 4 - OP Receptor (OP 9)

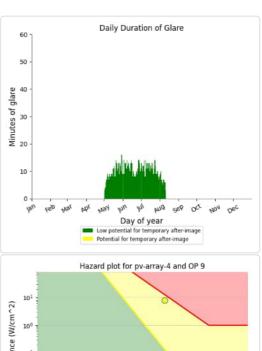
PV array is expected to produce the following glare for receptors at this location:

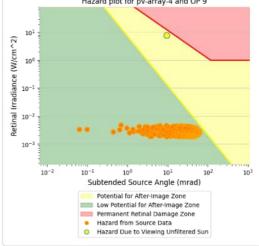
1,041 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.





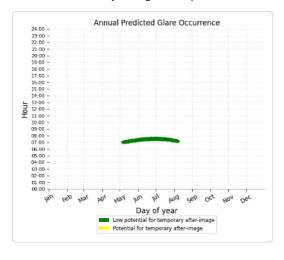


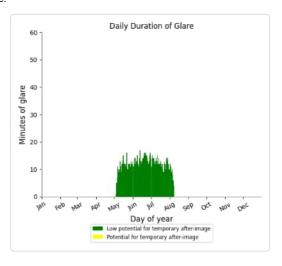


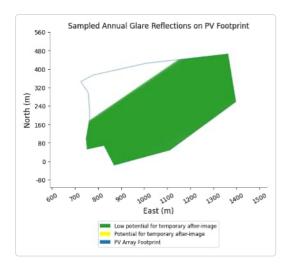
## PV array 4 - OP Receptor (OP 10)

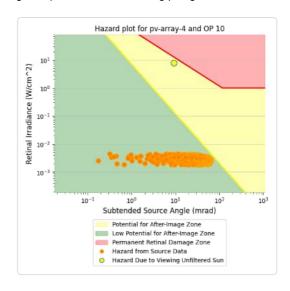
- PV array is expected to produce the following glare for receptors at this location:

   1,178 minutes of "green" glare with low potential to cause temporary after-image. 1,178 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.





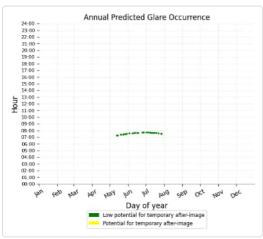


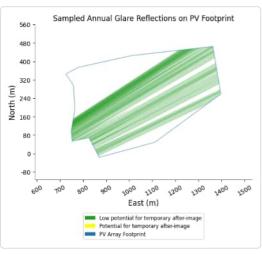


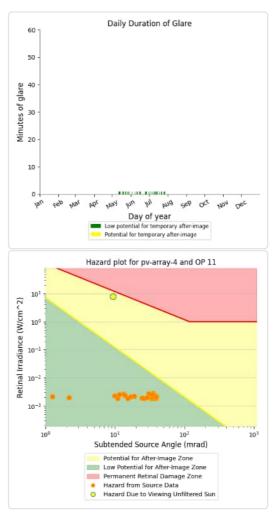
## PV array 4 - OP Receptor (OP 11)

PV array is expected to produce the following glare for receptors at this location:

- 29 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

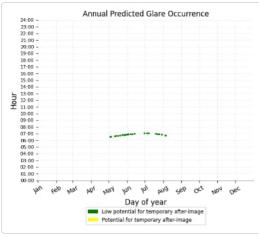


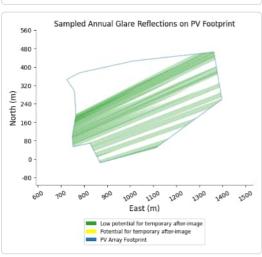


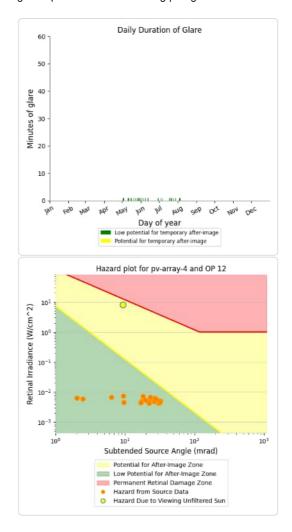


## PV array 4 - OP Receptor (OP 12)

- 24 minutes of "green" glare with low potential to cause temporary after-image.
  0 minutes of "yellow" glare with potential to cause temporary after-image.

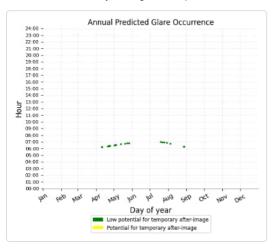


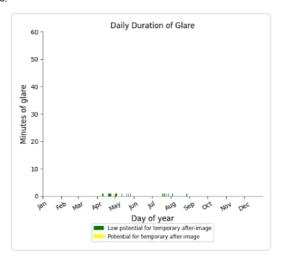


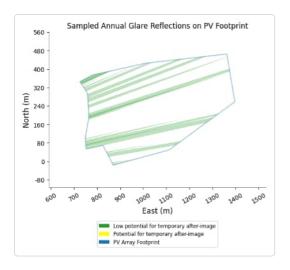


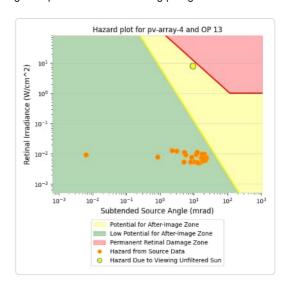
## PV array 4 - OP Receptor (OP 13)

- 22 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





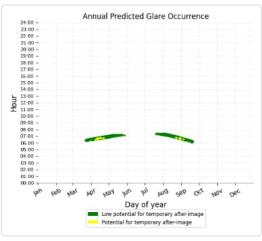


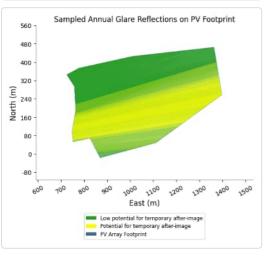


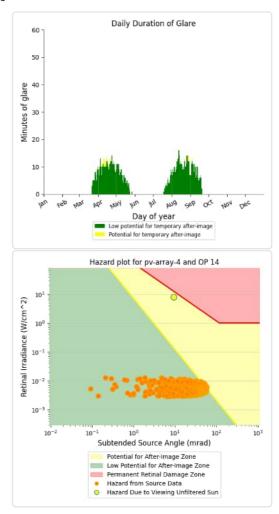
## PV array 4 - OP Receptor (OP 14)

PV array is expected to produce the following glare for receptors at this location:

- 1,082 minutes of "green" glare with low potential to cause temporary after-image.
- 22 minutes of "yellow" glare with potential to cause temporary after-image.

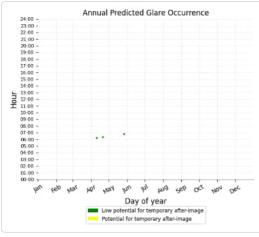


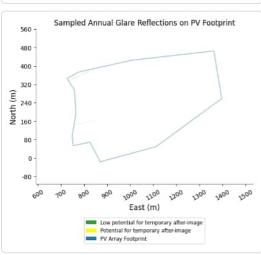


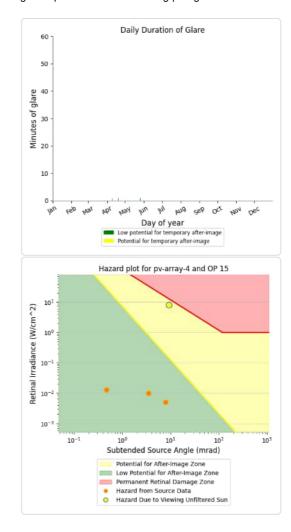


## PV array 4 - OP Receptor (OP 15)

- PV array is expected to produce the following glare for receptors at this location:
   3 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.

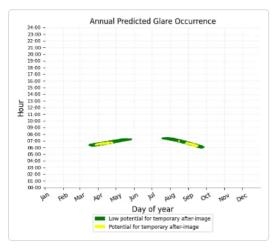


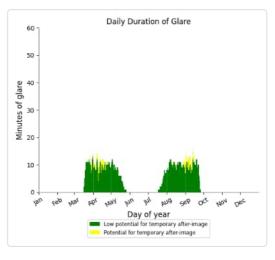


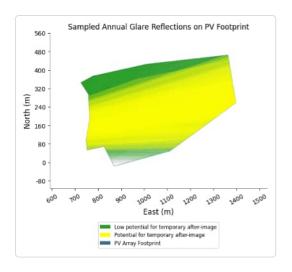


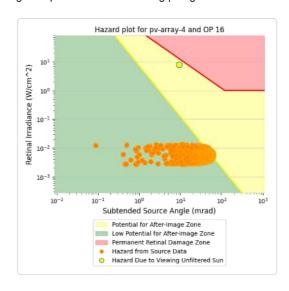
## PV array 4 - OP Receptor (OP 16)

- 1,195 minutes of "green" glare with low potential to cause temporary after-image.
- 107 minutes of "yellow" glare with potential to cause temporary after-image.





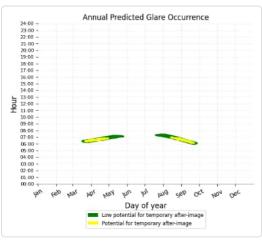


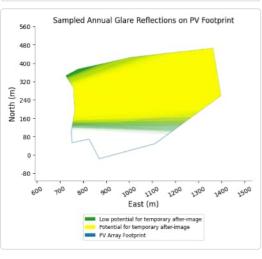


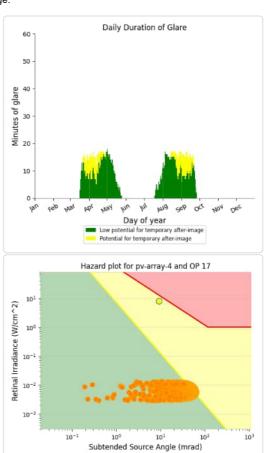
## PV array 4 - OP Receptor (OP 17)

PV array is expected to produce the following glare for receptors at this location:

- 1,395 minutes of "green" glare with low potential to cause temporary after-image.
- 416 minutes of "yellow" glare with potential to cause temporary after-image.







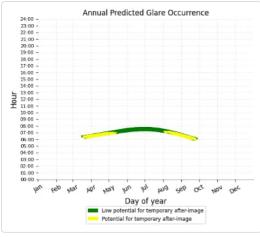
Potential for After-Image Zone

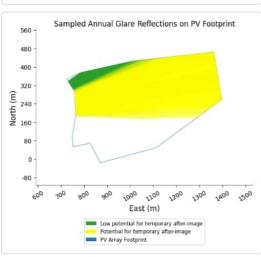
Low Potential for After-Image Zone Permanent Retinal Damage Zone Hazard from Source Data

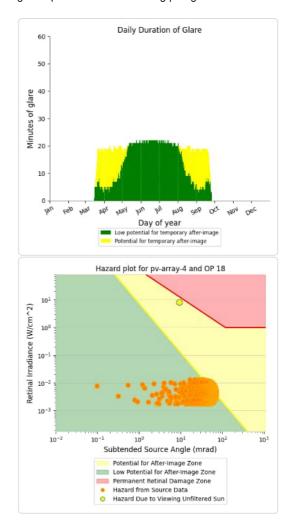
Hazard Due to Viewing Unfiltered Sun

## PV array 4 - OP Receptor (OP 18)

- 2,667 minutes of "green" glare with low potential to cause temporary after-image. 1,138 minutes of "yellow" glare with potential to cause temporary after-image.

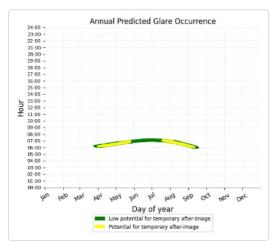


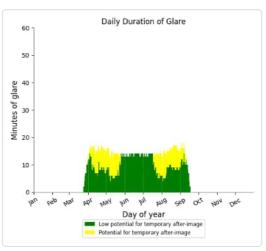


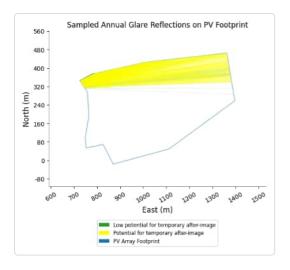


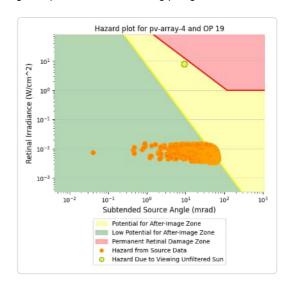
## PV array 4 - OP Receptor (OP 19)

- 1,722 minutes of "green" glare with low potential to cause temporary after-image.
- 754 minutes of "yellow" glare with potential to cause temporary after-image.





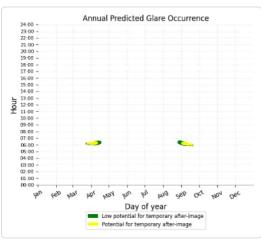


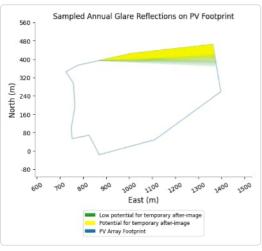


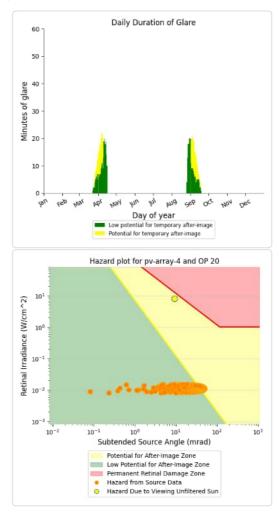
## PV array 4 - OP Receptor (OP 20)

PV array is expected to produce the following glare for receptors at this location:

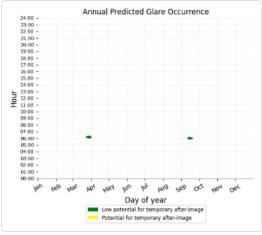
- 434 minutes of "green" glare with low potential to cause temporary after-image.
- 246 minutes of "yellow" glare with potential to cause temporary after-image.

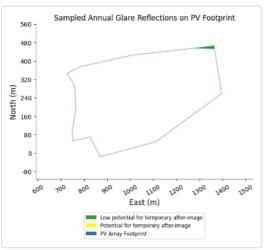






## PV array 4 - OP Receptor (OP 21)







No glare found

PV array 4 - OP Receptor (OP 23)

No glare found

PV array 4 - OP Receptor (OP 24)

No glare found

PV array 4 - OP Receptor (OP 25)

No glare found

PV array 4 - OP Receptor (OP 26)

No glare found

PV array 4 - OP Receptor (OP 27)

No glare found

PV array 4 - OP Receptor (OP 28)

No glare found

PV array 4 - OP Receptor (OP 29)

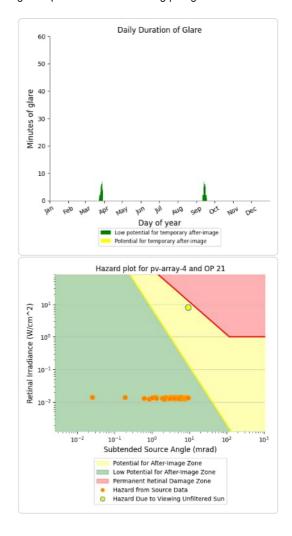
No glare found

PV array 4 - OP Receptor (OP 30)

No glare found

PV array 4 - OP Receptor (OP 31)

No glare found



PV array 4 - OP Receptor (OP 32)

No glare found

PV array 4 - OP Receptor (OP 33)

No glare found

PV array 4 - OP Receptor (OP 34)

No glare found

PV array 4 - OP Receptor (OP 35)

No glare found

PV array 4 - OP Receptor (OP 36)

No glare found

PV array 4 - OP Receptor (OP 37)

No glare found

PV array 4 - OP Receptor (OP 38)

No glare found

PV array 4 - OP Receptor (OP 39)

No glare found

PV array 4 - OP Receptor (OP 40)

No glare found

PV array 4 - OP Receptor (OP 41)

No glare found

PV array 4 - OP Receptor (OP 42)

No glare found

PV array 4 - OP Receptor (OP 43)

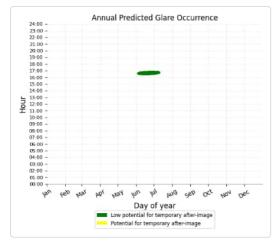
No glare found

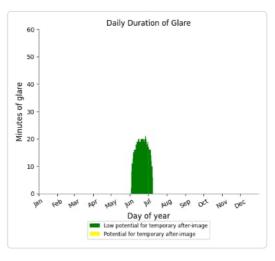
#### PV array 4 - OP Receptor (OP 44)

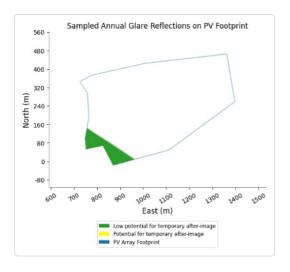
PV array is expected to produce the following glare for receptors at this location:

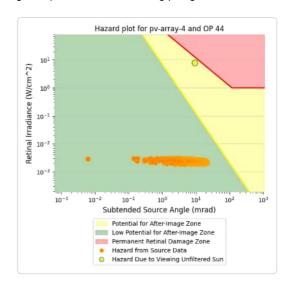
• 612 minutes of "green" glare with low potential to cause temporary after-image.

- 0 minutes of "yellow" glare with potential to cause temporary after-image.





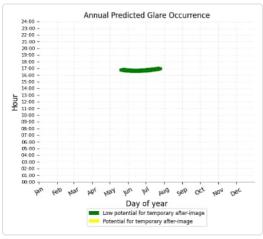


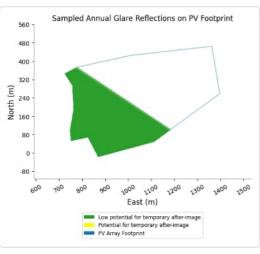


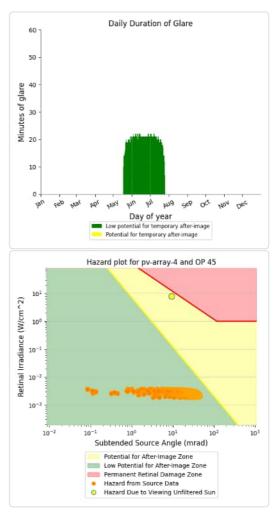
## PV array 4 - OP Receptor (OP 45)

PV array is expected to produce the following glare for receptors at this location:

- 1,391 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



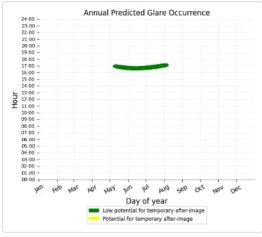


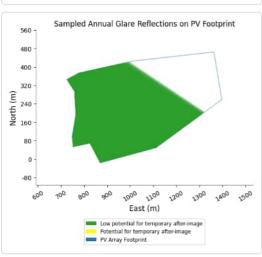


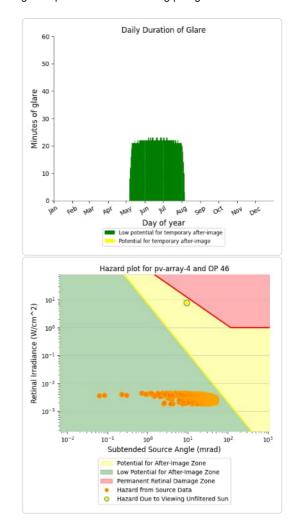
## PV array 4 - OP Receptor (OP 46)

- PV array is expected to produce the following glare for receptors at this location:

   1,943 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.

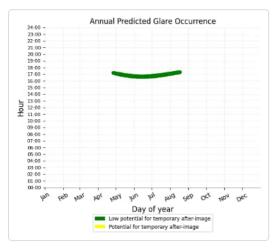


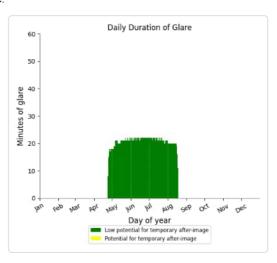


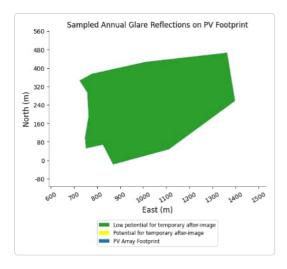


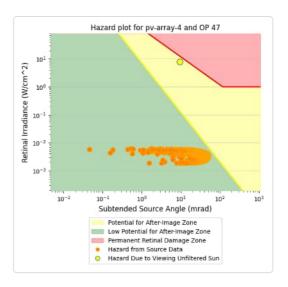
## PV array 4 - OP Receptor (OP 47)

- 2,415 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image. 2,415 minutes of "green" glare with low potential to cause temporary after-image.









# **Assumptions**

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not automatically account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response
  time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more
  rigorous modeling methods.
- Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results fo large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- 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.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a
  continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Refer to the Help page for detailed assumptions and limitations not listed here.

# ANNEX J: RAIL RECEPTOR GLARE RESULTS 5 DEGREES



# ForgeSolar

# **Gate Burton Solar Farm**

# Gate Burton Solar Farm Rail Receptors 5 Deg

Created Oct. 11, 2022 Updated Jan. 16, 2023 Time-step 1 minute Timezone offset UTC0 Site ID 77370.13697

Project type Advanced Project status: active Category 100 MW to 1 GW



## Misc. Analysis Settings

DNI: varies (1,000.0 W/m^2 peak) Ocular transmission coefficient: 0.5 Pupil diameter: 0.002 m Eye focal length: 0.017 m Sun subtended angle: 9.3 mrad PV Analysis Methodology: **Version 2** Enhanced subtended angle calculation: **On** 

# Summary of Results Glare with potential for temporary after-image predicted

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV array 1	5.0	180.0	61,401	80,301	-
PV array 2	5.0	180.0	24,128	35,508	-
PV array 3	5.0	180.0	15,423	1,455	-
PV array 4	5.0	180.0	7,399	1,131	-

# **Component Data**

# PV Array(s)

Total PV footprint area: 5,164,703 m^2

Name: PV array 1

Footprint area: 1,597,322 m<sup>2</sup>
Axis tracking: Fixed (no rotation)
Tilt: 5.0 deg
Orientation: 180.0 deg

Rated power: -

Panel material: Light textured glass with AR coating Vary reflectivity with sun position? Yes Correlate slope error with surface type? Yes Slope error: 9.16 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.360141	-0.740853	25.38	3.50	28.88
2	53.359142	-0.745295	27.04	3.50	30.54
3	53.355326	-0.742892	26.73	3.50	30.23
	53.356632	-0.738987	24.55	3.50	28.05
i	53.356465	-0.738150	25.02	3.50	28.52
i	53.356158	-0.737978	25.57	3.50	29.07
'	53.352510	-0.737785	29.23	3.50	32.73
3	53.348948	-0.739309	30.83	3.50	34.33
)	53.348986	-0.740188	32.37	3.50	35.87
0	53.349857	-0.742506	34.73	3.50	38.23
1	53.350242	-0.744952	33.16	3.50	36.66
2	53.349089	-0.744373	34.81	3.50	38.31
3	53.346510	-0.744101	28.30	3.50	31.80
4	53.346484	-0.745345	28.83	3.50	32.33
5	53.344653	-0.744766	24.78	3.50	28.28
6	53.344460	-0.745259	24.68	3.50	28.18
7	53.341078	-0.743199	25.42	3.50	28.92
8	53.340130	-0.741418	27.66	3.50	31.16
9	53.340758	-0.738243	29.03	3.50	32.53
20	53.339707	-0.737427	30.33	3.50	33.83
21	53.340399	-0.734659	29.43	3.50	32.93
22	53.340169	-0.730775	22.76	3.50	26.26
23	53.338496	-0.730450	22.00	3.50	25.50
24	53.338303	-0.730793	23.84	3.50	27.34
25	53.337471	-0.730750	21.41	3.50	24.91
26	53.336868	-0.735321	27.34	3.50	30.84
27	53.335023	-0.733321	26.30	3.50	29.80
. <i>r</i> !8	53.334677	-0.736522	27.73	3.50	31.23
29	53.333793	-0.737316	27.79	3.50	31.29
30	53.333435	-0.739676	29.76	3.50	33.26
31	53.332743	-0.739397	29.43	3.50	32.93
32	53.332589	-0.738775	29.26	3.50	32.76
33	53.332794	-0.736908	26.90	3.50	30.40
34	53.332909	-0.733454	26.43	3.50	29.93
35	53.333845	-0.733733	26.55	3.50	30.05
36	53.333985	-0.731544	23.51	3.50	27.01
37	53.332973	-0.730879	23.08	3.50	26.58
38	53.333076	-0.728046	16.44	3.50	19.94
39	53.332896	-0.726931	15.56	3.50	19.06
10	53.332948	-0.726287	15.53	3.50	19.03
11	53.333691	-0.725300	15.07	3.50	18.57
2	53.332794	-0.724120	18.41	3.50	21.91
3	53.333268	-0.722364	17.39	3.50	20.89
14	53.342867	-0.728436	22.81	3.50	26.31
5	53.342483	-0.731011	25.38	3.50	28.88
6	53.341112	-0.730604	23.89	3.50	27.39
7	53.340945	-0.731677	25.52	3.50	29.02
18	53.341176	-0.732234	26.17	3.50	29.67
.9	53.344103	-0.733393	20.15	3.50	23.65
50	53.344756	-0.729617	20.06	3.50	23.56
1	53.345460	-0.730003	21.09	3.50	24.59
52	53.345294	-0.731655	22.52	3.50	26.02
i3	53.344910	-0.734144	24.14	3.50	27.64
i3 i4	53.344999	-0.734144	24.71	3.50	28.21
i5	53.343795	-0.733003	21.17	3.50	24.67
56 57	53.343757	-0.735990	21.93	3.50	25.43
57	53.344961	-0.736204	23.87	3.50	27.37
58	53.344961	-0.737942	22.53	3.50	26.03
59	53.345588	-0.738028	23.02	3.50	26.52
60	53.345448	-0.736719	23.95	3.50	27.45
51	53.346434	-0.737213	22.62	3.50	26.12
62	53.346934	-0.736547	22.42	3.50	25.92
3	53.347395	-0.736547	23.09	3.50	26.59
64	53.347151	-0.731119	25.15	3.50	28.65

65	53.353735	-0.735260	23.20	3.50	26.70
66	53.354145	-0.736290	22.12	3.50	25.62
67	53.355310	-0.736462	22.00	3.50	25.50
68	53.356885	-0.737427	23.38	3.50	26.88
69	53.356680	-0.738092	24.35	3.50	27.85
70	53.356745	-0.738715	24.23	3.50	27.73

Name: PV array 2 Footprint area: 3,187,939 m^2 Axis tracking: Fixed (no rotation)
Tilt: 5.0 deg
Orientation: 180.0 deg

Rated power: -

Panel material: Light textured glass with AR coating Vary reflectivity with sun position? Yes Correlate slope error with surface type? Yes Slope error: 9.16 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.353754	-0.734662	23.97	3.50	27.47
2	53.338935	-0.725169	13.57	3.50	17.07
3	53.338615	-0.723559	12.00	3.50	15.50
4	53.339140	-0.723624	12.00	3.50	15.50
5	53.339294	-0.722401	12.00	3.50	15.50
6	53.338666	-0.722207	11.79	3.50	15.29
7	53.338269	-0.722744	12.00	3.50	15.50
8	53.337500	-0.722165	11.72	3.50	15.22
9	53.337064	-0.723066	12.31	3.50	15.81
10	53.336155	-0.723452	13.00	3.50	16.50
11	53.333515	-0.721671	15.87	3.50	19.37
12	53.334143	-0.718045	11.00	3.50	14.50
13 14	53.334745 53.334950	-0.718538 -0.718152	11.00	3.50	14.50
15	53.335783	-0.717959	10.14	3.50	13.64
16	53.336616	-0.717939	9.24	3.50	12.74
17	53.336975	-0.718216	9.59	3.50	13.09
18	53.337667	-0.718688	10.61	3.50	14.11
19	53.337897	-0.717723	10.95	3.50	14.11
20	53.337859	-0.716392	9.89	3.50	13.39
21	53.337269	-0.715341	9.24	3.50	12.74
22	53.336116	-0.715856	9.81	3.50	13.31
23	53.334809	-0.714955	10.90	3.50	14.40
24	53.335732	-0.710949	11.21	3.50	14.71
25	53.336244	-0.710563	11.08	3.50	14.58
26	53.336552	-0.709983	11.04	3.50	14.54
27	53.337564	-0.710155	12.22	3.50	15.72
28	53.337603	-0.709511	12.51	3.50	16.01
29	53.338410	-0.709061	13.25	3.50	16.75
30	53.339153	-0.709211	13.80	3.50	17.30
31	53.339178	-0.705520	14.81	3.50	18.31
32	53.341318	-0.704426	14.16	3.50	17.66
33	53.341254	-0.703460	15.00	3.50	18.50
34	53.338320	-0.701636	14.00	3.50	17.50
35	53.337731	-0.702967	14.70	3.50	18.20
36	53.337052	-0.702516	14.29	3.50	17.79
37	53.337039	-0.698825	16.56	3.50	20.06
38	53.337128	-0.696336	19.06	3.50	22.56
39	53.336962	-0.695049	20.32	3.50	23.82
40	53.337295	-0.693182	19.41	3.50	22.91
41	53.339883	-0.694727	14.00	3.50	17.50
42	53.341087	-0.692023	13.00	3.50	16.50
43	53.341664	-0.692109	13.00	3.50	16.50
44	53.344277	-0.696465	12.00	3.50	15.50
45	53.348287	-0.697817	13.08	3.50	16.58
46	53.349350	-0.697602	14.02	3.50	17.52
47	53.349516	-0.698224	14.00	3.50	17.50
48	53.349427	-0.702924	17.52	3.50	21.02
49	53.348914	-0.705091	17.98	3.50	21.48
50	53.349222	-0.705305	18.00	3.50	21.50
51	53.349183	-0.706464	18.00	3.50	21.50
52	53.346980	-0.706421	17.00	3.50	20.50
53	53.346378	-0.713138	13.88	3.50	17.38
54	53.347505	-0.713910	14.28	3.50	17.78
55	53.347505	-0.714983	14.25	3.50	17.75
56 57	53.349030	-0.715498	16.00	3.50	19.50
57	53.349004	-0.720004	22.46	3.50	25.96
58	53.350848	-0.719789	21.00	3.50	24.50
59 60	53.352872	-0.719747	19.04	3.50	22.54
60	53.353564	-0.719918	18.54	3.50	22.04
61	53.352898	-0.721678	18.21	3.50	21.71
62 63	53.352782	-0.724574	17.76 19.54	3.50	21.26
	00.00000	0.120244	10.07	0.00	20.04

65	53.354166	-0.729746	19.36	3.50	22.86
66	53.354179	-0.734016	22.69	3.50	26.19

Name: PV array 3 Footprint area: 162,584 m^2 Axis tracking: Fixed (no rotation) Tilt: 5.0 deg Orientation: 180.0 deg

Rated power: -

Panel material: Light textured glass with AR coating

Vary reflectivity with sun position? Yes Correlate slope error with surface type? Yes Slope error: 9.16 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.355703	-0.727643	18.87	3.50	22.37
2	53.355177	-0.725669	17.24	3.50	20.74
3	53.355088	-0.721935	18.98	3.50	22.48
4	53.355101	-0.720734	21.71	3.50	25.21
5	53.356125	-0.721034	21.89	3.50	25.39
6	53.357483	-0.721120	19.10	3.50	22.60
7	53.357534	-0.722836	18.29	3.50	21.79
8	53.359083	-0.721849	18.14	3.50	21.64
9	53.359544	-0.722107	16.73	3.50	20.23
10	53.359762	-0.721485	16.64	3.50	20.14
11	53.359583	-0.720734	17.67	3.50	21.17
12	53.360402	-0.719875	17.29	3.50	20.79
13	53.360313	-0.723673	16.00	3.50	19.50
14	53.360044	-0.724832	16.19	3.50	19.69
15	53.357585	-0.725175	17.45	3.50	20.95

Name: PV array 4 Footprint area: 216,857 m^2 Axis tracking: Fixed (no rotation)

Tilt: 5.0 deg

Orientation: 180.0 deg

Rated power: -

Panel material: Light textured glass with AR coating

Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes

Slope error: 9.16 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.360082	-0.727836	17.00	3.50	20.50
2	53.360851	-0.728501	17.37	3.50	20.87
3	53.360710	-0.729596	18.17	3.50	21.67
4	53.361107	-0.729660	18.75	3.50	22.25
5	53.361952	-0.729424	19.00	3.50	22.50
6	53.362874	-0.729510	19.31	3.50	22.81
7	53.363335	-0.730003	20.12	3.50	23.62
8	53.363591	-0.729209	19.64	3.50	23.14
9	53.364052	-0.725733	17.95	3.50	21.45
10	53.364410	-0.720433	15.80	3.50	19.30
11	53.362554	-0.719918	16.00	3.50	19.50
12	53.360671	-0.724210	16.71	3.50	20.21

# **Discrete Observation Receptors**

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	m	m	m
OP 1	53.368683	-0.746822	26.57	2.75	29.32
OP 2	53.366916	-0.744547	25.49	2.75	28.24
OP 3	53.365649	-0.743045	26.49	2.75	29.24
OP 4	53.364074	-0.741694	29.57	2.75	32.32
OP 5	53.362396	-0.740599	27.00	2.75	29.75
OP 6	53.360540	-0.739355	25.90	2.75	28.65
OP 7	53.358708	-0.738193	23.02	2.75	25.77
OP 8	53.357094	-0.737142	23.06	2.75	25.81
OP 9	53.355250	-0.735983	22.00	2.75	24.75
OP 10	53.353803	-0.735060	23.44	2.75	26.19
OP 11	53.352151	-0.734030	26.30	2.75	29.05
OP 12	53.350409	-0.732893	26.35	2.75	29.10
OP 13	53.348692	-0.731777	24.66	2.75	27.41
OP 14	53.347019	-0.730714	24.02	2.75	26.77
OP 15	53.345392	-0.729727	20.64	2.75	23.39
OP 16	53.343714	-0.728633	21.68	2.75	24.43
OP 17	53.342198	-0.727640	22.94	2.75	25.69
OP 18	53.340469	-0.726567	17.52	2.75	20.27
OP 19	53.338624	-0.725451	13.51	2.75	16.26
OP 20	53.337086	-0.724357	13.00	2.75	15.75
OP 21	53.335455	-0.723391	13.00	2.75	15.75
OP 22	53.333494	-0.722104	16.25	2.75	19.00
OP 23	53.332059	-0.721202	18.88	2.75	21.63
OP 24	53.330124	-0.719924	13.85	2.75	16.60

# **Summary of PV Glare Analysis**

PV configuration and total predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	5.0	180.0	61,401	80,301	-	-
PV array 2	5.0	180.0	24,128	35,508	-	-
PV array 3	5.0	180.0	15,423	1,455	-	-
PV array 4	5.0	180.0	7,399	1,131	-	-

# Distinct glare per month

Excludes overlapping glare from PV array for multiple receptors at matching time(s)

PV	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pv-array-1 (green)	1501	1356	1738	1803	1648	1567	1642	1771	1750	1590	1437	1532
pv-array-1 (yellow)	630	844	964	953	1290	1345	1316	1129	905	977	693	486
pv-array-2 (green)	147	574	761	751	911	865	908	794	743	735	276	2
pv-array-2 (yellow)	0	10	369	688	918	996	954	809	516	80	0	0
pv-array-3 (green)	0	52	461	609	360	340	401	497	555	176	0	0
pv-array-3 (yellow)	0	0	0	15	4	63	29	18	0	0	0	0
pv-array-4 (green)	0	72	496	405	490	351	447	405	517	211	0	0
pv-array-4 (yellow)	0	0	0	116	75	284	155	117	21	0	0	0

# **PV & Receptor Analysis Results**

Results for each PV array and receptor

# PV array 1 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	1066	0
OP: OP 8	853	83
OP: OP 9	682	405
OP: OP 10	3146	1625
OP: OP 11	11043	20686
OP: OP 12	11252	20200
OP: OP 13	7630	13696
OP: OP 14	2235	4971
OP: OP 15	3908	478
OP: OP 16	2790	1731
OP: OP 17	9359	11061
OP: OP 18	640	494
OP: OP 19	474	603

OP: OP 20	559	520
OP: OP 21	646	440
OP: OP 22	2899	952
OP: OP 23	1603	2329
OP: OP 24	616	27

PV array 1 - OP Receptor (OP 1)

No glare found

PV array 1 - OP Receptor (OP 2)

No glare found

PV array 1 - OP Receptor (OP 3)

No glare found

PV array 1 - OP Receptor (OP 4)

No glare found

PV array 1 - OP Receptor (OP 5)

No glare found

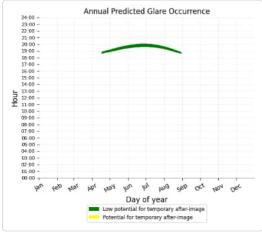
PV array 1 - OP Receptor (OP 6)

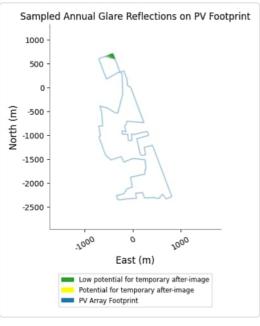
No glare found

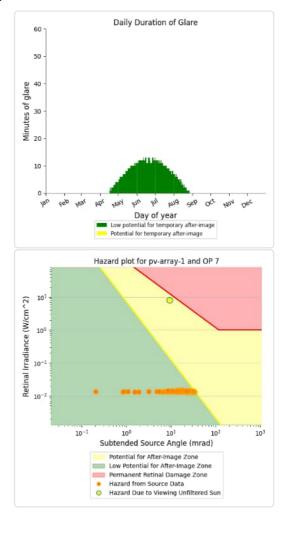
#### PV array 1 - OP Receptor (OP 7)

PV array is expected to produce the following glare for receptors at this location:

- 1,066 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





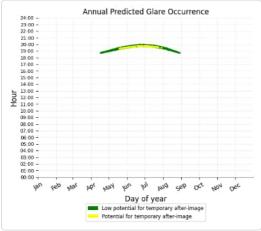


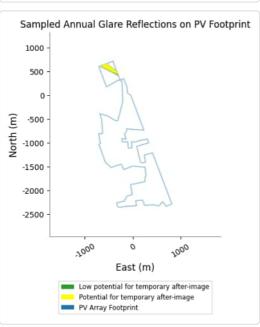
#### PV array 1 - OP Receptor (OP 8)

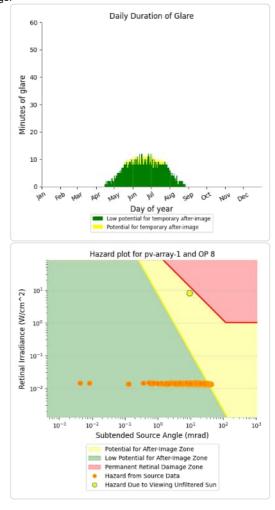
PV array is expected to produce the following glare for receptors at this location:

853 minutes of "green" glare with low potential to cause temporary after-image.

• 83 minutes of "yellow" glare with potential to cause temporary after-image.

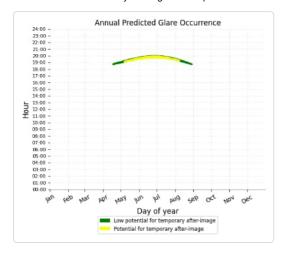


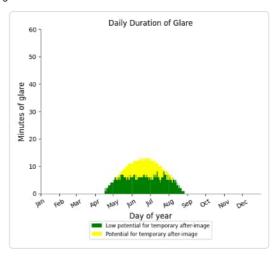


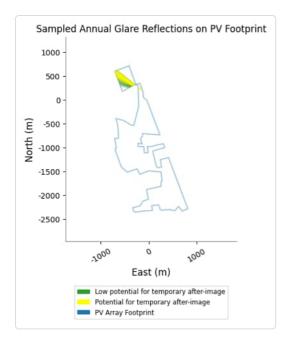


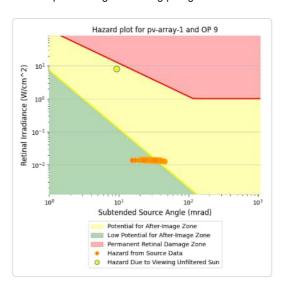
# PV array 1 - OP Receptor (OP 9)

- 682 minutes of "green" glare with low potential to cause temporary after-image.
- 405 minutes of "yellow" glare with potential to cause temporary after-image.





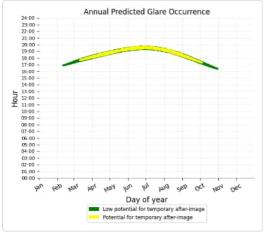


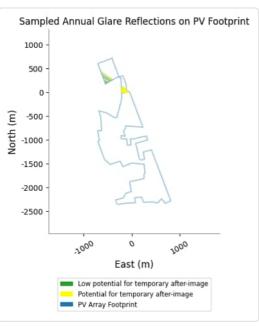


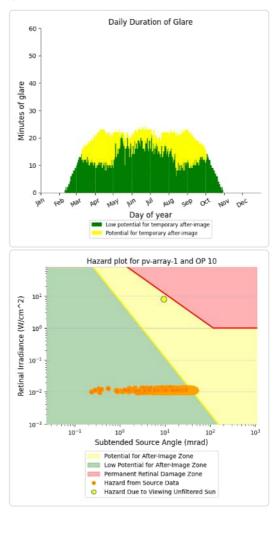
# PV array 1 - OP Receptor (OP 10)

- PV array is expected to produce the following glare for receptors at this location:

   3,146 minutes of "green" glare with low potential to cause temporary after-image.
   1,625 minutes of "yellow" glare with potential to cause temporary after-image.





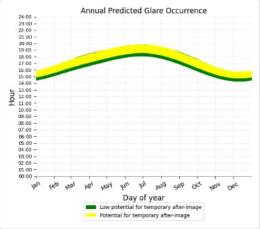


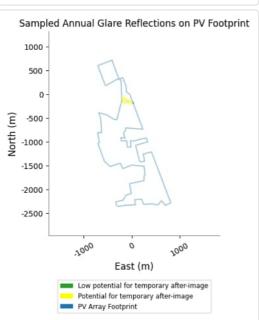
# PV array 1 - OP Receptor (OP 11)

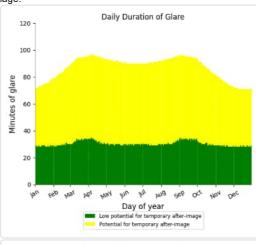
PV array is expected to produce the following glare for receptors at this location:

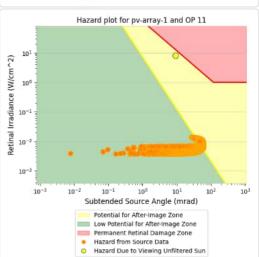
• 11,043 minutes of "green" glare with low potential to cause temporary after-image.

• 20,686 minutes of "yellow" glare with potential to cause temporary after-image.





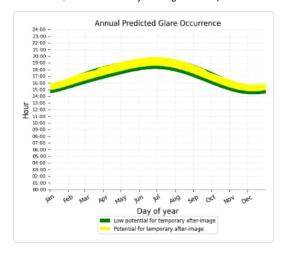


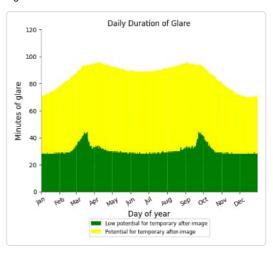


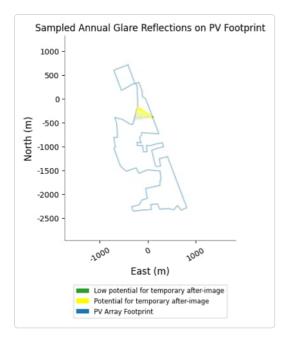
# PV array 1 - OP Receptor (OP 12)

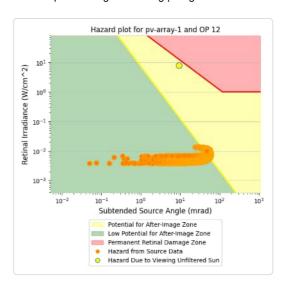
- PV array is expected to produce the following glare for receptors at this location:

   11,252 minutes of "green" glare with low potential to cause temporary after-image.
   20,200 minutes of "yellow" glare with potential to cause temporary after-image.





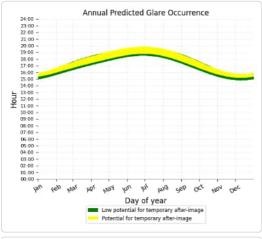


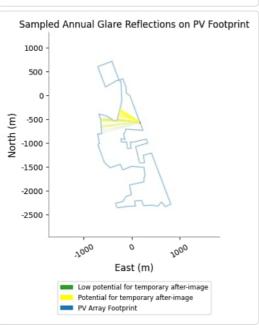


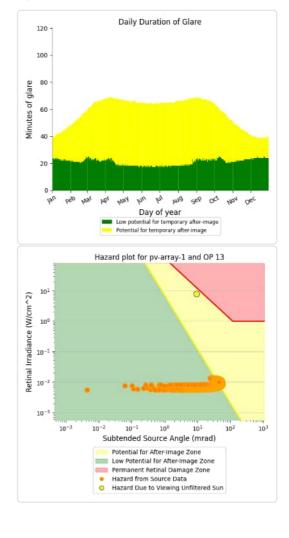
#### PV array 1 - OP Receptor (OP 13)

- PV array is expected to produce the following glare for receptors at this location:

   7,630 minutes of "green" glare with low potential to cause temporary after-image.
   13,696 minutes of "yellow" glare with potential to cause temporary after-image.

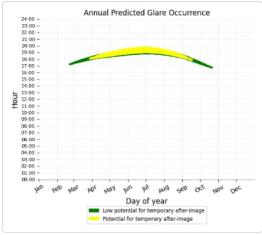


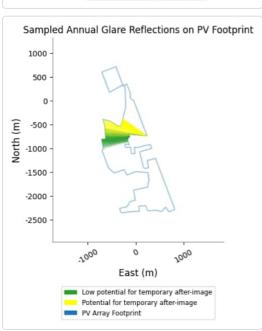


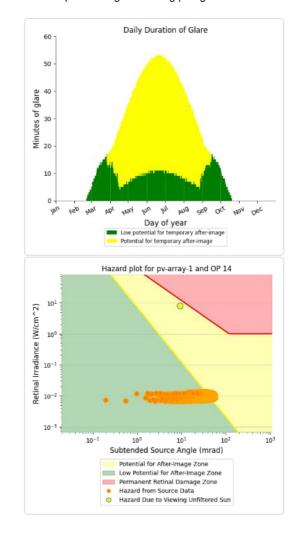


#### PV array 1 - OP Receptor (OP 14)

- 2,235 minutes of "green" glare with low potential to cause temporary after-image.
  4,971 minutes of "yellow" glare with potential to cause temporary after-image.



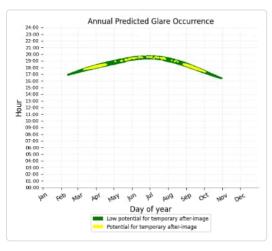


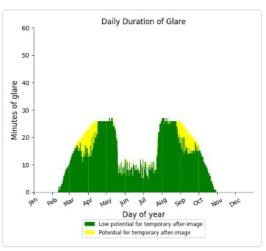


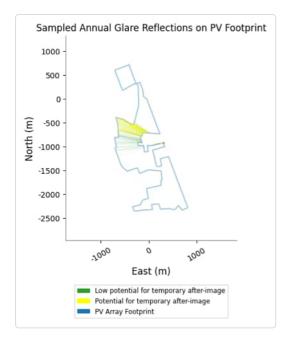
# PV array 1 - OP Receptor (OP 15)

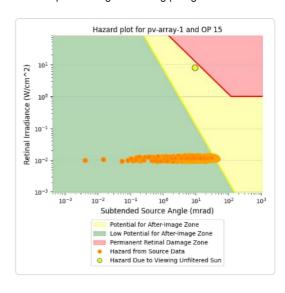
- PV array is expected to produce the following glare for receptors at this location:

   3,908 minutes of "green" glare with low potential to cause temporary after-image.
  - 478 minutes of "yellow" glare with potential to cause temporary after-image.





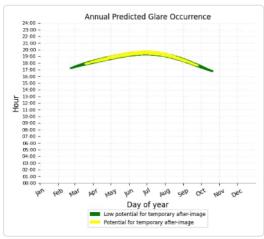


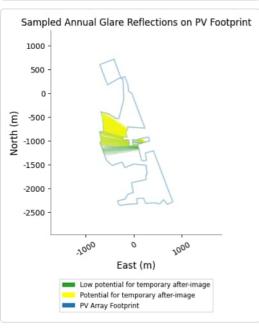


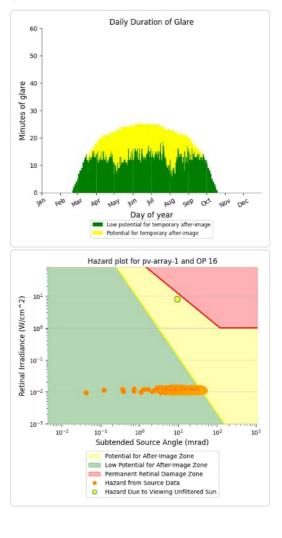
# PV array 1 - OP Receptor (OP 16)

- PV array is expected to produce the following glare for receptors at this location:

   2,790 minutes of "green" glare with low potential to cause temporary after-image.
   1,731 minutes of "yellow" glare with potential to cause temporary after-image.





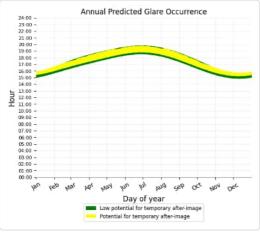


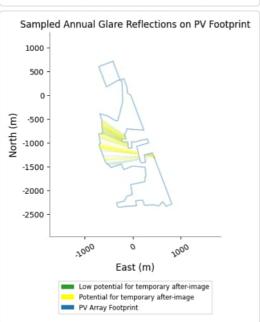
# PV array 1 - OP Receptor (OP 17)

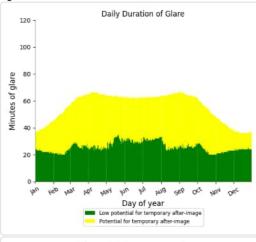
PV array is expected to produce the following glare for receptors at this location:

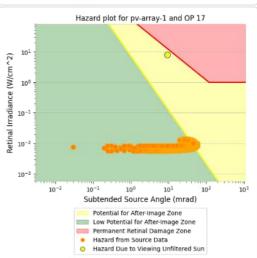
• 9,359 minutes of "green" glare with low potential to cause temporary after-image.

• 11,061 minutes of "yellow" glare with potential to cause temporary after-image.





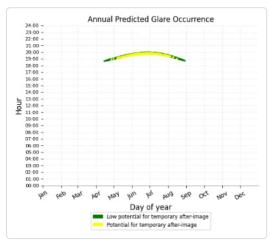


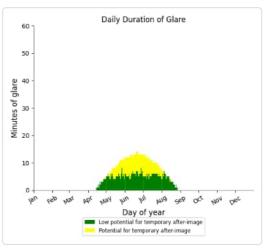


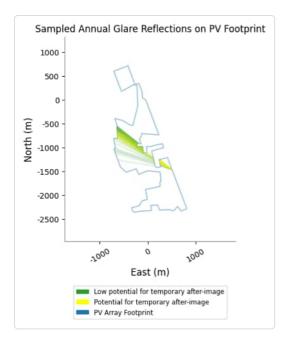
# PV array 1 - OP Receptor (OP 18)

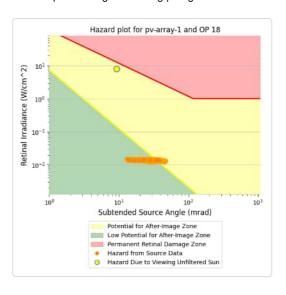
- PV array is expected to produce the following glare for receptors at this location:

   640 minutes of "green" glare with low potential to cause temporary after-image.
   494 minutes of "yellow" glare with potential to cause temporary after-image.



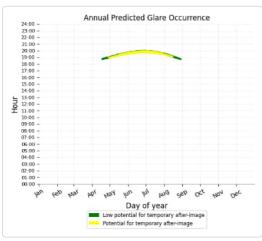


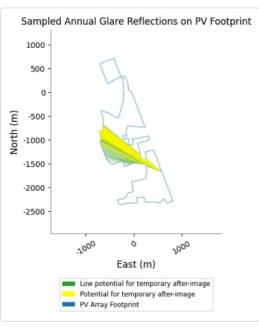


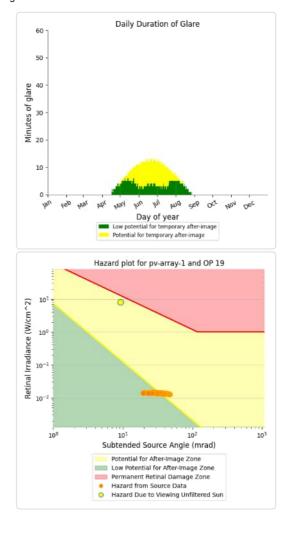


# PV array 1 - OP Receptor (OP 19)

- PV array is expected to produce the following glare for receptors at this location:
   • 474 minutes of "green" glare with low potential to cause temporary after-image.
   • 603 minutes of "yellow" glare with potential to cause temporary after-image.





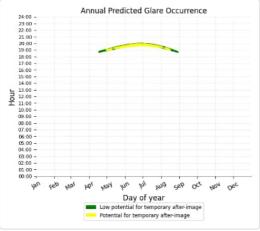


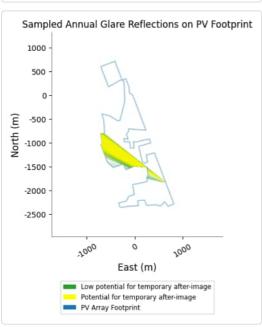
# PV array 1 - OP Receptor (OP 20)

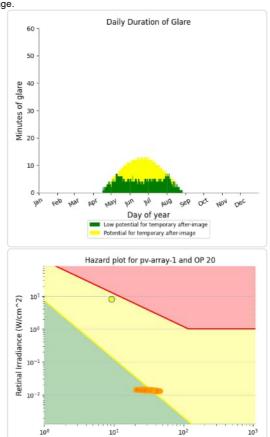
PV array is expected to produce the following glare for receptors at this location:

• 559 minutes of "green" glare with low potential to cause temporary after-image.

• 520 minutes of "yellow" glare with potential to cause temporary after-image.







Subtended Source Angle (mrad)

Hazard Due to Viewing Unfiltered Sun

Potential for After-Image Zone

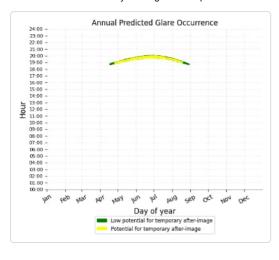
Low Potential for After-Image Zone

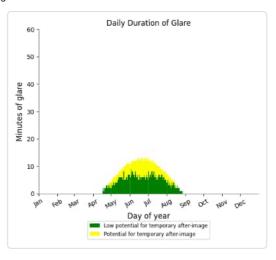
Permanent Retinal Damage Zone

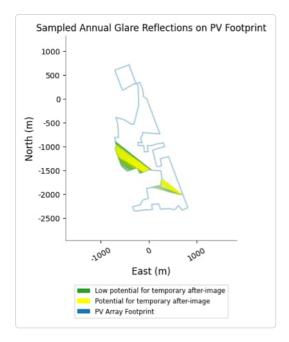
Hazard from Source Data

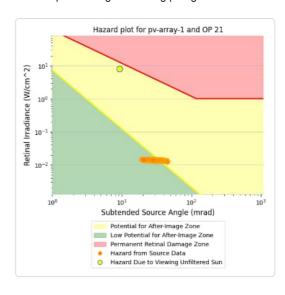
# PV array 1 - OP Receptor (OP 21)

- 646 minutes of "green" glare with low potential to cause temporary after-image.
  - 440 minutes of "yellow" glare with potential to cause temporary after-image.





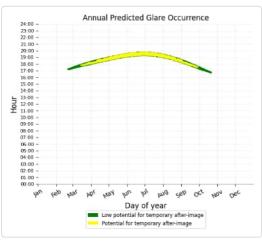


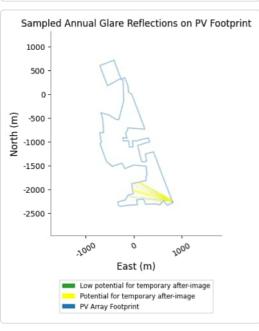


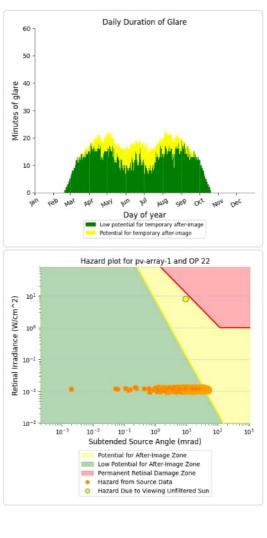
# PV array 1 - OP Receptor (OP 22)

- PV array is expected to produce the following glare for receptors at this location:

   2,899 minutes of "green" glare with low potential to cause temporary after-image.
   952 minutes of "yellow" glare with potential to cause temporary after-image.





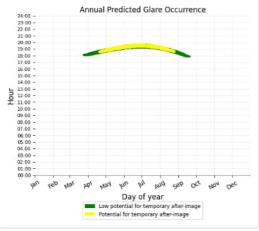


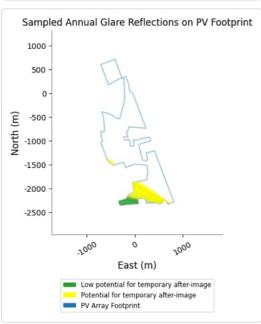
# PV array 1 - OP Receptor (OP 23)

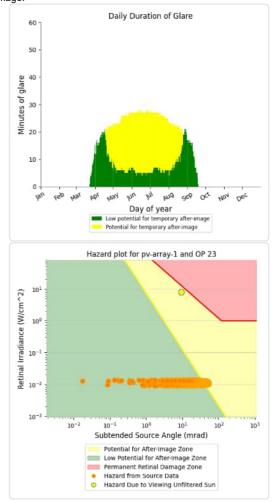
PV array is expected to produce the following glare for receptors at this location:

• 1,603 minutes of "green" glare with low potential to cause temporary after-image.

• 2,329 minutes of "yellow" glare with potential to cause temporary after-image.

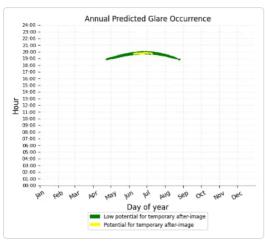


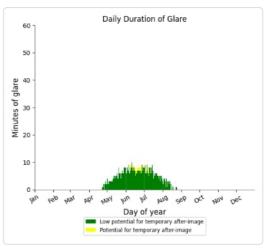


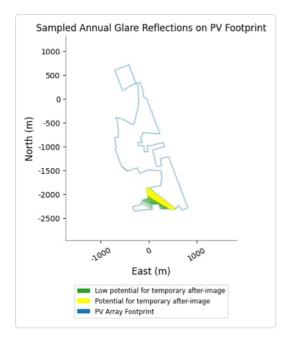


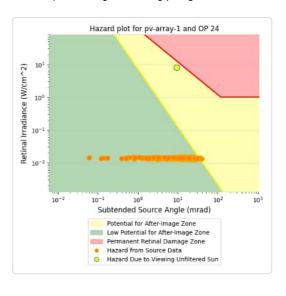
# PV array 1 - OP Receptor (OP 24)

- 616 minutes of "green" glare with low potential to cause temporary after-image.
- 27 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 2 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	1176	28
OP: OP 11	3606	7155
OP: OP 12	4368	8549
OP: OP 13	2961	5388
OP: OP 14	2819	4592
OP: OP 15	400	1068
OP: OP 16	1172	336
OP: OP 17	3300	4461
OP: OP 18	598	853
OP: OP 19	478	943
OP: OP 20	451	970
OP: OP 21	660	761
OP: OP 22	1046	404
OP: OP 23	15	0
OP: OP 24	1078	0

PV array 2 - OP Receptor (OP 1)

No glare found

PV array 2 - OP Receptor (OP 2)

No glare found

PV array 2 - OP Receptor (OP 3)

No glare found

PV array 2 - OP Receptor (OP 4)

No glare found

PV array 2 - OP Receptor (OP 5)

No glare found

PV array 2 - OP Receptor (OP 6)

No glare found

PV array 2 - OP Receptor (OP 7)

No glare found

PV array 2 - OP Receptor (OP 8)

No glare found

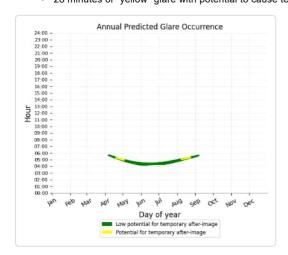
PV array 2 - OP Receptor (OP 9)

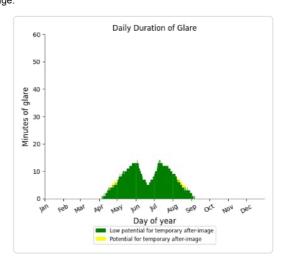
No glare found

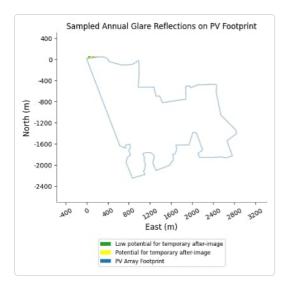
### PV array 2 - OP Receptor (OP 10)

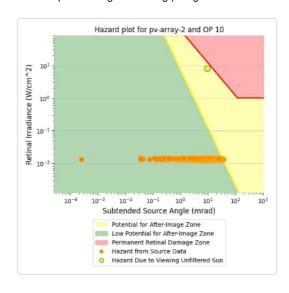
PV array is expected to produce the following glare for receptors at this location:

1,176 minutes of "green" glare with low potential to cause temporary after-image.
28 minutes of "yellow" glare with potential to cause temporary after-image.





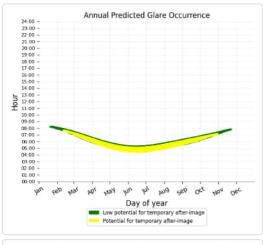


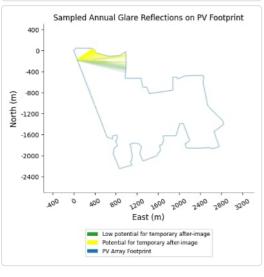


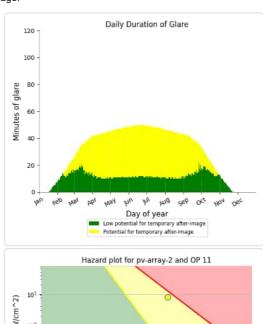
#### PV array 2 - OP Receptor (OP 11)

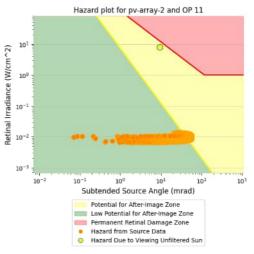
PV array is expected to produce the following glare for receptors at this location:

- 3,606 minutes of "green" glare with low potential to cause temporary after-image. 7,155 minutes of "yellow" glare with potential to cause temporary after-image.



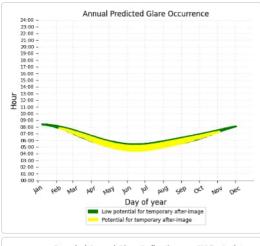


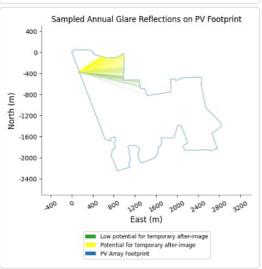


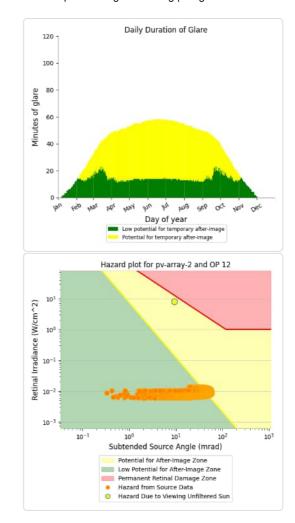


# PV array 2 - OP Receptor (OP 12)

- 4,368 minutes of "green" glare with low potential to cause temporary after-image. 8,549 minutes of "yellow" glare with potential to cause temporary after-image.

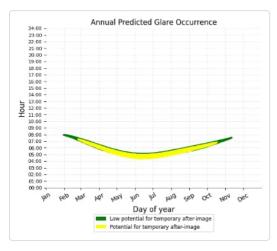


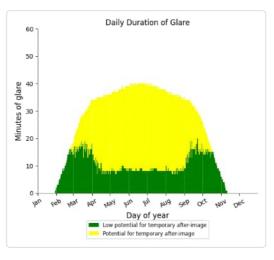


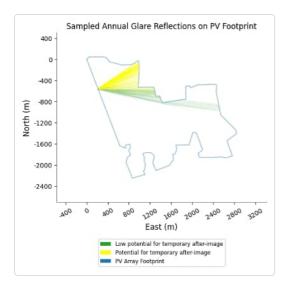


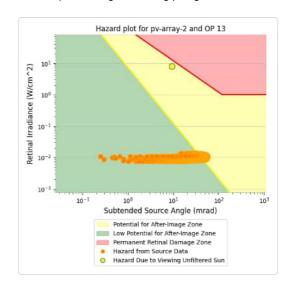
# PV array 2 - OP Receptor (OP 13)

- 2,961 minutes of "green" glare with low potential to cause temporary after-image.
- 5,388 minutes of "yellow" glare with potential to cause temporary after-image.





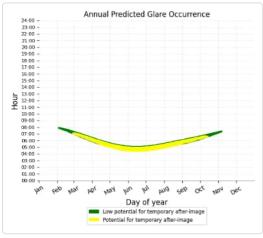


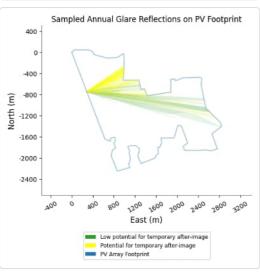


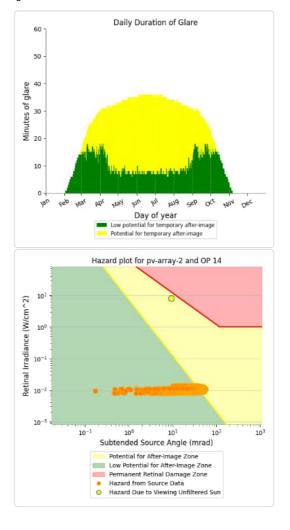
#### PV array 2 - OP Receptor (OP 14)

PV array is expected to produce the following glare for receptors at this location:

- 2,819 minutes of "green" glare with low potential to cause temporary after-image.
  4,592 minutes of "yellow" glare with potential to cause temporary after-image.

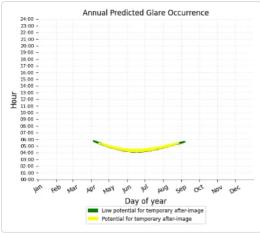


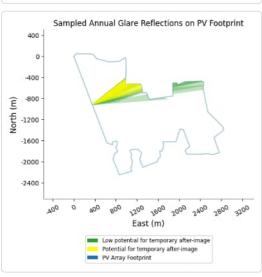


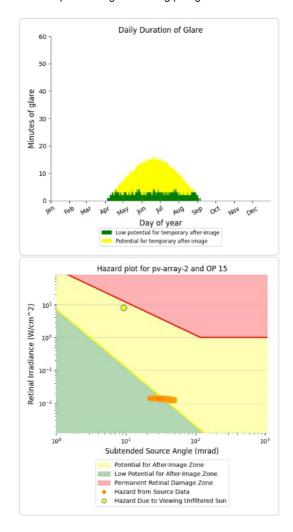


# PV array 2 - OP Receptor (OP 15)

- 400 minutes of "green" glare with low potential to cause temporary after-image.
- 1,068 minutes of "yellow" glare with potential to cause temporary after-image.



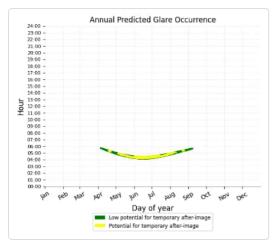


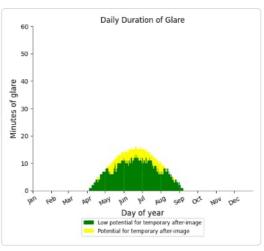


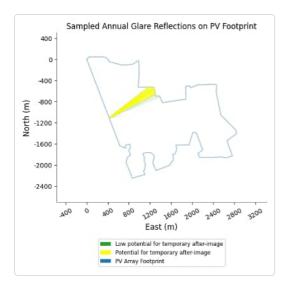
# PV array 2 - OP Receptor (OP 16)

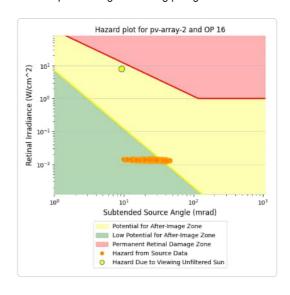
- PV array is expected to produce the following glare for receptors at this location:

   1,172 minutes of "green" glare with low potential to cause temporary after-image.
  - 336 minutes of "yellow" glare with potential to cause temporary after-image.





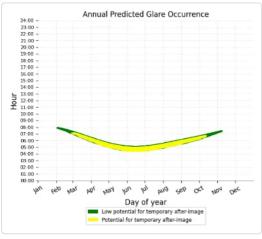


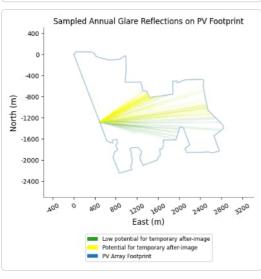


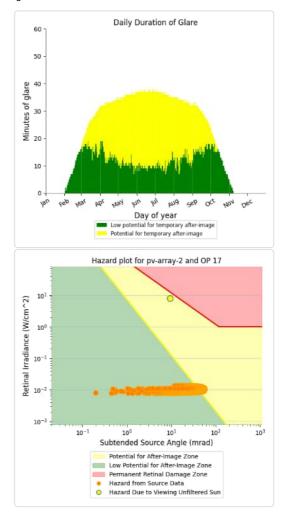
#### PV array 2 - OP Receptor (OP 17)

PV array is expected to produce the following glare for receptors at this location:

- 3,300 minutes of "green" glare with low potential to cause temporary after-image.
  4,461 minutes of "yellow" glare with potential to cause temporary after-image.

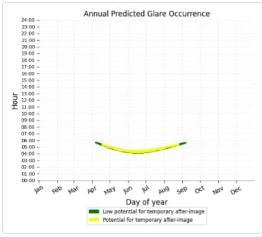


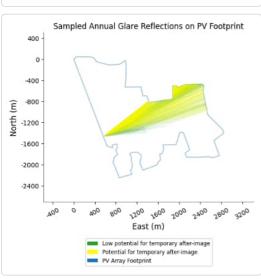


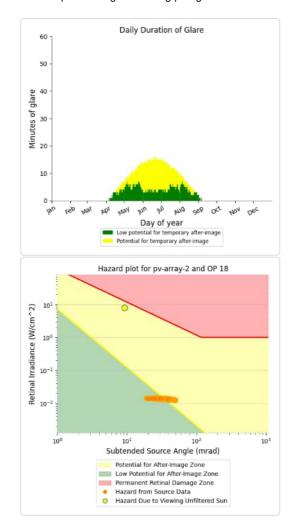


#### PV array 2 - OP Receptor (OP 18)

- 598 minutes of "green" glare with low potential to cause temporary after-image. 853 minutes of "yellow" glare with potential to cause temporary after-image.

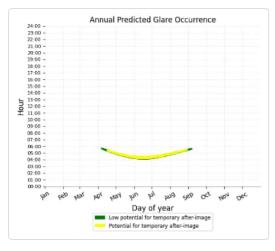


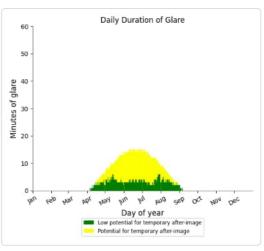


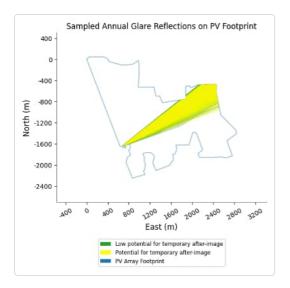


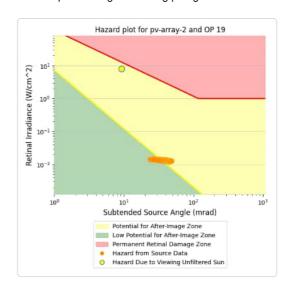
# PV array 2 - OP Receptor (OP 19)

- 478 minutes of "green" glare with low potential to cause temporary after-image.
  943 minutes of "yellow" glare with potential to cause temporary after-image.





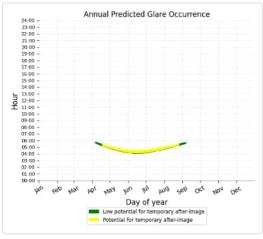


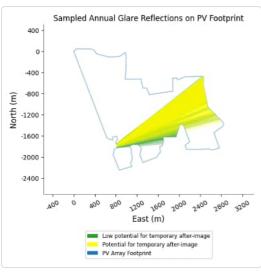


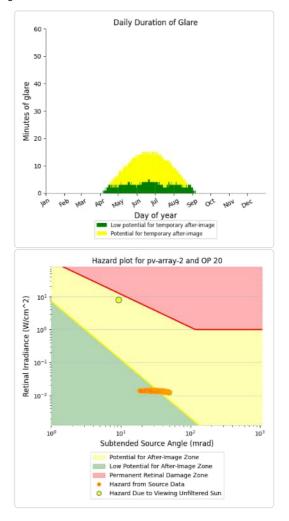
#### PV array 2 - OP Receptor (OP 20)

PV array is expected to produce the following glare for receptors at this location:

- 451 minutes of "green" glare with low potential to cause temporary after-image.
  970 minutes of "yellow" glare with potential to cause temporary after-image.

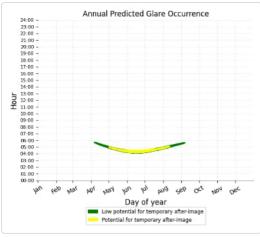


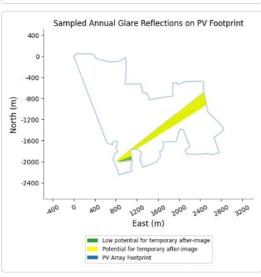


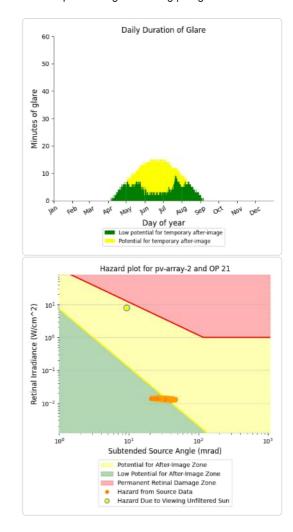


# PV array 2 - OP Receptor (OP 21)

- 660 minutes of "green" glare with low potential to cause temporary after-image. 761 minutes of "yellow" glare with potential to cause temporary after-image.



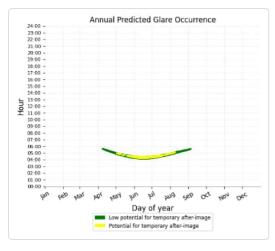


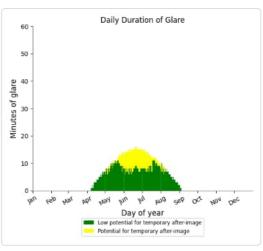


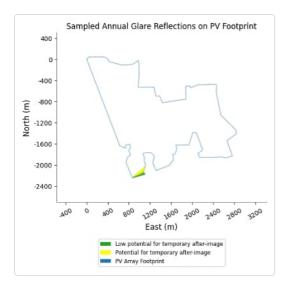
# PV array 2 - OP Receptor (OP 22)

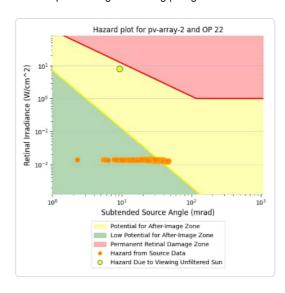
- PV array is expected to produce the following glare for receptors at this location:

   1,046 minutes of "green" glare with low potential to cause temporary after-image.
  - 404 minutes of "yellow" glare with potential to cause temporary after-image.





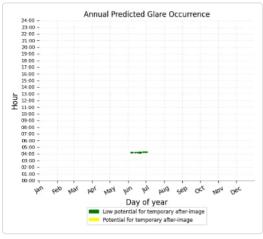


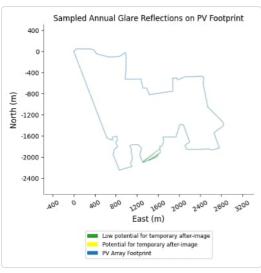


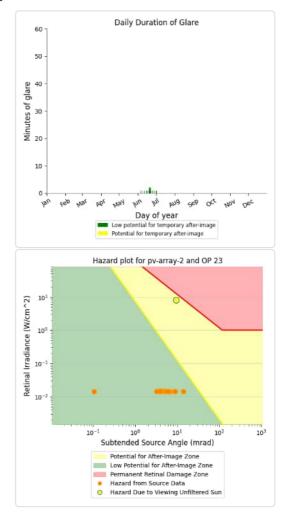
#### PV array 2 - OP Receptor (OP 23)

PV array is expected to produce the following glare for receptors at this location:

- 15 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

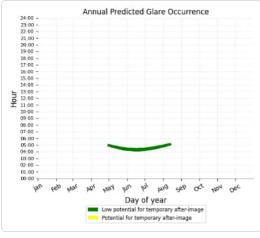


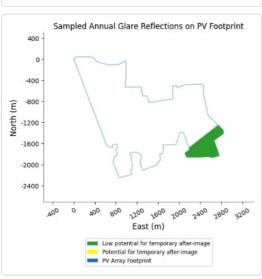


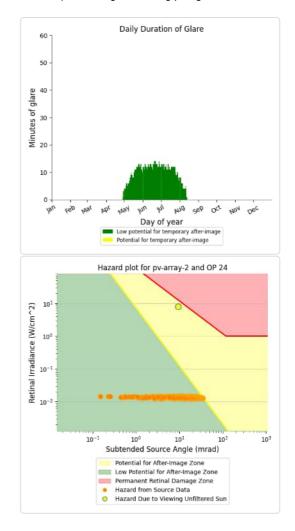


#### PV array 2 - OP Receptor (OP 24)

- 1,078 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.







PV array 3 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	1	0
OP: OP 4	118	0
OP: OP 5	393	0
OP: OP 6	888	0
OP: OP 7	1700	0
OP: OP 8	2914	0
OP: OP 9	4072	0
OP: OP 10	2764	854
OP: OP 11	2033	601
OP: OP 12	540	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	0	0

OP: OP 23	0	0
OP: OP 24	0	0

# PV array 3 - OP Receptor (OP 1)

No glare found

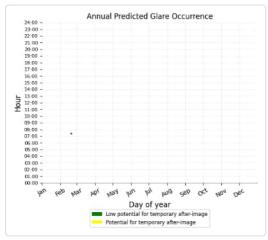
# PV array 3 - OP Receptor (OP 2)

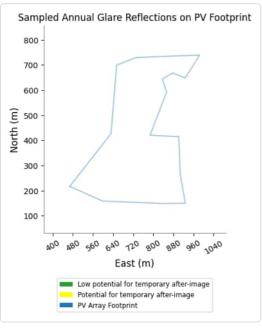
No glare found

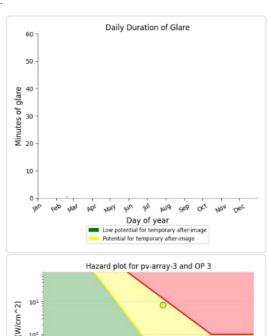
#### PV array 3 - OP Receptor (OP 3)

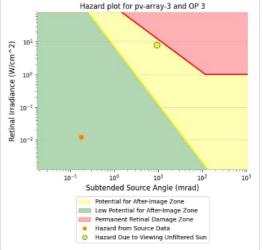
PV array is expected to produce the following glare for receptors at this location:

- 1 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



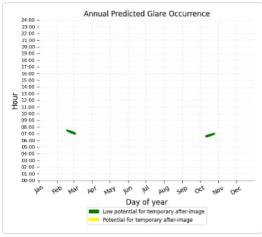


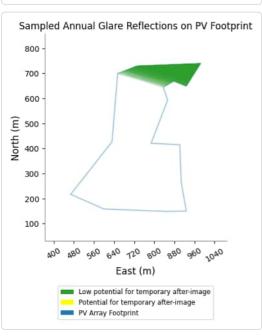


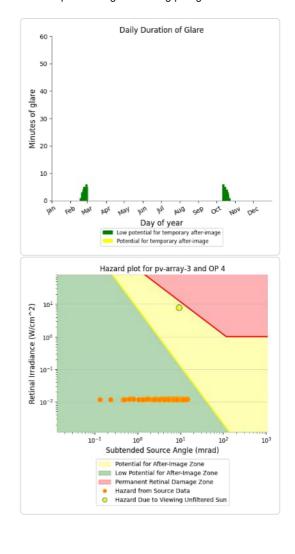


#### PV array 3 - OP Receptor (OP 4)

- 118 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.

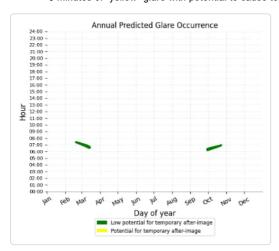


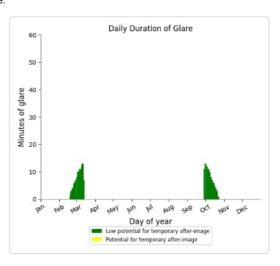


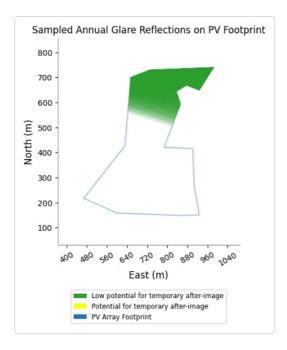


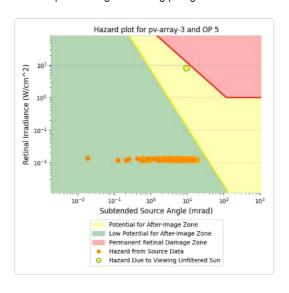
#### PV array 3 - OP Receptor (OP 5)

- 393 minutes of "green" glare with low potential to cause temporary after-image.
   0 minutes of "yellow" glare with potential to cause temporary after-image.





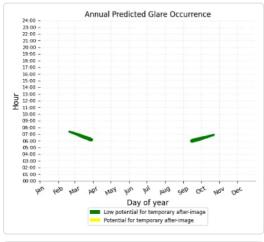


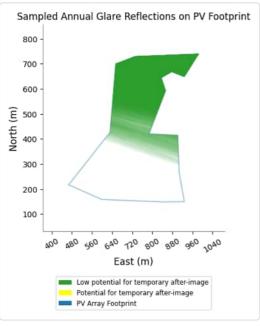


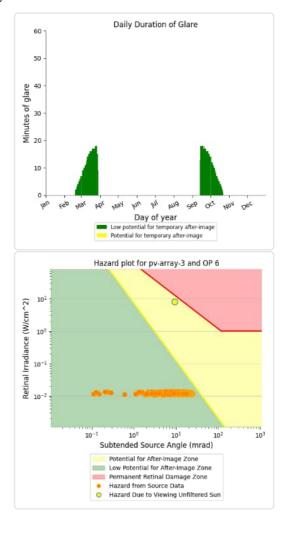
# PV array 3 - OP Receptor (OP 6)

PV array is expected to produce the following glare for receptors at this location:

- 888 minutes of "green" glare with low potential to cause temporary after-image.
  0 minutes of "yellow" glare with potential to cause temporary after-image.





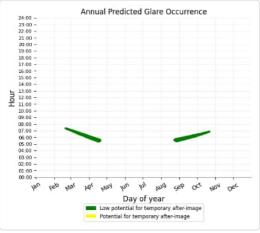


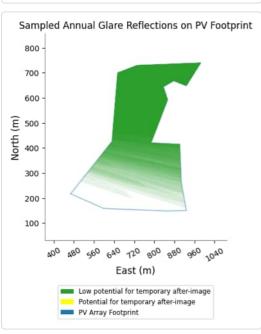
### PV array 3 - OP Receptor (OP 7)

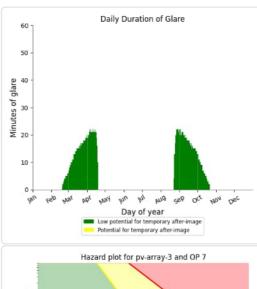
PV array is expected to produce the following glare for receptors at this location:

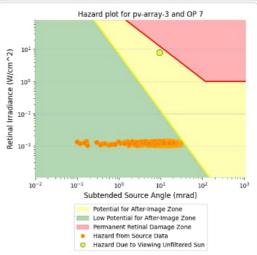
1,700 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.





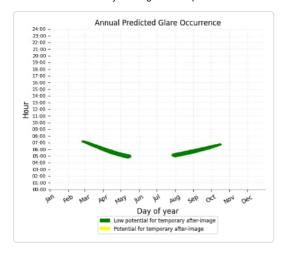


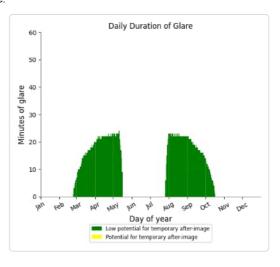


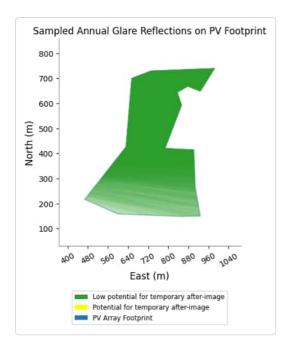
# PV array 3 - OP Receptor (OP 8)

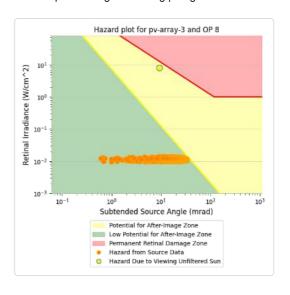
- PV array is expected to produce the following glare for receptors at this location:

   2,914 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.





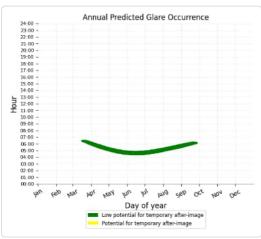


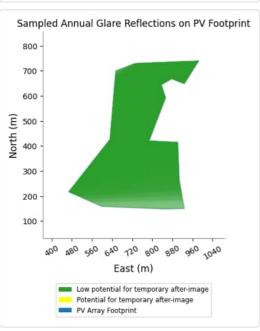


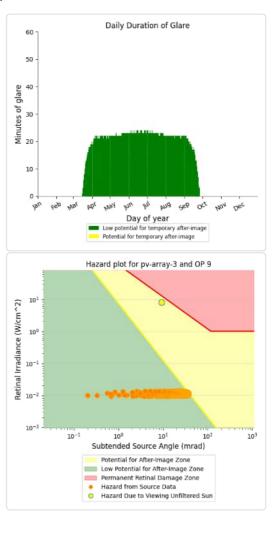
# PV array 3 - OP Receptor (OP 9)

PV array is expected to produce the following glare for receptors at this location:

- 4,072 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.





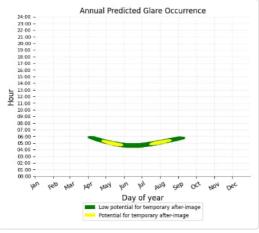


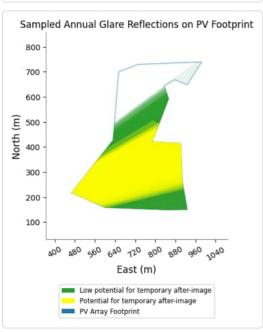
#### PV array 3 - OP Receptor (OP 10)

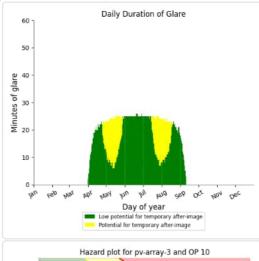
PV array is expected to produce the following glare for receptors at this location:

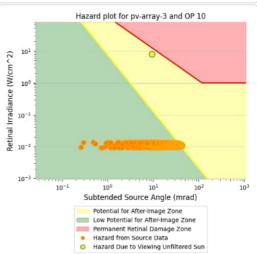
2,764 minutes of "green" glare with low potential to cause temporary after-image.

• 854 minutes of "yellow" glare with potential to cause temporary after-image.





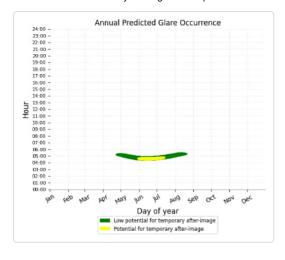


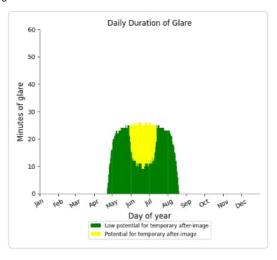


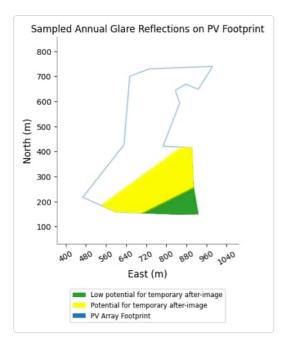
# PV array 3 - OP Receptor (OP 11)

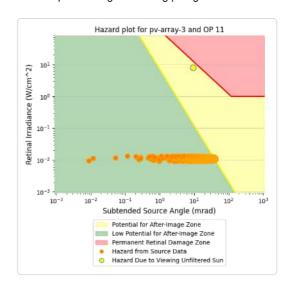
- PV array is expected to produce the following glare for receptors at this location:

   2,033 minutes of "green" glare with low potential to cause temporary after-image.
  - 601 minutes of "yellow" glare with potential to cause temporary after-image.







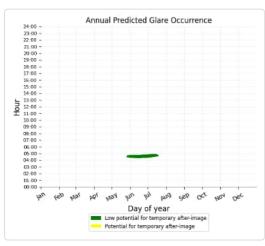


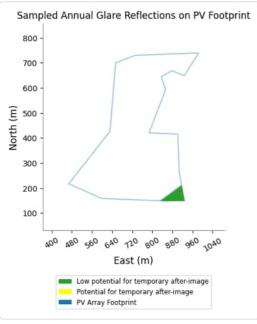
# PV array 3 - OP Receptor (OP 12)

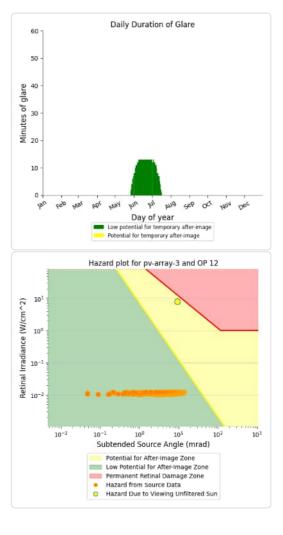
PV array is expected to produce the following glare for receptors at this location:

- 540 minutes of "green" glare with low potential to cause temporary after-image.

  0 minutes of "yellow" glare with potential to cause temporary after-image.







PV array 3 - OP Receptor (OP 13)

No glare found

PV array 3 - OP Receptor (OP 14)

No glare found

PV array 3 - OP Receptor (OP 15)

No glare found

PV array 3 - OP Receptor (OP 16)

No glare found

PV array 3 - OP Receptor (OP 17)

No glare found

PV array 3 - OP Receptor (OP 18)

No glare found

PV array 3 - OP Receptor (OP 19)

No glare found

PV array 3 - OP Receptor (OP 20)

No glare found

PV array 3 - OP Receptor (OP 21)

No glare found

PV array 3 - OP Receptor (OP 22)

No glare found

PV array 3 - OP Receptor (OP 23)

No glare found

PV array 3 - OP Receptor (OP 24)

No glare found

# PV array 4 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	1026	0
OP: OP 5	1267	42
OP: OP 6	2312	407
OP: OP 7	1665	210
OP: OP 8	1129	472
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0

OP: OP 21	0	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0

# PV array 4 - OP Receptor (OP 1)

No glare found

#### PV array 4 - OP Receptor (OP 2)

No glare found

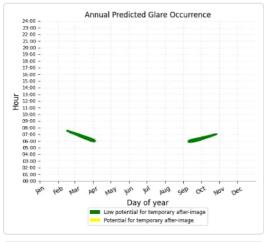
#### PV array 4 - OP Receptor (OP 3)

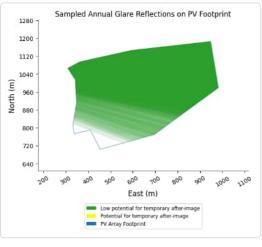
No glare found

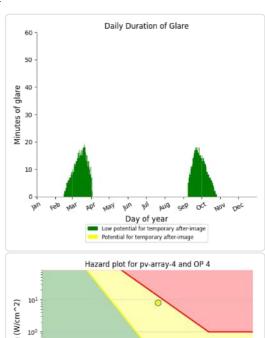
# PV array 4 - OP Receptor (OP 4)

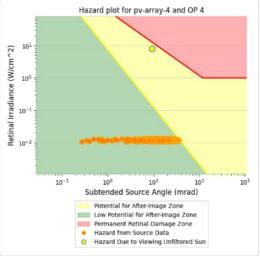
PV array is expected to produce the following glare for receptors at this location:

- 1,026 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





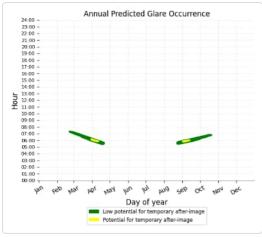


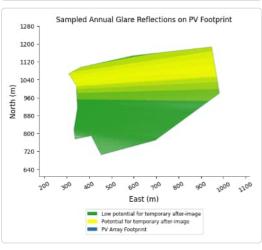


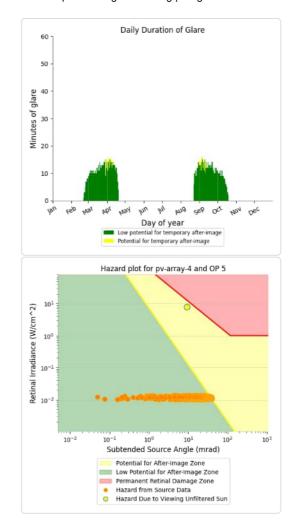
#### PV array 4 - OP Receptor (OP 5)

- PV array is expected to produce the following glare for receptors at this location:

   1,267 minutes of "green" glare with low potential to cause temporary after-image.
  - 42 minutes of "yellow" glare with potential to cause temporary after-image.

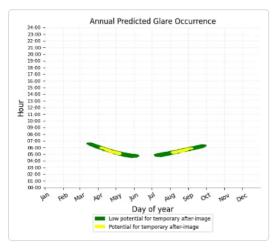


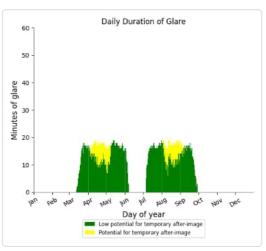


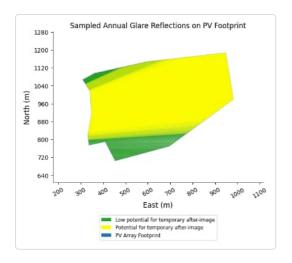


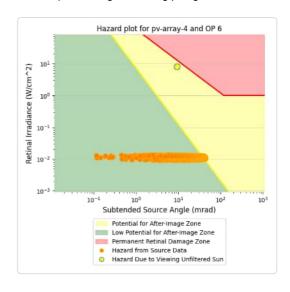
# PV array 4 - OP Receptor (OP 6)

- 2,312 minutes of "green" glare with low potential to cause temporary after-image.
  407 minutes of "yellow" glare with potential to cause temporary after-image.





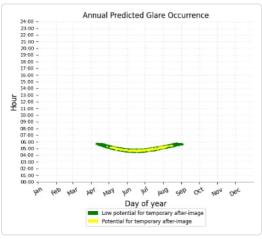


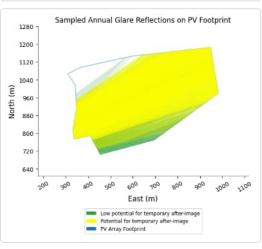


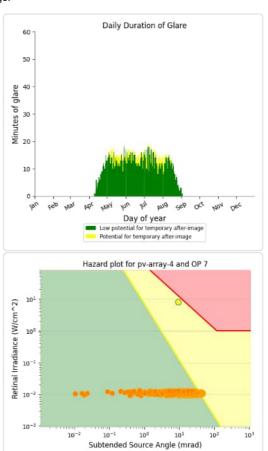
#### PV array 4 - OP Receptor (OP 7)

PV array is expected to produce the following glare for receptors at this location:

- 1,665 minutes of "green" glare with low potential to cause temporary after-image.
- 210 minutes of "yellow" glare with potential to cause temporary after-image.







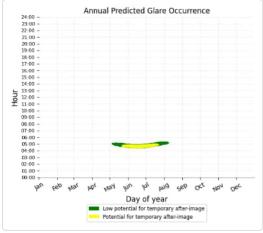
Potential for After-Image Zone Low Potential for After-Image Zone
Permanent Retinal Damage Zone
Hazard from Source Data Hazard Due to Viewing Unfiltered Sun

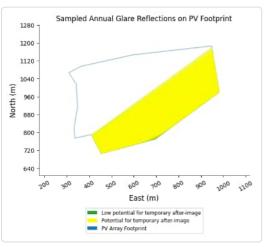
#### PV array 4 - OP Receptor (OP 8)

- PV array is expected to produce the following glare for receptors at this location:

   1,129 minutes of "green" glare with low potential to cause temporary after-image.

   472 minutes of "yellow" glare with potential to cause temporary after-image.







No glare found

# PV array 4 - OP Receptor (OP 10)

No glare found

# PV array 4 - OP Receptor (OP 11)

No glare found

# PV array 4 - OP Receptor (OP 12)

No glare found

# PV array 4 - OP Receptor (OP 13)

No glare found

#### PV array 4 - OP Receptor (OP 14)

No glare found

# PV array 4 - OP Receptor (OP 15)

No glare found

# PV array 4 - OP Receptor (OP 16)

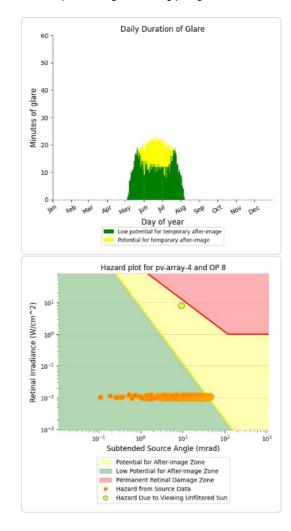
No glare found

#### PV array 4 - OP Receptor (OP 17)

No glare found

# PV array 4 - OP Receptor (OP 18)

No glare found



PV array 4 - OP Receptor (OP 19)

No glare found

PV array 4 - OP Receptor (OP 20)

No glare found

PV array 4 - OP Receptor (OP 21)

No glare found

PV array 4 - OP Receptor (OP 22)

No glare found

PV array 4 - OP Receptor (OP 23)

No glare found

PV array 4 - OP Receptor (OP 24)

No glare found

# **Assumptions**

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not automatically account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more
  rigorous modeling methods.
- Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results fo
  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.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a
  continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Refer to the Help page for detailed assumptions and limitations not listed here.

# ANNEX K: RAIL RECEPTOR GLARE RESULTS 45 DEGREES



# ForgeSolar

# **Gate Burton Solar Farm**

# Gate Burton Solar Farm Rail 45 Deg

Created Jan. 16, 2023 Updated Jan. 16, 2023 Time-step 1 minute Timezone offset UTC0 Site ID 82491.13697

Project type Advanced Project status: active Category 100 MW to 1 GW



#### Misc. Analysis Settings

DNI: varies (1,000.0 W/m^2 peak)
Ocular transmission coefficient: 0.5
Pupil diameter: 0.002 m
Eye focal length: 0.017 m
Sun subtended angle: 9.3 mrad

PV Analysis Methodology: **Version 2** Enhanced subtended angle calculation: **On** 

# Summary of Results Glare with potential for temporary after-image predicted

PV Name	Tilt	Orientation	Orientation "Green" Glare "Yello		Energy Produced
	deg	deg	min	min	kWh
PV array 1	45.0	180.0	70,949	46,663	-
PV array 2	45.0	180.0	42,895	47,154	-
PV array 3	45.0	180.0	12,942	887	-
PV array 4	45.0	180.0	6,214	522	-

# **Component Data**

# PV Array(s)

Total PV footprint area: 5,163,929 m^2

Name: PV array 1

Footprint area: 1,597,082 m<sup>2</sup> Axis tracking: Fixed (no rotation) Tilt: 45.0 deg Orientation: 180.0 deg

Rated power: -

Panel material: Light textured glass with AR coating Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes Slope error: 9.16 mrad



Vertex Latitude		Longitude	Ground elevation	Height above ground	ound Total elevation		
	deg	deg	m	m	m		
1	53.360141	-0.740853	25.38	3.50	28.88		
2	53.359142	-0.745295	27.04	3.50	30.54		
3	53.355326	-0.742892	26.73	3.50	30.23		
4	53.356632	-0.738987	24.55	3.50	28.05		
5	53.356465	-0.738150	25.02	3.50	28.52		
6	53.356158	-0.737978	25.57	3.50	29.07		
7	53.352510	-0.737785	29.23	3.50	32.73		
8	53.348948	-0.739309	30.83	3.50	34.33		
9	53.348986	-0.740188	32.37	3.50	35.87		
10	53.349857	-0.742506	34.73	3.50	38.23		
11	53.350242	-0.744952	33.16	3.50	36.66		
12	53.349089	-0.744373	34.81	3.50	38.31		
13	53.346510	-0.744101	28.30	3.50	31.80		
14	53.346484	-0.745345	28.83	3.50	32.33		
15	53.344653	-0.744766	24.78	3.50	28.28		
16	53.344460	-0.745259	24.68	3.50	28.18		
17	53.341078	-0.743199	25.42	3.50	28.92		
18	53.340130	-0.741418	27.66	3.50	31.16		
19	53.340758	-0.738243	29.03	3.50	32.53		
20	53.339707	-0.737427	30.33	3.50	33.83		
21	53.340399	-0.734659	29.43	3.50	32.93		
22	53.340169	-0.730775	22.76	3.50	26.26		
23	53.338496	-0.730450	22.00	3.50	25.50		
24	53.338303	-0.730793	23.84	3.50	27.34		
25	53.337471	-0.730750	21.41	3.50	24.91		
26	53.336868	-0.735321	27.34	3.50	30.84		
27	53.335023	-0.734763	26.30	3.50	29.80		
28	53.334677	-0.736522	27.73	3.50	31.23		
29	53.333793	-0.737316	27.79	3.50	31.29		
30	53.333435	-0.739676	29.76	3.50	33.26		
31	53.332743	-0.739397	29.43	3.50	32.93		
32	53.332589	-0.738775	29.26	3.50	32.76		
33	53.332794	-0.736908	26.90	3.50	30.40		
34	53.332909	-0.733454	26.43	3.50	29.93		
35	53.333845	-0.733733	26.55	3.50	30.05		
36	53.333985	-0.731544	23.51	3.50	27.01		
37	53.332973	-0.730879	23.08	3.50	26.58		
38	53.333076	-0.728046	16.44	3.50	19.94		
39	53.332896	-0.726931	15.56	3.50	19.06		
40	53.332948	-0.726287	15.53	3.50	19.03		
41	53.333691	-0.725300	15.07	3.50	18.57		
42	53.332794	-0.724120	18.41	3.50	21.91		
43	53.333268	-0.722364	17.39	3.50	20.89		
44	53.342867	-0.728436	22.81	3.50	26.31		
45	53.342483	-0.731011	25.38	3.50	28.88		
46	53.341112	-0.730604	23.89	3.50	27.39		
47	53.340945	-0.731677	25.52	3.50	29.02		
48	53.341176	-0.732234	26.17	3.50	29.67		
49	53.344103	-0.733393	20.15	3.50	23.65		
50	53.344756	-0.729617	20.06	3.50	23.56		
51	53.345460	-0.730003	21.09	3.50	24.59		
52	53.345294	-0.731655	22.52	3.50	26.02		
53	53.344910	-0.734144	24.14	3.50	27.64		
54	53.344999	-0.735003	24.71	3.50	28.21		
55	53.343795	-0.734852	21.17	3.50	24.67		
56	53.343757	-0.735990	21.93	3.50	25.43		
57	53.344961	-0.736204	23.87	3.50	27.37		
58	53.344961	-0.737942	22.53	3.50	26.03		
59	53.345588	-0.738028	23.02	3.50	26.52		
60	53.345448	-0.736719	23.95	3.50	27.45		
61	53.346434	-0.737213	22.62	3.50	26.12		
62	53.346934	-0.736547	22.42	3.50	25.92		
63	53.347395	-0.736547	23.09	3.50	26.59		

65	53.353735	-0.735260	23.20	3.50	26.70
66	53.354145	-0.736290	22.12	3.50	25.62
67	53.355310	-0.736462	22.00	3.50	25.50
68	53.356885	-0.737427	23.38	3.50	26.88
69	53.356680	-0.738092	24.35	3.50	27.85
70	53.356745	-0.738715	24.23	3.50	27.73

Name: PV array 2

Footprint area: 3,187,463 m^2 Axis tracking: Fixed (no rotation)
Tilt: 45.0 deg
Orientation: 180.0 deg

Rated power: -

Panel material: Light textured glass with AR coating Vary reflectivity with sun position? Yes Correlate slope error with surface type? Yes Slope error: 9.16 mrad



Vertex Latitude		Longitude	Ground elevation	Height above ground	Total elevation	
	deg	deg	m	m	m	
1	53.353754	-0.734662	23.97	3.50	27.47	
2	53.338935	-0.725169	13.57	3.50	17.07	
3	53.338615	-0.723559	12.00	3.50	15.50	
1	53.339140	-0.723624	12.00	3.50	15.50	
5	53.339294	-0.722401	12.00	3.50	15.50	
3	53.338666	-0.722207	11.79	3.50	15.29	
7	53.338269	-0.722744	12.00	3.50	15.50	
3	53.337500	-0.722165	11.72	3.50	15.22	
)	53.337064	-0.723066	12.31	3.50	15.81	
0	53.336155	-0.723452	13.00	3.50	16.50	
1	53.333515	-0.721671	15.87	3.50	19.37	
2	53.334143	-0.718045	11.00	3.50	14.50	
3	53.334745	-0.718538	11.00	3.50	14.50	
4	53.334950	-0.718152	11.00	3.50	14.50	
5	53.335783	-0.717959	10.14	3.50	13.64	
6	53.336616	-0.718345	9.24	3.50	12.74	
7	53.336975	-0.718216	9.59	3.50	13.09	
8	53.337667	-0.718688	10.61	3.50	14.11	
9	53.337897	-0.717723	10.95	3.50	14.45	
0	53.337859	-0.716392	9.89	3.50	13.39	
1	53.337269	-0.715341	9.24	3.50	12.74	
2	53.336116	-0.715856	9.81	3.50	13.31	
23	53.334809	-0.714955	10.90	3.50	14.40	
24	53.335732	-0.710949	11.21	3.50	14.71	
25	53.336244	-0.710563	11.08	3.50	14.58	
:6	53.336552	-0.709983	11.04	3.50	14.54	
.7	53.337564	-0.710155	12.22	3.50	15.72	
28	53.337603	-0.709511	12.51	3.50	16.01	
9	53.338410	-0.709061	13.25	3.50	16.75	
30	53.339153	-0.709211	13.80	3.50	17.30	
31	53.339178	-0.705520	14.81	3.50	18.31	
32	53.341318	-0.704426	14.16	3.50	17.66	
33	53.341254	-0.703460	15.00	3.50	18.50	
34	53.338320	-0.701636	14.00	3.50	17.50	
35	53.337731	-0.702967	14.70	3.50	18.20	
36	53.337052	-0.702516	14.29	3.50	17.79	
37	53.337039	-0.698825	16.56	3.50	20.06	
38	53.337128	-0.696336	19.06	3.50	22.56	
39	53.336962	-0.695049	20.32	3.50	23.82	
0	53.337295	-0.693182	19.41	3.50	22.91	
1	53.339883	-0.694727	14.00	3.50	17.50	
2	53.341087	-0.692023	13.00	3.50	16.50	
3	53.341664	-0.692109	13.00	3.50	16.50	
4	53.344277	-0.696465	12.00	3.50	15.50	
5	53.348287	-0.697817	13.08	3.50	16.58	
6	53.349350	-0.697602	14.02	3.50	17.52	
7	53.349516	-0.698224	14.00	3.50	17.50	
8	53.349427	-0.702924	17.52	3.50	21.02	
9	53.348914	-0.705091	17.98	3.50	21.48	
60	53.349222	-0.705305	18.00	3.50	21.50	
51	53.349183	-0.706464	18.00	3.50	21.50	
52	53.346980	-0.706421	17.00	3.50	20.50	
3	53.346378	-0.713138	13.88	3.50	17.38	
4	53.347505	-0.713910	14.28	3.50	17.78	
5	53.347505	-0.714983	14.25	3.50	17.75	
6	53.349030	-0.715498	16.00	3.50	19.50	
57	53.349004	-0.720004	22.46	3.50	25.96	
58	53.350848	-0.719789	21.00	3.50	24.50	
59	53.352872	-0.719769	19.04	3.50	22.54	
	53.353564	-0.719747	18.54	3.50	22.04	
	00.000004	3.1 133 10				
30 31	53 353000	_0 721670	10 21		21 71	
51	53.352898	-0.721678 -0.724574	18.21	3.50	21.71	
	53.352898 53.352782 53.353359	-0.721678 -0.724574 -0.728244	18.21 17.76 19.54	3.50 3.50 3.50	21.71 21.26 23.04	

65	53.354166	-0.729746	19.36	3.50	22.86
66	53.354179	-0.734016	22.69	3.50	26.19

Name: PV array 3 Footprint area: 162,560 m^2 Axis tracking: Fixed (no rotation) Tilt: 45.0 deg Orientation: 180.0 deg

Rated power: -

Panel material: Light textured glass with AR coating

Vary reflectivity with sun position? Yes Correlate slope error with surface type? Yes Slope error: 9.16 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation	
	deg	deg	m	m	m	
1	53.355703	-0.727643	18.87	3.50	22.37	
2	53.355177	-0.725669	17.24	3.50	20.74	
3	53.355088	-0.721935	18.98	3.50	22.48	
4	53.355101	-0.720734	21.71	3.50	25.21	
5	53.356125	-0.721034	21.89	3.50	25.39	
6	53.357483	-0.721120	19.10	3.50	22.60	
7	53.357534	-0.722836	18.29	3.50	21.79	
8	53.359083	-0.721849	18.14	3.50	21.64	
9	53.359544	-0.722107	16.73	3.50	20.23	
10	53.359762	-0.721485	16.64	3.50	20.14	
11	53.359583	-0.720734	17.67	3.50	21.17	
12	53.360402	-0.719875	17.29	3.50	20.79	
13	53.360313	-0.723673	16.00	3.50	19.50	
14	53.360044	-0.724832	16.19	3.50	19.69	
15	53.357585	-0.725175	17.45	3.50	20.95	

Name: PV array 4 Footprint area: 216,825 m^2 Axis tracking: Fixed (no rotation)

Tilt: 45.0 deg Orientation: 180.0 deg

Rated power: -

Panel material: Light textured glass with AR coating

Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes

Slope error: 9.16 mrad



Vertex	Latitude Longitud		Ground elevation	Height above ground	Total elevation		
	deg	deg	m	m	m		
1	53.360082	-0.727836	17.00	3.50	20.50		
2	53.360851	-0.728501	17.37	3.50	20.87		
3	53.360710	-0.729596	18.17	3.50	21.67		
4	53.361107	-0.729660	18.75	3.50	22.25		
5	53.361952	-0.729424	19.00	3.50	22.50		
6	53.362874	-0.729510	19.31	3.50	22.81		
7	53.363335	-0.730003	20.12	3.50	23.62		
8	53.363591	-0.729209	19.64	3.50	23.14		
9	53.364052	-0.725733	17.95	3.50	21.45		
10	53.364410	-0.720433	15.80	3.50	19.30		
11	53.362554	-0.719918	16.00	3.50	19.50		
12	53.360671	-0.724210	16.71	3.50	20.21		

# **Discrete Observation Receptors**

Number	Latitude Longitude		Ground elevation	Height above ground	Total Elevation	
	deg	deg	m	m	m	
OP 1	53.368683	-0.746822	26.57	2.75	29.32	
OP 2	53.366916	-0.744547	25.49	2.75	28.24	
OP 3	53.365649	-0.743045	26.49	2.75	29.24	
OP 4	53.364074	-0.741694	29.57	2.75	32.32	
OP 5	53.362396	-0.740599	27.00	2.75	29.75	
OP 6	53.360540	-0.739355	25.90	2.75	28.65	
OP 7	53.358708	-0.738193	23.02	2.75	25.77	
OP 8	53.357094	-0.737142	23.06	2.75	25.81	
OP 9	53.355250	-0.735983	22.00	2.75	24.75	
OP 10	53.353803	-0.735060	23.44	2.75	26.19	
OP 11	53.352151	-0.734030	26.30	2.75	29.05	
OP 12	53.350409	-0.732893	26.35	2.75	29.10	
OP 13	53.348692	-0.731777	24.66	2.75	27.41	
OP 14	53.347019	-0.730714	24.02	2.75	26.77	
OP 15	53.345392	-0.729727	20.64	2.75	23.39	
OP 16	53.343714	-0.728633	21.68	2.75	24.43	
OP 17	53.342198	-0.727640	22.94	2.75	25.69	
OP 18	53.340469	-0.726567	17.52	2.75	20.27	
OP 19	53.338624	-0.725451	13.51	2.75	16.26	
OP 20	53.337086	-0.724357	13.00	2.75	15.75	
OP 21	53.335455	-0.723391	13.00	2.75	15.75	
OP 22	53.333494	-0.722104	16.25	2.75	19.00	
OP 23	53.332059	-0.721202	18.88	2.75	21.63	
OP 24	53.330124	-0.719924	13.85	2.75	16.60	

# **Summary of PV Glare Analysis**

PV configuration and total predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	45.0	180.0	70,949	46,663	-	-
PV array 2	45.0	180.0	42,895	47,154	-	-
PV array 3	45.0	180.0	12,942	887	-	-
PV array 4	45.0	180.0	6,214	522	-	-

# Distinct glare per month

Excludes overlapping glare from PV array for multiple receptors at matching time(s)

PV	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pv-array-1 (green)	0	18	1143	1574	2717	3306	3128	1906	1332	336	0	0
pv-array-1 (yellow)	0	0	419	1244	1162	798	974	1376	775	5	0	0
pv-array-2 (green)	0	0	448	979	1702	2495	2152	1150	726	19	0	0
pv-array-2 (yellow)	0	0	258	988	1325	1284	1291	1226	542	0	0	0
pv-array-3 (green)	0	0	170	313	653	722	717	431	266	0	0	0
pv-array-3 (yellow)	0	0	53	107	2	0	0	94	67	0	0	0
pv-array-4 (green)	0	0	168	338	599	610	612	484	263	0	0	0
pv-array-4 (yellow)	0	0	41	123	3	0	0	39	110	0	0	0

# **PV & Receptor Analysis Results**

Results for each PV array and receptor

# PV array 1 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	1770	1600
OP: OP 8	1491	1484
OP: OP 9	2477	2240
OP: OP 10	2496	1233
OP: OP 11	10429	4279
OP: OP 12	10341	4267
OP: OP 13	7142	3684
OP: OP 14	5686	1931
OP: OP 15	2606	655
OP: OP 16	2980	857
OP: OP 17	7587	2890
OP: OP 18	1813	2688
OP: OP 19	1807	7093

OP: OP 20	2572	5065
OP: OP 21	2503	5273
OP: OP 22	2844	872
OP: OP 23	3292	552
OP: OP 24	1113	0

PV array 1 - OP Receptor (OP 1)

No glare found

PV array 1 - OP Receptor (OP 2)

No glare found

PV array 1 - OP Receptor (OP 3)

No glare found

PV array 1 - OP Receptor (OP 4)

No glare found

PV array 1 - OP Receptor (OP 5)

No glare found

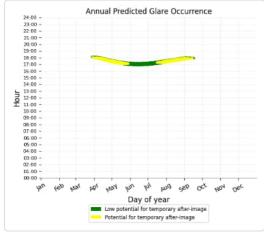
PV array 1 - OP Receptor (OP 6)

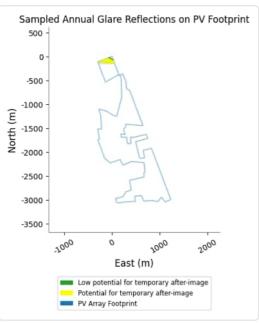
No glare found

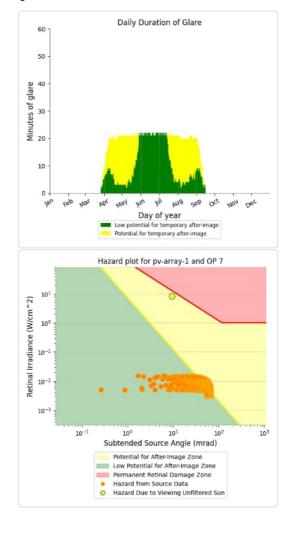
#### PV array 1 - OP Receptor (OP 7)

PV array is expected to produce the following glare for receptors at this location:

- 1,770 minutes of "green" glare with low potential to cause temporary after-image.
  1,600 minutes of "yellow" glare with potential to cause temporary after-image.





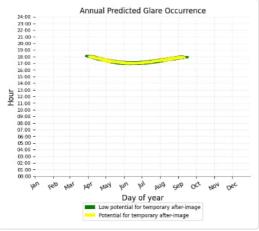


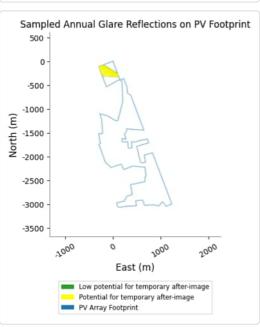
#### PV array 1 - OP Receptor (OP 8)

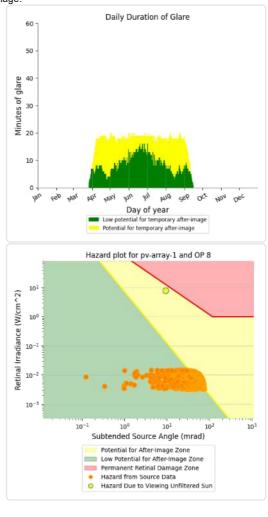
PV array is expected to produce the following glare for receptors at this location:

1,491 minutes of "green" glare with low potential to cause temporary after-image.

• 1,484 minutes of "yellow" glare with potential to cause temporary after-image.

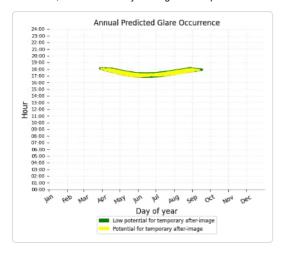


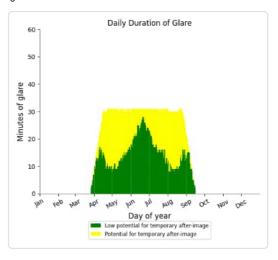


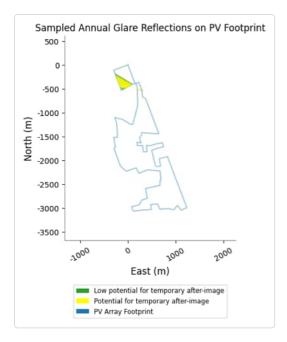


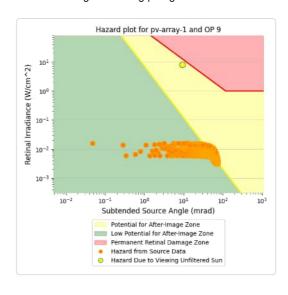
# PV array 1 - OP Receptor (OP 9)

- 2,477 minutes of "green" glare with low potential to cause temporary after-image.
- 2,240 minutes of "yellow" glare with potential to cause temporary after-image.





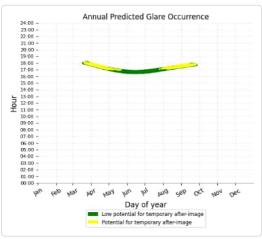


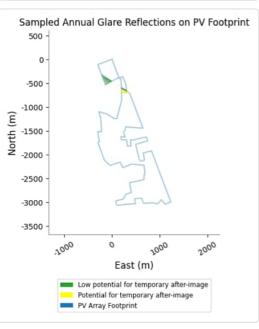


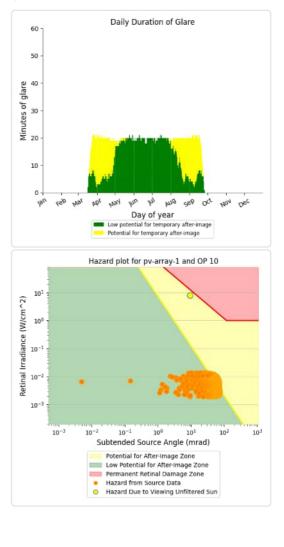
# PV array 1 - OP Receptor (OP 10)

- PV array is expected to produce the following glare for receptors at this location:

   2,496 minutes of "green" glare with low potential to cause temporary after-image.
   1,233 minutes of "yellow" glare with potential to cause temporary after-image.





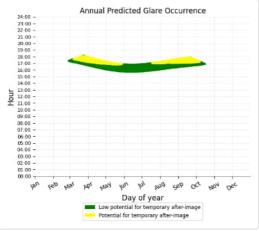


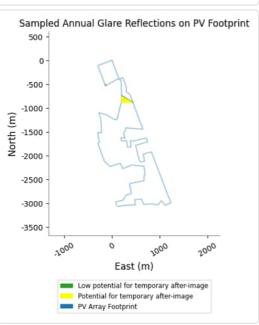
# PV array 1 - OP Receptor (OP 11)

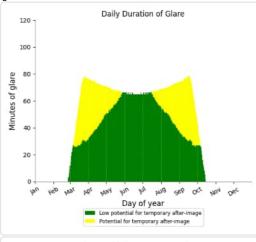
PV array is expected to produce the following glare for receptors at this location:

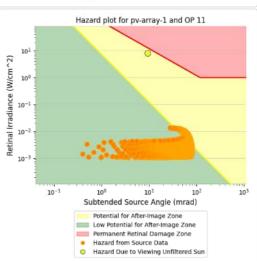
• 10,429 minutes of "green" glare with low potential to cause temporary after-image.

• 4,279 minutes of "yellow" glare with potential to cause temporary after-image.







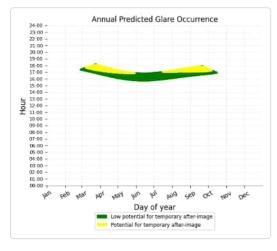


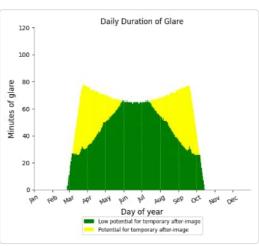
#### PV array 1 - OP Receptor (OP 12)

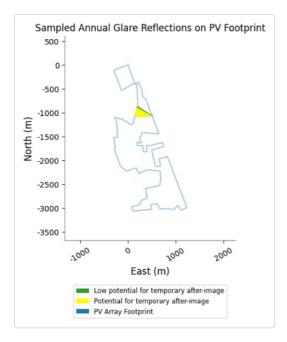
PV array is expected to produce the following glare for receptors at this location:

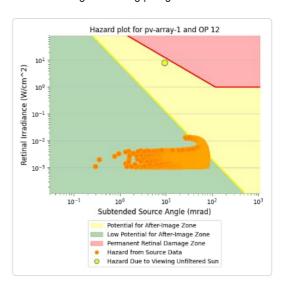
• 10,341 minutes of "green" glare with low potential to cause temporary after-image.

- 4,267 minutes of "yellow" glare with potential to cause temporary after-image.





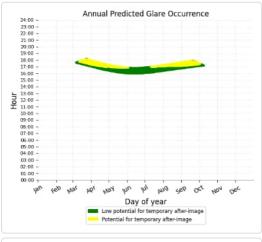


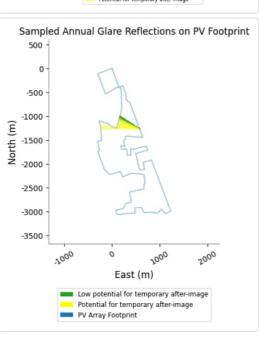


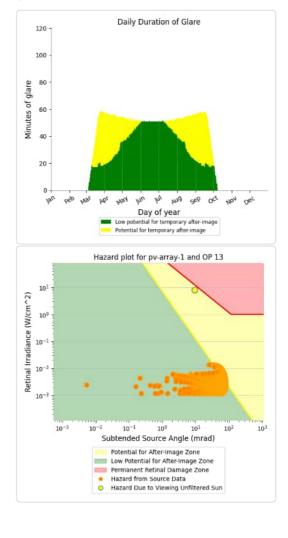
# PV array 1 - OP Receptor (OP 13)

- PV array is expected to produce the following glare for receptors at this location:

   7,142 minutes of "green" glare with low potential to cause temporary after-image.
   3,684 minutes of "yellow" glare with potential to cause temporary after-image.

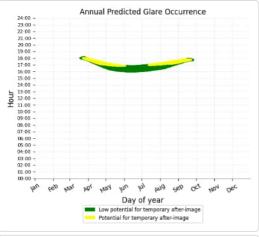


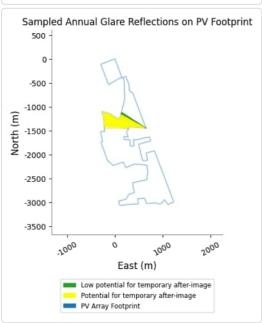


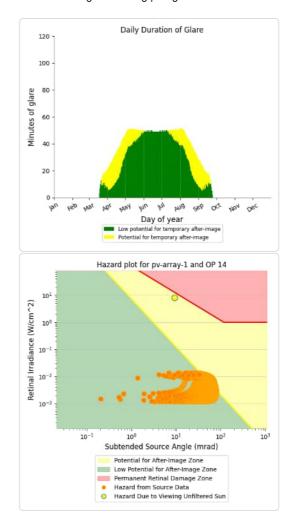


#### PV array 1 - OP Receptor (OP 14)

- 5,686 minutes of "green" glare with low potential to cause temporary after-image.
  1,931 minutes of "yellow" glare with potential to cause temporary after-image.

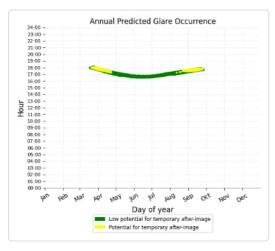


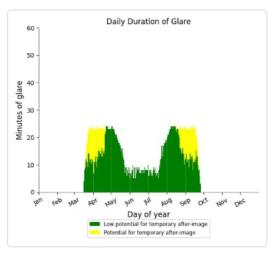


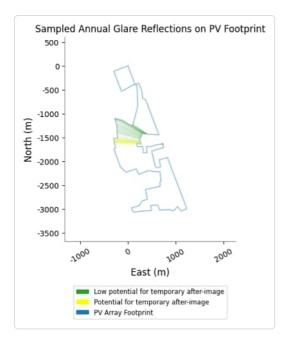


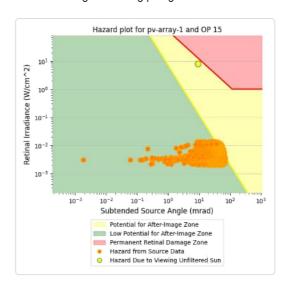
# PV array 1 - OP Receptor (OP 15)

- 2,606 minutes of "green" glare with low potential to cause temporary after-image. 655 minutes of "yellow" glare with potential to cause temporary after-image.





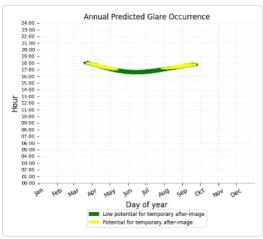


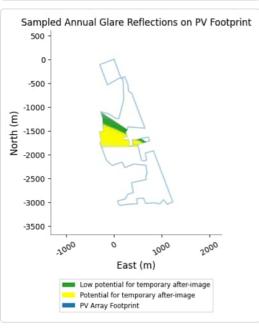


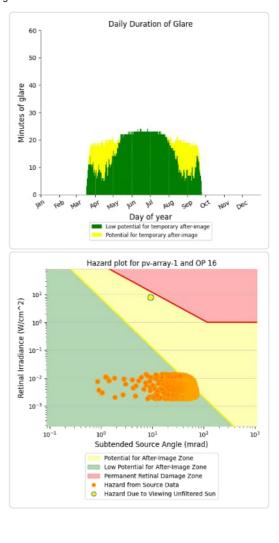
# PV array 1 - OP Receptor (OP 16)

- PV array is expected to produce the following glare for receptors at this location:

   2,980 minutes of "green" glare with low potential to cause temporary after-image.
   857 minutes of "yellow" glare with potential to cause temporary after-image.





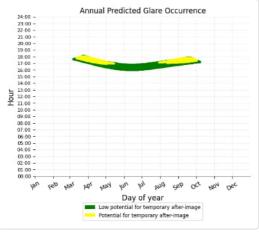


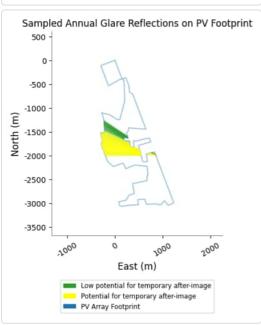
# PV array 1 - OP Receptor (OP 17)

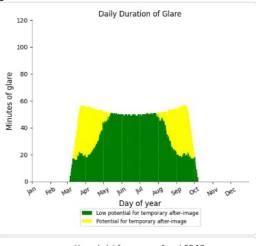
PV array is expected to produce the following glare for receptors at this location:

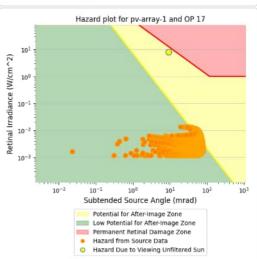
• 7,587 minutes of "green" glare with low potential to cause temporary after-image.

• 2,890 minutes of "yellow" glare with potential to cause temporary after-image.





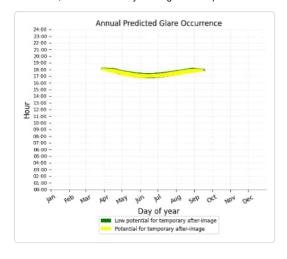


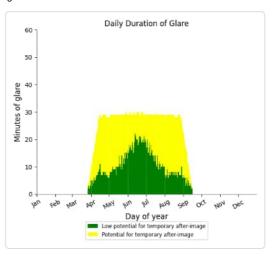


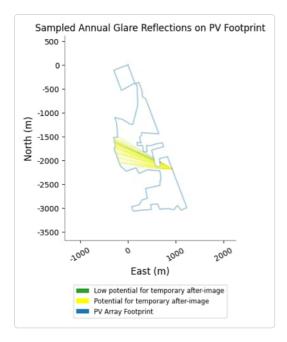
#### PV array 1 - OP Receptor (OP 18)

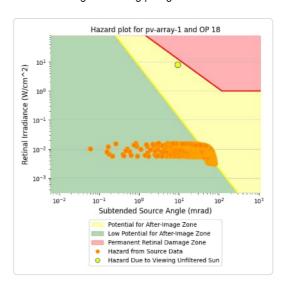
- PV array is expected to produce the following glare for receptors at this location:

   1,813 minutes of "green" glare with low potential to cause temporary after-image.
   2,688 minutes of "yellow" glare with potential to cause temporary after-image.





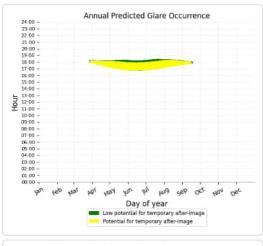


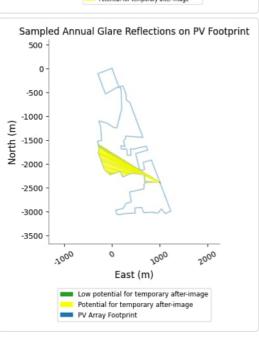


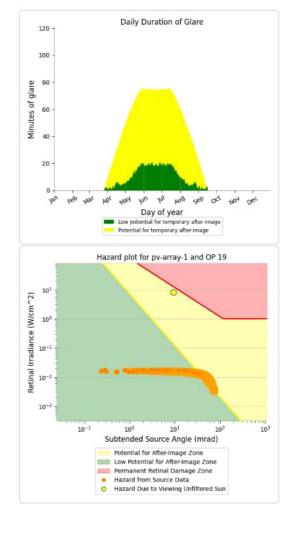
# PV array 1 - OP Receptor (OP 19)

- PV array is expected to produce the following glare for receptors at this location:

   1,807 minutes of "green" glare with low potential to cause temporary after-image.
   7,093 minutes of "yellow" glare with potential to cause temporary after-image.

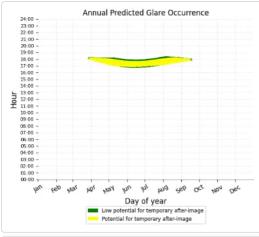


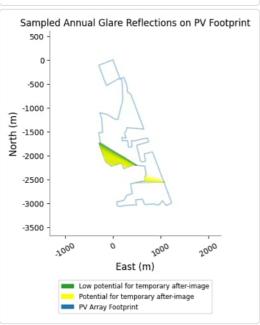


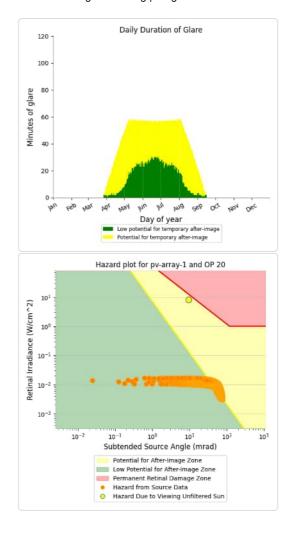


#### PV array 1 - OP Receptor (OP 20)

- 2,572 minutes of "green" glare with low potential to cause temporary after-image.
  5,065 minutes of "yellow" glare with potential to cause temporary after-image.

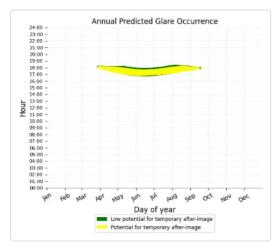


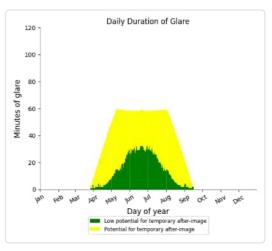


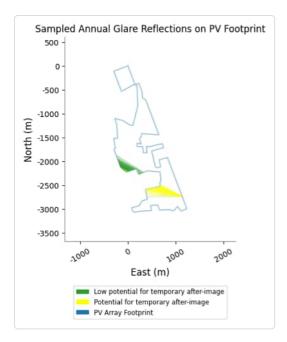


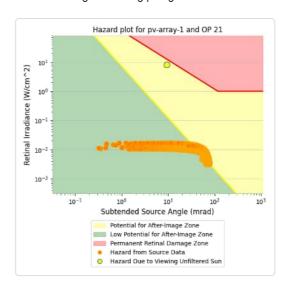
# PV array 1 - OP Receptor (OP 21)

- 2,503 minutes of "green" glare with low potential to cause temporary after-image. 5,273 minutes of "yellow" glare with potential to cause temporary after-image.





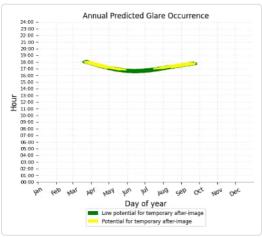


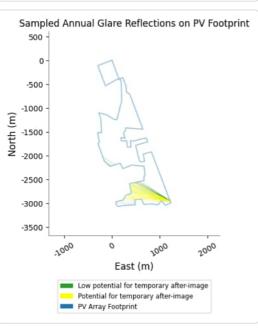


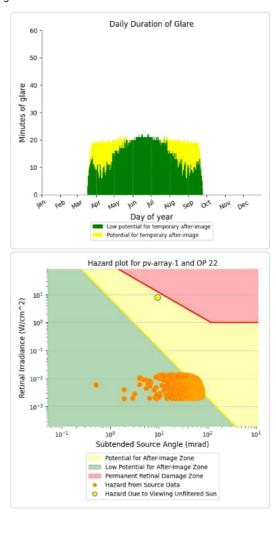
# PV array 1 - OP Receptor (OP 22)

- PV array is expected to produce the following glare for receptors at this location:

   2,844 minutes of "green" glare with low potential to cause temporary after-image.
   872 minutes of "yellow" glare with potential to cause temporary after-image.





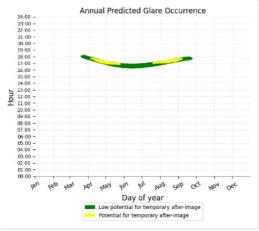


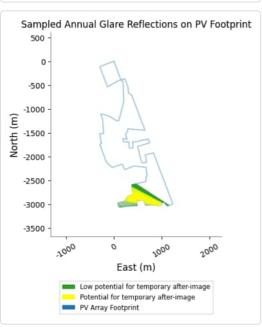
# PV array 1 - OP Receptor (OP 23)

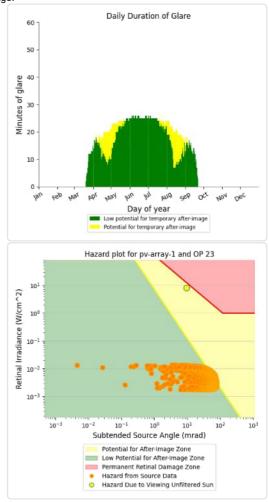
PV array is expected to produce the following glare for receptors at this location:

• 3,292 minutes of "green" glare with low potential to cause temporary after-image.

• 552 minutes of "yellow" glare with potential to cause temporary after-image.

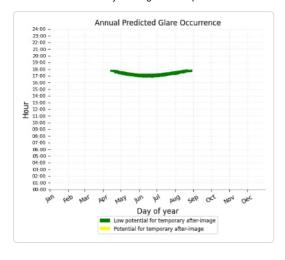


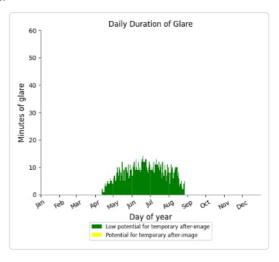


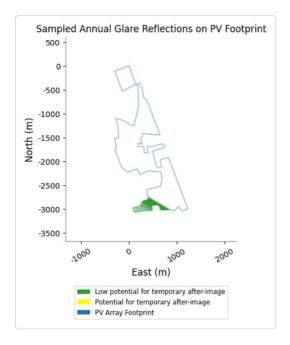


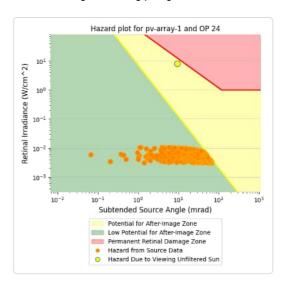
# PV array 1 - OP Receptor (OP 24)

- 1,113 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 2 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	2087	2033
OP: OP 11	5558	2682
OP: OP 12	6911	2854
OP: OP 13	4488	1984
OP: OP 14	3900	1919
OP: OP 15	1847	4401
OP: OP 16	2098	2005
OP: OP 17	4266	1800
OP: OP 18	1935	6548
OP: OP 19	2137	5275
OP: OP 20	1466	3780
)P: OP 21	1389	8227
OP: OP 22	3727	3646
OP: OP 23	31	0
OP: OP 24	1055	0

# PV array 2 - OP Receptor (OP 1)

No glare found

# PV array 2 - OP Receptor (OP 2)

No glare found

#### PV array 2 - OP Receptor (OP 3)

No glare found

# PV array 2 - OP Receptor (OP 4)

No glare found

#### PV array 2 - OP Receptor (OP 5)

No glare found

#### PV array 2 - OP Receptor (OP 6)

No glare found

#### PV array 2 - OP Receptor (OP 7)

No glare found

#### PV array 2 - OP Receptor (OP 8)

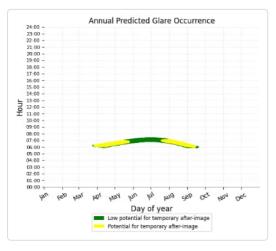
No glare found

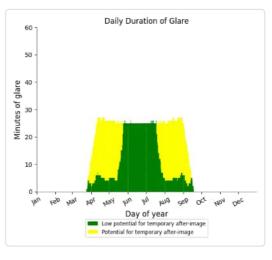
# PV array 2 - OP Receptor (OP 9)

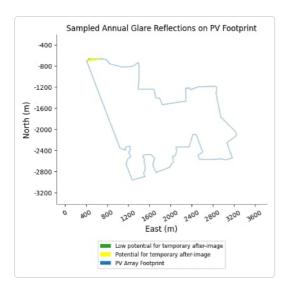
No glare found

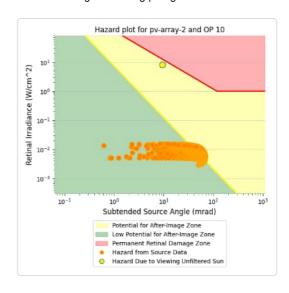
#### PV array 2 - OP Receptor (OP 10)

- 2,087 minutes of "green" glare with low potential to cause temporary after-image.
- 2,033 minutes of "yellow" glare with potential to cause temporary after-image.





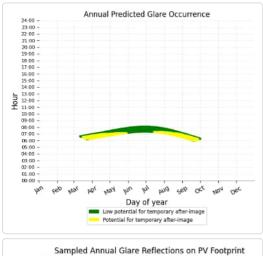


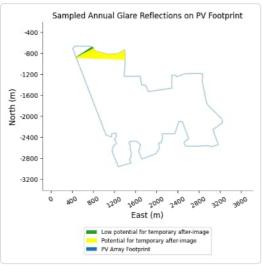


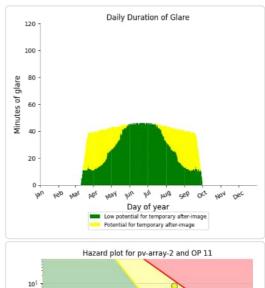
#### PV array 2 - OP Receptor (OP 11)

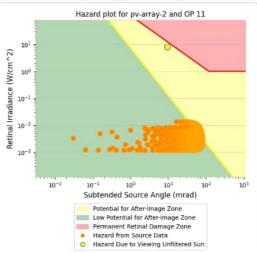
PV array is expected to produce the following glare for receptors at this location:

- 5,558 minutes of "green" glare with low potential to cause temporary after-image.
  2,682 minutes of "yellow" glare with potential to cause temporary after-image.



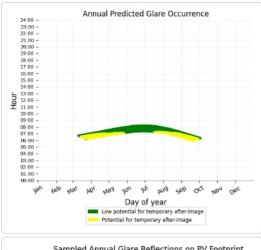


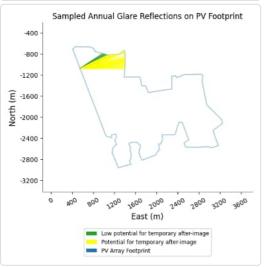


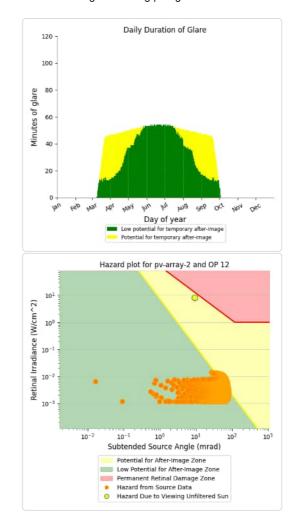


# PV array 2 - OP Receptor (OP 12)

- 6,911 minutes of "green" glare with low potential to cause temporary after-image. 2,854 minutes of "yellow" glare with potential to cause temporary after-image.

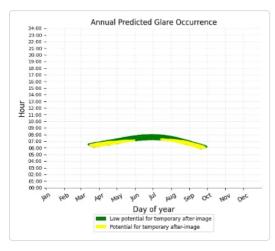


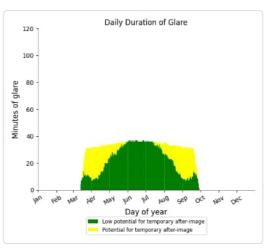


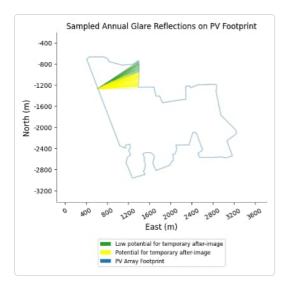


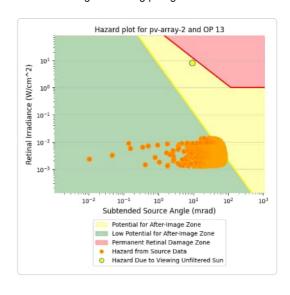
# PV array 2 - OP Receptor (OP 13)

- 4,488 minutes of "green" glare with low potential to cause temporary after-image.
- 1,984 minutes of "yellow" glare with potential to cause temporary after-image.





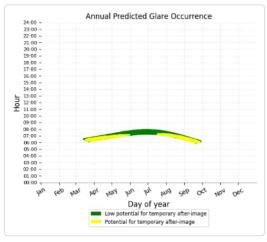


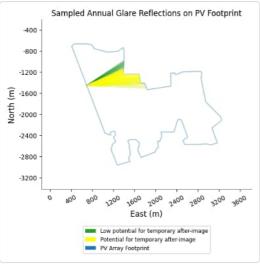


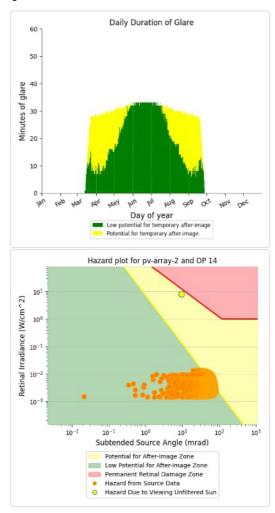
### PV array 2 - OP Receptor (OP 14)

PV array is expected to produce the following glare for receptors at this location:

- 3,900 minutes of "green" glare with low potential to cause temporary after-image.
  1,919 minutes of "yellow" glare with potential to cause temporary after-image.

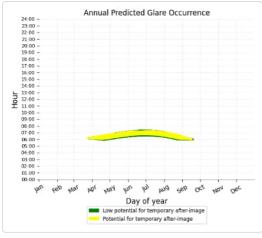


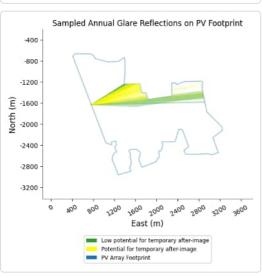


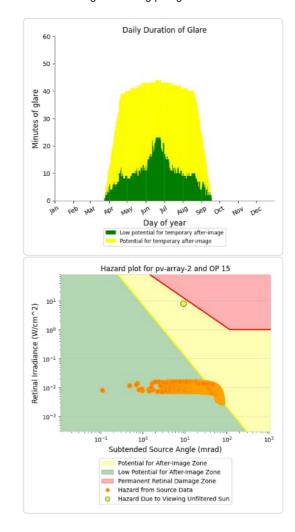


### PV array 2 - OP Receptor (OP 15)

- 1,847 minutes of "green" glare with low potential to cause temporary after-image.
  4,401 minutes of "yellow" glare with potential to cause temporary after-image.



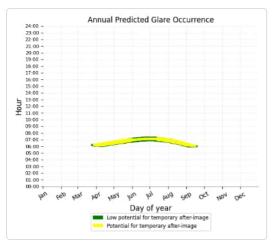


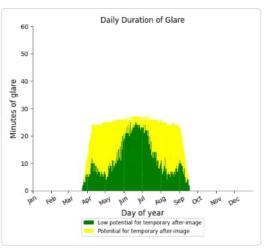


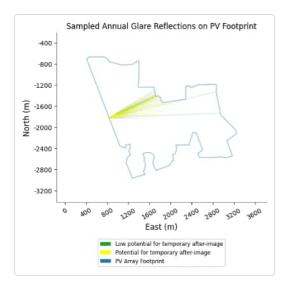
## PV array 2 - OP Receptor (OP 16)

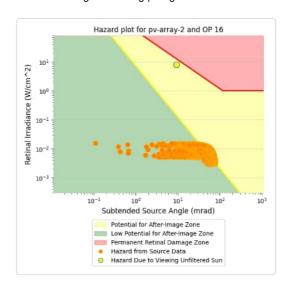
- PV array is expected to produce the following glare for receptors at this location:

   2,098 minutes of "green" glare with low potential to cause temporary after-image.
   2,005 minutes of "yellow" glare with potential to cause temporary after-image.





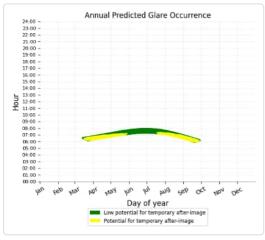


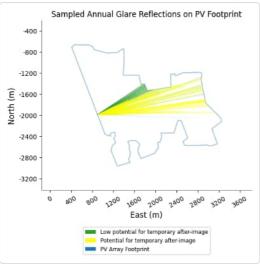


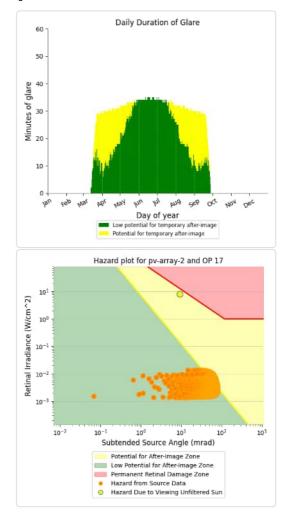
### PV array 2 - OP Receptor (OP 17)

PV array is expected to produce the following glare for receptors at this location:

- 4,266 minutes of "green" glare with low potential to cause temporary after-image.
  1,800 minutes of "yellow" glare with potential to cause temporary after-image.

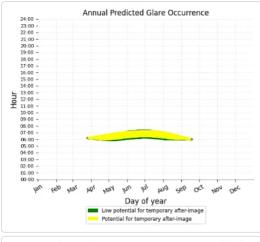


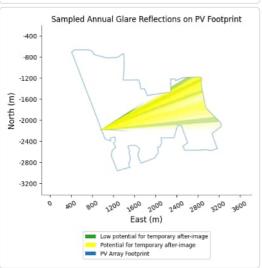


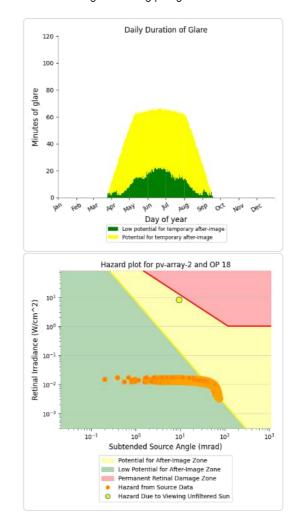


### PV array 2 - OP Receptor (OP 18)

- 1,935 minutes of "green" glare with low potential to cause temporary after-image.
  6,548 minutes of "yellow" glare with potential to cause temporary after-image.

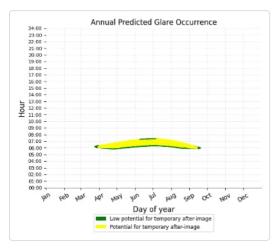


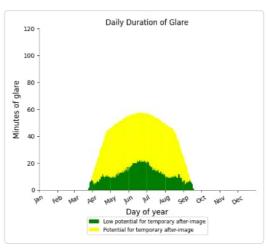


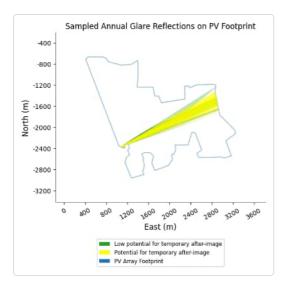


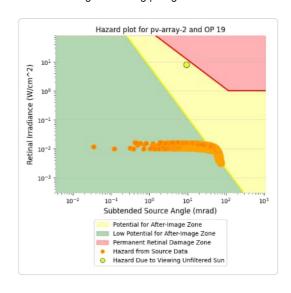
### PV array 2 - OP Receptor (OP 19)

- 2,137 minutes of "green" glare with low potential to cause temporary after-image.
- 5,275 minutes of "yellow" glare with potential to cause temporary after-image.





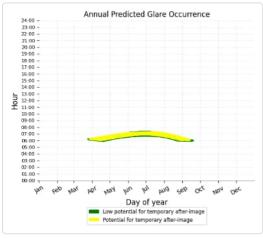


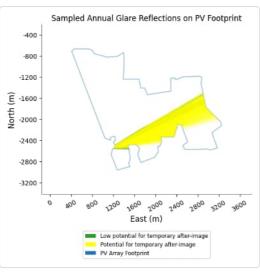


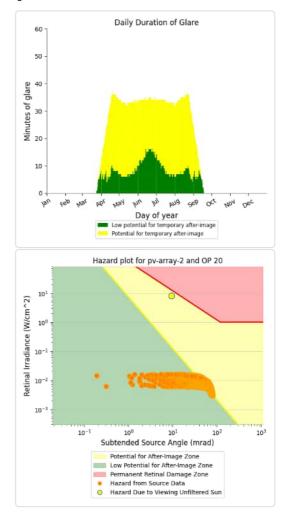
### PV array 2 - OP Receptor (OP 20)

PV array is expected to produce the following glare for receptors at this location:

- 1,466 minutes of "green" glare with low potential to cause temporary after-image.
  3,780 minutes of "yellow" glare with potential to cause temporary after-image.

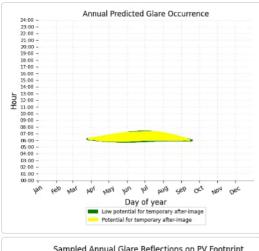


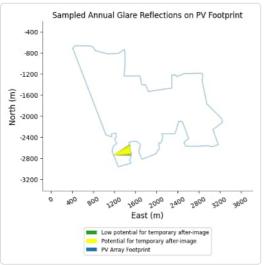


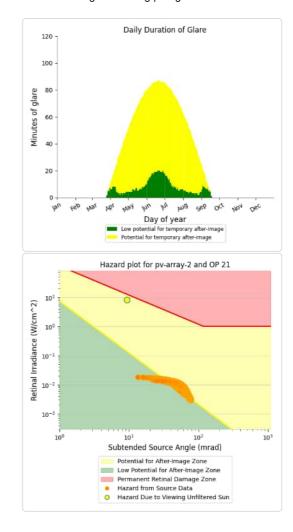


### PV array 2 - OP Receptor (OP 21)

- 1,389 minutes of "green" glare with low potential to cause temporary after-image.
  8,227 minutes of "yellow" glare with potential to cause temporary after-image.

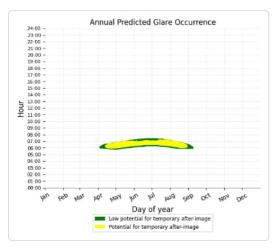


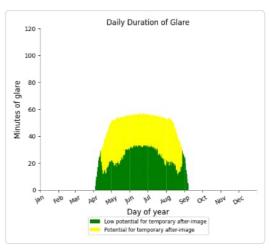


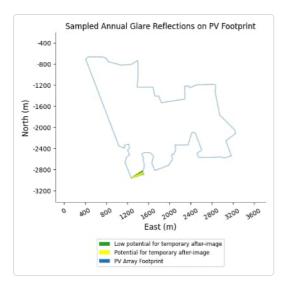


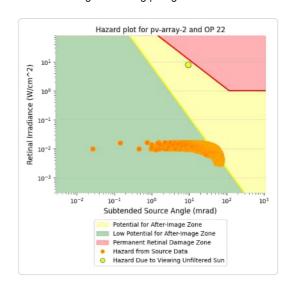
# PV array 2 - OP Receptor (OP 22)

- 3,727 minutes of "green" glare with low potential to cause temporary after-image.
- 3,646 minutes of "yellow" glare with potential to cause temporary after-image.





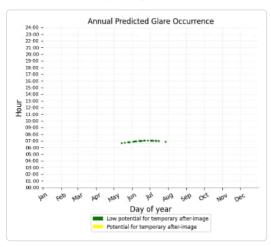


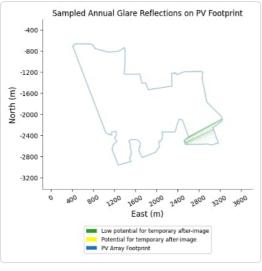


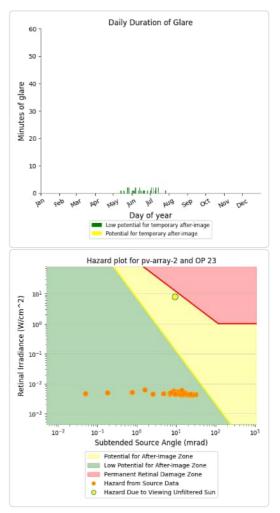
### PV array 2 - OP Receptor (OP 23)

PV array is expected to produce the following glare for receptors at this location:

- 31 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

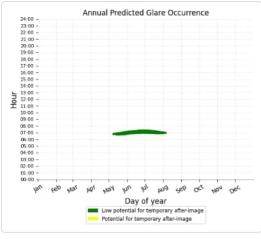


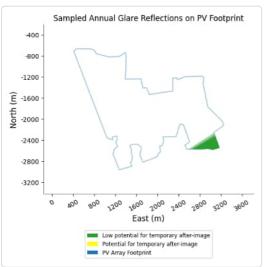


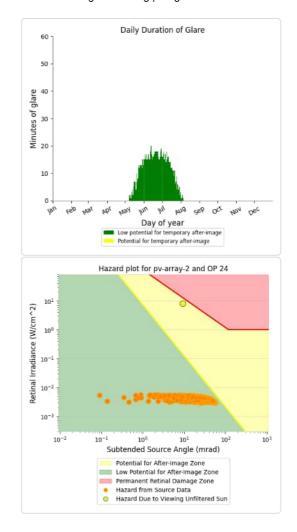


# PV array 2 - OP Receptor (OP 24)

- 1,055 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.







PV array 3 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	114	0
OP: OP 7	1031	0
OP: OP 8	2175	0
OP: OP 9	3272	546
OP: OP 10	3135	341
OP: OP 11	2552	0
OP: OP 12	663	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	0	0

OP: OP 23	0	0
OP: OP 24	0	0

#### PV array 3 - OP Receptor (OP 1)

No glare found

### PV array 3 - OP Receptor (OP 2)

No glare found

### PV array 3 - OP Receptor (OP 3)

No glare found

#### PV array 3 - OP Receptor (OP 4)

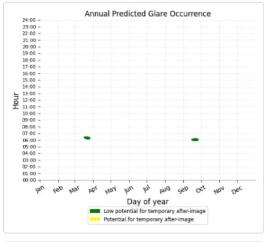
No glare found

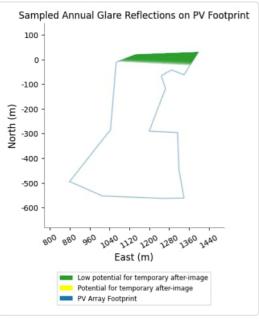
#### PV array 3 - OP Receptor (OP 5)

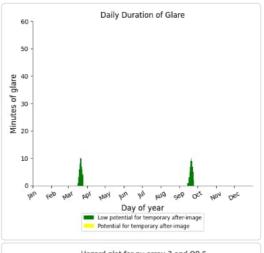
No glare found

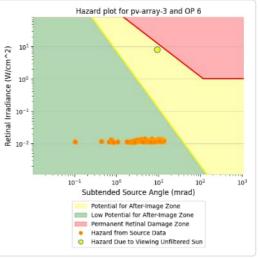
### PV array 3 - OP Receptor (OP 6)

- PV array is expected to produce the following glare for receptors at this location:
   • 114 minutes of "green" glare with low potential to cause temporary after-image.
   • 0 minutes of "yellow" glare with potential to cause temporary after-image.







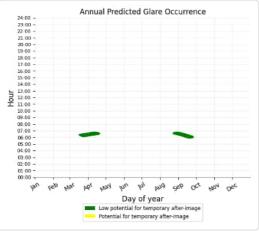


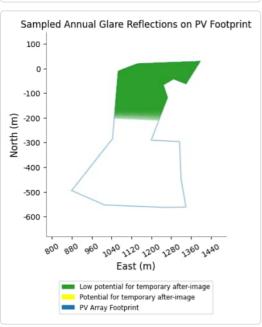
## PV array 3 - OP Receptor (OP 7)

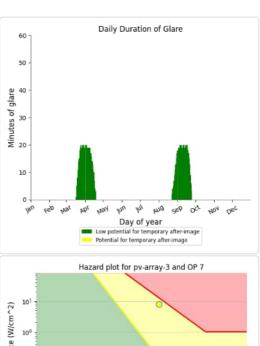
PV array is expected to produce the following glare for receptors at this location:

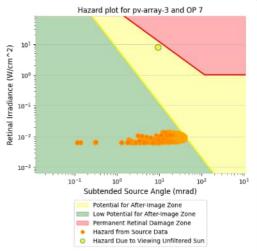
1,031 minutes of "green" glare with low potential to cause temporary after-image.

• 0 minutes of "yellow" glare with potential to cause temporary after-image.



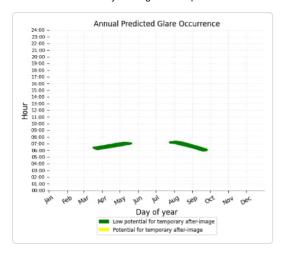


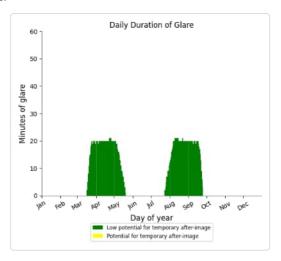


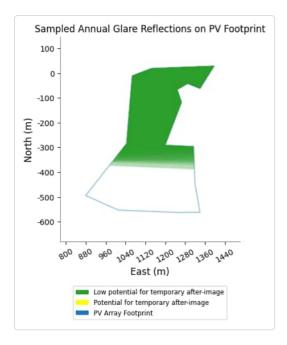


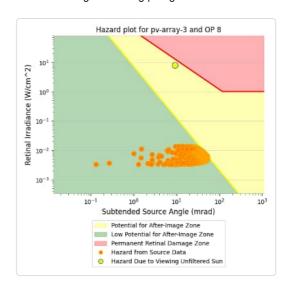
## PV array 3 - OP Receptor (OP 8)

- 2,175 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.





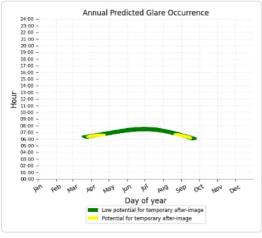


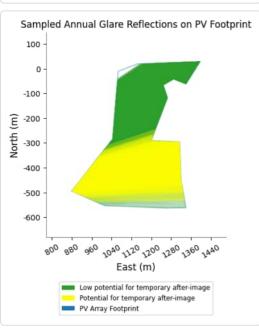


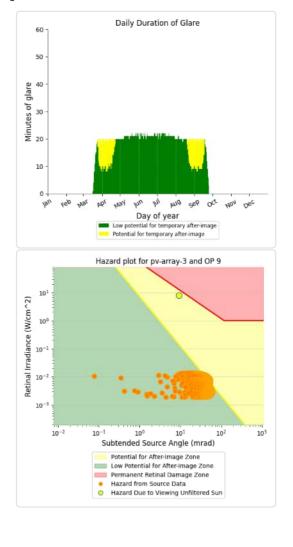
### PV array 3 - OP Receptor (OP 9)

PV array is expected to produce the following glare for receptors at this location:

- 3,272 minutes of "green" glare with low potential to cause temporary after-image.
- 546 minutes of "yellow" glare with potential to cause temporary after-image





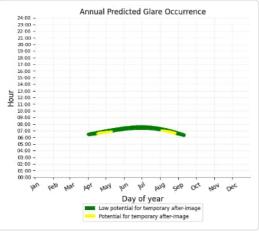


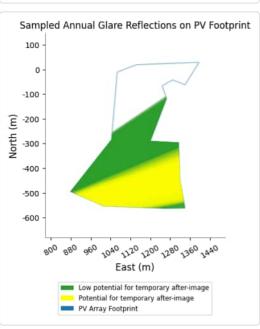
### PV array 3 - OP Receptor (OP 10)

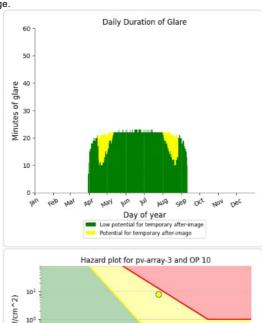
PV array is expected to produce the following glare for receptors at this location:

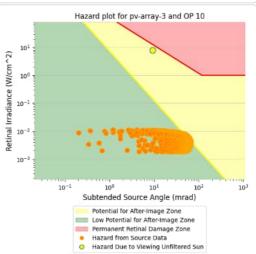
3,135 minutes of "green" glare with low potential to cause temporary after-image.

• 341 minutes of "yellow" glare with potential to cause temporary after-image.



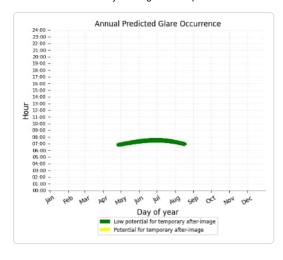


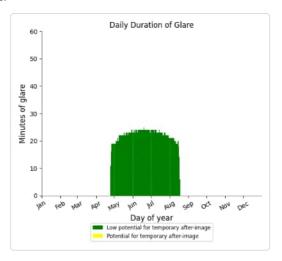


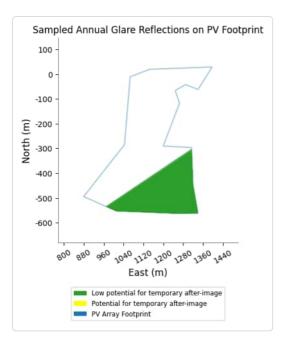


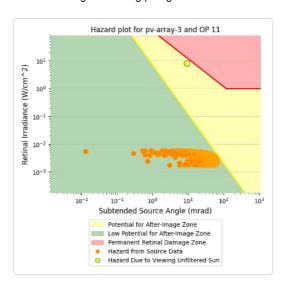
## PV array 3 - OP Receptor (OP 11)

- 2,552 minutes of "green" glare with low potential to cause temporary after-image. 0 minutes of "yellow" glare with potential to cause temporary after-image.





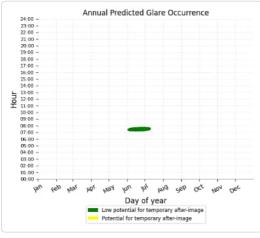


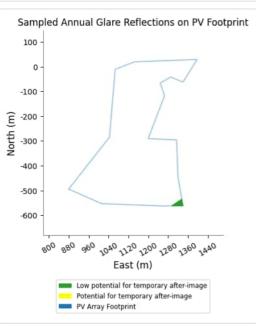


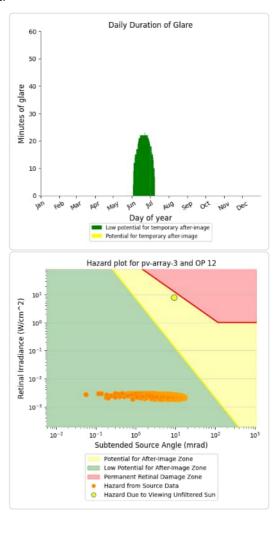
### PV array 3 - OP Receptor (OP 12)

PV array is expected to produce the following glare for receptors at this location:

- 663 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.







PV array 3 - OP Receptor (OP 13)

No glare found

PV array 3 - OP Receptor (OP 14)

No glare found

PV array 3 - OP Receptor (OP 15)

No glare found

PV array 3 - OP Receptor (OP 16)

No glare found

PV array 3 - OP Receptor (OP 17)

No glare found

PV array 3 - OP Receptor (OP 18)

No glare found

PV array 3 - OP Receptor (OP 19)

No glare found

PV array 3 - OP Receptor (OP 20)

No glare found

PV array 3 - OP Receptor (OP 21)

No glare found

PV array 3 - OP Receptor (OP 22)

No glare found

PV array 3 - OP Receptor (OP 23)

No glare found

PV array 3 - OP Receptor (OP 24)

No glare found

## PV array 4 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	182	0
OP: OP 5	604	99
OP: OP 6	2126	421
OP: OP 7	1761	2
OP: OP 8	1541	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0

OP: OP 21	0	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0

# PV array 4 - OP Receptor (OP 1)

No glare found

### PV array 4 - OP Receptor (OP 2)

No glare found

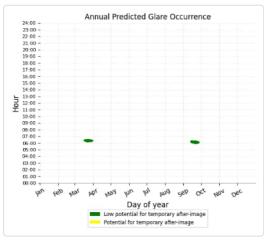
### PV array 4 - OP Receptor (OP 3)

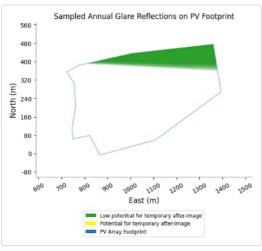
No glare found

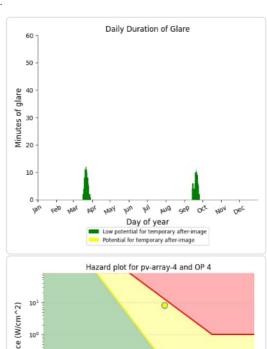
#### PV array 4 - OP Receptor (OP 4)

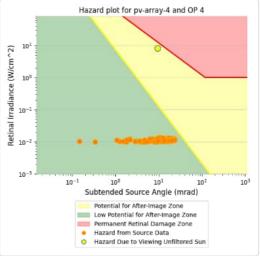
PV array is expected to produce the following glare for receptors at this location:

- 182 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





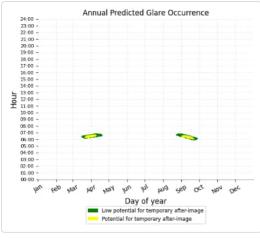


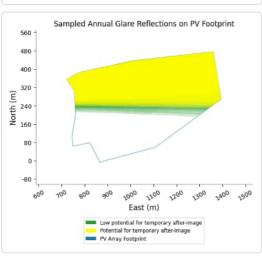


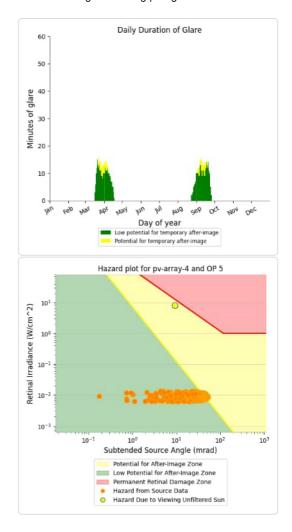
### PV array 4 - OP Receptor (OP 5)

- PV array is expected to produce the following glare for receptors at this location:

   604 minutes of "green" glare with low potential to cause temporary after-image.
  - 99 minutes of "yellow" glare with potential to cause temporary after-image.

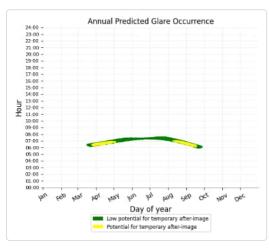


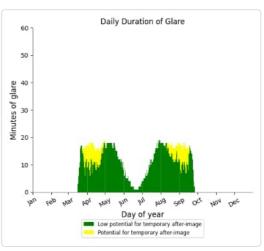


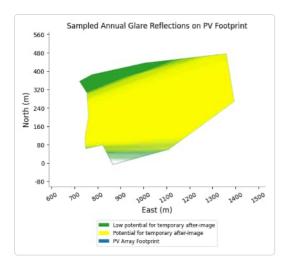


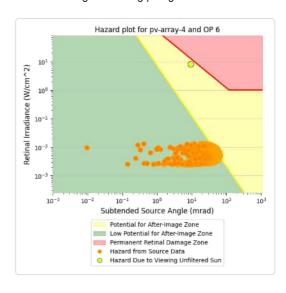
### PV array 4 - OP Receptor (OP 6)

- 2,126 minutes of "green" glare with low potential to cause temporary after-image.
- 421 minutes of "yellow" glare with potential to cause temporary after-image.





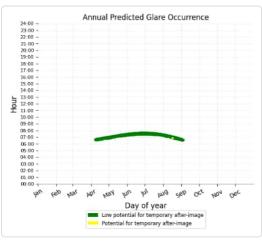


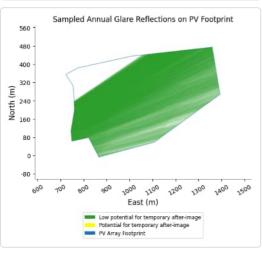


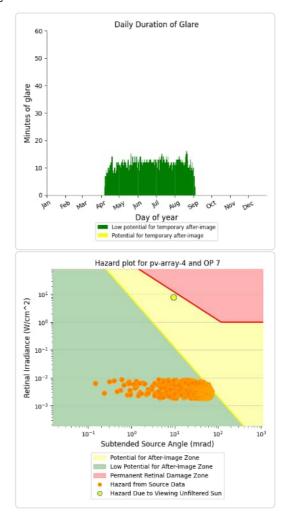
### PV array 4 - OP Receptor (OP 7)

PV array is expected to produce the following glare for receptors at this location:

- 1,761 minutes of "green" glare with low potential to cause temporary after-image.
- 2 minutes of "yellow" glare with potential to cause temporary after-image.



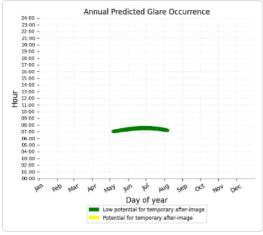


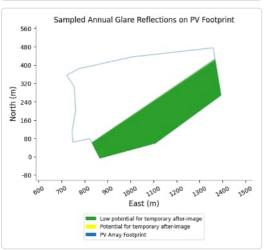


### PV array 4 - OP Receptor (OP 8)

- 1,541 minutes of "green" glare with low potential to cause temporary after-image.

  O minutes of "yellow" glare with potential to cause temporary after-image.







No glare found

PV array 4 - OP Receptor (OP 10)

No glare found

PV array 4 - OP Receptor (OP 11)

No glare found

PV array 4 - OP Receptor (OP 12)

No glare found

PV array 4 - OP Receptor (OP 13)

No glare found

PV array 4 - OP Receptor (OP 14)

No glare found

PV array 4 - OP Receptor (OP 15)

No glare found

PV array 4 - OP Receptor (OP 16)

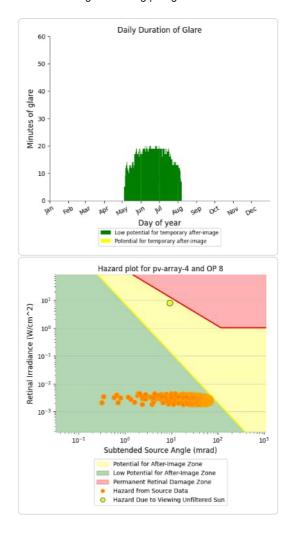
No glare found

PV array 4 - OP Receptor (OP 17)

No glare found

PV array 4 - OP Receptor (OP 18)

No glare found



PV array 4 - OP Receptor (OP 19)

No glare found

PV array 4 - OP Receptor (OP 20)

No glare found

PV array 4 - OP Receptor (OP 21)

No glare found

PV array 4 - OP Receptor (OP 22)

No glare found

PV array 4 - OP Receptor (OP 23)

No glare found

PV array 4 - OP Receptor (OP 24)

No glare found

# **Assumptions**

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not automatically account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
- · Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response
  time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more
  rigorous modeling methods.
- Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results fo
  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.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a
  continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Refer to the Help page for detailed assumptions and limitations not listed here.