Manchester Green Rooftop Solar Array

Aviation Receptor Glare Results

Created Oct 29, 2025
Updated Aug 04, 2026
Time-step 1 minute
Timezone offset UTC0
Minimum sun altitude 0.0 deg
Site ID 163112.23987

Project type Advanced
Project status: active
Category 10 MW to 100 MW
Sun dominance mitigation Enabled (max angle 10°)
Min luminance threshold 5,000 cd/m²

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**

Sun dominance mitigation: **Enabled** (max angle 10°)
Min luminance threshold: **5,000 cd/m²**

Summary of Results

Glare with low potential for temporary after-image predicted

ForgeSolar Radiometric Physics Engine 3.2.1

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Peak Luminance	Peak Illuminance
	deg	deg	min	min	kWh	cd/m²	lux
PV array 1	25.0	275.0	7,908	0	-	6,106,005	384
PV array 10	25.0	138.0	21,302	0	-	10,136,113	772
PV array 11	25.0	138.0	21,825	0	-	10,323,757	488
PV array 12	25.0	93.0	21,403	0	-	6,798,083	528
PV array 2	25.0	93.0	15,191	0	-	5,916,267	215
PV array 3	25.0	233.0	7,816	0	-	12,166,742	107
PV array 4	25.0	48.0	20,012	0	-	12,365,687	159
PV array 5	25.0	226.0	8,797	0	-	12,376,754	387
PV array 6	25.0	93.0	17,808	0	-	6,508,640	286
PV array 7	25.0	3.0	26,061	0	-	11,271,630	89
PV array 8	25.0	183.0	11,272	0	-	11,008,270	1,448
PV array 9	25.0	321.0	25,403	0	-	10,575,116	633

Component Data

PV Array(s)

Total PV footprint area: 1,214 m^2

Name: PV array 1
Footprint area: 111 m^2
Axis tracking: Fixed (no rotation)
Tilt: 25.0 deg
Orientation: 275.0 deg

Rated power: -
Panel material: Light textured glass with AR coating (revised)



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.366722	-2.241087	74.10	10.80	84.90
2	53.366650	-2.240984	74.24	13.50	87.74
3	53.366580	-2.240990	74.38	13.50	87.88
4	53.366554	-2.241118	74.37	10.80	85.17

Name: PV array 10
Footprint area: 107 m^2
Axis tracking: Fixed (no rotation)
Tilt: 25.0 deg
Orientation: 138.0 deg

Rated power: -
Panel material: Light textured glass with AR coating (revised)



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.366320	-2.238729	73.10	13.50	86.60
2	53.366272	-2.238664	73.04	10.80	83.84
3	53.366182	-2.238837	73.83	10.80	84.63
4	53.366261	-2.238866	73.68	13.50	87.18
5	53.366324	-2.238733	73.10	13.50	86.60

Name: PV array 11
Footprint area: 59 m^2
Axis tracking: Fixed (no rotation)
Tilt: 25.0 deg
Orientation: 138.0 deg

Rated power: -
Panel material: Light textured glass with AR coating (revised)



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.366395	-2.238601	72.52	13.50	86.02
2	53.366424	-2.238535	72.23	13.50	85.73
3	53.366389	-2.238428	72.12	10.80	82.92
4	53.366338	-2.238535	72.49	10.80	83.29

Name: PV array 12
Footprint area: 55 m^2
Axis tracking: Fixed (no rotation)
Tilt: 25.0 deg
Orientation: 93.0 deg

Rated power: -
Panel material: Light textured glass with AR coating (revised)



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.366451	-2.238533	72.14	13.50	85.64
2	53.366434	-2.238535	72.20	13.50	85.70
3	53.366398	-2.238425	72.09	10.80	82.89
4	53.366502	-2.238407	71.80	10.80	82.60

Name: PV array 2
Footprint area: 64 m^2
Axis tracking: Fixed (no rotation)
Tilt: 25.0 deg
Orientation: 93.0 deg

Rated power: -
Panel material: Light textured glass with AR coating (revised)



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.366645	-2.240961	74.27	13.50	87.77
2	53.366586	-2.240972	74.36	10.80	85.16
3	53.366604	-2.240856	74.39	10.80	85.19
4	53.366689	-2.240838	74.19	13.50	87.69

Name: PV array 3
Footprint area: 92 m^2
Axis tracking: Fixed (no rotation)
Tilt: 25.0 deg
Orientation: 233.0 deg

Rated power: -
Panel material: Light textured glass with AR coating (revised)



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.366564	-2.240986	74.41	13.50	87.91
2	53.366540	-2.241091	74.40	10.80	85.20
3	53.366451	-2.240966	74.64	10.80	85.44
4	53.366491	-2.240875	74.62	13.50	88.12

Name: PV array 4
Footprint area: 129 m^2
Axis tracking: Fixed (no rotation)
Tilt: 25.0 deg
Orientation: 48.0 deg

Rated power: -
Panel material: Light textured glass with AR coating (revised)



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.366571	-2.240955	74.41	13.50	87.91
2	53.366381	-2.240694	75.01	13.50	88.51
3	53.366416	-2.240662	74.93	10.80	85.73
4	53.366468	-2.240725	74.76	10.80	85.56
5	53.366466	-2.240773	74.73	13.50	88.23
6	53.366512	-2.240772	74.63	10.80	85.43
7	53.366583	-2.240887	74.42	10.80	85.22

Name: PV array 5
Footprint area: 56 m^2
Axis tracking: Fixed (no rotation)
Tilt: 25.0 deg
Orientation: 226.0 deg

Rated power: -
Panel material: Light textured glass with AR coating (revised)



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.366401	-2.240764	74.91	13.50	88.41
2	53.366378	-2.240713	75.00	13.50	88.50
3	53.366301	-2.240761	75.15	10.80	85.95
4	53.366366	-2.240856	74.89	10.80	85.69

Name: PV array 6
Footprint area: 58 m^2
Axis tracking: Fixed (no rotation)
Tilt: 25.0 deg
Orientation: 93.0 deg

Rated power: -
Panel material: Light textured glass with AR coating (revised)



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.366390	-2.240527	75.12	13.50	88.62
2	53.366344	-2.240531	75.26	13.50	88.76
3	53.366286	-2.240465	75.41	10.80	86.21
4	53.366424	-2.240445	75.04	10.80	85.84

Name: PV array 7
Footprint area: 100 m^2
Axis tracking: Fixed (no rotation)
Tilt: 25.0 deg
Orientation: 3.0 deg

Rated power: -
Panel material: Light textured glass with AR coating (revised)



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.366304	-2.239235	74.50	13.50	88.00
2	53.366350	-2.239233	74.35	10.80	85.15
3	53.366337	-2.238984	73.77	10.80	84.57
4	53.366287	-2.238991	73.95	13.50	87.45

Name: PV array 8
Footprint area: 240 m^2
Axis tracking: Fixed (no rotation)
Tilt: 25.0 deg
Orientation: 183.0 deg

Rated power: -
Panel material: Light textured glass with AR coating (revised)



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.366263	-2.239028	74.15	13.50	87.65
2	53.366260	-2.238877	73.71	13.50	87.21
3	53.366175	-2.238844	73.86	10.80	84.66
4	53.366206	-2.239411	75.02	10.80	85.82
5	53.366250	-2.239316	74.78	13.50	88.28
6	53.366238	-2.239024	74.18	13.50	87.68

Name: PV array 9
Footprint area: 142 m^2
Axis tracking: Fixed (no rotation)
Tilt: 25.0 deg
Orientation: 321.0 deg

Rated power: -
Panel material: Light textured glass with AR coating (revised)



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.366270	-2.238881	73.68	13.50	87.18
2	53.366428	-2.238546	72.26	13.50	85.76
3	53.366449	-2.238625	72.43	10.80	83.23
4	53.366427	-2.238702	72.69	10.80	83.49
5	53.366379	-2.238706	72.87	13.50	86.37
6	53.366384	-2.238782	73.07	10.80	83.87
7	53.366339	-2.238876	73.48	10.80	84.28
8	53.366276	-2.238884	73.65	13.50	87.15

2-Mile Flight Path Receptor(s)

Name: Manchester Airport - Runway 05L
Description:
Threshold height : 15 m
Direction: 51.1 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 30.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	53.347688	-2.287503	66.67	15.24	81.91
2-mile point	53.329532	-2.325240	50.09	200.50	250.60



Name: Manchester Airport - Runway 05L
Description:
Threshold height : 15 m
Direction: 51.0 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 30.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	53.332104	-2.310398	56.50	15.24	71.74
2-mile point	53.313924	-2.348090	49.26	191.17	240.42



Name: Manchester Airport - Runway 23L
Description:
Threshold height : 15 m
Direction: 231.1 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 30.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	53.348041	-2.277468	66.91	15.24	82.15
2-mile point	53.366197	-2.239730	75.52	175.31	250.83



Name: Manchester Airport - Runway 23R
Description:
Threshold height : 15 m
Direction: 231.1 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 30.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	53.361216	-2.259546	77.00	15.24	92.24
2-mile point	53.379372	-2.221797	61.43	199.49	260.92



Name: Manchester Barton - Runway 02
Description:
Threshold height : 15 m
Direction: 14.1 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 30.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	53.470142	-2.389511	22.99	15.24	38.23
2-mile point	53.442100	-2.401358	16.70	190.21	206.91



Name: Manchester Barton - Runway 08L
Description:
Threshold height : 15 m
Direction: 82.2 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 30.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	53.471470	-2.394855	24.08	15.24	39.32
2-mile point	53.467561	-2.443040	27.49	180.51	208.00



Name: Manchester Barton - Runway 08R
Description:
Threshold height : 15 m
Direction: 82.8 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 30.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	53.471263	-2.393859	21.42	15.24	36.66
2-mile point	53.467639	-2.442107	28.11	177.23	205.34



Name: Manchester Barton - Runway 14
Description:
Threshold height : 15 m
Direction: 134.2 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 30.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	53.473582	-2.388817	23.53	15.24	38.77
2-mile point	53.493739	-2.423683	26.88	180.58	207.46



Name: Manchester Barton - Runway 20
Description:
Threshold height : 15 m
Direction: 194.6 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 30.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	53.473802	-2.387913	23.73	15.24	38.97
2-mile point	53.501781	-2.375654	47.72	159.94	207.66



Name: Manchester Barton - Runway 26L
Description:
Threshold height : 15 m
Direction: 262.8 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 30.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	53.471884	-2.385552	23.74	15.24	38.98
2-mile point	53.475507	-2.337304	24.70	182.96	207.66



Name: Manchester Barton - Runway 26R
Description:
Threshold height : 15 m
Direction: 262.8 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 30.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	53.472108	-2.386286	22.66	15.24	37.90
2-mile point	53.475732	-2.338037	24.01	182.58	206.58



Name: Manchester Barton - Runway 32
Description:
Threshold height : 15 m
Direction: 314.2 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 30.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	53.471233	-2.384792	22.25	15.24	37.49
2-mile point	53.451076	-2.349928	26.00	180.17	206.17



Name: Wythenshawe - East Approach
Description:
Threshold height : 15 m
Direction: 270.0 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 30.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	53.388420	-2.289629	46.72	15.24	61.96
2-mile point	53.388425	-2.241093	51.18	179.47	230.64



Name: Wythenshawe - North Approach
Description:
Threshold height : 15 m
Direction: 180.0 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 30.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	53.388420	-2.289629	46.72	15.24	61.96
2-mile point	53.417332	-2.289629	31.68	198.96	230.64



Name: Wythenshawe - Northeast Approach
Description:
Threshold height : 15 m
Direction: 225.0 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 30.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	53.388420	-2.289628	46.72	15.24	61.96
2-mile point	53.408865	-2.255307	33.33	197.31	230.64



Name: Wythenshawe - Northwest Approach
Description:
Threshold height : 15 m
Direction: 135.0 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 30.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	53.388417	-2.289633	46.72	15.24	61.96
2-mile point	53.408862	-2.323953	28.79	201.85	230.64



Name: Wythenshawe - South Approach
Description:
Threshold height : 15 m
Direction: 0.0 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 30.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	53.388415	-2.289632	46.75	15.24	61.99
2-mile point	53.359502	-2.289632	68.69	161.99	230.68



Name: Wythenshawe - Southeast Approach
Description:
Threshold height : 15 m
Direction: 315.0 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 30.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	53.388416	-2.289632	46.72	15.24	61.96
2-mile point	53.367972	-2.255311	74.21	156.44	230.64



Name: Wythenshawe - Southwest Approach
Description:
Threshold height : 15 m
Direction: 45.0 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	53.388422	-2.289636	46.74	15.24	61.98
2-mile point	53.367978	-2.323956	59.51	171.15	230.66



Name: Wythenshawe - West Approach
Description:
Threshold height : 15 m
Direction: 90.0 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 30.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	53.388418	-2.289632	46.72	15.24	61.96
2-mile point	53.388418	-2.338168	31.48	199.16	230.64



Route Receptor(s)

Name: Macclesfield Entry
Route type One-way
Azimuthal view angle: 25.0 deg
Downward view angle: 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.236040	-2.135252	158.52	618.73	777.25
2	53.263422	-2.106050	224.90	552.31	777.21
3	53.263422	-2.102533	188.32	548.10	736.42
4	53.278862	-2.129901	142.36	526.34	668.70
5	53.304867	-2.124398	121.14	468.74	589.88
6	53.342574	-2.094886	139.44	382.56	522.00
7	53.357602	-2.098102	129.94	289.05	418.99
8	53.365656	-2.129970	83.13	273.48	356.61
9	53.354628	-2.263127	79.40	35.30	114.70
10	53.348037	-2.277466	66.91	15.24	82.15

Name: Macclesfield Exit
Route type One-way
Azimuthal view angle: 25.0 deg
Downward view angle: 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.337168	-2.300038	57.00	15.24	72.24
2	53.334432	-2.305615	56.00	36.93	92.93
3	53.326271	-2.302856	59.23	72.58	131.81
4	53.309982	-2.285484	68.04	154.43	222.47
5	53.296055	-2.236406	102.96	272.37	375.33
6	53.287853	-2.171501	154.65	407.05	561.70
7	53.260948	-2.154645	170.82	526.38	697.20
8	53.251023	-2.140109	166.76	592.30	759.06
9	53.236036	-2.135238	158.53	618.71	777.24

Name: Runway 05L - 10NM
Route type One-way
Azimuthal view angle: 25.0 deg
Downward view angle: 90.0 deg



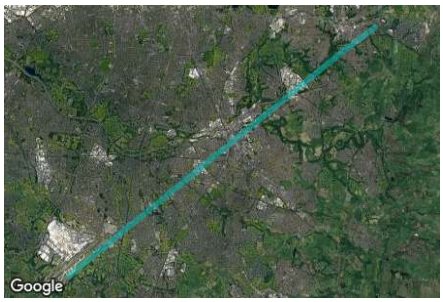
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.245030	-2.506330	34.93	1017.07	1052.00
2	53.255573	-2.485457	30.26	924.64	954.90
3	53.265800	-2.463563	32.00	825.80	857.80
4	53.276013	-2.441660	36.04	724.66	760.70
5	53.286223	-2.419745	47.28	616.32	663.60
6	53.296429	-2.397820	58.31	508.19	566.50
7	53.306630	-2.375885	48.24	421.16	469.40
8	53.316828	-2.353939	51.31	320.99	372.30
9	53.327021	-2.331982	57.09	218.11	275.20
10	53.337210	-2.310015	49.95	128.15	178.10
11	53.347405	-2.288038	66.65	15.24	81.89

Name: Runway 05R - 10NM
Route type One-way
Azimuthal view angle: 25.0 deg
Downward view angle: 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.229520	-2.528760	44.38	998.12	1042.50
2	53.239742	-2.507559	32.80	912.60	945.40
3	53.250008	-2.485724	26.59	821.71	848.30
4	53.260261	-2.463878	32.81	718.39	751.20
5	53.270520	-2.442038	37.58	616.52	654.10
6	53.280765	-2.420171	34.59	522.41	557.00
7	53.291007	-2.398310	47.79	412.11	459.90
8	53.301253	-2.376422	64.41	298.39	362.80
9	53.311486	-2.354525	52.00	213.70	265.70
10	53.321725	-2.332632	55.93	112.67	168.60
11	53.331950	-2.310713	55.79	15.24	71.03

Name: Runway 23L - 10NM
Route type One-way
Azimuthal view angle: 25.0 deg
Downward view angle: 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.452284	-2.060134	121.55	932.15	1053.70
2	53.442491	-2.082672	118.34	838.26	956.60
3	53.432029	-2.104325	93.46	766.04	859.50
4	53.421554	-2.125953	83.31	679.09	762.40
5	53.411076	-2.147584	73.85	591.45	665.30
6	53.400593	-2.169206	74.00	494.20	568.20
7	53.390107	-2.190816	54.91	416.19	471.10
8	53.379617	-2.212401	65.70	308.30	374.00
9	53.369123	-2.233991	71.00	205.90	276.90
10	53.358625	-2.255569	78.00	101.80	179.80
11	53.348123	-2.277137	66.95	15.24	82.19

Name: Runway 23R - 10NM
Route type One-way
Azimuthal view angle: 25.0 deg
Downward view angle: 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.465720	-2.041972	194.30	868.90	1063.20
2	53.455670	-2.064687	116.38	849.72	966.10
3	53.445202	-2.086351	98.05	770.95	869.00
4	53.434731	-2.108004	91.16	680.74	771.90
5	53.424256	-2.129632	83.27	591.53	674.80
6	53.413777	-2.151265	57.96	519.74	577.70
7	53.403303	-2.172886	67.83	412.77	480.60
8	53.392816	-2.194498	48.92	334.58	383.50
9	53.382325	-2.216098	56.05	230.35	286.40
10	53.371830	-2.237673	65.52	123.78	189.30
11	53.361331	-2.259252	77.00	15.24	92.24

Name: Runway Taxi 1
Route type Two-way
Azimuthal view angle: 50.0 deg
Downward view angle: 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.345163	-2.292633	61.16	4.04	65.20
2	53.362273	-2.257287	76.49	4.04	80.53

Name: Runway Taxi 2
Route type Two-way
Azimuthal view angle: 50.0 deg
Downward view angle: 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.350375	-2.272470	73.54	4.04	77.58
2	53.332075	-2.310425	56.48	4.04	60.52

Name: Stretton Entry
Route type One-way
Azimuthal view angle: 25.0 deg
Downward view angle: 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.348753	-2.506846	62.00	334.24	396.24
2	53.359659	-2.414944	42.76	263.67	306.43
3	53.354639	-2.377887	36.02	206.86	242.88
4	53.341727	-2.312974	54.98	74.51	129.49
5	53.342644	-2.298273	58.10	46.33	104.43
6	53.347689	-2.287535	66.62	15.24	81.86

Name: Thelwall Viaduct Exit
Route type One-way
Azimuthal view angle: 25.0 deg
Downward view angle: 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.361212	-2.259525	77.00	15.24	92.24
2	53.365491	-2.250772	76.86	30.30	107.16
3	53.374114	-2.245305	67.97	59.90	127.87
4	53.379746	-2.256119	63.18	83.87	147.05
5	53.381641	-2.279036	59.35	118.57	177.92
6	53.380669	-2.286227	59.33	128.45	187.78
7	53.365409	-2.309058	66.19	167.33	233.52
8	53.390259	-2.505775	12.17	384.07	396.24

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	m	m	m
1-ATCT	53.357825	-2.279589	70.00	60.00	130.00
2-ATCT	53.470833	-2.387148	22.75	15.00	37.75

1-ATCT map image



2-ATCT map image



Obstruction Components

Name: Obstruction 2
Upper edge height: 17.00 m



Vertex	Latitude	Longitude	Ground elevation
	deg	deg	m
1	53.366481	-2.241583	74.43
2	53.366484	-2.241369	74.43
3	53.366190	-2.241374	74.85
4	53.366164	-2.241578	74.90
5	53.366481	-2.241583	74.43

Name: Obstruction 3
Upper edge height: 12.00 m



Vertex	Latitude	Longitude	Ground elevation
	deg	deg	m
1	53.366139	-2.241558	74.93
2	53.366189	-2.241252	74.85
3	53.366094	-2.241177	75.04
4	53.366013	-2.241217	75.11
5	53.365960	-2.241534	75.19
6	53.366139	-2.241558	74.93

Name: Obstruction 4
Upper edge height: 14.00 m



Vertex	Latitude	Longitude	Ground elevation
	deg	deg	m
1	53.366095	-2.241111	75.13
2	53.365954	-2.241073	75.37
3	53.365943	-2.239691	76.00
4	53.365791	-2.238468	73.45
5	53.366043	-2.238312	73.07
6	53.366035	-2.239444	75.51
7	53.366198	-2.239406	75.05
8	53.366198	-2.239600	75.33
9	53.366070	-2.239626	75.73
10	53.366095	-2.241111	75.13

Summary of PV Glare Analysis

PV configuration and total predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Peak Luminance	Peak Illuminance	Data File
	deg	deg	min	min	kWh	cd/m^2	lux	
PV array 1	25.0	275.0	7,908	0	-	6,106,005	384	-
PV array 10	25.0	138.0	21,302	0	-	10,136,113	772	-
PV array 11	25.0	138.0	21,825	0	-	10,323,757	488	-
PV array 12	25.0	93.0	21,403	0	-	6,798,083	528	-
PV array 2	25.0	93.0	15,191	0	-	5,916,267	215	-
PV array 3	25.0	233.0	7,816	0	-	12,166,742	107	-
PV array 4	25.0	48.0	20,012	0	-	12,365,687	159	-
PV array 5	25.0	226.0	8,797	0	-	12,376,754	387	-
PV array 6	25.0	93.0	17,808	0	-	6,508,640	286	-
PV array 7	25.0	3.0	26,061	0	-	11,271,630	89	-
PV array 8	25.0	183.0	11,272	0	-	11,008,270	1,448	-
PV array 9	25.0	321.0	25,403	0	-	10,575,116	633	-

Distinct glare per month

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

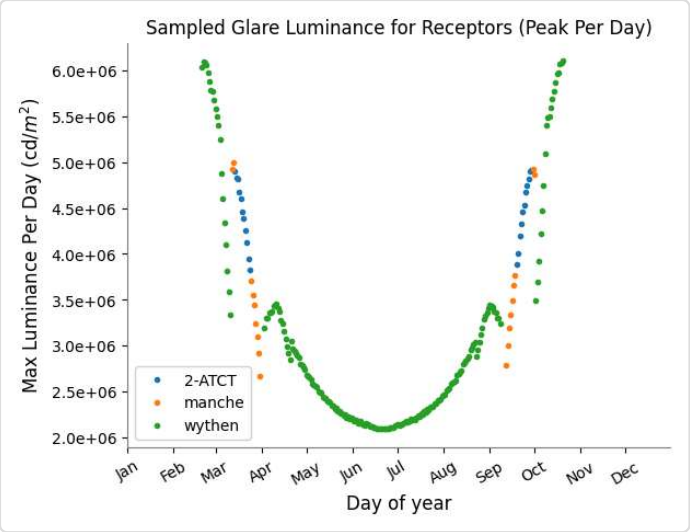
PV	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pv-array-1 (green)	0	194	783	862	1040	1033	1061	1021	710	475	0	0
pv-array-1 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-10 (green)	5381	2903	75	0	574	957	928	11	0	1402	5849	2935
pv-array-10 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-11 (green)	5330	3005	96	0	574	955	928	10	0	1479	5858	2867
pv-array-11 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-12 (green)	334	1111	1133	4124	2248	0	711	4824	1550	1192	676	0
pv-array-12 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-2 (green)	199	1133	1169	1032	1250	1306	1302	1160	1046	1243	546	0
pv-array-2 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-3 (green)	400	786	883	157	887	528	863	319	685	875	447	733
pv-array-3 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-4 (green)	1026	67	0	427	2564	2560	2711	1278	0	0	697	1302
pv-array-4 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-5 (green)	719	1677	1173	275	559	0	225	606	521	1862	1090	90
pv-array-5 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-6 (green)	281	1138	1160	1323	1757	1929	1865	1544	1112	1226	635	0
pv-array-6 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-7 (green)	0	0	863	2996	3755	2573	3543	2922	2239	0	0	0
pv-array-7 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-8 (green)	1823	738	270	1361	663	0	171	1406	683	437	1515	2170
pv-array-8 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-9 (green)	228	2016	1954	1094	2696	3314	3093	1659	1361	2466	697	0
pv-array-9 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0

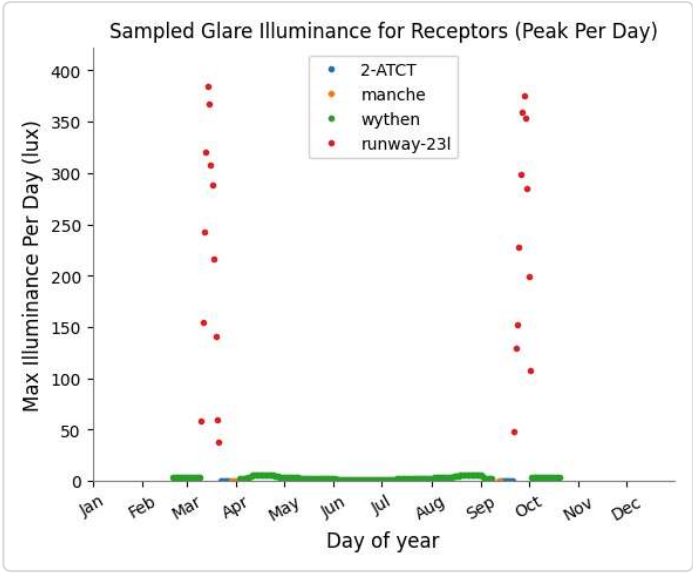
PV & Receptor Analysis Results

Results for each PV array and receptor

PV array 1 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)	Peak Luminance (cd/m^2)	Peak Illuminance (lux)
FP: Manchester Airport - Runway 05L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 05L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 23L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 23R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 02	0	0	0	0.0e+00
FP: Manchester Barton - Runway 08L	0	0	0	0.0e+00
FP: Manchester Barton - Runway 08R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 14	903	0	4,992,141	0.5
FP: Manchester Barton - Runway 20	0	0	0	0.0e+00
FP: Manchester Barton - Runway 26L	0	0	0	0.0e+00
FP: Manchester Barton - Runway 26R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 32	0	0	0	0.0e+00
FP: Wythenshawe - East Approach	0	0	0	0.0e+00
FP: Wythenshawe - North Approach	926	0	6,106,005	4
FP: Wythenshawe - Northeast Approach	0	0	0	0.0e+00
FP: Wythenshawe - Northwest Approach	1411	0	3,451,196	6
FP: Wythenshawe - South Approach	0	0	0	0.0e+00
FP: Wythenshawe - Southeast Approach	0	0	0	0.0e+00
FP: Wythenshawe - Southwest Approach	0	0	0	0.0e+00
FP: Wythenshawe - West Approach	3815	0	3,043,319	5
OP: 1-ATCT	0	0	0	0.0e+00
OP: 2-ATCT	738	0	4,915,898	0.5
Route: Macclesfield Entry	0	0	0	0.0e+00
Route: Macclesfield Exit	0	0	0	0.0e+00
Route: Runway 05L - 10NM	0	0	0	0.0e+00
Route: Runway 05R - 10NM	0	0	0	0.0e+00
Route: Runway 23L - 10NM	115	0	984,739	384
Route: Runway 23R - 10NM	0	0	0	0.0e+00
Route: Runway Taxi 1	0	0	0	0.0e+00
Route: Runway Taxi 2	0	0	0	0.0e+00
Route: Stretton Entry	0	0	0	0.0e+00
Route: Thelwall Viaduct Exit	0	0	0	0.0e+00





PV array 1: Manchester Airport - Runway 05L

No glare found

PV array 1: Manchester Airport - Runway 05L

No glare found

PV array 1: Manchester Airport - Runway 23L

No glare found

PV array 1: Manchester Airport - Runway 23R

No glare found

PV array 1: Manchester Barton - Runway 02

No glare found

PV array 1: Manchester Barton - Runway 08L

No glare found

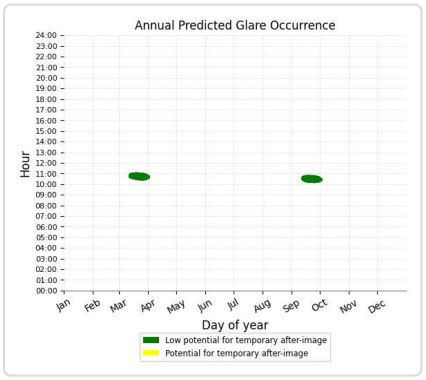
PV array 1: Manchester Barton - Runway 08R

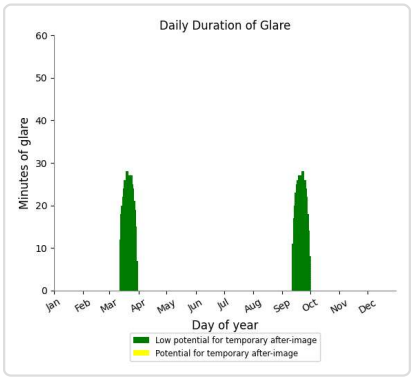
No glare found

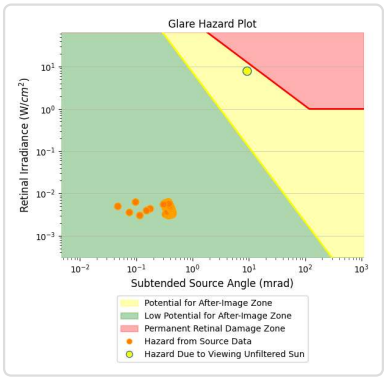
PV array 1: Manchester Barton - Runway 14

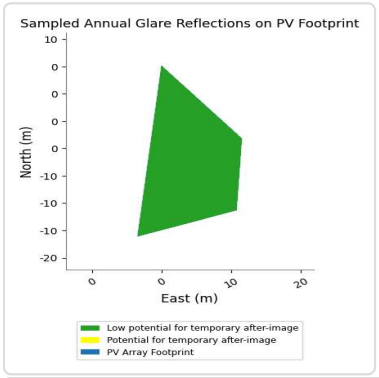
PV array is expected to produce the following glare for this receptor:

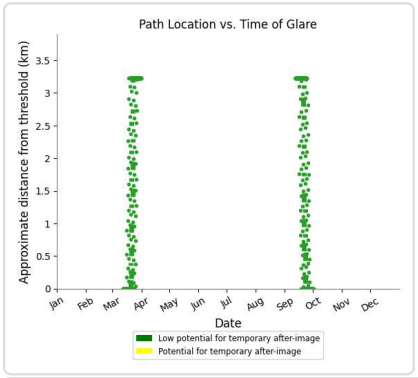
- 903 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

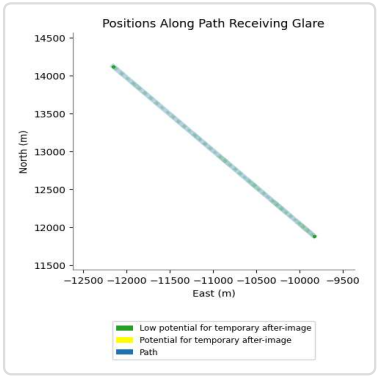


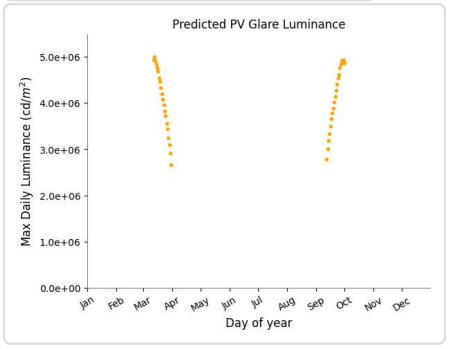


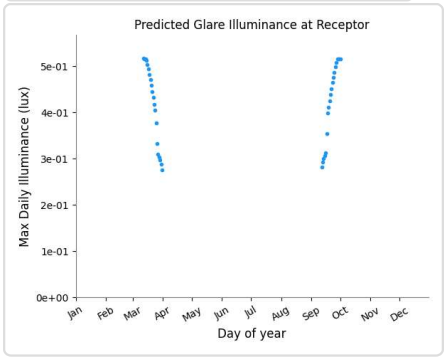












PV array 1: Manchester Barton - Runway 20

No glare found

PV array 1: Manchester Barton - Runway 26L

No glare found

PV array 1: Manchester Barton - Runway 26R

No glare found

PV array 1: Manchester Barton - Runway 32

No glare found

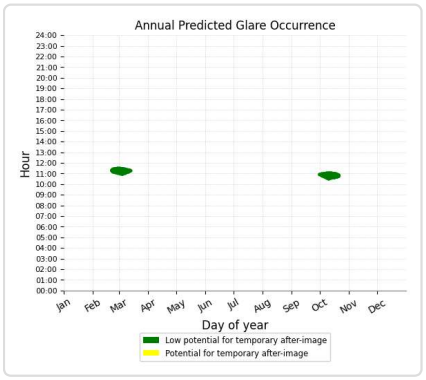
PV array 1: Wythenshawe - East Approach

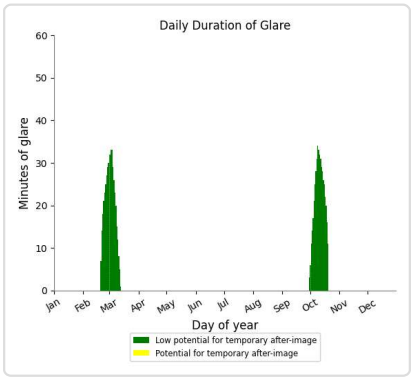
No glare found

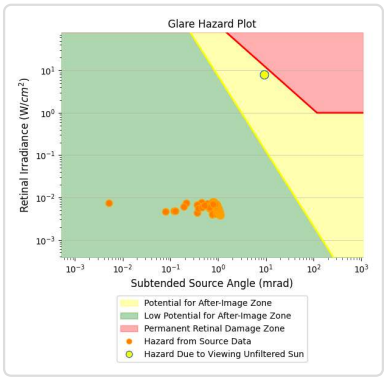
PV array 1: Wythenshawe - North Approach

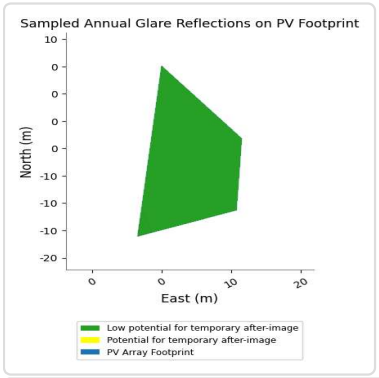
PV array is expected to produce the following glare for this receptor:

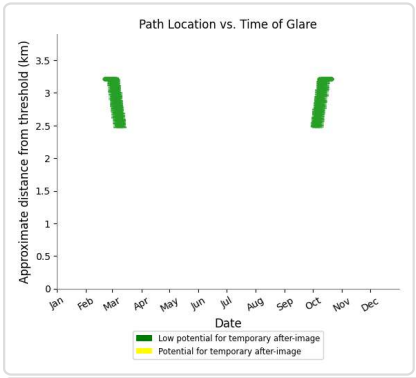
- 926 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

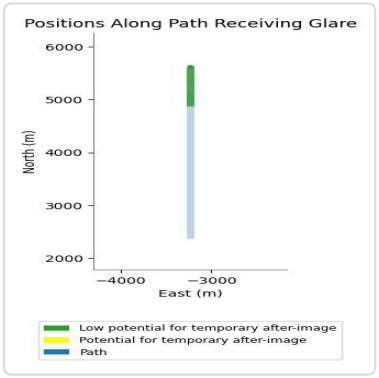


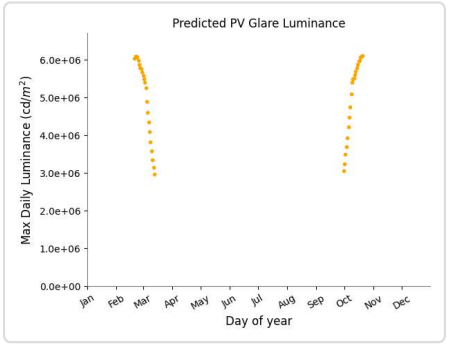


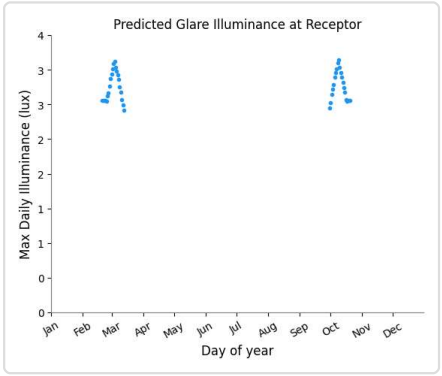












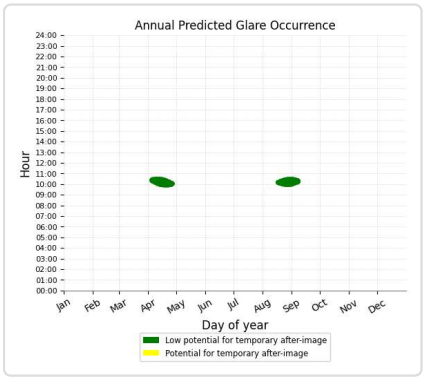
PV array 1: Wythenshawe - Northeast Approach

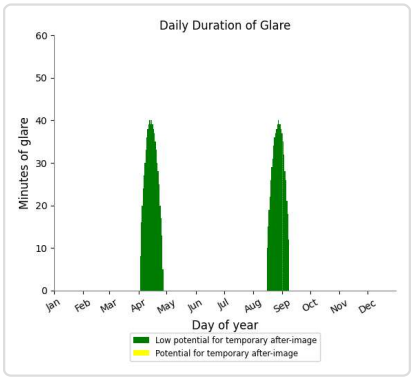
No glare found

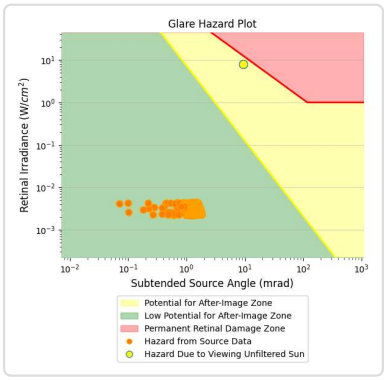
PV array 1: Wythenshawe - Northwest Approach

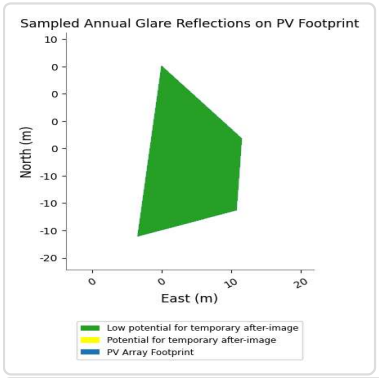
PV array is expected to produce the following glare for this receptor:

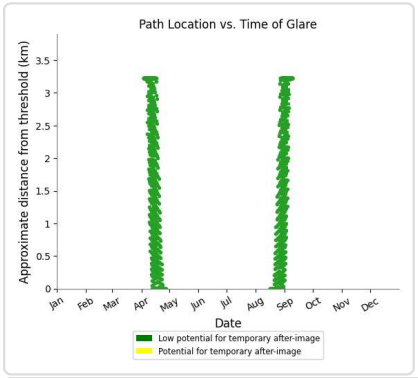
- 1,411 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

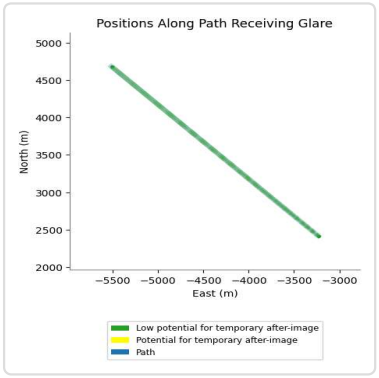


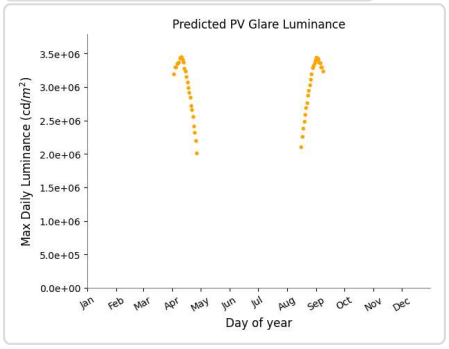


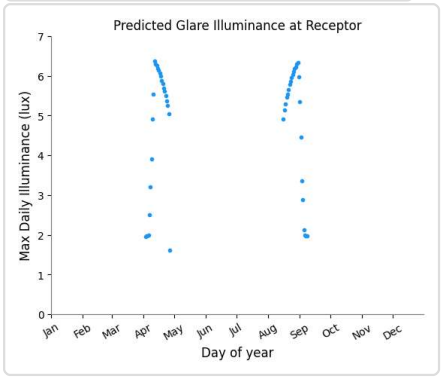












PV array 1: Wythenshawe - South Approach

No glare found

PV array 1: Wythenshawe - Southeast Approach

No glare found

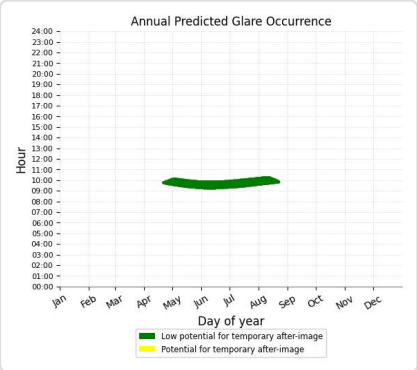
PV array 1: Wythenshawe - Southwest Approach

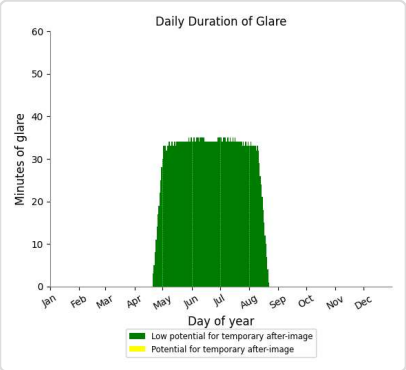
No glare found

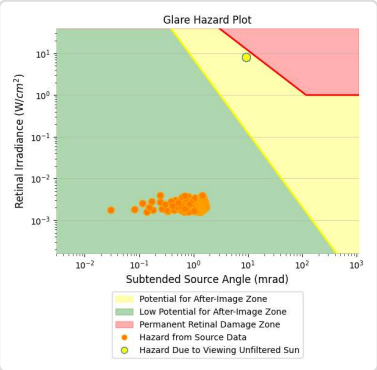
PV array 1: Wythenshawe - West Approach

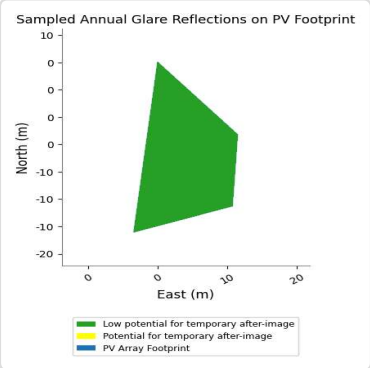
PV array is expected to produce the following glare for this receptor:

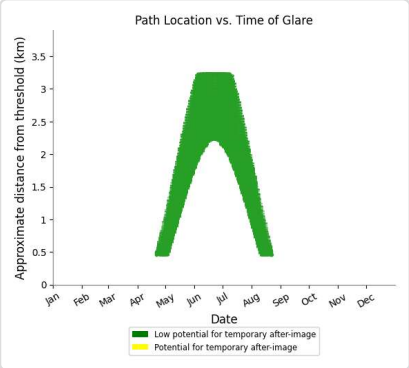
- 3,815 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

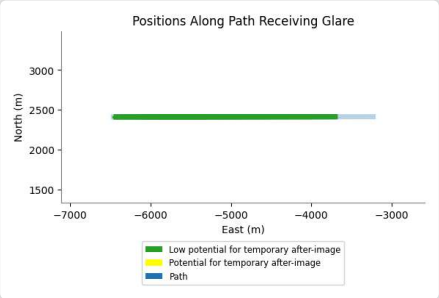


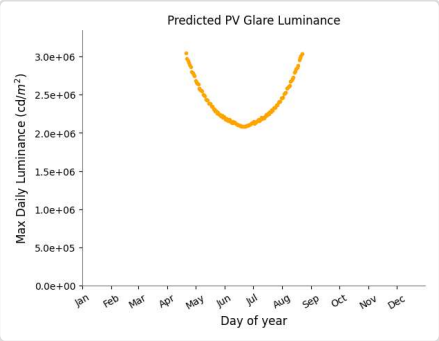


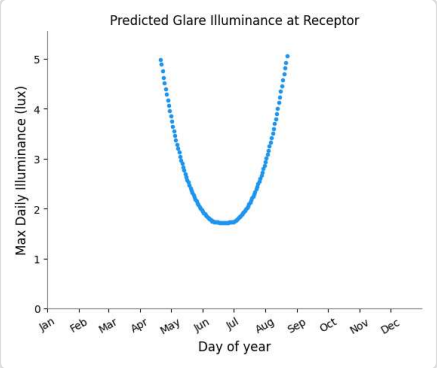












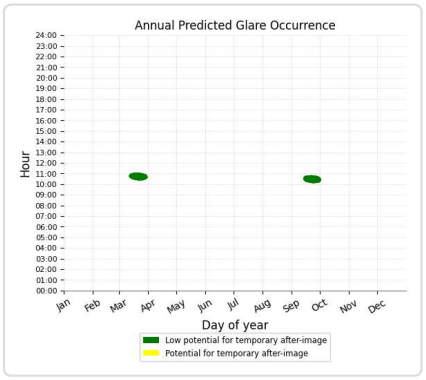
PV array 1: 1-ATCT

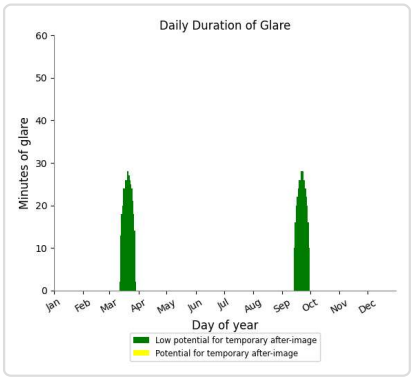
No glare found

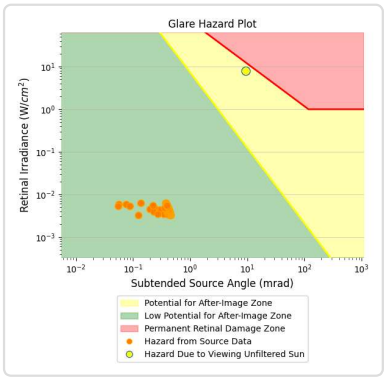
PV array 1: 2-ATCT

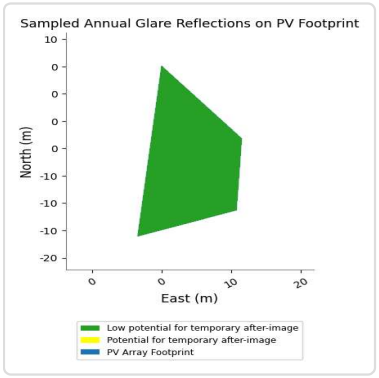
PV array is expected to produce the following glare for this receptor:

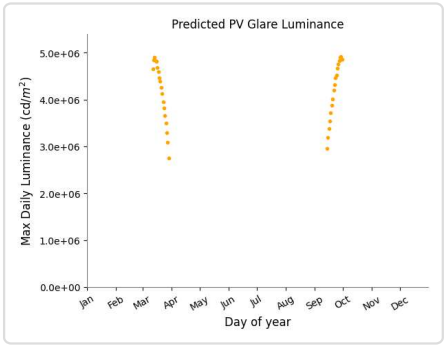
- 738 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

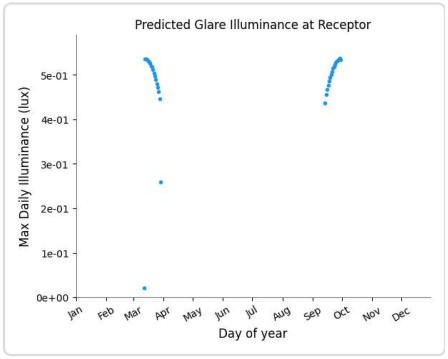












PV array 1: Macclesfield Entry

No glare found

PV array 1: Macclesfield Exit

No glare found

PV array 1: Runway 05L - 10NM

No glare found

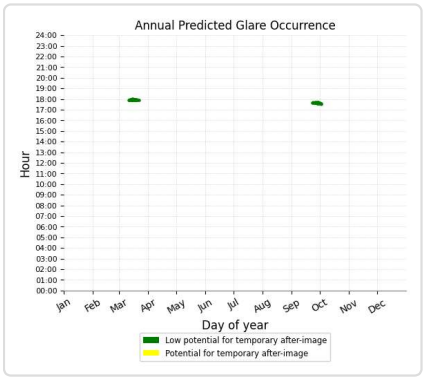
PV array 1: Runway 05R - 10NM

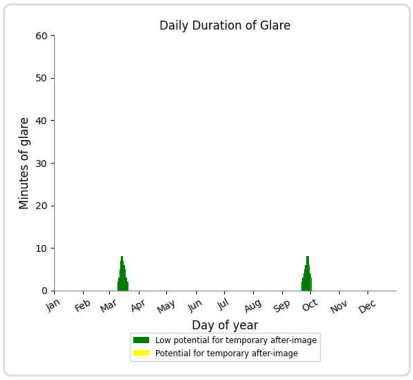
No glare found

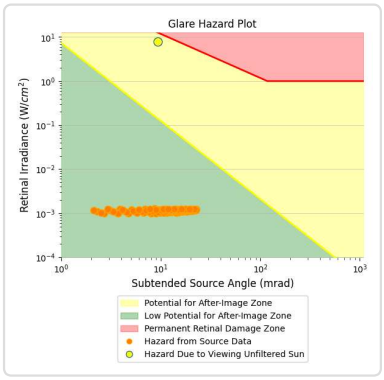
PV array 1: Runway 23L - 10NM

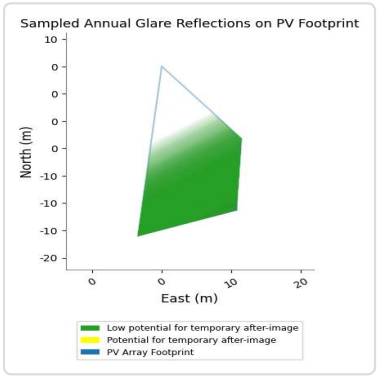
PV array is expected to produce the following glare for this receptor:

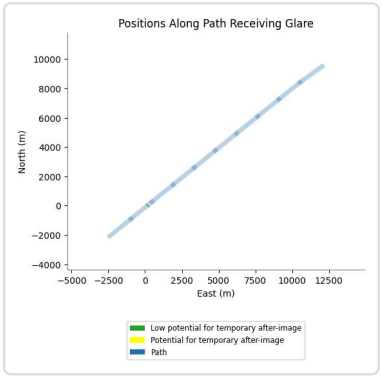
- 115 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

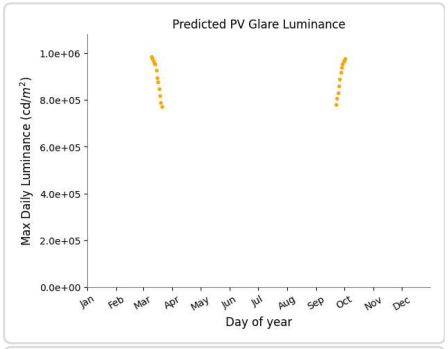


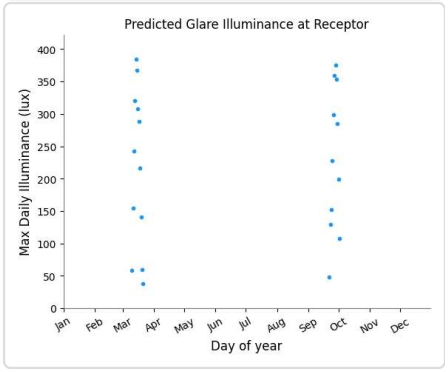












PV array 1: Runway 23R - 10NM

No glare found

PV array 1: Runway Taxi 1

No glare found

PV array 1: Runway Taxi 2

No glare found

PV array 1: Stretton Entry

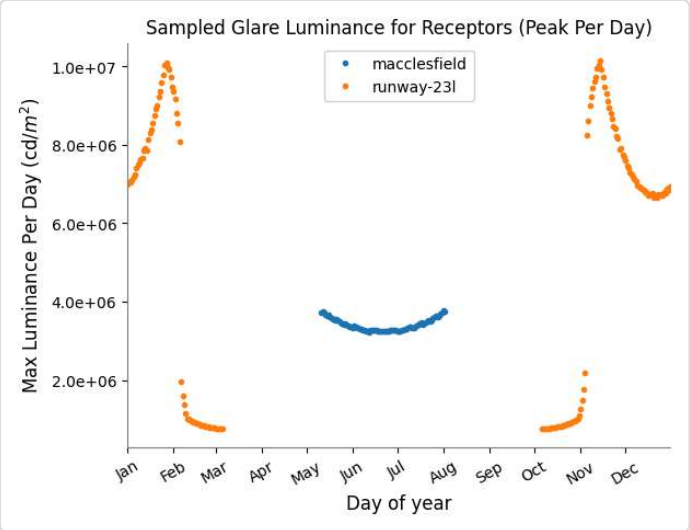
No glare found

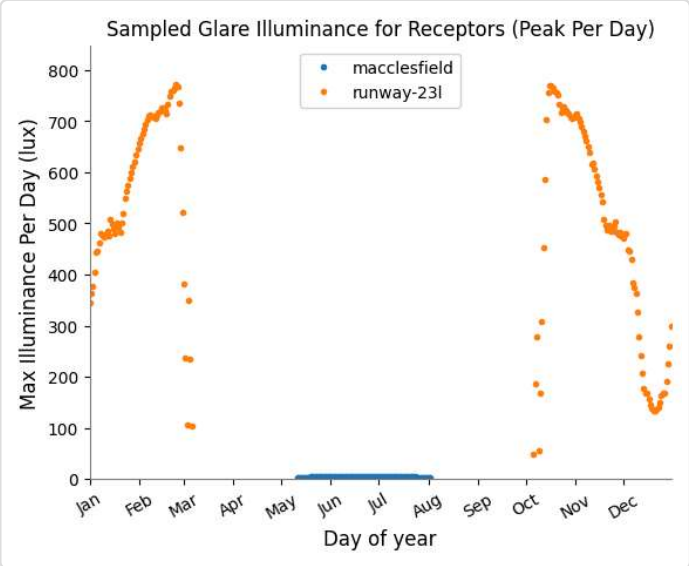
PV array 1: Thelwall Viaduct Exit

No glare found

PV array 10 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)	Peak Luminance (cd/m^2)	Peak Illuminance (lux)
FP: Manchester Airport - Runway 05L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 05L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 23L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 23R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 02	0	0	0	0.0e+00
FP: Manchester Barton - Runway 08L	0	0	0	0.0e+00
FP: Manchester Barton - Runway 08R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 14	0	0	0	0.0e+00
FP: Manchester Barton - Runway 20	0	0	0	0.0e+00
FP: Manchester Barton - Runway 26L	0	0	0	0.0e+00
FP: Manchester Barton - Runway 26R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 32	0	0	0	0.0e+00
FP: Wythenshawe - East Approach	0	0	0	0.0e+00
FP: Wythenshawe - North Approach	0	0	0	0.0e+00
FP: Wythenshawe - Northeast Approach	0	0	0	0.0e+00
FP: Wythenshawe - Northwest Approach	0	0	0	0.0e+00
FP: Wythenshawe - South Approach	0	0	0	0.0e+00
FP: Wythenshawe - Southeast Approach	0	0	0	0.0e+00
FP: Wythenshawe - Southwest Approach	0	0	0	0.0e+00
FP: Wythenshawe - West Approach	0	0	0	0.0e+00
OP: 1-ATCT	0	0	0	0.0e+00
OP: 2-ATCT	0	0	0	0.0e+00
Route: Macclesfield Entry	2470	0	3,779,124	6
Route: Macclesfield Exit	0	0	0	0.0e+00
Route: Runway 05L - 10NM	0	0	0	0.0e+00
Route: Runway 05R - 10NM	0	0	0	0.0e+00
Route: Runway 23L - 10NM	18545	0	10,136,113	772
Route: Runway 23R - 10NM	287	0	9,914,424	0.3
Route: Runway Taxi 1	0	0	0	0.0e+00
Route: Runway Taxi 2	0	0	0	0.0e+00
Route: Stretton Entry	0	0	0	0.0e+00
Route: Thelwall Viaduct Exit	0	0	0	0.0e+00





PV array 10: Manchester Airport - Runway 05L

No glare found

PV array 10: Manchester Airport - Runway 05L

No glare found

PV array 10: Manchester Airport - Runway 23L

No glare found

PV array 10: Manchester Airport - Runway 23R

No glare found

PV array 10: Manchester Barton - Runway 02

No glare found

PV array 10: Manchester Barton - Runway 08L

No glare found

PV array 10: Manchester Barton - Runway 08R

No glare found

PV array 10: Manchester Barton - Runway 14

No glare found

PV array 10: Manchester Barton - Runway 20

No glare found

PV array 10: Manchester Barton - Runway 26L

No glare found

PV array 10: Manchester Barton - Runway 26R

No glare found

PV array 10: Manchester Barton - Runway 32

No glare found

PV array 10: Wythenshawe - East Approach

No glare found

PV array 10: Wythenshawe - North Approach

No glare found

PV array 10: Wythenshawe - Northeast Approach

No glare found

PV array 10: Wythenshawe - Northwest Approach

No glare found

PV array 10: Wythenshawe - South Approach

No glare found

PV array 10: Wythenshawe - Southeast Approach

No glare found

PV array 10: Wythenshawe - Southwest Approach

No glare found

PV array 10: Wythenshawe - West Approach

No glare found

PV array 10: 1-ATCT

No glare found

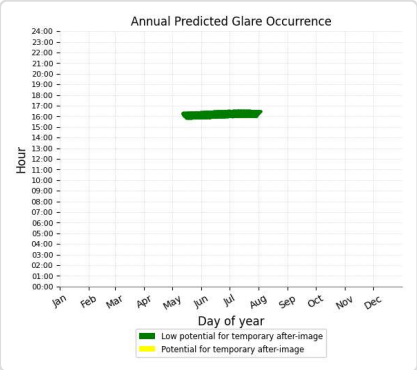
PV array 10: 2-ATCT

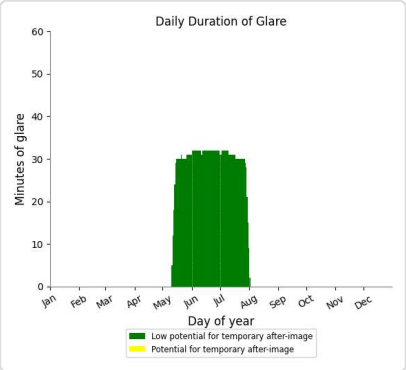
No glare found

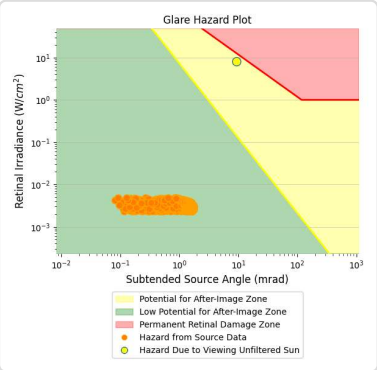
PV array 10: Macclesfield Entry

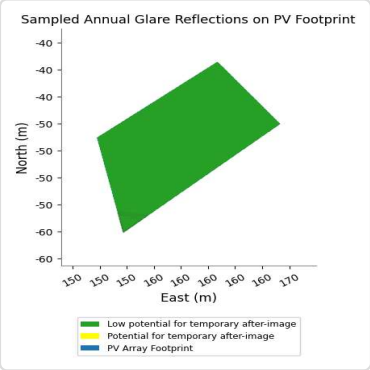
PV array is expected to produce the following glare for this receptor:

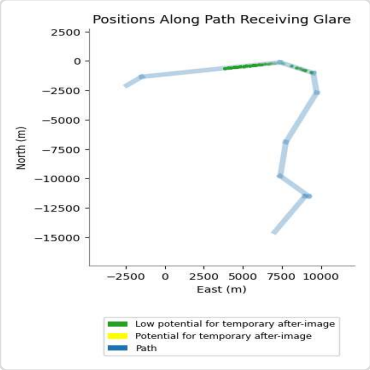
- 2,470 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

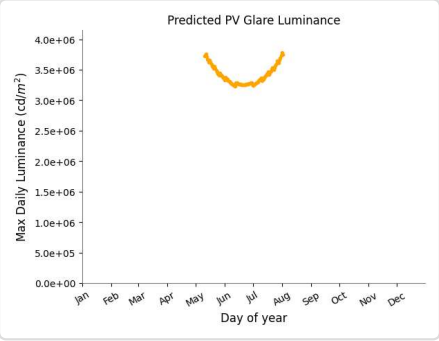


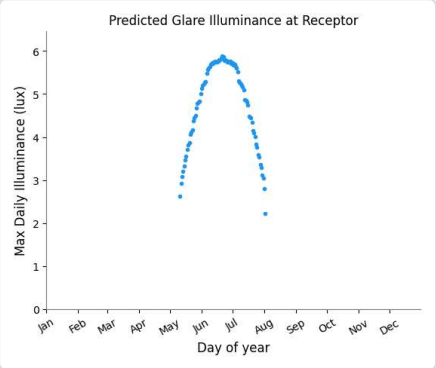












PV array 10: Macclesfield Exit

No glare found

PV array 10: Runway 05L - 10NM

No glare found

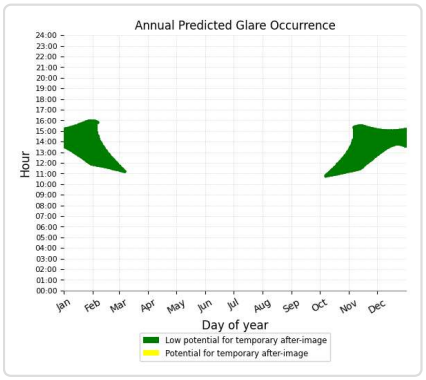
PV array 10: Runway 05R - 10NM

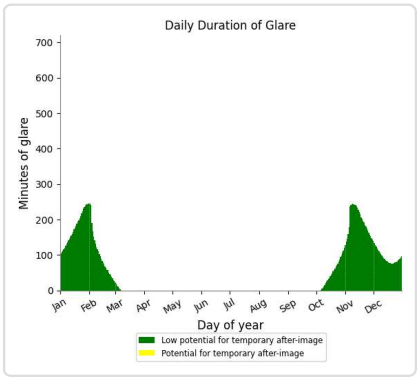
No glare found

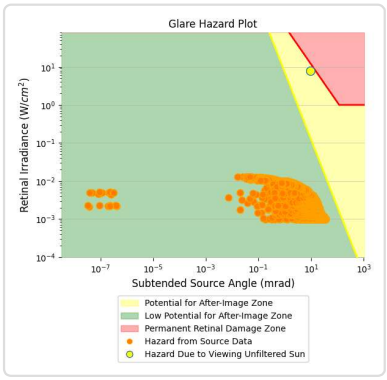
PV array 10: Runway 23L - 10NM

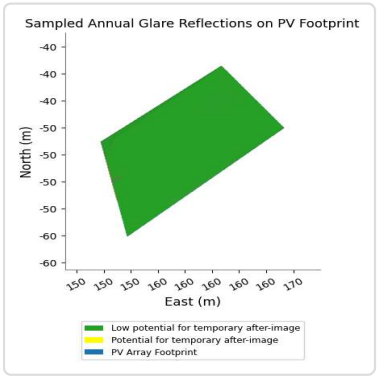
PV array is expected to produce the following glare for this receptor:

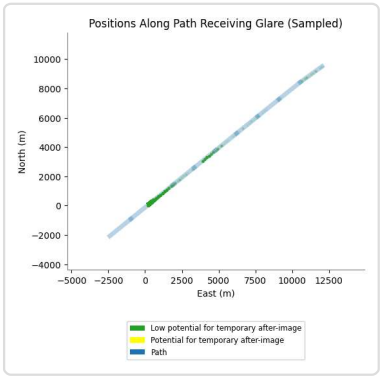
- 18,545 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

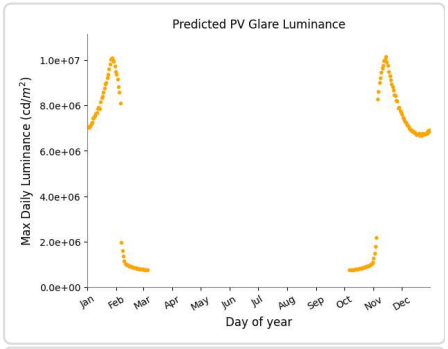


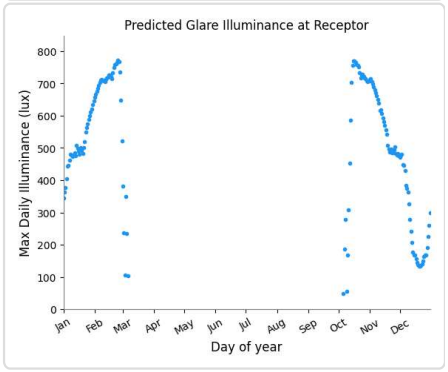








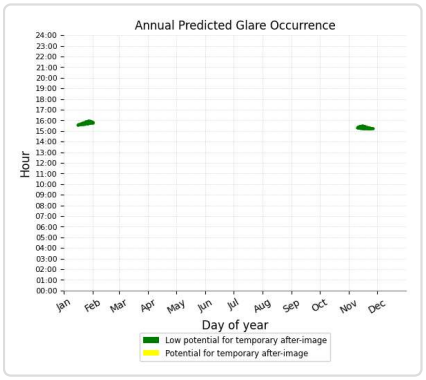


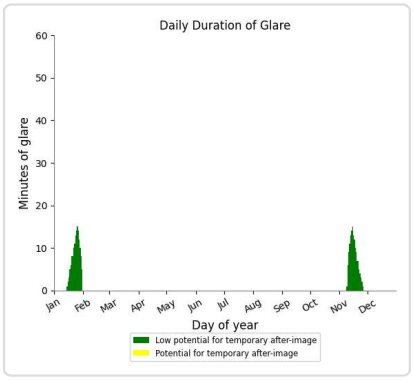


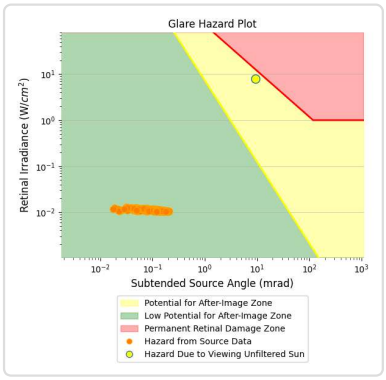
PV array 10: Runway 23R - 10NM

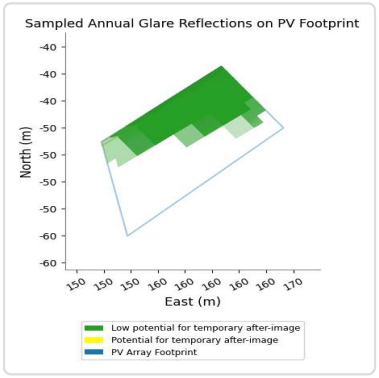
PV array is expected to produce the following glare for this receptor:

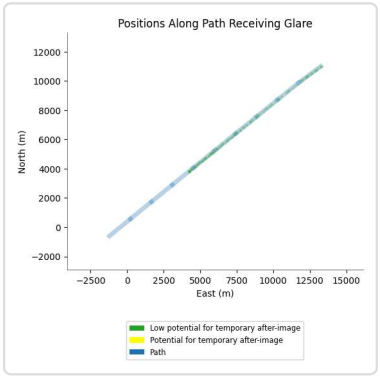
- 287 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

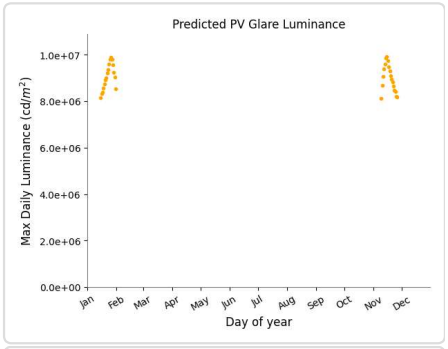


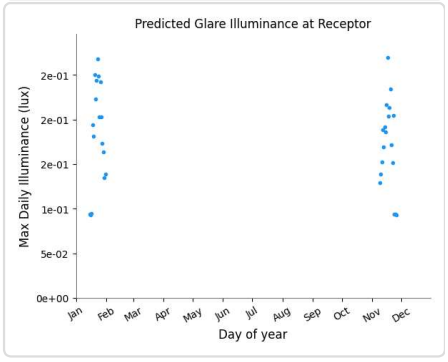












PV array 10: Runway Taxi 1

No glare found

PV array 10: Runway Taxi 2

No glare found

PV array 10: Stretton Entry

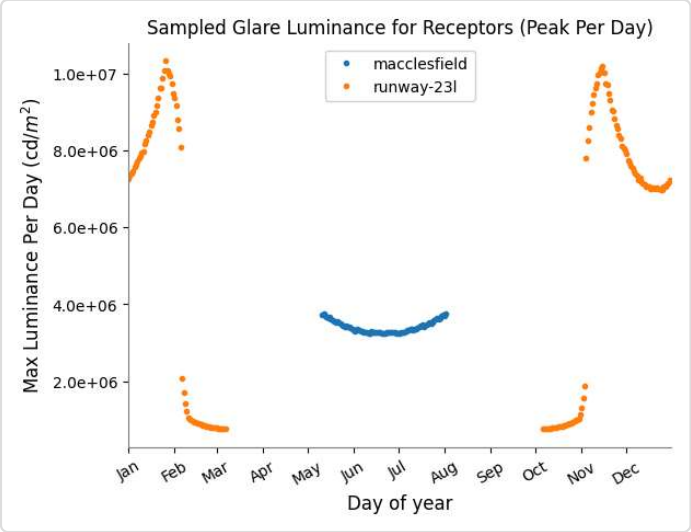
No glare found

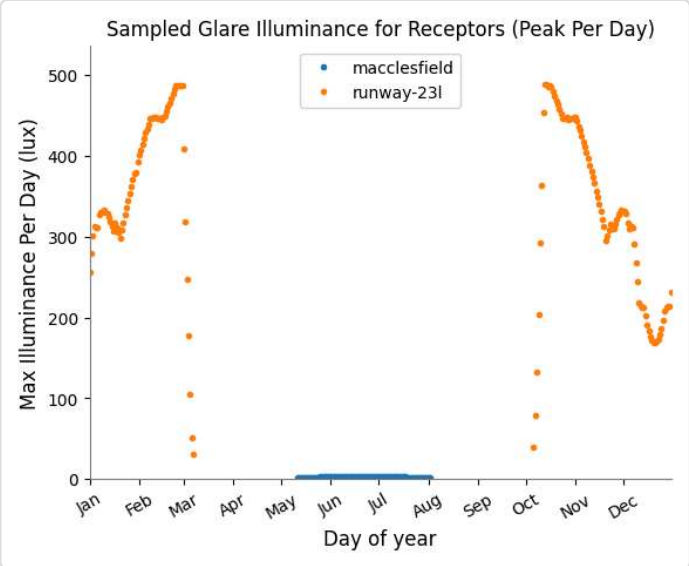
PV array 10: Thelwall Viaduct Exit

No glare found

PV array 11 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)	Peak Luminance (cd/m^2)	Peak Illuminance (lux)
FP: Manchester Airport - Runway 05L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 05L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 23L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 23R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 02	0	0	0	0.0e+00
FP: Manchester Barton - Runway 08L	0	0	0	0.0e+00
FP: Manchester Barton - Runway 08R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 14	0	0	0	0.0e+00
FP: Manchester Barton - Runway 20	0	0	0	0.0e+00
FP: Manchester Barton - Runway 26L	0	0	0	0.0e+00
FP: Manchester Barton - Runway 26R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 32	0	0	0	0.0e+00
FP: Wythenshawe - East Approach	0	0	0	0.0e+00
FP: Wythenshawe - North Approach	0	0	0	0.0e+00
FP: Wythenshawe - Northeast Approach	0	0	0	0.0e+00
FP: Wythenshawe - Northwest Approach	0	0	0	0.0e+00
FP: Wythenshawe - South Approach	0	0	0	0.0e+00
FP: Wythenshawe - Southeast Approach	0	0	0	0.0e+00
FP: Wythenshawe - Southwest Approach	0	0	0	0.0e+00
FP: Wythenshawe - West Approach	0	0	0	0.0e+00
OP: 1-ATCT	0	0	0	0.0e+00
OP: 2-ATCT	0	0	0	0.0e+00
Route: Macclesfield Entry	2467	0	3,752,838	3
Route: Macclesfield Exit	0	0	0	0.0e+00
Route: Runway 05L - 10NM	0	0	0	0.0e+00
Route: Runway 05R - 10NM	0	0	0	0.0e+00
Route: Runway 23L - 10NM	18635	0	10,323,757	488
Route: Runway 23R - 10NM	723	0	10,074,970	0.8
Route: Runway Taxi 1	0	0	0	0.0e+00
Route: Runway Taxi 2	0	0	0	0.0e+00
Route: Stretton Entry	0	0	0	0.0e+00
Route: Thelwall Viaduct Exit	0	0	0	0.0e+00





PV array 11: Manchester Airport - Runway 05L

No glare found

PV array 11: Manchester Airport - Runway 05L

No glare found

PV array 11: Manchester Airport - Runway 23L

No glare found

PV array 11: Manchester Airport - Runway 23R

No glare found

PV array 11: Manchester Barton - Runway 02

No glare found

PV array 11: Manchester Barton - Runway 08L

No glare found

PV array 11: Manchester Barton - Runway 08R

No glare found

PV array 11: Manchester Barton - Runway 14

No glare found

PV array 11: Manchester Barton - Runway 20

No glare found

PV array 11: Manchester Barton - Runway 26L

No glare found

PV array 11: Manchester Barton - Runway 26R

No glare found

PV array 11: Manchester Barton - Runway 32

No glare found

PV array 11: Wythenshawe - East Approach

No glare found

PV array 11: Wythenshawe - North Approach

No glare found

PV array 11: Wythenshawe - Northeast Approach

No glare found

PV array 11: Wythenshawe - Northwest Approach

No glare found

PV array 11: Wythenshawe - South Approach

No glare found

PV array 11: Wythenshawe - Southeast Approach

No glare found

PV array 11: Wythenshawe - Southwest Approach

No glare found

PV array 11: Wythenshawe - West Approach

No glare found

PV array 11: 1-ATCT

No glare found

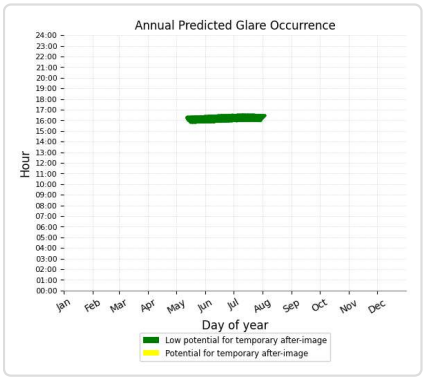
PV array 11: 2-ATCT

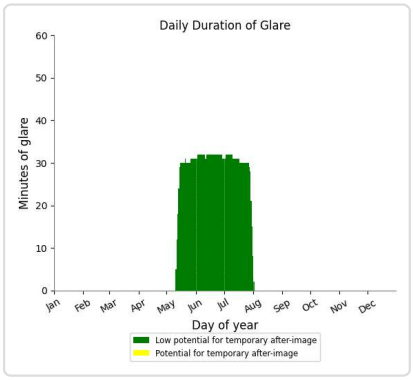
No glare found

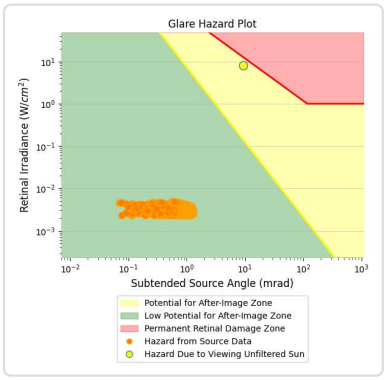
PV array 11: Macclesfield Entry

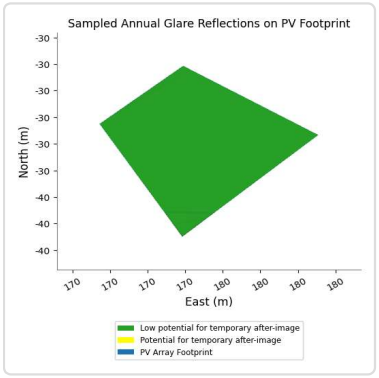
PV array is expected to produce the following glare for this receptor:

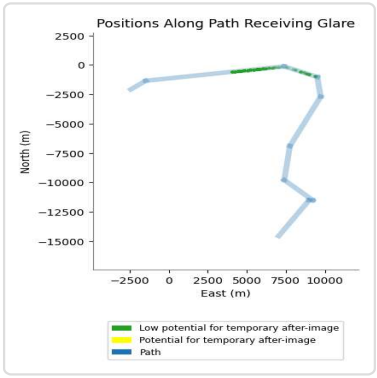
- 2,467 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

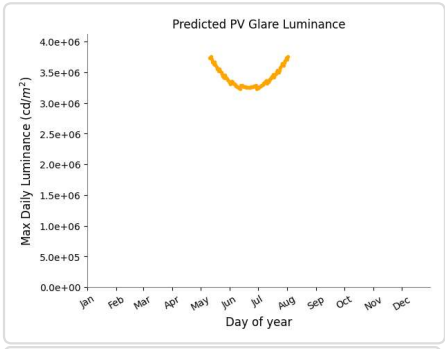


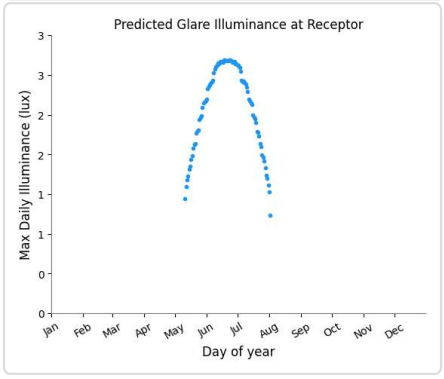












PV array 11: Macclesfield Exit

No glare found

PV array 11: Runway 05L - 10NM

No glare found

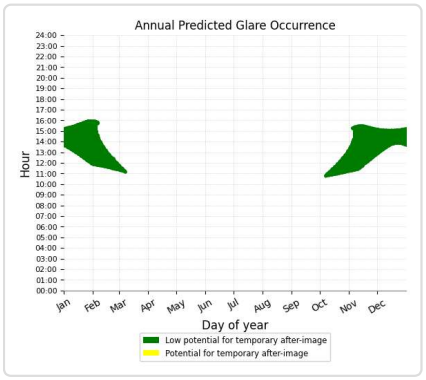
PV array 11: Runway 05R - 10NM

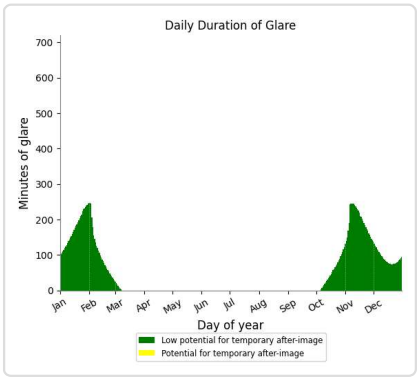
No glare found

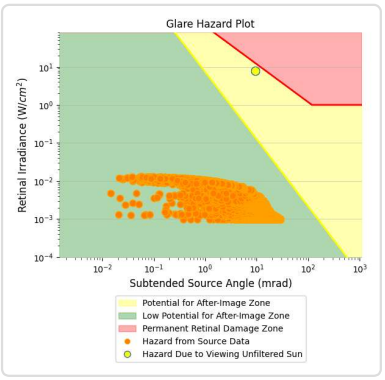
PV array 11: Runway 23L - 10NM

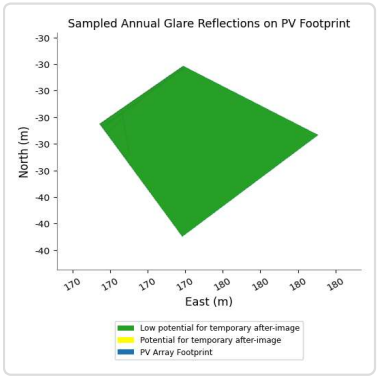
PV array is expected to produce the following glare for this receptor:

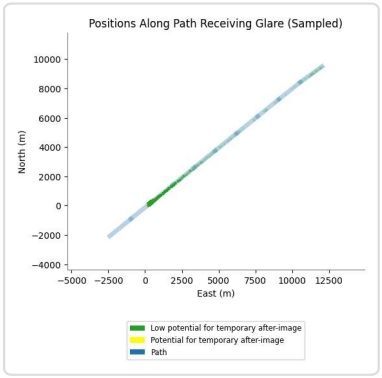
- 18,635 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

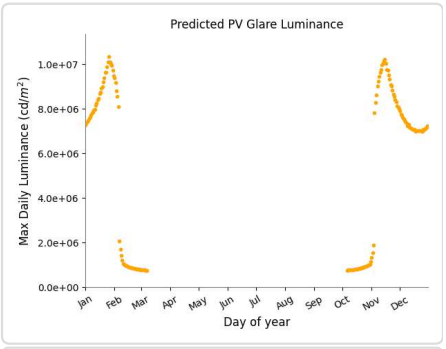


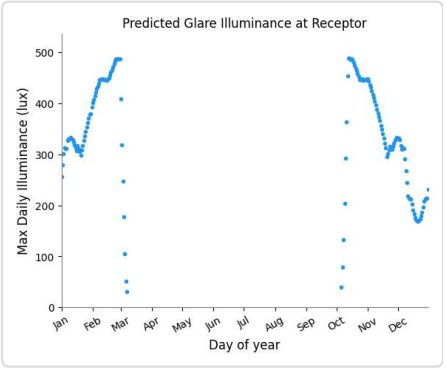








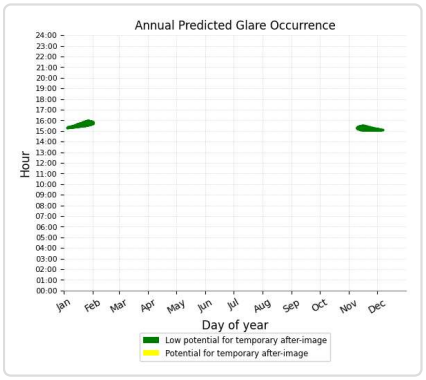


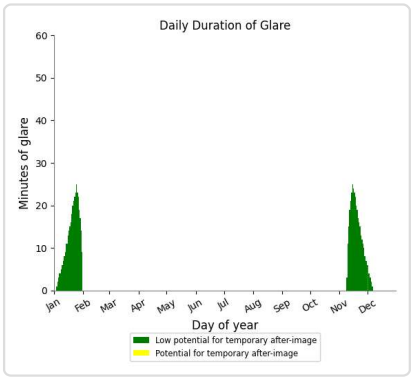


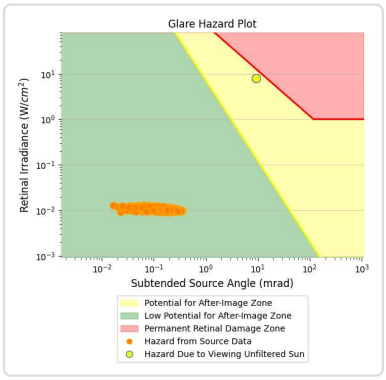
PV array 11: Runway 23R - 10NM

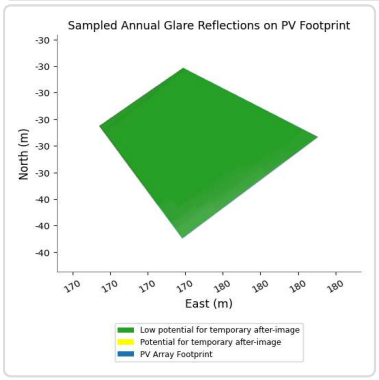
PV array is expected to produce the following glare for this receptor:

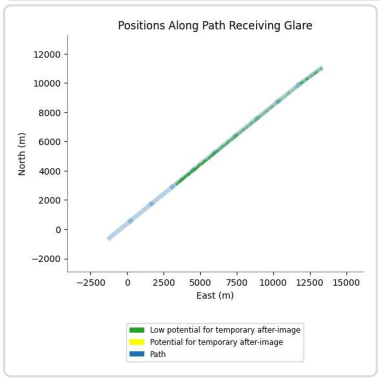
- 723 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

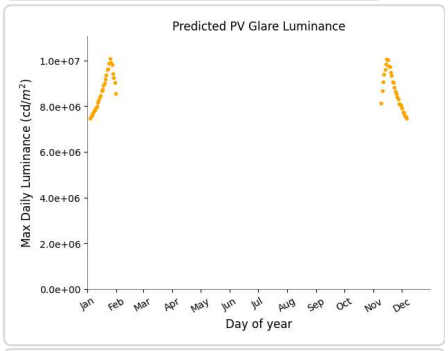


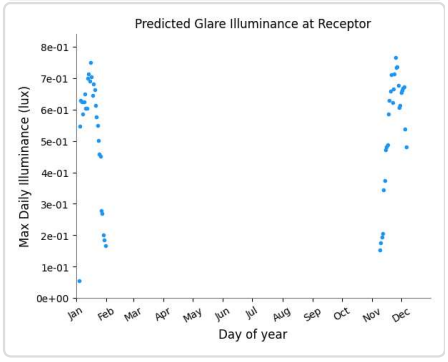












PV array 11: Runway Taxi 1

No glare found

PV array 11: Runway Taxi 2

No glare found

PV array 11: Stretton Entry

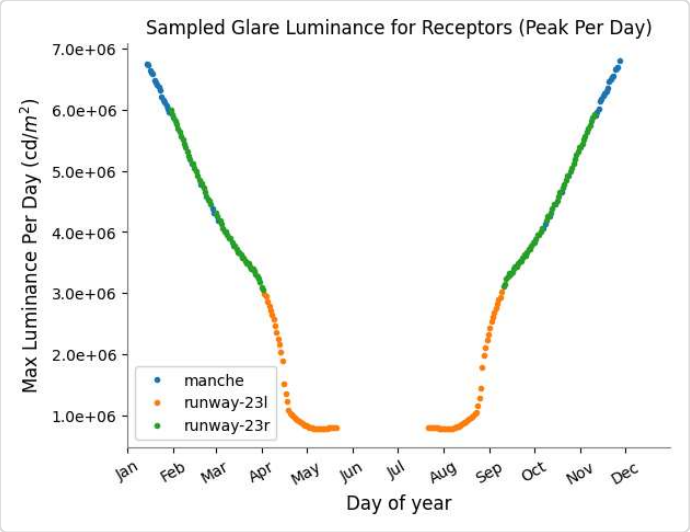
No glare found

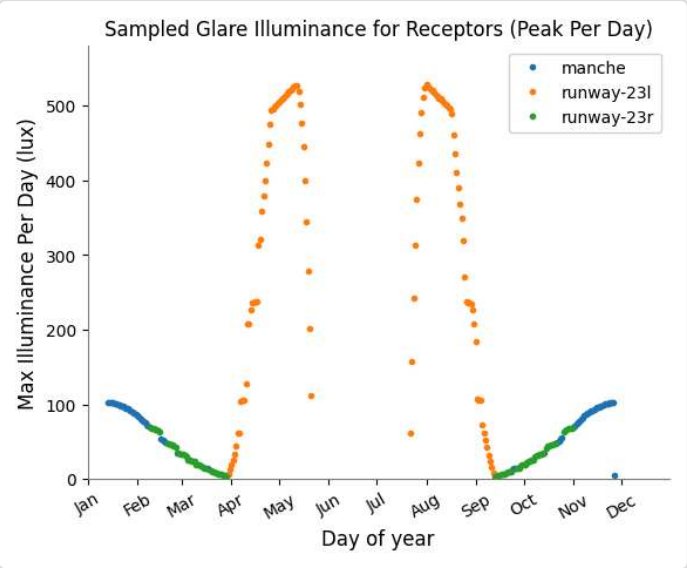
PV array 11: Thelwall Viaduct Exit

No glare found

PV array 12 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)	Peak Luminance (cd/m^2)	Peak Illuminance (lux)
FP: Manchester Airport - Runway 05L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 05L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 23L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 23R	3952	0	6,798,083	103
FP: Manchester Barton - Runway 02	0	0	0	0.0e+00
FP: Manchester Barton - Runway 08L	0	0	0	0.0e+00
FP: Manchester Barton - Runway 08R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 14	0	0	0	0.0e+00
FP: Manchester Barton - Runway 20	0	0	0	0.0e+00
FP: Manchester Barton - Runway 26L	0	0	0	0.0e+00
FP: Manchester Barton - Runway 26R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 32	0	0	0	0.0e+00
FP: Wythenshawe - East Approach	0	0	0	0.0e+00
FP: Wythenshawe - North Approach	0	0	0	0.0e+00
FP: Wythenshawe - Northeast Approach	0	0	0	0.0e+00
FP: Wythenshawe - Northwest Approach	0	0	0	0.0e+00
FP: Wythenshawe - South Approach	0	0	0	0.0e+00
FP: Wythenshawe - Southeast Approach	0	0	0	0.0e+00
FP: Wythenshawe - Southwest Approach	0	0	0	0.0e+00
FP: Wythenshawe - West Approach	0	0	0	0.0e+00
OP: 1-ATCT	0	0	0	0.0e+00
OP: 2-ATCT	0	0	0	0.0e+00
Route: Macclesfield Entry	0	0	0	0.0e+00
Route: Macclesfield Exit	0	0	0	0.0e+00
Route: Runway 05L - 10NM	0	0	0	0.0e+00
Route: Runway 05R - 10NM	0	0	0	0.0e+00
Route: Runway 23L - 10NM	12900	0	3,087,305	528
Route: Runway 23R - 10NM	4551	0	5,989,062	73
Route: Runway Taxi 1	0	0	0	0.0e+00
Route: Runway Taxi 2	0	0	0	0.0e+00
Route: Stretton Entry	0	0	0	0.0e+00
Route: Thelwall Viaduct Exit	0	0	0	0.0e+00





PV array 12: Manchester Airport - Runway 05L

No glare found

PV array 12: Manchester Airport - Runway 05L

No glare found

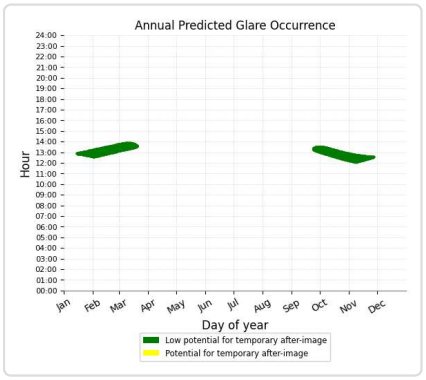
PV array 12: Manchester Airport - Runway 23L

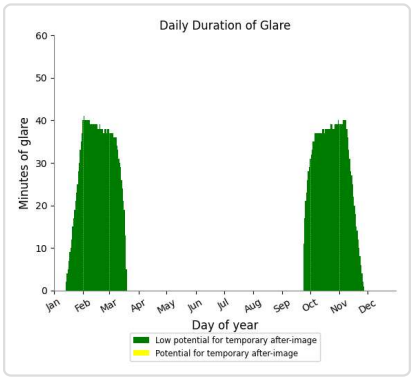
No glare found

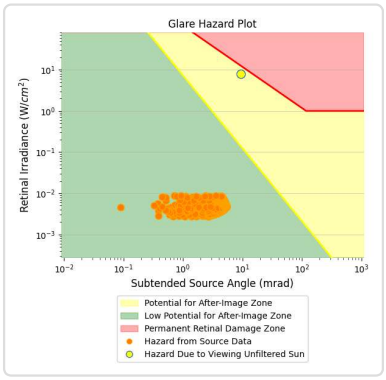
PV array 12: Manchester Airport - Runway 23R

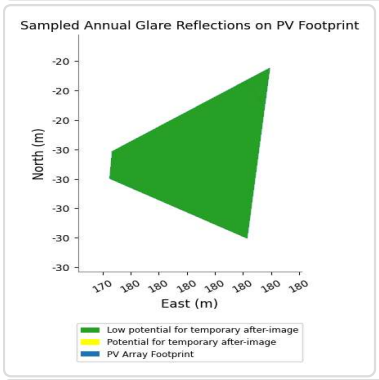
PV array is expected to produce the following glare for this receptor:

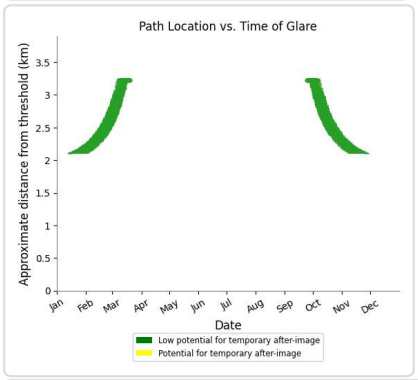
- 3,952 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

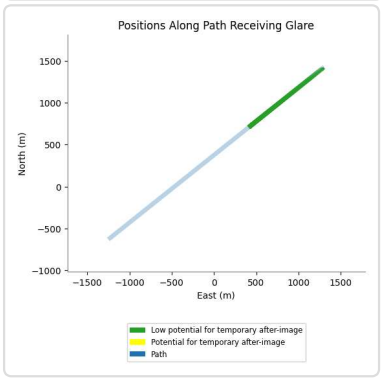


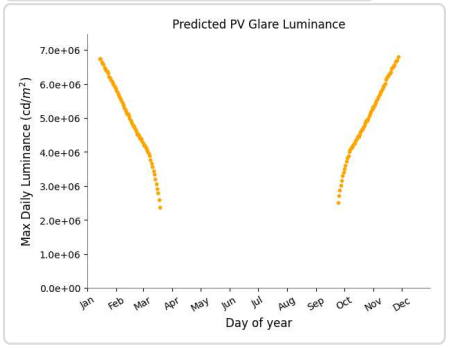


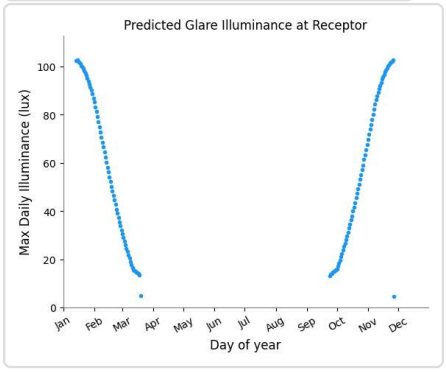












PV array 12: Manchester Barton - Runway 02

No glare found

PV array 12: Manchester Barton - Runway 08L

No glare found

PV array 12: Manchester Barton - Runway 08R

No glare found

PV array 12: Manchester Barton - Runway 14

No glare found

PV array 12: Manchester Barton - Runway 20

No glare found

PV array 12: Manchester Barton - Runway 26L

No glare found

PV array 12: Manchester Barton - Runway 26R

No glare found

PV array 12: Manchester Barton - Runway 32

No glare found

PV array 12: Wythenshawe - East Approach

No glare found

PV array 12: Wythenshawe - North Approach

No glare found

PV array 12: Wythenshawe - Northeast Approach

No glare found

PV array 12: Wythenshawe - Northwest Approach

No glare found

PV array 12: Wythenshawe - South Approach

No glare found

PV array 12: Wythenshawe - Southeast Approach

No glare found

PV array 12: Wythenshawe - Southwest Approach

No glare found

PV array 12: Wythenshawe - West Approach

No glare found

PV array 12: 1-ATCT

No glare found

PV array 12: 2-ATCT

No glare found

PV array 12: Macclesfield Entry

No glare found

PV array 12: Macclesfield Exit

No glare found

PV array 12: Runway 05L - 10NM

No glare found

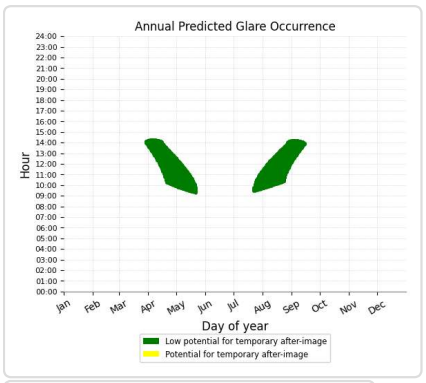
PV array 12: Runway 05R - 10NM

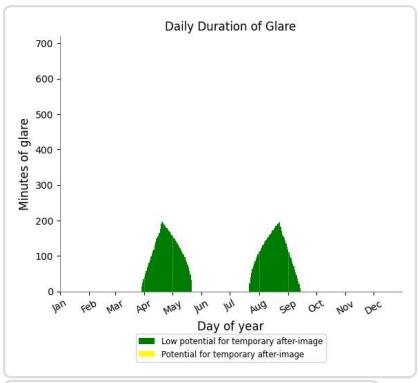
No glare found

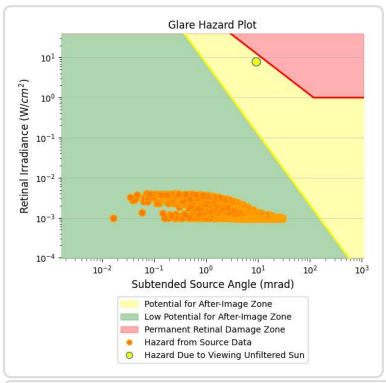
PV array 12: Runway 23L - 10NM

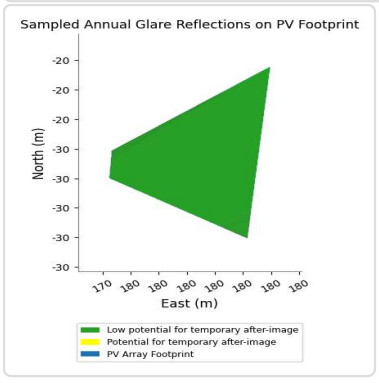
PV array is expected to produce the following glare for this receptor:

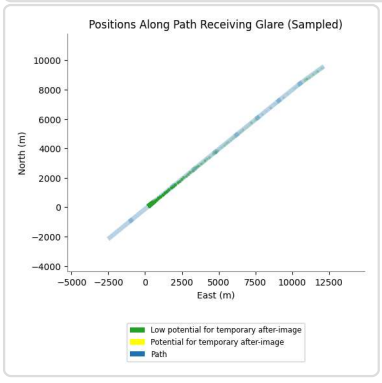
- 12,900 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

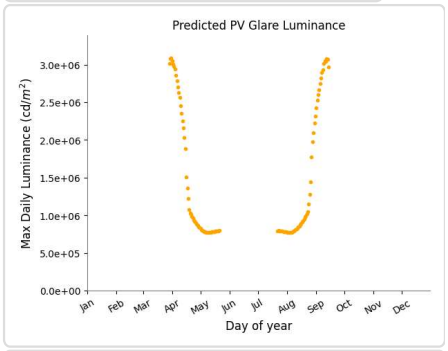


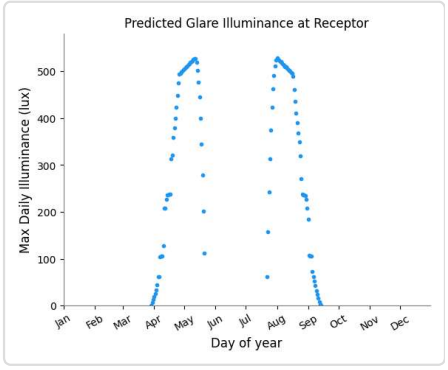








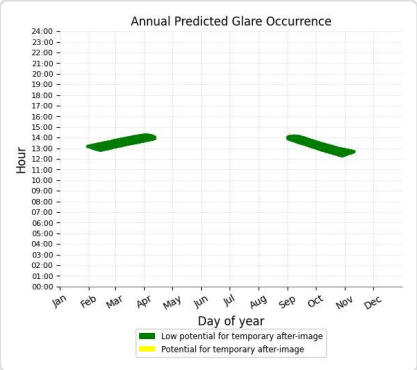


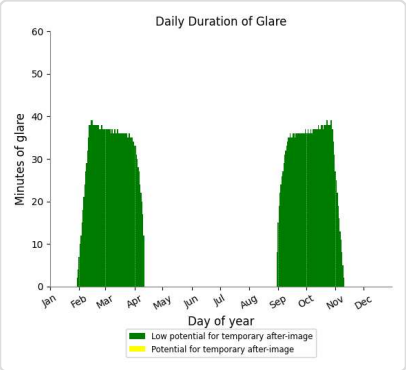


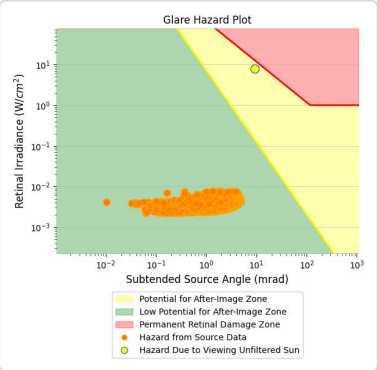
PV array 12: Runway 23R - 10NM

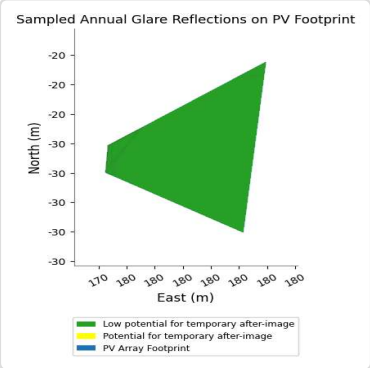
PV array is expected to produce the following glare for this receptor:

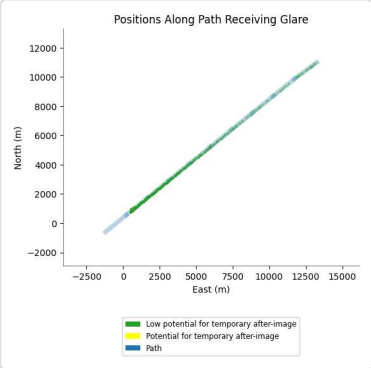
- 4,551 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

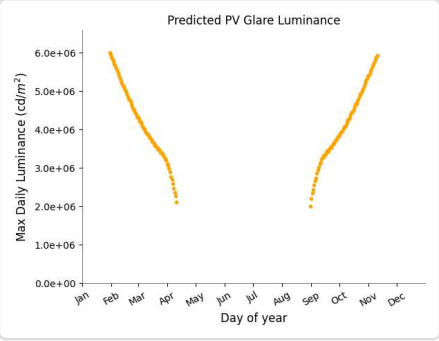


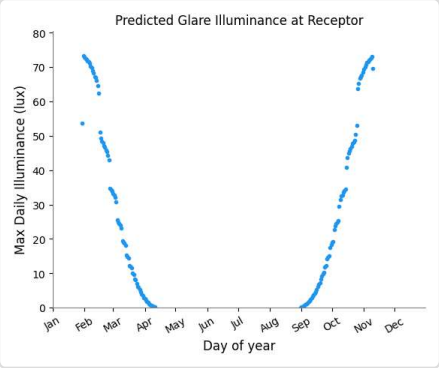












PV array 12: Runway Taxi 1

No glare found

PV array 12: Runway Taxi 2

No glare found

PV array 12: Stretton Entry

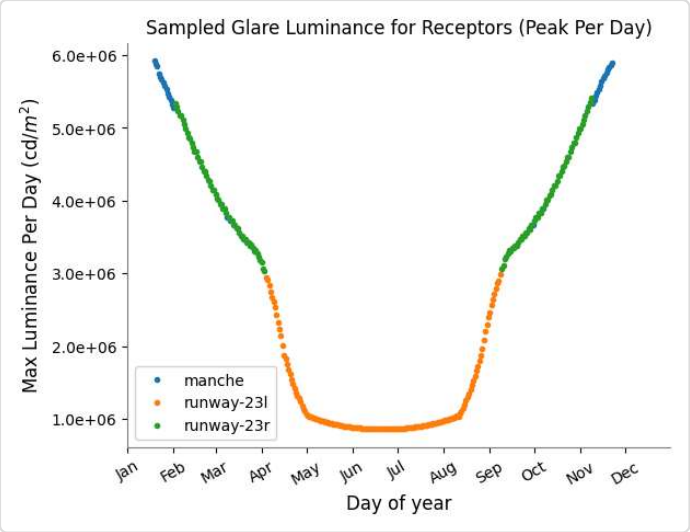
No glare found

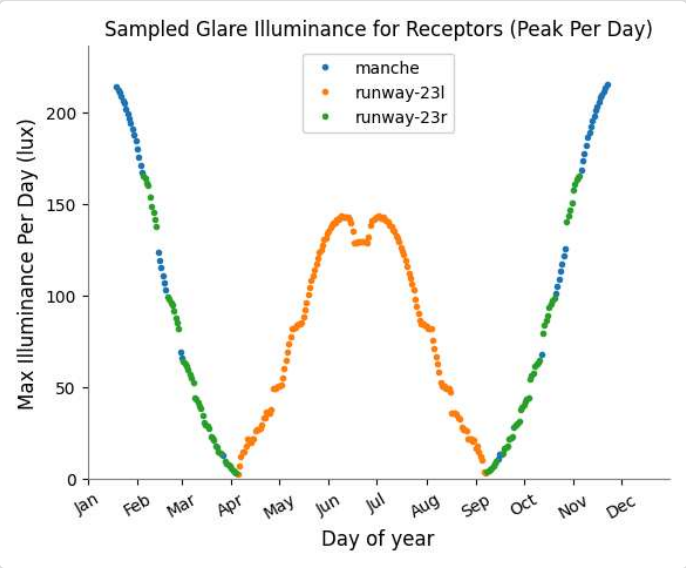
PV array 12: Thelwall Viaduct Exit

No glare found

PV array 2 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)	Peak Luminance (cd/m^2)	Peak Illuminance (lux)
FP: Manchester Airport - Runway 05L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 05L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 23L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 23R	4382	0	5,916,267	215
FP: Manchester Barton - Runway 02	0	0	0	0.0e+00
FP: Manchester Barton - Runway 08L	0	0	0	0.0e+00
FP: Manchester Barton - Runway 08R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 14	0	0	0	0.0e+00
FP: Manchester Barton - Runway 20	0	0	0	0.0e+00
FP: Manchester Barton - Runway 26L	0	0	0	0.0e+00
FP: Manchester Barton - Runway 26R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 32	0	0	0	0.0e+00
FP: Wythenshawe - East Approach	0	0	0	0.0e+00
FP: Wythenshawe - North Approach	0	0	0	0.0e+00
FP: Wythenshawe - Northeast Approach	0	0	0	0.0e+00
FP: Wythenshawe - Northwest Approach	0	0	0	0.0e+00
FP: Wythenshawe - South Approach	0	0	0	0.0e+00
FP: Wythenshawe - Southeast Approach	0	0	0	0.0e+00
FP: Wythenshawe - Southwest Approach	0	0	0	0.0e+00
FP: Wythenshawe - West Approach	0	0	0	0.0e+00
OP: 1-ATCT	0	0	0	0.0e+00
OP: 2-ATCT	0	0	0	0.0e+00
Route: Macclesfield Entry	0	0	0	0.0e+00
Route: Macclesfield Exit	0	0	0	0.0e+00
Route: Runway 05L - 10NM	0	0	0	0.0e+00
Route: Runway 05R - 10NM	0	0	0	0.0e+00
Route: Runway 23L - 10NM	6387	0	3,048,370	143
Route: Runway 23R - 10NM	4422	0	5,402,916	166
Route: Runway Taxi 1	0	0	0	0.0e+00
Route: Runway Taxi 2	0	0	0	0.0e+00
Route: Stretton Entry	0	0	0	0.0e+00
Route: Thelwall Viaduct Exit	0	0	0	0.0e+00





PV array 2: Manchester Airport - Runway 05L

No glare found

PV array 2: Manchester Airport - Runway 05L

No glare found

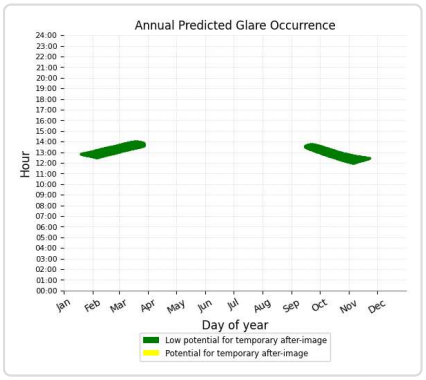
PV array 2: Manchester Airport - Runway 23L

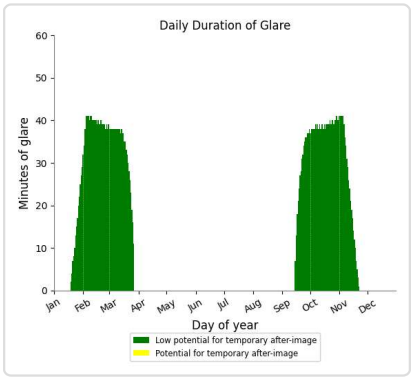
No glare found

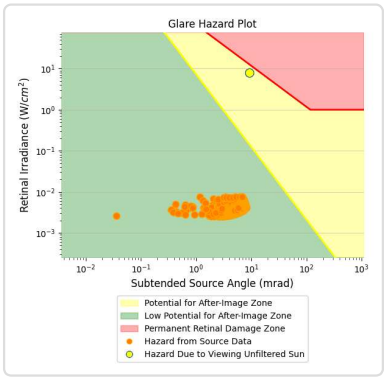
PV array 2: Manchester Airport - Runway 23R

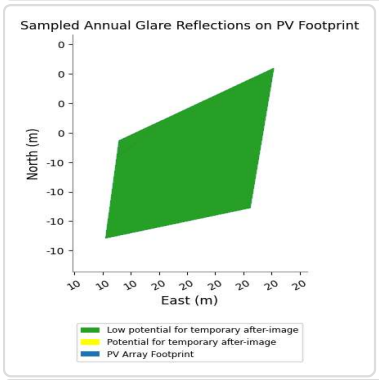
PV array is expected to produce the following glare for this receptor:

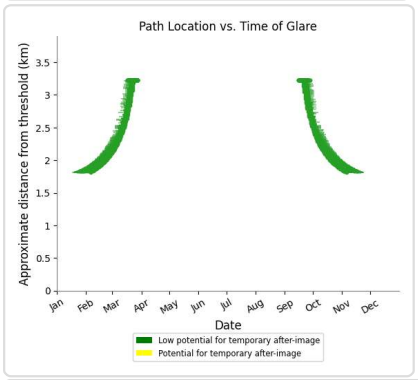
- 4,382 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

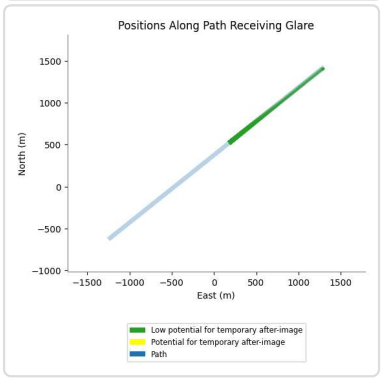


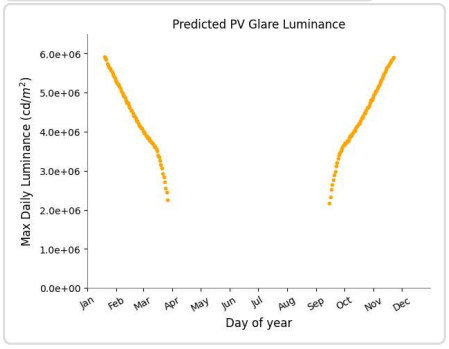


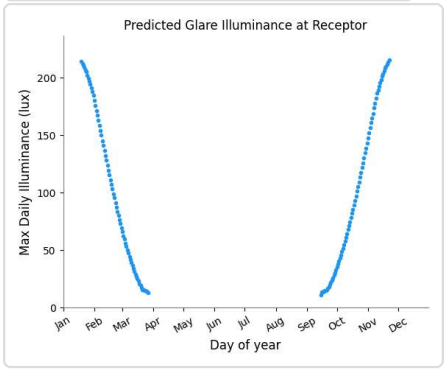












PV array 2: Manchester Barton - Runway 02

No glare found

PV array 2: Manchester Barton - Runway 08L

No glare found

PV array 2: Manchester Barton - Runway 08R

No glare found

PV array 2: Manchester Barton - Runway 14

No glare found

PV array 2: Manchester Barton - Runway 20

No glare found

PV array 2: Manchester Barton - Runway 26L

No glare found

PV array 2: Manchester Barton - Runway 26R

No glare found

PV array 2: Manchester Barton - Runway 32

No glare found

PV array 2: Wythenshawe - East Approach

No glare found

PV array 2: Wythenshawe - North Approach

No glare found

PV array 2: Wythenshawe - Northeast Approach

No glare found

PV array 2: Wythenshawe - Northwest Approach

No glare found

PV array 2: Wythenshawe - South Approach

No glare found

PV array 2: Wythenshawe - Southeast Approach

No glare found

PV array 2: Wythenshawe - Southwest Approach

No glare found

PV array 2: Wythenshawe - West Approach

No glare found

PV array 2: 1-ATCT

No glare found

PV array 2: 2-ATCT

No glare found

PV array 2: Macclesfield Entry

No glare found

PV array 2: Macclesfield Exit

No glare found

PV array 2: Runway 05L - 10NM

No glare found

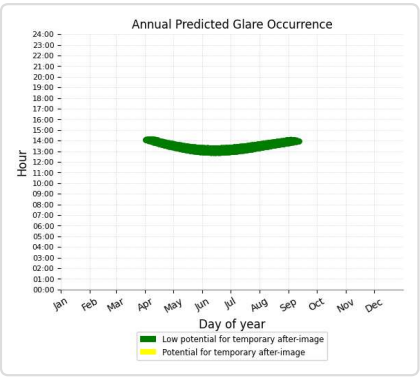
PV array 2: Runway 05R - 10NM

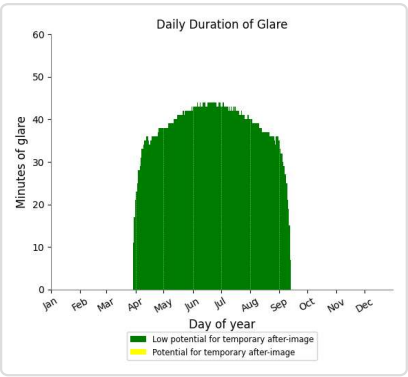
No glare found

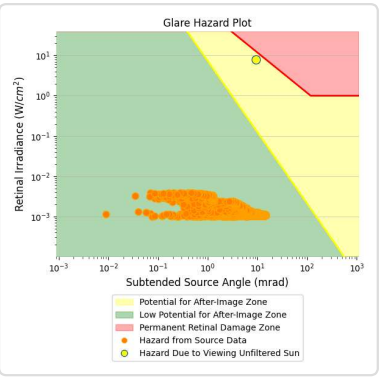
PV array 2: Runway 23L - 10NM

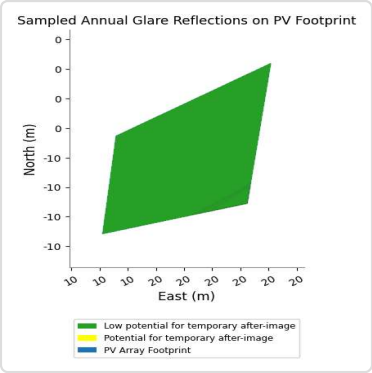
PV array is expected to produce the following glare for this receptor:

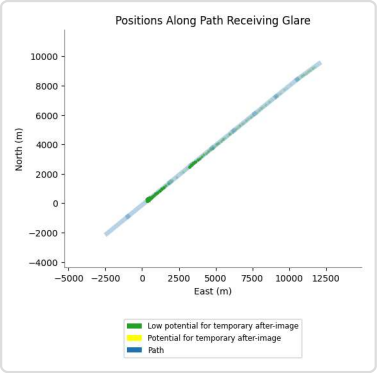
- 6,387 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

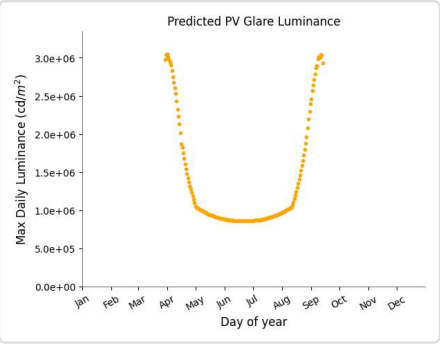


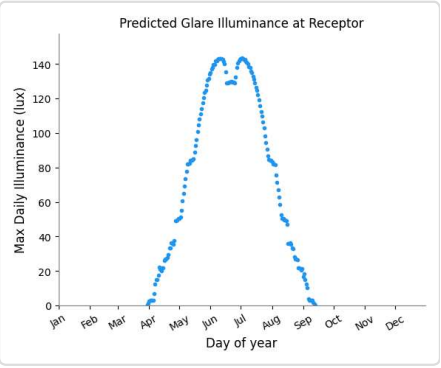








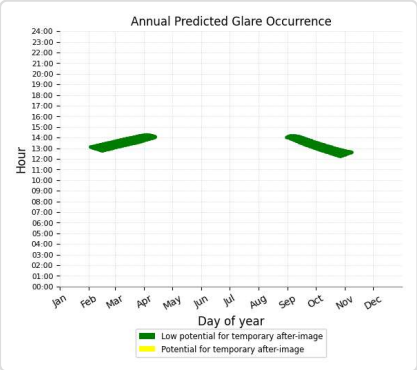


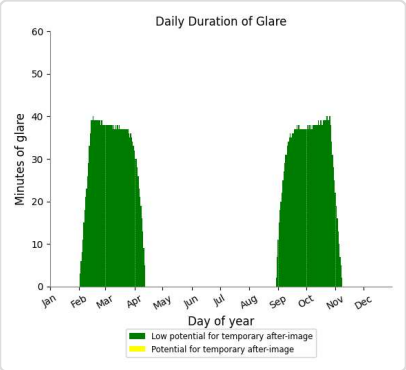


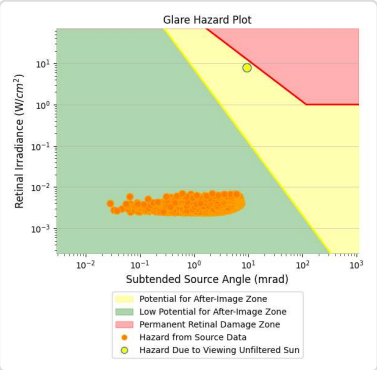
PV array 2: Runway 23R - 10NM

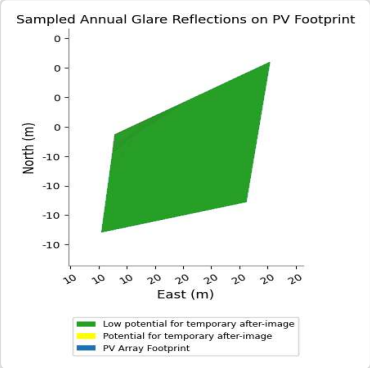
PV array is expected to produce the following glare for this receptor:

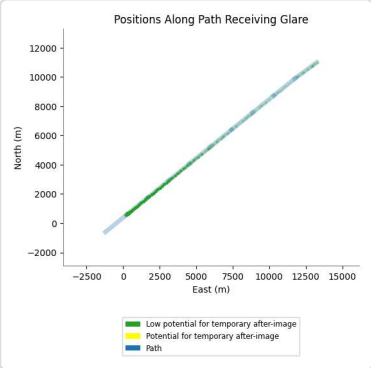
- 4,422 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

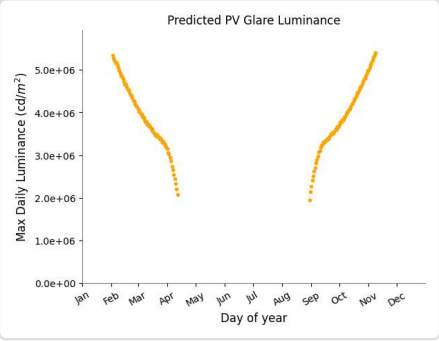


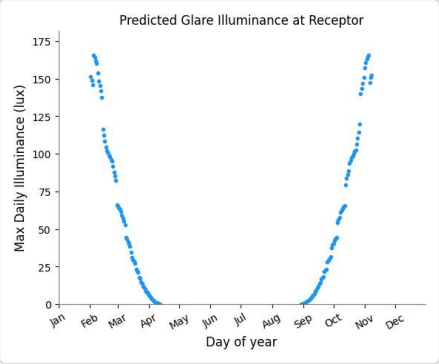












PV array 2: Runway Taxi 1

No glare found

PV array 2: Runway Taxi 2

No glare found

PV array 2: Stretton Entry

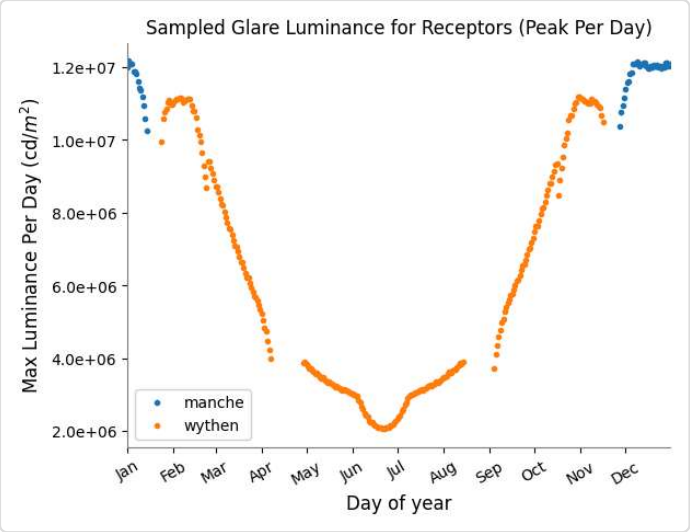
No glare found

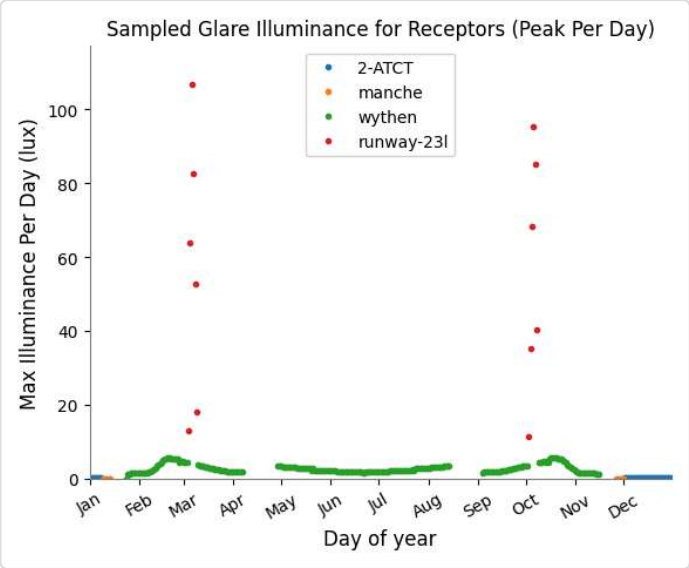
PV array 2: Thelwall Viaduct Exit

No glare found

PV array 3 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)	Peak Luminance (cd/m^2)	Peak Illuminance (lux)
FP: Manchester Airport - Runway 05L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 05L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 23L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 23R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 02	0	0	0	0.0e+00
FP: Manchester Barton - Runway 08L	0	0	0	0.0e+00
FP: Manchester Barton - Runway 08R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 14	1054	0	12,166,742	0.2
FP: Manchester Barton - Runway 20	0	0	0	0.0e+00
FP: Manchester Barton - Runway 26L	0	0	0	0.0e+00
FP: Manchester Barton - Runway 26R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 32	0	0	0	0.0e+00
FP: Wythenshawe - East Approach	0	0	0	0.0e+00
FP: Wythenshawe - North Approach	0	0	0	0.0e+00
FP: Wythenshawe - Northeast Approach	0	0	0	0.0e+00
FP: Wythenshawe - Northwest Approach	1696	0	11,191,184	6
FP: Wythenshawe - South Approach	0	0	0	0.0e+00
FP: Wythenshawe - Southeast Approach	0	0	0	0.0e+00
FP: Wythenshawe - Southwest Approach	2609	0	3,914,064	4
FP: Wythenshawe - West Approach	2161	0	9,422,617	5
OP: 1-ATCT	0	0	0	0.0e+00
OP: 2-ATCT	253	0	10,434,997	0.3
Route: Macclesfield Entry	0	0	0	0.0e+00
Route: Macclesfield Exit	0	0	0	0.0e+00
Route: Runway 05L - 10NM	0	0	0	0.0e+00
Route: Runway 05R - 10NM	0	0	0	0.0e+00
Route: Runway 23L - 10NM	43	0	686,525	107
Route: Runway 23R - 10NM	0	0	0	0.0e+00
Route: Runway Taxi 1	0	0	0	0.0e+00
Route: Runway Taxi 2	0	0	0	0.0e+00
Route: Stretton Entry	0	0	0	0.0e+00
Route: Thelwall Viaduct Exit	0	0	0	0.0e+00





PV array 3: Manchester Airport - Runway 05L

No glare found

PV array 3: Manchester Airport - Runway 05L

No glare found

PV array 3: Manchester Airport - Runway 23L

No glare found

PV array 3: Manchester Airport - Runway 23R

No glare found

PV array 3: Manchester Barton - Runway 02

No glare found

PV array 3: Manchester Barton - Runway 08L

No glare found

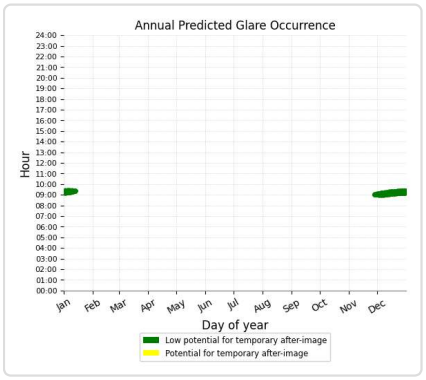
PV array 3: Manchester Barton - Runway 08R

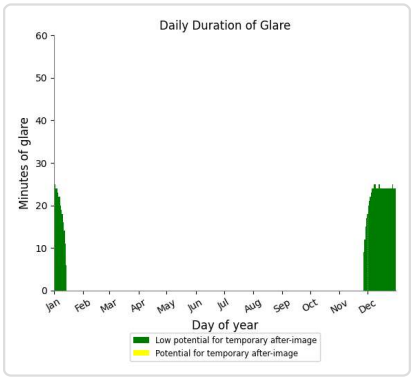
No glare found

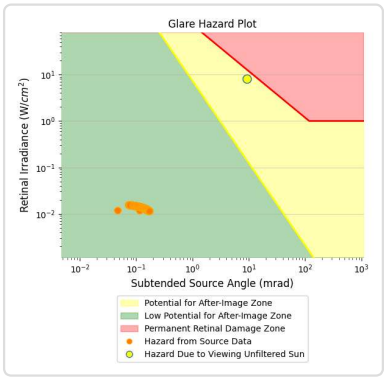
PV array 3: Manchester Barton - Runway 14

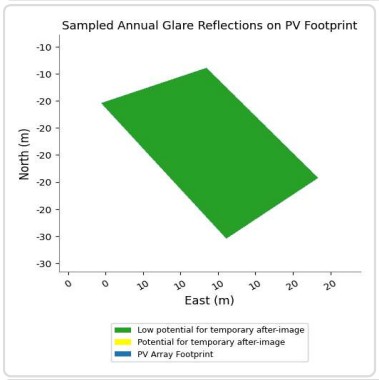
PV array is expected to produce the following glare for this receptor:

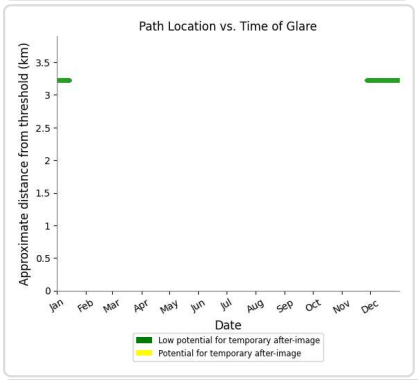
- 1,054 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

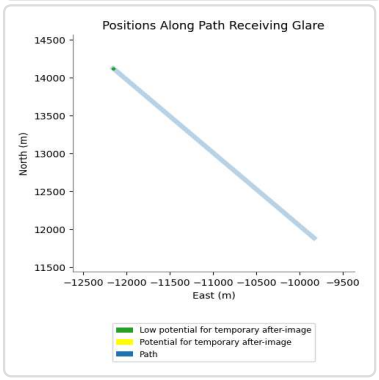


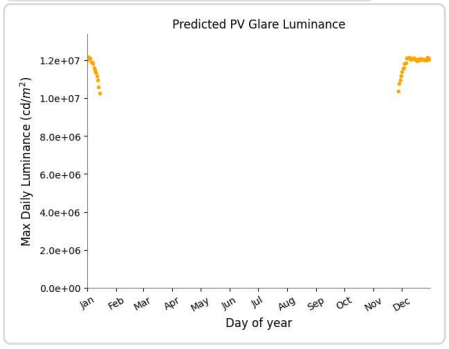


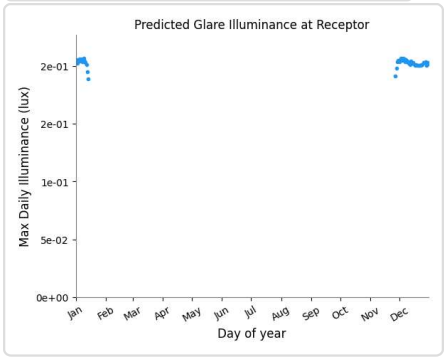












PV array 3: Manchester Barton - Runway 20

No glare found

PV array 3: Manchester Barton - Runway 26L

No glare found

PV array 3: Manchester Barton - Runway 26R

No glare found

PV array 3: Manchester Barton - Runway 32

No glare found

PV array 3: Wythenshawe - East Approach

No glare found

PV array 3: Wythenshawe - North Approach

No glare found

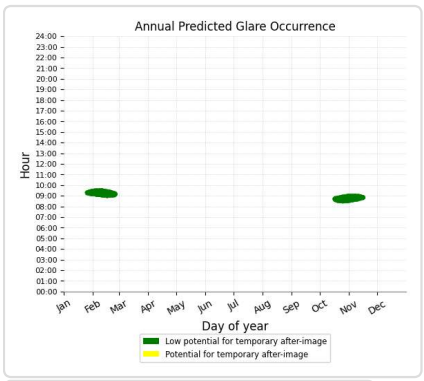
PV array 3: Wythenshawe - Northeast Approach

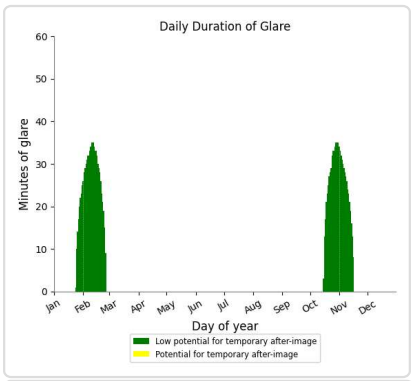
No glare found

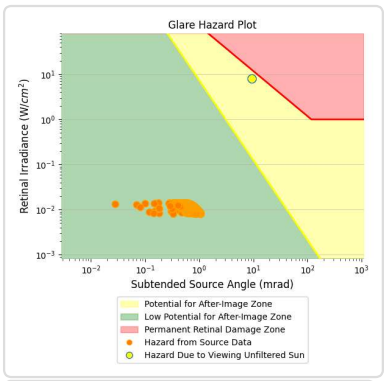
PV array 3: Wythenshawe - Northwest Approach

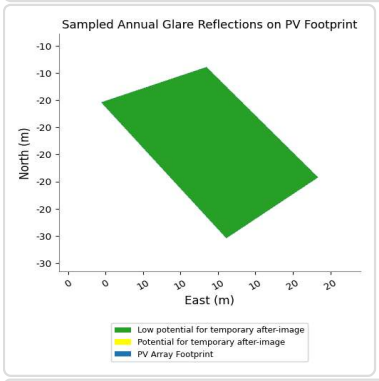
PV array is expected to produce the following glare for this receptor:

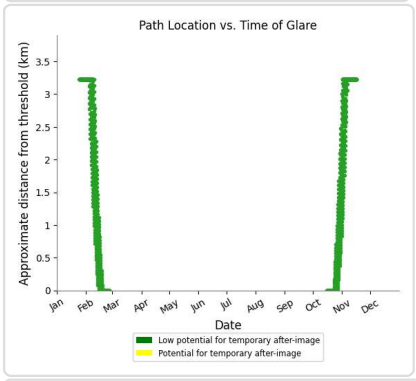
- 1,696 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

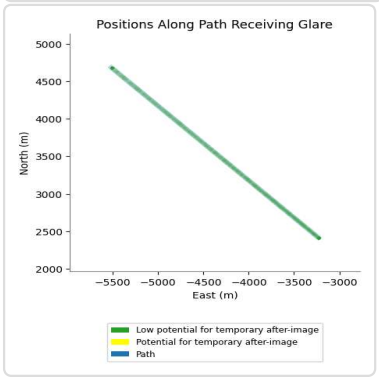


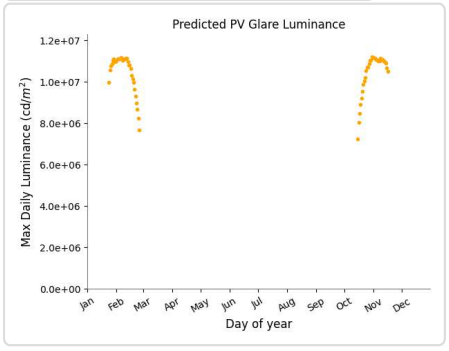


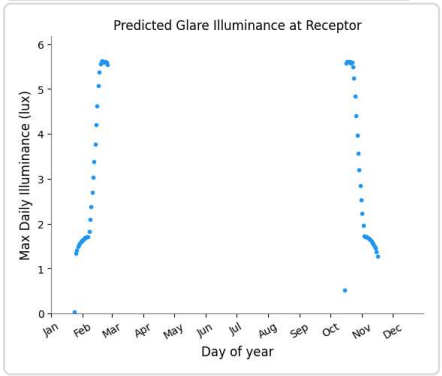












PV array 3: Wythenshawe - South Approach

No glare found

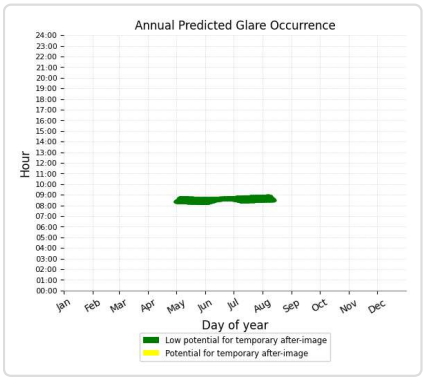
PV array 3: Wythenshawe - Southeast Approach

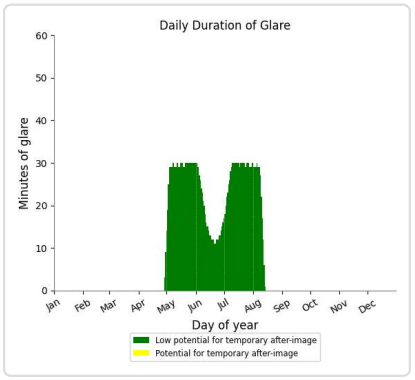
No glare found

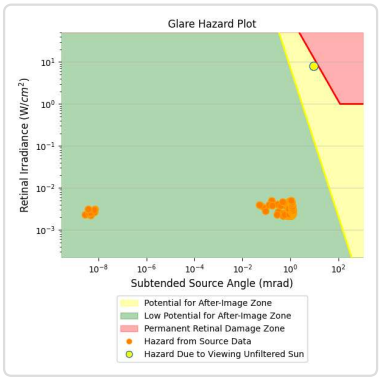
PV array 3: Wythenshawe - Southwest Approach

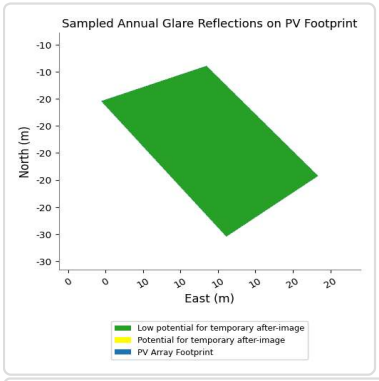
PV array is expected to produce the following glare for this receptor:

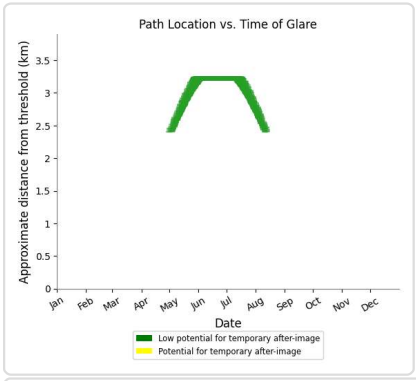
- 2,609 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

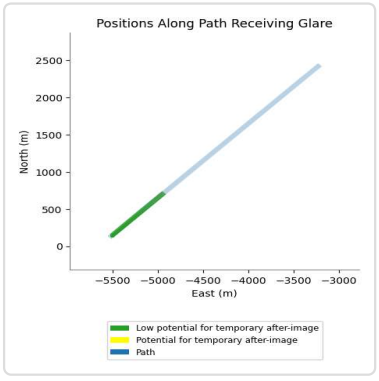


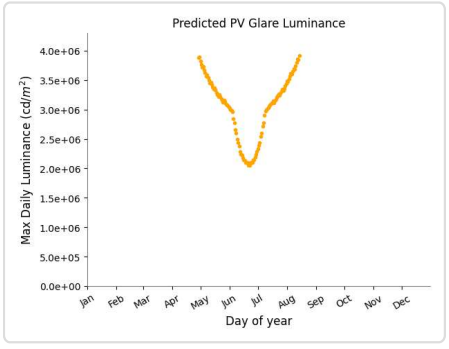


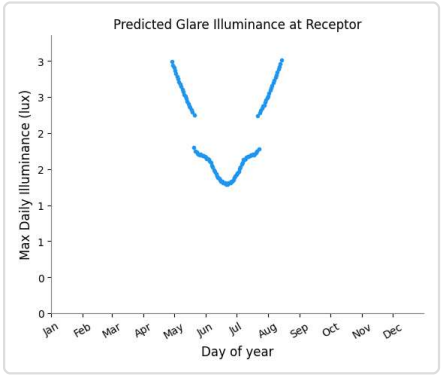








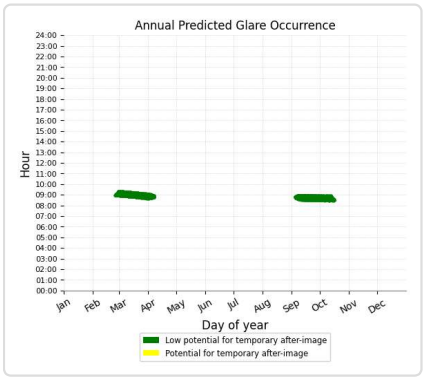


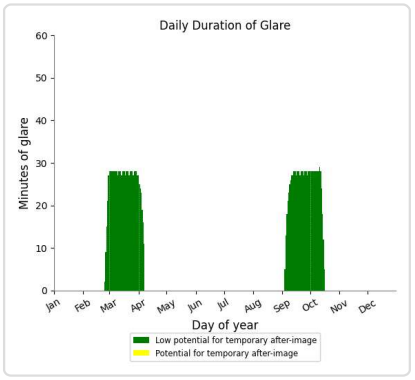


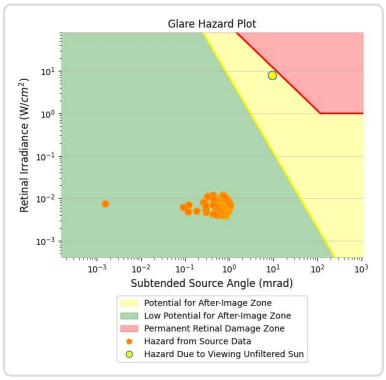
PV array 3: Wythenshawe - West Approach

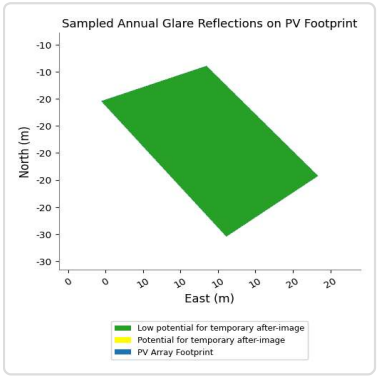
PV array is expected to produce the following glare for this receptor:

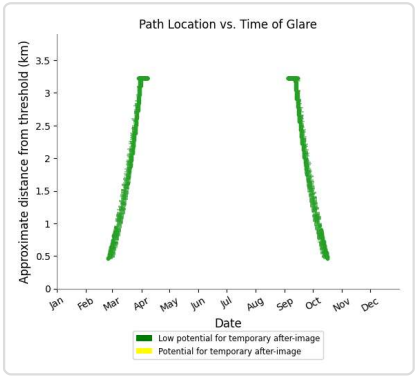
- 2,161 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

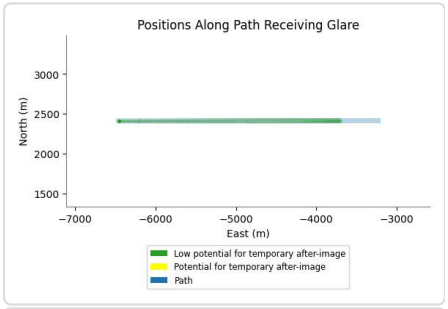


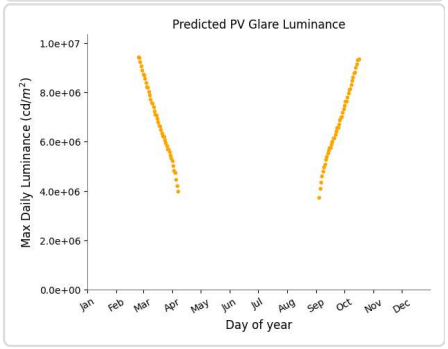


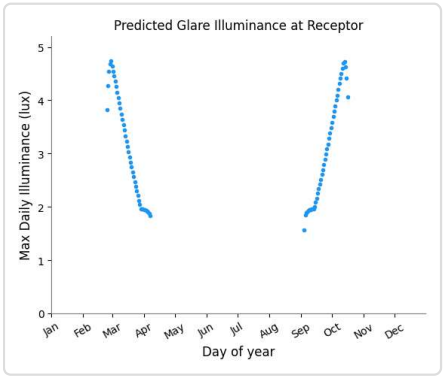












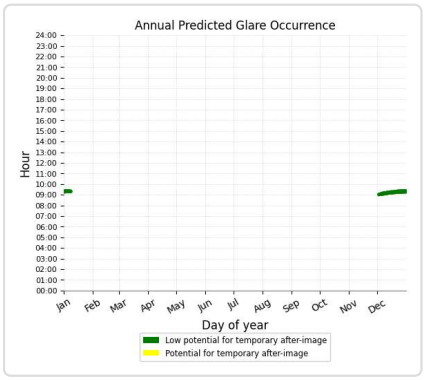
PV array 3: 1-ATCT

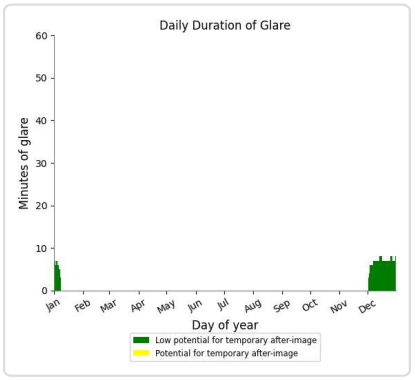
No glare found

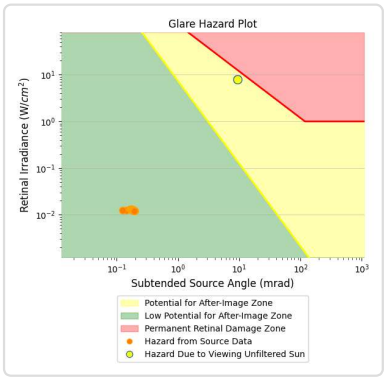
PV array 3: 2-ATCT

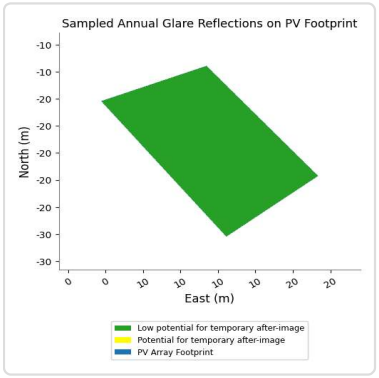
PV array is expected to produce the following glare for this receptor:

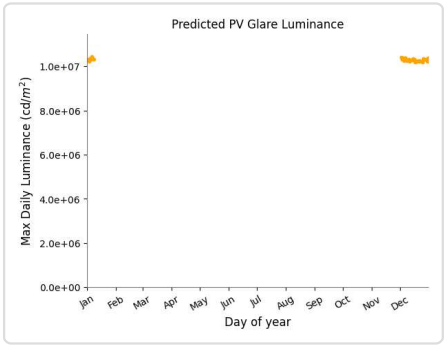
- 253 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

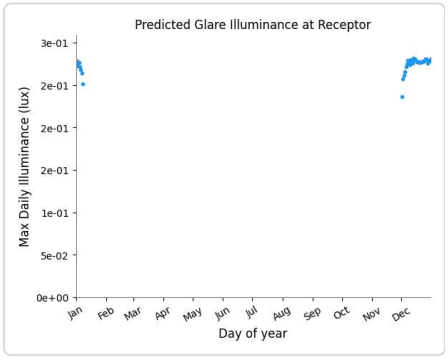












PV array 3: Macclesfield Entry

No glare found

PV array 3: Macclesfield Exit

No glare found

PV array 3: Runway 05L - 10NM

No glare found

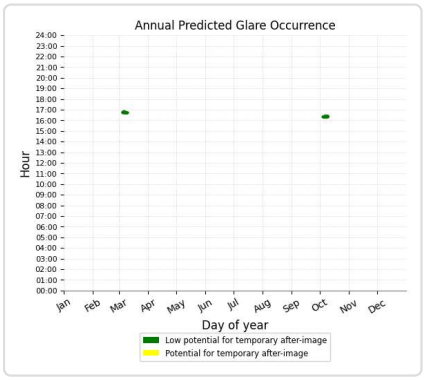
PV array 3: Runway 05R - 10NM

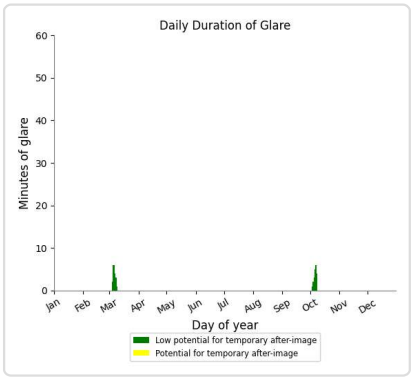
No glare found

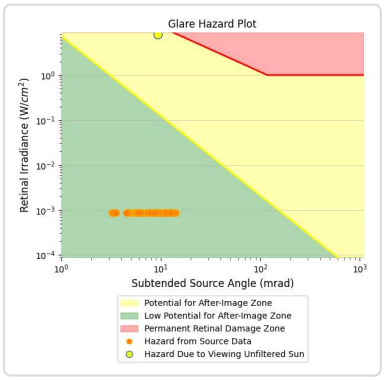
PV array 3: Runway 23L - 10NM

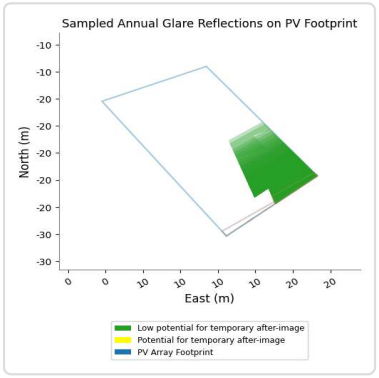
PV array is expected to produce the following glare for this receptor:

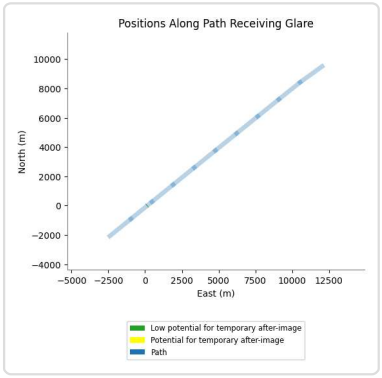
- 43 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

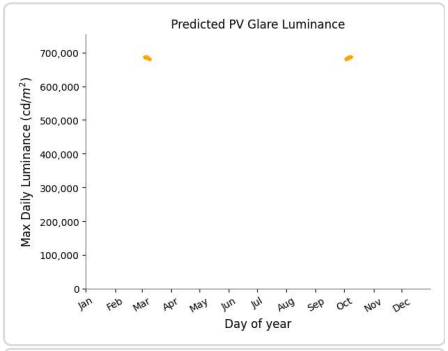


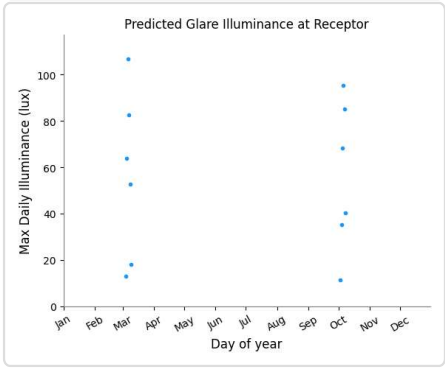












PV array 3: Runway 23R - 10NM

No glare found

PV array 3: Runway Taxi 1

No glare found

PV array 3: Runway Taxi 2

No glare found

PV array 3: Stretton Entry

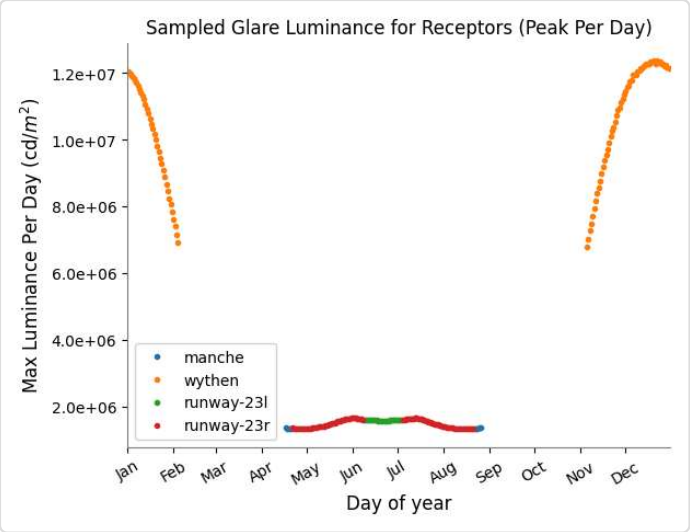
No glare found

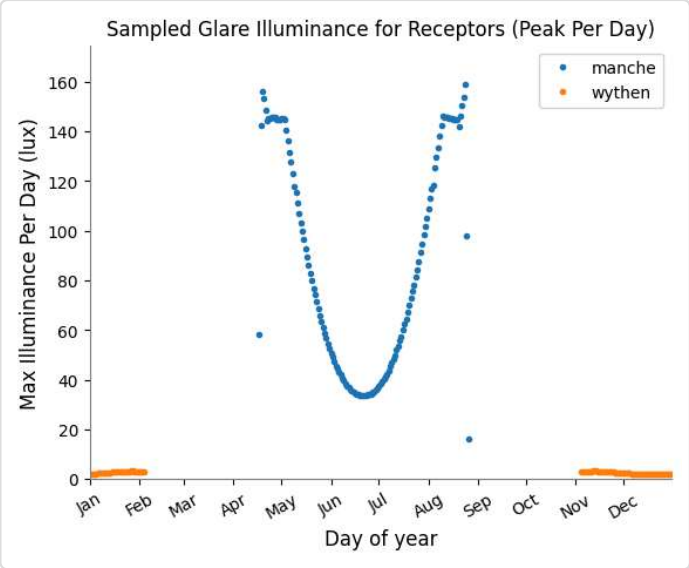
PV array 3: Thelwall Viaduct Exit

No glare found

PV array 4 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)	Peak Luminance (cd/m^2)	Peak Illuminance (lux)
FP: Manchester Airport - Runway 05L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 05L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 23L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 23R	7573	0	1,425,309	159
FP: Manchester Barton - Runway 02	0	0	0	0.0e+00
FP: Manchester Barton - Runway 08L	0	0	0	0.0e+00
FP: Manchester Barton - Runway 08R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 14	1033	0	10,785,639	0.3
FP: Manchester Barton - Runway 20	0	0	0	0.0e+00
FP: Manchester Barton - Runway 26L	0	0	0	0.0e+00
FP: Manchester Barton - Runway 26R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 32	0	0	0	0.0e+00
FP: Wythenshawe - East Approach	0	0	0	0.0e+00
FP: Wythenshawe - North Approach	2059	0	12,365,687	3
FP: Wythenshawe - Northeast Approach	0	0	0	0.0e+00
FP: Wythenshawe - Northwest Approach	0	0	0	0.0e+00
FP: Wythenshawe - South Approach	0	0	0	0.0e+00
FP: Wythenshawe - Southeast Approach	0	0	0	0.0e+00
FP: Wythenshawe - Southwest Approach	0	0	0	0.0e+00
FP: Wythenshawe - West Approach	0	0	0	0.0e+00
OP: 1-ATCT	0	0	0	0.0e+00
OP: 2-ATCT	237	0	10,254,047	0.3
Route: Macclesfield Entry	0	0	0	0.0e+00
Route: Macclesfield Exit	0	0	0	0.0e+00
Route: Runway 05L - 10NM	0	0	0	0.0e+00
Route: Runway 05R - 10NM	0	0	0	0.0e+00
Route: Runway 23L - 10NM	648	0	1,602,488	2
Route: Runway 23R - 10NM	8462	0	1,653,022	117
Route: Runway Taxi 1	0	0	0	0.0e+00
Route: Runway Taxi 2	0	0	0	0.0e+00
Route: Stretton Entry	0	0	0	0.0e+00
Route: Thelwall Viaduct Exit	0	0	0	0.0e+00





PV array 4: Manchester Airport - Runway 05L

No glare found

PV array 4: Manchester Airport - Runway 05L

No glare found

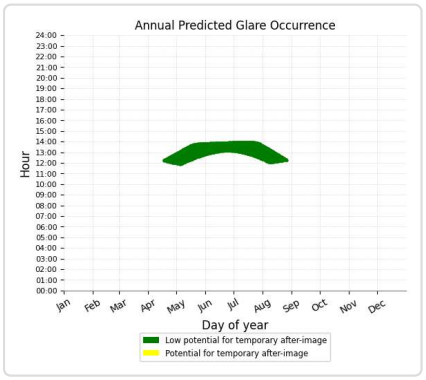
PV array 4: Manchester Airport - Runway 23L

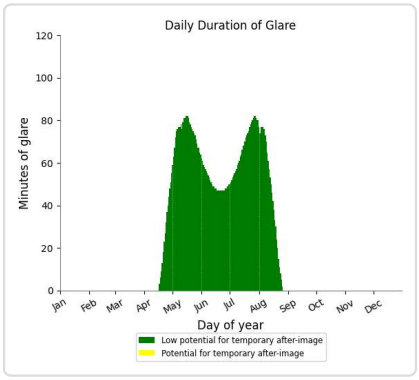
No glare found

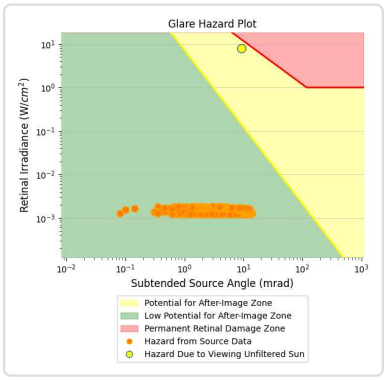
PV array 4: Manchester Airport - Runway 23R

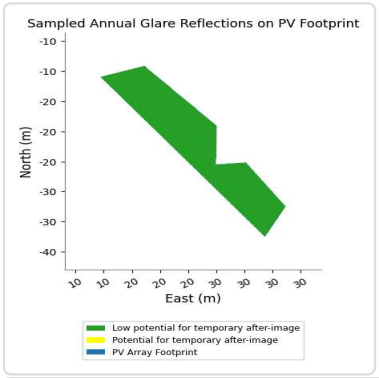
PV array is expected to produce the following glare for this receptor:

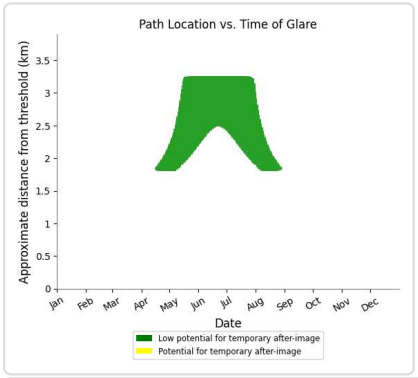
- 7,573 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

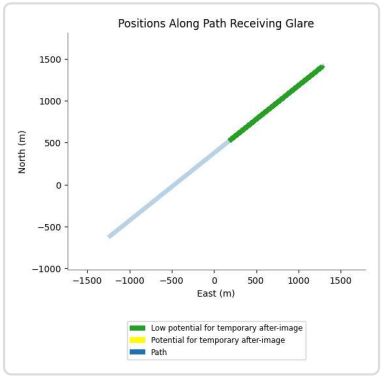


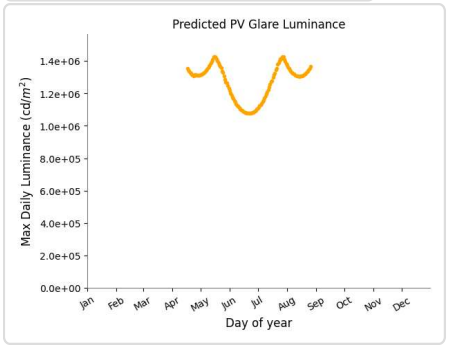


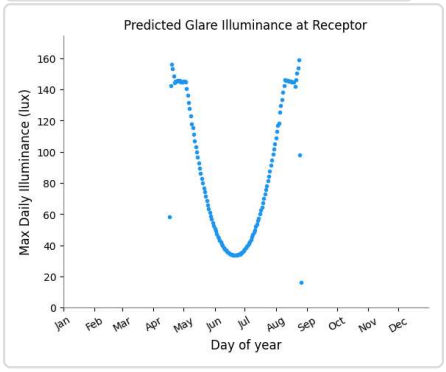












PV array 4: Manchester Barton - Runway 02

No glare found

PV array 4: Manchester Barton - Runway 08L

No glare found

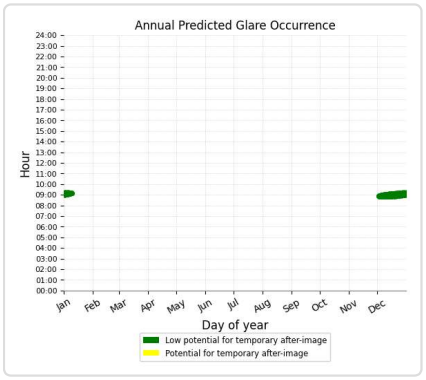
PV array 4: Manchester Barton - Runway 08R

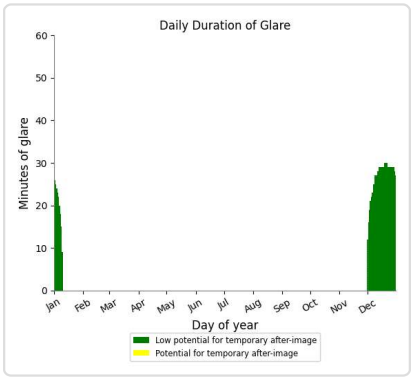
No glare found

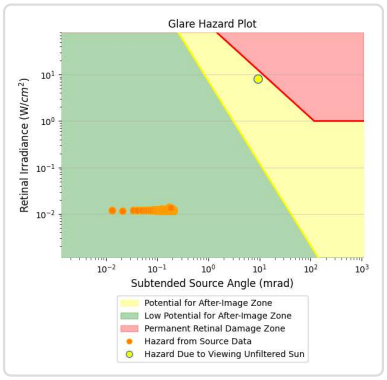
PV array 4: Manchester Barton - Runway 14

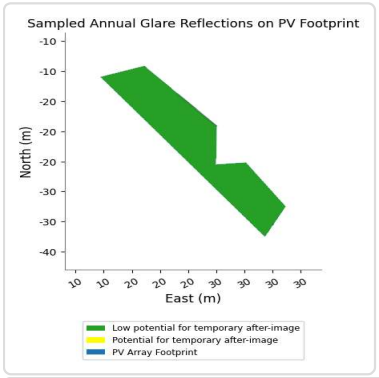
PV array is expected to produce the following glare for this receptor:

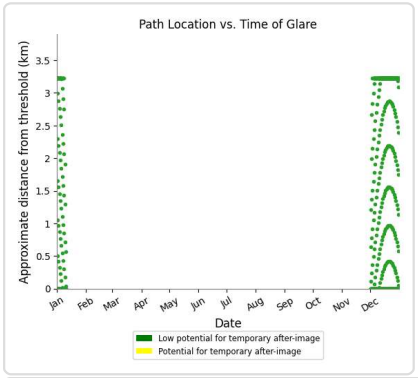
- 1,033 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

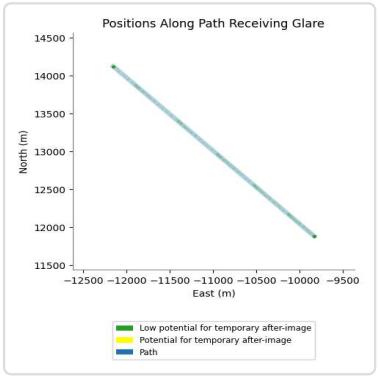


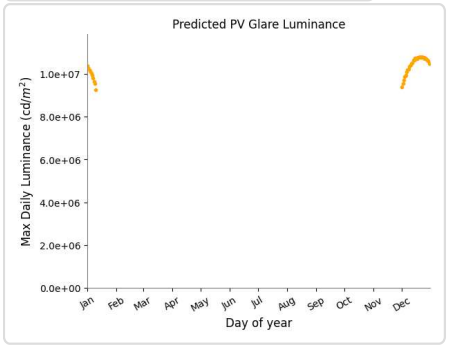


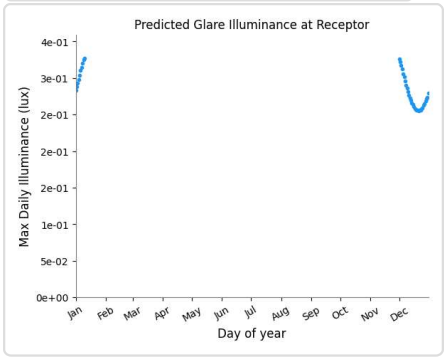












PV array 4: Manchester Barton - Runway 20

No glare found

PV array 4: Manchester Barton - Runway 26L

No glare found

PV array 4: Manchester Barton - Runway 26R

No glare found

PV array 4: Manchester Barton - Runway 32

No glare found

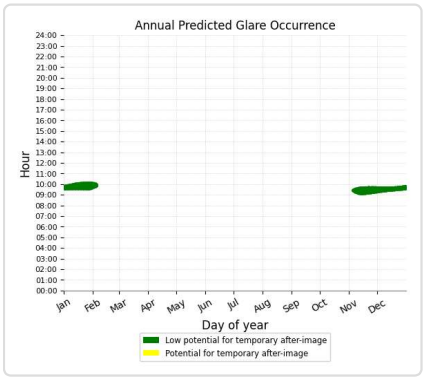
PV array 4: Wythenshawe - East Approach

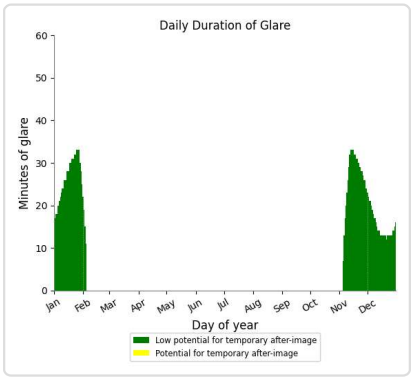
No glare found

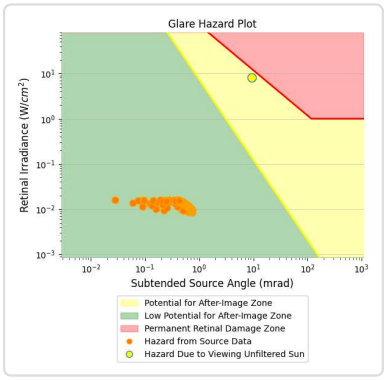
PV array 4: Wythenshawe - North Approach

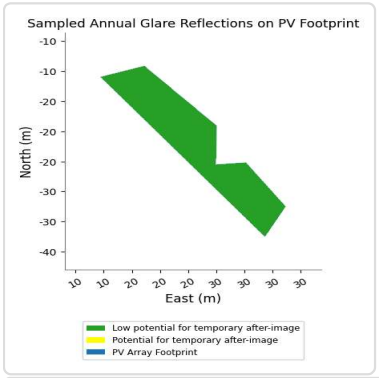
PV array is expected to produce the following glare for this receptor:

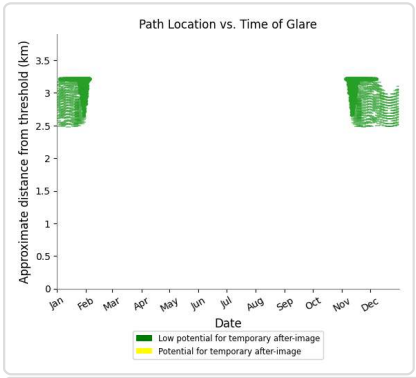
- 2,059 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

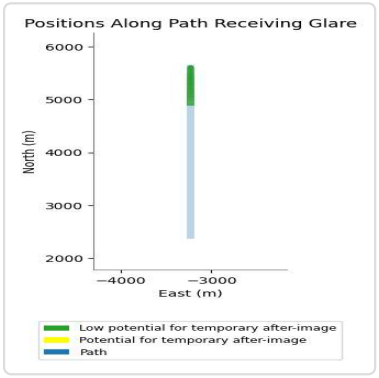


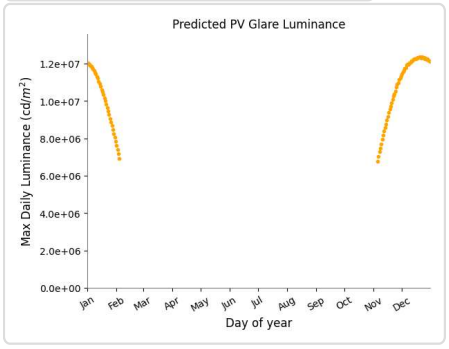


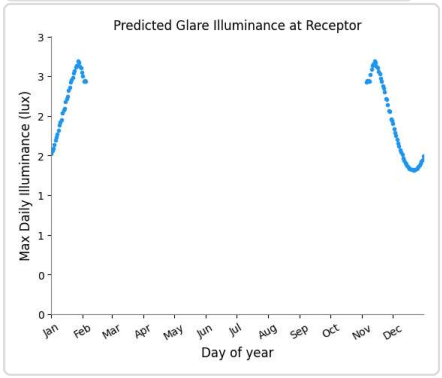












PV array 4: Wythenshawe - Northeast Approach

No glare found

PV array 4: Wythenshawe - Northwest Approach

No glare found

PV array 4: Wythenshawe - South Approach

No glare found

PV array 4: Wythenshawe - Southeast Approach

No glare found

PV array 4: Wythenshawe - Southwest Approach

No glare found

PV array 4: Wythenshawe - West Approach

No glare found

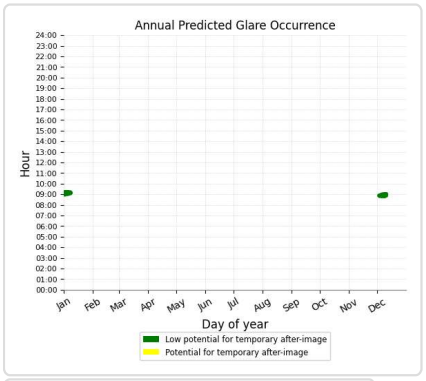
PV array 4: 1-ATCT

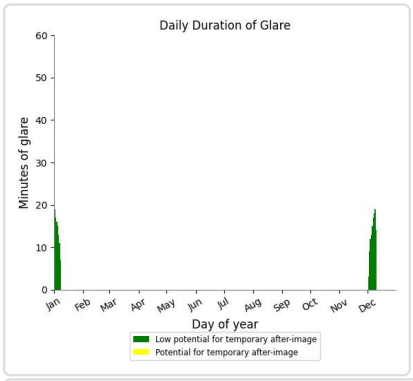
No glare found

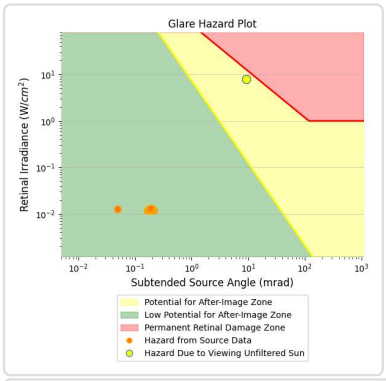
PV array 4: 2-ATCT

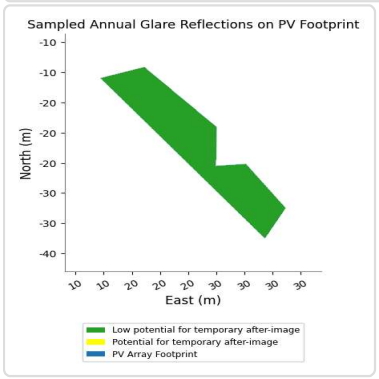
PV array is expected to produce the following glare for this receptor:

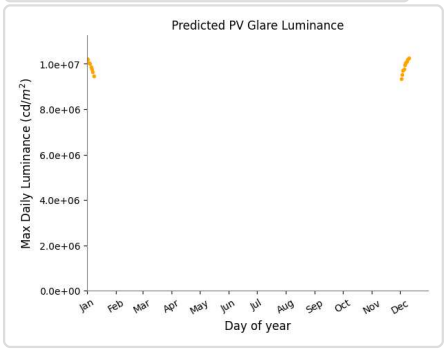
- 237 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

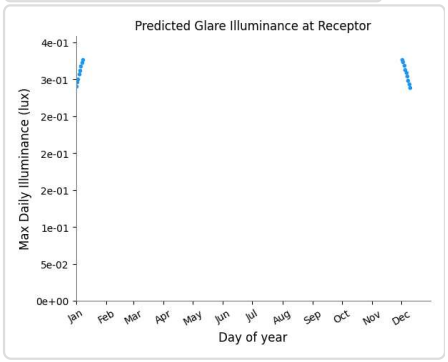












PV array 4: Macclesfield Entry

No glare found

PV array 4: Macclesfield Exit

No glare found

PV array 4: Runway 05L - 10NM

No glare found

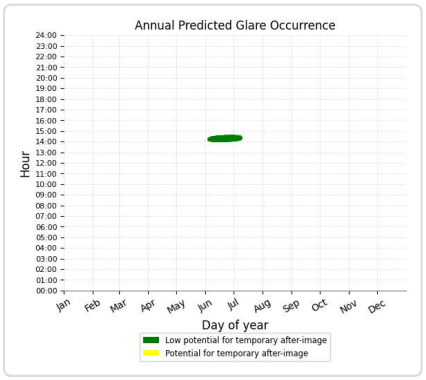
PV array 4: Runway 05R - 10NM

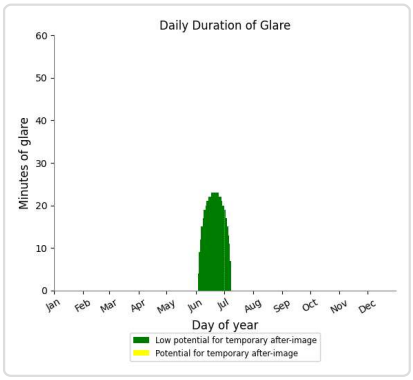
No glare found

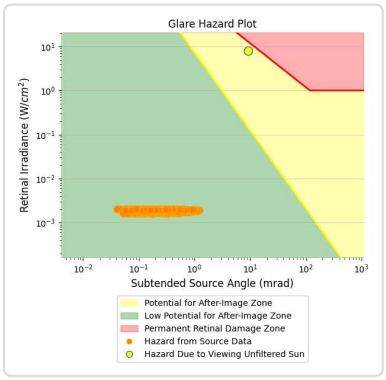
PV array 4: Runway 23L - 10NM

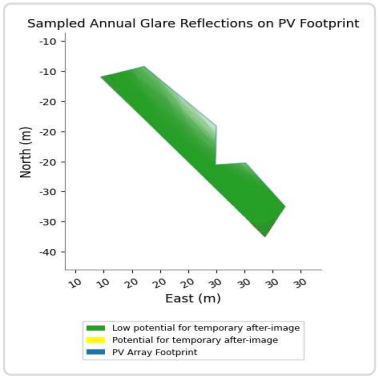
PV array is expected to produce the following glare for this receptor:

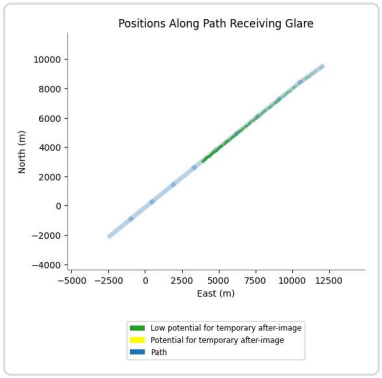
- 648 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

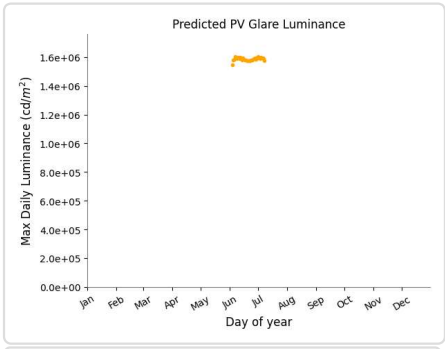


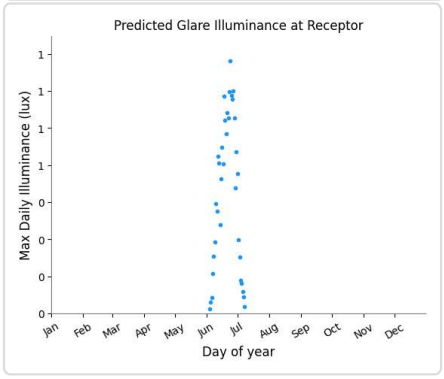








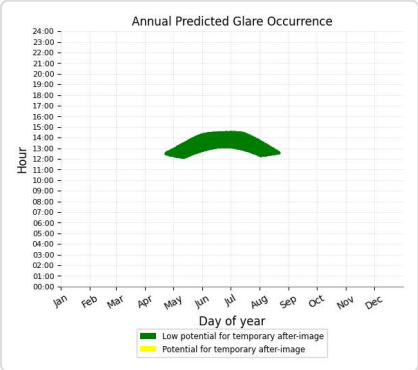


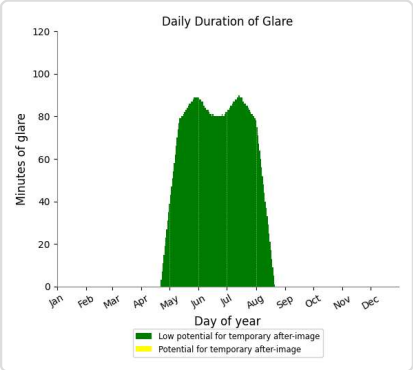


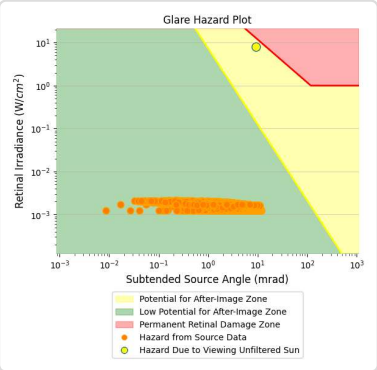
PV array 4: Runway 23R - 10NM

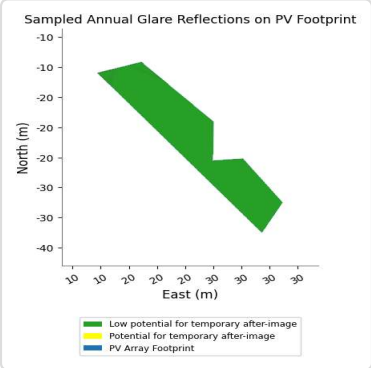
PV array is expected to produce the following glare for this receptor:

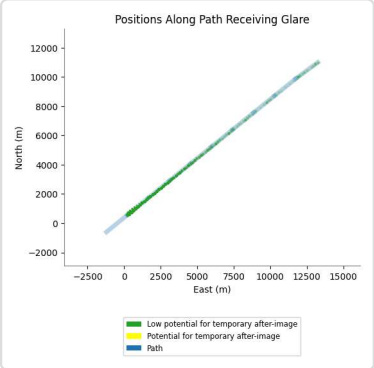
- 8,462 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

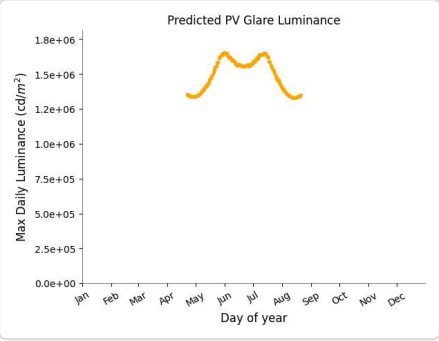


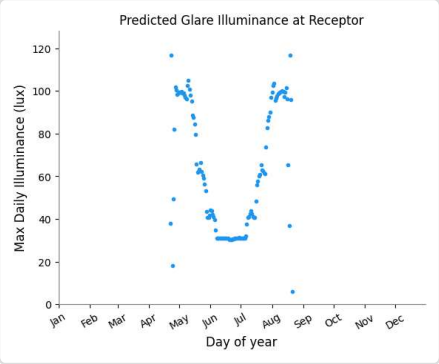












PV array 4: Runway Taxi 1

No glare found

PV array 4: Runway Taxi 2

No glare found

PV array 4: Stretton Entry

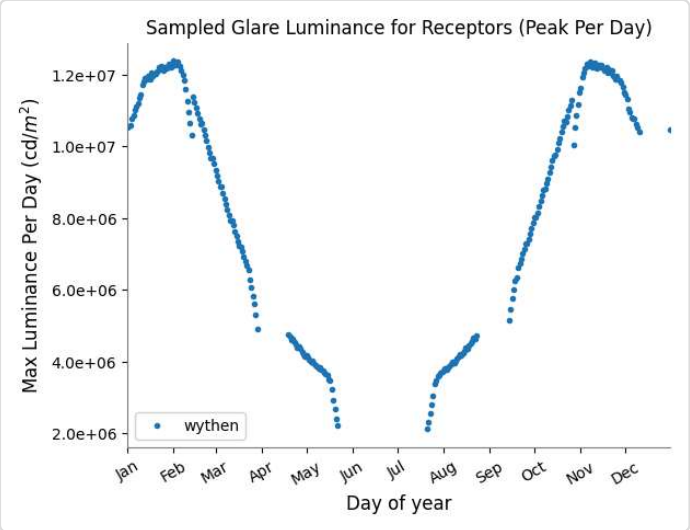
No glare found

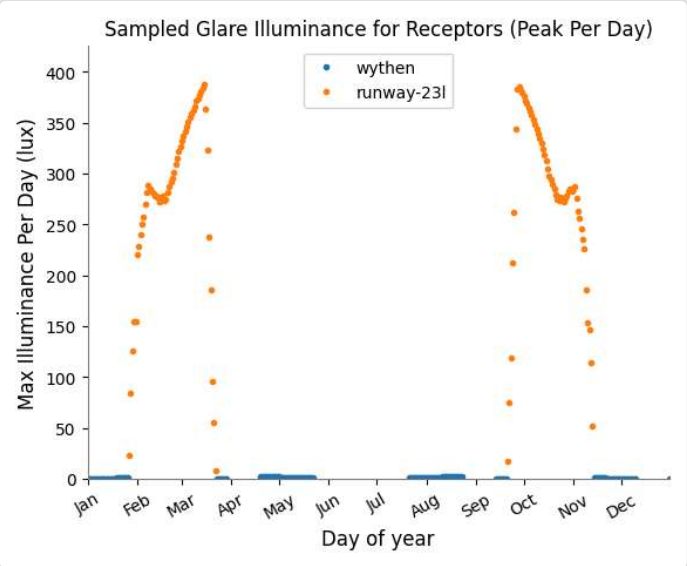
PV array 4: Thelwall Viaduct Exit

No glare found

PV array 5 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)	Peak Luminance (cd/m^2)	Peak Illuminance (lux)
FP: Manchester Airport - Runway 05L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 05L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 23L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 23R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 02	0	0	0	0.0e+00
FP: Manchester Barton - Runway 08L	0	0	0	0.0e+00
FP: Manchester Barton - Runway 08R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 14	0	0	0	0.0e+00
FP: Manchester Barton - Runway 20	0	0	0	0.0e+00
FP: Manchester Barton - Runway 26L	0	0	0	0.0e+00
FP: Manchester Barton - Runway 26R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 32	0	0	0	0.0e+00
FP: Wythenshawe - East Approach	0	0	0	0.0e+00
FP: Wythenshawe - North Approach	0	0	0	0.0e+00
FP: Wythenshawe - Northeast Approach	0	0	0	0.0e+00
FP: Wythenshawe - Northwest Approach	2091	0	12,376,754	3
FP: Wythenshawe - South Approach	0	0	0	0.0e+00
FP: Wythenshawe - Southeast Approach	0	0	0	0.0e+00
FP: Wythenshawe - Southwest Approach	1665	0	4,760,996	2
FP: Wythenshawe - West Approach	2216	0	11,375,901	3
OP: 1-ATCT	0	0	0	0.0e+00
OP: 2-ATCT	0	0	0	0.0e+00
Route: Macclesfield Entry	0	0	0	0.0e+00
Route: Macclesfield Exit	0	0	0	0.0e+00
Route: Runway 05L - 10NM	0	0	0	0.0e+00
Route: Runway 05R - 10NM	0	0	0	0.0e+00
Route: Runway 23L - 10NM	2825	0	1,046,492	387
Route: Runway 23R - 10NM	0	0	0	0.0e+00
Route: Runway Taxi 1	0	0	0	0.0e+00
Route: Runway Taxi 2	0	0	0	0.0e+00
Route: Stretton Entry	0	0	0	0.0e+00
Route: Thelwall Viaduct Exit	0	0	0	0.0e+00





PV array 5: Manchester Airport - Runway 05L

No glare found

PV array 5: Manchester Airport - Runway 05L

No glare found

PV array 5: Manchester Airport - Runway 23L

No glare found

PV array 5: Manchester Airport - Runway 23R

No glare found

PV array 5: Manchester Barton - Runway 02

No glare found

PV array 5: Manchester Barton - Runway 08L

No glare found

PV array 5: Manchester Barton - Runway 08R

No glare found

PV array 5: Manchester Barton - Runway 14

No glare found

PV array 5: Manchester Barton - Runway 20

No glare found

PV array 5: Manchester Barton - Runway 26L

No glare found

PV array 5: Manchester Barton - Runway 26R

No glare found

PV array 5: Manchester Barton - Runway 32

No glare found

PV array 5: Wythenshawe - East Approach

No glare found

PV array 5: Wythenshawe - North Approach

No glare found

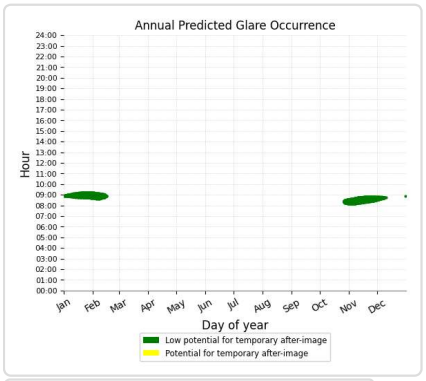
PV array 5: Wythenshawe - Northeast Approach

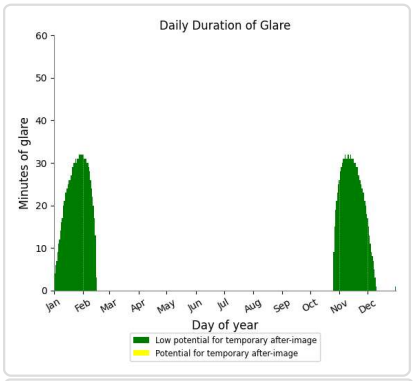
No glare found

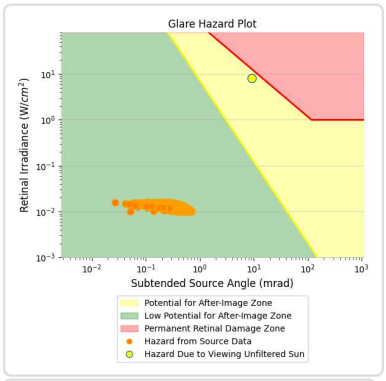
PV array 5: Wythenshawe - Northwest Approach

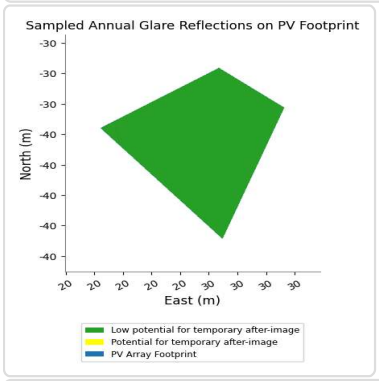
PV array is expected to produce the following glare for this receptor:

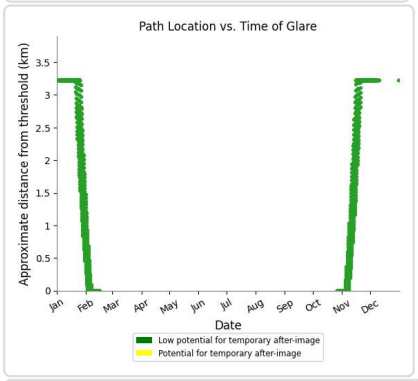
- 2,091 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

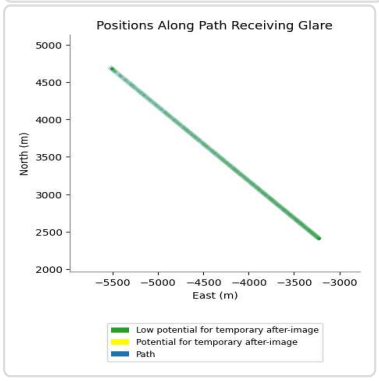


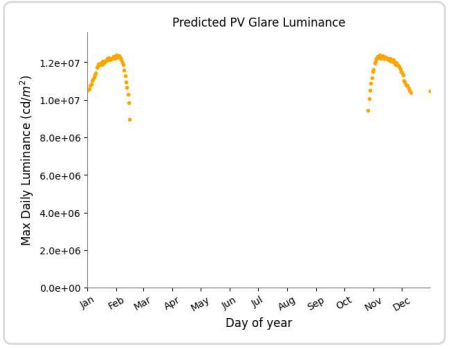


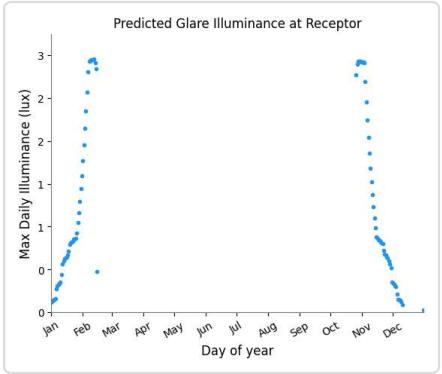












PV array 5: Wythenshawe - South Approach

No glare found

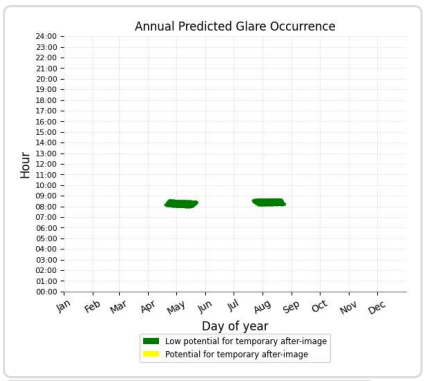
PV array 5: Wythenshawe - Southeast Approach

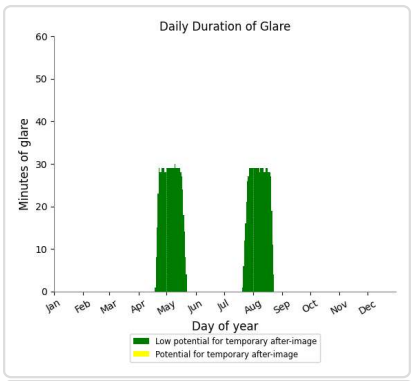
No glare found

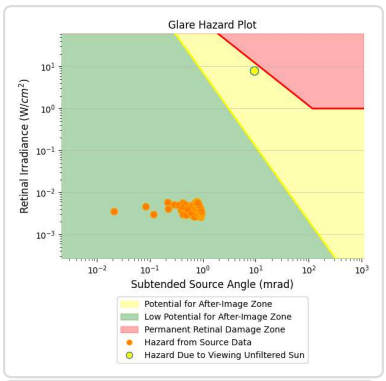
PV array 5: Wythenshawe - Southwest Approach

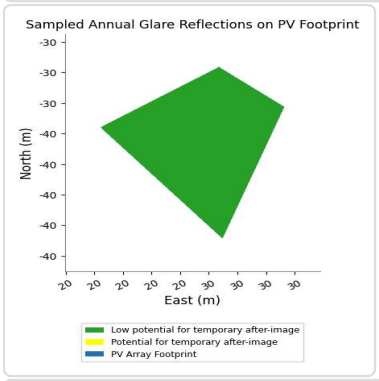
PV array is expected to produce the following glare for this receptor:

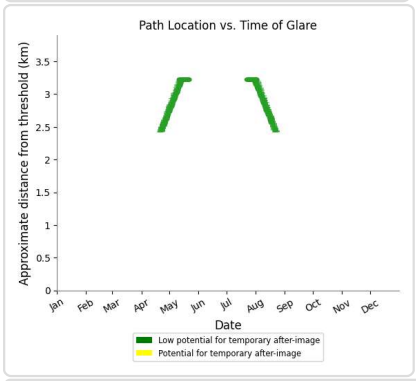
- 1,665 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

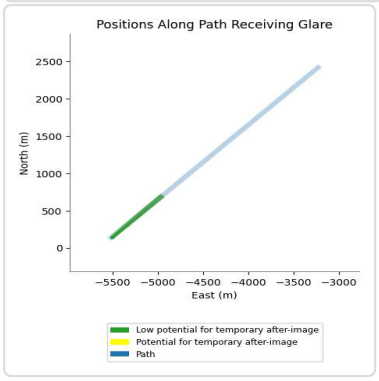


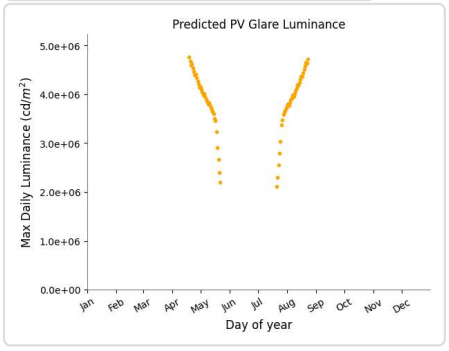


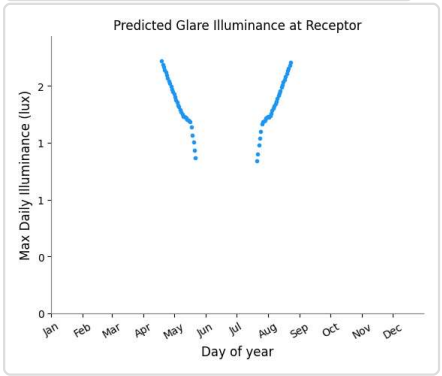








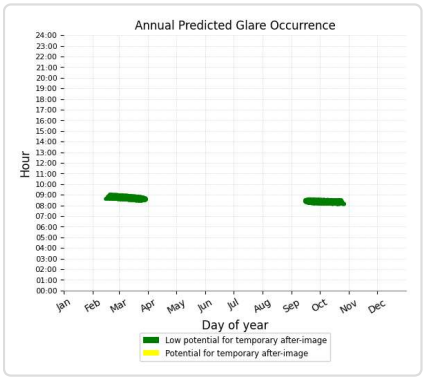


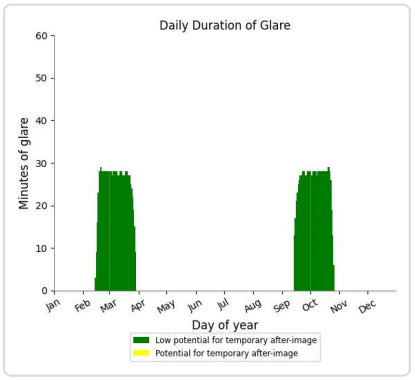


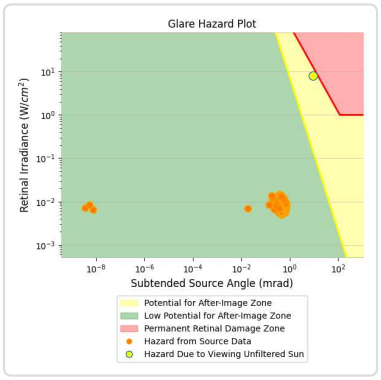
PV array 5: Wythenshawe - West Approach

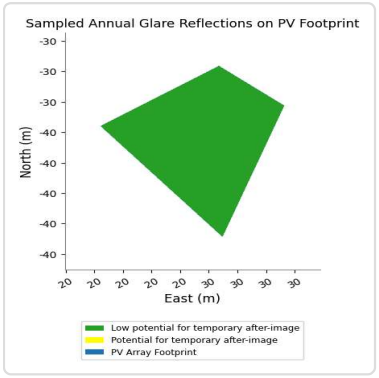
PV array is expected to produce the following glare for this receptor:

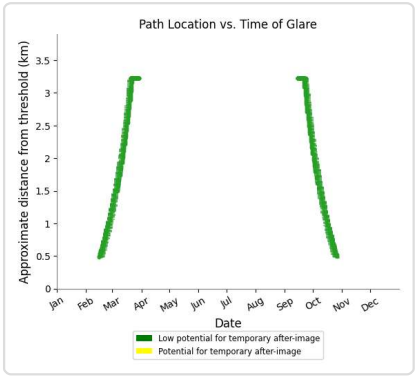
- 2,216 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

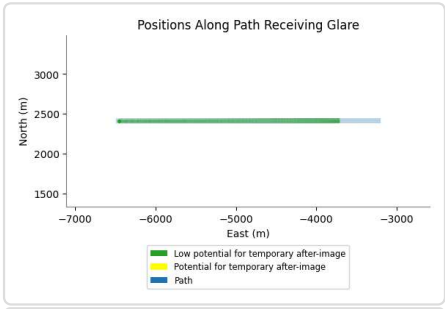


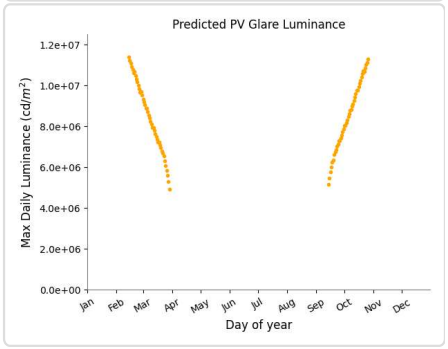


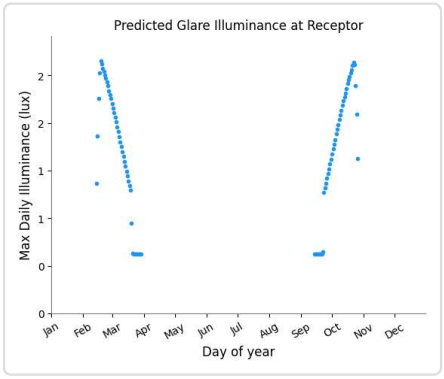












PV array 5: 1-ATCT

No glare found

PV array 5: 2-ATCT

No glare found

PV array 5: Macclesfield Entry

No glare found

PV array 5: Macclesfield Exit

No glare found

PV array 5: Runway 05L - 10NM

No glare found

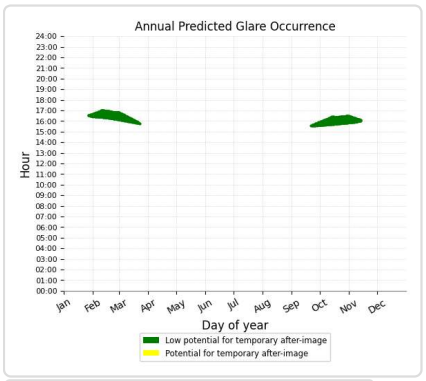
PV array 5: Runway 05R - 10NM

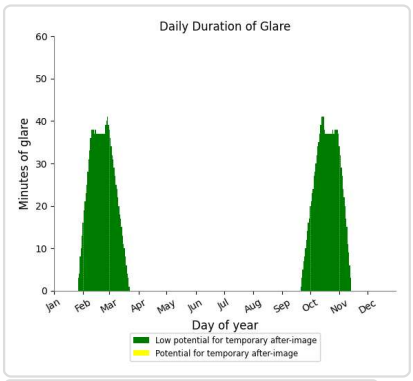
No glare found

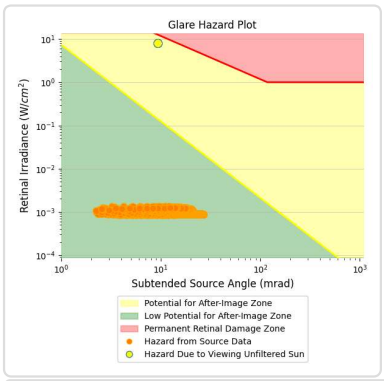
PV array 5: Runway 23L - 10NM

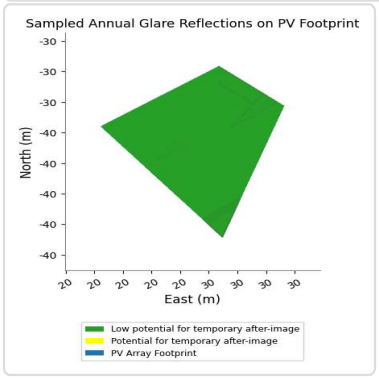
PV array is expected to produce the following glare for this receptor:

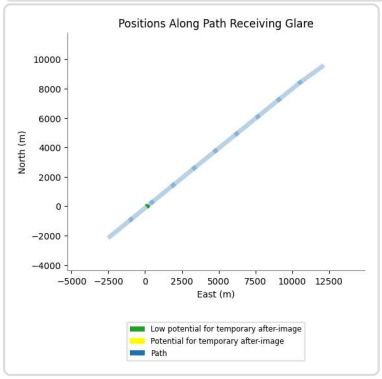
- 2,825 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

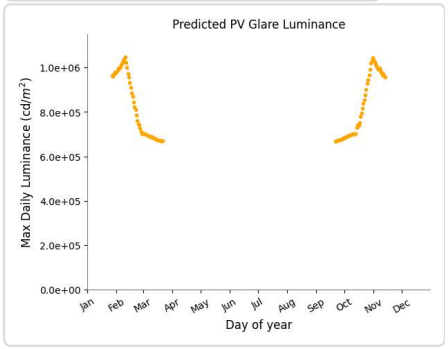


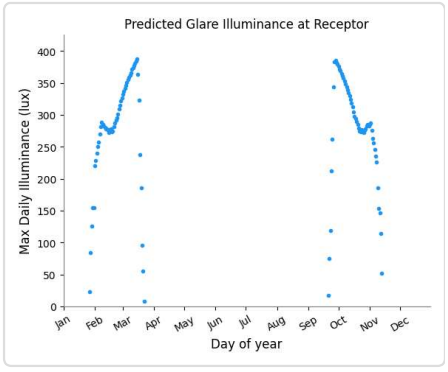












PV array 5: Runway 23R - 10NM

No glare found

PV array 5: Runway Taxi 1

No glare found

PV array 5: Runway Taxi 2

No glare found

PV array 5: Stretton Entry

No glare found

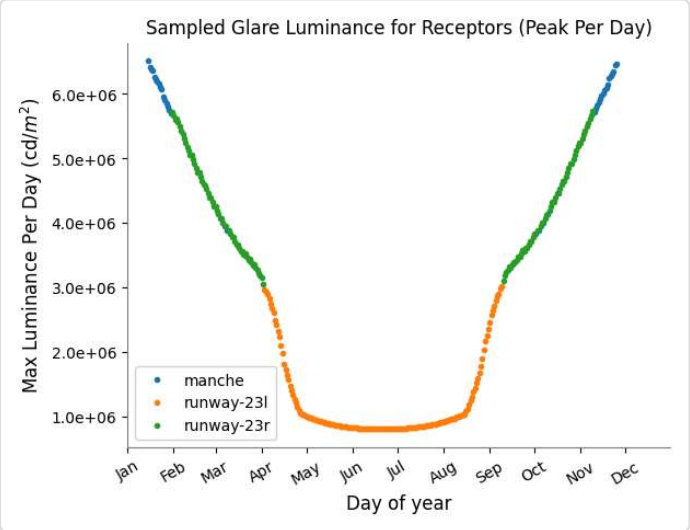
PV array 5: Thelwall Viaduct Exit

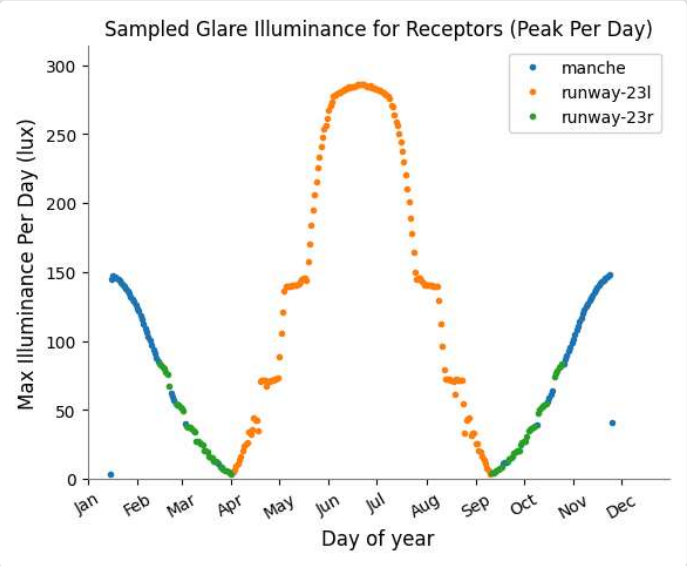
No glare found

PV array 6 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)	Peak Luminance (cd/m^2)	Peak Illuminance (lux)
FP: Manchester Airport - Runway 05L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 05L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 23L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 23R	4363	0	6,508,640	148
FP: Manchester Barton - Runway 02	0	0	0	0.0e+00
FP: Manchester Barton - Runway 08L	0	0	0	0.0e+00
FP: Manchester Barton - Runway 08R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 14	0	0	0	0.0e+00
FP: Manchester Barton - Runway 20	0	0	0	0.0e+00
FP: Manchester Barton - Runway 26L	0	0	0	0.0e+00
FP: Manchester Barton - Runway 26R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 32	0	0	0	0.0e+00
FP: Wythenshawe - East Approach	0	0	0	0.0e+00
FP: Wythenshawe - North Approach	0	0	0	0.0e+00
FP: Wythenshawe - Northeast Approach	0	0	0	0.0e+00
FP: Wythenshawe - Northwest Approach	0	0	0	0.0e+00
FP: Wythenshawe - South Approach	0	0	0	0.0e+00
FP: Wythenshawe - Southeast Approach	0	0	0	0.0e+00
FP: Wythenshawe - Southwest Approach	0	0	0	0.0e+00
FP: Wythenshawe - West Approach	0	0	0	0.0e+00
OP: 1-ATCT	0	0	0	0.0e+00
OP: 2-ATCT	0	0	0	0.0e+00
Route: Macclesfield Entry	0	0	0	0.0e+00
Route: Macclesfield Exit	0	0	0	0.0e+00
Route: Runway 05L - 10NM	0	0	0	0.0e+00
Route: Runway 05R - 10NM	0	0	0	0.0e+00
Route: Runway 23L - 10NM	8843	0	3,053,624	286
Route: Runway 23R - 10NM	4602	0	5,728,762	104
Route: Runway Taxi 1	0	0	0	0.0e+00

Route: Runway Taxi 2	0	0	0	0.0e+00
Route: Stretton Entry	0	0	0	0.0e+00
Route: Thelwall Viaduct Exit	0	0	0	0.0e+00





PV array 6: Manchester Airport - Runway 05L

No glare found

PV array 6: Manchester Airport - Runway 05L

No glare found

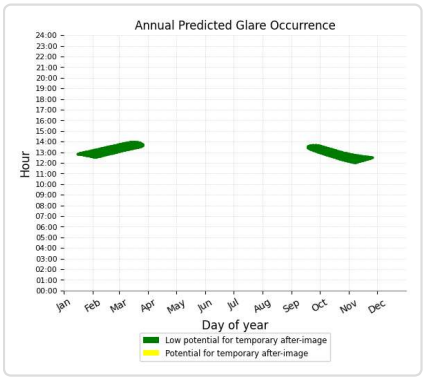
PV array 6: Manchester Airport - Runway 23L

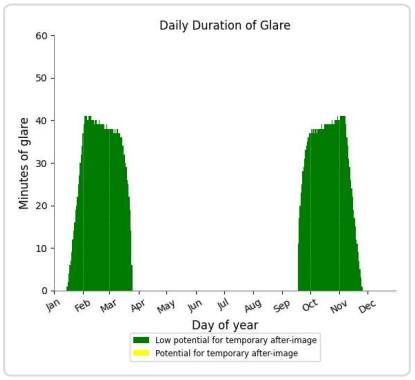
No glare found

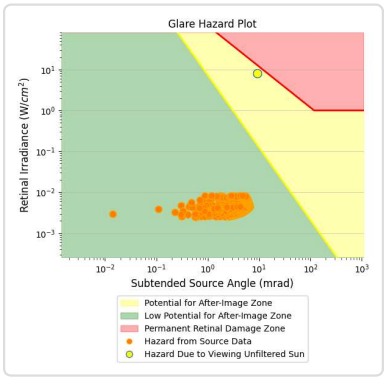
PV array 6: Manchester Airport - Runway 23R

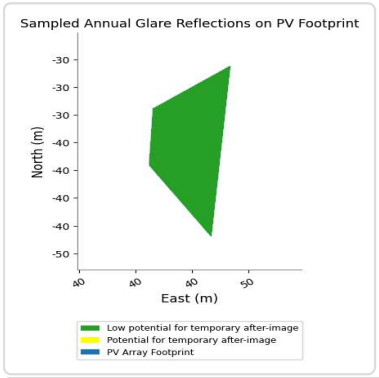
PV array is expected to produce the following glare for this receptor:

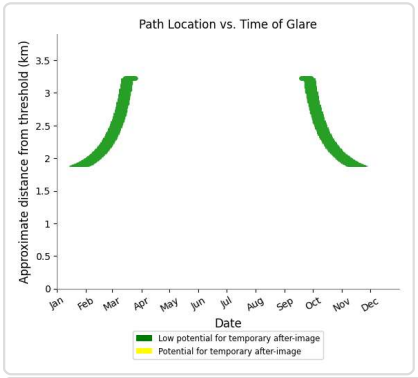
- 4,363 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

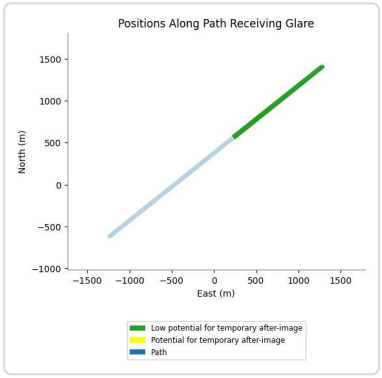


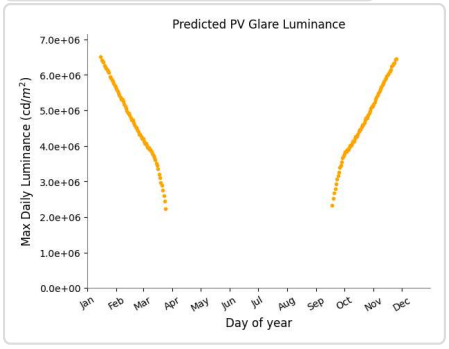


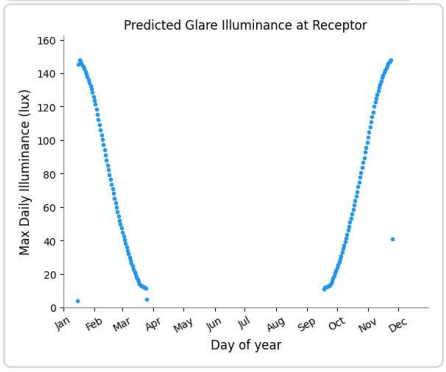












PV array 6: Manchester Barton - Runway 02

No glare found

PV array 6: Manchester Barton - Runway 08L

No glare found

PV array 6: Manchester Barton - Runway 08R

No glare found

PV array 6: Manchester Barton - Runway 14

No glare found

PV array 6: Manchester Barton - Runway 20

No glare found

PV array 6: Manchester Barton - Runway 26L

No glare found

PV array 6: Manchester Barton - Runway 26R

No glare found

PV array 6: Manchester Barton - Runway 32

No glare found

PV array 6: Wythenshawe - East Approach

No glare found

PV array 6: Wythenshawe - North Approach

No glare found

PV array 6: Wythenshawe - Northeast Approach

No glare found

PV array 6: Wythenshawe - Northwest Approach

No glare found

PV array 6: Wythenshawe - South Approach

No glare found

PV array 6: Wythenshawe - Southeast Approach

No glare found

PV array 6: Wythenshawe - Southwest Approach

No glare found

PV array 6: Wythenshawe - West Approach

No glare found

PV array 6: 1-ATCT

No glare found

PV array 6: 2-ATCT

No glare found

PV array 6: Macclesfield Entry

No glare found

PV array 6: Macclesfield Exit

No glare found

PV array 6: Runway 05L - 10NM

No glare found

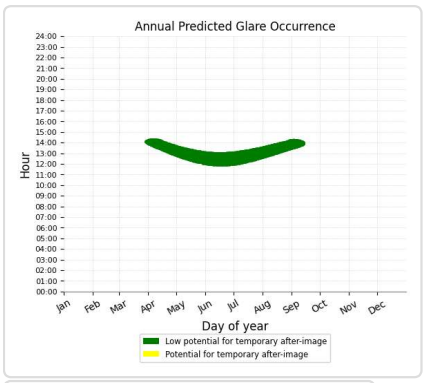
PV array 6: Runway 05R - 10NM

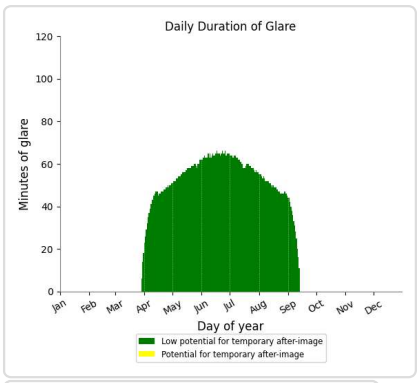
No glare found

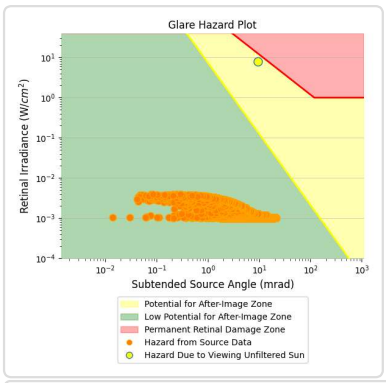
PV array 6: Runway 23L - 10NM

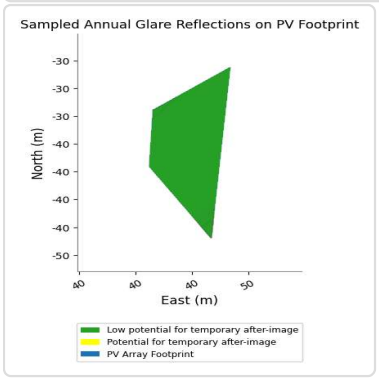
PV array is expected to produce the following glare for this receptor:

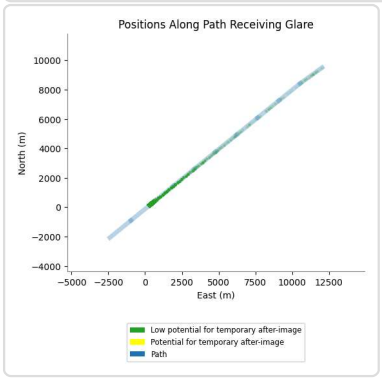
- 8,843 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

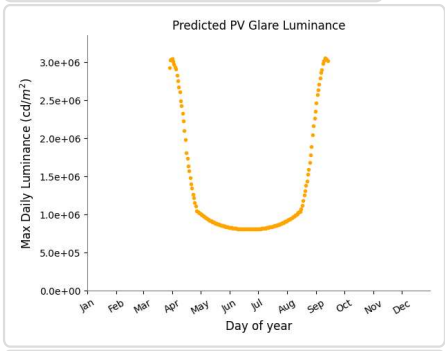


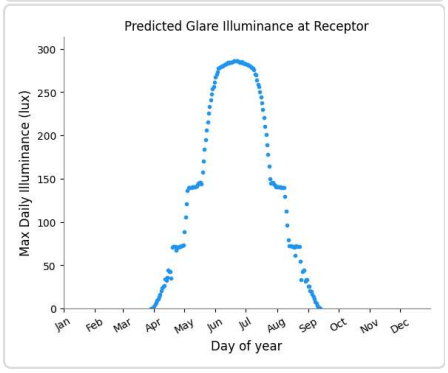








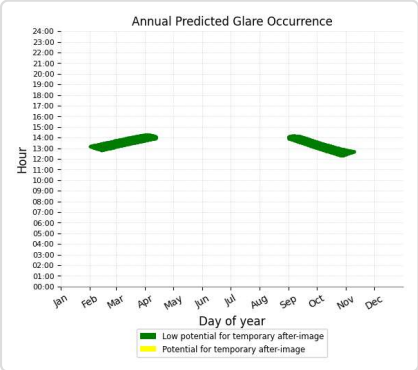


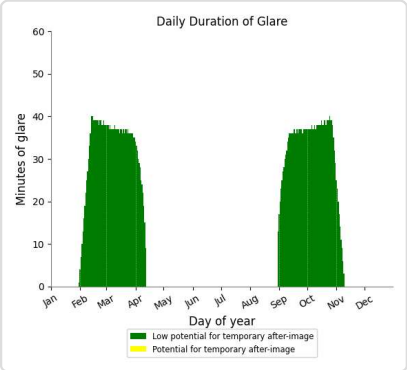


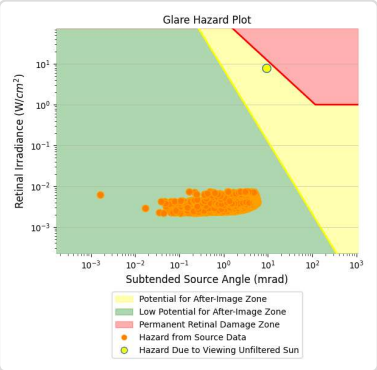
PV array 6: Runway 23R - 10NM

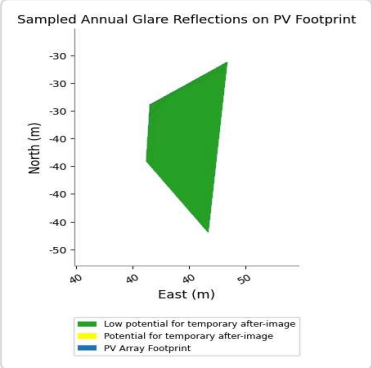
PV array is expected to produce the following glare for this receptor:

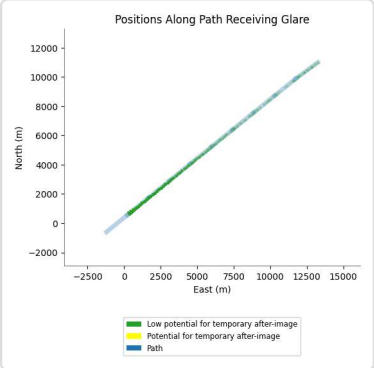
- 4,602 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

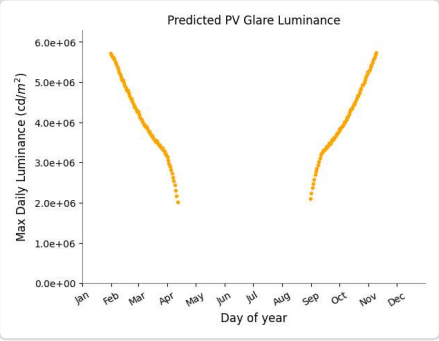


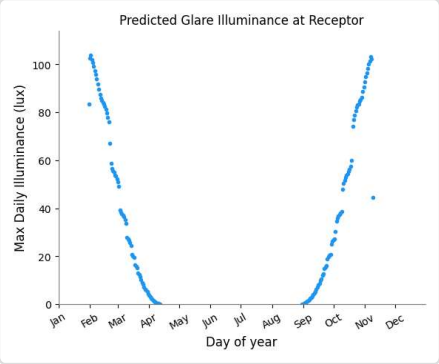












PV array 6: Runway Taxi 1

No glare found

PV array 6: Runway Taxi 2

No glare found

PV array 6: Stretton Entry

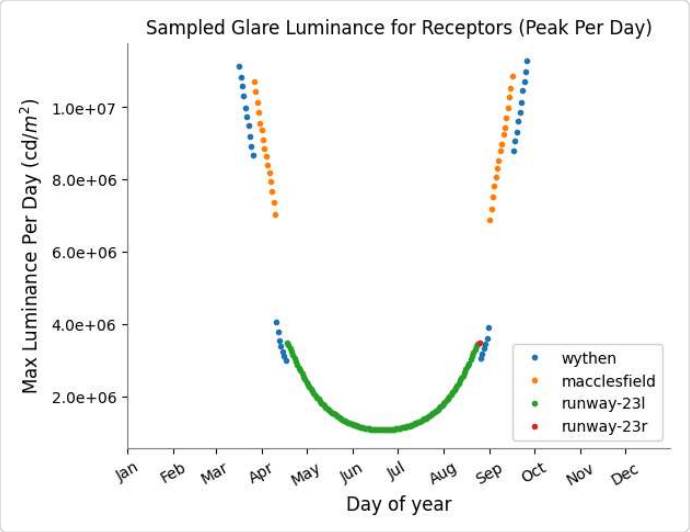
No glare found

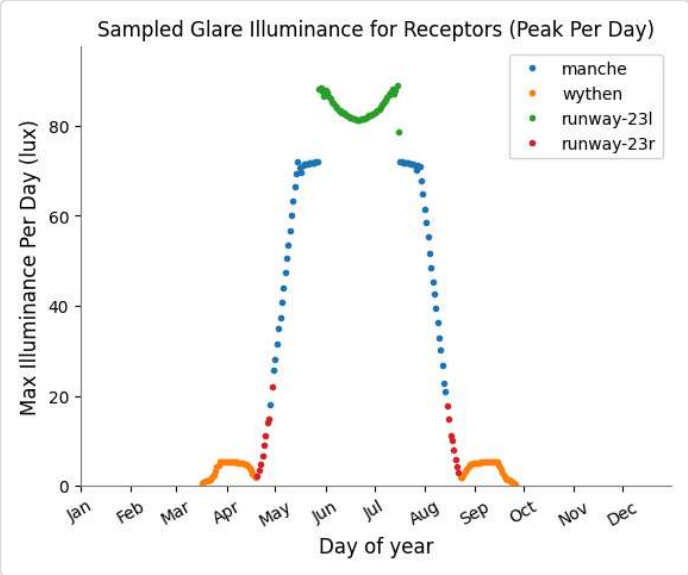
PV array 6: Thelwall Viaduct Exit

No glare found

PV array 7 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)	Peak Luminance (cd/m^2)	Peak Illuminance (lux)
FP: Manchester Airport - Runway 05L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 05L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 23L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 23R	7253	0	2,169,707	73
FP: Manchester Barton - Runway 02	0	0	0	0.0e+00
FP: Manchester Barton - Runway 08L	0	0	0	0.0e+00
FP: Manchester Barton - Runway 08R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 14	976	0	4,336,497	0.4
FP: Manchester Barton - Runway 20	0	0	0	0.0e+00
FP: Manchester Barton - Runway 26L	0	0	0	0.0e+00
FP: Manchester Barton - Runway 26R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 32	0	0	0	0.0e+00
FP: Wythenshawe - East Approach	0	0	0	0.0e+00
FP: Wythenshawe - North Approach	881	0	3,273,592	2
FP: Wythenshawe - Northeast Approach	0	0	0	0.0e+00
FP: Wythenshawe - Northwest Approach	1369	0	6,409,589	5
FP: Wythenshawe - South Approach	0	0	0	0.0e+00
FP: Wythenshawe - Southeast Approach	0	0	0	0.0e+00
FP: Wythenshawe - Southwest Approach	520	0	11,271,630	3
FP: Wythenshawe - West Approach	2178	0	8,702,864	5
OP: 1-ATCT	0	0	0	0.0e+00
OP: 2-ATCT	797	0	4,416,481	0.4
Route: Macclesfield Entry	522	0	10,862,216	3
Route: Macclesfield Exit	0	0	0	0.0e+00
Route: Runway 05L - 10NM	0	0	0	0.0e+00
Route: Runway 05R - 10NM	0	0	0	0.0e+00
Route: Runway 23L - 10NM	3924	0	3,491,709	89
Route: Runway 23R - 10NM	7641	0	3,486,806	57
Route: Runway Taxi 1	0	0	0	0.0e+00
Route: Runway Taxi 2	0	0	0	0.0e+00
Route: Stretton Entry	0	0	0	0.0e+00
Route: Thelwall Viaduct Exit	0	0	0	0.0e+00





PV array 7: Manchester Airport - Runway 05L

No glare found

PV array 7: Manchester Airport - Runway 05L

No glare found

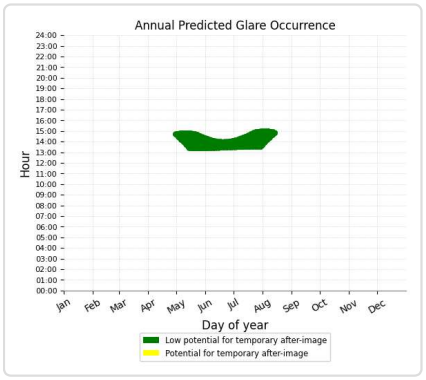
PV array 7: Manchester Airport - Runway 23L

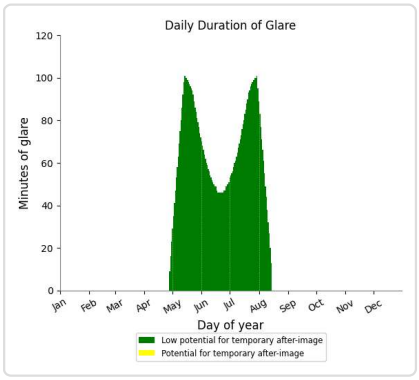
No glare found

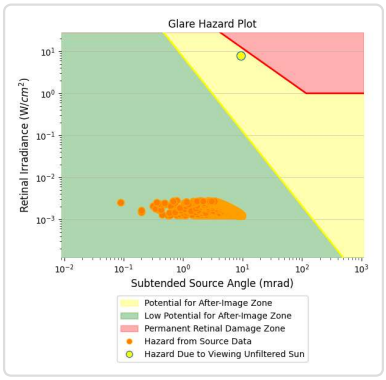
PV array 7: Manchester Airport - Runway 23R

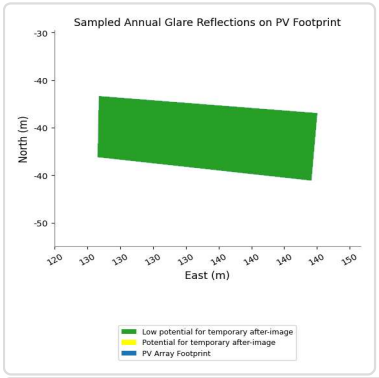
PV array is expected to produce the following glare for this receptor:

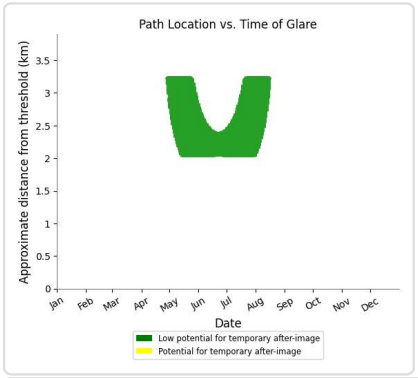
- 7,253 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

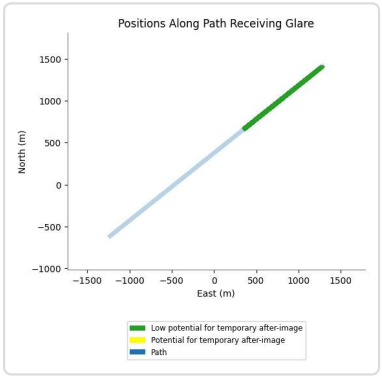


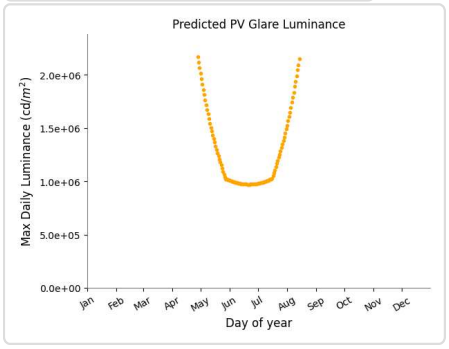


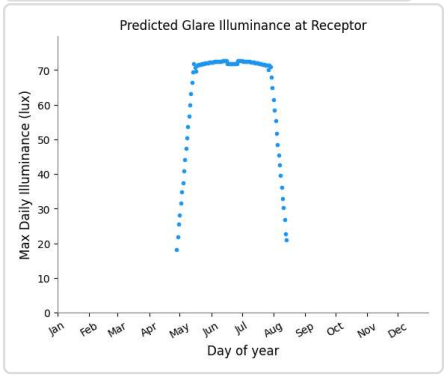












PV array 7: Manchester Barton - Runway 02

No glare found

PV array 7: Manchester Barton - Runway 08L

No glare found

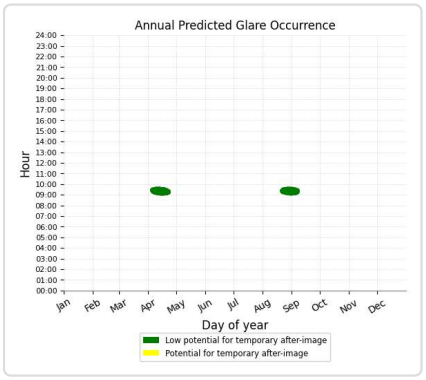
PV array 7: Manchester Barton - Runway 08R

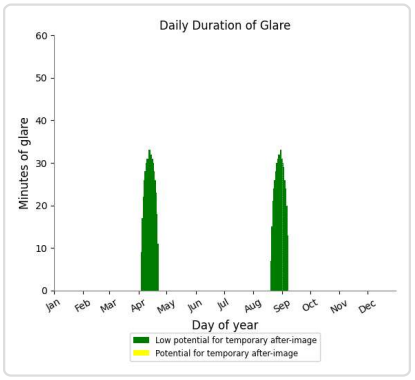
No glare found

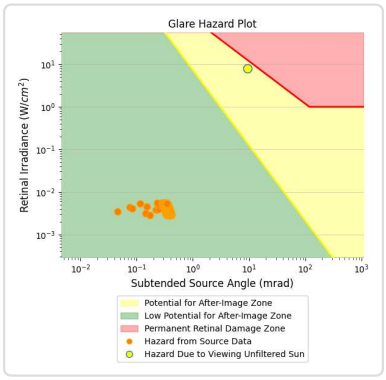
PV array 7: Manchester Barton - Runway 14

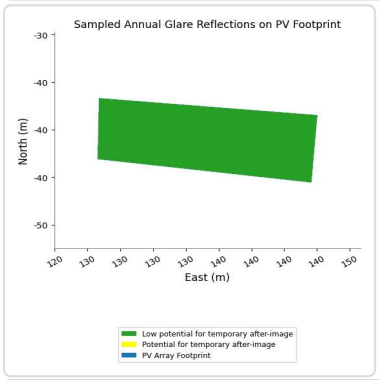
PV array is expected to produce the following glare for this receptor:

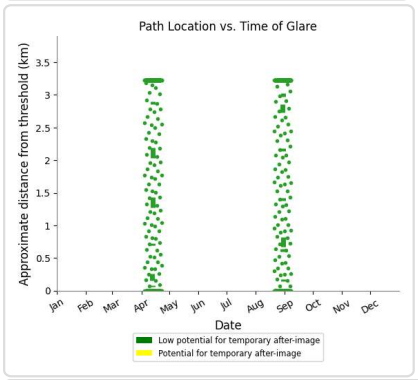
- 976 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

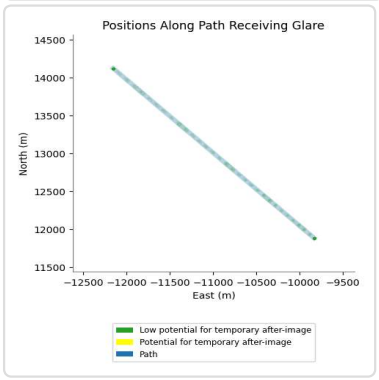


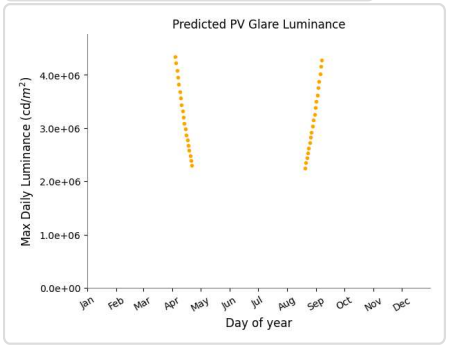


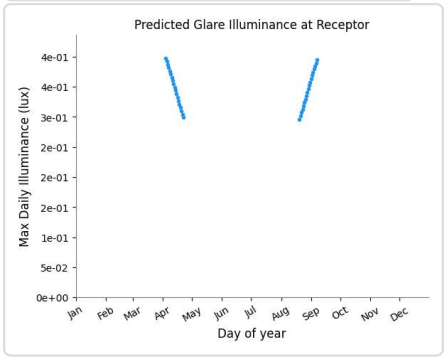












PV array 7: Manchester Barton - Runway 20

No glare found

PV array 7: Manchester Barton - Runway 26L

No glare found

PV array 7: Manchester Barton - Runway 26R

No glare found

PV array 7: Manchester Barton - Runway 32

No glare found

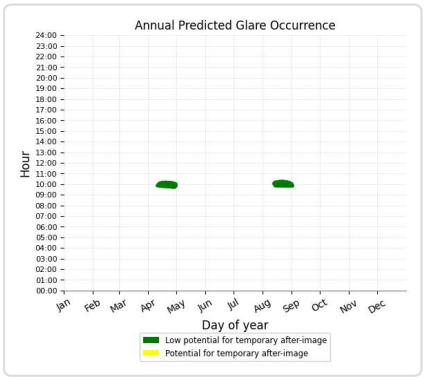
PV array 7: Wythenshawe - East Approach

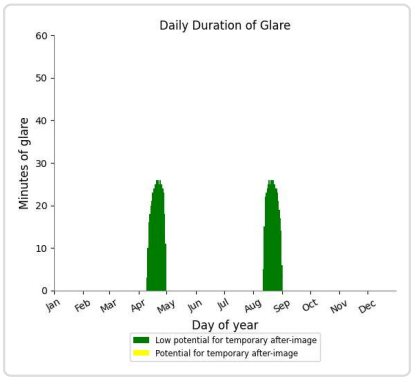
No glare found

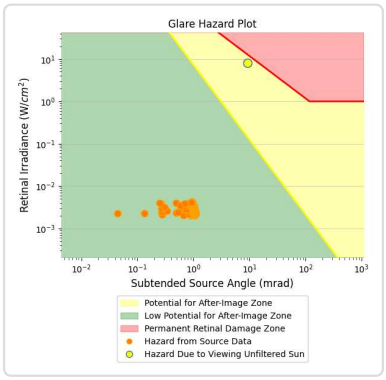
PV array 7: Wythenshawe - North Approach

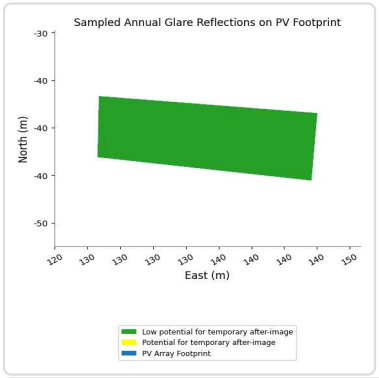
PV array is expected to produce the following glare for this receptor:

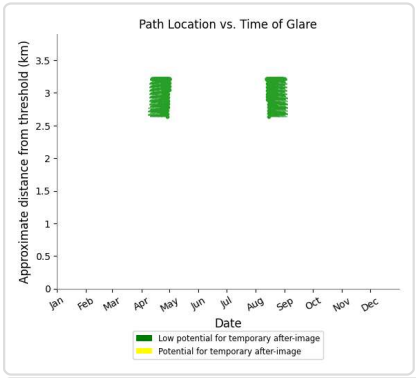
- 881 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

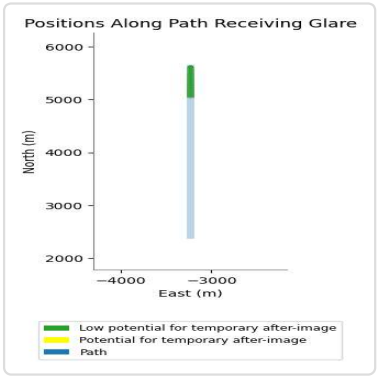


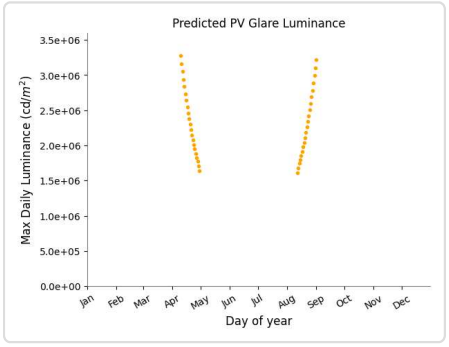


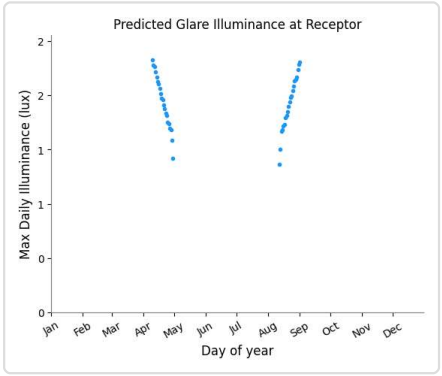












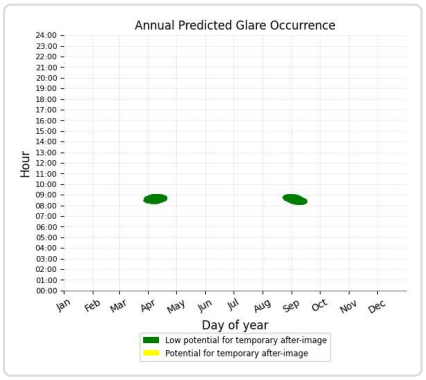
PV array 7: Wythenshawe - Northeast Approach

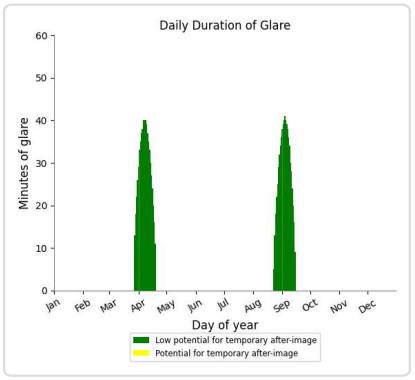
No glare found

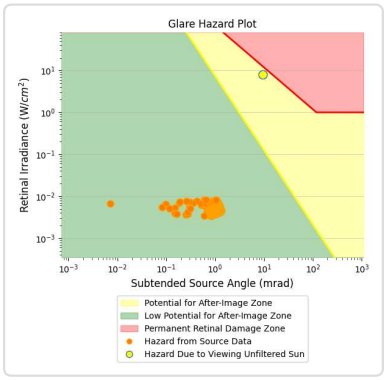
PV array 7: Wythenshawe - Northwest Approach

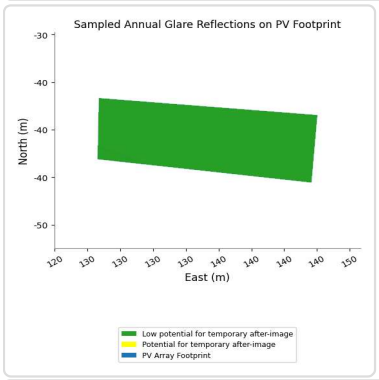
PV array is expected to produce the following glare for this receptor:

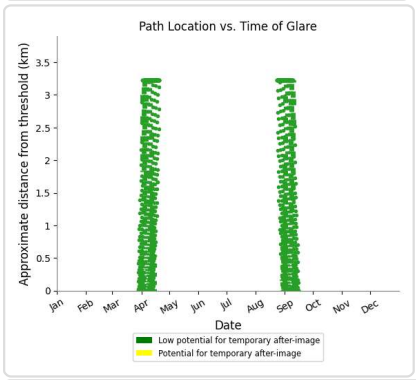
- 1,369 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

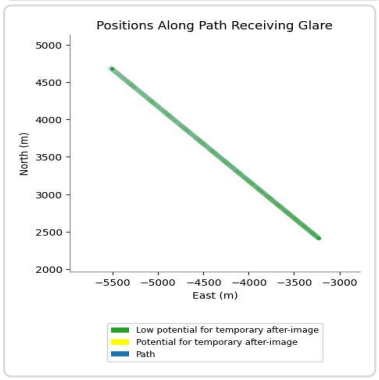


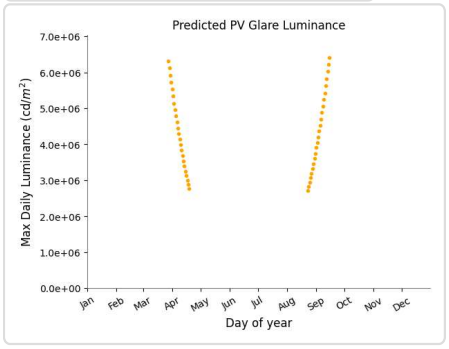


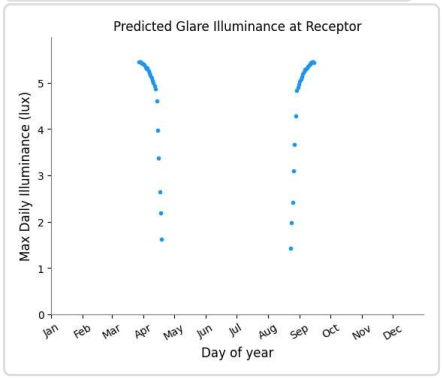












PV array 7: Wythenshawe - South Approach

No glare found

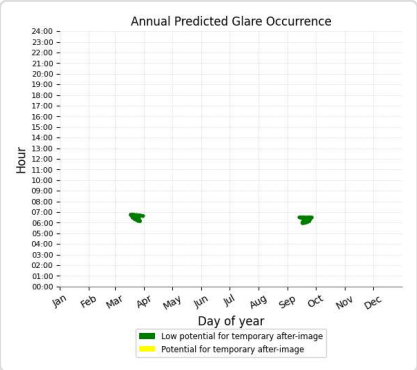
PV array 7: Wythenshawe - Southeast Approach

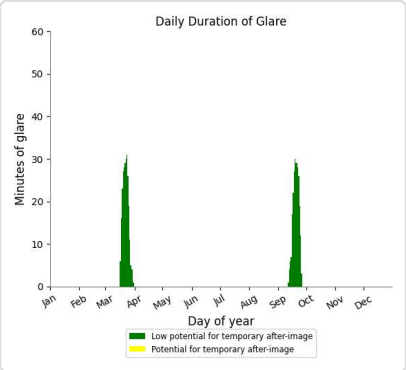
No glare found

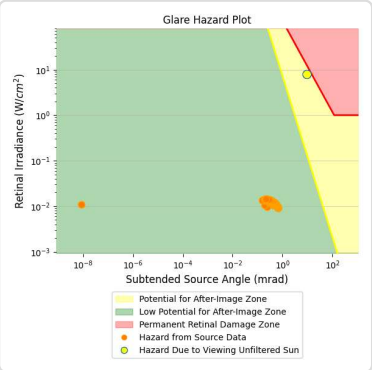
PV array 7: Wythenshawe - Southwest Approach

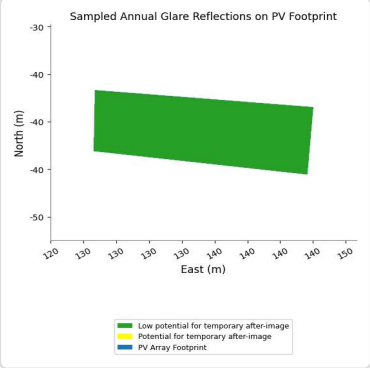
PV array is expected to produce the following glare for this receptor:

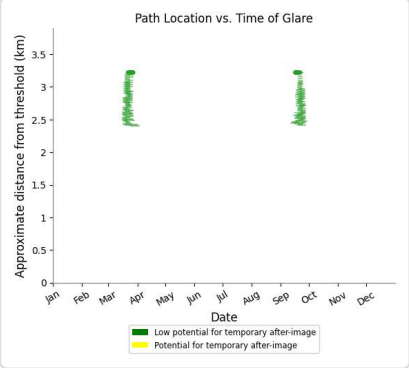
- 520 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

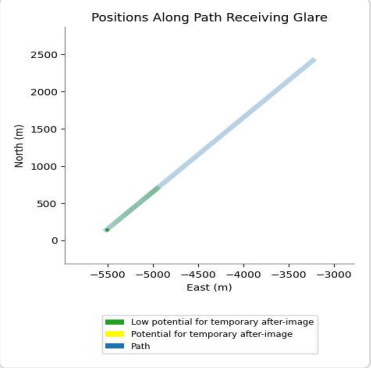


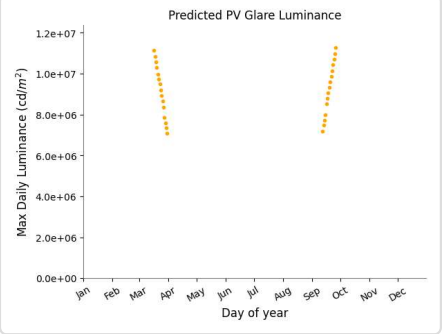


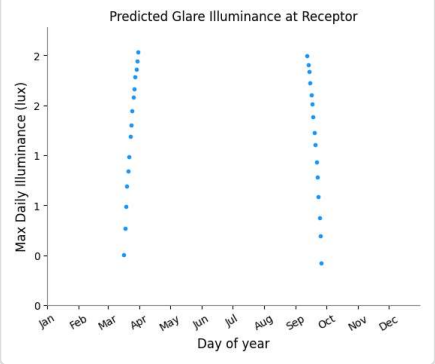








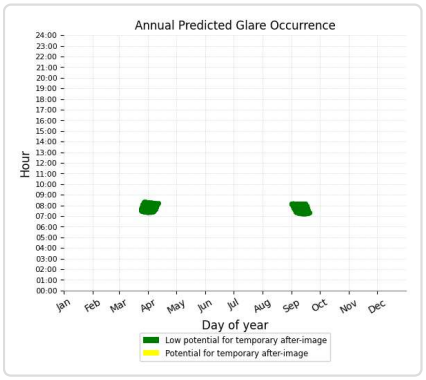


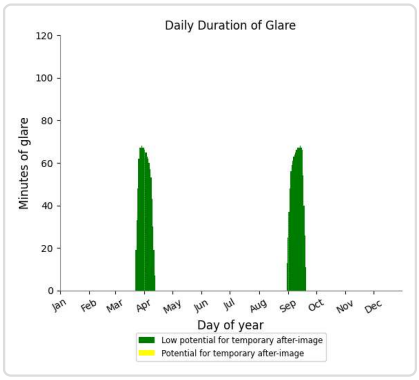


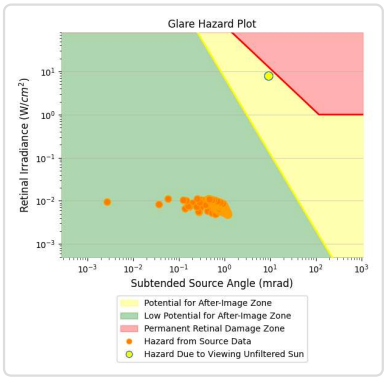
PV array 7: Wythenshawe - West Approach

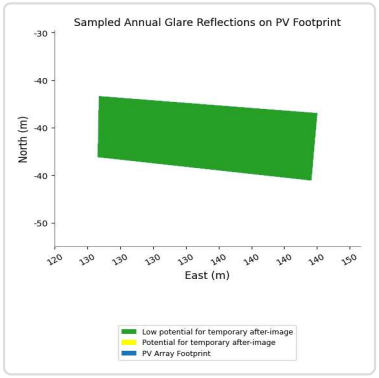
PV array is expected to produce the following glare for this receptor:

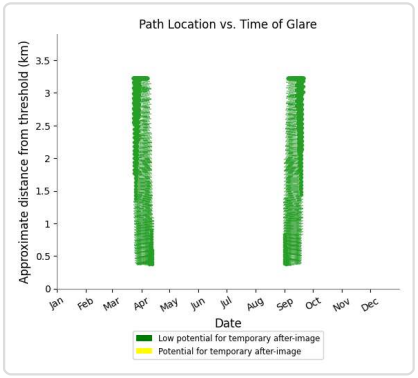
- 2,178 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

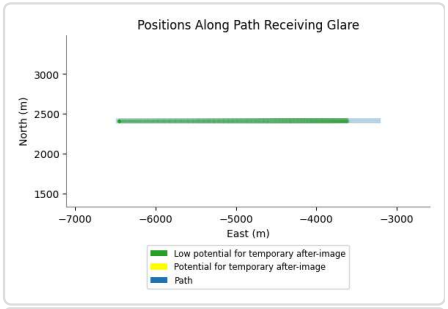


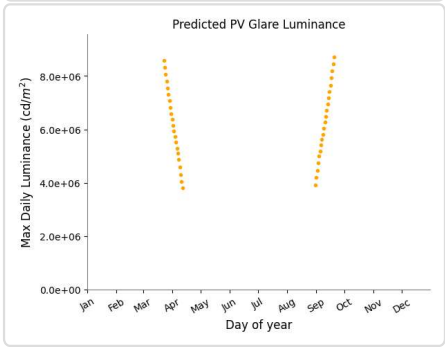


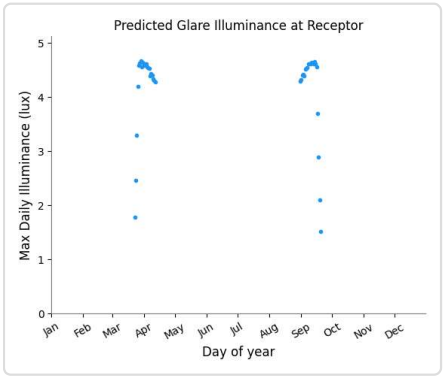












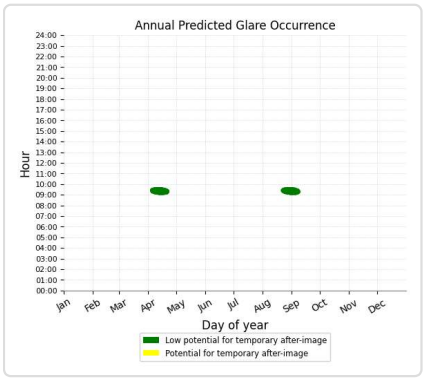
PV array 7: 1-ATCT

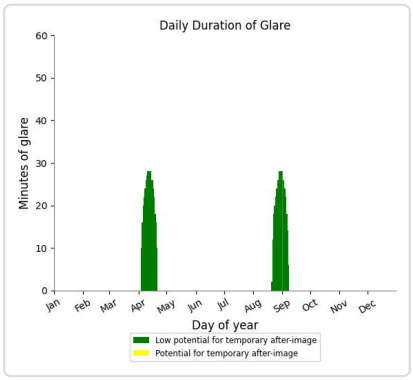
No glare found

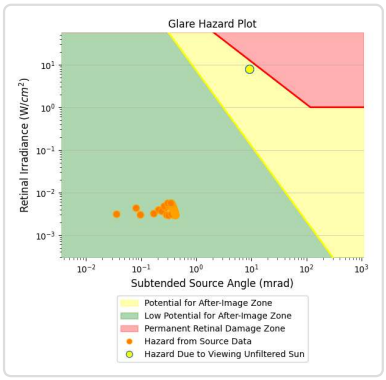
PV array 7: 2-ATCT

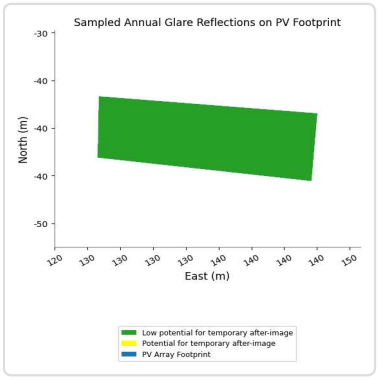
PV array is expected to produce the following glare for this receptor:

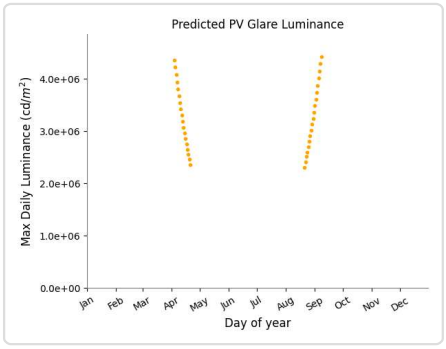
- 797 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

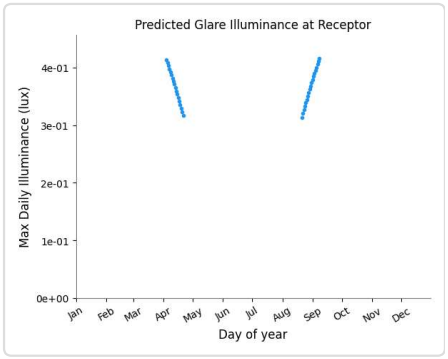








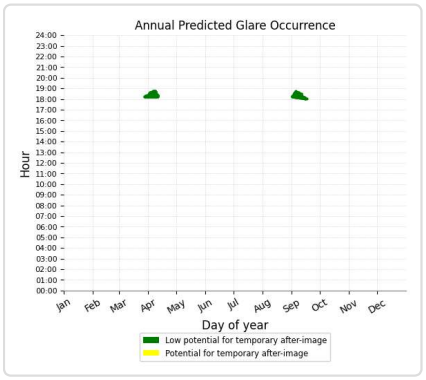


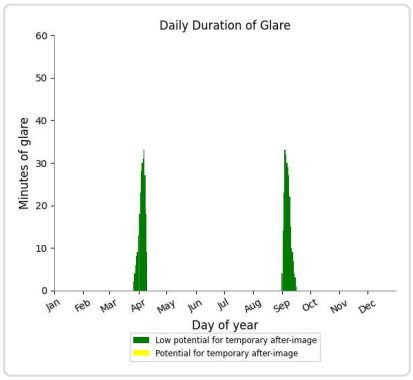


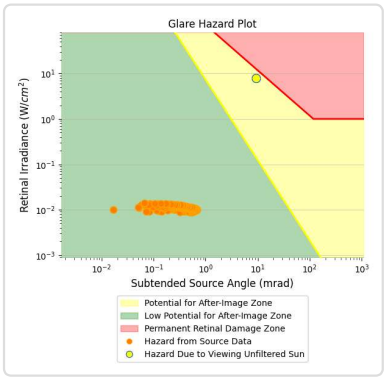
PV array 7: Macclesfield Entry

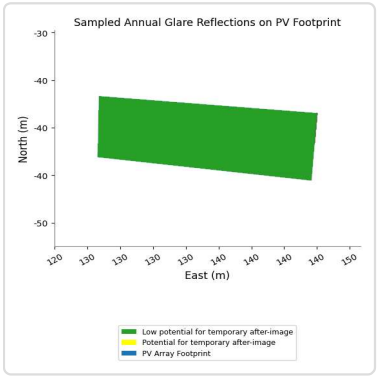
PV array is expected to produce the following glare for this receptor:

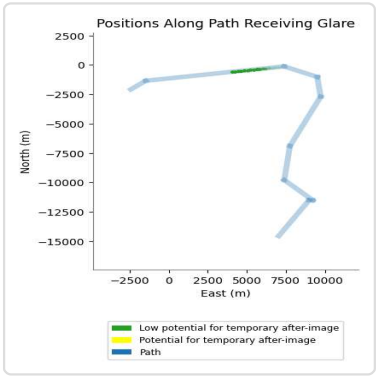
- 522 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

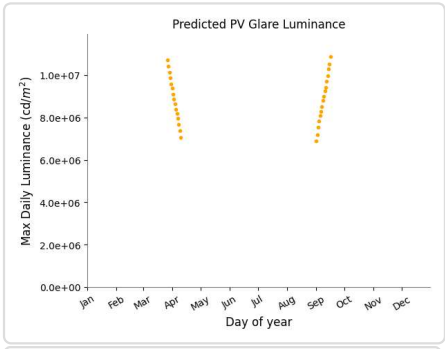


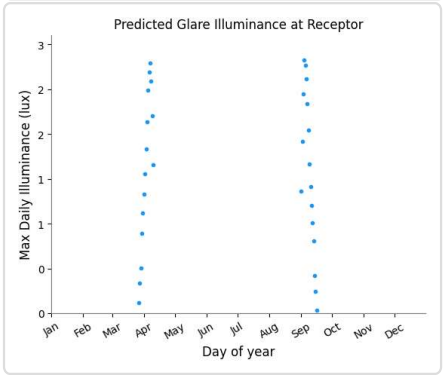












PV array 7: Macclesfield Exit

No glare found

PV array 7: Runway 05L - 10NM

No glare found

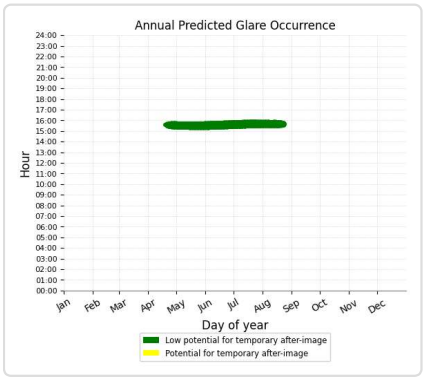
PV array 7: Runway 05R - 10NM

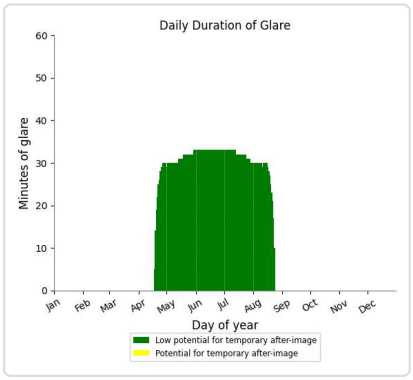
No glare found

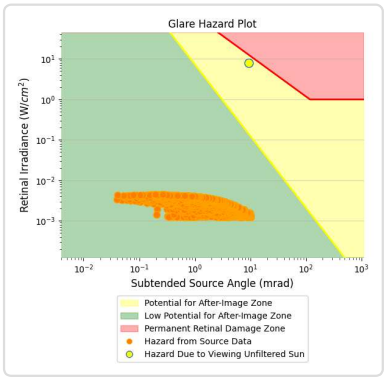
PV array 7: Runway 23L - 10NM

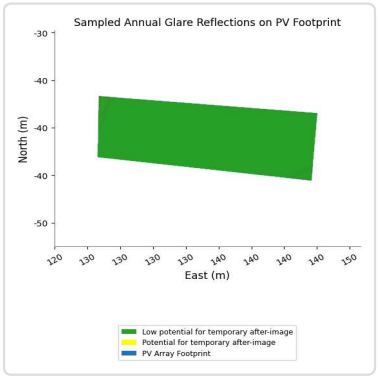
PV array is expected to produce the following glare for this receptor:

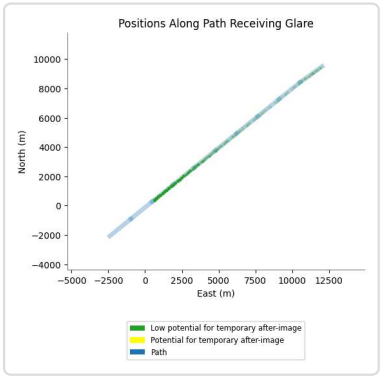
- 3,924 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

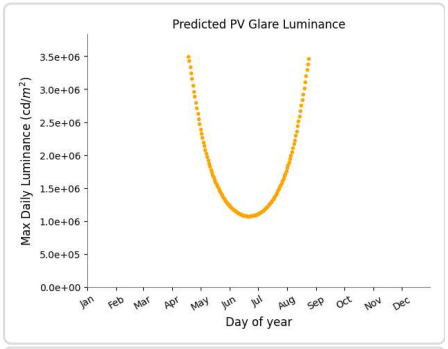


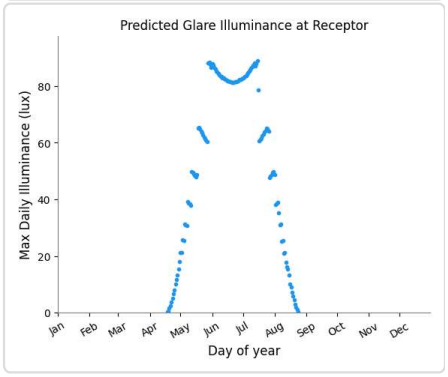








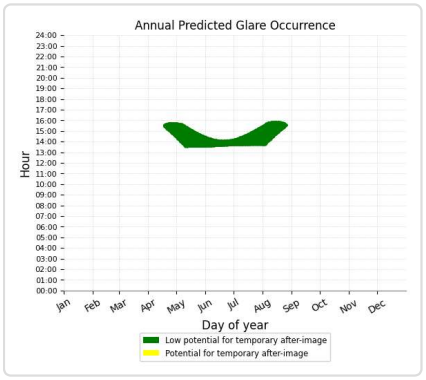


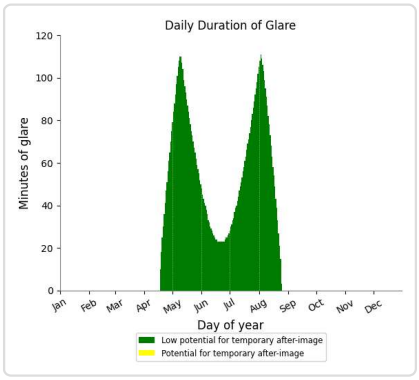


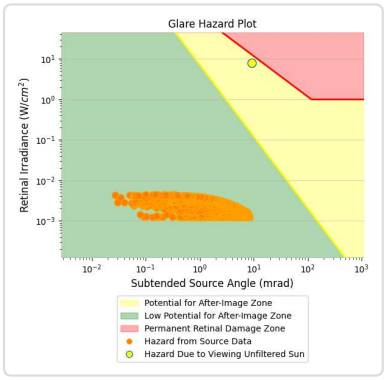
PV array 7: Runway 23R - 10NM

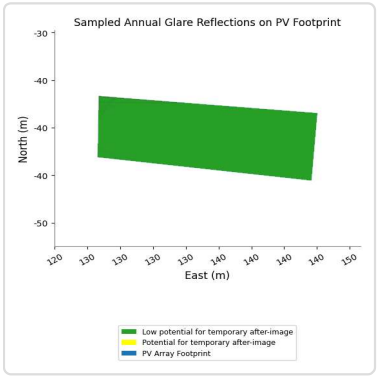
PV array is expected to produce the following glare for this receptor:

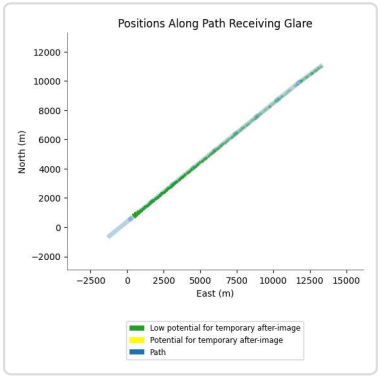
- 7,641 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

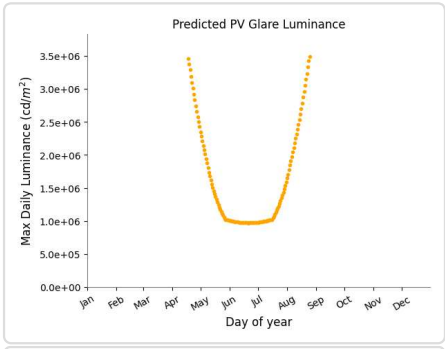


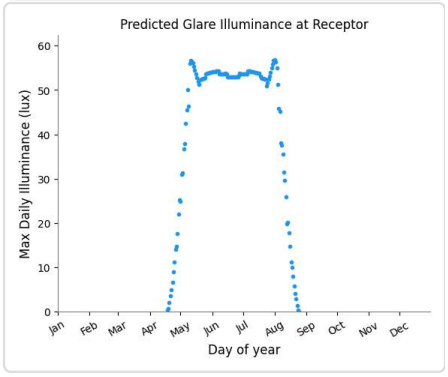












PV array 7: Runway Taxi 1

No glare found

PV array 7: Runway Taxi 2

No glare found

PV array 7: Stretton Entry

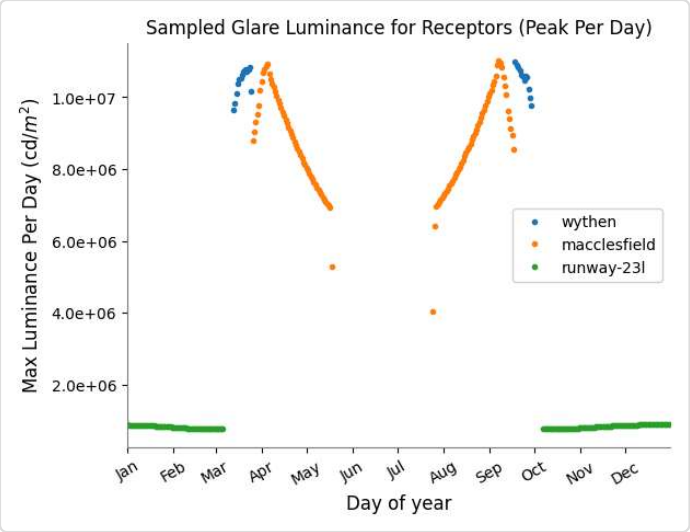
No glare found

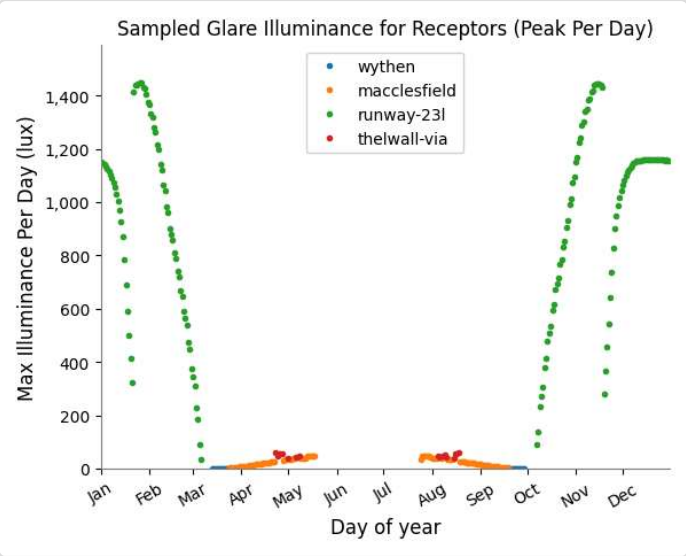
PV array 7: Thelwall Viaduct Exit

No glare found

PV array 8 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)	Peak Luminance (cd/m^2)	Peak Illuminance (lux)
FP: Manchester Airport - Runway 05L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 05L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 23L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 23R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 02	0	0	0	0.0e+00
FP: Manchester Barton - Runway 08L	0	0	0	0.0e+00
FP: Manchester Barton - Runway 08R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 14	0	0	0	0.0e+00
FP: Manchester Barton - Runway 20	0	0	0	0.0e+00
FP: Manchester Barton - Runway 26L	0	0	0	0.0e+00
FP: Manchester Barton - Runway 26R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 32	0	0	0	0.0e+00
FP: Wythenshawe - East Approach	0	0	0	0.0e+00
FP: Wythenshawe - North Approach	0	0	0	0.0e+00
FP: Wythenshawe - Northeast Approach	0	0	0	0.0e+00
FP: Wythenshawe - Northwest Approach	0	0	0	0.0e+00
FP: Wythenshawe - South Approach	0	0	0	0.0e+00
FP: Wythenshawe - Southeast Approach	0	0	0	0.0e+00
FP: Wythenshawe - Southwest Approach	162	0	10,991,561	3
FP: Wythenshawe - West Approach	0	0	0	0.0e+00
OP: 1-ATCT	0	0	0	0.0e+00
OP: 2-ATCT	0	0	0	0.0e+00
Route: Macclesfield Entry	2971	0	11,008,270	46
Route: Macclesfield Exit	0	0	0	0.0e+00
Route: Runway 05L - 10NM	0	0	0	0.0e+00
Route: Runway 05R - 10NM	0	0	0	0.0e+00
Route: Runway 23L - 10NM	6710	0	889,155	1,448
Route: Runway 23R - 10NM	0	0	0	0.0e+00
Route: Runway Taxi 1	0	0	0	0.0e+00
Route: Runway Taxi 2	0	0	0	0.0e+00
Route: Stretton Entry	789	0	8,882,639	0.6
Route: Thelwall Viaduct Exit	640	0	7,929,107	61





PV array 8: Manchester Airport - Runway 05L

No glare found

PV array 8: Manchester Airport - Runway 05L

No glare found

PV array 8: Manchester Airport - Runway 23L

No glare found

PV array 8: Manchester Airport - Runway 23R

No glare found

PV array 8: Manchester Barton - Runway 02

No glare found

PV array 8: Manchester Barton - Runway 08L

No glare found

PV array 8: Manchester Barton - Runway 08R

No glare found

PV array 8: Manchester Barton - Runway 14

No glare found

PV array 8: Manchester Barton - Runway 20

No glare found

PV array 8: Manchester Barton - Runway 26L

No glare found

PV array 8: Manchester Barton - Runway 26R

No glare found

PV array 8: Manchester Barton - Runway 32

No glare found

PV array 8: Wythenshawe - East Approach

No glare found

PV array 8: Wythenshawe - North Approach

No glare found

PV array 8: Wythenshawe - Northeast Approach

No glare found

PV array 8: Wythenshawe - Northwest Approach

No glare found

PV array 8: Wythenshawe - South Approach

No glare found

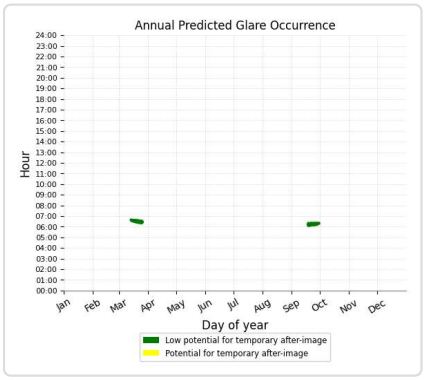
PV array 8: Wythenshawe - Southeast Approach

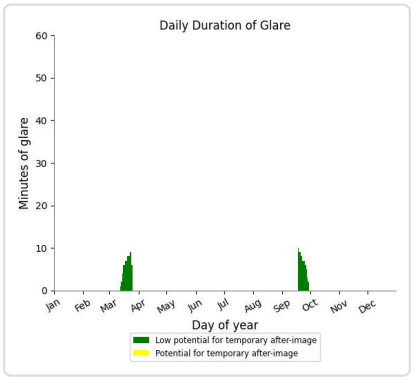
No glare found

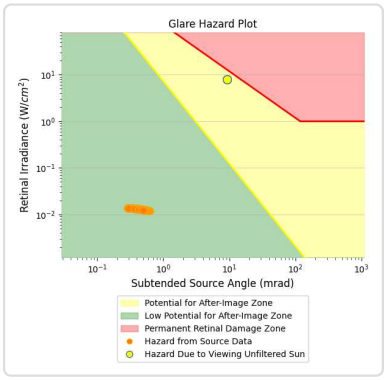
PV array 8: Wythenshawe - Southwest Approach

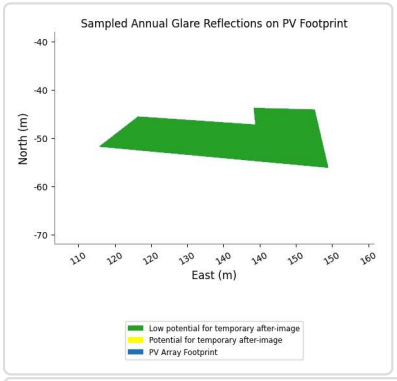
PV array is expected to produce the following glare for this receptor:

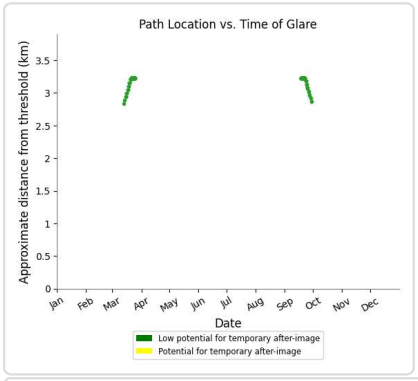
- 162 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

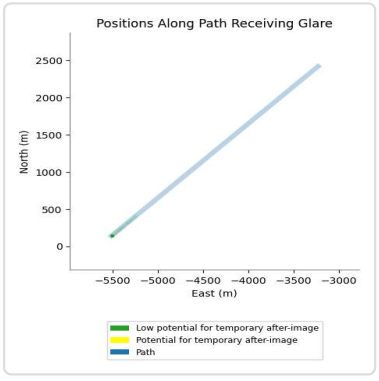


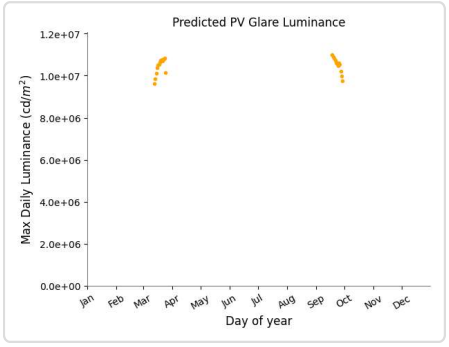


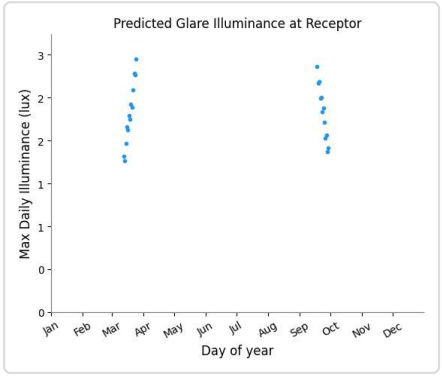












PV array 8: Wythenshawe - West Approach

No glare found

PV array 8: 1-ATCT

No glare found

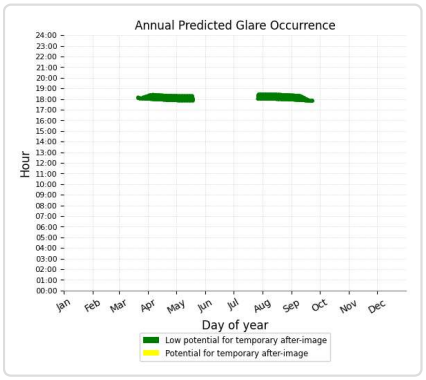
PV array 8: 2-ATCT

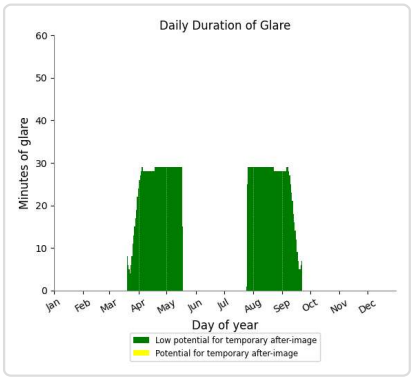
No glare found

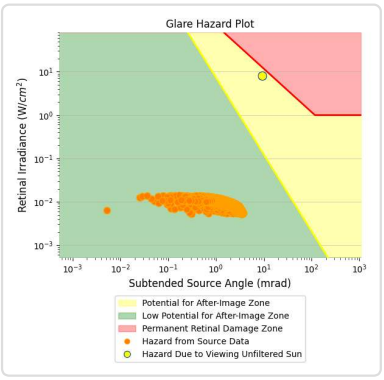
PV array 8: Macclesfield Entry

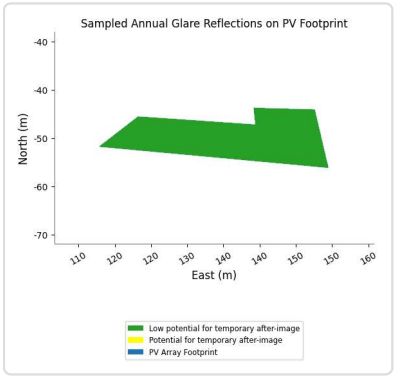
PV array is expected to produce the following glare for this receptor:

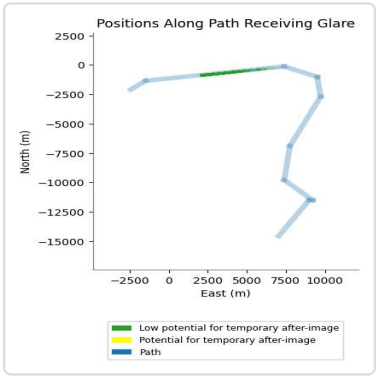
- 2,971 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

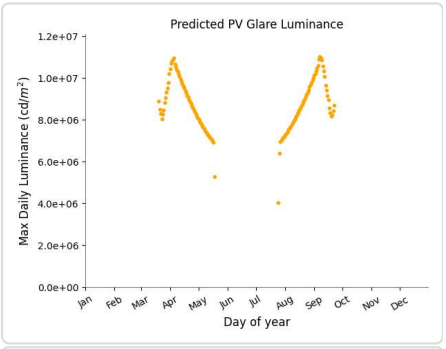


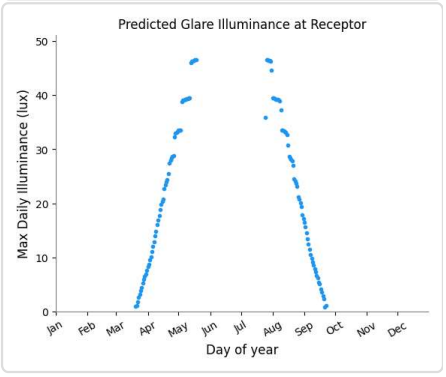












PV array 8: Macclesfield Exit

No glare found

PV array 8: Runway 05L - 10NM

No glare found

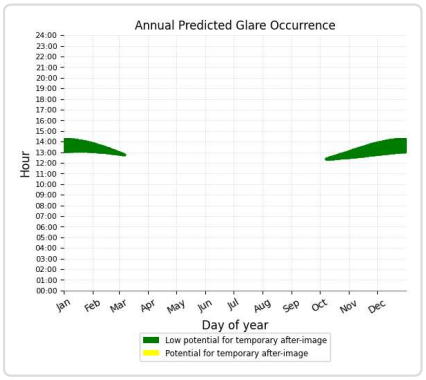
PV array 8: Runway 05R - 10NM

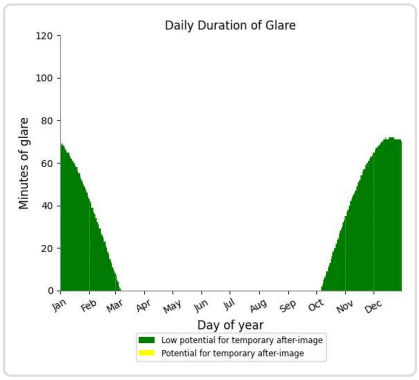
No glare found

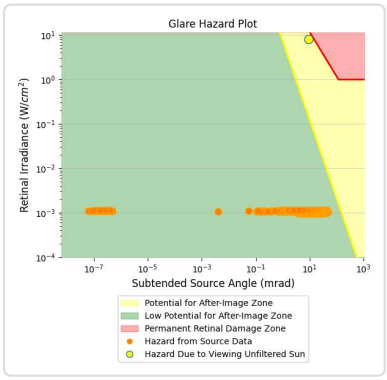
PV array 8: Runway 23L - 10NM

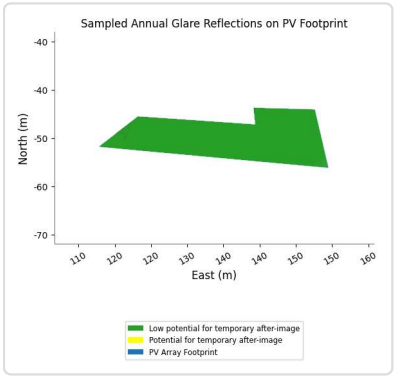
PV array is expected to produce the following glare for this receptor:

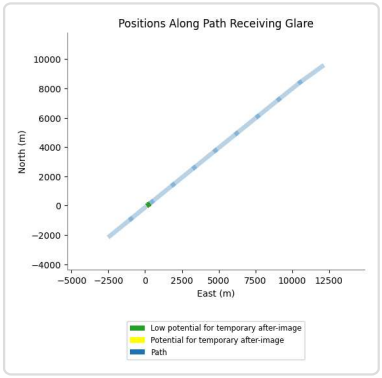
- 6,710 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

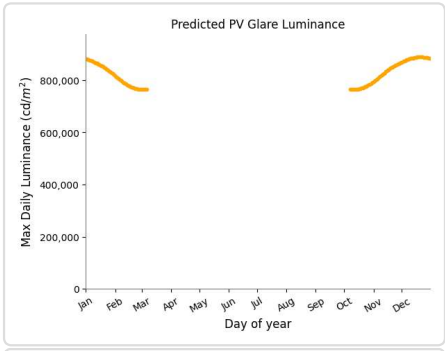


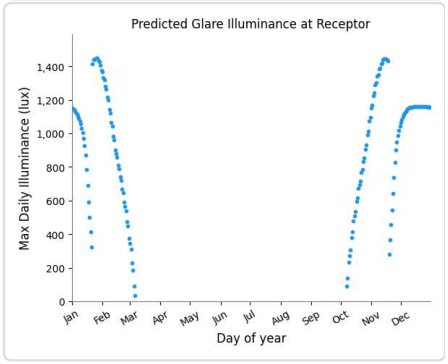












PV array 8: Runway 23R - 10NM

No glare found

PV array 8: Runway Taxi 1

No glare found

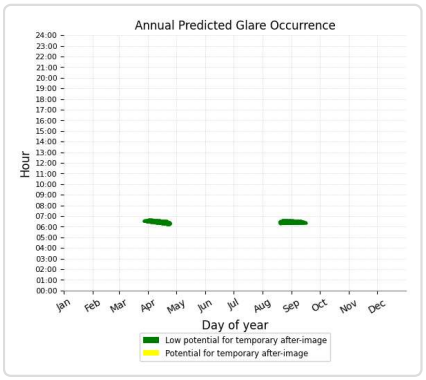
PV array 8: Runway Taxi 2

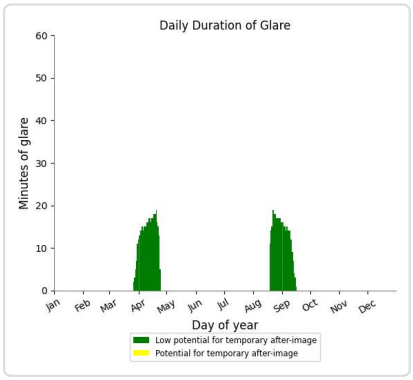
No glare found

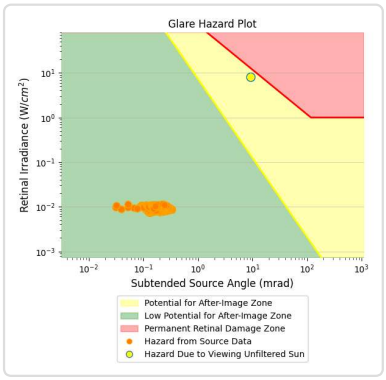
PV array 8: Stretton Entry

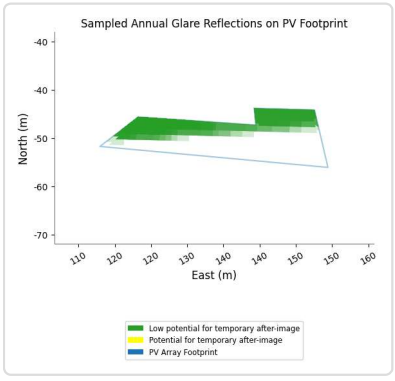
PV array is expected to produce the following glare for this receptor:

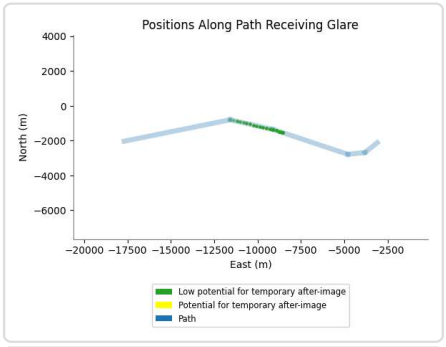
- 789 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

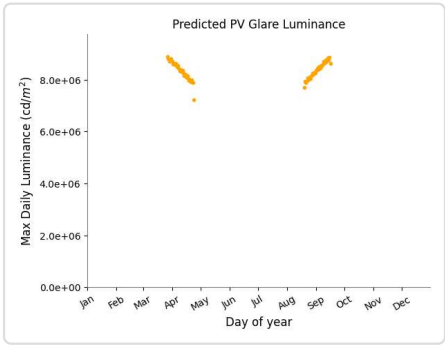


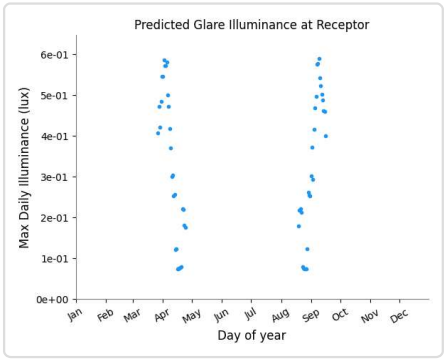








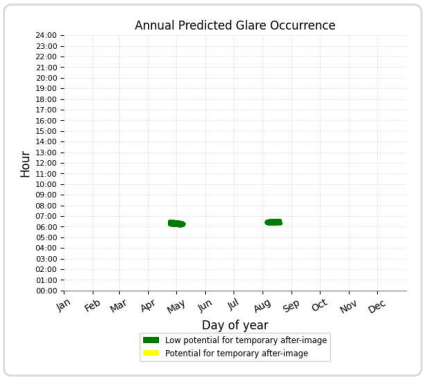


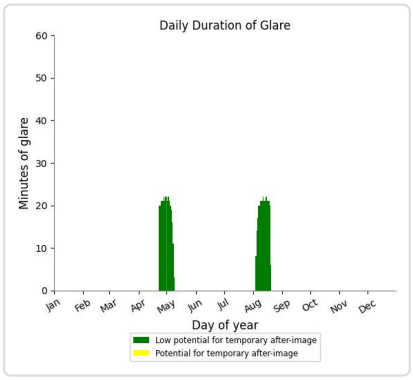


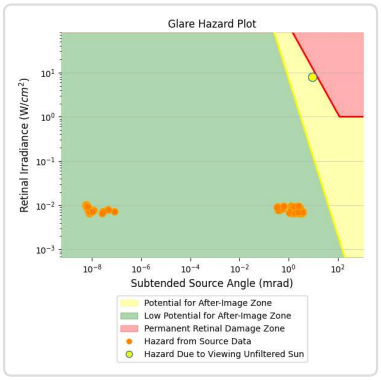
PV array 8: Thelwall Viaduct Exit

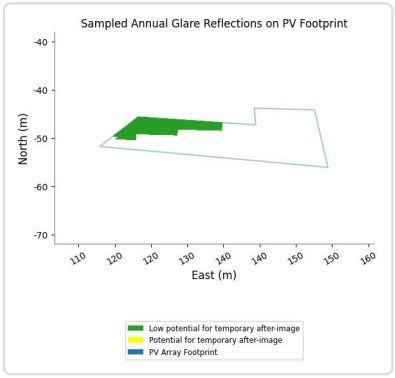
PV array is expected to produce the following glare for this receptor:

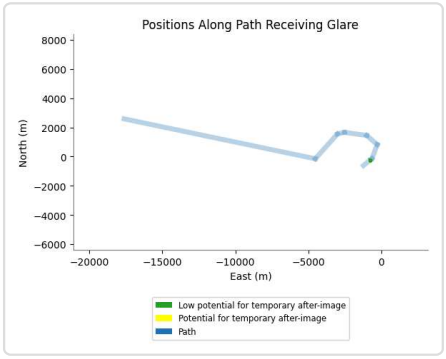
- 640 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

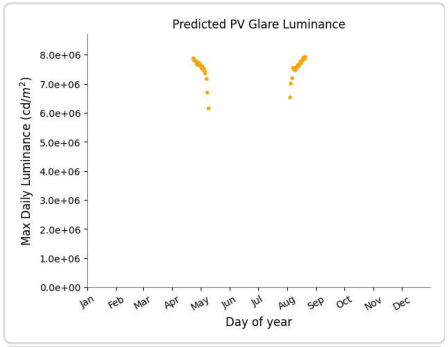


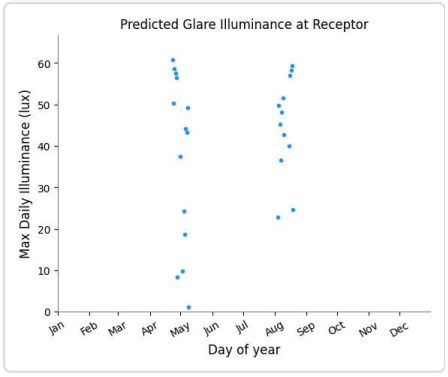








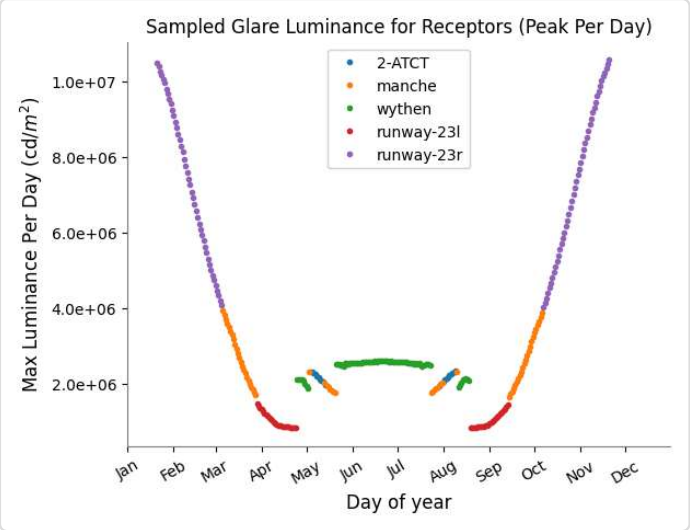


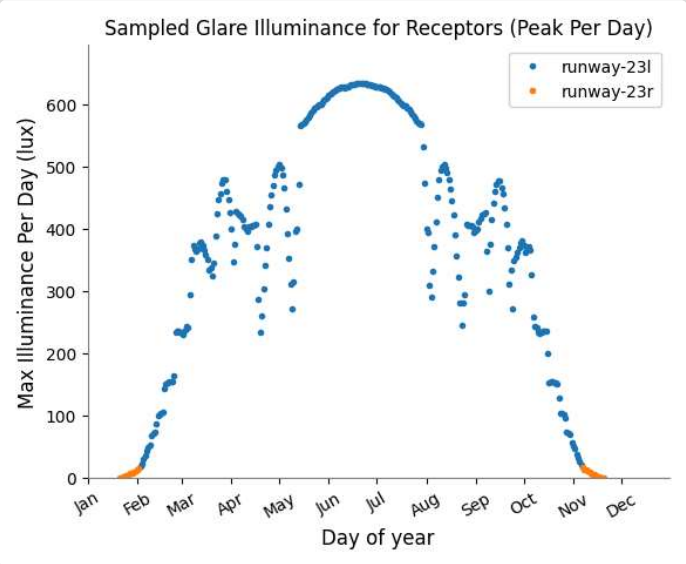


PV array 9 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)	Peak Luminance (cd/m²)	Peak Illuminance (lux)
FP: Manchester Airport - Runway 05L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 05L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 23L	0	0	0	0.0e+00
FP: Manchester Airport - Runway 23R	3531	0	7,915,609	181
FP: Manchester Barton - Runway 02	0	0	0	0.0e+00
FP: Manchester Barton - Runway 08L	0	0	0	0.0e+00
FP: Manchester Barton - Runway 08R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 14	1858	0	2,339,973	0.5
FP: Manchester Barton - Runway 20	0	0	0	0.0e+00
FP: Manchester Barton - Runway 26L	0	0	0	0.0e+00
FP: Manchester Barton - Runway 26R	0	0	0	0.0e+00
FP: Manchester Barton - Runway 32	0	0	0	0.0e+00

FP: Wythenshawe - East Approach	0	0	0	0.0e+00
FP: Wythenshawe - North Approach	1067	0	2,130,025	3
FP: Wythenshawe - Northeast Approach	0	0	0	0.0e+00
FP: Wythenshawe - Northwest Approach	2811	0	2,526,656	6
FP: Wythenshawe - South Approach	0	0	0	0.0e+00
FP: Wythenshawe - Southeast Approach	0	0	0	0.0e+00
FP: Wythenshawe - Southwest Approach	0	0	0	0.0e+00
FP: Wythenshawe - West Approach	970	0	2,601,402	6
OP: 1-ATCT	0	0	0	0.0e+00
OP: 2-ATCT	1410	0	2,339,973	0.5
Route: Macclesfield Entry	0	0	0	0.0e+00
Route: Macclesfield Exit	0	0	0	0.0e+00
Route: Runway 05L - 10NM	0	0	0	0.0e+00
Route: Runway 05R - 10NM	0	0	0	0.0e+00
Route: Runway 23L - 10NM	9092	0	9,775,263	633
Route: Runway 23R - 10NM	4664	0	10,575,116	147
Route: Runway Taxi 1	0	0	0	0.0e+00
Route: Runway Taxi 2	0	0	0	0.0e+00
Route: Stretton Entry	0	0	0	0.0e+00
Route: Thelwall Viaduct Exit	0	0	0	0.0e+00





PV array 9: Manchester Airport - Runway 05L

No glare found

PV array 9: Manchester Airport - Runway 05L

No glare found

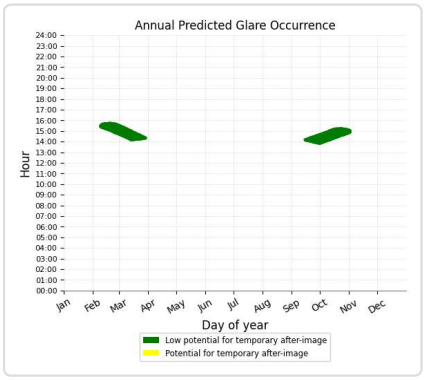
PV array 9: Manchester Airport - Runway 23L

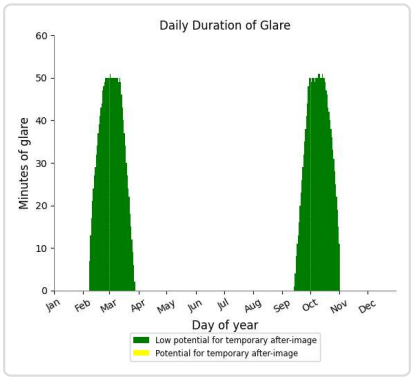
No glare found

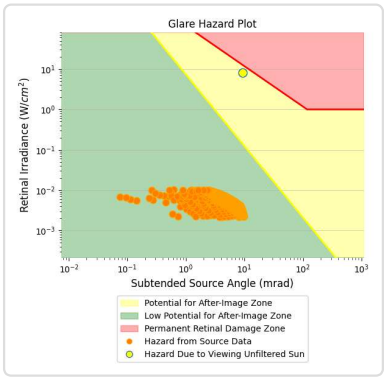
PV array 9: Manchester Airport - Runway 23R

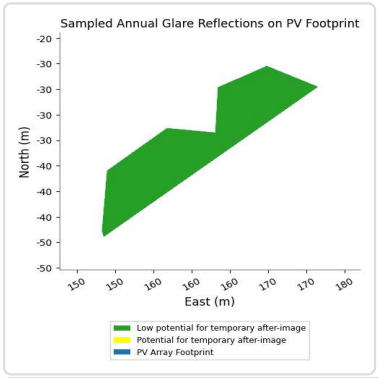
PV array is expected to produce the following glare for this receptor:

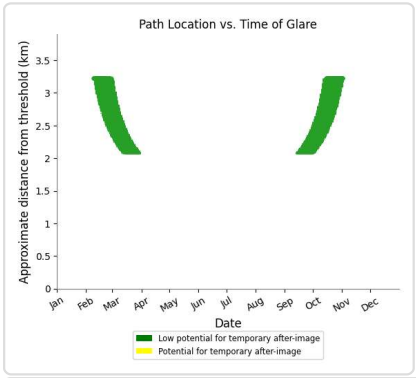
- 3,531 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

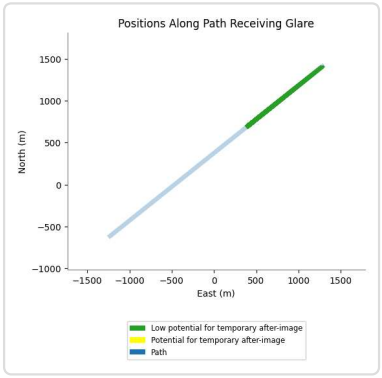


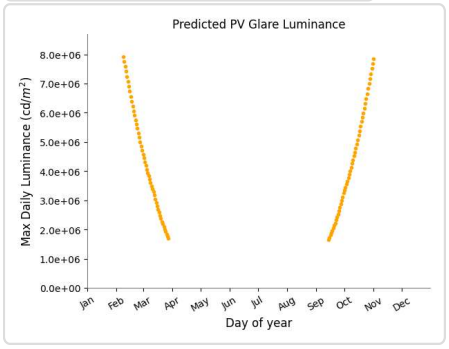


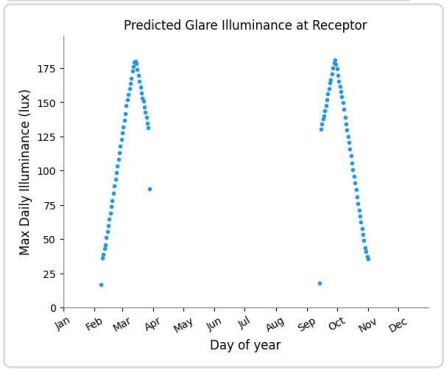












PV array 9: Manchester Barton - Runway 02

No glare found

PV array 9: Manchester Barton - Runway 08L

No glare found

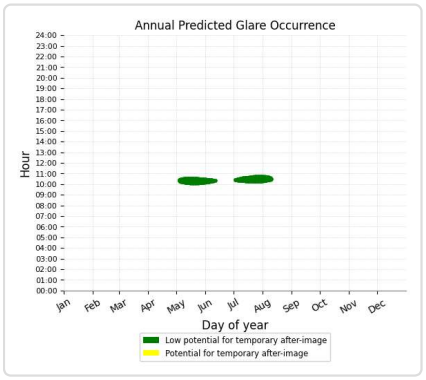
PV array 9: Manchester Barton - Runway 08R

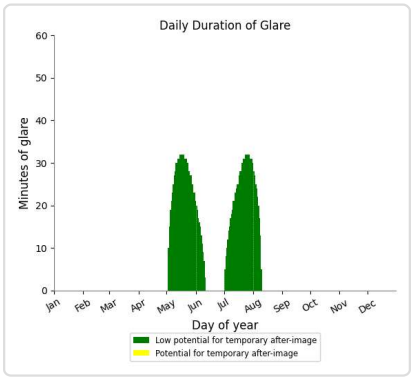
No glare found

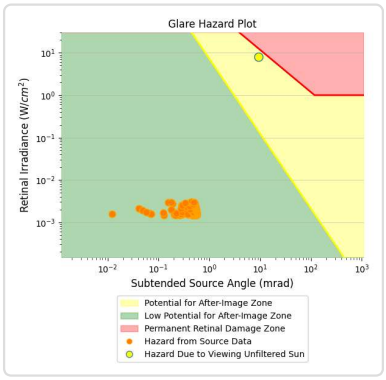
PV array 9: Manchester Barton - Runway 14

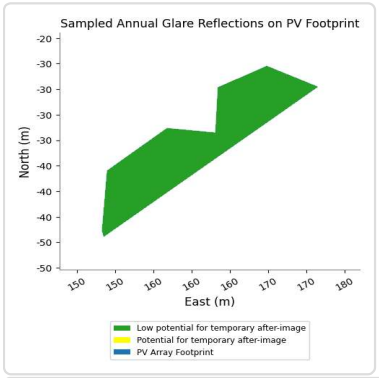
PV array is expected to produce the following glare for this receptor:

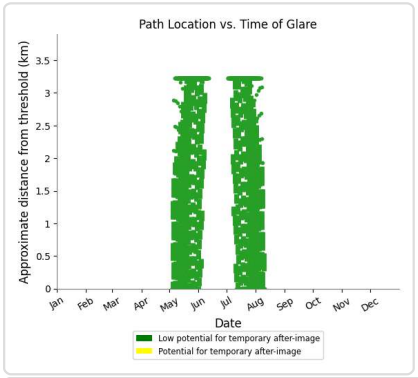
- 1,858 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

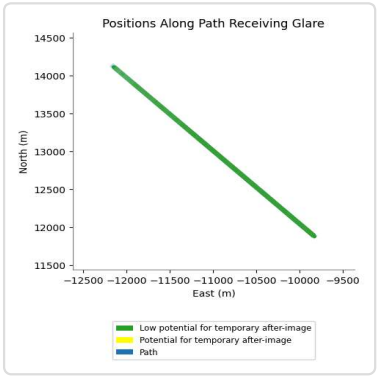


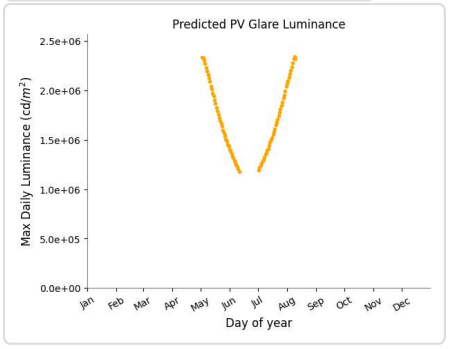


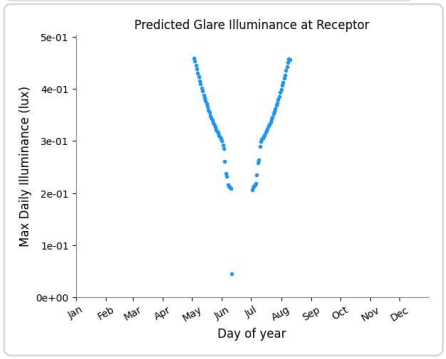












PV array 9: Manchester Barton - Runway 20

No glare found

PV array 9: Manchester Barton - Runway 26L

No glare found

PV array 9: Manchester Barton - Runway 26R

No glare found

PV array 9: Manchester Barton - Runway 32

No glare found

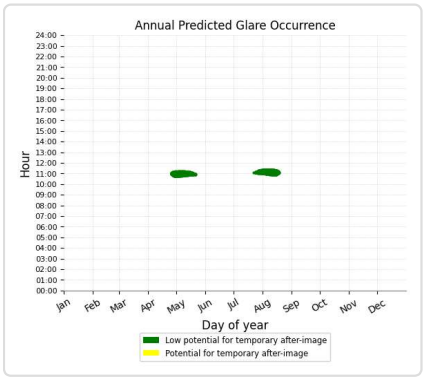
PV array 9: Wythenshawe - East Approach

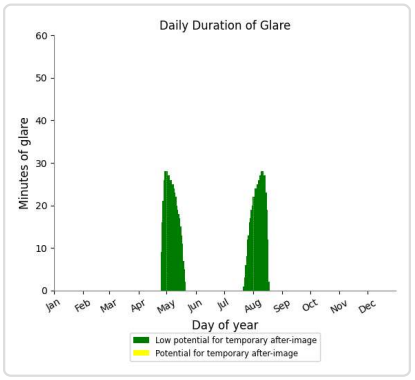
No glare found

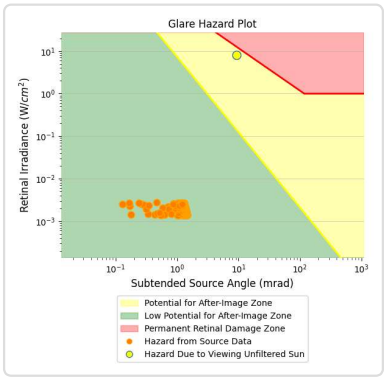
PV array 9: Wythenshawe - North Approach

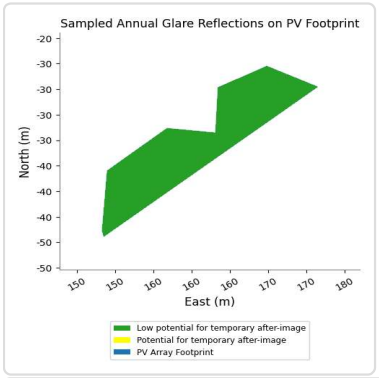
PV array is expected to produce the following glare for this receptor:

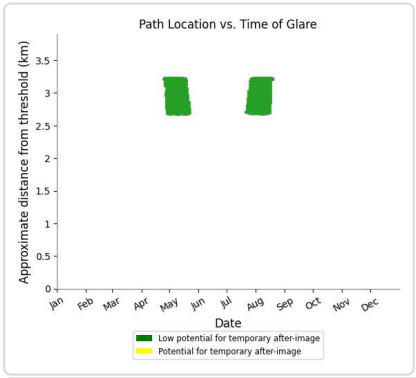
- 1,067 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

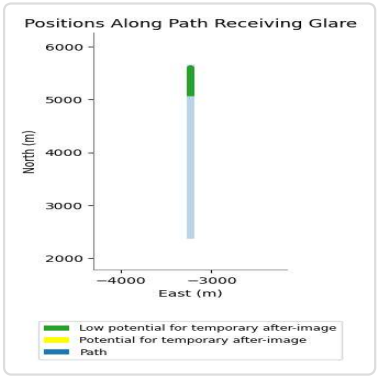


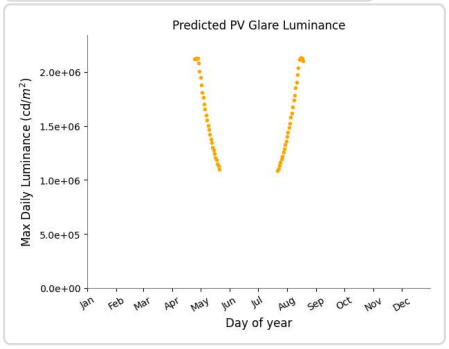


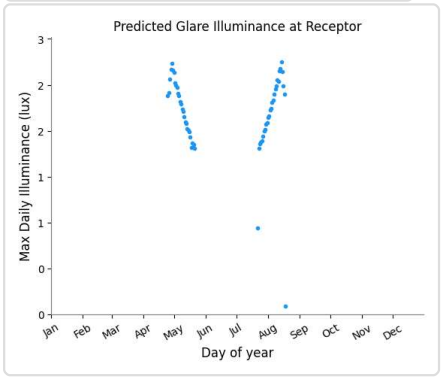












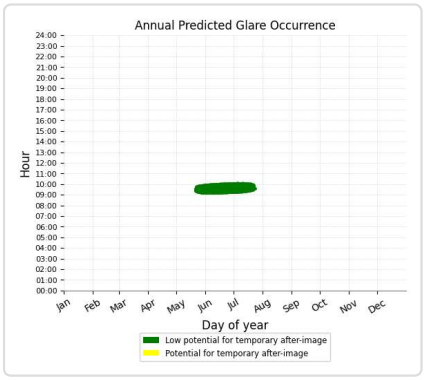
PV array 9: Wythenshawe - Northeast Approach

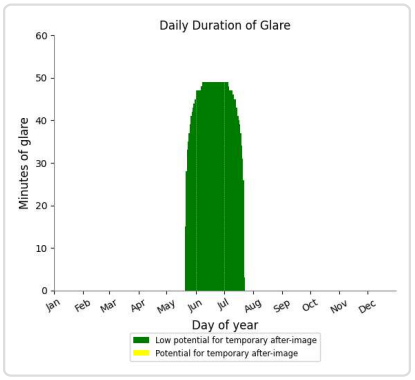
No glare found

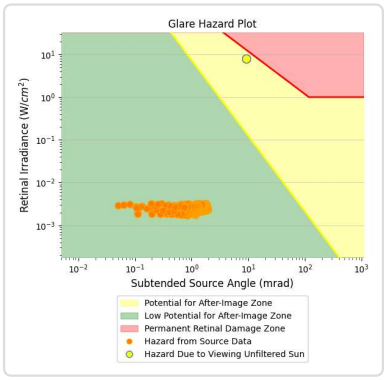
PV array 9: Wythenshawe - Northwest Approach

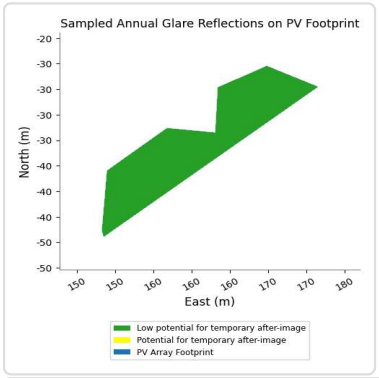
PV array is expected to produce the following glare for this receptor:

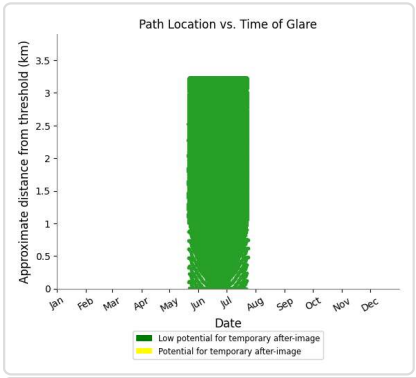
- 2,811 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

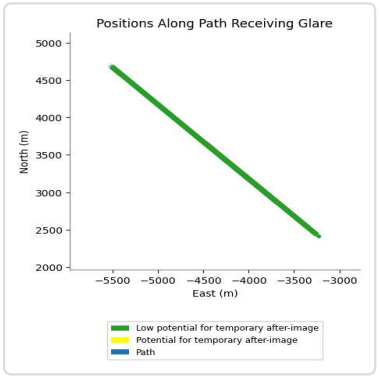


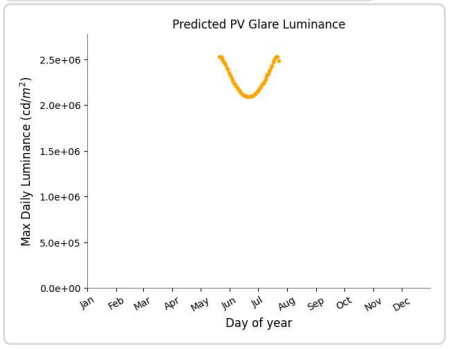


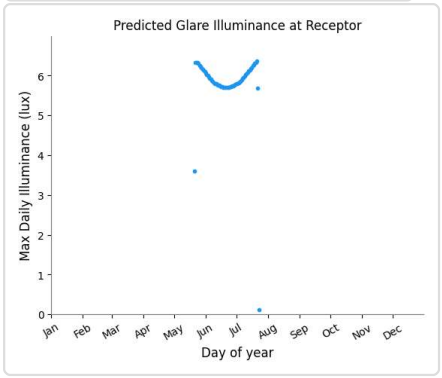












PV array 9: Wythenshawe - South Approach

No glare found

PV array 9: Wythenshawe - Southeast Approach

No glare found

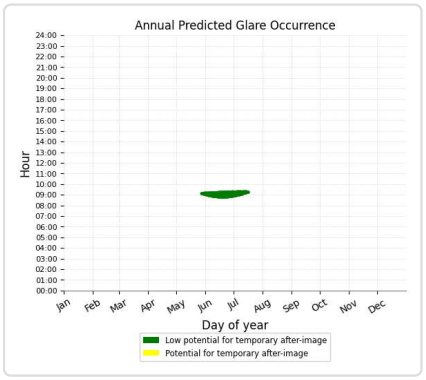
PV array 9: Wythenshawe - Southwest Approach

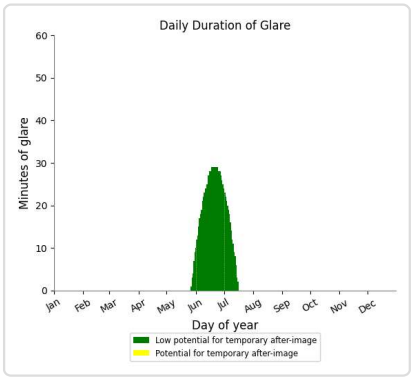
No glare found

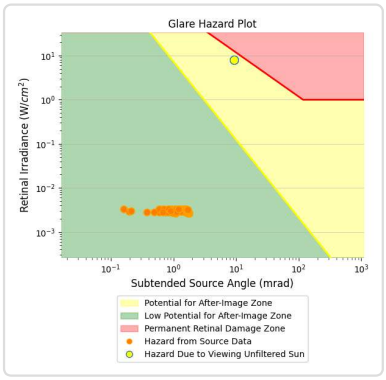
PV array 9: Wythenshawe - West Approach

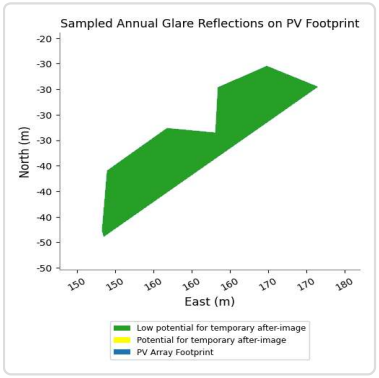
PV array is expected to produce the following glare for this receptor:

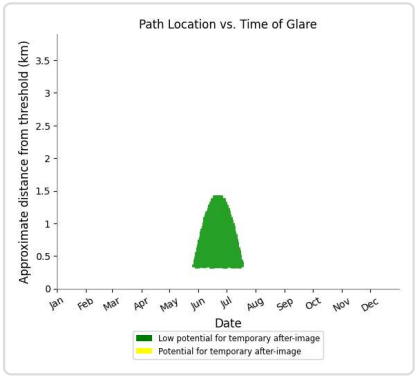
- 970 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

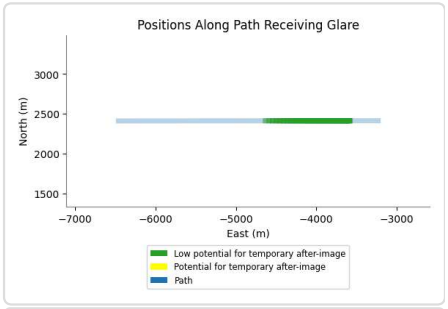


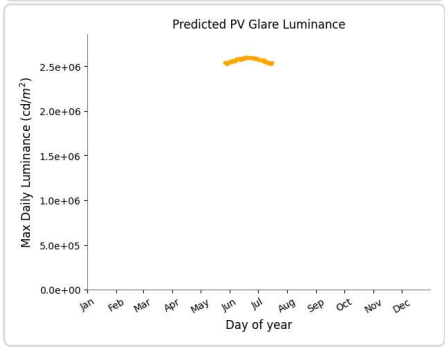


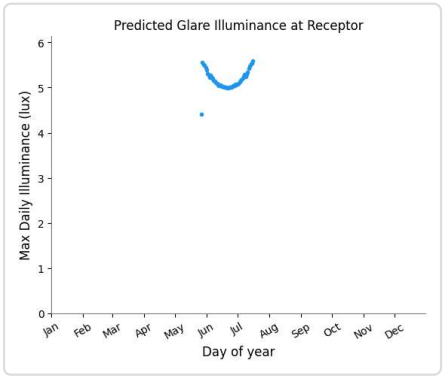












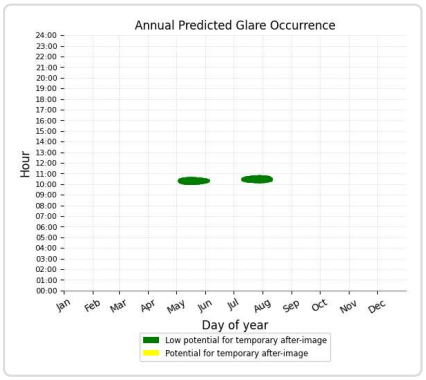
PV array 9: 1-ATCT

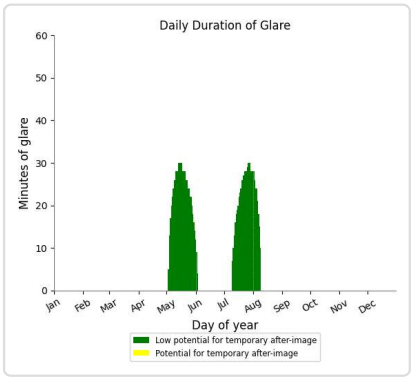
No glare found

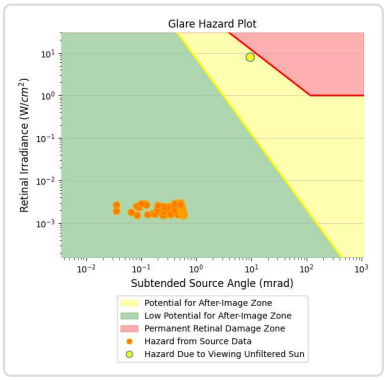
PV array 9: 2-ATCT

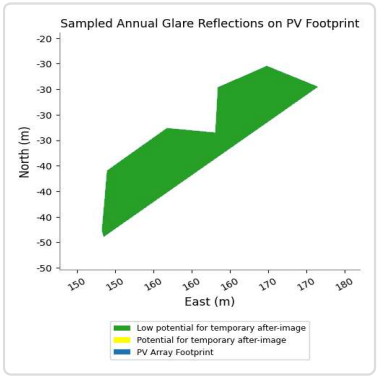
PV array is expected to produce the following glare for this receptor:

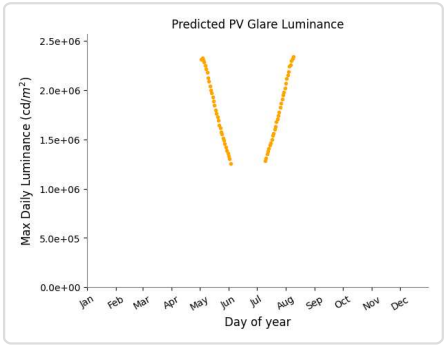
- 1,410 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

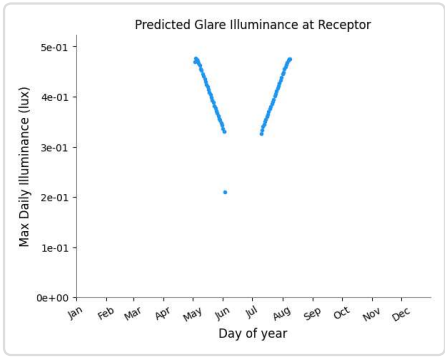












PV array 9: Macclesfield Entry

No glare found

PV array 9: Macclesfield Exit

No glare found

PV array 9: Runway 05L - 10NM

No glare found

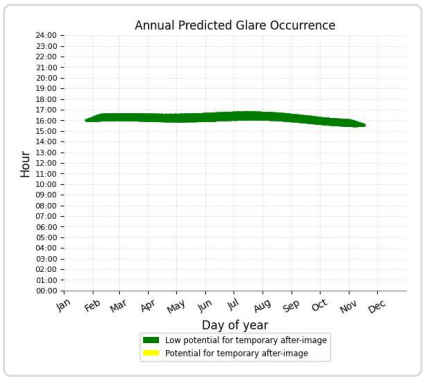
PV array 9: Runway 05R - 10NM

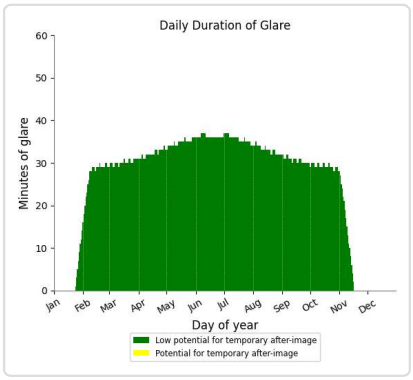
No glare found

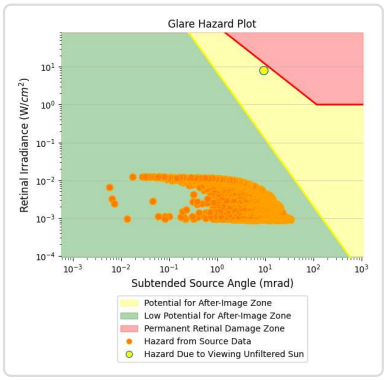
PV array 9: Runway 23L - 10NM

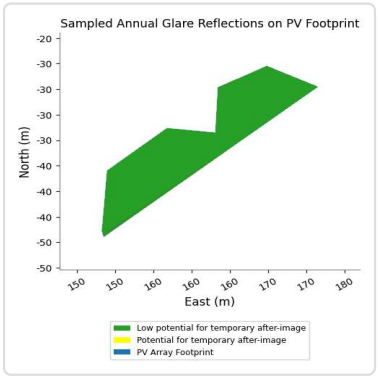
PV array is expected to produce the following glare for this receptor:

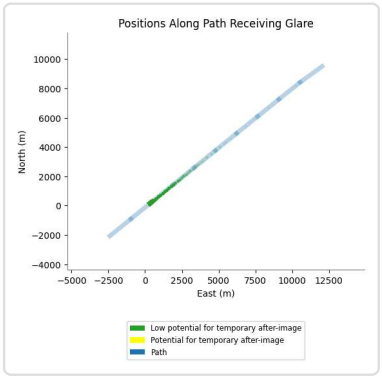
- 9,092 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

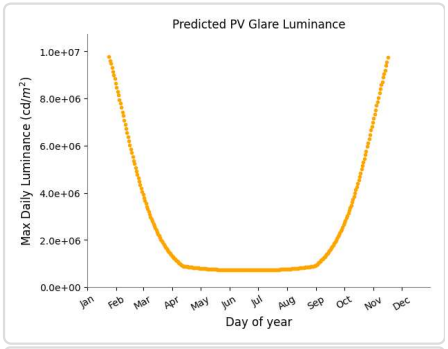


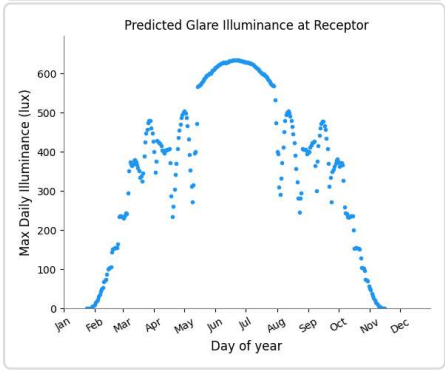








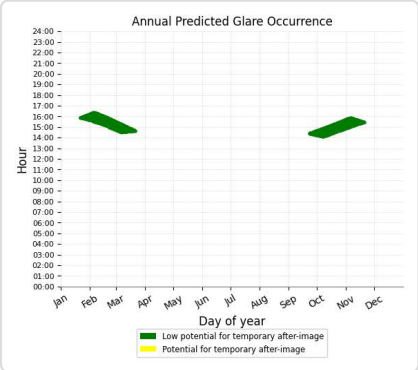


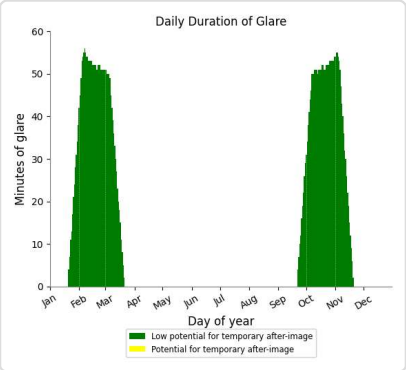


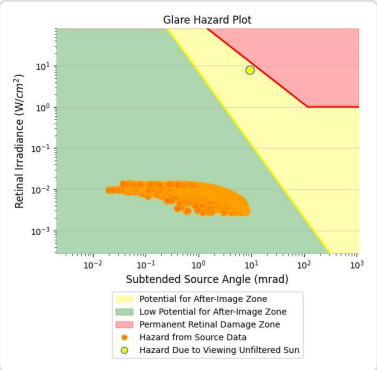
PV array 9: Runway 23R - 10NM

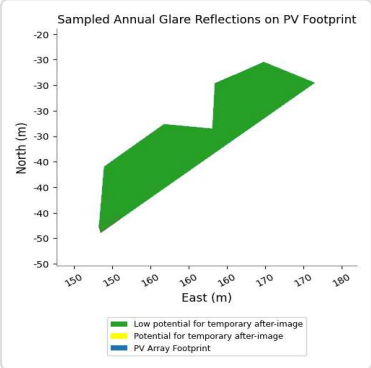
PV array is expected to produce the following glare for this receptor:

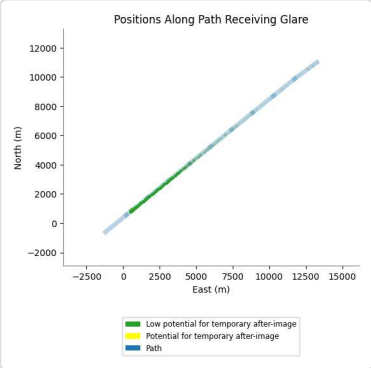
- 4,664 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

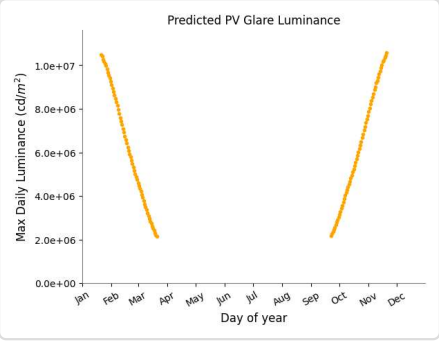


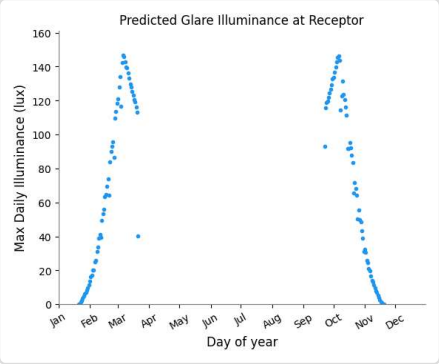












PV array 9: Runway Taxi 1

No glare found

PV array 9: Runway Taxi 2

No glare found

PV array 9: Stretton Entry

No glare found

PV array 9: Thelwall Viaduct Exit

No glare found

Summary of Vertical Surface Glare Analysis

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 geographi 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.
- 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, nc 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.