Manchester Green Rooftop Solar Array

Aviation Receptor Glare Results

Created Oct 29, 2025
Updated Jun 30, 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
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**

Min luminance threshold: **5,000 cd/m²**

Summary of Results

Glare with low potential for temporary after-image predicted
ForgeSolar Radiometric Physics Engine 3.2.0

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Peak Luminance
	deg	deg	min	min	kWh	cd/m^2
PV array 1	25.0	275.0	11,758	0	-	15,497
PV array 10	25.0	138.0	23,290	0	-	17,212
PV array 11	25.0	138.0	23,181	0	-	10,938
PV array 12	25.0	93.0	24,174	0	-	11,798
PV array 2	25.0	93.0	18,625	0	-	6,578
PV array 3	25.0	233.0	12,023	0	-	5,063
PV array 4	25.0	48.0	28,228	0	-	8,765
PV array 5	25.0	226.0	14,118	0	-	9,053
PV array 6	25.0	93.0	20,681	0	-	6,096
PV array 7	25.0	3.0	33,192	0	-	4,676
PV array 8	25.0	183.0	11,256	0	-	32,628
PV array 9	25.0	321.0	35,077	0	-	14,344

Component Data

PV Array(s)

Total PV footprint area: 1,123 m^2

Name: PV array 1
Footprint area: 105 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



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.366722	-2.241087	74.10	13.50	87.60
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	13.50	87.87

Name: PV array 10
Footprint area: 101 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



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	13.50	86.54
3	53.366182	-2.238837	73.83	13.50	87.33
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: 55 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



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	13.50	85.62
4	53.366338	-2.238535	72.49	13.50	85.99

Name: PV array 12
Footprint area: 52 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



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	13.50	85.59
4	53.366502	-2.238407	71.80	13.50	85.30

Name: PV array 2
Footprint area: 60 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



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	13.50	87.86
3	53.366604	-2.240856	74.39	13.50	87.89
4	53.366689	-2.240838	74.19	13.50	87.69

Name: PV array 3
Footprint area: 87 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



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	13.50	87.90
3	53.366451	-2.240966	74.64	13.50	88.14
4	53.366491	-2.240875	74.62	13.50	88.12

Name: PV array 4
Footprint area: 112 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



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	13.50	88.43
4	53.366468	-2.240725	74.76	13.50	88.26
5	53.366466	-2.240773	74.73	13.50	88.23
6	53.366512	-2.240772	74.63	13.50	88.13
7	53.366583	-2.240887	74.42	13.50	87.92

Name: PV array 5
Footprint area: 53 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



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	13.50	88.65
4	53.366366	-2.240856	74.89	13.50	88.39

Name: PV array 6
Footprint area: 51 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



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	13.50	88.91
4	53.366424	-2.240445	75.04	13.50	88.54

Name: PV array 7
Footprint area: 88 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



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	13.50	87.85
3	53.366337	-2.238984	73.77	13.50	87.27
4	53.366287	-2.238991	73.95	13.50	87.45

Name: PV array 8
Footprint area: 227 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



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	13.50	87.36
4	53.366206	-2.239411	75.02	13.50	88.52
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: 131 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



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	13.50	85.93
4	53.366427	-2.238702	72.69	13.50	86.19
5	53.366379	-2.238706	72.87	13.50	86.37
6	53.366384	-2.238782	73.07	13.50	86.57
7	53.366339	-2.238876	73.48	13.50	86.98
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: 51.0 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	53.332104	-2.310398	56.50	15.24	71.74
2-mile point	53.313924	-2.348090	49.26	191.17	240.42



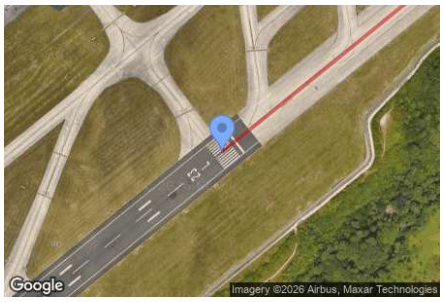
Name: Manchester Airport - Runway 05L
Description:
Threshold height : 15 m
Direction: 51.1 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

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 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: 50.0 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: 50.0 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: 50.0 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: 50.0 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: 50.0 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: 50.0 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: 50.0 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: 50.0 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: 50.0 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: 50.0 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: 50.0 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: 50.0 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: 50.0 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: 50.0 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: 50.0 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: 50.0 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: 50.0 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



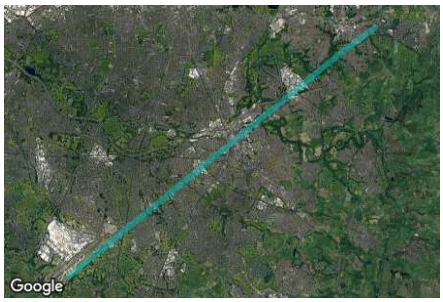
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.245030	-2.506330	34.93	1017.07	1052.00
2	53.255573	-2.485457	30.26	924.64	954.90
3	53.265800	-2.463563	32.00	825.80	857.80
4	53.276013	-2.441660	36.04	724.66	760.70
5	53.286223	-2.419745	47.28	616.32	663.60
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	Data File
	deg	deg	min	min	kWh	cd/m^2	
PV array 1	25.0	275.0	11,758	0	-	15,497	-
PV array 10	25.0	138.0	23,290	0	-	17,212	-
PV array 11	25.0	138.0	23,181	0	-	10,938	-
PV array 12	25.0	93.0	24,174	0	-	11,798	-
PV array 2	25.0	93.0	18,625	0	-	6,578	-
PV array 3	25.0	233.0	12,023	0	-	5,063	-
PV array 4	25.0	48.0	28,228	0	-	8,765	-
PV array 5	25.0	226.0	14,118	0	-	9,053	-
PV array 6	25.0	93.0	20,681	0	-	6,096	-
PV array 7	25.0	3.0	33,192	0	-	4,676	-
PV array 8	25.0	183.0	11,256	0	-	32,628	-
PV array 9	25.0	321.0	35,077	0	-	14,344	-

Distinct glare per month

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

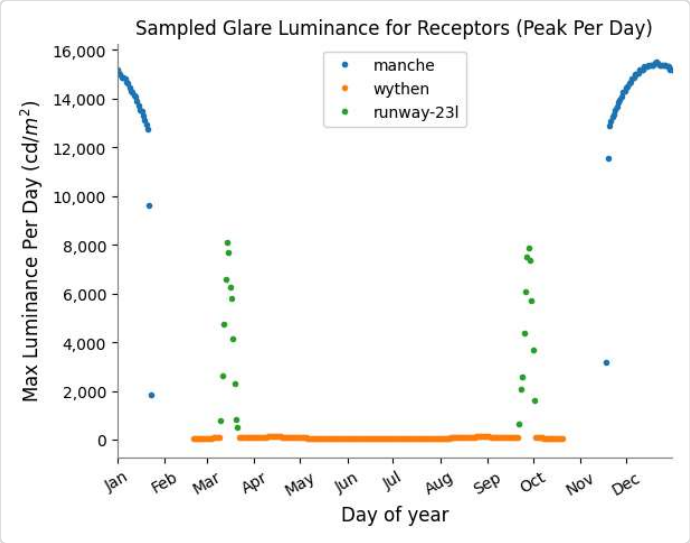
PV	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pv-array-1 (green)	369	137	815	649	692	759	742	669	732	439	144	867
pv-array-1 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-10 (green)	5793	2914	69	0	565	926	906	10	0	1389	6114	3500
pv-array-10 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-11 (green)	5630	3004	96	0	572	951	923	10	0	1479	6036	3286
pv-array-11 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-12 (green)	1265	1092	1124	4186	2216	0	685	4858	1560	1177	1210	1316
pv-array-12 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-2 (green)	1347	1157	1181	1055	1235	1279	1280	1148	1084	1244	1281	1403
pv-array-2 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-3 (green)	638	559	655	133	665	495	694	223	527	633	621	677
pv-array-3 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-4 (green)	1391	67	144	1903	2548	2522	2672	2217	702	0	980	1543
pv-array-4 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-5 (green)	743	1497	1006	207	464	0	199	471	447	1675	932	591
pv-array-5 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-6 (green)	1308	1125	1147	1318	1740	1909	1850	1539	1100	1209	1251	1368
pv-array-6 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-7 (green)	0	0	757	2730	4857	5045	5583	3011	1771	0	0	0
pv-array-7 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-8 (green)	1828	733	312	1356	623	0	171	1340	752	430	1509	2173
pv-array-8 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-9 (green)	254	2025	2450	1915	3259	3562	3741	1982	2387	2453	740	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)
FP: Manchester Airport - Runway 05L	0	0	0
FP: Manchester Airport - Runway 05L	0	0	0
FP: Manchester Airport - Runway 23L	0	0	0
FP: Manchester Airport - Runway 23R	1380	0	15,497
FP: Manchester Barton - Runway 02	0	0	0
FP: Manchester Barton - Runway 08L	803	0	9
FP: Manchester Barton - Runway 08R	832	0	9
FP: Manchester Barton - Runway 14	591	0	11
FP: Manchester Barton - Runway 20	988	0	11
FP: Manchester Barton - Runway 26L	0	0	0
FP: Manchester Barton - Runway 26R	0	0	0
FP: Manchester Barton - Runway 32	0	0	0
FP: Wythenshawe - East Approach	0	0	0
FP: Wythenshawe - North Approach	2580	0	124
FP: Wythenshawe - Northeast Approach	0	0	0
FP: Wythenshawe - Northwest Approach	946	0	124
FP: Wythenshawe - South Approach	0	0	0
FP: Wythenshawe - Southeast Approach	0	0	0
FP: Wythenshawe - Southwest Approach	0	0	0
FP: Wythenshawe - West Approach	3078	0	130
OP: 1-ATCT	0	0	0
OP: 2-ATCT	449	0	11
Route: Macclesfield Entry	0	0	0
Route: Macclesfield Exit	0	0	0
Route: Runway 05L - 10NM	0	0	0
Route: Runway 05R - 10NM	0	0	0
Route: Runway 23L - 10NM	111	0	8,094
Route: Runway 23R - 10NM	0	0	0
Route: Runway Taxi 1	0	0	0
Route: Runway Taxi 2	0	0	0
Route: Stretton Entry	0	0	0
Route: Thelwall Viaduct Exit	0	0	0



PV array 1: Manchester Airport - Runway 05L

No glare found

PV array 1: Manchester Airport - Runway 05L

No glare found

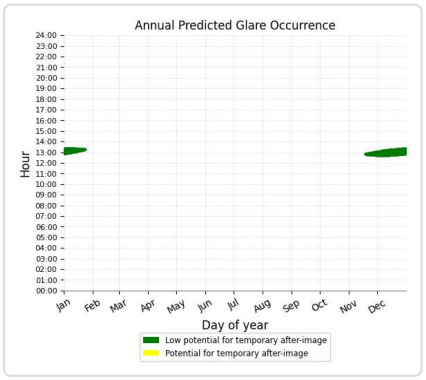
PV array 1: Manchester Airport - Runway 23L

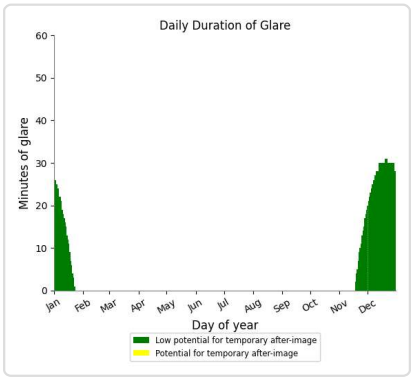
No glare found

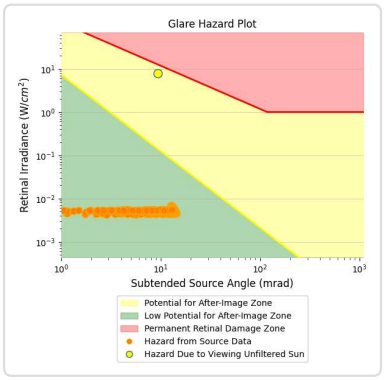
PV array 1: Manchester Airport - Runway 23R

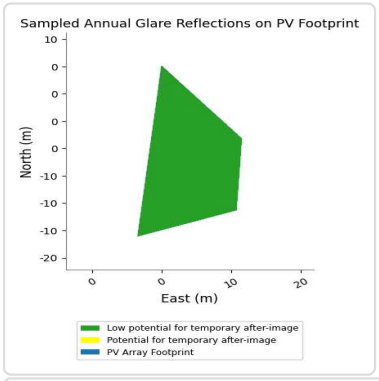
PV array is expected to produce the following glare for this receptor:

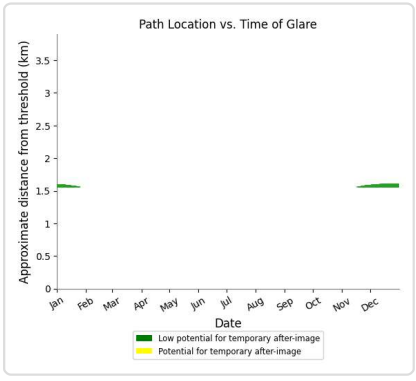
- 1,380 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

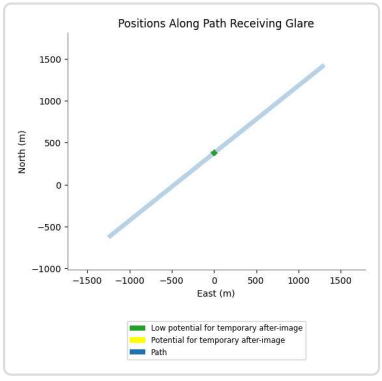


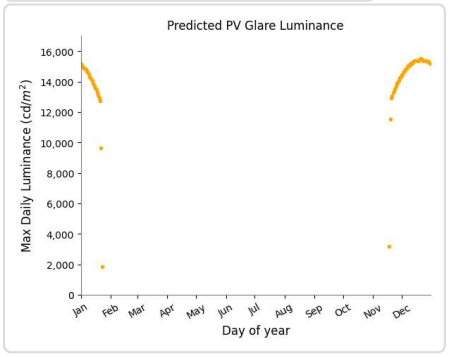












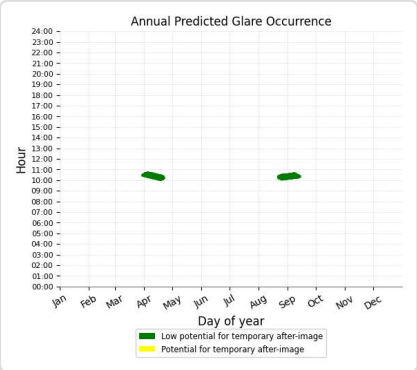
PV array 1: Manchester Barton - Runway 02

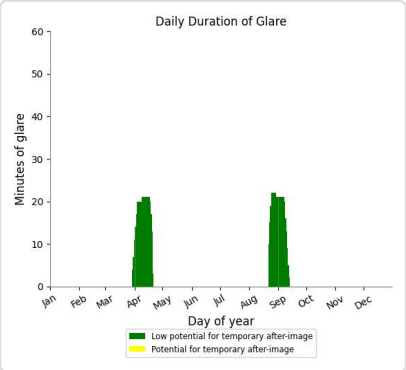
No glare found

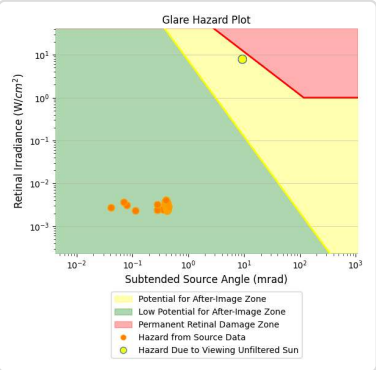
PV array 1: Manchester Barton - Runway 08L

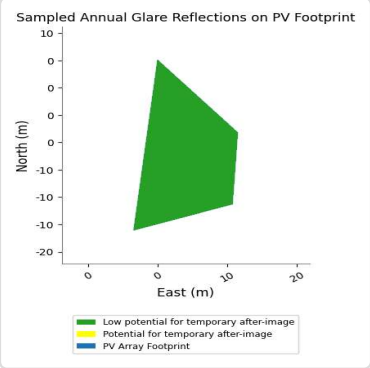
PV array is expected to produce the following glare for this receptor:

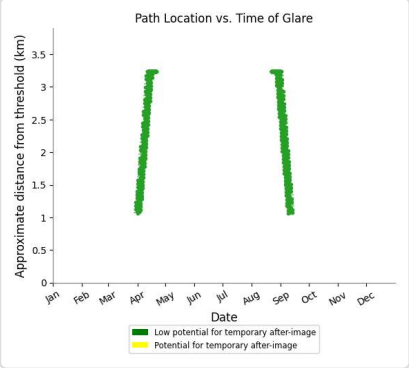
- 803 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

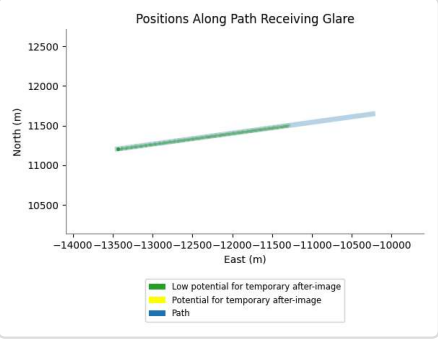


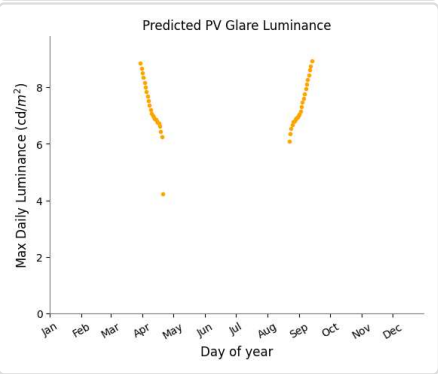








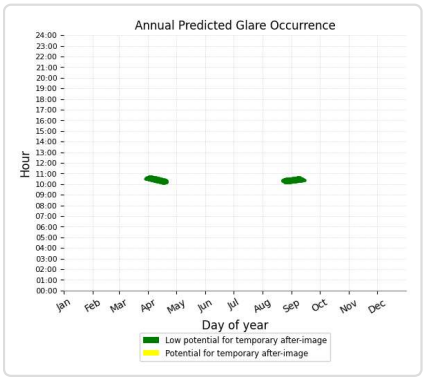


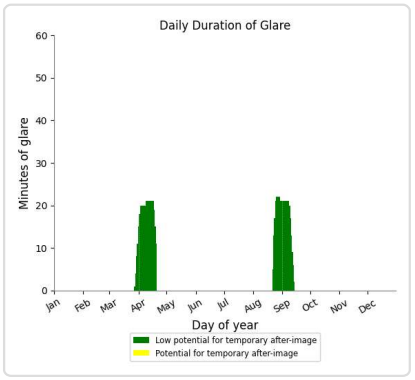


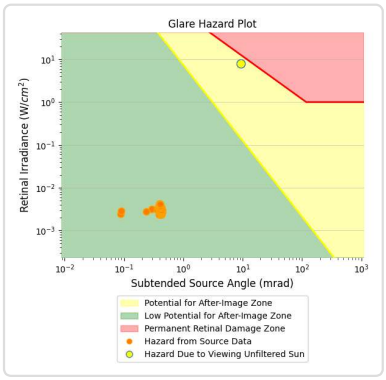
PV array 1: Manchester Barton - Runway 08R

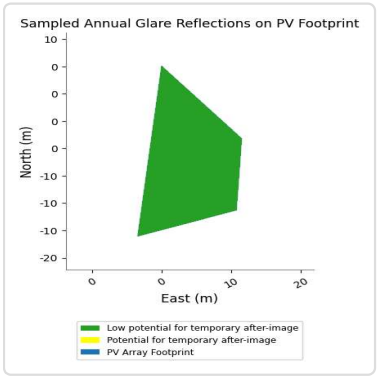
PV array is expected to produce the following glare for this receptor:

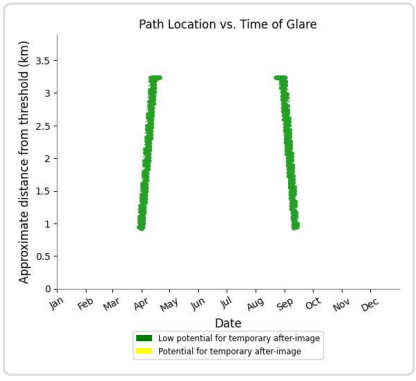
- 832 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

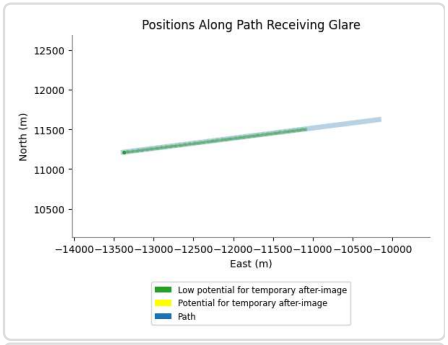


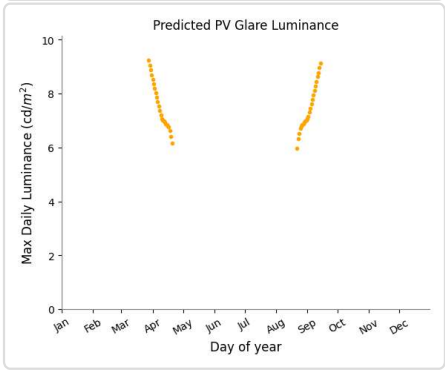








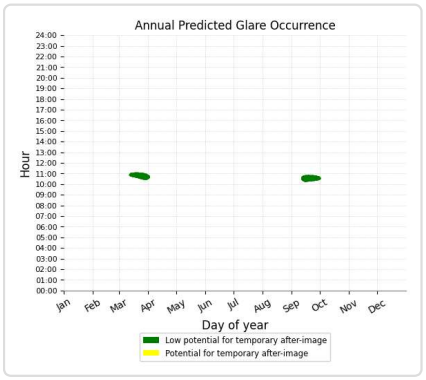


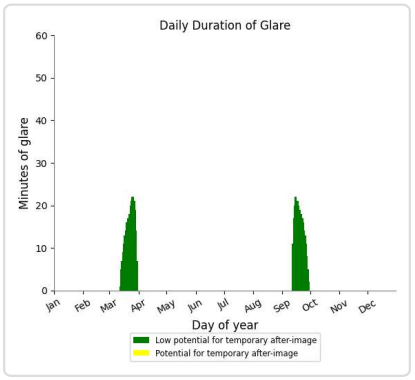


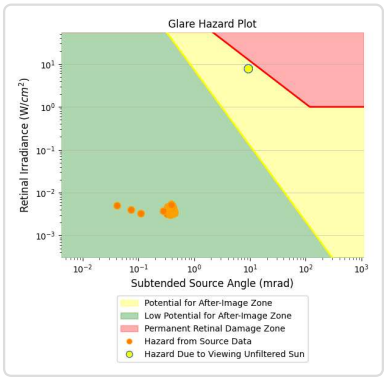
PV array 1: Manchester Barton - Runway 14

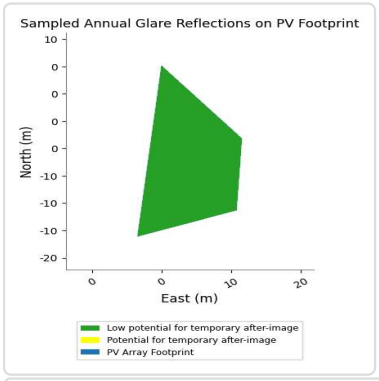
PV array is expected to produce the following glare for this receptor:

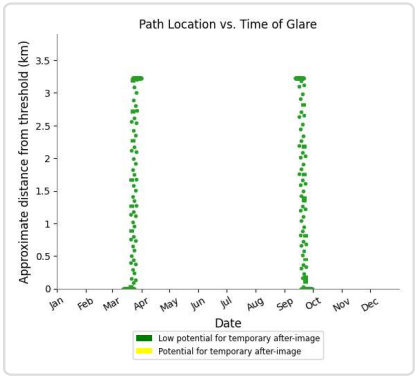
- 591 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

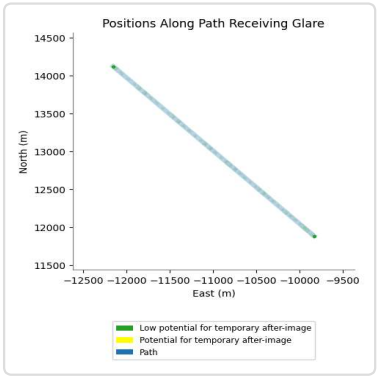


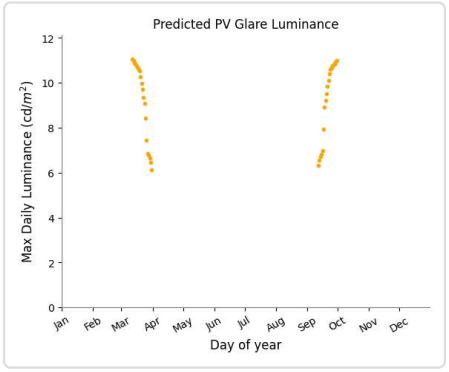








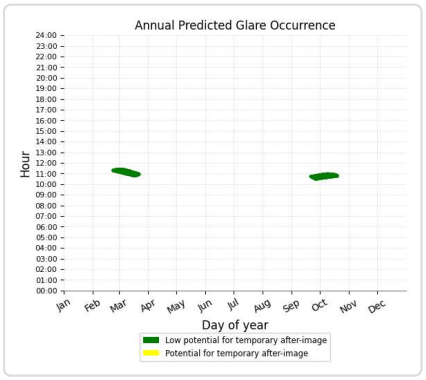


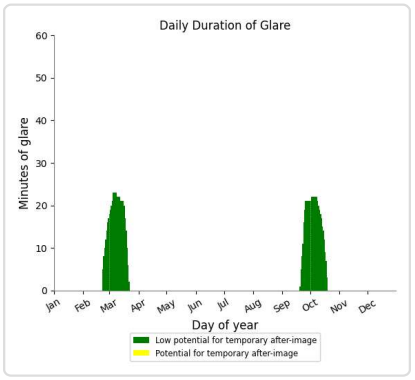


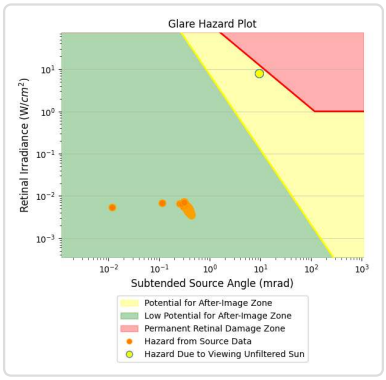
PV array 1: Manchester Barton - Runway 20

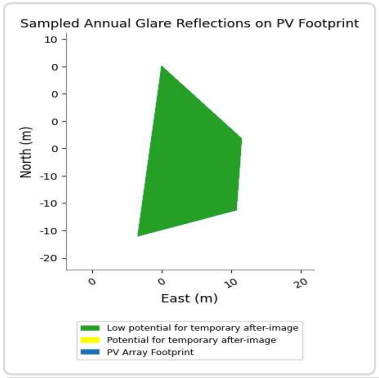
PV array is expected to produce the following glare for this receptor:

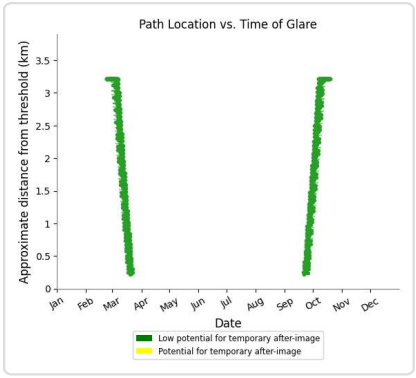
- 988 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

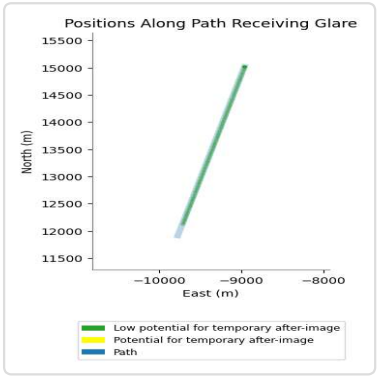


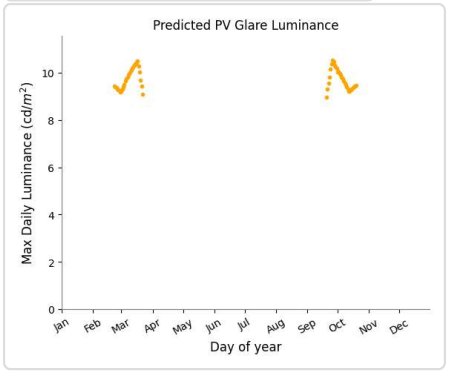












PV array 1: Manchester Barton - Runway 26L

No glare found

PV array 1: Manchester Barton - Runway 26R

No glare found

PV array 1: Manchester Barton - Runway 32

No glare found

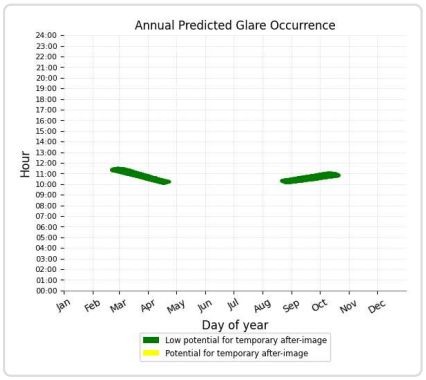
PV array 1: Wythenshawe - East Approach

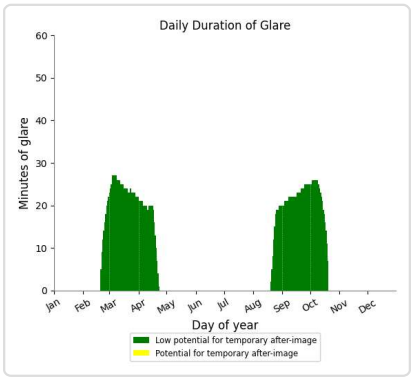
No glare found

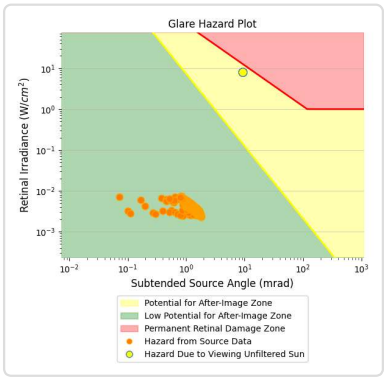
PV array 1: Wythenshawe - North Approach

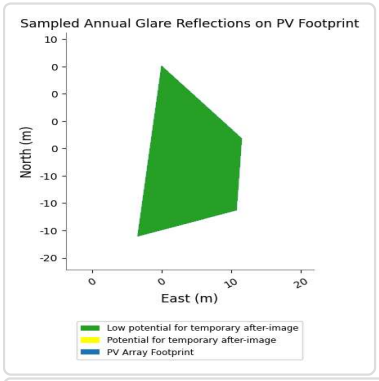
PV array is expected to produce the following glare for this receptor:

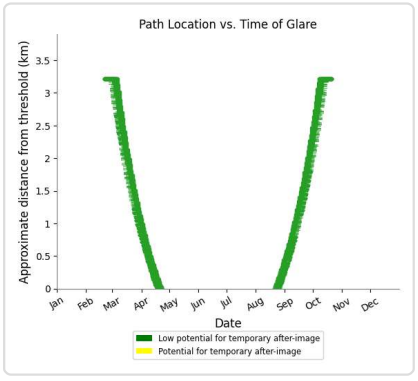
- 2,580 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

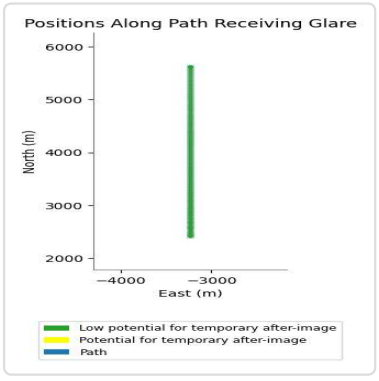


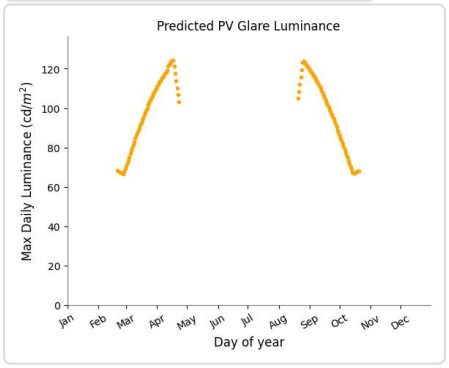












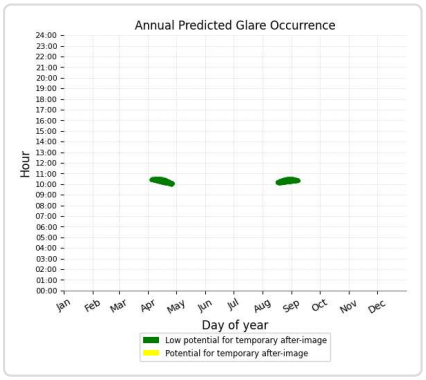
PV array 1: Wythenshawe - Northeast Approach

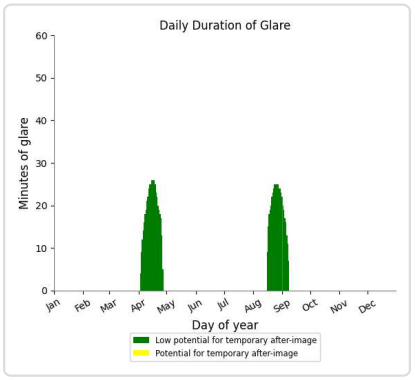
No glare found

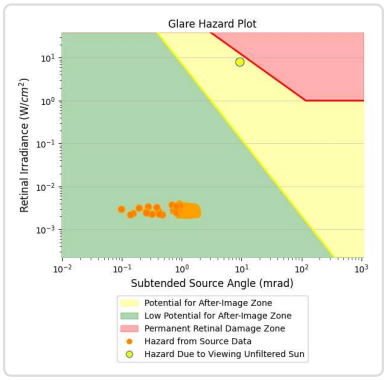
PV array 1: Wythenshawe - Northwest Approach

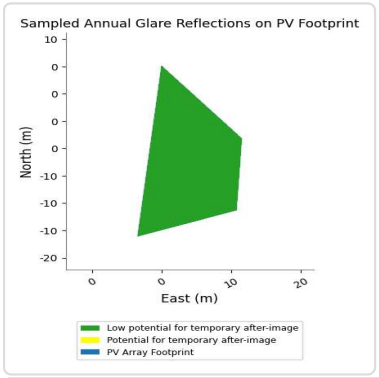
PV array is expected to produce the following glare for this receptor:

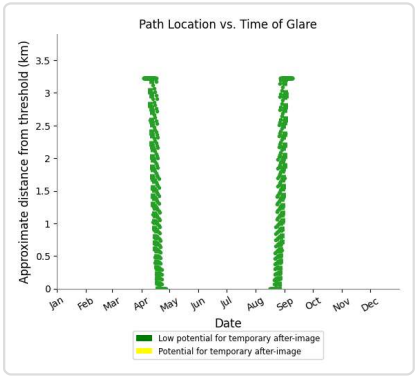
- 946 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

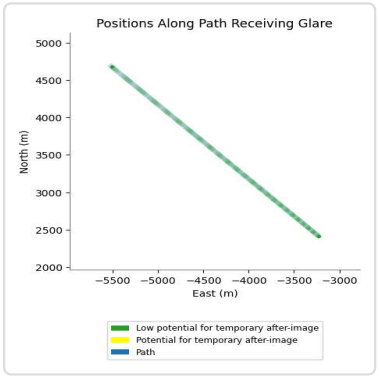


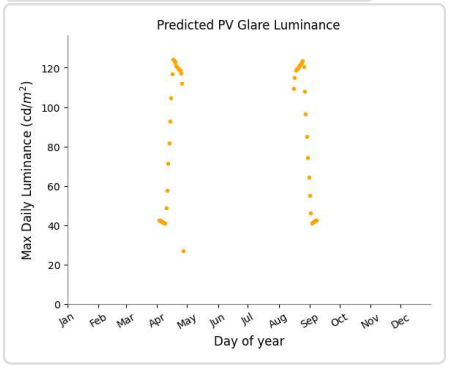












PV array 1: Wythenshawe - South Approach

No glare found

PV array 1: Wythenshawe - Southeast Approach

No glare found

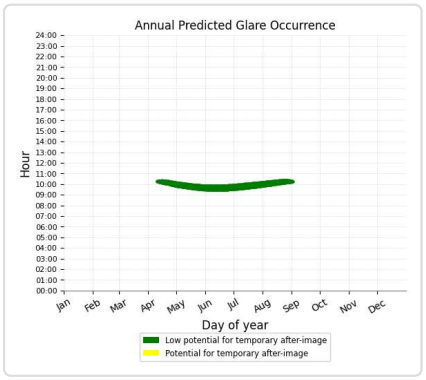
PV array 1: Wythenshawe - Southwest Approach

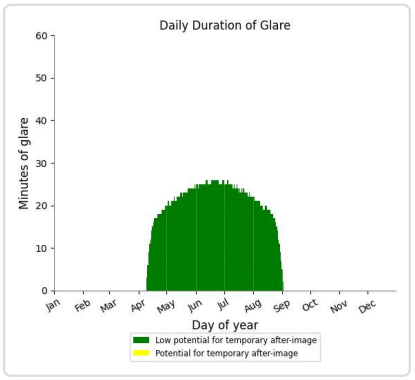
No glare found

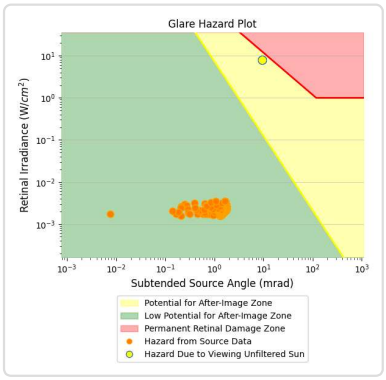
PV array 1: Wythenshawe - West Approach

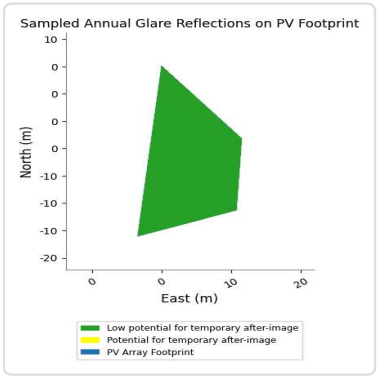
PV array is expected to produce the following glare for this receptor:

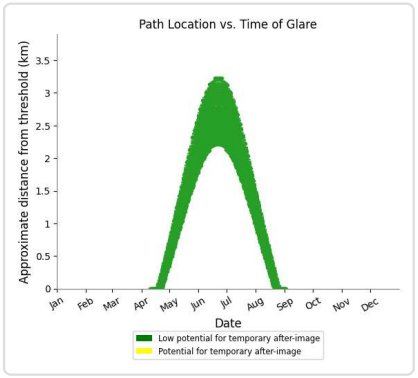
- 3,078 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

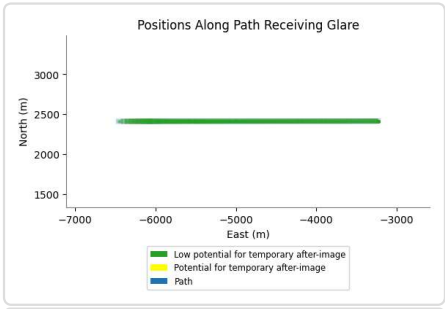


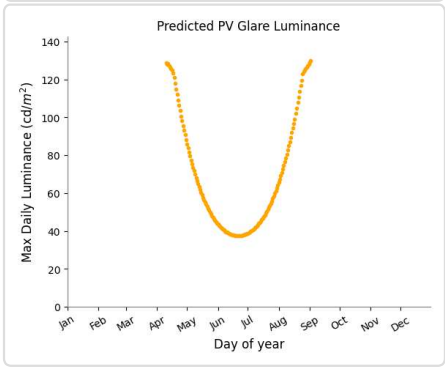












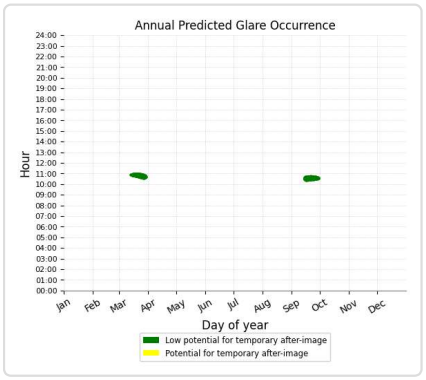
PV array 1: 1-ATCT

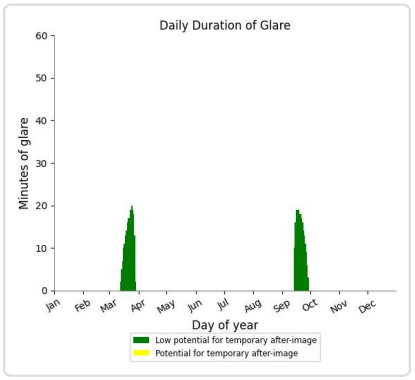
No glare found

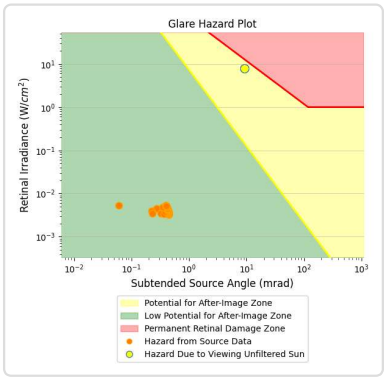
PV array 1: 2-ATCT

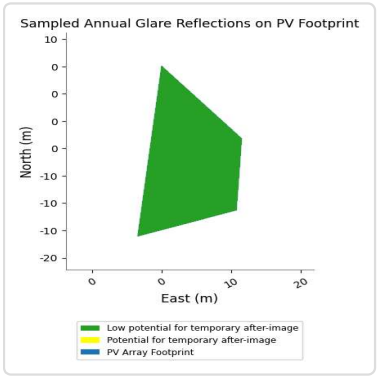
PV array is expected to produce the following glare for this receptor:

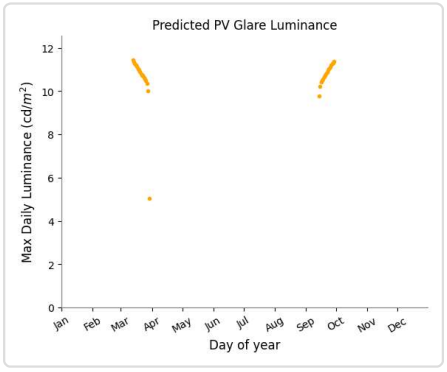
- 449 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.











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

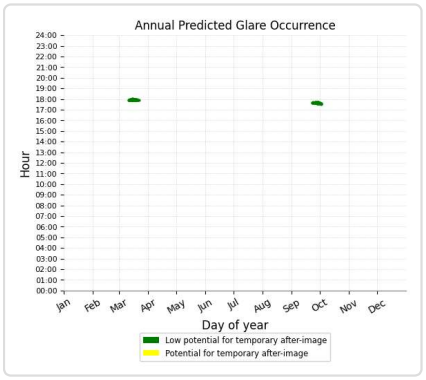
PV array 1: Runway 05R - 10NM

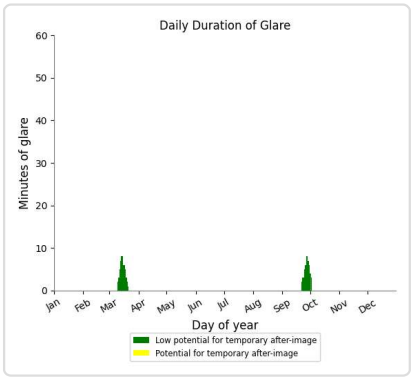
No glare found

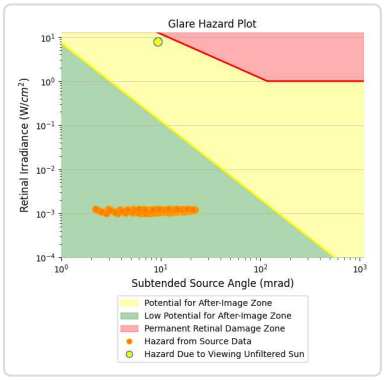
PV array 1: Runway 23L - 10NM

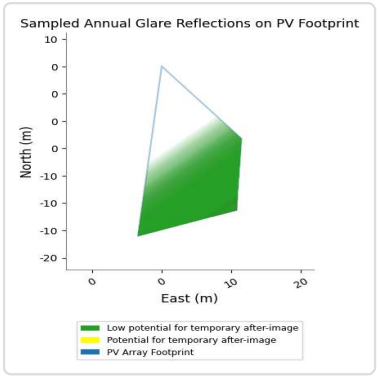
PV array is expected to produce the following glare for this receptor:

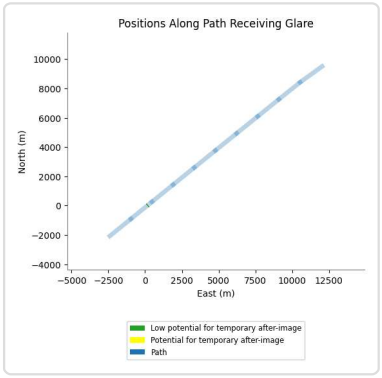
- 111 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

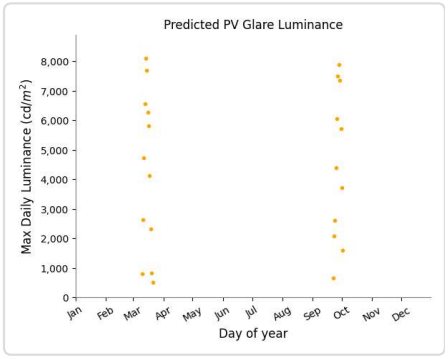












PV array 1: Runway 23R - 10NM

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

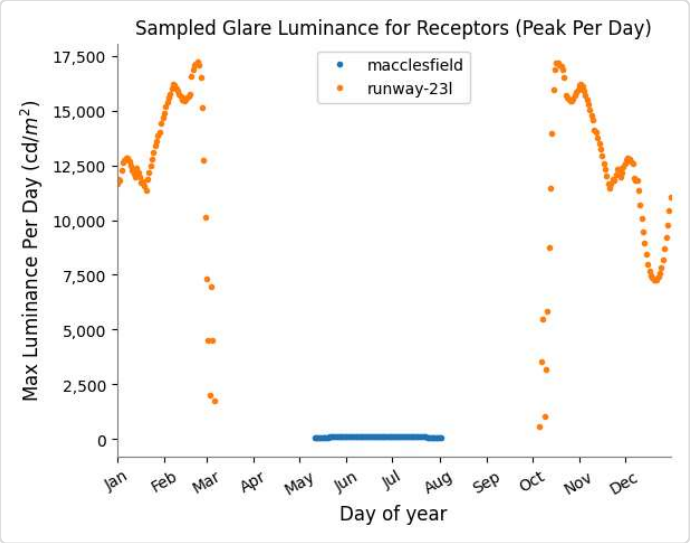
PV array 1: Thelwall Viaduct Exit

No glare found

PV array 10 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)	Peak Luminance (cd/m^2)
FP: Manchester Airport - Runway 05L	0	0	0
FP: Manchester Airport - Runway 05L	0	0	0
FP: Manchester Airport - Runway 23L	0	0	0
FP: Manchester Airport - Runway 23R	0	0	0
FP: Manchester Barton - Runway 02	0	0	0

FP: Manchester Barton - Runway 08L	0	0	0
FP: Manchester Barton - Runway 08R	0	0	0
FP: Manchester Barton - Runway 14	0	0	0
FP: Manchester Barton - Runway 20	0	0	0
FP: Manchester Barton - Runway 26L	0	0	0
FP: Manchester Barton - Runway 26R	0	0	0
FP: Manchester Barton - Runway 32	0	0	0
FP: Wythenshawe - East Approach	0	0	0
FP: Wythenshawe - North Approach	0	0	0
FP: Wythenshawe - Northeast Approach	0	0	0
FP: Wythenshawe - Northwest Approach	0	0	0
FP: Wythenshawe - South Approach	0	0	0
FP: Wythenshawe - Southeast Approach	0	0	0
FP: Wythenshawe - Southwest Approach	0	0	0
FP: Wythenshawe - West Approach	0	0	0
OP: 1-ATCT	0	0	0
OP: 2-ATCT	0	0	0
Route: Macclesfield Entry	2407	0	132
Route: Macclesfield Exit	0	0	0
Route: Runway 05L - 10NM	0	0	0
Route: Runway 05R - 10NM	0	0	0
Route: Runway 23L - 10NM	19779	0	17,212
Route: Runway 23R - 10NM	1104	0	74
Route: Runway Taxi 1	0	0	0
Route: Runway Taxi 2	0	0	0
Route: Stretton Entry	0	0	0
Route: Thelwall Viaduct Exit	0	0	0



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

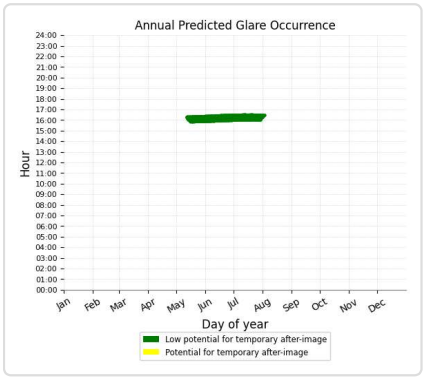
PV array 10: 2-ATCT

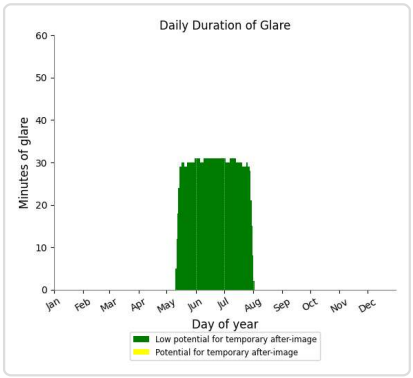
No glare found

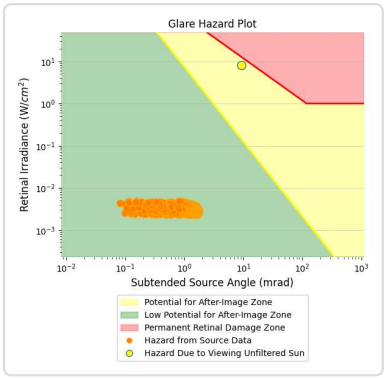
PV array 10: Macclesfield Entry

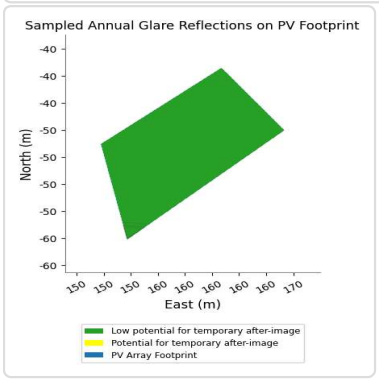
PV array is expected to produce the following glare for this receptor:

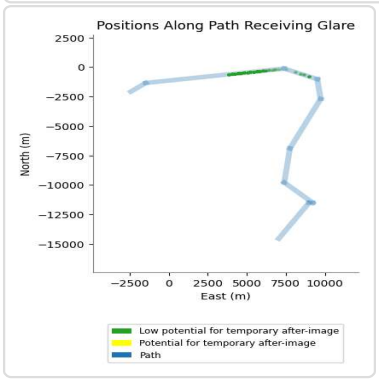
- 2,407 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

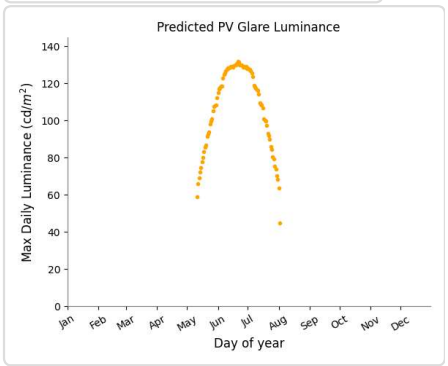












PV array 10: Macclesfield Exit

No glare found

PV array 10: Runway 05L - 10NM

No glare found

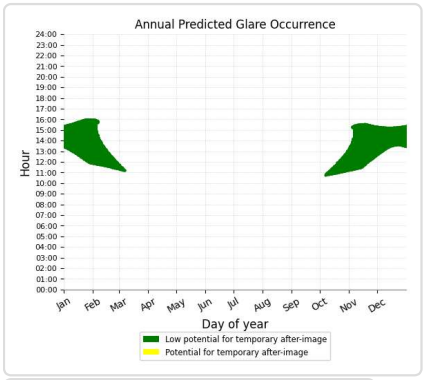
PV array 10: Runway 05R - 10NM

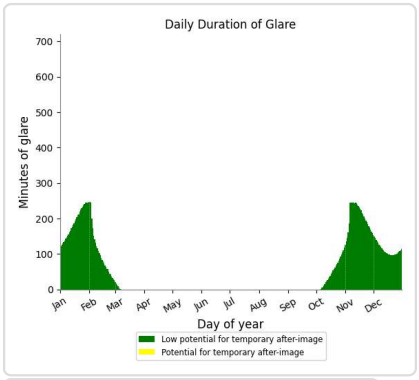
No glare found

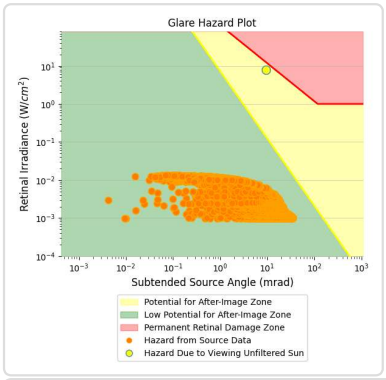
PV array 10: Runway 23L - 10NM

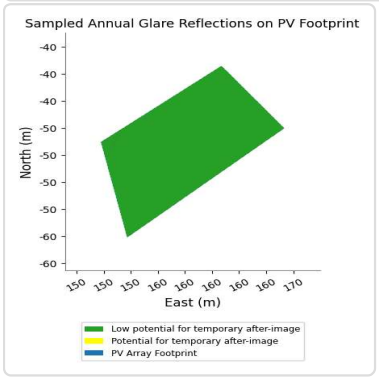
PV array is expected to produce the following glare for this receptor:

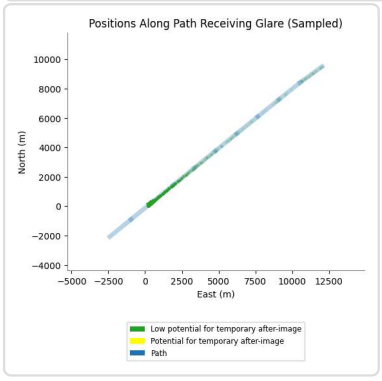
- 19,779 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

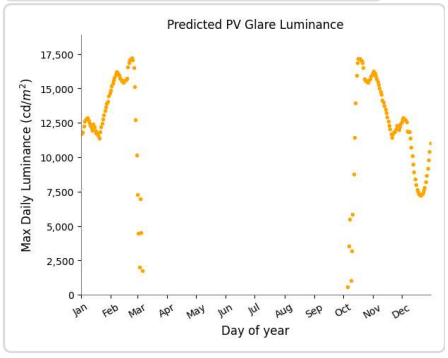








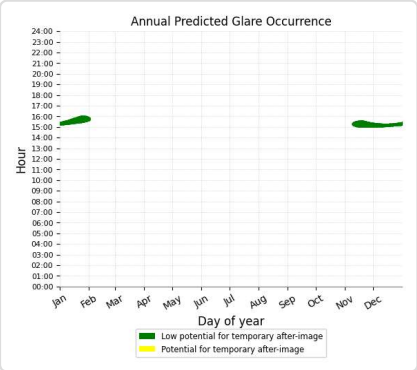


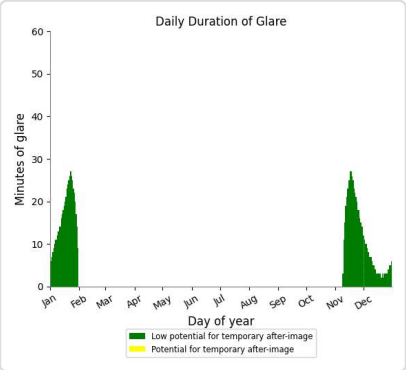


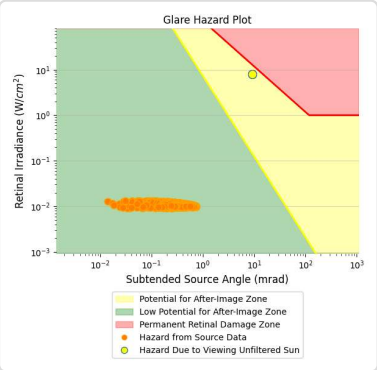
PV array 10: Runway 23R - 10NM

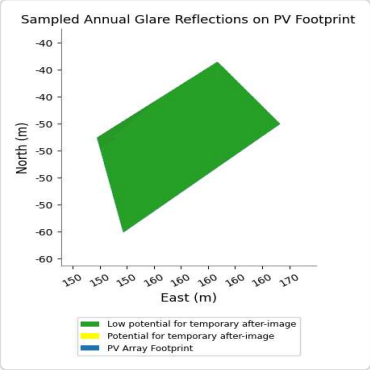
PV array is expected to produce the following glare for this receptor:

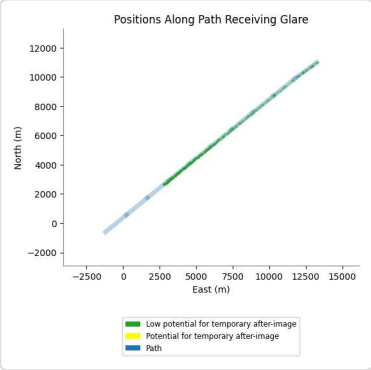
- 1,104 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

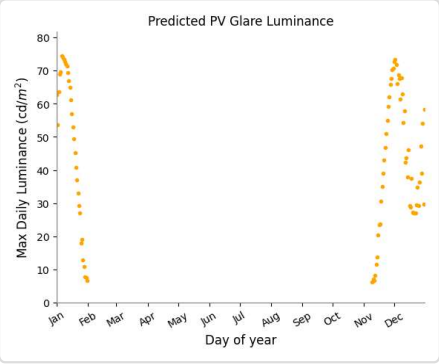












PV array 10: Runway Taxi 1

No glare found

PV array 10: Runway Taxi 2

No glare found

PV array 10: Stretton Entry

No glare found

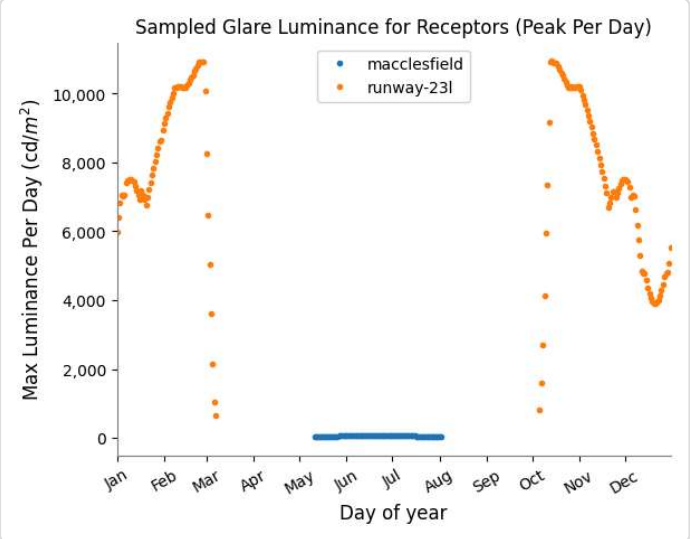
PV array 10: Thelwall Viaduct Exit

No glare found

PV array 11 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)	Peak Luminance (cd/m^2)
FP: Manchester Airport - Runway 05L	0	0	0
FP: Manchester Airport - Runway 05L	0	0	0
FP: Manchester Airport - Runway 23L	0	0	0
FP: Manchester Airport - Runway 23R	0	0	0
FP: Manchester Barton - Runway 02	0	0	0
FP: Manchester Barton - Runway 08L	0	0	0
FP: Manchester Barton - Runway 08R	0	0	0
FP: Manchester Barton - Runway 14	0	0	0
FP: Manchester Barton - Runway 20	0	0	0

FP: Manchester Barton - Runway 26L	0	0	0
FP: Manchester Barton - Runway 26R	0	0	0
FP: Manchester Barton - Runway 32	0	0	0
FP: Wythenshawe - East Approach	0	0	0
FP: Wythenshawe - North Approach	0	0	0
FP: Wythenshawe - Northeast Approach	0	0	0
FP: Wythenshawe - Northwest Approach	0	0	0
FP: Wythenshawe - South Approach	0	0	0
FP: Wythenshawe - Southeast Approach	0	0	0
FP: Wythenshawe - Southwest Approach	0	0	0
FP: Wythenshawe - West Approach	0	0	0
OP: 1-ATCT	0	0	0
OP: 2-ATCT	0	0	0
Route: Macclesfield Entry	2456	0	71
Route: Macclesfield Exit	0	0	0
Route: Runway 05L - 10NM	0	0	0
Route: Runway 05R - 10NM	0	0	0
Route: Runway 23L - 10NM	19531	0	10,938
Route: Runway 23R - 10NM	1194	0	63
Route: Runway Taxi 1	0	0	0
Route: Runway Taxi 2	0	0	0
Route: Stretton Entry	0	0	0
Route: Thelwall Viaduct Exit	0	0	0



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

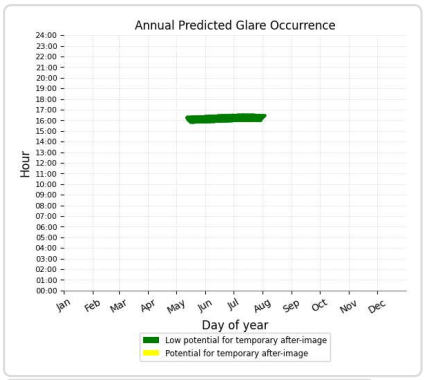
PV array 11: 2-ATCT

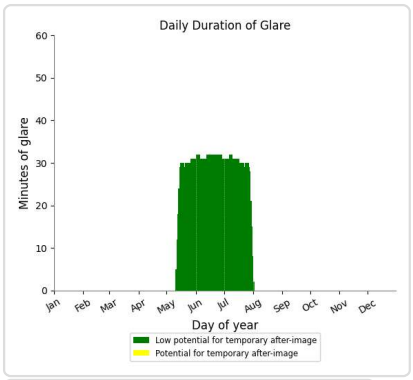
No glare found

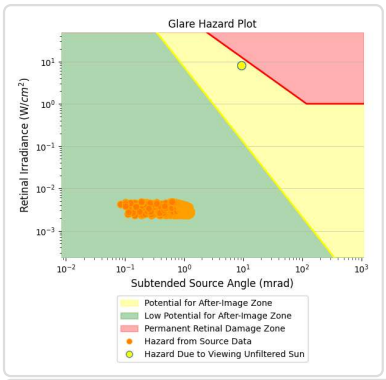
PV array 11: Macclesfield Entry

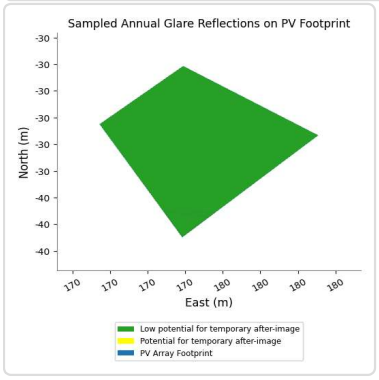
PV array is expected to produce the following glare for this receptor:

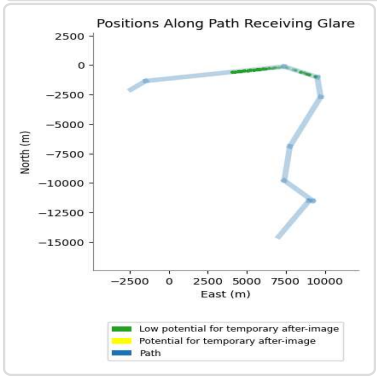
- 2,456 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

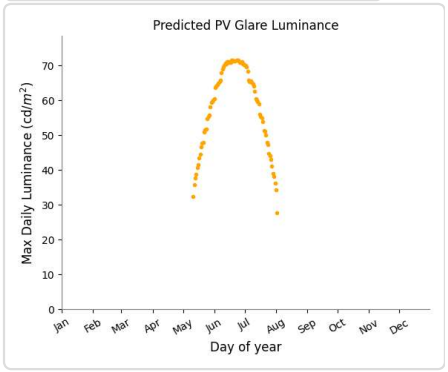












PV array 11: Macclesfield Exit

No glare found

PV array 11: Runway 05L - 10NM

No glare found

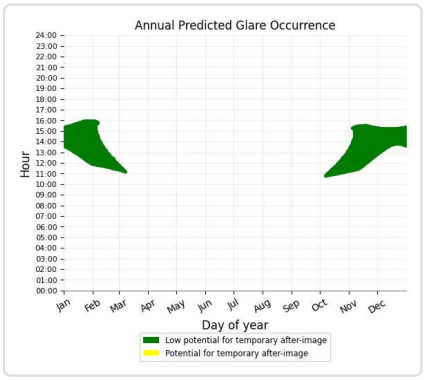
PV array 11: Runway 05R - 10NM

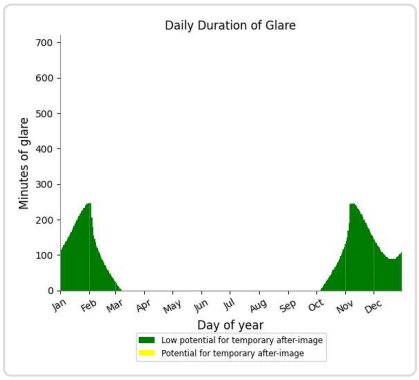
No glare found

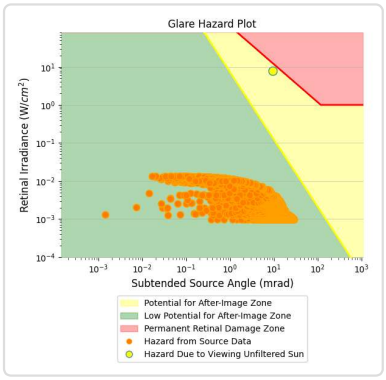
PV array 11: Runway 23L - 10NM

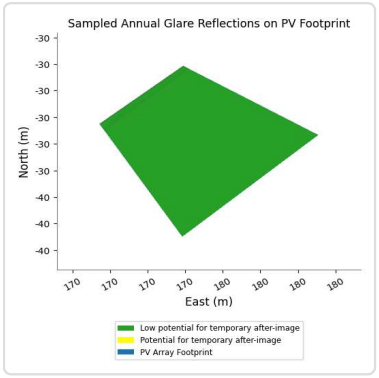
PV array is expected to produce the following glare for this receptor:

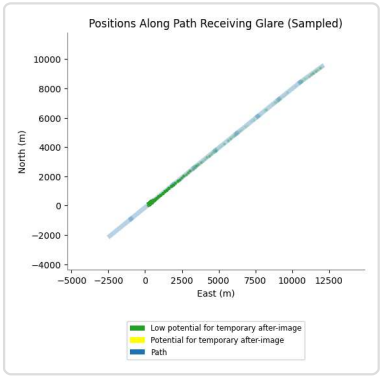
- 19,531 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

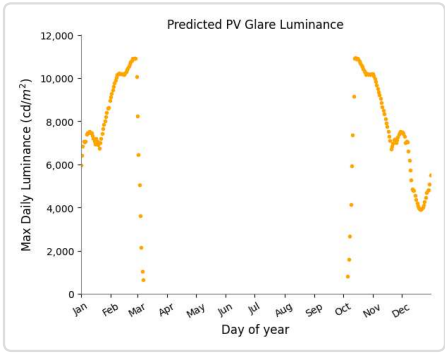








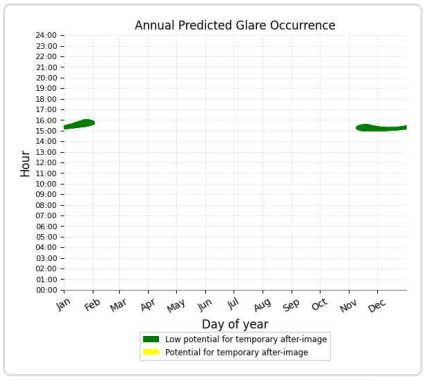


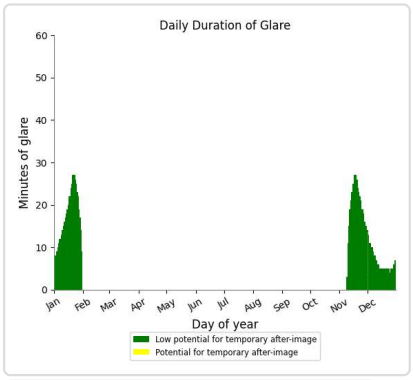


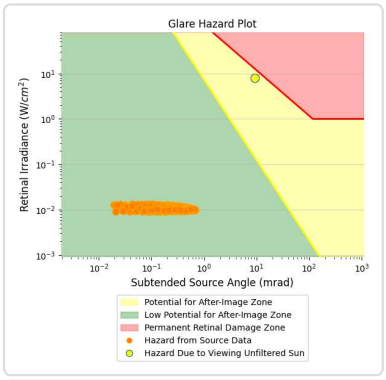
PV array 11: Runway 23R - 10NM

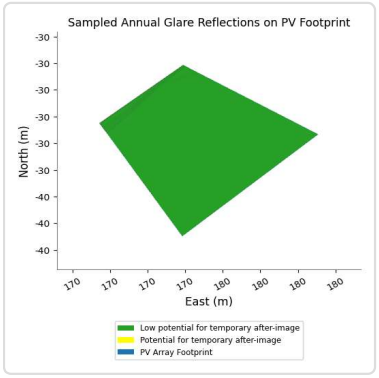
PV array is expected to produce the following glare for this receptor:

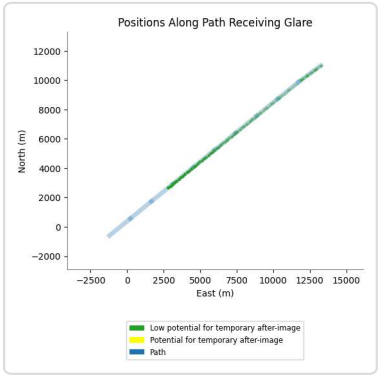
- 1,194 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

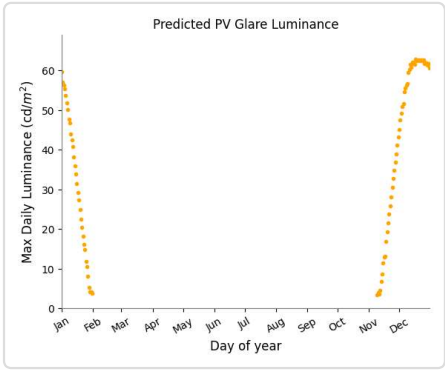












PV array 11: Runway Taxi 1

No glare found

PV array 11: Runway Taxi 2

No glare found

PV array 11: Stretton Entry

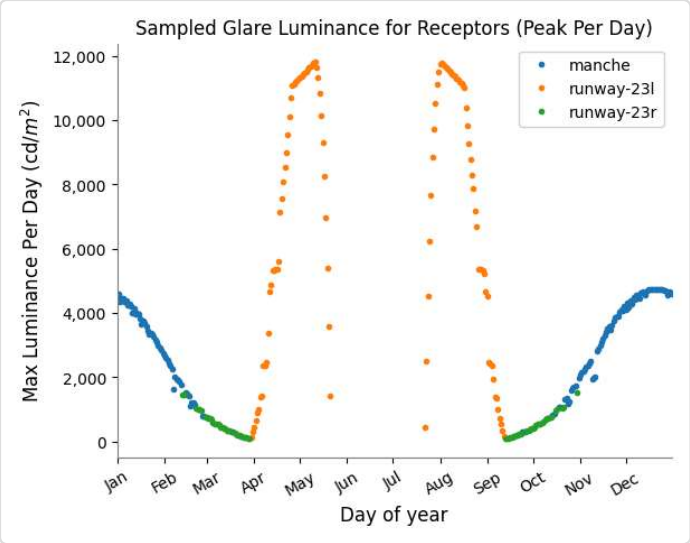
No glare found

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)
FP: Manchester Airport - Runway 05L	0	0	0
FP: Manchester Airport - Runway 05L	0	0	0
FP: Manchester Airport - Runway 23L	0	0	0
FP: Manchester Airport - Runway 23R	6687	0	4,747
FP: Manchester Barton - Runway 02	0	0	0
FP: Manchester Barton - Runway 08L	0	0	0
FP: Manchester Barton - Runway 08R	0	0	0
FP: Manchester Barton - Runway 14	0	0	0
FP: Manchester Barton - Runway 20	0	0	0
FP: Manchester Barton - Runway 26L	0	0	0
FP: Manchester Barton - Runway 26R	0	0	0
FP: Manchester Barton - Runway 32	0	0	0
FP: Wythenshawe - East Approach	0	0	0
FP: Wythenshawe - North Approach	0	0	0
FP: Wythenshawe - Northeast Approach	0	0	0
FP: Wythenshawe - Northwest Approach	0	0	0
FP: Wythenshawe - South Approach	0	0	0
FP: Wythenshawe - Southeast Approach	0	0	0
FP: Wythenshawe - Southwest Approach	0	0	0
FP: Wythenshawe - West Approach	0	0	0
OP: 1-ATCT	0	0	0
OP: 2-ATCT	0	0	0
Route: Macclesfield Entry	0	0	0
Route: Macclesfield Exit	0	0	0
Route: Runway 05L - 10NM	0	0	0
Route: Runway 05R - 10NM	0	0	0
Route: Runway 23L - 10NM	12956	0	11,798
Route: Runway 23R - 10NM	4531	0	1,649
Route: Runway Taxi 1	0	0	0
Route: Runway Taxi 2	0	0	0
Route: Stretton Entry	0	0	0
Route: Thelwall Viaduct Exit	0	0	0



PV array 12: Manchester Airport - Runway 05L

No glare found

PV array 12: Manchester Airport - Runway 05L

No glare found

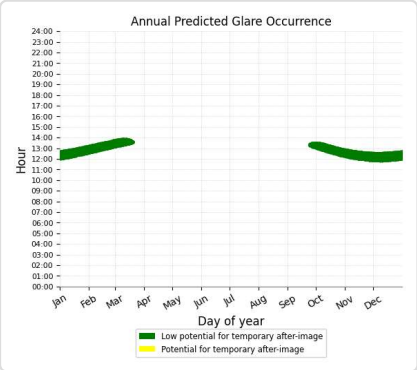
PV array 12: Manchester Airport - Runway 23L

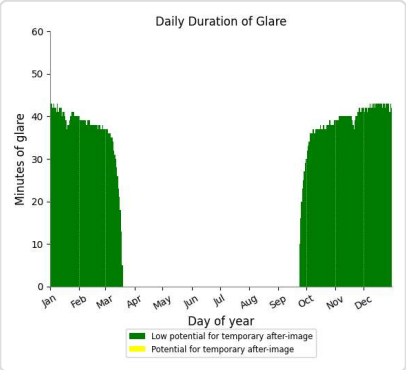
No glare found

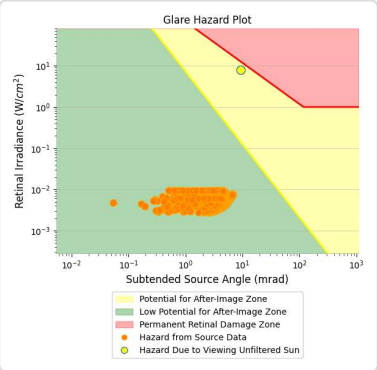
PV array 12: Manchester Airport - Runway 23R

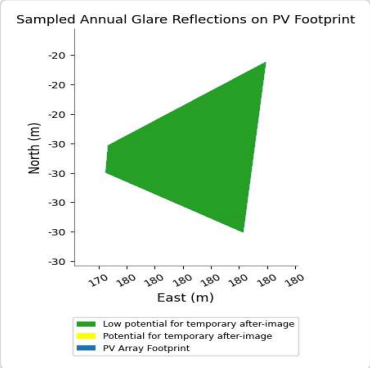
PV array is expected to produce the following glare for this receptor:

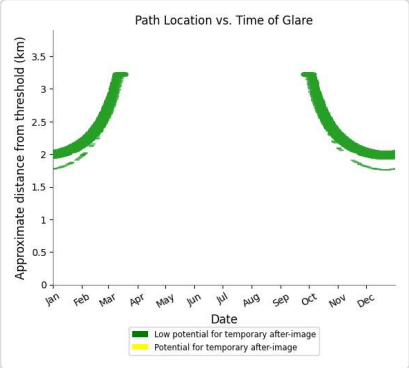
- 6,687 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

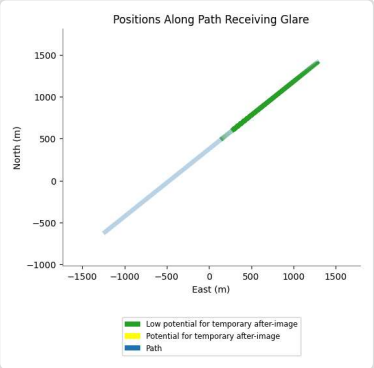


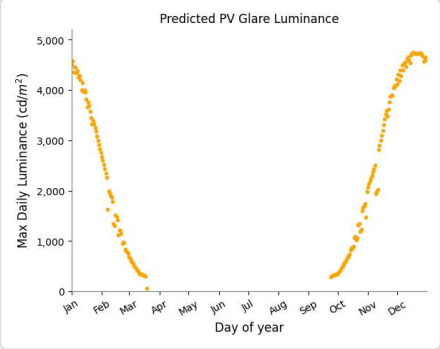












PV array 12: Manchester Barton - Runway 02

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

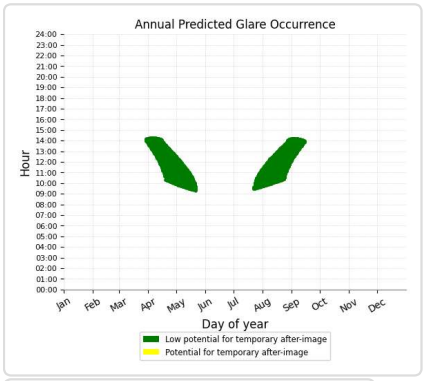
PV array 12: Runway 05R - 10NM

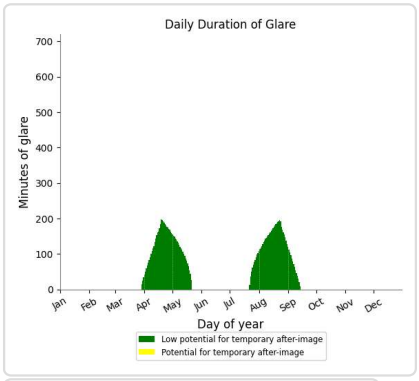
No glare found

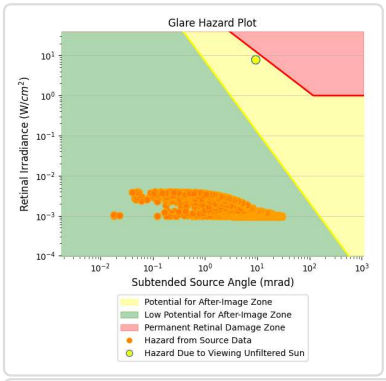
PV array 12: Runway 23L - 10NM

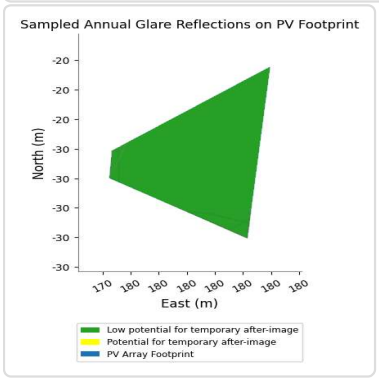
PV array is expected to produce the following glare for this receptor:

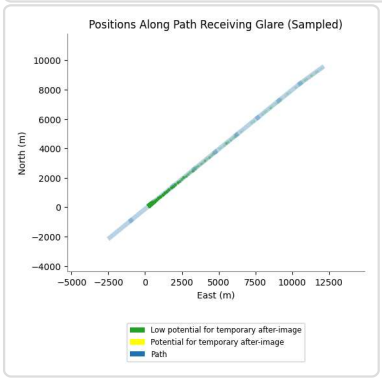
- 12,956 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

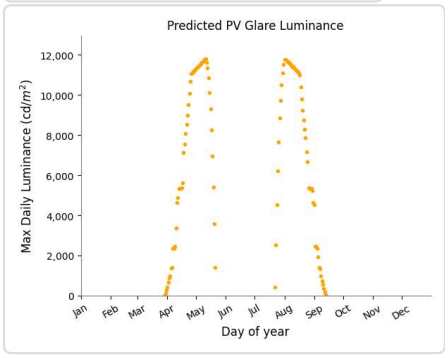








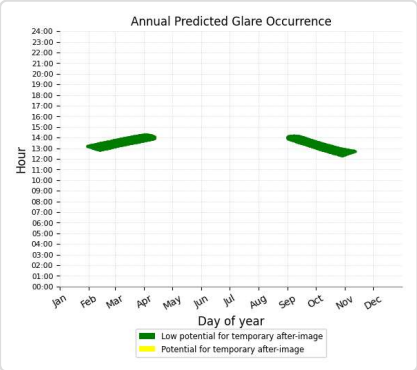


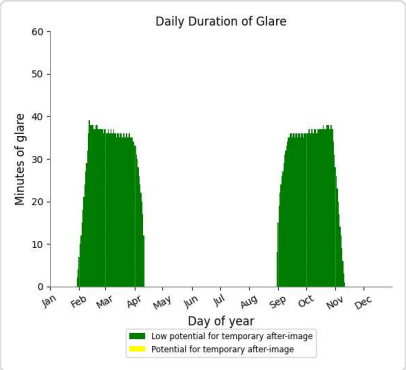


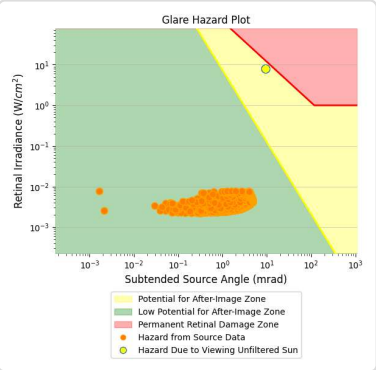
PV array 12: Runway 23R - 10NM

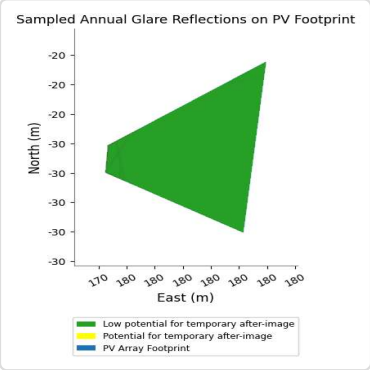
PV array is expected to produce the following glare for this receptor:

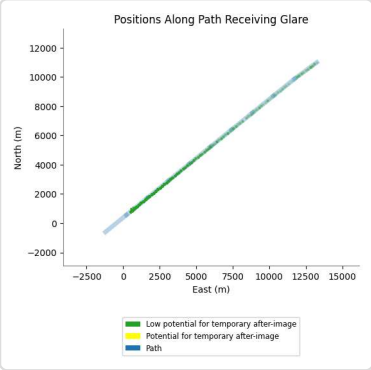
- 4,531 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

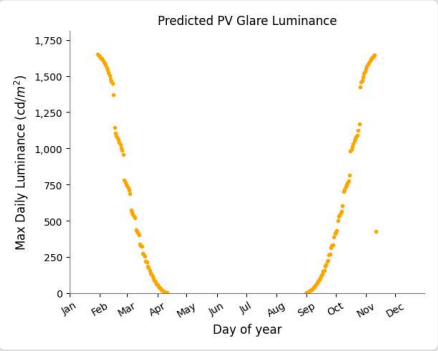












PV array 12: Runway Taxi 1

No glare found

PV array 12: Runway Taxi 2

No glare found

PV array 12: Stretton Entry

No glare found

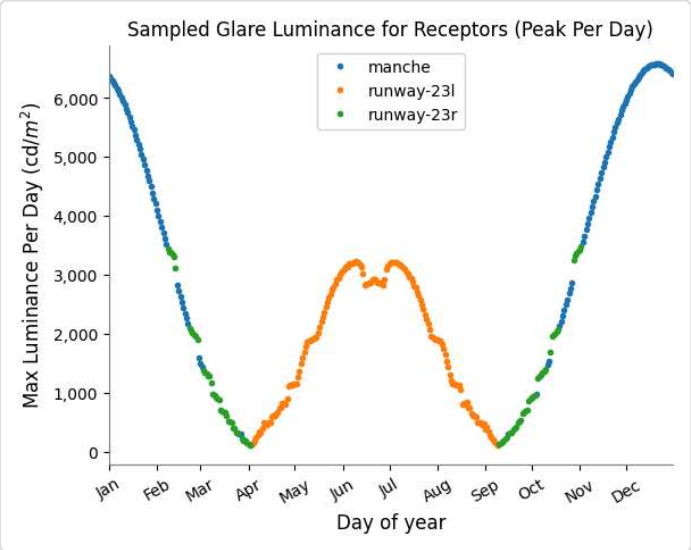
PV array 12: Thelwall Viaduct Exit

No glare found

PV array 2 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)	Peak Luminance (cd/m^2)
FP: Manchester Airport - Runway 05L	0	0	0
FP: Manchester Airport - Runway 05L	0	0	0
FP: Manchester Airport - Runway 23L	0	0	0
FP: Manchester Airport - Runway 23R	7711	0	6,578
FP: Manchester Barton - Runway 02	0	0	0
FP: Manchester Barton - Runway 08L	0	0	0
FP: Manchester Barton - Runway 08R	0	0	0
FP: Manchester Barton - Runway 14	0	0	0
FP: Manchester Barton - Runway 20	0	0	0

FP: Manchester Barton - Runway 26L	0	0	0
FP: Manchester Barton - Runway 26R	0	0	0
FP: Manchester Barton - Runway 32	0	0	0
FP: Wythenshawe - East Approach	0	0	0
FP: Wythenshawe - North Approach	0	0	0
FP: Wythenshawe - Northeast Approach	0	0	0
FP: Wythenshawe - Northwest Approach	0	0	0
FP: Wythenshawe - South Approach	0	0	0
FP: Wythenshawe - Southeast Approach	0	0	0
FP: Wythenshawe - Southwest Approach	0	0	0
FP: Wythenshawe - West Approach	0	0	0
OP: 1-ATCT	0	0	0
OP: 2-ATCT	0	0	0
Route: Macclesfield Entry	0	0	0
Route: Macclesfield Exit	0	0	0
Route: Runway 05L - 10NM	0	0	0
Route: Runway 05R - 10NM	0	0	0
Route: Runway 23L - 10NM	6328	0	3,221
Route: Runway 23R - 10NM	4586	0	3,588
Route: Runway Taxi 1	0	0	0
Route: Runway Taxi 2	0	0	0
Route: Stretton Entry	0	0	0
Route: Thelwall Viaduct Exit	0	0	0



PV array 2: Manchester Airport - Runway 05L

No glare found

PV array 2: Manchester Airport - Runway 05L

No glare found

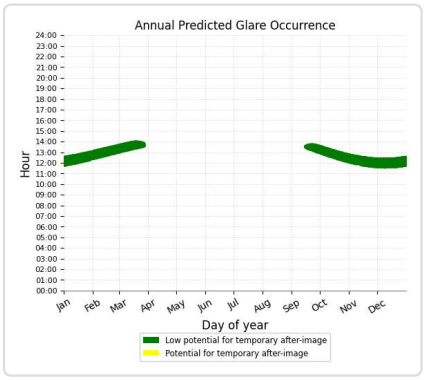
PV array 2: Manchester Airport - Runway 23L

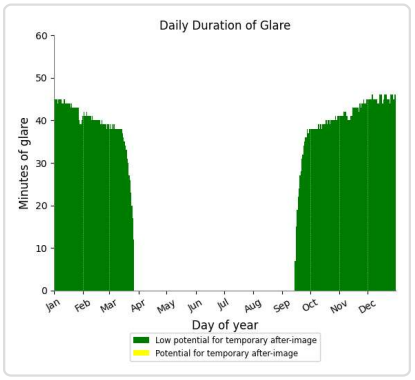
No glare found

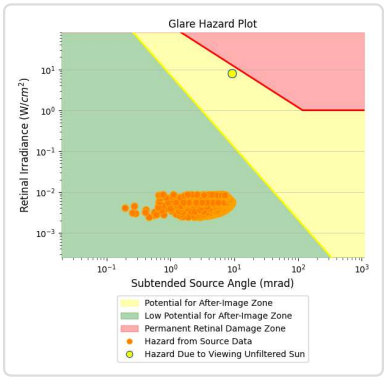
PV array 2: Manchester Airport - Runway 23R

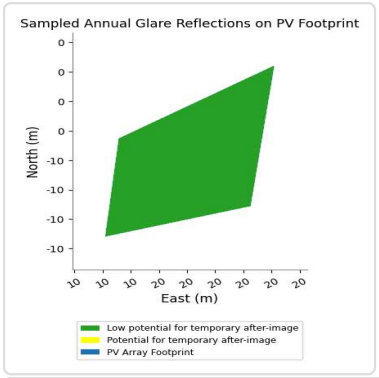
PV array is expected to produce the following glare for this receptor:

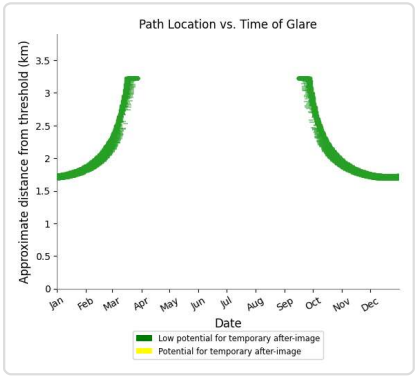
- 7,711 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

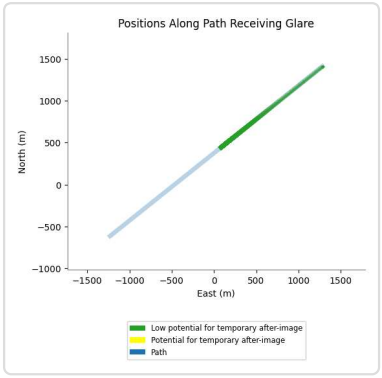


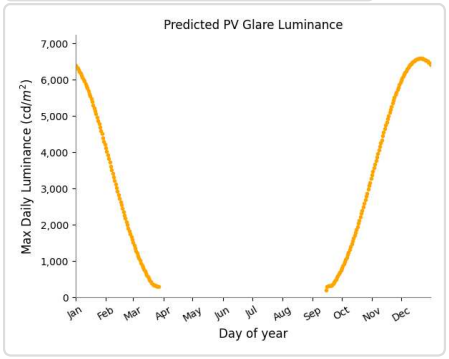












PV array 2: Manchester Barton - Runway 02

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

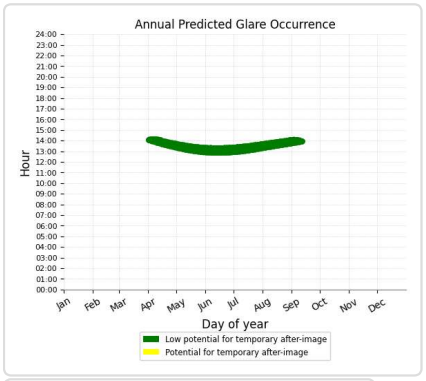
PV array 2: Runway 05R - 10NM

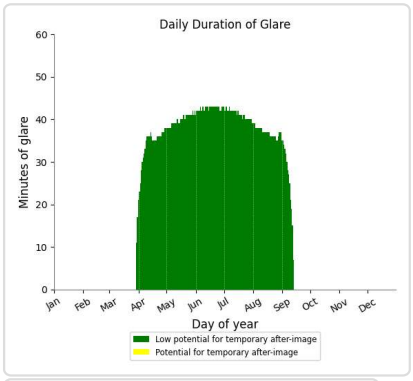
No glare found

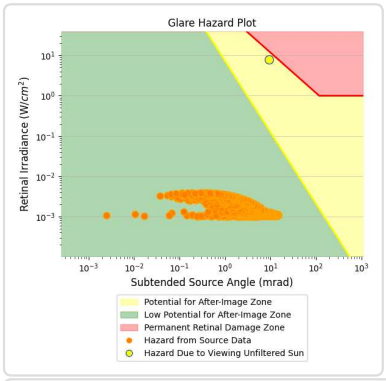
PV array 2: Runway 23L - 10NM

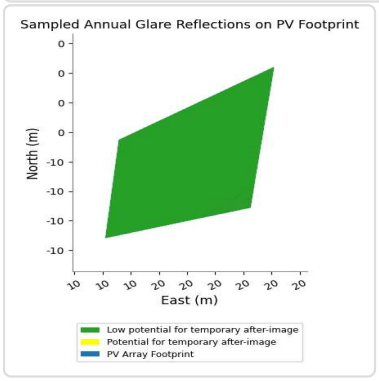
PV array is expected to produce the following glare for this receptor:

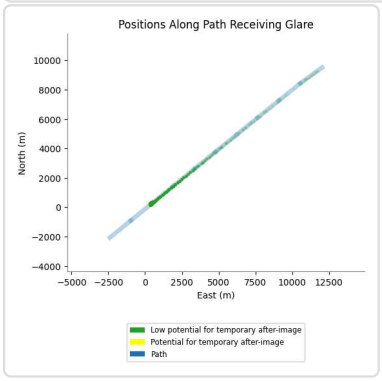
- 6,328 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

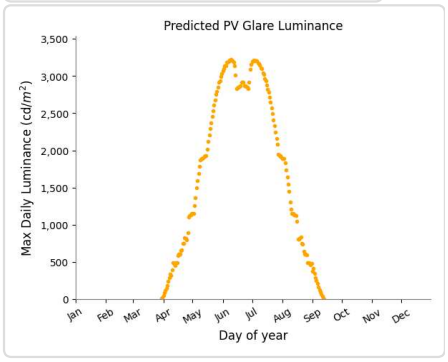








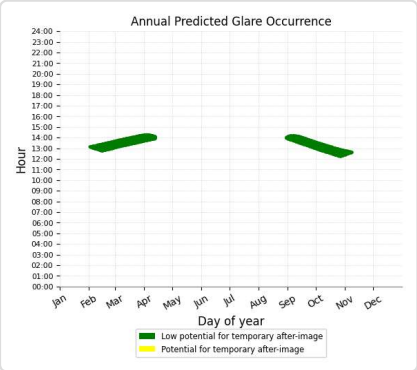


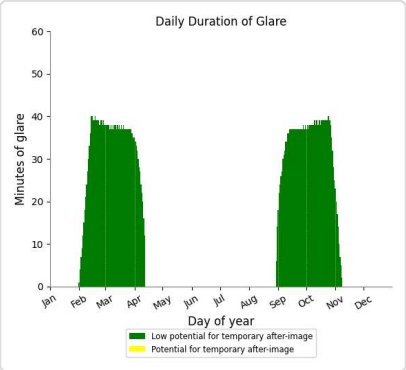


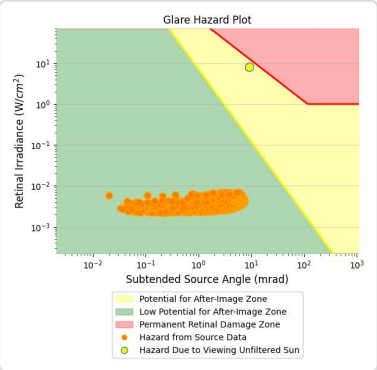
PV array 2: Runway 23R - 10NM

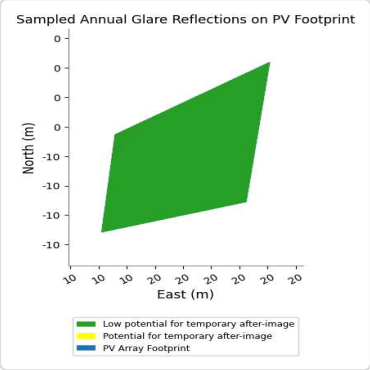
PV array is expected to produce the following glare for this receptor:

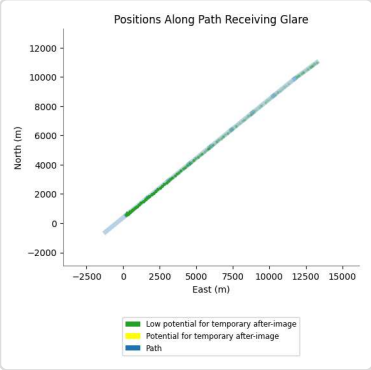
- 4,586 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

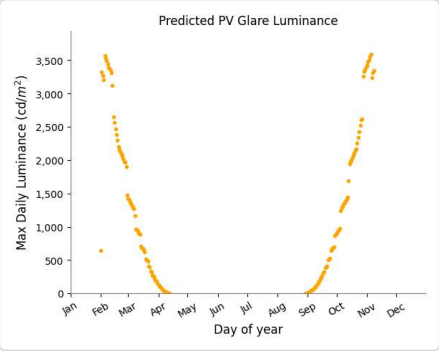












PV array 2: Runway Taxi 1

No glare found

PV array 2: Runway Taxi 2

No glare found

PV array 2: Stretton Entry

No glare found

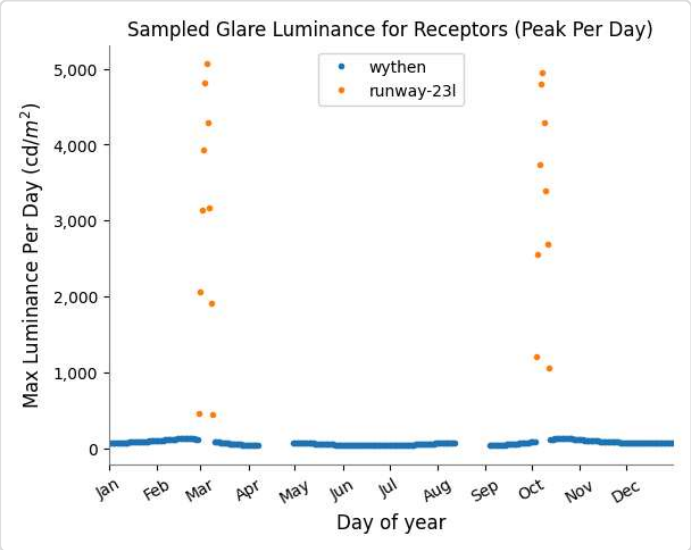
PV array 2: Thelwall Viaduct Exit

No glare found

PV array 3 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)	Peak Luminance (cd/m^2)
FP: Manchester Airport - Runway 05L	0	0	0
FP: Manchester Airport - Runway 05L	0	0	0
FP: Manchester Airport - Runway 23L	0	0	0
FP: Manchester Airport - Runway 23R	0	0	0
FP: Manchester Barton - Runway 02	0	0	0
FP: Manchester Barton - Runway 08L	1235	0	7
FP: Manchester Barton - Runway 08R	1344	0	7
FP: Manchester Barton - Runway 14	956	0	5
FP: Manchester Barton - Runway 20	0	0	0

FP: Manchester Barton - Runway 26L	0	0	0
FP: Manchester Barton - Runway 26R	0	0	0
FP: Manchester Barton - Runway 32	0	0	0
FP: Wythenshawe - East Approach	0	0	0
FP: Wythenshawe - North Approach	2361	0	125
FP: Wythenshawe - Northeast Approach	0	0	0
FP: Wythenshawe - Northwest Approach	1196	0	126
FP: Wythenshawe - South Approach	0	0	0
FP: Wythenshawe - Southeast Approach	0	0	0
FP: Wythenshawe - Southwest Approach	2078	0	74
FP: Wythenshawe - West Approach	2157	0	125
OP: 1-ATCT	0	0	0
OP: 2-ATCT	596	0	6
Route: Macclesfield Entry	0	0	0
Route: Macclesfield Exit	0	0	0
Route: Runway 05L - 10NM	0	0	0
Route: Runway 05R - 10NM	0	0	0
Route: Runway 23L - 10NM	100	0	5,063
Route: Runway 23R - 10NM	0	0	0
Route: Runway Taxi 1	0	0	0
Route: Runway Taxi 2	0	0	0
Route: Stretton Entry	0	0	0
Route: Thelwall Viaduct Exit	0	0	0



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

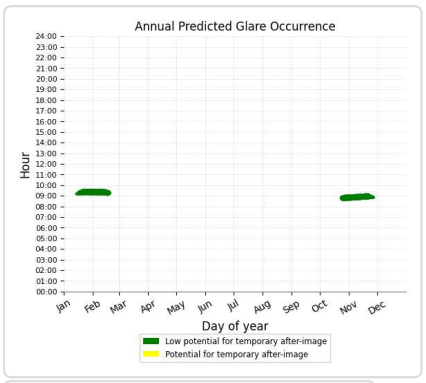
PV array 3: Manchester Barton - Runway 02

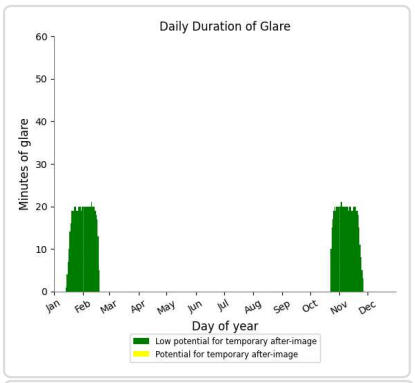
No glare found

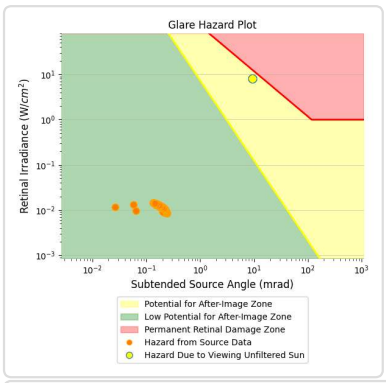
PV array 3: Manchester Barton - Runway 08L

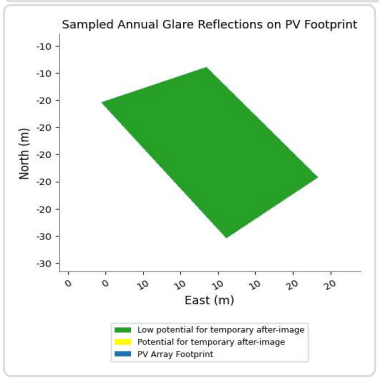
PV array is expected to produce the following glare for this receptor:

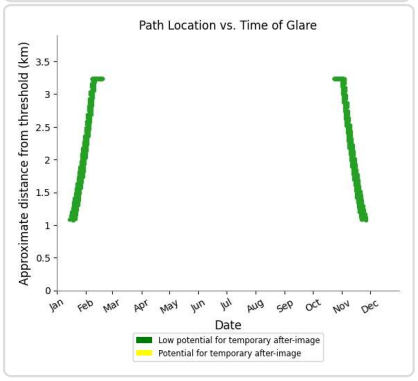
- 1,235 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

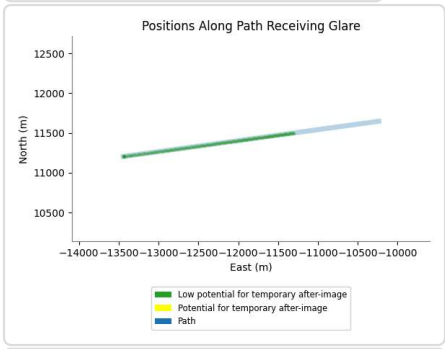


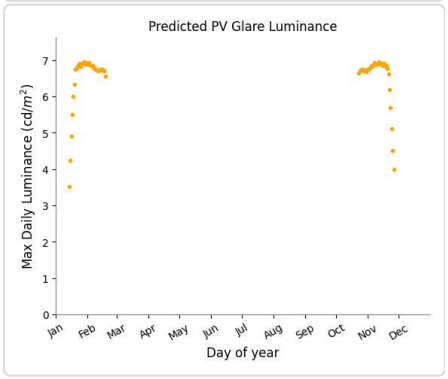








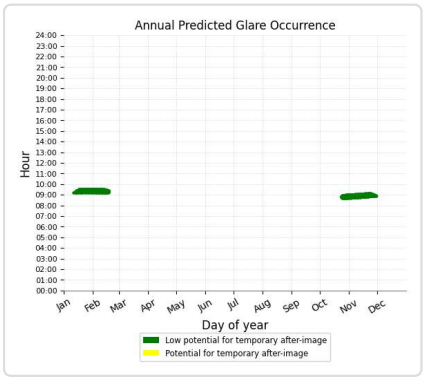


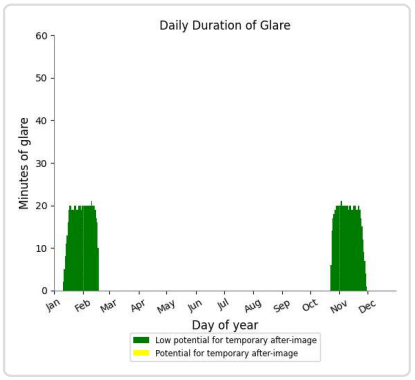


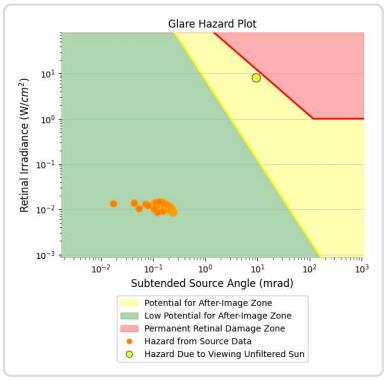
PV array 3: Manchester Barton - Runway 08R

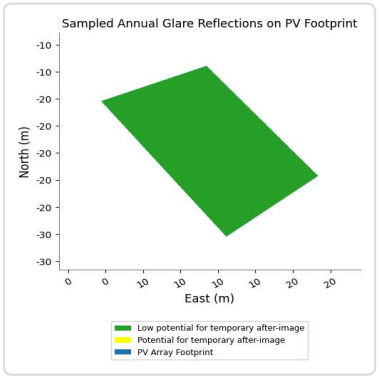
PV array is expected to produce the following glare for this receptor:

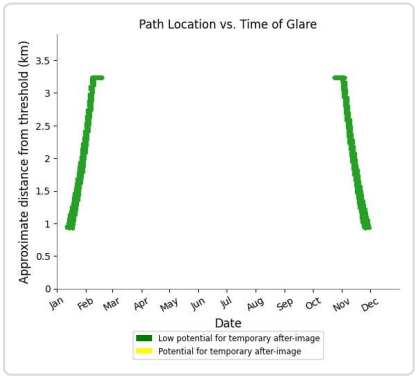
- 1,344 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

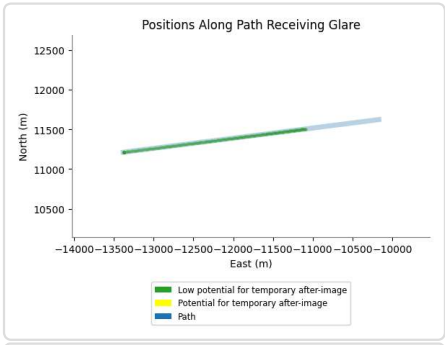


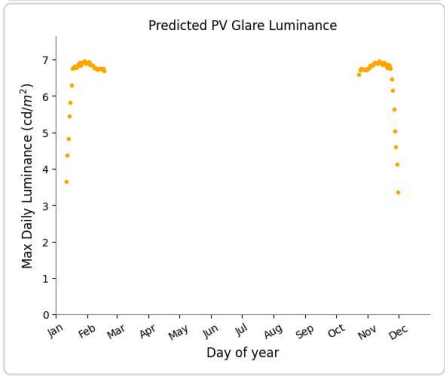








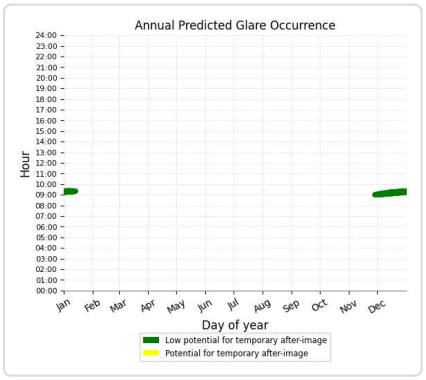


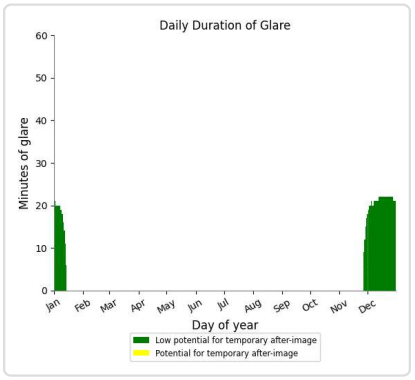


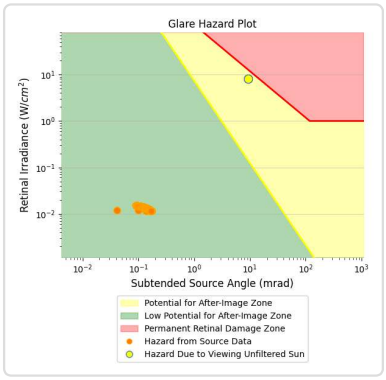
PV array 3: Manchester Barton - Runway 14

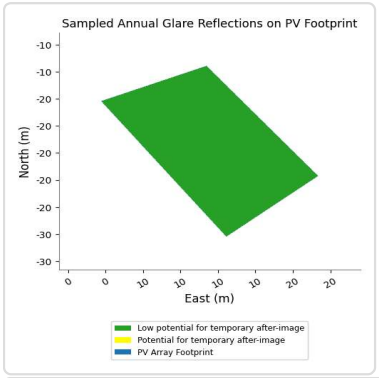
PV array is expected to produce the following glare for this receptor:

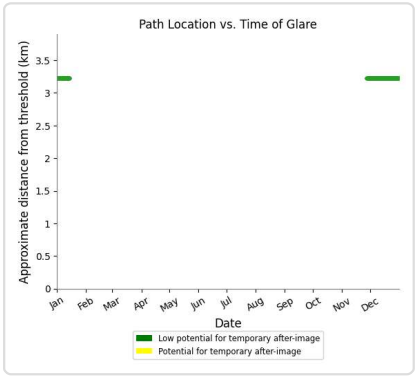
- 956 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

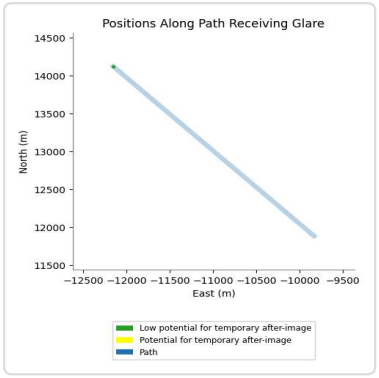


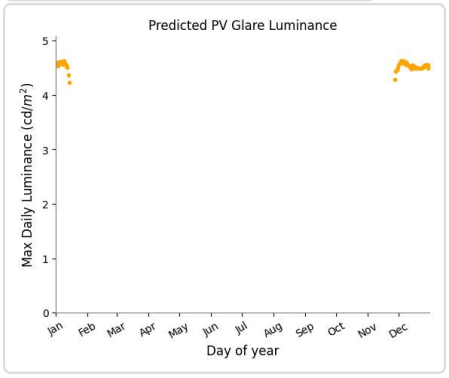












PV array 3: Manchester Barton - Runway 20

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

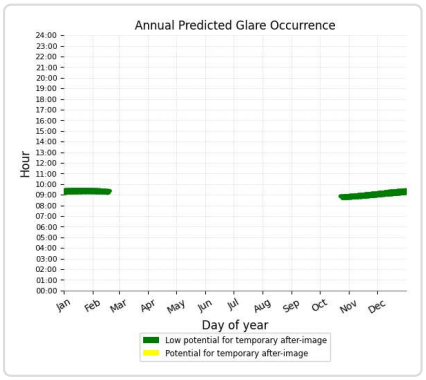
PV array 3: Wythenshawe - East Approach

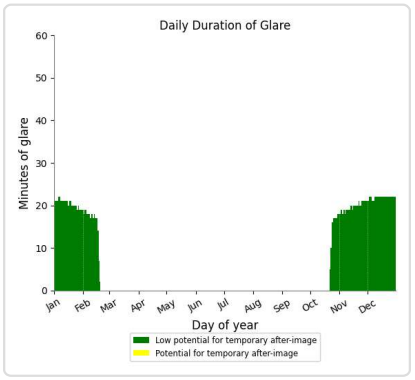
No glare found

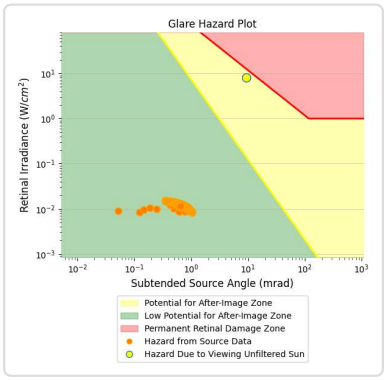
PV array 3: Wythenshawe - North Approach

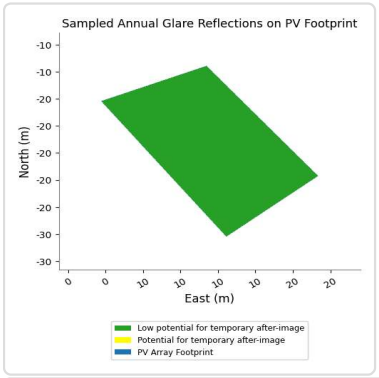
PV array is expected to produce the following glare for this receptor:

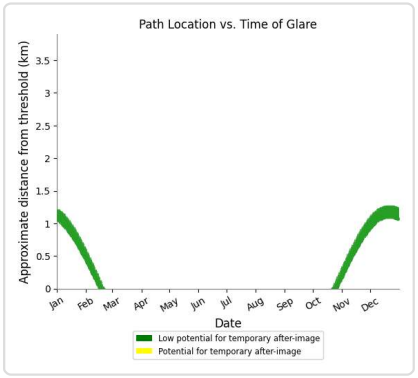
- 2,361 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

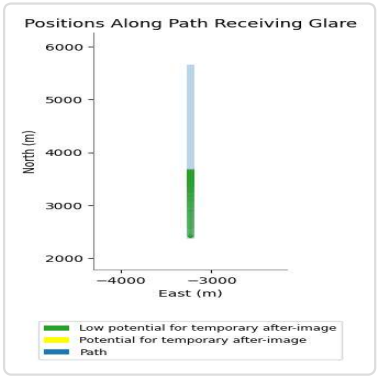


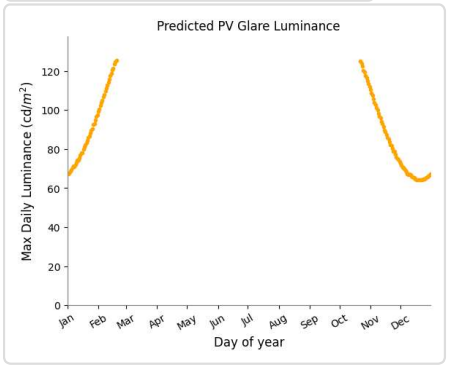












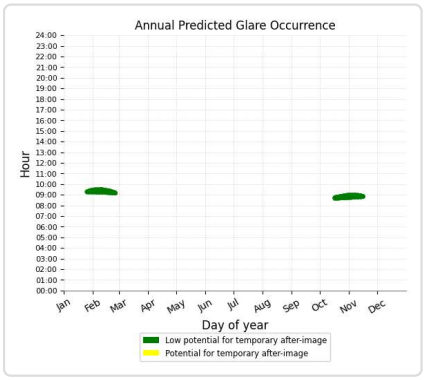
PV array 3: Wythenshawe - Northeast Approach

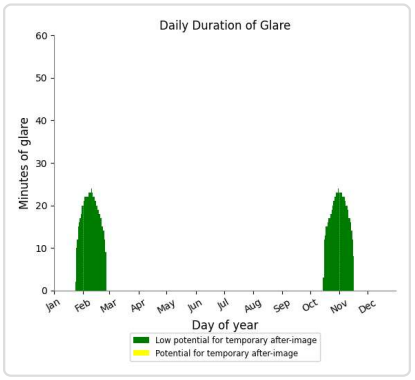
No glare found

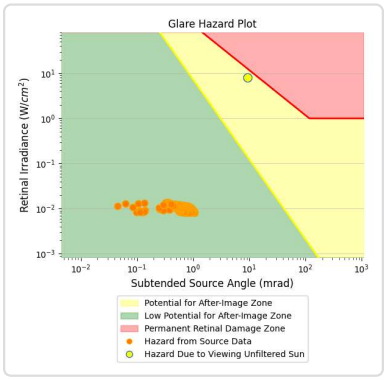
PV array 3: Wythenshawe - Northwest Approach

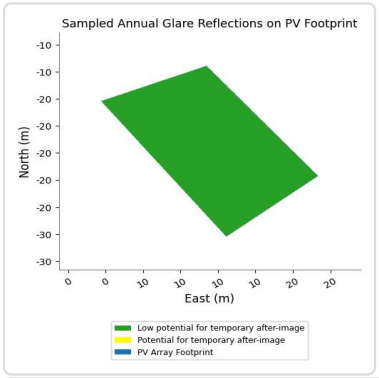
PV array is expected to produce the following glare for this receptor:

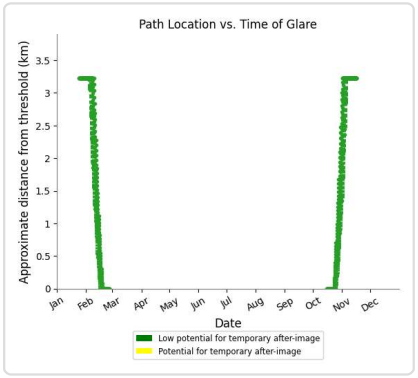
- 1,196 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

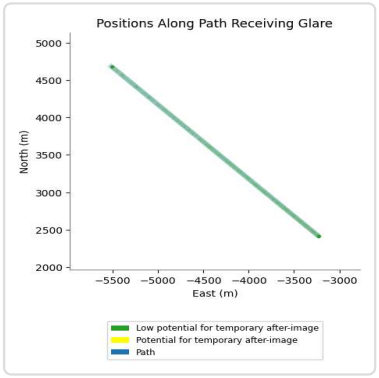


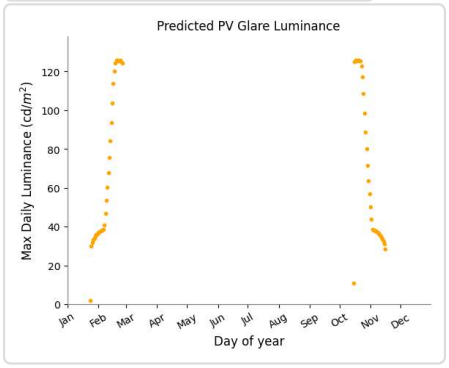












PV array 3: Wythenshawe - South Approach

No glare found

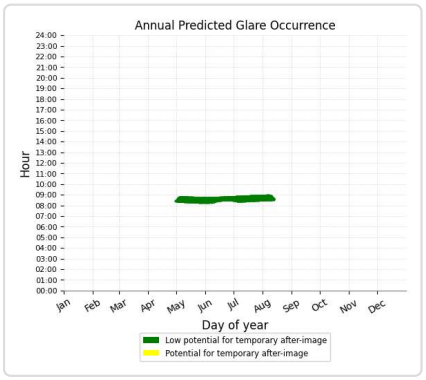
PV array 3: Wythenshawe - Southeast Approach

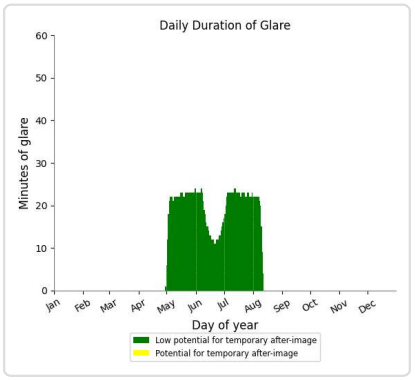
No glare found

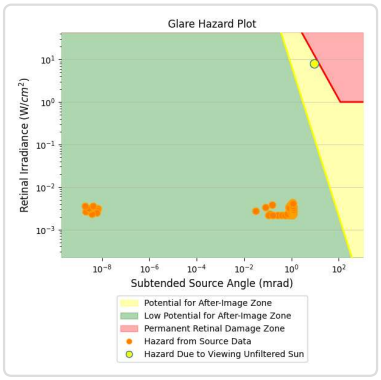
PV array 3: Wythenshawe - Southwest Approach

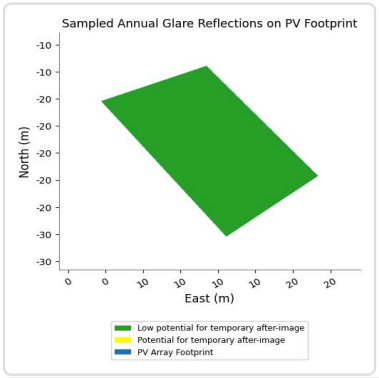
PV array is expected to produce the following glare for this receptor:

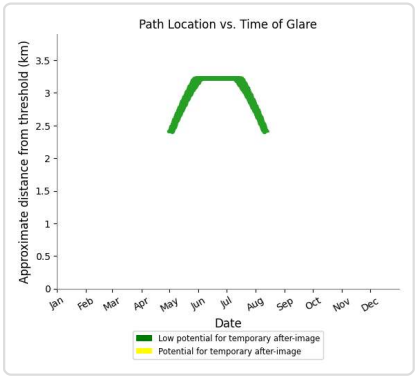
- 2,078 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

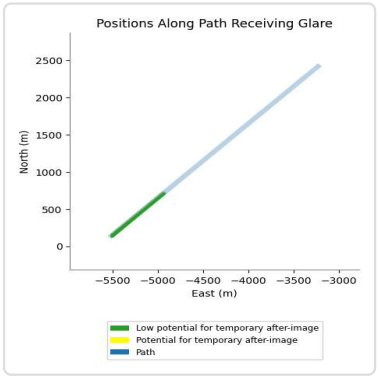


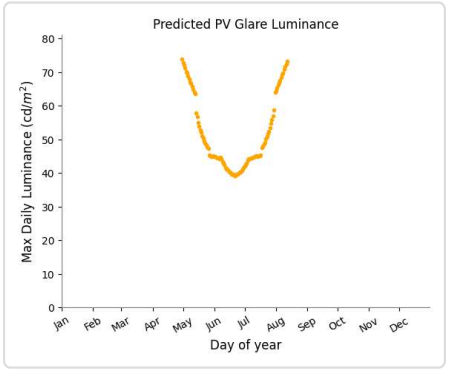








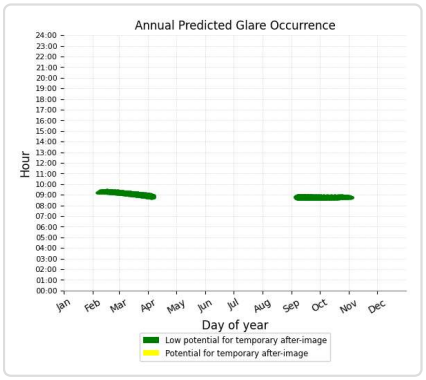


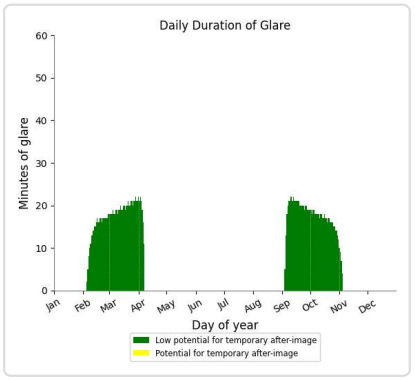


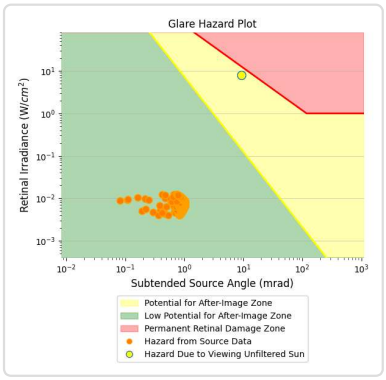
PV array 3: Wythenshawe - West Approach

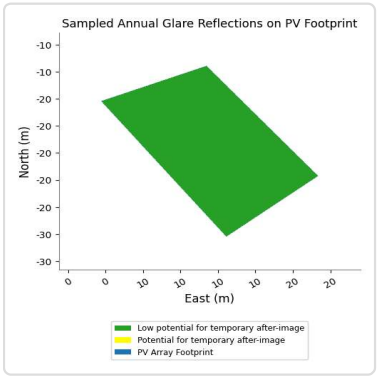
PV array is expected to produce the following glare for this receptor:

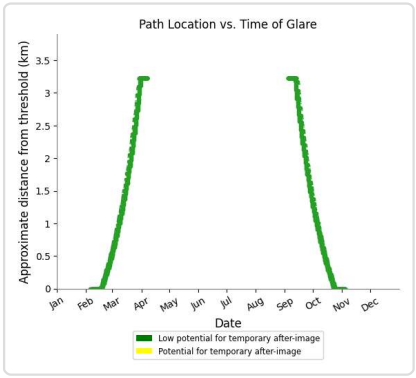
- 2,157 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

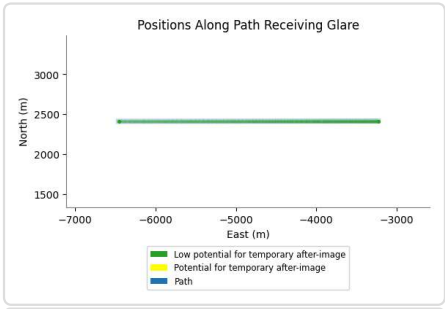


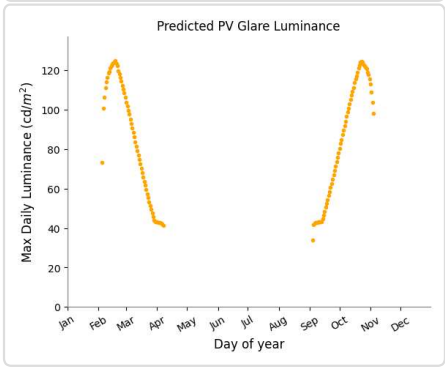












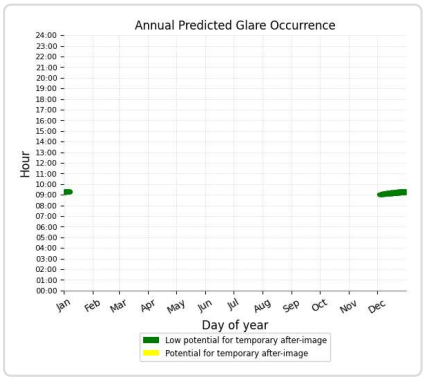
PV array 3: 1-ATCT

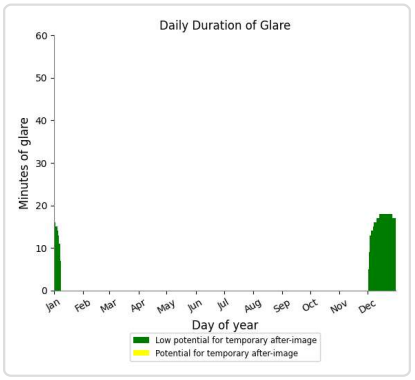
No glare found

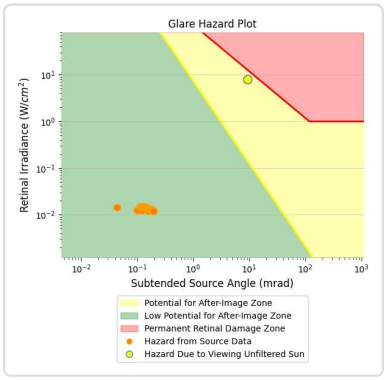
PV array 3: 2-ATCT

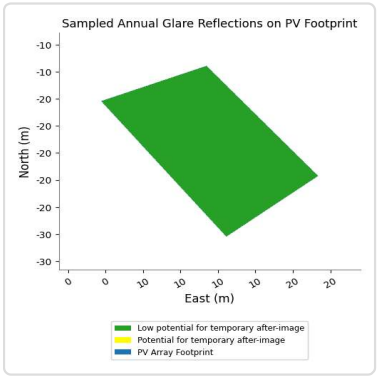
PV array is expected to produce the following glare for this receptor:

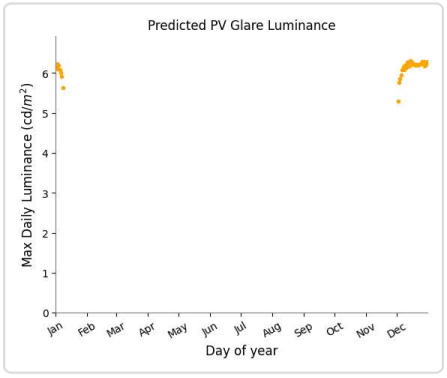
- 596 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.











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

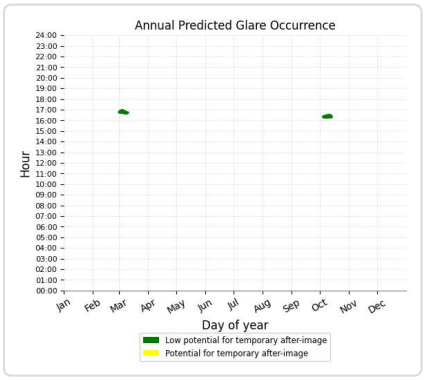
PV array 3: Runway 05R - 10NM

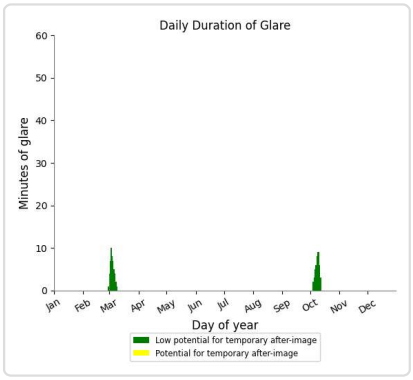
No glare found

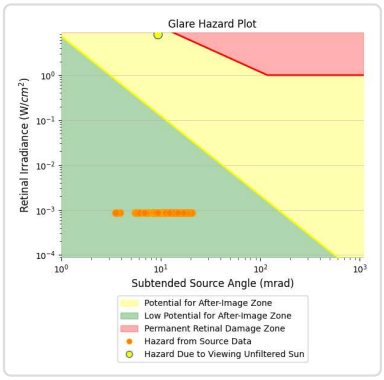
PV array 3: Runway 23L - 10NM

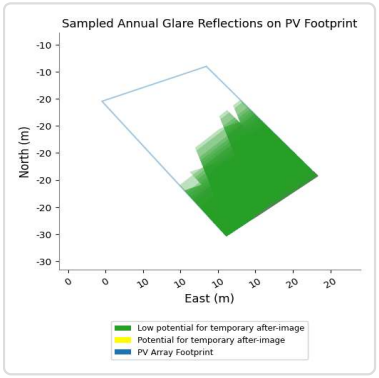
PV array is expected to produce the following glare for this receptor:

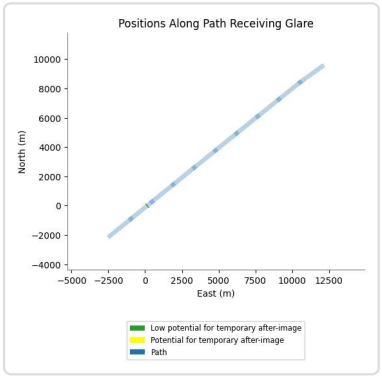
- 100 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

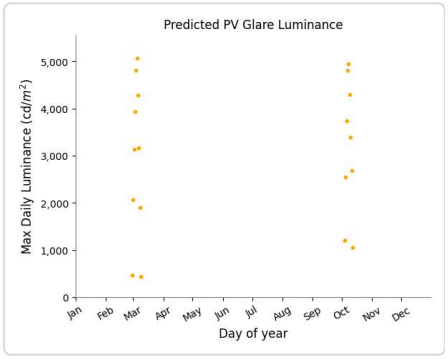












PV array 3: Runway 23R - 10NM

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

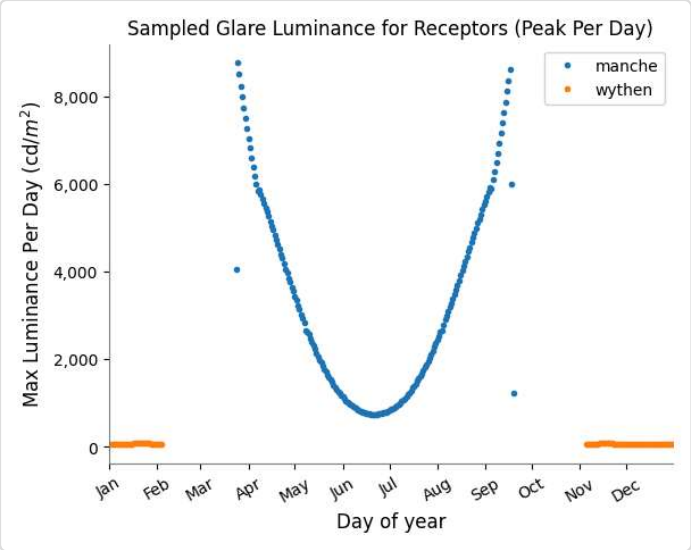
PV array 3: Thelwall Viaduct Exit

No glare found

PV array 4 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)	Peak Luminance (cd/m^2)
FP: Manchester Airport - Runway 05L	0	0	0
FP: Manchester Airport - Runway 05L	0	0	0
FP: Manchester Airport - Runway 23L	0	0	0
FP: Manchester Airport - Runway 23R	10751	0	8,765
FP: Manchester Barton - Runway 02	0	0	0

FP: Manchester Barton - Runway 08L	0	0	0
FP: Manchester Barton - Runway 08R	0	0	0
FP: Manchester Barton - Runway 14	1033	0	7
FP: Manchester Barton - Runway 20	2749	0	9
FP: Manchester Barton - Runway 26L	0	0	0
FP: Manchester Barton - Runway 26R	0	0	0
FP: Manchester Barton - Runway 32	0	0	0
FP: Wythenshawe - East Approach	0	0	0
FP: Wythenshawe - North Approach	3981	0	74
FP: Wythenshawe - Northeast Approach	0	0	0
FP: Wythenshawe - Northwest Approach	0	0	0
FP: Wythenshawe - South Approach	0	0	0
FP: Wythenshawe - Southeast Approach	0	0	0
FP: Wythenshawe - Southwest Approach	0	0	0
FP: Wythenshawe - West Approach	0	0	0
OP: 1-ATCT	0	0	0
OP: 2-ATCT	707	0	7
Route: Macclesfield Entry	0	0	0
Route: Macclesfield Exit	0	0	0
Route: Runway 05L - 10NM	0	0	0
Route: Runway 05R - 10NM	0	0	0
Route: Runway 23L - 10NM	649	0	44
Route: Runway 23R - 10NM	8358	0	2,368
Route: Runway Taxi 1	0	0	0
Route: Runway Taxi 2	0	0	0
Route: Stretton Entry	0	0	0
Route: Thelwall Viaduct Exit	0	0	0



PV array 4: Manchester Airport - Runway 05L

No glare found

PV array 4: Manchester Airport - Runway 05L

No glare found

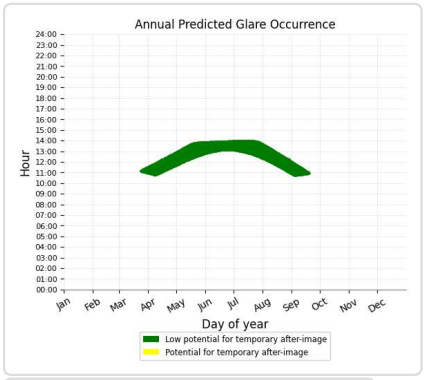
PV array 4: Manchester Airport - Runway 23L

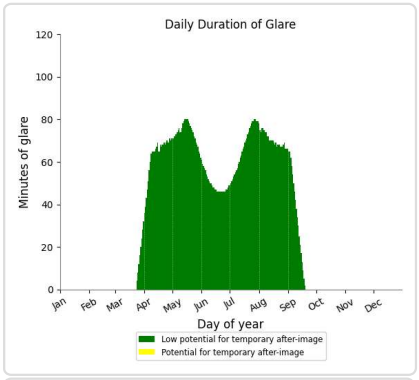
No glare found

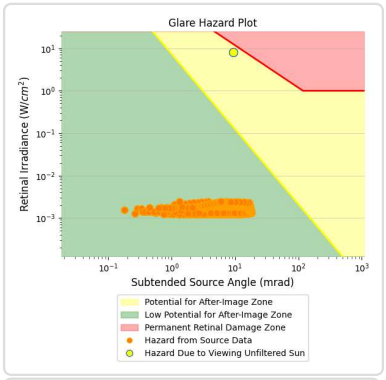
PV array 4: Manchester Airport - Runway 23R

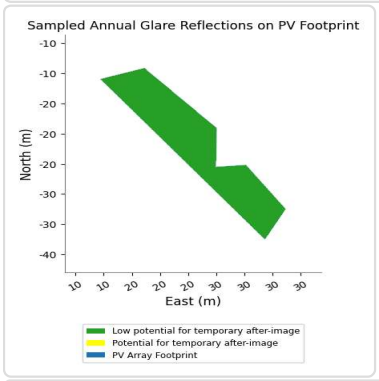
PV array is expected to produce the following glare for this receptor:

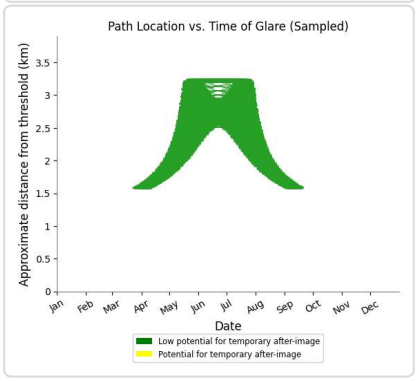
- 10,751 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

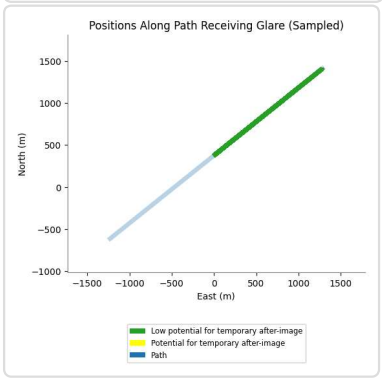


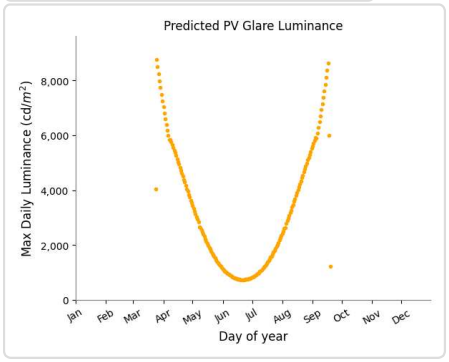












PV array 4: Manchester Barton - Runway 02

No glare found

PV array 4: Manchester Barton - Runway 08L

No glare found

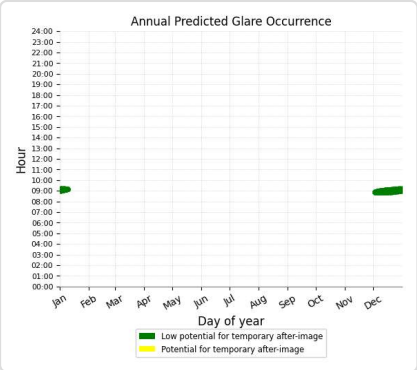
PV array 4: Manchester Barton - Runway 08R

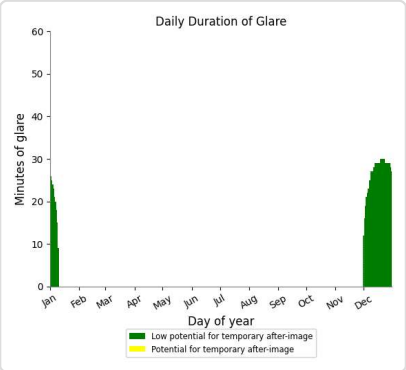
No glare found

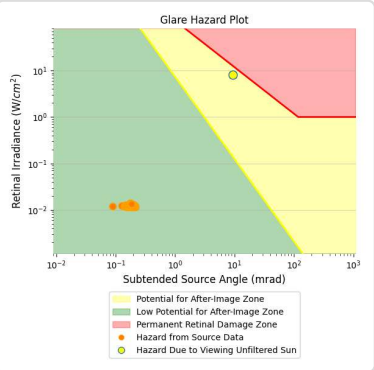
PV array 4: Manchester Barton - Runway 14

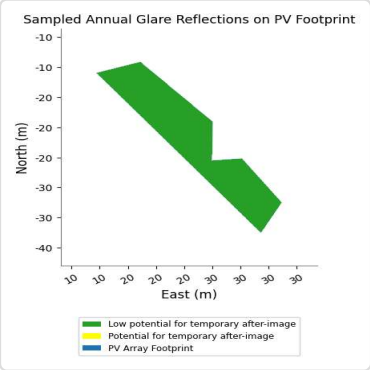
PV array is expected to produce the following glare for this receptor:

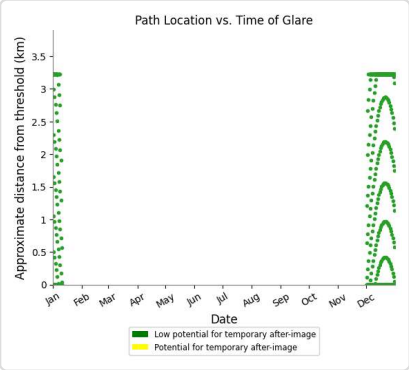
- 1,033 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

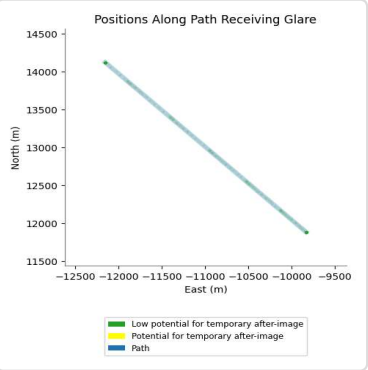


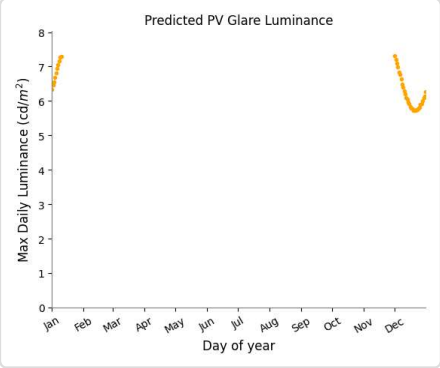








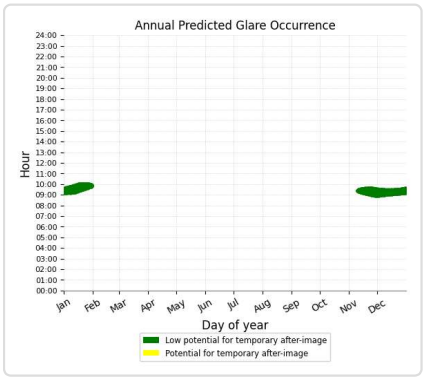


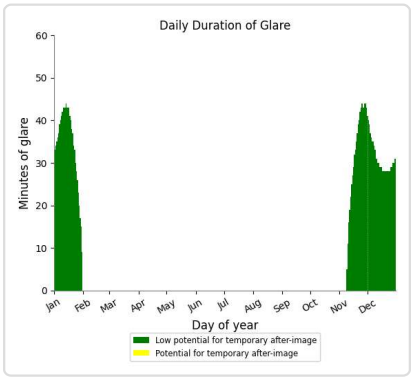


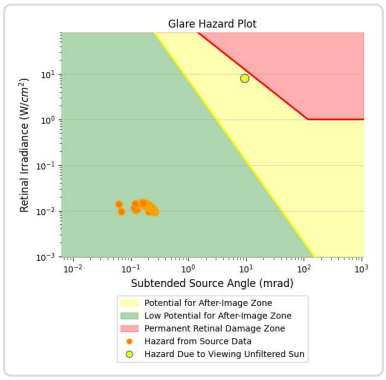
PV array 4: Manchester Barton - Runway 20

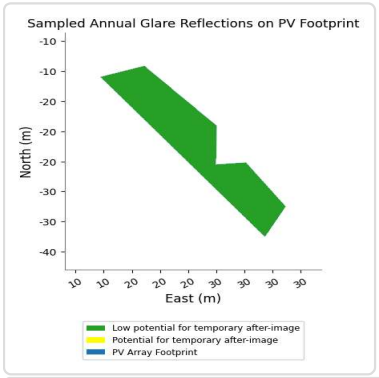
PV array is expected to produce the following glare for this receptor:

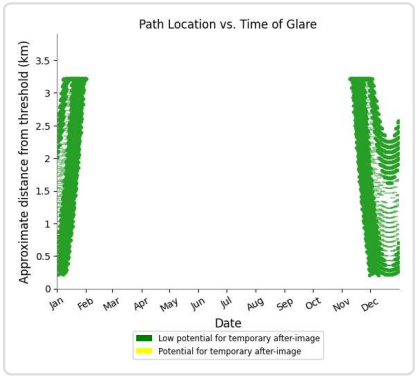
- 2,749 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

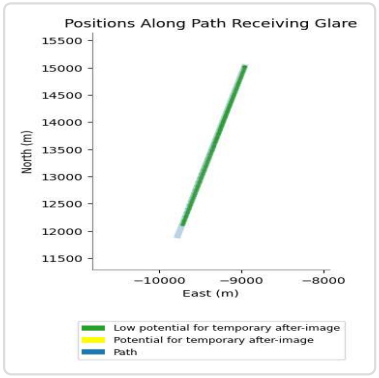


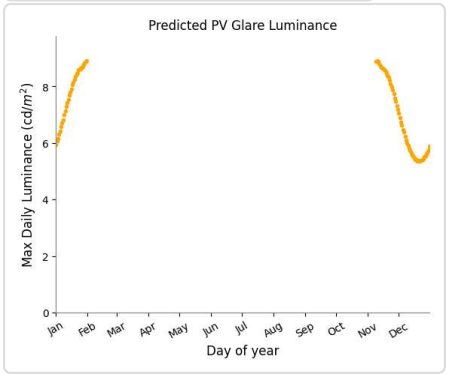












PV array 4: Manchester Barton - Runway 26L

No glare found

PV array 4: Manchester Barton - Runway 26R

No glare found

PV array 4: Manchester Barton - Runway 32

No glare found

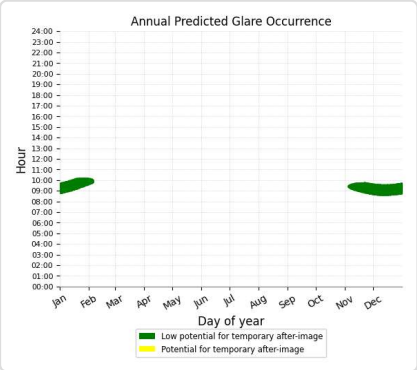
PV array 4: Wythenshawe - East Approach

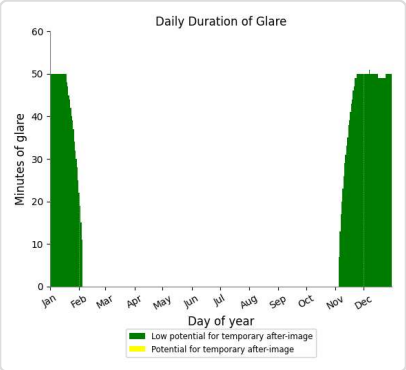
No glare found

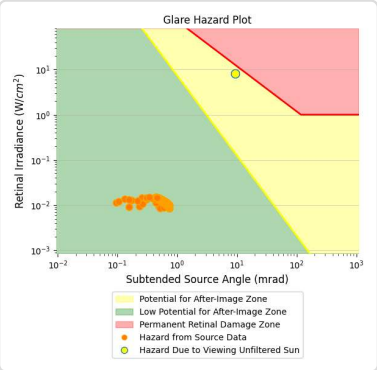
PV array 4: Wythenshawe - North Approach

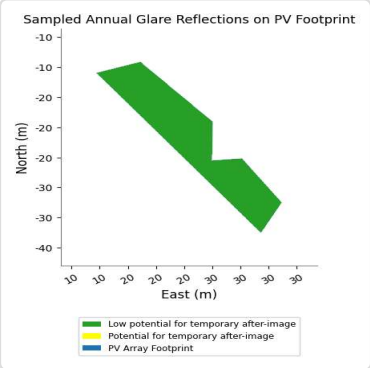
PV array is expected to produce the following glare for this receptor:

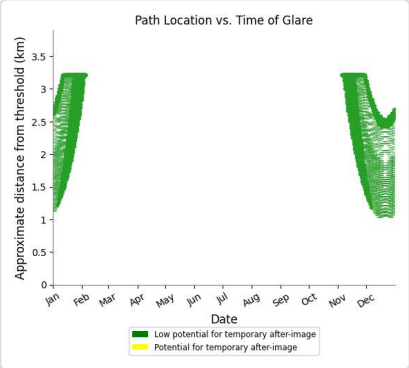
- 3,981 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

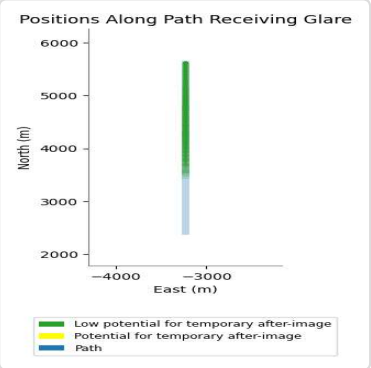


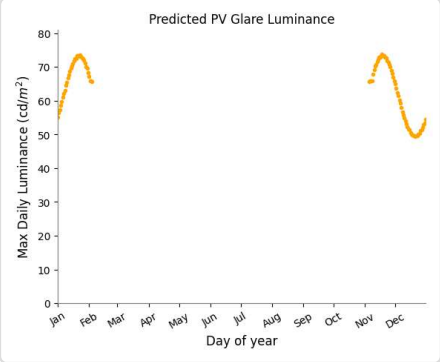












PV array 4: Wythenshawe - Northeast Approach

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

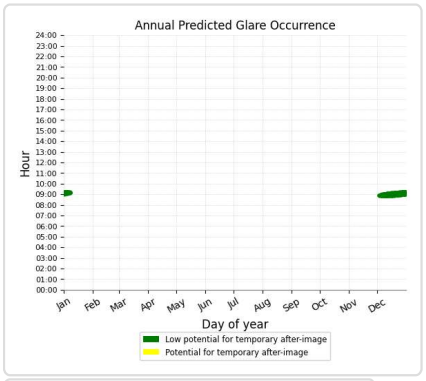
PV array 4: 1-ATCT

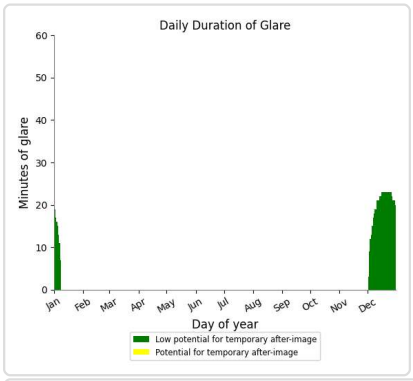
No glare found

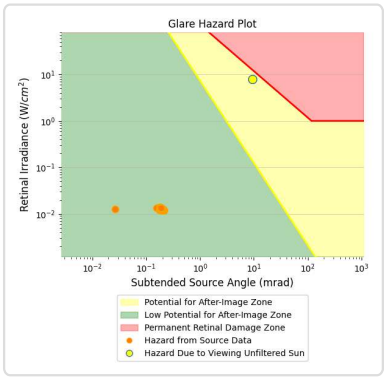
PV array 4: 2-ATCT

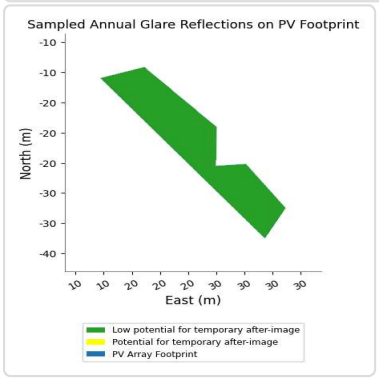
PV array is expected to produce the following glare for this receptor:

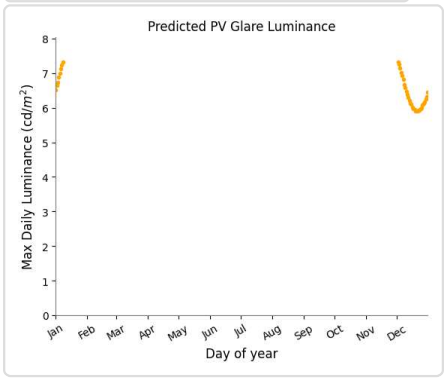
- 707 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.











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

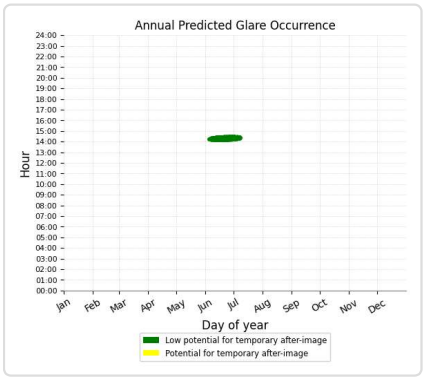
PV array 4: Runway 05R - 10NM

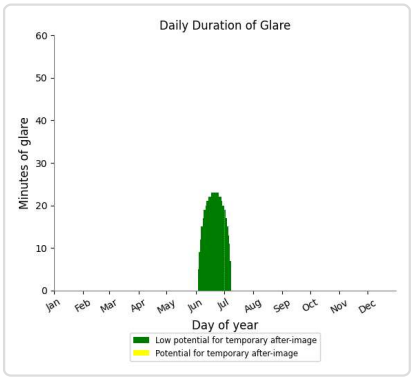
No glare found

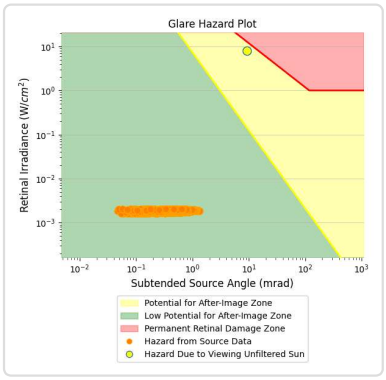
PV array 4: Runway 23L - 10NM

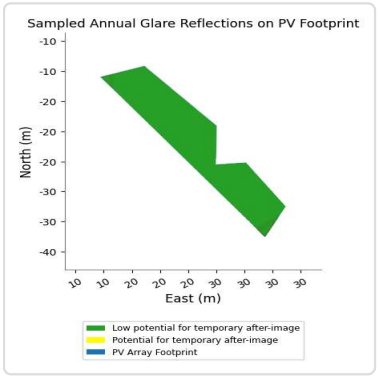
PV array is expected to produce the following glare for this receptor:

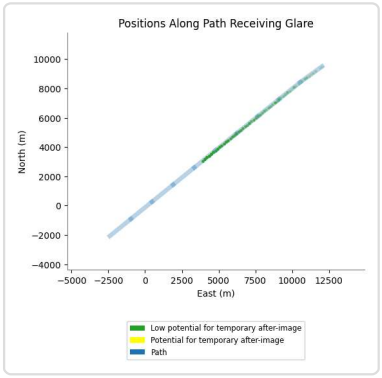
- 649 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

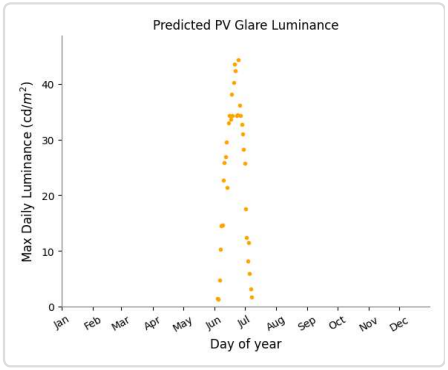








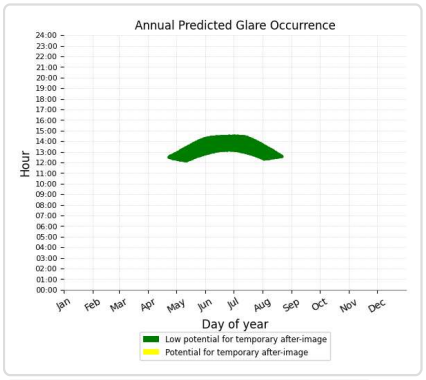


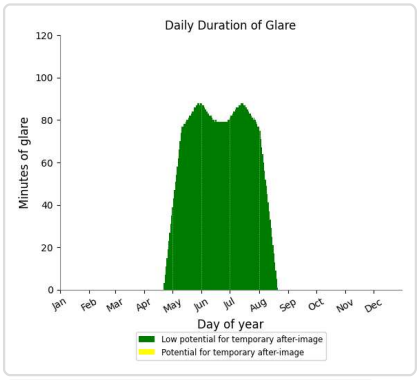


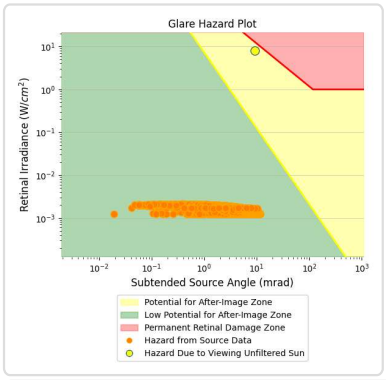
PV array 4: Runway 23R - 10NM

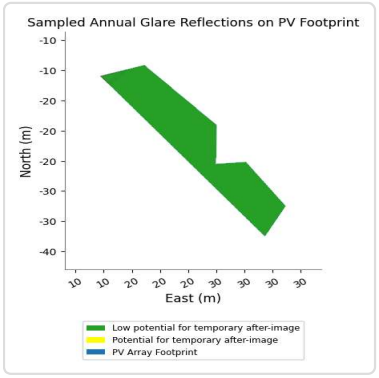
PV array is expected to produce the following glare for this receptor:

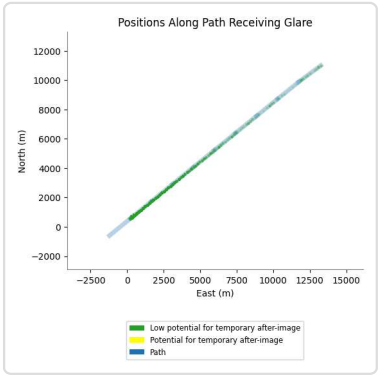
- 8,358 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

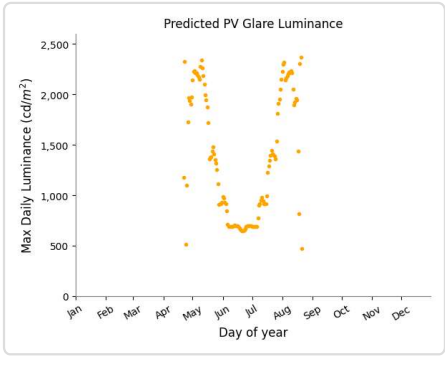












PV array 4: Runway Taxi 1

No glare found

PV array 4: Runway Taxi 2

No glare found

PV array 4: Stretton Entry

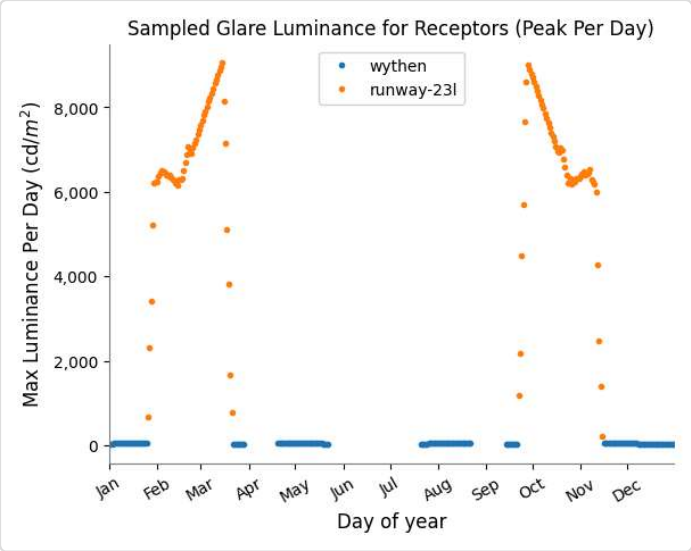
No glare found

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)
FP: Manchester Airport - Runway 05L	0	0	0
FP: Manchester Airport - Runway 05L	0	0	0
FP: Manchester Airport - Runway 23L	0	0	0
FP: Manchester Airport - Runway 23R	0	0	0
FP: Manchester Barton - Runway 02	0	0	0
FP: Manchester Barton - Runway 08L	1907	0	3
FP: Manchester Barton - Runway 08R	1885	0	3
FP: Manchester Barton - Runway 14	0	0	0
FP: Manchester Barton - Runway 20	0	0	0
FP: Manchester Barton - Runway 26L	0	0	0
FP: Manchester Barton - Runway 26R	0	0	0
FP: Manchester Barton - Runway 32	0	0	0
FP: Wythenshawe - East Approach	0	0	0
FP: Wythenshawe - North Approach	1846	0	65
FP: Wythenshawe - Northeast Approach	0	0	0
FP: Wythenshawe - Northwest Approach	1837	0	66
FP: Wythenshawe - South Approach	0	0	0
FP: Wythenshawe - Southeast Approach	0	0	0
FP: Wythenshawe - Southwest Approach	1341	0	48
FP: Wythenshawe - West Approach	2499	0	64
OP: 1-ATCT	0	0	0
OP: 2-ATCT	0	0	0
Route: Macclesfield Entry	0	0	0
Route: Macclesfield Exit	0	0	0
Route: Runway 05L - 10NM	0	0	0
Route: Runway 05R - 10NM	0	0	0
Route: Runway 23L - 10NM	2803	0	9,053
Route: Runway 23R - 10NM	0	0	0
Route: Runway Taxi 1	0	0	0
Route: Runway Taxi 2	0	0	0
Route: Stretton Entry	0	0	0
Route: Thelwall Viaduct Exit	0	0	0



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

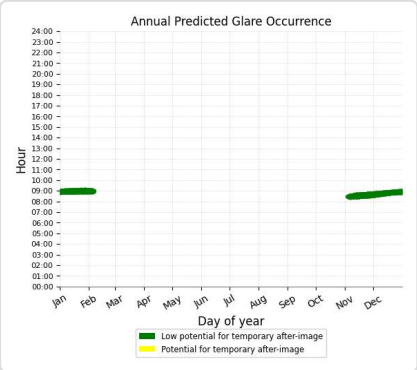
PV array 5: Manchester Barton - Runway 02

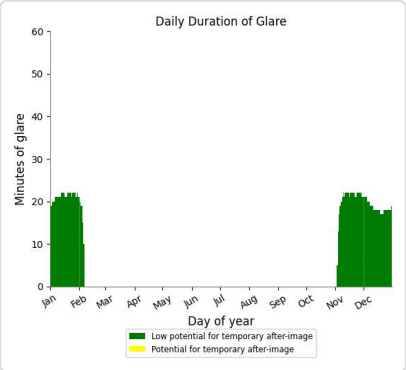
No glare found

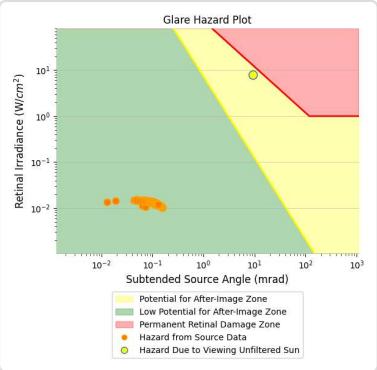
PV array 5: Manchester Barton - Runway 08L

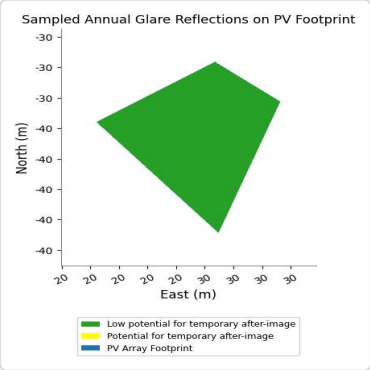
PV array is expected to produce the following glare for this receptor:

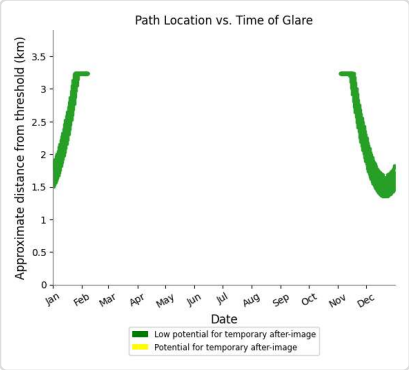
- 1,907 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

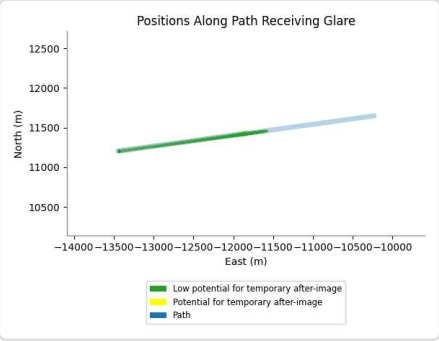


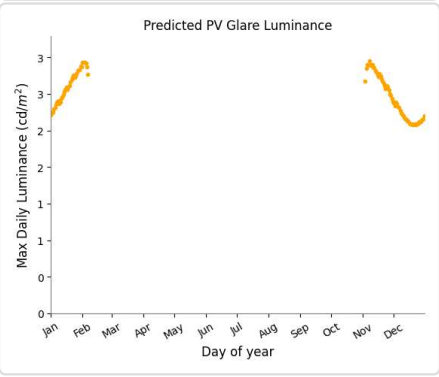








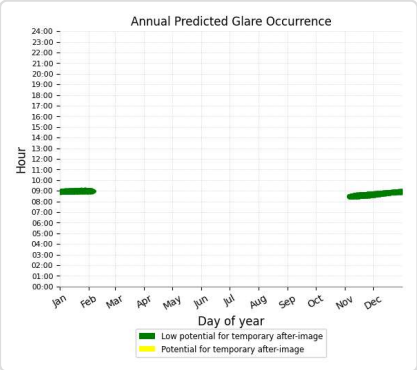


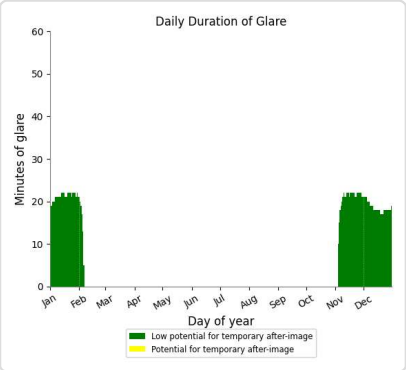


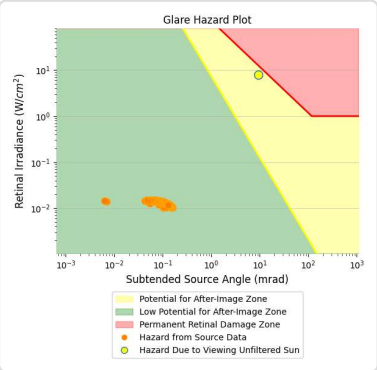
PV array 5: Manchester Barton - Runway 08R

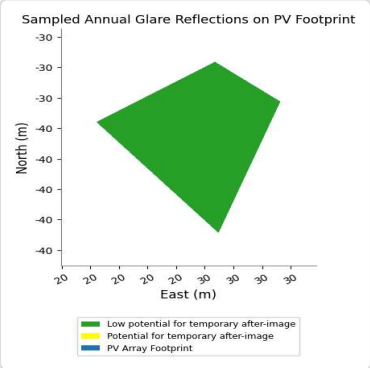
PV array is expected to produce the following glare for this receptor:

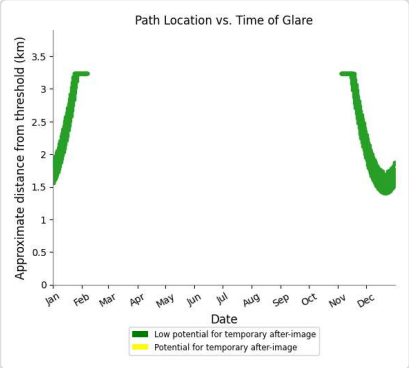
- 1,885 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

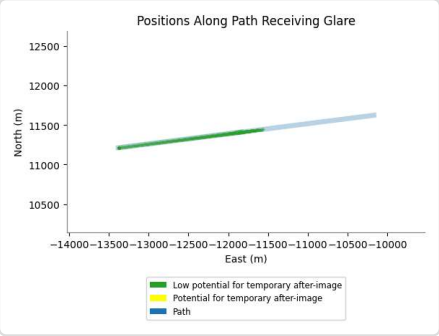


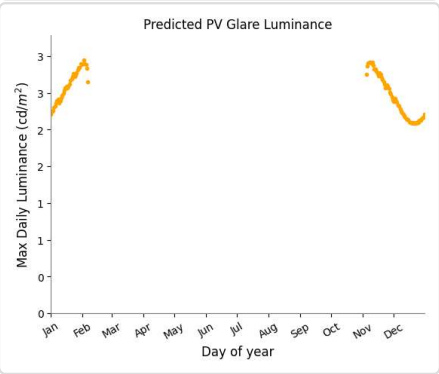












PV array 5: Manchester Barton - Runway 14

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

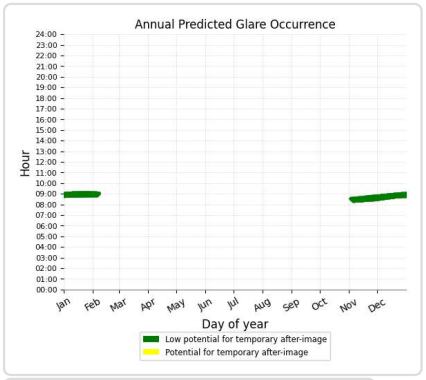
PV array 5: Wythenshawe - East Approach

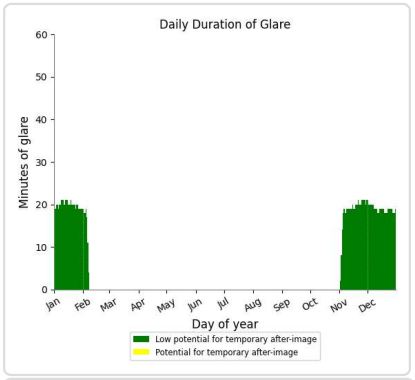
No glare found

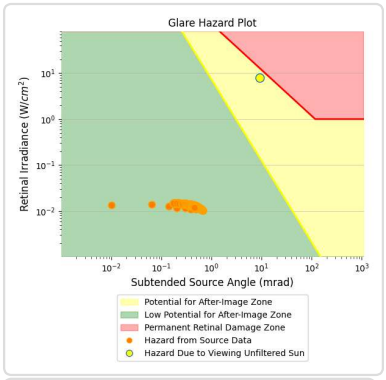
PV array 5: Wythenshawe - North Approach

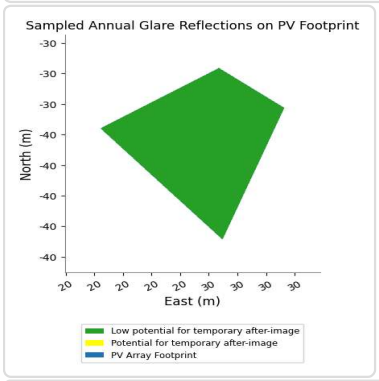
PV array is expected to produce the following glare for this receptor:

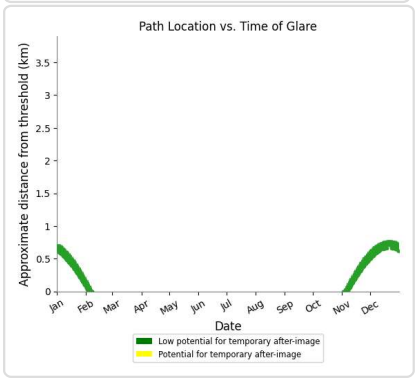
- 1,846 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

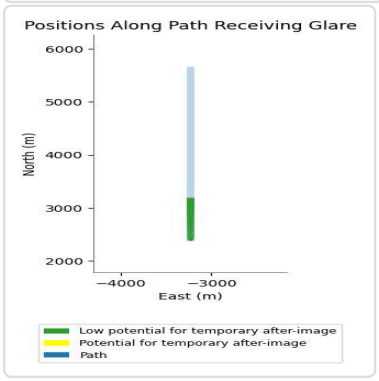


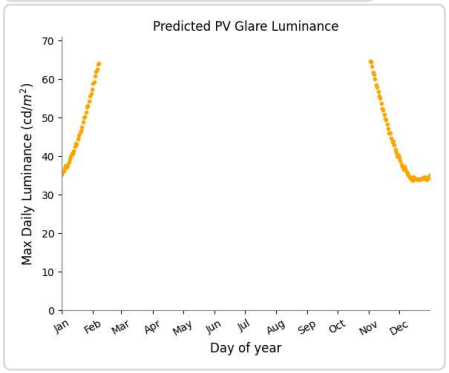












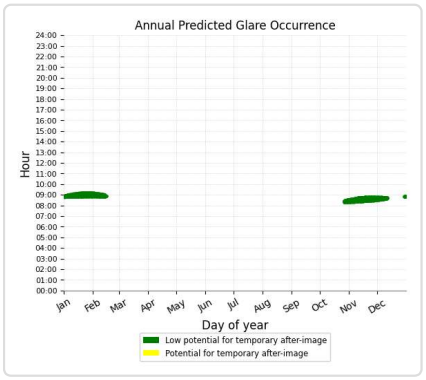
PV array 5: Wythenshawe - Northeast Approach

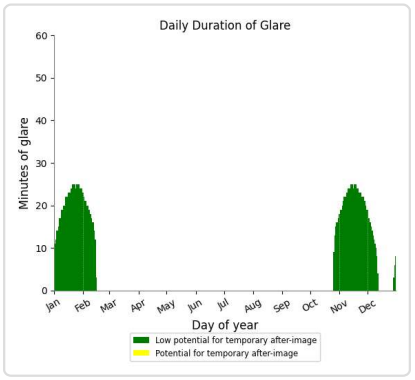
No glare found

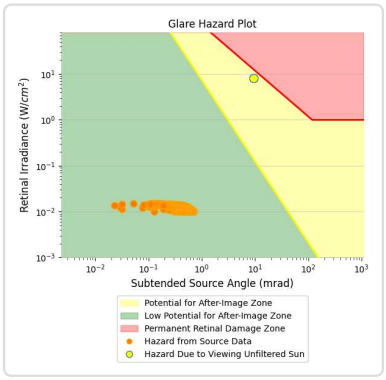
PV array 5: Wythenshawe - Northwest Approach

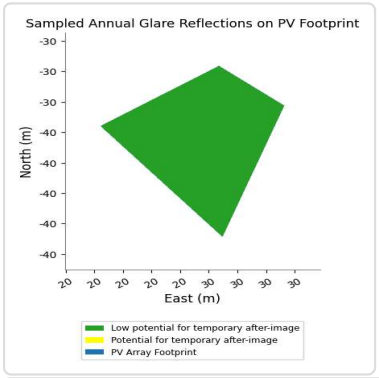
PV array is expected to produce the following glare for this receptor:

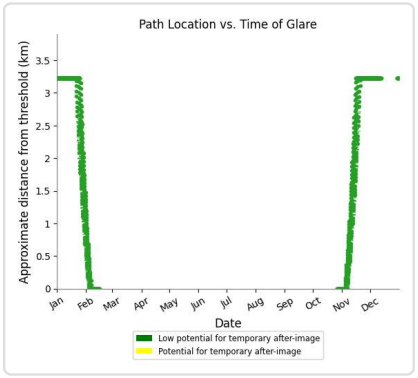
- 1,837 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

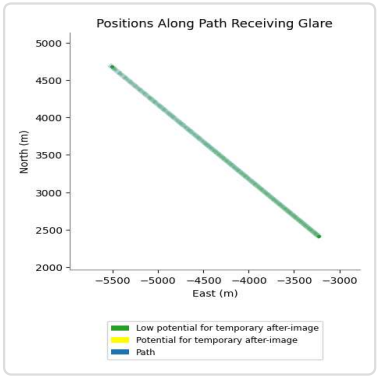


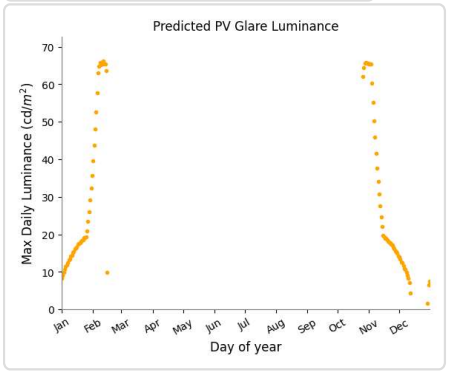












PV array 5: Wythenshawe - South Approach

No glare found

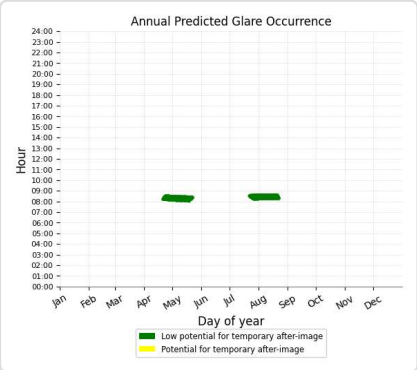
PV array 5: Wythenshawe - Southeast Approach

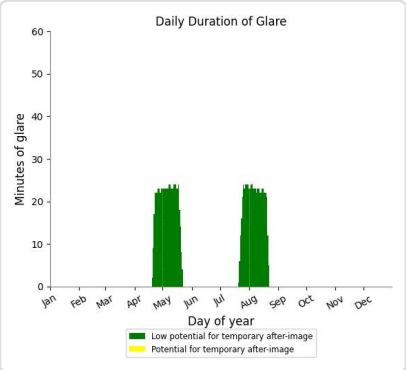
No glare found

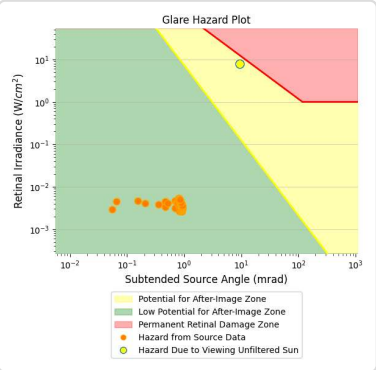
PV array 5: Wythenshawe - Southwest Approach

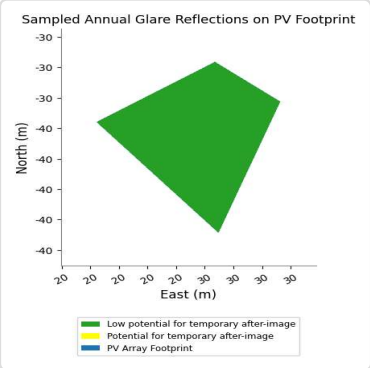
PV array is expected to produce the following glare for this receptor:

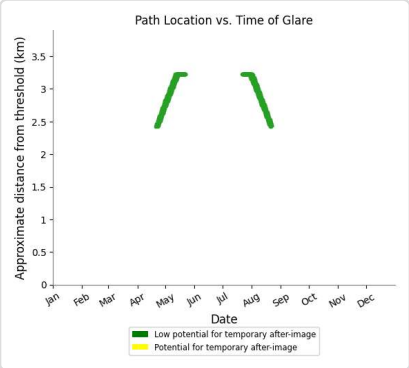
- 1,341 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

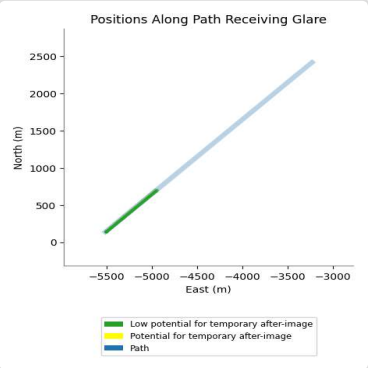


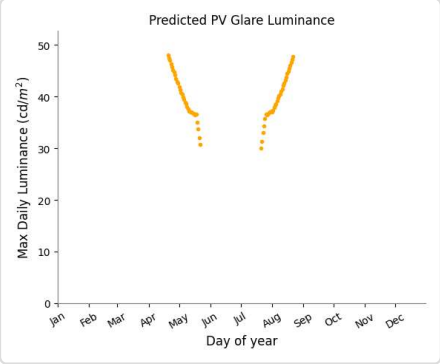








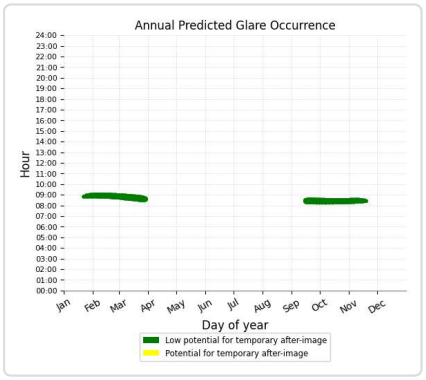


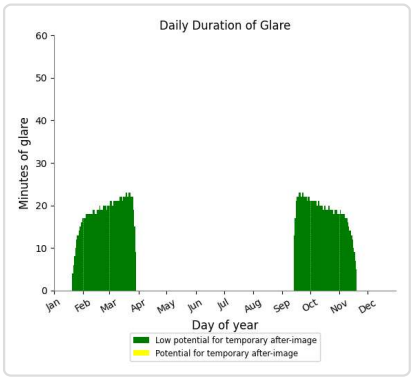


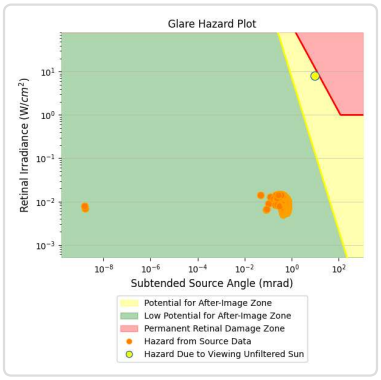
PV array 5: Wythenshawe - West Approach

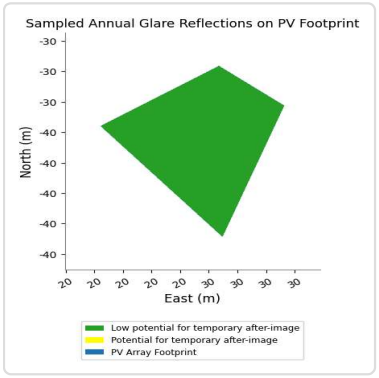
PV array is expected to produce the following glare for this receptor:

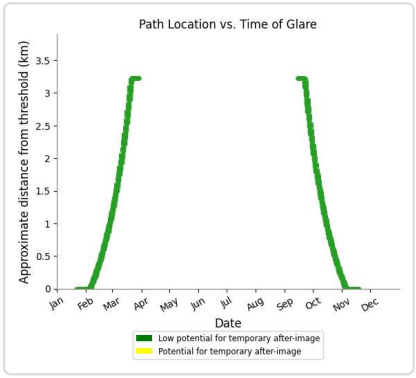
- 2,499 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

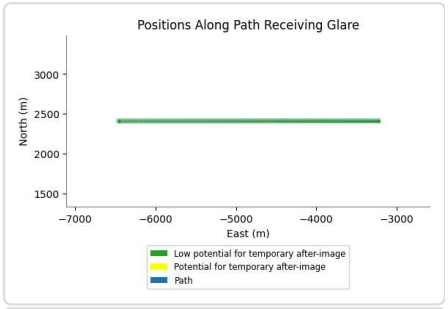


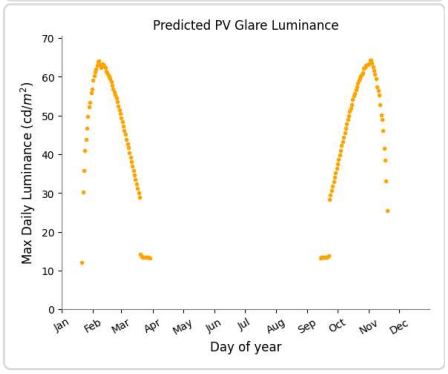












PV array 5: 1-ATCT

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

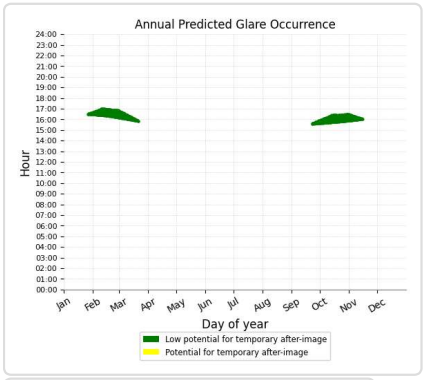
PV array 5: Runway 05R - 10NM

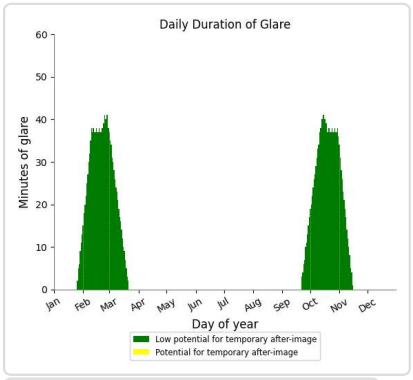
No glare found

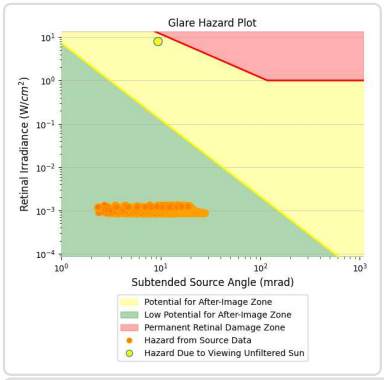
PV array 5: Runway 23L - 10NM

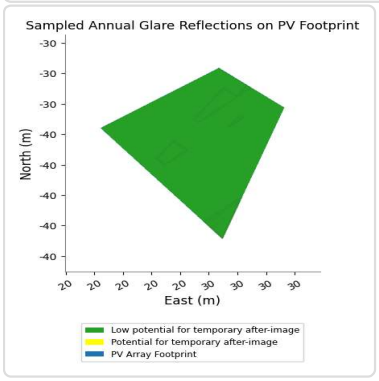
PV array is expected to produce the following glare for this receptor:

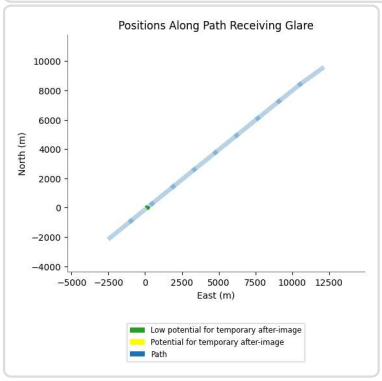
- 2,803 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

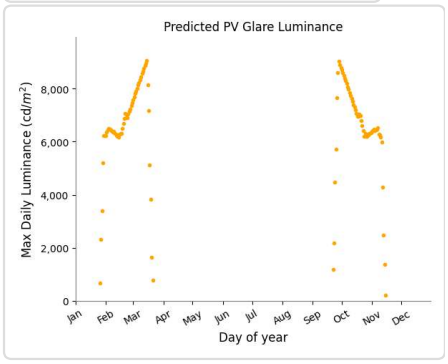












PV array 5: Runway 23R - 10NM

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

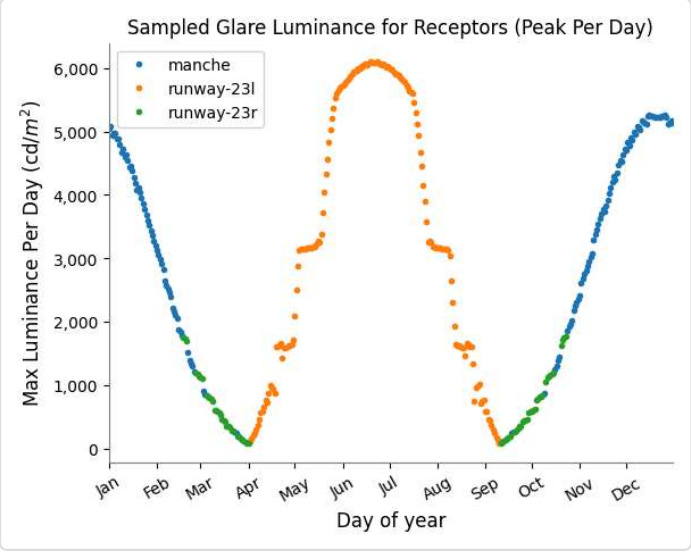
PV array 5: Thelwall Viaduct Exit

No glare found

PV array 6 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)	Peak Luminance (cd/m^2)
FP: Manchester Airport - Runway 05L	0	0	0
FP: Manchester Airport - Runway 05L	0	0	0

FP: Manchester Airport - Runway 23L	0	0	0
FP: Manchester Airport - Runway 23R	7325	0	5,260
FP: Manchester Barton - Runway 02	0	0	0
FP: Manchester Barton - Runway 08L	0	0	0
FP: Manchester Barton - Runway 08R	0	0	0
FP: Manchester Barton - Runway 14	0	0	0
FP: Manchester Barton - Runway 20	0	0	0
FP: Manchester Barton - Runway 26L	0	0	0
FP: Manchester Barton - Runway 26R	0	0	0
FP: Manchester Barton - Runway 32	0	0	0
FP: Wythenshawe - East Approach	0	0	0
FP: Wythenshawe - North Approach	0	0	0
FP: Wythenshawe - Northeast Approach	0	0	0
FP: Wythenshawe - Northwest Approach	0	0	0
FP: Wythenshawe - South Approach	0	0	0
FP: Wythenshawe - Southeast Approach	0	0	0
FP: Wythenshawe - Southwest Approach	0	0	0
FP: Wythenshawe - West Approach	0	0	0
OP: 1-ATCT	0	0	0
OP: 2-ATCT	0	0	0
Route: Macclesfield Entry	0	0	0
Route: Macclesfield Exit	0	0	0
Route: Runway 05L - 10NM	0	0	0
Route: Runway 05R - 10NM	0	0	0
Route: Runway 23L - 10NM	8778	0	6,096
Route: Runway 23R - 10NM	4578	0	2,210
Route: Runway Taxi 1	0	0	0
Route: Runway Taxi 2	0	0	0
Route: Stretton Entry	0	0	0
Route: Thelwall Viaduct Exit	0	0	0



PV array 6: Manchester Airport - Runway 05L

No glare found

PV array 6: Manchester Airport - Runway 05L

No glare found

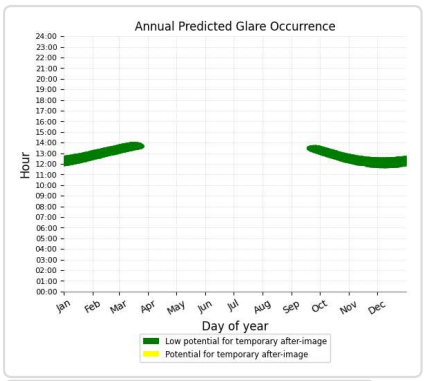
PV array 6: Manchester Airport - Runway 23L

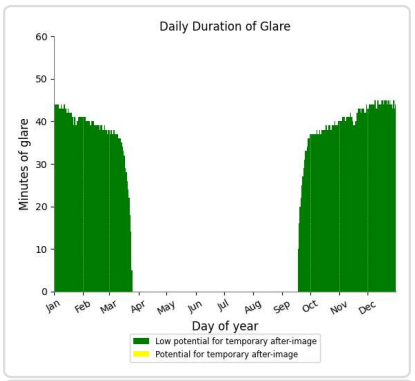
No glare found

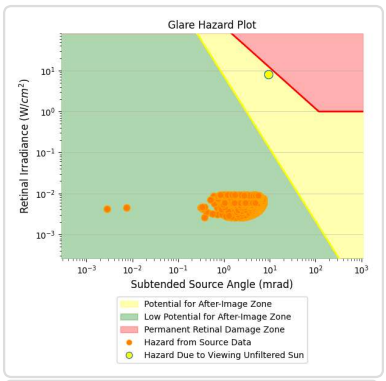
PV array 6: Manchester Airport - Runway 23R

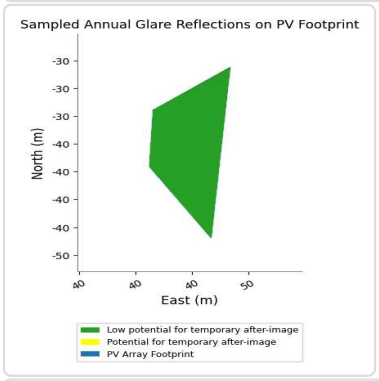
PV array is expected to produce the following glare for this receptor:

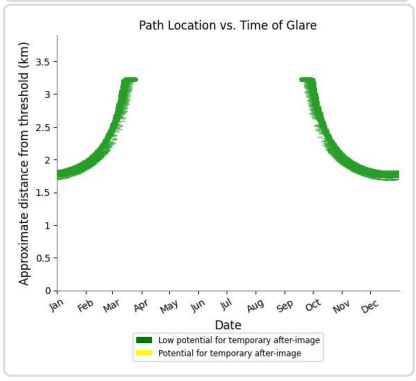
- 7,325 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

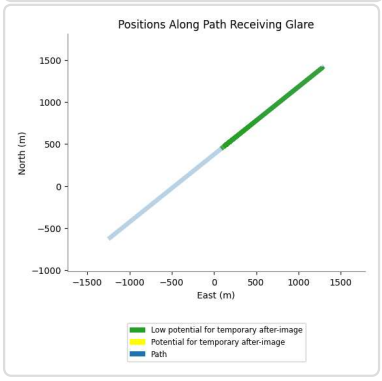


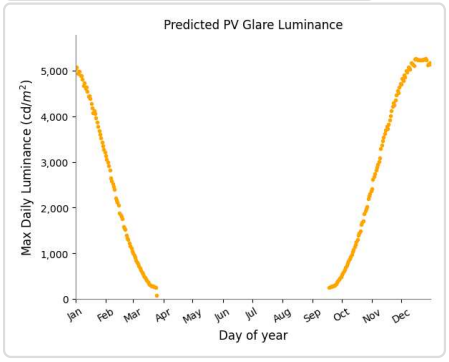












PV array 6: Manchester Barton - Runway 02

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

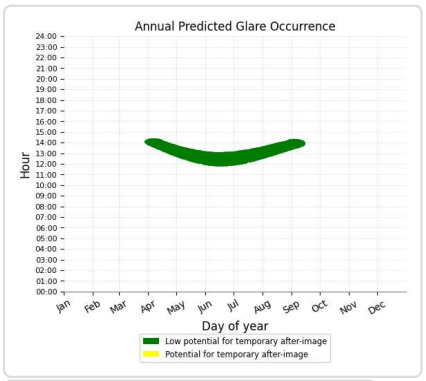
PV array 6: Runway 05R - 10NM

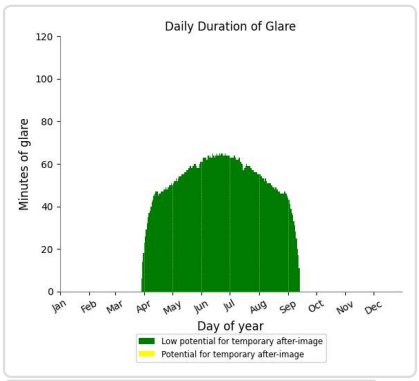
No glare found

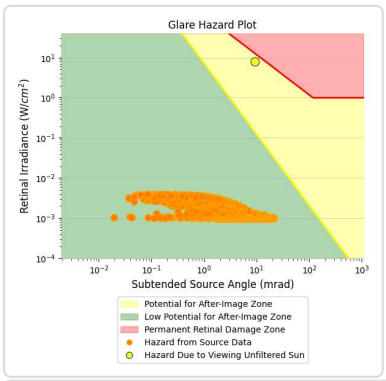
PV array 6: Runway 23L - 10NM

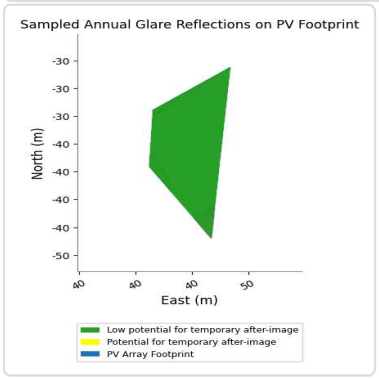
PV array is expected to produce the following glare for this receptor:

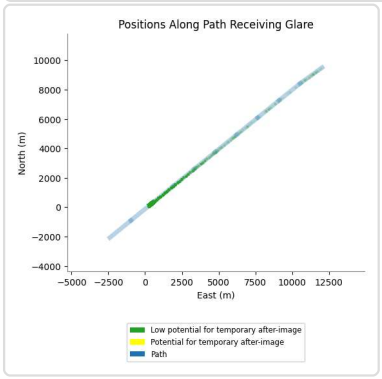
- 8,778 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

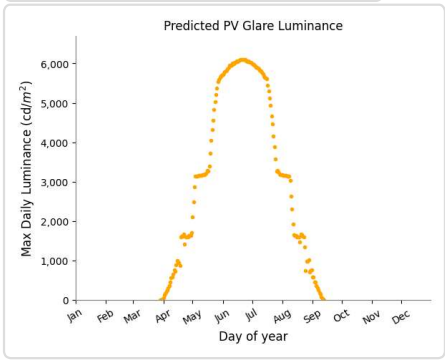








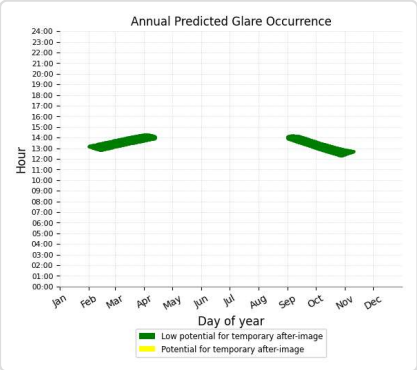


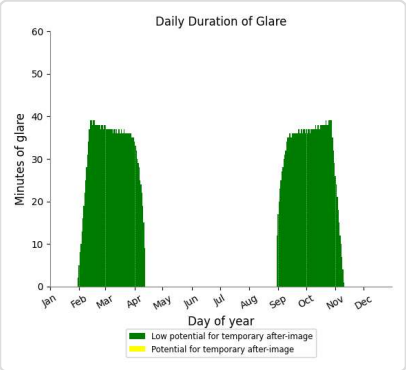


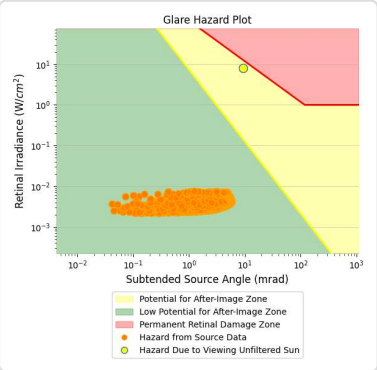
PV array 6: Runway 23R - 10NM

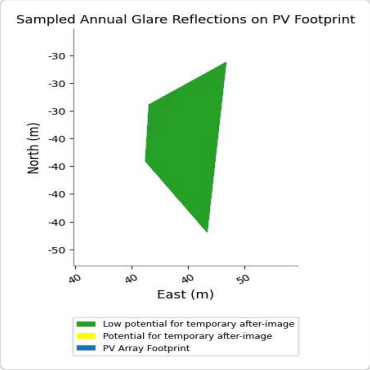
PV array is expected to produce the following glare for this receptor:

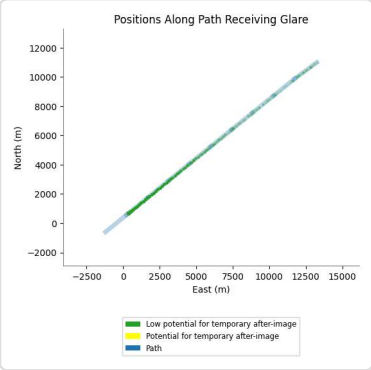
- 4,578 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

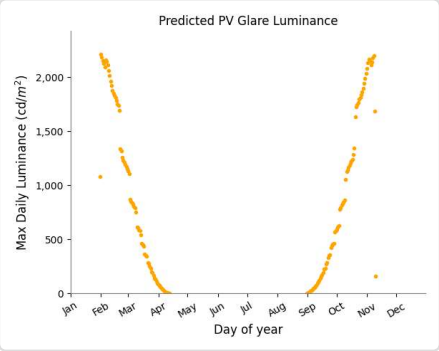












PV array 6: Runway Taxi 1

No glare found

PV array 6: Runway Taxi 2

No glare found

PV array 6: Stretton Entry

No glare found

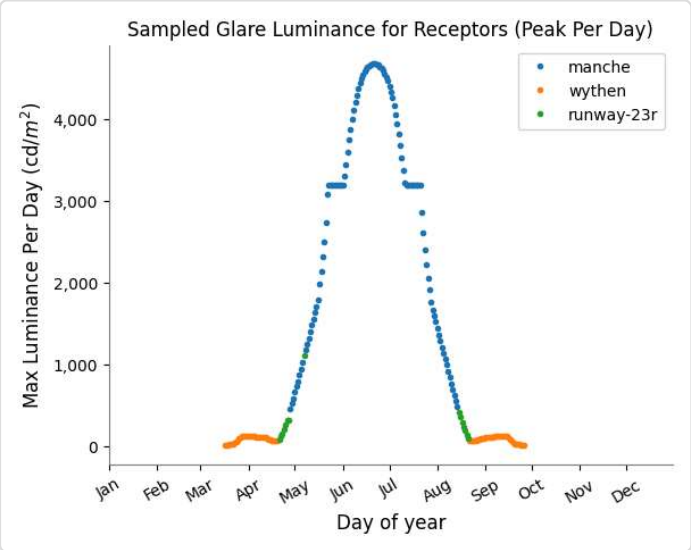
PV array 6: Thelwall Viaduct Exit

No glare found

PV array 7 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)	Peak Luminance (cd/m^2)
FP: Manchester Airport - Runway 05L	0	0	0
FP: Manchester Airport - Runway 05L	0	0	0
FP: Manchester Airport - Runway 23L	0	0	0
FP: Manchester Airport - Runway 23R	12877	0	4,676
FP: Manchester Barton - Runway 02	0	0	0
FP: Manchester Barton - Runway 08L	438	0	8
FP: Manchester Barton - Runway 08R	469	0	8
FP: Manchester Barton - Runway 14	579	0	9
FP: Manchester Barton - Runway 20	980	0	9

FP: Manchester Barton - Runway 26L	0	0	0
FP: Manchester Barton - Runway 26R	0	0	0
FP: Manchester Barton - Runway 32	0	0	0
FP: Wythenshawe - East Approach	0	0	0
FP: Wythenshawe - North Approach	2413	0	122
FP: Wythenshawe - Northeast Approach	0	0	0
FP: Wythenshawe - Northwest Approach	1161	0	123
FP: Wythenshawe - South Approach	0	0	0
FP: Wythenshawe - Southeast Approach	0	0	0
FP: Wythenshawe - Southwest Approach	299	0	42
FP: Wythenshawe - West Approach	1680	0	124
OP: 1-ATCT	0	0	0
OP: 2-ATCT	331	0	9
Route: Macclesfield Entry	541	0	63
Route: Macclesfield Exit	0	0	0
Route: Runway 05L - 10NM	0	0	0
Route: Runway 05R - 10NM	0	0	0
Route: Runway 23L - 10NM	3923	0	2,012
Route: Runway 23R - 10NM	7501	0	1,285
Route: Runway Taxi 1	0	0	0
Route: Runway Taxi 2	0	0	0
Route: Stretton Entry	0	0	0
Route: Thelwall Viaduct Exit	0	0	0



PV array 7: Manchester Airport - Runway 05L

No glare found

PV array 7: Manchester Airport - Runway 05L

No glare found

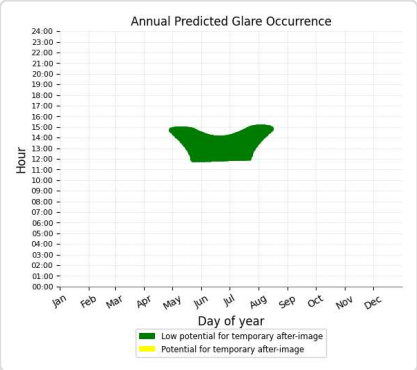
PV array 7: Manchester Airport - Runway 23L

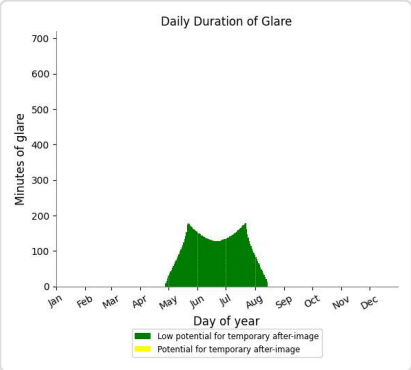
No glare found

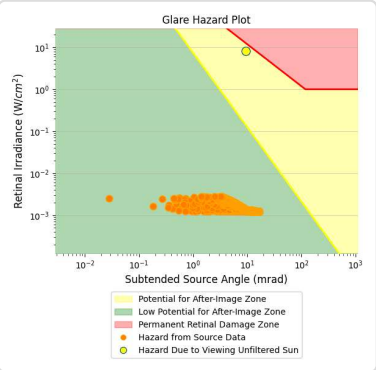
PV array 7: Manchester Airport - Runway 23R

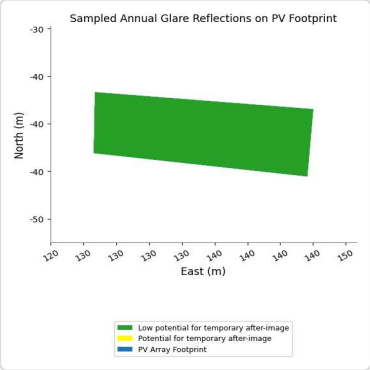
PV array is expected to produce the following glare for this receptor:

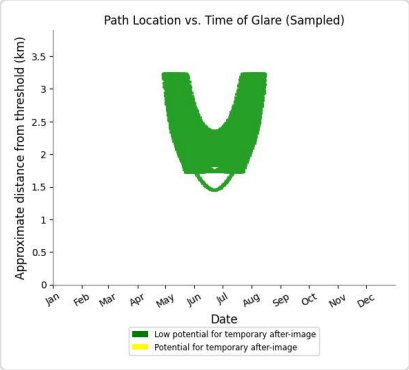
- 12,877 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

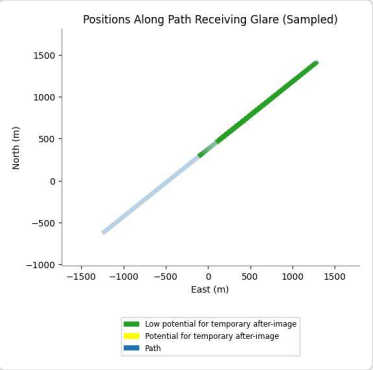


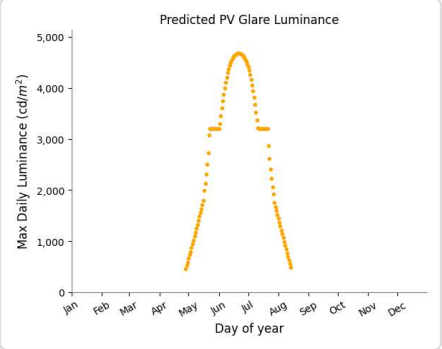












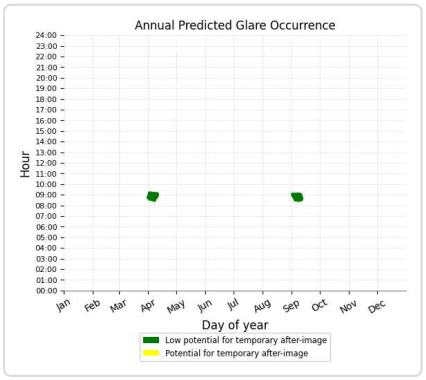
PV array 7: Manchester Barton - Runway 02

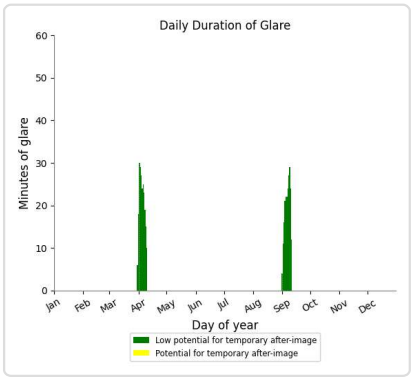
No glare found

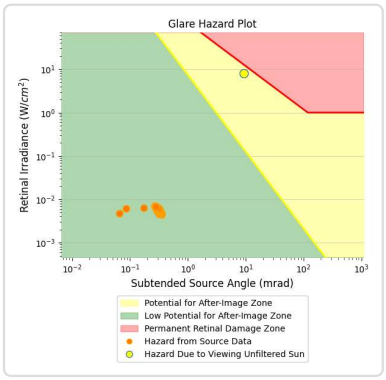
PV array 7: Manchester Barton - Runway 08L

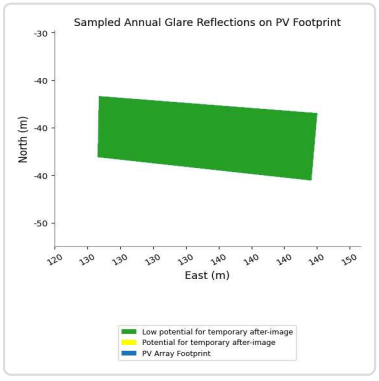
PV array is expected to produce the following glare for this receptor:

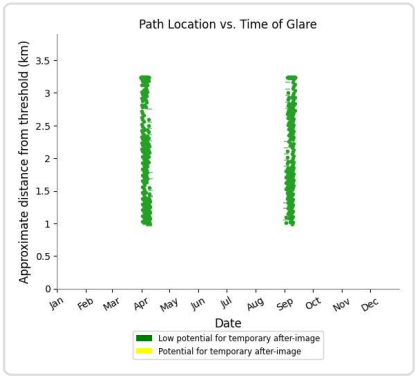
- 438 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

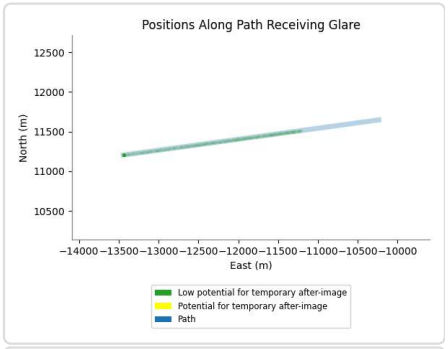


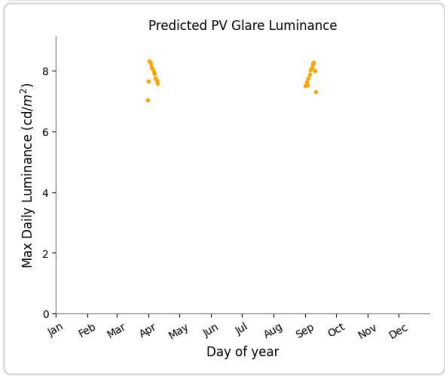








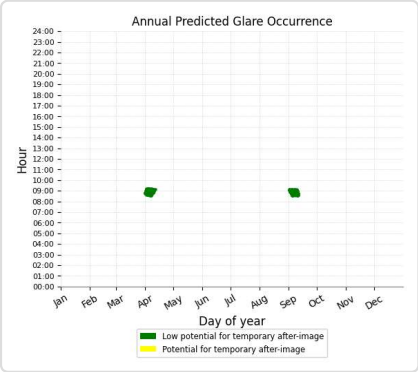


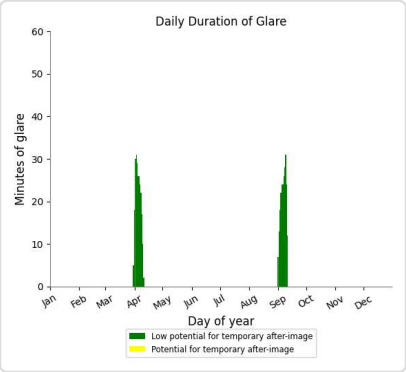


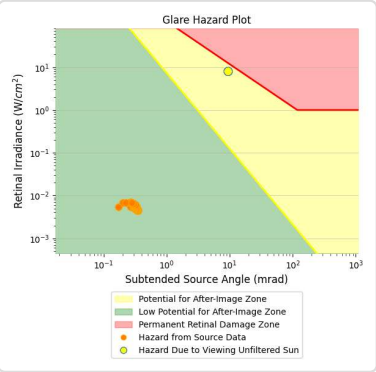
PV array 7: Manchester Barton - Runway 08R

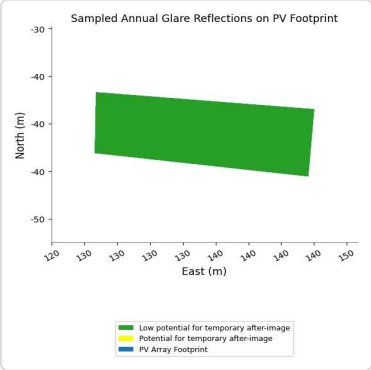
PV array is expected to produce the following glare for this receptor:

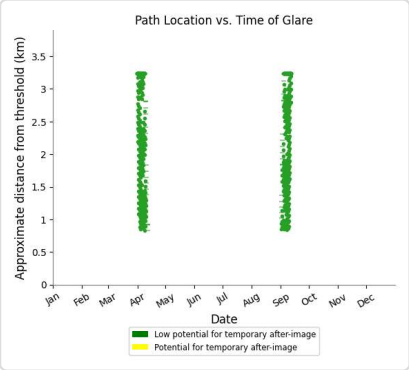
- 469 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

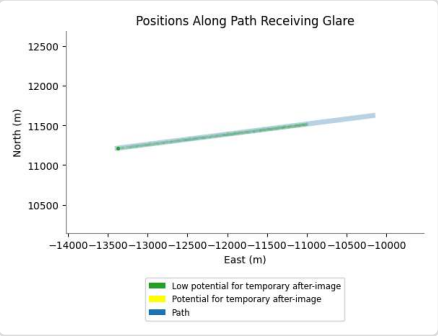


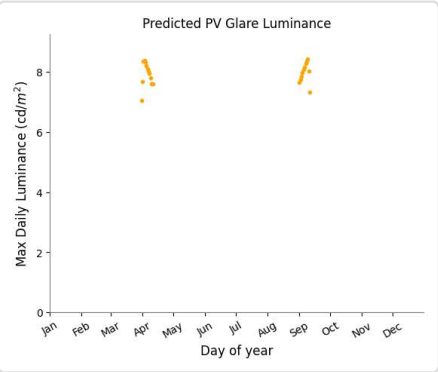








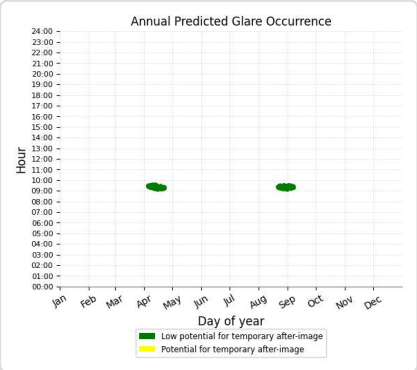


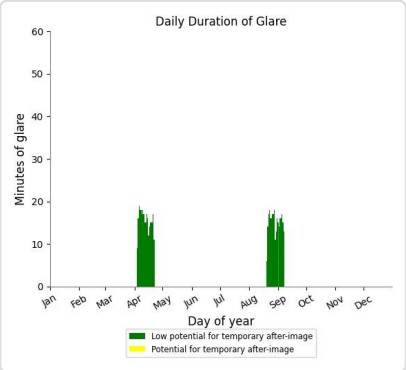


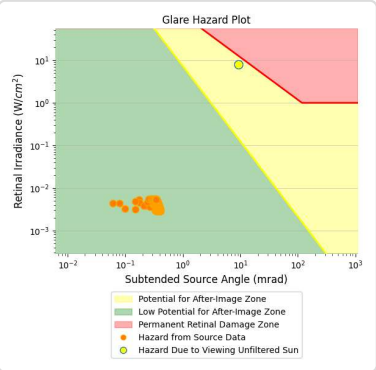
PV array 7: Manchester Barton - Runway 14

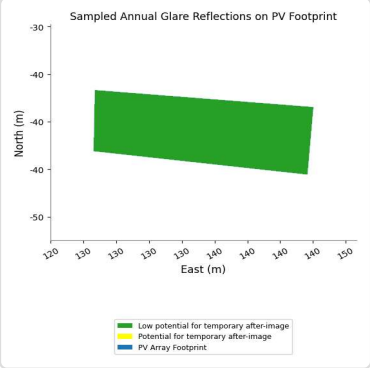
PV array is expected to produce the following glare for this receptor:

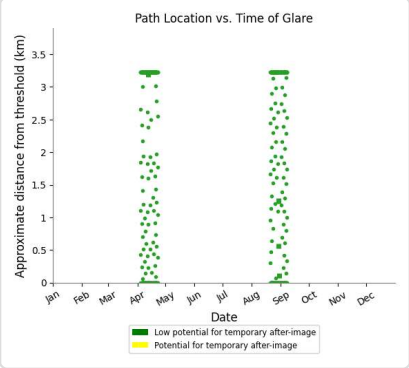
- 579 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

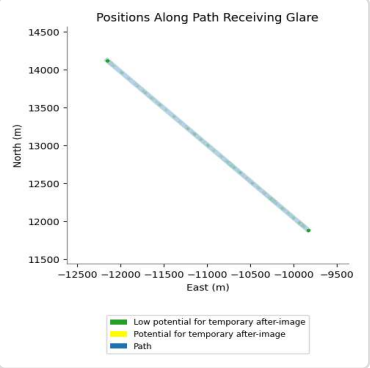


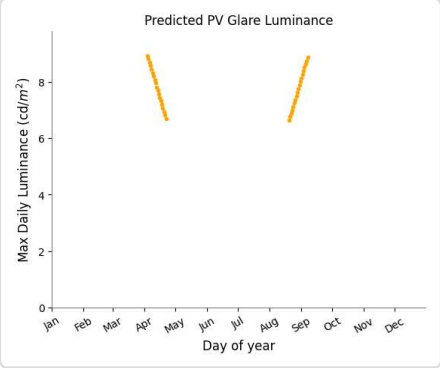








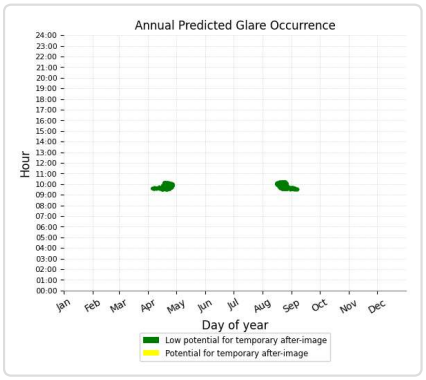


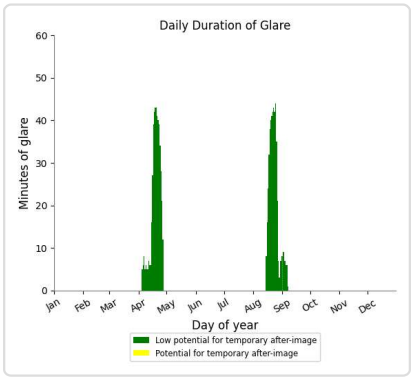


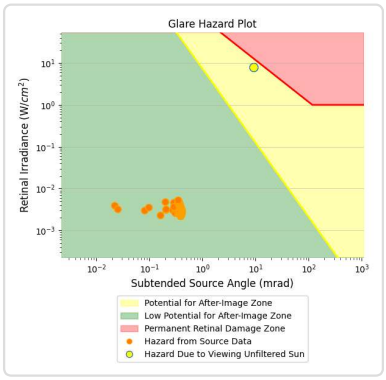
PV array 7: Manchester Barton - Runway 20

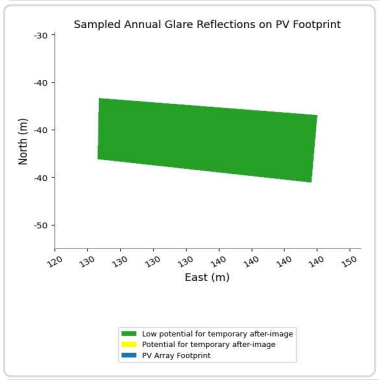
PV array is expected to produce the following glare for this receptor:

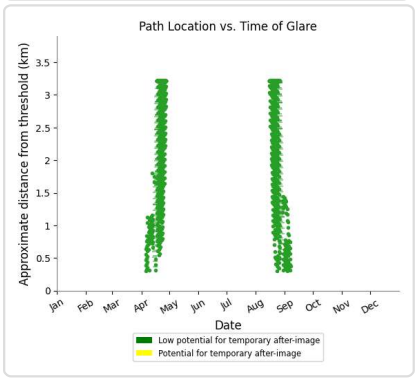
- 980 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

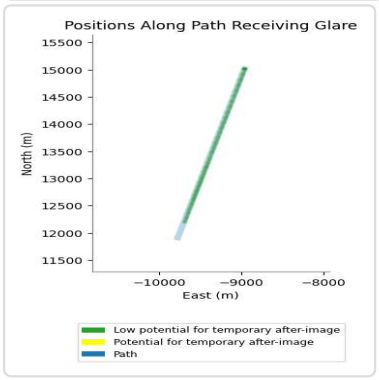


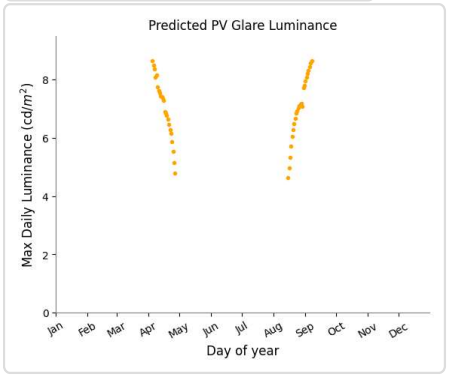












PV array 7: Manchester Barton - Runway 26L

No glare found

PV array 7: Manchester Barton - Runway 26R

No glare found

PV array 7: Manchester Barton - Runway 32

No glare found

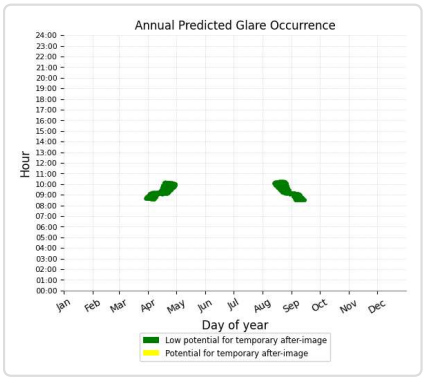
PV array 7: Wythenshawe - East Approach

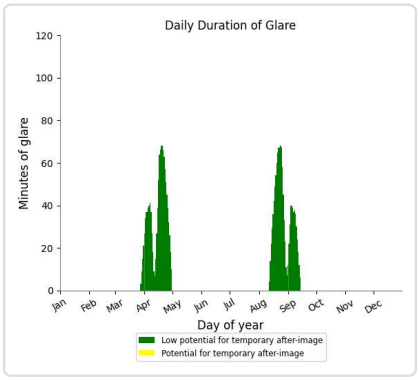
No glare found

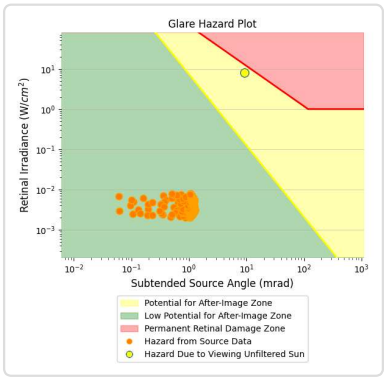
PV array 7: Wythenshawe - North Approach

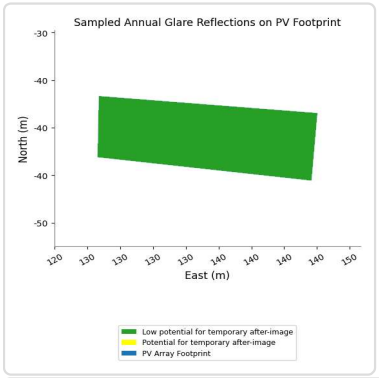
PV array is expected to produce the following glare for this receptor:

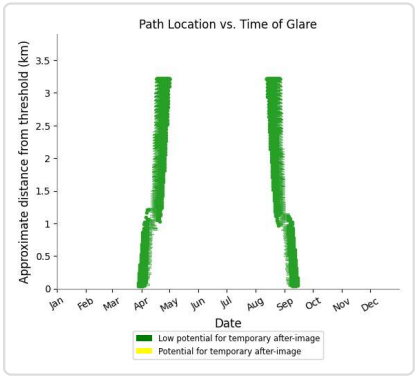
- 2,413 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

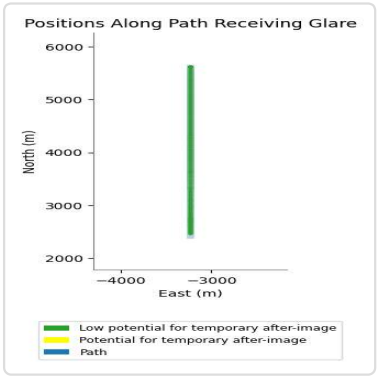


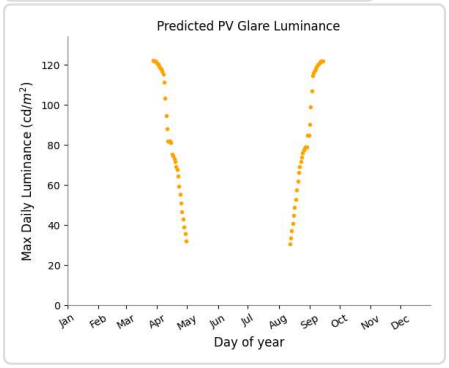












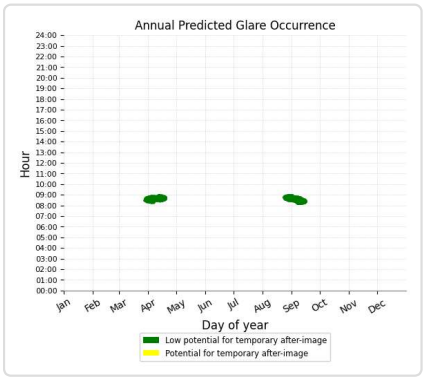
PV array 7: Wythenshawe - Northeast Approach

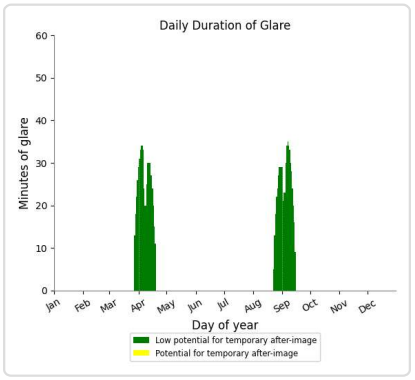
No glare found

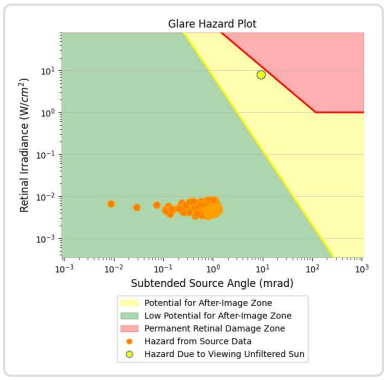
PV array 7: Wythenshawe - Northwest Approach

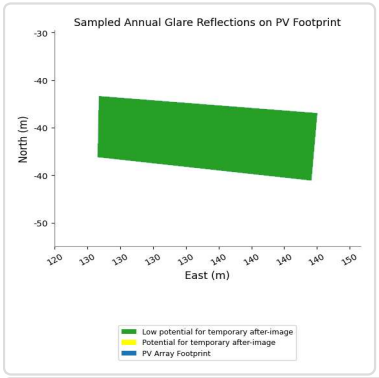
PV array is expected to produce the following glare for this receptor:

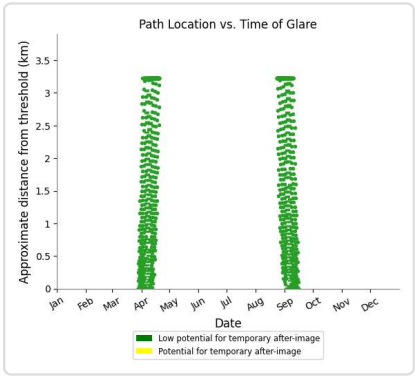
- 1,161 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

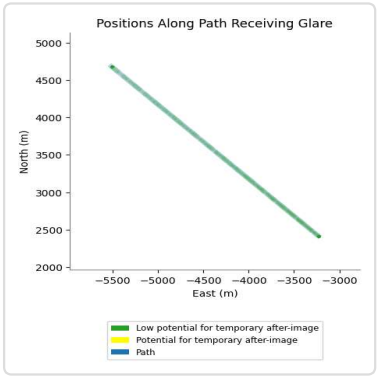


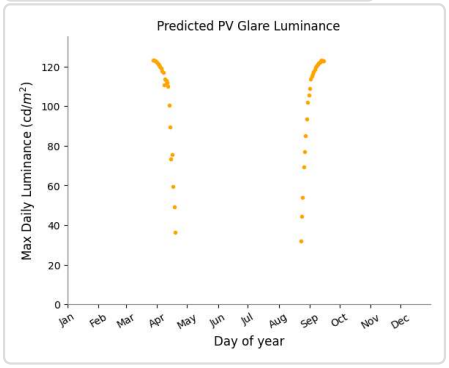












PV array 7: Wythenshawe - South Approach

No glare found

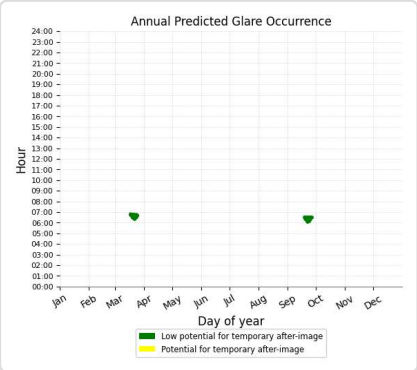
PV array 7: Wythenshawe - Southeast Approach

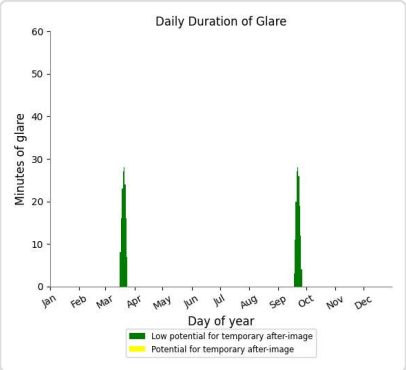
No glare found

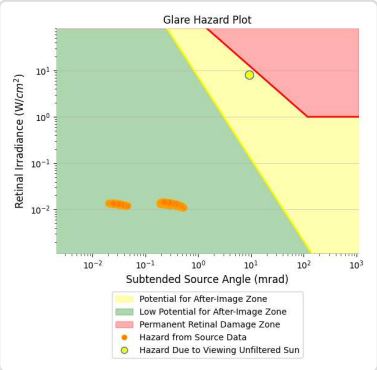
PV array 7: Wythenshawe - Southwest Approach

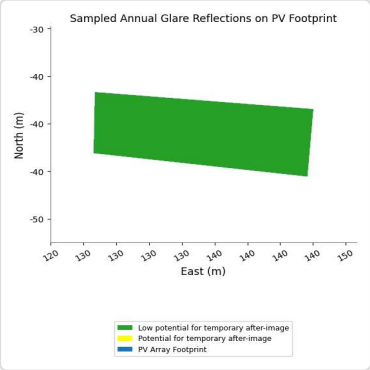
PV array is expected to produce the following glare for this receptor:

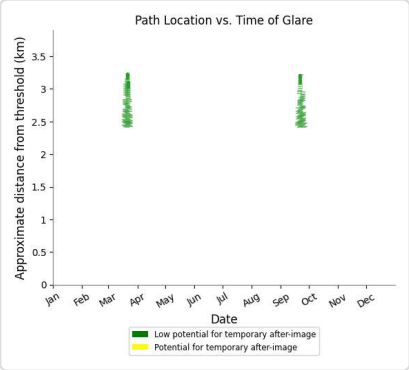
- 299 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

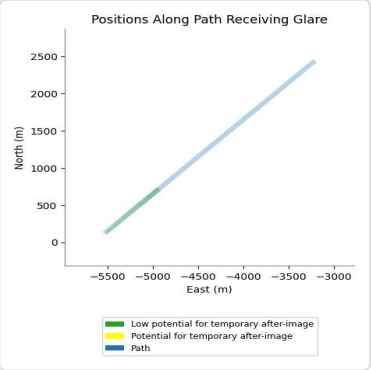


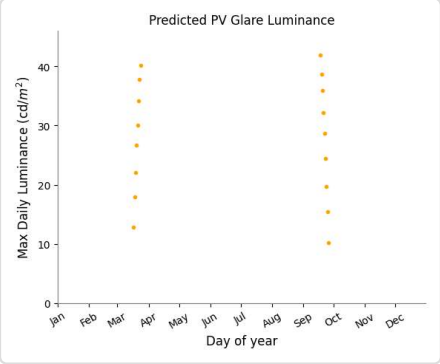








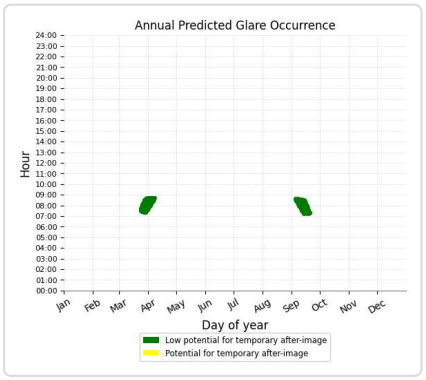


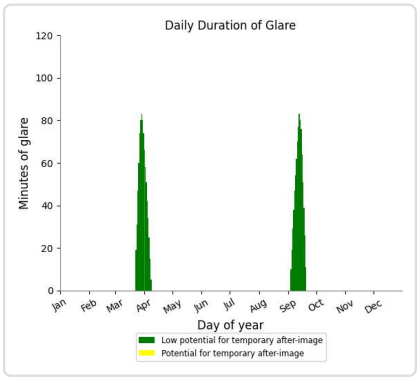


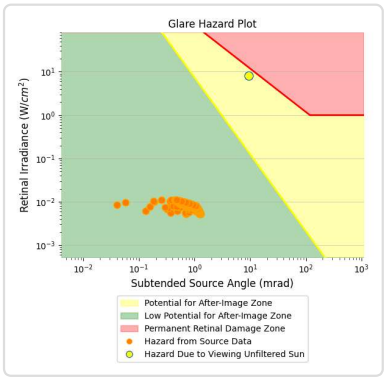
PV array 7: Wythenshawe - West Approach

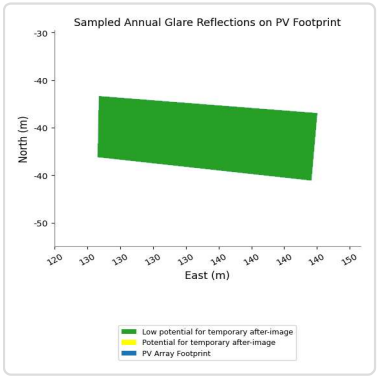
PV array is expected to produce the following glare for this receptor:

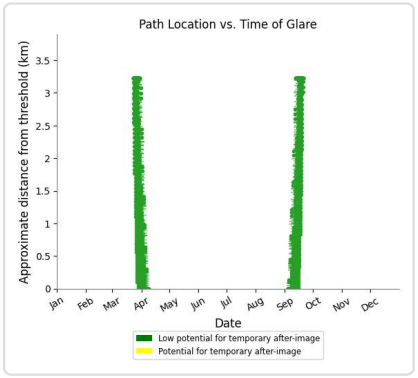
- 1,680 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

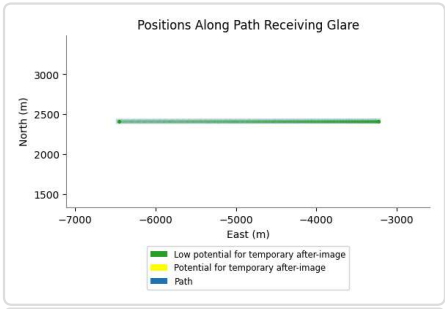


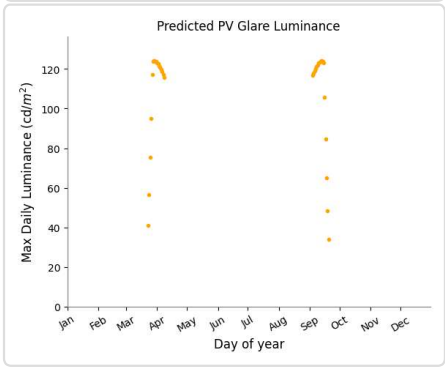












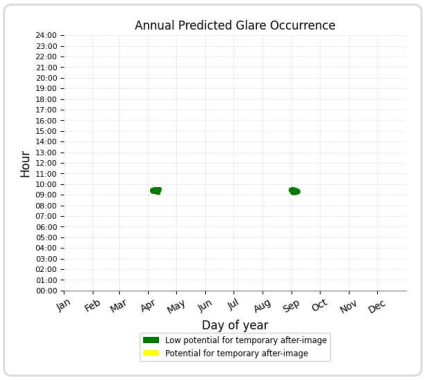
PV array 7: 1-ATCT

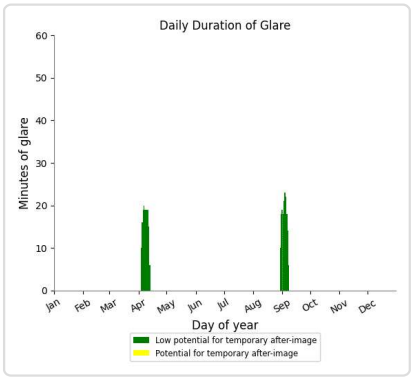
No glare found

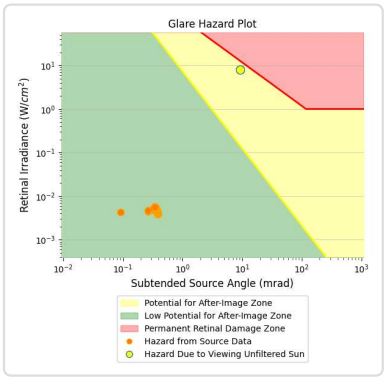
PV array 7: 2-ATCT

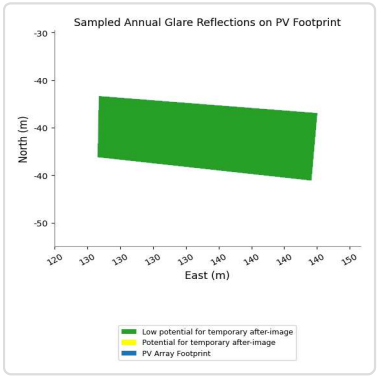
PV array is expected to produce the following glare for this receptor:

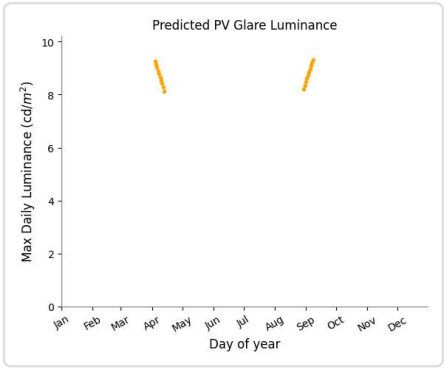
- 331 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.







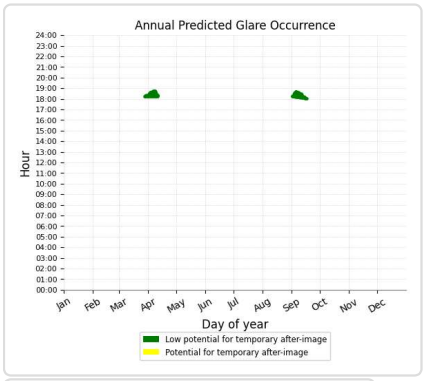


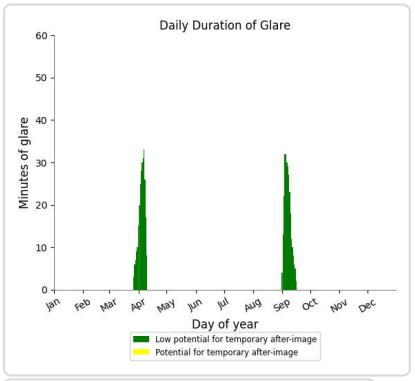


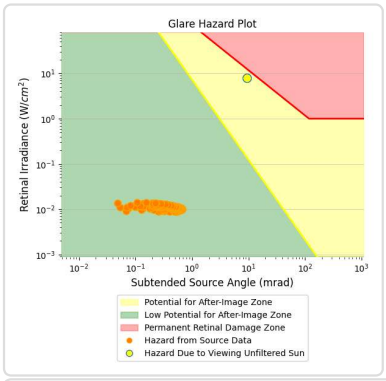
PV array 7: Macclesfield Entry

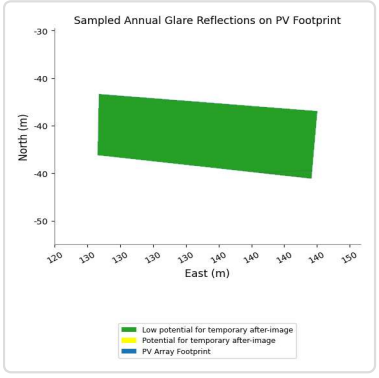
PV array is expected to produce the following glare for this receptor:

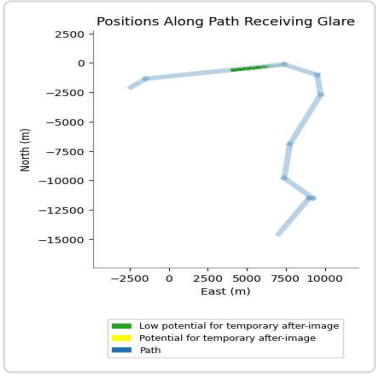
- 541 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

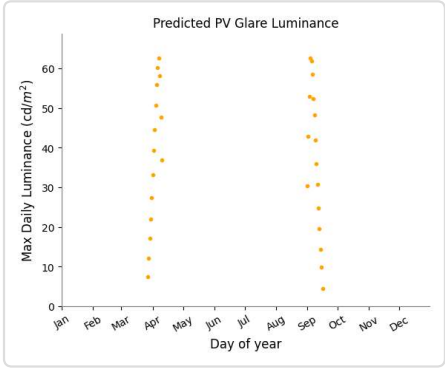












PV array 7: Macclesfield Exit

No glare found

PV array 7: Runway 05L - 10NM

No glare found

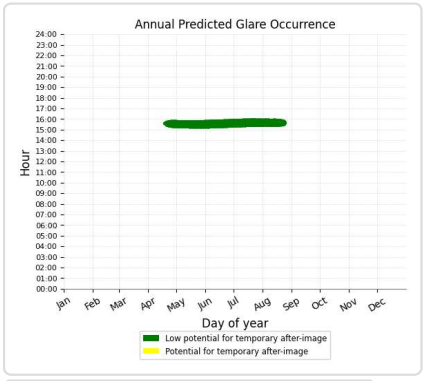
PV array 7: Runway 05R - 10NM

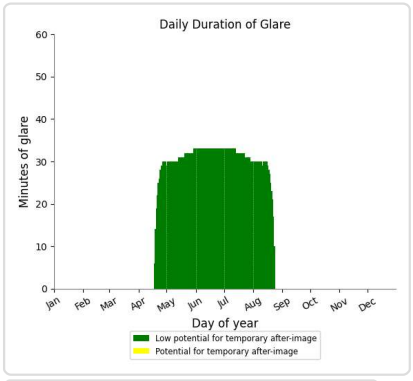
No glare found

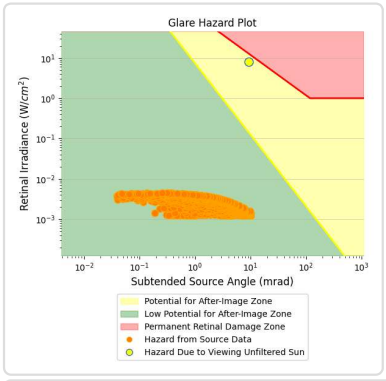
PV array 7: Runway 23L - 10NM

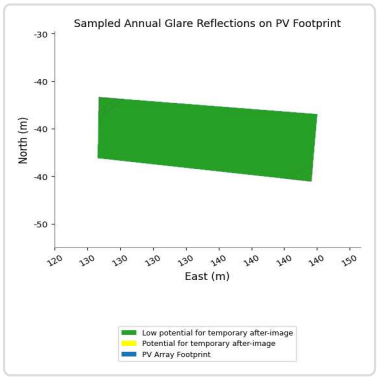
PV array is expected to produce the following glare for this receptor:

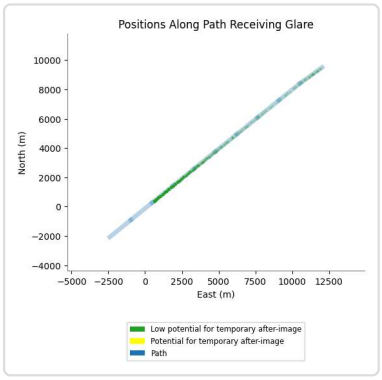
- 3,923 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

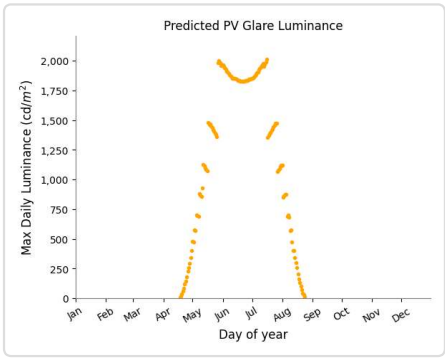








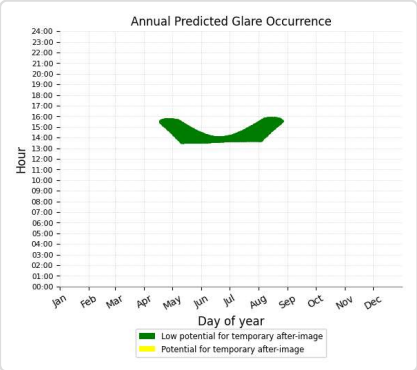


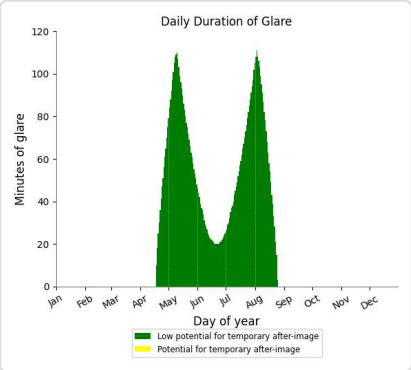


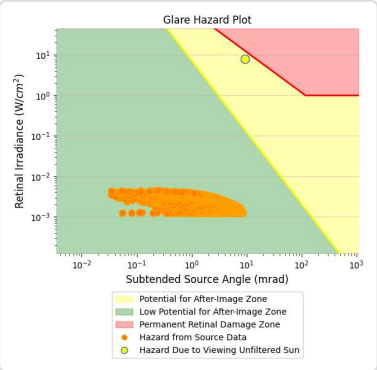
PV array 7: Runway 23R - 10NM

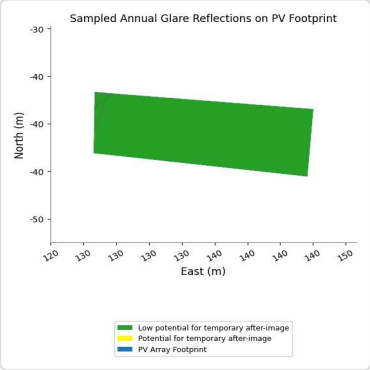
PV array is expected to produce the following glare for this receptor:

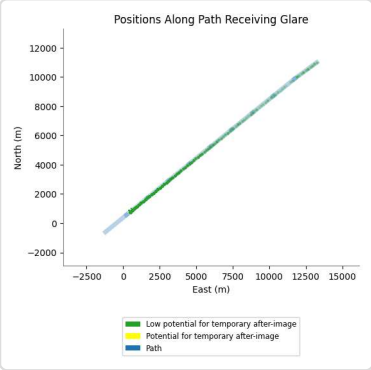
- 7,501 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

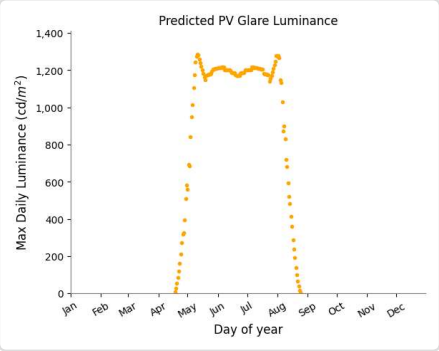












PV array 7: Runway Taxi 1

No glare found

PV array 7: Runway Taxi 2

No glare found

PV array 7: Stretton Entry

No glare found

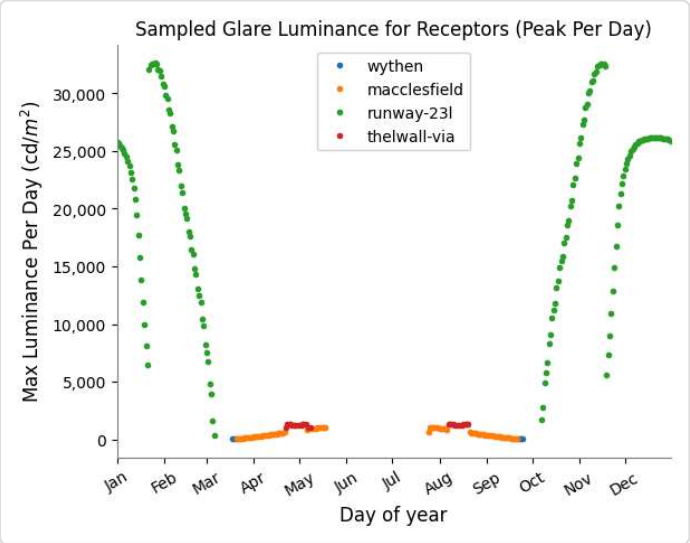
PV array 7: Thelwall Viaduct Exit

No glare found

PV array 8 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)	Peak Luminance (cd/m^2)
FP: Manchester Airport - Runway 05L	0	0	0
FP: Manchester Airport - Runway 05L	0	0	0
FP: Manchester Airport - Runway 23L	0	0	0
FP: Manchester Airport - Runway 23R	0	0	0
FP: Manchester Barton - Runway 02	0	0	0
FP: Manchester Barton - Runway 08L	0	0	0
FP: Manchester Barton - Runway 08R	0	0	0
FP: Manchester Barton - Runway 14	0	0	0
FP: Manchester Barton - Runway 20	0	0	0

FP: Manchester Barton - Runway 26L	0	0	0
FP: Manchester Barton - Runway 26R	0	0	0
FP: Manchester Barton - Runway 32	0	0	0
FP: Wythenshawe - East Approach	0	0	0
FP: Wythenshawe - North Approach	0	0	0
FP: Wythenshawe - Northeast Approach	0	0	0
FP: Wythenshawe - Northwest Approach	0	0	0
FP: Wythenshawe - South Approach	0	0	0
FP: Wythenshawe - Southeast Approach	0	0	0
FP: Wythenshawe - Southwest Approach	115	0	36
FP: Wythenshawe - West Approach	0	0	0
OP: 1-ATCT	0	0	0
OP: 2-ATCT	0	0	0
Route: Macclesfield Entry	3014	0	1,042
Route: Macclesfield Exit	0	0	0
Route: Runway 05L - 10NM	0	0	0
Route: Runway 05R - 10NM	0	0	0
Route: Runway 23L - 10NM	6696	0	32,628
Route: Runway 23R - 10NM	0	0	0
Route: Runway Taxi 1	0	0	0
Route: Runway Taxi 2	0	0	0
Route: Stretton Entry	905	0	8
Route: Thelwall Viaduct Exit	526	0	1,308



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

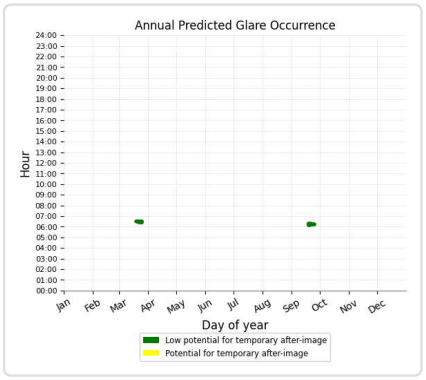
PV array 8: Wythenshawe - Southeast Approach

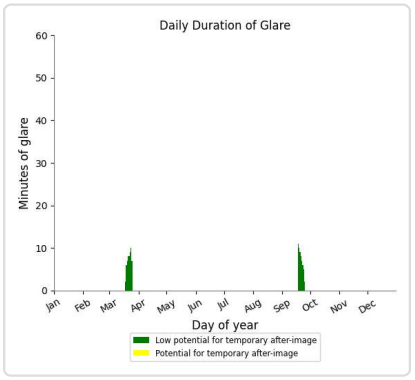
No glare found

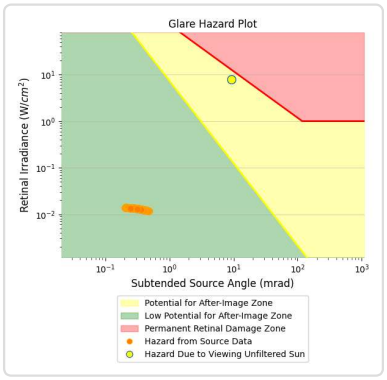
PV array 8: Wythenshawe - Southwest Approach

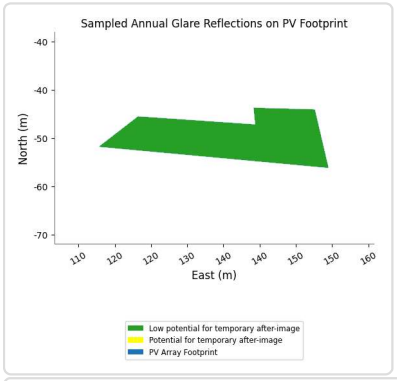
PV array is expected to produce the following glare for this receptor:

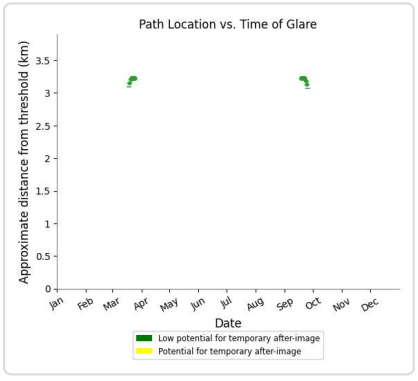
- 115 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

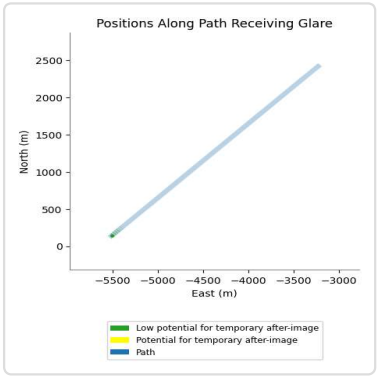


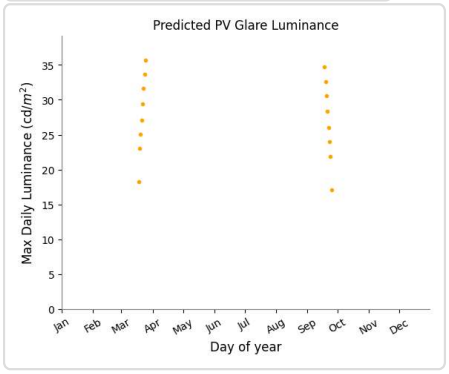












PV array 8: Wythenshawe - West Approach

No glare found

PV array 8: 1-ATCT

No glare found

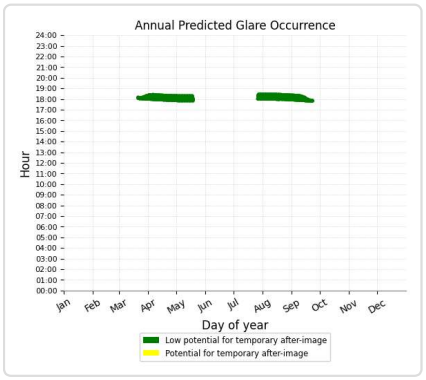
PV array 8: 2-ATCT

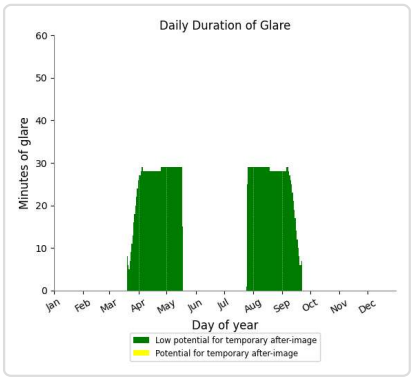
No glare found

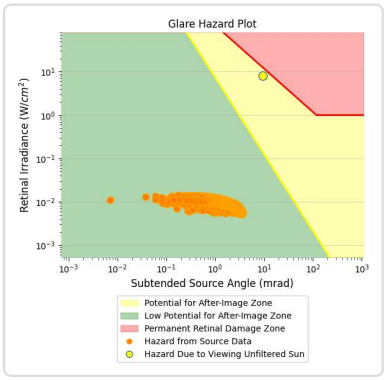
PV array 8: Macclesfield Entry

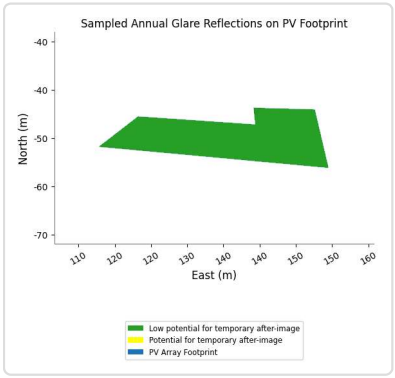
PV array is expected to produce the following glare for this receptor:

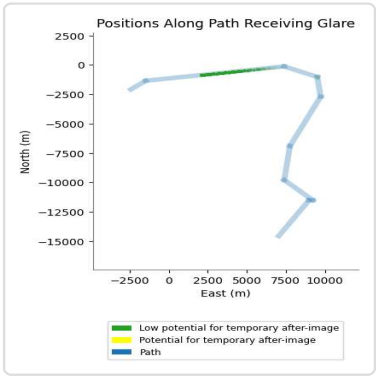
- 3,014 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

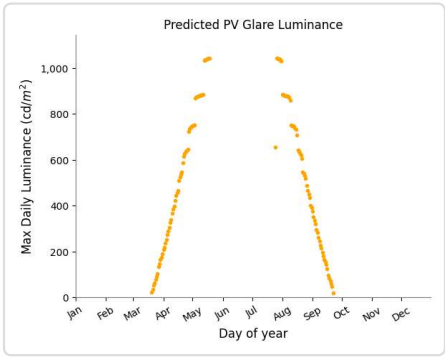












PV array 8: Macclesfield Exit

No glare found

PV array 8: Runway 05L - 10NM

No glare found

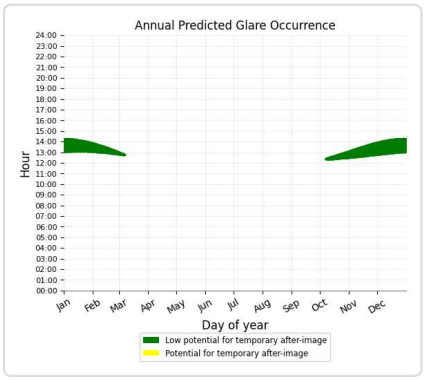
PV array 8: Runway 05R - 10NM

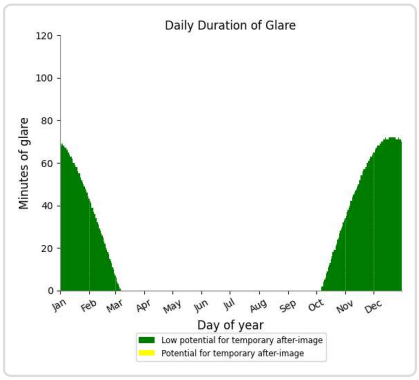
No glare found

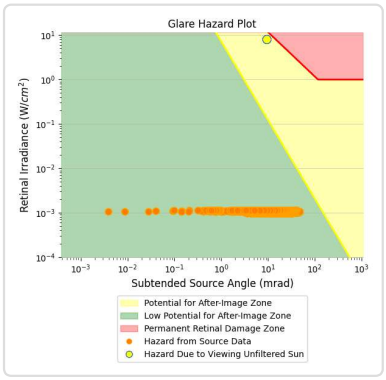
PV array 8: Runway 23L - 10NM

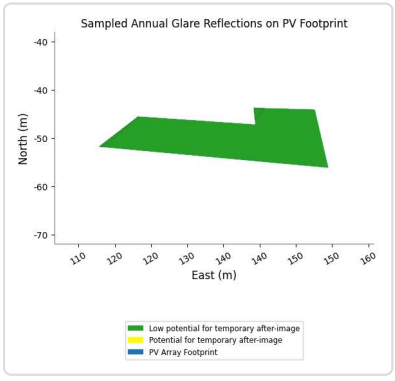
PV array is expected to produce the following glare for this receptor:

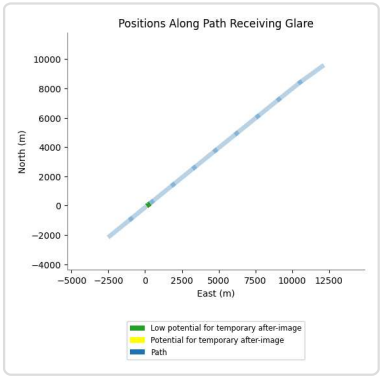
- 6,696 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

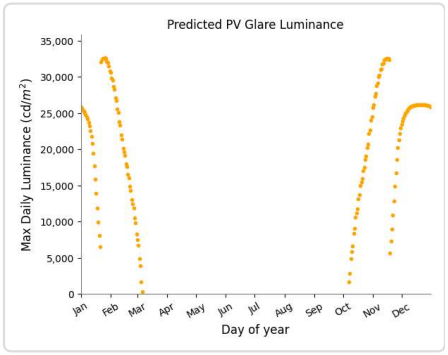












PV array 8: Runway 23R - 10NM

No glare found

PV array 8: Runway Taxi 1

No glare found

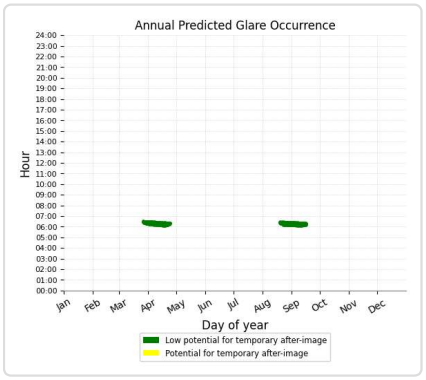
PV array 8: Runway Taxi 2

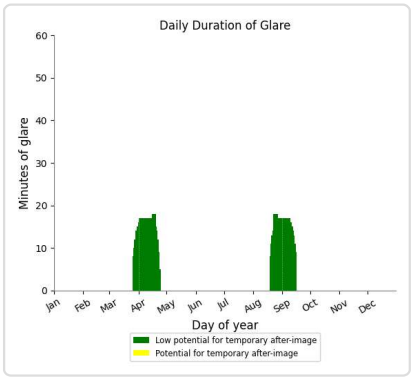
No glare found

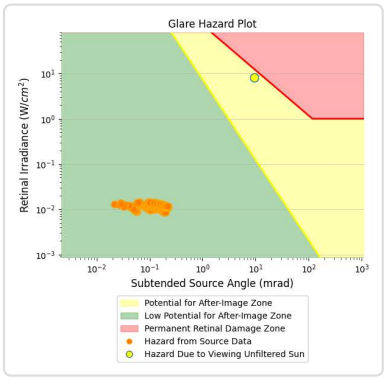
PV array 8: Stretton Entry

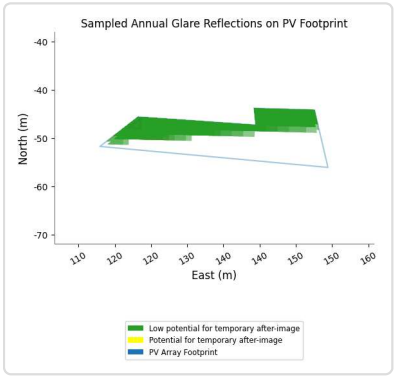
PV array is expected to produce the following glare for this receptor:

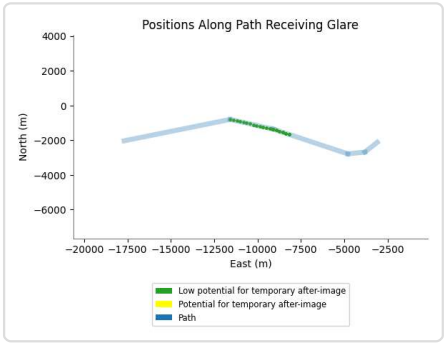
- 905 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

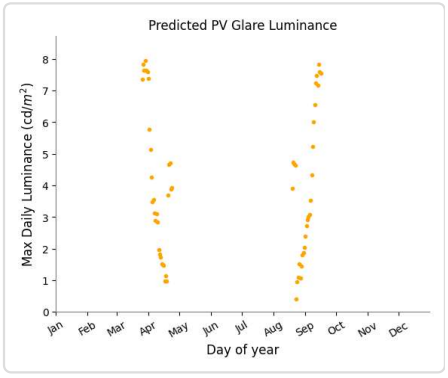








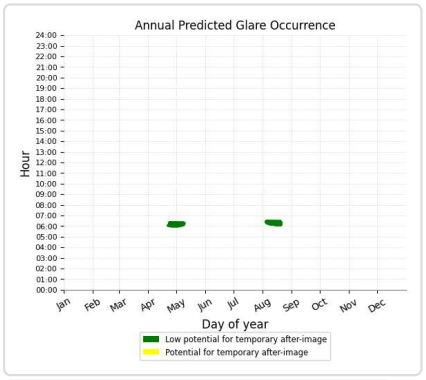


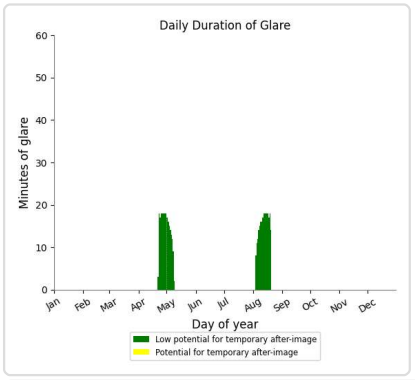


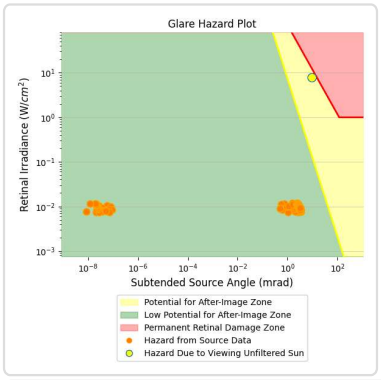
PV array 8: Thelwall Viaduct Exit

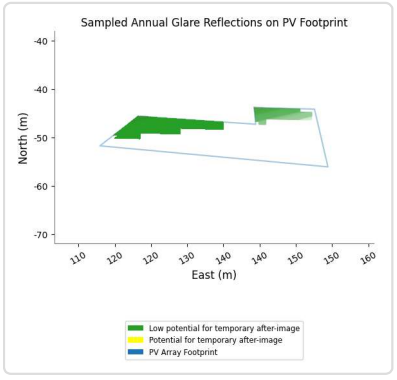
PV array is expected to produce the following glare for this receptor:

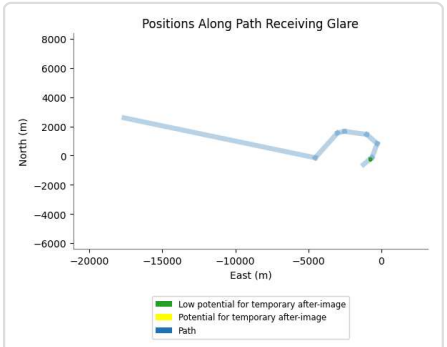
- 526 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

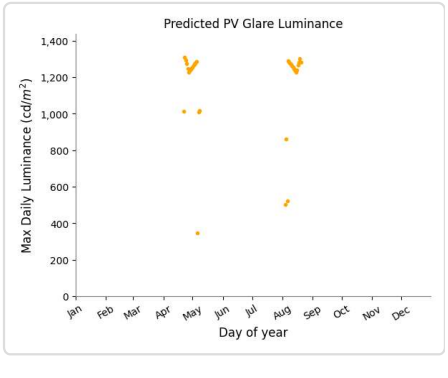






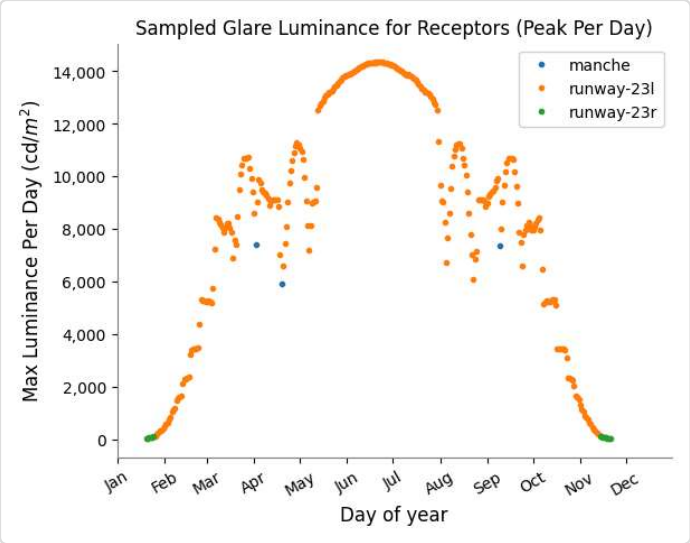






PV array 9 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)	Peak Luminance (cd/m^2)
FP: Manchester Airport - Runway 05L	0	0	0
FP: Manchester Airport - Runway 05L	0	0	0
FP: Manchester Airport - Runway 23L	0	0	0
FP: Manchester Airport - Runway 23R	6390	0	7,430
FP: Manchester Barton - Runway 02	0	0	0
FP: Manchester Barton - Runway 08L	900	0	9
FP: Manchester Barton - Runway 08R	954	0	9
FP: Manchester Barton - Runway 14	1200	0	10
FP: Manchester Barton - Runway 20	1368	0	10
FP: Manchester Barton - Runway 26L	0	0	0
FP: Manchester Barton - Runway 26R	0	0	0
FP: Manchester Barton - Runway 32	0	0	0
FP: Wythenshawe - East Approach	0	0	0
FP: Wythenshawe - North Approach	5000	0	139
FP: Wythenshawe - Northeast Approach	0	0	0
FP: Wythenshawe - Northwest Approach	2583	0	143
FP: Wythenshawe - South Approach	0	0	0
FP: Wythenshawe - Southeast Approach	0	0	0
FP: Wythenshawe - Southwest Approach	0	0	0
FP: Wythenshawe - West Approach	2551	0	143
OP: 1-ATCT	0	0	0
OP: 2-ATCT	412	0	11
Route: Macclesfield Entry	0	0	0
Route: Macclesfield Exit	0	0	0
Route: Runway 05L - 10NM	0	0	0
Route: Runway 05R - 10NM	0	0	0
Route: Runway 23L - 10NM	9050	0	14,344
Route: Runway 23R - 10NM	4669	0	3,338
Route: Runway Taxi 1	0	0	0
Route: Runway Taxi 2	0	0	0
Route: Stretton Entry	0	0	0
Route: Thelwall Viaduct Exit	0	0	0



PV array 9: Manchester Airport - Runway 05L

No glare found

PV array 9: Manchester Airport - Runway 05L

No glare found

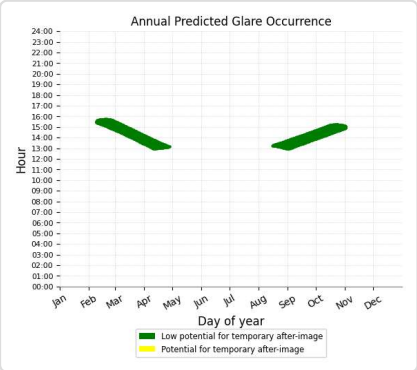
PV array 9: Manchester Airport - Runway 23L

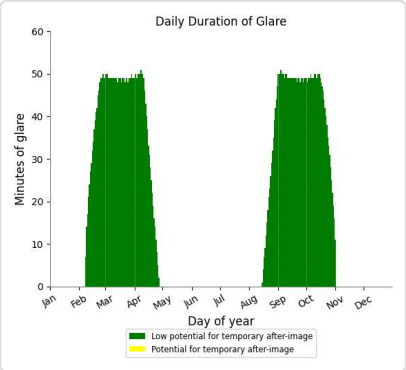
No glare found

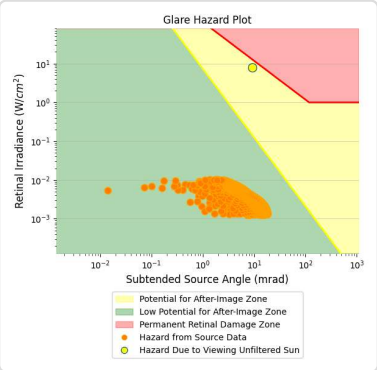
PV array 9: Manchester Airport - Runway 23R

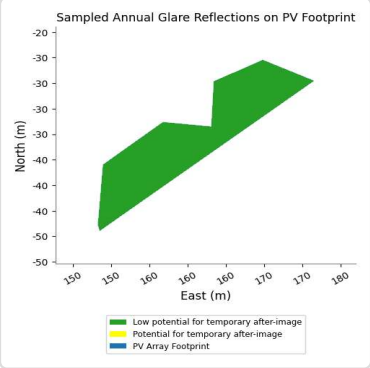
PV array is expected to produce the following glare for this receptor:

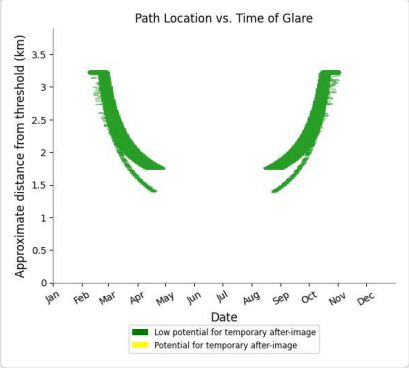
- 6,390 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

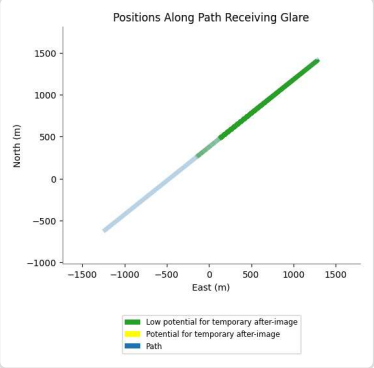


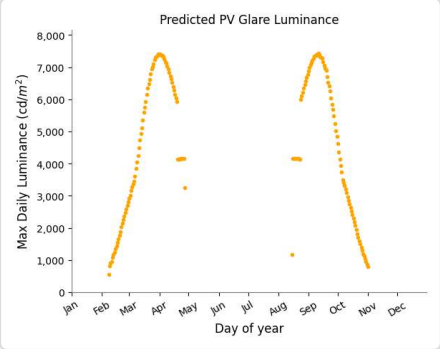












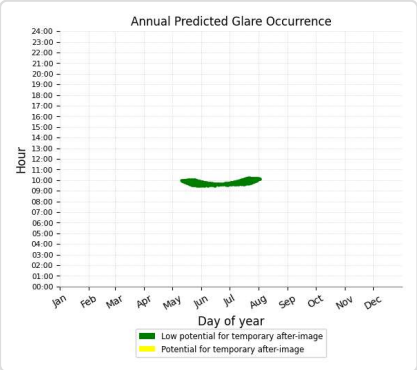
PV array 9: Manchester Barton - Runway 02

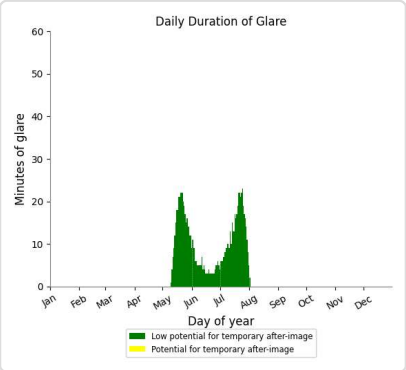
No glare found

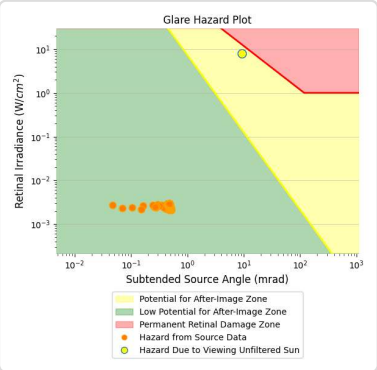
PV array 9: Manchester Barton - Runway 08L

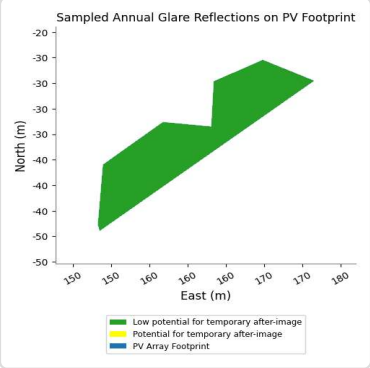
PV array is expected to produce the following glare for this receptor:

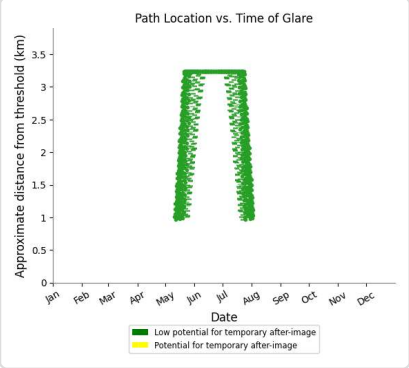
- 900 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

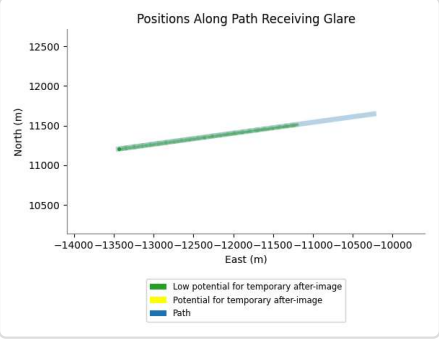


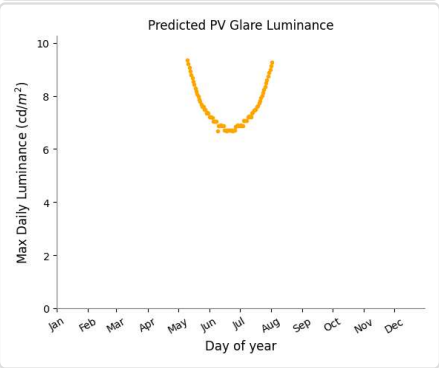








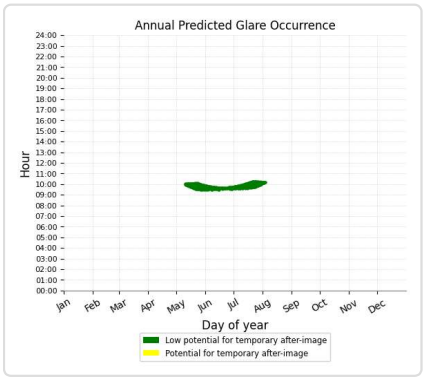


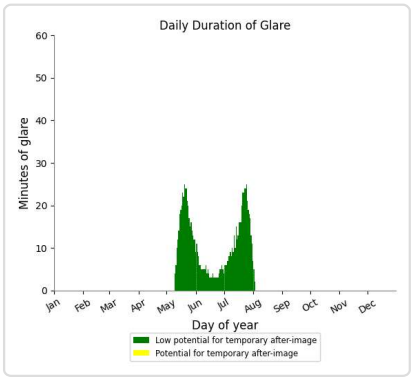


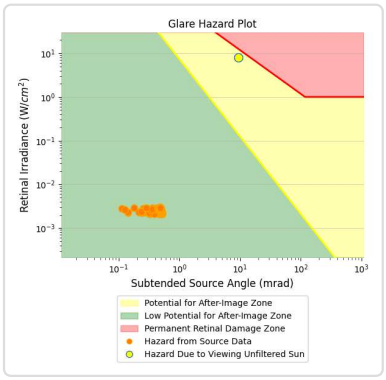
PV array 9: Manchester Barton - Runway 08R

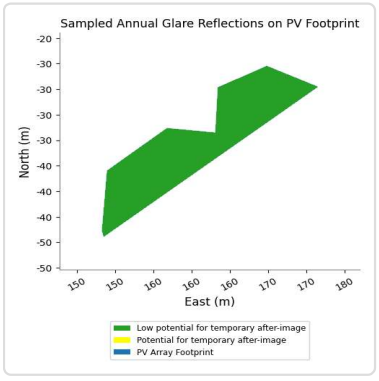
PV array is expected to produce the following glare for this receptor:

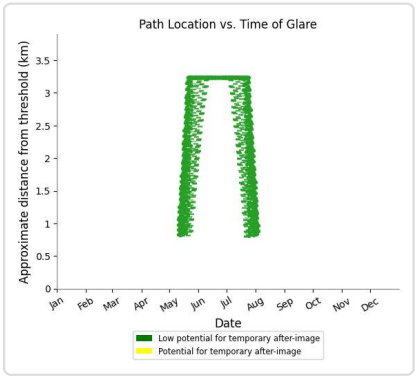
- 954 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

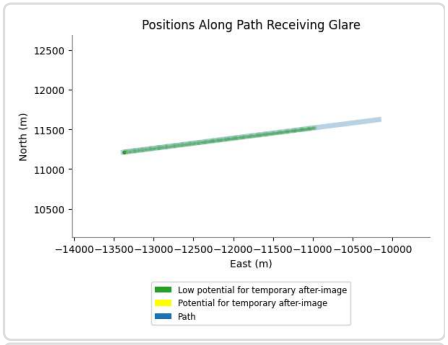


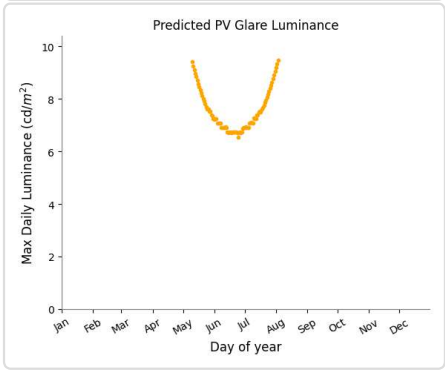








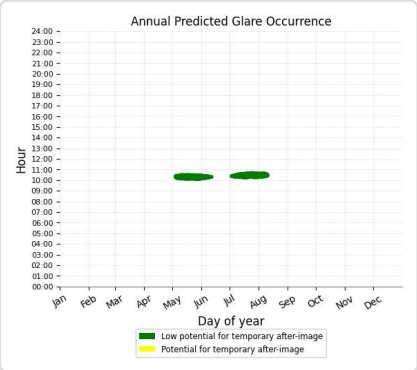


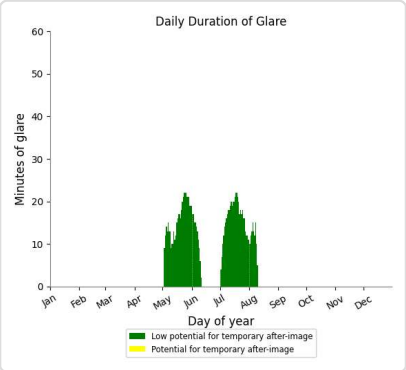


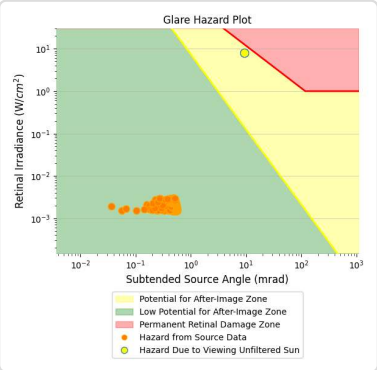
PV array 9: Manchester Barton - Runway 14

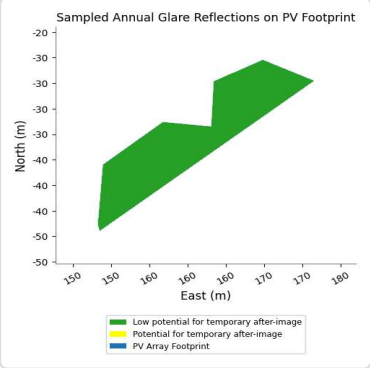
PV array is expected to produce the following glare for this receptor:

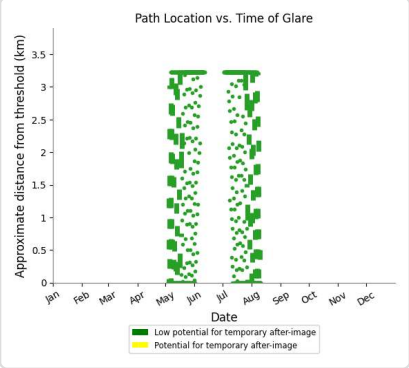
- 1,200 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

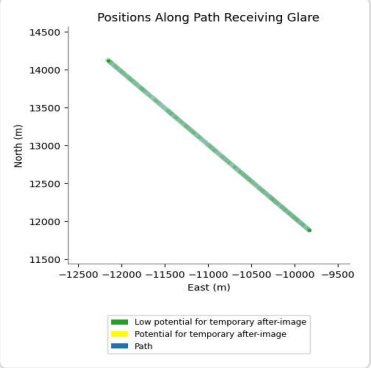


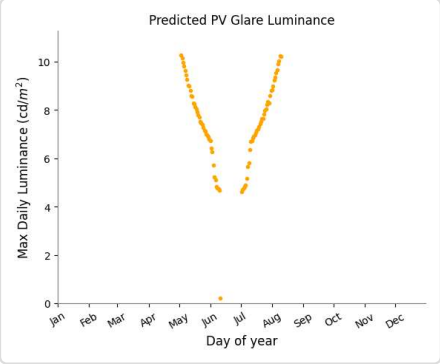








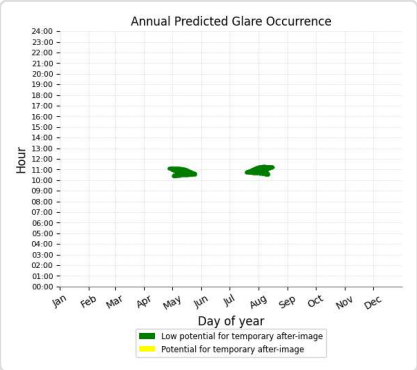


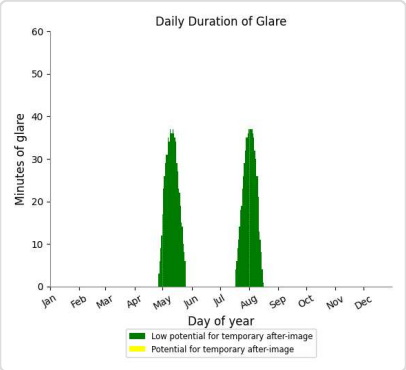


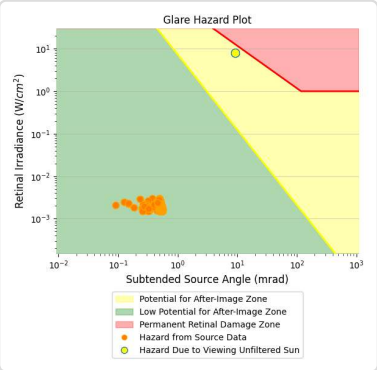
PV array 9: Manchester Barton - Runway 20

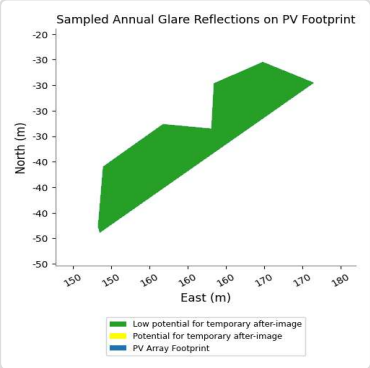
PV array is expected to produce the following glare for this receptor:

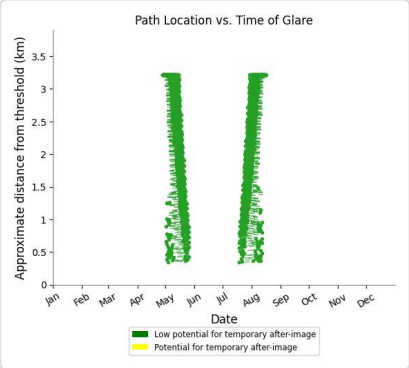
- 1,368 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

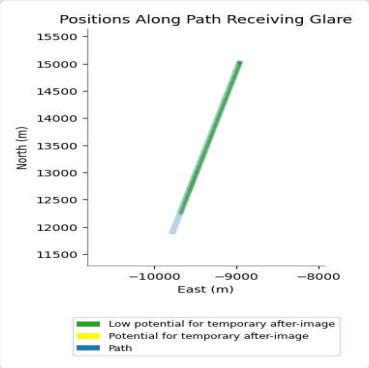


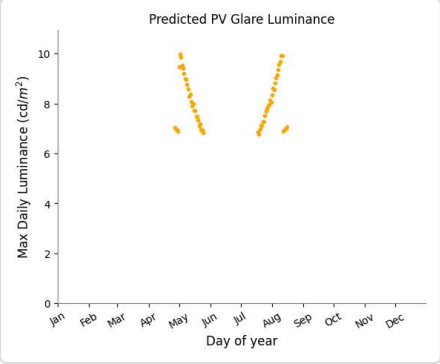












PV array 9: Manchester Barton - Runway 26L

No glare found

PV array 9: Manchester Barton - Runway 26R

No glare found

PV array 9: Manchester Barton - Runway 32

No glare found

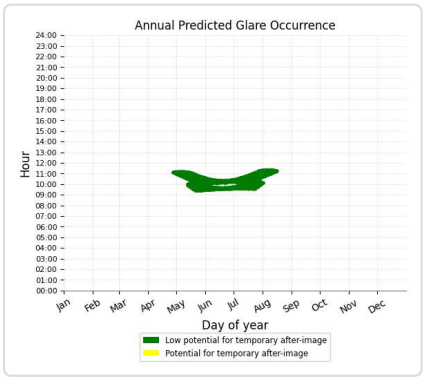
PV array 9: Wythenshawe - East Approach

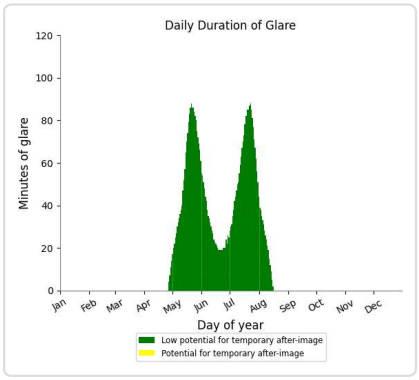
No glare found

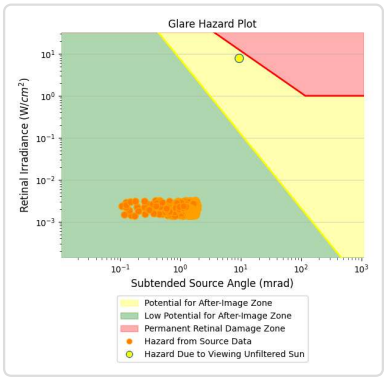
PV array 9: Wythenshawe - North Approach

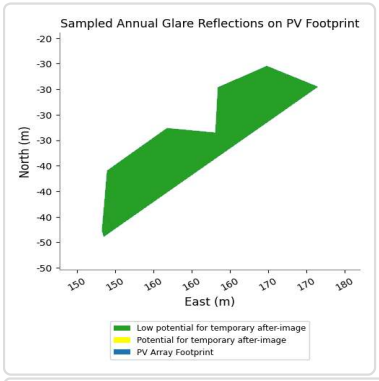
PV array is expected to produce the following glare for this receptor:

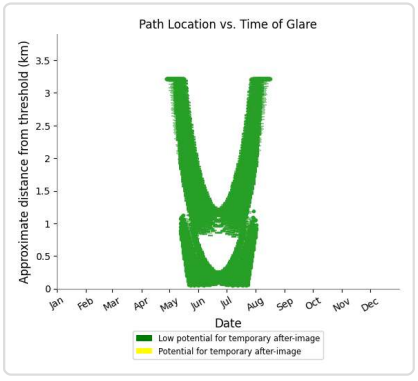
- 5,000 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

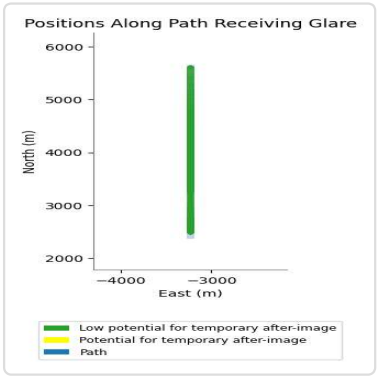


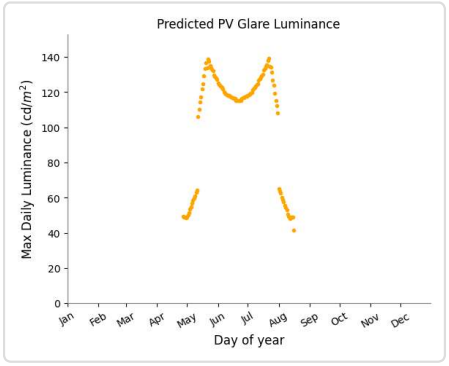












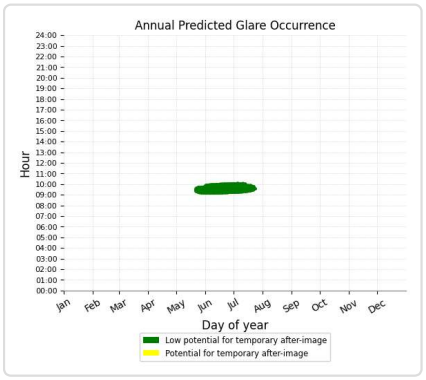
PV array 9: Wythenshawe - Northeast Approach

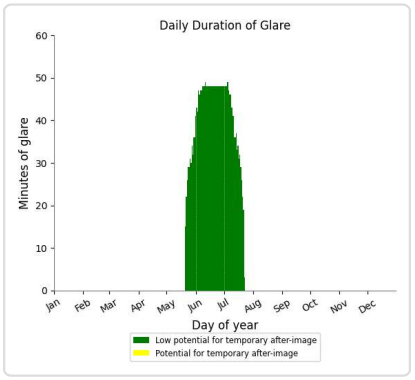
No glare found

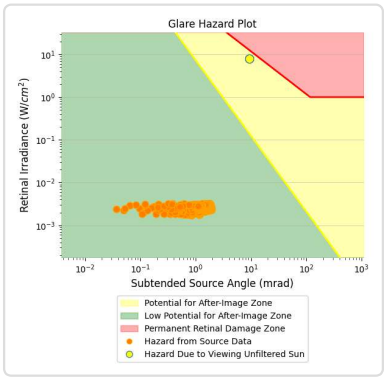
PV array 9: Wythenshawe - Northwest Approach

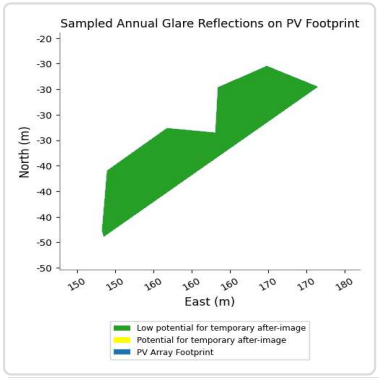
PV array is expected to produce the following glare for this receptor:

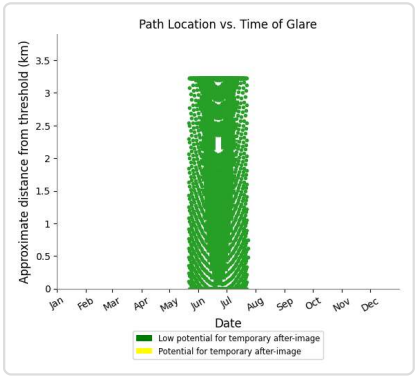
- 2,583 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

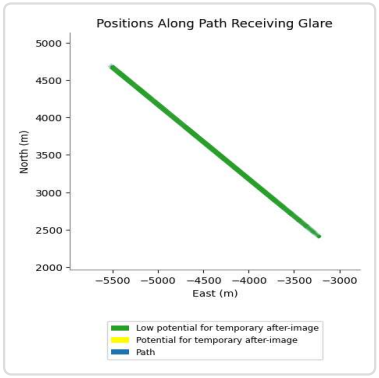


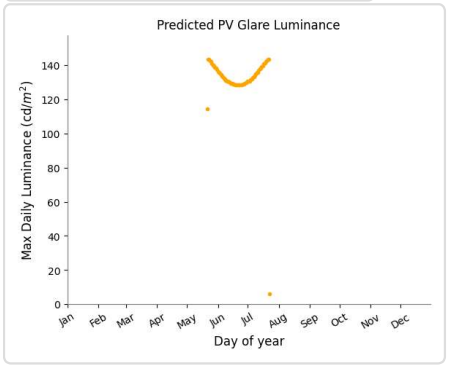












PV array 9: Wythenshawe - South Approach

No glare found

PV array 9: Wythenshawe - Southeast Approach

No glare found

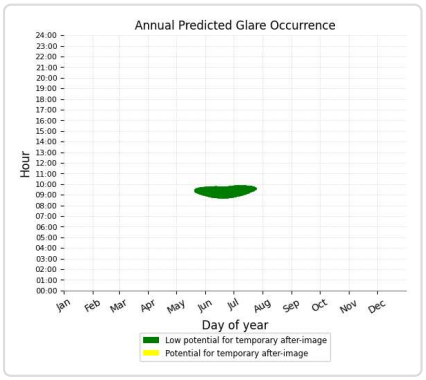
PV array 9: Wythenshawe - Southwest Approach

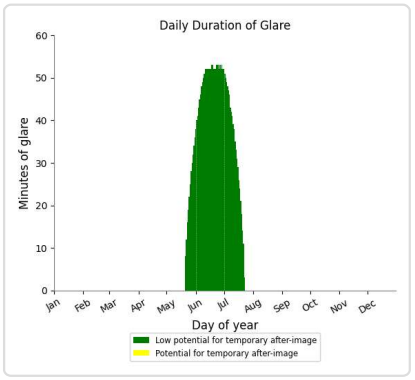
No glare found

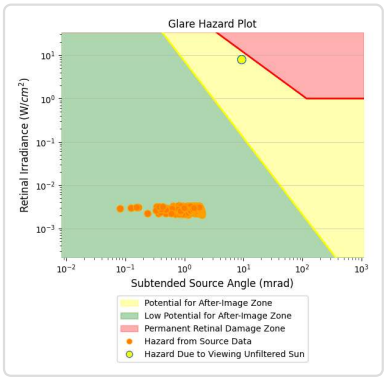
PV array 9: Wythenshawe - West Approach

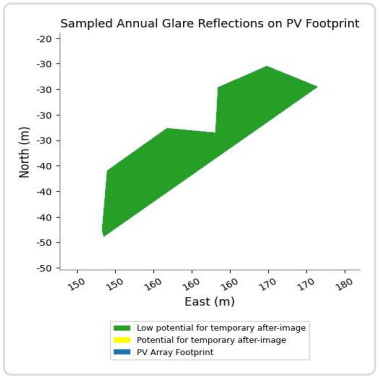
PV array is expected to produce the following glare for this receptor:

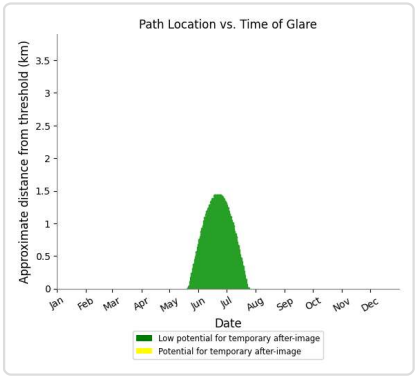
- 2,551 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

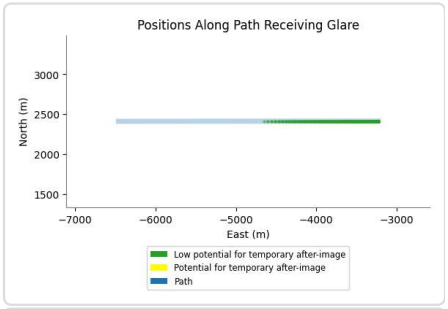


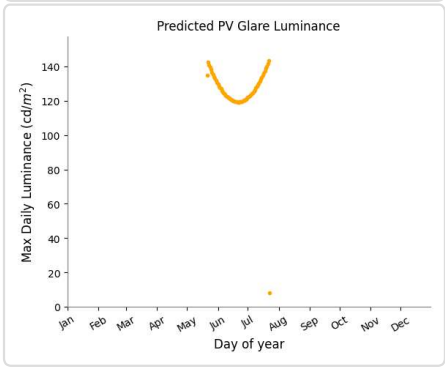












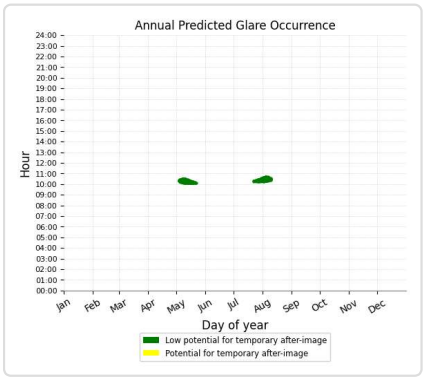
PV array 9: 1-ATCT

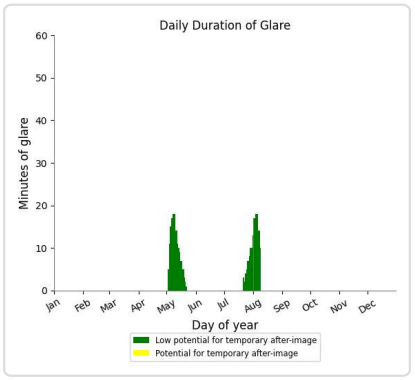
No glare found

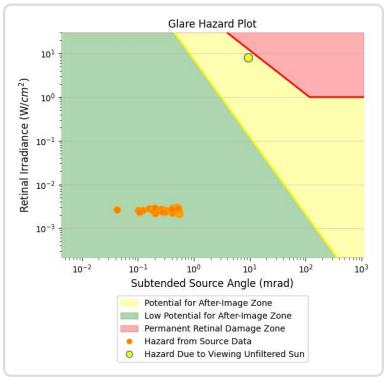
PV array 9: 2-ATCT

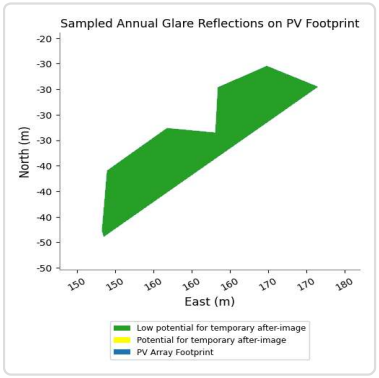
PV array is expected to produce the following glare for this receptor:

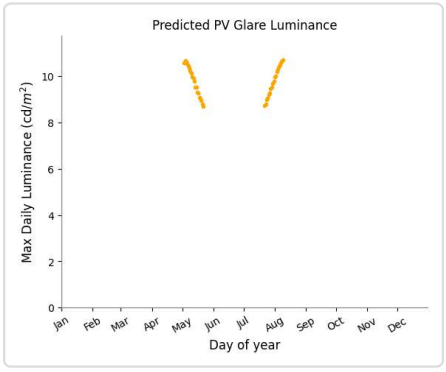
- 412 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.











PV array 9: Macclesfield Entry

No glare found

PV array 9: Macclesfield Exit

No glare found

PV array 9: Runway 05L - 10NM

No glare found

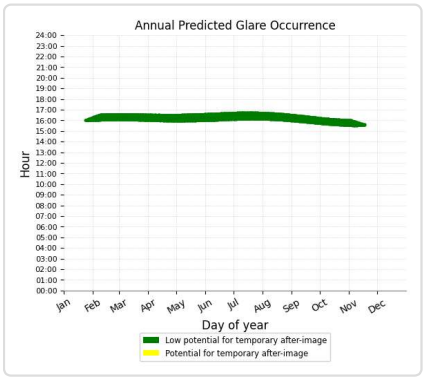
PV array 9: Runway 05R - 10NM

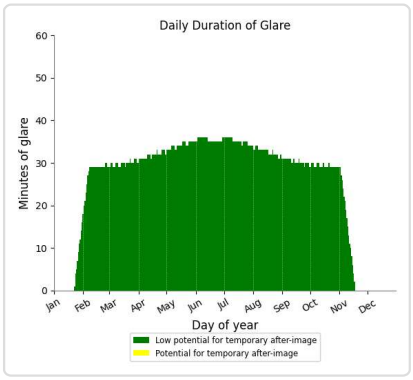
No glare found

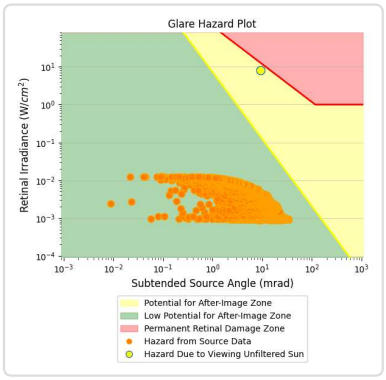
PV array 9: Runway 23L - 10NM

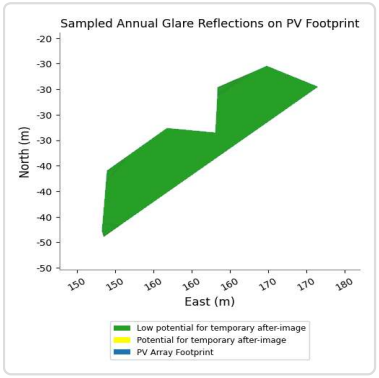
PV array is expected to produce the following glare for this receptor:

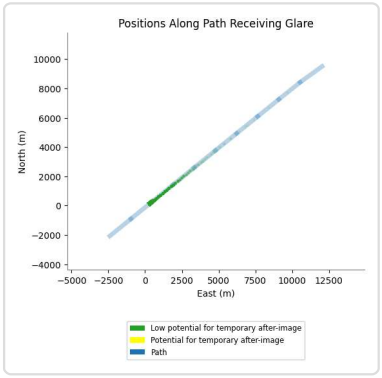
- 9,050 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

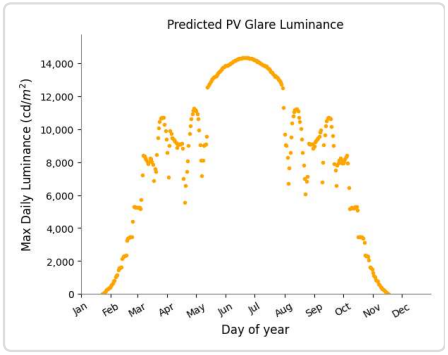








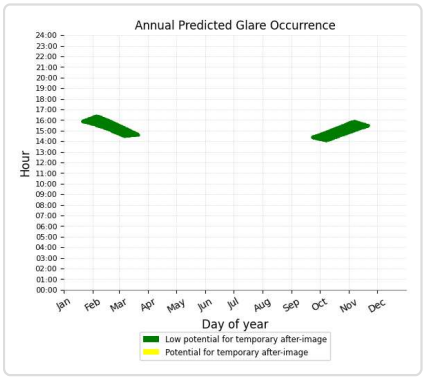


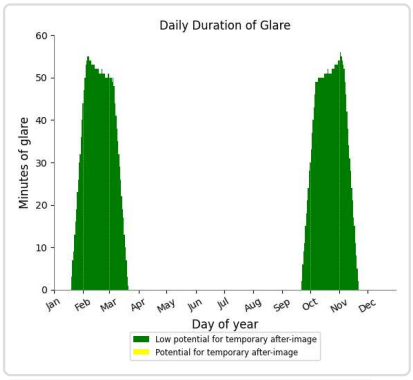


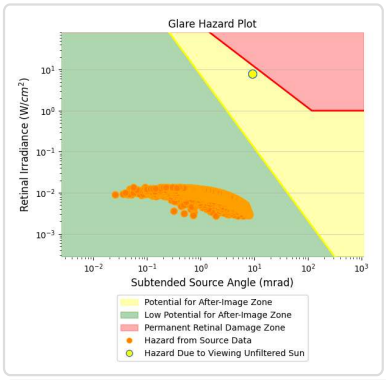
PV array 9: Runway 23R - 10NM

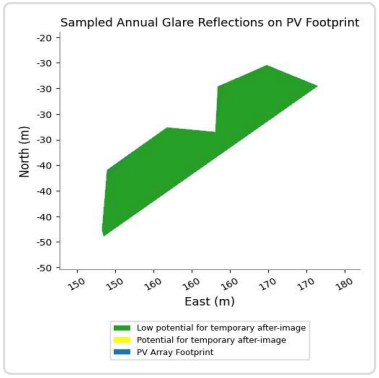
PV array is expected to produce the following glare for this receptor:

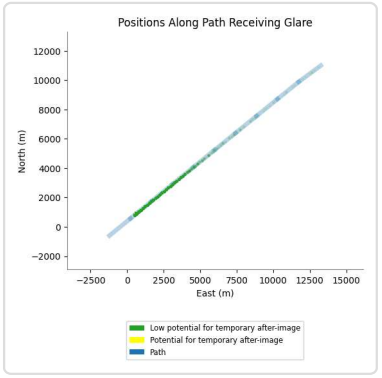
- 4,669 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

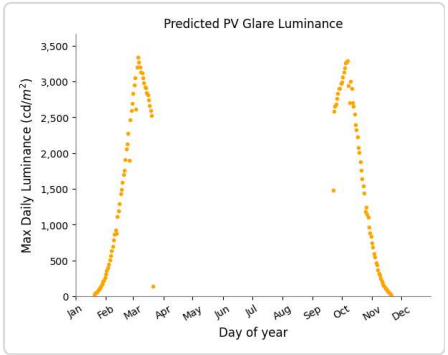












PV array 9: Runway Taxi 1

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.