

**COMMONWEALTH OF KENTUCKY  
BEFORE THE KENTUCKY STATE BOARD  
ON ELECTRIC GENERATION AND TRANSMISSION SITING**

**In the Matter of the Application of AEUG Madison            )**  
**Solar, LLC, for a Construction Certificate to Construct    )** **Case No. 2020-00219**  
**a Merchant Electric Generating Facility                    )**

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**NOTICE OF FILING**

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AEUG Madison Solar, LLC (“AEUG Madison”), by counsel, provides notice of its filing of the attached glare study. AEUG Madison submits that this glare study satisfies the requirements of condition 10 of the Siting Board’s Order dated June 9, 2021, which stated as follows:

AEUG Madison has pledged to select anti-glare panels and operate the panels in such a way that all glare from the panels is eliminated. AEUG Madison shall provide proof that glare will not occur from the facility or immediately adjust solar panel operations upon any complaint from those living, working, or travelling in proximity to the facility. Failing this, AEUG Madison will cease operations until the glare is rectified.

On page 5 of the glare study’s technical memorandum, it concludes that “[b]ased on the glare hazard analysis performed for the Project with the project specifications provided above, no green, yellow, or red glare is expected to be visible at the OPs and along the Route Receptors evaluated.” Accordingly, AEUG Madison submits that it has provided the necessary information to the Siting Board to meet the requirements of condition 10 of the Siting Board’s order.

On July 9, 2021, AEUG Madison submitted a Petition for Reconsideration, Clarification and for a formal conference with the members of the Siting Board (“Petition for Reconsideration”), in order to seek clarification of certain conditions presented in the Siting Board’s Order. One of

the clarifications AEUG Madison sought was related to this condition. With the filing of this glare study, AEUG Madison believes that the Siting Board can strike condition 10 from its Order.

Striking condition 10 from its order would be consistent with a similar sequence of events in Case No. 2020-00206. In that case by order dated May 24, 2020, the Siting Board issued an identical condition for the project. Following that order on June 15, 2020, the project submitted a glare study indicating no green, yellow, or red glare is expected at the observation points. As a result, the Siting Board agreed to strike that condition by order dated November 12, 2021. *See Application of AEUG Fleming Solar, LLC for a Construction Certificate to Construct a Merchant Electric Generating Facility, Case No. 2020-00206.*

Accordingly, AEUG Madison respectfully requests similar treatment such that the Siting Board strike condition 10 of its June 9, 2021 order in this matter. In addition, AEUG Madison also respectfully requests the Siting Board issue a decision on the Motion to Re-open Case, filed on November 8, 2021, and address the remaining issues related to visual buffers, compliance with the Conditional Use Permit requirements, and the decommissioning bond.

Respectfully submitted,

*/s/ M. Todd Osterloh*

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ATTORNEYS FOR AEUG MADISON SOLAR, LLC



TRC  
708 Heartland Trl, Suite 3000  
Madison, WI 53717

## Technical Memorandum

**Date:** January 26, 2022  
**To:** AEUG Madison Solar, LLC  
**From:** BreAnne Kahnk – Project Engineer  
**Reference No.:** TRC Project No. 444044.0001  
**Subject:** Madison County, Kentucky – Solar Glare Hazard Analysis

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### Introduction

AEUG Madison Solar, LLC (Madison Solar) is proposing to develop an approximately 100-megawatt (MW) alternating current (AC) solar photovoltaic (PV) project identified as the Madison Solar Project (Project). The Project is located near Richmond, Madison County, Kentucky. Figure 1 demonstrates the proposed PV array locations for the Project.

### Solar Glare Analysis Methodology

TRC conducted a solar glare analysis using methodology developed by Sandia National Laboratories and described in the Solar Glare Hazard Analysis Tool (SGHAT) User's Manual (Ho et al, 2013). The SGHAT-compliant software used in this analysis is under license to TRC by ForgeSolar.

Under certain conditions, solar panel surfaces reflect sunlight and produce glint (a momentary flash of bright light) or glare (a continuous source of bright light). Magnitude of glint and glare depends on several factors such as sun position, location of observer, and characteristics of the solar PV array including the tilt, orientation, location, and optical properties of the modules.

Glare visibility from the observer's location is analyzed once glare characteristics are determined. Ocular hazard potential is estimated based on retinal irradiance and subtended angle (size/distance) of the glare (Ho et al., 2010). Potential ocular hazards range from temporary after-image to retinal burn depending on the retinal irradiance and subtended angle as shown in Figure 2. The SGHAT classifies solar glare into three categories, denoted as either 'green', 'yellow', or 'red' glare.

- Green glare is the mildest of the three glare classifications and refers to a level of glare that has a low potential to cause after-image and no potential to cause retinal burn.
- Yellow glare is a moderate level of glare with some potential to cause temporary after-image and no potential to cause retinal burn.
- Red glare is a serious and significant form of glare with potential to cause retinal burn and/or permanent eye damage.

Limitations of the SGHAT applicable to this Project are as follows:

- The SGHAT does not rigorously represent the detailed geometry of a solar panel array; detailed features such as gaps between modules, variable height of the PV array, and support structures may impact actual glare results. However, accuracy of the current approach is validated by several test cases.
- The model does not consider obstacles (either man-made or natural, existing or proposed) and mitigation measures between the observation points and prescribed solar installation that may obstruct predicted glare.
- The ocular hazard predicted by the tool depends on a number of environmental, optical, and human factors, which can be uncertain.

In general, default values given by the SGHAT in this analysis reflect the worst-case scenario. As such, the actual glare created by the proposed Project will likely be less than that predicted by this model.

## Project Description

Preliminary layout and panel configuration have been developed by Madison Solar. As the Project is further designed, it is likely that the actual Project footprint will be smaller than that used for this analysis.

The Project was modelled as 40 distinct array areas for this analysis. Due to limitations of ForgeSolar, the Project was split into four areas or groupings of arrays for the analyses.

Figure 1 depicts the proposed arrays, observation points (OPs), and route receptors evaluated. The same receptor parameters were used for each grouping of arrays analyzed.

## Project Specifications

The PV panels for the Project are proposed to be mounted on a single-axis tracker racking system with axes that are oriented to the south ( $180^\circ$  azimuth), and an east-west tilt angle of  $50^\circ$  to  $-50^\circ$ . The resting angle, which is defined as the angle of rotation of the panels when the sun is outside the panels' tracking range, will range from  $45^\circ$  to  $55^\circ$ .

Single-axis tracking systems are programmed for the panels to remain perpendicular to the sun's location as the sun moves across the sky throughout the day via solar data from ephemeris tables, which predict the sun's path across the sky. The tracking system begins when the sun's location is perpendicular with the maximum tracking angle ( $50^\circ$ ) of the system and continues until the sun enters a range where the panel can no longer remain perpendicular with the sun. When the sun is outside the tracking range of the system (when the panels no longer can remain perpendicular with the sun), the trackers remain at their resting angle until the sun sets below the horizon.

The panels are proposed to be mounted to the racking at approximately 5.5-feet above ground level (AGL). The glare analysis will be evaluated at the mounting height. No significant grading is currently proposed for the Project. The panels are designed to absorb sunlight. The panels will be treated with anti-reflective coatings (ARC), which absorbs and transmits light rather than reflecting it. The panels were modeled as smooth glass with anti-reflective (AR) coating for the glare analysis.

## Observation Point Parameters

Solar glare hazard analyses were conducted for selected residences, churches, and schools located in vicinity of the Project using ForgeSolar's OP tool to estimate potential glare. Unoccupied structures, such as garages, sheds, barns, etc., were not analyzed.

The majority of OPs analyzed were provided by Madison Solar. Several additional OPs were selected by TRC based on aerial imagery to provide a representative sampling of locations in the vicinity of the Project. A height of 6 feet was used to represent observers located at one-story residences. No two-story residences were identified (Google Earth Pro 2021). Table 1 summarizes the modelled characteristics of the selected OPs and their corresponding labels. Figure 1 shows the locations of the selected OPs in relation to the Project.

**Table 1: Observation Points**

Observation Point Label	Number of Floors in Residence	Height (ft)
OP1	Assumed One Story Building	6
OP2	Assumed One Story Building	6
OP3	Assumed One Story Building	6
OP4	Assumed One Story Building	6
OP5	Assumed One Story Building	6
OP6	Assumed One Story Building	6
OP7	Assumed One Story Building	6
OP8	Assumed One Story Building	6
OP9	Assumed One Story Building	6
OP10	Assumed One Story Building	6
OP11	Assumed One Story Building	6
OP12	Assumed One Story Building	6
OP13	Assumed One Story Building	6

## Route Receptors

TRC also analyzed the adjacent roadways, Bill Eades Road West and Sycamore Drive, East Bill Eads Road, Highway 388, and Three Forks Road, utilizing the Route Receptor in ForgeSolar (Figure 1)<sup>1</sup>. The Route Receptor provides a multi-line representation that simulates observers traveling along continuous paths such as roads, railways, helicopter paths, and multi-segment flight tracks. The viewing angle for observers traveling along Dixon Road and Wood Road was presumed to be a 180° field of view, which represents that the observer can view glare in all directions. The height for observers traveling along the roadway was assumed to be 5 feet.

<sup>1</sup> Based on Google Maps, Bill Eades Road West and East Bill Eads Road include alternate spelling for Eads/Eades.

## Additional Assumptions

The following assumptions have been utilized for the analyses:

- Time zone for the Project was set at UTC – 5 hours (Eastern Standard Time).
- Subtended angle of the sun of 9.3 milliradian (mrad) is assumed as recommended by SGHAT. This is the average angle of the sun as viewed from earth as it moves throughout the day.
- The time interval for the analysis was set to run at 1-minute increments.

Inputs, outputs, and other assumptions used in the analysis are documented in the solar glare hazard analysis reports.

## Results, Recommendations, and Conclusions

TRC conducted the solar glare hazard analysis using the FAA-approved SGHAT tool to evaluate potential impact of the Project on the evaluated OPs and Route Receptors. TRC evaluated the potential solar glare impact of the PV panels using the project specifications detailed above.

Table 2 summarizes the estimated total number of minutes per year that glare may be visible from the proposed Project using a 45° resting angle at each OP and Route Receptor evaluated. These results are detailed in Attachment 1.

**Table 2**

Receptor	Green Glare (min/yr)	Yellow Glare (min/yr)	Red Glare (min/yr)
OP1	0	0	0
OP2	0	0	0
OP3	0	0	0
OP4	0	0	0
OP5	0	0	0
OP6	0	0	0
OP7	0	0	0
OP8	0	0	0
OP9	0	0	0
OP10	0	0	0
OP11	0	0	0
OP12	0	0	0
OP13	0	0	0
Bill Eades and Sycamore Drive	0	0	0
Bill Eades Road	0	0	0
Highway 388	0	0	0
Three Forks Road	0	0	0

Table 3 summarizes the estimated total number of minutes per year that glare may be visible from the proposed Project using a 55° resting angle at each OP and Route Receptor evaluated. These results are detailed in Attachment 2.

**Table 3**

<b>Receptor</b>	<b>Green Glare (min/yr)</b>	<b>Yellow Glare (min/yr)</b>	<b>Red Glare (min/yr)</b>
OP1	0	0	0
OP2	0	0	0
OP3	0	0	0
OP4	0	0	0
OP5	0	0	0
OP6	0	0	0
OP7	0	0	0
OP8	0	0	0
OP9	0	0	0
OP10	0	0	0
OP11	0	0	0
OP12	0	0	0
OP13	0	0	0
Bill Eades and Sycamore Drive	0	0	0
Bill Eades Road	0	0	0
Highway 388	0	0	0
Three Forks Road	0	0	0

Based on the glare hazard analysis performed for the Project with the project specifications provided above, no green, yellow, or red glare is expected to be visible at the OPs and along the Route Receptors evaluated. The lack of glare predicted to be visible is primarily attributed to the proposed resting angle of the PV panel system. The resting angle of a tracking system can have a large impact on glare produced near sunrise and sunset. This is because when the sun is low on the horizon and panels are at a low angle, light is more likely to be reflected to observers close to the ground, such as nearby residences or vehicles. For example, if the resting angle is 0 degrees, the panels will be flat until the sun is within the range, at which point the panel is able to rotate perpendicular to the sun; therefore, at sunrise and sunset, light will reflect at a low angle and high reflectance off of the panels, causing glare. Steeper resting angle ensures that light is reflected in a more upward trajectory, mitigating observable glare.

Because the Project is proposed to use steeper resting angles, the estimated glare impacts from the panels are minimized. During times of the day when glare would be the most prevalent (sunrise and sunset), the higher resting angle would reflect light in an upward trajectory, away from OPs and Route Receptors.

It should be noted that changes to the Project specifications may affect the results of this analysis. In addition, vegetative screening may further mitigate visual impacts from the Project arrays.

## References

Ho, C.K., C.M. Ghanbari, and R.B. Driver. 2010. Methodology to Assess Potential Glare Hazards from Concentrating Solar Power Plants: Analytical Models and Experimental Validation, SAND2010-2581C, in proceedings of the 4th International Conference on Energy Sustainability, Phoenix, AZ, May 17-22.

Ho, C.K., and C.A. Sims. 2013. Solar Glare Hazard Analysis Tool (SGHAT) User's Manual v 3.0.



## Figures

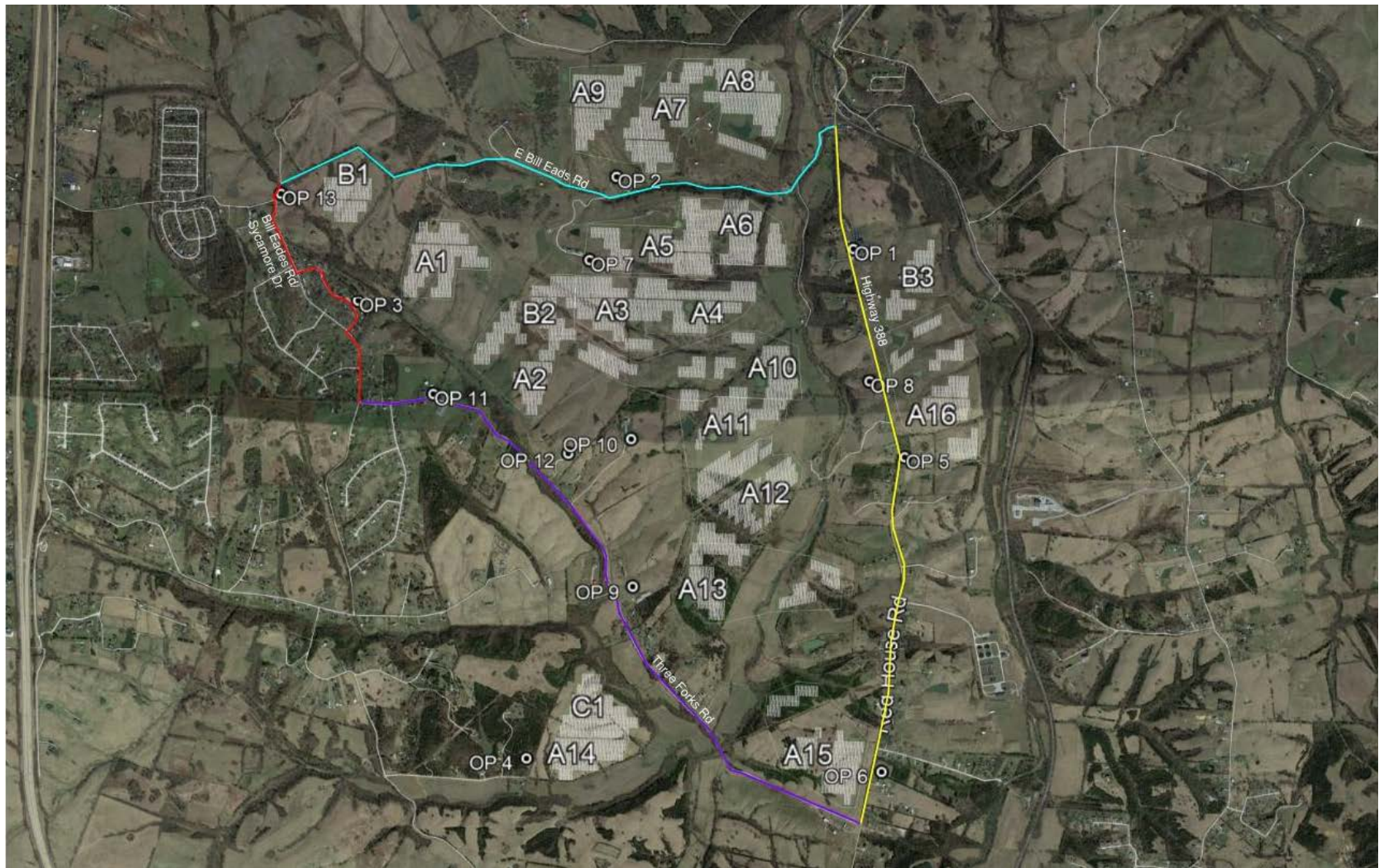
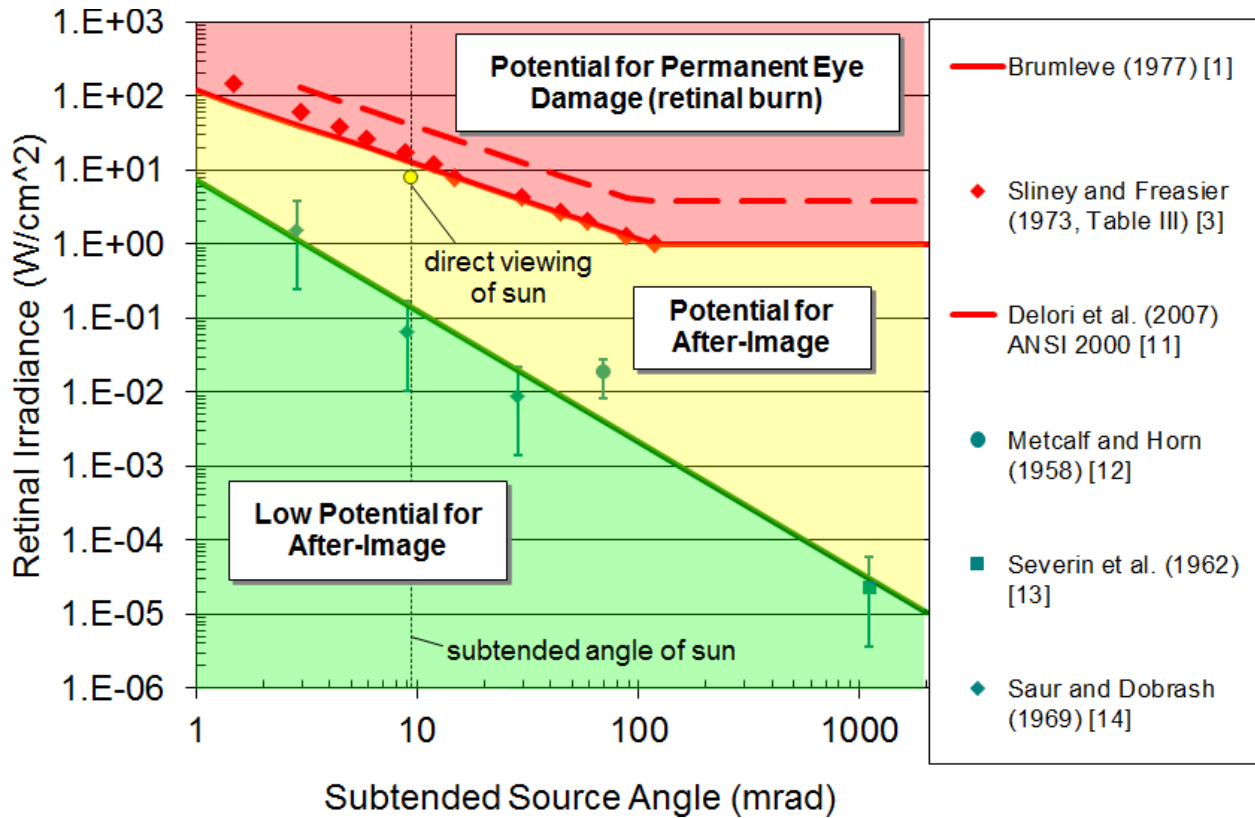


Figure 1. Madison Solar Site with Observation Points and Route Receptor Locations



Airport Feature	FAA Acceptable Glare Limit	Color Code
Runways	No Glare	None
	Low potential for after image	Green
ATCT	No Glare	None

Note:

After image (flash blindness) is an internal picture that appears on the retina after looking at an object reflecting light or at a source of light itself.

**Figure 2. Glare Hazard Analysis Plot and FAA Acceptable Glare Limits (Ho et al., 2011 and FAA, 2013)**

Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.

Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.

The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)

Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.

Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.

The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual results and glare occurrence may differ.

Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

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**Attachment 1**

**Madison County Solar Project  
Solar Glare Hazard Analysis Reports  
(45-Degree Resting Angle)**

# FORGESOLAR GLARE ANALYSIS

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Project: **Acciona - Madison**

A proposed solar facility near Richmond, Madison County, Kentucky.

Site configuration: **Madison - Area 1\_resting angle 45**

Analysis conducted by BreAnne Kahnk (bkahnk@trccompanies.com) at 16:55 on 25 Jan, 2022.

## U.S. FAA 2013 Policy Adherence

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

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

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

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

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

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

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

# SITE CONFIGURATION

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## Analysis Parameters

DNI: peaks at 1,000.0 W/m<sup>2</sup>

Time interval: 1 min

Ocular transmission

coefficient: 0.5

Pupil diameter: 0.002 m

Eye focal length: 0.017 m

Sun subtended angle: 9.3

mrاد

Site Config ID: 64021.9754

**PV Array(s)**



**Name:** 01 - A1

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

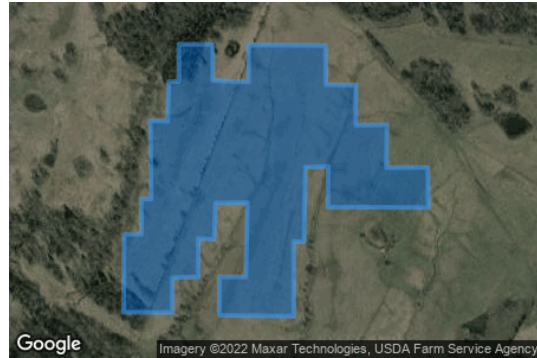
**Resting angle:** 45.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.823395	-84.299296	907.06	5.50	912.56
2	37.823392	-84.298680	905.97	5.50	911.47
3	37.822876	-84.298679	905.44	5.50	910.94
4	37.822855	-84.298027	901.91	5.50	907.41
5	37.823385	-84.298026	906.08	5.50	911.58
6	37.823376	-84.296631	910.93	5.50	916.43
7	37.822817	-84.296625	900.12	5.50	905.62
8	37.822812	-84.296079	887.40	5.50	892.90
9	37.822239	-84.296082	881.89	5.50	887.39
10	37.822244	-84.295518	897.18	5.50	902.68
11	37.821631	-84.295525	904.09	5.50	909.59
12	37.821636	-84.294775	901.50	5.50	907.00
13	37.821060	-84.294765	885.55	5.50	891.05
14	37.821068	-84.296588	867.89	5.50	873.39
15	37.821648	-84.296580	870.58	5.50	876.08
16	37.821641	-84.296998	884.16	5.50	889.66
17	37.820569	-84.297022	860.05	5.50	865.55
18	37.820577	-84.297211	868.50	5.50	874.00
19	37.819509	-84.297208	853.51	5.50	859.01
20	37.819521	-84.298560	869.43	5.50	874.93
21	37.820073	-84.298558	856.26	5.50	861.76
22	37.820069	-84.298077	879.34	5.50	884.84
23	37.821131	-84.298048	864.98	5.50	870.48
24	37.821126	-84.298629	876.80	5.50	882.30
25	37.820608	-84.298653	862.35	5.50	867.85
26	37.820618	-84.298942	868.80	5.50	874.30
27	37.820073	-84.298937	851.67	5.50	857.17
28	37.820058	-84.299407	864.15	5.50	869.65
29	37.819562	-84.299414	851.33	5.50	856.83
30	37.819566	-84.300298	849.88	5.50	855.38
31	37.820680	-84.300286	853.10	5.50	858.61
32	37.820681	-84.299971	871.24	5.50	876.74
33	37.821188	-84.299979	862.14	5.50	867.64
34	37.821182	-84.299796	871.59	5.50	877.09
35	37.822304	-84.299812	865.11	5.50	870.61
36	37.822295	-84.299497	874.36	5.50	879.86
37	37.822857	-84.299473	883.05	5.50	888.56
38	37.822860	-84.299293	890.66	5.50	896.16



**Name:** 02 - A10 West

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

**Resting angle:** 45.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.816619	-84.281861	805.78	5.50	811.28
2	37.816587	-84.280924	798.03	5.50	803.53
3	37.815418	-84.280951	818.39	5.50	823.89
4	37.815497	-84.282775	831.08	5.50	836.58
5	37.816112	-84.282782	846.64	5.50	852.14
6	37.816077	-84.281876	846.31	5.50	851.81

**Name:** 03 - A2

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

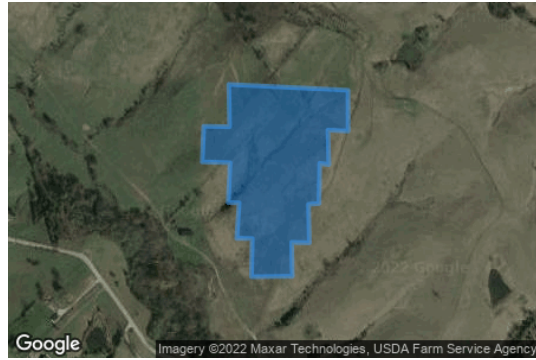
**Resting angle:** 45.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.816363	-84.292875	863.32	5.50	868.82
2	37.816279	-84.290711	874.98	5.50	880.48
3	37.815695	-84.290710	879.87	5.50	885.37
4	37.815710	-84.291076	866.79	5.50	872.29
5	37.815215	-84.291058	878.44	5.50	883.94
6	37.815236	-84.291225	877.25	5.50	882.75
7	37.814662	-84.291237	870.59	5.50	876.09
8	37.814649	-84.291429	869.70	5.50	875.20
9	37.814098	-84.291414	854.38	5.50	859.88
10	37.814107	-84.291735	855.91	5.50	861.41
11	37.813622	-84.291722	837.83	5.50	843.33
12	37.813614	-84.292464	827.60	5.50	833.10
13	37.814162	-84.292450	843.45	5.50	848.95
14	37.814163	-84.292732	840.91	5.50	846.41
15	37.814671	-84.292687	834.82	5.50	840.32
16	37.814673	-84.292885	825.49	5.50	830.99
17	37.815243	-84.292853	848.03	5.50	853.53
18	37.815255	-84.293358	855.55	5.50	861.06
19	37.815765	-84.293331	857.58	5.50	863.08
20	37.815758	-84.292862	859.83	5.50	865.33

**Name:** 04 - A3 North

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

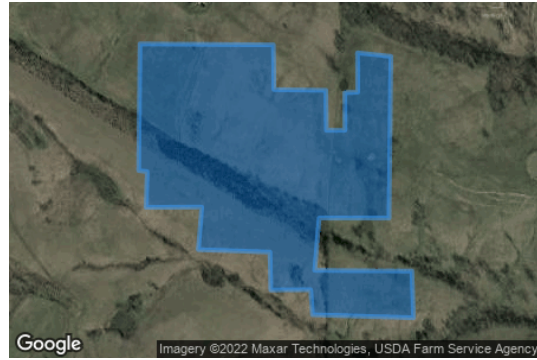
**Resting angle:** 45.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.820772	-84.289291	867.11	5.50	872.61
2	37.820758	-84.286870	874.90	5.50	880.40
3	37.820119	-84.286860	852.90	5.50	858.40
4	37.820109	-84.285917	873.37	5.50	878.87
5	37.819536	-84.285909	859.72	5.50	865.22
6	37.819538	-84.285571	852.43	5.50	857.93
7	37.820074	-84.285572	874.09	5.50	879.59
8	37.820082	-84.285338	872.70	5.50	878.20
9	37.820644	-84.285343	849.15	5.50	854.65
10	37.820593	-84.284738	851.68	5.50	857.18
11	37.818285	-84.284770	830.44	5.50	835.94
12	37.818283	-84.286039	828.14	5.50	833.64
13	37.817536	-84.286121	846.10	5.50	851.60
14	37.817526	-84.284356	809.50	5.50	815.00
15	37.816860	-84.284327	829.71	5.50	835.21
16	37.816903	-84.286160	822.56	5.50	828.06
17	37.817261	-84.286193	834.42	5.50	839.92
18	37.817257	-84.286917	826.09	5.50	831.59
19	37.817798	-84.286932	842.00	5.50	847.50
20	37.817833	-84.288233	834.81	5.50	840.31
21	37.818442	-84.288169	862.40	5.50	867.90
22	37.818436	-84.289180	850.08	5.50	855.58
23	37.818947	-84.289161	868.86	5.50	874.36
24	37.818963	-84.289315	865.70	5.50	871.20

**Name:** 05 - A3 South

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

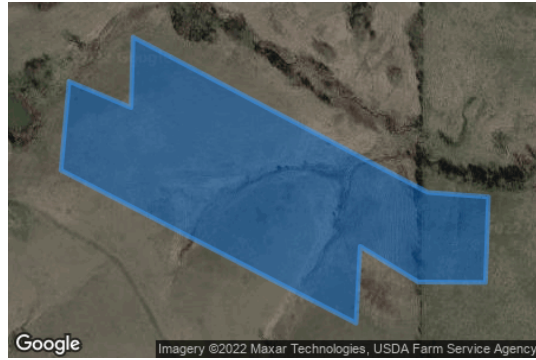
**Resting angle:** 45.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.817335	-84.288512	846.33	5.50	851.83
2	37.816226	-84.285837	831.52	5.50	837.02
3	37.816193	-84.285286	831.90	5.50	837.40
4	37.815583	-84.285314	874.18	5.50	879.68
5	37.815586	-84.285925	868.43	5.50	873.93
6	37.815840	-84.286451	840.92	5.50	846.42
7	37.815292	-84.286488	872.13	5.50	877.63
8	37.816384	-84.289166	883.99	5.50	889.49
9	37.817019	-84.289093	856.44	5.50	861.94
10	37.816831	-84.288529	874.45	5.50	879.95

**Name:** 06 - A4 - North

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

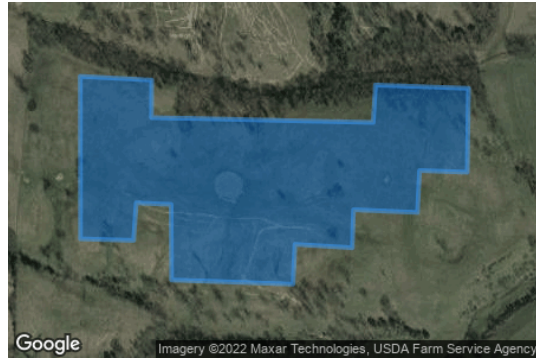
**Resting angle:** 45.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.820597	-84.284713	850.60	5.50	856.10
2	37.820543	-84.283418	820.00	5.50	825.50
3	37.820006	-84.283421	838.72	5.50	844.22
4	37.819938	-84.279397	824.42	5.50	829.92
5	37.820473	-84.279356	813.07	5.50	818.57
6	37.820425	-84.277668	785.19	5.50	790.69
7	37.819227	-84.277690	798.84	5.50	804.34
8	37.819251	-84.278555	813.38	5.50	818.88
9	37.818652	-84.278594	817.20	5.50	822.70
10	37.818691	-84.279754	827.29	5.50	832.79
11	37.818148	-84.279777	833.50	5.50	839.00
12	37.818197	-84.280817	832.35	5.50	837.85
13	37.817628	-84.280852	809.47	5.50	814.97
14	37.817688	-84.283058	819.04	5.50	824.54
15	37.818768	-84.283065	850.26	5.50	855.76
16	37.818789	-84.283698	849.51	5.50	855.01
17	37.818253	-84.283746	842.12	5.50	847.62
18	37.818275	-84.284710	832.82	5.50	838.32

**Name:** 07 - A4 South

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

**Resting angle:** 45.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.817847	-84.279390	836.48	5.50	841.99
2	37.817873	-84.277763	809.46	5.50	814.96
3	37.817160	-84.277819	769.87	5.50	775.37
4	37.817143	-84.279391	796.98	5.50	802.48

**Name:** 08 - A5 and A6 West

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

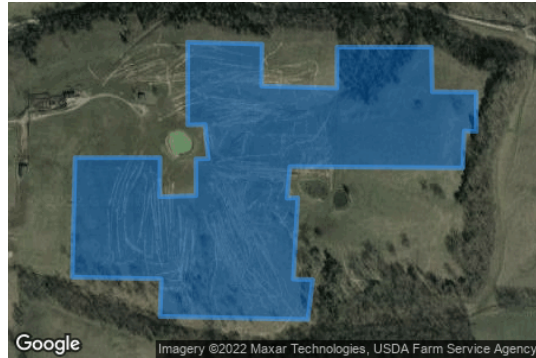
**Resting angle:** 45.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.824696	-84.282592	841.21	5.50	846.71
2	37.824668	-84.281243	830.13	5.50	835.63
3	37.824068	-84.281253	832.45	5.50	837.95
4	37.824039	-84.279884	799.54	5.50	805.04
5	37.824624	-84.279881	813.37	5.50	818.87
6	37.824623	-84.278167	786.51	5.50	792.01
7	37.823986	-84.278153	826.16	5.50	831.66
8	37.823983	-84.277358	820.28	5.50	825.78
9	37.823419	-84.277353	800.67	5.50	806.17
10	37.823427	-84.277574	808.45	5.50	813.95
11	37.822898	-84.277601	808.77	5.50	814.28
12	37.822919	-84.280737	845.37	5.50	850.87
13	37.822466	-84.280791	836.69	5.50	842.19
14	37.822473	-84.280594	838.98	5.50	844.48
15	37.821309	-84.280676	815.13	5.50	820.63
16	37.821302	-84.280322	799.53	5.50	805.03
17	37.820733	-84.280414	785.84	5.50	791.34
18	37.820778	-84.283094	797.31	5.50	802.81
19	37.821314	-84.283073	835.74	5.50	841.24
20	37.821337	-84.284688	807.91	5.50	813.41
21	37.823045	-84.284638	839.95	5.50	845.45
22	37.823047	-84.283094	869.88	5.50	875.38
23	37.822487	-84.283100	855.93	5.50	861.43
24	37.822503	-84.282441	844.27	5.50	849.77
25	37.823027	-84.282447	866.23	5.50	871.73
26	37.823029	-84.282220	858.90	5.50	864.40
27	37.823519	-84.282277	853.91	5.50	859.41
28	37.823513	-84.282590	863.35	5.50	868.85

**Name:** 09 - A5 West

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

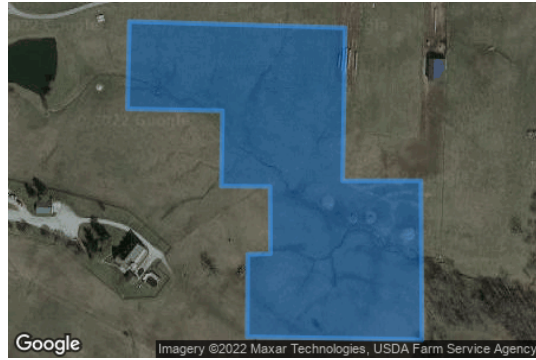
**Resting angle:** 45.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.823185	-84.288352	865.96	5.50	871.46
2	37.823140	-84.286393	874.85	5.50	880.35
3	37.822046	-84.286416	837.94	5.50	843.44
4	37.822047	-84.285705	842.65	5.50	848.15
5	37.820912	-84.285696	837.07	5.50	842.57
6	37.820932	-84.287283	878.75	5.50	884.25
7	37.821521	-84.287278	851.49	5.50	856.99
8	37.821525	-84.287071	845.06	5.50	850.56
9	37.822006	-84.287075	833.80	5.50	839.30
10	37.822009	-84.287517	846.64	5.50	852.14
11	37.822547	-84.287507	843.89	5.50	849.39
12	37.822560	-84.288370	857.44	5.50	862.94

**Name:** 10 - PV Array  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 45.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.823426	-84.276802	738.24	5.50	743.74
2	37.823442	-84.276173	722.41	5.50	727.91
3	37.822865	-84.276190	724.54	5.50	730.04
4	37.822858	-84.276023	723.00	5.50	728.50
5	37.822349	-84.276026	725.56	5.50	731.06
6	37.822344	-84.275769	722.62	5.50	728.12
7	37.821241	-84.275832	727.23	5.50	732.73
8	37.821273	-84.277212	751.05	5.50	756.55
9	37.822394	-84.277135	759.91	5.50	765.41
10	37.822381	-84.276989	745.10	5.50	750.60
11	37.822911	-84.277003	745.76	5.50	751.26
12	37.822896	-84.276804	733.47	5.50	738.97

## Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	37.822070	-84.271477	861.39	6.00
OP 2	2	37.825730	-84.286606	843.23	6.00
OP 3	3	37.819382	-84.303090	905.87	6.00
OP 4	4	37.795983	-84.292407	838.28	6.00
OP 5	5	37.811527	-84.268196	858.16	6.00
OP 6	6	37.795636	-84.269683	883.45	6.00
OP 7	7	37.821502	-84.288321	891.37	6.00
OP 8	8	37.815338	-84.270442	857.04	6.00
OP 9	9	37.805023	-84.285580	808.28	6.00
OP 10	10	37.812440	-84.285666	894.37	6.00
OP 11	11	37.814698	-84.298288	910.90	6.00
OP 12	12	37.811717	-84.289690	866.78	6.00
OP 13	13	37.824855	-84.308043	875.61	6.00



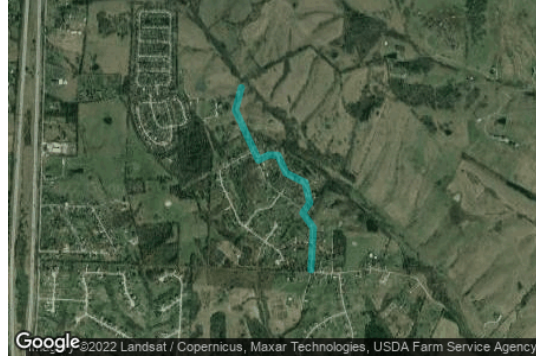
## Route Receptor(s)

**Name:** Bill Eades Rd and Sycamore Drive

**Path type:** Two-way

**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.824808	-84.308238	872.99	5.00	877.99
2	37.823520	-84.308667	910.69	5.00	915.69
3	37.820673	-84.306994	915.84	5.00	920.84
4	37.820978	-84.306221	911.14	5.00	916.14
5	37.820944	-84.305578	904.93	5.00	909.93
6	37.819927	-84.304977	912.80	5.00	917.80
7	37.819384	-84.303603	906.02	5.00	911.02
8	37.818232	-84.303260	900.51	5.00	905.51
9	37.817655	-84.303775	891.01	5.00	896.01
10	37.816808	-84.303003	908.86	5.00	913.86
11	37.814401	-84.303174	901.10	5.00	906.10

**Name:** Bill Eads Road

**Path type:** Two-way

**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.825474	-84.308120	856.28	5.00	861.28
2	37.825287	-84.307777	858.02	5.00	863.02
3	37.827169	-84.303185	925.33	5.00	930.34
4	37.825575	-84.300932	904.12	5.00	909.12
5	37.826406	-84.297563	871.73	5.00	876.73
6	37.826304	-84.296104	838.47	5.00	843.47
7	37.826592	-84.294988	824.11	5.00	829.11
8	37.826609	-84.293872	821.00	5.00	826.00
9	37.825609	-84.290718	802.00	5.00	807.00
10	37.825287	-84.290182	795.62	5.00	800.62
11	37.824863	-84.287736	787.48	5.00	792.48
12	37.824609	-84.287156	782.49	5.00	787.49
13	37.825474	-84.282350	748.08	5.00	753.08
14	37.825118	-84.280805	762.02	5.00	767.02
15	37.825202	-84.279024	744.83	5.00	749.83
16	37.824847	-84.276535	719.49	5.00	724.49
17	37.824982	-84.275483	713.30	5.00	718.30
18	37.825762	-84.274947	715.44	5.00	720.44
19	37.826321	-84.274260	715.41	5.00	720.41
20	37.826982	-84.273702	708.31	5.00	713.31
21	37.827474	-84.273509	707.05	5.00	712.05
22	37.827948	-84.273638	709.92	5.00	714.92
23	37.828372	-84.272629	712.47	5.00	717.47

**Name:** Highway 388

**Path type:** Two-way

**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.832311	-84.272530	717.18	5.00	722.18
2	37.832074	-84.272809	714.37	5.00	719.37
3	37.831752	-84.272766	714.08	5.00	719.08
4	37.831464	-84.272315	706.59	5.00	711.59
5	37.831091	-84.271908	706.47	5.00	711.47
6	37.830650	-84.271779	713.82	5.00	718.82
7	37.830227	-84.272144	707.12	5.00	712.12
8	37.829820	-84.272508	707.45	5.00	712.45
9	37.826007	-84.272551	752.20	5.00	757.20
10	37.823888	-84.272315	819.42	5.00	824.42
11	37.822210	-84.271950	851.13	5.00	856.13
12	37.818108	-84.270663	857.95	5.00	862.95
13	37.812022	-84.268689	853.63	5.00	858.63
14	37.811107	-84.268539	847.55	5.00	852.55
15	37.810056	-84.268775	842.43	5.00	847.43
16	37.808785	-84.269054	864.53	5.00	869.53
17	37.807852	-84.269182	858.08	5.00	863.08
18	37.806987	-84.268882	861.93	5.00	866.93
19	37.806157	-84.268496	862.97	5.00	867.97
20	37.805343	-84.268303	859.82	5.00	864.82
21	37.804580	-84.268410	862.91	5.00	867.91
22	37.803698	-84.268732	865.33	5.00	870.33
23	37.802647	-84.269032	865.38	5.00	870.38
24	37.801766	-84.269311	867.58	5.00	872.58
25	37.800630	-84.269247	859.89	5.00	864.89
26	37.799714	-84.269225	860.37	5.00	865.37
27	37.798595	-84.269483	872.07	5.00	877.07
28	37.792983	-84.271028	873.72	5.00	878.72

**Name:** Three Forks Road  
**Path type:** Two-way  
**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.814350	-84.303074	901.73	5.00	906.73
2	37.814180	-84.302431	908.29	5.00	913.30
3	37.814180	-84.301079	904.49	5.00	909.49
4	37.814452	-84.298783	901.98	5.00	906.98
5	37.813892	-84.295478	911.36	5.00	916.36
6	37.812519	-84.294277	881.93	5.00	886.93
7	37.812180	-84.293397	865.69	5.00	870.69
8	37.810773	-84.291680	834.69	5.00	839.69
9	37.808857	-84.289427	808.47	5.00	813.47
10	37.807366	-84.287968	804.08	5.00	809.08
11	37.806671	-84.287389	797.98	5.00	802.98
12	37.805958	-84.287410	810.43	5.00	815.43
13	37.805331	-84.287389	796.90	5.00	801.90
14	37.801839	-84.285372	795.10	5.00	800.10
15	37.801211	-84.284986	794.34	5.00	799.34
16	37.799007	-84.282454	783.35	5.00	788.35
17	37.798092	-84.281273	768.55	5.00	773.55
18	37.796854	-84.280115	766.75	5.00	771.75
19	37.795718	-84.279407	798.02	5.00	803.02
20	37.795599	-84.279213	806.87	5.00	811.87
21	37.795531	-84.278377	823.26	5.00	828.26
22	37.795345	-84.277947	830.47	5.00	835.47
23	37.793259	-84.272090	884.50	5.00	889.50
24	37.792988	-84.271060	874.44	5.00	879.44

# GLARE ANALYSIS RESULTS

## Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
01 - A1	SA tracking	SA tracking	0	0	-
02 - A10 West	SA tracking	SA tracking	0	0	-
03 - A2	SA tracking	SA tracking	0	0	-
04 - A3 North	SA tracking	SA tracking	0	0	-
05 - A3 South	SA tracking	SA tracking	0	0	-
06 - A4 - North	SA tracking	SA tracking	0	0	-
07 - A4 South	SA tracking	SA tracking	0	0	-
08 - A5 and A6 West	SA tracking	SA tracking	0	0	-
09 - A5 West	SA tracking	SA tracking	0	0	-
10 - PV Array	SA tracking	SA tracking	0	0	-

*Total annual glare received by each receptor*

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

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

## Results for: 01 - A1

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 02 - A10 West**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0



**Point Receptor: OP 1**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 2**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 3**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Three Forks Road**

0 minutes of yellow glare  
0 minutes of green glare

**Results for: 03 - A2**

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

Receptor	Green Glare (min)	Yellow Glare (min)
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### Route: Three Forks Road

0 minutes of yellow glare

0 minutes of green glare

## Results for: 04 - A3 North

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 05 - A3 South**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

**Point Receptor: OP 1**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 2**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 3**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare



0 minutes of green glare

### **Point Receptor: OP 11**

0 minutes of yellow glare

0 minutes of green glare

### **Point Receptor: OP 12**

0 minutes of yellow glare

0 minutes of green glare

### **Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 06 - A4 - North**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### Route: Three Forks Road

0 minutes of yellow glare

0 minutes of green glare

## Results for: 07 - A4 South

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 08 - A5 and A6 West**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

**Point Receptor: OP 1**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 2**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 3**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Three Forks Road**

0 minutes of yellow glare  
0 minutes of green glare

**Results for: 09 - A5 West**

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



Receptor	Green Glare (min)	Yellow Glare (min)
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### Route: Three Forks Road

0 minutes of yellow glare

0 minutes of green glare

## Results for: 10 - PV Array

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Assumptions**

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"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.

Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.

Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to V1 algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.

The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size.

Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)

Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.

Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.

The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual results and glare occurrence may differ.

Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

Refer to the Help page at [www.forgesolar.com/help/](http://www.forgesolar.com/help/) for assumptions and limitations not listed here.

# FORGESOLAR GLARE ANALYSIS

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Project: **Acciona - Madison**

A proposed solar facility near Richmond, Madison County, Kentucky.

Site configuration: **Madison - Area 2\_resting angle 45**

Analysis conducted by BreAnne Kahnk (bkahnk@trccompanies.com) at 15:21 on 25 Jan, 2022.

## U.S. FAA 2013 Policy Adherence

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

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

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

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

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

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

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

# SITE CONFIGURATION

## Analysis Parameters

DNI: peaks at 1,000.0 W/m<sup>2</sup>  
Time interval: 1 min  
Ocular transmission coefficient: 0.5  
Pupil diameter: 0.002 m  
Eye focal length: 0.017 m  
Sun subtended angle: 9.3 mrad  
Site Config ID: 64013.9754

## PV Array(s)

**Name:** 11 - A6 South  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 45.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.822862	-84.279538	837.57	5.50	843.07
2	37.822840	-84.277656	811.89	5.50	817.39
3	37.821741	-84.277716	799.92	5.50	805.42
4	37.821743	-84.277881	804.36	5.50	809.86
5	37.821184	-84.277898	789.60	5.50	795.10
6	37.821231	-84.280134	799.42	5.50	804.92
7	37.821799	-84.280146	824.82	5.50	830.32
8	37.821806	-84.279506	830.07	5.50	835.57

**Name:** 12 - A7 North

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

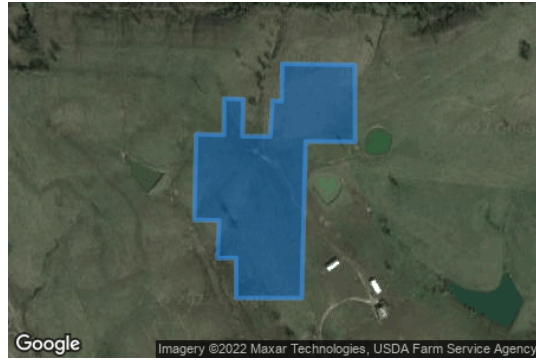
**Resting angle:** 45.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.830990	-84.283476	870.07	5.50	875.57
2	37.830982	-84.283129	852.64	5.50	858.15
3	37.830455	-84.283143	867.97	5.50	873.47
4	37.830449	-84.282637	865.95	5.50	871.45
5	37.830965	-84.282600	843.00	5.50	848.50
6	37.830951	-84.282430	850.67	5.50	856.17
7	37.831489	-84.282421	823.65	5.50	829.15
8	37.831471	-84.281104	823.39	5.50	828.89
9	37.830371	-84.281097	858.04	5.50	863.54
10	37.830379	-84.281997	863.63	5.50	869.13
11	37.828139	-84.282067	848.29	5.50	853.79
12	37.828141	-84.283257	813.69	5.50	819.19
13	37.828717	-84.283259	836.37	5.50	841.87
14	37.828708	-84.283599	819.18	5.50	824.68
15	37.829251	-84.283566	840.22	5.50	845.72
16	37.829255	-84.284017	822.73	5.50	828.23
17	37.830479	-84.283985	866.03	5.50	871.53
18	37.830473	-84.283480	868.21	5.50	873.71



**Name:** 13 - A7 South

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

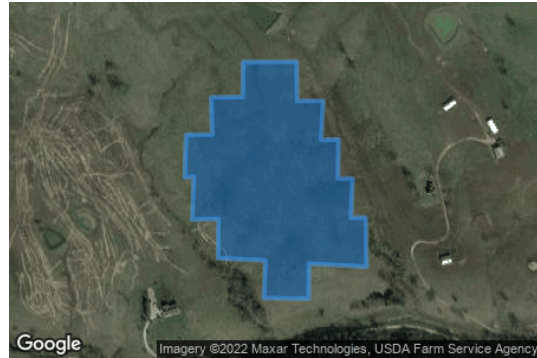
**Resting angle:** 45.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.829224	-84.285252	876.68	5.50	882.19
2	37.829230	-84.284282	833.36	5.50	838.86
3	37.828669	-84.284272	842.42	5.50	847.92
4	37.828670	-84.283800	817.13	5.50	822.63
5	37.828117	-84.283836	823.26	5.50	828.76
6	37.828118	-84.283521	811.27	5.50	816.77
7	37.827564	-84.283532	815.50	5.50	821.00
8	37.827560	-84.283265	803.37	5.50	808.87
9	37.827000	-84.283294	818.74	5.50	824.24
10	37.827001	-84.283026	801.85	5.50	807.35
11	37.826301	-84.283013	817.96	5.50	823.46
12	37.826346	-84.284056	833.08	5.50	838.58
13	37.825846	-84.284061	800.53	5.50	806.03
14	37.825854	-84.284875	804.16	5.50	809.66
15	37.826390	-84.284846	815.66	5.50	821.16
16	37.826425	-84.285707	802.57	5.50	808.07
17	37.826983	-84.285700	827.76	5.50	833.26
18	37.826977	-84.286179	812.88	5.50	818.38
19	37.827586	-84.286146	842.79	5.50	848.29
20	37.827577	-84.286310	838.18	5.50	843.68
21	37.828187	-84.286288	851.83	5.50	857.33
22	37.828189	-84.285814	859.83	5.50	865.33
23	37.828719	-84.285833	863.54	5.50	869.04
24	37.828726	-84.285260	874.30	5.50	879.80

**Name:** 14 - A8 Central

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

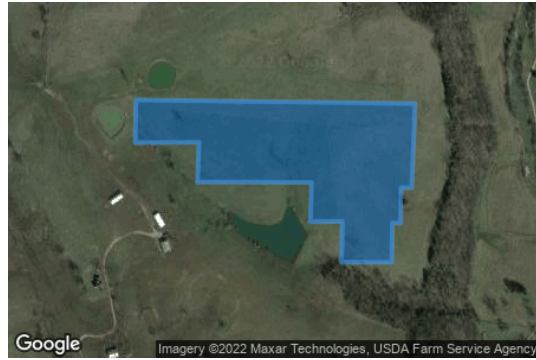
**Resting angle:** 45.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.827705	-84.276504	807.06	5.50	812.57
2	37.827704	-84.277419	774.33	5.50	779.83
3	37.828287	-84.277402	816.20	5.50	821.70
4	37.828281	-84.277985	810.54	5.50	816.04
5	37.828843	-84.277961	826.94	5.50	832.44
6	37.828850	-84.280032	817.70	5.50	823.20
7	37.829417	-84.280004	843.47	5.50	848.97
8	37.829411	-84.281161	838.61	5.50	844.12
9	37.830023	-84.281152	850.58	5.50	856.08
10	37.829969	-84.276085	828.36	5.50	833.86
11	37.828767	-84.276143	811.41	5.50	816.91
12	37.828767	-84.276343	810.74	5.50	816.24
13	37.828262	-84.276346	814.70	5.50	820.20
14	37.828265	-84.276496	816.45	5.50	821.95

**Name:** 15 - A8 North

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

**Resting angle:** 45.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.831701	-84.280497	801.63	5.50	807.13
2	37.831677	-84.278410	833.88	5.50	839.38
3	37.831101	-84.278447	828.72	5.50	834.22
4	37.831090	-84.277547	808.33	5.50	813.83
5	37.830570	-84.277555	831.75	5.50	837.25
6	37.830560	-84.277441	827.76	5.50	833.26
7	37.831094	-84.277424	805.76	5.50	811.27
8	37.831085	-84.276933	811.17	5.50	816.67
9	37.830531	-84.276951	827.01	5.50	832.51
10	37.830525	-84.276524	827.91	5.50	833.41
11	37.829975	-84.276529	842.55	5.50	848.05
12	37.830065	-84.280278	847.71	5.50	853.21
13	37.830580	-84.280228	851.80	5.50	857.30
14	37.830584	-84.280378	853.22	5.50	858.72
15	37.831081	-84.280353	839.81	5.50	845.31
16	37.831088	-84.280451	837.85	5.50	843.35
17	37.830746	-84.280459	850.60	5.50	856.10
18	37.830729	-84.281095	858.49	5.50	863.99
19	37.831370	-84.281107	825.43	5.50	830.93
20	37.831379	-84.280513	818.85	5.50	824.35

**Name:** 16 - A8 South

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

**Resting angle:** 45.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.827994	-84.280217	844.13	5.50	849.63
2	37.827123	-84.277103	804.22	5.50	809.72
3	37.826538	-84.277107	820.64	5.50	826.14
4	37.827352	-84.280186	837.91	5.50	843.41

**Name:** 17 - A9

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

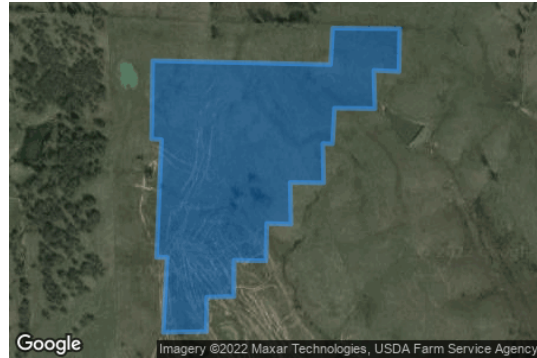
**Resting angle:** 45.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.830854	-84.289491	895.14	5.50	900.64
2	37.830798	-84.286261	873.18	5.50	878.68
3	37.831318	-84.286222	880.18	5.50	885.68
4	37.831311	-84.285006	872.30	5.50	877.80
5	37.830698	-84.285019	864.40	5.50	869.90
6	37.830716	-84.285477	866.46	5.50	871.96
7	37.830169	-84.285456	855.86	5.50	861.36
8	37.830175	-84.286190	880.50	5.50	886.00
9	37.829665	-84.286226	869.96	5.50	875.46
10	37.829671	-84.286402	867.72	5.50	873.22
11	37.829109	-84.286386	851.20	5.50	856.70
12	37.829114	-84.286995	858.15	5.50	863.65
13	37.828518	-84.286979	841.89	5.50	847.39
14	37.828531	-84.287420	838.50	5.50	844.00
15	37.827994	-84.287432	831.64	5.50	837.14
16	37.828005	-84.288011	860.46	5.50	865.96
17	37.827484	-84.288015	863.83	5.50	869.33
18	37.827478	-84.288508	868.34	5.50	873.84
19	37.826985	-84.288513	849.94	5.50	855.44
20	37.826973	-84.289298	858.33	5.50	863.83
21	37.828044	-84.289230	883.63	5.50	889.13
22	37.828045	-84.289420	884.56	5.50	890.06
23	37.829726	-84.289330	874.10	5.50	879.60
24	37.829737	-84.289510	880.59	5.50	886.09

**Name:** 18 - B1

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

**Resting angle:** 45.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.825644	-84.305367	887.90	5.50	893.40
2	37.825586	-84.302238	915.23	5.50	920.73
3	37.824491	-84.302278	889.91	5.50	895.41
4	37.824443	-84.302584	896.28	5.50	901.78
5	37.823837	-84.302590	871.44	5.50	876.94
6	37.823832	-84.303165	880.67	5.50	886.17
7	37.823316	-84.303143	865.70	5.50	871.20
8	37.823359	-84.304767	848.75	5.50	854.25
9	37.823894	-84.304700	862.20	5.50	867.70
10	37.823934	-84.305532	860.95	5.50	866.45

**Name:** 19 - B2 East

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

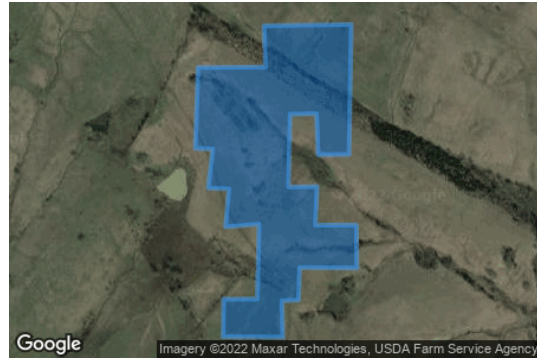
**Resting angle:** 45.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.820776	-84.290903	850.90	5.50	856.40
2	37.820796	-84.289318	866.02	5.50	871.52
3	37.818938	-84.289359	863.37	5.50	868.88
4	37.818933	-84.289921	854.54	5.50	860.04
5	37.819521	-84.289950	872.26	5.50	877.76
6	37.819515	-84.290427	871.07	5.50	876.57
7	37.818473	-84.290458	871.44	5.50	876.94
8	37.818479	-84.289940	860.04	5.50	865.54
9	37.817929	-84.289970	871.88	5.50	877.38
10	37.817929	-84.289226	850.13	5.50	855.63
11	37.817315	-84.289217	853.92	5.50	859.42
12	37.817323	-84.290254	877.74	5.50	883.24
13	37.816859	-84.290276	882.81	5.50	888.31
14	37.816849	-84.290578	882.87	5.50	888.37
15	37.816328	-84.290561	879.27	5.50	884.77
16	37.816336	-84.291646	867.94	5.50	873.44
17	37.816871	-84.291636	884.23	5.50	889.73
18	37.816873	-84.291025	880.48	5.50	885.98
19	37.817945	-84.290993	890.56	5.50	896.06
20	37.817903	-84.291601	896.19	5.50	901.69
21	37.818448	-84.291541	891.35	5.50	896.85
22	37.818458	-84.291912	889.81	5.50	895.31
23	37.819017	-84.291834	893.47	5.50	898.97
24	37.819025	-84.292150	889.09	5.50	894.59
25	37.820179	-84.292102	892.25	5.50	897.75
26	37.820186	-84.290878	867.57	5.50	873.07

**Name:** 20 - B2 West

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

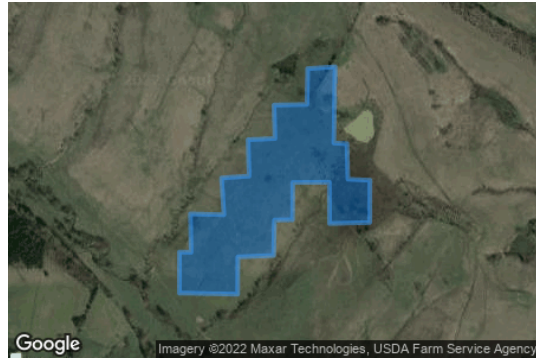
**Resting angle:** 45.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.819334	-84.293504	882.59	5.50	888.09
2	37.819360	-84.293006	897.70	5.50	903.20
3	37.818271	-84.293030	874.89	5.50	880.39
4	37.818261	-84.292791	869.83	5.50	875.33
5	37.817754	-84.292773	865.72	5.50	871.22
6	37.817739	-84.292373	878.67	5.50	884.17
7	37.817136	-84.292375	880.37	5.50	885.87
8	37.817121	-84.293108	864.57	5.50	870.07
9	37.817710	-84.293110	859.72	5.50	865.22
10	37.817707	-84.293774	868.70	5.50	874.20
11	37.817175	-84.293778	852.67	5.50	858.17
12	37.817172	-84.294107	862.24	5.50	867.74
13	37.816666	-84.294122	844.73	5.50	850.23
14	37.816643	-84.294771	853.52	5.50	859.02
15	37.816111	-84.294775	831.83	5.50	837.33
16	37.816129	-84.295831	824.79	5.50	830.29
17	37.816716	-84.295831	841.50	5.50	847.00
18	37.816709	-84.295620	849.23	5.50	854.73
19	37.817260	-84.295633	839.04	5.50	844.54
20	37.817246	-84.295024	860.59	5.50	866.09
21	37.817772	-84.295067	849.51	5.50	855.01
22	37.817798	-84.294567	870.85	5.50	876.35
23	37.818318	-84.294586	857.40	5.50	862.90
24	37.818335	-84.294097	876.68	5.50	882.18
25	37.818813	-84.294116	867.72	5.50	873.22
26	37.818821	-84.293517	887.11	5.50	892.61



## Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	37.822070	-84.271477	861.39	6.00
OP 2	2	37.825730	-84.286606	843.23	6.00
OP 3	3	37.819382	-84.303090	905.87	6.00
OP 4	4	37.795983	-84.292407	838.28	6.00
OP 5	5	37.811527	-84.268196	858.16	6.00
OP 6	6	37.795636	-84.269683	883.45	6.00
OP 7	7	37.821502	-84.288321	891.37	6.00
OP 8	8	37.815338	-84.270442	857.04	6.00
OP 9	9	37.805023	-84.285580	808.28	6.00
OP 10	10	37.812440	-84.285666	894.37	6.00
OP 11	11	37.814698	-84.298288	910.90	6.00
OP 12	12	37.811717	-84.289690	866.78	6.00
OP 13	13	37.824855	-84.308043	875.61	6.00

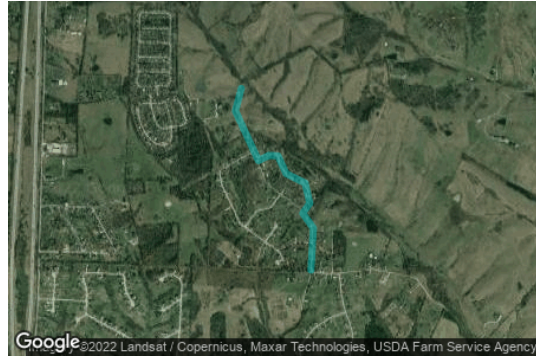
## Route Receptor(s)

**Name:** Bill Eades Rd and Sycamore Drive

**Path type:** Two-way

**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.824808	-84.308238	872.99	5.00	877.99
2	37.823520	-84.308667	910.69	5.00	915.69
3	37.820673	-84.306994	915.84	5.00	920.84
4	37.820978	-84.306221	911.14	5.00	916.14
5	37.820944	-84.305578	904.93	5.00	909.93
6	37.819927	-84.304977	912.80	5.00	917.80
7	37.819384	-84.303603	906.02	5.00	911.02
8	37.818232	-84.303260	900.51	5.00	905.51
9	37.817655	-84.303775	891.01	5.00	896.01
10	37.816808	-84.303003	908.86	5.00	913.86
11	37.814401	-84.303174	901.10	5.00	906.10

**Name:** Bill Eads Road

**Path type:** Two-way

**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.825474	-84.308120	856.28	5.00	861.28
2	37.825287	-84.307777	858.02	5.00	863.02
3	37.827169	-84.303185	925.33	5.00	930.34
4	37.825575	-84.300932	904.12	5.00	909.12
5	37.826406	-84.297563	871.73	5.00	876.73
6	37.826304	-84.296104	838.47	5.00	843.47
7	37.826592	-84.294988	824.11	5.00	829.11
8	37.826609	-84.293872	821.00	5.00	826.00
9	37.825609	-84.290718	802.00	5.00	807.00
10	37.825287	-84.290182	795.62	5.00	800.62
11	37.824863	-84.287736	787.48	5.00	792.48
12	37.824609	-84.287156	782.49	5.00	787.49
13	37.825474	-84.282350	748.08	5.00	753.08
14	37.825118	-84.280805	762.02	5.00	767.02
15	37.825202	-84.279024	744.83	5.00	749.83
16	37.824847	-84.276535	719.49	5.00	724.49
17	37.824982	-84.275483	713.30	5.00	718.30
18	37.825762	-84.274947	715.44	5.00	720.44
19	37.826321	-84.274260	715.41	5.00	720.41
20	37.826982	-84.273702	708.31	5.00	713.31
21	37.827474	-84.273509	707.05	5.00	712.05
22	37.827948	-84.273638	709.92	5.00	714.92
23	37.828372	-84.272629	712.47	5.00	717.47

**Name:** Highway 388

**Path type:** Two-way

**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.832311	-84.272530	717.18	5.00	722.18
2	37.832074	-84.272809	714.37	5.00	719.37
3	37.831752	-84.272766	714.08	5.00	719.08
4	37.831464	-84.272315	706.59	5.00	711.59
5	37.831091	-84.271908	706.47	5.00	711.47
6	37.830650	-84.271779	713.82	5.00	718.82
7	37.830227	-84.272144	707.12	5.00	712.12
8	37.829820	-84.272508	707.45	5.00	712.45
9	37.826007	-84.272551	752.20	5.00	757.20
10	37.823888	-84.272315	819.42	5.00	824.42
11	37.822210	-84.271950	851.13	5.00	856.13
12	37.818108	-84.270663	857.95	5.00	862.95
13	37.812022	-84.268689	853.63	5.00	858.63
14	37.811107	-84.268539	847.55	5.00	852.55
15	37.810056	-84.268775	842.43	5.00	847.43
16	37.808785	-84.269054	864.53	5.00	869.53
17	37.807852	-84.269182	858.08	5.00	863.08
18	37.806987	-84.268882	861.93	5.00	866.93
19	37.806157	-84.268496	862.97	5.00	867.97
20	37.805343	-84.268303	859.82	5.00	864.82
21	37.804580	-84.268410	862.91	5.00	867.91
22	37.803698	-84.268732	865.33	5.00	870.33
23	37.802647	-84.269032	865.38	5.00	870.38
24	37.801766	-84.269311	867.58	5.00	872.58
25	37.800630	-84.269247	859.89	5.00	864.89
26	37.799714	-84.269225	860.37	5.00	865.37
27	37.798595	-84.269483	872.07	5.00	877.07
28	37.792983	-84.271028	873.72	5.00	878.72

**Name:** Three Forks Road  
**Path type:** Two-way  
**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.814350	-84.303074	901.73	5.00	906.73
2	37.814180	-84.302431	908.29	5.00	913.30
3	37.814180	-84.301079	904.49	5.00	909.49
4	37.814452	-84.298783	901.98	5.00	906.98
5	37.813892	-84.295478	911.36	5.00	916.36
6	37.812519	-84.294277	881.93	5.00	886.93
7	37.812180	-84.293397	865.69	5.00	870.69
8	37.810773	-84.291680	834.69	5.00	839.69
9	37.808857	-84.289427	808.47	5.00	813.47
10	37.807366	-84.287968	804.08	5.00	809.08
11	37.806671	-84.287389	797.98	5.00	802.98
12	37.805958	-84.287410	810.43	5.00	815.43
13	37.805331	-84.287389	796.90	5.00	801.90
14	37.801839	-84.285372	795.10	5.00	800.10
15	37.801211	-84.284986	794.34	5.00	799.34
16	37.799007	-84.282454	783.35	5.00	788.35
17	37.798092	-84.281273	768.55	5.00	773.55
18	37.796854	-84.280115	766.75	5.00	771.75
19	37.795718	-84.279407	798.02	5.00	803.02
20	37.795599	-84.279213	806.87	5.00	811.87
21	37.795531	-84.278377	823.26	5.00	828.26
22	37.795345	-84.277947	830.47	5.00	835.47
23	37.793259	-84.272090	884.50	5.00	889.50
24	37.792988	-84.271060	874.44	5.00	879.44

# GLARE ANALYSIS RESULTS

## Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
11 - A6 South	SA tracking	SA tracking	0	0	-
12 - A7 North	SA tracking	SA tracking	0	0	-
13 - A7 South	SA tracking	SA tracking	0	0	-
14 - A8 Central	SA tracking	SA tracking	0	0	-
15 - A8 North	SA tracking	SA tracking	0	0	-
16 - A8 South	SA tracking	SA tracking	0	0	-
17 - A9	SA tracking	SA tracking	0	0	-
18 - B1	SA tracking	SA tracking	0	0	-
19 - B2 East	SA tracking	SA tracking	0	0	-
20 - B2 West	SA tracking	SA tracking	0	0	-

*Total annual glare received by each receptor*

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

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

## Results for: 11 - A6 South

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 12 - A7 North**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0



**Point Receptor: OP 1**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 2**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 3**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Three Forks Road**

0 minutes of yellow glare  
0 minutes of green glare

**Results for: 13 - A7 South**

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

Receptor	Green Glare (min)	Yellow Glare (min)
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### Route: Three Forks Road

0 minutes of yellow glare

0 minutes of green glare

## Results for: 14 - A8 Central

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 15 - A8 North**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

**Point Receptor: OP 1**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 2**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 3**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare



0 minutes of green glare

### **Point Receptor: OP 11**

0 minutes of yellow glare

0 minutes of green glare

### **Point Receptor: OP 12**

0 minutes of yellow glare

0 minutes of green glare

### **Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 16 - A8 South**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### Route: Three Forks Road

0 minutes of yellow glare

0 minutes of green glare

## Results for: 17 - A9

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 18 - B1**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

**Point Receptor: OP 1**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 2**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 3**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Three Forks Road**

0 minutes of yellow glare  
0 minutes of green glare

**Results for: 19 - B2 East**

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



Receptor	Green Glare (min)	Yellow Glare (min)
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### Route: Three Forks Road

0 minutes of yellow glare

0 minutes of green glare

## Results for: 20 - B2 West

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Assumptions**

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"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.

Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.

Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to V1 algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.

The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size.

Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)

Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.

Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.

The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual results and glare occurrence may differ.

Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

Refer to the Help page at [www.forgesolar.com/help/](http://www.forgesolar.com/help/) for assumptions and limitations not listed here.

# FORGESOLAR GLARE ANALYSIS

Project: **Acciona - Madison**

A proposed solar facility near Richmond, Madison County, Kentucky.

Site configuration: **Madison - Area 3\_resting angle 45**

Analysis conducted by BreAnne Kahnk (bkahnk@trccompanies.com) at 16:51 on 25 Jan, 2022.

## U.S. FAA 2013 Policy Adherence

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

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

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

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

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

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

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

# SITE CONFIGURATION

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## Analysis Parameters

DNI: peaks at 1,000.0 W/m<sup>2</sup>

Time interval: 1 min

Ocular transmission

coefficient: 0.5

Pupil diameter: 0.002 m

Eye focal length: 0.017 m

Sun subtended angle: 9.3  
mrad

Site Config ID: 64018.9754

## PV Array(s)

**Name:** 21 - S - A10 and A11

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

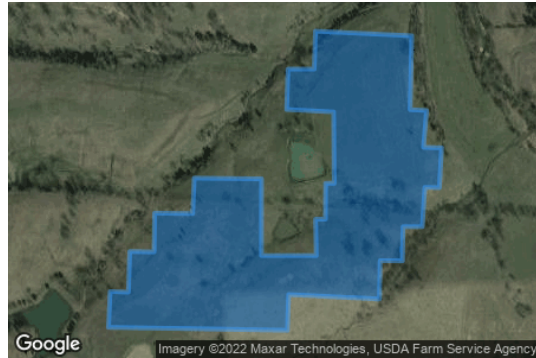
**Resting angle:** 45.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.817157	-84.277313	748.65	5.50	754.15
2	37.817090	-84.275564	774.58	5.50	780.08
3	37.816036	-84.275595	791.88	5.50	797.38
4	37.816023	-84.275295	775.57	5.50	781.07
5	37.815497	-84.275352	785.90	5.50	791.40
6	37.815490	-84.275024	773.05	5.50	778.55
7	37.814921	-84.275062	780.17	5.50	785.67
8	37.814925	-84.275327	789.29	5.50	794.79
9	37.814364	-84.275374	770.00	5.50	775.50
10	37.814363	-84.275722	788.86	5.50	794.36
11	37.813876	-84.275733	788.72	5.50	794.22
12	37.813878	-84.276138	811.41	5.50	816.91
13	37.813330	-84.276152	793.07	5.50	798.57
14	37.813395	-84.277800	837.78	5.50	843.28
15	37.812884	-84.277821	821.80	5.50	827.30
16	37.812925	-84.281069	857.05	5.50	862.55
17	37.813438	-84.281038	830.20	5.50	835.70
18	37.813428	-84.280707	843.89	5.50	849.39
19	37.814009	-84.280682	809.93	5.50	815.43
20	37.814003	-84.280240	829.79	5.50	835.29
21	37.814556	-84.280232	799.85	5.50	805.35
22	37.814551	-84.279542	827.69	5.50	833.19
23	37.815057	-84.279512	796.52	5.50	802.02
24	37.815047	-84.278291	822.45	5.50	827.95
25	37.813950	-84.278292	820.27	5.50	825.77
26	37.813950	-84.277297	831.87	5.50	837.37
27	37.814470	-84.277311	804.62	5.50	810.12
28	37.814472	-84.277131	804.21	5.50	809.71
29	37.814983	-84.277128	806.40	5.50	811.90
30	37.814982	-84.276972	804.85	5.50	810.35
31	37.816002	-84.276983	809.24	5.50	814.74
32	37.816038	-84.277836	801.20	5.50	806.70
33	37.816614	-84.277810	767.51	5.50	773.01
34	37.816614	-84.277335	784.49	5.50	789.99



**Name:** 22 - S - A10 Central

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

**Resting angle:** 45.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.816556	-84.280396	796.37	5.50	801.87
2	37.816514	-84.278966	779.96	5.50	785.46
3	37.815927	-84.278990	789.38	5.50	794.88
4	37.815951	-84.279782	822.36	5.50	827.86
5	37.815417	-84.279794	800.25	5.50	805.75
6	37.815410	-84.280479	824.30	5.50	829.80

**Name:** 23 - S - A11 South

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

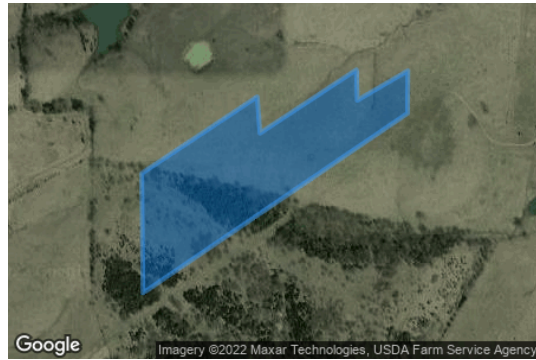
**Resting angle:** 45.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.810798	-84.281538	878.27	5.50	883.77
2	37.811894	-84.279442	848.98	5.50	854.49
3	37.811373	-84.279392	850.93	5.50	856.43
4	37.812280	-84.277641	815.94	5.50	821.45
5	37.811843	-84.277626	831.27	5.50	836.77
6	37.812265	-84.276709	830.97	5.50	836.47
7	37.811658	-84.276714	844.02	5.50	849.52
8	37.809091	-84.281515	842.55	5.50	848.05

**Name:** 24 - S - A11 West  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 45.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.814957	-84.282548	835.63	5.50	841.13
2	37.814924	-84.281429	818.56	5.50	824.06
3	37.813795	-84.281451	816.81	5.50	822.31
4	37.813820	-84.282612	846.95	5.50	852.45

**Name:** 25 - S - A11 West  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 45.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.812959	-84.281432	841.63	5.50	847.13
2	37.812923	-84.281007	859.18	5.50	864.68
3	37.812392	-84.280999	861.21	5.50	866.71
4	37.812381	-84.281189	853.16	5.50	858.66
5	37.811846	-84.281174	861.67	5.50	867.17
6	37.811854	-84.281644	870.22	5.50	875.72
7	37.812424	-84.281646	839.13	5.50	844.63
8	37.812407	-84.281438	839.88	5.50	845.38

**Name:** 26 - S - A12

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

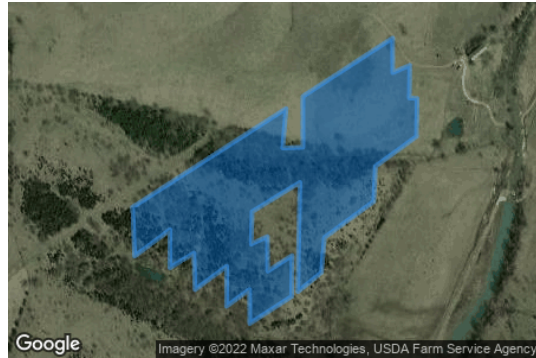
**Resting angle:** 45.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.809200	-84.280224	844.31	5.50	849.81
2	37.810609	-84.277437	835.63	5.50	841.13
3	37.810046	-84.277499	800.76	5.50	806.26
4	37.810056	-84.277132	797.24	5.50	802.74
5	37.810782	-84.277133	831.72	5.50	837.22
6	37.811616	-84.275505	826.19	5.50	831.69
7	37.811122	-84.275501	816.15	5.50	821.65
8	37.811228	-84.275193	802.88	5.50	808.38
9	37.810760	-84.275200	795.46	5.50	800.96
10	37.810754	-84.275059	790.03	5.50	795.53
11	37.810210	-84.275071	771.56	5.50	777.06
12	37.809784	-84.275815	788.14	5.50	793.64
13	37.809283	-84.275847	792.39	5.50	797.90
14	37.808766	-84.276742	826.93	5.50	832.43
15	37.808269	-84.276796	811.16	5.50	816.66
16	37.807993	-84.277226	820.15	5.50	825.65
17	37.809555	-84.277186	830.77	5.50	836.27
18	37.809137	-84.278054	853.56	5.50	859.06
19	37.808673	-84.278070	849.96	5.50	855.46
20	37.808781	-84.277777	850.52	5.50	856.02
21	37.808286	-84.277770	829.85	5.50	835.35
22	37.808510	-84.277329	848.12	5.50	853.62
23	37.807926	-84.277336	817.92	5.50	823.42
24	37.807538	-84.278098	789.29	5.50	794.79
25	37.808026	-84.278101	817.76	5.50	823.26
26	37.807785	-84.278518	795.88	5.50	801.38
27	37.808357	-84.278514	831.31	5.50	836.81
28	37.808023	-84.279089	796.15	5.50	801.65
29	37.808546	-84.279112	816.20	5.50	821.70
30	37.808333	-84.279548	808.88	5.50	814.38
31	37.808879	-84.279544	841.02	5.50	846.52
32	37.808503	-84.280187	802.55	5.50	808.05

**Name:** 27 - S - A13 Central  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 45.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



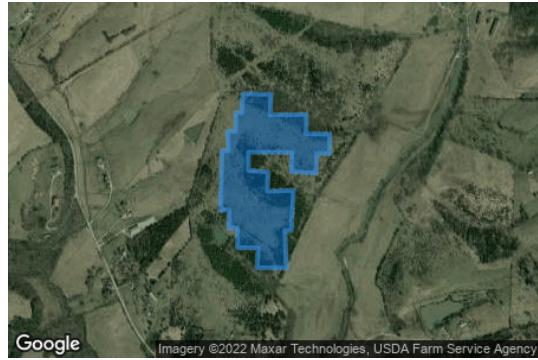
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.805091	-84.275366	764.34	5.50	769.84
2	37.805253	-84.274486	769.00	5.50	774.50
3	37.804710	-84.274514	790.36	5.50	795.86
4	37.804843	-84.273892	783.10	5.50	788.60
5	37.804291	-84.273887	820.44	5.50	825.94
6	37.803808	-84.276304	767.27	5.50	772.77
7	37.804413	-84.276298	766.16	5.50	771.66
8	37.804595	-84.275378	771.42	5.50	776.92

**Name:** 28 - S - A13 East  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 45.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.806416	-84.274231	770.61	5.50	776.11
2	37.805950	-84.272330	837.40	5.50	842.90
3	37.804761	-84.272334	801.04	5.50	806.54
4	37.805058	-84.273618	775.30	5.50	780.80
5	37.805651	-84.273611	791.60	5.50	797.10
6	37.805789	-84.274271	777.09	5.50	782.59

**Name:** 29 - S - A13 West  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 45.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.808262	-84.281314	849.33	5.50	854.83
2	37.808249	-84.280290	814.41	5.50	819.91
3	37.807664	-84.280321	854.40	5.50	859.90
4	37.807673	-84.279002	798.53	5.50	804.03
5	37.807119	-84.279003	845.33	5.50	850.83
6	37.807110	-84.278153	816.51	5.50	822.01
7	37.806548	-84.278169	828.47	5.50	833.97
8	37.806558	-84.278630	843.56	5.50	849.06
9	37.805990	-84.278653	819.88	5.50	825.39
10	37.806033	-84.279548	801.07	5.50	806.57
11	37.806584	-84.279531	835.55	5.50	841.05
12	37.806598	-84.281098	841.79	5.50	847.29
13	37.806074	-84.281109	849.17	5.50	854.67
14	37.806028	-84.280395	815.22	5.50	820.72
15	37.805479	-84.280421	846.39	5.50	851.89
16	37.805507	-84.279468	803.55	5.50	809.05
17	37.804355	-84.279552	814.17	5.50	819.67
18	37.804359	-84.279783	819.09	5.50	824.59
19	37.803279	-84.279727	796.21	5.50	801.71
20	37.803293	-84.280789	801.75	5.50	807.25
21	37.803862	-84.280754	829.05	5.50	834.55
22	37.803864	-84.281500	820.30	5.50	825.80
23	37.804429	-84.281504	836.84	5.50	842.34
24	37.804420	-84.281821	837.35	5.50	842.85
25	37.804941	-84.281808	845.91	5.50	851.41
26	37.804937	-84.282132	840.99	5.50	846.49
27	37.806646	-84.282056	857.35	5.50	862.85
28	37.806640	-84.281830	862.32	5.50	867.82
29	37.807185	-84.281864	868.03	5.50	873.53
30	37.807198	-84.281557	863.36	5.50	868.87
31	37.807726	-84.281566	873.41	5.50	878.91
32	37.807714	-84.281351	869.51	5.50	875.01



**Name:** 30 - S - A15 Central  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 45.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.797850	-84.274007	842.16	5.50	847.66
2	37.797846	-84.273542	849.98	5.50	855.48
3	37.797305	-84.273543	858.51	5.50	864.01
4	37.797295	-84.273832	850.88	5.50	856.38
5	37.796745	-84.273842	866.96	5.50	872.46
6	37.796745	-84.274031	864.95	5.50	870.45
7	37.796216	-84.274038	854.90	5.50	860.40
8	37.796222	-84.274360	850.62	5.50	856.12
9	37.795691	-84.274362	826.12	5.50	831.62
10	37.795720	-84.275957	810.35	5.50	815.85
11	37.796825	-84.275932	842.96	5.50	848.46
12	37.796826	-84.275193	837.74	5.50	843.24
13	37.797363	-84.275183	836.39	5.50	841.89
14	37.797311	-84.273995	848.86	5.50	854.36

## Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	37.822070	-84.271477	861.39	6.00
OP 2	2	37.825730	-84.286606	843.23	6.00
OP 3	3	37.819382	-84.303090	905.87	6.00
OP 4	4	37.795983	-84.292407	838.28	6.00
OP 5	5	37.811527	-84.268196	858.16	6.00
OP 6	6	37.795636	-84.269683	883.45	6.00
OP 7	7	37.821502	-84.288321	891.37	6.00
OP 8	8	37.815338	-84.270442	857.04	6.00
OP 9	9	37.805023	-84.285580	808.28	6.00
OP 10	10	37.812440	-84.285666	894.37	6.00
OP 11	11	37.814698	-84.298288	910.90	6.00
OP 12	12	37.811717	-84.289690	866.78	6.00
OP 13	13	37.824855	-84.308043	875.61	6.00

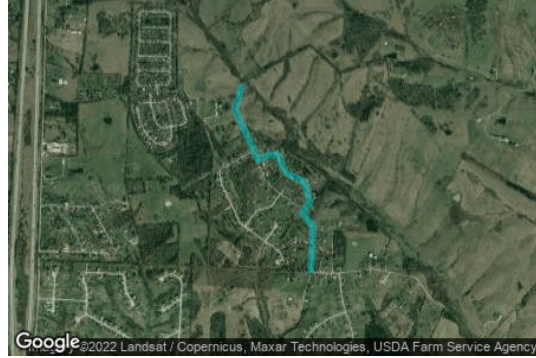
## Route Receptor(s)

**Name:** Bill Eades Rd and Sycamore Drive

**Path type:** Two-way

**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.824808	-84.308238	872.99	5.00	877.99
2	37.823520	-84.308667	910.69	5.00	915.69
3	37.820673	-84.306994	915.84	5.00	920.84
4	37.820978	-84.306221	911.14	5.00	916.14
5	37.820944	-84.305578	904.93	5.00	909.93
6	37.819927	-84.304977	912.80	5.00	917.80
7	37.819384	-84.303603	906.02	5.00	911.02
8	37.818232	-84.303260	900.51	5.00	905.51
9	37.817655	-84.303775	891.01	5.00	896.01
10	37.816808	-84.303003	908.86	5.00	913.86
11	37.814401	-84.303174	901.10	5.00	906.10

**Name:** Bill Eads Road

**Path type:** Two-way

**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.825474	-84.308120	856.28	5.00	861.28
2	37.825287	-84.307777	858.02	5.00	863.02
3	37.827169	-84.303185	925.33	5.00	930.34
4	37.825575	-84.300932	904.12	5.00	909.12
5	37.826406	-84.297563	871.73	5.00	876.73
6	37.826304	-84.296104	838.47	5.00	843.47
7	37.826592	-84.294988	824.11	5.00	829.11
8	37.826609	-84.293872	821.00	5.00	826.00
9	37.825609	-84.290718	802.00	5.00	807.00
10	37.825287	-84.290182	795.62	5.00	800.62
11	37.824863	-84.287736	787.48	5.00	792.48
12	37.824609	-84.287156	782.49	5.00	787.49
13	37.825474	-84.282350	748.08	5.00	753.08
14	37.825118	-84.280805	762.02	5.00	767.02
15	37.825202	-84.279024	744.83	5.00	749.83
16	37.824847	-84.276535	719.49	5.00	724.49
17	37.824982	-84.275483	713.30	5.00	718.30
18	37.825762	-84.274947	715.44	5.00	720.44
19	37.826321	-84.274260	715.41	5.00	720.41
20	37.826982	-84.273702	708.31	5.00	713.31
21	37.827474	-84.273509	707.05	5.00	712.05
22	37.827948	-84.273638	709.92	5.00	714.92
23	37.828372	-84.272629	712.47	5.00	717.47



**Name:** Highway 388

**Path type:** Two-way

**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.832311	-84.272530	717.18	5.00	722.18
2	37.832074	-84.272809	714.37	5.00	719.37
3	37.831752	-84.272766	714.08	5.00	719.08
4	37.831464	-84.272315	706.59	5.00	711.59
5	37.831091	-84.271908	706.47	5.00	711.47
6	37.830650	-84.271779	713.82	5.00	718.82
7	37.830227	-84.272144	707.12	5.00	712.12
8	37.829820	-84.272508	707.45	5.00	712.45
9	37.826007	-84.272551	752.20	5.00	757.20
10	37.823888	-84.272315	819.42	5.00	824.42
11	37.822210	-84.271950	851.13	5.00	856.13
12	37.818108	-84.270663	857.95	5.00	862.95
13	37.812022	-84.268689	853.63	5.00	858.63
14	37.811107	-84.268539	847.55	5.00	852.55
15	37.810056	-84.268775	842.43	5.00	847.43
16	37.808785	-84.269054	864.53	5.00	869.53
17	37.807852	-84.269182	858.08	5.00	863.08
18	37.806987	-84.268882	861.93	5.00	866.93
19	37.806157	-84.268496	862.97	5.00	867.97
20	37.805343	-84.268303	859.82	5.00	864.82
21	37.804580	-84.268410	862.91	5.00	867.91
22	37.803698	-84.268732	865.33	5.00	870.33
23	37.802647	-84.269032	865.38	5.00	870.38
24	37.801766	-84.269311	867.58	5.00	872.58
25	37.800630	-84.269247	859.89	5.00	864.89
26	37.799714	-84.269225	860.37	5.00	865.37
27	37.798595	-84.269483	872.07	5.00	877.07
28	37.792983	-84.271028	873.72	5.00	878.72

**Name:** Three Forks Road  
**Path type:** Two-way  
**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.814350	-84.303074	901.73	5.00	906.73
2	37.814180	-84.302431	908.29	5.00	913.30
3	37.814180	-84.301079	904.49	5.00	909.49
4	37.814452	-84.298783	901.98	5.00	906.98
5	37.813892	-84.295478	911.36	5.00	916.36
6	37.812519	-84.294277	881.93	5.00	886.93
7	37.812180	-84.293397	865.69	5.00	870.69
8	37.810773	-84.291680	834.69	5.00	839.69
9	37.808857	-84.289427	808.47	5.00	813.47
10	37.807366	-84.287968	804.08	5.00	809.08
11	37.806671	-84.287389	797.98	5.00	802.98
12	37.805958	-84.287410	810.43	5.00	815.43
13	37.805331	-84.287389	796.90	5.00	801.90
14	37.801839	-84.285372	795.10	5.00	800.10
15	37.801211	-84.284986	794.34	5.00	799.34
16	37.799007	-84.282454	783.35	5.00	788.35
17	37.798092	-84.281273	768.55	5.00	773.55
18	37.796854	-84.280115	766.75	5.00	771.75
19	37.795718	-84.279407	798.02	5.00	803.02
20	37.795599	-84.279213	806.87	5.00	811.87
21	37.795531	-84.278377	823.26	5.00	828.26
22	37.795345	-84.277947	830.47	5.00	835.47
23	37.793259	-84.272090	884.50	5.00	889.50
24	37.792988	-84.271060	874.44	5.00	879.44

# GLARE ANALYSIS RESULTS

## Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
21 - S - A10 and A11	SA tracking	SA tracking	0	0	-
22 - S - A10 Central	SA tracking	SA tracking	0	0	-
23 - S - A11 South	SA tracking	SA tracking	0	0	-
24 - S - A11 West	SA tracking	SA tracking	0	0	-
25 - S - A11 West	SA tracking	SA tracking	0	0	-
26 - S - A12	SA tracking	SA tracking	0	0	-
27 - S - A13 Central	SA tracking	SA tracking	0	0	-
28 - S - A13 East	SA tracking	SA tracking	0	0	-
29 - S - A13 West	SA tracking	SA tracking	0	0	-
30 - S - A15 Central	SA tracking	SA tracking	0	0	-

*Total annual glare received by each receptor*

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

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

## Results for: 21 - S - A10 and A11

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 22 - S - A10 Central**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

**Point Receptor: OP 1**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 2**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 3**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Three Forks Road**

0 minutes of yellow glare  
0 minutes of green glare

**Results for: 23 - S - A11 South**

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



Receptor	Green Glare (min)	Yellow Glare (min)
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### Route: Three Forks Road

0 minutes of yellow glare

0 minutes of green glare

## Results for: 24 - S - A11 West

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 25 - S - A11 West**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

**Point Receptor: OP 1**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 2**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 3**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Three Forks Road**

0 minutes of yellow glare  
0 minutes of green glare

**Results for: 26 - S - A12**

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

Receptor	Green Glare (min)	Yellow Glare (min)
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare



**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### Route: Three Forks Road

0 minutes of yellow glare

0 minutes of green glare

## Results for: 27 - S - A13 Central

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 28 - S - A13 East**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

**Point Receptor: OP 1**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 2**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 3**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Three Forks Road**

0 minutes of yellow glare  
0 minutes of green glare

**Results for: 29 - S - A13 West**

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

Receptor	Green Glare (min)	Yellow Glare (min)
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare



0 minutes of green glare

### Route: Three Forks Road

0 minutes of yellow glare

0 minutes of green glare

## Results for: 30 - S - A15 Central

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Assumptions**

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"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.

Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.

Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to V1 algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.

The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size.

Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)

Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.

Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.

The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual results and glare occurrence may differ.

Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

Refer to the Help page at [www.forgesolar.com/help/](http://www.forgesolar.com/help/) for assumptions and limitations not listed here.

# FORGESOLAR GLARE ANALYSIS

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Project: **Acciona - Madison**

A proposed solar facility near Richmond, Madison County, Kentucky.

Site configuration: **Madison - Area 4\_resting angle 45**

Analysis conducted by BreAnne Kahnk (bkahnk@trccompanies.com) at 15:47 on 25 Jan, 2022.

## U.S. FAA 2013 Policy Adherence

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

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

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

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

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

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

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

# SITE CONFIGURATION

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## Analysis Parameters

DNI: peaks at 1,000.0 W/m<sup>2</sup>

Time interval: 1 min

Ocular transmission

coefficient: 0.5

Pupil diameter: 0.002 m

Eye focal length: 0.017 m

Sun subtended angle: 9.3

mrاد

Site Config ID: 64015.9754

## PV Array(s)

**Name:** 31 - S - A15 East

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

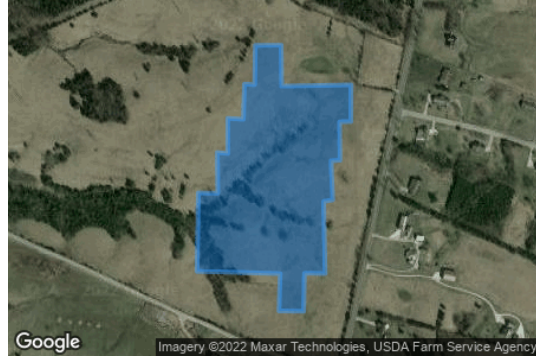
**Resting angle:** 45.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.797716	-84.272589	870.29	5.50	875.79
2	37.797720	-84.272120	879.38	5.50	884.88
3	37.797135	-84.272111	873.35	5.50	878.85
4	37.797153	-84.270853	883.28	5.50	888.78
5	37.796630	-84.270853	878.57	5.50	884.07
6	37.796623	-84.271059	872.43	5.50	877.93
7	37.796076	-84.271051	877.86	5.50	883.36
8	37.796068	-84.271215	874.36	5.50	879.86
9	37.795510	-84.271183	870.95	5.50	876.45
10	37.795487	-84.271348	867.71	5.50	873.21
11	37.794457	-84.271322	883.62	5.50	889.12
12	37.794460	-84.271435	882.14	5.50	887.64
13	37.794463	-84.271582	878.70	5.50	884.20
14	37.794461	-84.271696	876.04	5.50	881.54
15	37.793918	-84.271712	888.10	5.50	893.60
16	37.793923	-84.272159	878.06	5.50	883.56
17	37.794456	-84.272137	867.31	5.50	872.81
18	37.794488	-84.273647	849.72	5.50	855.22
19	37.795609	-84.273623	836.25	5.50	841.75
20	37.795604	-84.273271	830.55	5.50	836.05
21	37.796186	-84.273277	858.10	5.50	863.60
22	37.796172	-84.273089	855.93	5.50	861.43
23	37.796675	-84.273088	873.69	5.50	879.19
24	37.796661	-84.272806	871.13	5.50	876.63
25	37.797163	-84.272787	879.05	5.50	884.55
26	37.797156	-84.272600	879.90	5.50	885.40

**Name:** 32 - S - A15 North  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 45.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.799977	-84.275267	825.70	5.50	831.20
2	37.799941	-84.273712	822.93	5.50	828.43
3	37.799330	-84.273718	853.94	5.50	859.44
4	37.799379	-84.274947	830.26	5.50	835.76
5	37.798794	-84.274979	834.26	5.50	839.76
6	37.798884	-84.276195	835.25	5.50	840.75
7	37.798317	-84.276195	838.54	5.50	844.04
8	37.798340	-84.277118	785.99	5.50	791.49
9	37.798941	-84.277074	798.82	5.50	804.32
10	37.798931	-84.276860	812.96	5.50	818.46
11	37.799475	-84.276869	805.69	5.50	811.19
12	37.799412	-84.275246	820.14	5.50	825.64

**Name:** 33 - S - A16 Central

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

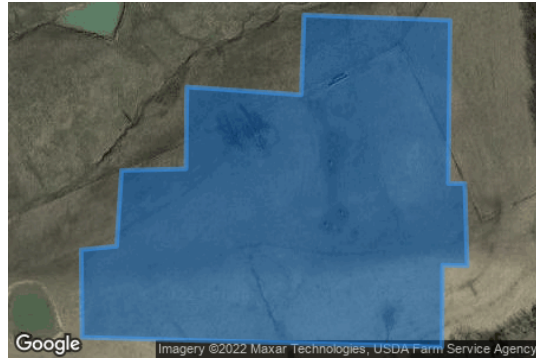
**Resting angle:** 45.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

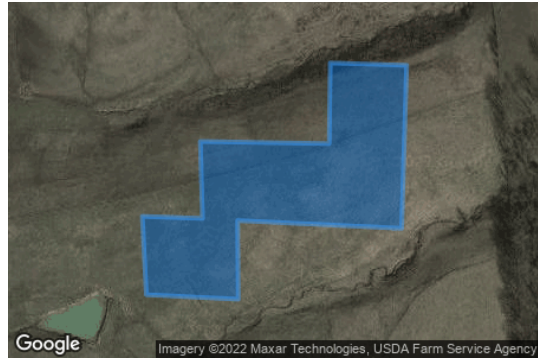
**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.815662	-84.265470	795.04	5.50	800.54
2	37.815624	-84.264144	810.22	5.50	815.72
3	37.814459	-84.264161	804.39	5.50	809.89
4	37.814458	-84.264011	803.85	5.50	809.35
5	37.813871	-84.263989	811.72	5.50	817.22
6	37.813876	-84.264213	820.66	5.50	826.16
7	37.813291	-84.264218	779.60	5.50	785.10
8	37.813360	-84.267485	843.27	5.50	848.77
9	37.813986	-84.267493	845.21	5.50	850.71
10	37.814011	-84.267171	845.15	5.50	850.65
11	37.814553	-84.267126	826.79	5.50	832.29
12	37.814564	-84.266541	848.88	5.50	854.38
13	37.815148	-84.266535	813.84	5.50	819.34
14	37.815092	-84.265495	839.11	5.50	844.61



**Name:** 34 - S - A16 North  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 45.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.817489	-84.265071	778.92	5.50	784.42
2	37.817473	-84.264378	794.67	5.50	800.17
3	37.816308	-84.264424	785.94	5.50	791.44
4	37.816364	-84.265912	826.60	5.50	832.10
5	37.815802	-84.265906	802.90	5.50	808.40
6	37.815834	-84.266741	819.18	5.50	824.68
7	37.816394	-84.266777	840.59	5.50	846.09
8	37.816379	-84.266230	833.85	5.50	839.35
9	37.816929	-84.266251	815.10	5.50	820.60
10	37.816913	-84.265081	823.74	5.50	829.24

**Name:** 35 - S - A16 Southr  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 45.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.813024	-84.264011	790.17	5.50	795.67
2	37.813003	-84.263544	801.30	5.50	806.80
3	37.811332	-84.263584	766.42	5.50	771.93
4	37.811388	-84.265536	802.66	5.50	808.16
5	37.812560	-84.265506	808.57	5.50	814.07
6	37.812522	-84.264026	815.97	5.50	821.47

**Name:** 36 - S - B3 North

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

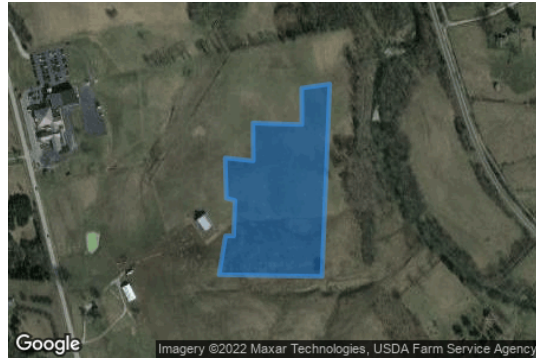
**Resting angle:** 45.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.822015	-84.267653	824.71	5.50	830.21
2	37.821992	-84.266766	815.65	5.50	821.15
3	37.822514	-84.266769	817.95	5.50	823.45
4	37.822572	-84.266259	820.15	5.50	825.65
5	37.819822	-84.266399	805.38	5.50	810.88
6	37.819847	-84.268268	824.33	5.50	829.83
7	37.820402	-84.268151	842.67	5.50	848.17
8	37.820402	-84.268003	826.75	5.50	832.25
9	37.820908	-84.267979	829.81	5.50	835.31
10	37.820939	-84.268136	843.17	5.50	848.67
11	37.821517	-84.268159	837.88	5.50	843.38
12	37.821474	-84.267647	832.86	5.50	838.36

**Name:** 37 - S - B3 South

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

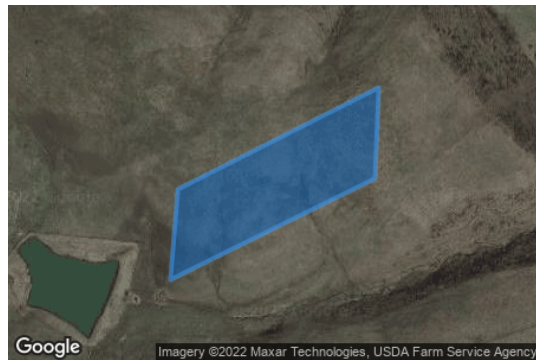
**Resting angle:** 45.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.818058	-84.267678	834.26	5.50	839.76
2	37.818784	-84.265854	832.00	5.50	837.50
3	37.818135	-84.265888	836.45	5.50	841.95
4	37.817412	-84.267745	811.86	5.50	817.36

**Name:** 38 - S - B3 Southwest  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 45.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



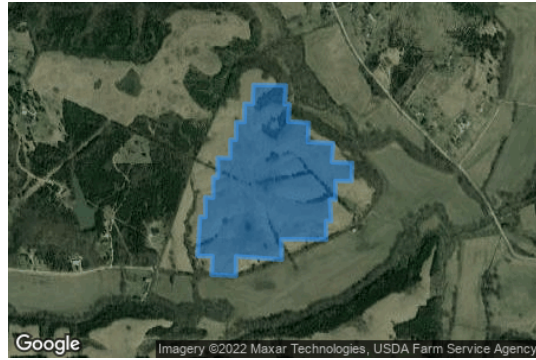
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.816724	-84.269194	849.98	5.50	855.48
2	37.816927	-84.268731	831.27	5.50	836.77
3	37.816498	-84.268708	849.61	5.50	855.11
4	37.817069	-84.267667	806.80	5.50	812.30
5	37.816399	-84.267644	850.18	5.50	855.68
6	37.815662	-84.269002	848.80	5.50	854.30
7	37.816163	-84.269000	856.61	5.50	862.11
8	37.816189	-84.269175	861.11	5.50	866.61

**Name:** 39 - S - B3 West  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 45.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.820021	-84.269100	856.45	5.50	861.95
2	37.820009	-84.268510	842.71	5.50	848.21
3	37.819457	-84.268535	835.16	5.50	840.66
4	37.819463	-84.267555	813.33	5.50	818.83
5	37.818903	-84.267549	835.46	5.50	840.96
6	37.818904	-84.268435	856.96	5.50	862.46
7	37.818364	-84.268419	845.52	5.50	851.02
8	37.818370	-84.269481	840.32	5.50	845.82
9	37.819466	-84.269444	871.51	5.50	877.01
10	37.819477	-84.269116	860.81	5.50	866.31

**Name:** 40 - S - C1 and A14  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 45.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.800552	-84.288865	846.44	5.50	851.94
2	37.800531	-84.287689	820.61	5.50	826.11
3	37.799996	-84.287725	801.54	5.50	807.04
4	37.799996	-84.287557	791.70	5.50	797.20
5	37.799502	-84.287597	815.47	5.50	820.97
6	37.799466	-84.286855	816.99	5.50	822.49
7	37.798915	-84.286889	846.85	5.50	852.35
8	37.798883	-84.285966	824.02	5.50	829.52
9	37.798340	-84.286013	832.51	5.50	838.01
10	37.798319	-84.285279	815.02	5.50	820.52
11	37.797802	-84.285305	827.78	5.50	833.28
12	37.797804	-84.285889	815.45	5.50	820.95
13	37.797270	-84.285878	800.03	5.50	805.53
14	37.797272	-84.286084	806.50	5.50	812.00
15	37.796655	-84.286040	828.66	5.50	834.16
16	37.796655	-84.286227	831.65	5.50	837.16
17	37.796125	-84.286223	798.43	5.50	803.93
18	37.796135	-84.287848	815.94	5.50	821.44
19	37.795556	-84.287833	799.05	5.50	804.55
20	37.795651	-84.289494	838.04	5.50	843.54
21	37.795093	-84.289501	796.98	5.50	802.48
22	37.795122	-84.290383	795.32	5.50	800.82
23	37.795657	-84.290354	819.99	5.50	825.49
24	37.795663	-84.290900	793.07	5.50	798.57
25	37.796780	-84.290800	823.73	5.50	829.23
26	37.796775	-84.290609	834.08	5.50	839.58
27	37.797340	-84.290617	824.06	5.50	829.56
28	37.797328	-84.290329	835.26	5.50	840.76
29	37.797914	-84.290326	843.69	5.50	849.19
30	37.797905	-84.290161	845.00	5.50	850.50
31	37.798467	-84.290162	857.73	5.50	863.23
32	37.798456	-84.289701	868.12	5.50	873.62
33	37.798981	-84.289698	871.90	5.50	877.40
34	37.798983	-84.289499	872.87	5.50	878.37
35	37.799488	-84.289492	866.04	5.50	871.54
36	37.799485	-84.289193	866.03	5.50	871.53
37	37.800014	-84.289185	857.27	5.50	862.77
38	37.800005	-84.288893	853.91	5.50	859.41

## Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	37.822070	-84.271477	861.39	6.00
OP 2	2	37.825730	-84.286606	843.23	6.00
OP 3	3	37.819382	-84.303090	905.87	6.00
OP 4	4	37.795983	-84.292407	838.28	6.00
OP 5	5	37.811527	-84.268196	858.16	6.00
OP 6	6	37.795636	-84.269683	883.45	6.00
OP 7	7	37.821502	-84.288321	891.37	6.00
OP 8	8	37.815338	-84.270442	857.04	6.00
OP 9	9	37.805023	-84.285580	808.28	6.00
OP 10	10	37.812440	-84.285666	894.37	6.00
OP 11	11	37.814698	-84.298288	910.90	6.00
OP 12	12	37.811717	-84.289690	866.78	6.00
OP 13	13	37.824855	-84.308043	875.61	6.00

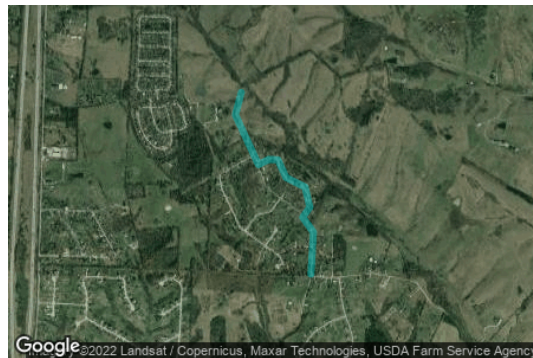
## Route Receptor(s)

**Name:** Bill Eades Rd and Sycamore Drive

**Path type:** Two-way

**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.824808	-84.308238	872.99	5.00	877.99
2	37.823520	-84.308667	910.69	5.00	915.69
3	37.820673	-84.306994	915.84	5.00	920.84
4	37.820978	-84.306221	911.14	5.00	916.14
5	37.820944	-84.305578	904.93	5.00	909.93
6	37.819927	-84.304977	912.80	5.00	917.80
7	37.819384	-84.303603	906.02	5.00	911.02
8	37.818232	-84.303260	900.51	5.00	905.51
9	37.817655	-84.303775	891.01	5.00	896.01
10	37.816808	-84.303003	908.86	5.00	913.86
11	37.814401	-84.303174	901.10	5.00	906.10



**Name:** Bill Eads Road

**Path type:** Two-way

**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.825474	-84.308120	856.28	5.00	861.28
2	37.825287	-84.307777	858.02	5.00	863.02
3	37.827169	-84.303185	925.33	5.00	930.34
4	37.825575	-84.300932	904.12	5.00	909.12
5	37.826406	-84.297563	871.73	5.00	876.73
6	37.826304	-84.296104	838.47	5.00	843.47
7	37.826592	-84.294988	824.11	5.00	829.11
8	37.826609	-84.293872	821.00	5.00	826.00
9	37.825609	-84.290718	802.00	5.00	807.00
10	37.825287	-84.290182	795.62	5.00	800.62
11	37.824863	-84.287736	787.48	5.00	792.48
12	37.824609	-84.287156	782.49	5.00	787.49
13	37.825474	-84.282350	748.08	5.00	753.08
14	37.825118	-84.280805	762.02	5.00	767.02
15	37.825202	-84.279024	744.83	5.00	749.83
16	37.824847	-84.276535	719.49	5.00	724.49
17	37.824982	-84.275483	713.30	5.00	718.30
18	37.825762	-84.274947	715.44	5.00	720.44
19	37.826321	-84.274260	715.41	5.00	720.41
20	37.826982	-84.273702	708.31	5.00	713.31
21	37.827474	-84.273509	707.05	5.00	712.05
22	37.827948	-84.273638	709.92	5.00	714.92
23	37.828372	-84.272629	712.47	5.00	717.47

**Name:** Highway 388

**Path type:** Two-way

**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.832311	-84.272530	717.18	5.00	722.18
2	37.832074	-84.272809	714.37	5.00	719.37
3	37.831752	-84.272766	714.08	5.00	719.08
4	37.831464	-84.272315	706.59	5.00	711.59
5	37.831091	-84.271908	706.47	5.00	711.47
6	37.830650	-84.271779	713.82	5.00	718.82
7	37.830227	-84.272144	707.12	5.00	712.12
8	37.829820	-84.272508	707.45	5.00	712.45
9	37.826007	-84.272551	752.20	5.00	757.20
10	37.823888	-84.272315	819.42	5.00	824.42
11	37.822210	-84.271950	851.13	5.00	856.13
12	37.818108	-84.270663	857.95	5.00	862.95
13	37.812022	-84.268689	853.63	5.00	858.63
14	37.811107	-84.268539	847.55	5.00	852.55
15	37.810056	-84.268775	842.43	5.00	847.43
16	37.808785	-84.269054	864.53	5.00	869.53
17	37.807852	-84.269182	858.08	5.00	863.08
18	37.806987	-84.268882	861.93	5.00	866.93
19	37.806157	-84.268496	862.97	5.00	867.97
20	37.805343	-84.268303	859.82	5.00	864.82
21	37.804580	-84.268410	862.91	5.00	867.91
22	37.803698	-84.268732	865.33	5.00	870.33
23	37.802647	-84.269032	865.38	5.00	870.38
24	37.801766	-84.269311	867.58	5.00	872.58
25	37.800630	-84.269247	859.89	5.00	864.89
26	37.799714	-84.269225	860.37	5.00	865.37
27	37.798595	-84.269483	872.07	5.00	877.07
28	37.792983	-84.271028	873.72	5.00	878.72

**Name:** Three Forks Road  
**Path type:** Two-way  
**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.814350	-84.303074	901.73	5.00	906.73
2	37.814180	-84.302431	908.29	5.00	913.30
3	37.814180	-84.301079	904.49	5.00	909.49
4	37.814452	-84.298783	901.98	5.00	906.98
5	37.813892	-84.295478	911.36	5.00	916.36
6	37.812519	-84.294277	881.93	5.00	886.93
7	37.812180	-84.293397	865.69	5.00	870.69
8	37.810773	-84.291680	834.69	5.00	839.69
9	37.808857	-84.289427	808.47	5.00	813.47
10	37.807366	-84.287968	804.08	5.00	809.08
11	37.806671	-84.287389	797.98	5.00	802.98
12	37.805958	-84.287410	810.43	5.00	815.43
13	37.805331	-84.287389	796.90	5.00	801.90
14	37.801839	-84.285372	795.10	5.00	800.10
15	37.801211	-84.284986	794.34	5.00	799.34
16	37.799007	-84.282454	783.35	5.00	788.35
17	37.798092	-84.281273	768.55	5.00	773.55
18	37.796854	-84.280115	766.75	5.00	771.75
19	37.795718	-84.279407	798.02	5.00	803.02
20	37.795599	-84.279213	806.87	5.00	811.87
21	37.795531	-84.278377	823.26	5.00	828.26
22	37.795345	-84.277947	830.47	5.00	835.47
23	37.793259	-84.272090	884.50	5.00	889.50
24	37.792988	-84.271060	874.44	5.00	879.44



# GLARE ANALYSIS RESULTS

## Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
31 - S - A15 East	SA tracking	SA tracking	0	0	-
32 - S - A15 North	SA tracking	SA tracking	0	0	-
33 - S - A16 Central	SA tracking	SA tracking	0	0	-
34 - S - A16 North	SA tracking	SA tracking	0	0	-
35 - S - A16 Southr	SA tracking	SA tracking	0	0	-
36 - S - B3 North	SA tracking	SA tracking	0	0	-
37 - S - B3 South	SA tracking	SA tracking	0	0	-
38 - S - B3 Southwest	SA tracking	SA tracking	0	0	-
39 - S - B3 West	SA tracking	SA tracking	0	0	-
40 - S - C1 and A14	SA tracking	SA tracking	0	0	-

*Total annual glare received by each receptor*

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

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

## Results for: 31 - S - A15 East

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 32 - S - A15 North**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

**Point Receptor: OP 1**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 2**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 3**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Three Forks Road**

0 minutes of yellow glare  
0 minutes of green glare

**Results for: 33 - S - A16 Central**

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

Receptor	Green Glare (min)	Yellow Glare (min)
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare



0 minutes of green glare

### Route: Three Forks Road

0 minutes of yellow glare

0 minutes of green glare

## Results for: 34 - S - A16 North

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 35 - S - A16 Southr**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

**Point Receptor: OP 1**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 2**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 3**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Three Forks Road**

0 minutes of yellow glare  
0 minutes of green glare

**Results for: 36 - S - B3 North**

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

Receptor	Green Glare (min)	Yellow Glare (min)
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### Route: Three Forks Road

0 minutes of yellow glare

0 minutes of green glare

## Results for: 37 - S - B3 South

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare



**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 38 - S - B3 Southwest**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

**Point Receptor: OP 1**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 2**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 3**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Three Forks Road**

0 minutes of yellow glare  
0 minutes of green glare

**Results for: 39 - S - B3 West**

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

Receptor	Green Glare (min)	Yellow Glare (min)
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### Route: Three Forks Road

0 minutes of yellow glare

0 minutes of green glare

## Results for: 40 - S - C1 and A14

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare



0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Assumptions**

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"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.

Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.

Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to V1 algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.

The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size.

Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)

Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.

Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.

The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual results and glare occurrence may differ.

Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

Refer to the Help page at [www.forgesolar.com/help/](http://www.forgesolar.com/help/) for assumptions and limitations not listed here.

**Attachment 2**

**Madison County Solar Project  
Solar Glare Hazard Analysis Reports  
(55-Degree Resting Angle)**

# FORGESOLAR GLARE ANALYSIS

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Project: **Acciona - Madison**

A proposed solar facility near Richmond, Madison County, Kentucky.

Site configuration: **Madison - Area 1\_resting angle 55**

Analysis conducted by BreAnne Kahnk (bkahnk@trccompanies.com) at 16:57 on 25 Jan, 2022.

## U.S. FAA 2013 Policy Adherence

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

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

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

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

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

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

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

# SITE CONFIGURATION

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## Analysis Parameters

DNI: peaks at 1,000.0 W/m<sup>2</sup>

Time interval: 1 min

Ocular transmission

coefficient: 0.5

Pupil diameter: 0.002 m

Eye focal length: 0.017 m

Sun subtended angle: 9.3  
mrad

Site Config ID: 64022.9754

**PV Array(s)**

**Name:** 01 - A1

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

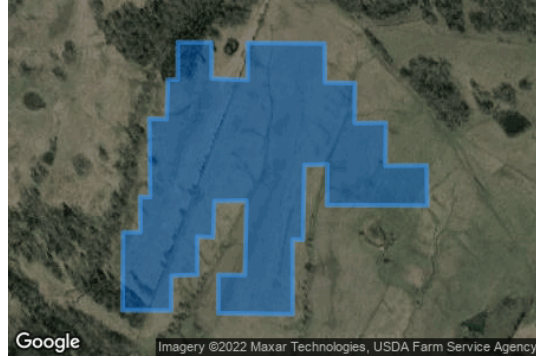
**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.823395	-84.299296	907.06	5.50	912.56
2	37.823392	-84.298680	905.97	5.50	911.47
3	37.822876	-84.298679	905.44	5.50	910.94
4	37.822855	-84.298027	901.91	5.50	907.41
5	37.823385	-84.298026	906.08	5.50	911.58
6	37.823376	-84.296631	910.93	5.50	916.43
7	37.822817	-84.296625	900.12	5.50	905.62
8	37.822812	-84.296079	887.40	5.50	892.90
9	37.822239	-84.296082	881.89	5.50	887.39
10	37.822244	-84.295518	897.18	5.50	902.68
11	37.821631	-84.295525	904.09	5.50	909.59
12	37.821636	-84.294775	901.50	5.50	907.00
13	37.821060	-84.294765	885.55	5.50	891.05
14	37.821068	-84.296588	867.89	5.50	873.39
15	37.821648	-84.296580	870.58	5.50	876.08
16	37.821641	-84.296998	884.16	5.50	889.66
17	37.820569	-84.297022	860.05	5.50	865.55
18	37.820577	-84.297211	868.50	5.50	874.00
19	37.819509	-84.297208	853.51	5.50	859.01
20	37.819521	-84.298560	869.43	5.50	874.93
21	37.820073	-84.298558	856.26	5.50	861.76
22	37.820069	-84.298077	879.34	5.50	884.84
23	37.821131	-84.298048	864.98	5.50	870.48
24	37.821126	-84.298629	876.80	5.50	882.30
25	37.820608	-84.298653	862.35	5.50	867.85
26	37.820618	-84.298942	868.80	5.50	874.30
27	37.820073	-84.298937	851.67	5.50	857.17
28	37.820058	-84.299407	864.15	5.50	869.65
29	37.819562	-84.299414	851.33	5.50	856.83
30	37.819566	-84.300298	849.88	5.50	855.38
31	37.820680	-84.300286	853.10	5.50	858.61
32	37.820681	-84.299971	871.24	5.50	876.74
33	37.821188	-84.299979	862.14	5.50	867.64
34	37.821182	-84.299796	871.59	5.50	877.09
35	37.822304	-84.299812	865.11	5.50	870.61
36	37.822295	-84.299497	874.36	5.50	879.86
37	37.822857	-84.299473	883.05	5.50	888.56
38	37.822860	-84.299293	890.66	5.50	896.16

**Name:** 02 - A10 West

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

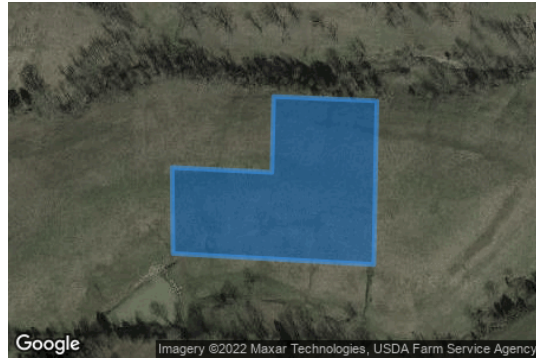
**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.816619	-84.281861	805.78	5.50	811.28
2	37.816587	-84.280924	798.03	5.50	803.53
3	37.815418	-84.280951	818.39	5.50	823.89
4	37.815497	-84.282775	831.08	5.50	836.58
5	37.816112	-84.282782	846.64	5.50	852.14
6	37.816077	-84.281876	846.31	5.50	851.81

**Name:** 03 - A2

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

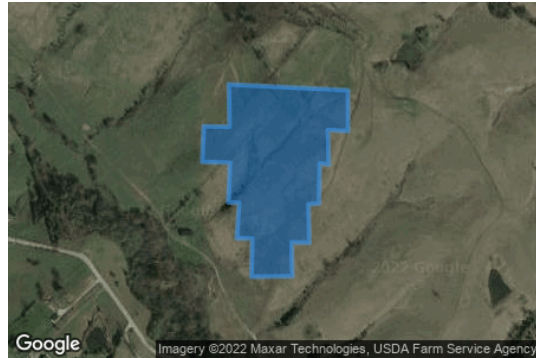
**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.816363	-84.292875	863.32	5.50	868.82
2	37.816279	-84.290711	874.98	5.50	880.48
3	37.815695	-84.290710	879.87	5.50	885.37
4	37.815710	-84.291076	866.79	5.50	872.29
5	37.815215	-84.291058	878.44	5.50	883.94
6	37.815236	-84.291225	877.25	5.50	882.75
7	37.814662	-84.291237	870.59	5.50	876.09
8	37.814649	-84.291429	869.70	5.50	875.20
9	37.814098	-84.291414	854.38	5.50	859.88
10	37.814107	-84.291735	855.91	5.50	861.41
11	37.813622	-84.291722	837.83	5.50	843.33
12	37.813614	-84.292464	827.60	5.50	833.10
13	37.814162	-84.292450	843.45	5.50	848.95
14	37.814163	-84.292732	840.91	5.50	846.41
15	37.814671	-84.292687	834.82	5.50	840.32
16	37.814673	-84.292885	825.49	5.50	830.99
17	37.815243	-84.292853	848.03	5.50	853.53
18	37.815255	-84.293358	855.55	5.50	861.06
19	37.815765	-84.293331	857.58	5.50	863.08
20	37.815758	-84.292862	859.83	5.50	865.33



**Name:** 04 - A3 North

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

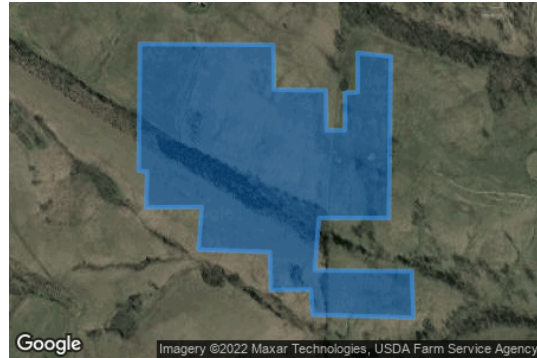
**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.820772	-84.289291	867.11	5.50	872.61
2	37.820758	-84.286870	874.90	5.50	880.40
3	37.820119	-84.286860	852.90	5.50	858.40
4	37.820109	-84.285917	873.37	5.50	878.87
5	37.819536	-84.285909	859.72	5.50	865.22
6	37.819538	-84.285571	852.43	5.50	857.93
7	37.820074	-84.285572	874.09	5.50	879.59
8	37.820082	-84.285338	872.70	5.50	878.20
9	37.820644	-84.285343	849.15	5.50	854.65
10	37.820593	-84.284738	851.68	5.50	857.18
11	37.818285	-84.284770	830.44	5.50	835.94
12	37.818283	-84.286039	828.14	5.50	833.64
13	37.817536	-84.286121	846.10	5.50	851.60
14	37.817526	-84.284356	809.50	5.50	815.00
15	37.816860	-84.284327	829.71	5.50	835.21
16	37.816903	-84.286160	822.56	5.50	828.06
17	37.817261	-84.286193	834.42	5.50	839.92
18	37.817257	-84.286917	826.09	5.50	831.59
19	37.817798	-84.286932	842.00	5.50	847.50
20	37.817833	-84.288233	834.81	5.50	840.31
21	37.818442	-84.288169	862.40	5.50	867.90
22	37.818436	-84.289180	850.08	5.50	855.58
23	37.818947	-84.289161	868.86	5.50	874.36
24	37.818963	-84.289315	865.70	5.50	871.20

**Name:** 05 - A3 South

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

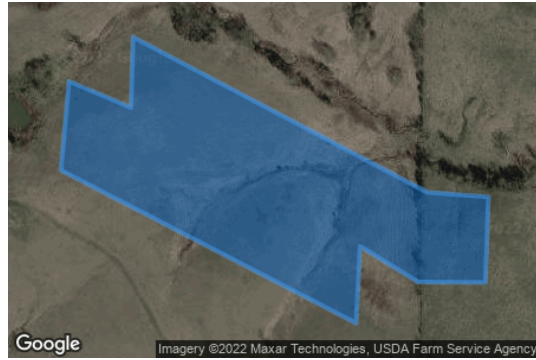
**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.817335	-84.288512	846.33	5.50	851.83
2	37.816226	-84.285837	831.52	5.50	837.02
3	37.816193	-84.285286	831.90	5.50	837.40
4	37.815583	-84.285314	874.18	5.50	879.68
5	37.815586	-84.285925	868.43	5.50	873.93
6	37.815840	-84.286451	840.92	5.50	846.42
7	37.815292	-84.286488	872.13	5.50	877.63
8	37.816384	-84.289166	883.99	5.50	889.49
9	37.817019	-84.289093	856.44	5.50	861.94
10	37.816831	-84.288529	874.45	5.50	879.95

**Name:** 06 - A4 - North

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

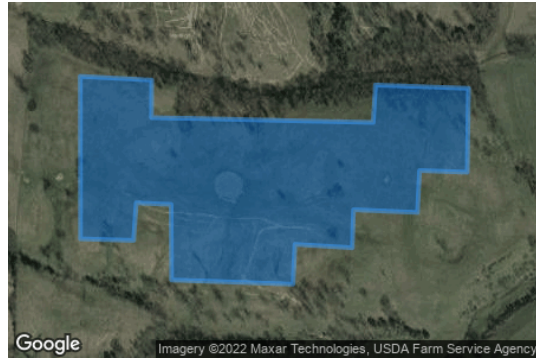
**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.820597	-84.284713	850.60	5.50	856.10
2	37.820543	-84.283418	820.00	5.50	825.50
3	37.820006	-84.283421	838.72	5.50	844.22
4	37.819938	-84.279397	824.42	5.50	829.92
5	37.820473	-84.279356	813.07	5.50	818.57
6	37.820425	-84.277668	785.19	5.50	790.69
7	37.819227	-84.277690	798.84	5.50	804.34
8	37.819251	-84.278555	813.38	5.50	818.88
9	37.818652	-84.278594	817.20	5.50	822.70
10	37.818691	-84.279754	827.29	5.50	832.79
11	37.818148	-84.279777	833.50	5.50	839.00
12	37.818197	-84.280817	832.35	5.50	837.85
13	37.817628	-84.280852	809.47	5.50	814.97
14	37.817688	-84.283058	819.04	5.50	824.54
15	37.818768	-84.283065	850.26	5.50	855.76
16	37.818789	-84.283698	849.51	5.50	855.01
17	37.818253	-84.283746	842.12	5.50	847.62
18	37.818275	-84.284710	832.82	5.50	838.32

**Name:** 07 - A4 South

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.817847	-84.279390	836.48	5.50	841.99
2	37.817873	-84.277763	809.46	5.50	814.96
3	37.817160	-84.277819	769.87	5.50	775.37
4	37.817143	-84.279391	796.98	5.50	802.48

**Name:** 08 - A5 and A6 West

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

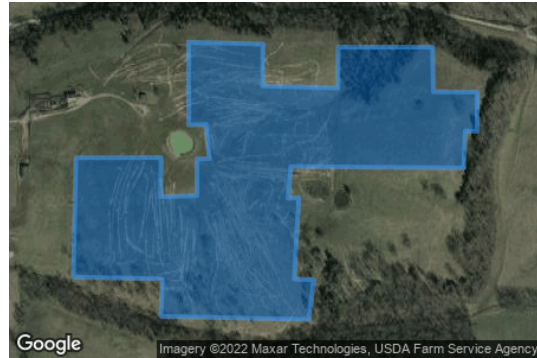
**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.824696	-84.282592	841.21	5.50	846.71
2	37.824668	-84.281243	830.13	5.50	835.63
3	37.824068	-84.281253	832.45	5.50	837.95
4	37.824039	-84.279884	799.54	5.50	805.04
5	37.824624	-84.279881	813.37	5.50	818.87
6	37.824623	-84.278167	786.51	5.50	792.01
7	37.823986	-84.278153	826.16	5.50	831.66
8	37.823983	-84.277358	820.28	5.50	825.78
9	37.823419	-84.277353	800.67	5.50	806.17
10	37.823427	-84.277574	808.45	5.50	813.95
11	37.822898	-84.277601	808.77	5.50	814.28
12	37.822919	-84.280737	845.37	5.50	850.87
13	37.822466	-84.280791	836.69	5.50	842.19
14	37.822473	-84.280594	838.98	5.50	844.48
15	37.821309	-84.280676	815.13	5.50	820.63
16	37.821302	-84.280322	799.53	5.50	805.03
17	37.820733	-84.280414	785.84	5.50	791.34
18	37.820778	-84.283094	797.31	5.50	802.81
19	37.821314	-84.283073	835.74	5.50	841.24
20	37.821337	-84.284688	807.91	5.50	813.41
21	37.823045	-84.284638	839.95	5.50	845.45
22	37.823047	-84.283094	869.88	5.50	875.38
23	37.822487	-84.283100	855.93	5.50	861.43
24	37.822503	-84.282441	844.27	5.50	849.77
25	37.823027	-84.282447	866.23	5.50	871.73
26	37.823029	-84.282220	858.90	5.50	864.40
27	37.823519	-84.282277	853.91	5.50	859.41
28	37.823513	-84.282590	863.35	5.50	868.85

**Name:** 09 - A5 West

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

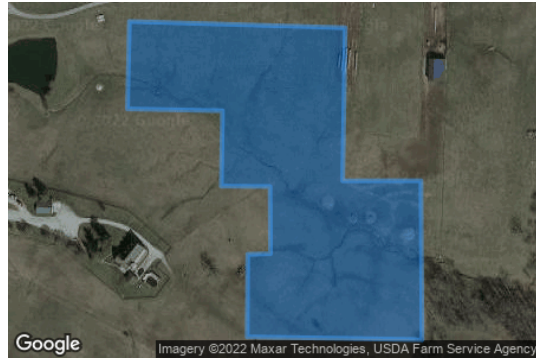
**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.823185	-84.288352	865.96	5.50	871.46
2	37.823140	-84.286393	874.85	5.50	880.35
3	37.822046	-84.286416	837.94	5.50	843.44
4	37.822047	-84.285705	842.65	5.50	848.15
5	37.820912	-84.285696	837.07	5.50	842.57
6	37.820932	-84.287283	878.75	5.50	884.25
7	37.821521	-84.287278	851.49	5.50	856.99
8	37.821525	-84.287071	845.06	5.50	850.56
9	37.822006	-84.287075	833.80	5.50	839.30
10	37.822009	-84.287517	846.64	5.50	852.14
11	37.822547	-84.287507	843.89	5.50	849.39
12	37.822560	-84.288370	857.44	5.50	862.94

**Name:** 10 - PV Array  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 55.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.823426	-84.276802	738.24	5.50	743.74
2	37.823442	-84.276173	722.41	5.50	727.91
3	37.822865	-84.276190	724.54	5.50	730.04
4	37.822858	-84.276023	723.00	5.50	728.50
5	37.822349	-84.276026	725.56	5.50	731.06
6	37.822344	-84.275769	722.62	5.50	728.12
7	37.821241	-84.275832	727.23	5.50	732.73
8	37.821273	-84.277212	751.05	5.50	756.55
9	37.822394	-84.277135	759.91	5.50	765.41
10	37.822381	-84.276989	745.10	5.50	750.60
11	37.822911	-84.277003	745.76	5.50	751.26
12	37.822896	-84.276804	733.47	5.50	738.97

## Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	37.822070	-84.271477	861.39	6.00
OP 2	2	37.825730	-84.286606	843.23	6.00
OP 3	3	37.819382	-84.303090	905.87	6.00
OP 4	4	37.795983	-84.292407	838.28	6.00
OP 5	5	37.811527	-84.268196	858.16	6.00
OP 6	6	37.795636	-84.269683	883.45	6.00
OP 7	7	37.821502	-84.288321	891.37	6.00
OP 8	8	37.815338	-84.270442	857.04	6.00
OP 9	9	37.805023	-84.285580	808.28	6.00
OP 10	10	37.812440	-84.285666	894.37	6.00
OP 11	11	37.814698	-84.298288	910.90	6.00
OP 12	12	37.811717	-84.289690	866.78	6.00
OP 13	13	37.824855	-84.308043	875.61	6.00

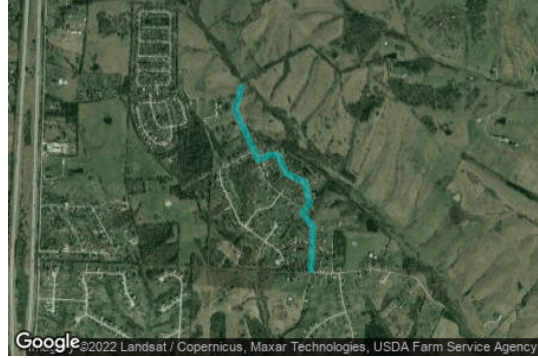
## Route Receptor(s)

**Name:** Bill Eades Rd and Sycamore Drive

**Path type:** Two-way

**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.824808	-84.308238	872.99	5.00	877.99
2	37.823520	-84.308667	910.69	5.00	915.69
3	37.820673	-84.306994	915.84	5.00	920.84
4	37.820978	-84.306221	911.14	5.00	916.14
5	37.820944	-84.305578	904.93	5.00	909.93
6	37.819927	-84.304977	912.80	5.00	917.80
7	37.819384	-84.303603	906.02	5.00	911.02
8	37.818232	-84.303260	900.51	5.00	905.51
9	37.817655	-84.303775	891.01	5.00	896.01
10	37.816808	-84.303003	908.86	5.00	913.86
11	37.814401	-84.303174	901.10	5.00	906.10



**Name:** Bill Eads Road

**Path type:** Two-way

**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.825474	-84.308120	856.28	5.00	861.28
2	37.825287	-84.307777	858.02	5.00	863.02
3	37.827169	-84.303185	925.33	5.00	930.34
4	37.825575	-84.300932	904.12	5.00	909.12
5	37.826406	-84.297563	871.73	5.00	876.73
6	37.826304	-84.296104	838.47	5.00	843.47
7	37.826592	-84.294988	824.11	5.00	829.11
8	37.826609	-84.293872	821.00	5.00	826.00
9	37.825609	-84.290718	802.00	5.00	807.00
10	37.825287	-84.290182	795.62	5.00	800.62
11	37.824863	-84.287736	787.48	5.00	792.48
12	37.824609	-84.287156	782.49	5.00	787.49
13	37.825474	-84.282350	748.08	5.00	753.08
14	37.825118	-84.280805	762.02	5.00	767.02
15	37.825202	-84.279024	744.83	5.00	749.83
16	37.824847	-84.276535	719.49	5.00	724.49
17	37.824982	-84.275483	713.30	5.00	718.30
18	37.825762	-84.274947	715.44	5.00	720.44
19	37.826321	-84.274260	715.41	5.00	720.41
20	37.826982	-84.273702	708.31	5.00	713.31
21	37.827474	-84.273509	707.05	5.00	712.05
22	37.827948	-84.273638	709.92	5.00	714.92
23	37.828372	-84.272629	712.47	5.00	717.47



**Name:** Highway 388

**Path type:** Two-way

**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.832311	-84.272530	717.18	5.00	722.18
2	37.832074	-84.272809	714.37	5.00	719.37
3	37.831752	-84.272766	714.08	5.00	719.08
4	37.831464	-84.272315	706.59	5.00	711.59
5	37.831091	-84.271908	706.47	5.00	711.47
6	37.830650	-84.271779	713.82	5.00	718.82
7	37.830227	-84.272144	707.12	5.00	712.12
8	37.829820	-84.272508	707.45	5.00	712.45
9	37.826007	-84.272551	752.20	5.00	757.20
10	37.823888	-84.272315	819.42	5.00	824.42
11	37.822210	-84.271950	851.13	5.00	856.13
12	37.818108	-84.270663	857.95	5.00	862.95
13	37.812022	-84.268689	853.63	5.00	858.63
14	37.811107	-84.268539	847.55	5.00	852.55
15	37.810056	-84.268775	842.43	5.00	847.43
16	37.808785	-84.269054	864.53	5.00	869.53
17	37.807852	-84.269182	858.08	5.00	863.08
18	37.806987	-84.268882	861.93	5.00	866.93
19	37.806157	-84.268496	862.97	5.00	867.97
20	37.805343	-84.268303	859.82	5.00	864.82
21	37.804580	-84.268410	862.91	5.00	867.91
22	37.803698	-84.268732	865.33	5.00	870.33
23	37.802647	-84.269032	865.38	5.00	870.38
24	37.801766	-84.269311	867.58	5.00	872.58
25	37.800630	-84.269247	859.89	5.00	864.89
26	37.799714	-84.269225	860.37	5.00	865.37
27	37.798595	-84.269483	872.07	5.00	877.07
28	37.792983	-84.271028	873.72	5.00	878.72

**Name:** Three Forks Road  
**Path type:** Two-way  
**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.814350	-84.303074	901.73	5.00	906.73
2	37.814180	-84.302431	908.29	5.00	913.30
3	37.814180	-84.301079	904.49	5.00	909.49
4	37.814452	-84.298783	901.98	5.00	906.98
5	37.813892	-84.295478	911.36	5.00	916.36
6	37.812519	-84.294277	881.93	5.00	886.93
7	37.812180	-84.293397	865.69	5.00	870.69
8	37.810773	-84.291680	834.69	5.00	839.69
9	37.808857	-84.289427	808.47	5.00	813.47
10	37.807366	-84.287968	804.08	5.00	809.08
11	37.806671	-84.287389	797.98	5.00	802.98
12	37.805958	-84.287410	810.43	5.00	815.43
13	37.805331	-84.287389	796.90	5.00	801.90
14	37.801839	-84.285372	795.10	5.00	800.10
15	37.801211	-84.284986	794.34	5.00	799.34
16	37.799007	-84.282454	783.35	5.00	788.35
17	37.798092	-84.281273	768.55	5.00	773.55
18	37.796854	-84.280115	766.75	5.00	771.75
19	37.795718	-84.279407	798.02	5.00	803.02
20	37.795599	-84.279213	806.87	5.00	811.87
21	37.795531	-84.278377	823.26	5.00	828.26
22	37.795345	-84.277947	830.47	5.00	835.47
23	37.793259	-84.272090	884.50	5.00	889.50
24	37.792988	-84.271060	874.44	5.00	879.44

# GLARE ANALYSIS RESULTS

## Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
01 - A1	SA tracking	SA tracking	0	0	-
02 - A10 West	SA tracking	SA tracking	0	0	-
03 - A2	SA tracking	SA tracking	0	0	-
04 - A3 North	SA tracking	SA tracking	0	0	-
05 - A3 South	SA tracking	SA tracking	0	0	-
06 - A4 - North	SA tracking	SA tracking	0	0	-
07 - A4 South	SA tracking	SA tracking	0	0	-
08 - A5 and A6 West	SA tracking	SA tracking	0	0	-
09 - A5 West	SA tracking	SA tracking	0	0	-
10 - PV Array	SA tracking	SA tracking	0	0	-

*Total annual glare received by each receptor*

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

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

## Results for: 01 - A1

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 02 - A10 West**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

**Point Receptor: OP 1**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 2**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 3**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare

0 minutes of green glare

### **Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

### **Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

### **Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare  
0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare  
0 minutes of green glare

## **Results for: 03 - A2**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0



Receptor	Green Glare (min)	Yellow Glare (min)
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### Route: Three Forks Road

0 minutes of yellow glare

0 minutes of green glare

## Results for: 04 - A3 North

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 05 - A3 South**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

**Point Receptor: OP 1**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 2**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 3**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare

0 minutes of green glare

### **Point Receptor: OP 11**

0 minutes of yellow glare

0 minutes of green glare

### **Point Receptor: OP 12**

0 minutes of yellow glare

0 minutes of green glare

### **Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 06 - A4 - North**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare



**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### Route: Three Forks Road

0 minutes of yellow glare

0 minutes of green glare

## Results for: 07 - A4 South

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 08 - A5 and A6 West**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

**Point Receptor: OP 1**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 2**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 3**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Three Forks Road**

0 minutes of yellow glare  
0 minutes of green glare

**Results for: 09 - A5 West**

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

Receptor	Green Glare (min)	Yellow Glare (min)
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare



0 minutes of green glare

### Route: Three Forks Road

0 minutes of yellow glare

0 minutes of green glare

## Results for: 10 - PV Array

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Assumptions**

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"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.

Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.

Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to V1 algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.

The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size.

Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)

Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.

Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.

The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual results and glare occurrence may differ.

Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

Refer to the Help page at [www.forgesolar.com/help/](http://www.forgesolar.com/help/) for assumptions and limitations not listed here.

# FORGESOLAR GLARE ANALYSIS

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Project: **Acciona - Madison**

A proposed solar facility near Richmond, Madison County, Kentucky.

Site configuration: **Madison - Area 2\_resting angle 55**

Analysis conducted by BreAnne Kahnk (bkahnk@trccompanies.com) at 15:26 on 25 Jan, 2022.

## U.S. FAA 2013 Policy Adherence

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

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

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

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

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

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

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

# SITE CONFIGURATION

## Analysis Parameters

DNI: peaks at 1,000.0 W/m<sup>2</sup>  
Time interval: 1 min  
Ocular transmission coefficient: 0.5  
Pupil diameter: 0.002 m  
Eye focal length: 0.017 m  
Sun subtended angle: 9.3 mrad  
Site Config ID: 64014.9754

## PV Array(s)

**Name:** 11 - A6 South  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 55.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.822862	-84.279538	837.57	5.50	843.07
2	37.822840	-84.277656	811.89	5.50	817.39
3	37.821741	-84.277716	799.92	5.50	805.42
4	37.821743	-84.277881	804.36	5.50	809.86
5	37.821184	-84.277898	789.60	5.50	795.10
6	37.821231	-84.280134	799.42	5.50	804.92
7	37.821799	-84.280146	824.82	5.50	830.32
8	37.821806	-84.279506	830.07	5.50	835.57

**Name:** 12 - A7 North

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

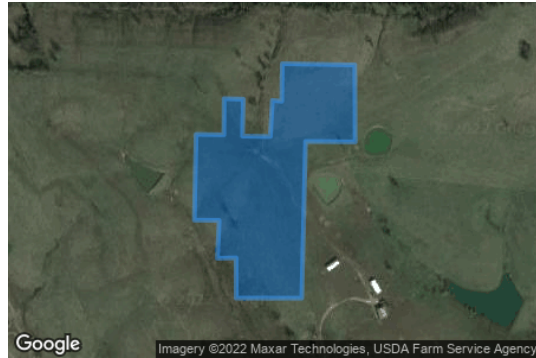
**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.830990	-84.283476	870.07	5.50	875.57
2	37.830982	-84.283129	852.64	5.50	858.15
3	37.830455	-84.283143	867.97	5.50	873.47
4	37.830449	-84.282637	865.95	5.50	871.45
5	37.830965	-84.282600	843.00	5.50	848.50
6	37.830951	-84.282430	850.67	5.50	856.17
7	37.831489	-84.282421	823.65	5.50	829.15
8	37.831471	-84.281104	823.39	5.50	828.89
9	37.830371	-84.281097	858.04	5.50	863.54
10	37.830379	-84.281997	863.63	5.50	869.13
11	37.828139	-84.282067	848.29	5.50	853.79
12	37.828141	-84.283257	813.69	5.50	819.19
13	37.828717	-84.283259	836.37	5.50	841.87
14	37.828708	-84.283599	819.18	5.50	824.68
15	37.829251	-84.283566	840.22	5.50	845.72
16	37.829255	-84.284017	822.73	5.50	828.23
17	37.830479	-84.283985	866.03	5.50	871.53
18	37.830473	-84.283480	868.21	5.50	873.71

**Name:** 13 - A7 South

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

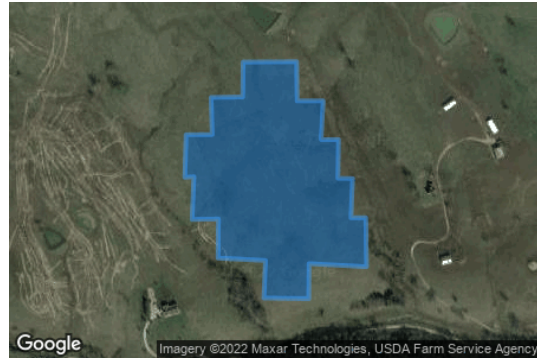
**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.829224	-84.285252	876.68	5.50	882.19
2	37.829230	-84.284282	833.36	5.50	838.86
3	37.828669	-84.284272	842.42	5.50	847.92
4	37.828670	-84.283800	817.13	5.50	822.63
5	37.828117	-84.283836	823.26	5.50	828.76
6	37.828118	-84.283521	811.27	5.50	816.77
7	37.827564	-84.283532	815.50	5.50	821.00
8	37.827560	-84.283265	803.37	5.50	808.87
9	37.827000	-84.283294	818.74	5.50	824.24
10	37.827001	-84.283026	801.85	5.50	807.35
11	37.826301	-84.283013	817.96	5.50	823.46
12	37.826346	-84.284056	833.08	5.50	838.58
13	37.825846	-84.284061	800.53	5.50	806.03
14	37.825854	-84.284875	804.16	5.50	809.66
15	37.826390	-84.284846	815.66	5.50	821.16
16	37.826425	-84.285707	802.57	5.50	808.07
17	37.826983	-84.285700	827.76	5.50	833.26
18	37.826977	-84.286179	812.88	5.50	818.38
19	37.827586	-84.286146	842.79	5.50	848.29
20	37.827577	-84.286310	838.18	5.50	843.68
21	37.828187	-84.286288	851.83	5.50	857.33
22	37.828189	-84.285814	859.83	5.50	865.33
23	37.828719	-84.285833	863.54	5.50	869.04
24	37.828726	-84.285260	874.30	5.50	879.80

**Name:** 14 - A8 Central

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

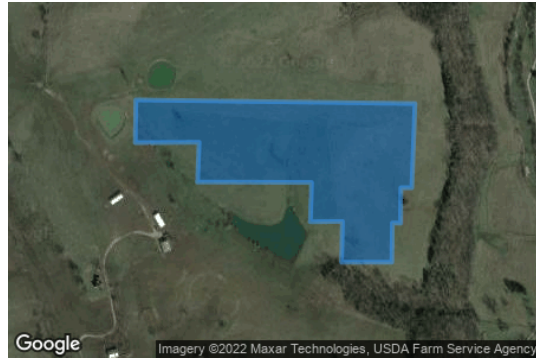
**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.827705	-84.276504	807.06	5.50	812.57
2	37.827704	-84.277419	774.33	5.50	779.83
3	37.828287	-84.277402	816.20	5.50	821.70
4	37.828281	-84.277985	810.54	5.50	816.04
5	37.828843	-84.277961	826.94	5.50	832.44
6	37.828850	-84.280032	817.70	5.50	823.20
7	37.829417	-84.280004	843.47	5.50	848.97
8	37.829411	-84.281161	838.61	5.50	844.12
9	37.830023	-84.281152	850.58	5.50	856.08
10	37.829969	-84.276085	828.36	5.50	833.86
11	37.828767	-84.276143	811.41	5.50	816.91
12	37.828767	-84.276343	810.74	5.50	816.24
13	37.828262	-84.276346	814.70	5.50	820.20
14	37.828265	-84.276496	816.45	5.50	821.95



**Name:** 15 - A8 North

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.831701	-84.280497	801.63	5.50	807.13
2	37.831677	-84.278410	833.88	5.50	839.38
3	37.831101	-84.278447	828.72	5.50	834.22
4	37.831090	-84.277547	808.33	5.50	813.83
5	37.830570	-84.277555	831.75	5.50	837.25
6	37.830560	-84.277441	827.76	5.50	833.26
7	37.831094	-84.277424	805.76	5.50	811.27
8	37.831085	-84.276933	811.17	5.50	816.67
9	37.830531	-84.276951	827.01	5.50	832.51
10	37.830525	-84.276524	827.91	5.50	833.41
11	37.829975	-84.276529	842.55	5.50	848.05
12	37.830065	-84.280278	847.71	5.50	853.21
13	37.830580	-84.280228	851.80	5.50	857.30
14	37.830584	-84.280378	853.22	5.50	858.72
15	37.831081	-84.280353	839.81	5.50	845.31
16	37.831088	-84.280451	837.85	5.50	843.35
17	37.830746	-84.280459	850.60	5.50	856.10
18	37.830729	-84.281095	858.49	5.50	863.99
19	37.831370	-84.281107	825.43	5.50	830.93
20	37.831379	-84.280513	818.85	5.50	824.35

**Name:** 16 - A8 South

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.827994	-84.280217	844.13	5.50	849.63
2	37.827123	-84.277103	804.22	5.50	809.72
3	37.826538	-84.277107	820.64	5.50	826.14
4	37.827352	-84.280186	837.91	5.50	843.41

**Name:** 17 - A9

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

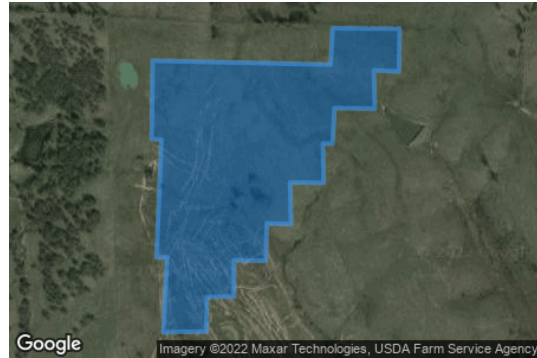
**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.830854	-84.289491	895.14	5.50	900.64
2	37.830798	-84.286261	873.18	5.50	878.68
3	37.831318	-84.286222	880.18	5.50	885.68
4	37.831311	-84.285006	872.30	5.50	877.80
5	37.830698	-84.285019	864.40	5.50	869.90
6	37.830716	-84.285477	866.46	5.50	871.96
7	37.830169	-84.285456	855.86	5.50	861.36
8	37.830175	-84.286190	880.50	5.50	886.00
9	37.829665	-84.286226	869.96	5.50	875.46
10	37.829671	-84.286402	867.72	5.50	873.22
11	37.829109	-84.286386	851.20	5.50	856.70
12	37.829114	-84.286995	858.15	5.50	863.65
13	37.828518	-84.286979	841.89	5.50	847.39
14	37.828531	-84.287420	838.50	5.50	844.00
15	37.827994	-84.287432	831.64	5.50	837.14
16	37.828005	-84.288011	860.46	5.50	865.96
17	37.827484	-84.288015	863.83	5.50	869.33
18	37.827478	-84.288508	868.34	5.50	873.84
19	37.826985	-84.288513	849.94	5.50	855.44
20	37.826973	-84.289298	858.33	5.50	863.83
21	37.828044	-84.289230	883.63	5.50	889.13
22	37.828045	-84.289420	884.56	5.50	890.06
23	37.829726	-84.289330	874.10	5.50	879.60
24	37.829737	-84.289510	880.59	5.50	886.09

**Name:** 18 - B1

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.825644	-84.305367	887.90	5.50	893.40
2	37.825586	-84.302238	915.23	5.50	920.73
3	37.824491	-84.302278	889.91	5.50	895.41
4	37.824443	-84.302584	896.28	5.50	901.78
5	37.823837	-84.302590	871.44	5.50	876.94
6	37.823832	-84.303165	880.67	5.50	886.17
7	37.823316	-84.303143	865.70	5.50	871.20
8	37.823359	-84.304767	848.75	5.50	854.25
9	37.823894	-84.304700	862.20	5.50	867.70
10	37.823934	-84.305532	860.95	5.50	866.45

**Name:** 19 - B2 East

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

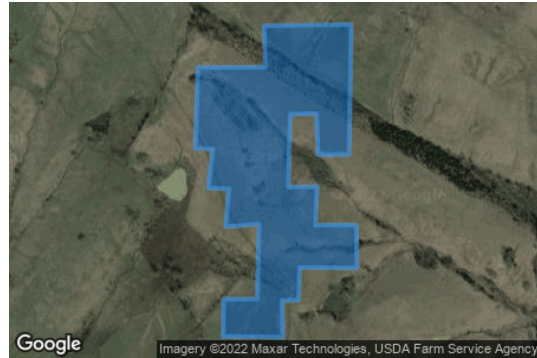
**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.820776	-84.290903	850.90	5.50	856.40
2	37.820796	-84.289318	866.02	5.50	871.52
3	37.818938	-84.289359	863.37	5.50	868.88
4	37.818933	-84.289921	854.54	5.50	860.04
5	37.819521	-84.289950	872.26	5.50	877.76
6	37.819515	-84.290427	871.07	5.50	876.57
7	37.818473	-84.290458	871.44	5.50	876.94
8	37.818479	-84.289940	860.04	5.50	865.54
9	37.817929	-84.289970	871.88	5.50	877.38
10	37.817929	-84.289226	850.13	5.50	855.63
11	37.817315	-84.289217	853.92	5.50	859.42
12	37.817323	-84.290254	877.74	5.50	883.24
13	37.816859	-84.290276	882.81	5.50	888.31
14	37.816849	-84.290578	882.87	5.50	888.37
15	37.816328	-84.290561	879.27	5.50	884.77
16	37.816336	-84.291646	867.94	5.50	873.44
17	37.816871	-84.291636	884.23	5.50	889.73
18	37.816873	-84.291025	880.48	5.50	885.98
19	37.817945	-84.290993	890.56	5.50	896.06
20	37.817903	-84.291601	896.19	5.50	901.69
21	37.818448	-84.291541	891.35	5.50	896.85
22	37.818458	-84.291912	889.81	5.50	895.31
23	37.819017	-84.291834	893.47	5.50	898.97
24	37.819025	-84.292150	889.09	5.50	894.59
25	37.820179	-84.292102	892.25	5.50	897.75
26	37.820186	-84.290878	867.57	5.50	873.07

**Name:** 20 - B2 West

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

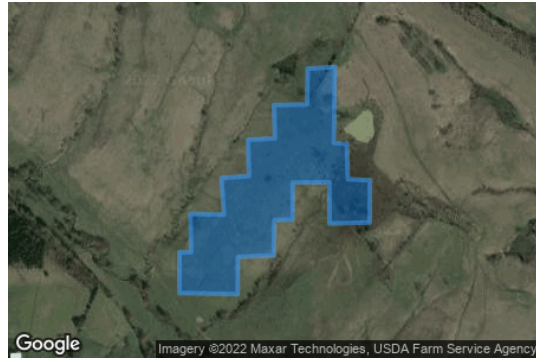
**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.819334	-84.293504	882.59	5.50	888.09
2	37.819360	-84.293006	897.70	5.50	903.20
3	37.818271	-84.293030	874.89	5.50	880.39
4	37.818261	-84.292791	869.83	5.50	875.33
5	37.817754	-84.292773	865.72	5.50	871.22
6	37.817739	-84.292373	878.67	5.50	884.17
7	37.817136	-84.292375	880.37	5.50	885.87
8	37.817121	-84.293108	864.57	5.50	870.07
9	37.817710	-84.293110	859.72	5.50	865.22
10	37.817707	-84.293774	868.70	5.50	874.20
11	37.817175	-84.293778	852.67	5.50	858.17
12	37.817172	-84.294107	862.24	5.50	867.74
13	37.816666	-84.294122	844.73	5.50	850.23
14	37.816643	-84.294771	853.52	5.50	859.02
15	37.816111	-84.294775	831.83	5.50	837.33
16	37.816129	-84.295831	824.79	5.50	830.29
17	37.816716	-84.295831	841.50	5.50	847.00
18	37.816709	-84.295620	849.23	5.50	854.73
19	37.817260	-84.295633	839.04	5.50	844.54
20	37.817246	-84.295024	860.59	5.50	866.09
21	37.817772	-84.295067	849.51	5.50	855.01
22	37.817798	-84.294567	870.85	5.50	876.35
23	37.818318	-84.294586	857.40	5.50	862.90
24	37.818335	-84.294097	876.68	5.50	882.18
25	37.818813	-84.294116	867.72	5.50	873.22
26	37.818821	-84.293517	887.11	5.50	892.61

## Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	37.822070	-84.271477	861.39	6.00
OP 2	2	37.825730	-84.286606	843.23	6.00
OP 3	3	37.819382	-84.303090	905.87	6.00
OP 4	4	37.795983	-84.292407	838.28	6.00
OP 5	5	37.811527	-84.268196	858.16	6.00
OP 6	6	37.795636	-84.269683	883.45	6.00
OP 7	7	37.821502	-84.288321	891.37	6.00
OP 8	8	37.815338	-84.270442	857.04	6.00
OP 9	9	37.805023	-84.285580	808.28	6.00
OP 10	10	37.812440	-84.285666	894.37	6.00
OP 11	11	37.814698	-84.298288	910.90	6.00
OP 12	12	37.811717	-84.289690	866.78	6.00
OP 13	13	37.824855	-84.308043	875.61	6.00

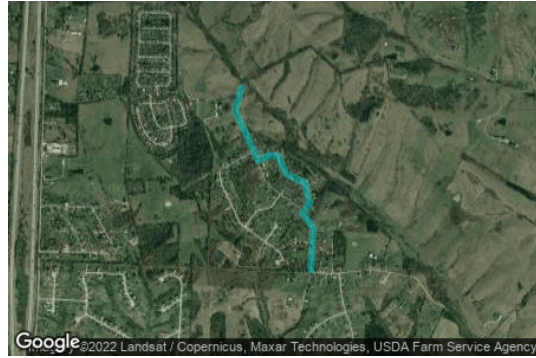
## Route Receptor(s)

**Name:** Bill Eades Rd and Sycamore Drive

**Path type:** Two-way

**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.824808	-84.308238	872.99	5.00	877.99
2	37.823520	-84.308667	910.69	5.00	915.69
3	37.820673	-84.306994	915.84	5.00	920.84
4	37.820978	-84.306221	911.14	5.00	916.14
5	37.820944	-84.305578	904.93	5.00	909.93
6	37.819927	-84.304977	912.80	5.00	917.80
7	37.819384	-84.303603	906.02	5.00	911.02
8	37.818232	-84.303260	900.51	5.00	905.51
9	37.817655	-84.303775	891.01	5.00	896.01
10	37.816808	-84.303003	908.86	5.00	913.86
11	37.814401	-84.303174	901.10	5.00	906.10

**Name:** Bill Eads Road

**Path type:** Two-way

**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.825474	-84.308120	856.28	5.00	861.28
2	37.825287	-84.307777	858.02	5.00	863.02
3	37.827169	-84.303185	925.33	5.00	930.34
4	37.825575	-84.300932	904.12	5.00	909.12
5	37.826406	-84.297563	871.73	5.00	876.73
6	37.826304	-84.296104	838.47	5.00	843.47
7	37.826592	-84.294988	824.11	5.00	829.11
8	37.826609	-84.293872	821.00	5.00	826.00
9	37.825609	-84.290718	802.00	5.00	807.00
10	37.825287	-84.290182	795.62	5.00	800.62
11	37.824863	-84.287736	787.48	5.00	792.48
12	37.824609	-84.287156	782.49	5.00	787.49
13	37.825474	-84.282350	748.08	5.00	753.08
14	37.825118	-84.280805	762.02	5.00	767.02
15	37.825202	-84.279024	744.83	5.00	749.83
16	37.824847	-84.276535	719.49	5.00	724.49
17	37.824982	-84.275483	713.30	5.00	718.30
18	37.825762	-84.274947	715.44	5.00	720.44
19	37.826321	-84.274260	715.41	5.00	720.41
20	37.826982	-84.273702	708.31	5.00	713.31
21	37.827474	-84.273509	707.05	5.00	712.05
22	37.827948	-84.273638	709.92	5.00	714.92
23	37.828372	-84.272629	712.47	5.00	717.47



**Name:** Highway 388

**Path type:** Two-way

**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.832311	-84.272530	717.18	5.00	722.18
2	37.832074	-84.272809	714.37	5.00	719.37
3	37.831752	-84.272766	714.08	5.00	719.08
4	37.831464	-84.272315	706.59	5.00	711.59
5	37.831091	-84.271908	706.47	5.00	711.47
6	37.830650	-84.271779	713.82	5.00	718.82
7	37.830227	-84.272144	707.12	5.00	712.12
8	37.829820	-84.272508	707.45	5.00	712.45
9	37.826007	-84.272551	752.20	5.00	757.20
10	37.823888	-84.272315	819.42	5.00	824.42
11	37.822210	-84.271950	851.13	5.00	856.13
12	37.818108	-84.270663	857.95	5.00	862.95
13	37.812022	-84.268689	853.63	5.00	858.63
14	37.811107	-84.268539	847.55	5.00	852.55
15	37.810056	-84.268775	842.43	5.00	847.43
16	37.808785	-84.269054	864.53	5.00	869.53
17	37.807852	-84.269182	858.08	5.00	863.08
18	37.806987	-84.268882	861.93	5.00	866.93
19	37.806157	-84.268496	862.97	5.00	867.97
20	37.805343	-84.268303	859.82	5.00	864.82
21	37.804580	-84.268410	862.91	5.00	867.91
22	37.803698	-84.268732	865.33	5.00	870.33
23	37.802647	-84.269032	865.38	5.00	870.38
24	37.801766	-84.269311	867.58	5.00	872.58
25	37.800630	-84.269247	859.89	5.00	864.89
26	37.799714	-84.269225	860.37	5.00	865.37
27	37.798595	-84.269483	872.07	5.00	877.07
28	37.792983	-84.271028	873.72	5.00	878.72

**Name:** Three Forks Road  
**Path type:** Two-way  
**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.814350	-84.303074	901.73	5.00	906.73
2	37.814180	-84.302431	908.29	5.00	913.30
3	37.814180	-84.301079	904.49	5.00	909.49
4	37.814452	-84.298783	901.98	5.00	906.98
5	37.813892	-84.295478	911.36	5.00	916.36
6	37.812519	-84.294277	881.93	5.00	886.93
7	37.812180	-84.293397	865.69	5.00	870.69
8	37.810773	-84.291680	834.69	5.00	839.69
9	37.808857	-84.289427	808.47	5.00	813.47
10	37.807366	-84.287968	804.08	5.00	809.08
11	37.806671	-84.287389	797.98	5.00	802.98
12	37.805958	-84.287410	810.43	5.00	815.43
13	37.805331	-84.287389	796.90	5.00	801.90
14	37.801839	-84.285372	795.10	5.00	800.10
15	37.801211	-84.284986	794.34	5.00	799.34
16	37.799007	-84.282454	783.35	5.00	788.35
17	37.798092	-84.281273	768.55	5.00	773.55
18	37.796854	-84.280115	766.75	5.00	771.75
19	37.795718	-84.279407	798.02	5.00	803.02
20	37.795599	-84.279213	806.87	5.00	811.87
21	37.795531	-84.278377	823.26	5.00	828.26
22	37.795345	-84.277947	830.47	5.00	835.47
23	37.793259	-84.272090	884.50	5.00	889.50
24	37.792988	-84.271060	874.44	5.00	879.44

# GLARE ANALYSIS RESULTS

## Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
11 - A6 South	SA tracking	SA tracking	0	0	-
12 - A7 North	SA tracking	SA tracking	0	0	-
13 - A7 South	SA tracking	SA tracking	0	0	-
14 - A8 Central	SA tracking	SA tracking	0	0	-
15 - A8 North	SA tracking	SA tracking	0	0	-
16 - A8 South	SA tracking	SA tracking	0	0	-
17 - A9	SA tracking	SA tracking	0	0	-
18 - B1	SA tracking	SA tracking	0	0	-
19 - B2 East	SA tracking	SA tracking	0	0	-
20 - B2 West	SA tracking	SA tracking	0	0	-

*Total annual glare received by each receptor*

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

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

## Results for: 11 - A6 South

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 12 - A7 North**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

**Point Receptor: OP 1**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 2**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 3**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Three Forks Road**

0 minutes of yellow glare  
0 minutes of green glare

**Results for: 13 - A7 South**

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



Receptor	Green Glare (min)	Yellow Glare (min)
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### Route: Three Forks Road

0 minutes of yellow glare

0 minutes of green glare

## Results for: 14 - A8 Central

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 15 - A8 North**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

**Point Receptor: OP 1**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 2**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 3**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Three Forks Road**

0 minutes of yellow glare  
0 minutes of green glare

**Results for: 16 - A8 South**

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

Receptor	Green Glare (min)	Yellow Glare (min)
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare



**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### Route: Three Forks Road

0 minutes of yellow glare

0 minutes of green glare

## Results for: 17 - A9

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 18 - B1**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

**Point Receptor: OP 1**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 2**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 3**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Three Forks Road**

0 minutes of yellow glare  
0 minutes of green glare

**Results for: 19 - B2 East**

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

Receptor	Green Glare (min)	Yellow Glare (min)
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare



0 minutes of green glare

### Route: Three Forks Road

0 minutes of yellow glare

0 minutes of green glare

## Results for: 20 - B2 West

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Assumptions**

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"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.

Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.

Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to V1 algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.

The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size.

Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)

Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.

Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.

The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual results and glare occurrence may differ.

Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

Refer to the Help page at [www.forgesolar.com/help/](http://www.forgesolar.com/help/) for assumptions and limitations not listed here.

# FORGESOLAR GLARE ANALYSIS

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Project: **Acciona - Madison**

A proposed solar facility near Richmond, Madison County, Kentucky.

Site configuration: **Madison - Area 3\_resting angle 55**

Analysis conducted by BreAnne Kahnk (bkahnk@trccompanies.com) at 16:53 on 25 Jan, 2022.

## U.S. FAA 2013 Policy Adherence

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

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

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

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

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

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

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

# SITE CONFIGURATION

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## Analysis Parameters

DNI: peaks at 1,000.0 W/m<sup>2</sup>

Time interval: 1 min

Ocular transmission

coefficient: 0.5

Pupil diameter: 0.002 m

Eye focal length: 0.017 m

Sun subtended angle: 9.3

mrاد

Site Config ID: 64019.9754

## PV Array(s)

**Name:** 21 - S - A10 and A11

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

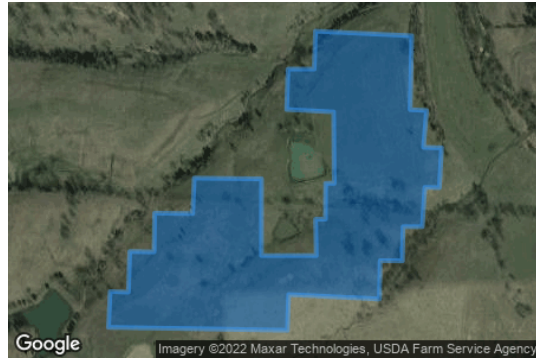
**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.817157	-84.277313	748.65	5.50	754.15
2	37.817090	-84.275564	774.58	5.50	780.08
3	37.816036	-84.275595	791.88	5.50	797.38
4	37.816023	-84.275295	775.57	5.50	781.07
5	37.815497	-84.275352	785.90	5.50	791.40
6	37.815490	-84.275024	773.05	5.50	778.55
7	37.814921	-84.275062	780.17	5.50	785.67
8	37.814925	-84.275327	789.29	5.50	794.79
9	37.814364	-84.275374	770.00	5.50	775.50
10	37.814363	-84.275722	788.86	5.50	794.36
11	37.813876	-84.275733	788.72	5.50	794.22
12	37.813878	-84.276138	811.41	5.50	816.91
13	37.813330	-84.276152	793.07	5.50	798.57
14	37.813395	-84.277800	837.78	5.50	843.28
15	37.812884	-84.277821	821.80	5.50	827.30
16	37.812925	-84.281069	857.05	5.50	862.55
17	37.813438	-84.281038	830.20	5.50	835.70
18	37.813428	-84.280707	843.89	5.50	849.39
19	37.814009	-84.280682	809.93	5.50	815.43
20	37.814003	-84.280240	829.79	5.50	835.29
21	37.814556	-84.280232	799.85	5.50	805.35
22	37.814551	-84.279542	827.69	5.50	833.19
23	37.815057	-84.279512	796.52	5.50	802.02
24	37.815047	-84.278291	822.45	5.50	827.95
25	37.813950	-84.278292	820.27	5.50	825.77
26	37.813950	-84.277297	831.87	5.50	837.37
27	37.814470	-84.277311	804.62	5.50	810.12
28	37.814472	-84.277131	804.21	5.50	809.71
29	37.814983	-84.277128	806.40	5.50	811.90
30	37.814982	-84.276972	804.85	5.50	810.35
31	37.816002	-84.276983	809.24	5.50	814.74
32	37.816038	-84.277836	801.20	5.50	806.70
33	37.816614	-84.277810	767.51	5.50	773.01
34	37.816614	-84.277335	784.49	5.50	789.99

**Name:** 22 - S - A10 Central  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 55.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.816556	-84.280396	796.37	5.50	801.87
2	37.816514	-84.278966	779.96	5.50	785.46
3	37.815927	-84.278990	789.38	5.50	794.88
4	37.815951	-84.279782	822.36	5.50	827.86
5	37.815417	-84.279794	800.25	5.50	805.75
6	37.815410	-84.280479	824.30	5.50	829.80

**Name:** 23 - S - A11 South  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 55.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.810798	-84.281538	878.27	5.50	883.77
2	37.811894	-84.279442	848.98	5.50	854.49
3	37.811373	-84.279392	850.93	5.50	856.43
4	37.812280	-84.277641	815.94	5.50	821.45
5	37.811843	-84.277626	831.27	5.50	836.77
6	37.812265	-84.276709	830.97	5.50	836.47
7	37.811658	-84.276714	844.02	5.50	849.52
8	37.809091	-84.281515	842.55	5.50	848.05

**Name:** 24 - S - A11 West

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.814957	-84.282548	835.63	5.50	841.13
2	37.814924	-84.281429	818.56	5.50	824.06
3	37.813795	-84.281451	816.81	5.50	822.31
4	37.813820	-84.282612	846.95	5.50	852.45

**Name:** 25 - S - A11 West

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.812959	-84.281432	841.63	5.50	847.13
2	37.812923	-84.281007	859.18	5.50	864.68
3	37.812392	-84.280999	861.21	5.50	866.71
4	37.812381	-84.281189	853.16	5.50	858.66
5	37.811846	-84.281174	861.67	5.50	867.17
6	37.811854	-84.281644	870.22	5.50	875.72
7	37.812424	-84.281646	839.13	5.50	844.63
8	37.812407	-84.281438	839.88	5.50	845.38



**Name:** 26 - S - A12

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

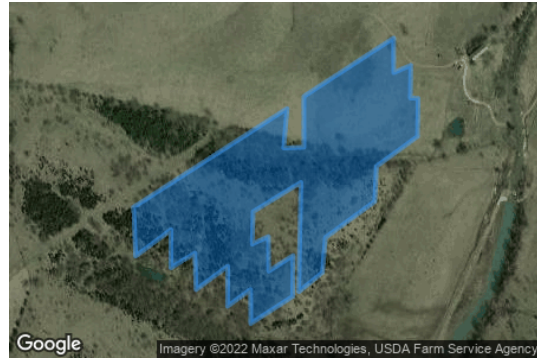
**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



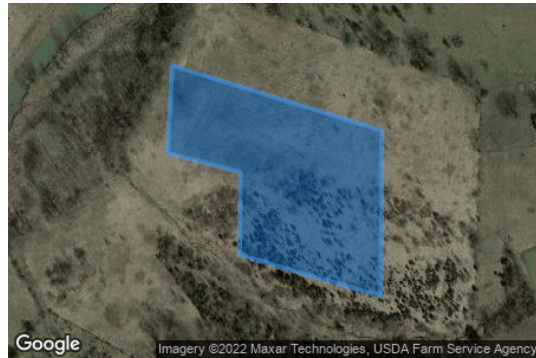
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.809200	-84.280224	844.31	5.50	849.81
2	37.810609	-84.277437	835.63	5.50	841.13
3	37.810046	-84.277499	800.76	5.50	806.26
4	37.810056	-84.277132	797.24	5.50	802.74
5	37.810782	-84.277133	831.72	5.50	837.22
6	37.811616	-84.275505	826.19	5.50	831.69
7	37.811122	-84.275501	816.15	5.50	821.65
8	37.811228	-84.275193	802.88	5.50	808.38
9	37.810760	-84.275200	795.46	5.50	800.96
10	37.810754	-84.275059	790.03	5.50	795.53
11	37.810210	-84.275071	771.56	5.50	777.06
12	37.809784	-84.275815	788.14	5.50	793.64
13	37.809283	-84.275847	792.39	5.50	797.90
14	37.808766	-84.276742	826.93	5.50	832.43
15	37.808269	-84.276796	811.16	5.50	816.66
16	37.807993	-84.277226	820.15	5.50	825.65
17	37.809555	-84.277186	830.77	5.50	836.27
18	37.809137	-84.278054	853.56	5.50	859.06
19	37.808673	-84.278070	849.96	5.50	855.46
20	37.808781	-84.277777	850.52	5.50	856.02
21	37.808286	-84.277770	829.85	5.50	835.35
22	37.808510	-84.277329	848.12	5.50	853.62
23	37.807926	-84.277336	817.92	5.50	823.42
24	37.807538	-84.278098	789.29	5.50	794.79
25	37.808026	-84.278101	817.76	5.50	823.26
26	37.807785	-84.278518	795.88	5.50	801.38
27	37.808357	-84.278514	831.31	5.50	836.81
28	37.808023	-84.279089	796.15	5.50	801.65
29	37.808546	-84.279112	816.20	5.50	821.70
30	37.808333	-84.279548	808.88	5.50	814.38
31	37.808879	-84.279544	841.02	5.50	846.52
32	37.808503	-84.280187	802.55	5.50	808.05

**Name:** 27 - S - A13 Central  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 55.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



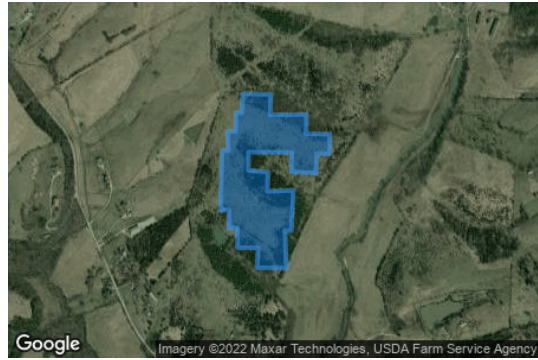
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.805091	-84.275366	764.34	5.50	769.84
2	37.805253	-84.274486	769.00	5.50	774.50
3	37.804710	-84.274514	790.36	5.50	795.86
4	37.804843	-84.273892	783.10	5.50	788.60
5	37.804291	-84.273887	820.44	5.50	825.94
6	37.803808	-84.276304	767.27	5.50	772.77
7	37.804413	-84.276298	766.16	5.50	771.66
8	37.804595	-84.275378	771.42	5.50	776.92

**Name:** 28 - S - A13 East  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 55.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.806416	-84.274231	770.61	5.50	776.11
2	37.805950	-84.272330	837.40	5.50	842.90
3	37.804761	-84.272334	801.04	5.50	806.54
4	37.805058	-84.273618	775.30	5.50	780.80
5	37.805651	-84.273611	791.60	5.50	797.10
6	37.805789	-84.274271	777.09	5.50	782.59

**Name:** 29 - S - A13 West  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 55.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.808262	-84.281314	849.33	5.50	854.83
2	37.808249	-84.280290	814.41	5.50	819.91
3	37.807664	-84.280321	854.40	5.50	859.90
4	37.807673	-84.279002	798.53	5.50	804.03
5	37.807119	-84.279003	845.33	5.50	850.83
6	37.807110	-84.278153	816.51	5.50	822.01
7	37.806548	-84.278169	828.47	5.50	833.97
8	37.806558	-84.278630	843.56	5.50	849.06
9	37.805990	-84.278653	819.88	5.50	825.39
10	37.806033	-84.279548	801.07	5.50	806.57
11	37.806584	-84.279531	835.55	5.50	841.05
12	37.806598	-84.281098	841.79	5.50	847.29
13	37.806074	-84.281109	849.17	5.50	854.67
14	37.806028	-84.280395	815.22	5.50	820.72
15	37.805479	-84.280421	846.39	5.50	851.89
16	37.805507	-84.279468	803.55	5.50	809.05
17	37.804355	-84.279552	814.17	5.50	819.67
18	37.804359	-84.279783	819.09	5.50	824.59
19	37.803279	-84.279727	796.21	5.50	801.71
20	37.803293	-84.280789	801.75	5.50	807.25
21	37.803862	-84.280754	829.05	5.50	834.55
22	37.803864	-84.281500	820.30	5.50	825.80
23	37.804429	-84.281504	836.84	5.50	842.34
24	37.804420	-84.281821	837.35	5.50	842.85
25	37.804941	-84.281808	845.91	5.50	851.41
26	37.804937	-84.282132	840.99	5.50	846.49
27	37.806646	-84.282056	857.35	5.50	862.85
28	37.806640	-84.281830	862.32	5.50	867.82
29	37.807185	-84.281864	868.03	5.50	873.53
30	37.807198	-84.281557	863.36	5.50	868.87
31	37.807726	-84.281566	873.41	5.50	878.91
32	37.807714	-84.281351	869.51	5.50	875.01

**Name:** 30 - S - A15 Central  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 55.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.797850	-84.274007	842.16	5.50	847.66
2	37.797846	-84.273542	849.98	5.50	855.48
3	37.797305	-84.273543	858.51	5.50	864.01
4	37.797295	-84.273832	850.88	5.50	856.38
5	37.796745	-84.273842	866.96	5.50	872.46
6	37.796745	-84.274031	864.95	5.50	870.45
7	37.796216	-84.274038	854.90	5.50	860.40
8	37.796222	-84.274360	850.62	5.50	856.12
9	37.795691	-84.274362	826.12	5.50	831.62
10	37.795720	-84.275957	810.35	5.50	815.85
11	37.796825	-84.275932	842.96	5.50	848.46
12	37.796826	-84.275193	837.74	5.50	843.24
13	37.797363	-84.275183	836.39	5.50	841.89
14	37.797311	-84.273995	848.86	5.50	854.36

## Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	37.822070	-84.271477	861.39	6.00
OP 2	2	37.825730	-84.286606	843.23	6.00
OP 3	3	37.819382	-84.303090	905.87	6.00
OP 4	4	37.795983	-84.292407	838.28	6.00
OP 5	5	37.811527	-84.268196	858.16	6.00
OP 6	6	37.795636	-84.269683	883.45	6.00
OP 7	7	37.821502	-84.288321	891.37	6.00
OP 8	8	37.815338	-84.270442	857.04	6.00
OP 9	9	37.805023	-84.285580	808.28	6.00
OP 10	10	37.812440	-84.285666	894.37	6.00
OP 11	11	37.814698	-84.298288	910.90	6.00
OP 12	12	37.811717	-84.289690	866.78	6.00
OP 13	13	37.824855	-84.308043	875.61	6.00

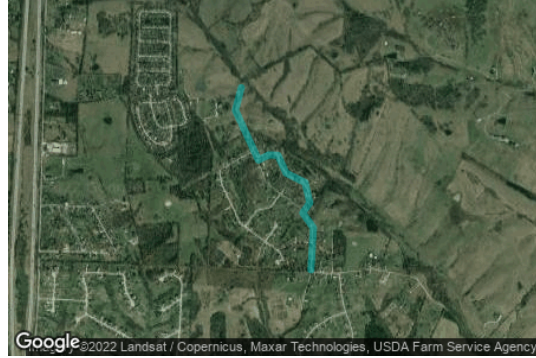
## Route Receptor(s)

**Name:** Bill Eades Rd and Sycamore Drive

**Path type:** Two-way

**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.824808	-84.308238	872.99	5.00	877.99
2	37.823520	-84.308667	910.69	5.00	915.69
3	37.820673	-84.306994	915.84	5.00	920.84
4	37.820978	-84.306221	911.14	5.00	916.14
5	37.820944	-84.305578	904.93	5.00	909.93
6	37.819927	-84.304977	912.80	5.00	917.80
7	37.819384	-84.303603	906.02	5.00	911.02
8	37.818232	-84.303260	900.51	5.00	905.51
9	37.817655	-84.303775	891.01	5.00	896.01
10	37.816808	-84.303003	908.86	5.00	913.86
11	37.814401	-84.303174	901.10	5.00	906.10

**Name:** Bill Eads Road

**Path type:** Two-way

**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.825474	-84.308120	856.28	5.00	861.28
2	37.825287	-84.307777	858.02	5.00	863.02
3	37.827169	-84.303185	925.33	5.00	930.34
4	37.825575	-84.300932	904.12	5.00	909.12
5	37.826406	-84.297563	871.73	5.00	876.73
6	37.826304	-84.296104	838.47	5.00	843.47
7	37.826592	-84.294988	824.11	5.00	829.11
8	37.826609	-84.293872	821.00	5.00	826.00
9	37.825609	-84.290718	802.00	5.00	807.00
10	37.825287	-84.290182	795.62	5.00	800.62
11	37.824863	-84.287736	787.48	5.00	792.48
12	37.824609	-84.287156	782.49	5.00	787.49
13	37.825474	-84.282350	748.08	5.00	753.08
14	37.825118	-84.280805	762.02	5.00	767.02
15	37.825202	-84.279024	744.83	5.00	749.83
16	37.824847	-84.276535	719.49	5.00	724.49
17	37.824982	-84.275483	713.30	5.00	718.30
18	37.825762	-84.274947	715.44	5.00	720.44
19	37.826321	-84.274260	715.41	5.00	720.41
20	37.826982	-84.273702	708.31	5.00	713.31
21	37.827474	-84.273509	707.05	5.00	712.05
22	37.827948	-84.273638	709.92	5.00	714.92
23	37.828372	-84.272629	712.47	5.00	717.47



**Name:** Highway 388

**Path type:** Two-way

**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.832311	-84.272530	717.18	5.00	722.18
2	37.832074	-84.272809	714.37	5.00	719.37
3	37.831752	-84.272766	714.08	5.00	719.08
4	37.831464	-84.272315	706.59	5.00	711.59
5	37.831091	-84.271908	706.47	5.00	711.47
6	37.830650	-84.271779	713.82	5.00	718.82
7	37.830227	-84.272144	707.12	5.00	712.12
8	37.829820	-84.272508	707.45	5.00	712.45
9	37.826007	-84.272551	752.20	5.00	757.20
10	37.823888	-84.272315	819.42	5.00	824.42
11	37.822210	-84.271950	851.13	5.00	856.13
12	37.818108	-84.270663	857.95	5.00	862.95
13	37.812022	-84.268689	853.63	5.00	858.63
14	37.811107	-84.268539	847.55	5.00	852.55
15	37.810056	-84.268775	842.43	5.00	847.43
16	37.808785	-84.269054	864.53	5.00	869.53
17	37.807852	-84.269182	858.08	5.00	863.08
18	37.806987	-84.268882	861.93	5.00	866.93
19	37.806157	-84.268496	862.97	5.00	867.97
20	37.805343	-84.268303	859.82	5.00	864.82
21	37.804580	-84.268410	862.91	5.00	867.91
22	37.803698	-84.268732	865.33	5.00	870.33
23	37.802647	-84.269032	865.38	5.00	870.38
24	37.801766	-84.269311	867.58	5.00	872.58
25	37.800630	-84.269247	859.89	5.00	864.89
26	37.799714	-84.269225	860.37	5.00	865.37
27	37.798595	-84.269483	872.07	5.00	877.07
28	37.792983	-84.271028	873.72	5.00	878.72

**Name:** Three Forks Road  
**Path type:** Two-way  
**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.814350	-84.303074	901.73	5.00	906.73
2	37.814180	-84.302431	908.29	5.00	913.30
3	37.814180	-84.301079	904.49	5.00	909.49
4	37.814452	-84.298783	901.98	5.00	906.98
5	37.813892	-84.295478	911.36	5.00	916.36
6	37.812519	-84.294277	881.93	5.00	886.93
7	37.812180	-84.293397	865.69	5.00	870.69
8	37.810773	-84.291680	834.69	5.00	839.69
9	37.808857	-84.289427	808.47	5.00	813.47
10	37.807366	-84.287968	804.08	5.00	809.08
11	37.806671	-84.287389	797.98	5.00	802.98
12	37.805958	-84.287410	810.43	5.00	815.43
13	37.805331	-84.287389	796.90	5.00	801.90
14	37.801839	-84.285372	795.10	5.00	800.10
15	37.801211	-84.284986	794.34	5.00	799.34
16	37.799007	-84.282454	783.35	5.00	788.35
17	37.798092	-84.281273	768.55	5.00	773.55
18	37.796854	-84.280115	766.75	5.00	771.75
19	37.795718	-84.279407	798.02	5.00	803.02
20	37.795599	-84.279213	806.87	5.00	811.87
21	37.795531	-84.278377	823.26	5.00	828.26
22	37.795345	-84.277947	830.47	5.00	835.47
23	37.793259	-84.272090	884.50	5.00	889.50
24	37.792988	-84.271060	874.44	5.00	879.44



# GLARE ANALYSIS RESULTS

## Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
21 - S - A10 and A11	SA tracking	SA tracking	0	0	-
22 - S - A10 Central	SA tracking	SA tracking	0	0	-
23 - S - A11 South	SA tracking	SA tracking	0	0	-
24 - S - A11 West	SA tracking	SA tracking	0	0	-
25 - S - A11 West	SA tracking	SA tracking	0	0	-
26 - S - A12	SA tracking	SA tracking	0	0	-
27 - S - A13 Central	SA tracking	SA tracking	0	0	-
28 - S - A13 East	SA tracking	SA tracking	0	0	-
29 - S - A13 West	SA tracking	SA tracking	0	0	-
30 - S - A15 Central	SA tracking	SA tracking	0	0	-

*Total annual glare received by each receptor*

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

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

## Results for: 21 - S - A10 and A11

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 22 - S - A10 Central**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

**Point Receptor: OP 1**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 2**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 3**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Three Forks Road**

0 minutes of yellow glare  
0 minutes of green glare

**Results for: 23 - S - A11 South**

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

Receptor	Green Glare (min)	Yellow Glare (min)
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare



0 minutes of green glare

### Route: Three Forks Road

0 minutes of yellow glare

0 minutes of green glare

## Results for: 24 - S - A11 West

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 25 - S - A11 West**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

**Point Receptor: OP 1**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 2**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 3**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Three Forks Road**

0 minutes of yellow glare  
0 minutes of green glare

**Results for: 26 - S - A12**

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

Receptor	Green Glare (min)	Yellow Glare (min)
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### Route: Three Forks Road

0 minutes of yellow glare

0 minutes of green glare

## Results for: 27 - S - A13 Central

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare



**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 28 - S - A13 East**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

**Point Receptor: OP 1**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 2**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 3**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Three Forks Road**

0 minutes of yellow glare  
0 minutes of green glare

**Results for: 29 - S - A13 West**

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

Receptor	Green Glare (min)	Yellow Glare (min)
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### Route: Three Forks Road

0 minutes of yellow glare

0 minutes of green glare

## Results for: 30 - S - A15 Central

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare



0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Assumptions**

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"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.

Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.

Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to V1 algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.

The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size.

Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)

Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.

Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.

The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual results and glare occurrence may differ.

Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

Refer to the Help page at [www.forgesolar.com/help/](http://www.forgesolar.com/help/) for assumptions and limitations not listed here.

# FORGESOLAR GLARE ANALYSIS

Project: **Acciona - Madison**

A proposed solar facility near Richmond, Madison County, Kentucky.

Site configuration: **Madison - Area 4\_resting angle 55**

Analysis conducted by BreAnne Kahnk (bkahnk@trccompanies.com) at 16:01 on 25 Jan, 2022.

## U.S. FAA 2013 Policy Adherence

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

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

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

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

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

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

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

# SITE CONFIGURATION

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## Analysis Parameters

DNI: peaks at 1,000.0 W/m<sup>2</sup>

Time interval: 1 min

Ocular transmission

coefficient: 0.5

Pupil diameter: 0.002 m

Eye focal length: 0.017 m

Sun subtended angle: 9.3

mrاد

Site Config ID: 64016.9754

## PV Array(s)

**Name:** 31 - S - A15 East

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

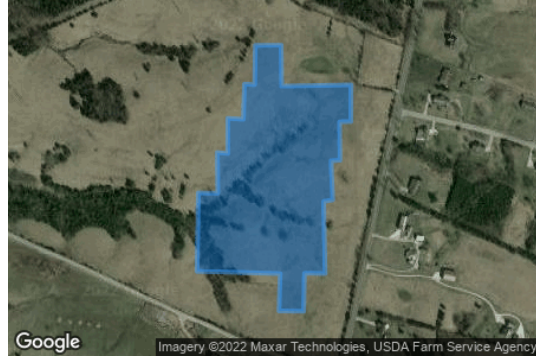
**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.797716	-84.272589	870.29	5.50	875.79
2	37.797720	-84.272120	879.38	5.50	884.88
3	37.797135	-84.272111	873.35	5.50	878.85
4	37.797153	-84.270853	883.28	5.50	888.78
5	37.796630	-84.270853	878.57	5.50	884.07
6	37.796623	-84.271059	872.43	5.50	877.93
7	37.796076	-84.271051	877.86	5.50	883.36
8	37.796068	-84.271215	874.36	5.50	879.86
9	37.795510	-84.271183	870.95	5.50	876.45
10	37.795487	-84.271348	867.71	5.50	873.21
11	37.794457	-84.271322	883.62	5.50	889.12
12	37.794460	-84.271435	882.14	5.50	887.64
13	37.794463	-84.271582	878.70	5.50	884.20
14	37.794461	-84.271696	876.04	5.50	881.54
15	37.793918	-84.271712	888.10	5.50	893.60
16	37.793923	-84.272159	878.06	5.50	883.56
17	37.794456	-84.272137	867.31	5.50	872.81
18	37.794488	-84.273647	849.72	5.50	855.22
19	37.795609	-84.273623	836.25	5.50	841.75
20	37.795604	-84.273271	830.55	5.50	836.05
21	37.796186	-84.273277	858.10	5.50	863.60
22	37.796172	-84.273089	855.93	5.50	861.43
23	37.796675	-84.273088	873.69	5.50	879.19
24	37.796661	-84.272806	871.13	5.50	876.63
25	37.797163	-84.272787	879.05	5.50	884.55
26	37.797156	-84.272600	879.90	5.50	885.40

**Name:** 32 - S - A15 North

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.799977	-84.275267	825.70	5.50	831.20
2	37.799941	-84.273712	822.93	5.50	828.43
3	37.799330	-84.273718	853.94	5.50	859.44
4	37.799379	-84.274947	830.26	5.50	835.76
5	37.798794	-84.274979	834.26	5.50	839.76
6	37.798884	-84.276195	835.25	5.50	840.75
7	37.798317	-84.276195	838.54	5.50	844.04
8	37.798340	-84.277118	785.99	5.50	791.49
9	37.798941	-84.277074	798.82	5.50	804.32
10	37.798931	-84.276860	812.96	5.50	818.46
11	37.799475	-84.276869	805.69	5.50	811.19
12	37.799412	-84.275246	820.14	5.50	825.64

**Name:** 33 - S - A16 Central

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

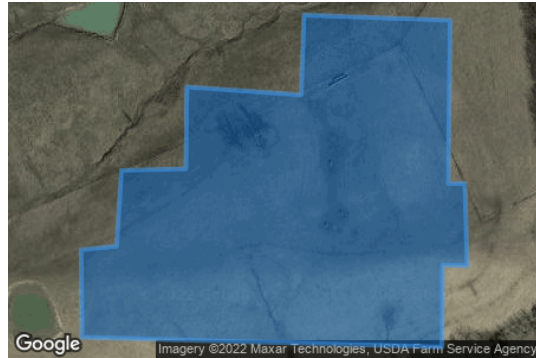
**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

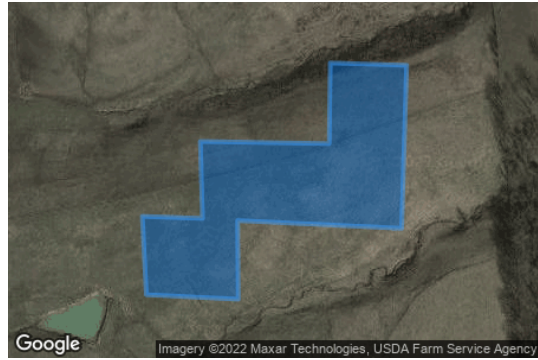
**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.815662	-84.265470	795.04	5.50	800.54
2	37.815624	-84.264144	810.22	5.50	815.72
3	37.814459	-84.264161	804.39	5.50	809.89
4	37.814458	-84.264011	803.85	5.50	809.35
5	37.813871	-84.263989	811.72	5.50	817.22
6	37.813876	-84.264213	820.66	5.50	826.16
7	37.813291	-84.264218	779.60	5.50	785.10
8	37.813360	-84.267485	843.27	5.50	848.77
9	37.813986	-84.267493	845.21	5.50	850.71
10	37.814011	-84.267171	845.15	5.50	850.65
11	37.814553	-84.267126	826.79	5.50	832.29
12	37.814564	-84.266541	848.88	5.50	854.38
13	37.815148	-84.266535	813.84	5.50	819.34
14	37.815092	-84.265495	839.11	5.50	844.61

**Name:** 34 - S - A16 North  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 55.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.817489	-84.265071	778.92	5.50	784.42
2	37.817473	-84.264378	794.67	5.50	800.17
3	37.816308	-84.264424	785.94	5.50	791.44
4	37.816364	-84.265912	826.60	5.50	832.10
5	37.815802	-84.265906	802.90	5.50	808.40
6	37.815834	-84.266741	819.18	5.50	824.68
7	37.816394	-84.266777	840.59	5.50	846.09
8	37.816379	-84.266230	833.85	5.50	839.35
9	37.816929	-84.266251	815.10	5.50	820.60
10	37.816913	-84.265081	823.74	5.50	829.24

**Name:** 35 - S - A16 Southr  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 55.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.813024	-84.264011	790.17	5.50	795.67
2	37.813003	-84.263544	801.30	5.50	806.80
3	37.811332	-84.263584	766.42	5.50	771.93
4	37.811388	-84.265536	802.66	5.50	808.16
5	37.812560	-84.265506	808.57	5.50	814.07
6	37.812522	-84.264026	815.97	5.50	821.47

**Name:** 36 - S - B3 North

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

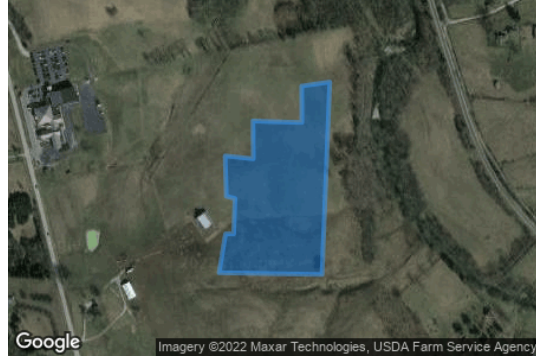
**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.822015	-84.267653	824.71	5.50	830.21
2	37.821992	-84.266766	815.65	5.50	821.15
3	37.822514	-84.266769	817.95	5.50	823.45
4	37.822572	-84.266259	820.15	5.50	825.65
5	37.819822	-84.266399	805.38	5.50	810.88
6	37.819847	-84.268268	824.33	5.50	829.83
7	37.820402	-84.268151	842.67	5.50	848.17
8	37.820402	-84.268003	826.75	5.50	832.25
9	37.820908	-84.267979	829.81	5.50	835.31
10	37.820939	-84.268136	843.17	5.50	848.67
11	37.821517	-84.268159	837.88	5.50	843.38
12	37.821474	-84.267647	832.86	5.50	838.36

**Name:** 37 - S - B3 South

**Axis tracking:** Single-axis rotation

**Tracking axis orientation:** 180.0°

**Tracking axis tilt:** 0.0°

**Tracking axis panel offset:** 0.0°

**Max tracking angle:** 50.0°

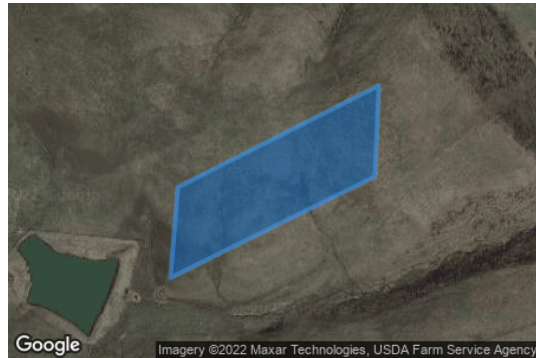
**Resting angle:** 55.0°

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Reflectivity:** Vary with sun

**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.818058	-84.267678	834.26	5.50	839.76
2	37.818784	-84.265854	832.00	5.50	837.50
3	37.818135	-84.265888	836.45	5.50	841.95
4	37.817412	-84.267745	811.86	5.50	817.36



**Name:** 38 - S - B3 Southwest  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 55.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



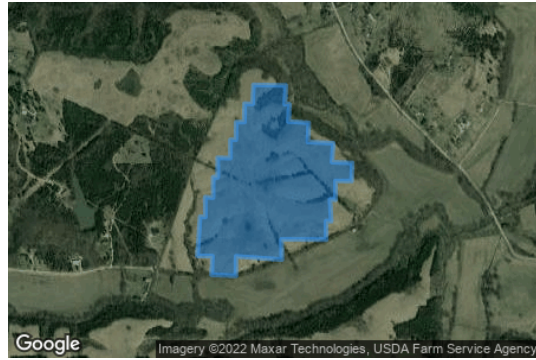
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.816724	-84.269194	849.98	5.50	855.48
2	37.816927	-84.268731	831.27	5.50	836.77
3	37.816498	-84.268708	849.61	5.50	855.11
4	37.817069	-84.267667	806.80	5.50	812.30
5	37.816399	-84.267644	850.18	5.50	855.68
6	37.815662	-84.269002	848.80	5.50	854.30
7	37.816163	-84.269000	856.61	5.50	862.11
8	37.816189	-84.269175	861.11	5.50	866.61

**Name:** 39 - S - B3 West  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 55.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.820021	-84.269100	856.45	5.50	861.95
2	37.820009	-84.268510	842.71	5.50	848.21
3	37.819457	-84.268535	835.16	5.50	840.66
4	37.819463	-84.267555	813.33	5.50	818.83
5	37.818903	-84.267549	835.46	5.50	840.96
6	37.818904	-84.268435	856.96	5.50	862.46
7	37.818364	-84.268419	845.52	5.50	851.02
8	37.818370	-84.269481	840.32	5.50	845.82
9	37.819466	-84.269444	871.51	5.50	877.01
10	37.819477	-84.269116	860.81	5.50	866.31

**Name:** 40 - S - C1 and A14  
**Axis tracking:** Single-axis rotation  
**Tracking axis orientation:** 180.0°  
**Tracking axis tilt:** 0.0°  
**Tracking axis panel offset:** 0.0°  
**Max tracking angle:** 50.0°  
**Resting angle:** 55.0°  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.800552	-84.288865	846.44	5.50	851.94
2	37.800531	-84.287689	820.61	5.50	826.11
3	37.799996	-84.287725	801.54	5.50	807.04
4	37.799996	-84.287557	791.70	5.50	797.20
5	37.799502	-84.287597	815.47	5.50	820.97
6	37.799466	-84.286855	816.99	5.50	822.49
7	37.798915	-84.286889	846.85	5.50	852.35
8	37.798883	-84.285966	824.02	5.50	829.52
9	37.798340	-84.286013	832.51	5.50	838.01
10	37.798319	-84.285279	815.02	5.50	820.52
11	37.797802	-84.285305	827.78	5.50	833.28
12	37.797804	-84.285889	815.45	5.50	820.95
13	37.797270	-84.285878	800.03	5.50	805.53
14	37.797272	-84.286084	806.50	5.50	812.00
15	37.796655	-84.286040	828.66	5.50	834.16
16	37.796655	-84.286227	831.65	5.50	837.16
17	37.796125	-84.286223	798.43	5.50	803.93
18	37.796135	-84.287848	815.94	5.50	821.44
19	37.795556	-84.287833	799.05	5.50	804.55
20	37.795651	-84.289494	838.04	5.50	843.54
21	37.795093	-84.289501	796.98	5.50	802.48
22	37.795122	-84.290383	795.32	5.50	800.82
23	37.795657	-84.290354	819.99	5.50	825.49
24	37.795663	-84.290900	793.07	5.50	798.57
25	37.796780	-84.290800	823.73	5.50	829.23
26	37.796775	-84.290609	834.08	5.50	839.58
27	37.797340	-84.290617	824.06	5.50	829.56
28	37.797328	-84.290329	835.26	5.50	840.76
29	37.797914	-84.290326	843.69	5.50	849.19
30	37.797905	-84.290161	845.00	5.50	850.50
31	37.798467	-84.290162	857.73	5.50	863.23
32	37.798456	-84.289701	868.12	5.50	873.62
33	37.798981	-84.289698	871.90	5.50	877.40
34	37.798983	-84.289499	872.87	5.50	878.37
35	37.799488	-84.289492	866.04	5.50	871.54
36	37.799485	-84.289193	866.03	5.50	871.53
37	37.800014	-84.289185	857.27	5.50	862.77
38	37.800005	-84.288893	853.91	5.50	859.41

## Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	37.822070	-84.271477	861.39	6.00
OP 2	2	37.825730	-84.286606	843.23	6.00
OP 3	3	37.819382	-84.303090	905.87	6.00
OP 4	4	37.795983	-84.292407	838.28	6.00
OP 5	5	37.811527	-84.268196	858.16	6.00
OP 6	6	37.795636	-84.269683	883.45	6.00
OP 7	7	37.821502	-84.288321	891.37	6.00
OP 8	8	37.815338	-84.270442	857.04	6.00
OP 9	9	37.805023	-84.285580	808.28	6.00
OP 10	10	37.812440	-84.285666	894.37	6.00
OP 11	11	37.814698	-84.298288	910.90	6.00
OP 12	12	37.811717	-84.289690	866.78	6.00
OP 13	13	37.824855	-84.308043	875.61	6.00

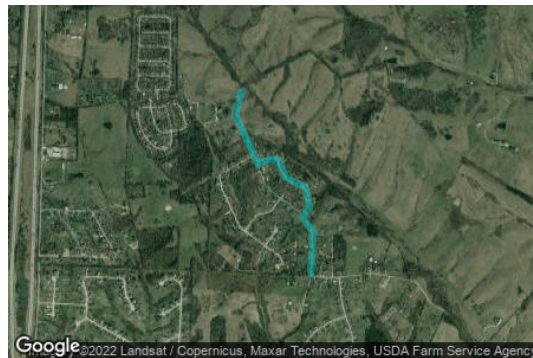
## Route Receptor(s)

**Name:** Bill Eades Rd and Sycamore Drive

**Path type:** Two-way

**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.824808	-84.308238	872.99	5.00	877.99
2	37.823520	-84.308667	910.69	5.00	915.69
3	37.820673	-84.306994	915.84	5.00	920.84
4	37.820978	-84.306221	911.14	5.00	916.14
5	37.820944	-84.305578	904.93	5.00	909.93
6	37.819927	-84.304977	912.80	5.00	917.80
7	37.819384	-84.303603	906.02	5.00	911.02
8	37.818232	-84.303260	900.51	5.00	905.51
9	37.817655	-84.303775	891.01	5.00	896.01
10	37.816808	-84.303003	908.86	5.00	913.86
11	37.814401	-84.303174	901.10	5.00	906.10

**Name:** Bill Eads Road

**Path type:** Two-way

**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.825474	-84.308120	856.28	5.00	861.28
2	37.825287	-84.307777	858.02	5.00	863.02
3	37.827169	-84.303185	925.33	5.00	930.34
4	37.825575	-84.300932	904.12	5.00	909.12
5	37.826406	-84.297563	871.73	5.00	876.73
6	37.826304	-84.296104	838.47	5.00	843.47
7	37.826592	-84.294988	824.11	5.00	829.11
8	37.826609	-84.293872	821.00	5.00	826.00
9	37.825609	-84.290718	802.00	5.00	807.00
10	37.825287	-84.290182	795.62	5.00	800.62
11	37.824863	-84.287736	787.48	5.00	792.48
12	37.824609	-84.287156	782.49	5.00	787.49
13	37.825474	-84.282350	748.08	5.00	753.08
14	37.825118	-84.280805	762.02	5.00	767.02
15	37.825202	-84.279024	744.83	5.00	749.83
16	37.824847	-84.276535	719.49	5.00	724.49
17	37.824982	-84.275483	713.30	5.00	718.30
18	37.825762	-84.274947	715.44	5.00	720.44
19	37.826321	-84.274260	715.41	5.00	720.41
20	37.826982	-84.273702	708.31	5.00	713.31
21	37.827474	-84.273509	707.05	5.00	712.05
22	37.827948	-84.273638	709.92	5.00	714.92
23	37.828372	-84.272629	712.47	5.00	717.47

**Name:** Highway 388

**Path type:** Two-way

**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.832311	-84.272530	717.18	5.00	722.18
2	37.832074	-84.272809	714.37	5.00	719.37
3	37.831752	-84.272766	714.08	5.00	719.08
4	37.831464	-84.272315	706.59	5.00	711.59
5	37.831091	-84.271908	706.47	5.00	711.47
6	37.830650	-84.271779	713.82	5.00	718.82
7	37.830227	-84.272144	707.12	5.00	712.12
8	37.829820	-84.272508	707.45	5.00	712.45
9	37.826007	-84.272551	752.20	5.00	757.20
10	37.823888	-84.272315	819.42	5.00	824.42
11	37.822210	-84.271950	851.13	5.00	856.13
12	37.818108	-84.270663	857.95	5.00	862.95
13	37.812022	-84.268689	853.63	5.00	858.63
14	37.811107	-84.268539	847.55	5.00	852.55
15	37.810056	-84.268775	842.43	5.00	847.43
16	37.808785	-84.269054	864.53	5.00	869.53
17	37.807852	-84.269182	858.08	5.00	863.08
18	37.806987	-84.268882	861.93	5.00	866.93
19	37.806157	-84.268496	862.97	5.00	867.97
20	37.805343	-84.268303	859.82	5.00	864.82
21	37.804580	-84.268410	862.91	5.00	867.91
22	37.803698	-84.268732	865.33	5.00	870.33
23	37.802647	-84.269032	865.38	5.00	870.38
24	37.801766	-84.269311	867.58	5.00	872.58
25	37.800630	-84.269247	859.89	5.00	864.89
26	37.799714	-84.269225	860.37	5.00	865.37
27	37.798595	-84.269483	872.07	5.00	877.07
28	37.792983	-84.271028	873.72	5.00	878.72

**Name:** Three Forks Road  
**Path type:** Two-way  
**Observer view angle:** 180.0°

**Note:** Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.814350	-84.303074	901.73	5.00	906.73
2	37.814180	-84.302431	908.29	5.00	913.30
3	37.814180	-84.301079	904.49	5.00	909.49
4	37.814452	-84.298783	901.98	5.00	906.98
5	37.813892	-84.295478	911.36	5.00	916.36
6	37.812519	-84.294277	881.93	5.00	886.93
7	37.812180	-84.293397	865.69	5.00	870.69
8	37.810773	-84.291680	834.69	5.00	839.69
9	37.808857	-84.289427	808.47	5.00	813.47
10	37.807366	-84.287968	804.08	5.00	809.08
11	37.806671	-84.287389	797.98	5.00	802.98
12	37.805958	-84.287410	810.43	5.00	815.43
13	37.805331	-84.287389	796.90	5.00	801.90
14	37.801839	-84.285372	795.10	5.00	800.10
15	37.801211	-84.284986	794.34	5.00	799.34
16	37.799007	-84.282454	783.35	5.00	788.35
17	37.798092	-84.281273	768.55	5.00	773.55
18	37.796854	-84.280115	766.75	5.00	771.75
19	37.795718	-84.279407	798.02	5.00	803.02
20	37.795599	-84.279213	806.87	5.00	811.87
21	37.795531	-84.278377	823.26	5.00	828.26
22	37.795345	-84.277947	830.47	5.00	835.47
23	37.793259	-84.272090	884.50	5.00	889.50
24	37.792988	-84.271060	874.44	5.00	879.44

# GLARE ANALYSIS RESULTS

## Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
31 - S - A15 East	SA tracking	SA tracking	0	0	-
32 - S - A15 North	SA tracking	SA tracking	0	0	-
33 - S - A16 Central	SA tracking	SA tracking	0	0	-
34 - S - A16 North	SA tracking	SA tracking	0	0	-
35 - S - A16 Southr	SA tracking	SA tracking	0	0	-
36 - S - B3 North	SA tracking	SA tracking	0	0	-
37 - S - B3 South	SA tracking	SA tracking	0	0	-
38 - S - B3 Southwest	SA tracking	SA tracking	0	0	-
39 - S - B3 West	SA tracking	SA tracking	0	0	-
40 - S - C1 and A14	SA tracking	SA tracking	0	0	-

*Total annual glare received by each receptor*

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

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

## Results for: 31 - S - A15 East

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare



**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 32 - S - A15 North**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

**Point Receptor: OP 1**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 2**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 3**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Three Forks Road**

0 minutes of yellow glare  
0 minutes of green glare

**Results for: 33 - S - A16 Central**

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

Receptor	Green Glare (min)	Yellow Glare (min)
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### Route: Three Forks Road

0 minutes of yellow glare

0 minutes of green glare

## Results for: 34 - S - A16 North

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare



0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 35 - S - A16 Southr**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

**Point Receptor: OP 1**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 2**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 3**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare

0 minutes of green glare

### **Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

### **Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

### **Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare  
0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare  
0 minutes of green glare

## **Results for: 36 - S - B3 North**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### Route: Three Forks Road

0 minutes of yellow glare

0 minutes of green glare

## Results for: 37 - S - B3 South

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Results for: 38 - S - B3 Southwest**

<b>Receptor</b>	<b>Green Glare (min)</b>	<b>Yellow Glare (min)</b>
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0



**Point Receptor: OP 1**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 2**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 3**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Three Forks Road**

0 minutes of yellow glare  
0 minutes of green glare

**Results for: 39 - S - B3 West**

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

Receptor	Green Glare (min)	Yellow Glare (min)
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Bill Eads Road**

0 minutes of yellow glare  
0 minutes of green glare

**Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### Route: Three Forks Road

0 minutes of yellow glare

0 minutes of green glare

## Results for: 40 - S - C1 and A14

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
Bill Eades Rd and Sycamore Drive	0	0
Bill Eads Road	0	0
Highway 388	0	0
Three Forks Road	0	0

### Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

### Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

**Point Receptor: OP 4**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 5**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 6**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 7**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 8**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 9**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 10**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 11**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 12**

0 minutes of yellow glare  
0 minutes of green glare

**Point Receptor: OP 13**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eades Rd and Sycamore Drive**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Bill Eads Road**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Highway 388**

0 minutes of yellow glare

0 minutes of green glare

### **Route: Three Forks Road**

0 minutes of yellow glare

0 minutes of green glare

## **Assumptions**

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"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.

Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.

Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to V1 algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.

The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size.

Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)

Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.

Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.

The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual results and glare occurrence may differ.

Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

Refer to the Help page at [www.forgesolar.com/help/](http://www.forgesolar.com/help/) for assumptions and limitations not listed here.