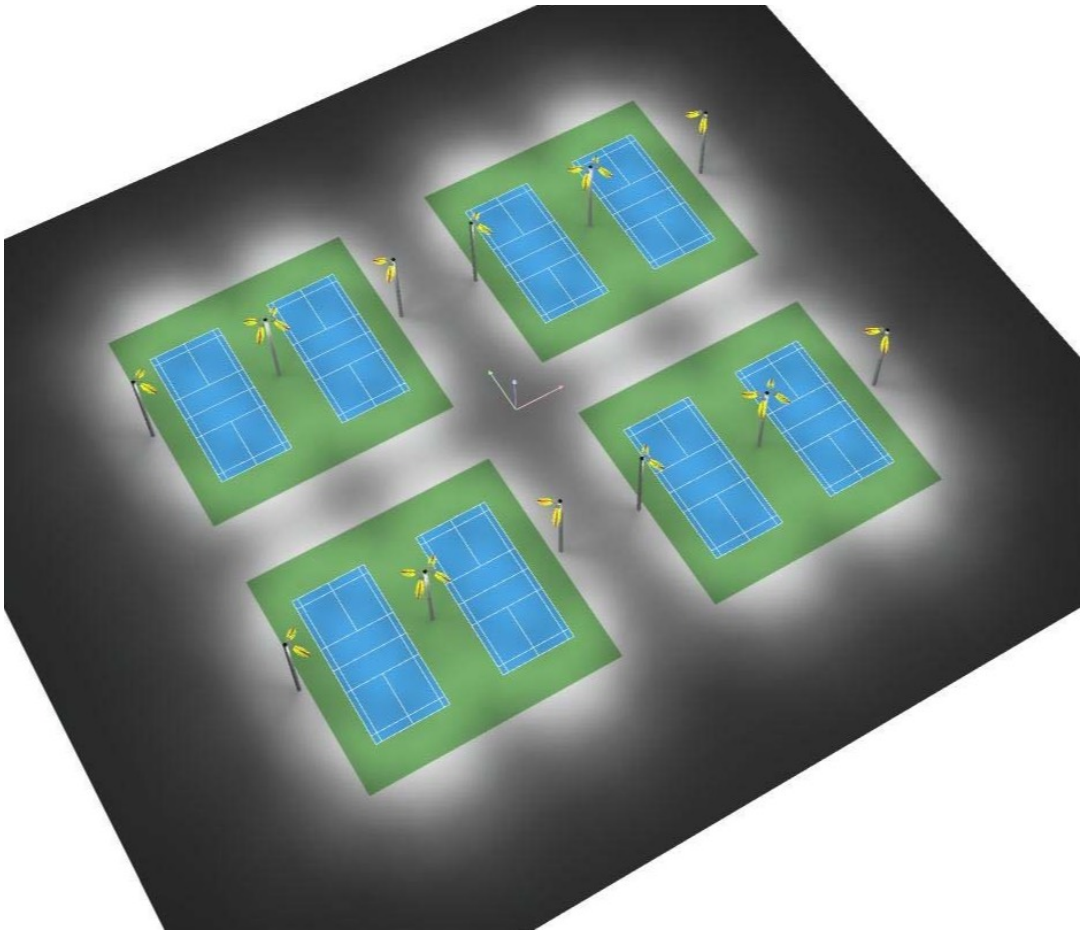
AccessFixtures
High-Performance Lighting Solutions

8 Court Pickleball Lighting Photometric Analysis

Competition Level - Full Cut Off 5000 Kelvin LED Lights - Dark Sky Compliant with 3000 Kelvin LEDs**
(12) 25' Poles - (32) APTI 360s
Average 50 Footcandles and 1.57 Max/Min Ratio



This photometric study was generated using methods recommended by the Illuminating Engineering Society of North America (IESNA). The calculations in this report are based on data provided by a third party. The accuracy of this report is dependent on the accuracy of the data provided. End user environment and application including but not limited to voltage variation and dirt accumulation can cause actual photometric performance to differ from the performance calculated using the data provided. This report is provided without warranty as to accuracy, completeness, reliability or otherwise. In no event will Access Fixtures be responsible for any loss resulting from use of this report.

** Dark Sky requirements may vary. 3000 Kelvin is a typical standard. 2200 Kelvin may be required. Check your local lighting ordinances. 3000 Kelvin LEDs will result in approximately 6% reduction in footcandles.

Key Points

- A photometric analysis provides a multidimensional simulation of a lighting design engineered to accomplish a application-specific outcome, in this case a pickleball complex that meets sporting standards. The criteria for each photometric varies by sport, application, municipal code, safety standard, structural restrictions, and personal preferences. We use Illuminating Engineering Society (IES) standards as well as specialist expertise when engineering lighting plans.

- Each sport has different lighting requirements with regard to footcandles, max/min ratio, and the location, height and angle of the fixtures.

- Important Sports Factors

- Footcandles:

Simply put, this is a unit of measurement for the amount of light projected onto a specific surface. More footcandles are required for fast moving sports with small balls such as hockey, tennis, and pickleball because it is more difficult to see the object in motion. Fewer footcandles are required for sports with large and/or slower moving balls such as basketball and bocce ball because it is easier to see the moving object.

- Max/Min:

A measure of how evenly the light is distributed on a specific surface. Lower max/min ratios are required for fast moving sports with small objects. If you have a high max/min ratio with "poor" lighting in one zone and "good" lighting in the other, when the ball is in motion you could lose sight of it when turning your head. Alternatively, if you had "good" light in one zone and "great" light in another, you would *still* lose track of the ball when trackng from zone to zone. *The reason for this is because, regardless of how many footcandles of light there are, if there is a contrast between two areas, your pupils will dilate and you can lose sight of your target.*

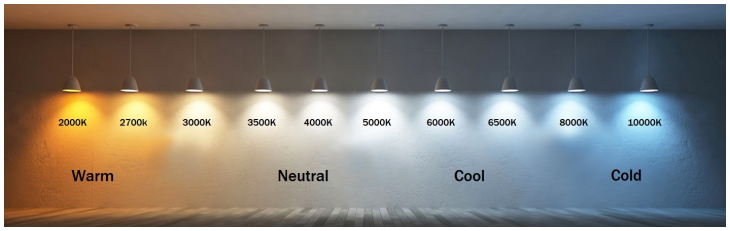
- Pole and fixture height, location and angles:

These factors vary based on the direction the light needs to be projected toward or restricted from as well as the game style, player body mechanics, and glare that may interfere with a players ability to perform. *If a sport requires that a player look upward, directly into the lighting fixture, they will experience discomfort due to glare and will be unable to play properly if light is not diffused.*

- Lighting Factors

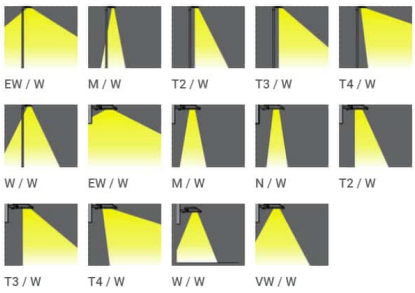
- Kelvin:

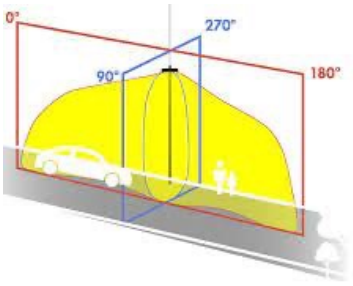
This is a measure of the color "warmth". Most applications use between 3000k-5000k.

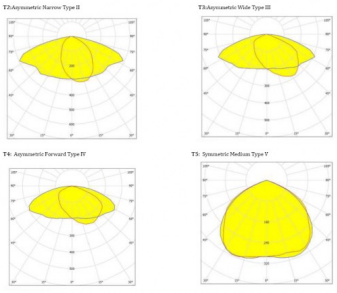


- Optics:

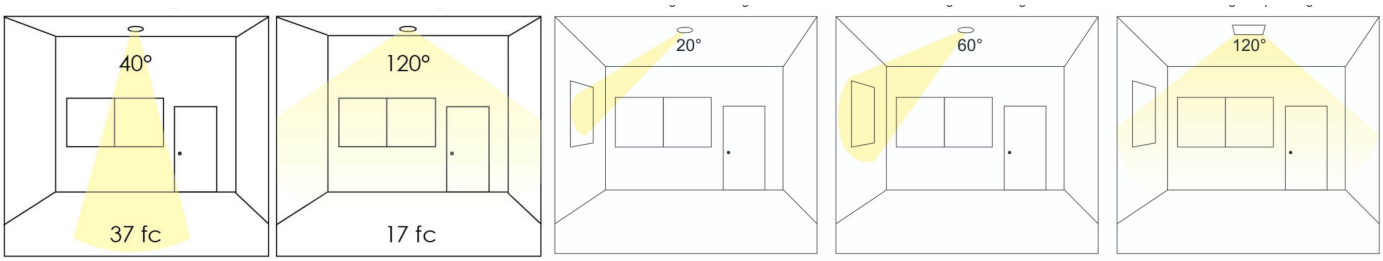
There are many types of optics that project light in unimaginable ways. Sometimes its spherical, other times it's tubular, other times it is oblong. Furthermore, optics dictate the directions in which light is cast to ensure it's hitting the correct areas efficiently and without excessive light trespass.







Footcandle Factors: Distance from light source, angle, optics, wattage, and kelvin.



This shows how optics change the number of footcandles on the floor. It also shows how optics affect light distribution. You needed specialized optics to achieve the fc and Max/Min ratio presented in this photometric study.

Operator
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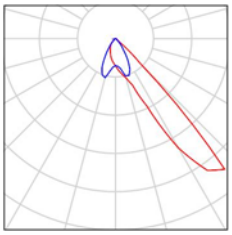
Pickleball Complex / Luminaire parts list

32 Pieces

AAF88XPAD360-T4VVSB-50K-3535F
Article No.:
Luminous flux (Luminaire): 40702 lm
Luminous flux (Lamps): 40686 lm
Luminaire Wattage: 344.4 W
Luminaire classification according to CIE: 100
CIE flux code: 82 96 99 100 100
Fitting: 1 x NICHIA 3535F 5000K (Correction Factor 1.000).

See our luminaire catalog for an image of the luminaire.



Operator
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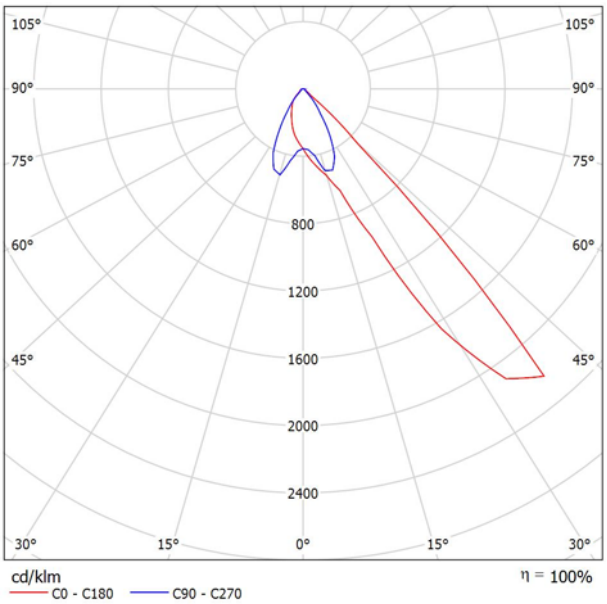
AF88XPAD360-T4VVSB-50K-3535F / Luminaire Data Sheet

See our luminaire catalog for an image of the luminaire.

Luminous emittance 1:



Luminaire classification according to CIE: 100
CIE flux code: 82 96 99 100 100

Due to missing symmetry properties, no UGR table can be displayed for this luminaire.

Operator
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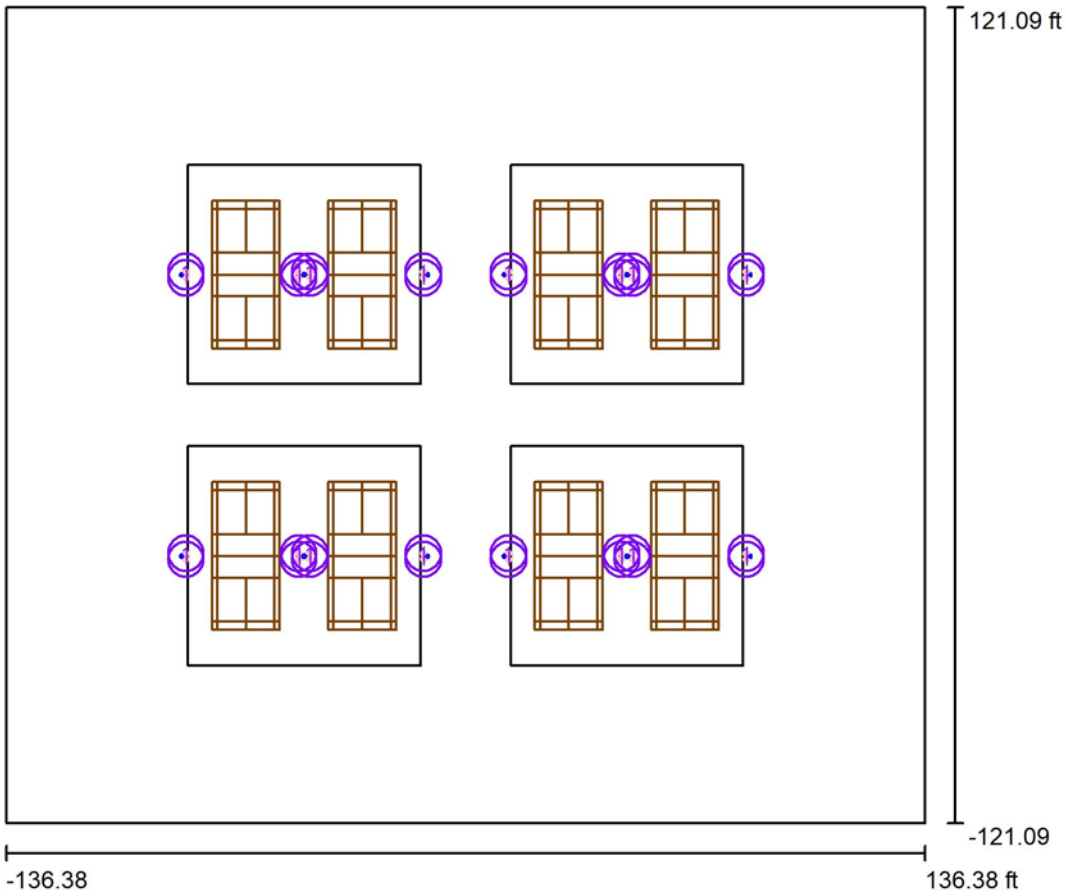
Exterior Scene 1 / Planning data



Maintenance factor: 0.90, ULR (Upward Light Ratio): 1.0%

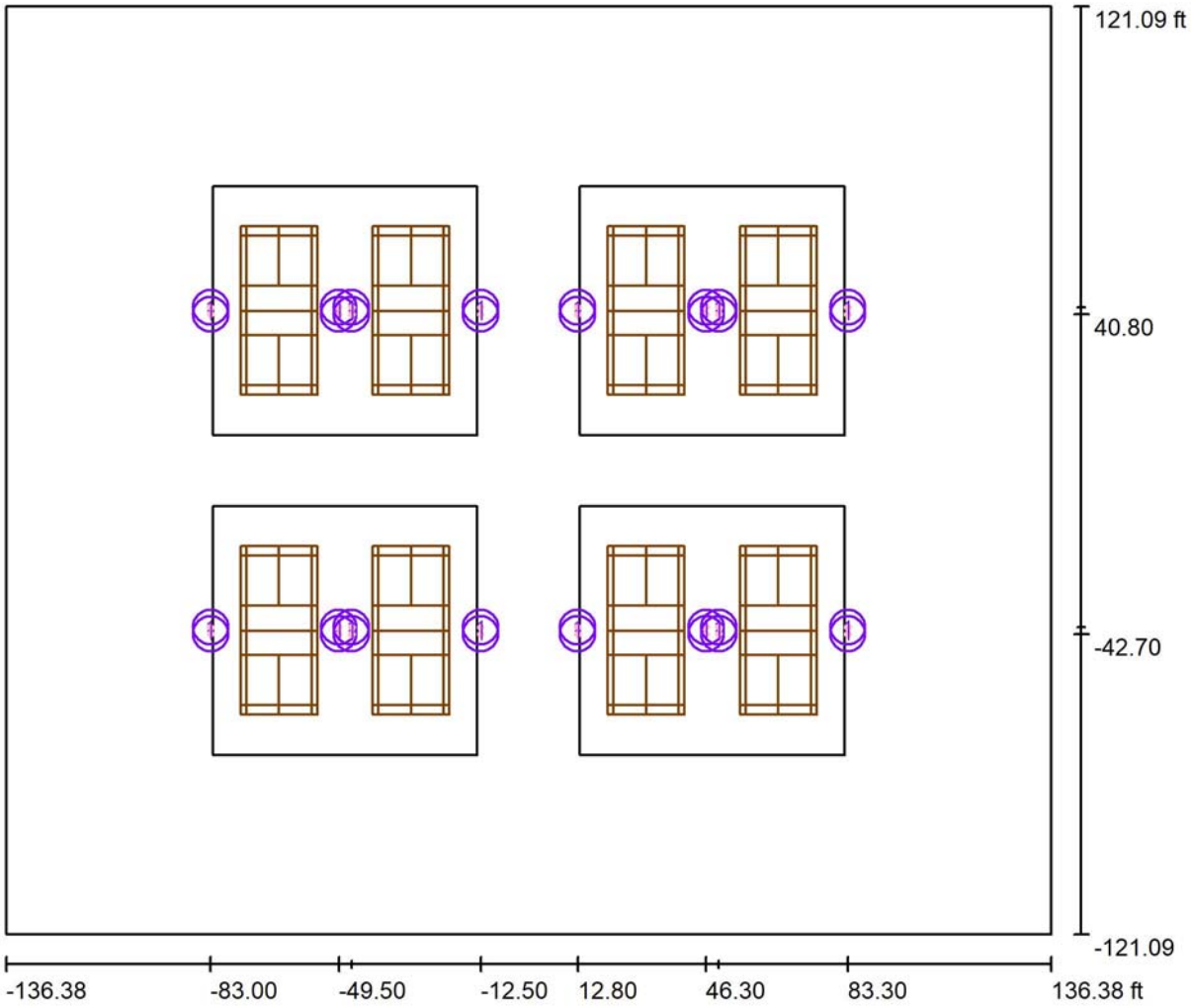
Scale 1:685

Luminaire Parts List

No.	Pieces	Designation (Correction Factor)	Φ (Luminaire) [lm]	Φ (Lamps) [lm]	P [W]
1	32	AF88XPAD360-T4VVSB-50K-3535F	40702	40686	344.4
		(1.000)	Total: 1302470	Total: 1301952	11021.3

Operator
Telephone
Fax
e-Mail

Exterior Scene 1 / Luminaires (layout plan)



Scale 1 : 595

Luminaire Parts List

No.	Pieces	Designation
1	32	AF88XPAD360-T4VVSB-50K-3535F

Operator
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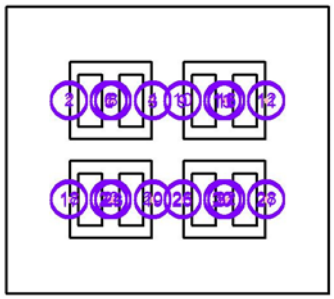
Exterior Scene 1 / Luminaires (coordinates list)

AF88XPAD360-T4VVSB-50K-3535F

40702 lm, 344.4 W, 1 x 1 x NICHIA 3535F 5000K (Correction Factor 1.000).



No.	Position [ft]			Rotation [°]		
	X	Y	Z	X	Y	Z
1	-83.000	40.800	25.000	0.0	-20.0	-50.0
2	-83.000	42.600	25.000	0.0	-20.0	50.0
3	-12.500	40.800	25.000	0.0	-20.0	-130.0
4	-12.500	42.600	25.000	0.0	-20.0	130.0
5	-49.500	40.800	25.000	0.0	-20.0	-130.0
6	-49.500	42.600	25.000	0.0	-20.0	130.0
7	-46.200	40.800	25.000	0.0	-20.0	-50.0
8	-46.200	42.600	25.000	0.0	-20.0	50.0
9	12.800	40.800	25.000	0.0	-20.0	-50.0
10	12.800	42.600	25.000	0.0	-20.0	50.0
11	83.300	40.800	25.000	0.0	-20.0	-130.0
12	83.300	42.600	25.000	0.0	-20.0	130.0
13	46.300	40.800	25.000	0.0	-20.0	-130.0
14	46.300	42.600	25.000	0.0	-20.0	130.0
15	49.600	40.800	25.000	0.0	-20.0	-50.0
16	49.600	42.600	25.000	0.0	-20.0	50.0
17	-83.000	-42.700	25.000	0.0	-20.0	-50.0
18	-83.000	-40.900	25.000	0.0	-20.0	50.0
19	-12.500	-42.700	25.000	0.0	-20.0	-130.0
20	-12.500	-40.900	25.000	0.0	-20.0	130.0
21	-49.500	-42.700	25.000	0.0	-20.0	-130.0
22	-49.500	-40.900	25.000	0.0	-20.0	130.0
23	-46.200	-42.700	25.000	0.0	-20.0	-50.0
24	-46.200	-40.900	25.000	0.0	-20.0	50.0
25	12.800	-42.700	25.000	0.0	-20.0	-50.0
26	12.800	-40.900	25.000	0.0	-20.0	50.0
27	83.300	-42.700	25.000	0.0	-20.0	-130.0
28	83.300	-40.900	25.000	0.0	-20.0	130.0

Operator
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Exterior Scene 1 / Luminaires (coordinates list)

No.	Position [ft]			Rotation [°]		
	X	Y	Z	X	Y	Z
29	46.300	-42.700	25.000	0.0	-20.0	-130.0
30	46.300	-40.900	25.000	0.0	-20.0	130.0
31	49.600	-42.700	25.000	0.0	-20.0	-50.0
32	49.600	-40.900	25.000	0.0	-20.0	50.0

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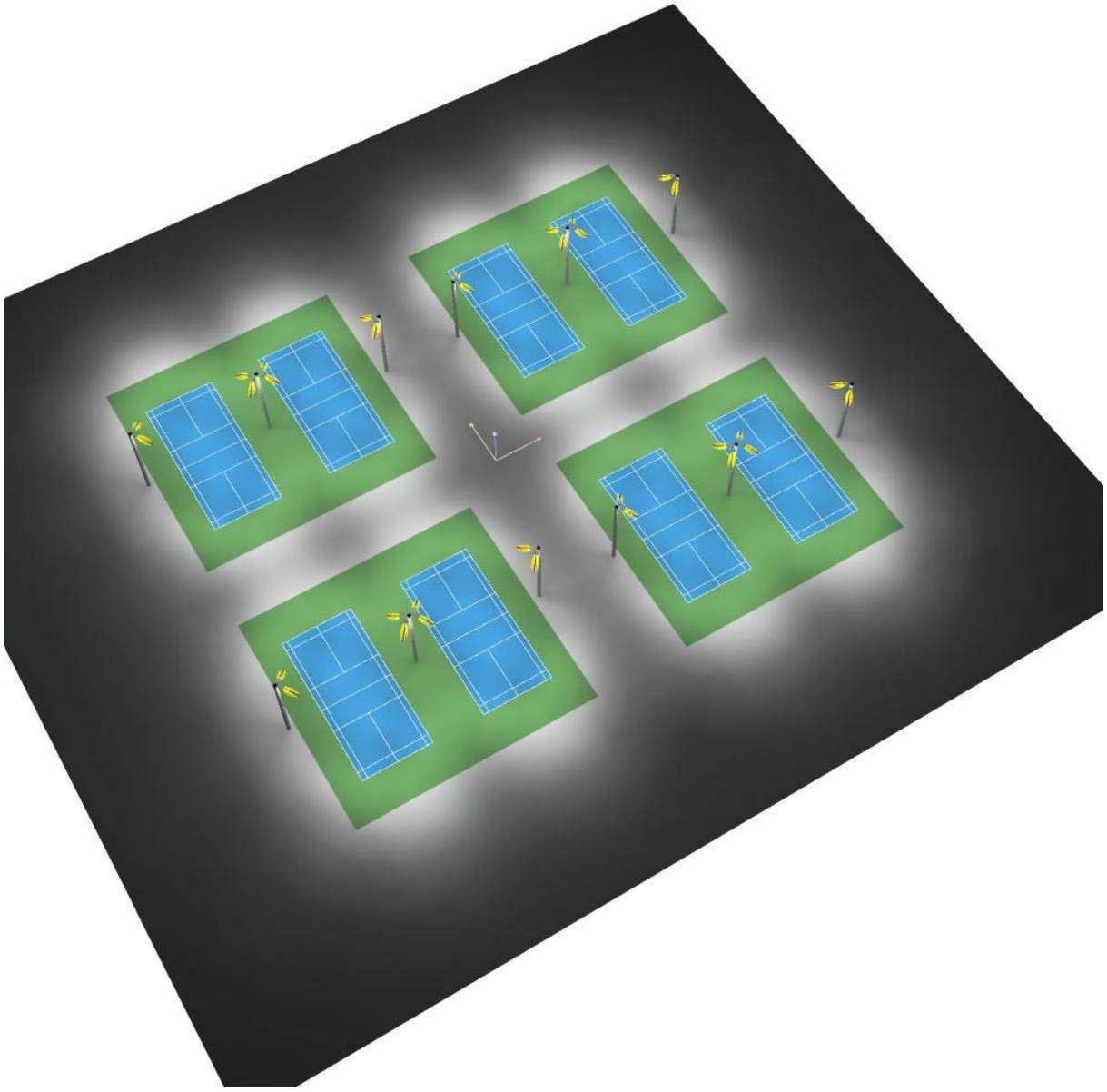
Exterior Scene 1 / 3D Rendering



Operator
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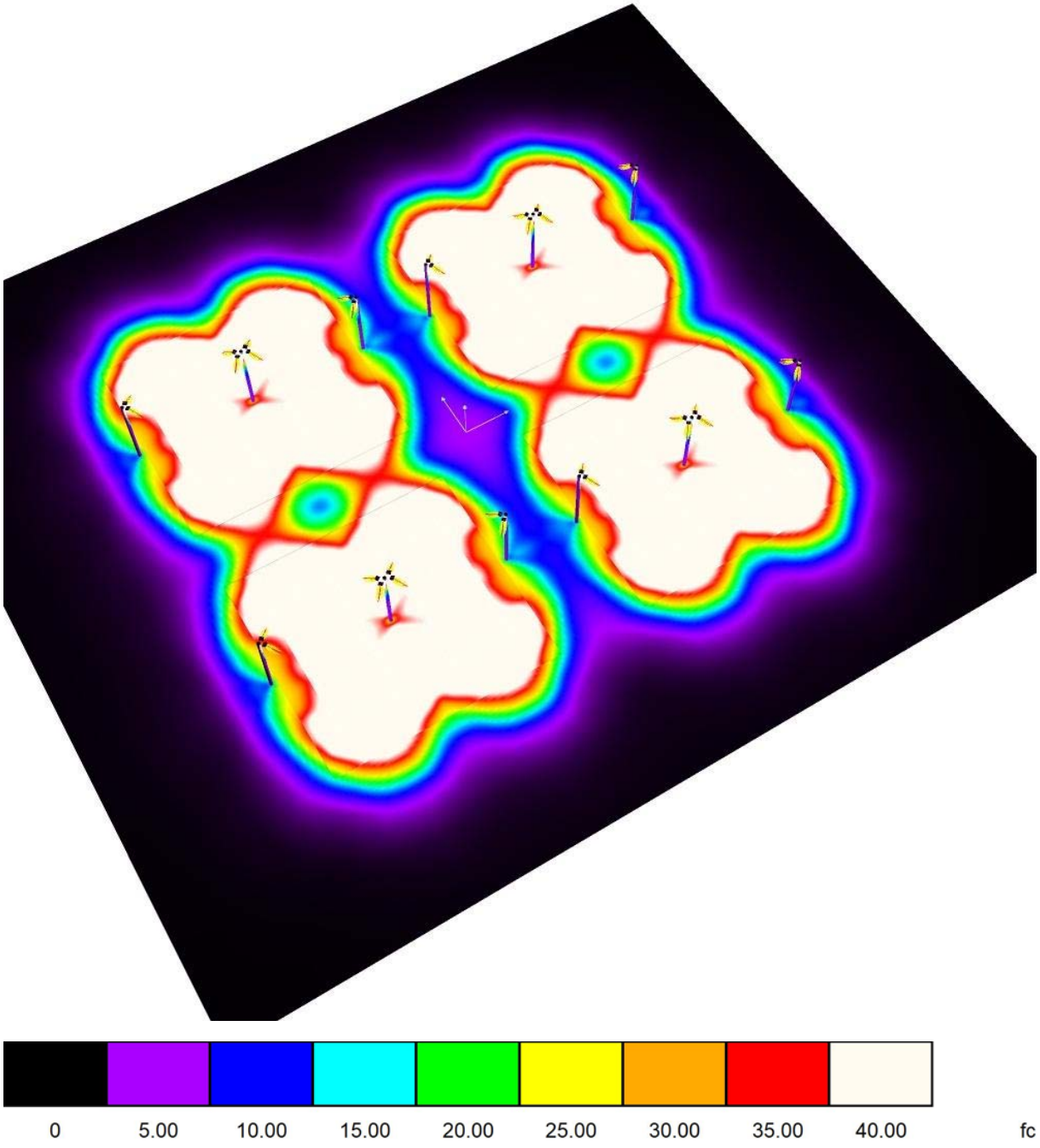
Exterior Scene 1 / False Colour Rendering



Operator
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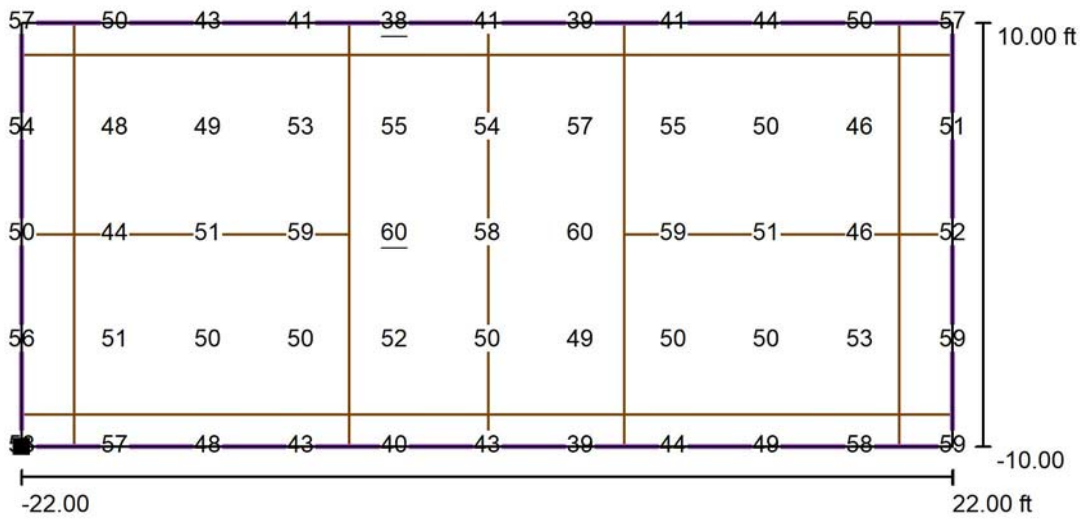
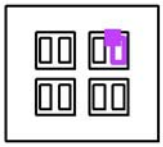
e-Mail

Exterior Scene 1 / Pickleball 1 Calculation Grid (PA) / Value Chart (E, Perpendicular)



Values in Footcandles, Scale 1 : 109

Position of surface in external scene:
Marked point: (55.150 ft, 63.742 ft, 0.000 ft)

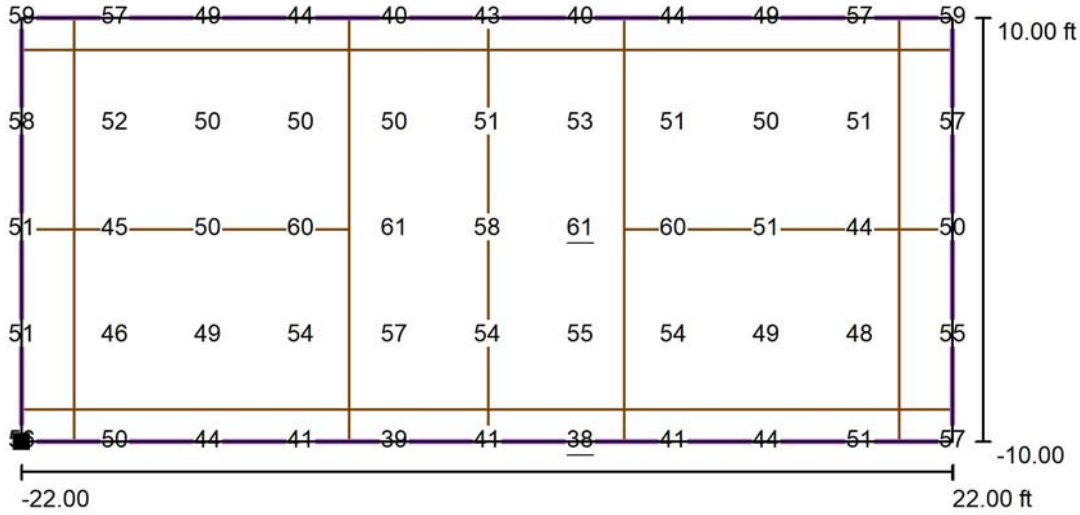


Grid: 11 x 5 Points

E_{av} [fc]	E_{min} [fc]	E_{max} [fc]	u0	E_{max} / E_{min}
50	38	60	1.32	1.58

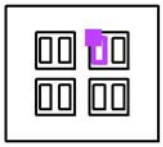
Operator
Telephone
Fax
e-Mail

Exterior Scene 1 / Pickleball 2 Calculation Grid (PA) / Value Chart (E, Perpendicular)



Values in Footcandles, Scale 1 : 109

Position of surface in external scene:
Marked point: (20.650 ft, 63.742 ft, 0.000 ft)



Grid: 11 x 5 Points

E_{av} [fc]	E_{min} [fc]	E_{max} [fc]	u0	E_{max} / E_{min}
51	38	61	1.34	1.61

Operator
Telephone
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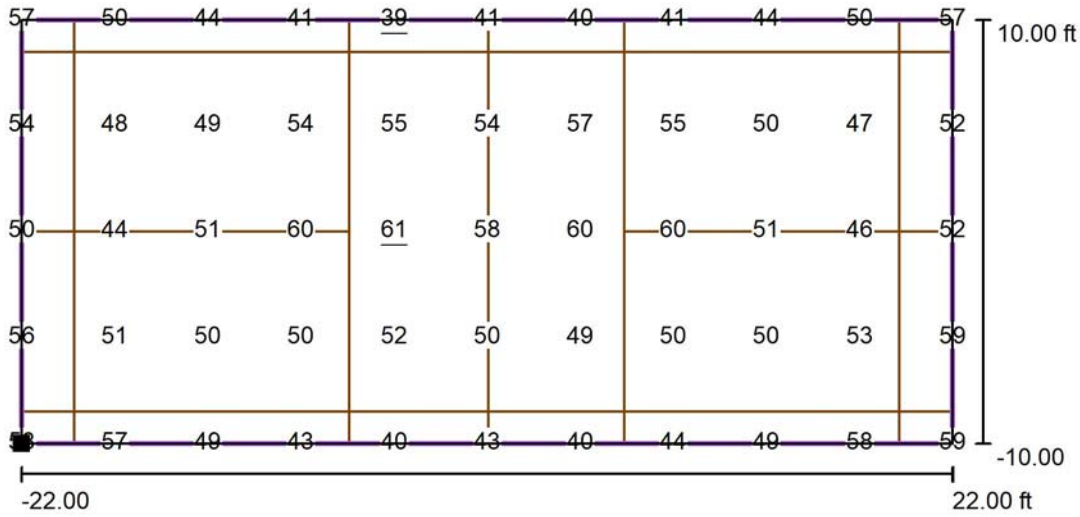
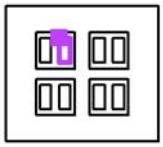
e-Mail

Exterior Scene 1 / Pickleball 3 Calculation Grid (PA) / Value Chart (E, Perpendicular)



Values in Footcandles, Scale 1 : 109

Position of surface in external scene:
Marked point: (-40.648 ft, 63.742 ft, 0.000 ft)

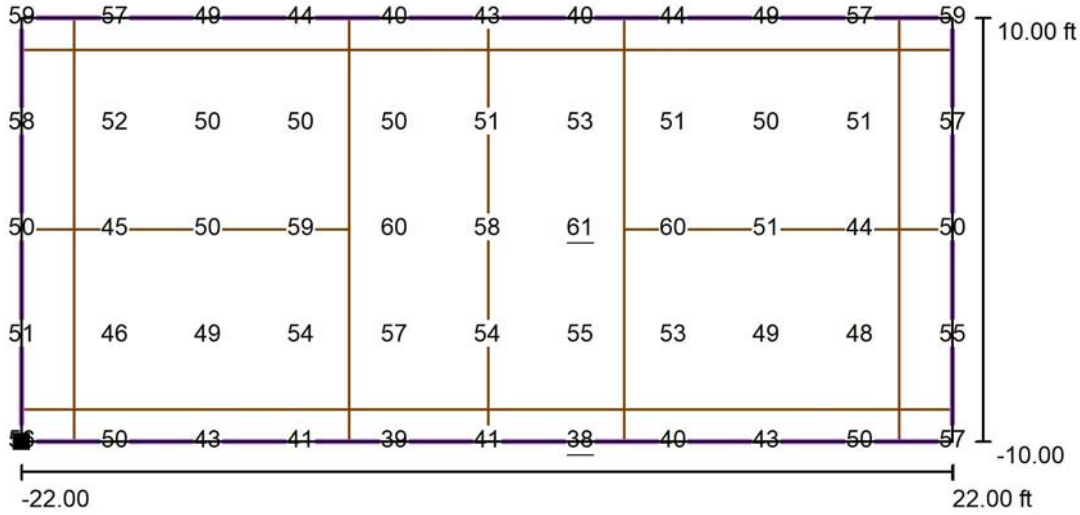


Grid: 11 x 5 Points

E_{av} [fc]	E_{min} [fc]	E_{max} [fc]	u0	E_{max} / E_{min}
51	39	61	1.31	1.56

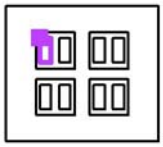
Operator
Telephone
Fax
e-Mail

Exterior Scene 1 / Pickleball 4 Calculation Grid (PA) / Value Chart (E, Perpendicular)



Values in Footcandles, Scale 1 : 109

Position of surface in external scene:
Marked point: (-75.148 ft, 63.742 ft, 0.000 ft)

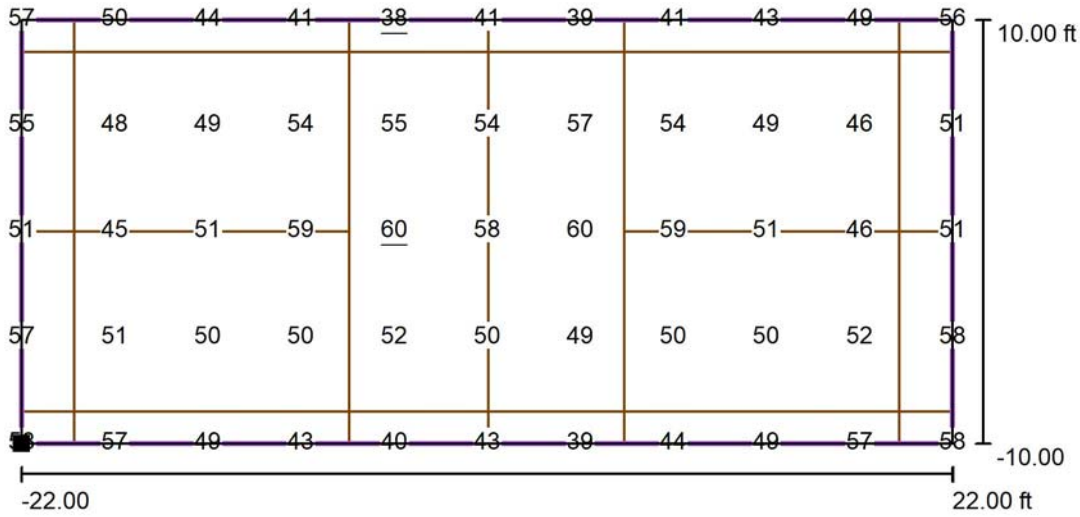


Grid: 11 x 5 Points

E_{av} [fc]	E_{min} [fc]	E_{max} [fc]	u0	E_{max} / E_{min}
50	38	61	1.32	1.61

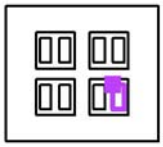
Operator
Telephone
Fax
e-Mail

Exterior Scene 1 / Pickleball 5 Calculation Grid (PA) / Value Chart (E, Perpendicular)



Values in Footcandles, Scale 1 : 109

Position of surface in external scene:
Marked point: (55.150 ft, -19.754 ft, 0.000 ft)

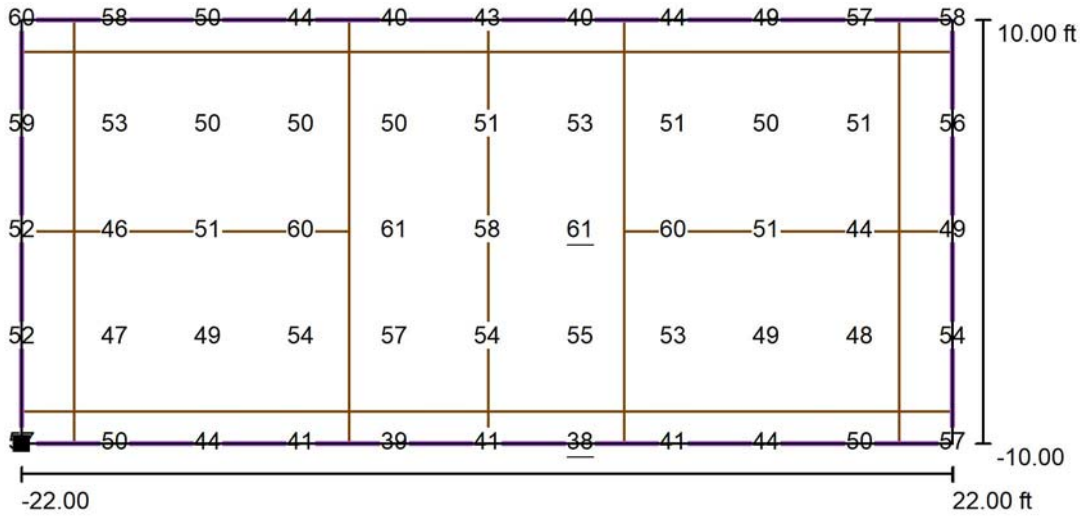


Grid: 11 x 5 Points

E_{av} [fc]	E_{min} [fc]	E_{max} [fc]	u0	E_{max} / E_{min}
50	38	60	1.32	1.58

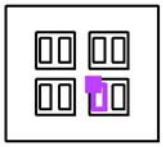
Operator
Telephone
Fax
e-Mail

Exterior Scene 1 / Pickleball 6 Calculation Grid (PA) / Value Chart (E, Perpendicular)



Values in Footcandles, Scale 1 : 109

Position of surface in external scene:
Marked point: (20.650 ft, -19.754 ft, 0.000 ft)

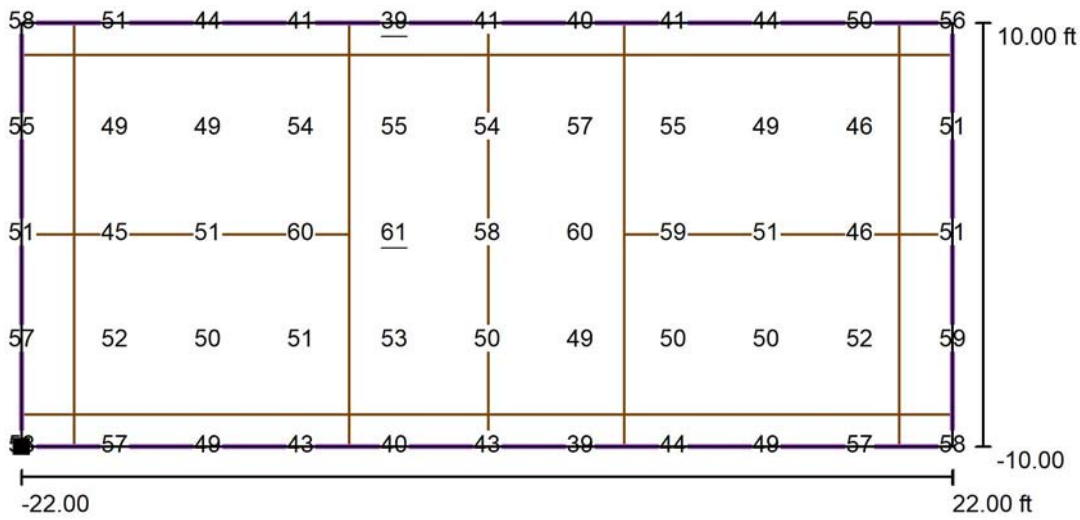


Grid: 11 x 5 Points

E_{av} [fc]	E_{min} [fc]	E_{max} [fc]	u0	E_{max} / E_{min}
51	38	61	1.34	1.61

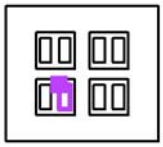
Operator
Telephone
Fax
e-Mail

Exterior Scene 1 / Pickleball 7 Calculation Grid (PA) / Value Chart (E, Perpendicular)



Values in Footcandles, Scale 1 : 109

Position of surface in external scene:
Marked point: (-40.648 ft, -19.754 ft, 0.000 ft)

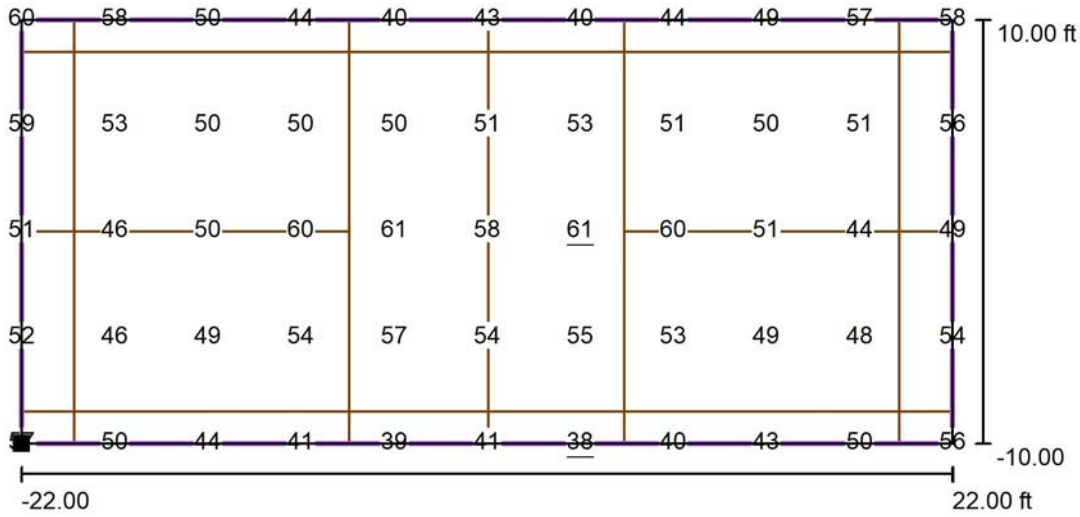


Grid: 11 x 5 Points

E_{av} [fc]	E_{min} [fc]	E_{max} [fc]	u0	E_{max} / E_{min}
51	39	61	1.31	1.56

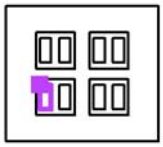
Operator
Telephone
Fax
e-Mail

Exterior Scene 1 / Pickleball 8 Calculation Grid (PA) / Value Chart (E, Perpendicular)



Values in Footcandles, Scale 1 : 109

Position of surface in external scene:
Marked point: (-75.148 ft, -19.754 ft, 0.000 ft)



Grid: 11 x 5 Points

E_{av} [fc]	E_{min} [fc]	E_{max} [fc]	u0	E_{max} / E_{min}
50	38	61	1.32	1.61