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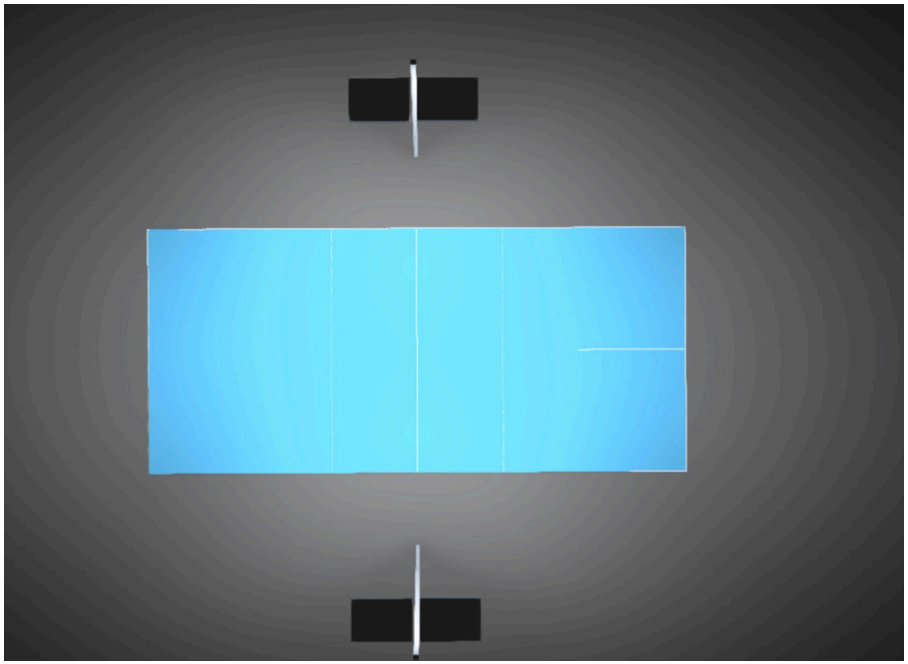
SOLAR PICKLEBALL LIGHTING – Packages and Photometric Studies

Pickleball is rapidly growing across the U.S., increasing the need for well-lit courts that support evening play. Access Fixtures offers specialized LED lighting solutions that meet both performance and regulatory standards. To meet this demand sustainably, solar-powered lighting packages featuring the SUNA LED fixture provide reliable, off-grid illumination —ideal for new installations, remote sites, or cost-effective retrofits. Whether you're hosting tournaments or upgrading a local court, quality LED lighting ensures visibility, safety, and an enhanced playing experience. Investing in professional lighting design creates a court optimized for performance and comfort.



Pickleball Lighting Requiements

Average Footcandles:
Recreational: 20 to 30 Average Footcandles
Club / Competition Level: 30 to 50 Average Footcandles
Broadcast: 75+ Average footcandles
Uniform Lighting: Max/Min ratio of less than 2.0
Mounting Height: 25ft, 20ft standard

Proper Planning

Proper planning is essential to meet the lighting requirements for your Pickleball court. Access Fixtures' lighting specialists and engineers can deliver a pre-engineered lighting package or create a custom photometric analysis based on the specific level of play. Ensure your court meets both safety and performance standards—contact a lighting specialist today.

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SUNA 100-200
LED SOLAR LIGHTS

L70 25°C 150,000 Hours

Ready to revolutionize your volleyball court with an eco-friendly lighting solution that doesn't have an electric bill? Imagine every spike, dig, and block illuminated by consistent, brilliant light, all powered entirely by the sun! Access Fixtures' comprehensive solar lighting package, featuring two 20 and 25-foot-high poles, two bullhorns, and four SUNA solar sports lights, isn't just about significant energy savings; it's about delivering a superior playing experience with no wires or electricians, and unwavering reliability.

Unmatched Visibility for Superior Performance:
These solar lighting package isn't just bright; it's designed for clarity. Delivering a range of footcandles with impressive max/min ratios. You get bright and even illumination across the entire court. This means players can track fast-moving balls with ease, and spectators will enjoy every thrilling moment without shadows or blinding spots.

Zero Wiring, Zero Energy Bills:
Say goodbye to complex wiring, disruptive trenching, and endless utility bills. Installation is incredibly fast, significantly cutting both upfront labor and long-term energy costs. Whether you're building a new court or upgrading an existing one, our modular design makes expansion easy and maintenance minimal, giving you more time to play and less time worrying about logistics.

Built to Last, Whatever the Weather:
Pickleball courts require lighting that can withstand the elements, and this system delivers. Each SUNA solar sports light features an EXTREME-LIFE L70 rating of 150,000 hours, IP66 waterproofing, and an IK08 impact resistance rating, ensuring reliable performance in all weather conditions. With durable monocrystalline solar panels and long-lasting lithium batteries, this high-performance lighting system is engineered for long-term dependability.

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FIXTURE DURABILITY

- **Corrosion-Resistant Construction :** Built with a robust aluminum alloy housing paired with 316 stainless steel components for enhanced resistance to rust and corrosion

- **IP66 Rating :** Offers complete protection against dust and strong jets of water, making it suitable for demanding outdoor environments

- **IK08 Impact Rating:** Certified against impacts up to 5 joules—able to withstand accidental strikes or forces commonly encountered in public or industrial settings

- **Secure Mounting System:** Utilizes a heavy-duty slip fitter and aluminum cage design that holds the fixture firmly in place, even in high wind or remote locations

- **Wide Temperature Tolerance:** Engineered to perform reliably from –30 °C to +45 °C (–22 °F to +113 °F), making it ideal for both hot and cold outdoor conditions.

- **High-Grade Battery & Electronics:** Features a replaceable $LiFePO_4$ rechargeable battery and MPPT (or Hybrid MPPT) solar controller designed to withstand repeated charge cycles and maintain performance over time

- **Longevity & Resilience Certification:** Built to last with Philips Lumileds 5050 LEDs rated for L70 at 150,000 hours, and supported by a 5-year limited warranty.

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PERFORMANCE DATA

	100w~200w
	190 lm/w
LEDS	Philips Lumileds
DIM	PIR & Microwave & Timer Dimming
Control	MPPT Controller
CCT	3000~5000K
IES	60×100° / 70×135° / 75×150° / 80×150° / 110° / 150°
	IP66
IK	IK08
	Monocrystalline silicon photovoltaic panels
	LiFeP04 battery
	Slip fitter
	Operating Temperature: -20°C to + 60°C /-4° F to 140°F, (Charge: 0°C to 60°C / 32°F to 140°F, Discharge: -20°C to 60°C / -4°F to 140°F) and Storing Temperature:-20°C to +60°C/-4°F to 140°F

ACCESSORIES

NEMA Socket(7pins) + Shorting Cap for IOT Smart System)

AC Charger

SUNA EPA

Model	Size	Horizontal Angle (°)	Single Fixture EPA (ft2)
100W	35.83" x 31.87" x 8.66"	0	0.96
		15	2.06
		30	3.98
		45	5.63
120W	43.31" x 31.87" x 8.66"	0	0.96
		15	2.49
		30	4.81
		45	6.80
150W	45.28" x 36.22" x 8.66"	0	1.09
		15	2.96
		30	5.71
		45	8.08
180W	45.28" x 41.34" x 8.66"	0	1.25
		15	1.19
		30	2.30
		45	3.25
200W	45.28" x 45.28" x 8.66"	0	1.37
		15	3.70
		30	7.14
		45	10.10

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SPECIFICATIONS

Part #	Power	Modules	LED Efficiency	Solar Panel	Battery	Dimensions
AF44XEL-TASTII-100	100w	2	190 lm/w	100W/36V	25.6V/24AH	35.83" × 26.77" × 7.87"
AF44XEL-TASTII-120	120w	2	190 lm/w	140W/36V	25.6V/24AH	38.98" × 31.89" × 7.87"
AF44XEL-TASTII-150	150w	3	190 lm/w	175W/36V	25.6V/30AH	45.28" × 34.65" × 7.87"
AF44XEL-TASTII-180	180w	3	190 lm/w	200W/36V	25.6V/36AH	45.28" × 39.76" × 7.87"
AF44XEL-TASTII-200	200w	4	190 lm/w	220W/36V	25.6V/42AH	45.28" × 43.31" × 7.87"

The solar panel and battery configuration is based on 6 hours charging time.

B.U.G Rating - **B**ack-Light / **U**p-Light / **G**lare

SUNA B.U.G RATING							
WATTS (W)	**Type I-VS (60X100D)**	**Type II-S (70X135D)**	**Type II- M (65X155D)**	**Type III-S (80X150D)**	**Type III-M (75X150D)**	**Type VS- 110D**	**Type VS- 150D**
100w	B:4 U:0 G:1	B:3 U:0 G:2	B:3 U:0 G:3	B:3 U:0 G:3	B:3 U:0 G:3	B:4 U:0 G:1	B:4 U:0 G:2
120w	B:4 U:0 G:1	B:3 U:0 G:2	B:3 U:0 G:3	B:3 U:0 G:3	B:3 U:0 G:3	B:4 U:0 G:1	B:4 U:0 G:2
150w	B:5 U:0 G:1	B:3 U:0 G:2	B:3 U:0 G:3	B:3 U:0 G:3	B:3 U:0 G:3	B:5 U:0 G:1	B:4 U:0 G:2
180w	B:5 U:0 G:1	B:3 U:0 G:2	B:4 U:0 G:3	B:4 U:0 G:3	B:4 U:0 G:3	B:5 U:0 G:1	B:5 U:0 G:2
200w	B:5 U:0 G:1	B:4 U:0 G:3	B:4 U:0 G:4	B:4 U:0 G:3	B:4 U:0 G:4	B:5 U:0 G:1	B:4 U:0 G:3

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SOLAR PANEL SPECIFICATION

Maximum Power (Pmax/W)	160	250
Open Circuit Voltage(Voc/V)	43.2	
Short Circuit Current(Isc/A)	4.65	7.15
Maximun Power Voltage(Vmp/V)	36V	
Maximum Power Current(Imp/A)	4.4	6.9
Module Efficiency(%)	24	
Output Tolerance(%)	±3	
Operating Temperature	104°F - +185°F	
Wind Load/Snow Load	2400pa/5400pa	
NOCT	45±2°C	
Temp Coefficient of Isc	+0.046%/°C	
Temp Coefficient of Voc	-0.275%/°C	
Temp Coefficient of Pmax	-0.350%/°C	

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BATTERY SPECIFICATION

Capacity	24Ah	30Ah	36Ah	42Ah	48Ah
Nominal Voltage	25.6V				
Charging Voltage	29.2V				
Load Voltage	≥24V				
Standard charging method	5A(CC)charging to 29.2V; After CV(DC 29.2V) Charge until charging current≤0.02C				
Max charging current	≤20A				
Max discharge current	≤20A				
Over current	≤20A				
Cut off discharge Voltage	20V				
Operating temperature range	Charge: 32°F - 140° F Discharge: -4°F - 140° F				
Storage	-4°F - 140° F				
Battery category	LiFePO4				
Cycle life	≥4000				

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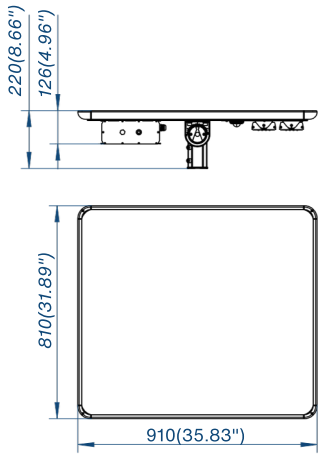
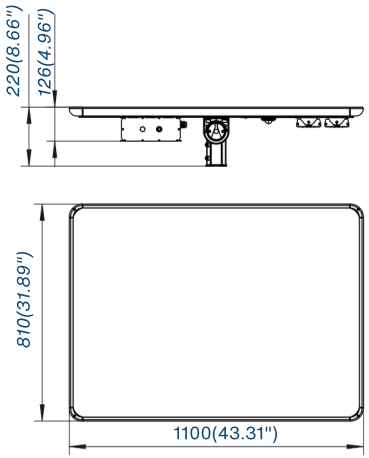
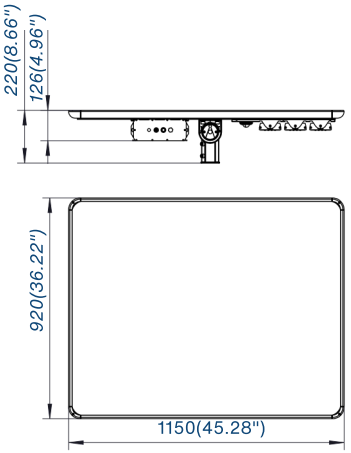
SUNA - 100w



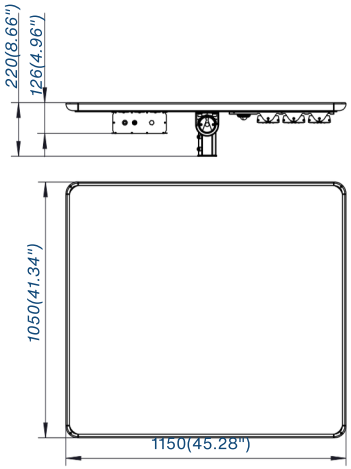
SUNA - 120w



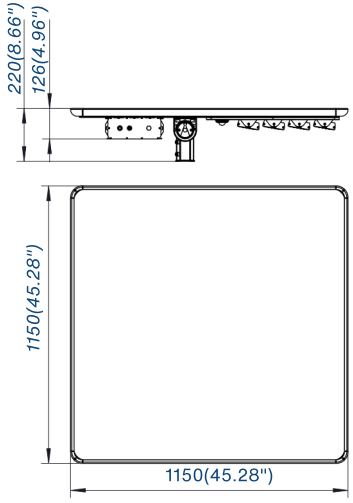
SUNA - 150w



SUNA - 180w



SUNA - 200w



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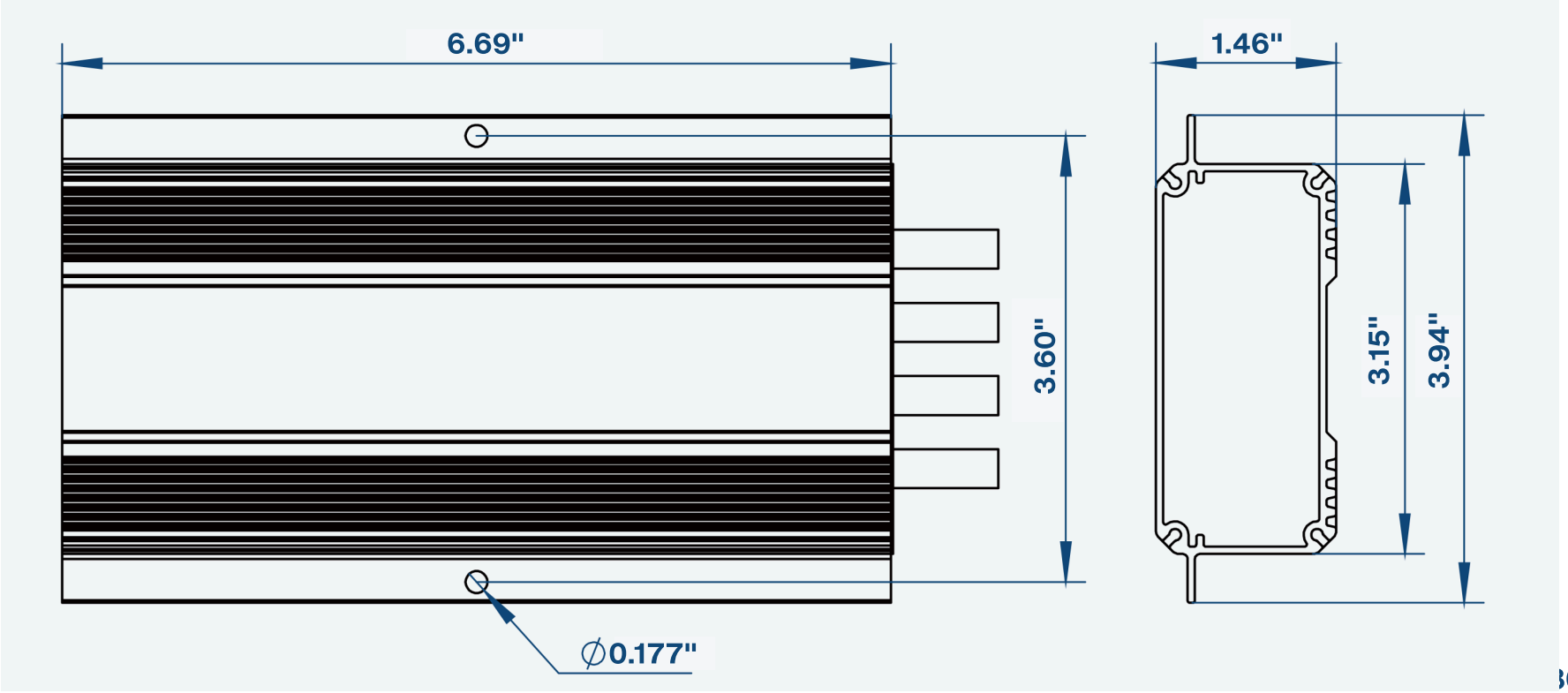
SPECIFICATIONS

Model	Dimension	N.W
AF44XEL-CNTLR	6.69'' X 3.94'' X 1.46''	2.20lbs



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THE DC CHARGE PORT

A DC charge port is offered as an option to be integrated into the SUNA, ensuring the battery remains charged even during extended periods in the warehouse.

INSTALLING YOUR SUNA FIXTURE

1. Due to variations in longitude and latitude at the installation site, the angle at which the sun's rays illuminate differs. During installation, it is crucial for the solar panel to be oriented towards the sun precisely at 12:00 noon. However, often due to factors like road direction and light poles, achieving this alignment becomes challenging. The solar panel must still maintain a horizontal position even if it can't be ideally oriented towards the sun at noon due to road lighting requirements.

Several conditions can lead to sub optimal functioning of standard lamps. Prior to making a purchase, it's important to communicate these factors to the sales person and consider increasing the solar panel's power capacity:

a. Any deviation below the horizontal plane of the solar panel, relative to the solar irradiation angle, will
result in a significant decline in the solar panel's power generation efficiency.

b. When installing solar lamps and lanterns, it's essential to avoid any obstacles that might block sunlight, such as trees or buildings.

c. Natural elements like rain, ice, snow, dust, clouds, and bird droppings can reduce the solar panel's power generation efficiency.

Ensuring that the solar panel remain sun obstructed by carriers like trees and buildings, and accounting for factors such as the solar panel's angle and external elements, are vital for optimal performance.

2. Install lamps at a considerable distance from areas prone to strong electromagnetic interference, such as high-voltage cables and high-power wireless transmission towers. These sources could potentially disrupt the lamp control system, leading to malfunctions and improper operation.

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INFRARED REMOTE CONTROL

Remote Control Distance: ≤ 35 Feet / 12 Meters

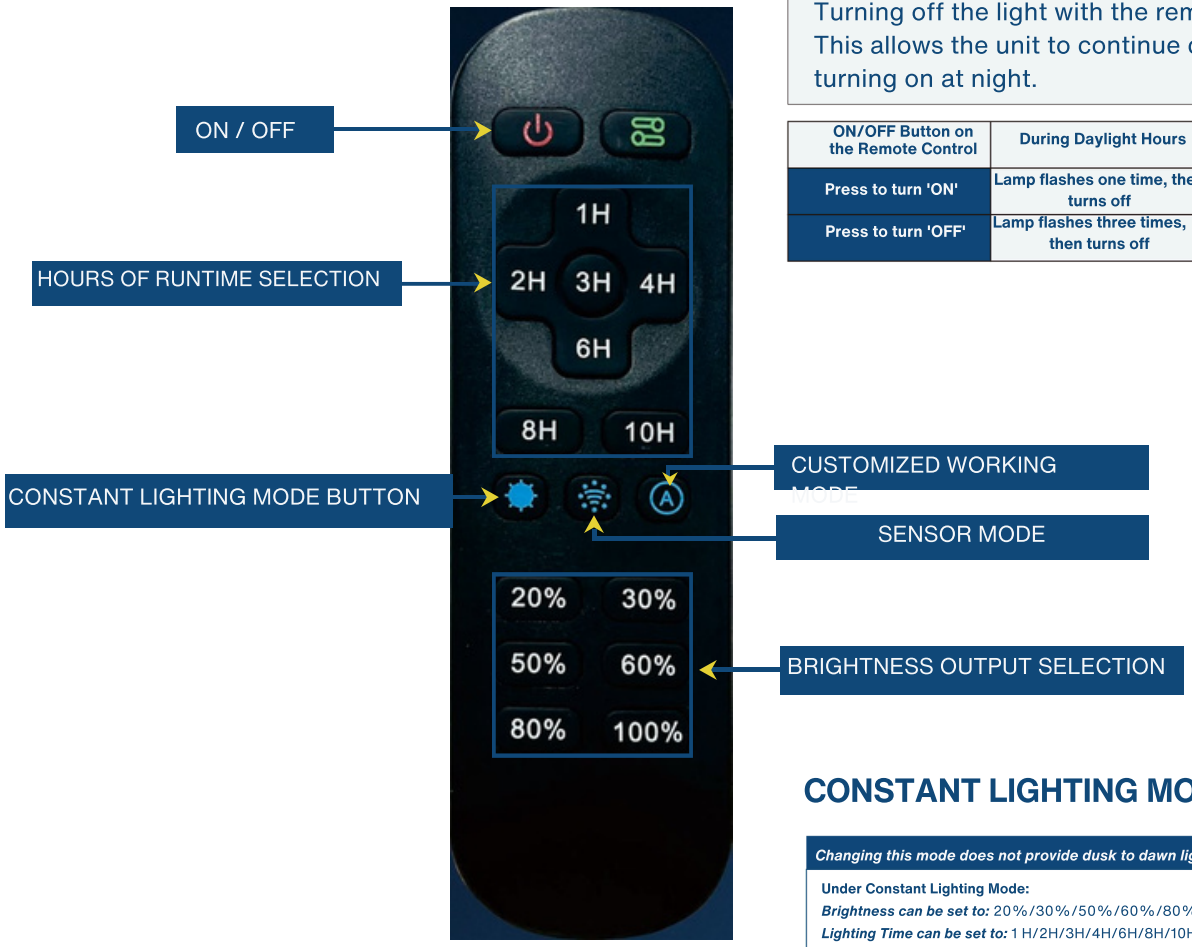
Power Button:
Turning off the light with the remote control. This allows the unit to continue charging without turning on at night.

ON/OFF Button on the Remote Control	During Daylight Hours	At Night Time
Press to turn 'ON'	Lamp flashes one time, then turns off	Lamp turns on
Press to turn 'OFF'	Lamp flashes three times, then turns off	Lamp flashes three times, then turns off

TURNING THE LIGHT ON:
Press and hold the **Power Button** The fixture will light up for 3 seconds then turn off; which indicates that the light and the remote control have been successfully activated.

TURNING THE LIGHT OFF:
Press the **Power Button** to completely turn off the light and deactivate the remote control.

SENSOR MODE:
Time and Brightness are NOT Adjustable.
For the sensor mode, press the sensor mode button, the light will operate as follows: Automatically operates at 30% brightness. When motion is detected, light increases to 100% until no motion is detected, then returns to 30% brightness.
Detects motion up to 50 feet.



CONSTANT LIGHTING MODE

Changing this mode does not provide dusk to dawn lighting.

Under Constant Lighting Mode:
Brightness can be set to: 20%/30%/50%/60%/80%/100%
Lighting Time can be set to: 1 H/2H/3H/4H/6H/8H/10H
Before setting the brightness or lighting time, press the **Constant Lighting** Mode button first, then press the Brightness or Lighting Time option desired.
OPTION 1 : **Press**
Default setting for Constant Lighting Mode:
The lamp automatically turns on at dusk and will maintain 50% brightness until dawn or until the power runs out.

Changing this mode does not provide dusk to dawn lighting.

OPTION 2: Press + Select a Brightness Button For example:

Press + Press 60%

Lamp automatically turns on at dusk and maintains 60% brightness until the power runs out.

Note: Under constant lighting mode, when you change the brightness but not the lighting time; it will keep lighting at the chosen brightness until power runs out.

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INDICATOR FUNCTIONS

There are 4 colors (green, red, blue, yellow) in the indicator light section. Each color indicates the working status of different parts of the lamp so you can easily troubleshoot your light.

Indicator Color	Indicator Status	Functions
Green Charging Indicator	Slow Flash (Flashes once every 2 seconds and keeps repeating)	MPPT charging correctly
	Fast Flash (Fast flash 3 times, then off for 2 seconds, keeps repeating)	The output voltage of the solar panel is lower than the charging voltage of the battery. (Usually because it's early morning or the solar panel is covered.)
	Off	Solar panel wiring does have a good connection.
		It's nighttime.
		Battery is fully charged.
		Battery wiring does have a good connection.
		Battery can't be charged / Faulty or old battery.
Red Battery Indicator	Off	Battery works normally.
	Slow Flash {Flash 1 time every 2 seconds, keep repeating)	Battery over discharge (Low Power).
	Constant Lighting On (Green light OFF at the same time.)	Battery is fully charged.
Blue LED Indicator	Off	LEDs work normally.
	Fast Flash (Fast flash 3 times then off for 2 seconds, keeps repeating)	LED output over-voltage.
		LEDs have short circuited.
		LEDs are disconnected.
Yellow PIR Sensor Indicator	Constant Lighting On	PIR sensor works normally motion is detected at night.
	Off	It's daytime.

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Frequently Asked Pickleball Lighting Questions:

- **What are the standard lighting requirements for pickleball courts?**

According to the USA Pickleball Association (USAPA) standards, outdoor pickleball courts require illumination from luminaires mounted on 20-foot high poles, delivering an average of 30 footcandles (fc). Competitive play may require 40-50 fc, while professional play can go up to 60-80 fc for broadcast quality. The max/min ratio, which measures light uniformity, should be 2.0 or less, ensuring extremely even light distribution across the court. This low ratio is crucial because the pickleball is small and fast-moving, making consistent visibility essential.

- **What is the ideal color temperature for pickleball lighting?**

A color temperature (CCT) of 4000K to 5000K is recommended. 4000K is a neutral white, suitable for residential or recreational courts, while 5000K, closer to daylight, is preferred for competitive or public installations for better visibility and color accuracy.

- **What is the max/min ratio, and why does it matter?**

The max/min ratio measures lighting uniformity, calculated by dividing the brightest spot's light level by the dimmest. For pickleball, a ratio below 2.0 is ideal (1.5 or less is even better) to avoid shadows or uneven spots that could impair visibility and gameplay on the smaller 20x44-foot court.

- **What should I consider regarding pole height for pickleball court lighting?**

While the USAPA recommends luminaires be mounted on 20-foot high poles, local lighting ordinances may require shorter mounting heights, sometimes as low as 16 feet.... Shorter poles might cause the ball to temporarily disappear above the lights during high arcs. The pole material (steel, aluminum, or Composite, Fiber Glass) should also be considered based on local conditions like wind speed and saltwater exposure.

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How do solar-powered pickleball court lighting systems compare to traditional grid-connected systems?

Solar-powered lighting systems offer several benefits:

- Installation Costs: Solar systems eliminate the need for costly and labor-intensive trenching for electrical wiring, potentially lowering installation expenses, although initial fixture costs might be higher due to panels and batteries

- Operational Costs: Solar lights have minimal operational costs as they use sunlight, leading to significant long-term energy savings and eliminating electricity bills. Grid-connected systems have ongoing electricity expenses.

- Energy Independence: Solar lighting provides on-site power generation, making them ideal for remote areas or locations with unreliable power grids or frequent outages.

- Environmental Impact: Solar lights reduce carbon emissions, decrease reliance on fossil fuels, and promote sustainability. Many solar fixtures are also dark sky compliant.

- Maintenance: Both require minimal maintenance, but solar systems involve cleaning panels and checking battery health, while grid-connected systems have virtually no ongoing maintenance besides fixture upkeep.

- Lifespan: Solar lighting systems can last 20-25 years with proper maintenance. Batteries typically provide reliable performance for several years.

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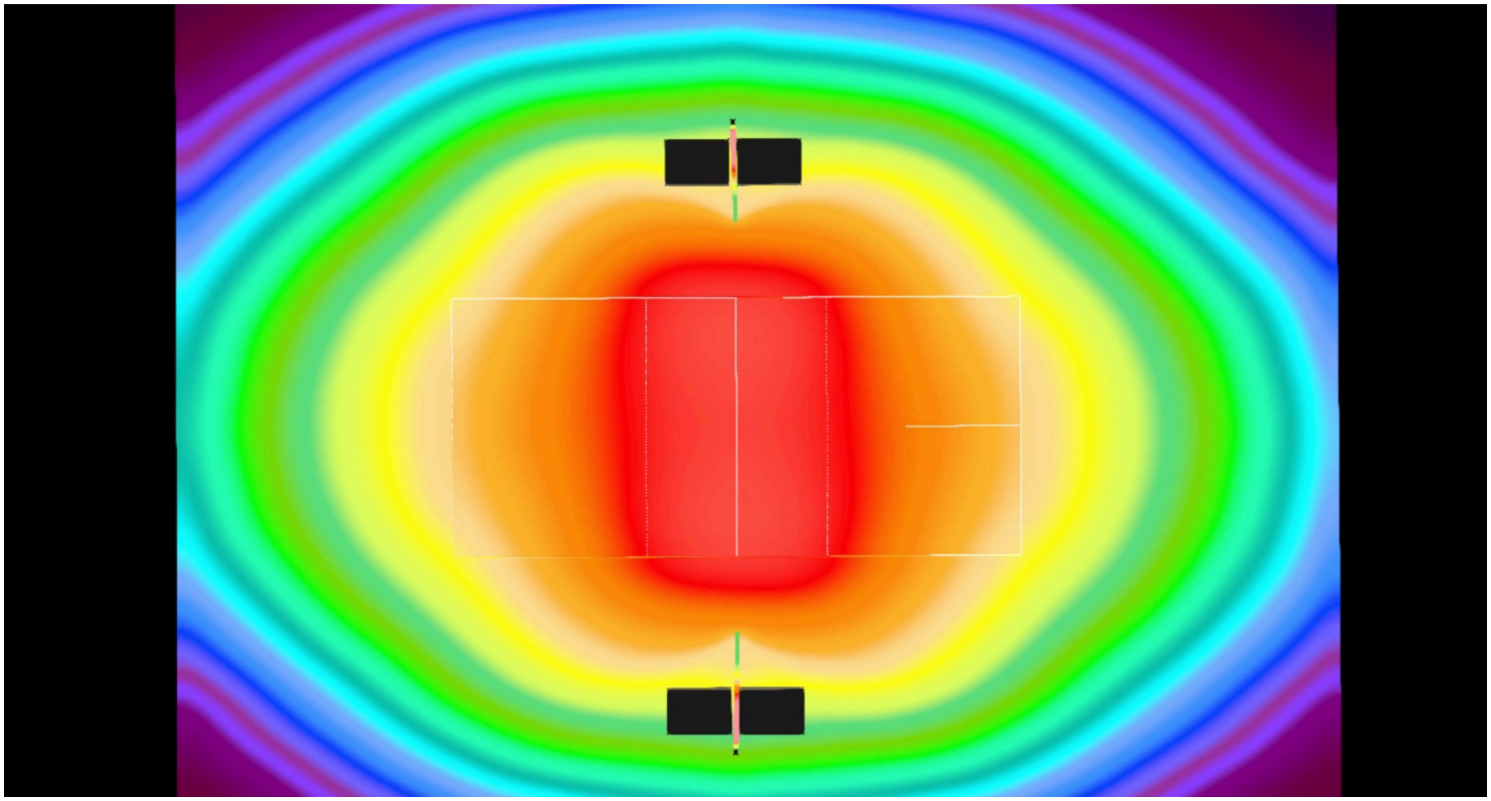
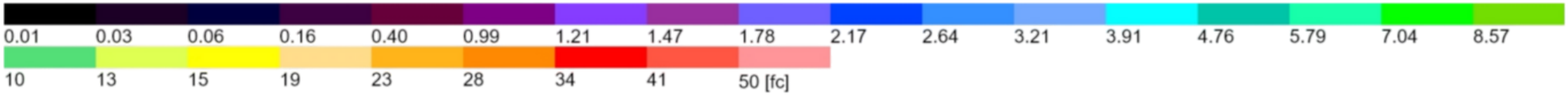
2 x 20' Poles - 4 120w SUNA LED Solar Light 2.16 Max/min - 30 Footcandles





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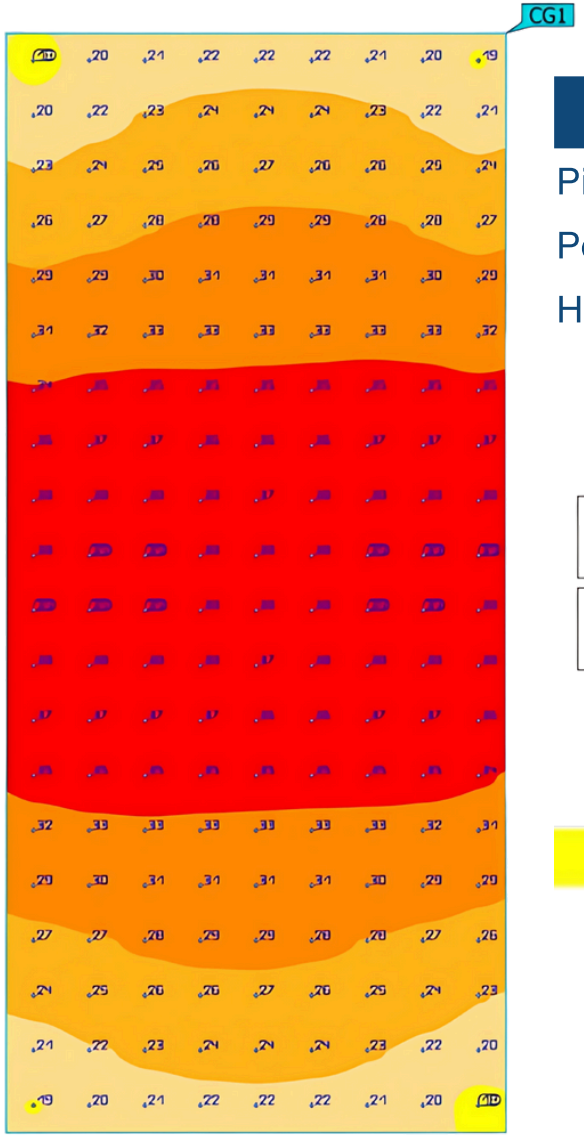

Properties	Ē	Emin	Emax	Ē/Emin	Emax/min
Pickleball Court	30.6fc	18.1fc	39.0fc	1.69	2.16

Perpendicular Illuminance

Height: 0.000ft

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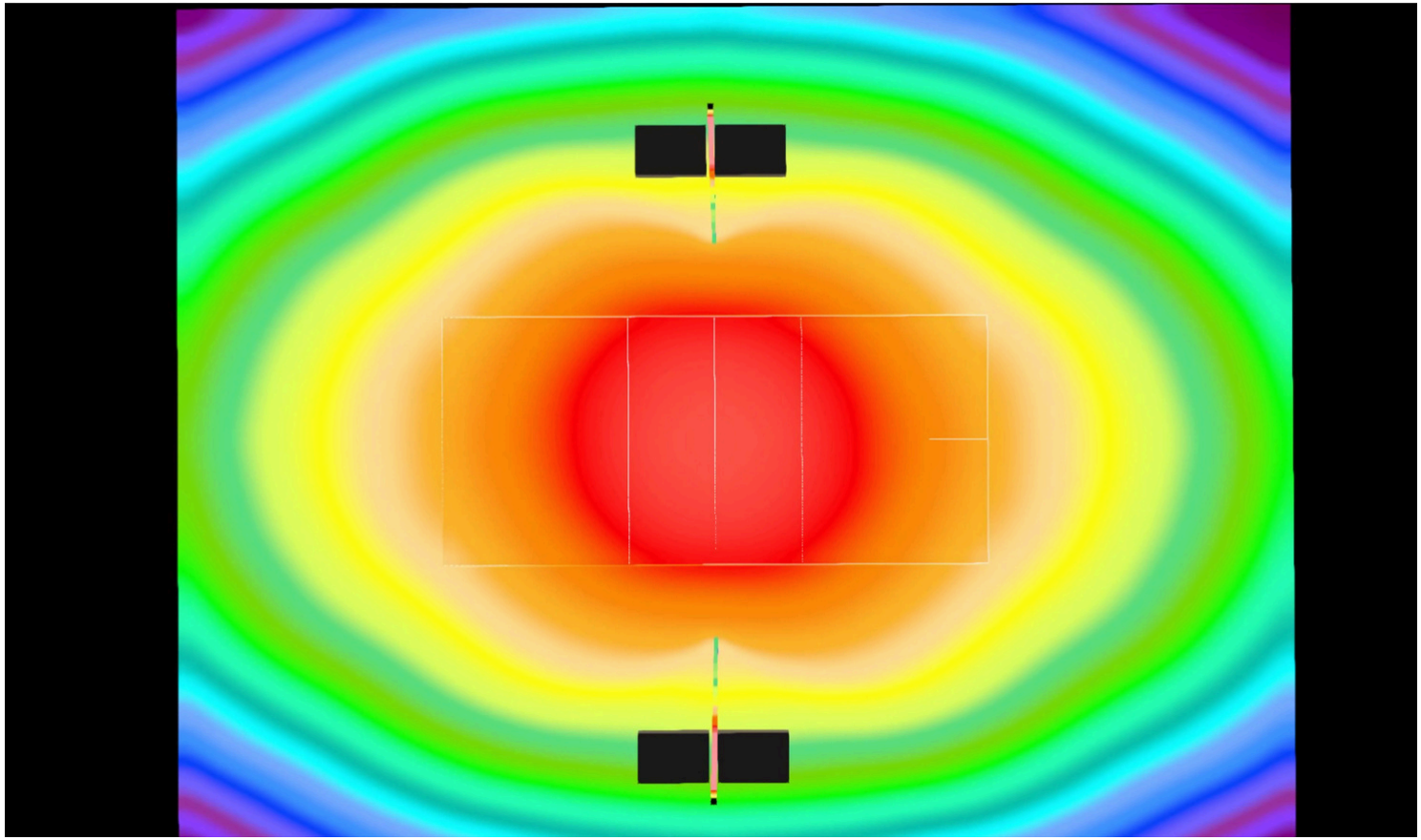
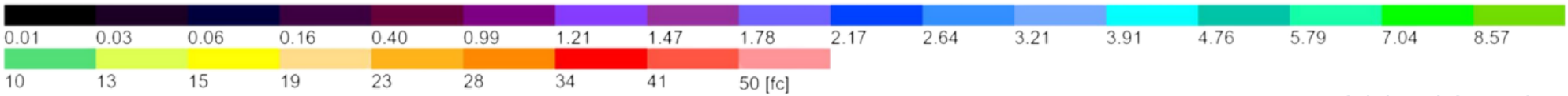
2 x 25' Poles - 4 150w SUNA LED Solar Light 1.87 Max/min - 32 Footcandles





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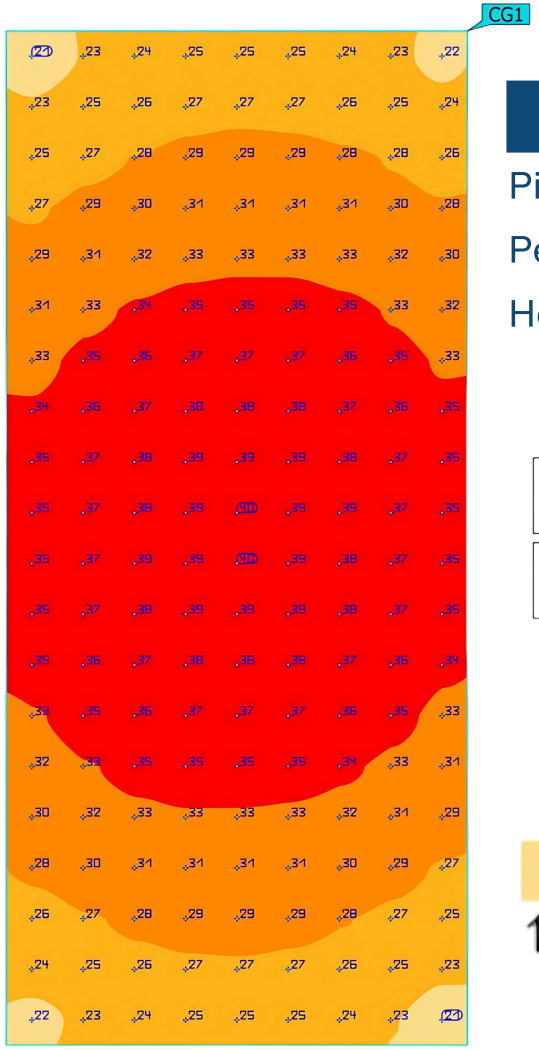

Properties	Ē	Emin	Emax	Ē/Emin	Emax/min
Pickleball Court	32.0fc	21.2fc	39.6	1.51	1.87

Perpendicular Illuminance

Height: 0.000ft

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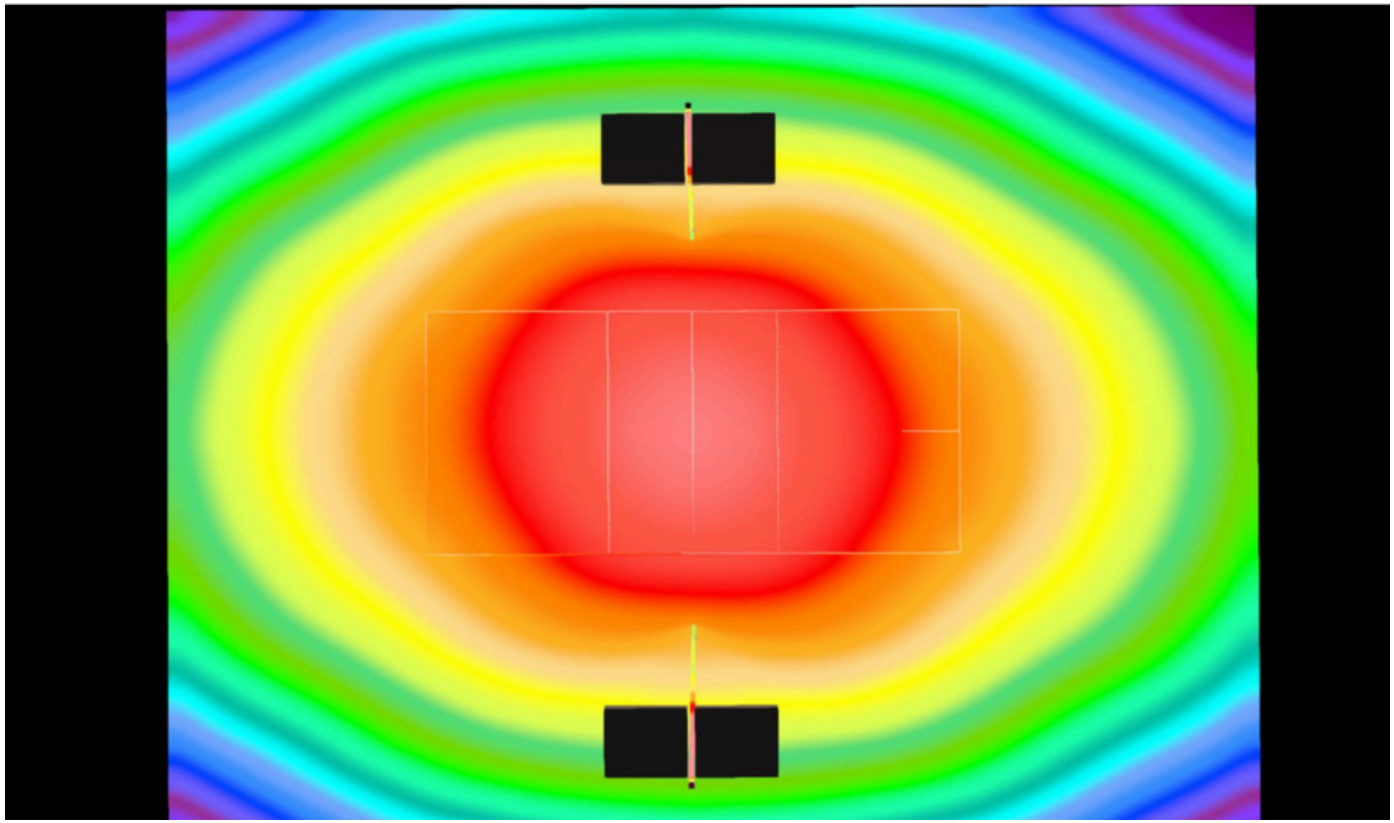
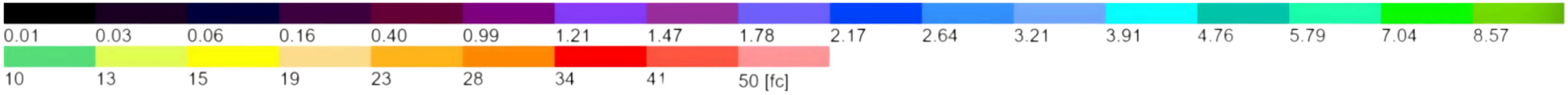
2 x 25' Poles - 4 180w SUNA LED Solar Light 1.86 Max/min - 37 Footcandles





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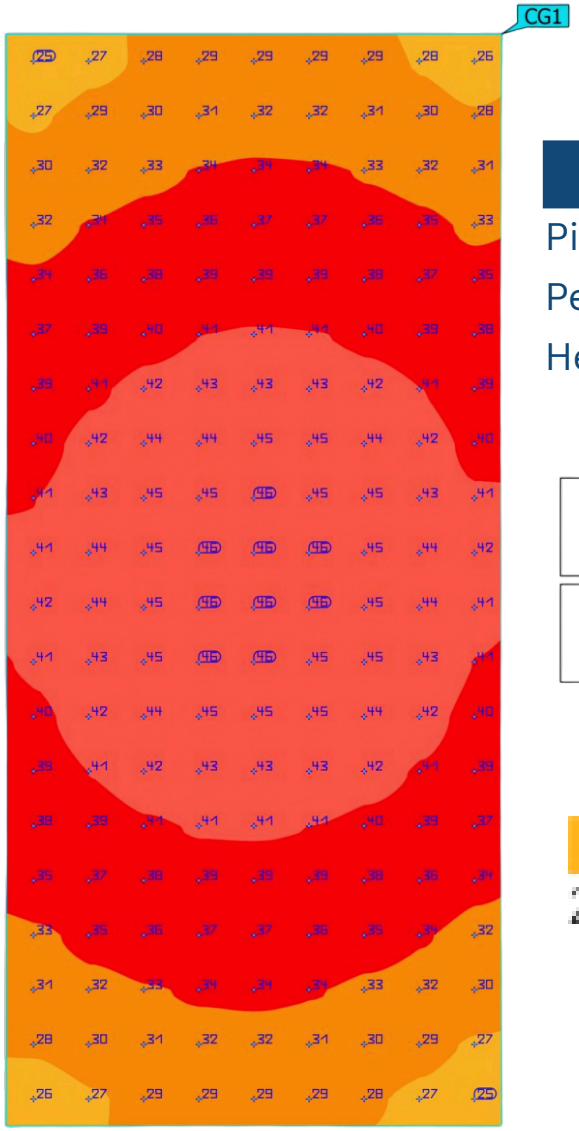

Properties	Ē	Emin	Emax	Ē/Emin	Emax/min
Pickleball Court	37.5fc	25.0fc	46.4	1.50	1.86
Perpendicular Illuminance					
Height: 0.000ft					

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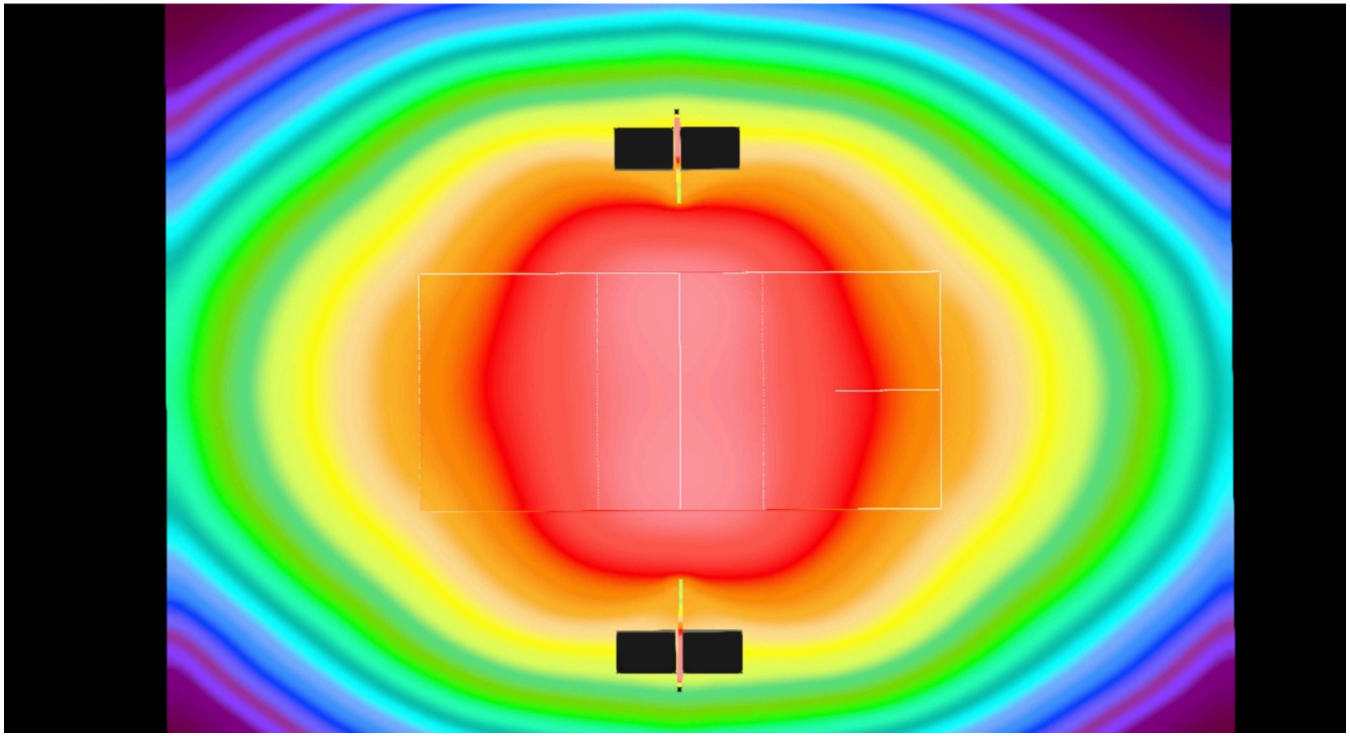
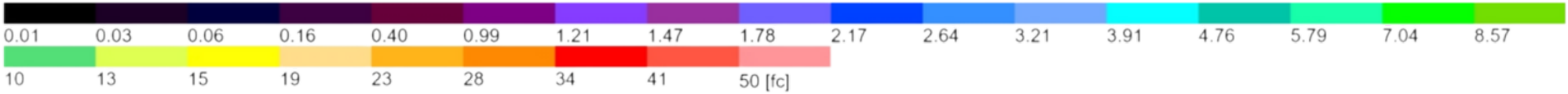
2 x 20' Poles - 4 150w SUNA LED Solar Light 2.18 Max/min - 39 Footcandles





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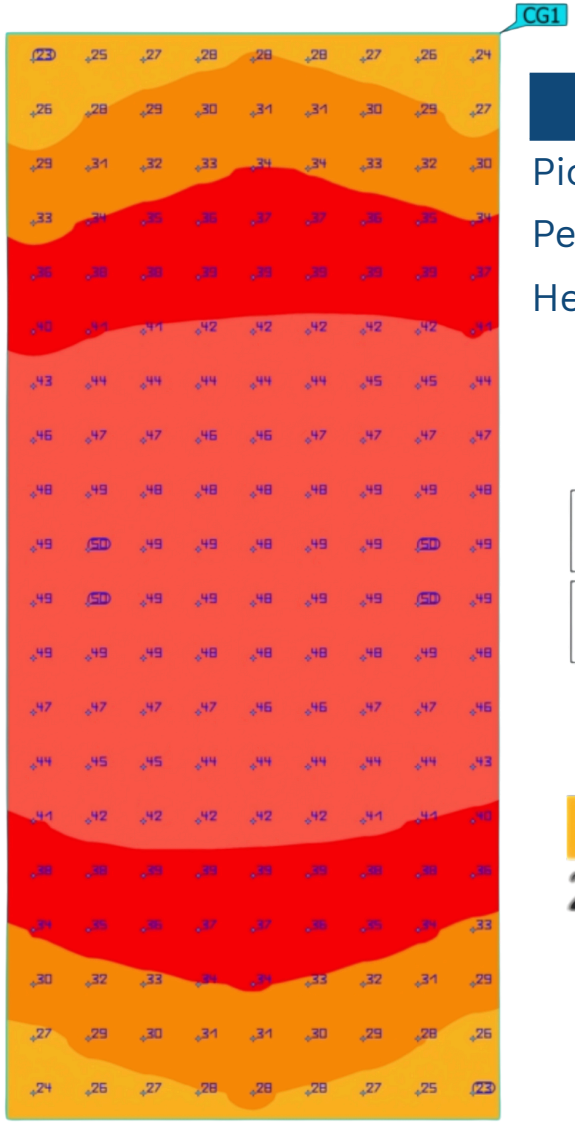

Properties	Ē	Emin	Emax	Ē/Emin	Emax/min
Pickleball Court	39.0fc	23.0fc	49.7	1.69	2.18

Perpendicular Illuminance

Height: 0.000ft

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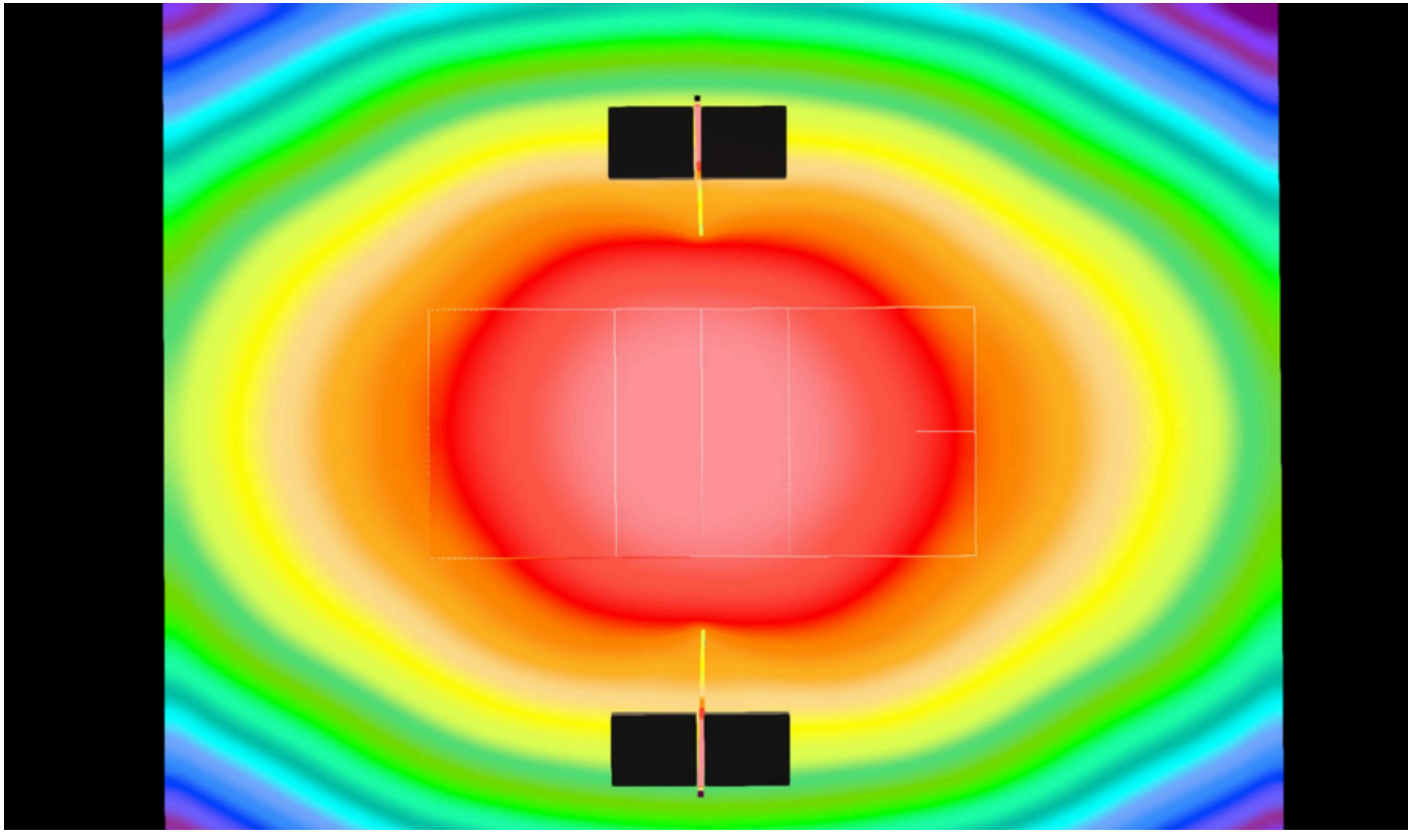
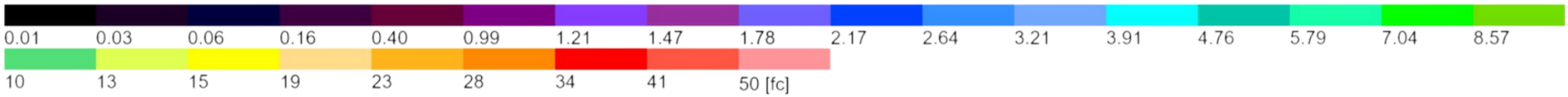
2 x 20' Poles - 4 200w SUNA LED Solar Light 1.86 Max/min - 42 Footcandles





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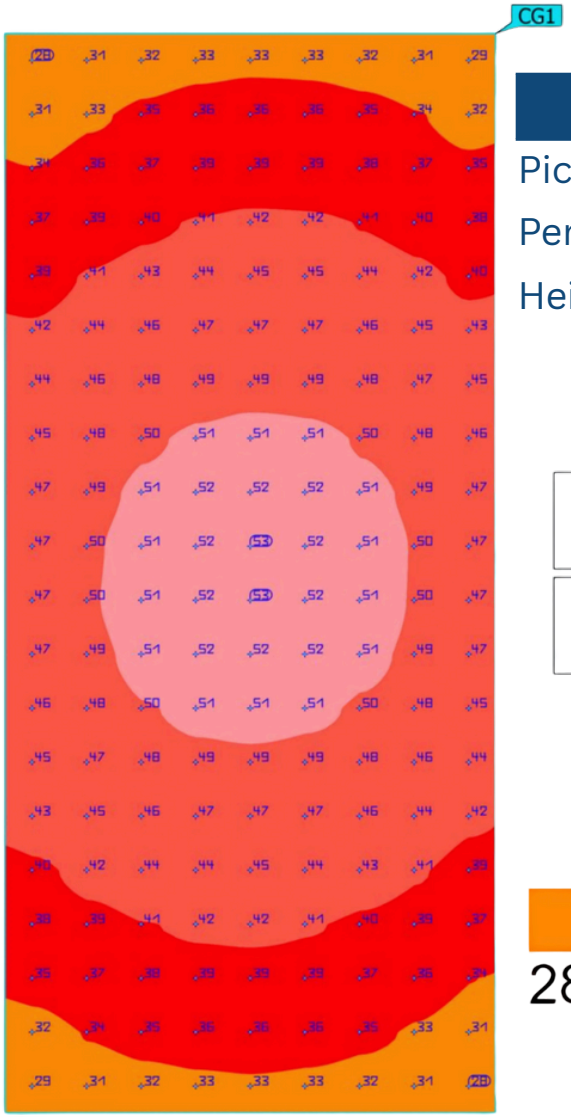
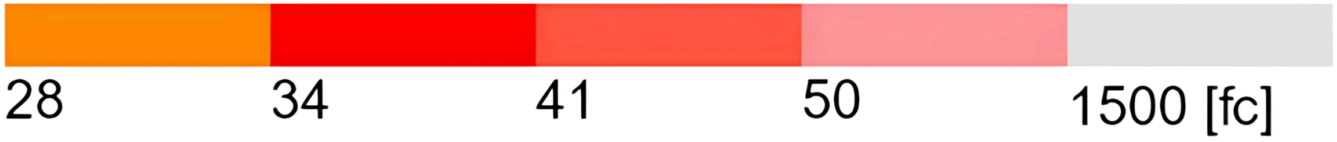


Properties	Ē	Emin	Emax	Ē/Emin	Emax/min
Pickleball Court	42.6fc	28.4fc	52.8	1.50	1.86
Perpendicular Illuminance					
Height: 0.000ft					



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