



Greenshine



SUPERA

Cost Effective Solar Lighting Solutions

SUPERA | GENERAL SPECIFICATIONS



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Light Fixture (GS-LED-290D)

Luminaire Input Voltage	DC 12V 24V
Power Consumption	30W 40W 60W 80W
Lumen	3929 5288 7051 9488 lumens
Color Temperature	3000-4000 K
IES Lighting Type	Type III
Material	Die-cast aluminum



Solar Panel (1 or 2 Units) 180W

Rating Power	180 W
Maximum Power Voltage	18.95 V
Maximum Power Current	9.50 A
Open Circuit Current	22.74 V
Short Circuit Current	9.98 A
Size	58.5" x 27"
Weight	23.4 lb

Battery (1 or 2 Units)

Battery Type	GEL Deep Cycle Lead-Acid
Operating Voltage	12 V
Capacity	150 Ah at 20 hr-rate to 1.75 V per cell at 77°F
Dimensions	16(L)×7(W)×9.2(H) (in)
Expected Life	5 ~ 7 years

Solar Charger

Operating Voltage	12 V/24 V auto recognition
Max. Charge / Load Current	5 A/ 10 A/ 20 A (different models)
Night / Day Detection	2.5 V – 10 V
IP Class	IP68

Pole

Height	26 ft
Diameter	6 3/4" at the bottom, 4" at the top
Thickness	5/32"
Material	Galvanized Steel
Finishing	Powder Coating



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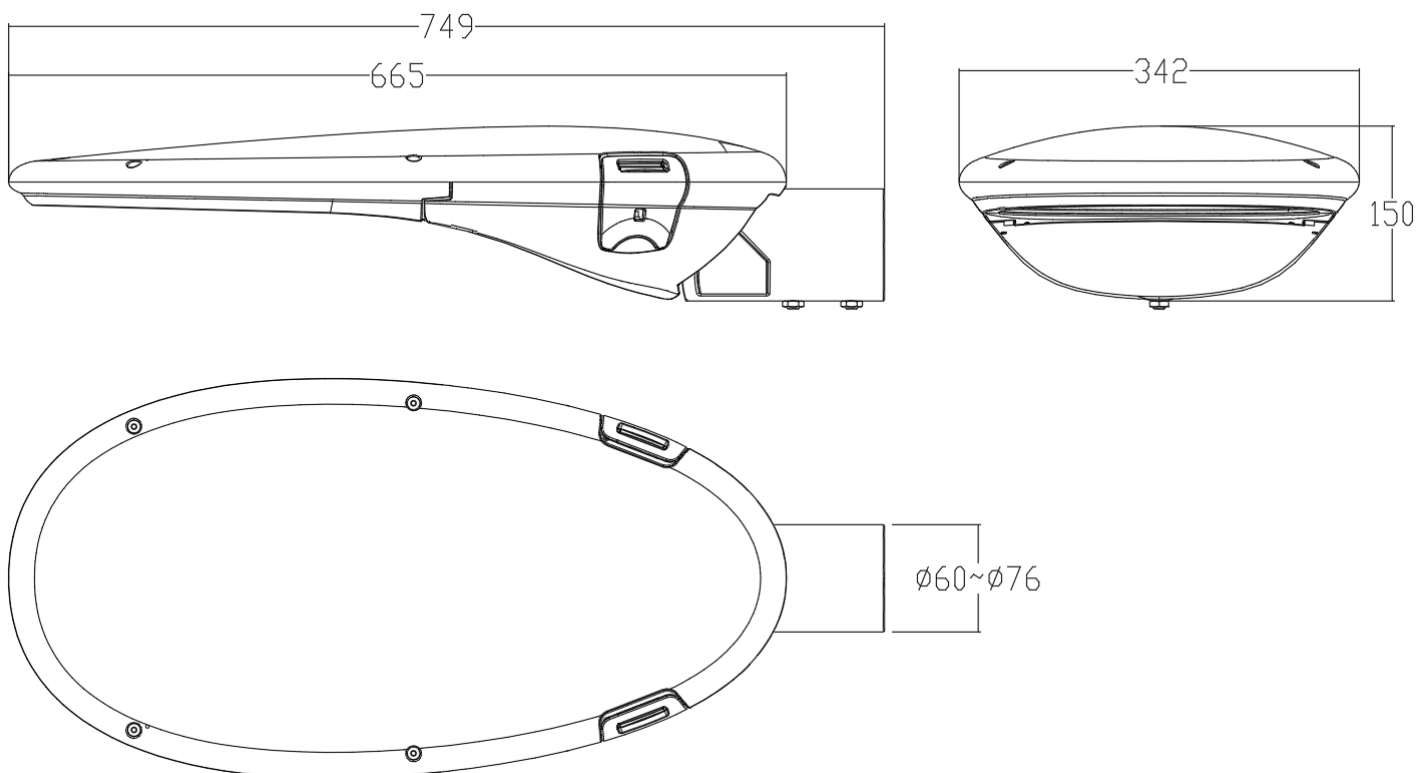
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SPECIFICATIONS

Luminaire Input Voltage	DC 12V 24V
Power Consumption	30W 40W 60W 80W
Lumen Output	3929 5288 7051 9488 lumens
Color Temperature	3000-4000 K
IES Lighting Type	Type III
Material	High pressure die-cast aluminum
Lens	5mm toughened glass, optical grade PMMA
IP Class	IP 65
Insulation	Class I
Operating Temperature	-30°C ~+50°C / -22°F ~+122°F
CRI	≥70

Weight: 8.3 kg | 18.3 lb

DIMENSIONS



GREENSHINE SOLAR PANEL

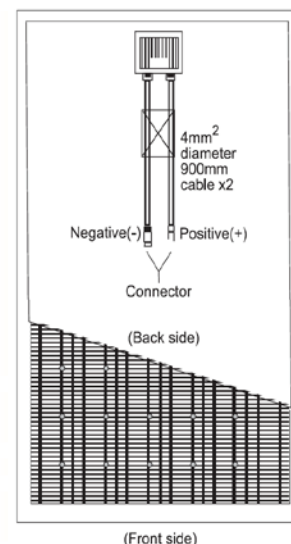
Solar Powered LED Lighting System



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OVERVIEW

- Mono-Crystalline solar cells
- Aluminum frame with a unique design to withstand strong winds
- Highly resistant tempered glass
- Multilayer EVA encapsulation with triple layer back sheet
- 25-year power output warranty: 5 years/95%, 12 years/90%, 25 years/80%.



Rating Power

110W

180W

Product Tolerance	± 3%	± 3%
Maximum Power Voltage	17.60V	18.95V
Maximum Power Current	6.25A	9.50A
Open Circuit Voltage	21.7 V	22.74 V
Short Circuit Current	6.71 A	9.98 A
Frame	Anodized aluminum, 4mm thickness	
Dimensions	1208mm x 682mm 47.5" x 27" 13kg 29.5lb	1486mm x 682mm 58.5" x 27" 10.6kg 23.4lb
Test Temperature	25°C 77°F, 1000w/m², Air Mass 1.5	
Junction Box / Wiring	IP65 Junction box with 900mm cable with MC4 connectors	



GREENSHINE GEL-TYPE BATTERY

Solar Powered LED Lighting System



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OVERVIEW

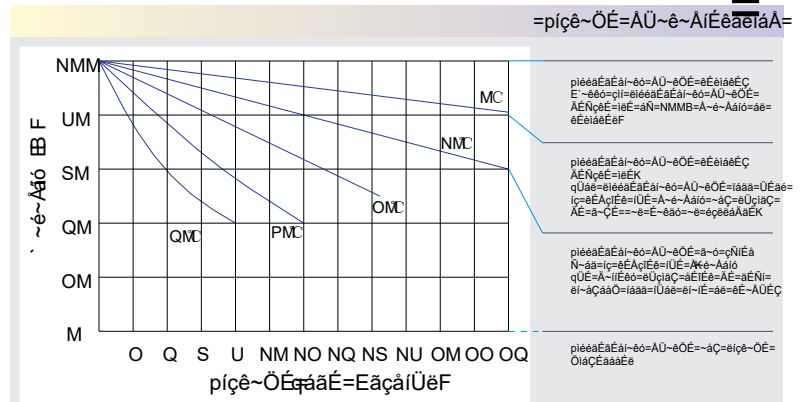
GEL deep cycle battery with a 12 years floating design life is especially designed for frequent cyclic discharge under extreme temperature.



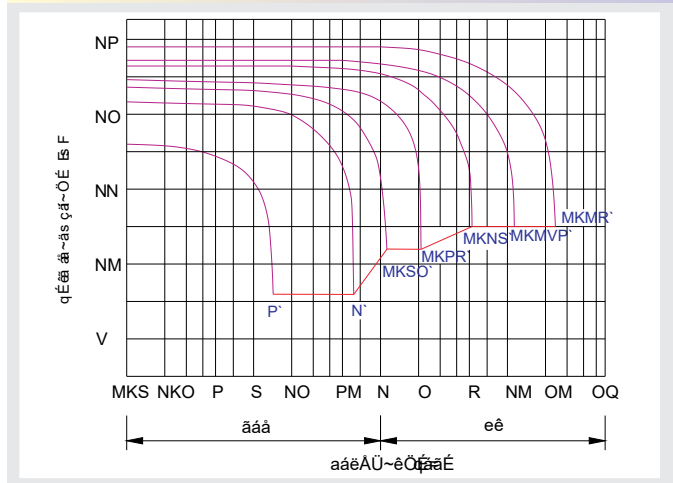
	GS-GEL-H80	GS-GEL-H120	GS-GEL-H150	GS-GEL-H200
Cells per unit	6	6	6	6
Voltage per unit	12V	12V	12V	12V
Capacity	80Ah @ 20hr-rate to 1.75V per cell @ 25°C / 77°F	120Ah @ 20hr-rate to 1.75V per cell @ 25°C / 77°F	150Ah @ 20hr-rate to 1.75V per cell @ 25°C / 77°F	200Ah @ 20hr-rate to 1.75V per cell @ 25°C / 77°F
Weight	26kg / 58lb	38kg / 84lb	46kg / 100lb	59.2kg / 131.5lb
Dimensions L x W x H	330 x 172 x 214(mm) 13" x 7" x 8.5"	406 x 173 x 233(mm) 16" x 7" x 9.2"	483 x 170 x 240(mm) 19" x 6.7" x 9.5"	522 x 240 x 218(mm) 20.5" x 9.44" x 8.7"
Max Discharge Current	800A (5 Sec)	1200A (5 Sec)	1500A (5 Sec)	2000A (5 Sec) ²
Operating Temp. range	-40°C~60°C -40°F~140°F			
Flot Charging Voltage	13.6 to 13.8 VDC / unit average at 25°C / 77°F			
Recommended max. charging current	16A	24A	30A	40A
Self-discharge	Valve Regulated Lead Acid can be stored for more than 6 months at 25°C/77°F. Self-discharge ratio less than 3% per month at 25°C/77°F. Please charge batteries before using.			
Equalization and cycle service	14.6 to 14.8 VDC / unit average at 25°C / 77°F			
Terminal type	5ft cooper wire leads from the battery case			



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Discharge characteristic curve



Capacity Factors With Different Temperature

Battery Type		-20℃	-10℃	0℃	5℃	10℃	20℃	25℃	30℃	40℃	45℃
GEL Battery	6V&12V	50%	70%	83%	85%	90%	98%	100%	102%	104%	105%
	2V	60%	75%	85%	88%	92%	99%	100%	103%	105%	106%
AGM Battery	6V&12V	46%	66%	76%	83%	90%	98%	100%	103%	107%	109%
	2V	55%	70%	80%	85%	92%	99%	100%	104%	108%	110%

Discharge Current VS. Discharge Voltage

cáa~ã=ãEÄÜ~ëÖE s ç áí~ÖE=ãEÄää=	NKTRs	NKTMs	NKSMs
ããEÄÜ~ëÖE= íëëEäí=EÄF	(^) ≤ MKO'	MKO < (^) < NKM'	(^) ≥ NKM'

Charge the batteries at least once every six months, if they are stored at 25°C.

`Ü~êÖáâÖ=jÉíÜçç

‘çâêf~âi=sçâi~ÔÉ	JMKO’ ñOÜHNQKQJNQKTSñOQÜlj~ñK=’lêêÉâi=MKO’
‘çâêf~âi=’lêêÉâi	JMKO’ ñOÜHMKNOÜ
c~êi	JMKO’ ñOÜHMKO’ ñSÜ

Bolt	jR=	jS=	jU=
Terminal	cP=cQ=cN=cNO=cR=cS	cU=cM=cJ=cN=cNR	cR=cV=cNM=cNO=cNQ=cNS
Torque	SÚTkJä	UüNMkJä	NMüNOkJä

Maintenance & Cautions

Cycle service

[illegible]



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GREENSHINE CONTROLLER

Solar Powered LED Lighting System

FEATURES

- Corrosion-proof epoxy-encapsulated PCB (IP68)
- Four-stage battery charging (main, float, boost, equalization)
- Temperature compensated
- Automatic system voltage recognition (12V/24V)
- Customized by Greenshine to fit specific needs of clients
- Easy to install

SPECIFICATIONS

System Voltage

12V | 24 Auto Recognition

Max. charge / load current

5A | 10A | 20A (Different Models)

Deep discharge protection:

Cut-off Voltage

11V - 12V | 22V - 24V

Reconnect Level

12.8V | 25.6V

Overvoltage Protection

15.5V | 31.0V

Undervoltage Protection

10.5V | 21V

Max. Panel Voltage

$U_{BATmin} + 30V$ (if module and battery are connected with correct polarity)

Temperature compensation

$-25mV | K$ at 12V

(Charge Voltage)

$-50mV | K$ at 24V

Ambient Temperature

$-40^{\circ}C$ to $+60^{\circ}C$, $-40^{\circ}F$ to $+140^{\circ}F$

Max. Altitude

4,000m above sea level

Battery Type

Lead acid (GEL, AGM, flooded)

Adjustment Range:

Evening / Morning Hours

0 – 15h | 0 – 14h

Night / Day Detection

2.5V – 10V

Wire Cross Section

1.5mm²/ 1.5mm²/ 2.5mm², 15 (AWG)

Type of Protection

IP68 (1.5 m, 72 h)



Project 1



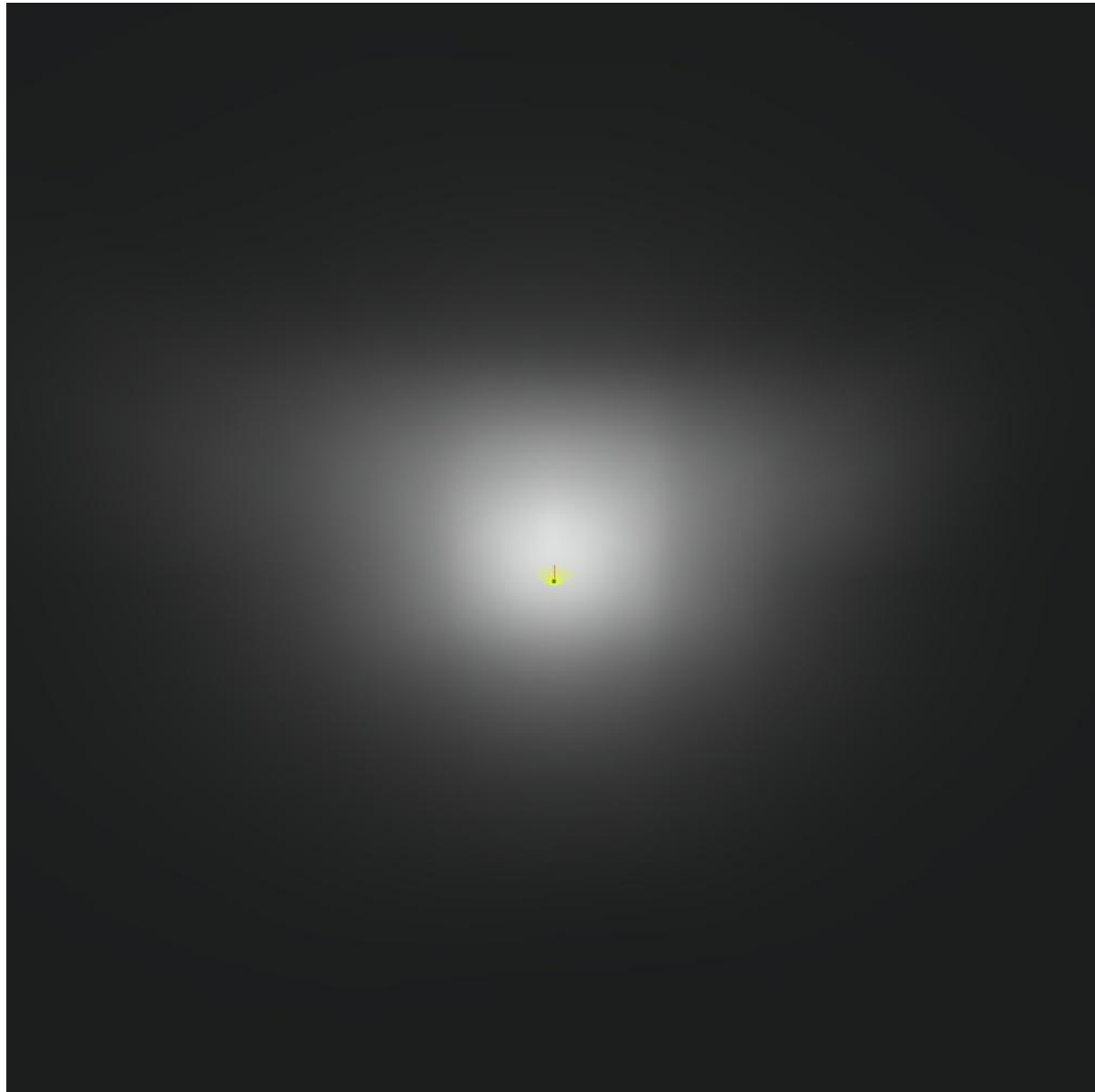
03 / 23 / 2020

Greenshine New Energy

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Lake Forest, CA 92630

Operator Luis Jimenez
Telephone 949-609-9636 X 104
Fax
e-Mail luis.jimenez@streetlights-solar.com

SUPERA 60W - 26' POLE / 3D Rendering

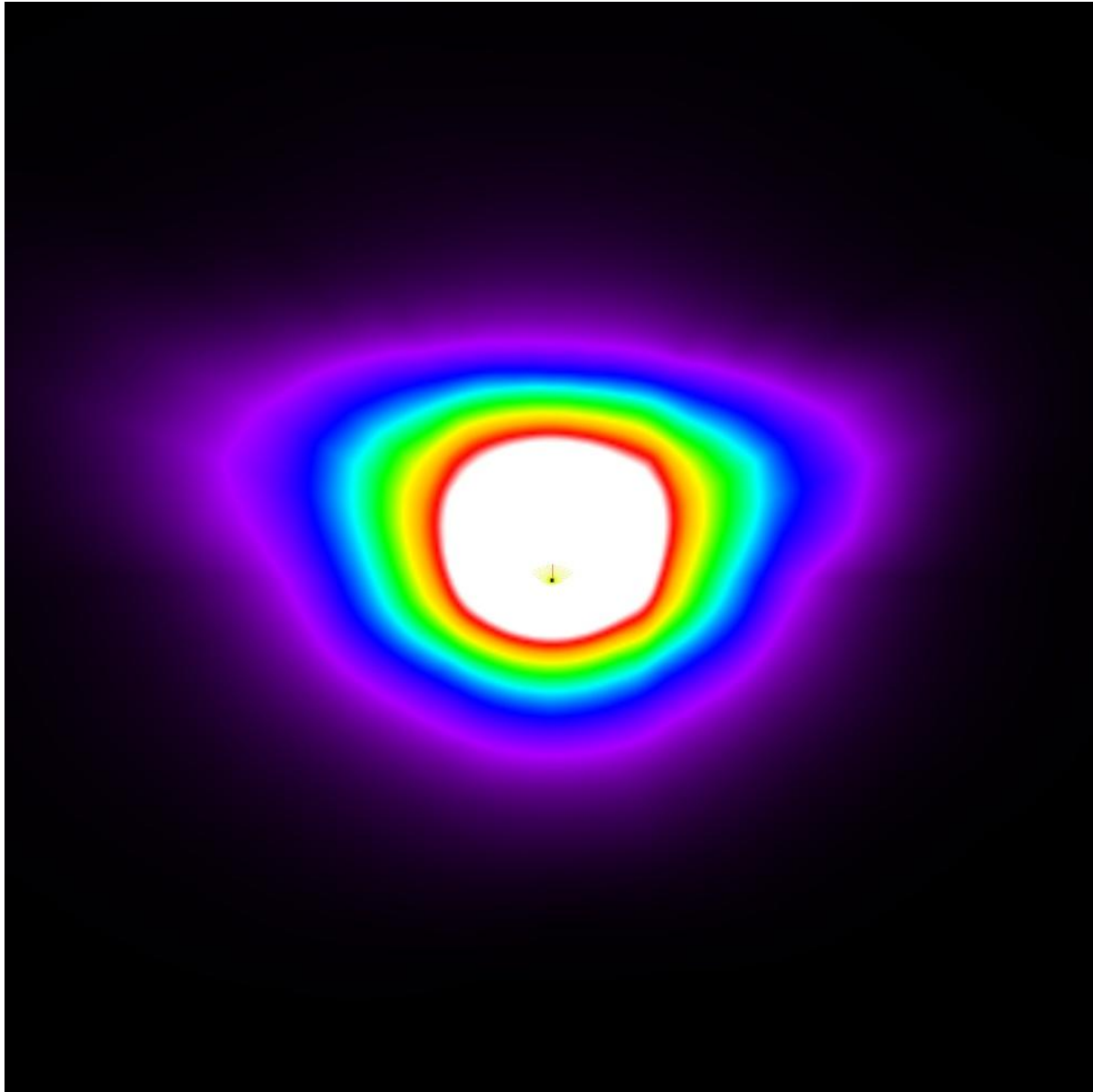




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SUPERA 60W - 26' POLE / False Color Rendering



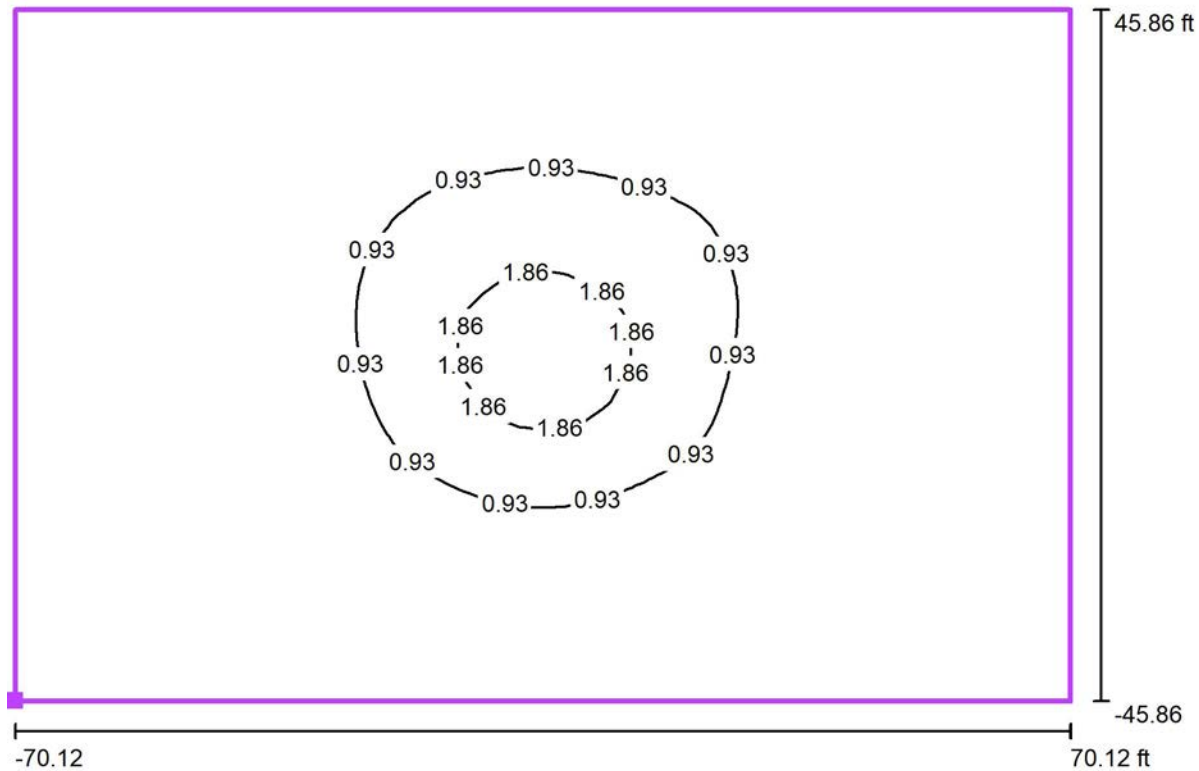
0 0.13 0.25 0.38 0.50 0.63 0.75 0.88 1.00

fc

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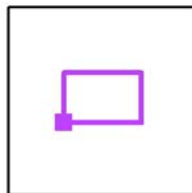
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e-Mail luis.jimenez@streetlights-solar.com

SUPERA 60W - 26' POLE / Calculation Grid 1 / Isolines (E, Perpendicular)



Values in Footcandles, Scale 1 : 306

Position of surface in external scene:
Marked point: (101.641 ft, 132.298 ft,
0.000 ft)



Grid: 50 x 30 Points

E_{av} [fc]
0.44

E_{min} [fc]
0.01

E_{max} [fc]
2.39

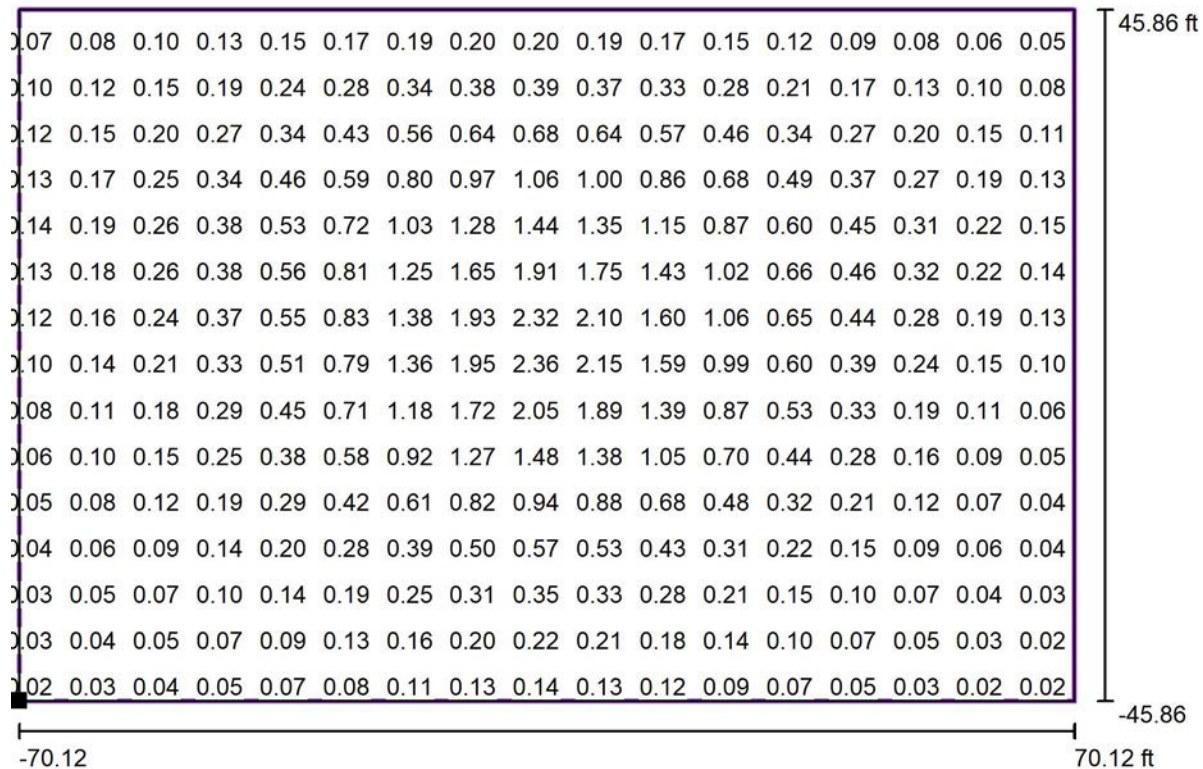
u_0
0.03

E_{min} / E_{max}
0.01

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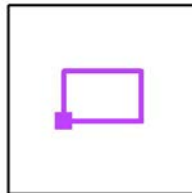
SUPERA 60W - 26' POLE / Calculation Grid 1 / Value Chart (E, Perpendicular)



Values in Footcandles, Scale 1 : 306

Not all calculated values could be displayed.

Position of surface in external scene:
Marked point: (101.641 ft, 132.298 ft,
0.000 ft)



Grid: 50 x 30 Points

E_{av} [fc]
0.44

E_{min} [fc]
0.01

E_{max} [fc]
2.39

u_0
0.03

E_{min} / E_{max}
0.01