

Vertex Pole-Top Solar Lighting System

Stand-Alone High Output LED Lighting System



Product Overview

Mission critical lighting for discerning organisations that value reliability & performance.

The Vertex® solar lighting system comprises the Cree XSPR High Output luminaire mounted on a fixed solar pole with the solar panel array attached at the top.

The batteries, Charge controller and Vertex® EMS (energy management systems) are securely housed in the pole-top mounted housing.

Performance Summary

Designed and Assembled in Australia

Autonomy: Up to 5 Days

Lumen Output: Up to 5,000 Lumens

Luminaire Efficacy: Up to 108 LPW

Colour Rendering Index: Minimum 70 CRI

Colour Temperature: 4000K, 3000K

Warranty: 5 Year Limited Warranty with Performance Guarantee

Specification Criteria

Product	Arrangement	Power	Optic	CCT	Height	Footing	Pole Finish	Power Profile
Vertex®	Single	14W	Type 2 Long	40K	4.0m	Cage	Galvanised	Dusk-Dawn
		17W	Type 3 Medium	30K	6.0m	Block	Powdercoat (RAL)	4-Hour / Off
		22W	Type 4 Medium			Custom	Aluminium	4-Hour / Dim
		27W*						5 Hour / Off
		32W*						5 Hour / Dim
		38W*						Other / Custom
		42W*						

* = Wattage may only be at this level for set number of hours per night and require dimming power profile depending on site install location.

Power Profiles:

Dusk -Dawn – Runs the luminaire at static power level from dusk through to dawn

4 Hour / Off – Runs luminaire from dusk for a total time of 4 hours and then completely switches off the luminaire

4 Hour / Dim – Runs luminaire from dusk for a total time of 4 hours and then dims the luminaire to a pre-set level for the rest of the night

5 Hour / Off – Runs luminaire from dusk for a total time of 5 hours and then completely switches off the luminaire

5 Hour / Dim – Runs luminaire from dusk for a total time of 5 hours and then dims the luminaire to a pre-set level for the rest of the night

Other / Custom – Orca Solar can program systems for dimming level and or running time according to project requirements.

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Recommended XSPR Lumen Maintenance Factors (LMF)

Ambient	Init. LMF	25k hr (2)	50k hr (2)	75k hr (3)	100k hr (3)
15°C	1.02	0.95	0.89	0.83	0.77
20°C	1.01	0.94	0.88	0.82	0.76
25°C	1.00	0.93	0.87	0.81	0.75

1 Lumen maintenance values at 4000K and 25°C (77°F) are calculated per TM-21 based on LM-80 data and in-situ luminaire testing

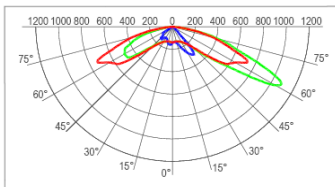
2 In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip)

3 In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip)

CREE XSPR High Output

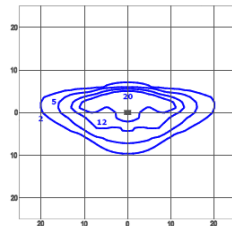
- Die cast aluminium housing w/UV stabilized polymeric door for long weathering and reliability
- Tool-less entry, mounts on 60mm O.D. horizontal tenon (minimum 200mm in length)
- Adjustable +/- 5° to allow for tilt or levelling, secures with two mounting bolts
- Exclusive Colourfast DeltaGuard® finish features an E-Coat epoxy primer with an ultra-durable silver powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion

2LG



cd/klm
 C0 - C180 C90 - C270 C05 - C185

Test Report #: PL09479-001



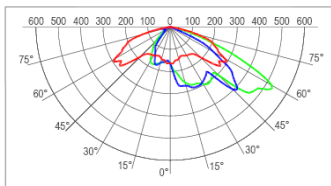
lux
 XSPRCHT2LGA40K
 Mounting Height: 6m

Type II Long Distribution

Input Power	4000K Initial Lumens*
17W	2,109
22W	2,836
27W	3,565
32W	4,243
38W	4,818
42W	5,346

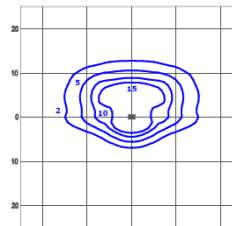
Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens

3ME



cd/klm
 C0 - C180 C90 - C270 C15 - C195

Test Report #: PL10063-004



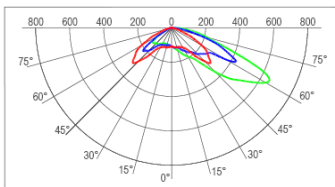
lux
 XSPRCHT3MEA40K
 Mounting Height: 6m

Type III Medium Distribution

Input Power	4000K Initial Lumens*
17W	2,080
22W	2,797
27W	3,516
32W	4,184
38W	4,751
42W	5,272

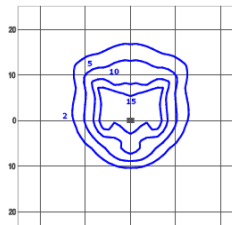
Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens

4ME



cd/klm
 C0 - C180 C90 - C270 C15 - C195

Test Report #: PL10063-003



lux
 XSPRCHT4MEA40K
 Mounting Height: 6m

Type IV Medium Distribution

Input Power	4000K Initial Lumens*
17W	2,108
22W	2,834
27W	3,563
32W	4,241
38W	4,815
42W	5,343

Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens

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System design

Autonomy: Vertex® solar lighting systems are scaled to suit applications using NASA solar radiation data based on conditions recorded at location of installation.

Solar Panel: Photovoltaic panel(s) scaled sufficiently to match power load and Vertex® system requirements with 25 Year performance guarantee.

Panel systems are sized specific to location conditions and autonomy requirements

Batteries: Long life batteries VRLA Gel batteries with 5 Year + 5 Year Pro-Rate warranty on SunGEL branded batteries

Battery systems are sized and quantified specific to location conditions and autonomy requirements in accordance with AS/NZS 4509 and AS/NZS 4806.

** 5 Year warranty applies to SunGEL Brand batteries only, standard Deep Cycle GEL batteries (Ritar or Trojan Brand) are supplied with a 12 Month manufacturer's warranty only.*

Charge Controller: Advanced MPPT (maximum power point tracking) with short circuit and over current protection. Minimum efficiency of 99.5% and automatic limit function of maximum PV input power, ensuring no overload under any circumstance.

LED Driver: Wide input voltage and high precision constant current control with linear PWM duty cycle dimming control. Minimum 92% efficiency under -40-65° ambient conditions

LED Drive Controller: Four function drive control with pre-set dimming level and timeframe programming including autonomous power adjustment synced to battery voltage and ambient temperature conditions.

Compliance

Vertex® solar lighting systems provide a minimum of 30% solar panel oversupply co efficient as an extra reliability measure in accordance with AS4509.2 (Australian standards for standalone power systems),

