

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 behind a sturdy steel locked door fastened using the Rivlok™ security system.

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	Autonomy	Optic	CCT	Height	Footing	Finish	Power Profile
Vertex®	Single	14W	3 Days	Type 2 Long	40K	4.0m	Cage	Galvanised	Dusk-Dawn
		17W	4 Days	Type 3 Medium	30K	6.0m	Block	Powdercoat (RAL)	4-Hour / Off
		22W	5 Days	Type 4 Medium		4-Hour / Dim			
		27W				6-Off-2			
		32W				8-Off-2			
		38W				Other / Custom			
42W									

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 / Off – 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

6-Off-2 – Runs Luminaire from dusk for a total time of 6 Hours, switches off and runs again for 2 hours prior to dawn

8-Off-2 – Runs Luminaire from dusk for a total time of 8 Hours, switches off and runs again for 2 hours prior to dawn

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

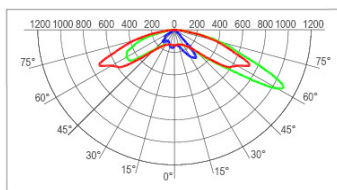
2 In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip)

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

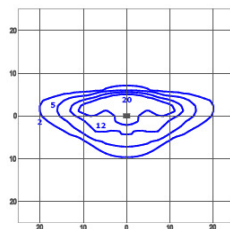
- Die cast aluminium housing w/UV stabilized polymeric door for long weathering and reliability
- Tool-less entry, mounts on 60mm O.D. horizontal tenon (minimum 200mm in length)
- Adjustable +/- 5° to allow for tilt or levelling, secures with two mounting bolts
- Exclusive Colourfast DeltaGuard® finish 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



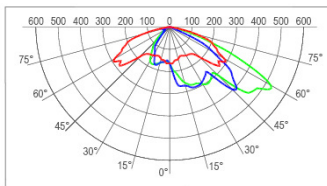
lux
 XSPRCHT2LGA40K
 Mounting Height: 6m

Type II Long Distribution

Input Power	3000K	4000K
	Initial Lumens*	Initial Lumens*
17W	1,872	1,972
22W	2,532	2,668
27W	3,192	3,365
32W	3,798	4,002
38W	4,238	4,467
42W	4,743	4,988

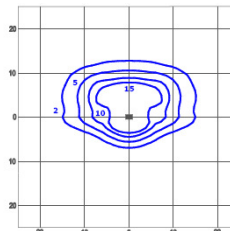
Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens

3ME



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

Test Report #: PL10063-004



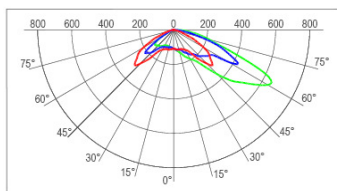
lux
 XSPRCHT3MEA40K
 Mounting Height: 6m

Type III Medium Distribution

Input Power	3000K	4000K
	Initial Lumens*	Initial Lumens*
17W	1,856	1,956
22W	2,512	2,646
27W	3,167	3,336
32W	3,767	3,969
38W	4,204	4,430
42W	4,696	4,947

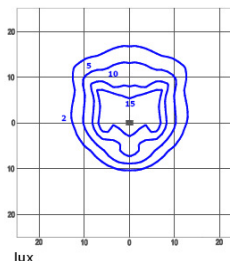
Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens

4ME



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

Test Report #: PL10063-003



lux
 XSPRCHT4MEA40K
 Mounting Height: 6m

Type IV Medium Distribution

Input Power	3000K	4000K
	Initial Lumens*	Initial Lumens*
17W	1,883	1,985
22W	2,548	2,685
27W	3,212	3,385
32W	3,822	4,027
38W	4,265	4,494
42W	4,763	5,019

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 designed specifically for solar cycling applications with 5 year + 5 year pro-rata warranty

Battery systems are sized and quantified specific to location conditions and autonomy requirements

Charge Controller: Advanced PWM (pulse width modulation) battery charging with low voltage disconnect override protection.

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

Solar Pole: Specifically designed for the Vertex® solar lighting systems, six metre fixed solar pole with battery box to securely house the Vertex® EMS and batteries behind a secure steel door and provide ventilation as per AS4509.

Batteries are securely placed on shelves above the Vertex® EMS which is fixed to a purpose built mounting bracket positioned for easy access during installation and maintenance.

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),

HDG (Hot Dipped Galvanised) steel poles and cage footings designed in accordance with AS4100, AS3679, AS1163 and AS1154

The Vertex® Energy Management System houses the lighting controller, LED driver and safety switches, mounted on fire retardant board. Designed and assembled in Australia, conforming to AS 3000 electrical safety standards and AS 4509.2 standalone power systems

