Vertex 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 an enlarged base 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 enlarged base of the pole (above ground) behind a sturdy steel locked door fastened using the Rivlok™ security system.

Performance Summary

Designed and Assembled in Australia

Autonomy: Up to 7 Days
Lumen Output: Up to 8,000 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	17W	3 Days	Type 2 Long	40K	4.0m	Cage	Galvanised	Dusk-Dawn
	Double	22W	4 Days	Type 3 Medium	30K	6.0m	Block	Powdercoat	4-Hour / Off
		27W	5 Days	Type 4 Medium		8.0m		(RAL)	4-Hour / Dim
		32W	6 Days						6-Off-2
		38W	7 Days						8-Off-2
		42W							Other / Custom
		48W							
		54W							
		60W							
		80W							

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)

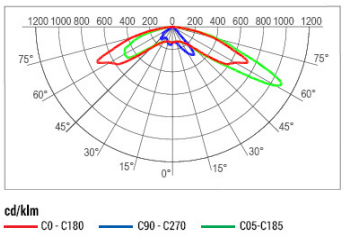
CREE XSPR High Output

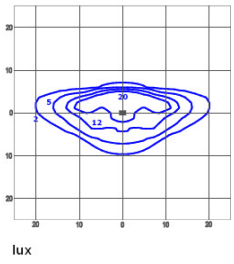
• Die cast aluminium housing w/UV stabilized polymeric door for long weathering and reliability

• 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





Test Report #: PL09479-001

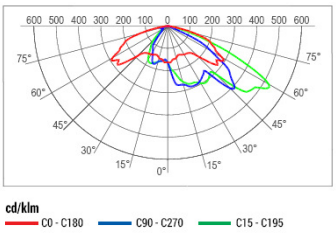
XSPRCHT2LGA40K
Mounting Height: 6m

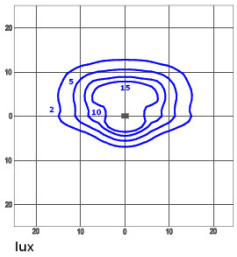
Type II Long Distribution

Input Power	3000K Initial Lumens*	4000K 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
48W	5,119	5,395
54W	5,505	5,801
60W	5,958	6,286
80W	7,891	8,326

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

3ME





Test Report #: PL10063-004

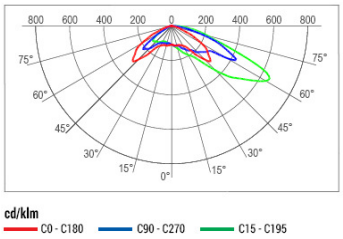
XSPRCHT3MEA40K
Mounting Height: 6m

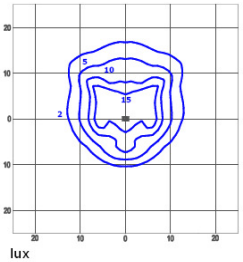
Type III Medium Distribution

Input Power	3000K Initial Lumens*	4000K 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
48W	5,078	5,350
54W	5,460	5,753
60W	5,958	6,286
80W	7,891	8,326

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

4ME





Test Report #: PL10063-003

XSPRCHT4MEA40K
Mounting Height: 6m

Type IV Medium Distribution

Input Power	3000K Initial Lumens*	4000K 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
48W	5,151	5,428
54W	5,539	5,837
60W	5,958	6,286

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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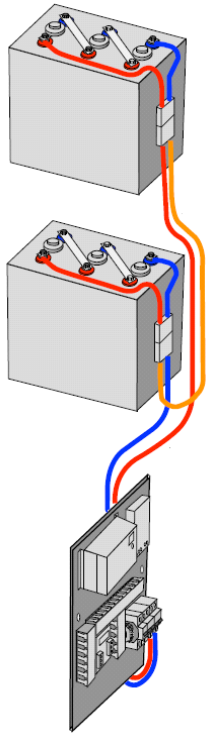
System design



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

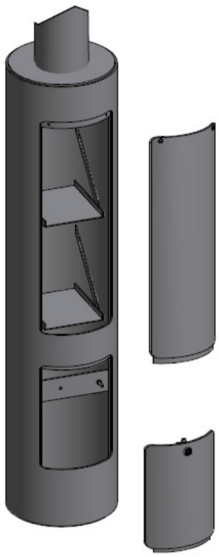
Solar Panel: Photovoltaic panel(s) scaled sufficiently to match power load and Vertex® system requirements with 25 Year performance guarantee.
Panel systems are sized specific to location conditions and autonomy requirements

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 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.



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.

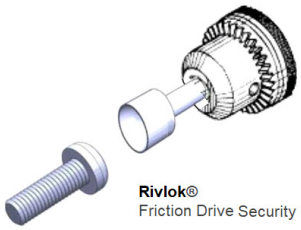
Batteries are securely placed on shelves above the Vertex® EMS which is fixed to a purpose built mounting bracket positioned for easy access during installation and maintenance.

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



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Friction Drive Security Fixing