



Cree Standard XP-G3 LED Module

Power of Cree in Standard and Custom LED modules

Data Sheet

Illumination Accelerated

Design Faster – use standard, UL-listed modules

Superior Performance & Cost – top flux bin LEDs at competitive prices

Thermal Interface Included – pre-installed to simplify assembly

Add Standard Optics – configured for off-the-shelf optics

Primary Applications



High Mast	Canopy
Streetlight	Garage
Stadium	Portable
Architectural	High bay



Superior Performance in Standard & Custom Modules

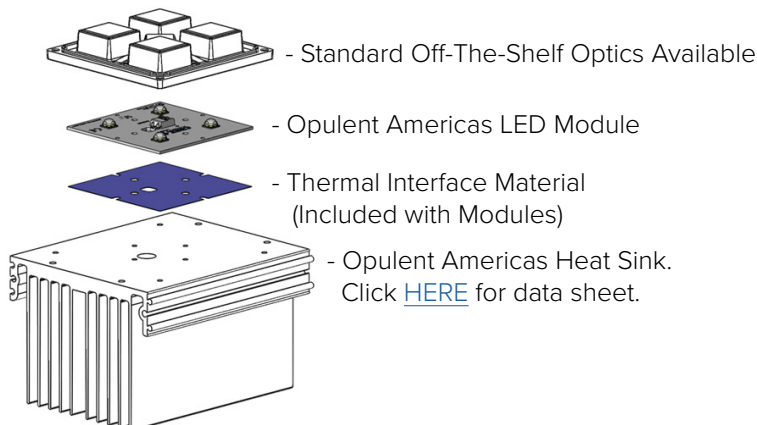
- Market leading L90 & L70 lifetimes, even in high stress conditions
- 70, 80, and 90 CRI LEDs available
- Metal core PCB for optimal thermal management
- Configurable with off the shelf optics, and heat sinks
- Private label or custom designs available

Simplify Your Next Design

The Cree standard modules, built with Cree SC5 technology, are an off-the-shelf platform to rapidly move from prototype to finished LED lighting fixture. The thermal interface is already installed with easy to use connectors to help simplify the lighting design and get to market faster. These competitively priced modules come in a range of lumen outputs and can achieve both DLC Premium or DLC Standard lumens per watt specifications.

Integrate Further

Opulent Americas also offers standard heat sinks and fully assembled IP-rated modules.



About Opulent Americas

Opulent Americas, part of Singapore based Opulent Group, is a fully integrated, global manufacturer for the lighting, automotive and medical industries. Through 30 years of manufacturing experience and state-of-the-art facilities, the company offers leading solid state lighting components and modules. The NC-based office provides quick engineering & sales support with an R&D lab to provide prototype development and custom solutions. See Opulent-Americas.com for more information.



XP-G3 Series Specifications

Product Selection Table

Configuration	LED Layout	Part Number	CCT	CRI	Binning	Luminous Flux (lm)		Efficacy Nominal (lm/W)	Watts (W)	
						Nominal	Max		Nominal	Max
Rectangular ⁽¹⁾	2x2	LSR1-04C32-2780-00	2700K	80	5-Step	556	2374	145	3.8	24.5
Rectangular ⁽¹⁾	2x2	LSR1-04C32-2790-00	2700K	90	5-Step	456	1947	119	3.8	24.5
Rectangular ⁽¹⁾	2x2	LSR1-04C32-3070-00	3000K	70	5-Step	624	2665	163	3.8	24.5
Rectangular ⁽¹⁾	2x2	LSR1-04C32-3080-00	3000K	80	5-Step	556	2372	145	3.8	24.5
Rectangular ⁽¹⁾	2x2	LSR1-04C32-4070-00	4000K	70	5-Step	656	2802	171	3.8	24.5
Rectangular ⁽¹⁾	2x2	LSR1-04C32-4080-00	4000K	80	5-Step	592	2528	155	3.8	24.5
Rectangular ⁽¹⁾	2x2	LSR1-04C32-5070-00	5000K	70	5-Step	656	2802	171	3.8	24.5
Rectangular ⁽¹⁾	2x2	LSR1-04C32-5080-00	5000K	80	5-Step	624	2665	163	3.8	24.5
Rectangular ⁽¹⁾	2x2	LSR1-04C32-5770-00	5700K	70	5-Step	656	2802	171	3.8	24.5
Rectangular ⁽¹⁾	2x2	LSR1-04C32-5780-00	5700K	80	5-Step	624	2665	163	3.8	24.5
Rectangular ⁽¹⁾	2x6	LSR1-12C32-2780-00	2700K	80	5-Step	1668	7123	145	11.5	73.4
Rectangular ⁽¹⁾	2x6	LSR1-12C32-2790-00	2700K	90	5-Step	1368	5841	119	11.5	73.4
Rectangular ⁽¹⁾	2x6	LSR1-12C32-3070-00	3000K	70	5-Step	1872	7995	163	11.5	73.4
Rectangular ⁽¹⁾	2x6	LSR1-12C32-3080-00	3000K	80	5-Step	1668	7116	145	11.5	73.4
Rectangular ⁽¹⁾	2x6	LSR1-12C32-4070-00	4000K	70	5-Step	1968	8405	171	11.5	73.4
Rectangular ⁽¹⁾	2x6	LSR1-12C32-4080-00	4000K	80	5-Step	1776	7584	155	11.5	73.4
Rectangular ⁽¹⁾	2x6	LSR1-12C32-5070-00	5000K	70	5-Step	1968	8405	171	11.5	73.4
Rectangular ⁽¹⁾	2x6	LSR1-12C32-5080-00	5000K	80	5-Step	1872	7995	163	11.5	73.4
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Rectangular ⁽¹⁾	2x6	LSR1-12C32-5780-00	5700K	80	5-Step	1872	7995	163	11.5	73.4

⁽¹⁾ Product performance at 350mA T_j = 85°C.

⁽²⁾ Cree XLamp XP-G3 LED order codes specify only a minimum flux bin and not a maximum. Opulent Americas may ship modules in flux bins higher than the minimum specified by the order code without advance notice. Shipments will always adhere to the chromaticity bin restrictions specified by the order code.



XP-G3 Series Specifications

Order Code Formatting

Series	-	LED Count	LED Code	-	Color Temperature	Color Rendering Index	-	Internal Code
LSR1 - Standard High Power LED PCB Assembly, Rectangular		04 - 4 LEDs	C32 - Cree XPG3		27 - 2700K	70 - 70 CRI		XX
		12 - 12 LEDs			30 - 3000K	80 - 80 CRI		
					40 - 4000K	90 - 90 CRI		
					50 - 5000K			
					57 - 5700K			



XP-G3 Series Specifications

Electrical Characteristics

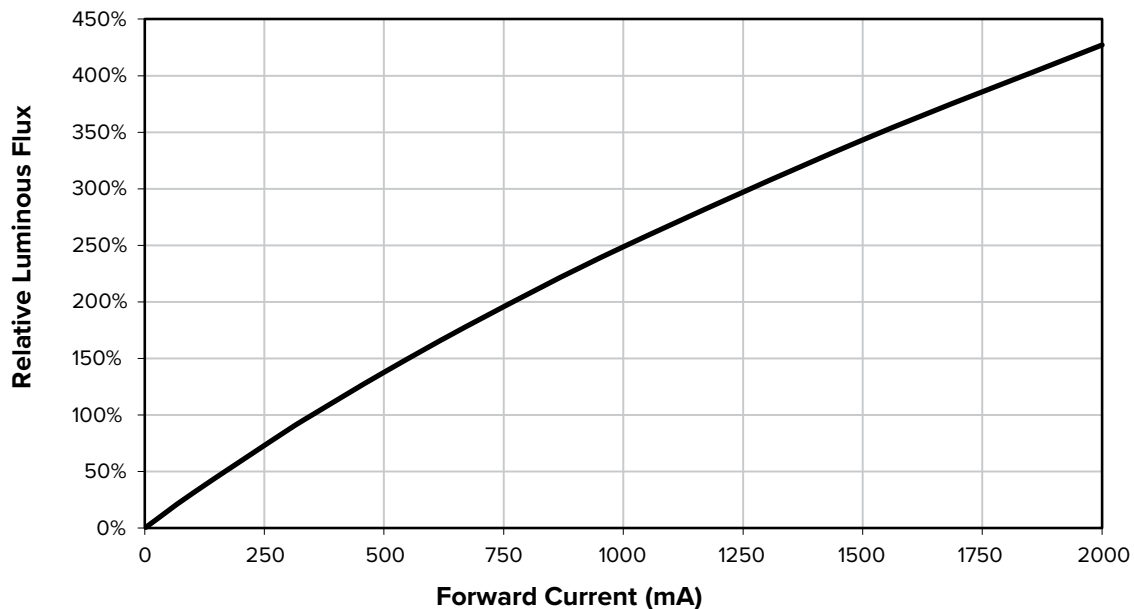
Part Number	Forward Voltage (v)		Typical Thermal Resistance - Junction to Heat Sink (K/W) RTh J-HS
	Typical	Maximum	
LSR1-04x	10.92	12.32	1.8
LSR1-12x	32.76	36.96	1.8

Intended for connection to a class 2 power source with a maximum operating voltage of 50 Vdc

Maximum Ratings

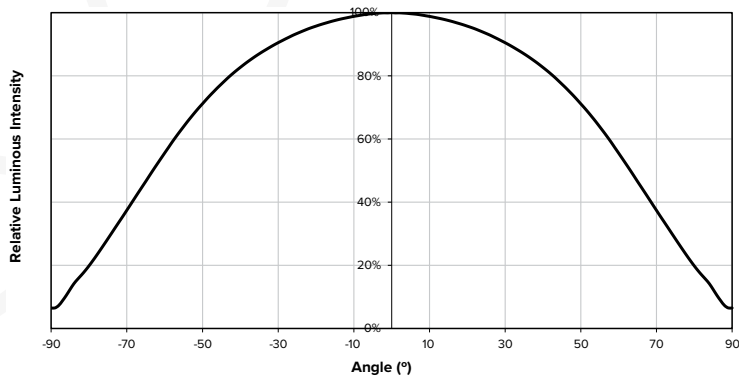
Part Number	DC Current (A)	Tsp Temp (°C)	Power (W)
LSR1-04x	2.00	105	24.5
LSR1-12x	2.00	105	73.4

Relative Flux Vs Board Current (TJ = 85°C)



XP-G3 Series Specifications

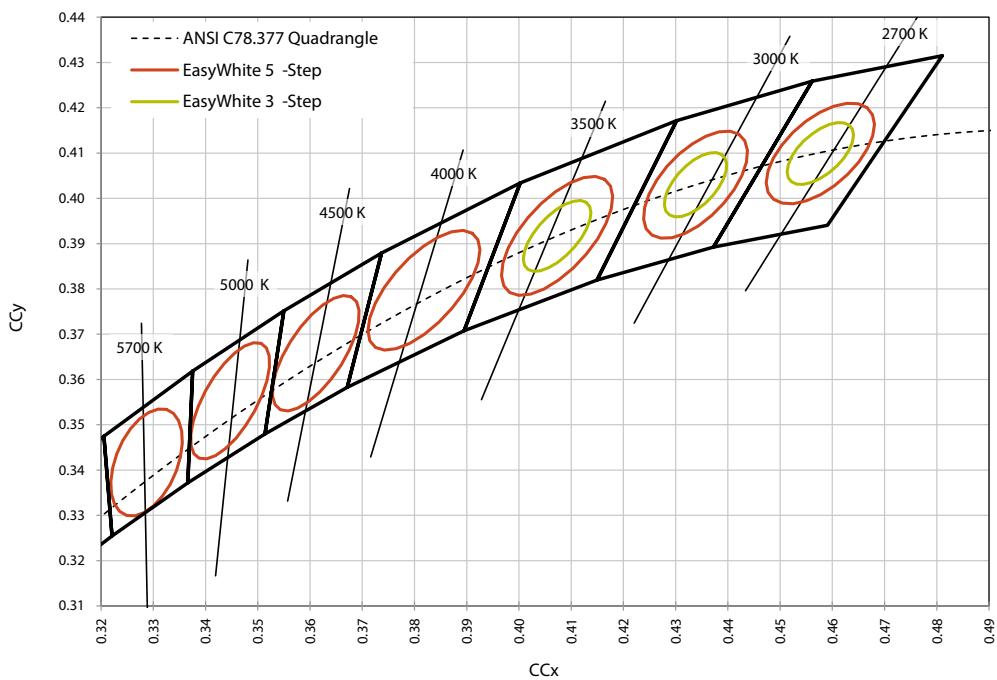
Spatial Distribution



Performance Groups – Chromaticity

5-Step Binning					
CCT	Center Point		Major Axis	Minor Axis	Rotation Angle (°)
	X	Y	a	b	
5700K	0.3287	0.3417	0.0123	0.0060	72.0
5000K	0.3447	0.3553	0.0140	0.0052	65.0
4000K	0.3818	0.3797	0.0157	0.0067	53.7
3000K	0.4338	0.4030	0.0139	0.0068	53.2
2700K	0.4577	0.4099	0.0135	0.0070	48.5

Standard White Chromaticity Regions



XP-G3 Series Specifications

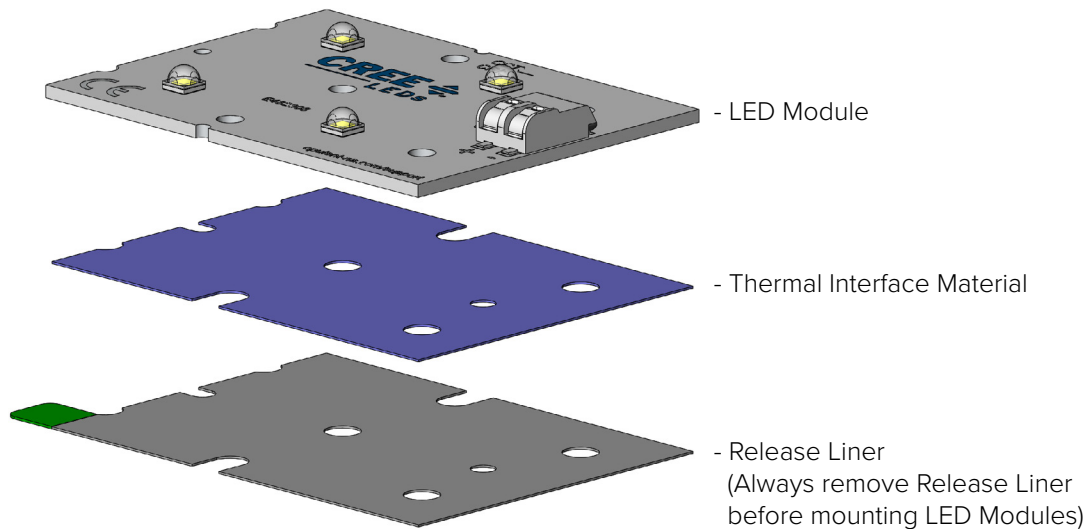
Thermal Interface Properties

Property	Test Method	Value	Unit
Color	-	Blue	-
Thickness	ASTM D374	0.3	mm
Construction	-	Silicone / Ceramic	-
Temperature Range	EN344	-50-200	°C
Breakdown Voltage	ASTM D149	>8.0	Kv/mm
Flame Rating	UL94	V-0	-
Thermal Conductivity	ASTM D5470	3.0	W/m-K

Intended for connection to a class 2 power source with a maximum operating voltage of 50 Vdc

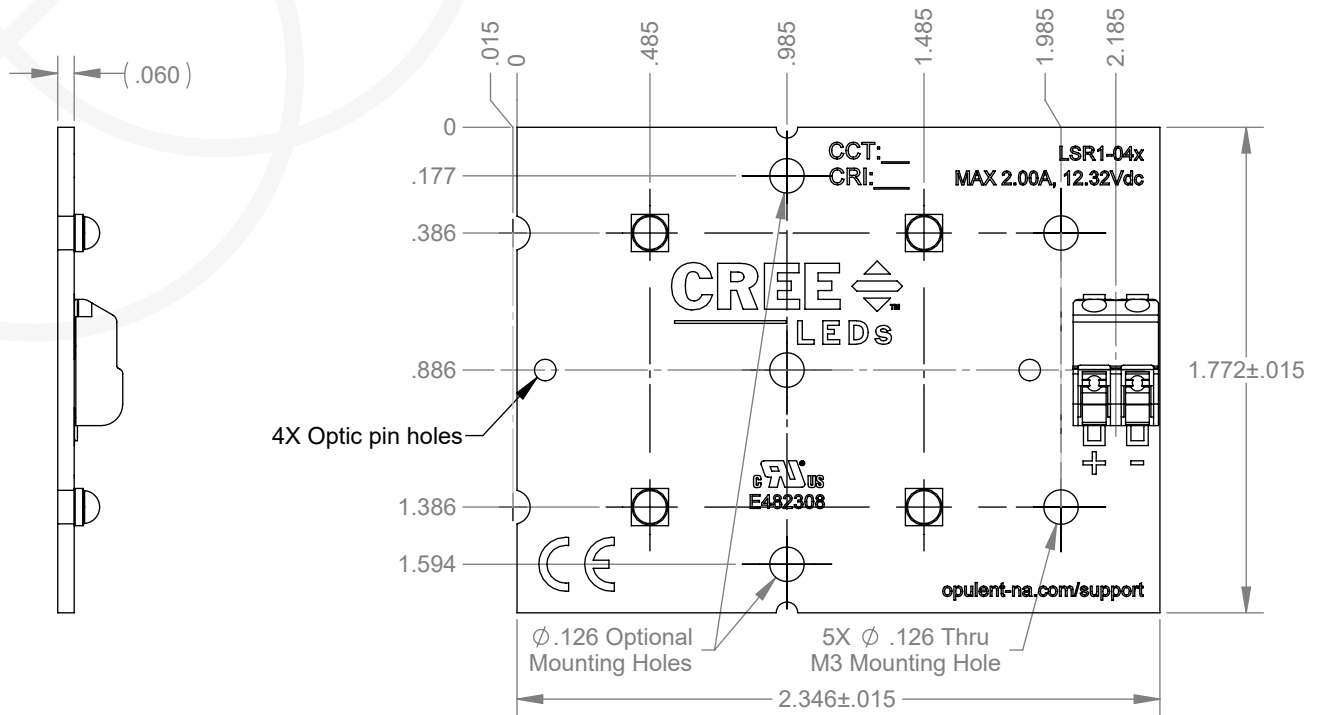
Board Material Properties

Property	Value	Unit
Solder Mask Color	White	-
Thickness	.062	in
Construction	AL	-
Temperature	130	°C
Flame Rating	V-0	-
Copper Thickness	2	oz

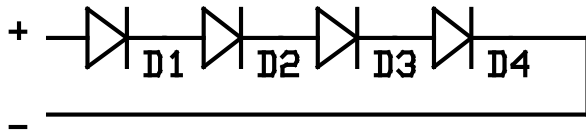


XP-G3 Series Specifications

Opulent Americas Rectangular 4 LED XP-G3 Module



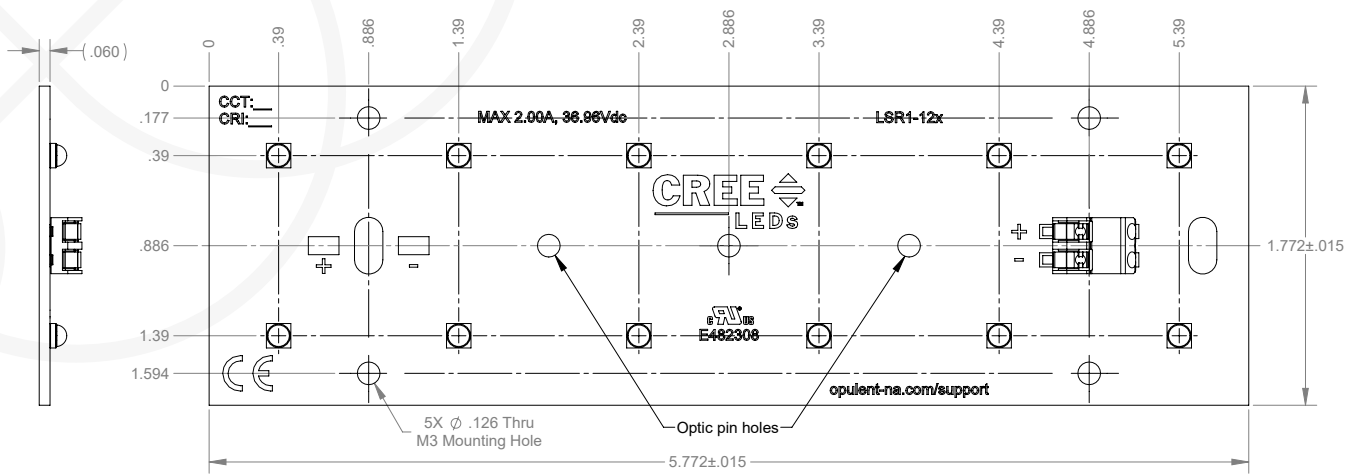
Schematic



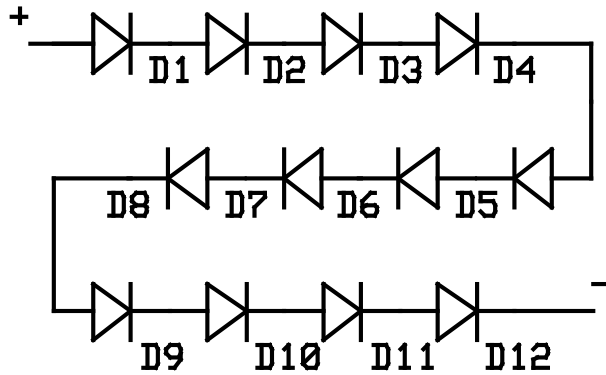
1. Dual Poke-In Connectors accept 18-24 AWG solid or stranded wire
2. Recommended Mounting Hardware: 5x M3-5 Socket Head Cap Screws

XP-G3 Series Specifications

Opulent Americas Rectangular 12 LED XP-G3 Module



Schematic



1. Dual Poke-In Connectors accept 18-24 AWG solid or stranded wire
2. Recommended Mounting Hardware: 5x M3-5 Socket Head Cap Screws

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