opulent americas

Cree Performance XHP50 LED Module

Power of Cree XHP Series 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

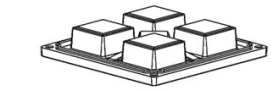
- Market leading L90 & L70 lifetimes, even in high stress conditions
- 70, 80, and 90 CRI LEDs available
- Metal core PCB for optimal thermal management
- Configurable with off the shelf optics, and heat sinks
- Private label or custom designs available

Simplify Your Next Design

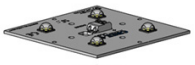
The Cree performance modules, built with Cree SC5 technology, are an off-the-shelf platform to rapidly move from prototype to finished LED lighting fixture. These versatile building blocks are UL-listed and include Cree XHP35, XHP50 & XHP70 LEDs in square, linear or rectangle formats. The thermal interface 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

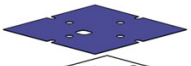
Opulent Americas also offers standard heat sinks and fully assembled IP-rated modules.



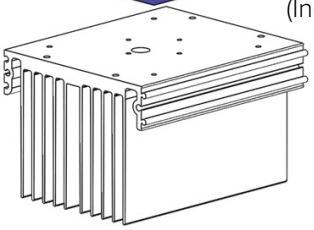
- Standard Off-The-Shelf Optics Available



- Opulent Americas LED Module



- Thermal Interface Material (Included with Modules)



- Opulent Americas Heat Sink. Click HERE for data sheet.

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.

RoHS E482308 CE CREE LEDs

Last Modified: 05/26/17

XHP50 Series Specifications

Product Selection Table

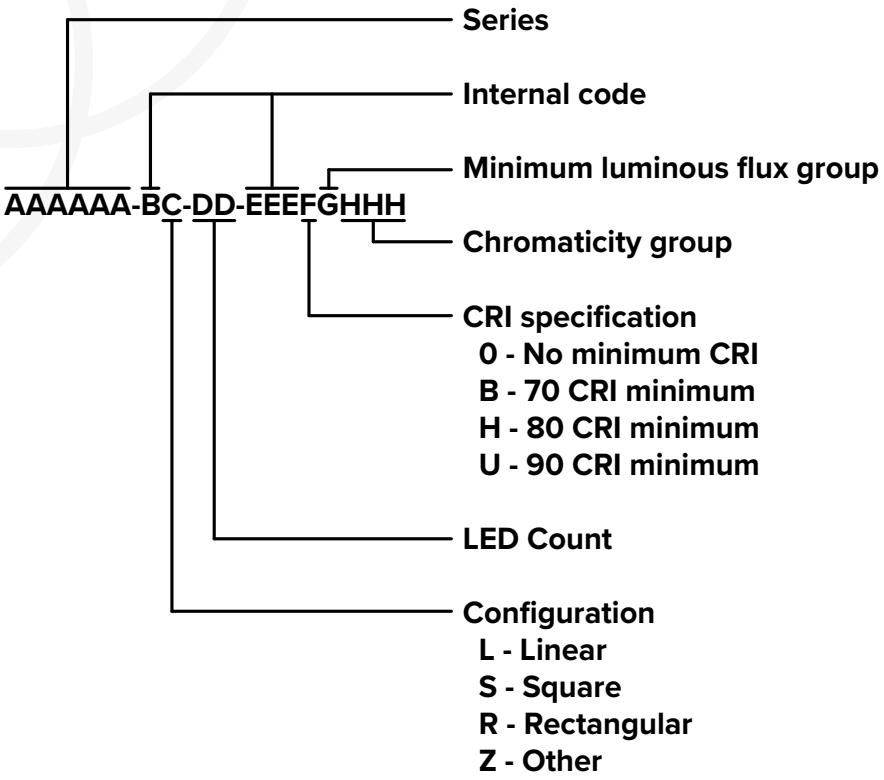
Configuration	LED Layout	Part Number	CCT	CRI	Binning	Luminous Flux (lm)		Efficacy Nominal (lm/W)	Watts (W)	
						Nominal	Max		Nominal	Max
Square[1]	Single	XHP50A-0S-01-0D0HH227G	2700K	80	3-Step	900	1665	112	8	18
Square[1]	Single	XHP50A-0S-01-0D0BH430E	3000K	70	5-Step	970	1795	121	8	18
Square[1]	Single	XHP50A-0S-01-0D0BJ440E	4000K	70	5-Step	1120	2072	139	8	18
Square[1]	Single	XHP50A-0S-01-0D0BJ450E	5000K	70	5-Step	1120	2072	139	8	18
Square[1]	Single	XHP50A-0S-01-0D0BJ40E2	5700K	70	ANSI	1120	2072	139	8	18
Linear[1]	1x2	XHP50A-0L-02-0D0HH227G	2700K	80	3-Step	1800	3330	112	16	36
Linear[1]	1x2	XHP50A-0L-02-0D0BH430E	3000K	70	5-Step	1940	3589	121	16	36
Linear[1]	1x2	XHP50A-0L-02-0D0BJ440E	4000K	70	5-Step	2240	4145	139	16	36
Linear[1]	1x2	XHP50A-0L-02-0D0BJ450E	5000K	70	5-Step	2240	4145	139	16	36
Linear[1]	1x2	XHP50A-0L-02-0D0BJ40E2	5700K	70	ANSI	2240	4145	139	16	36
Linear[1]	1x3	XHP50A-0L-03-0D0HH227G	2700K	80	3-Step	2700	4995	112	24	54
Linear[1]	1x3	XHP50A-0L-03-0D0BH430E	3000K	70	5-Step	2910	5384	121	24	54
Linear[1]	1x3	XHP50A-0L-03-0D0BJ440E	4000K	70	5-Step	3360	6217	139	24	54
Linear[1]	1x3	XHP50A-0L-03-0D0BJ450E	5000K	70	5-Step	3360	6217	139	24	54
Linear[1]	1x3	XHP50A-0L-03-0D0BJ40E2	5700K	70	ANSI	3360	6217	139	24	54
Linear[1]	1x4	XHP50A-0L-04-0D0HH227G	2700K	80	3-Step	3600	6660	112	32	72
Linear[1]	1x4	XHP50A-0L-04-0D0BH430E	3000K	70	5-Step	3880	7178	121	32	72
Linear[1]	1x4	XHP50A-0L-04-0D0BJ440E	4000K	70	5-Step	4480	8290	139	32	72
Linear[1]	1x4	XHP50A-0L-04-0D0BJ450E	5000K	70	5-Step	4480	8290	139	32	72
Linear[1]	1x4	XHP50A-0L-04-0D0BJ40E2	5700K	70	ANSI	4480	8290	139	32	72
Square[1]	2x2	XHP50A-0S-04-0D0HH227G	2700K	80	3-Step	3600	6660	112	32	72
Square[1]	2x2	XHP50A-0S-04-0D0BH430E	3000K	70	5-Step	3880	7178	121	32	72
Square[1]	2x2	XHP50A-0S-04-0D0BJ440E	4000K	70	5-Step	4480	8290	139	32	72
Square[1]	2x2	XHP50A-0S-04-0D0BJ450E	5000K	70	5-Step	4480	8290	139	32	72
Square[1]	2x2	XHP50A-0S-04-0D0BJ40E2	5700K	70	ANSI	4480	8290	139	32	72

[1] Product performance at 700mA Tj = 85°C.

[2] Cree XLamp XHP50 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.

XHP50 Series Specifications

Order Code Formatting



XHP50 Series Specifications

Electrical Characteristics

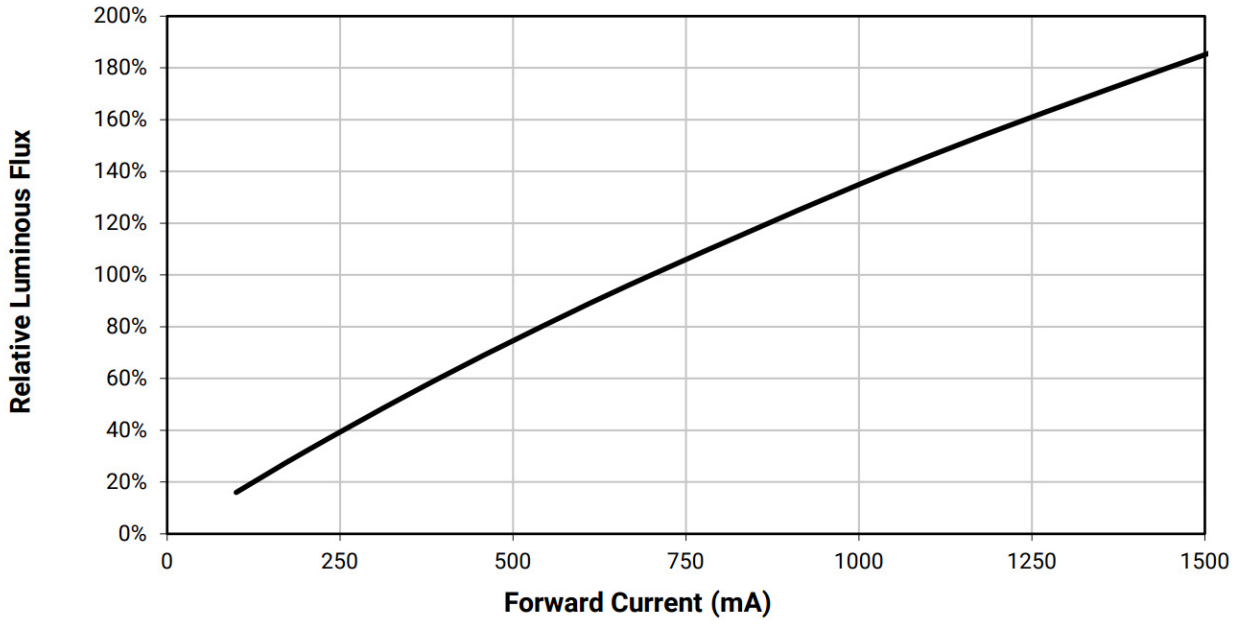
Part Number	Forward Voltage (v)		Typical Thermal Resistance - Juntion to Solder Point (°C/W) RTh J-HS
	Typical	Maximum	
XHP50A-0S-01-x	11.5	12.6	1.2
XHP50A-0L-02-x	23	25.2	1.2
XHP50A-0L-03-x	34.5	37.8	1.2
XHP50A-0L-04-x	46	50.4	1.2
XHP50A-0S-04-x	46	50.4	1.2

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

Maximum Ratings

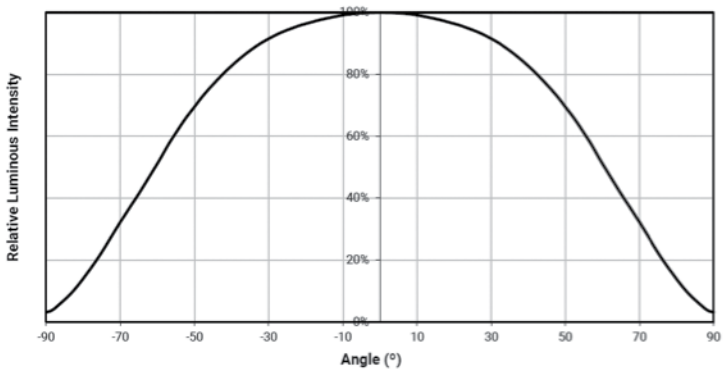
Part Number	DC Current (A)	Tsp Temp (°C)	Power (W)
XHP50A-0S-01-x	1.5	105	19
XHP50A-0L-02-x	1.5	105	38
XHP50A-0L-03-x	1.5	105	57
XHP50A-0L-04-x	1.5	105	76
XHP50A-0S-04-x	1.5	105	76

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



XHP50 Series Specifications

Spatial Distribution



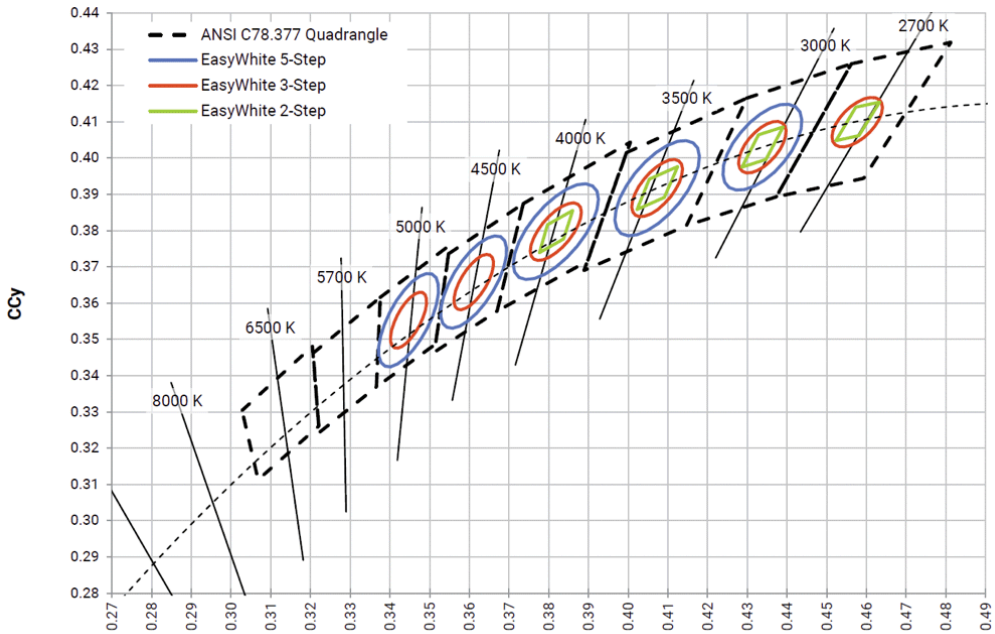
Performance Groups – Chromaticity

Binning	CCT	X	Y
ANSI	5700K	0.3207	0.3462
		0.3376	0.3616
		0.3366	0.3369
		0.3222	0.3243

Binning	CCT	Center Point		Major Axis		Rotation Angle (°)
		X	Y	a	b	
5-Step	5000K	0.3447	0.3553	0.01400	0.00520	65.0
5-Step	4000K	0.3818	0.3797	0.001420	0.00550	61.5
5-Step	3000K	0.4338	0.4030	0.01390	0.00680	53.2
3-Step	2700K	0.4577	0.4099	0.01350	0.00700	48.5

XHP50 Series Specifications

Standard White Chromaticity Regions Plotted On The CIE 1931 Curve



XHP50 Series Specifications

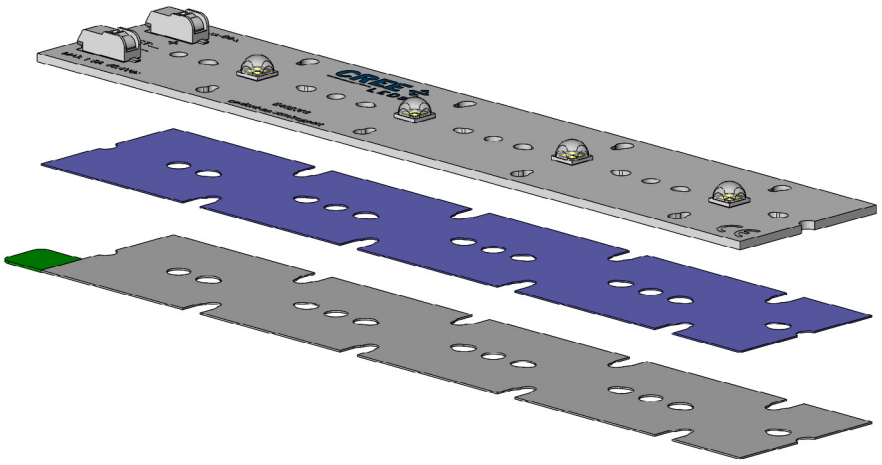
Thermal Interface Properties

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
Note: Release liner must be removed for proper thermal performance. Do not remove thermal Interface Material.

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



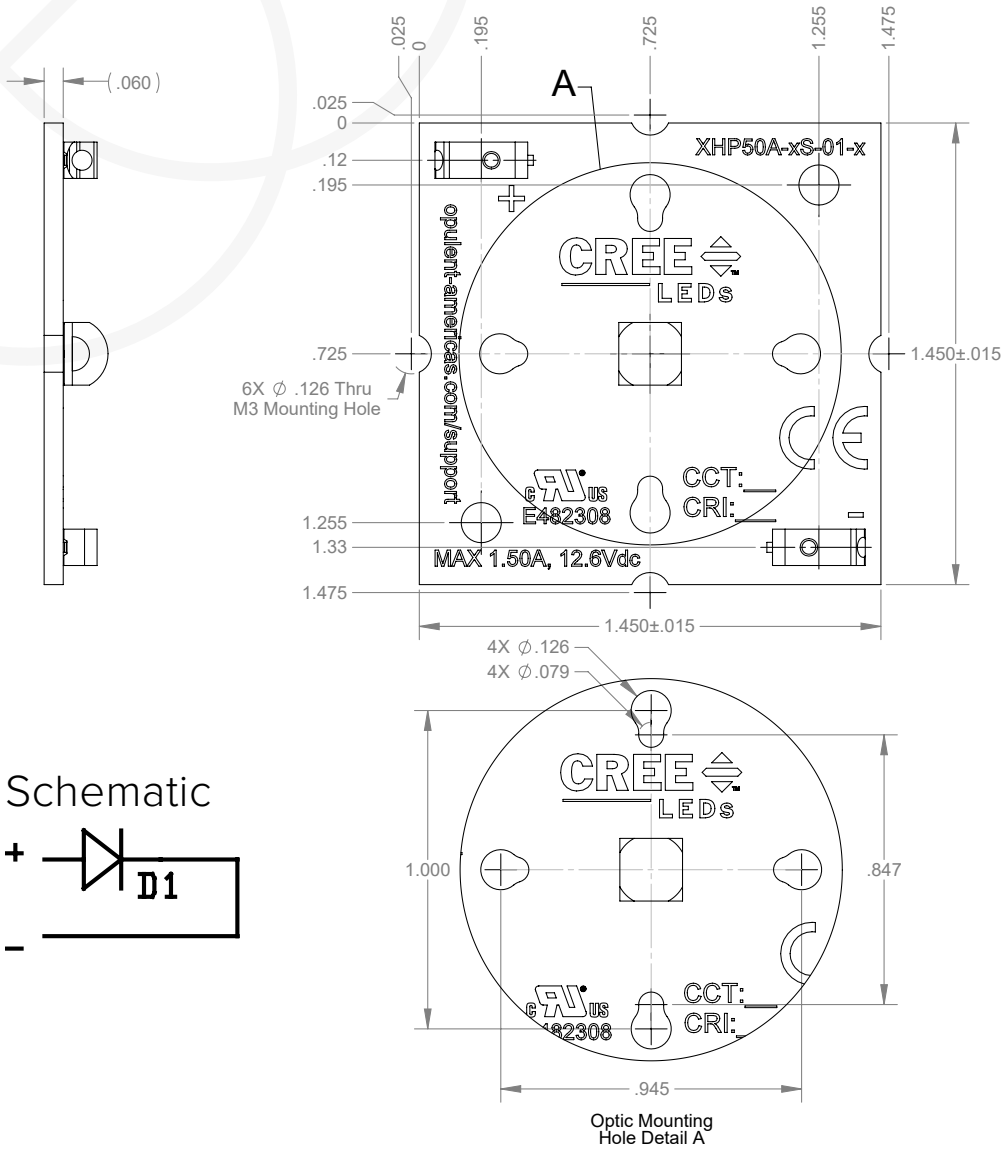
- XHP LED Module

- Thermal Interface Material

- Release Liner
(Always remove Release Liner
before mounting LED Modules)

XHP50 Series Specifications

Opulent Americas Square 1 LED XHP50 Module

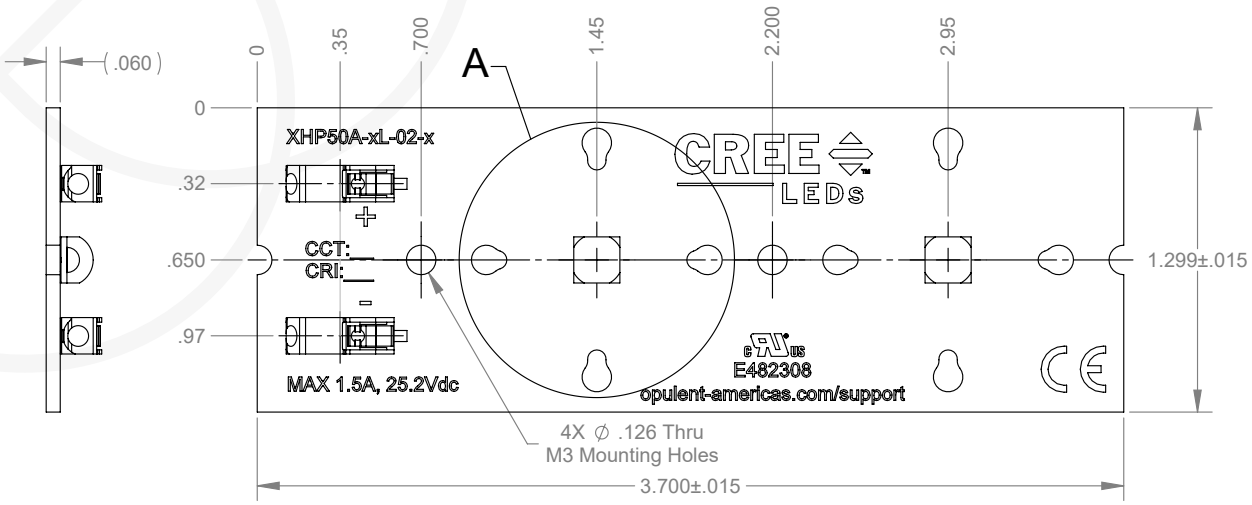


Schematic

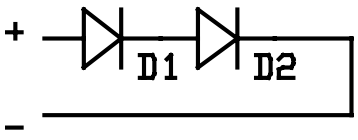
1. Single Poke-In Connectors accept 22-26 AWG solid or stranded wire
2. Recommended Mounting Hardware: 6x M3-.5 Socket Head Cap Screws

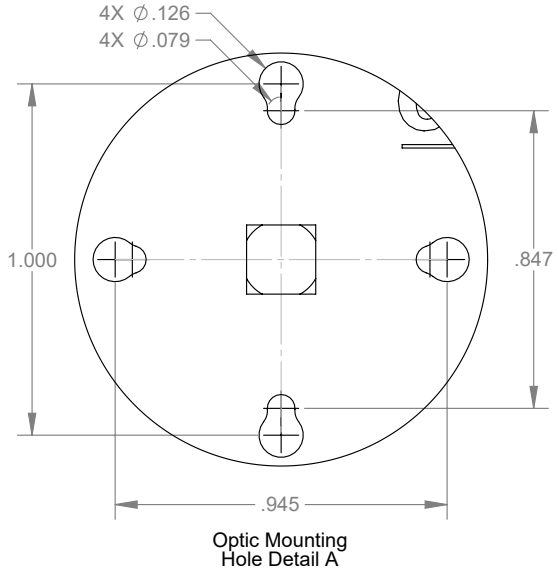
XHP50 Series Specifications

Opulent Americas Linear 2 LED XHP50 Module



Schematic



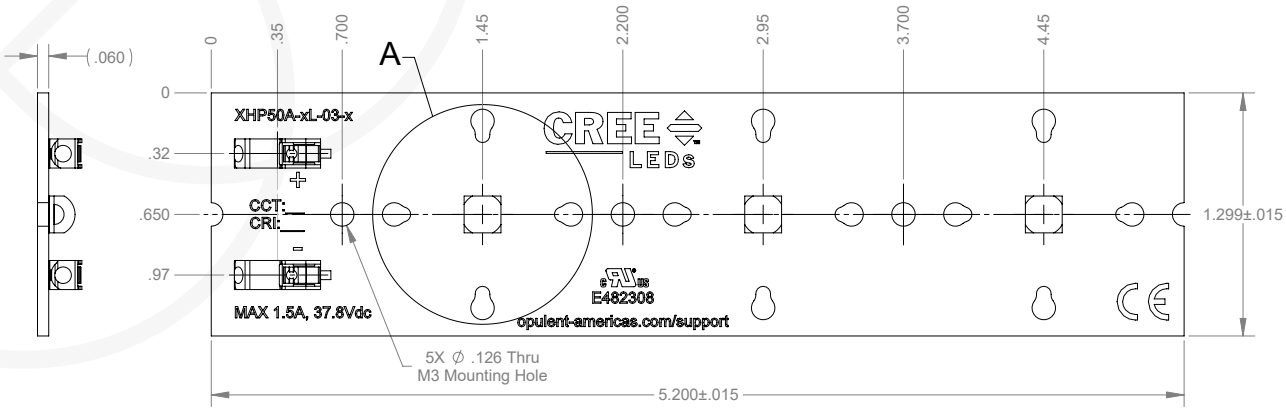


Optic Mounting Hole Detail A

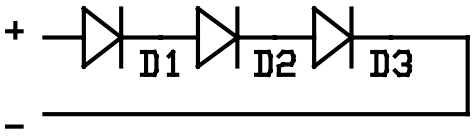
1. Single Poke-In Connectors accept 18-24 AWG solid or stranded wire
2. Recommended Mounting Hardware: 4x M3-.5 Socket Head Cap Screws

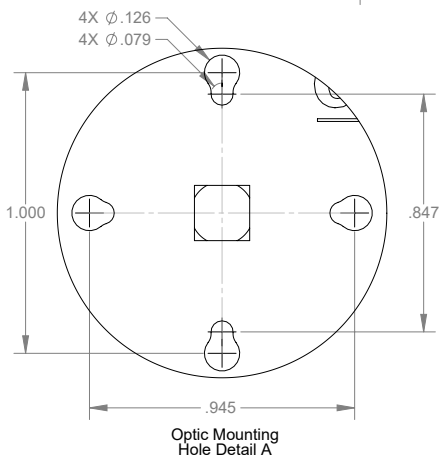
XHP50 Series Specifications

Opulent Americas Linear 3 LED XHP50 Module



Schematic

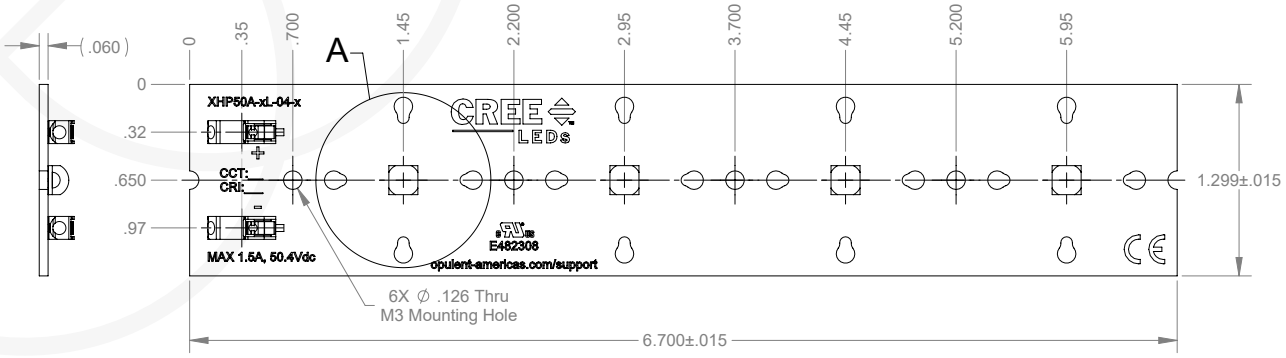


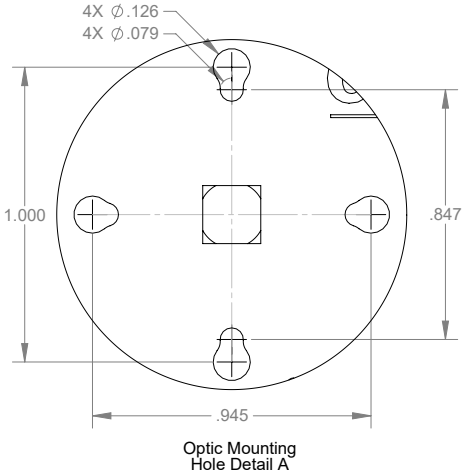


1. Single Poke-In Connectors accept 18-24 AWG solid or stranded wire
2. Recommended Mounting Hardware: 5x M3-.5 Socket Head Cap Screws

XHP50 Series Specifications

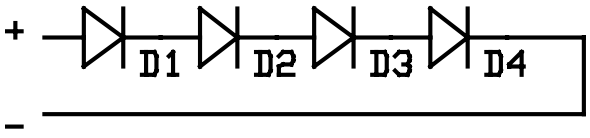
Opulent Americas Linear 4 LED XHP50 Module





Optic Mounting Hole Detail A

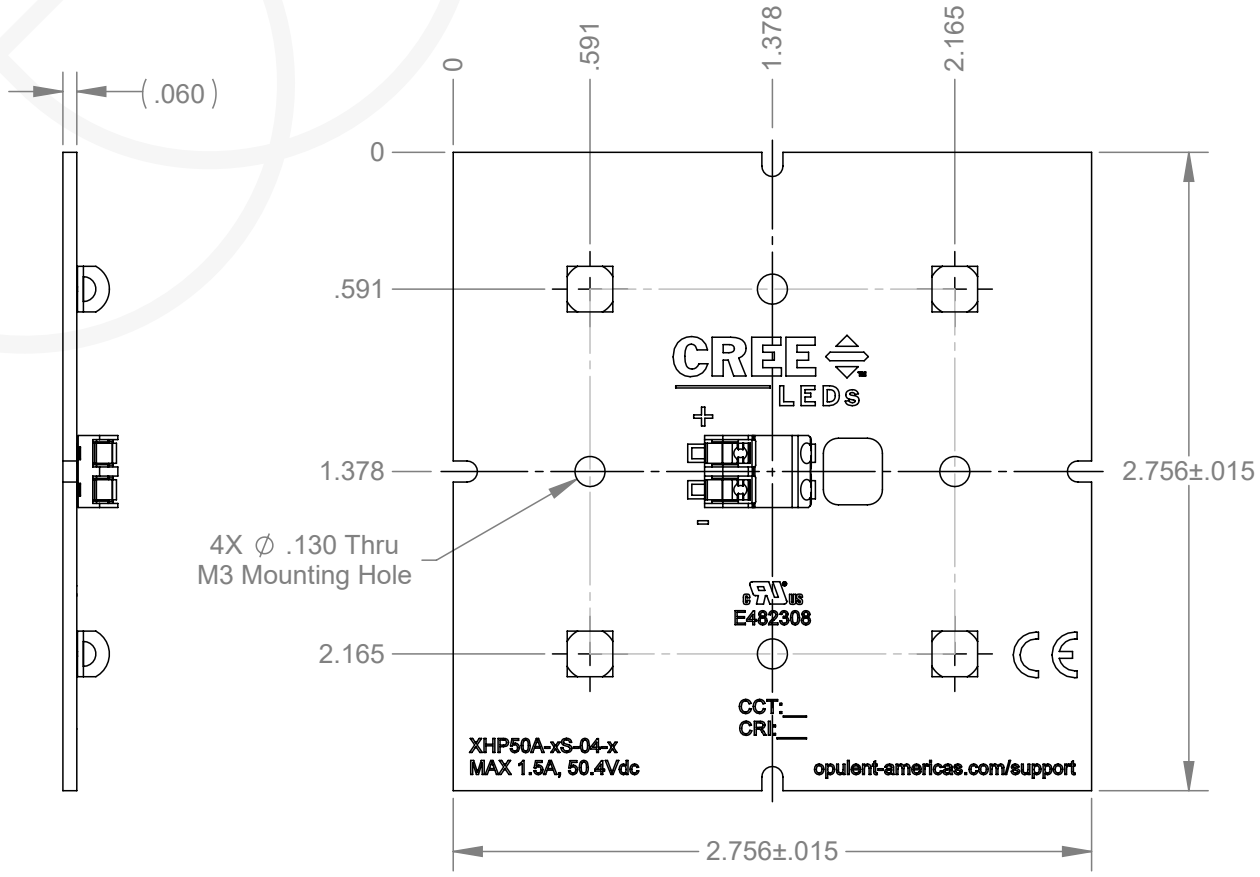
Schematic



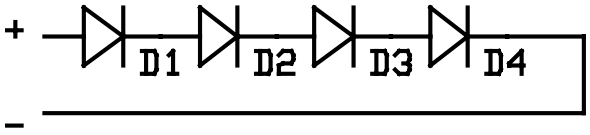
1. Single Poke-In Connectors accept 18-24 AWG solid or stranded wire
2. Recommended Mounting Hardware: 6x M3-.5 Socket Head Cap Screws

XHP50 Series Specifications

Opulent Americas Square 4 LED XHP50 Module



Schematic



1. Dual Poke-In Connectors accept 18-24 AWG solid or stranded wire
2. Recommended Mounting Hardware: 4x M3-.5 Socket Head Cap Screws