opulent americas

Cree Performance XHP70 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

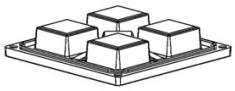
- Market leading L90 & L70 lifetimes, even in high stress conditions
- 70, 80, and 90 CRI LEDs available
- Metal core PCB for optimal thermal management
- Configurable with off the shelf optics, and heat sinks
- Private label or custom designs available

Simplify Your Next Design

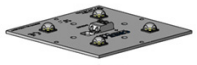
The Cree performance modules, built with Cree SC5 technology, are an off-the-shelf platform to rapidly move from prototype to finished LED lighting fixture. These versatile building blocks are UL-listed and include Cree XHP35, XHP50 & XHP70 LEDs in square, linear or rectangle formats. The thermal interface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

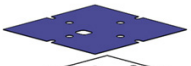
Opulent Americas also offers standard heat sinks and fully assembled IP-rated modules.



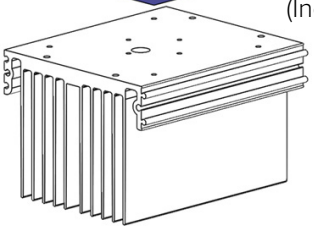
- Standard Off-The-Shelf Optics Available



- 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

XHP70 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	XHP70A-0S-01-0D0HM227G	2700K	80	3-Step	1380	2639	113	12.1	30
Square[1]	Single	XHP70A-0S-01-0D0BM430E	3000K	70	5-Step	1485	2839	122	12.1	30
Square[1]	Single	XHP70A-0S-01-0D0BN240E	4000K	70	5-Step	1590	3040	131	12.1	30
Square[1]	Single	XHP70A-0S-01-0D0BN450E	5000K	70	5-Step	1710	3270	140	12.1	30
Square[1]	Single	XHP70A-0S-01-0D0BN40E2	5700K	70	ANSI	1710	3270	140	12.1	30
Linear[1]	1x2	XHP70A-0L-02-0D0HM227G	2700K	80	3-Step	2760	5278	113	24.2	60
Linear[1]	1x2	XHP70A-0L-02-0D0BM430E	3000K	70	5-Step	2970	5678	122	24.2	60
Linear[1]	1x2	XHP70A-0L-02-0D0BN240E	4000K	70	5-Step	3180	6080	131	24.2	60
Linear[1]	1x2	XHP70A-0L-02-0D0BN450E	5000K	70	5-Step	3420	6541	140	24.2	60
Linear[1]	1x2	XHP70A-0L-02-0D0BN40E2	5700K	70	ANSI	3420	6541	140	24.2	60
Linear[1]	1x3	XHP70A-0L-03-0D0HM227G	2700K	80	3-Step	4140	7917	113	36.3	90
Linear[1]	1x3	XHP70A-0L-03-0D0BM430E	3000K	70	5-Step	4455	8517	122	36.3	90
Linear[1]	1x3	XHP70A-0L-03-0D0BN240E	4000K	70	5-Step	4770	9120	131	36.3	90
Linear[1]	1x3	XHP70A-0L-03-0D0BN450E	5000K	70	5-Step	5130	9811	140	36.3	90
Linear[1]	1x3	XHP70A-0L-03-0D0BN40E2	5700K	70	ANSI	5130	9811	140	36.3	90
Linear[1]	1x4	XHP70A-0L-04-0D0HM227G	2700K	80	3-Step	5520	10556	113	48.4	100/119[2]
Linear[1]	1x4	XHP70A-0L-04-0D0BM430E	3000K	70	5-Step	5940	11356	122	48.4	100/119[2]
Linear[1]	1x4	XHP70A-0L-04-0D0BN240E	4000K	70	5-Step	6360	12160	131	48.4	100/119[2]
Linear[1]	1x4	XHP70A-0L-04-0D0BN450E	5000K	70	5-Step	6840	13081	140	48.4	100/119[2]
Linear[1]	1x4	XHP70A-0L-04-0D0BN40E2	5700K	70	ANSI	6840	13081	140	48.4	100/119[2]
Square[1]	2x2	XHP70A-0S-04-0D0HM227G	2700K	80	3-Step	5520	10556	113	48.4	100/119[2]
Square[1]	2x2	XHP70A-0S-04-0D0BM430E	3000K	70	5-Step	5940	11356	122	48.4	100/119[2]
Square[1]	2x2	XHP70A-0S-04-0D0BN240E	4000K	70	5-Step	6360	12160	131	48.4	100/119[2]
Square[1]	2x2	XHP70A-0S-04-0D0BN450E	5000K	70	5-Step	6840	13081	140	48.4	100/119[2]
Square[1]	2x2	XHP70A-0S-04-0D0BN40E2	5700K	70	ANSI	6840	13081	140	48.4	100/119[2]

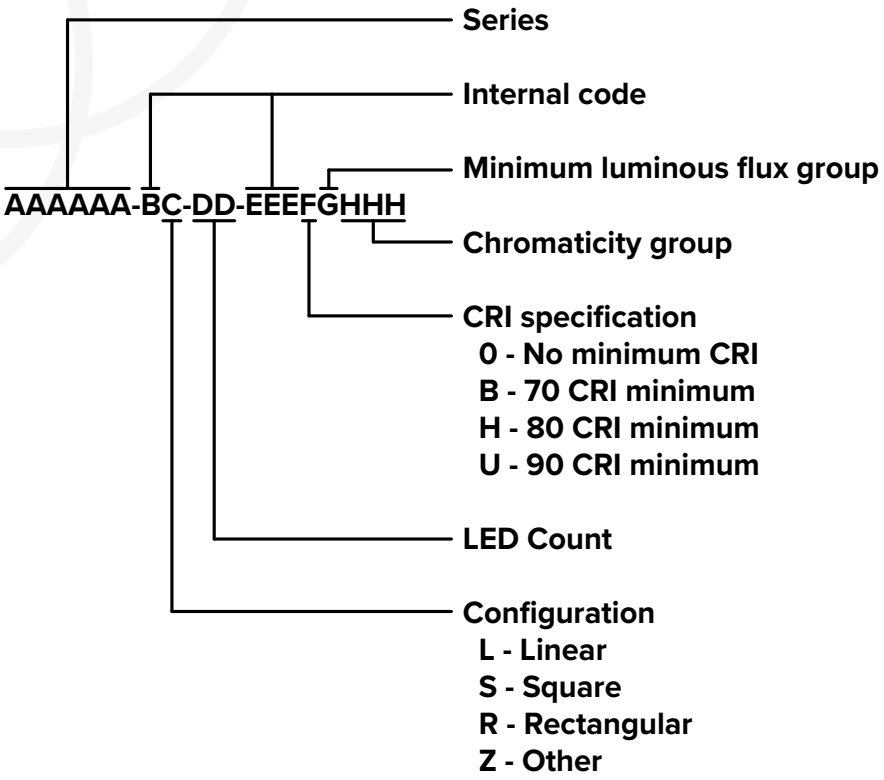
[1] Nominal product performance at 1050mA Tj = 85°C.

[2] Input power not to exceed 100W for UL Class 2. Suitability for usage in other than Class 2 circuits shall be determined in the end-product investigation.

[3] Cree XLamp XHP70 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.

XHP70 Series Specifications

Order Code Formatting



XHP70 Series Specifications

Electrical Characteristics

Part Number	Forward Voltage (v)		Typical Thermal Resistance - Juntion to Solder Point (°C/W) RTh J-HS
	Typical	Maximum	
XHP70A-0S-01-x	11.6	12.4	0.9
XHP70A-0L-02-x	23.2	24.8	0.9
XHP70A-0L-03-x	34.8	37.2	0.9
XHP70A-0L-04-x	46.4	49.6	0.9
XHP70A-0S-04-x	46.4	49.6	0.9

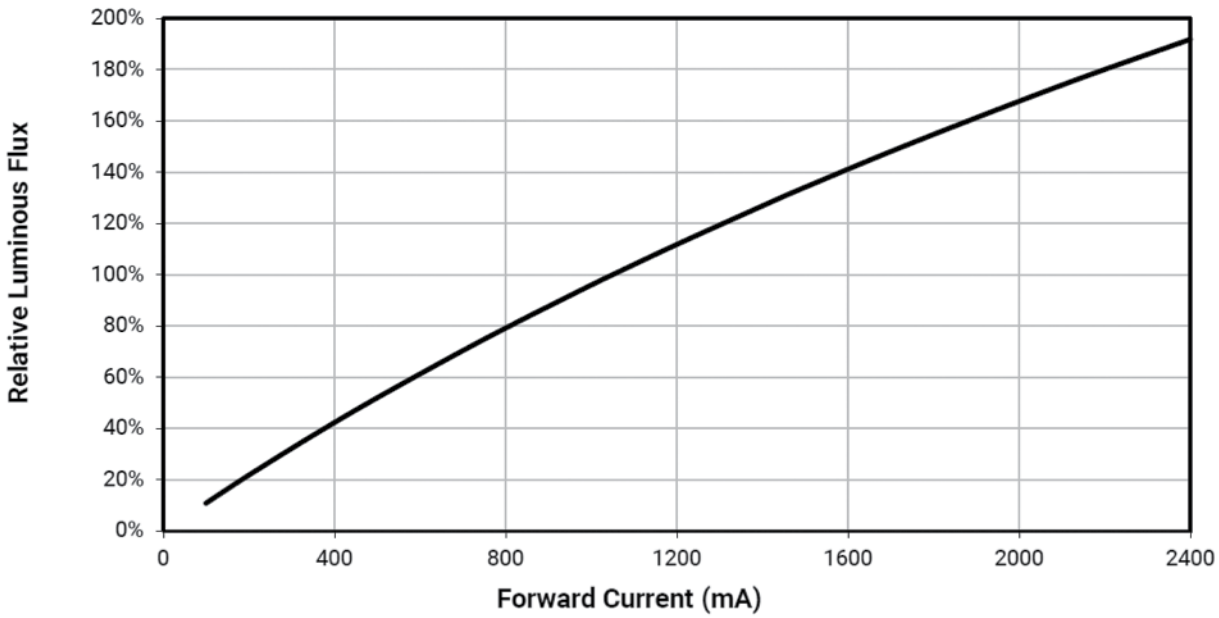
Intended for connection to a class 2 power source with a maximum operating voltage of 50 Vdc

Maximum Ratings

Part Number	DC Current (A)	Tsp Temp (°C)	Power (W)
XHP70A-0S-01-x	2.4	105	30
XHP70A-0L-02-x	2.4	105	60
XHP70A-0L-03-x	2.4	105	90
XHP70A-0L-04-x	2.4	105	100/119[1]
XHP70A-0S-04-x	2.4	105	100/119[1]

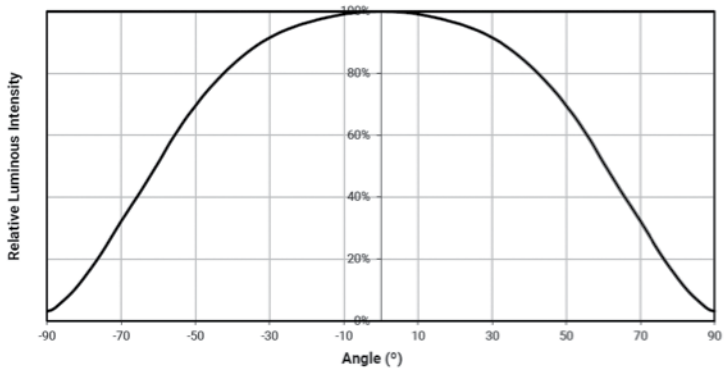
[1] Input power not to exceed 100W for UL Class 2. Suitability for usage in other than Class 2 circuits shall be determined in the end-product investigation.

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



XHP70 Series Specifications

Spatial Distribution



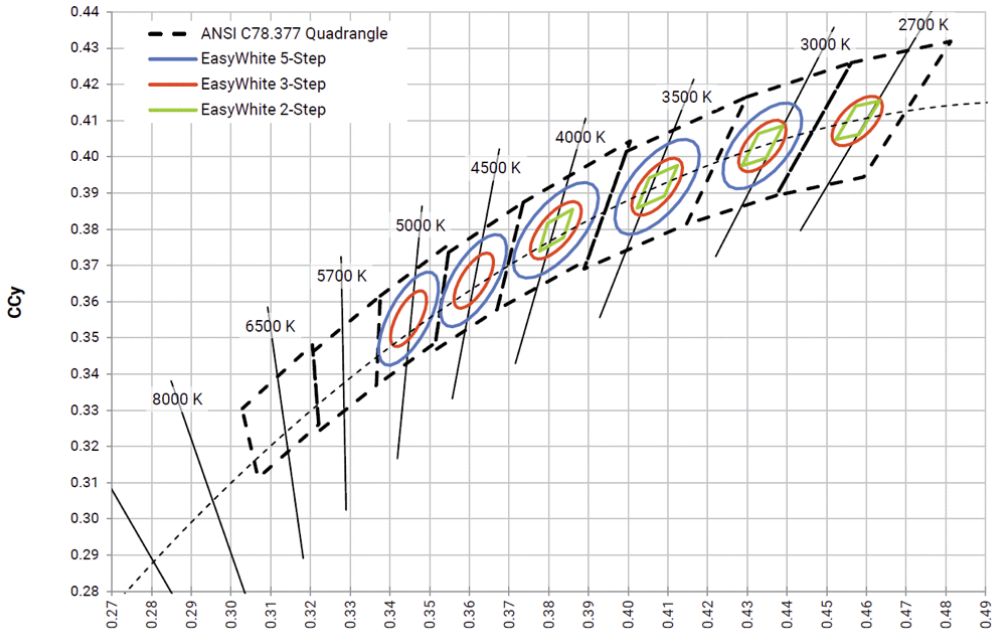
Performance Groups – Chromaticity

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

XHP70 Series Specifications

Standard White Chromaticity Regions Plotted On The CIE 1931 Curve



XHP70 Series Specifications

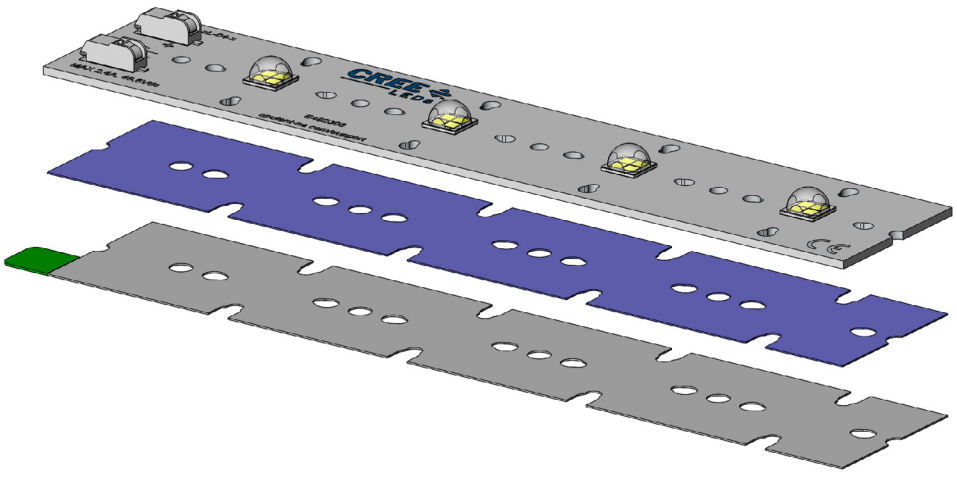
Thermal Interface Properties

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.

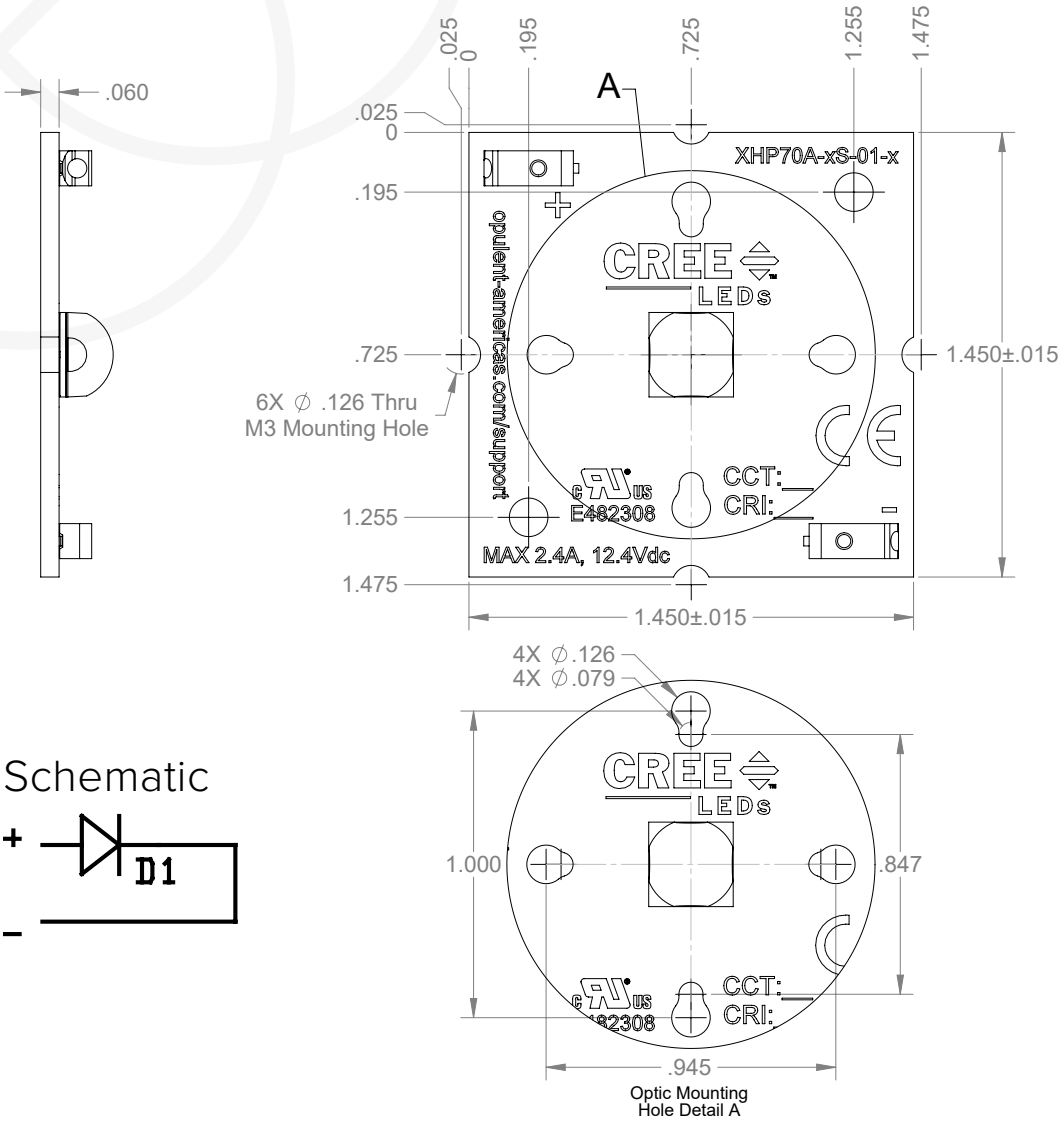
Board Material Properties

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



XHP70 Series Specifications

Opulent Americas Square 1 LED XHP70 Module

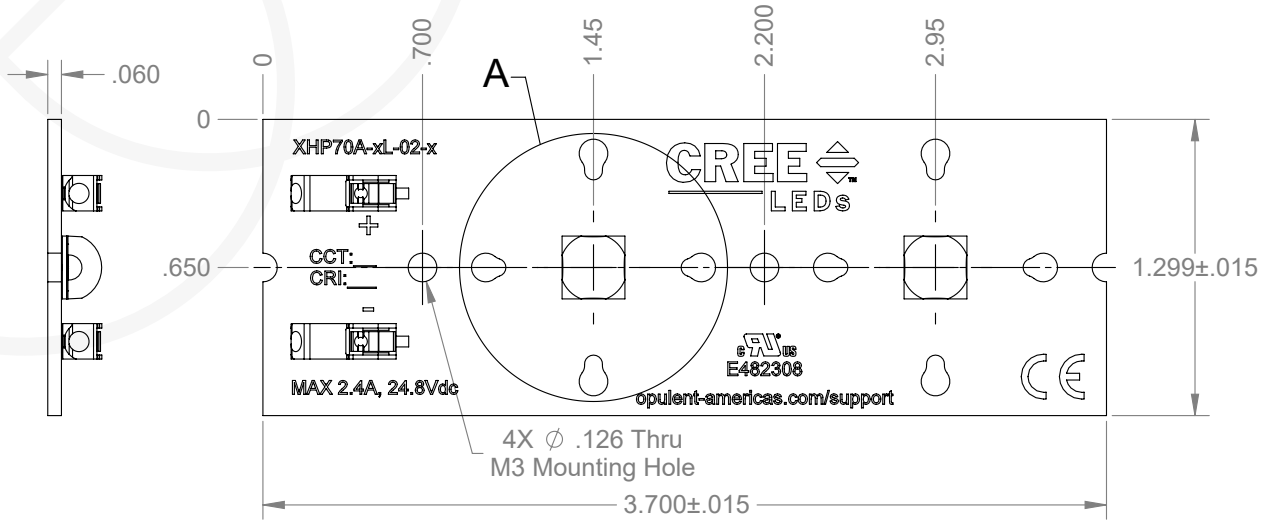


Schematic

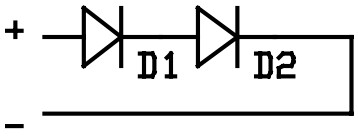
1. Single Poke-In Connectors accept 22-26 AWG solid or stranded wire
2. Recommended Mounting Hardware: 6x M3-.5 Socket Head Cap Screws

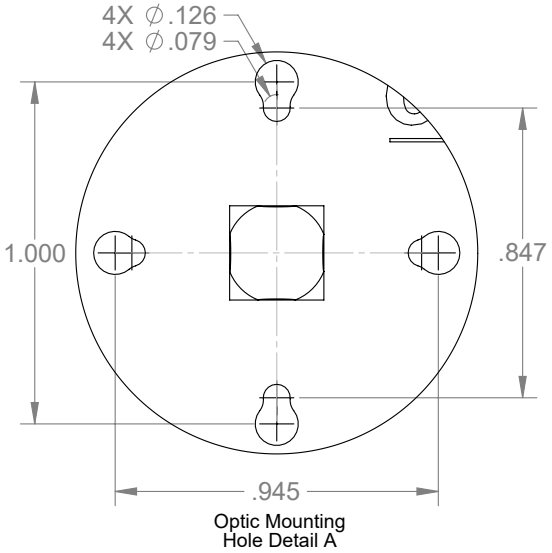
XHP70 Series Specifications

Opulent Americas Linear 2 LED XHP70 Module



Schematic

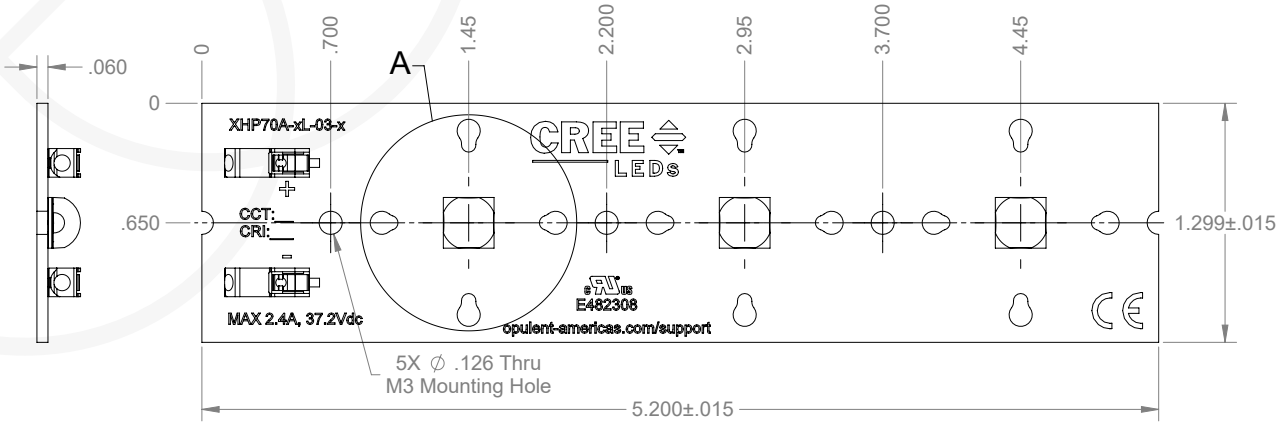


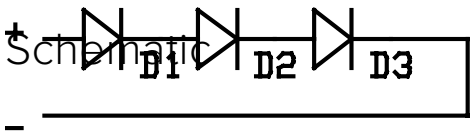


1. Single Poke-In Connectors accept 18-24 AWG solid or stranded wire
2. Recommended Mounting Hardware: 4x M3-.5 Socket Head Cap Screws

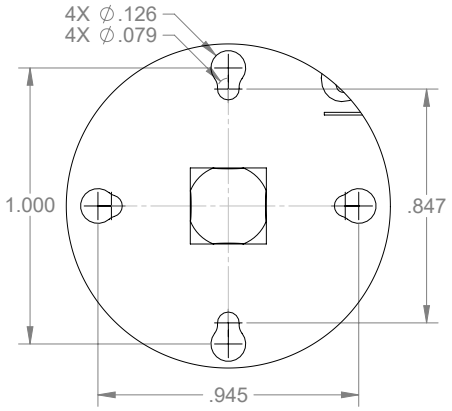
XHP70 Series Specifications

Opulent Americas Linear 3 LED XHP70 Module





Schematic

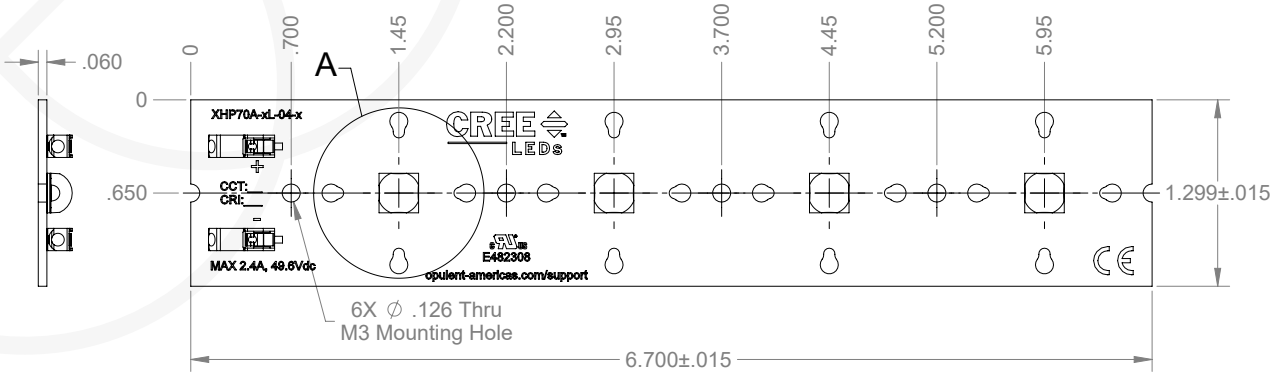


Optic Mounting Hole Detail A

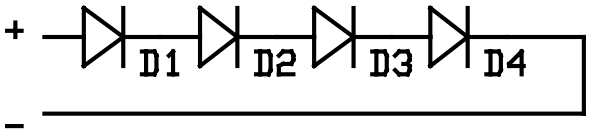
1. Single Poke-In Connectors accept 18-24 AWG solid or stranded wire
2. Recommended Mounting Hardware: 5x M3-.5 Socket Head Cap Screws

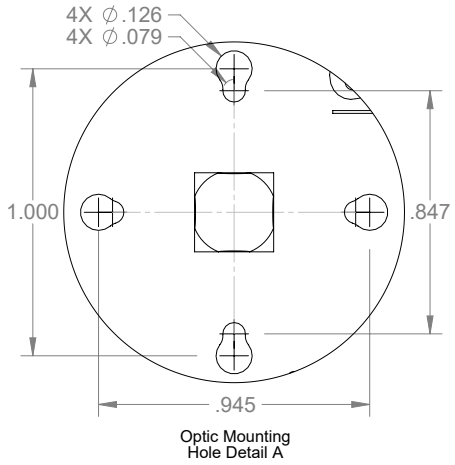
XHP70 Series Specifications

Opulent Americas Linear 4 LED XHP70 Module



Schematic

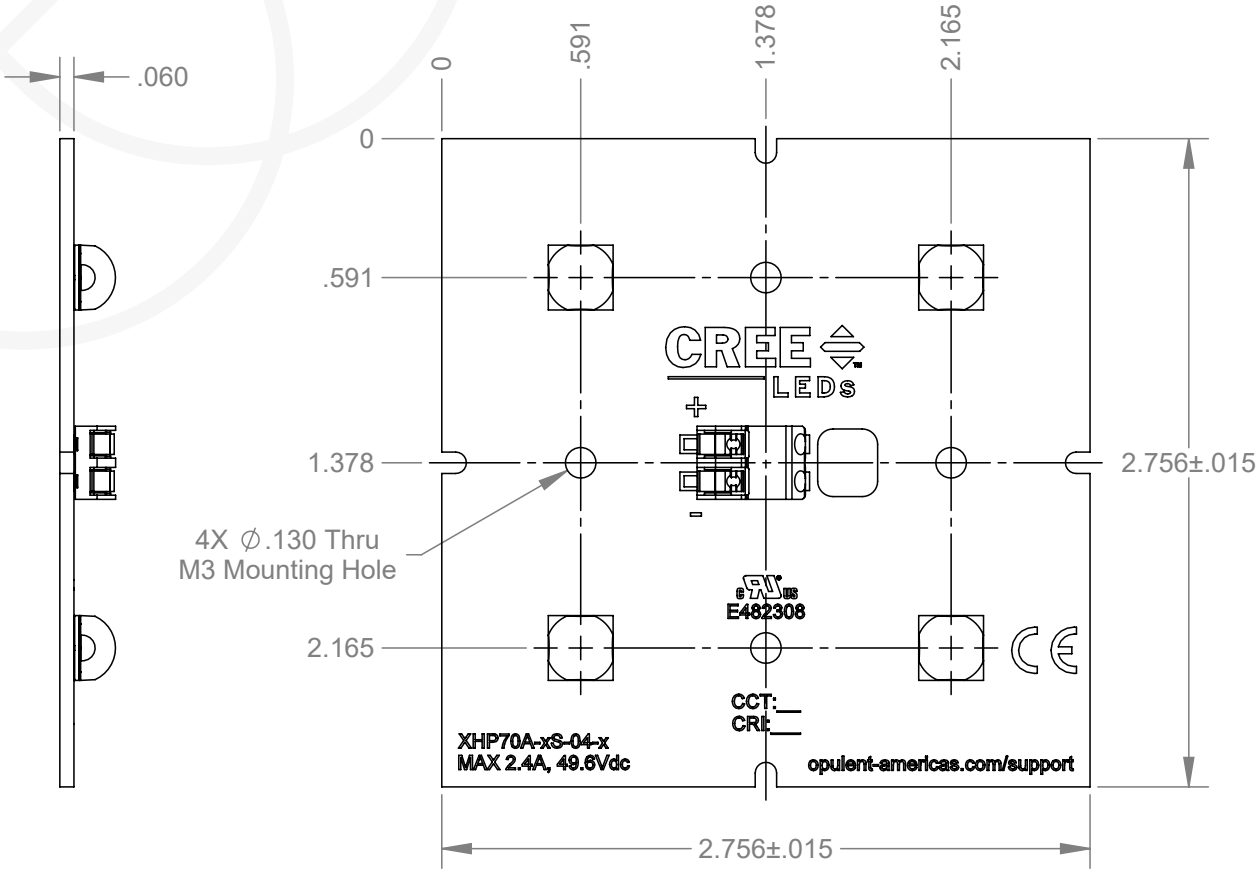




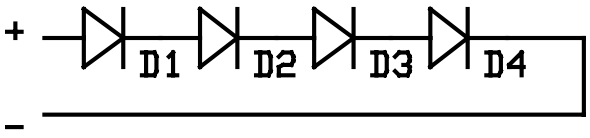
1. Single Poke-In Connectors accept 18-24 AWG solid or stranded wire
2. Recommended Mounting Hardware: 6x M3-.5 Socket Head Cap Screws

XHP70 Series Specifications

Opulent Americas Square 4 LED XHP70 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