



# Cree Standard MHD-G 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

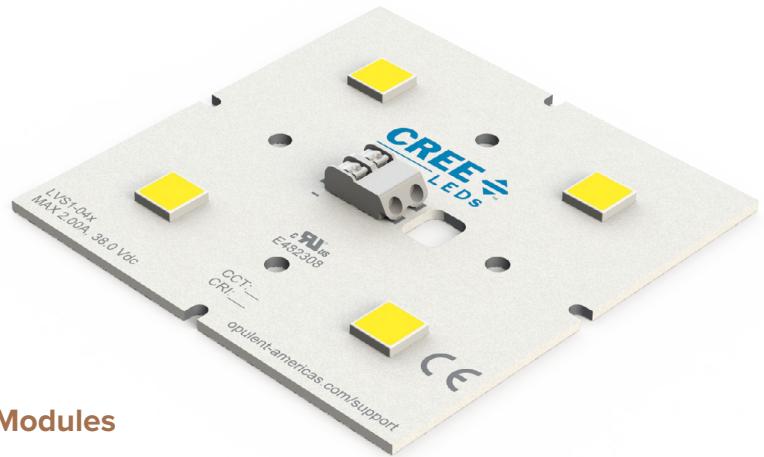
**Thermal Interface Included** – pre-installed to simplify assembly

**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

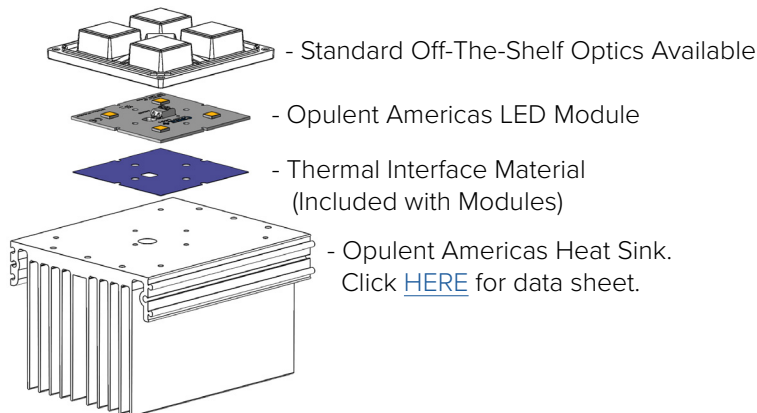
- 70, 80, and 90 CRI LEDs available
- Metal core PCB for optimal thermal management
- Configurable with off the shelf optics, and heat sinks
- Private label or custom designs available

## Simplify Your Next Design

The Cree standard MHD-G modules 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, UL listed, 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](http://Opulent-Americas.com) for more information.



# MHD-G 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 <sup>(1)</sup>	2x2	LVS1-04C05-2780-00	2700K	80	3-Step	2870	6796	120	23.9	76
Square <sup>(1)</sup>	2x2	LVS1-04C05-2790-00	2700K	90	3-Step	2492	5902	104	23.9	76
Square <sup>(1)</sup>	2x2	LVS1-04C05-3080-00	3000K	80	3-Step	3070	7272	128	23.9	76
Square <sup>(1)</sup>	2x2	LVS1-04C05-3090-00	3000K	90	3-Step	2670	6324	111	23.9	76
Square <sup>(1)</sup>	2x2	LVS1-04C05-4070-00	4000K	70	5-Step	3304	7824	138	23.9	76
Square <sup>(1)</sup>	2x2	LVS1-04C05-4080-00	4000K	80	3-Step	3070	7272	128	23.9	76
Square <sup>(1)</sup>	2x2	LVS1-04C05-5070-00	5000K	70	5-Step	3537	8376	148	23.9	76
Square <sup>(1)</sup>	2x2	LVS1-04C05-5080-00	5000K	80	3-Step	3304	7826	138	23.9	76
Square <sup>(1)</sup>	2x2	LVS1-04C05-5770-00	5700K	70	5-Step	3537	8376	148	23.9	76

<sup>(1)</sup> Nominal product performance at 350mA Tj = 85°C.

<sup>(2)</sup> Cree XLamp MHD-G 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.

## Order Code Formatting

Series	-	LED Count	LED Code	-	Color Temperature	Color Rendering Index	-	Internal Code
LVS1 - High Power Array LED PCB Assembly, Square		04 - 4 LEDs	C05 - Cree MHDG		27 - 2700K	70 - 70 CRI		XX
					30 - 3000K	80 - 80 CRI		
					40 - 4000K	90 - 90 CRI		
					50 - 5000K			
					57 - 5700K			

# MHD-G Series Specifications

## Electrical Characteristics

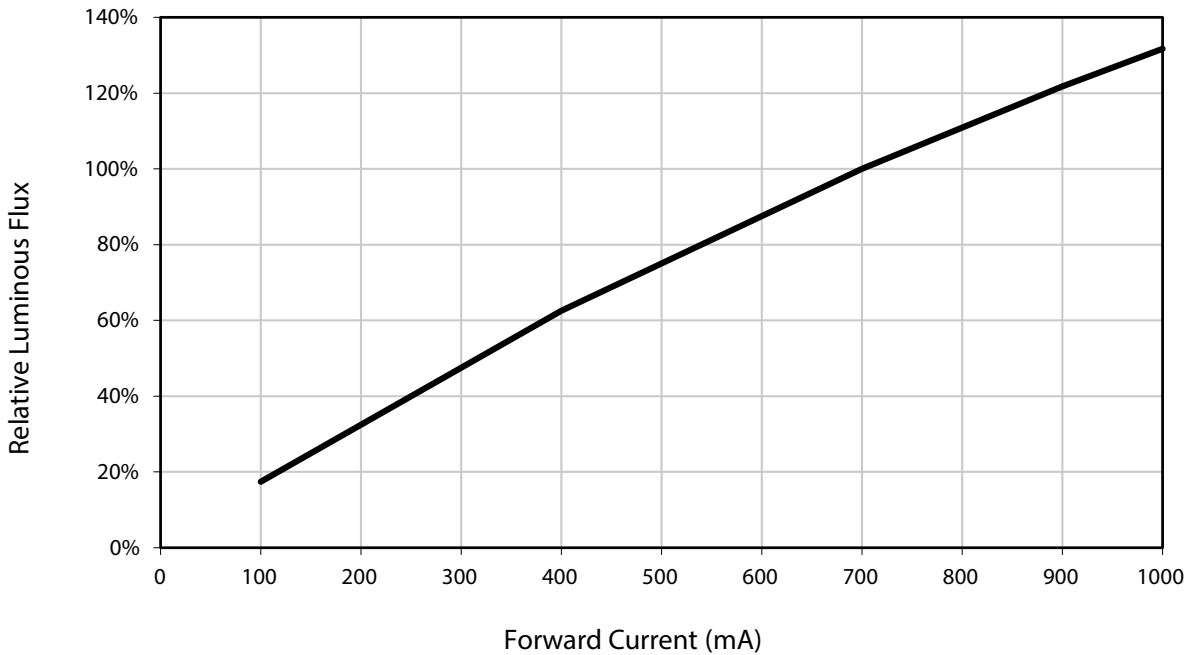
Part Number	Forward Voltage (v)		Typical Thermal Resistance - Junction to Solder Point (°C/W) RTh J-HS
	Typical	Maximum	
LVS1-04x	34.2	38.0	2.6

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

## Maximum Ratings

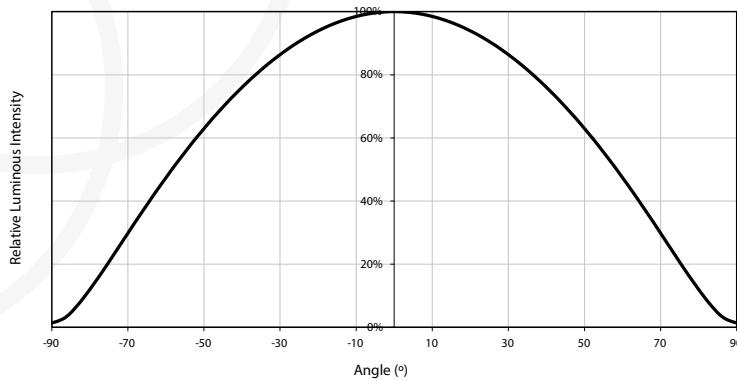
Part Number	DC Current (A)	Tsp Temp (°C)	Power (W)
LVS1-04x	2.0	105	76.0

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



# MHD-G Series Specifications

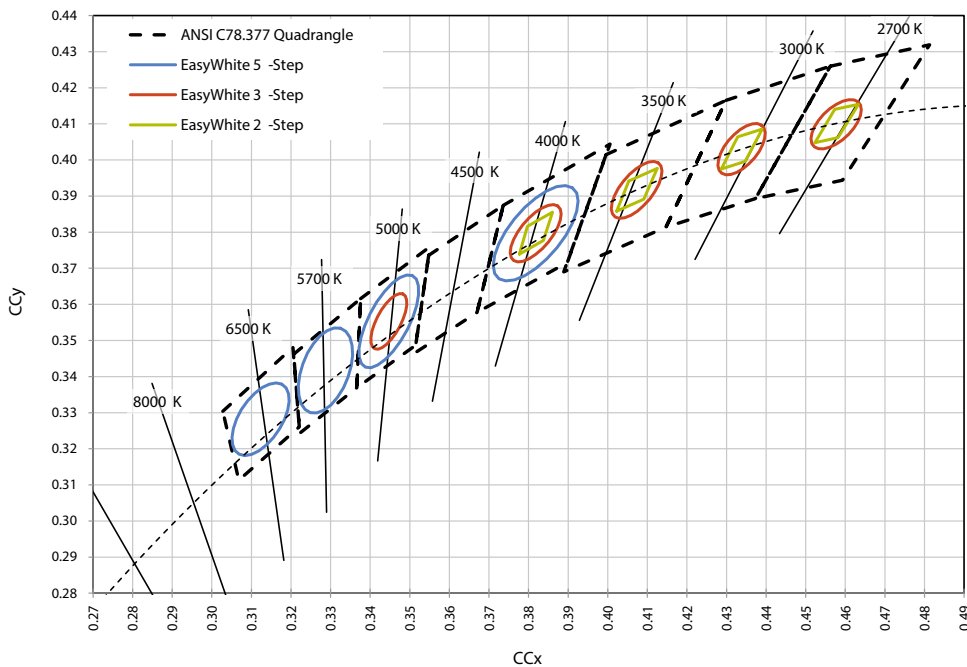
## Spatial Distribution



## Performance Groups – Chromaticity

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	0.01565	0.00670	53.7
3-Step	3000K	0.4338	0.4030	0.00834	0.00408	53.2
3-Step	2700K	0.4577	0.4099	0.00834	0.00420	48.5

## Standard White Chromaticity Regions Plotted On The CIE 1931 Curve



# MHD-G Series Specifications

## Thermal Interface Properties

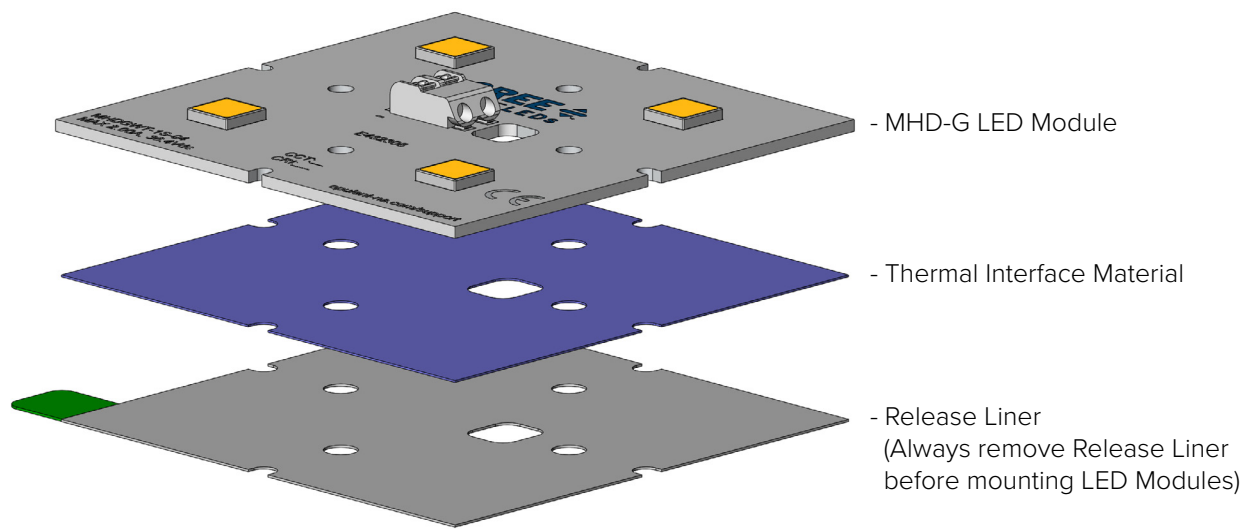
Property	Test Method	Value	Unit
Color	-	Blue	-
Thickness	ASTM D374	0.3	mm
Construction	-	Silicone / Ceramic	-
Temperature Range	EN344	-50-200	°C
Breakdown Voltage	ASTM D149	>8.0	Kv/mm
Flame Rating	UL94	V-0	-
Thermal Conductivity	ASTM D5470	3.0	W/m-K

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.

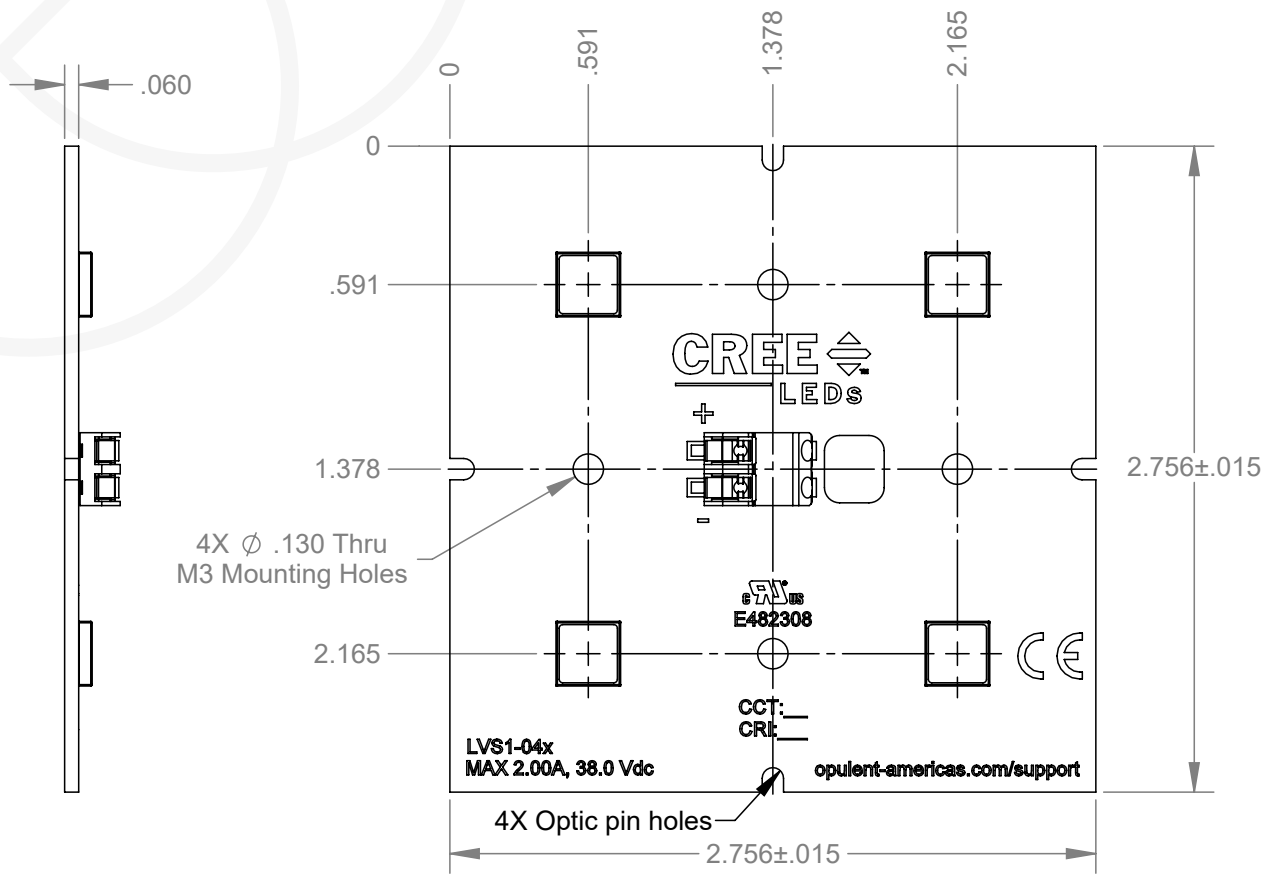
## Board Material Properties

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

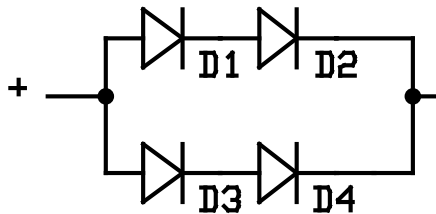


# MHD-G Series Specifications

## Opulent Americas Square 4 LED MHD-G Module



### Schematic



1. See [Approved Optic Guide](#) for recommended solutions
2. Dual Poke-In Connectors accept 18-24 AWG solid or stranded wire
3. Recommended Mounting Hardware: 4x M3-5 Socket Head Cap Screws