

# Cree Standard MHD-G LED Module

Power of Cree in Standard and Custom LED modules

# Data Sheet

## Illumination Accelerated

**Design Faster** – use standard modules to shorten development time

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

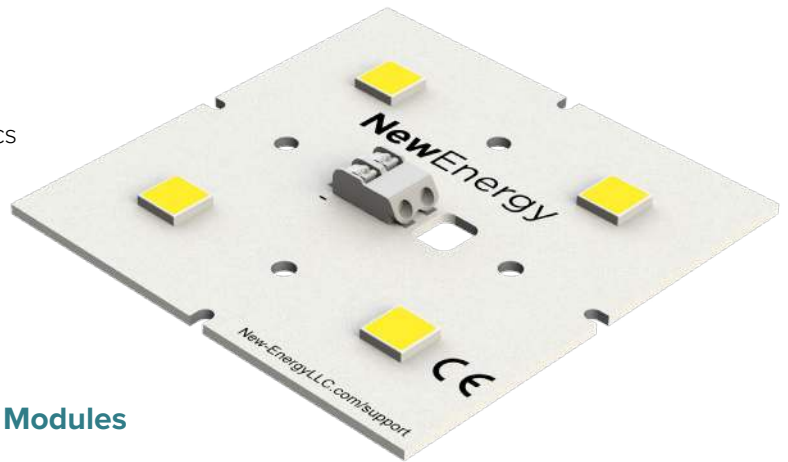
**Thermal Interface Included** – pre-installed to simplify assembly

**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

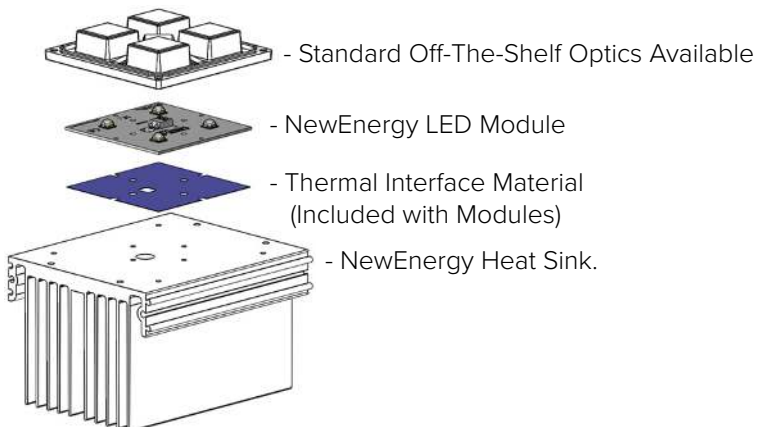
- 70, 80, and 90 CRI LEDs available
- Metal core PCB for optimal thermal management
- Configurable with off the shelf optics, and heat sinks
- Private label or custom designs available

## 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 modules come in a range of lumen outputs and can achieve both DLC Premium or DLC Standard lumens per watt specifications.

## Integrate Further

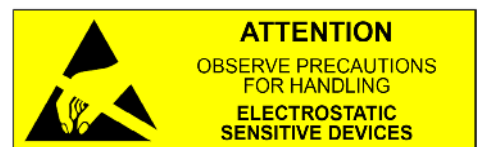
NewEnergy also offers standard heat sinks and fully assembled IP-rated modules.



## About NewEnergy

NewEnergy accelerates the adoption of LED technology through simple, modular products and custom designs. Through 30 years of experience, state of the art manufacturing, full traceability and advanced quality controls, NewEnergy offers leading solid state lighting components, modules and custom solutions. NewEnergy customers get to market faster, with less resources, at lower costs. Visit [New-EnergyLLC.com](http://New-EnergyLLC.com) for more information.

CE  
RoHS



# 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. NewEnergy 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

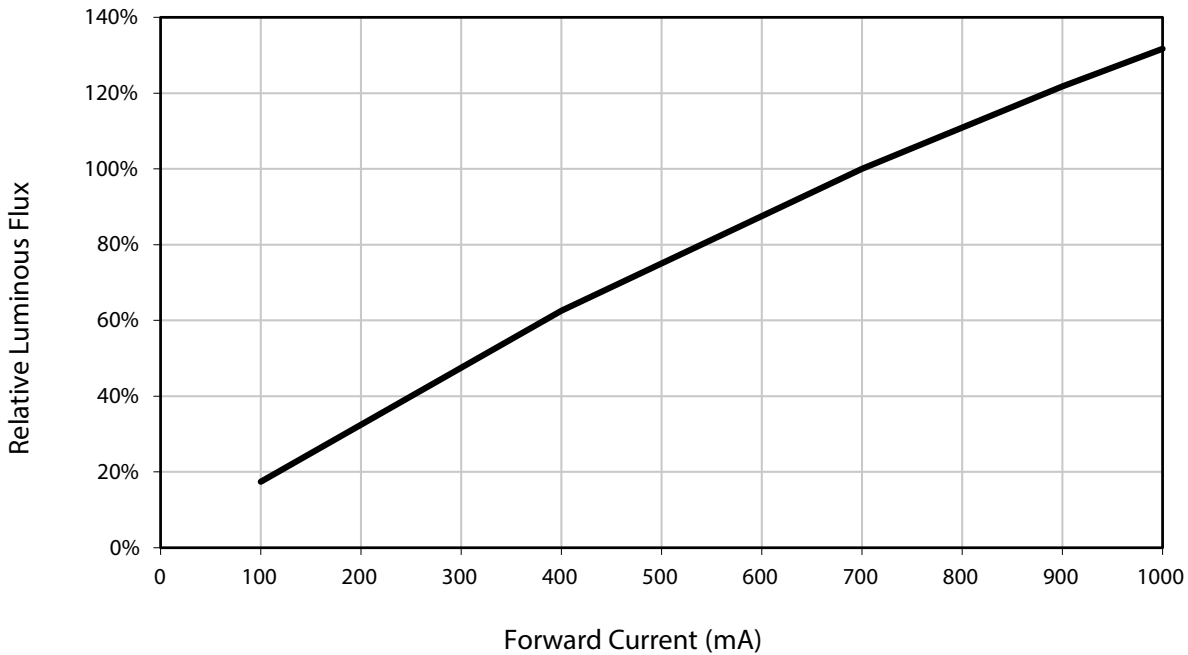
| Part Number | Forward Voltage (v) |         | Typical Thermal Resistance -<br>Junction to Solder Point (°C/W) RTh J-HS |
|-------------|---------------------|---------|--|
|             | Typical             | Maximum |  |
| LVS1-04x    | 34.2                | 38.0    | 2.6  |

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

## Maximum Ratings

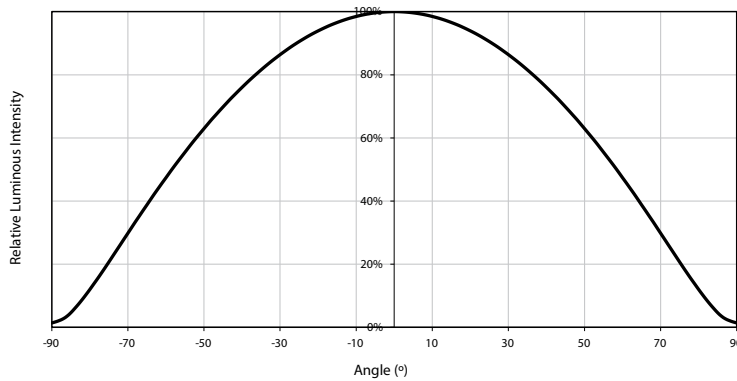
| Part Number | DC Current (A) | Tsp Temp (°C) | Power (W) |
|-------------|----------------|---------------|-----------|
| LVS1-04x    | 2.0            | 105           | 76.0      |

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



# MHD-G Series Specifications

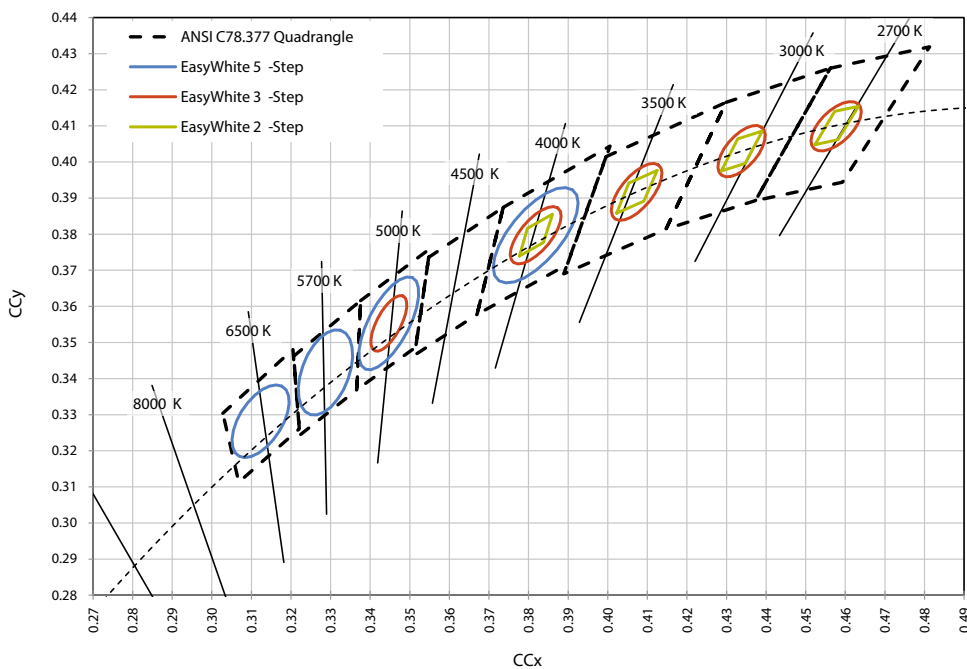
## Spatial Distribution



## 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

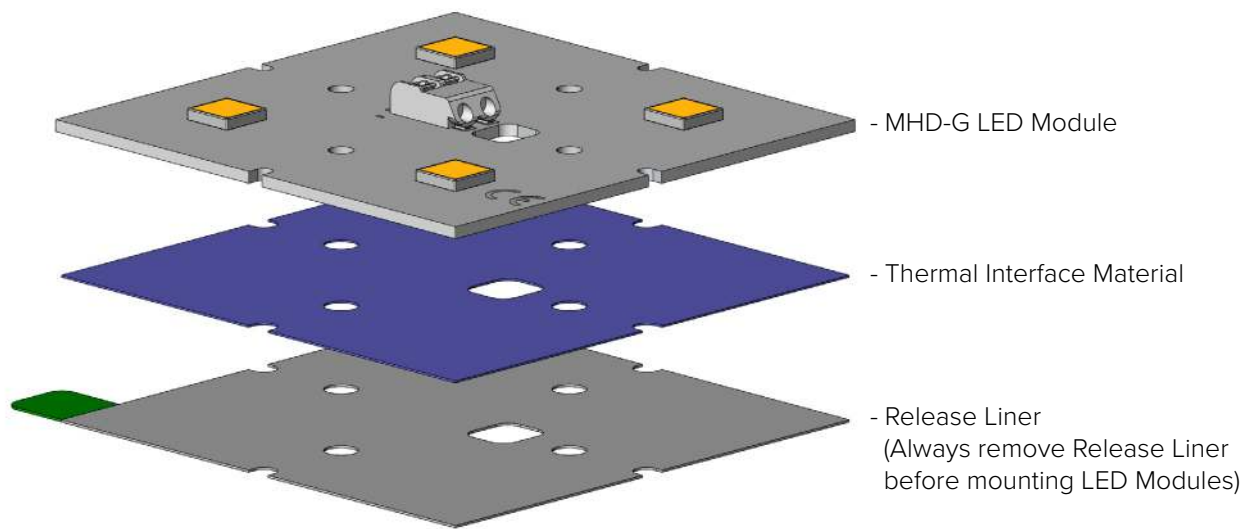
| Property             | Test Method | Value              | Unit  |
|----------------------|-------------|--------------------|-------|
| Color                | -           | Blue               | -     |
| Thickness            | ASTM D374   | 0.3                | mm    |
| Construction         | -           | 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.

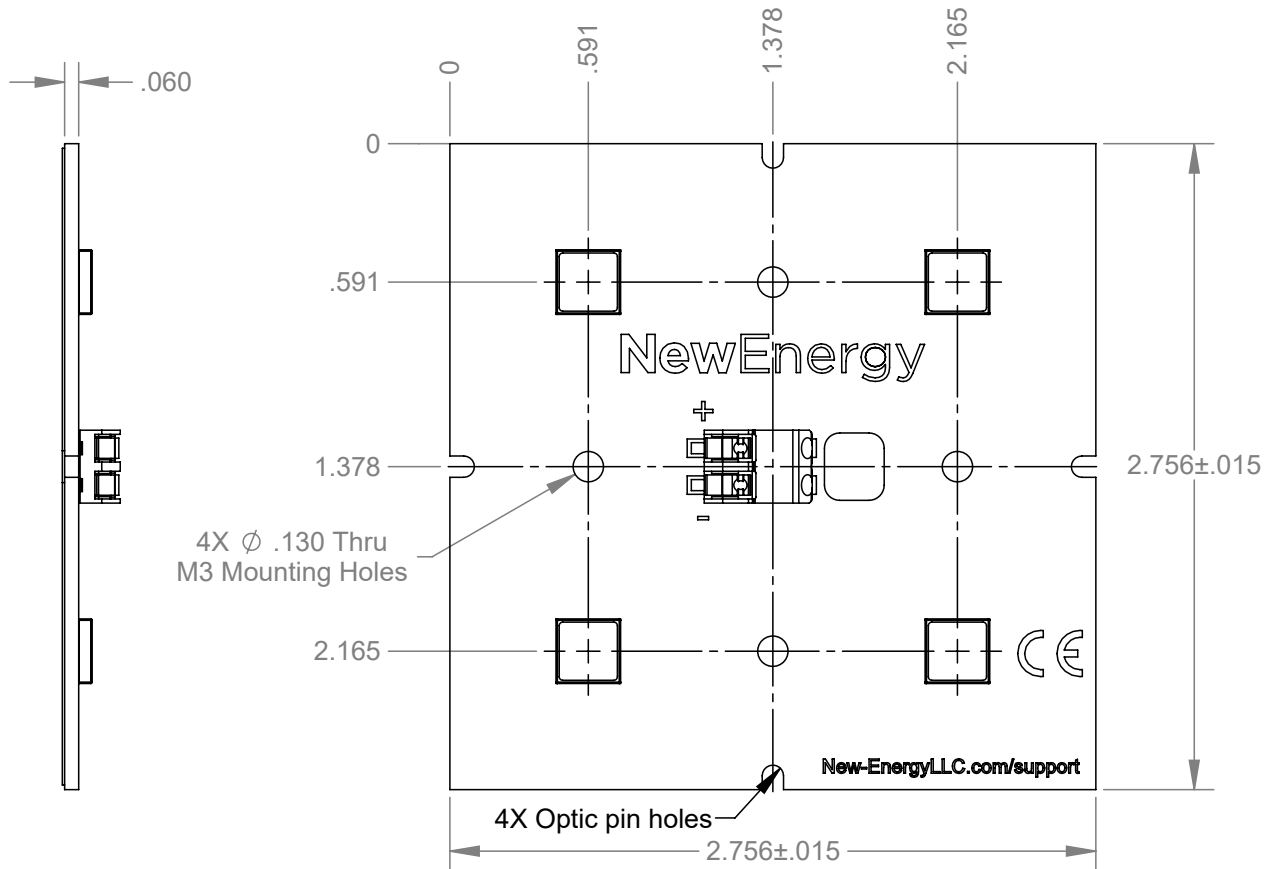
## Board Material Properties

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

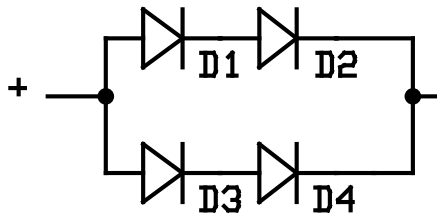


# MHD-G Series Specifications

## NewEnergy Square 4 LED MHD-G 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