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# Cree® LMR4 LED Module with TrueWhite® Technology

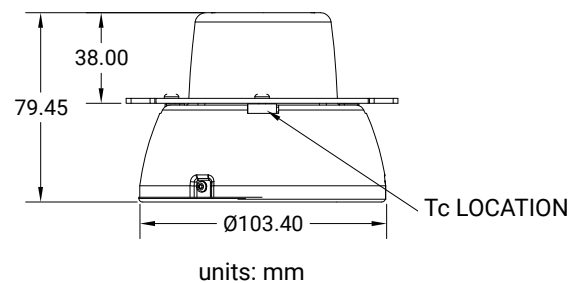
Cree LED modules provide lighting designers and manufacturers with simple, easy-to-adopt LED lighting solutions that reduce fixture development time and speed time-to-market. The Cree LED LMR4 module is the ideal choice for enabling rapid fixture development where bright, beautiful, long-life lighting is required. The LMR series of modules incorporates Cree’s award-winning TrueWhite® Technology into a compact system of integrated driver electronics, optics, and primary thermal management for use in residential and commercial lighting applications. This versatile LED lighting module jump-starts the design process for 5–6” (125–155 mm) downlights, wall sconces, or pendant lights in demanding end markets such as retail, museums, hospitality and restaurants.

## BENEFITS FOR LUMINAIRE DESIGNERS

- Faster time-to-market and lower system cost with complete, compact, light-source solution
- Reduced development time with concurrently designed and tested optics, driver electronics and primary thermal management
- Wide variety of design applications enabled with 2700 K, 3000 K, 3500 K and 4000 K correlated color temperatures
- Industry-leading, 5-year limited warranty backed by patented, reliable Cree LED technology
- Rapid regulatory approval and voluntary qualification of final luminaire enabled by:
  - ◊ UL® approval (120 V)
  - ◊ California Title 24 compliance (120 V)
  - ◊ LED LM-80 data for US ENERGY STAR®
  - ◊ Compliance with CE and other international standards (230 V)

## BENEFITS FOR END USERS

- Vibrant color rendering showcases the full beauty of people, rooms and merchandise with > 90 CRI
- Significant energy savings over traditional lighting through superior efficacy
  - ◊ > 70 lm/W (700 lm)
  - ◊ > 67 lm/W (1000 lm)
- Uniform, visually comfortable appearance whether powered on or off by means of proprietary optics
- Designed to last 35,000 hours at L<sub>70</sub>
- Consistent light quality over time and temperature delivered by built-in optical management system
- Dimming down to 5% of rated light output using standard incandescent and electronic low-voltage dimmers
- No UV or mercury



**CHARACTERISTICS**

Cree TrueWhite Technology is a revolutionary way of generating white light with LEDs. It delivers high efficiency with beautiful light characteristics and color accuracy, while maintaining color consistency over the life of the product.

| Nominal Luminous Flux (lm) | CCT (K) | CRI  | Input Power (W) | Module Efficacy (lm/W) | Input Voltage (V)/ Frequency (Hz)* | Power Factor | Dimming | Order Code               |
|----------------------------|---------|------|-----------------|------------------------|------------------------------------|--------------|---------|--------------------------|
| 700                        | 4000    | > 90 | 9.5             | 74                     | 120/60                             | > .80        | TRIAC   | LMR040-0700-40F9-10100TW |
|                            | 3500    | > 90 | 9.5             | 74                     | 120/60                             | > .80        | TRIAC   | LMR040-0700-35F9-10100TW |
|                            | 3000    | > 90 | 9.5             | 74                     | 120/60                             | > .80        | TRIAC   | LMR040-0700-30F9-10100TW |
|                            | 2700    | > 90 | 9.5             | 74                     | 120/60                             | > .80        | TRIAC   | LMR040-0700-27F9-10100TW |
| 1000                       | 4000    | > 90 | 15              | 67                     | 120/60                             | > .95        | TRIAC   | LMR040-1000-40F9-10100TW |
|                            |         |      |                 |                        | 230/50                             | > .90        | TRIAC   | LMR040-1000-40F9-20100TW |
|                            | 3500    | > 90 | 15              | 67                     | 120/60                             | > .95        | TRIAC   | LMR040-1000-35F9-10100TW |
|                            |         |      |                 |                        | 230/50                             | > .90        | TRIAC   | LMR040-1000-35F9-20100TW |
|                            | 3000    | > 90 | 15              | 67                     | 120/60                             | > .95        | TRIAC   | LMR040-1000-30F9-10100TW |
|                            |         |      |                 |                        | 230/50                             | > .90        | TRIAC   | LMR040-1000-30F9-20100TW |
|                            | 2700    | > 90 | 15              | 67                     | 120/60                             | > .95        | TRIAC   | LMR040-1000-27F9-10100TW |
|                            |         |      |                 |                        | 230/50                             | > .90        | TRIAC   | LMR040-1000-27F9-20100TW |

\* Input ranges are 110–130 V/60–70 Hz and 220–240 V/50–60 Hz.  
 Note: Cree maintains a tolerance of +/- 7% on flux and power measurements.

**CHROMATICITY**

The Cree LMR4 LED module provides high color consistency around the specified color temperature. Individual LEDs are tested and matched in order to meet our designed chromaticity specification.

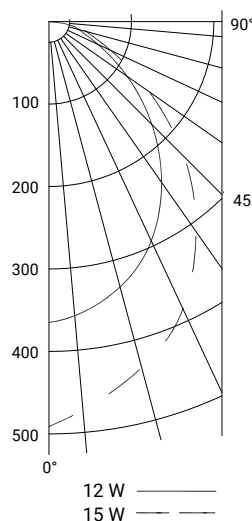
Secondary optics can be added to the module but will reduce light output and may also alter the color characteristics of the final luminaire design.

**THERMAL MANAGEMENT GUIDELINES**

The Cree LMR4 LED module is designed to perform in a variety of environments. To achieve lifetime and performance estimates, and to maintain the warranty, the final luminaire design cannot allow the module case temperature (Tc) point shown on page one to exceed 70 °C when the fixture is at thermal equilibrium. Follow the mechanical and thermal design guidelines listed in the Cree [LMR4 LED Module Design Guide](#) to ensure proper thermal management.

| Operating Temperature (at Tc point) |
|-------------------------------------|
| 0-70 °C                             |

**PHOTOMETRY**



| Intensity (Candlepower) |                |                 |
|-------------------------|----------------|-----------------|
| Angle                   | 700 lm Mean CP | 1000 lm Mean CP |
| 0°                      | 365            | 491             |
| 5°                      | 362            | 476             |
| 15°                     | 340            | 441             |
| 25°                     | 300            | 395             |
| 35°                     | 245            | 318             |
| 45°                     | 184            | 244             |
| 55°                     | 124            | 159             |
| 65°                     | 71             | 90              |
| 75°                     | 37             | 46              |
| 85°                     | 27             | 33              |
| 90°                     | 0              | 0               |

**ZONAL LUMENS – 700**

| Zone  | Lumens | %   |
|-------|--------|-----|
| 0-30° | 242    | 35  |
| 0-40° | 381    | 55  |
| 0-60° | 607    | 87  |
| 0-90° | 700    | 100 |

**ZONAL LUMENS – 1000**

| Zone  | Lumens | %   |
|-------|--------|-----|
| 0-30° | 255    | 24  |
| 0-40° | 451    | 43  |
| 0-60° | 817    | 77  |
| 0-90° | 1057   | 100 |