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## Reflectors for Cree ${ }^{\circledR}$ LMH2 LED Modules Product Guide



Diffuse Finish


White Finish


Semi-Specular Finish


Faceted, Specular Finish

## PRODUCT DESCRIPTION

Cree LED modules provide lighting designers and manufacturers with simple, easy-to-adopt LED lighting solutions that reduce luminaire development time and speed time-to-market. Cree reflectors are specifically designed to work with the Cree LMH2 LED modules to jump-start the design process for recessed downlights, wall sconces and pendant lights in demanding end markets such as retail, museums, hospitality and restaurants.

## FEATURES

- $4-\mathrm{in} / 110-\mathrm{mm}, 6-\mathrm{in} / 150-\mathrm{mm}$ and 8-in/190-mm sizes
- Diffuse, white, semi-specular and faceted, specular finishes


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## 4-IN/110-MM REFLECTORS

## Order Codes

| Description | Finish | Order Code |
| :---: | :---: | :---: |
| 4-in/110-mm <br> circular reflector | Diffuse | LMH020-REFL-0000-0000045 |
|  | White | LMH020-REFL-0000-0000044 |

## Mechanical Dimensions ${ }^{1}$



## Reflector Photometry

The candela values for an LMH2 LED module with a particular reflector, and the values for the corresponding polar graph, can be approximated by applying the following multiplication factors to the tables and graphs in the following sections. The exact candela values can be found in the IES files available on the Cree website. ${ }^{2}$

|  | LMH2 LED Module |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 850 Im | 1250 Im | 2000 Im | 3000 lm | 4000 lm | 6000 lm | 8000 Im |
| Multiplication factor | 0.283 | 0.417 | 03.667 | 1.000 | 1.333 | 2.000 | 2.667 |

[^0]
## 4-in/110-mm Circular Reflector, Diffuse Finish

The following table and graph show the candela tabulation for the 3000-lumen flat lens LMH2 LED module with the 4-in/110-mm circular reflector with a diffuse finish.

| Angle from Nadir ( ${ }^{\circ}$ ) | Candelas | Angle from Nadir ( ${ }^{\circ}$ ) | Candelas | Angle from Nadir ( ${ }^{\circ}$ ) | Candelas |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0.0 | 2073.4 |  |  |  |  | $\square$ |
| 2.5 | 2065.1 | 32.5 | 934.0 | 62.5 | 64.4 | - 518 |
| 5.0 | 2041.1 | 35.0 | 741.6 | 65.0 | 53.8 | - |
| 7.5 | 2002.9 | 37.5 | 577.2 | 67.5 | 44.3 | , |
| 10.0 | 1953.7 | 40.0 | 445.4 | 70.0 | 35.8 | ) |
| 12.5 | 1892.6 | 42.5 | 345.7 | 72.5 | 28.3 | 7 |
| 15.0 | 1822.6 | 45.0 | 266.9 | 75.0 | 21.7 | - |
| 17.5 | 1745.0 | 47.5 | 203.9 | 77.5 | 16.0 | - |
| 20.0 | 1662.5 | 50.0 | 154.7 | 80.0 | 11.1 | - |
| 22.5 | 1579.9 | 52.5 | 122.9 | 82.5 | 7.0 |  |
| 25.0 | 1473.5 | 55.0 | 103.2 | 85.0 | 3.5 | - |
| 27.5 | 1319.9 | 57.5 | 89.2 | 87.5 | 0.9 |  |
| 30.0 | 1135.1 | 60.0 | 76.2 | 90.0 | 0.2 | $2073$ |

## 4-in/110-mm Circular Reflector, White Finish

The following table and graph show the candela tabulation for the 3000-lumen flat lens LMH2 LED module with the 4-in/110-mm circular reflector with a white finish.

| Angle from <br> Nadir $\left({ }^{\circ}\right)$ | Candelas | Angle from <br> Nadir $\left({ }^{\circ}\right)$ | Candelas | Angle from <br> Nadir $\left({ }^{\circ}\right)$ | Candelas |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 0.0 | 1865.4 |  |  |  |  |
| 2.5 | 1859.2 | 32.5 | 913.4 | 62.5 | 138.7 |
| 5.0 | 1841.5 | 35.0 | 738.2 | 65.0 | 124.7 |
| 7.5 | 1812.5 | 37.5 | 588.6 | 67.5 | 110.7 |
| 10.0 | 1774.8 | 40.0 | 470.1 | 70.0 | 96.8 |
| 12.5 | 1728.7 | 42.5 | 382.5 | 72.5 | 83.0 |
| 15.0 | 1676.6 | 45.0 | 314.8 | 75.0 | 69.5 |
| 17.5 | 1618.8 | 47.5 | 261.4 | 77.5 | 56.3 |
| 20.0 | 1556.2 | 50.0 | 220.1 | 80.0 | 43.2 |
| 22.5 | 1491.7 | 52.5 | 194.5 | 82.5 | 30.2 |
| 25.0 | 1403.7 | 55.0 | 179.4 | 85.0 | 17.2 |
| 27.5 | 1266.9 | 167.5 | 152.8 | 87.5 | 53 |
| 30.0 | 1097.9 | 60.0 | 90.0 | 0.6 |  |

## 4-in/110-mm Circular Reflector, Semi-Specular Finish

The following table and graph show the candela tabulation for the 3000-lumen flat lens LMH2 LED module with the 4-in/110-mm circular reflector with a semi-specular finish.

| Angle from Nadir ( ${ }^{\circ}$ ) | Candelas | Angle from Nadir ( ${ }^{\circ}$ ) | Candelas | Angle from Nadir ( ${ }^{\circ}$ ) | Candelas |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0.0 | 3510.3 |  |  |  |  | $\sim$ |
| 2.5 | 3500.2 | 32.5 | 989.3 | 62.5 | 1.8 | ( 878 |
| 5.0 | 3454.0 | 35.0 | 703.5 | 65.0 | 1.5 | - |
| 7.5 | 3368.6 | 37.5 | 489.0 | 67.5 | 1.3 | - |
| 10.0 | 3217.0 | 40.0 | 327.7 | 70.0 | 1.1 | - |
| 12.5 | 3013.8 | 42.5 | 209.5 | 72.5 | 0.9 | , |
| 15.0 | 2807.9 | 45.0 | 121.5 | 75.0 | 0.7 | - |
| 17.5 | 2582.7 | 47.5 | 61.1 | 77.5 | 0.6 | , |
| 20.0 | 2351.2 | 50.0 | 25.8 | 80.0 | 0.4 | - |
| 22.5 | 2146.8 | 52.5 | 8.6 | 82.5 | 0.3 |  |
| 25.0 | 1920.0 | 55.0 | 3.1 | 85.0 | 0.2 |  |
| 27.5 | 1639.8 | 57.5 | 2.5 | 87.5 | 0.1 |  |
| 30.0 | 1317.4 | 60.0 | 2.1 | 90.0 | 0.1 |  |

## 4-in/110-mm Spot Reflector, Faceted, Specular Finish

The following table and graph show the candela tabulation for the 3000-lumen flat lens LMH2 LED module with the 4-in/110-mm spot reflector with a faceted, specular finish.

| Angle from <br> Nadir $\left({ }^{\circ}\right)$ | Candelas | Angle from <br> Nadir $\left({ }^{\circ}\right)$ | Candelas | Angle from <br> Nadir $\left({ }^{\circ}\right)$ | Candelas |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 0.0 | 7595.5 |  |  |  |  |
| 2.5 | 7296.8 | 32.5 | 634.8 | 62.5 | 0.5 |
| 5.0 | 6562.5 | 35.0 | 415.3 | 65.0 | 0.4 |
| 7.5 | 5533.0 | 37.5 | 265.4 | 67.5 | 0.3 |
| 10.0 | 4535.5 | 40.0 | 161.7 | 70.0 | 0.2 |
| 12.5 | 3757.2 | 42.5 | 90.8 | 72.5 | 0.2 |
| 15.0 | 3171.1 | 45.0 | 41.7 | 75.0 | 0.2 |
| 17.5 | 2705.4 | 47.5 | 17.6 | 77.5 | 0.1 |
| 20.0 | 2294.5 | 50.0 | 6.1 | 80.0 | 0.1 |
| 22.5 | 1927.3 | 52.5 | 1.9 | 82.5 | 0.1 |
| 25.0 | 1587.2 | 55.0 | 1.0 | 85.0 | 0.1 |
| 27.5 | 1244.3 | 67.5 | 0.8 | 87.5 | 0.2 |
| 30.0 | 913.0 | 0.6 | 90.0 | 0.2 |  |

## CREE $\stackrel{\text { - }}{\text { - }}$

The following table and graph show the candela tabulation for the 3000-lumen dome lens LMH2 LED module with the 4 -in/110-mm spot reflector with a faceted, specular finish.

| Angle from <br> Nadir $\left({ }^{\circ}\right)$ | Candelas | Angle from <br> Nadir $\left({ }^{\circ}\right)$ | Candelas | Angle from <br> Nadir $\left({ }^{\circ}\right)$ | Candelas |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 0.0 | 3937.3 |  |  |  |  |
| 2.5 | 3868.6 | 32.5 | 919.6 | 62.5 | 0.6 |
| 5.0 | 3695.2 | 35.0 | 707.3 | 65.0 | 0.5 |
| 7.5 | 3440.2 | 37.5 | 536.9 | 67.5 | 0.4 |
| 10.0 | 3144.7 | 40.0 | 404.1 | 70.0 | 0.3 |
| 12.5 | 2842.8 | 42.5 | 298.6 | 72.5 | 0.2 |
| 15.0 | 2551.5 | 45.0 | 213.8 | 75.0 | 0.2 |
| 17.5 | 2286.7 | 47.5 | 148.7 | 77.5 | 0.2 |
| 20.0 | 2045.1 | 50.0 | 97.8 | 80.0 | 0.1 |
| 22.5 | 1820.1 | 52.5 | 57.8 | 82.5 | 0.1 |
| 25.0 | 1602.2 | 55.0 | 29.6 | 85.0 | 0.2 |
| 27.5 | 1381.1 | 57.5 | 11.4 | 87.5 | 0.3 |
| 30.0 | 1153.3 | 20.0 | 90.0 | 0.4 |  |

## 6-IN/150-MM REFLECTORS

## Order Codes

| Description | Finish | Order Code |
| :---: | :---: | :---: |
| 6-in/150-mm <br> circular reflector | White | LMH020-REFL-0000-0000064 |

## Mechanical Dimensions ${ }^{3}$



## Reflector Photometry

The candela values for an LMH2 LED module with a particular reflector, and the values for the corresponding polar graph, can be approximated by applying the following multiplication factors to the tables and graphs in the following sections. The exact candela values can be found in the IES files available on the Cree website. ${ }^{4}$

|  | LMH2 LED Module |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 850 lm | 1250 Im | 2000 lm | 3000 Im | 4000 lm | 6000 lm | 8000 lm |
| Multiplication factor | 0.283 | 0.417 | 03.667 | 1.000 | 1.333 | 2.000 | 2.667 |

[^1]
## 6-in/150-mm Circular Reflector, White Finish

The following table and graph show the candela tabulation for the 3000-lumen flat lens LMH2 LED module with the 6-in/150-mm circular reflector with a white finish.

| Angle from <br> Nadir $\left({ }^{\circ}\right)$ | Candelas | Angle from <br> Nadir $\left({ }^{\circ}\right)$ | Candelas | Angle from <br> Nadir $\left({ }^{\circ}\right)$ | Candelas |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 0.0 | 1837.4 |  |  |  |  |
| 2.5 | 1832.6 | 32.5 | 1103.3 | 62.5 | 159.8 |
| 5.0 | 1817.7 | 35.0 | 876.1 | 65.0 | 144.0 |
| 7.5 | 1793.1 | 37.5 | 667.1 | 67.5 | 127.4 |
| 10.0 | 1759.5 | 40.0 | 498.2 | 70.0 | 111.4 |
| 12.5 | 1720.0 | 42.5 | 386.0 | 72.5 | 95.0 |
| 15.0 | 1673.1 | 45.0 | 306.0 | 75.0 | 79.6 |
| 17.5 | 1625.2 | 47.5 | 253.5 | 77.5 | 64.0 |
| 20.0 | 1571.8 | 50.0 | 227.3 | 80.0 | 49.2 |
| 22.5 | 1518.2 | 52.5 | 215.9 | 82.5 | 34.2 |
| 25.0 | 1460.0 | 55.0 | 204.3 | 85.0 | 20.0 |
| 27.5 | 1398.0 | 57.5 | 190.5 | 87.5 |  |
| 30.0 | 1288.4 | 60.0 | 175.7 | 90.0 | 0.5 |

## 6-in/150-mm Circular Reflector, Semi-Specular Finish

The following table and graph show the candela tabulation for the 3000-lumen flat lens LMH2 LED module with the 6-in/150-mm circular reflector with a semi-specular finish.

| Angle from <br> Nadir $\left({ }^{\circ}\right)$ | Candelas | Angle from <br> Nadir $\left({ }^{\circ}\right)$ | Candelas | Angle from <br> Nadir $\left({ }^{\circ}\right)$ | Candelas |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 0.0 | 3414.7 |  |  |  |  |
| 2.5 | 3407.8 | 32.5 | 1282.1 | 62.5 | 1.5 |
| 5.0 | 3339.8 | 35.0 | 925.0 | 65.0 | 1.2 |
| 7.5 | 3177.4 | 37.5 | 599.8 | 67.5 | 1.0 |
| 10.0 | 3002.6 | 40.0 | 361.4 | 70.0 | 0.8 |
| 12.5 | 2845.9 | 42.5 | 192.0 | 72.5 | 0.7 |
| 15.0 | 2705.6 | 45.0 | 84.7 | 75.0 | 0.6 |
| 17.5 | 2564.5 | 47.5 | 28.7 | 77.5 | 0.4 |
| 20.0 | 2442.5 | 50.0 | 6.5 | 80.0 | 0.3 |
| 22.5 | 2315.0 | 52.5 | 3.6 | 82.5 | 0.3 |
| 25.0 | 2170.7 | 55.0 | 2.8 | 85.0 | 0.2 |
| 27.5 | 1927.7 | 25.5 | 2.3 | 87.5 | 0.1 |
| 30.0 | 1653.1 | 1.8 | 90.0 | 0.1 |  |

## 8-IN/190-MM REFLECTORS

## Order Codes

| Description | Finish | Order Code |
| :---: | :---: | :---: |
| 8-in/190-mm <br> circular reflector | White | LMH020-REFL-0000-0000084 |
|  | Semi-specular | LMH020-REFL-0000-0000082 |

## Mechanical Dimensions ${ }^{5}$



## Reflector Photometry

The candela values for an LMH2 LED module with a particular reflector, and the values for the corresponding polar graph, can be approximated by applying the following multiplication factors to the tables and graphs in the following sections. The exact candela values can be found in the IES files available on the Cree website. ${ }^{6}$

|  | LMH2 LED Module |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 850 Im | 1250 Im | 2000 lm | 3000 lm | 4000 lm | 6000 lm | 8000 Im |
| Multiplication factor | 0.283 | 0.417 | 03.667 | 1.000 | 1.333 | 2.000 | 2.667 |

[^2]
## 8-in/190-mm Circular Reflector, White Finish

The following table and graph show the candela tabulation for the 3000-lumen flat lens LMH2 LED module with the 8-in/190-mm circular reflector with a white finish.

| Angle from Nadir ( ${ }^{\circ}$ ) | Candelas | Angle from Nadir ( ${ }^{\circ}$ ) | Candelas | Angle from Nadir ( ${ }^{\circ}$ ) | Candelas |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0.0 | 1826.2 |  |  |  |  | , |
| 2.5 | 1821.5 | 32.5 | 1242.6 | 62.5 | 155.4 | 457 |
| 5.0 | 1807.4 | 35.0 | 1061.6 | 65.0 | 140.4 | / |
| 7.5 | 1783.7 | 37.5 | 814.0 | 67.5 | 125.1 | - |
| 10.0 | 1752.0 | 40.0 | 580.5 | 70.0 | 109.5 | / |
| 12.5 | 1713.0 | 42.5 | 418.0 | 72.5 | 93.8 | $913$ |
| 15.0 | 1668.2 | 45.0 | 308.8 | 75.0 | 78.5 |  |
| 17.5 | 1619.6 | 47.5 | 243.6 | 77.5 | 63.5 | N |
| 20.0 | 1566.8 | 50.0 | 214.7 | 80.0 | 48.8 |  |
| 22.5 | 1512.0 | 52.5 | 204.6 | 82.5 | 34.1 | - |
| 25.0 | 1454.3 | 55.0 | 194.6 | 85.0 | 19.9 | - |
| 27.5 | 1393.9 | 57.5 | 183.1 | 87.5 | 6.7 |  |
| 30.0 | 1328.9 | 60.0 | 169.7 | 90.0 | 0.4 |  |

## 8-in/190-mm Circular Reflector, Semi-Specular Finish

The following table and graph show the candela tabulation for the 3000-lumen flat lens LMH2 LED module with the 8-in/190-mm circular reflector with a semi-specular finish.

| Angle from <br> Nadir $\left({ }^{\circ}\right)$ | Candelas | Angle from <br> Nadir $\left(^{\circ}\right)$ | Candelas | Angle from <br> Nadir $\left({ }^{\circ}\right)$ | Candelas |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 0.0 | 3176.6 |  |  |  |  |
| 2.5 | 3176.6 | 32.5 | 1381.3 | 62.5 | 0.1 |
| 5.0 | 3179.9 | 35.0 | 1039.6 | 65.0 | 0.0 |
| 7.5 | 3173.9 | 37.5 | 688.6 | 67.5 | 0.0 |
| 10.0 | 3099.6 | 40.0 | 386.1 | 70.0 | 0.0 |
| 12.5 | 2948.9 | 42.5 | 186.2 | 72.5 | 0.0 |
| 15.0 | 2763.9 | 45.0 | 81.9 | 75.0 | 0.0 |
| 17.5 | 2603.4 | 47.5 | 21.5 | 77.5 | 0.0 |
| 20.0 | 2435.4 | 50.0 | 2.3 | 80.0 | 0.0 |
| 22.5 | 2216.5 | 52.5 | 1.2 | 82.5 | 0.0 |
| 25.0 | 2056.1 | 55.0 | 0.8 | 85.0 | 0.0 |
| 27.5 | 1891.8 | 57.5 | 0.5 | 87.5 | 0.0 |
| 30.0 | 1658.0 |  | 0.2 | 90.0 | 0.0 |

## PACKAGING

Reflectors are packaged in boxes of 10 , which are then combined in cartons as shown below. Box and carton sizes are as follows.

Box of $104-\mathrm{in} / 110-\mathrm{mm}$ reflectors: $155 \times 155 \times 380 \mathrm{~mm}$
Carton of 204 -in/110-mm reflector boxes, 2004 -inch/110-mm reflectors: $850 \times 690 \times 440 \mathrm{~mm}$

Box of $106-\mathrm{in} / 150-\mathrm{mm}$ reflectors: $205 \times 205 \times 350 \mathrm{~mm}$
Carton of 66 -in/150-mm reflector boxes, 606 -inch/150-mm reflectors: $680 \times 470 \times 410 \mathrm{~mm}$

Box of $108-\mathrm{in} / 190-\mathrm{mm}$ reflectors: $245 \times 245 \times 380 \mathrm{~mm}$
Carton of 68 -in/190-mm reflector boxes, 608 -inch/190-mm reflectors: $800 \times 550 \times 440 \mathrm{~mm}$


[^0]:    1 Dimensions for the reflector diagrams are for reference only. For exact dimensions and tolerances, refer to the 3-D models (.STEP files) for the reflectors available on the LMH2 product page and the diffuse, white, semi-specular and specular reflector product pages. Select the Documentation tab, then select the STEP files under the Design Files heading.
    2 Select the Documentation tab on the LMH2 product page, then select the IES file under the Design Files heading.

[^1]:    3 Dimensions for the reflector diagrams are for reference only. For exact dimensions and tolerances, refer to the 3-D models (.STEP files) for the reflectors available on the LMH2 product page and the white and semi-specular reflector product pages. Select the Documentation tab, then select the STEP files under the Design Files heading.
    4 Select the Documentation tab on the LMH2 product page, then select the IES file under the Design Files heading.

[^2]:    5 Dimensions for the reflector diagrams are for reference only. For exact dimensions and tolerances, refer to the 3-D models (.STEP files) for the reflectors available on the LMH2 product page and the white and semi-specular reflector product pages. Select the Documentation tab, then select the STEP files under the Design Files heading.
    6 Select the Documentation tab on the LMH2 product page, then select the IES file under the Design Files heading.

