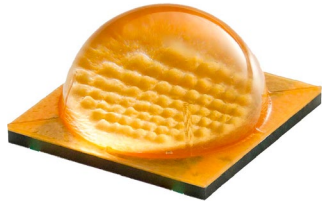


Cree® XLamp® MT-G2 EasyWhite® LEDs



PRODUCT DESCRIPTION

The XLamp® MT-G2 EasyWhite® LED builds on the breakthrough performance of the original MT-G by increasing lumen output up to 25%, while providing a small, uniform, single point source for precise optical control. The MT-G2 shares the same mechanical footprint as the original MT-G, providing customers with a seamless upgrade path and shortening the LED luminaire and retrofit lamp design cycle.

MT-G2 LEDs are designed for high-output, directional lighting applications and are the ideal replacement for lighting applications that currently use inefficient halogen lamps. MT-G2 LEDs are optimized for use in track, accent, lamp retrofit, downlighting and other applications where color quality, consistency and optical control are required.

FEATURES

- Cree EasyWhite color temperatures from 2700 K to 5000 K CCT
- 85 °C binning and characterization
- Three voltage options: 6 V, 9 V, 36 V
- 80 and 90 minimum CRI options
- Low effective thermal resistance: 1.5 °C/W
- High lumen density
- Small, uniform emitting area for excellent optical control
- Electrically neutral thermal path
- RoHS and REACH compliant
- UL® recognized component (E349212)

APPLICATIONS

- MR, PAR, BR, AR and other directional retrofit lamps
- Commercial/residential directional lighting
- General illumination

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CHARACTERISTICS

| Characteristics | Unit | Minimum | Typical | Maximum |
|--|---------|---------|---------|---------|
| Viewing angle (FWHM) | degrees | | 115 | |
| ESD withstand voltage (HBM per Mil-Std-883D) | V | | | 8000 |
| Effective thermal resistance, junction to solder point | °C/W | | 1.5 | |
| LED junction temperature | °C | | | 150 |
| DC forward current (6 V) | mA | | | 3000 |
| DC forward current (9 V) | mA | | | 2000 |
| DC forward current (36 V) | mA | | | 500 |
| Forward voltage (6 V, 1100 mA, 85 °C) | V | | 5.7 | |
| Forward voltage (6 V, 1100 mA, 25 °C) | V | | | 7 |
| Forward voltage (9 V, 735 mA, 85 °C) | V | | 8.55 | |
| Forward voltage (9 V, 735 mA, 25 °C) | V | | | 10.5 |
| Forward voltage (36 V, 185 mA, 85 °C) | V | | 34.2 | |
| Forward voltage (36 V, 185 mA, 25 °C) | V | | | 42 |
| Temperature coefficient of voltage (6 V) | mV/°C | | -4 | |
| Temperature coefficient of voltage (9 V) | mV/°C | | -6 | |
| Temperature coefficient of voltage (36 V) | mV/°C | | -26 | |
| Reverse voltage (6 V) | V | | | -5 |
| Reverse current (6 V, 9 V, 36 V) | A | | | 0.1 |

FLUX CHARACTERISTICS, STANDARD ORDER CODES, BINS, 6-VOLT MT-G2 (1100 mA, T_j = 85 °C)

The following table provides several base order codes for 6-volt XLamp MT-G2 EasyWhite LEDs. For a complete description of the order code nomenclature, please reference page 13 of this document.

| Color | CCT Range | Minimum Luminous Flux (lm) @ 1100 mA | | | 2-Step | | 4-Step | |
|------------------------|------------------|--------------------------------------|-------------------|--------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | | Group | Flux (lm) @ 85 °C | Flux (lm) @ 25 °C* | Chromaticity Region | Order Code | Chromaticity Region | Order Code |
| Standard CRI EasyWhite | 5000 K | N0 | 750 | 863 | 50H | MTGBEZ-00-0000-0B00N050H | 50F | MTGBEZ-00-0000-0B00N050F |
| | | P0 | 800 | 920 | | MTGBEZ-00-0000-0B00P050H | | MTGBEZ-00-0000-0B00P050F |
| | 4000 K | K0 | 650 | 748 | 40H | MTGBEZ-00-0000-0B00K040H | 40f | MTGBEZ-00-0000-0B00K040F |
| | | M0 | 700 | 805 | | MTGBEZ-00-0000-0B00M040H | | MTGBEZ-00-0000-0B00M040F |
| | | N0 | 750 | 863 | | MTGBEZ-00-0000-0B00N040H | | MTGBEZ-00-0000-0B00N040F |
| | 3500 K | K0 | 650 | 748 | 35H | MTGBEZ-00-0000-0B00K035H | 35F | MTGBEZ-00-0000-0B00K035F |
| | | M0 | 700 | 805 | | MTGBEZ-00-0000-0B00M035H | | MTGBEZ-00-0000-0B00M035F |
| | | N0 | 750 | 863 | | MTGBEZ-00-0000-0B00N035H | | MTGBEZ-00-0000-0B00N035F |
| | 3000 K | J0 | 600 | 690 | 30H | MTGBEZ-00-0000-0B00J030H | 30F | MTGBEZ-00-0000-0B00J030F |
| | | K0 | 650 | 748 | | MTGBEZ-00-0000-0B00K030H | | MTGBEZ-00-0000-0B00K030F |
| | | M0 | 700 | 805 | | MTGBEZ-00-0000-0B00M030H | | MTGBEZ-00-0000-0B00M030F |
| | 2700 K | H0 | 560 | 644 | 27H | MTGBEZ-00-0000-0B00H027H | 27F | MTGBEZ-00-0000-0B00H027F |
| | | J0 | 600 | 690 | | MTGBEZ-00-0000-0B00J027H | | MTGBEZ-00-0000-0B00J027F |
| | | K0 | 650 | 748 | | MTGBEZ-00-0000-0B00K027H | | MTGBEZ-00-0000-0B00K027F |
| | 80 CRI EasyWhite | 5000 K | M0 | 700 | 805 | 50H | MTGBEZ-00-0000-0B0HM050H | 50F |
| N0 | | | 750 | 863 | MTGBEZ-00-0000-0B0HN050H | | MTGBEZ-00-0000-0B0HN050F | |
| 4000 K | | J0 | 600 | 690 | 40H | MTGBEZ-00-0000-0B0HJ040H | 40F | MTGBEZ-00-0000-0B0HJ040F |
| | | K0 | 650 | 748 | | MTGBEZ-00-0000-0B0HK040H | | MTGBEZ-00-0000-0B0HK040F |
| | | M0 | 700 | 805 | | MTGBEZ-00-0000-0B0HM040H | | MTGBEZ-00-0000-0B0HM040F |
| 90 CRI EasyWhite | 3000 K | F0 | 480 | 552 | 30H | MTGBEZ-00-0000-0B0UF030H | 30F | MTGBEZ-00-0000-0B0UF030F |
| | | G0 | 520 | 598 | | MTGBEZ-00-0000-0B0UG030H | | MTGBEZ-00-0000-0B0UG030F |
| | 2700 K | E0 | 440 | 506 | 27H | MTGBEZ-00-0000-0B0UE027H | 27F | MTGBEZ-00-0000-0B0UE027F |
| | | F0 | 480 | 552 | | MTGBEZ-00-0000-0B0UF027H | | MTGBEZ-00-0000-0B0UF027F |

Notes:

- Cree maintains a tolerance of ±7% on flux and power measurements, ±0.005 on chromaticity (CCx, CCy) measurements and ±2 on CRI measurements. See the Measurements section (page 15).
- Cree XLamp MT-G2 LED order codes specify only a minimum flux bin and not a maximum. Cree may ship reels 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.
- Minimum CRI for standard EasyWhite color temperatures 27F, 27H, 30F, 30H, 35F, 35H is 80.
- Minimum CRI for standard EasyWhite color temperatures, 40F, 40H, 50F, 50H is 70.
- Typical CRI for standard EasyWhite color temperatures 40F, 40H, 50F, 50H is 75.
- * Flux values @ 25 °C are calculated and for reference only.

FLUX CHARACTERISTICS, STANDARD ORDER CODES, BINS, 9-VOLT MT-G2 (735 mA, T_j = 85 °C)

The following table provides several base order codes for 9-volt XLamp MT-G2 EasyWhite LEDs. For a complete description of the order code nomenclature, please reference page 13 of this document.

| Color | CCT Range | Minimum Luminous Flux (lm) @ 735 mA | | | 2-Step | | 4-Step | |
|------------------------|------------------|-------------------------------------|-------------------|--------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| | | Group | Flux (lm) @ 85 °C | Flux (lm) @ 25 °C* | Chromaticity Region | Order Code | Chromaticity Region | Order Code |
| Standard CRI EasyWhite | 5000 K | N0 | 750 | 863 | 50H | MTGBEZ-00-0000-0C00N050H | 50F | MTGBEZ-00-0000-0C00N050F |
| | | P0 | 800 | 920 | | MTGBEZ-00-0000-0C00P050H | | MTGBEZ-00-0000-0C00P050F |
| | 4000 K | K0 | 650 | 748 | 40H | MTGBEZ-00-0000-0C00K040H | 40F | MTGBEZ-00-0000-0C00K040F |
| | | M0 | 700 | 805 | | MTGBEZ-00-0000-0C00M040H | | MTGBEZ-00-0000-0C00M040F |
| | | N0 | 750 | 863 | | MTGBEZ-00-0000-0C00N040H | | MTGBEZ-00-0000-0C00N040F |
| | 3500 K | K0 | 650 | 748 | 35H | MTGBEZ-00-0000-0C00K035H | 35F | MTGBEZ-00-0000-0C00K035F |
| | | M0 | 700 | 805 | | MTGBEZ-00-0000-0C00M035H | | MTGBEZ-00-0000-0C00M035F |
| | | N0 | 750 | 863 | | MTGBEZ-00-0000-0C00N035H | | MTGBEZ-00-0000-0C00N035F |
| | 3000 K | J0 | 600 | 690 | 30H | MTGBEZ-00-0000-0C00J030H | 30F | MTGBEZ-00-0000-0C00J030F |
| | | K0 | 650 | 748 | | MTGBEZ-00-0000-0C00K030H | | MTGBEZ-00-0000-0C00K030F |
| | | M0 | 700 | 805 | | MTGBEZ-00-0000-0C00M030H | | MTGBEZ-00-0000-0C00M030F |
| | 2700 K | H0 | 560 | 644 | 27H | MTGBEZ-00-0000-0C00H027H | 27F | MTGBEZ-00-0000-0C00H027F |
| | | J0 | 600 | 690 | | MTGBEZ-00-0000-0C00J027H | | MTGBEZ-00-0000-0C00J027F |
| | | K0 | 650 | 748 | | MTGBEZ-00-0000-0C00K027H | | MTGBEZ-00-0000-0C00K027F |
| | 80 CRI EasyWhite | 5000 K | M0 | 700 | 805 | 50H | MTGBEZ-00-0000-0C00HM050H | 50F |
| N0 | | | 750 | 863 | MTGBEZ-00-0000-0C00HN050H | | MTGBEZ-00-0000-0C00HN050F | |
| 4000 K | | J0 | 600 | 690 | 40H | MTGBEZ-00-0000-0C00HJ040H | 40F | MTGBEZ-00-0000-0C00HJ040F |
| | | K0 | 650 | 748 | | MTGBEZ-00-0000-0C00HK040H | | MTGBEZ-00-0000-0C00HK040F |
| | M0 | 700 | 805 | | MTGBEZ-00-0000-0C00HM040H | | MTGBEZ-00-0000-0C00HM040F | |
| 90 CRI EasyWhite | 3000 K | F0 | 480 | 552 | 30H | MTGBEZ-00-0000-0C00UF030H | 30F | MTGBEZ-00-0000-0C00UF030F |
| | | G0 | 520 | 598 | | MTGBEZ-00-0000-0C00UG030H | | MTGBEZ-00-0000-0C00UG030F |
| | 2700 K | E0 | 440 | 506 | 27H | MTGBEZ-00-0000-0C00UE027H | 27F | MTGBEZ-00-0000-0C00UE027F |
| | | F0 | 480 | 552 | | MTGBEZ-00-0000-0C00UF027H | | MTGBEZ-00-0000-0C00UF027F |

Notes:

- Cree maintains a tolerance of $\pm 7\%$ on flux and power measurements, ± 0.005 on chromaticity (CCx, CCy) measurements and ± 2 on CRI measurements. See the Measurements section (page 15).
- Cree XLamp MT-G2 LED order codes specify only a minimum flux bin and not a maximum. Cree may ship reels 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.
- Minimum CRI for standard EasyWhite color temperatures 27F, 27H, 30F, 30H, 35F, 35H is 80.
- Minimum CRI for standard EasyWhite color temperatures, 40F, 40H, 50F, 50H is 70.
- Typical CRI for standard EasyWhite color temperatures 40F, 40H, 50F, 50H is 75.
- * Flux values @ 25 °C are calculated and for reference only.

FLUX CHARACTERISTICS, STANDARD ORDER CODES, BINS, 36-VOLT MT-G2 (185 mA, T_j = 85 °C)

The following table provides several base order codes for 36-volt XLamp MT-G2 EasyWhite LEDs. For a complete description of the order code nomenclature, please reference page 13 of this document.

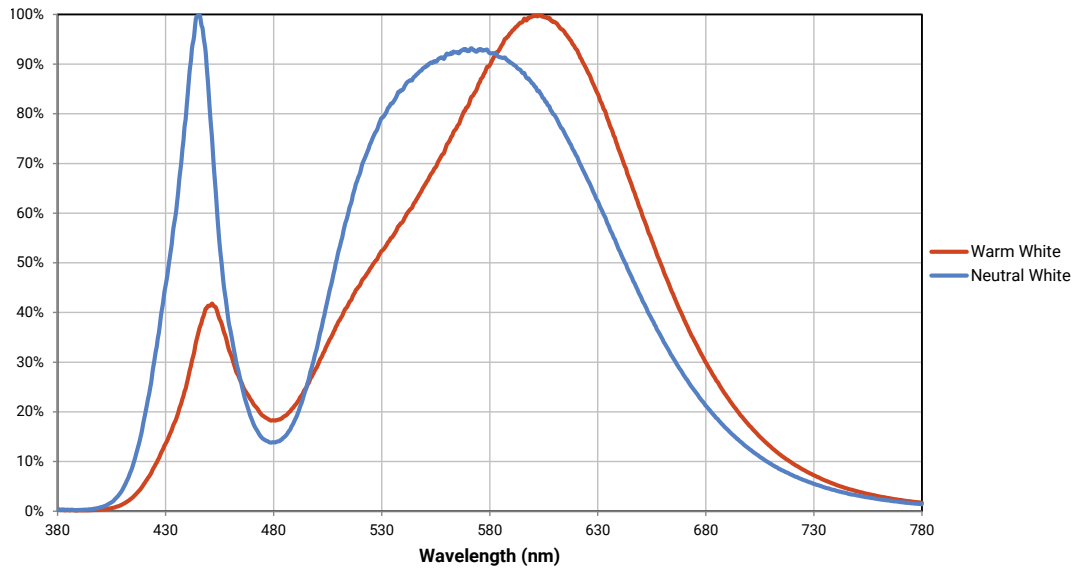
| Color | CCT Range | Minimum Luminous Flux (lm) @ 185 mA | | | 2-Step | | 4-Step | |
|------------------------|------------------|-------------------------------------|-------------------|--------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | | Group | Flux (lm) @ 85 °C | Flux (lm) @ 25 °C* | Chromaticity Region | Order Code | Chromaticity Region | Order Code |
| Standard CRI EasyWhite | 5000 K | N0 | 750 | 863 | 50H | MTGBEZ-00-0000-0N00N050H | 50F | MTGBEZ-00-0000-0N00N050F |
| | | P0 | 800 | 920 | | MTGBEZ-00-0000-0N00P050H | | MTGBEZ-00-0000-0N00P050F |
| | 4000 K | K0 | 650 | 748 | 40H | MTGBEZ-00-0000-0N00K040H | 40F | MTGBEZ-00-0000-0N00K040F |
| | | M0 | 700 | 805 | | MTGBEZ-00-0000-0N00M040H | | MTGBEZ-00-0000-0N00M040F |
| | | N0 | 750 | 863 | | MTGBEZ-00-0000-0N00N040H | | MTGBEZ-00-0000-0N00N040F |
| | 3500 K | K0 | 650 | 748 | 35H | MTGBEZ-00-0000-0N00K035H | 35F | MTGBEZ-00-0000-0N00K035F |
| | | M0 | 700 | 805 | | MTGBEZ-00-0000-0N00M035H | | MTGBEZ-00-0000-0N00M035F |
| | | N0 | 750 | 863 | | MTGBEZ-00-0000-0N00N035H | | MTGBEZ-00-0000-0N00N035F |
| | 3000 K | J0 | 600 | 690 | 30H | MTGBEZ-00-0000-0N00J030H | 30F | MTGBEZ-00-0000-0N00J030F |
| | | K0 | 650 | 748 | | MTGBEZ-00-0000-0N00K030H | | MTGBEZ-00-0000-0N00K030F |
| | | M0 | 700 | 805 | | MTGBEZ-00-0000-0N00M030H | | MTGBEZ-00-0000-0N00M030F |
| | 2700 K | H0 | 560 | 644 | 27H | MTGBEZ-00-0000-0N00H027H | 27F | MTGBEZ-00-0000-0N00H027F |
| | | J0 | 600 | 690 | | MTGBEZ-00-0000-0N00J027H | | MTGBEZ-00-0000-0N00J027F |
| | | K0 | 650 | 748 | | MTGBEZ-00-0000-0N00K027H | | MTGBEZ-00-0000-0N00K027F |
| | 80 CRI EasyWhite | 5000 K | M0 | 700 | 805 | 50H | MTGBEZ-00-0000-0N0HM050H | 50F |
| N0 | | | 750 | 863 | MTGBEZ-00-0000-0N0HN050H | | MTGBEZ-00-0000-0N0HN050F | |
| 4000 K | | J0 | 600 | 690 | 40H | MTGBEZ-00-0000-0N0HJ040H | 40F | MTGBEZ-00-0000-0N0HJ040F |
| | | K0 | 650 | 748 | | MTGBEZ-00-0000-0N0HK040H | | MTGBEZ-00-0000-0N0HK040F |
| | | M0 | 700 | 805 | | MTGBEZ-00-0000-0N0HM040H | | MTGBEZ-00-0000-0N0HM040F |
| 90 CRI EasyWhite | 3000 K | F0 | 480 | 552 | 30H | MTGBEZ-00-0000-0N0UF030H | 30F | MTGBEZ-00-0000-0N0UF030F |
| | | G0 | 520 | 598 | | MTGBEZ-00-0000-0N0UG030H | | MTGBEZ-00-0000-0N0UG030F |
| | 2700 K | E0 | 440 | 506 | 27H | MTGBEZ-00-0000-0N0UE027H | 27F | MTGBEZ-00-0000-0N0UE027F |
| | | F0 | 480 | 552 | | MTGBEZ-00-0000-0N0UF027H | | MTGBEZ-00-0000-0N0UF027F |

Notes:

- Cree maintains a tolerance of $\pm 7\%$ on flux and power measurements, ± 0.005 on chromaticity (CCx, CCy) measurements and ± 2 on CRI measurements. See the Measurements section (page 15).
- Cree XLamp MT-G2 LED order codes specify only a minimum flux bin and not a maximum. Cree may ship reels 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.
- Minimum CRI for standard EasyWhite color temperatures 27F, 27H, 30F, 30H, 35F, 35H is 80.
- Minimum CRI for standard EasyWhite color temperatures, 40F, 40H, 50F, 50H is 70.
- Typical CRI for standard EasyWhite color temperatures 40F, 40H, 50F, 50H is 75.
- * Flux values @ 25 °C are calculated and for reference only.

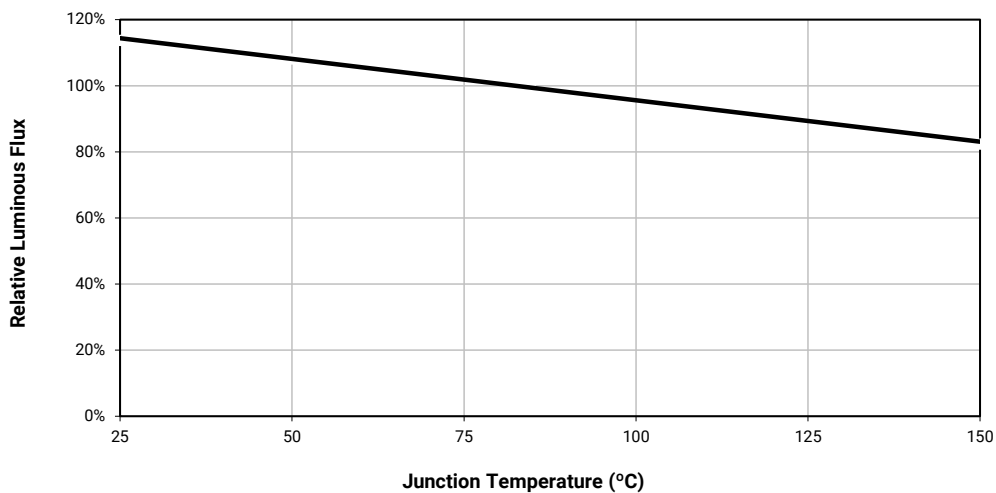
RELATIVE SPECTRAL POWER DISTRIBUTION (6 V, 1100 mA; 9 V, 735 mA; 36 V, 185 mA; $T_j = 85^\circ\text{C}$)

The following graph represents typical spectral output of the XLamp MT-G2 EasyWhite LED.

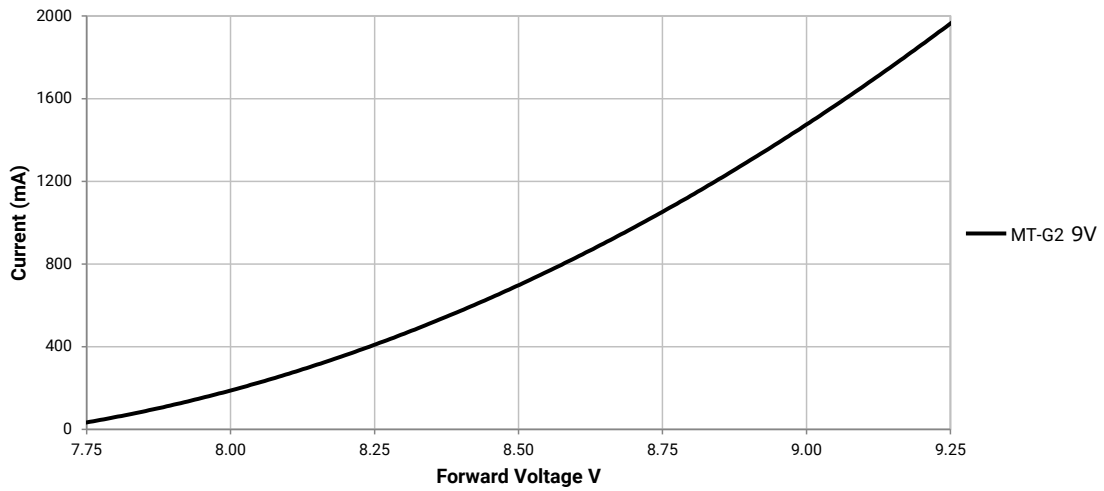
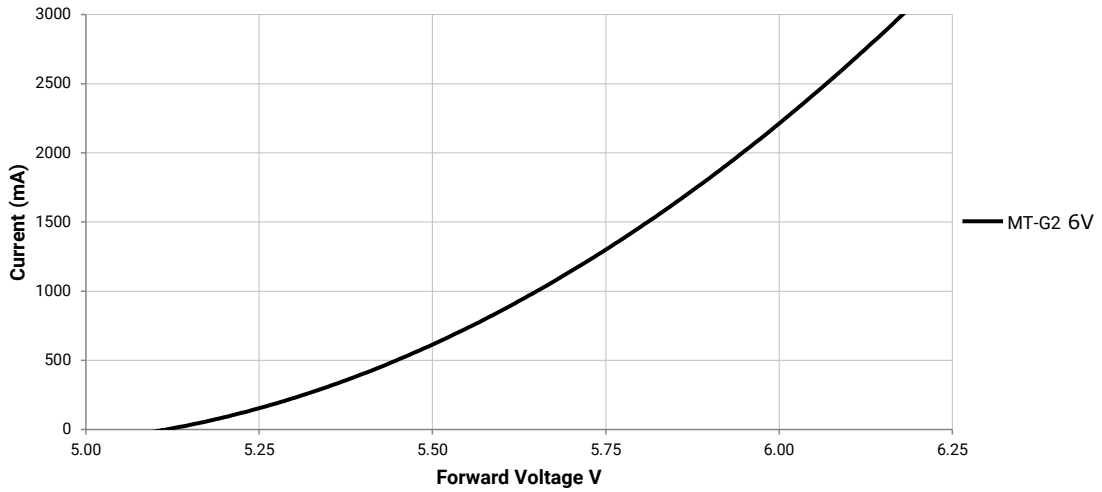


RELATIVE LUMINOUS FLUX VS. JUNCTION TEMPERATURE (6 V, 1100 mA; 9 V, 735 mA; 36 V, 185 mA)

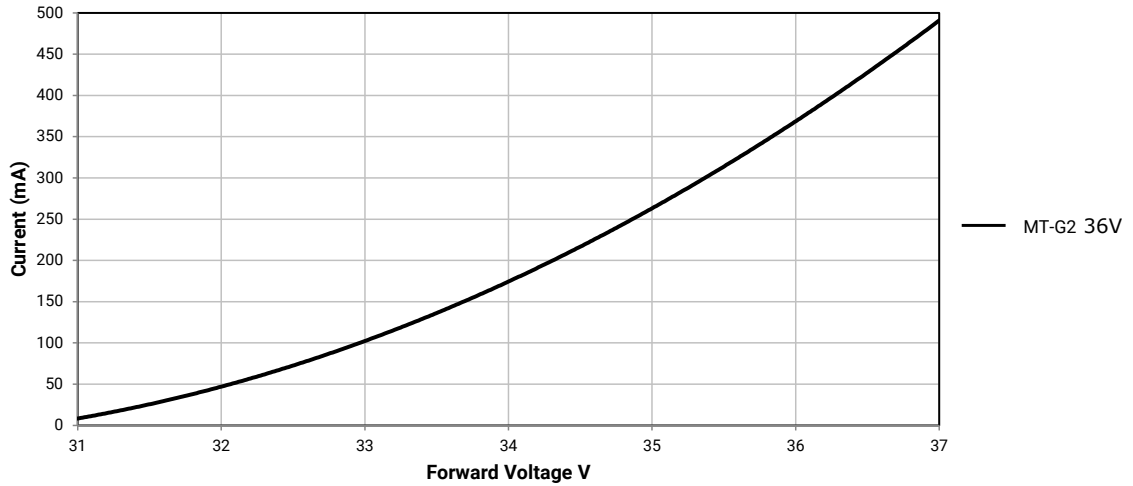
The following graph represents typical performance of the XLamp MT-G2 EasyWhite LED.



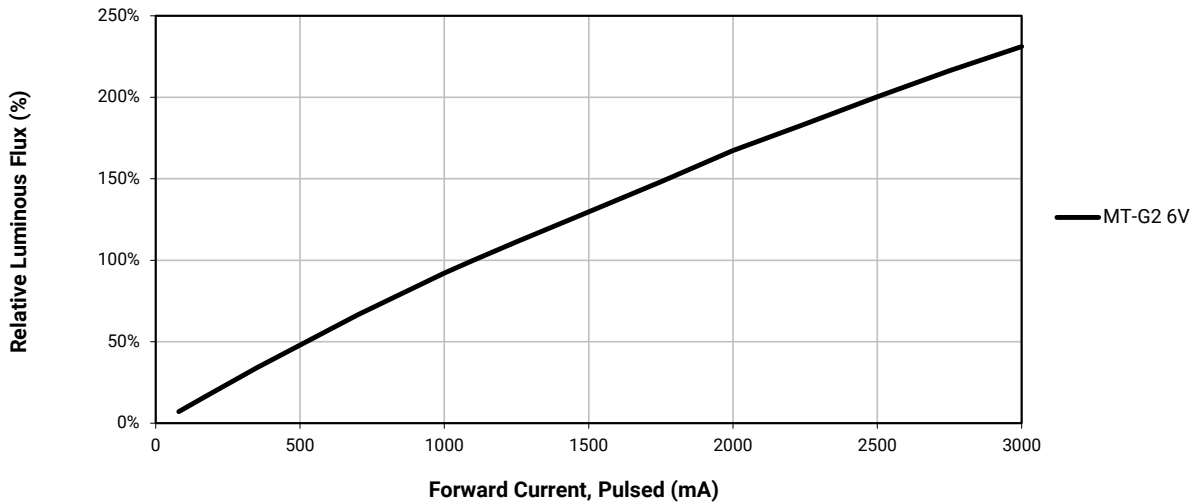
ELECTRICAL CHARACTERISTICS ($T_j = 85^\circ\text{C}$)



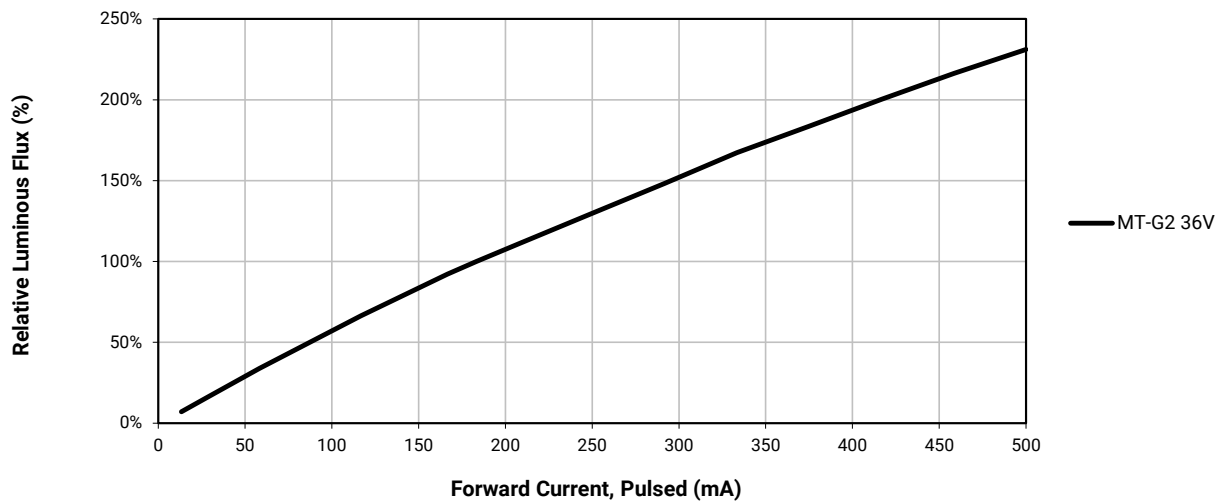
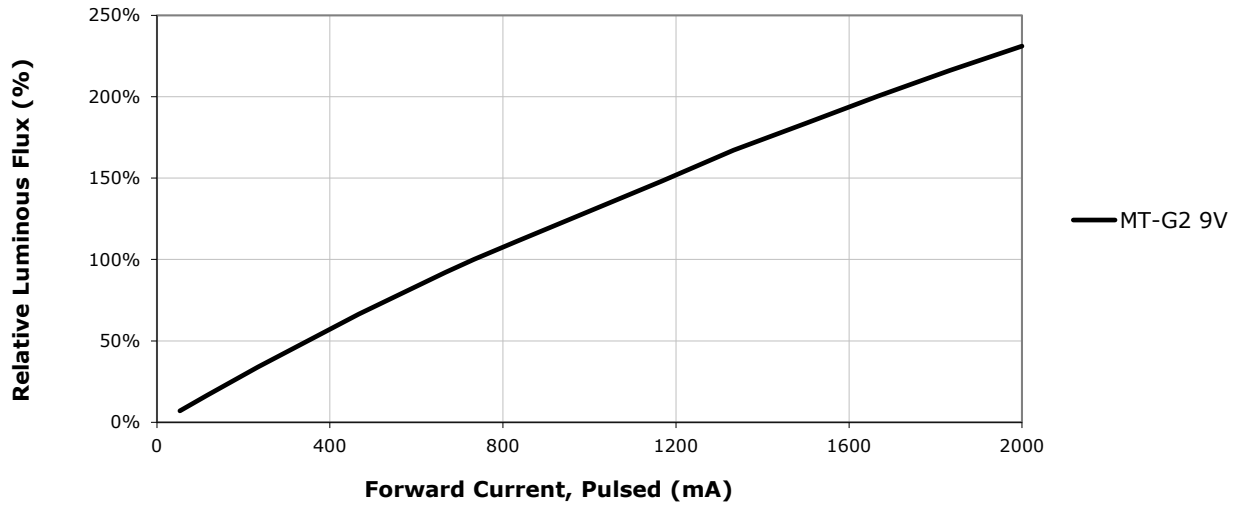
ELECTRICAL CHARACTERISTICS ($T_j = 85\text{ }^\circ\text{C}$) - CONTINUED



RELATIVE LUMINOUS FLUX VS. CURRENT ($T_j = 85\text{ }^\circ\text{C}$)

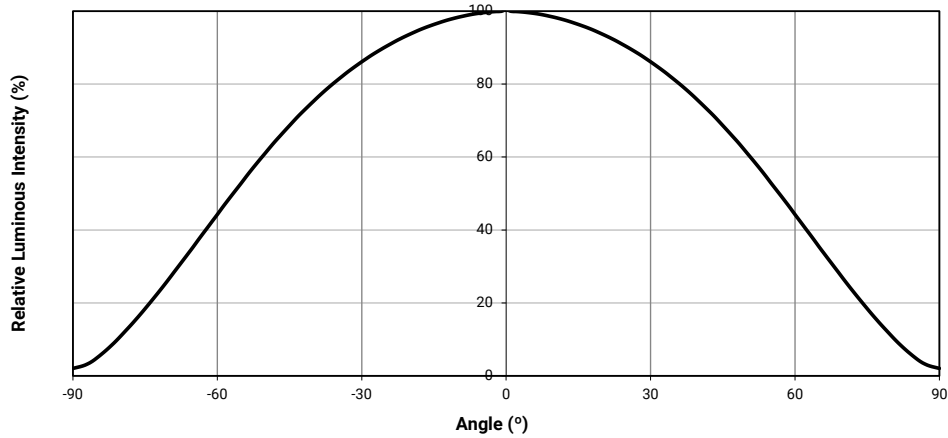


RELATIVE LUMINOUS FLUX VS. CURRENT ($T_j = 85^\circ\text{C}$) - CONTINUED



TYPICAL SPATIAL DISTRIBUTION

The following graph represents typical performance of the XLamp MT-G2 EasyWhite LED.



PERFORMANCE GROUPS – BRIGHTNESS (T_J = 85 °C)

XLamp MT-G2 EasyWhite LEDs are tested for luminosity and placed into one of the following bins.

| Group Code | Minimum Luminous Flux @ Nominal I _F | Maximum Luminous Flux @ Nominal I _F |
|------------|--|--|
| D0 | 400 | 440 |
| E0 | 440 | 480 |
| F0 | 480 | 520 |
| G0 | 520 | 560 |
| H0 | 560 | 600 |
| J0 | 600 | 650 |
| K0 | 650 | 700 |
| M0 | 700 | 750 |
| N0 | 750 | 800 |
| P0 | 800 | 860 |

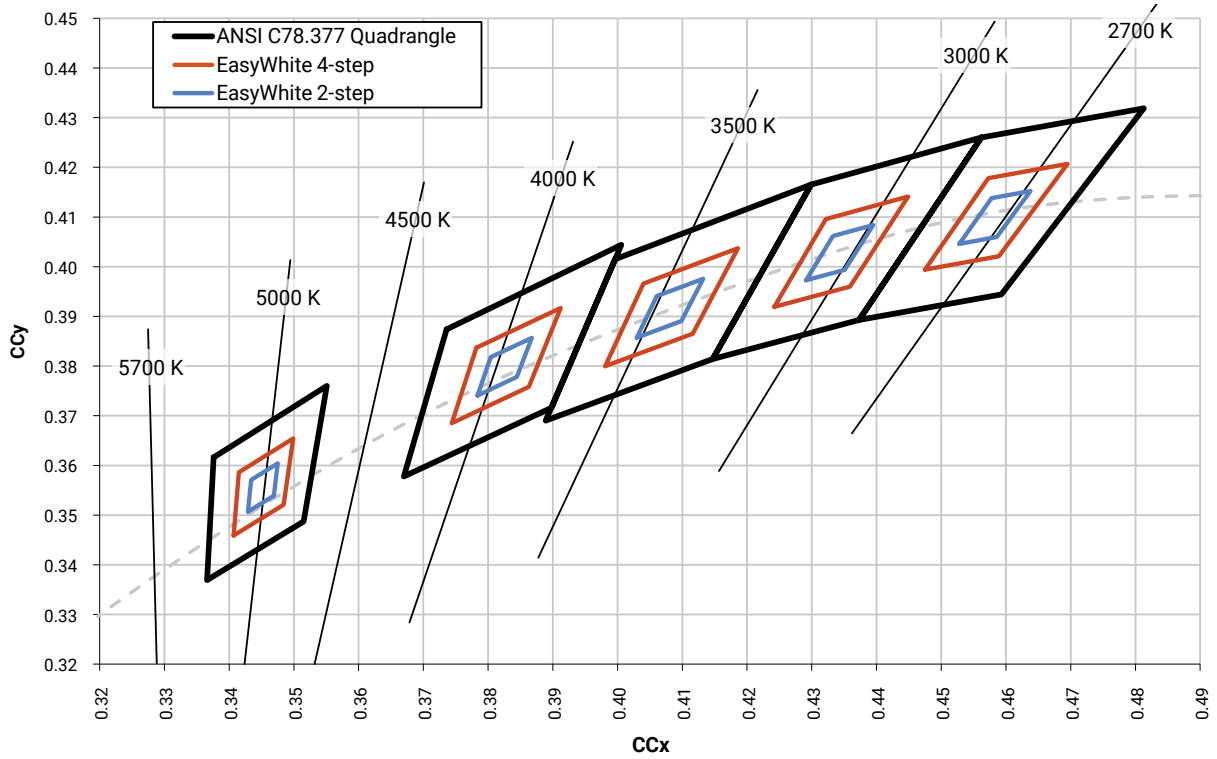
PERFORMANCE GROUPS – CHROMATICITY ($T_j = 85\text{ }^\circ\text{C}$)

XLamp MT-G2 EasyWhite LEDs are tested for chromaticity and placed into one of the regions defined by the following bounding coordinates.

| EasyWhite Color Temperatures – 4-Step | | | |
|---------------------------------------|--------|--------|--------|
| Code | CCT | x | y |
| 50F | 5000 K | 0.3407 | 0.3459 |
| | | 0.3415 | 0.3586 |
| | | 0.3499 | 0.3654 |
| | | 0.3484 | 0.3521 |
| 40F | 4000 K | 0.3744 | 0.3685 |
| | | 0.3782 | 0.3837 |
| | | 0.3912 | 0.3917 |
| | | 0.3863 | 0.3758 |
| 35F | 3500 K | 0.3981 | 0.3800 |
| | | 0.4040 | 0.3966 |
| | | 0.4186 | 0.4037 |
| | | 0.4116 | 0.3865 |
| 30F | 3000 K | 0.4242 | 0.3919 |
| | | 0.4322 | 0.4096 |
| | | 0.4449 | 0.4141 |
| | | 0.4359 | 0.3960 |
| 27F | 2700 K | 0.4475 | 0.3994 |
| | | 0.4573 | 0.4178 |
| | | 0.4695 | 0.4207 |
| | | 0.4589 | 0.4021 |

| EasyWhite Color Temperatures – 2-Step | | | |
|---------------------------------------|--------|--------|--------|
| Code | CCT | x | y |
| 50H | 5000 K | 0.3429 | 0.3507 |
| | | 0.3434 | 0.3571 |
| | | 0.3475 | 0.3604 |
| | | 0.3469 | 0.3539 |
| 40H | 4000 K | 0.3784 | 0.3741 |
| | | 0.3804 | 0.3818 |
| | | 0.3867 | 0.3857 |
| | | 0.3844 | 0.3778 |
| 35H | 3500 K | 0.4030 | 0.3857 |
| | | 0.4061 | 0.3941 |
| | | 0.4132 | 0.3976 |
| | | 0.4099 | 0.3890 |
| 30H | 3000 K | 0.4291 | 0.3973 |
| | | 0.4333 | 0.4062 |
| | | 0.4395 | 0.4084 |
| | | 0.4351 | 0.3994 |
| 27H | 2700 K | 0.4528 | 0.4046 |
| | | 0.4578 | 0.4138 |
| | | 0.4638 | 0.4152 |
| | | 0.4586 | 0.4060 |

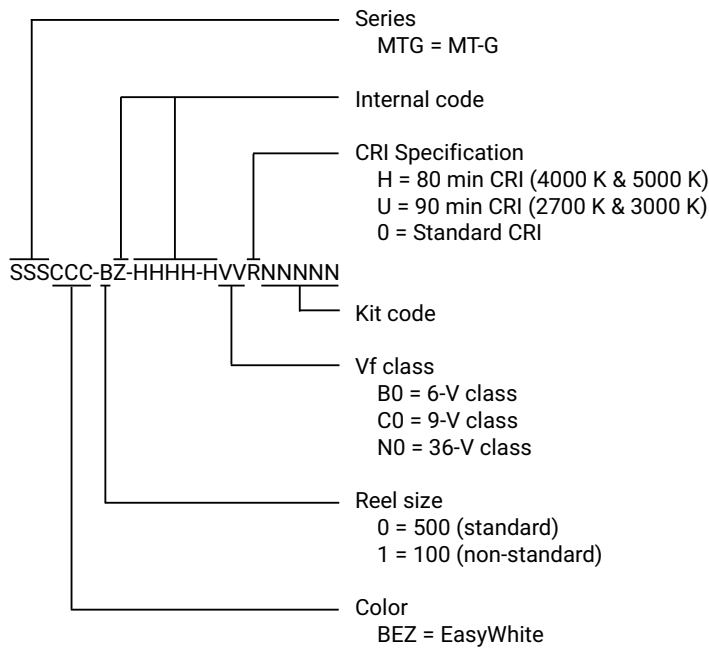
CREE EASYWHITE® COLOR TEMPERATURES PLOTTED ON THE 1931 CIE CURVE ($T_j = 85\text{ }^\circ\text{C}$)



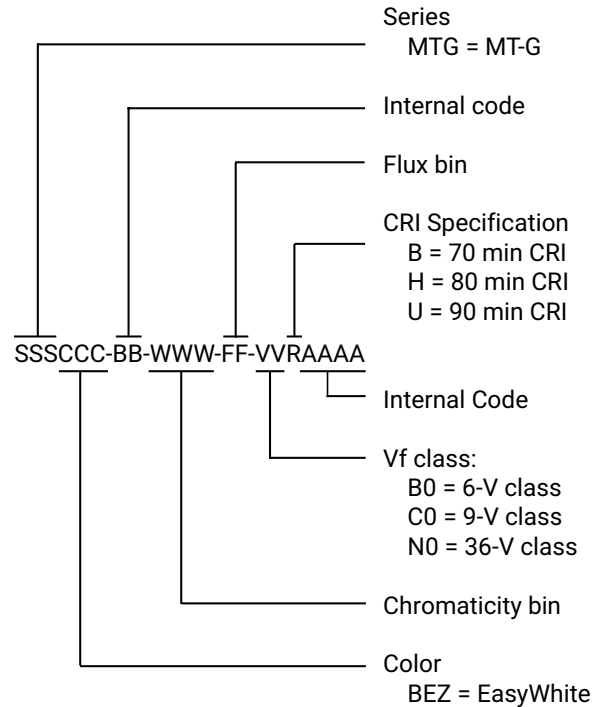
BIN AND ORDER CODE FORMATS

Bin codes and order codes are configured as follows:

Order Code



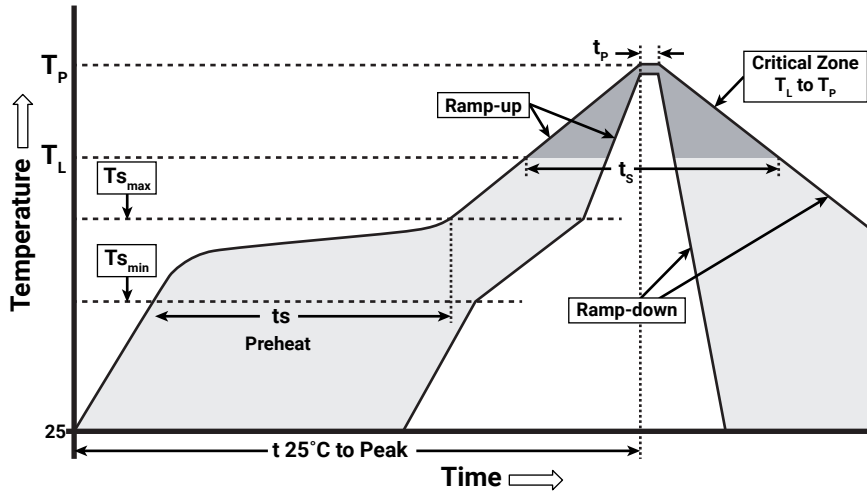
Bin Code



REFLOW SOLDERING CHARACTERISTICS

In testing, Cree has found XLamp MT-G2 EasyWhite LEDs to be compatible with JEDEC J-STD-020C, using the parameters listed below. As a general guideline, Cree recommends that users follow the recommended soldering profile provided by the manufacturer of the solder paste used, and therefore it is the lamp or luminaire manufacturer’s responsibility to determine applicable soldering requirements.

Note that this general guideline may not apply to all PCB designs and configurations of reflow soldering equipment.



IPC/JEDEC J-STD-020C

| Profile Feature | Lead-Free Solder |
|---|------------------|
| Average Ramp-Up Rate ($T_{s_{max}}$ to T_p) | 1.2 °C/second |
| Preheat: Temperature Min ($T_{s_{min}}$) | 120 °C |
| Preheat: Temperature Max ($T_{s_{max}}$) | 170 °C |
| Preheat: Time ($t_{s_{min}}$ to $t_{s_{max}}$) | 65-150 seconds |
| Time Maintained Above: Temperature (T_L) | 217 °C |
| Time Maintained Above: Time (t_L) | 45-90 seconds |
| Peak/Classification Temperature (T_p) | 235 - 245 °C |
| Time Within 5 °C of Actual Peak Temperature (t_p) | 20-40 seconds |
| Ramp-Down Rate | 1 - 6 °C/second |
| Time 25 °C to Peak Temperature | 4 minutes max. |

Note: All temperatures refer to the topside of the package, measured on the package body surface.

NOTES

Measurements

The luminous flux, radiant power, chromaticity, forward voltage and CRI measurements in this document are binning specifications only and solely represent product measurements as of the date of shipment. These measurements will change over time based on a number of factors that are not within Cree's control and are not intended or provided as operational specifications for the products. Calculated values are provided for informational purposes only and are not intended or provided as specifications.

Pre-Release Qualification Testing

Please read the [LED Reliability Overview](#) for details of the qualification process Cree applies to ensure long-term reliability for XLamp LEDs and details of Cree's pre-release qualification testing for XLamp LEDs.

Lumen Maintenance

Cree now uses standardized IES LM-80-08 and TM-21-11 methods for collecting long-term data and extrapolating LED lumen maintenance. For information on the specific LM-80 data sets available for this LED, refer to the public [LM-80 results document](#).

Moisture Sensitivity

Cree recommends keeping XLamp LEDs in the provided, resealable moisture-barrier packaging (MBP) until immediately prior to soldering. Unopened MBPs that contain XLamp LEDs do not need special storage for moisture sensitivity.

Once the MBP is opened, XLamp MT-G2 EasyWhite LEDs may be stored as MSL 1 per JEDEC J-STD-033, meaning they have unlimited floor life in conditions of ≤ 30 °C/85% relative humidity (RH). Regardless of storage condition, Cree recommends sealing any unsoldered LEDs in the original MBP.

RoHS Compliance

The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU Directive 2011/65/EC (RoHS2), as implemented January 2, 2013. RoHS Declarations for this product can be obtained from your Cree representative or from the [Product Ecology](#) section of the Cree website.

REACH Compliance

REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, please contact a Cree representative to insure you get the most up-to-date REACH Declaration. REACH banned substance information (REACH Article 67) is also available upon request.

UL® Recognized Component

This product meets the requirements to be considered a UL Recognized Component with Level 4 enclosure consideration. The LED package or a portion thereof has been investigated as a fire and electrical enclosure per ANSI/UL 8750.

NOTES - CONTINUED

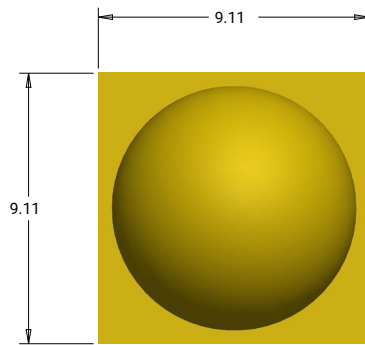
Vision Advisory

WARNING: Do not look at an exposed lamp in operation. Eye injury can result. For more information about LEDs and eye safety, please refer to the [LED Eye Safety application note](#).

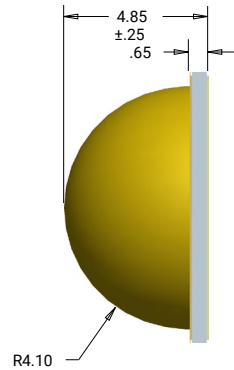
MECHANICAL DIMENSIONS

Thermal vias, if present, are not shown on these drawings.

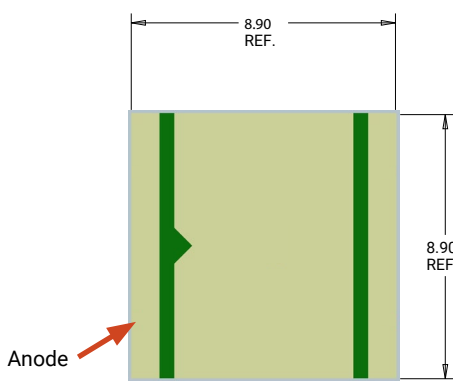
All measurements are ± 0.13 mm unless otherwise indicated.



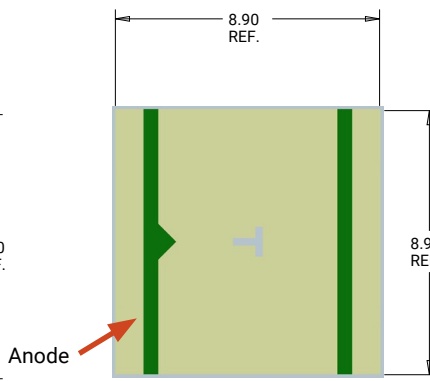
Top View



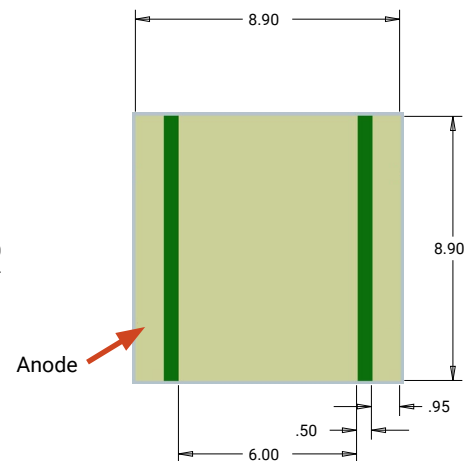
Side View



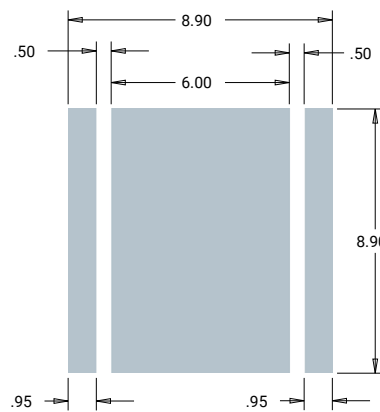
Bottom View



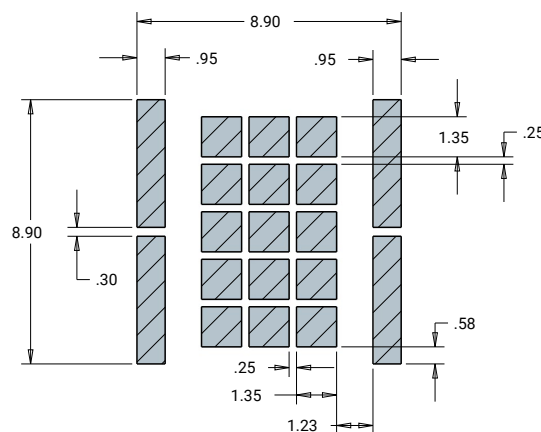
Alternate Bottom View



Alternate Bottom View



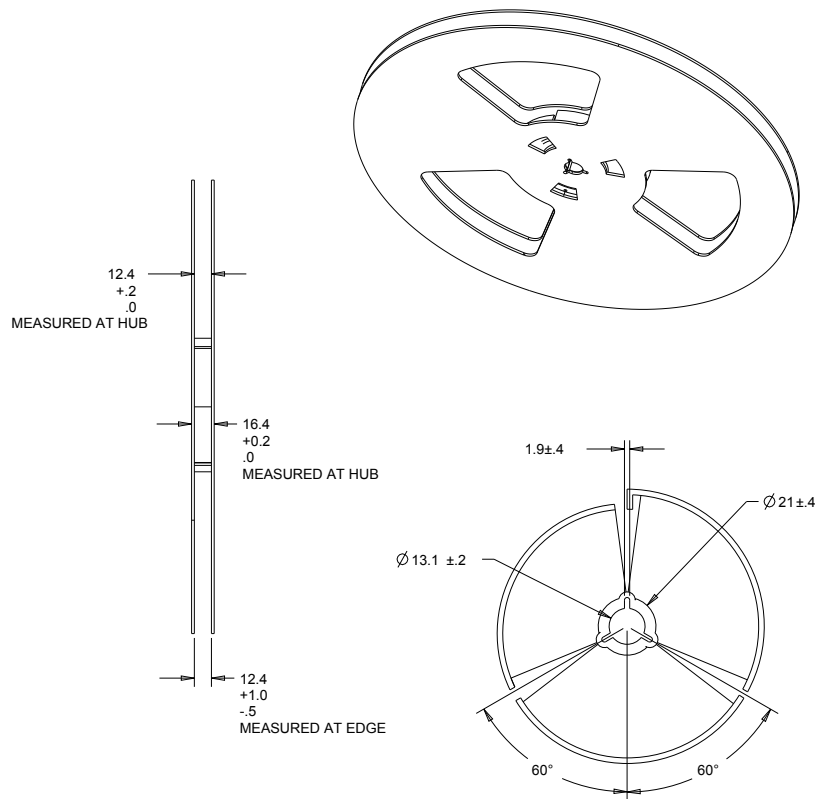
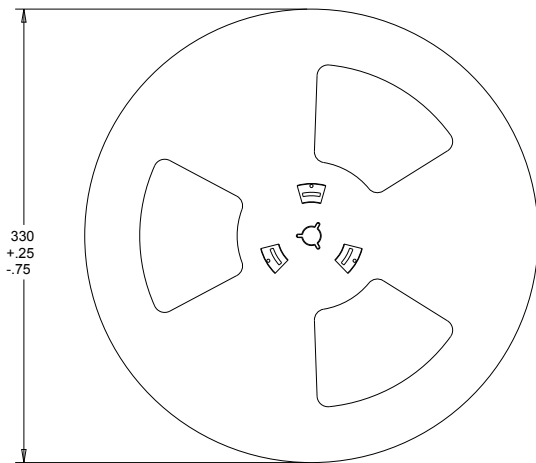
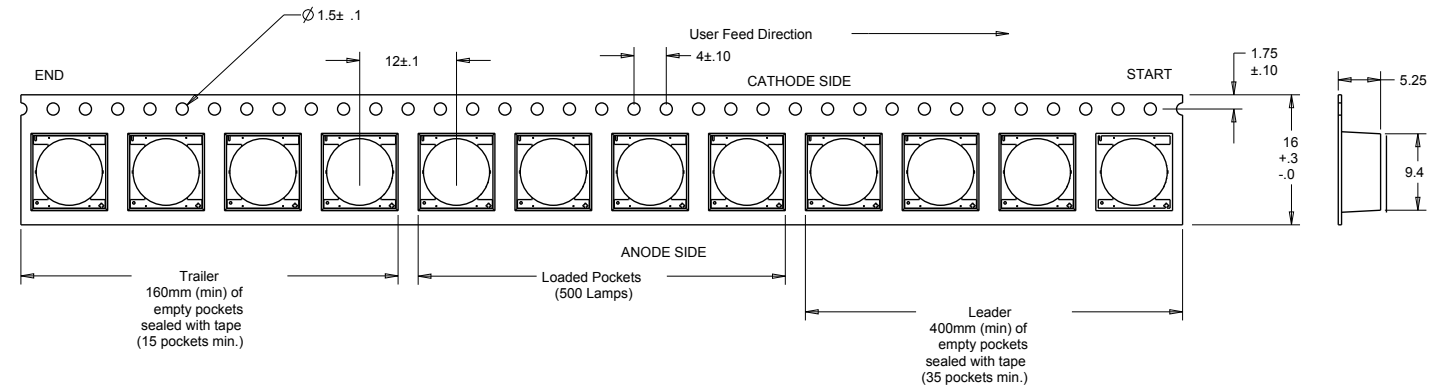
Recommended PCB Solder Pad



**Recommended Stencil Pattern
(Shaded Area Is Open)**

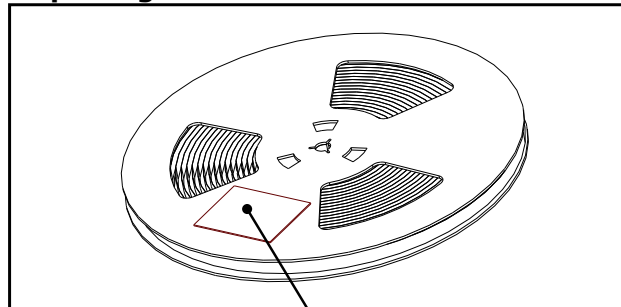
TAPE AND REEL

All Cree carrier tapes conform to EIA-481D, Automated Component Handling Systems Standard.
All dimensions in mm.



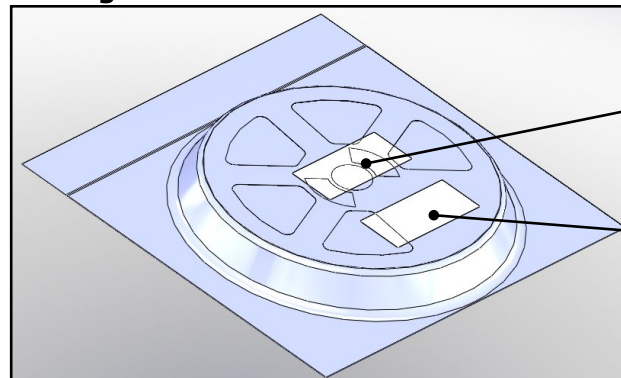
PACKAGING

Unpackaged Reel



Label with Cree Bin Code,
Quantity, Reel ID

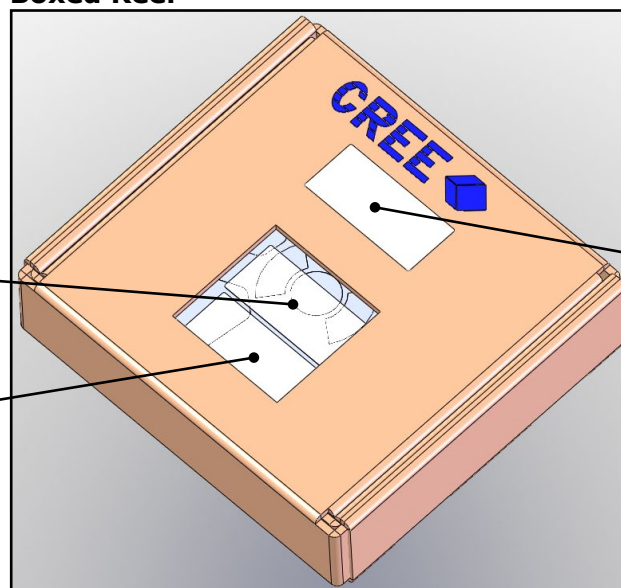
Packaged Reel



Label with Cree Order Code,
Quantity, Reel ID, PO #

Label with Cree Bin Code,
Quantity, Reel ID

Boxed Reel



Label with Cree Order Code,
Quantity, Reel ID, PO #

Label with Cree Bin Code,
Quantity, Reel ID

Patent Label

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