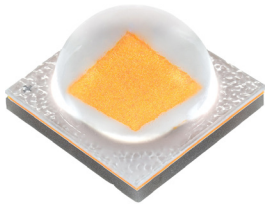
XLamp® XM-L2 LEDs



PRODUCT DESCRIPTION

The XLamp® XM-L2 LED builds on the unprecedented performance of the original XM-L, increasing lumen output up to 20% while providing a single die LED point source for precise optical control. The XM-L2 LED shares the same mechanical and optical footprint as the original XM-L, providing a seamless upgrade path and shortened design cycle.

XLamp XM-L2 LEDs are the ideal choice for lighting applications where high light output and maximum efficacy are required, such as LED light bulbs, outdoor lighting, portable lighting, indoor lighting and solar-powered lighting.

FEATURES

- Available in white, 70-CRI white, 80-CRI white, and 90-CRI white
- ANSI-compatible chromaticity bins
- Binned at 85 °C
- Maximum drive current: 3000 mA
- Low thermal resistance: 0.75 °C/W
- Wide viewing angle: 120°
- Unlimited floor life at ≤ 30 °C/85% RH
- Reflow solderable - JEDEC J-STD-020C
- Electrically neutral thermal path
- RoHS and REACH compliant
- UL® recognized component (E349212)

Cree LED / 4001 E. Hwy. 54, Suite 2000 / Durham, NC 27709 USA / +1.919.313.5330 / www.cree-led.com

CHARACTERISTICS

Characteristics	Unit	Minimum	Typical	Maximum
Thermal resistance, junction to solder point*	°C/W		0.75	
Viewing angle (FWHM)	degrees		120	
Temperature coefficient of voltage	mV/°C		-1.3	
ESD withstand voltage (HBM per Mil-Std-883D)	V			8000
DC forward current	mA			3000
Reverse voltage	V			1
Forward voltage (@ 700 mA, 85 °C)	V		2.72	3.15
Forward voltage (@ 1500 mA, 85 °C)	V		2.84	
Forward voltage (@ 3000 mA, 85 °C)	V		3.02	
LED junction temperature	°C			150

Note

* Thermal resistance measurement was performed per JEDEC JESD51-14 standard. See the Thermal Resistance Measurement application note for more details.

ORDER CODES SUGGESTED FOR NEW DESIGNS (T_J = 85 °C) - CONTINUED

Chromaticity		Minimum Luminous Flux (lm) @ 700 mA*			Calculated Minimum Luminous Flux (lm) @ 85 °C**			Order Codes		
Kit	CCT	Code	Flux (lm) @ 85 °C	Flux (lm) @ 25 °C*	1000 mA	1500 mA	2000 mA	70 CRI Minimum	75 CRI Typical	80 CRI Minimum
ANSI Neutral White (3700 K – 5000 K)										
E3	5000 K	U4	340	370	469	667	848	XMLBWT-00-0000-000BU40E3	XMLBWT-00-0000-000LU40E3	
		U3	320	348	441	628	798	XMLBWT-00-0000-000BU30E3	XMLBWT-00-0000-000LU30E3	
		U2	300	327	414	589	749	XMLBWT-00-0000-000BU20E3	XMLBWT-00-0000-000LU20E3	
F4	4750 K	U4	340	370	469	667	848	XMLBWT-00-0000-000BU40F4		
		U3	320	348	441	628	798	XMLBWT-00-0000-000BU30F4	XMLBWT-00-0000-000LU30F4	
		U2	300	327	414	589	749	XMLBWT-00-0000-000BU20F4	XMLBWT-00-0000-000LU20F4	
		T6	280	305	386	549	699		XMLBWT-00-0000-000LT60F4	
E4	4500 K	U4	340	370	469	667	848	XMLBWT-00-0000-000BU40E4		
		U3	320	348	441	628	798	XMLBWT-00-0000-000BU30E4	XMLBWT-00-0000-000LU30E4	
		U2	300	327	414	589	749	XMLBWT-00-0000-000BU20E4	XMLBWT-00-0000-000LU20E4	
		T6	280	305	386	549	699		XMLBWT-00-0000-000LT60E4	
F5	4250 K	U4	340	370	469	667	848	XMLBWT-00-0000-000BU40F5		
		U3	320	348	441	628	798	XMLBWT-00-0000-000BU30F5	XMLBWT-00-0000-000LU30F5	
		U2	300	327	414	589	749	XMLBWT-00-0000-000BU20F5	XMLBWT-00-0000-000LU20F5	
		T6	280	305	386	549	699		XMLBWT-00-0000-000LT60F5	
E5	4000 K	U4	340	370	469	667	848	XMLBWT-00-0000-000BU40E5		
		U3	320	348	441	628	798	XMLBWT-00-0000-000BU30E5	XMLBWT-00-0000-000LU30E5	XMLBWT-00-0000-000HU30E5
		U2	300	327	414	589	749	XMLBWT-00-0000-000BU20E5	XMLBWT-00-0000-000LU20E5	XMLBWT-00-0000-000HU20E5
		T6	280	305	386	549	699		XMLBWT-00-0000-000LT60E5	XMLBWT-00-0000-000HT60E5

Notes

- For additional order codes NOT recommended for new designs please see the Appendix section starting on page 31.
- Cree LED maintains a tolerance of ±7% on flux and power measurements, ±0.005 on chromaticity (CCx, CCy) measurements and a tolerance of ±2 on CRI measurements. See the Measurements section (page 25).
- XLamp XM-L2 LED order codes specify only a minimum flux bin and not a maximum. Cree LED 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.

* Flux values @ 25 °C are calculated and for reference only.

** Calculated flux values are for reference only.

ORDER CODES SUGGESTED FOR NEW DESIGNS (T_J = 85 °C) - CONTINUED

Chromaticity		Minimum Luminous Flux (lm) @ 700 mA*			Calculated Minimum Luminous Flux (lm) @ 85 °C**			Order Codes		
Kit	CCT	Code	Flux (lm) @ 85 °C	Flux (lm) @ 25 °C*	1000 mA	1500 mA	2000 mA	70 CRI Minimum	75 CRI Typical	80 CRI Minimum
ANSI Neutral White (3700 K – 5000 K)										
Z5	4000 K	U3	320	348	441	628	798		XMLBWT-00-0000-000LU30Z5	XMLBWT-00-0000-000HU30Z5
		U2	300	327	414	589	749		XMLBWT-00-0000-000LU20Z5	XMLBWT-00-0000-000HU20Z5
		T6	280	305	386	549	699		XMLBWT-00-0000-000LT60Z5	XMLBWT-00-0000-000HT60Z5

Notes

- For additional order codes NOT recommended for new designs please see the Appendix section starting on page 31.
- Cree LED maintains a tolerance of ±7% on flux and power measurements, ±0.005 on chromaticity (CCx, CCy) measurements and a tolerance of ±2 on CRI measurements. See the Measurements section (page 25).
- XLamp XM-L2 LED order codes specify only a minimum flux bin and not a maximum. Cree LED 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.

* Flux values @ 25 °C are calculated and for reference only.

** Calculated flux values are for reference only.