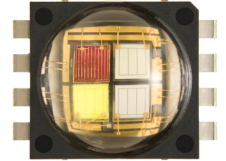


# Cree® XLamp® MC-E Color (RGBW) LED Data Sheet

Cree XLamp® MC-E Color (RGBW) LEDs provide high brightness and efficient color mixing from a single, compact package that enables a wide range of lighting applications, including entertainment, retail display, and architectural/decorative color.



## FEATURES

- High lumen density
- Small, multi-color optical source for efficient color mixing
- Max drive current: 700 mA per emitter
- Thermal performance: 3°C/W
- Lead-free and RoHS-compliant

## APPLICATIONS

- Architectural/decorative lighting
- Stage and studio lighting
- Retail display

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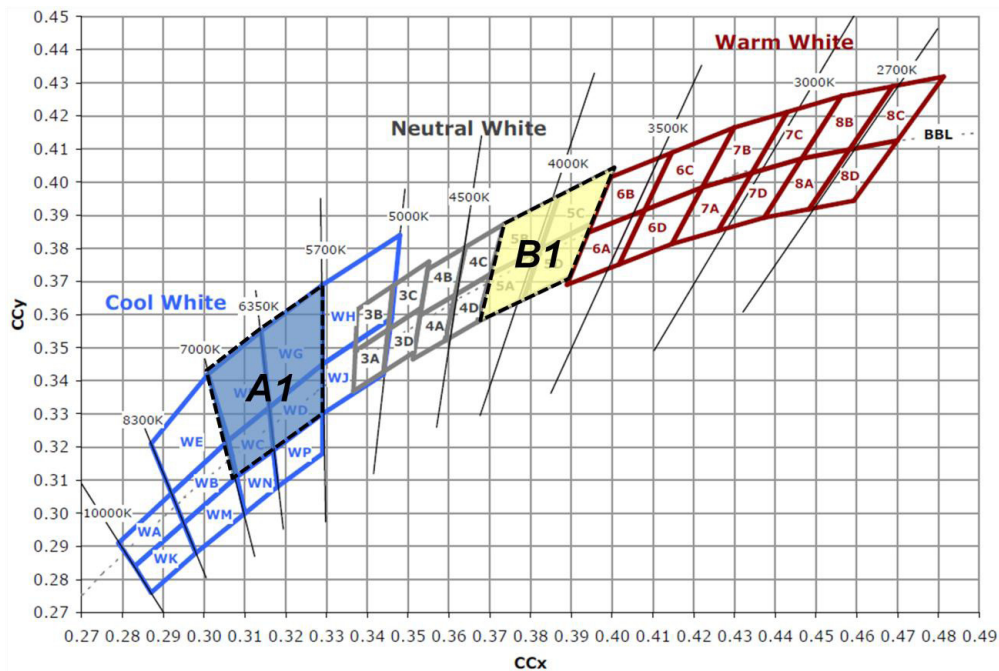
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## Flux Characteristics (T<sub>v</sub> = 25°C) Red, Green, Blue and White (RGBW)

Product	Color Configuration	Min Luminous Flux (lm) @ 350 mA*		Dominant Wavelength (nm)			Order Code
		Kit Code	Flux (lm)	Kit Code	Min.	Max.	
MC-E Color (RGBW)	Red	A5	30.6	A	620	630	MCE4CT-A2-0000-00A5AAAA1
	Green		67.2	A	520	535	
	Blue		8.2	A	450	465	
	White**		95	A1	WG, WF, WC, WD		
	Red	A4	30.6	A	620	630	MCE4CT-A2-0000-00A4AAAB1
	Green		67.2	A	520	535	
	Blue		8.2	A	450	465	
	White**		80	B1	5A, 5B, 5C, 5D		

\* Cree maintains a tolerance of ±7% on flux measurement.

\*\* Chromaticity bins for white emitter:





# Preliminary April 29, 2009

## Characteristics - Per LED Die ( $T_j = 25^\circ\text{C}$ )

The following table lists the product characteristics for each LED die within the XLamp MC-E Color (RGBW) LED package.

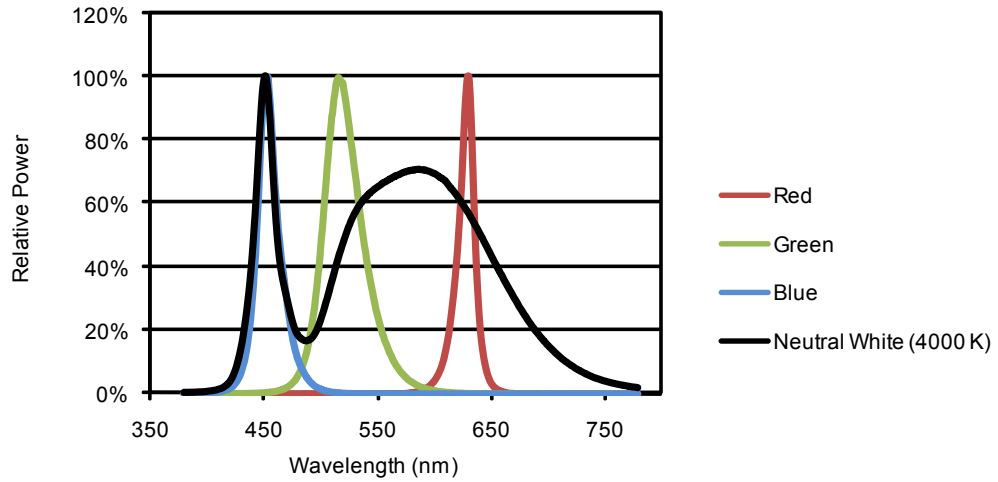
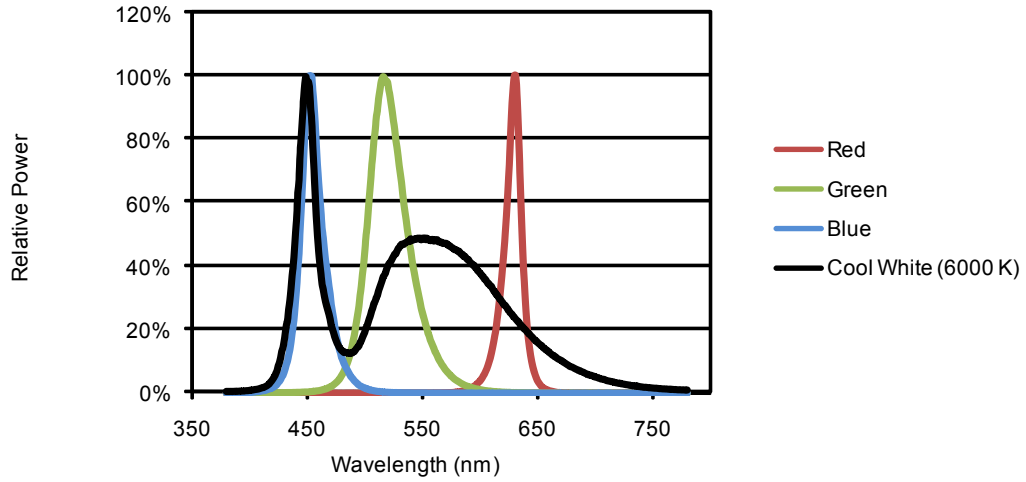
Characteristics	Unit		Red	Green	Blue	White	
Dominant wavelength	nm	Min.	620	520	450	Cool (WG, WF, WC, WD)	Neutral (5A, 5B, 5C, 5D)
		Max.	630	535	465		
$V_F$ ( $I_F = 350\text{ mA}$ )	V	Typ	2.2	3.4	3.2	3.2	
		Max.	2.5	3.9	3.9	3.9	
Min. luminous flux (lm) @ 350 mA	lm	Per emitter	30.6	67.2	8.2	95	80
Max. driving current per emitter (target)	mA		700	700	700	700	

## Characteristics - Complete Package

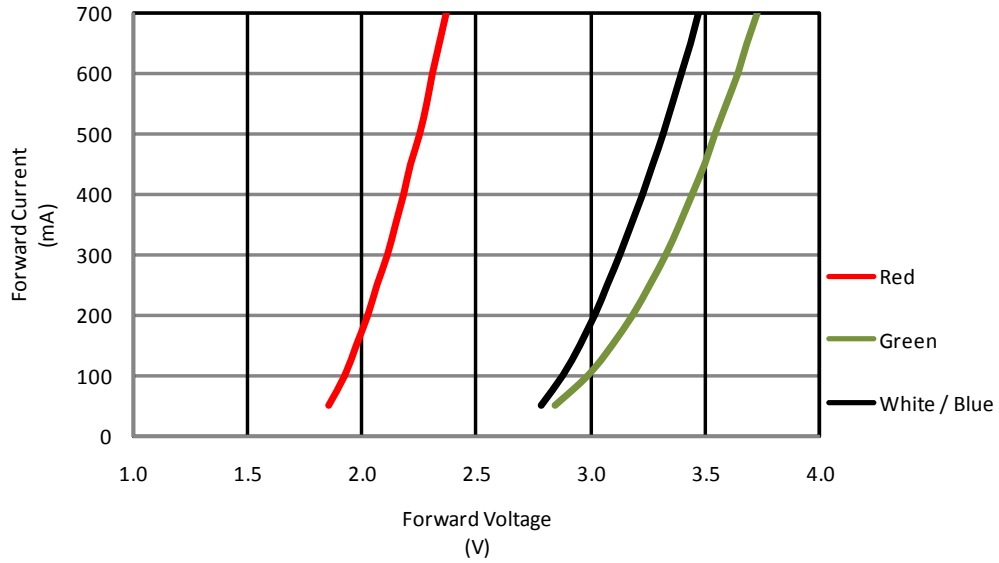
The following table lists the product characteristics for the XLamp MC-E Color (RGBW) LED package.

Characteristics	Unit	Minimum	Typical	Maximum
Thermal resistance	$^\circ\text{C}/\text{W}$		3	
Viewing angle (FWHM)	degrees		115	

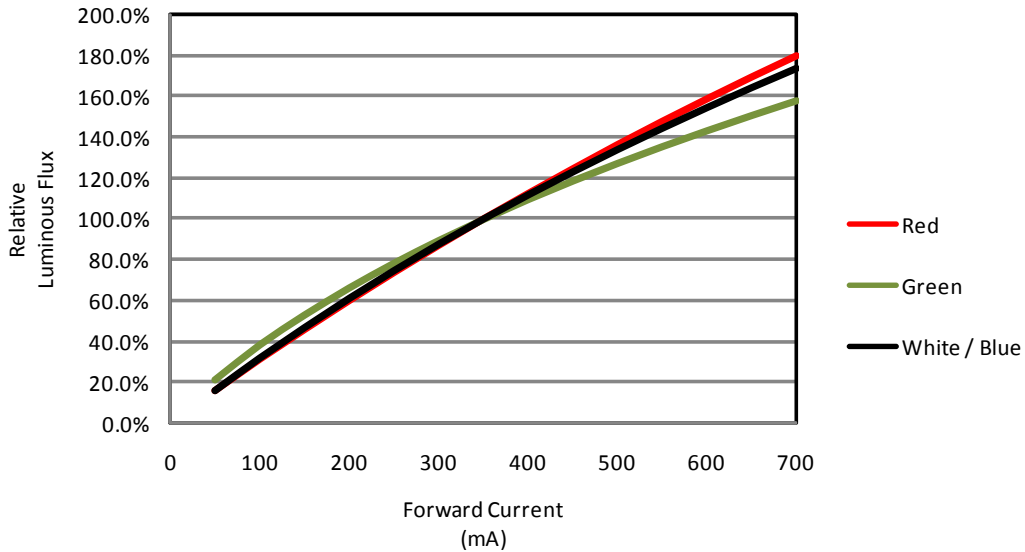
**Relative Spectral Power per Emitter**



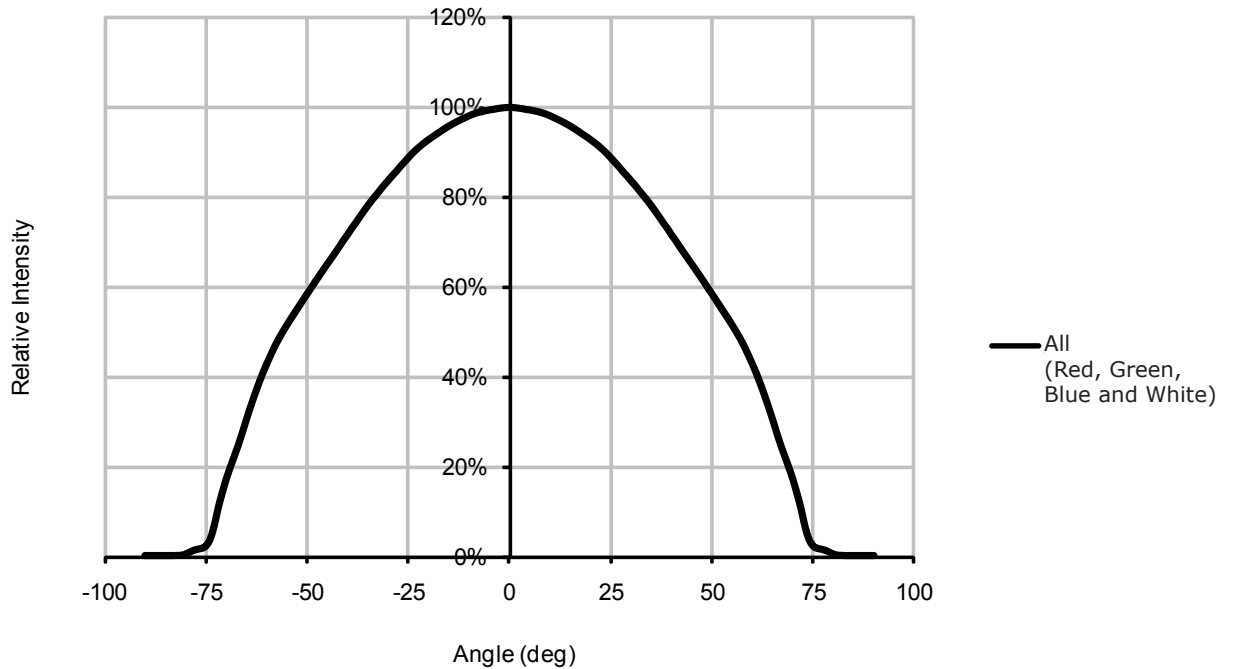
**Forward Current (mA) vs Forward Voltage (V)**



## Relative Luminous Flux vs Forward Current (mA) ( $T_j = 25^\circ\text{C}$ )

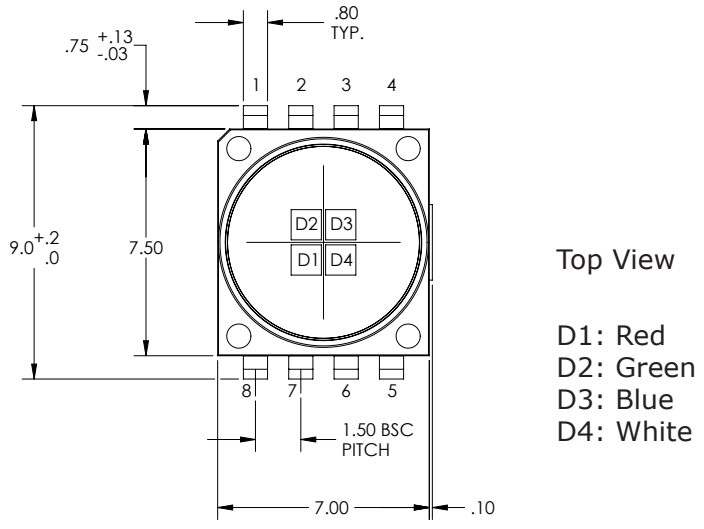
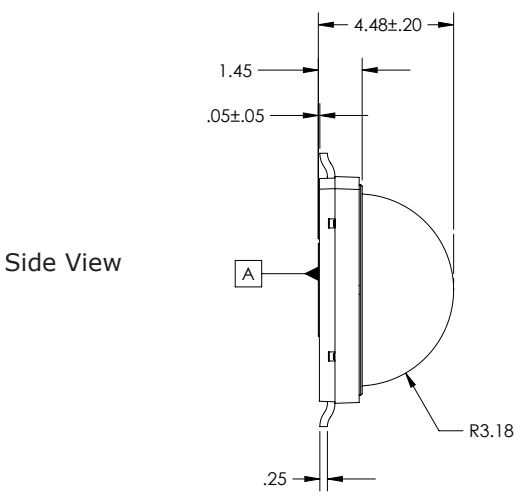
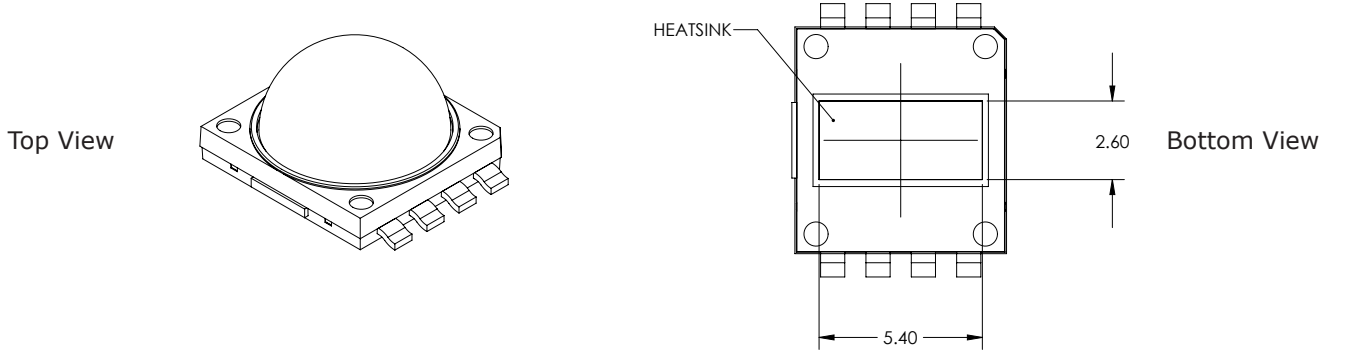


## Typical Spatial Radiation Pattern

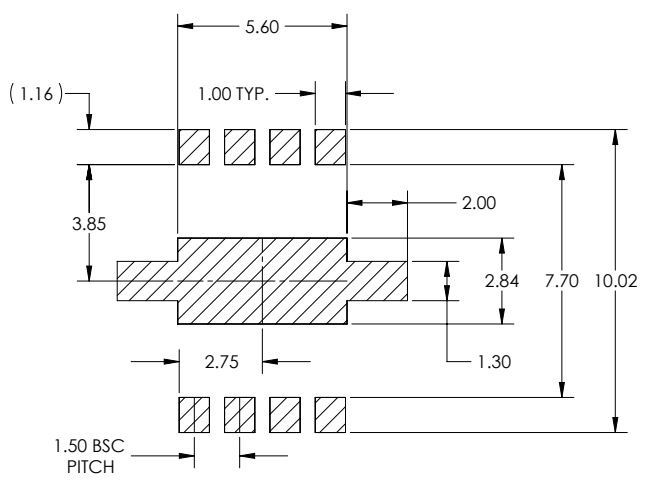


## Mechanical Dimensions

All measurements are  $\pm .1\text{mm}$  unless otherwise indicated.

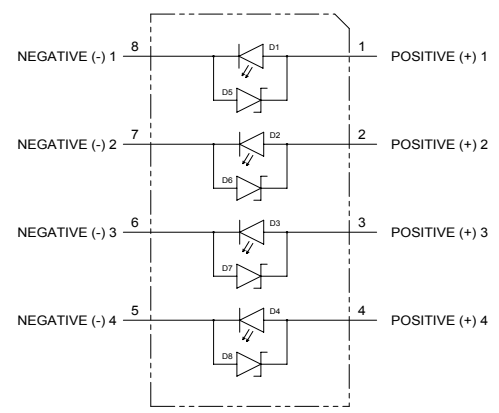


D1: Red  
D2: Green  
D3: Blue  
D4: White



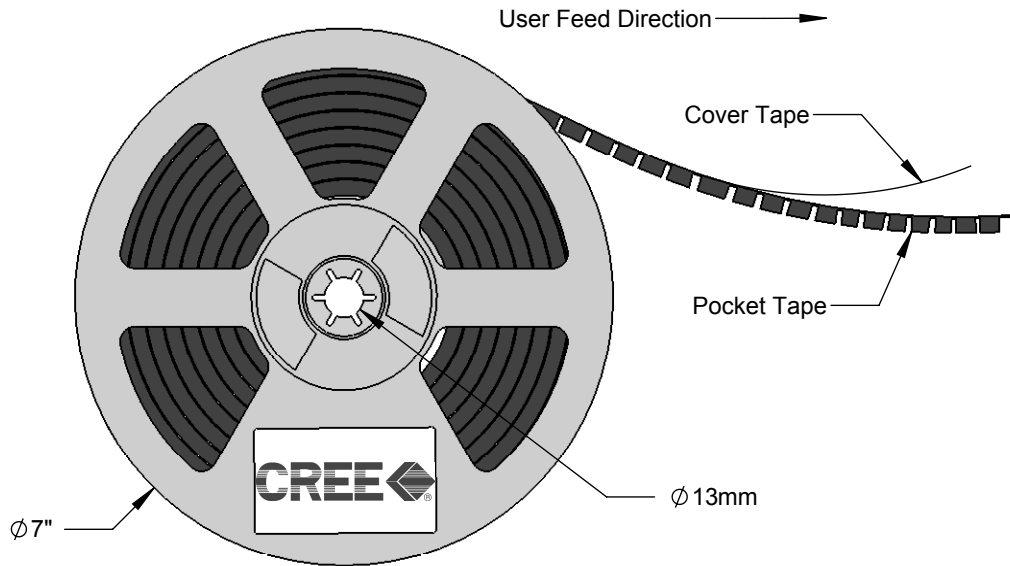
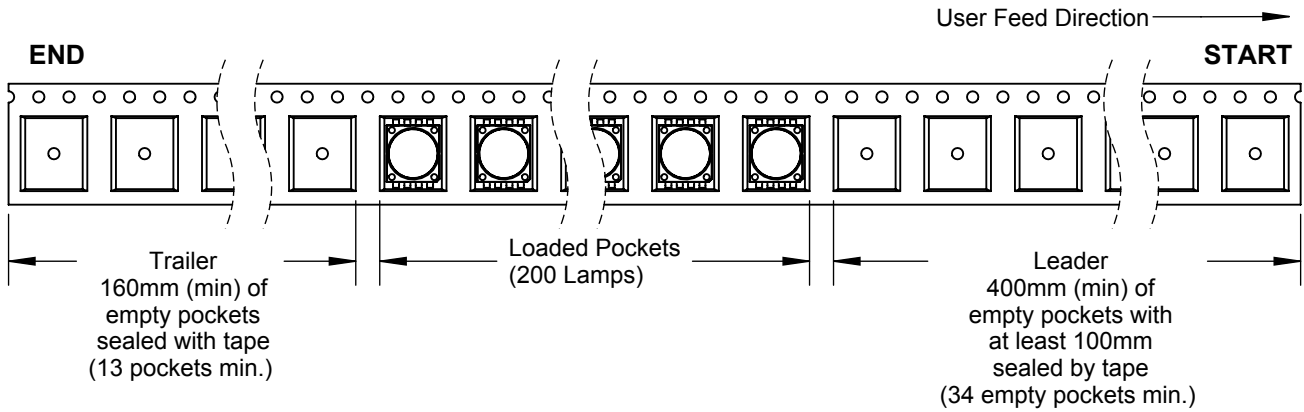
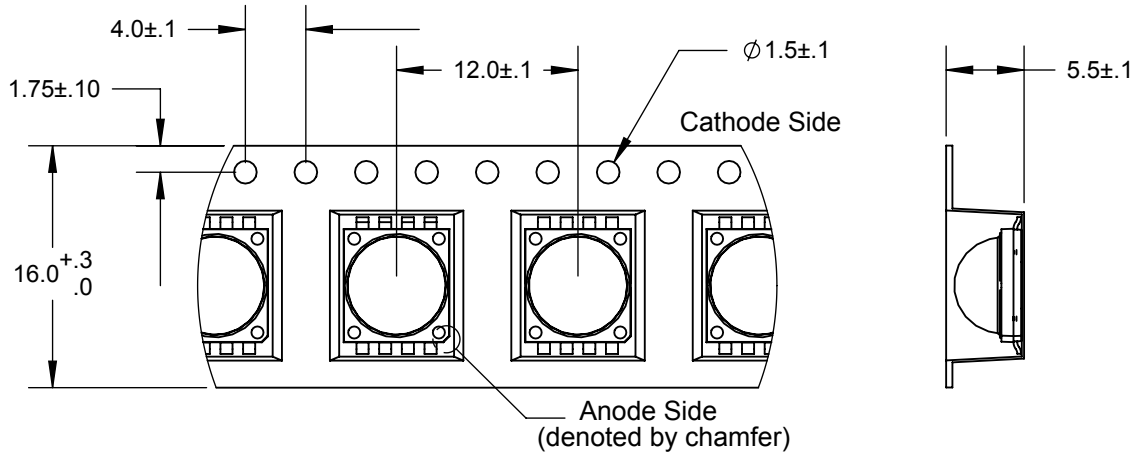
**RECOMMENDED PCB SOLDER PAD**

1. Tolerances:  $\pm .10$
2. Solder mask windows must be  $.05\text{ mm}$  bigger than PCB Solder Pad.



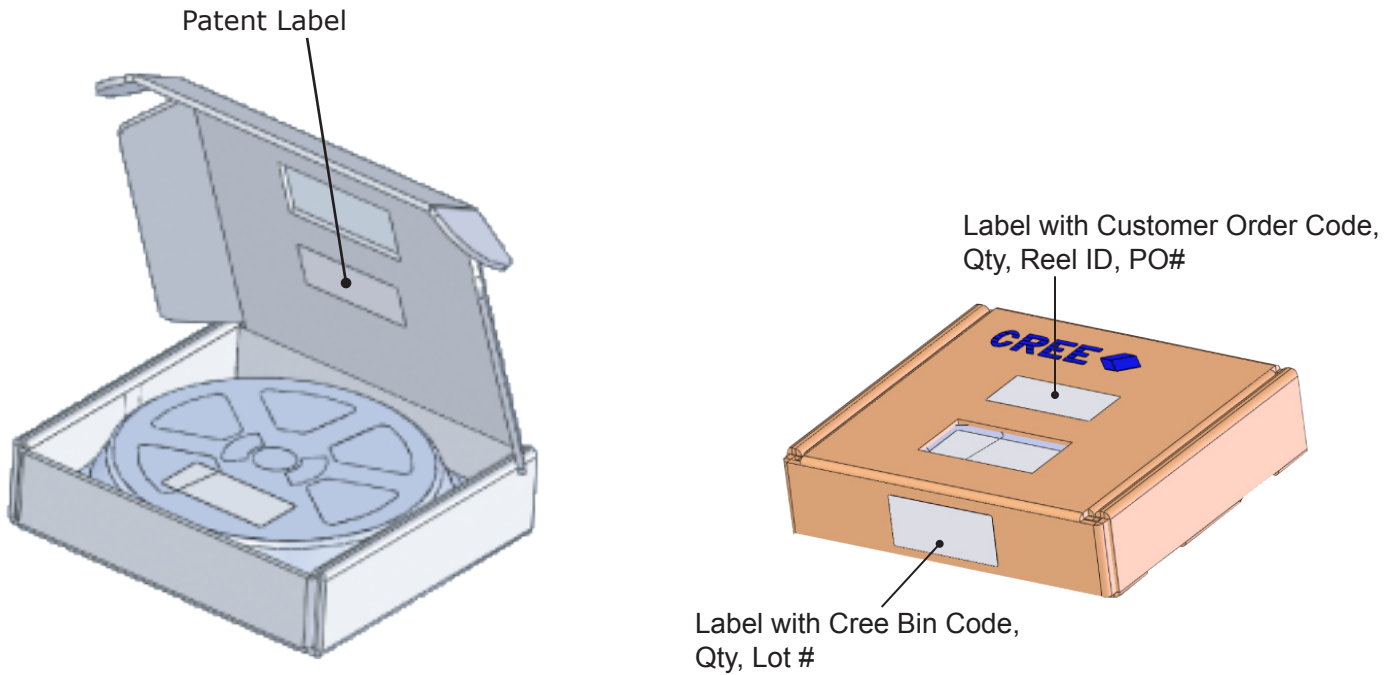
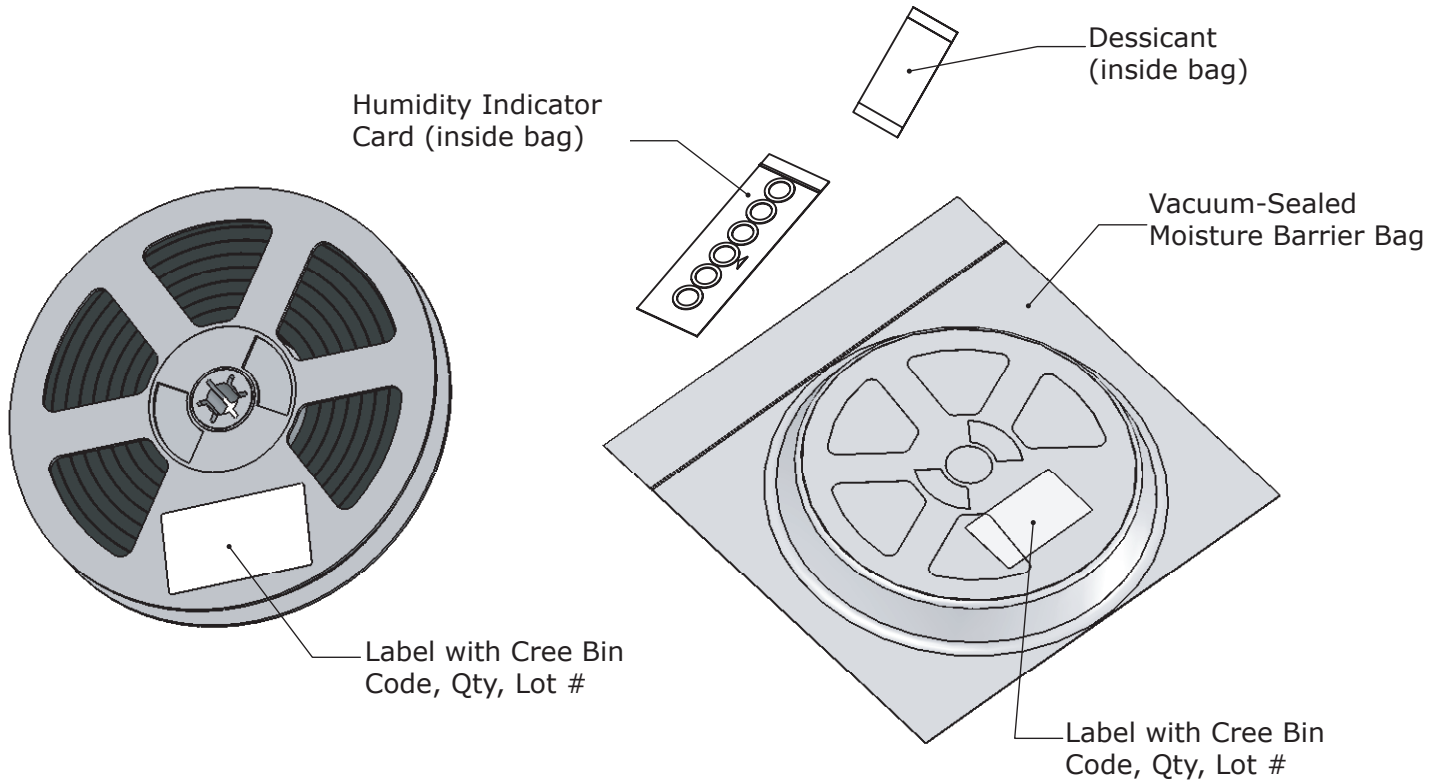
**Tape and Reel**

All measurements in mm.





**Dry Packaging and Packaging**

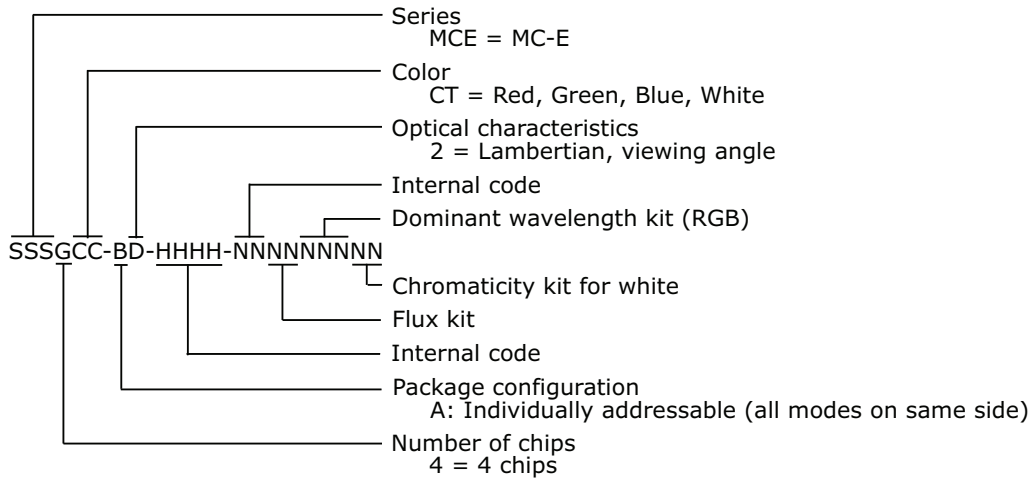


## Bin- and Order-Code Format

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Bin codes and order codes are configured in the following manner:

### Order Code



### Bin Code

