

Cree® XLamp® MC-E LED Binning and Labeling

Introduction

This document describes the product nomenclature required to select and order Cree XLamp MC-E LEDs. XLamp MC-E LEDs are tested and sorted into bins which are then combined into orderable kits identified by an order code.

All XLamp LEDs are tested and sorted by color and brightness into a unique bin. Each bin contains LEDs from only one color and brightness group and is uniquely identified by a bin code. White XLamp LEDs are sorted by chromaticity (color) and luminous flux (brightness). LEDs are shipped on reels containing LEDs from one bin and are always labeled with the appropriate bin code.



Kits contain LEDs from a number of similar bins and are fully defined by their order codes. A full explanation of the order codes for XLamp MC-E, as well as a list of standard order codes, is provided in this document.

Table of Contents

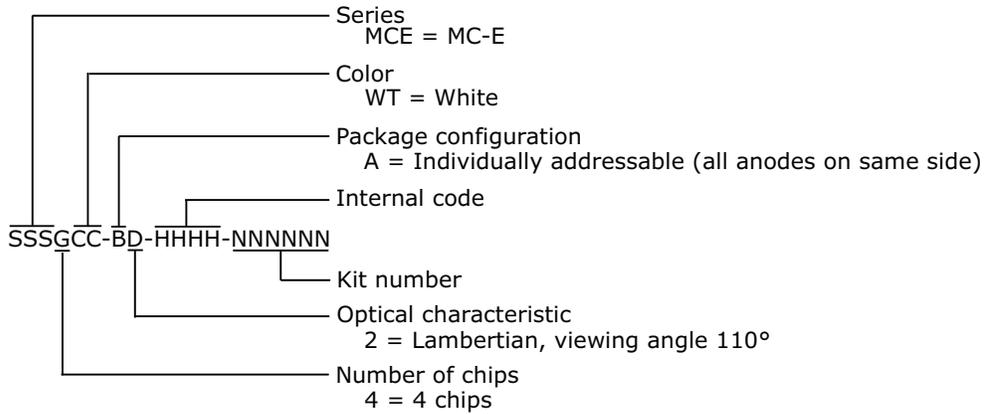
Bin and Order-Code Format	2
Performance Groups – Brightness	2
Performance Groups – Chromaticity	3
Cree’s Standard Chromaticity Regions Plotted on the 1931 CIE Curve	5
Standard Order Codes and Bins (MC-E Cool White)	6
Standard Order Codes and Bins (MC-E Neutral White)	6
Standard Order Codes and Bins (MC-E Warm White)	7

Application Note: CLD-AP20.001

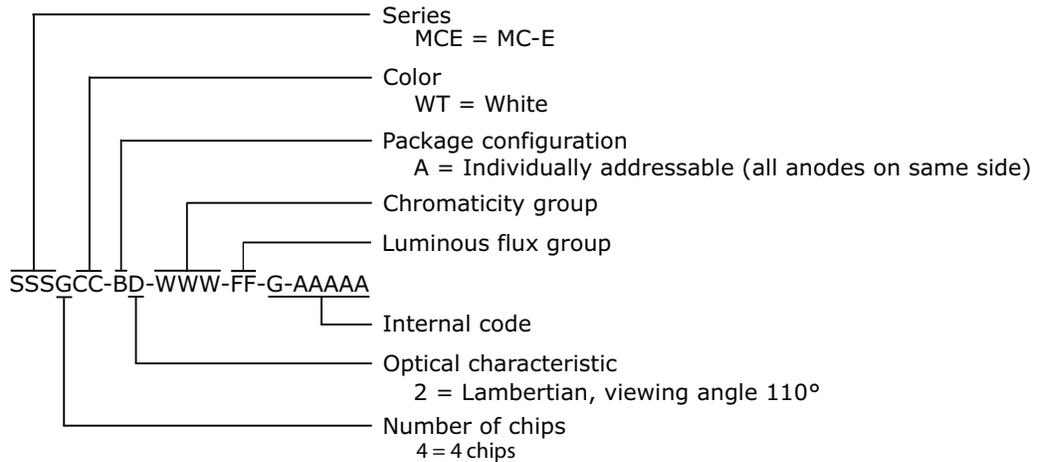
Bin and Order-Code Format

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

Order Code



Bin Code



Performance Groups – Brightness

White XLamp MC-E LEDs are tested for luminous flux and placed into one of the following luminous-flux groups:

Group Code	Min. Luminous Flux @ 350 mA (lm)	Max. Luminous Flux @ 350 mA (lm)
F	210	240
G	240	280
H	280	320
J	320	370
K	370	430
M	430	490

* Flux and chromaticity are measured with each LED die connected to independent drive circuits at 350 mA.

* The flux and chromaticity are measured with all LEDs lit simultaneously.

Performance Groups – Chromaticity

White XLamp MC-E LEDs are tested for chromaticity and placed into one of the regions defined by the bounding coordinates below.

White Chromaticity Region Bounding Coordinates

Region	x	y	Region	x	y
WK	.283	.284	WF	.314	.355
	.295	.297		.316	.332
	.298	.288		.306	.322
	.287	.276		.301	.342
WA	.292	.306	WP	.317	.319
	.295	.297		.329	.330
	.283	.284		.329	.318
	.279	.291		.318	.308
WM	.295	.297	WD	.329	.345
	.308	.311		.329	.330
	.310	.300		.317	.319
	.298	.288		.316	.332
WB	.306	.322	WG	.329	.369
	.308	.311		.329	.345
	.295	.297		.316	.332
	.292	.306		.314	.355
WE	.301	.342	WJ	.329	.330
	.306	.322		.329	.345
	.292	.306		.346	.359
	.287	.321		.344	.342
WN	.308	.311	WH	.348	.384
	.317	.319		.346	.359
	.318	.308		.329	.345
	.310	.300		.329	.369
WC	.316	.332			
	.317	.319			
	.308	.311			
	.306	.322			

* Flux and chromaticity are measured with each LED die connected to independent drive circuits at 350 mA.

* The flux and chromaticity are measured with all LEDs lit simultaneously.

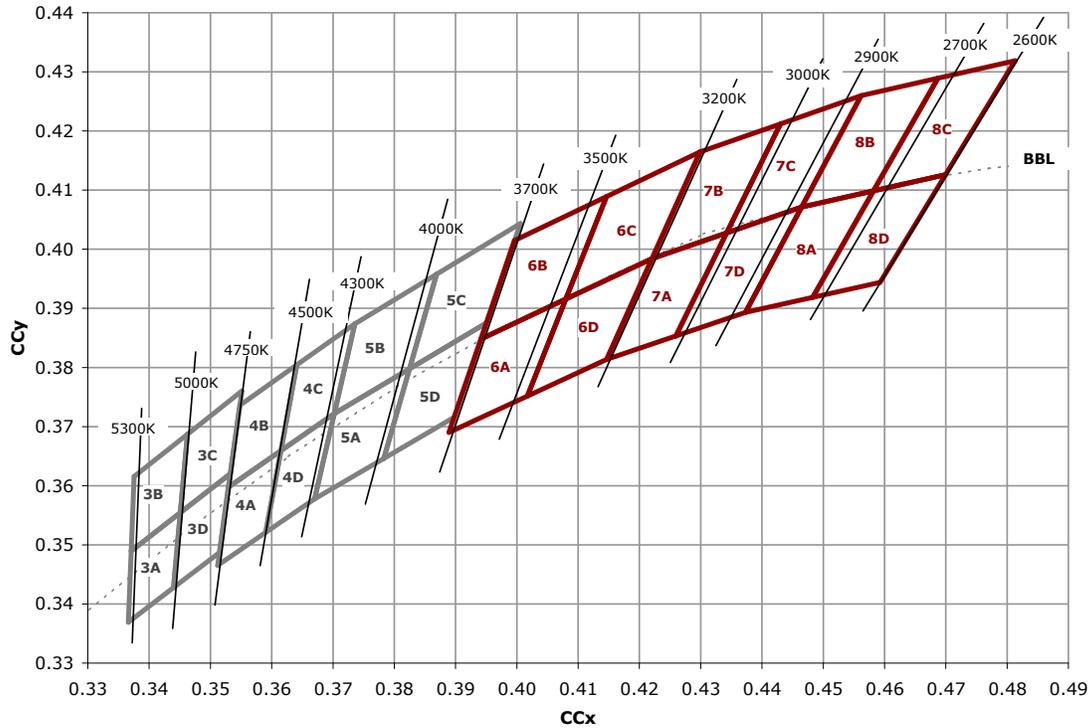
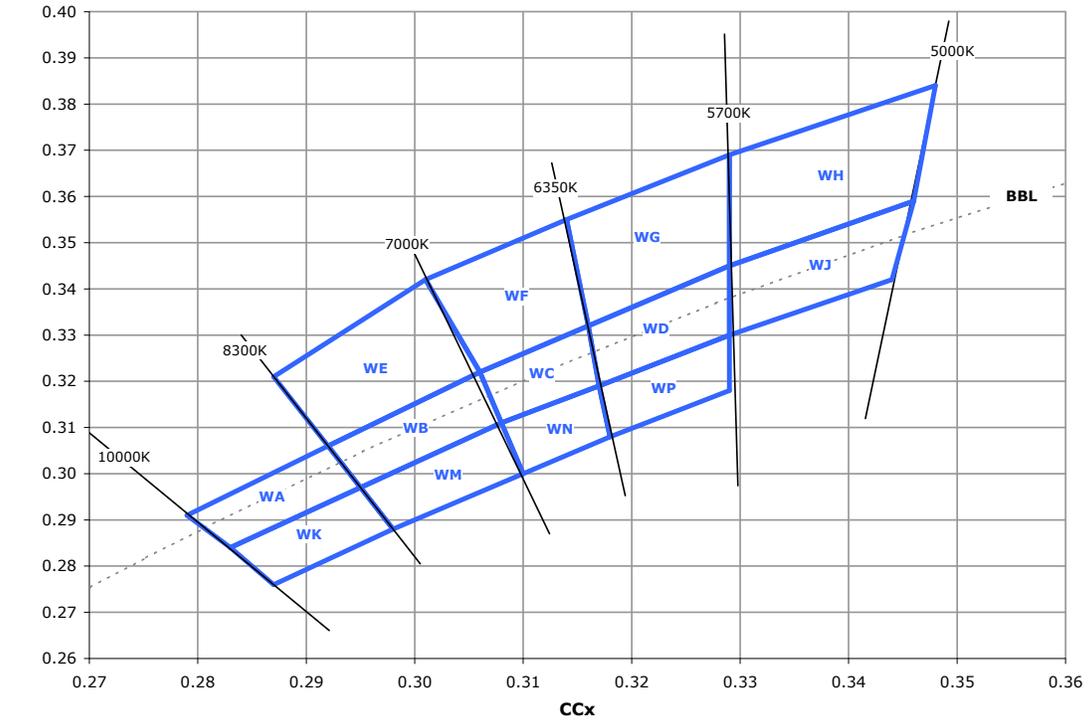
Performance Groups – Chromaticity (continued)

Region	x	y									
3A	.3371	.3490	3B	.3376	.3616	3C	.3463	.3687	3D	.3451	.3554
	.3451	.3554		.3463	.3687		.3551	.3760		.3533	.3620
	.3440	.3428		.3451	.3554		.3533	.3620		.3515	.3487
	.3366	.3369		.3371	.3490		.3451	.3554		.3440	.3428
4A	.3512	.3465	4B	.3529	.3597	4C	.3615	.3659	4D	.3590	.3521
	.3529	.3597		.3548	.3736		.3641	.3804		.3615	.3659
	.3615	.3659		.3641	.3804		.3736	.3874		.3702	.3722
	.3590	.3521		.3615	.3659		.3702	.3722		.3670	.3578
5A	.3670	.3578	5B	.3702	.3722	5C	.3825	.3798	5D	.3783	.3646
	.3702	.3722		.3736	.3874		.3869	.3958		.3825	.3798
	.3825	.3798		.3869	.3958		.4006	.4044		.3950	.3875
	.3783	.3646		.3825	.3798		.3950	.3875		.3898	.3716
6A	.3889	.3690	6B	.3941	.3848	6C	.4080	.3916	6D	.4017	.3751
	.3941	.3848		.3996	.4015		.4146	.4089		.4080	.3916
	.4080	.3916		.4146	.4089		.4299	.4165		.4221	.3984
	.4017	.3751		.4080	.3916		.4221	.3984		.4147	.3814
7A	.4147	.3814	7B	.4221	.3984	7C	.4342	.4028	7D	.4259	.3853
	.4221	.3984		.4299	.4165		.4430	.4212		.4342	.4028
	.4342	.4028		.4430	.4212		.4562	.4260		.4465	.4071
	.4259	.3853		.4342	.4028		.4465	.4071		.4373	.3893
8A	.4373	.3893	8B	.4465	.4071	8C	.4582	.4099	8D	.4483	.3919
	.4465	.4071		.4562	.4260		.4687	.4289		.4582	.4099
	.4582	.4099		.4687	.4289		.4813	.4319		.4700	.4126
	.4483	.3919		.4582	.4099		.4700	.4126		.4593	.3944

* Flux and chromaticity are measured with each LED die connected to independent drive circuits at 350 mA.

* The flux and chromaticity are measured with all LEDs lit simultaneously.

Cree's Standard Chromaticity Regions Plotted on the 1931 CIE Curve



Standard Order Codes and Bins (MC-E Cool White)

The following tables list standard kit numbers and performance bins. Kit numbers completely describe an order code's chromaticity regions and luminous flux range.

XLamp MC-E LED Standard Order Codes - White			
Min. Luminous Flux (lm) @ 350 mA*		Chromaticity Regions	Kit Number
Group	Flux (lm)		
Cool White (5000 K - 10,000 K)			
K	370	WA, WB, WC, WD, WE, WF, WG, WH, WJ, WK, WM, WN, WP	000K01
		WC, WD, WF, WG	000K02
		WC, WD, WF, WG, WH, WJ, WN, WP	000K03

For other flux and chromaticity combinations, contact Cree or an authorized distributor.

* Cree XLamp MC-E 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 or DWL bin restrictions specified by the order code.

Standard Order Codes and Bins (MC-E Neutral White)

The following tables list standard kit numbers and performance bins. Kit numbers completely describe an order code's chromaticity regions and luminous flux range.

XLamp MC-E LED Standard Order Codes - White				
Minimum Luminous Flux (lm) @ 350 mA*		Chromaticity Regions	Kit Number	CCT
Group	Flux (lm)			
Neutral White (3700 K - 5000 K)				
H	280	5C, 5D, 6A, 6B	000HF6	3700 K
J	320	3A, 3B, 3C, 3D	000JE3	5000 K
		3C, 3D, 4A, 4B	000JF4	4750 K
		4A, 4B, 4C, 4D	000JE4	4500 K
		4C, 4D, 5A, 5B	000JF5	4300 K
		5A, 5B, 5C, 5D	000JE5	4000 K
		5C, 5D, 6A, 6B	000JF6	3700 K

For other flux and chromaticity combinations, contact Cree or an authorized distributor.

* Cree XLamp MC-E 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 or DWL bin restrictions specified by the order code.

Standard Order Codes and Bins (MC-E Warm White)

The following tables list standard kit numbers and performance bins. Kit numbers completely describe an order code's chromaticity regions and luminous flux range.

XLamp MC-E LED Standard Order Codes - White				
Minimum Luminous Flux (lm) @ 350 mA*		Chromaticity Regions	Kit Number	CCT
Group	Flux (lm)			
Warm White (2600 K - 3700 K)				
G	240	6C, 6D, 7A, 7B	000GF7	3200 K
		7A, 7B, 7C, 7D	000GE7	3000 K
		7C, 7D, 8A, 8B	000GF8	2900 K
		8A, 8B, 8C, 8D	000GE8	2700 K
H	280	6A, 6B, 6C, 6D	000HE6	3500 K
		6C, 6D, 7A, 7B	000HF7	3200 K
		7A, 7B, 7C, 7D	000HE7	3000 K
		7C, 7D, 8A, 8B	000HF8	2900 K
J	320	6A, 6B, 6C, 6D	000JE6	3500 K

For other flux and chromaticity combinations, contact Cree or an authorized distributor.

* Cree XLamp MC-E 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 or DWL bin restrictions specified by the order code.