

# Cree® XLamp® ML Family LEDs



## INTRODUCTION

This document describes the product nomenclature required to select and order Cree's XLamp ML family of LEDs. XLamp ML family 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). Color XLamp LEDs are sorted by dominant wavelength (color) and luminous flux (brightness). LEDs are shipped on reels containing LEDs from one bin and are always labeled with the appropriate bin code.

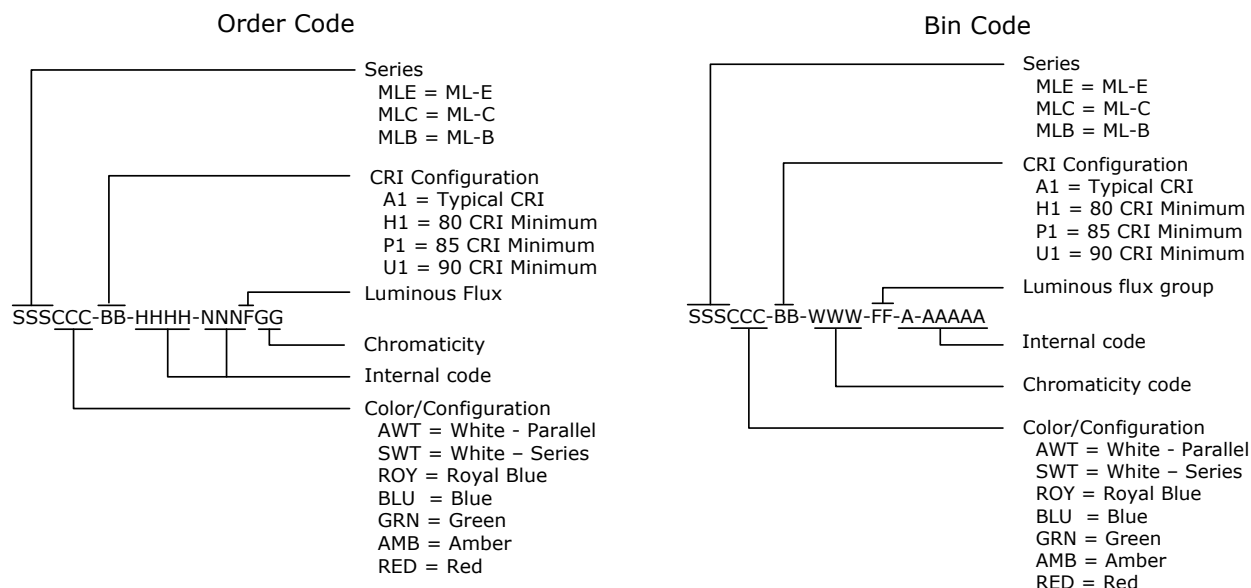
Kits contain LEDs from a number of similar bins and are fully defined by their order codes. A full explanation of the order codes for XLamp ML family LEDs, as well as a list of standard order codes, is provided in this document.

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## BIN AND ORDER-CODE FORMAT

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



## PERFORMANCE GROUPS – LUMINOUS OR RADIANT FLUX

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

| Group Code | Min. Luminous Flux | Max. Luminous Flux |
|------------|--------------------|--------------------|
| F0*        | 10.7               | 13.9               |
| F2         | 10.7               | 12.3               |
| F3         | 12.3               | 13.9               |
| G0         | 13.9               | 18.1               |
| G2         | 13.9               | 15.8               |
| G3         | 15.8               | 18.1               |
| H0*        | 18.1               | 23.5               |
| H2         | 18.1               | 20.6               |
| H3         | 20.6               | 23.5               |
| J0*        | 23.5               | 30.6               |
| J2         | 23.5               | 26.8               |
| J3         | 26.8               | 30.6               |
| K2         | 30.6               | 35.2               |
| K3         | 35.2               | 39.8               |
| M2         | 39.8               | 45.7               |
| M3         | 45.7               | 51.7               |
| N2         | 51.7               | 56.8               |
| N3         | 56.8               | 62                 |

- Notes:
- Flux codes F0, G0, H0 and J0 are further subdivided into F2, F3, G2, G3 and H2, H3, respectively. Orders for the F0 flux code may be filled with either F2 or F3 sub-codes, orders for the G0 flux code may be filled with either G2 or G3 sub-codes, orders for the H0 flux code may be filled with H2 or H3 sub-codes, and orders for the J0 flux code may be filled with J2 or J3 sub-codes.

Royal-blue XLamp LEDs are tested for radiant flux and sorted into one of the following radiant-flux bins.

| Group | Min. Radiant Flux (mW) | Max. Radiant Flux (mW) |
|-------|------------------------|------------------------|
| 03    | 50                     | 60                     |
| 04    | 60                     | 70                     |
| 05    | 70                     | 85                     |
| 06    | 85                     | 100                    |
| 07    | 100                    | 122                    |
| 08    | 122                    | 147                    |
| 09    | 147                    | 175                    |
| 10    | 175                    | 210                    |
| 11    | 210                    | 250                    |
| 12    | 250                    | 300                    |
| 13    | 300                    | 350                    |
| 14    | 350                    | 425                    |

## PERFORMANCE GROUPS – DOMINANT WAVELENGTH

The XLamp ML-E color LEDs are tested individually for dominant wavelength (DWL) and sorted into one of the DWL bins defined below.

| Color      | DWL Group | Min. DWL (nm) | Max. DWL (nm) |
|------------|-----------|---------------|---------------|
| Royal Blue | D36       | 450           | 452.5         |
|            | D37       | 452.5         | 455           |
|            | D46       | 455           | 457.5         |
|            | D47       | 457.5         | 460           |
|            | D56       | 460           | 462.5         |
|            | D57       | 462.5         | 465           |
| Blue       | B3        | 465           | 470           |
|            | B4        | 470           | 475           |
|            | B5        | 475           | 480           |
|            | B6        | 480           | 485           |
| Green      | G2        | 520           | 525           |
|            | G3        | 525           | 530           |
|            | G4        | 530           | 535           |
| Amber      | A2        | 585           | 590           |
|            | A3        | 590           | 595           |
| Red        | R2        | 620           | 625           |
|            | R3        | 625           | 630           |

## PERFORMANCE GROUPS – CHROMATICITY

| Region | x      | y      | Region | x      | y      | Region | x      | y      | Region | x      | y      |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0A     | 0.2950 | 0.2970 | 0B     | 0.2920 | 0.3060 | 0C     | 0.2984 | 0.3133 | 0D     | 0.2984 | 0.3133 |
|        | 0.2920 | 0.3060 |        | 0.2895 | 0.3135 |        | 0.2962 | 0.3220 |        | 0.3048 | 0.3207 |
|        | 0.2984 | 0.3133 |        | 0.2962 | 0.3220 |        | 0.3028 | 0.3304 |        | 0.3068 | 0.3113 |
|        | 0.3009 | 0.3042 |        | 0.2984 | 0.3133 |        | 0.3048 | 0.3207 |        | 0.3009 | 0.3042 |
| 0R     | 0.2980 | 0.2880 | 0S     | 0.2895 | 0.3135 | 0T     | 0.2962 | 0.3220 | 0U     | 0.3037 | 0.2937 |
|        | 0.2950 | 0.2970 |        | 0.2870 | 0.3210 |        | 0.2937 | 0.3312 |        | 0.3009 | 0.3042 |
|        | 0.3009 | 0.3042 |        | 0.2937 | 0.3312 |        | 0.3005 | 0.3415 |        | 0.3068 | 0.3113 |
|        | 0.3037 | 0.2937 |        | 0.2962 | 0.3220 |        | 0.3028 | 0.3304 |        | 0.3093 | 0.2993 |
| 1A     | 0.3048 | 0.3207 | 1B     | 0.3028 | 0.3304 | 1C     | 0.3115 | 0.3391 | 1D     | 0.3130 | 0.3290 |
|        | 0.3130 | 0.3290 |        | 0.3115 | 0.3391 |        | 0.3205 | 0.3481 |        | 0.3213 | 0.3373 |
|        | 0.3144 | 0.3186 |        | 0.3130 | 0.3290 |        | 0.3213 | 0.3373 |        | 0.3221 | 0.3261 |
|        | 0.3068 | 0.3113 |        | 0.3048 | 0.3207 |        | 0.3130 | 0.3290 |        | 0.3144 | 0.3186 |
| 1R     | 0.3068 | 0.3113 | 1S     | 0.3005 | 0.3415 | 1T     | 0.3099 | 0.3509 | 1U     | 0.3144 | 0.3186 |
|        | 0.3144 | 0.3186 |        | 0.3099 | 0.3509 |        | 0.3196 | 0.3602 |        | 0.3221 | 0.3261 |
|        | 0.3161 | 0.3059 |        | 0.3115 | 0.3391 |        | 0.3205 | 0.3481 |        | 0.3231 | 0.3120 |
|        | 0.3093 | 0.2993 |        | 0.3028 | 0.3304 |        | 0.3115 | 0.3391 |        | 0.3161 | 0.3059 |
| 2A     | 0.3215 | 0.3350 | 2B     | 0.3207 | 0.3462 | 2C     | 0.3290 | 0.3538 | 2D     | 0.3290 | 0.3417 |
|        | 0.3290 | 0.3417 |        | 0.3290 | 0.3538 |        | 0.3376 | 0.3616 |        | 0.3371 | 0.3490 |
|        | 0.3290 | 0.3300 |        | 0.3290 | 0.3417 |        | 0.3371 | 0.3490 |        | 0.3366 | 0.3369 |
|        | 0.3222 | 0.3243 |        | 0.3215 | 0.3350 |        | 0.3290 | 0.3417 |        | 0.3290 | 0.3300 |
| 2R     | 0.3222 | 0.3243 | 2S     | 0.3196 | 0.3602 | 2T     | 0.3290 | 0.3690 | 2U     | 0.3290 | 0.3300 |
|        | 0.3290 | 0.3300 |        | 0.3290 | 0.3690 |        | 0.3381 | 0.3762 |        | 0.3366 | 0.3369 |
|        | 0.3290 | 0.3180 |        | 0.3290 | 0.3538 |        | 0.3376 | 0.3616 |        | 0.3361 | 0.3245 |
|        | 0.3231 | 0.3120 |        | 0.3207 | 0.3462 |        | 0.3290 | 0.3538 |        | 0.3290 | 0.3180 |
| 3A     | 0.3371 | 0.3490 | 3B     | 0.3376 | 0.3616 | 3C     | 0.3463 | 0.3687 | 3D     | 0.3451 | 0.3554 |
|        | 0.3451 | 0.3554 |        | 0.3463 | 0.3687 |        | 0.3551 | 0.3760 |        | 0.3533 | 0.3620 |
|        | 0.3440 | 0.3427 |        | 0.3451 | 0.3554 |        | 0.3533 | 0.3620 |        | 0.3515 | 0.3487 |
|        | 0.3366 | 0.3369 |        | 0.3371 | 0.3490 |        | 0.3451 | 0.3554 |        | 0.3440 | 0.3427 |
| 3R     | 0.3366 | 0.3369 | 3S     | 0.3381 | 0.3762 | 3T     | 0.3480 | 0.3840 | 3U     | 0.3440 | 0.3428 |
|        | 0.3440 | 0.3428 |        | 0.3480 | 0.3840 |        | 0.3571 | 0.3907 |        | 0.3515 | 0.3487 |
|        | 0.3429 | 0.3307 |        | 0.3463 | 0.3687 |        | 0.3551 | 0.3760 |        | 0.3495 | 0.3339 |
|        | 0.3361 | 0.3245 |        | 0.3376 | 0.3616 |        | 0.3463 | 0.3687 |        | 0.3429 | 0.3307 |
| 4A     | 0.3530 | 0.3597 | 4B     | 0.3548 | 0.3736 | 4C     | 0.3641 | 0.3804 | 4D     | 0.3615 | 0.3659 |
|        | 0.3615 | 0.3659 |        | 0.3641 | 0.3804 |        | 0.3736 | 0.3874 |        | 0.3702 | 0.3722 |
|        | 0.3590 | 0.3521 |        | 0.3615 | 0.3659 |        | 0.3702 | 0.3722 |        | 0.3670 | 0.3578 |
|        | 0.3512 | 0.3465 |        | 0.3530 | 0.3597 |        | 0.3615 | 0.3659 |        | 0.3590 | 0.3521 |
| 4R     | 0.3512 | 0.3465 | 4S     | 0.3571 | 0.3907 | 4T     | 0.3668 | 0.3957 | 4U     | 0.3590 | 0.3521 |
|        | 0.3590 | 0.3521 |        | 0.3668 | 0.3957 |        | 0.3771 | 0.4034 |        | 0.3670 | 0.3578 |
|        | 0.3567 | 0.3389 |        | 0.3641 | 0.3804 |        | 0.3736 | 0.3874 |        | 0.3640 | 0.3440 |
|        | 0.3495 | 0.3339 |        | 0.3548 | 0.3736 |        | 0.3641 | 0.3804 |        | 0.3567 | 0.3389 |

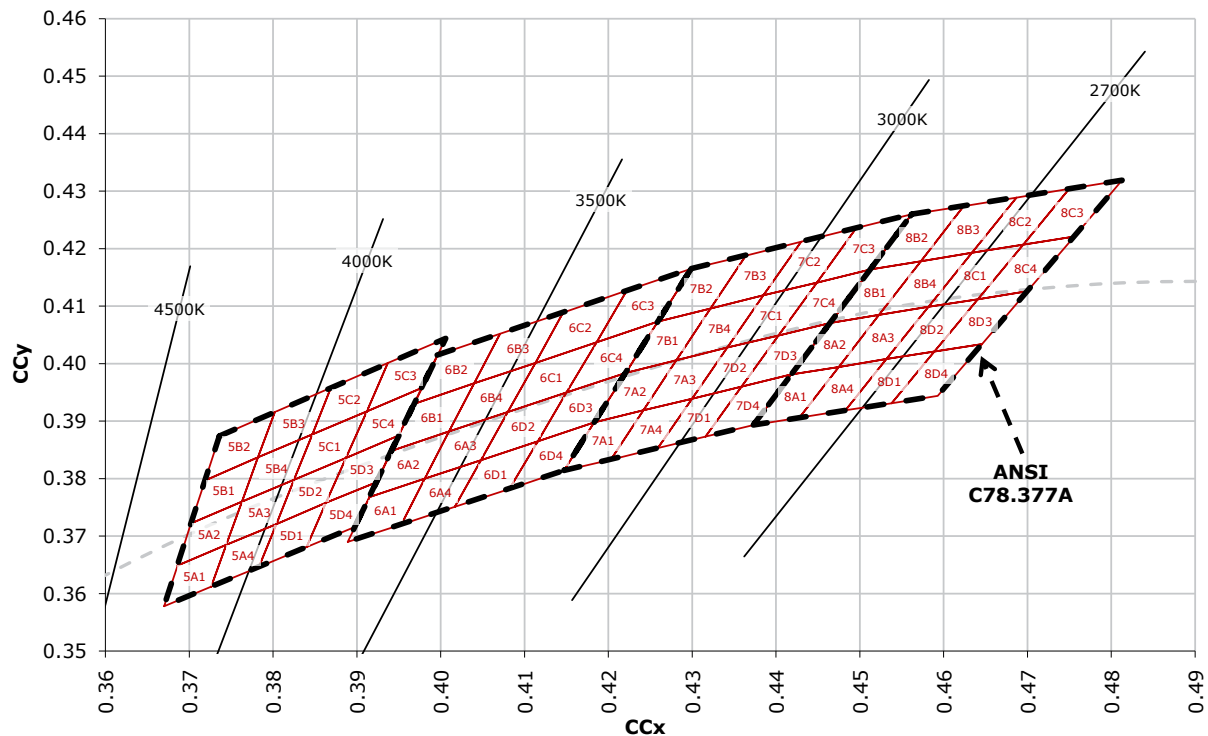
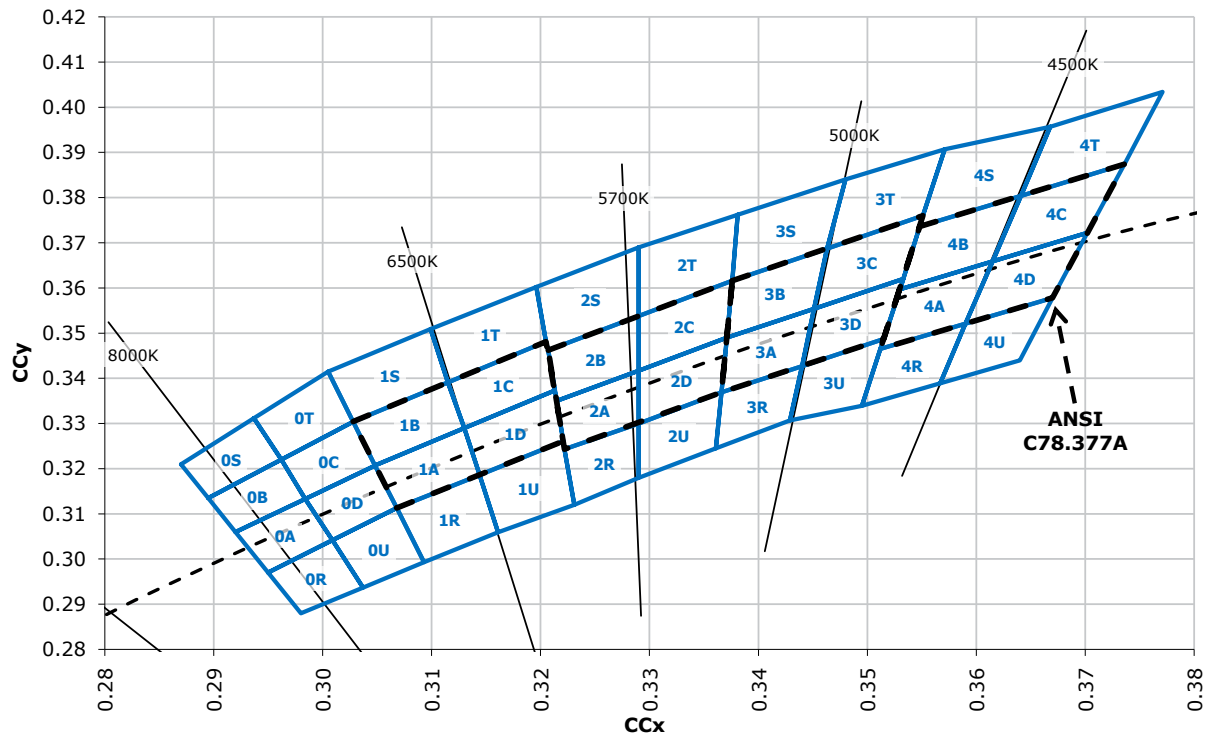
**PERFORMANCE GROUPS – CHROMATICITY (CONTINUED)**

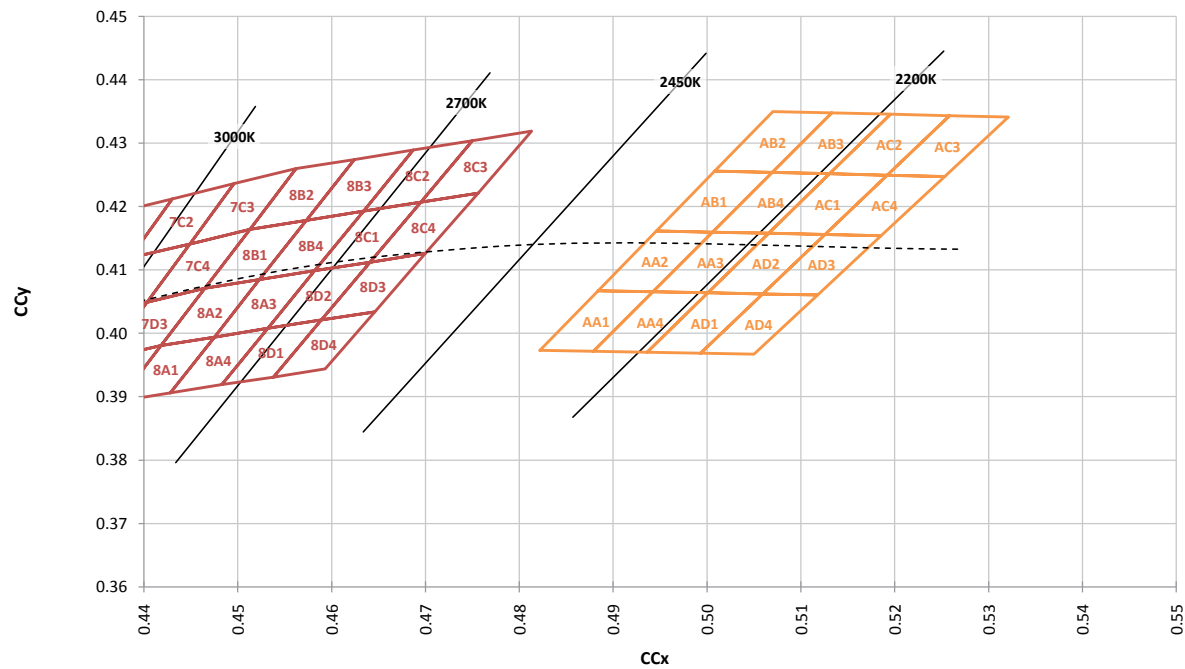
| Region | x      | y      | Region | x      | y      | Region | x      | y      | Region | x      | y      |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 5A1    | 0.3670 | 0.3578 | 5A2    | 0.3686 | 0.3649 | 5A3    | 0.3744 | 0.3685 | 5A4    | 0.3726 | 0.3612 |
|        | 0.3686 | 0.3649 |        | 0.3702 | 0.3722 |        | 0.3763 | 0.3760 |        | 0.3744 | 0.3685 |
|        | 0.3744 | 0.3685 |        | 0.3763 | 0.3760 |        | 0.3825 | 0.3798 |        | 0.3804 | 0.3721 |
|        | 0.3726 | 0.3612 |        | 0.3744 | 0.3685 |        | 0.3804 | 0.3721 |        | 0.3783 | 0.3646 |
| 5B1    | 0.3702 | 0.3722 | 5B2    | 0.3719 | 0.3797 | 5B3    | 0.3782 | 0.3837 | 5B4    | 0.3763 | 0.3760 |
|        | 0.3719 | 0.3797 |        | 0.3736 | 0.3874 |        | 0.3802 | 0.3916 |        | 0.3782 | 0.3837 |
|        | 0.3782 | 0.3837 |        | 0.3802 | 0.3916 |        | 0.3869 | 0.3958 |        | 0.3847 | 0.3877 |
|        | 0.3763 | 0.3760 |        | 0.3782 | 0.3837 |        | 0.3847 | 0.3877 |        | 0.3825 | 0.3798 |
| 5C1    | 0.3825 | 0.3798 | 5C2    | 0.3847 | 0.3877 | 5C3    | 0.3912 | 0.3917 | 5C4    | 0.3887 | 0.3836 |
|        | 0.3847 | 0.3877 |        | 0.3869 | 0.3958 |        | 0.3937 | 0.4001 |        | 0.3912 | 0.3917 |
|        | 0.3912 | 0.3917 |        | 0.3937 | 0.4001 |        | 0.4006 | 0.4044 |        | 0.3978 | 0.3958 |
|        | 0.3887 | 0.3836 |        | 0.3912 | 0.3917 |        | 0.3978 | 0.3958 |        | 0.3950 | 0.3875 |
| 5D1    | 0.3783 | 0.3646 | 5D2    | 0.3804 | 0.3721 | 5D3    | 0.3863 | 0.3758 | 5D4    | 0.3840 | 0.3681 |
|        | 0.3804 | 0.3721 |        | 0.3825 | 0.3798 |        | 0.3887 | 0.3836 |        | 0.3863 | 0.3758 |
|        | 0.3863 | 0.3758 |        | 0.3887 | 0.3836 |        | 0.3950 | 0.3875 |        | 0.3924 | 0.3794 |
|        | 0.3840 | 0.3681 |        | 0.3863 | 0.3758 |        | 0.3924 | 0.3794 |        | 0.3898 | 0.3716 |
| 6A1    | 0.3889 | 0.3690 | 6A2    | 0.3915 | 0.3768 | 6A3    | 0.3981 | 0.3800 | 6A4    | 0.3953 | 0.3720 |
|        | 0.3915 | 0.3768 |        | 0.3941 | 0.3848 |        | 0.4010 | 0.3882 |        | 0.3981 | 0.3800 |
|        | 0.3981 | 0.3800 |        | 0.4010 | 0.3882 |        | 0.4080 | 0.3916 |        | 0.4048 | 0.3832 |
|        | 0.3953 | 0.3720 |        | 0.3981 | 0.3800 |        | 0.4048 | 0.3832 |        | 0.4017 | 0.3751 |
| 6B1    | 0.3941 | 0.3848 | 6B2    | 0.3968 | 0.3930 | 6B3    | 0.4040 | 0.3966 | 6B4    | 0.4010 | 0.3882 |
|        | 0.3968 | 0.3930 |        | 0.3996 | 0.4015 |        | 0.4071 | 0.4052 |        | 0.4040 | 0.3966 |
|        | 0.4040 | 0.3966 |        | 0.4071 | 0.4052 |        | 0.4146 | 0.4089 |        | 0.4113 | 0.4001 |
|        | 0.4010 | 0.3882 |        | 0.4040 | 0.3966 |        | 0.4113 | 0.4001 |        | 0.4080 | 0.3916 |
| 6C1    | 0.4080 | 0.3916 | 6C2    | 0.4113 | 0.4001 | 6C3    | 0.4186 | 0.4037 | 6C4    | 0.4150 | 0.3950 |
|        | 0.4113 | 0.4001 |        | 0.4146 | 0.4089 |        | 0.4222 | 0.4127 |        | 0.4186 | 0.4037 |
|        | 0.4186 | 0.4037 |        | 0.4222 | 0.4127 |        | 0.4299 | 0.4165 |        | 0.4259 | 0.4073 |
|        | 0.4150 | 0.3950 |        | 0.4186 | 0.4037 |        | 0.4259 | 0.4073 |        | 0.4221 | 0.3984 |
| 6D1    | 0.4017 | 0.3751 | 6D2    | 0.4048 | 0.3832 | 6D3    | 0.4116 | 0.3865 | 6D4    | 0.4082 | 0.3782 |
|        | 0.4048 | 0.3832 |        | 0.4080 | 0.3916 |        | 0.4150 | 0.3950 |        | 0.4116 | 0.3865 |
|        | 0.4116 | 0.3865 |        | 0.4150 | 0.3950 |        | 0.4221 | 0.3984 |        | 0.4183 | 0.3898 |
|        | 0.4082 | 0.3782 |        | 0.4116 | 0.3865 |        | 0.4183 | 0.3898 |        | 0.4147 | 0.3814 |
| 7A1    | 0.4147 | 0.3814 | 7A2    | 0.4183 | 0.3898 | 7A3    | 0.4242 | 0.3919 | 7A4    | 0.4203 | 0.3833 |
|        | 0.4183 | 0.3898 |        | 0.4221 | 0.3984 |        | 0.4281 | 0.4006 |        | 0.4242 | 0.3919 |
|        | 0.4242 | 0.3919 |        | 0.4281 | 0.4006 |        | 0.4342 | 0.4028 |        | 0.4300 | 0.3939 |
|        | 0.4203 | 0.3833 |        | 0.4242 | 0.3919 |        | 0.4300 | 0.3939 |        | 0.4259 | 0.3853 |
| 7B1    | 0.4221 | 0.3984 | 7B2    | 0.4259 | 0.4073 | 7B3    | 0.4322 | 0.4096 | 7B4    | 0.4281 | 0.4006 |
|        | 0.4259 | 0.4073 |        | 0.4299 | 0.4165 |        | 0.4364 | 0.4188 |        | 0.4322 | 0.4096 |
|        | 0.4322 | 0.4096 |        | 0.4364 | 0.4188 |        | 0.4430 | 0.4212 |        | 0.4385 | 0.4119 |
|        | 0.4281 | 0.4006 |        | 0.4322 | 0.4096 |        | 0.4385 | 0.4119 |        | 0.4342 | 0.4028 |

**PERFORMANCE GROUPS – CHROMATICITY (CONTINUED)**

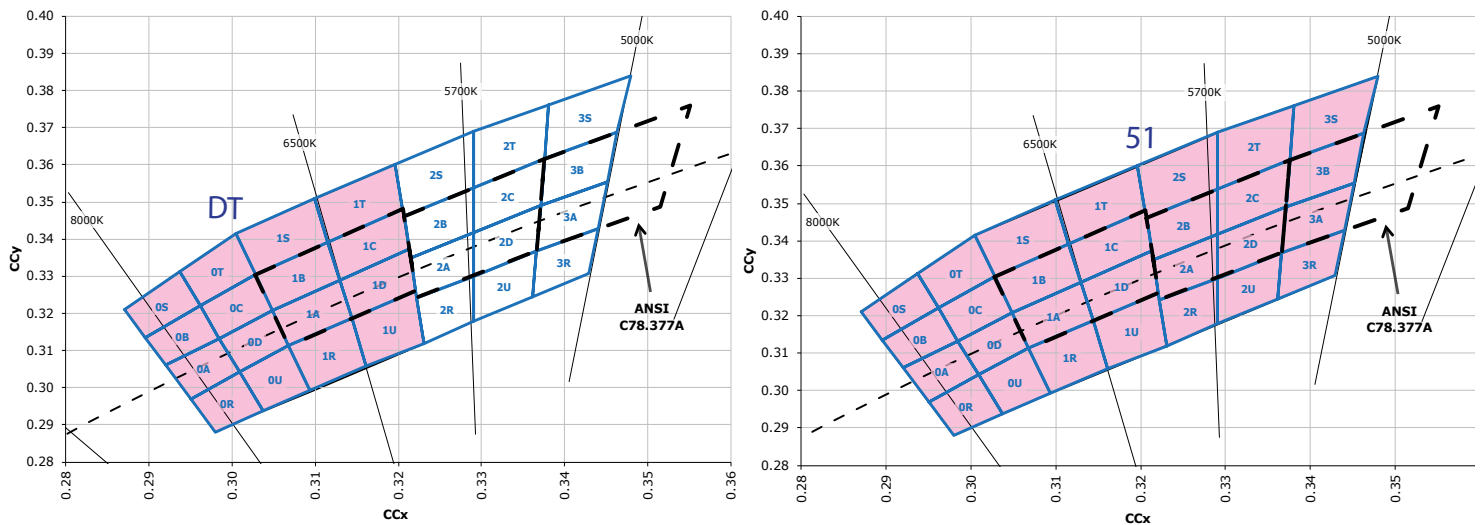
| Region | x      | y      | Region | x      | y      | Region | x      | y      | Region | x      | y      |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 7C1    | 0.4342 | 0.4028 | 7C2    | 0.4385 | 0.4119 | 7C3    | 0.4449 | 0.4141 | 7C4    | 0.4403 | 0.4049 |
|        | 0.4385 | 0.4119 |        | 0.4430 | 0.4212 |        | 0.4496 | 0.4236 |        | 0.4449 | 0.4141 |
|        | 0.4449 | 0.4141 |        | 0.4496 | 0.4236 |        | 0.4562 | 0.4260 |        | 0.4513 | 0.4164 |
|        | 0.4403 | 0.4049 |        | 0.4449 | 0.4141 |        | 0.4513 | 0.4164 |        | 0.4465 | 0.4071 |
| 7D1    | 0.4259 | 0.3853 | 7D2    | 0.4300 | 0.3939 | 7D3    | 0.4359 | 0.3960 | 7D4    | 0.4316 | 0.3873 |
|        | 0.4300 | 0.3939 |        | 0.4342 | 0.4028 |        | 0.4403 | 0.4049 |        | 0.4359 | 0.3960 |
|        | 0.4359 | 0.3960 |        | 0.4403 | 0.4049 |        | 0.4465 | 0.4071 |        | 0.4418 | 0.3981 |
|        | 0.4316 | 0.3873 |        | 0.4359 | 0.3960 |        | 0.4418 | 0.3981 |        | 0.4373 | 0.3893 |
| 8A1    | 0.4373 | 0.3893 | 8A2    | 0.4418 | 0.3981 | 8A3    | 0.4475 | 0.3994 | 8A4    | 0.4428 | 0.3906 |
|        | 0.4418 | 0.3981 |        | 0.4465 | 0.4071 |        | 0.4523 | 0.4085 |        | 0.4475 | 0.3994 |
|        | 0.4475 | 0.3994 |        | 0.4523 | 0.4085 |        | 0.4582 | 0.4099 |        | 0.4532 | 0.4008 |
|        | 0.4428 | 0.3906 |        | 0.4475 | 0.3994 |        | 0.4532 | 0.4008 |        | 0.4483 | 0.3919 |
| 8B1    | 0.4465 | 0.4071 | 8B2    | 0.4513 | 0.4164 | 8B3    | 0.4573 | 0.4178 | 8B4    | 0.4523 | 0.4085 |
|        | 0.4513 | 0.4164 |        | 0.4562 | 0.4260 |        | 0.4624 | 0.4274 |        | 0.4573 | 0.4178 |
|        | 0.4573 | 0.4178 |        | 0.4624 | 0.4274 |        | 0.4687 | 0.4289 |        | 0.4634 | 0.4193 |
|        | 0.4523 | 0.4085 |        | 0.4573 | 0.4178 |        | 0.4634 | 0.4193 |        | 0.4582 | 0.4099 |
| 8C1    | 0.4582 | 0.4099 | 8C2    | 0.4634 | 0.4193 | 8C3    | 0.4695 | 0.4207 | 8C4    | 0.4641 | 0.4112 |
|        | 0.4634 | 0.4193 |        | 0.4687 | 0.4289 |        | 0.4750 | 0.4304 |        | 0.4695 | 0.4207 |
|        | 0.4695 | 0.4207 |        | 0.4750 | 0.4304 |        | 0.4813 | 0.4319 |        | 0.4756 | 0.4221 |
|        | 0.4641 | 0.4112 |        | 0.4695 | 0.4207 |        | 0.4756 | 0.4221 |        | 0.4700 | 0.4126 |
| 8D1    | 0.4483 | 0.3919 | 8D2    | 0.4532 | 0.4008 | 8D3    | 0.4589 | 0.4021 | 8D4    | 0.4538 | 0.3931 |
|        | 0.4532 | 0.4008 |        | 0.4582 | 0.4099 |        | 0.4641 | 0.4112 |        | 0.4589 | 0.4021 |
|        | 0.4589 | 0.4021 |        | 0.4641 | 0.4112 |        | 0.4700 | 0.4126 |        | 0.4646 | 0.4034 |
|        | 0.4538 | 0.3931 |        | 0.4589 | 0.4021 |        | 0.4646 | 0.4034 |        | 0.4593 | 0.3944 |
| AB2    | 0.5008 | 0.4256 | AB3    | 0.5069 | 0.4254 | AC2    | 0.5131 | 0.4252 | AC3    | 0.5192 | 0.4250 |
|        | 0.5070 | 0.4350 |        | 0.5133 | 0.4348 |        | 0.5196 | 0.4346 |        | 0.5258 | 0.4343 |
|        | 0.5133 | 0.4348 |        | 0.5196 | 0.4346 |        | 0.5258 | 0.4343 |        | 0.5321 | 0.4341 |
|        | 0.5069 | 0.4254 |        | 0.5131 | 0.4252 |        | 0.5192 | 0.4250 |        | 0.5253 | 0.4248 |
| AB1    | 0.4946 | 0.4162 | AB4    | 0.5006 | 0.4160 | AC1    | 0.5066 | 0.4158 | AC4    | 0.5126 | 0.4156 |
|        | 0.5008 | 0.4256 |        | 0.5069 | 0.4254 |        | 0.5131 | 0.4252 |        | 0.5192 | 0.4250 |
|        | 0.5069 | 0.4254 |        | 0.5131 | 0.4252 |        | 0.5192 | 0.4250 |        | 0.5253 | 0.4248 |
|        | 0.5006 | 0.4160 |        | 0.5066 | 0.4158 |        | 0.5126 | 0.4156 |        | 0.5186 | 0.4154 |
| AA2    | 0.4884 | 0.4067 | AA3    | 0.4942 | 0.4066 | AD2    | 0.5001 | 0.4064 | AD3    | 0.5059 | 0.4062 |
|        | 0.4946 | 0.4162 |        | 0.5006 | 0.4160 |        | 0.5066 | 0.4158 |        | 0.5126 | 0.4156 |
|        | 0.5006 | 0.4160 |        | 0.5066 | 0.4158 |        | 0.5126 | 0.4156 |        | 0.5186 | 0.4154 |
|        | 0.4942 | 0.4066 |        | 0.5001 | 0.4064 |        | 0.5059 | 0.4062 |        | 0.5118 | 0.4061 |
| AA1    | 0.4822 | 0.3973 | AA4    | 0.4879 | 0.3972 | AD1    | 0.4936 | 0.3970 | AD4    | 0.4993 | 0.3969 |
|        | 0.4884 | 0.4067 |        | 0.4942 | 0.4066 |        | 0.5001 | 0.4064 |        | 0.5059 | 0.4062 |
|        | 0.4942 | 0.4066 |        | 0.5001 | 0.4064 |        | 0.5059 | 0.4062 |        | 0.5118 | 0.4061 |
|        | 0.4879 | 0.3972 |        | 0.4936 | 0.3970 |        | 0.4993 | 0.3969 |        | 0.5050 | 0.3967 |

## CREE'S STANDARD CHROMATICITY REGIONS PLOTTED ON THE 1931 CIE CURVE

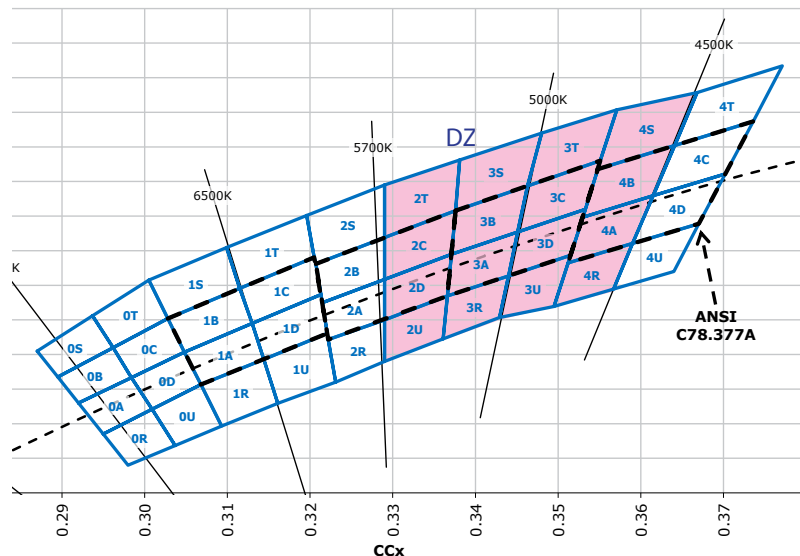
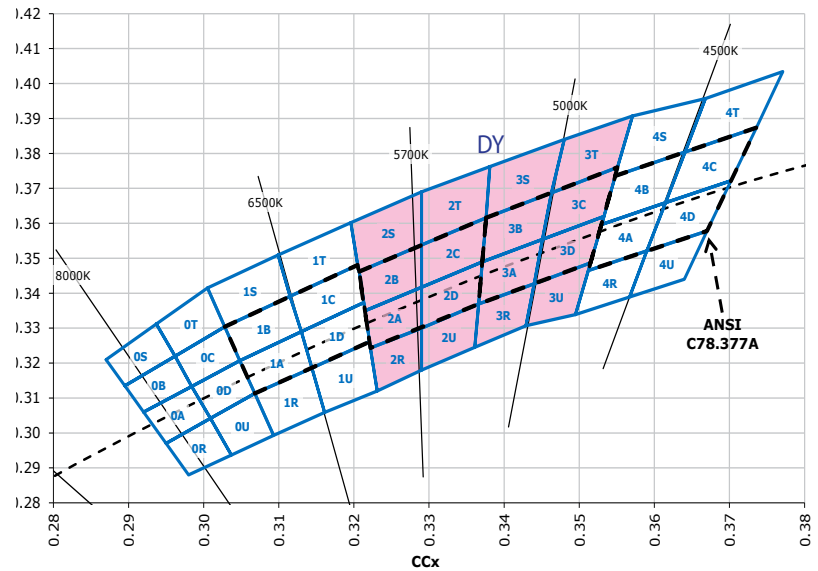
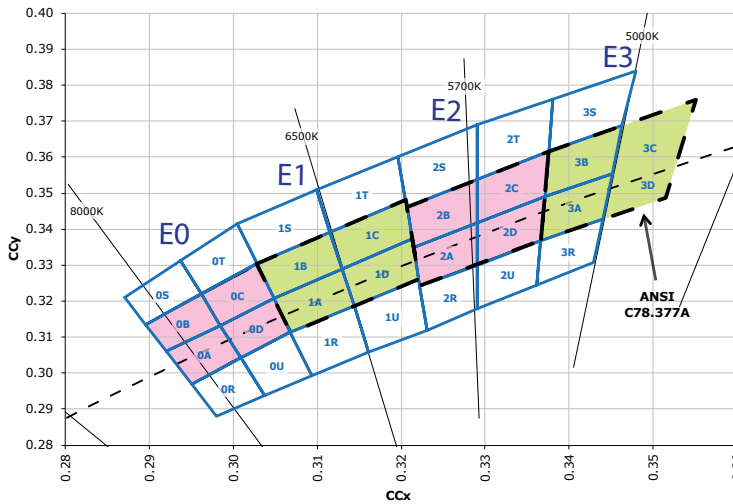
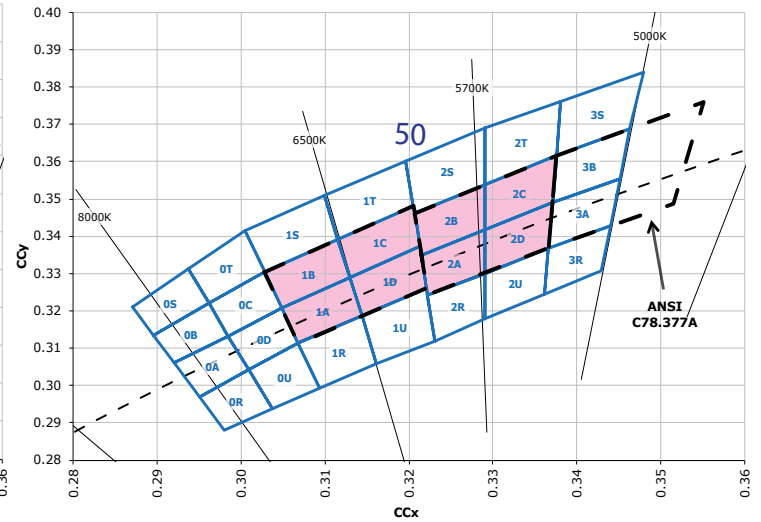
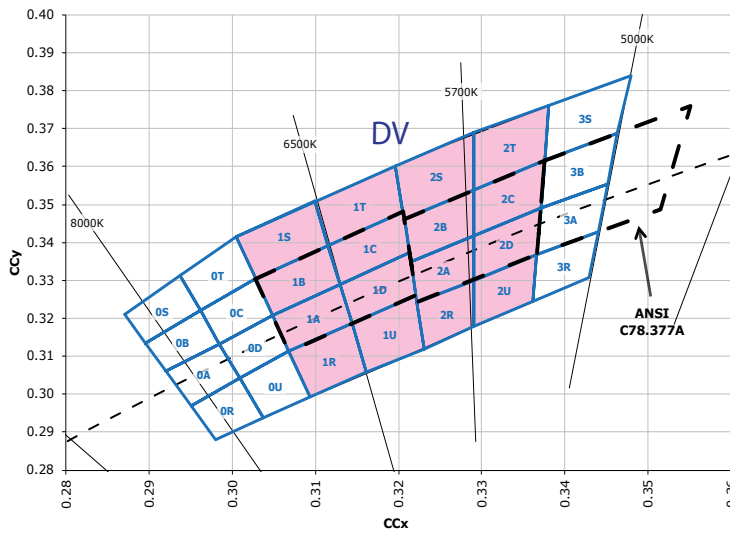




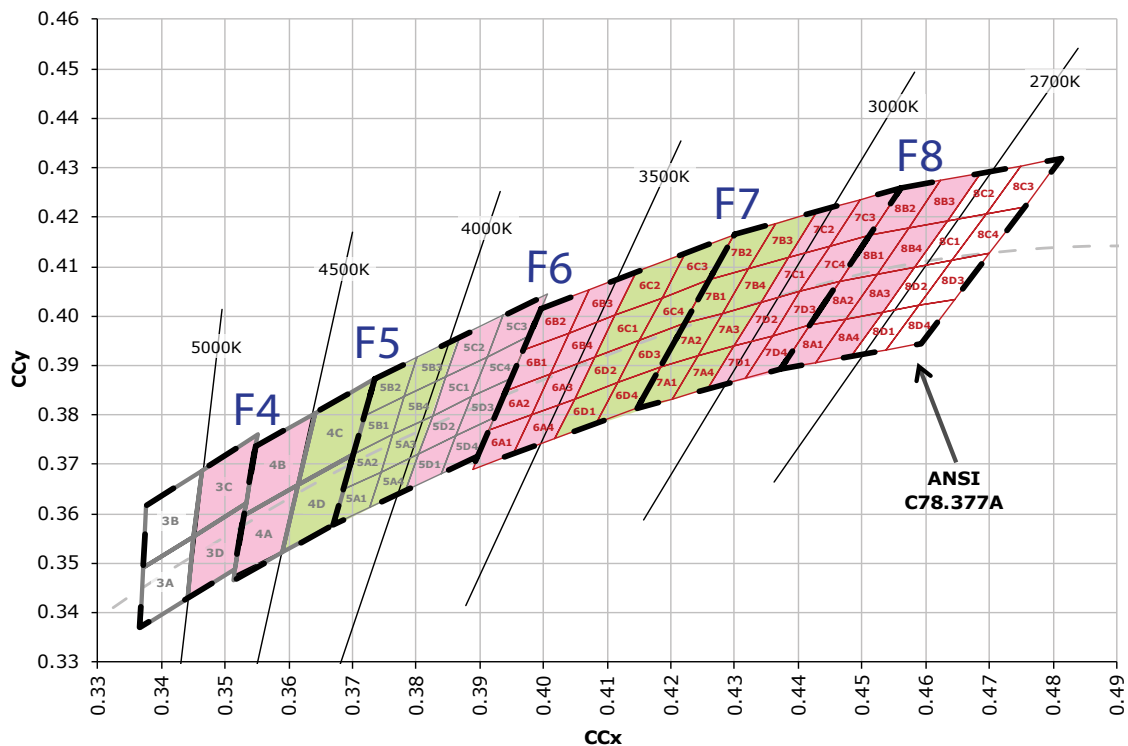
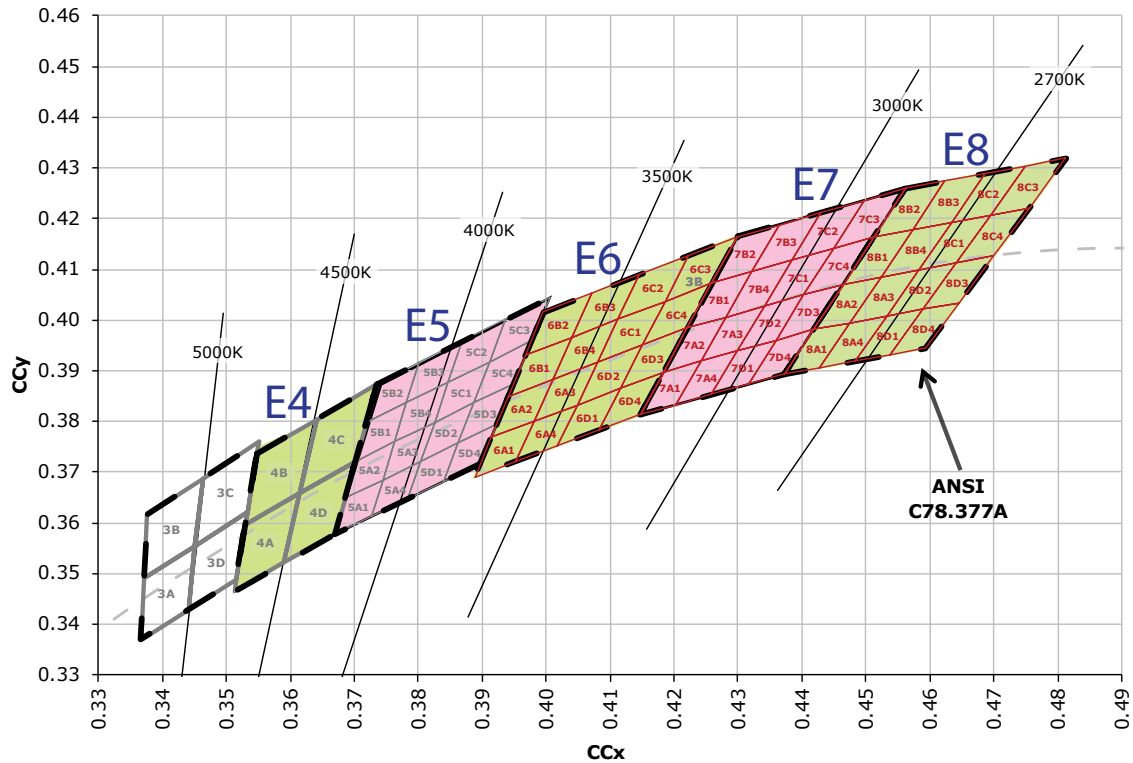
## CREE'S STANDARD COOL WHITE KITS PLOTTED ON ANSI STANDARD CHROMATICITY REGIONS

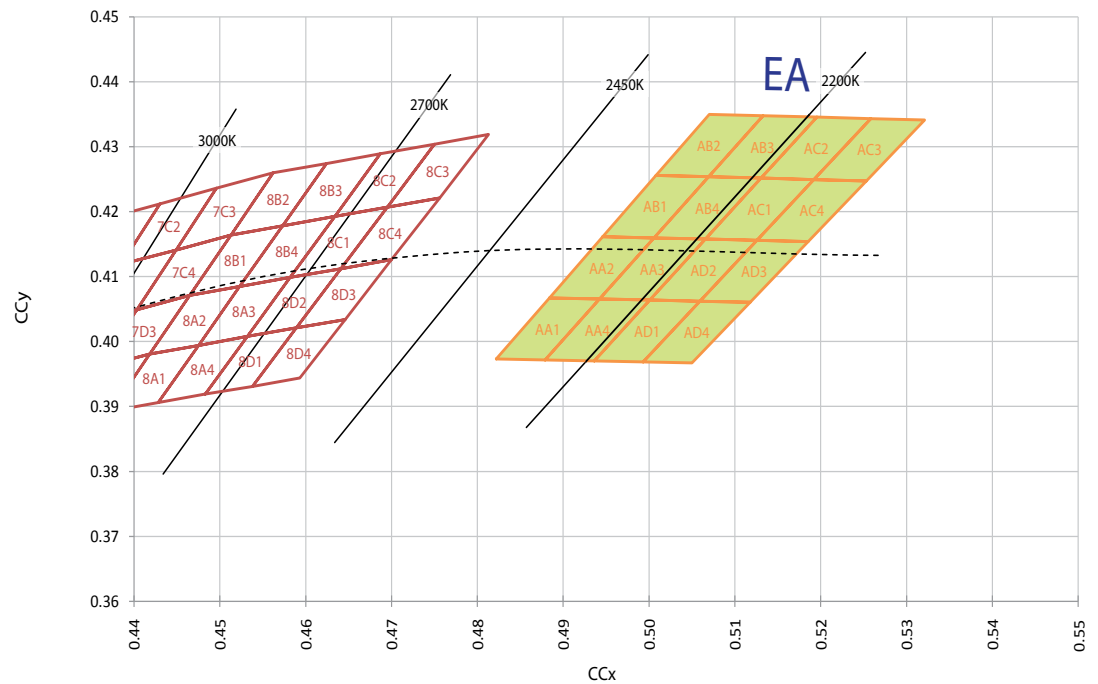
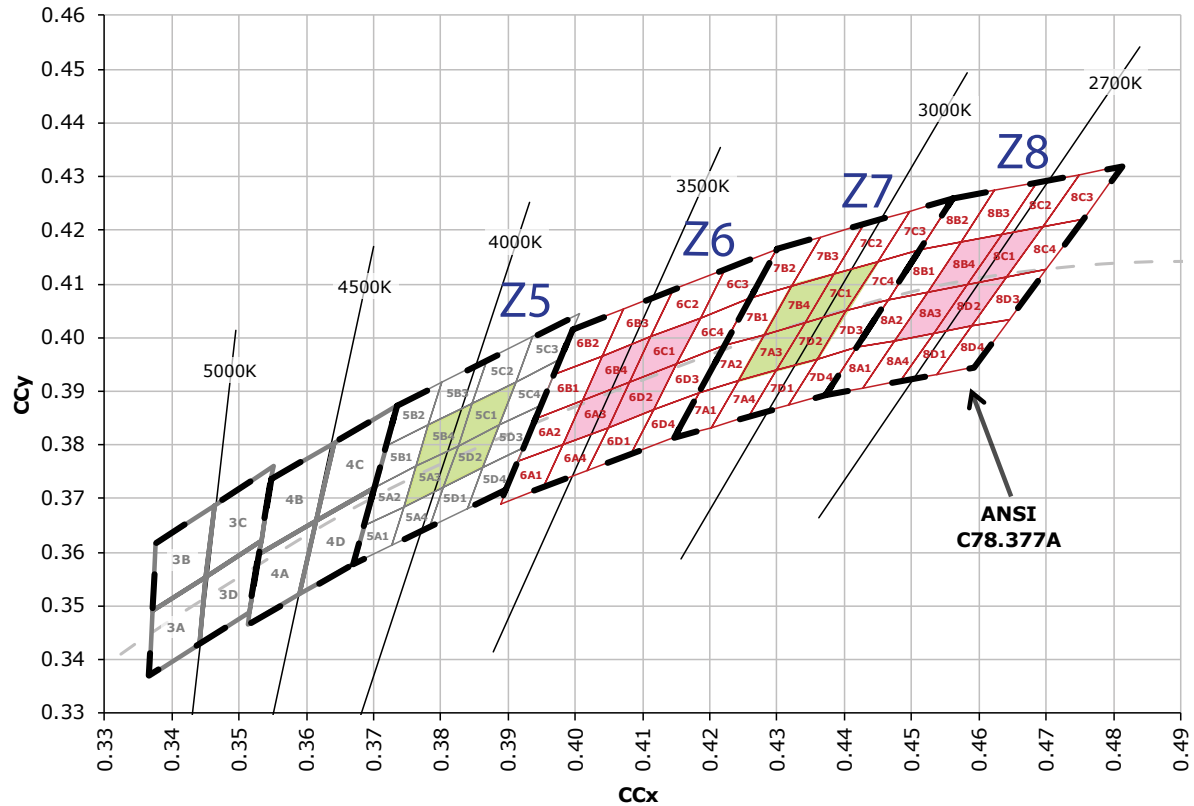






## CREE'S STANDARD WARM AND NEUTRAL WHITE KITS PLOTTED ON ANSI STANDARD CHROMATICITY REGIONS





## CREE'S STANDARD CHROMATICITY KITS

The following table provides the chromaticity bins associated with chromaticity kits for the ML family of LEDs.

| Color      | CCT    | Kit | Chromaticity Bins                                                                                                      |
|------------|--------|-----|------------------------------------------------------------------------------------------------------------------------|
| Cool White | 7000 K | DT  | 0A, 0B, 0C, 0D, 0R, 0S, 0T, 0U, 1A, 1B, 1C, 1D, 1R, 1S, 1T, 1U                                                         |
|            | 7000 K | E0  | 0A, 0B, 0C, 0D                                                                                                         |
|            | 6500 K | S1  | 0A, 0B, 0C, 0D, 0R, 0S, 0T, 0U, 1A, 1B, 1C, 1D, 1R, 1S, 1T, 1U, 2A, 2B, 2C, 2D, 2R, 2S, 2T, 2U, 3A, 3B, 3R, 3S         |
|            | 6500 K | E1  | 1A, 1B, 1C, 1D                                                                                                         |
|            | 6200 K | S0  | 1A, 1B, 1C, 1D, 2A, 2B, 2C, 2D                                                                                         |
|            | 6000 K | DV  | 1A, 1B, 1C, 1D, 1R, 1S, 1T, 1U, 2A, 2B, 2C, 2D, 2R, 2S, 2T, 2U                                                         |
|            | 5700 K | E2  | 2A, 2B, 2C, 2D                                                                                                         |
|            | 5500 K | DY  | 2A, 2B, 2C, 2D, 2R, 2S, 2T, 2U, 3A, 3B, 3C, 3D, 3R, 3S, 3T, 3U                                                         |
|            | 5000 K | DZ  | 2C, 2D, 2T, 2U, 3A, 3B, 3C, 3D, 3R, 3S, 3T, 3U, 4A, 4B, 4R, 4S                                                         |
|            | 5000 K | A1  | 3A, 3B, 3C, 3D, 4A, 4B                                                                                                 |
|            | 5000 K | E3  | 3A, 3B, 3C, 3D                                                                                                         |
|            | 4750 K | F4  | 3C, 3D, 4A, 4B                                                                                                         |
|            | 4750 K | A2  | 3C, 3D, 4A, 4B, 4C, 4D                                                                                                 |
|            | 4500 K | E4  | 4A, 4B, 4C, 4D                                                                                                         |
| Warm White | 4300 K | A3  | 4A, 4B, 4C, 4D, 5A1, 5A2, 5A3, 5A4, 5B1, 5B2, 5B3, 5B4                                                                 |
|            | 4250 K | F5  | 4C, 4D, 5A1, 5A2, 5A3, 5A4, 5B1, 5B2, 5B3, 5B4                                                                         |
|            | 4000 K | E5  | 5A1, 5A2, 5A3, 5A4, 5B1, 5B2, 5B3, 5B4, 5C1, 5C2, 5C3, 5C4, 5D1, 5D2, 5D3, 5D4                                         |
|            | 4000 K | Z5  | 5A3, 5B4, 5C1, 5D2                                                                                                     |
|            | 4000 K | A4  | 4C, 4D, 5A1, 5A2, 5A3, 5A4, 5B1, 5B2, 5B3, 5B4, 5C1, 5C2, 5C3, 5C4, 5D1, 5D2, 5D3, 5D4                                 |
|            | 3750 K | A5  | 5A1, 5A2, 5A3, 5A4, 5B1, 5B2, 5B3, 5B4, 5C1, 5C2, 5C3, 5C4, 5D1, 5D2, 5D3, 5D4, 6A1, 6A2, 6A3, 6A4, 6B1, 6B2, 6B3, 6B4 |
|            | 3750 K | F6  | 5C1, 5C2, 5C3, 5C4, 5D1, 5D2, 5D3, 5D4, 6A1, 6A2, 6A3, 6A4, 6B1, 6B2, 6B3, 6B4                                         |
|            | 3500 K | E6  | 6A1, 6A2, 6A3, 6A4, 6B1, 6B2, 6B3, 6B4, 6C1, 6C2, 6C3, 6C4, 6D1, 6D2, 6D3, 6D4                                         |
|            | 3500 K | Z6  | 6A3, 6B4, 6C1, 6D2                                                                                                     |
|            | 3500 K | A6  | 5C1, 5C2, 5C3, 5C4, 5D1, 5D2, 5D3, 5D4, 6A1, 6A2, 6A3, 6A4, 6B1, 6B2, 6B3, 6B4, 6C1, 6C2, 6C3, 6C4, 6D1, 6D2, 6D3, 6D4 |
|            | 3250 K | A7  | 6A1, 6A2, 6A3, 6A4, 6B1, 6B2, 6B3, 6B4, 6C1, 6C2, 6C3, 6C4, 6D1, 6D2, 6D3, 6D4, 7A1, 7A2, 7A3, 7A4, 7B1, 7B2, 7B3, 7B4 |
|            | 3250 K | F7  | 6C1, 6C2, 6C3, 6C4, 6D1, 6D2, 6D3, 6D4, 7A1, 7A2, 7A3, 7A4, 7B1, 7B2, 7B3, 7B4                                         |
|            | 3000 K | E7  | 7A1, 7A2, 7A3, 7A4, 7B1, 7B2, 7B3, 7B4, 7C1, 7C2, 7C3, 7C4, 7D1, 7D2, 7D3, 7D4                                         |
|            | 3000 K | Z7  | 7A3, 7B4, 7C1, 7D2                                                                                                     |
|            | 3000 K | A8  | 6C1, 6C2, 6C3, 6C4, 6D1, 6D2, 6D3, 6D4, 7A1, 7A2, 7A3, 7A4, 7B1, 7B2, 7B3, 7B4, 7C1, 7C2, 7C3, 7C4, 7D1, 7D2, 7D3, 7D4 |
|            | 2850 K | A9  | 7A1, 7A2, 7A3, 7A4, 7B1, 7B2, 7B3, 7B4, 7C1, 7C2, 7C3, 7C4, 7D1, 7D2, 7D3, 7D4, 8A1, 8A2, 8A3, 8A4, 8B1, 8B2, 8B3, 8B4 |
|            | 2850 K | F8  | 7C1, 7C2, 7C3, 7C4, 7D1, 7D2, 7D3, 7D4, 8A1, 8A2, 8A3, 8A4, 8B1, 8B2, 8B3, 8B4                                         |
|            | 2700 K | E8  | 8A1, 8A2, 8A3, 8A4, 8B1, 8B2, 8B3, 8B4, 8C1, 8C2, 8C3, 8C4, 8D1, 8D2, 8D3, 8D4                                         |
|            | 2700 K | Z8  | 8A3, 8B4, 8C1, 8D2                                                                                                     |
|            | 2700 K | AA  | 7C1, 7C2, 7C3, 7C4, 7D1, 7D2, 7D3, 7D4, 8A1, 8A2, 8A3, 8A4, 8B1, 8B2, 8B3, 8B4, 8C1, 8C2, 8C3, 8C4, 8D1, 8D2, 8D3, 8D4 |
|            | 2200 K | EA  | AA1, AA2, AA3, AA4, AB1, AB2, AB3, AB4, AC1, AC2, AC3, AC4, AD1, AD2, AD3, AD4                                         |

The following tables of order codes list flux minimums and chromaticity regions for the various categories of XLamp ML LEDs. Kit numbers completely describe an order code's chromaticity regions and luminous flux range. For other flux and chromaticity combinations, contact Cree or an authorized distributor.

## STANDARD ORDER CODES AND BINS (ML-B COOL WHITE, $T_j = 25\text{ }^{\circ}\text{C}$ )

| XLamp ML-B Standard Kit Codes - White |        |                                     |           |                       |  |                |
|---------------------------------------|--------|-------------------------------------|-----------|-----------------------|--|----------------|
| Chromaticity                          |        | Minimum Luminous Flux (lm) @ 80 mA* |           | Order Codes           |  |                |
| Kit                                   | CCT    | Code                                | Flux (lm) | Typical CRI (75)      |  | 80 CRI Minimum |
| ANSI Cool White (4500 K – 8300 K)     |        |                                     |           |                       |  |                |
| DT                                    | 7000 K | J0                                  | 23.5      | MLBAWT-A1-0000-000WDT |  |                |
| E0                                    |        |                                     |           | MLBAWT-A1-0000-000WE0 |  |                |
| S1                                    | 6500 K |                                     |           | MLBAWT-A1-0000-000W51 |  |                |
| E1                                    |        |                                     |           | MLBAWT-A1-0000-000WE1 |  |                |
| S0                                    | 6200 K |                                     |           | MLBAWT-A1-0000-000W50 |  |                |
| DV                                    | 6000 K |                                     |           | MLBAWT-A1-0000-000WDV |  |                |
| E2                                    | 5750 K |                                     |           | MLBAWT-A1-0000-000WE2 |  |                |
| DY                                    | 5500 K |                                     |           | MLBAWT-A1-0000-000WDY |  |                |
| DZ                                    | 5000 K |                                     |           | MLBAWT-A1-0000-000WDZ |  |                |
| A1                                    |        |                                     |           | MLBAWT-A1-0000-000WA1 |  |                |
| E3                                    |        |                                     |           | MLBAWT-A1-0000-000WE3 |  |                |
| F4                                    |        |                                     |           | MLBAWT-A1-0000-000WF4 |  |                |
| A2                                    | 4750K  |                                     |           | MLBAWT-A1-0000-000WA2 |  |                |
| E4                                    | 4500K  |                                     |           | MLBAWT-A1-0000-000WE4 |  |                |

## STANDARD ORDER CODES AND BINS (ML-B WARM WHITE, $T_j = 25\text{ }^{\circ}\text{C}$ )

| XLamp ML-B Standard Kit Codes - White |        |                                     |                       |                       |                       |                       |                       |
|---------------------------------------|--------|-------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Chromaticity                          |        | Minimum Luminous Flux (lm) @ 80 mA* |                       | Order Codes           |                       |                       |                       |
| Kit                                   | CCT    | Code                                | Flux (lm)             | Typical CRI (80)      | 80 CRI Minimum        | 85 CRI Minimum        | 90 CRI Minimum        |
| ANSI Warm White (2600 K – 4300 K)     |        |                                     |                       |                       |                       |                       |                       |
| A3                                    | 4300 K | J0                                  | 23.5                  | MLBAWT-A1-0000-000WA3 |                       |                       |                       |
|                                       |        | H0                                  | 18.1                  | MLBAWT-A1-0000-000VA3 |                       |                       |                       |
| F5                                    | 4250 K | J0                                  | 23.5                  | MLBAWT-A1-0000-000WF5 |                       |                       |                       |
|                                       |        | H0                                  | 18.1                  | MLBAWT-A1-0000-000VF5 |                       |                       |                       |
| E5                                    | 4000 K | J0                                  | 23.5                  | MLBAWT-A1-0000-000WE5 | MLBAWT-H1-0000-000WE5 |                       |                       |
| H0                                    |        | 18.1                                | MLBAWT-A1-0000-000VE5 | MLBAWT-H1-0000-000VE5 | MLBAWT-P1-0000-000VE5 | MLBAWT-U1-0000-000VE5 |                       |
| Z5                                    |        | J0                                  | 23.5                  | MLBAWT-A1-0000-000WZ5 | MLBAWT-H1-0000-000WZ5 |                       |                       |
|                                       |        | H0                                  | 18.1                  | MLBAWT-A1-0000-000VZ5 | MLBAWT-H1-0000-000VZ5 | MLBAWT-P1-0000-000VZ5 | MLBAWT-U1-0000-000VZ5 |
| A4                                    |        | J0                                  | 23.5                  | MLBAWT-A1-0000-000WA4 |                       |                       |                       |
|                                       |        | H0                                  | 18.1                  | MLBAWT-A1-0000-000VA4 |                       |                       |                       |

- Notes:
- Cree maintains a tolerance of  $\pm 7\%$  on flux and power measurements,  $\pm 0.005$  on chromaticity (CCx, CCy) measurements and  $\pm 2$  on CRI measurements.
  - Typical CRI for Cool White order codes is 75; Typical CRI for Warm White order codes is 80
  - Cree XLamp 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.

| XLamp ML-B Standard Kit Codes - White |        |                                     |           |                       |                       |                       |                       |
|---------------------------------------|--------|-------------------------------------|-----------|-----------------------|-----------------------|-----------------------|-----------------------|
| Chromaticity                          |        | Minimum Luminous Flux (lm) @ 80 mA* |           | Order Codes           |                       |                       |                       |
| Kit                                   | CCT    | Code                                | Flux (lm) | Typical CRI (80)      | 80 CRI Minimum        | 85 CRI Minimum        | 90 CRI Minimum        |
| A5                                    | 3750 K | J0                                  | 23.5      | MLBAWT-A1-0000-000WA5 |                       |                       |                       |
|                                       |        | H0                                  | 18.1      | MLBAWT-A1-0000-000VA5 | MLBAWT-H1-0000-000VA5 | MLBAWT-P1-0000-000VA5 | MLBAWT-U1-0000-000VA5 |
|                                       |        | G0                                  | 13.9      |                       |                       |                       | MLBAWT-U1-0000-000UA5 |
| F6                                    |        | J0                                  | 23.5      | MLBAWT-A1-0000-000WF6 |                       |                       |                       |
|                                       |        | H0                                  | 18.1      | MLBAWT-A1-0000-000VF6 | MLBAWT-H1-0000-000VF6 | MLBAWT-P1-0000-000VF6 | MLBAWT-U1-0000-000VF6 |
|                                       |        | G0                                  | 13.9      |                       |                       |                       | MLBAWT-U1-0000-000UF6 |
| E6                                    | 3500 K | J0                                  | 23.5      | MLBAWT-A1-0000-000WE6 |                       |                       |                       |
|                                       |        | H0                                  | 18.1      | MLBAWT-A1-0000-000VE6 | MLBAWT-H1-0000-000VE6 | MLBAWT-P1-0000-000VE6 | MLBAWT-U1-0000-000VE6 |
|                                       |        | G0                                  | 13.9      |                       |                       |                       | MLBAWT-U1-0000-000UE6 |
| Z6                                    |        | J0                                  | 23.5      | MLBAWT-A1-0000-000WZ6 |                       |                       |                       |
|                                       |        | H0                                  | 18.1      | MLBAWT-A1-0000-000VZ6 | MLBAWT-H1-0000-000VZ6 | MLBAWT-P1-0000-000VZ6 | MLBAWT-U1-0000-000VZ6 |
|                                       |        | G0                                  | 13.9      |                       |                       |                       | MLBAWT-U1-0000-000UZ6 |
| A6                                    |        | J0                                  | 23.5      | MLBAWT-A1-0000-000WA6 |                       |                       |                       |
|                                       |        | H0                                  | 18.1      | MLBAWT-A1-0000-000VA6 | MLBAWT-H1-0000-000VA6 | MLBAWT-P1-0000-000VA6 | MLBAWT-U1-0000-000VA6 |
|                                       |        | G0                                  | 13.9      |                       |                       |                       | MLBAWT-U1-0000-000UA6 |
| A7                                    | 3250 K | J0                                  | 23.5      | MLBAWT-A1-0000-000WA7 |                       |                       |                       |
|                                       |        | H0                                  | 18.1      | MLBAWT-A1-0000-000VA7 | MLBAWT-H1-0000-000VA7 | MLBAWT-P1-0000-000VA7 | MLBAWT-U1-0000-000VA7 |
|                                       |        | G0                                  | 13.9      |                       |                       | MLBAWT-P1-0000-000UA7 | MLBAWT-U1-0000-000UA7 |
| F7                                    |        | J0                                  | 23.5      | MLBAWT-A1-0000-000WF7 |                       |                       |                       |
|                                       |        | H0                                  | 18.1      | MLBAWT-A1-0000-000VF7 | MLBAWT-H1-0000-000VF7 | MLBAWT-P1-0000-000VF7 | MLBAWT-U1-0000-000VF7 |
|                                       |        | G0                                  | 13.9      |                       |                       | MLBAWT-P1-0000-000UF7 | MLBAWT-U1-0000-000UF7 |
| E7                                    | 3000 K | J0                                  | 23.5      | MLBAWT-A1-0000-000WE7 |                       |                       |                       |
|                                       |        | H0                                  | 18.1      | MLBAWT-A1-0000-000VE7 | MLBAWT-H1-0000-000VE7 | MLBAWT-P1-0000-000VE7 | MLBAWT-U1-0000-000VE7 |
|                                       |        | G0                                  | 13.9      |                       |                       | MLBAWT-P1-0000-000UE7 | MLBAWT-U1-0000-000UE7 |
| Z7                                    |        | J0                                  | 23.5      | MLBAWT-A1-0000-000WZ7 |                       |                       |                       |
|                                       |        | H0                                  | 18.1      | MLBAWT-A1-0000-000VZ7 | MLBAWT-H1-0000-000VZ7 | MLBAWT-P1-0000-000VZ7 | MLBAWT-U1-0000-000VZ7 |
|                                       |        | G0                                  | 13.9      |                       |                       | MLBAWT-P1-0000-000UZ7 | MLBAWT-U1-0000-000UZ7 |
| A8                                    |        | J0                                  | 23.5      | MLBAWT-A1-0000-000WA8 |                       |                       |                       |
|                                       |        | H0                                  | 18.1      | MLBAWT-A1-0000-000VA8 | MLBAWT-H1-0000-000VA8 | MLBAWT-P1-0000-000VA8 | MLBAWT-U1-0000-000VA8 |
|                                       |        | G0                                  | 13.9      |                       |                       | MLBAWT-P1-0000-000UA8 | MLBAWT-U1-0000-000UA8 |
| A9                                    | 2850 K | H0                                  | 18.1      | MLBAWT-A1-0000-000VA9 | MLBAWT-H1-0000-000VA9 | MLBAWT-P1-0000-000VA9 | MLBAWT-U1-0000-000VA9 |
|                                       |        | G0                                  | 13.9      |                       |                       | MLBAWT-P1-0000-000UA9 | MLBAWT-U1-0000-000UA9 |
| F8                                    |        | H0                                  | 18.1      | MLBAWT-A1-0000-000VF8 | MLBAWT-H1-0000-000VF8 | MLBAWT-P1-0000-000VF8 | MLBAWT-U1-0000-000VF8 |
|                                       |        | G0                                  | 13.9      |                       |                       | MLBAWT-P1-0000-000UF8 | MLBAWT-U1-0000-000UF8 |

- Notes:
- Cree maintains a tolerance of  $\pm 7\%$  on flux and power measurements,  $\pm 0.005$  on chromaticity (CCx, CCy) measurements and  $\pm 2$  on CRI measurements.
  - Typical CRI for Cool White order codes is 75; Typical CRI for Warm White order codes is 80
  - Cree XLamp 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.

| XLamp ML-B Standard Kit Codes - White |        |                                     |           |                       |                       |                       |                       |
|---------------------------------------|--------|-------------------------------------|-----------|-----------------------|-----------------------|-----------------------|-----------------------|
| Chromaticity                          |        | Minimum Luminous Flux (lm) @ 80 mA* |           | Order Codes           |                       |                       |                       |
| Kit                                   | CCT    | Code                                | Flux (lm) | Typical CRI (80)      | 80 CRI Minimum        | 85 CRI Minimum        | 90 CRI Minimum        |
| E8                                    | 2700 K | H0                                  | 18.1      | MLBAWT-A1-0000-000VE8 | MLBAWT-H1-0000-000VE8 | MLBAWT-P1-0000-000VE8 | MLBAWT-U1-0000-000VE8 |
|                                       |        | G0                                  | 13.9      |                       |                       | MLBAWT-P1-0000-000UE8 | MLBAWT-U1-0000-000UE8 |
| Z8                                    |        | H0                                  | 18.1      | MLBAWT-A1-0000-000VZ8 | MLBAWT-H1-0000-000VZ8 | MLBAWT-P1-0000-000VZ8 | MLBAWT-U1-0000-000VZ8 |
|                                       |        | G0                                  | 13.9      |                       |                       | MLBAWT-P1-0000-000UZ8 | MLBAWT-U1-0000-000UZ8 |
| AA                                    |        | H0                                  | 18.1      | MLBAWT-A1-0000-000VAA | MLBAWT-H1-0000-000VAA | MLBAWT-P1-0000-000VAA | MLBAWT-U1-0000-000VAA |
|                                       |        | G0                                  | 13.9      |                       |                       | MLBAWT-P1-0000-000UAA | MLBAWT-U1-0000-000UAA |
| EA                                    | 2200 K | G0                                  | 13.9      | MLBAWT-A1-0000-000UEA |                       |                       |                       |
|                                       |        | F0                                  | 10.7      | MLBAWT-A1-0000-000TEA |                       |                       |                       |

## STANDARD ORDER CODES AND BINS (ML-C PARALLEL, COOL WHITE, T<sub>j</sub> = 25 °C)

| XLamp ML-C Parallel, Standard Kit Codes - White |        |                                      |           |                       |                       |
|-------------------------------------------------|--------|--------------------------------------|-----------|-----------------------|-----------------------|
| Chromaticity                                    |        | Minimum Luminous Flux (lm) @ 100 mA* |           | Order Codes           |                       |
| Kit                                             | CCT    | Code                                 | Flux (lm) | Typical CRI (75)      | 80 CRI Minimum        |
| ANSI Cool White (4500 K – 8300 K)               |        |                                      |           |                       |                       |
| DT                                              | 7000 K | K3                                   | 35.2      | MLCAWT-A1-0000-0001DT |                       |
|                                                 |        | K2                                   | 30.6      | MLCAWT-A1-0000-0000DT |                       |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XDT |                       |
| E0                                              |        | K3                                   | 35.2      | MLCAWT-A1-0000-0001E0 |                       |
|                                                 |        | K2                                   | 30.6      | MLCAWT-A1-0000-0000E0 |                       |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XE0 |                       |
| 51                                              | 6500 K | K3                                   | 35.2      | MLCAWT-A1-0000-000151 |                       |
|                                                 |        | K2                                   | 30.6      | MLCAWT-A1-0000-000051 |                       |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000X51 |                       |
| E1                                              |        | K3                                   | 35.2      | MLCAWT-A1-0000-0001E1 |                       |
|                                                 |        | K2                                   | 30.6      | MLCAWT-A1-0000-0000E1 | MLCAWT-H1-0000-0000E1 |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XE1 | MLCAWT-H1-0000-000XE1 |

- Notes:
- Cree maintains a tolerance of ±7% on flux and power measurements, ±0.005 on chromaticity (CCx, CCy) measurements and ±2 on CRI measurements.
  - Typical CRI for Cool White order codes is 75; Typical CRI for Warm White order codes is 80
  - Cree XLamp 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.

| XLamp ML-C Parallel, Standard Kit Codes - White |        |                                      |           |                       |                       |
|-------------------------------------------------|--------|--------------------------------------|-----------|-----------------------|-----------------------|
| Chromaticity                                    |        | Minimum Luminous Flux (lm) @ 100 mA* |           | Order Codes           |                       |
| Kit                                             | CCT    | Code                                 | Flux (lm) | Typical CRI (75)      | 80 CRI Minimum        |
| 50                                              | 6200 K | K3                                   | 35.2      | MLCAWT-A1-0000-000150 |                       |
|                                                 |        | K2                                   | 30.6      | MLCAWT-A1-0000-000050 |                       |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000X50 |                       |
| DV                                              | 6000 K | K3                                   | 35.2      | MLCAWT-A1-0000-0001DV |                       |
|                                                 |        | K2                                   | 30.6      | MLCAWT-A1-0000-0000DV |                       |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XDV |                       |
| E2                                              | 5750 K | K3                                   | 35.2      | MLCAWT-A1-0000-0001E2 |                       |
|                                                 |        | K2                                   | 30.6      | MLCAWT-A1-0000-0000E2 |                       |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XE2 |                       |
| DY                                              | 5500 K | K3                                   | 35.2      | MLCAWT-A1-0000-0001DY |                       |
|                                                 |        | K2                                   | 30.6      | MLCAWT-A1-0000-0000DY |                       |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XDY |                       |
| DZ                                              | 5000 K | K3                                   | 35.2      | MLCAWT-A1-0000-0001DZ |                       |
|                                                 |        | K2                                   | 30.6      | MLCAWT-A1-0000-0000DZ |                       |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XDZ |                       |
| A1                                              |        | K3                                   | 35.2      | MLCAWT-A1-0000-0001A1 |                       |
|                                                 |        | K2                                   | 30.6      | MLCAWT-A1-0000-0000A1 |                       |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XA1 |                       |
| E3                                              |        | K3                                   | 35.2      | MLCAWT-A1-0000-0001E3 |                       |
|                                                 |        | K2                                   | 30.6      | MLCAWT-A1-0000-0000E3 | MLCAWT-H1-0000-0000E3 |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XE3 | MLCAWT-H1-0000-000XE3 |
| F4                                              | 4750 K | K3                                   | 35.2      | MLCAWT-A1-0000-0001F4 |                       |
|                                                 |        | K2                                   | 30.6      | MLCAWT-A1-0000-0000F4 |                       |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XF4 |                       |
| A2                                              |        | K3                                   | 35.2      | MLCAWT-A1-0000-0001A2 |                       |
|                                                 |        | K2                                   | 30.6      | MLCAWT-A1-0000-0000A2 |                       |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XA2 |                       |
| E4                                              | 4500 K | K3                                   | 35.2      | MLCAWT-A1-0000-0001E4 |                       |
|                                                 |        | K2                                   | 30.6      | MLCAWT-A1-0000-0000E4 |                       |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XE4 |                       |

- Notes:
- Cree maintains a tolerance of  $\pm 7\%$  on flux and power measurements,  $\pm 0.005$  on chromaticity (CCx, CCy) measurements and  $\pm 2$  on CRI measurements.
  - Typical CRI for Cool White order codes is 75; Typical CRI for Warm White order codes is 80
  - Cree XLamp 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.



**STANDARD ORDER CODES AND BINS (ML-C PARALLEL, WARM WHITE, T<sub>j</sub> = 25 °C)**

| XLamp ML-C Parallel, Standard Kit Codes - White |        |                                      |           |                       |                       |                       |                       |  |
|-------------------------------------------------|--------|--------------------------------------|-----------|-----------------------|-----------------------|-----------------------|-----------------------|--|
| Chromaticity                                    |        | Minimum Luminous Flux (lm) @ 100 mA* |           | Order Codes           |                       |                       |                       |  |
| Kit                                             | CCT    | Code                                 | Flux (lm) | Typical CRI (80)      | 80 CRI Minimum        | 85 CRI Minimum        | 90 CRI Minimum        |  |
| ANSI Warm White (2600 K – 4300 K)               |        |                                      |           |                       |                       |                       |                       |  |
| A3                                              | 4300 K | K2                                   | 30.6      | MLCAWT-A1-0000-0000A3 |                       |                       |                       |  |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XA3 |                       |                       |                       |  |
| F5                                              | 4250 K | K2                                   | 30.6      | MLCAWT-A1-0000-0000F5 |                       |                       |                       |  |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XF5 |                       |                       |                       |  |
| E5                                              | 4000 K | K2                                   | 30.6      | MLCAWT-A1-0000-0000E5 | MLCAWT-H1-0000-0000E5 |                       |                       |  |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XE5 | MLCAWT-H1-0000-000XE5 | MLCAWT-P1-0000-000XE5 |                       |  |
|                                                 |        | J2                                   | 23.5      |                       | MLCAWT-H1-0000-000WE5 | MLCAWT-P1-0000-000WE5 | MLCAWT-U1-0000-000WE5 |  |
|                                                 |        | H0                                   | 18.1      |                       |                       |                       | MLCAWT-U1-0000-000VE5 |  |
| Z5                                              |        | K2                                   | 30.6      | MLCAWT-A1-0000-0000Z5 | MLCAWT-H1-0000-0000Z5 |                       |                       |  |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XZ5 | MLCAWT-H1-0000-000XZ5 | MLCAWT-P1-0000-000XZ5 |                       |  |
|                                                 |        | J2                                   | 23.5      |                       | MLCAWT-H1-0000-000WZ5 | MLCAWT-P1-0000-000WZ5 | MLCAWT-U1-0000-000WZ5 |  |
|                                                 |        | H0                                   | 18.1      |                       |                       |                       | MLCAWT-U1-0000-000VZ5 |  |
| A4                                              |        | K2                                   | 30.6      | MLCAWT-A1-0000-0000A4 |                       |                       |                       |  |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XA4 |                       |                       |                       |  |
| A5                                              |        | 3750 K                               | K2        | 30.6                  | MLCAWT-A1-0000-0000A5 | MLCAWT-H1-0000-0000A5 |                       |  |
|                                                 |        |                                      | J3        | 26.8                  | MLCAWT-A1-0000-000XA5 | MLCAWT-H1-0000-000XA5 | MLCAWT-P1-0000-000XA5 |  |
|                                                 | J2     |                                      | 23.5      |                       | MLCAWT-H1-0000-000WA5 | MLCAWT-P1-0000-000WA5 | MLCAWT-U1-0000-000WA5 |  |
|                                                 | H0     |                                      | 18.1      |                       |                       | MLCAWT-P1-0000-000VA5 | MLCAWT-U1-0000-000VA5 |  |
| F6                                              | K2     |                                      | 30.6      | MLCAWT-A1-0000-0000F6 | MLCAWT-H1-0000-0000F6 |                       |                       |  |
|                                                 | J3     |                                      | 26.8      | MLCAWT-A1-0000-000XF6 | MLCAWT-H1-0000-000XF6 | MLCAWT-P1-0000-000XF6 |                       |  |
|                                                 | J2     |                                      | 23.5      |                       | MLCAWT-H1-0000-000WF6 | MLCAWT-P1-0000-000WF6 | MLCAWT-U1-0000-000WF6 |  |
|                                                 | H0     |                                      | 18.1      |                       |                       | MLCAWT-P1-0000-000VF6 | MLCAWT-U1-0000-000VF6 |  |
| E6                                              | 3500 K | K2                                   | 30.6      | MLCAWT-A1-0000-0000E6 | MLCAWT-H1-0000-0000E6 |                       |                       |  |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XE6 | MLCAWT-H1-0000-000XE6 | MLCAWT-P1-0000-000XE6 |                       |  |
|                                                 |        | J2                                   | 23.5      |                       | MLCAWT-H1-0000-000WE6 | MLCAWT-P1-0000-000WE6 | MLCAWT-U1-0000-000WE6 |  |
|                                                 |        | H0                                   | 18.1      |                       |                       | MLCAWT-P1-0000-000VE6 | MLCAWT-U1-0000-000VE6 |  |
| Z6                                              |        | K2                                   | 30.6      | MLCAWT-A1-0000-0000Z6 | MLCAWT-H1-0000-0000Z6 |                       |                       |  |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XZ6 | MLCAWT-H1-0000-000XZ6 | MLCAWT-P1-0000-000XZ6 |                       |  |
|                                                 |        | J2                                   | 23.5      |                       | MLCAWT-H1-0000-000WZ6 | MLCAWT-P1-0000-000WZ6 | MLCAWT-U1-0000-000WZ6 |  |
|                                                 |        | H0                                   | 18.1      |                       |                       | MLCAWT-P1-0000-000VZ6 | MLCAWT-U1-0000-000VZ6 |  |
| A6                                              |        | K2                                   | 30.6      | MLCAWT-A1-0000-0000A6 | MLCAWT-H1-0000-0000A6 |                       |                       |  |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XA6 | MLCAWT-H1-0000-000XA6 | MLCAWT-P1-0000-000XA6 |                       |  |
|                                                 |        | J2                                   | 23.5      |                       | MLCAWT-H1-0000-000WA6 | MLCAWT-P1-0000-000WA6 | MLCAWT-U1-0000-000WA6 |  |
|                                                 |        | H0                                   | 18.1      |                       |                       | MLCAWT-P1-0000-000VA6 | MLCAWT-U1-0000-000VA6 |  |

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  - Typical CRI for Cool White order codes is 75; Typical CRI for Warm White order codes is 80
  - Cree XLamp 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.

| XLamp ML-C Parallel, Standard Kit Codes - White |        |                                      |           |                       |                       |                       |                       |
|-------------------------------------------------|--------|--------------------------------------|-----------|-----------------------|-----------------------|-----------------------|-----------------------|
| Chromaticity                                    |        | Minimum Luminous Flux (lm) @ 100 mA* |           | Order Codes           |                       |                       |                       |
| Kit                                             | CCT    | Code                                 | Flux (lm) | Typical CRI (80)      | 80 CRI Minimum        | 85 CRI Minimum        | 90 CRI Minimum        |
| A7                                              | 3250 K | K2                                   | 30.6      | MLCAWT-A1-0000-0000A7 | MLCAWT-H1-0000-0000A7 |                       |                       |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XA7 | MLCAWT-H1-0000-000XA7 |                       |                       |
|                                                 |        | J2                                   | 23.5      | MLCAWT-A1-0000-000WA7 | MLCAWT-H1-0000-000WA7 | MLCAWT-P1-0000-000WA7 | MLCAWT-U1-0000-000WA7 |
|                                                 |        | H0                                   | 18.1      |                       | MLCAWT-H1-0000-000VA7 | MLCAWT-P1-0000-000VA7 | MLCAWT-U1-0000-000VA7 |
| F7                                              |        | K2                                   | 30.6      | MLCAWT-A1-0000-0000F7 | MLCAWT-H1-0000-0000F7 |                       |                       |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XF7 | MLCAWT-H1-0000-000XF7 |                       |                       |
|                                                 |        | J2                                   | 23.5      | MLCAWT-A1-0000-000WF7 | MLCAWT-H1-0000-000WF7 | MLCAWT-P1-0000-000WF7 | MLCAWT-U1-0000-000WF7 |
|                                                 |        | H0                                   | 18.1      |                       | MLCAWT-H1-0000-000VF7 | MLCAWT-P1-0000-000VF7 | MLCAWT-U1-0000-000VF7 |
| E7                                              | 3000 K | K2                                   | 30.6      | MLCAWT-A1-0000-0000E7 | MLCAWT-H1-0000-0000E7 |                       |                       |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XE7 | MLCAWT-H1-0000-000XE7 |                       |                       |
|                                                 |        | J2                                   | 23.5      | MLCAWT-A1-0000-000WE7 | MLCAWT-H1-0000-000WE7 | MLCAWT-P1-0000-000WE7 | MLCAWT-U1-0000-000WE7 |
|                                                 |        | H0                                   | 18.1      |                       | MLCAWT-H1-0000-000VE7 | MLCAWT-P1-0000-000VE7 | MLCAWT-U1-0000-000VE7 |
| Z7                                              |        | K2                                   | 30.6      | MLCAWT-A1-0000-0000Z7 | MLCAWT-H1-0000-0000Z7 |                       |                       |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XZ7 | MLCAWT-H1-0000-000XZ7 |                       |                       |
|                                                 |        | J2                                   | 23.5      | MLCAWT-A1-0000-000WZ7 | MLCAWT-H1-0000-000WZ7 | MLCAWT-P1-0000-000WZ7 | MLCAWT-U1-0000-000WZ7 |
|                                                 |        | H0                                   | 18.1      |                       | MLCAWT-H1-0000-000VZ7 | MLCAWT-P1-0000-000VZ7 | MLCAWT-U1-0000-000VZ7 |
| A8                                              |        | K2                                   | 30.6      | MLCAWT-A1-0000-0000A8 | MLCAWT-H1-0000-0000A8 |                       |                       |
|                                                 |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XA8 | MLCAWT-H1-0000-000XA8 |                       |                       |
|                                                 |        | J2                                   | 23.5      | MLCAWT-A1-0000-000WA8 | MLCAWT-H1-0000-000WA8 | MLCAWT-P1-0000-000WA8 | MLCAWT-U1-0000-000WA8 |
|                                                 |        | H0                                   | 18.1      |                       | MLCAWT-H1-0000-000VA8 | MLCAWT-P1-0000-000VA8 | MLCAWT-U1-0000-000VA8 |
| A9                                              | 2850 K | J3                                   | 26.8      | MLCAWT-A1-0000-000XA9 | MLCAWT-H1-0000-000XA9 |                       |                       |
|                                                 |        | J2                                   | 23.5      | MLCAWT-A1-0000-000WA9 | MLCAWT-H1-0000-000WA9 | MLCAWT-P1-0000-000WA9 | MLCAWT-U1-0000-000WA9 |
|                                                 |        | H0                                   | 18.1      |                       | MLCAWT-H1-0000-000VA9 | MLCAWT-P1-0000-000VA9 | MLCAWT-U1-0000-000VA9 |
| F8                                              |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XF8 | MLCAWT-H1-0000-000XF8 |                       |                       |
|                                                 |        | J2                                   | 23.5      | MLCAWT-A1-0000-000WF8 | MLCAWT-H1-0000-000WF8 | MLCAWT-P1-0000-000WF8 | MLCAWT-U1-0000-000WF8 |
|                                                 |        | H0                                   | 18.1      |                       | MLCAWT-H1-0000-000VF8 | MLCAWT-P1-0000-000VF8 | MLCAWT-U1-0000-000VF8 |
| E8                                              | 2700 K | J3                                   | 26.8      | MLCAWT-A1-0000-000XE8 | MLCAWT-H1-0000-000XE8 |                       |                       |
|                                                 |        | J2                                   | 23.5      | MLCAWT-A1-0000-000WE8 | MLCAWT-H1-0000-000WE8 | MLCAWT-P1-0000-000WE8 | MLCAWT-U1-0000-000WE8 |
|                                                 |        | H0                                   | 18.1      |                       | MLCAWT-H1-0000-000VE8 | MLCAWT-P1-0000-000VE8 | MLCAWT-U1-0000-000VE8 |
| Z8                                              |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XZ8 | MLCAWT-H1-0000-000XZ8 |                       |                       |
|                                                 |        | J2                                   | 23.5      | MLCAWT-A1-0000-000WZ8 | MLCAWT-H1-0000-000WZ8 | MLCAWT-P1-0000-000WZ8 | MLCAWT-U1-0000-000WZ8 |
|                                                 |        | H0                                   | 18.1      |                       | MLCAWT-H1-0000-000VZ8 | MLCAWT-P1-0000-000VZ8 | MLCAWT-U1-0000-000VZ8 |
| AA                                              |        | J3                                   | 26.8      | MLCAWT-A1-0000-000XAA | MLCAWT-H1-0000-000XAA |                       |                       |
|                                                 |        | J2                                   | 23.5      | MLCAWT-A1-0000-000WAA | MLCAWT-H1-0000-000WAA | MLCAWT-P1-0000-000WAA | MLCAWT-U1-0000-000WAA |
|                                                 |        | H0                                   | 18.1      |                       | MLCAWT-H1-0000-000VAA | MLCAWT-P1-0000-000VAA | MLCAWT-U1-0000-000VAA |

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  - Cree XLamp 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.

**STANDARD ORDER CODES AND BINS (ML-E PARALLEL, COOL WHITE, T<sub>j</sub> = 25 °C)**

| XLamp ML-E Parallel, Standard Kit Codes - White |        |                                      |           |                       |                       |
|-------------------------------------------------|--------|--------------------------------------|-----------|-----------------------|-----------------------|
| Chromaticity                                    |        | Minimum Luminous Flux (lm) @ 150 mA* |           | Order Codes           |                       |
| Kit                                             | CCT    | Code                                 | Flux (lm) | Typical CRI (75)      | 80 CRI Minimum        |
| ANSI Cool White (4500 K – 8300 K)               |        |                                      |           |                       |                       |
| DT                                              | 7000 K | N3                                   | 56.8      | MLEAWT-A1-0000-0005DT |                       |
|                                                 |        | N2                                   | 51.7      | MLEAWT-A1-0000-0004DT |                       |
|                                                 |        | M3                                   | 45.7      | MLEAWT-A1-0000-0003DT |                       |
| E0                                              |        | N3                                   | 56.8      | MLEAWT-A1-0000-0005E0 |                       |
|                                                 |        | N2                                   | 51.7      | MLEAWT-A1-0000-0004E0 |                       |
|                                                 |        | M3                                   | 45.7      | MLEAWT-A1-0000-0003E0 |                       |
| 51                                              | 6500 K | N3                                   | 56.8      | MLEAWT-A1-0000-000551 |                       |
|                                                 |        | N2                                   | 51.7      | MLEAWT-A1-0000-000451 |                       |
|                                                 |        | M3                                   | 45.7      | MLEAWT-A1-0000-000351 |                       |
| E1                                              |        | N3                                   | 56.8      | MLEAWT-A1-0000-0005E1 |                       |
|                                                 |        | N2                                   | 51.7      | MLEAWT-A1-0000-0004E1 |                       |
|                                                 |        | M3                                   | 45.7      | MLEAWT-A1-0000-0003E1 |                       |
| 50                                              | 6200 K | N3                                   | 56.8      | MLEAWT-A1-0000-000550 |                       |
|                                                 |        | N2                                   | 51.7      | MLEAWT-A1-0000-000450 |                       |
|                                                 |        | M3                                   | 45.7      | MLEAWT-A1-0000-000350 |                       |
| DV                                              | 6000 K | N3                                   | 56.8      | MLEAWT-A1-0000-0005DV |                       |
|                                                 |        | N2                                   | 51.7      | MLEAWT-A1-0000-0004DV |                       |
|                                                 |        | M3                                   | 45.7      | MLEAWT-A1-0000-0003DV |                       |
| E2                                              | 5750 K | N3                                   | 56.8      | MLEAWT-A1-0000-0005E2 |                       |
|                                                 |        | N2                                   | 51.7      | MLEAWT-A1-0000-0004E2 |                       |
|                                                 |        | M3                                   | 45.7      | MLEAWT-A1-0000-0003E2 |                       |
| DY                                              | 5500 K | N3                                   | 56.8      | MLEAWT-A1-0000-0005DY |                       |
|                                                 |        | N2                                   | 51.7      | MLEAWT-A1-0000-0004DY |                       |
|                                                 |        | M3                                   | 45.7      | MLEAWT-A1-0000-0003DY |                       |
| DZ                                              | 5000 K | N3                                   | 56.8      | MLEAWT-A1-0000-0005DZ |                       |
|                                                 |        | N2                                   | 51.7      | MLEAWT-A1-0000-0004DZ |                       |
|                                                 |        | M3                                   | 45.7      | MLEAWT-A1-0000-0003DZ |                       |
| A1                                              |        | N2                                   | 51.7      | MLEAWT-A1-0000-0004A1 |                       |
|                                                 |        | M3                                   | 45.7      | MLEAWT-A1-0000-0003A1 |                       |
|                                                 |        | M2                                   | 39.8      | MLEAWT-A1-0000-0002A1 |                       |
| E3                                              |        | N3                                   | 56.8      | MLEAWT-A1-0000-0005E3 |                       |
|                                                 |        | N2                                   | 51.7      | MLEAWT-A1-0000-0004E3 | MLEAWT-H1-0000-0004E3 |
|                                                 |        | M3                                   | 45.7      | MLEAWT-A1-0000-0003E3 | MLEAWT-H1-0000-0003E3 |
|                                                 |        | M2                                   | 39.8      | MLEAWT-A1-0000-0002E3 | MLEAWT-H1-0000-0002E3 |

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| XLamp ML-E Parallel, Standard Kit Codes - White |        |                                      |           |                       |                |
|-------------------------------------------------|--------|--------------------------------------|-----------|-----------------------|----------------|
| Chromaticity                                    |        | Minimum Luminous Flux (lm) @ 150 mA* |           | Order Codes           |                |
| Kit                                             | CCT    | Code                                 | Flux (lm) | Typical CRI (75)      | 80 CRI Minimum |
| F4                                              | 4750 K | N2                                   | 51.7      | MLEAWT-A1-0000-0004F4 |                |
|                                                 |        | M3                                   | 45.7      | MLEAWT-A1-0000-0003F4 |                |
|                                                 |        | M2                                   | 39.8      | MLEAWT-A1-0000-0002F4 |                |
| A2                                              |        | N2                                   | 51.7      | MLEAWT-A1-0000-0004A2 |                |
|                                                 |        | M3                                   | 45.7      | MLEAWT-A1-0000-0003A2 |                |
|                                                 |        | M2                                   | 39.8      | MLEAWT-A1-0000-0002A2 |                |
| E4                                              | 4500 K | N2                                   | 51.7      | MLEAWT-A1-0000-0004E4 |                |
|                                                 |        | M3                                   | 45.7      | MLEAWT-A1-0000-0003E4 |                |
|                                                 |        | M2                                   | 39.8      | MLEAWT-A1-0000-0002E4 |                |

## STANDARD ORDER CODES AND BINS (ML-E PARALLEL, WARM WHITE, T<sub>j</sub> = 25 °C)

| XLamp ML-E Parallel, Standard Kit Codes - White |        |                                      |           |                       |                       |                       |                       |
|-------------------------------------------------|--------|--------------------------------------|-----------|-----------------------|-----------------------|-----------------------|-----------------------|
| Chromaticity                                    |        | Minimum Luminous Flux (lm) @ 150 mA* |           | Order Codes           |                       |                       |                       |
| Kit                                             | CCT    | Code                                 | Flux (lm) | Typical CRI (80)      | 80 CRI Minimum        | 85 CRI Minimum        | 90 CRI Minimum        |
| ANSI Warm White (2600 K – 4300 K)               |        |                                      |           |                       |                       |                       |                       |
| A3                                              | 4300 K | N2                                   | 51.7      | MLEAWT-A1-0000-0004A3 |                       |                       |                       |
|                                                 |        | M3                                   | 45.7      | MLEAWT-A1-0000-0003A3 |                       |                       |                       |
|                                                 |        | M2                                   | 39.8      | MLEAWT-A1-0000-0002A3 |                       |                       |                       |
| F5                                              | 4250 K | N2                                   | 51.7      | MLEAWT-A1-0000-0004F5 |                       |                       |                       |
|                                                 |        | M3                                   | 45.7      | MLEAWT-A1-0000-0003F5 |                       |                       |                       |
|                                                 |        | M2                                   | 39.8      | MLEAWT-A1-0000-0002F5 |                       |                       |                       |
| E5                                              | 4000 K | N2                                   | 51.7      | MLEAWT-A1-0000-0004E5 |                       |                       |                       |
|                                                 |        | M3                                   | 45.7      | MLEAWT-A1-0000-0003E5 | MLEAWT-H1-0000-0003E5 | MLEAWT-P1-0000-0003E5 |                       |
|                                                 |        | M2                                   | 39.8      | MLEAWT-A1-0000-0002E5 | MLEAWT-H1-0000-0002E5 | MLEAWT-P1-0000-0002E5 | MLEAWT-U1-0000-0002E5 |
|                                                 |        | K3                                   | 35.2      |                       | MLEAWT-H1-0000-0001E5 | MLEAWT-P1-0000-0001E5 | MLEAWT-U1-0000-0001E5 |
| Z5                                              |        | N2                                   | 51.7      | MLEAWT-A1-0000-0004Z5 |                       |                       |                       |
|                                                 |        | M3                                   | 45.7      | MLEAWT-A1-0000-0003Z5 | MLEAWT-H1-0000-0003Z5 | MLEAWT-P1-0000-0003Z5 |                       |
|                                                 |        | M2                                   | 39.8      | MLEAWT-A1-0000-0002Z5 | MLEAWT-H1-0000-0002Z5 | MLEAWT-P1-0000-0002Z5 | MLEAWT-U1-0000-0002Z5 |
|                                                 |        | K3                                   | 35.2      |                       | MLEAWT-H1-0000-0001Z5 | MLEAWT-P1-0000-0001Z5 | MLEAWT-U1-0000-0001Z5 |
| A4                                              |        | N2                                   | 51.7      | MLEAWT-A1-0000-0004A4 |                       |                       |                       |
|                                                 |        | M3                                   | 45.7      | MLEAWT-A1-0000-0003A4 |                       |                       |                       |
|                                                 |        | M2                                   | 39.8      | MLEAWT-A1-0000-0002A4 |                       |                       |                       |
| A5                                              | 3750 K | M3                                   | 45.7      | MLEAWT-A1-0000-0003A5 |                       |                       |                       |
|                                                 |        | M2                                   | 39.8      | MLEAWT-A1-0000-0002A5 | MLEAWT-H1-0000-0002A5 | MLEAWT-P1-0000-0002A5 | MLEAWT-U1-0000-0002A5 |
|                                                 |        | K3                                   | 35.2      |                       | MLEAWT-H1-0000-0001A5 | MLEAWT-P1-0000-0001A5 | MLEAWT-U1-0000-0001A5 |
| F6                                              |        | M3                                   | 45.7      | MLEAWT-A1-0000-0003F6 |                       |                       |                       |
|                                                 |        | M2                                   | 39.8      | MLEAWT-A1-0000-0002F6 | MLEAWT-H1-0000-0002F6 | MLEAWT-P1-0000-0002F6 | MLEAWT-U1-0000-0002F6 |
|                                                 |        | K3                                   | 35.2      |                       | MLEAWT-H1-0000-0001F6 | MLEAWT-P1-0000-0001F6 | MLEAWT-U1-0000-0001F6 |

- Notes:
- Cree maintains a tolerance of ±7% on flux and power measurements, ±0.005 on chromaticity (CCx, CCy) measurements and ±2 on CRI measurements.
  - Typical CRI for Cool White order codes is 75; Typical CRI for Warm White order codes is 80
  - Cree XLamp 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.

| XLamp ML-E Parallel, Standard Kit Codes - White |        |                                      |           |                       |                       |                       |                       |
|-------------------------------------------------|--------|--------------------------------------|-----------|-----------------------|-----------------------|-----------------------|-----------------------|
| Chromaticity                                    |        | Minimum Luminous Flux (lm) @ 150 mA* |           | Order Codes           |                       |                       |                       |
| Kit                                             | CCT    | Code                                 | Flux (lm) | Typical CRI (80)      | 80 CRI Minimum        | 85 CRI Minimum        | 90 CRI Minimum        |
| E6                                              | 3500 K | M3                                   | 45.7      | MLEAWT-A1-0000-0003E6 |                       |                       |                       |
|                                                 |        | M2                                   | 39.8      | MLEAWT-A1-0000-0002E6 | MLEAWT-H1-0000-0002E6 | MLEAWT-P1-0000-0002E6 | MLEAWT-U1-0000-0002E6 |
|                                                 |        | K3                                   | 35.2      |                       | MLEAWT-H1-0000-0001E6 | MLEAWT-P1-0000-0001E6 | MLEAWT-U1-0000-0001E6 |
| Z6                                              |        | M3                                   | 45.7      | MLEAWT-A1-0000-0003Z6 |                       |                       |                       |
|                                                 |        | M2                                   | 39.8      | MLEAWT-A1-0000-0002Z6 | MLEAWT-H1-0000-0002Z6 | MLEAWT-P1-0000-0002Z6 | MLEAWT-U1-0000-0002Z6 |
|                                                 |        | K3                                   | 35.2      |                       | MLEAWT-H1-0000-0001Z6 | MLEAWT-P1-0000-0001Z6 | MLEAWT-U1-0000-0001Z6 |
| A6                                              |        | M3                                   | 45.7      | MLEAWT-A1-0000-0003A6 |                       |                       |                       |
|                                                 |        | M2                                   | 39.8      | MLEAWT-A1-0000-0002A6 | MLEAWT-H1-0000-0002A6 | MLEAWT-P1-0000-0002A6 | MLEAWT-U1-0000-0002A6 |
|                                                 |        | K3                                   | 35.2      |                       | MLEAWT-H1-0000-0001A6 | MLEAWT-P1-0000-0001A6 | MLEAWT-U1-0000-0001A6 |
| A7                                              | 3250 K | M3                                   | 45.7      | MLEAWT-A1-0000-0003A7 |                       |                       |                       |
|                                                 |        | M2                                   | 39.8      | MLEAWT-A1-0000-0002A7 | MLEAWT-H1-0000-0002A7 | MLEAWT-P1-0000-0002A7 | MLEAWT-U1-0000-0002A7 |
|                                                 |        | K3                                   | 35.2      | MLEAWT-A1-0000-0001A7 | MLEAWT-H1-0000-0001A7 | MLEAWT-P1-0000-0001A7 | MLEAWT-U1-0000-0001A7 |
|                                                 |        | K2                                   | 30.6      |                       | MLEAWT-H1-0000-0000A7 | MLEAWT-P1-0000-0000A7 | MLEAWT-U1-0000-0000A7 |
| F7                                              |        | M3                                   | 45.7      | MLEAWT-A1-0000-0003F7 |                       |                       |                       |
|                                                 |        | M2                                   | 39.8      | MLEAWT-A1-0000-0002F7 | MLEAWT-H1-0000-0002F7 | MLEAWT-P1-0000-0002F7 | MLEAWT-U1-0000-0002F7 |
|                                                 |        | K3                                   | 35.2      | MLEAWT-A1-0000-0001F7 | MLEAWT-H1-0000-0001F7 | MLEAWT-P1-0000-0001F7 | MLEAWT-U1-0000-0001F7 |
|                                                 |        | K2                                   | 30.6      |                       | MLEAWT-H1-0000-0000F7 | MLEAWT-P1-0000-0000F7 | MLEAWT-U1-0000-0000F7 |
| E7                                              | 3000 K | M3                                   | 45.7      | MLEAWT-A1-0000-0003E7 |                       |                       |                       |
|                                                 |        | M2                                   | 39.8      | MLEAWT-A1-0000-0002E7 | MLEAWT-H1-0000-0002E7 | MLEAWT-P1-0000-0002E7 | MLEAWT-U1-0000-0002E7 |
|                                                 |        | K3                                   | 35.2      | MLEAWT-A1-0000-0001E7 | MLEAWT-H1-0000-0001E7 | MLEAWT-P1-0000-0001E7 | MLEAWT-U1-0000-0001E7 |
|                                                 |        | K2                                   | 30.6      |                       | MLEAWT-H1-0000-0000E7 | MLEAWT-P1-0000-0000E7 | MLEAWT-U1-0000-0000E7 |
| Z7                                              |        | M3                                   | 45.7      | MLEAWT-A1-0000-0003Z7 |                       |                       |                       |
|                                                 |        | M2                                   | 39.8      | MLEAWT-A1-0000-0002Z7 | MLEAWT-H1-0000-0002Z7 | MLEAWT-P1-0000-0002Z7 | MLEAWT-U1-0000-0002Z7 |
|                                                 |        | K3                                   | 35.2      | MLEAWT-A1-0000-0001Z7 | MLEAWT-H1-0000-0001Z7 | MLEAWT-P1-0000-0001Z7 | MLEAWT-U1-0000-0001Z7 |
|                                                 |        | K2                                   | 30.6      |                       | MLEAWT-H1-0000-0000Z7 | MLEAWT-P1-0000-0000Z7 | MLEAWT-U1-0000-0000Z7 |
| A8                                              |        | M3                                   | 45.7      | MLEAWT-A1-0000-0003A8 |                       |                       |                       |
|                                                 |        | M2                                   | 39.8      | MLEAWT-A1-0000-0002A8 | MLEAWT-H1-0000-0002A8 | MLEAWT-P1-0000-0002A8 | MLEAWT-U1-0000-0002A8 |
|                                                 |        | K3                                   | 35.2      | MLEAWT-A1-0000-0001A8 | MLEAWT-H1-0000-0001A8 | MLEAWT-P1-0000-0001A8 | MLEAWT-U1-0000-0001A8 |
|                                                 |        | K2                                   | 30.6      |                       | MLEAWT-H1-0000-0000A8 | MLEAWT-P1-0000-0000A8 | MLEAWT-U1-0000-0000A8 |
| A9                                              | 2850 K | M2                                   | 39.8      | MLEAWT-A1-0000-0002A9 |                       |                       |                       |
|                                                 |        | K3                                   | 35.2      | MLEAWT-A1-0000-0001A9 | MLEAWT-H1-0000-0001A9 | MLEAWT-P1-0000-0001A9 | MLEAWT-U1-0000-0001A9 |
|                                                 |        | K2                                   | 30.6      |                       | MLEAWT-H1-0000-0000A9 | MLEAWT-P1-0000-0000A9 | MLEAWT-U1-0000-0000A9 |
| F8                                              |        | M2                                   | 39.8      | MLEAWT-A1-0000-0002F8 |                       |                       |                       |
|                                                 |        | K3                                   | 35.2      | MLEAWT-A1-0000-0001F8 | MLEAWT-H1-0000-0001F8 | MLEAWT-P1-0000-0001F8 | MLEAWT-U1-0000-0001F8 |
|                                                 |        | K2                                   | 30.6      |                       | MLEAWT-H1-0000-0000F8 | MLEAWT-P1-0000-0000F8 | MLEAWT-U1-0000-0000F8 |

- Notes:
- Cree maintains a tolerance of  $\pm 7\%$  on flux and power measurements,  $\pm 0.005$  on chromaticity (CCx, CCy) measurements and  $\pm 2$  on CRI measurements.
  - Typical CRI for Cool White order codes is 75; Typical CRI for Warm White order codes is 80
  - Cree XLamp 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.

| XLamp ML-E Parallel, Standard Kit Codes - White |        |                                      |           |                       |                       |                       |                       |
|-------------------------------------------------|--------|--------------------------------------|-----------|-----------------------|-----------------------|-----------------------|-----------------------|
| Chromaticity                                    |        | Minimum Luminous Flux (lm) @ 150 mA* |           | Order Codes           |                       |                       |                       |
| Kit                                             | CCT    | Code                                 | Flux (lm) | Typical CRI (80)      | 80 CRI Minimum        | 85 CRI Minimum        | 90 CRI Minimum        |
| E8                                              | 2700 K | M2                                   | 39.8      | MLEAWT-A1-0000-0002E8 |                       |                       |                       |
|                                                 |        | K3                                   | 35.2      | MLEAWT-A1-0000-0001E8 | MLEAWT-H1-0000-0001E8 | MLEAWT-P1-0000-0001E8 | MLEAWT-U1-0000-0001E8 |
|                                                 |        | K2                                   | 30.6      |                       | MLEAWT-H1-0000-0000E8 | MLEAWT-P1-0000-0000E8 | MLEAWT-U1-0000-0000E8 |
| Z8                                              |        | M2                                   | 39.8      | MLEAWT-A1-0000-0002Z8 |                       |                       |                       |
|                                                 |        | K3                                   | 35.2      | MLEAWT-A1-0000-0001Z8 | MLEAWT-H1-0000-0001Z8 | MLEAWT-P1-0000-0001Z8 | MLEAWT-U1-0000-0001Z8 |
|                                                 |        | K2                                   | 30.6      |                       | MLEAWT-H1-0000-0000Z8 | MLEAWT-P1-0000-0000Z8 | MLEAWT-U1-0000-0000Z8 |
| AA                                              |        | M2                                   | 39.8      | MLEAWT-A1-0000-0002AA |                       |                       |                       |
|                                                 |        | K3                                   | 35.2      | MLEAWT-A1-0000-0001AA | MLEAWT-H1-0000-0001AA | MLEAWT-P1-0000-0001AA | MLEAWT-U1-0000-0001AA |
|                                                 |        | K2                                   | 30.6      |                       | MLEAWT-H1-0000-0000AA | MLEAWT-P1-0000-0000AA | MLEAWT-U1-0000-0000AA |

## STANDARD ORDER CODES AND BINS (ML-C SERIES, COOL WHITE, T<sub>j</sub> = 25 °C)

| XLamp ML-C Series, Standard Kit Codes - White |        |                                     |           |                       |                       |
|-----------------------------------------------|--------|-------------------------------------|-----------|-----------------------|-----------------------|
| Chromaticity                                  |        | Minimum Luminous Flux (lm) @ 50 mA* |           | Order Codes           |                       |
| Kit                                           | CCT    | Code                                | Flux (lm) | Typical CRI (75)      | 80 CRI Minimum        |
| ANSI Cool White (4500 K – 8300 K)             |        |                                     |           |                       |                       |
| DT                                            | 7000 K | K3                                  | 35.2      | MLCSWT-A1-0000-0001DT |                       |
|                                               |        | K2                                  | 30.6      | MLCSWT-A1-0000-0000DT |                       |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XDT |                       |
| E0                                            |        | K3                                  | 35.2      | MLCSWT-A1-0000-0001E0 |                       |
|                                               |        | K2                                  | 30.6      | MLCSWT-A1-0000-0000E0 |                       |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XE0 |                       |
| 51                                            | 6500 K | K3                                  | 35.2      | MLCSWT-A1-0000-000151 |                       |
|                                               |        | K2                                  | 30.6      | MLCSWT-A1-0000-000051 |                       |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000X51 |                       |
| E1                                            |        | K3                                  | 35.2      | MLCSWT-A1-0000-0001E1 |                       |
|                                               |        | K2                                  | 30.6      | MLCSWT-A1-0000-0000E1 |                       |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XE1 | MLCSWT-H1-0000-000XE1 |

- Notes:
- Cree maintains a tolerance of ±7% on flux and power measurements, ±0.005 on chromaticity (CCx, CCy) measurements and ±2 on CRI measurements.
  - Typical CRI for Cool White order codes is 75; Typical CRI for Warm White order codes is 80
  - Cree XLamp 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.

| XLamp ML-C Series, Standard Kit Codes - White |        |                                     |           |                       |                       |
|-----------------------------------------------|--------|-------------------------------------|-----------|-----------------------|-----------------------|
| Chromaticity                                  |        | Minimum Luminous Flux (lm) @ 50 mA* |           | Order Codes           |                       |
| Kit                                           | CCT    | Code                                | Flux (lm) | Typical CRI (75)      | 80 CRI Minimum        |
| 50                                            | 6200 K | K3                                  | 35.2      | MLCSWT-A1-0000-000150 |                       |
|                                               |        | K2                                  | 30.6      | MLCSWT-A1-0000-000050 |                       |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000X50 |                       |
| DV                                            | 6000 K | K3                                  | 35.2      | MLCSWT-A1-0000-0001DV |                       |
|                                               |        | K2                                  | 30.6      | MLCSWT-A1-0000-0000DV |                       |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XDV |                       |
| E2                                            | 5750 K | K3                                  | 35.2      | MLCSWT-A1-0000-0001E2 |                       |
|                                               |        | K2                                  | 30.6      | MLCSWT-A1-0000-0000E2 |                       |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XE2 |                       |
| DY                                            | 5500 K | K3                                  | 35.2      | MLCSWT-A1-0000-0001DY |                       |
|                                               |        | K2                                  | 30.6      | MLCSWT-A1-0000-0000DY |                       |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XDY |                       |
| DZ                                            | 5000 K | K3                                  | 35.2      | MLCSWT-A1-0000-0001DZ |                       |
|                                               |        | K2                                  | 30.6      | MLCSWT-A1-0000-0000DZ |                       |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XDZ |                       |
| A1                                            |        | K3                                  | 35.2      | MLCSWT-A1-0000-0001A1 |                       |
|                                               |        | K2                                  | 30.6      | MLCSWT-A1-0000-0000A1 |                       |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XA1 |                       |
| E3                                            |        | K3                                  | 35.2      | MLCSWT-A1-0000-0001E3 |                       |
|                                               |        | K2                                  | 30.6      | MLCSWT-A1-0000-0000E3 | MLCSWT-H1-0000-0000E3 |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XE3 | MLCSWT-H1-0000-000XE3 |
| F4                                            | 4750 K | K3                                  | 35.2      | MLCSWT-A1-0000-0001F4 |                       |
|                                               |        | K2                                  | 30.6      | MLCSWT-A1-0000-0000F4 |                       |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XF4 |                       |
| A2                                            |        | K3                                  | 35.2      | MLCSWT-A1-0000-0001A2 |                       |
|                                               |        | K2                                  | 30.6      | MLCSWT-A1-0000-0000A2 |                       |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XA2 |                       |
| E4                                            | 4500 K | K3                                  | 35.2      | MLCSWT-A1-0000-0001E4 |                       |
|                                               |        | K2                                  | 30.6      | MLCSWT-A1-0000-0000E4 |                       |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XE4 |                       |

**Notes:**

- Cree maintains a tolerance of  $\pm 7\%$  on flux and power measurements,  $\pm 0.005$  on chromaticity (CCx, CCy) measurements and  $\pm 2$  on CRI measurements.
- Typical CRI for Cool White order codes is 75; Typical CRI for Warm White order codes is 80
- Cree XLamp 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.

## STANDARD ORDER CODES AND BINS (ML-C SERIES, WARM WHITE, $T_j = 25\text{ }^{\circ}\text{C}$ )

| XLamp ML-C Series, Standard Kit Codes - White |        |                                     |           |                       |                       |                       |                       |  |
|-----------------------------------------------|--------|-------------------------------------|-----------|-----------------------|-----------------------|-----------------------|-----------------------|--|
| Chromaticity                                  |        | Minimum Luminous Flux (lm) @ 50 mA* |           | Order Codes           |                       |                       |                       |  |
| Kit                                           | CCT    | Code                                | Flux (lm) | Typical CRI (80)      | 80 CRI Minimum        | 85 CRI Minimum        | 90 CRI Minimum        |  |
| ANSI Warm White (2600 K – 4300 K)             |        |                                     |           |                       |                       |                       |                       |  |
| A3                                            | 4300 K | K2                                  | 30.6      | MLCSWT-A1-0000-0000A3 |                       |                       |                       |  |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XA3 |                       |                       |                       |  |
| F5                                            | 4250 K | K2                                  | 30.6      | MLCSWT-A1-0000-0000F5 |                       |                       |                       |  |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XF5 |                       |                       |                       |  |
| E5                                            | 4000 K | K2                                  | 30.6      | MLCSWT-A1-0000-0000E5 | MLCSWT-H1-0000-0000E5 |                       |                       |  |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XE5 | MLCSWT-H1-0000-000XE5 | MLCSWT-P1-0000-000XE5 |                       |  |
|                                               |        | J2                                  | 23.5      |                       | MLCSWT-H1-0000-000WE5 | MLCSWT-P1-0000-000WE5 | MLCSWT-U1-0000-000WE5 |  |
|                                               |        | H0                                  | 18.1      |                       |                       |                       | MLCSWT-U1-0000-000VE5 |  |
| Z5                                            |        | K2                                  | 30.6      | MLCSWT-A1-0000-0000Z5 | MLCSWT-H1-0000-0000Z5 |                       |                       |  |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XZ5 | MLCSWT-H1-0000-000XZ5 | MLCSWT-P1-0000-000XZ5 |                       |  |
|                                               |        | J2                                  | 23.5      |                       | MLCSWT-H1-0000-000WZ5 | MLCSWT-P1-0000-000WZ5 | MLCSWT-U1-0000-000WZ5 |  |
|                                               |        | H0                                  | 18.1      |                       |                       |                       | MLCSWT-U1-0000-000VZ5 |  |
| A4                                            |        | K2                                  | 30.6      | MLCSWT-A1-0000-0000A4 |                       |                       |                       |  |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XA4 |                       |                       |                       |  |
| A5                                            |        | 3750 K                              | K2        | 30.6                  | MLCSWT-A1-0000-0000A5 | MLCSWT-H1-0000-0000A5 |                       |  |
|                                               |        |                                     | J3        | 26.8                  | MLCSWT-A1-0000-000XA5 | MLCSWT-H1-0000-000XA5 | MLCSWT-P1-0000-000XA5 |  |
|                                               | J2     |                                     | 23.5      |                       | MLCSWT-H1-0000-000WA5 | MLCSWT-P1-0000-000WA5 | MLCSWT-U1-0000-000WA5 |  |
|                                               | H0     |                                     | 18.1      |                       |                       | MLCSWT-P1-0000-000VA5 | MLCSWT-U1-0000-000VA5 |  |
| F6                                            | K2     |                                     | 30.6      | MLCSWT-A1-0000-0000F6 | MLCSWT-H1-0000-0000F6 |                       |                       |  |
|                                               | J3     |                                     | 26.8      | MLCSWT-A1-0000-000XF6 | MLCSWT-H1-0000-000XF6 | MLCSWT-P1-0000-000XF6 |                       |  |
|                                               | J2     |                                     | 23.5      |                       | MLCSWT-H1-0000-000WF6 | MLCSWT-P1-0000-000WF6 | MLCSWT-U1-0000-000WF6 |  |
|                                               | H0     |                                     | 18.1      |                       |                       | MLCSWT-P1-0000-000VF6 | MLCSWT-U1-0000-000VF6 |  |
| E6                                            | 3500 K | K2                                  | 30.6      | MLCSWT-A1-0000-0000E6 | MLCSWT-H1-0000-0000E6 |                       |                       |  |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XE6 | MLCSWT-H1-0000-000XE6 | MLCSWT-P1-0000-000XE6 |                       |  |
|                                               |        | J2                                  | 23.5      |                       | MLCSWT-H1-0000-000WE6 | MLCSWT-P1-0000-000WE6 | MLCSWT-U1-0000-000WE6 |  |
|                                               |        | H0                                  | 18.1      |                       |                       | MLCSWT-P1-0000-000VE6 | MLCSWT-U1-0000-000VE6 |  |
| Z6                                            |        | K2                                  | 30.6      | MLCSWT-A1-0000-0000Z6 | MLCSWT-H1-0000-0000Z6 |                       |                       |  |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XZ6 | MLCSWT-H1-0000-000XZ6 | MLCSWT-P1-0000-000XZ6 |                       |  |
|                                               |        | J2                                  | 23.5      |                       | MLCSWT-H1-0000-000WZ6 | MLCSWT-P1-0000-000WZ6 | MLCSWT-U1-0000-000WZ6 |  |
|                                               |        | H0                                  | 18.1      |                       |                       | MLCSWT-P1-0000-000VZ6 | MLCSWT-U1-0000-000VZ6 |  |
| A6                                            |        | K2                                  | 30.6      | MLCSWT-A1-0000-0000A6 | MLCSWT-H1-0000-0000A6 |                       |                       |  |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XA6 | MLCSWT-H1-0000-000XA6 | MLCSWT-P1-0000-000XA6 |                       |  |
|                                               |        | J2                                  | 23.5      |                       | MLCSWT-H1-0000-000WA6 | MLCSWT-P1-0000-000WA6 | MLCSWT-U1-0000-000WA6 |  |
|                                               |        | H0                                  | 18.1      |                       |                       | MLCSWT-P1-0000-000VA6 | MLCSWT-U1-0000-000VA6 |  |

- Notes:
- Cree maintains a tolerance of  $\pm 7\%$  on flux and power measurements,  $\pm 0.005$  on chromaticity (CCx, CCy) measurements and  $\pm 2$  on CRI measurements.
  - Typical CRI for Cool White order codes is 75; Typical CRI for Warm White order codes is 80
  - Cree XLamp 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.



| XLamp ML-C Series, Standard Kit Codes - White |        |                                     |           |                       |                       |                       |                       |
|-----------------------------------------------|--------|-------------------------------------|-----------|-----------------------|-----------------------|-----------------------|-----------------------|
| Chromaticity                                  |        | Minimum Luminous Flux (lm) @ 50 mA* |           | Order Codes           |                       |                       |                       |
| Kit                                           | CCT    | Code                                | Flux (lm) | Typical CRI (80)      | 80 CRI Minimum        | 85 CRI Minimum        | 90 CRI Minimum        |
| A7                                            | 3250 K | K2                                  | 30.6      | MLCSWT-A1-0000-0000A7 | MLCSWT-H1-0000-0000A7 |                       |                       |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XA7 | MLCSWT-H1-0000-000XA7 |                       |                       |
|                                               |        | J2                                  | 23.5      | MLCSWT-A1-0000-000WA7 | MLCSWT-H1-0000-000WA7 | MLCSWT-P1-0000-000WA7 | MLCSWT-U1-0000-000WA7 |
|                                               |        | H0                                  | 18.1      |                       | MLCSWT-H1-0000-000VA7 | MLCSWT-P1-0000-000VA7 | MLCSWT-U1-0000-000VA7 |
| F7                                            |        | K2                                  | 30.6      | MLCSWT-A1-0000-0000F7 | MLCSWT-H1-0000-0000F7 |                       |                       |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XF7 | MLCSWT-H1-0000-000XF7 |                       |                       |
|                                               |        | J2                                  | 23.5      | MLCSWT-A1-0000-000WF7 | MLCSWT-H1-0000-000WF7 | MLCSWT-P1-0000-000WF7 | MLCSWT-U1-0000-000WF7 |
|                                               |        | H0                                  | 18.1      |                       | MLCSWT-H1-0000-000VF7 | MLCSWT-P1-0000-000VF7 | MLCSWT-U1-0000-000VF7 |
| E7                                            | 3000 K | K2                                  | 30.6      | MLCSWT-A1-0000-0000E7 | MLCSWT-H1-0000-0000E7 |                       |                       |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XE7 | MLCSWT-H1-0000-000XE7 |                       |                       |
|                                               |        | J2                                  | 23.5      | MLCSWT-A1-0000-000WE7 | MLCSWT-H1-0000-000WE7 | MLCSWT-P1-0000-000WE7 | MLCSWT-U1-0000-000WE7 |
|                                               |        | H0                                  | 18.1      |                       | MLCSWT-H1-0000-000VE7 | MLCSWT-P1-0000-000VE7 | MLCSWT-U1-0000-000VE7 |
| Z7                                            |        | K2                                  | 30.6      | MLCSWT-A1-0000-0000Z7 | MLCSWT-H1-0000-0000Z7 |                       |                       |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XZ7 | MLCSWT-H1-0000-000XZ7 |                       |                       |
|                                               |        | J2                                  | 23.5      | MLCSWT-A1-0000-000WZ7 | MLCSWT-H1-0000-000WZ7 | MLCSWT-P1-0000-000WZ7 | MLCSWT-U1-0000-000WZ7 |
|                                               |        | H0                                  | 18.1      |                       | MLCSWT-H1-0000-000VZ7 | MLCSWT-P1-0000-000VZ7 | MLCSWT-U1-0000-000VZ7 |
| A8                                            |        | K2                                  | 30.6      | MLCSWT-A1-0000-0000A8 | MLCSWT-H1-0000-0000A8 |                       |                       |
|                                               |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XA8 | MLCSWT-H1-0000-000XA8 |                       |                       |
|                                               |        | J2                                  | 23.5      | MLCSWT-A1-0000-000WA8 | MLCSWT-H1-0000-000WA8 | MLCSWT-P1-0000-000WA8 | MLCSWT-U1-0000-000WA8 |
|                                               |        | H0                                  | 18.1      |                       | MLCSWT-H1-0000-000VA8 | MLCSWT-P1-0000-000VA8 | MLCSWT-U1-0000-000VA8 |
| A9                                            | 2850 K | J3                                  | 26.8      | MLCSWT-A1-0000-000XA9 | MLCSWT-H1-0000-000XA9 |                       |                       |
|                                               |        | J2                                  | 23.5      | MLCSWT-A1-0000-000WA9 | MLCSWT-H1-0000-000WA9 | MLCSWT-P1-0000-000WA9 | MLCSWT-U1-0000-000WA9 |
|                                               |        | H0                                  | 18.1      |                       | MLCSWT-H1-0000-000VA9 | MLCSWT-P1-0000-000VA9 | MLCSWT-U1-0000-000VA9 |
| F8                                            |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XF8 | MLCSWT-H1-0000-000XF8 |                       |                       |
|                                               |        | J2                                  | 23.5      | MLCSWT-A1-0000-000WF8 | MLCSWT-H1-0000-000WF8 | MLCSWT-P1-0000-000WF8 | MLCSWT-U1-0000-000WF8 |
|                                               |        | H0                                  | 18.1      |                       | MLCSWT-H1-0000-000VF8 | MLCSWT-P1-0000-000VF8 | MLCSWT-U1-0000-000VF8 |
| E8                                            | 2700 K | J3                                  | 26.8      | MLCSWT-A1-0000-000XE8 | MLCSWT-H1-0000-000XE8 |                       |                       |
|                                               |        | J2                                  | 23.5      | MLCSWT-A1-0000-000WE8 | MLCSWT-H1-0000-000WE8 | MLCSWT-P1-0000-000WE8 | MLCSWT-U1-0000-000WE8 |
|                                               |        | H0                                  | 18.1      |                       | MLCSWT-H1-0000-000VE8 | MLCSWT-P1-0000-000VE8 | MLCSWT-U1-0000-000VE8 |
| Z8                                            |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XZ8 | MLCSWT-H1-0000-000XZ8 |                       |                       |
|                                               |        | J2                                  | 23.5      | MLCSWT-A1-0000-000WZ8 | MLCSWT-H1-0000-000WZ8 | MLCSWT-P1-0000-000WZ8 | MLCSWT-U1-0000-000WZ8 |
|                                               |        | H0                                  | 18.1      |                       | MLCSWT-H1-0000-000VZ8 | MLCSWT-P1-0000-000VZ8 | MLCSWT-U1-0000-000VZ8 |
| AA                                            |        | J3                                  | 26.8      | MLCSWT-A1-0000-000XAA | MLCSWT-H1-0000-000XAA |                       |                       |
|                                               |        | J2                                  | 23.5      | MLCSWT-A1-0000-000WAA | MLCSWT-H1-0000-000WAA | MLCSWT-P1-0000-000WAA | MLCSWT-U1-0000-000WAA |
|                                               |        | H0                                  | 18.1      |                       | MLCSWT-H1-0000-000VAA | MLCSWT-P1-0000-000VAA | MLCSWT-U1-0000-000VAA |

**Notes:**

- Cree maintains a tolerance of  $\pm 7\%$  on flux and power measurements,  $\pm 0.005$  on chromaticity (CCx, CCy) measurements and  $\pm 2$  on CRI measurements.
- Typical CRI for Cool White order codes is 75; Typical CRI for Warm White order codes is 80
- Cree XLamp 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.

**STANDARD ORDER CODES AND BINS (ML-E SERIES, COOL WHITE,  $T_j = 25\text{ }^{\circ}\text{C}$ )**

| XLamp ML-E Series, Standard Kit Codes - White |        |                                     |           |                       |                       |
|-----------------------------------------------|--------|-------------------------------------|-----------|-----------------------|-----------------------|
| Chromaticity                                  |        | Minimum Luminous Flux (lm) @ 50 mA* |           | Order Codes           |                       |
| Kit                                           | CCT    | Code                                | Flux (lm) | Typical CRI (75)      | 80 CRI Minimum        |
| ANSI Cool White (4500 K – 8300 K)             |        |                                     |           |                       |                       |
| DT                                            | 7000 K | N3                                  | 56.8      | MLESWT-A1-0000-0005DT |                       |
|                                               |        | N2                                  | 51.7      | MLESWT-A1-0000-0004DT |                       |
|                                               |        | M3                                  | 45.7      | MLESWT-A1-0000-0003DT |                       |
| E0                                            |        | N3                                  | 56.8      | MLESWT-A1-0000-0005E0 |                       |
|                                               |        | N2                                  | 51.7      | MLESWT-A1-0000-0004E0 |                       |
|                                               |        | M3                                  | 45.7      | MLESWT-A1-0000-0003E0 |                       |
| 51                                            | 6500 K | N3                                  | 56.8      | MLESWT-A1-0000-000551 |                       |
|                                               |        | N2                                  | 51.7      | MLESWT-A1-0000-000451 |                       |
|                                               |        | M3                                  | 45.7      | MLESWT-A1-0000-000351 |                       |
| E1                                            |        | N3                                  | 56.8      | MLESWT-A1-0000-0005E1 |                       |
|                                               |        | N2                                  | 51.7      | MLESWT-A1-0000-0004E1 |                       |
|                                               |        | M3                                  | 45.7      | MLESWT-A1-0000-0003E1 |                       |
| 50                                            | 6200 K | N3                                  | 56.8      | MLESWT-A1-0000-000550 |                       |
|                                               |        | N2                                  | 51.7      | MLESWT-A1-0000-000450 |                       |
|                                               |        | M3                                  | 45.7      | MLESWT-A1-0000-000350 |                       |
| DV                                            | 6000 K | N3                                  | 56.8      | MLESWT-A1-0000-0005DV |                       |
|                                               |        | N2                                  | 51.7      | MLESWT-A1-0000-0004DV |                       |
|                                               |        | M3                                  | 45.7      | MLESWT-A1-0000-0003DV |                       |
| E2                                            | 5750 K | N3                                  | 56.8      | MLESWT-A1-0000-0005E2 |                       |
|                                               |        | N2                                  | 51.7      | MLESWT-A1-0000-0004E2 |                       |
|                                               |        | M3                                  | 45.7      | MLESWT-A1-0000-0003E2 |                       |
| DY                                            | 5500 K | N3                                  | 56.8      | MLESWT-A1-0000-0005DY |                       |
|                                               |        | N2                                  | 51.7      | MLESWT-A1-0000-0004DY |                       |
|                                               |        | M3                                  | 45.7      | MLESWT-A1-0000-0003DY |                       |
| DZ                                            | 5000 K | N3                                  | 56.8      | MLESWT-A1-0000-0005DZ |                       |
|                                               |        | N2                                  | 51.7      | MLESWT-A1-0000-0004DZ |                       |
|                                               |        | M3                                  | 45.7      | MLESWT-A1-0000-0003DZ |                       |
| A1                                            |        | N2                                  | 51.7      | MLESWT-A1-0000-0004A1 |                       |
|                                               |        | M3                                  | 45.7      | MLESWT-A1-0000-0003A1 |                       |
|                                               |        | M2                                  | 39.8      | MLESWT-A1-0000-0002A1 |                       |
| E3                                            |        | N3                                  | 56.8      | MLESWT-A1-0000-0005E3 |                       |
|                                               |        | N2                                  | 51.7      | MLESWT-A1-0000-0004E3 | MLESWT-H1-0000-0004E3 |
|                                               |        | M3                                  | 45.7      | MLESWT-A1-0000-0003E3 | MLESWT-H1-0000-0003E3 |
|                                               |        | M2                                  | 39.8      | MLESWT-A1-0000-0002E3 | MLESWT-H1-0000-0002E3 |

**Notes:**

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- Cree XLamp 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.

| XLamp ML-E Series, Standard Kit Codes - White |        |                                     |           |                       |                |
|-----------------------------------------------|--------|-------------------------------------|-----------|-----------------------|----------------|
| Chromaticity                                  |        | Minimum Luminous Flux (lm) @ 50 mA* |           | Order Codes           |                |
| Kit                                           | CCT    | Code                                | Flux (lm) | Typical CRI (75)      | 80 CRI Minimum |
| F4                                            | 4750 K | N2                                  | 51.7      | MLESWT-A1-0000-0004F4 |                |
|                                               |        | M3                                  | 45.7      | MLESWT-A1-0000-0003F4 |                |
|                                               |        | M2                                  | 39.8      | MLESWT-A1-0000-0002F4 |                |
| A2                                            | 4750 K | N2                                  | 51.7      | MLESWT-A1-0000-0004A2 |                |
|                                               |        | M3                                  | 45.7      | MLESWT-A1-0000-0003A2 |                |
|                                               |        | M2                                  | 39.8      | MLESWT-A1-0000-0002A2 |                |
| E4                                            | 4500 K | N2                                  | 51.7      | MLESWT-A1-0000-0004E4 |                |
|                                               |        | M3                                  | 45.7      | MLESWT-A1-0000-0003E4 |                |
|                                               |        | M2                                  | 39.8      | MLESWT-A1-0000-0002E4 |                |

## STANDARD ORDER CODES AND BINS (ML-E SERIES, WARM WHITE, T<sub>j</sub> = 25 °C)

| XLamp ML-E Series, Standard Kit Codes - White |        |                                     |           |                       |                       |                       |                       |
|-----------------------------------------------|--------|-------------------------------------|-----------|-----------------------|-----------------------|-----------------------|-----------------------|
| Chromaticity                                  |        | Minimum Luminous Flux (lm) @ 50 mA* |           | Order Codes           |                       |                       |                       |
| Kit                                           | CCT    | Code                                | Flux (lm) | Typical CRI (80)      | 80 CRI Minimum        | 85 CRI Minimum        | 90 CRI Minimum        |
| ANSI Warm White (2600 K – 4300 K)             |        |                                     |           |                       |                       |                       |                       |
| A3                                            | 4300 K | N2                                  | 51.7      | MLESWT-A1-0000-0004A3 |                       |                       |                       |
|                                               |        | M3                                  | 45.7      | MLESWT-A1-0000-0003A3 |                       |                       |                       |
|                                               |        | M2                                  | 39.8      | MLESWT-A1-0000-0002A3 |                       |                       |                       |
| F5                                            | 4250 K | N2                                  | 51.7      | MLESWT-A1-0000-0004F5 |                       |                       |                       |
|                                               |        | M3                                  | 45.7      | MLESWT-A1-0000-0003F5 |                       |                       |                       |
|                                               |        | M2                                  | 39.8      | MLESWT-A1-0000-0002F5 |                       |                       |                       |
| E5                                            | 4000 K | N2                                  | 51.7      | MLESWT-A1-0000-0004E5 |                       |                       |                       |
|                                               |        | M3                                  | 45.7      | MLESWT-A1-0000-0003E5 | MLESWT-H1-0000-0003E5 | MLESWT-P1-0000-0003E5 |                       |
|                                               |        | M2                                  | 39.8      | MLESWT-A1-0000-0002E5 | MLESWT-H1-0000-0002E5 | MLESWT-P1-0000-0002E5 | MLESWT-U1-0000-0002E5 |
|                                               |        | K3                                  | 35.2      |                       | MLESWT-H1-0000-0001E5 | MLESWT-P1-0000-0001E5 | MLESWT-U1-0000-0001E5 |
| Z5                                            |        | N2                                  | 51.7      | MLESWT-A1-0000-0004Z5 |                       |                       |                       |
|                                               |        | M3                                  | 45.7      | MLESWT-A1-0000-0003Z5 | MLESWT-H1-0000-0003Z5 | MLESWT-P1-0000-0003Z5 |                       |
|                                               |        | M2                                  | 39.8      | MLESWT-A1-0000-0002Z5 | MLESWT-H1-0000-0002Z5 | MLESWT-P1-0000-0002Z5 | MLESWT-U1-0000-0002Z5 |
|                                               |        | K3                                  | 35.2      |                       | MLESWT-H1-0000-0001Z5 | MLESWT-P1-0000-0001Z5 | MLESWT-U1-0000-0001Z5 |
| A4                                            |        | N2                                  | 51.7      | MLESWT-A1-0000-0004A4 |                       |                       |                       |
|                                               |        | M3                                  | 45.7      | MLESWT-A1-0000-0003A4 |                       |                       |                       |
|                                               |        | M2                                  | 39.8      | MLESWT-A1-0000-0002A4 |                       |                       |                       |

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- Cree maintains a tolerance of  $\pm 7\%$  on flux and power measurements,  $\pm 0.005$  on chromaticity (CCx, CCy) measurements and  $\pm 2$  on CRI measurements.
  - Typical CRI for Cool White order codes is 75; Typical CRI for Warm White order codes is 80
  - Cree XLamp 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.

| XLamp ML-E Series, Standard Kit Codes - White |        |                                     |           |                       |                       |                       |                       |
|-----------------------------------------------|--------|-------------------------------------|-----------|-----------------------|-----------------------|-----------------------|-----------------------|
| Chromaticity                                  |        | Minimum Luminous Flux (lm) @ 50 mA* |           | Order Codes           |                       |                       |                       |
| Kit                                           | CCT    | Code                                | Flux (lm) | Typical CRI (80)      | 80 CRI Minimum        | 85 CRI Minimum        | 90 CRI Minimum        |
| A5                                            | 3750 K | M3                                  | 45.7      | MLESWT-A1-0000-0003A5 |                       |                       |                       |
|                                               |        | M2                                  | 39.8      | MLESWT-A1-0000-0002A5 | MLESWT-H1-0000-0002A5 | MLESWT-P1-0000-0002A5 | MLESWT-U1-0000-0002A5 |
|                                               |        | K3                                  | 35.2      |                       | MLESWT-H1-0000-0001A5 | MLESWT-P1-0000-0001A5 | MLESWT-U1-0000-0001A5 |
| F6                                            |        | M3                                  | 45.7      | MLESWT-A1-0000-0003F6 |                       |                       |                       |
|                                               |        | M2                                  | 39.8      | MLESWT-A1-0000-0002F6 | MLESWT-H1-0000-0002F6 | MLESWT-P1-0000-0002F6 | MLESWT-U1-0000-0002F6 |
|                                               |        | K3                                  | 35.2      |                       | MLESWT-H1-0000-0001F6 | MLESWT-P1-0000-0001F6 | MLESWT-U1-0000-0001F6 |
| E6                                            | 3500 K | M3                                  | 45.7      | MLESWT-A1-0000-0003E6 |                       |                       |                       |
|                                               |        | M2                                  | 39.8      | MLESWT-A1-0000-0002E6 | MLESWT-H1-0000-0002E6 | MLESWT-P1-0000-0002E6 | MLESWT-U1-0000-0002E6 |
|                                               |        | K3                                  | 35.2      |                       | MLESWT-H1-0000-0001E6 | MLESWT-P1-0000-0001E6 | MLESWT-U1-0000-0001E6 |
| Z6                                            |        | M3                                  | 45.7      | MLESWT-A1-0000-0003Z6 |                       |                       |                       |
|                                               |        | M2                                  | 39.8      | MLESWT-A1-0000-0002Z6 | MLESWT-H1-0000-0002Z6 | MLESWT-P1-0000-0002Z6 | MLESWT-U1-0000-0002Z6 |
|                                               |        | K3                                  | 35.2      |                       | MLESWT-H1-0000-0001Z6 | MLESWT-P1-0000-0001Z6 | MLESWT-U1-0000-0001Z6 |
| A6                                            |        | M3                                  | 45.7      | MLESWT-A1-0000-0003A6 |                       |                       |                       |
|                                               |        | M2                                  | 39.8      | MLESWT-A1-0000-0002A6 | MLESWT-H1-0000-0002A6 | MLESWT-P1-0000-0002A6 | MLESWT-U1-0000-0002A6 |
|                                               |        | K3                                  | 35.2      |                       | MLESWT-H1-0000-0001A6 | MLESWT-P1-0000-0001A6 | MLESWT-U1-0000-0001A6 |
| A7                                            | 3250 K | M3                                  | 45.7      | MLESWT-A1-0000-0003A7 |                       |                       |                       |
|                                               |        | M2                                  | 39.8      | MLESWT-A1-0000-0002A7 | MLESWT-H1-0000-0002A7 | MLESWT-P1-0000-0002A7 | MLESWT-U1-0000-0002A7 |
|                                               |        | K3                                  | 35.2      | MLESWT-A1-0000-0001A7 | MLESWT-H1-0000-0001A7 | MLESWT-P1-0000-0001A7 | MLESWT-U1-0000-0001A7 |
|                                               |        | K2                                  | 30.6      |                       | MLESWT-H1-0000-0000A7 | MLESWT-P1-0000-0000A7 | MLESWT-U1-0000-0000A7 |
| F7                                            |        | M3                                  | 45.7      | MLESWT-A1-0000-0003F7 |                       |                       |                       |
|                                               |        | M2                                  | 39.8      | MLESWT-A1-0000-0002F7 | MLESWT-H1-0000-0002F7 | MLESWT-P1-0000-0002F7 | MLESWT-U1-0000-0002F7 |
|                                               |        | K3                                  | 35.2      | MLESWT-A1-0000-0001F7 | MLESWT-H1-0000-0001F7 | MLESWT-P1-0000-0001F7 | MLESWT-U1-0000-0001F7 |
|                                               |        | K2                                  | 30.6      |                       | MLESWT-H1-0000-0000F7 | MLESWT-P1-0000-0000F7 | MLESWT-U1-0000-0000F7 |
| E7                                            | 3000 K | M3                                  | 45.7      | MLESWT-A1-0000-0003E7 |                       |                       |                       |
|                                               |        | M2                                  | 39.8      | MLESWT-A1-0000-0002E7 | MLESWT-H1-0000-0002E7 | MLESWT-P1-0000-0002E7 | MLESWT-U1-0000-0002E7 |
|                                               |        | K3                                  | 35.2      | MLESWT-A1-0000-0001E7 | MLESWT-H1-0000-0001E7 | MLESWT-P1-0000-0001E7 | MLESWT-U1-0000-0001E7 |
|                                               |        | K2                                  | 30.6      |                       | MLESWT-H1-0000-0000E7 | MLESWT-P1-0000-0000E7 | MLESWT-U1-0000-0000E7 |
| Z7                                            |        | M3                                  | 45.7      | MLESWT-A1-0000-0003Z7 |                       |                       |                       |
|                                               |        | M2                                  | 39.8      | MLESWT-A1-0000-0002Z7 | MLESWT-H1-0000-0002Z7 | MLESWT-P1-0000-0002Z7 | MLESWT-U1-0000-0002Z7 |
|                                               |        | K3                                  | 35.2      | MLESWT-A1-0000-0001Z7 | MLESWT-H1-0000-0001Z7 | MLESWT-P1-0000-0001Z7 | MLESWT-U1-0000-0001Z7 |
|                                               |        | K2                                  | 30.6      |                       | MLESWT-H1-0000-0000Z7 | MLESWT-P1-0000-0000Z7 | MLESWT-U1-0000-0000Z7 |
| A8                                            |        | M3                                  | 45.7      | MLESWT-A1-0000-0003A8 |                       |                       |                       |
|                                               |        | M2                                  | 39.8      | MLESWT-A1-0000-0002A8 | MLESWT-H1-0000-0002A8 | MLESWT-P1-0000-0002A8 | MLESWT-U1-0000-0002A8 |
|                                               |        | K3                                  | 35.2      | MLESWT-A1-0000-0001A8 | MLESWT-H1-0000-0001A8 | MLESWT-P1-0000-0001A8 | MLESWT-U1-0000-0001A8 |
|                                               |        | K2                                  | 30.6      |                       | MLESWT-H1-0000-0000A8 | MLESWT-P1-0000-0000A8 | MLESWT-U1-0000-0000A8 |

- Notes:
- Cree maintains a tolerance of  $\pm 7\%$  on flux and power measurements,  $\pm 0.005$  on chromaticity (CCx, CCy) measurements and  $\pm 2$  on CRI measurements.
  - Typical CRI for Cool White order codes is 75; Typical CRI for Warm White order codes is 80
  - Cree XLamp 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.

| XLamp ML-E Series, Standard Kit Codes - White |        |                                     |           |                       |                       |                       |                       |
|-----------------------------------------------|--------|-------------------------------------|-----------|-----------------------|-----------------------|-----------------------|-----------------------|
| Chromaticity                                  |        | Minimum Luminous Flux (lm) @ 50 mA* |           | Order Codes           |                       |                       |                       |
| Kit                                           | CCT    | Code                                | Flux (lm) | Typical CRI (80)      | 80 CRI Minimum        | 85 CRI Minimum        | 90 CRI Minimum        |
| A9                                            | 2850 K | M2                                  | 39.8      | MLESWT-A1-0000-0002A9 |                       |                       |                       |
|                                               |        | K3                                  | 35.2      | MLESWT-A1-0000-0001A9 | MLESWT-H1-0000-0001A9 | MLESWT-P1-0000-0001A9 | MLESWT-U1-0000-0001A9 |
|                                               |        | K2                                  | 30.6      |                       | MLESWT-H1-0000-0000A9 | MLESWT-P1-0000-0000A9 | MLESWT-U1-0000-0000A9 |
| F8                                            |        | M2                                  | 39.8      | MLESWT-A1-0000-0002F8 |                       |                       |                       |
|                                               |        | K3                                  | 35.2      | MLESWT-A1-0000-0001F8 | MLESWT-H1-0000-0001F8 | MLESWT-P1-0000-0001F8 | MLESWT-U1-0000-0001F8 |
|                                               |        | K2                                  | 30.6      |                       | MLESWT-H1-0000-0000F8 | MLESWT-P1-0000-0000F8 | MLESWT-U1-0000-0000F8 |
| E8                                            | 2700 K | M2                                  | 39.8      | MLESWT-A1-0000-0002E8 |                       |                       |                       |
|                                               |        | K3                                  | 35.2      | MLESWT-A1-0000-0001E8 | MLESWT-H1-0000-0001E8 | MLESWT-P1-0000-0001E8 | MLESWT-U1-0000-0001E8 |
|                                               |        | K2                                  | 30.6      |                       | MLESWT-H1-0000-0000E8 | MLESWT-P1-0000-0000E8 | MLESWT-U1-0000-0000E8 |
| Z8                                            |        | M2                                  | 39.8      | MLESWT-A1-0000-0002Z8 |                       |                       |                       |
|                                               |        | K3                                  | 35.2      | MLESWT-A1-0000-0001Z8 | MLESWT-H1-0000-0001Z8 | MLESWT-P1-0000-0001Z8 | MLESWT-U1-0000-0001Z8 |
|                                               |        | K2                                  | 30.6      |                       | MLESWT-H1-0000-0000Z8 | MLESWT-P1-0000-0000Z8 | MLESWT-U1-0000-0000Z8 |
| AA                                            |        | M2                                  | 39.8      | MLESWT-A1-0000-0002AA |                       |                       |                       |
|                                               |        | K3                                  | 35.2      | MLESWT-A1-0000-0001AA | MLESWT-H1-0000-0001AA | MLESWT-P1-0000-0001AA | MLESWT-U1-0000-0001AA |
|                                               |        | K2                                  | 30.6      |                       | MLESWT-H1-0000-0000AA | MLESWT-P1-0000-0000AA | MLESWT-U1-0000-0000AA |

## STANDARD ORDER CODES AND BINS (ML-C COLOR, T<sub>j</sub> = 25 °C)

| XLamp ML-C Standard Kit Codes - Royal Blue |                          |                                     |           |                       |
|--------------------------------------------|--------------------------|-------------------------------------|-----------|-----------------------|
| Royal Blue                                 |                          | Minimum Radiant Flux (lm) @ 100 mA* |           | Order Codes           |
| Kit                                        | Dominant Wavelength (nm) | Code                                | Flux (mW) |                       |
| 01                                         | 450 - 465                | 07                                  | 100       | MLCROY-A1-0000-000201 |
| 02                                         | 450 - 460                | 07                                  | 100       | MLCROY-A1-0000-000202 |
| 03                                         | 455 - 465                | 07                                  | 100       | MLCROY-A1-0000-000203 |

## STANDARD ORDER CODES AND BINS (ML-E COLOR, T<sub>j</sub> = 25 °C)

| XLamp ML-E Standard Kit Codes - Royal Blue |                          |                                     |           |                       |
|--------------------------------------------|--------------------------|-------------------------------------|-----------|-----------------------|
| Royal Blue                                 |                          | Minimum Radiant Flux (lm) @ 150 mA* |           | Order Codes           |
| Kit                                        | Dominant Wavelength (nm) | Code                                | Flux (mW) |                       |
| 01                                         | 450 - 465                | 10                                  | 175       | MLEROY-A1-0000-000501 |
| 02                                         | 450 - 460                | 10                                  | 175       | MLEROY-A1-0000-000502 |
| 03                                         | 455 - 465                | 10                                  | 175       | MLEROY-A1-0000-000503 |

- Notes:
- Cree maintains a tolerance of ±7% on flux and power measurements, ±0.005 on chromaticity (CCx, CCy) measurements and ±2 on CRI measurements.
  - Typical CRI for Cool White order codes is 75; Typical CRI for Warm White order codes is 80
  - Cree XLamp 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.

| XLamp ML-E Standard Kit Codes - Blue |                          |                                      |           |                       |
|--------------------------------------|--------------------------|--------------------------------------|-----------|-----------------------|
| Blue                                 |                          | Minimum Luminous Flux (lm) @ 150 mA* |           | Order Codes           |
| Kit                                  | Dominant Wavelength (nm) | Code                                 | Flux (lm) |                       |
| 01                                   | 465 - 485                | G0                                   | 13.9      | MLEBLU-A1-0000-000U01 |
|                                      |                          | F0                                   | 10.7      | MLEBLU-A1-0000-000T01 |
| 02                                   | 465 - 480                | G0                                   | 13.9      | MLEBLU-A1-0000-000U02 |
|                                      |                          | F0                                   | 10.7      | MLEBLU-A1-0000-000T02 |
| 05                                   | 470 - 480                | G0                                   | 13.9      | MLEBLU-A1-0000-000U05 |
|                                      |                          | F0                                   | 10.7      | MLEBLU-A1-0000-000T05 |

| XLamp ML-E Standard Kit Codes - Green |                          |                                      |           |                       |
|---------------------------------------|--------------------------|--------------------------------------|-----------|-----------------------|
| Green                                 |                          | Minimum Luminous Flux (lm) @ 150 mA* |           | Order Codes           |
| Kit                                   | Dominant Wavelength (nm) | Code                                 | Flux (lm) |                       |
| 01                                    | 520 - 535                | K3                                   | 35.2      | MLEGRN-A1-0000-000I01 |
|                                       |                          | K2                                   | 30.6      | MLEGRN-A1-0000-000001 |
|                                       |                          | J3                                   | 26.8      | MLEGRN-A1-0000-000X01 |
| 02                                    | 520 - 530                | K3                                   | 35.2      | MLEGRN-A1-0000-000I02 |
|                                       |                          | K2                                   | 30.6      | MLEGRN-A1-0000-000002 |
|                                       |                          | J3                                   | 26.8      | MLEGRN-A1-0000-000X02 |
| 03                                    | 525 - 535                | K3                                   | 35.2      | MLEGRN-A1-0000-000I03 |
|                                       |                          | K2                                   | 30.6      | MLEGRN-A1-0000-000003 |
|                                       |                          | J3                                   | 26.8      | MLEGRN-A1-0000-000X03 |

| XLamp ML-E Standard Kit Codes - Amber |                          |                                      |           |                       |
|---------------------------------------|--------------------------|--------------------------------------|-----------|-----------------------|
| Amber                                 |                          | Minimum Luminous Flux (lm) @ 150 mA* |           | Order Codes           |
| Kit                                   | Dominant Wavelength (nm) | Code                                 | Flux (lm) |                       |
| 01                                    | 585 - 595                | K2                                   | 30.6      | MLEAMB-A1-0000-000001 |
|                                       |                          | J3                                   | 26.8      | MLEAMB-A1-0000-000X01 |

| XLamp ML-E Standard Kit Codes - Red |                          |                                      |           |                       |
|-------------------------------------|--------------------------|--------------------------------------|-----------|-----------------------|
| Red                                 |                          | Minimum Luminous Flux (lm) @ 150 mA* |           | Order Codes           |
| Kit                                 | Dominant Wavelength (nm) | Code                                 | Flux (lm) |                       |
| 01                                  | 620 - 630                | J2                                   | 23.5      | MLERED-A1-0000-000W01 |
|                                     |                          | H0                                   | 18.1      | MLERED-A1-0000-000V01 |
| 02                                  | 620 - 625                | J2                                   | 23.5      | MLERED-A1-0000-000W02 |
|                                     |                          | H0                                   | 18.1      | MLERED-A1-0000-000V02 |
| 03                                  | 625 - 630                | H0                                   | 18.1      | MLERED-A1-0000-000V03 |

- Notes:
- Cree maintains a tolerance of  $\pm 7\%$  on flux and power measurements,  $\pm 0.005$  on chromaticity (CCx, CCy) measurements and  $\pm 2$  on CRI measurements.
  - Cree XLamp 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.