

# Cree® XLamp® XH Family LEDs



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## INTRODUCTION

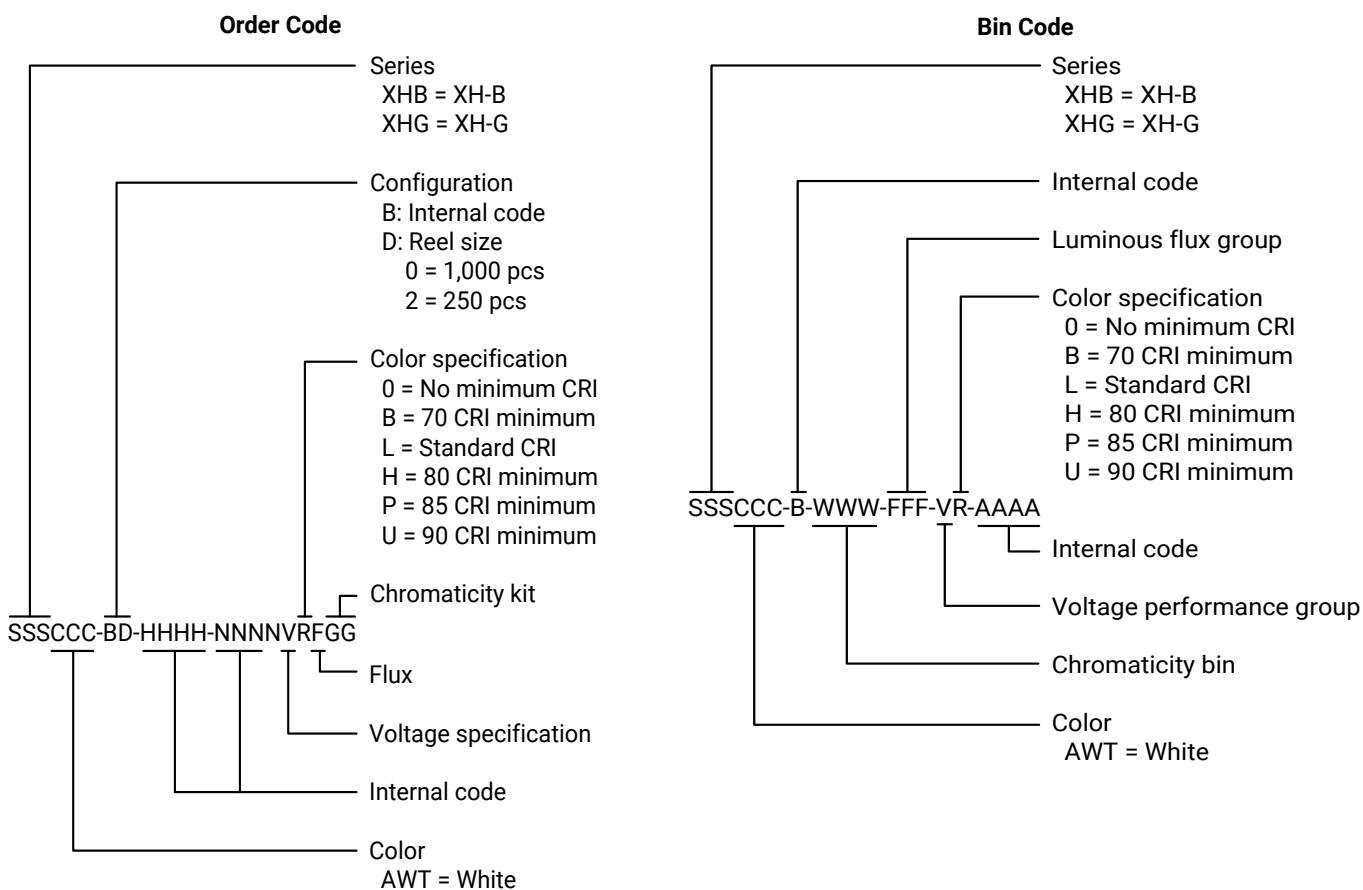
This document describes the product nomenclature required to select and order Cree's XLamp® XH Family LEDs. XLamp XH Family LEDs are tested and sorted into bins which are then combined into orderable kits identified by an order code.

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). 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 XH Family LEDs, as well as a list of standard order codes, is provided in this document.

## BIN AND ORDER-CODE FORMAT

Bin codes and order codes for XH Family White LEDs are configured in the following manner:



## PERFORMANCE GROUPS – LUMINOUS FLUX ( $T_j = 25^\circ\text{C}$ )

XLamp XH Family White LEDs are tested for luminous flux and placed into one of the following luminous-flux groups. These group codes, with a 0 appended, are used in the Bin Code “Luminous flux group.”

| Group Code | Min. Luminous Flux (lm) | Max. Luminous Flux (lm) |
|------------|-------------------------|-------------------------|
| H0         | 18.1                    | 23.5                    |
| J2         | 23.5                    | 26.8                    |
| J3         | 26.8                    | 30.6                    |
| K2         | 30.6                    | 35.2                    |
| K3         | 35.2                    | 39.8                    |

## PERFORMANCE GROUPS – CHROMATICITY

XLamp XH Family White LEDs are tested for luminous flux and placed into one of the following chromaticity groups. These group codes are used in the Bin Code "Chromaticity bin." Two-digit group codes are appended with a 0.

| 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 |

## PERFORMANCE GROUPS – CHROMATICITY (CONTINUED)

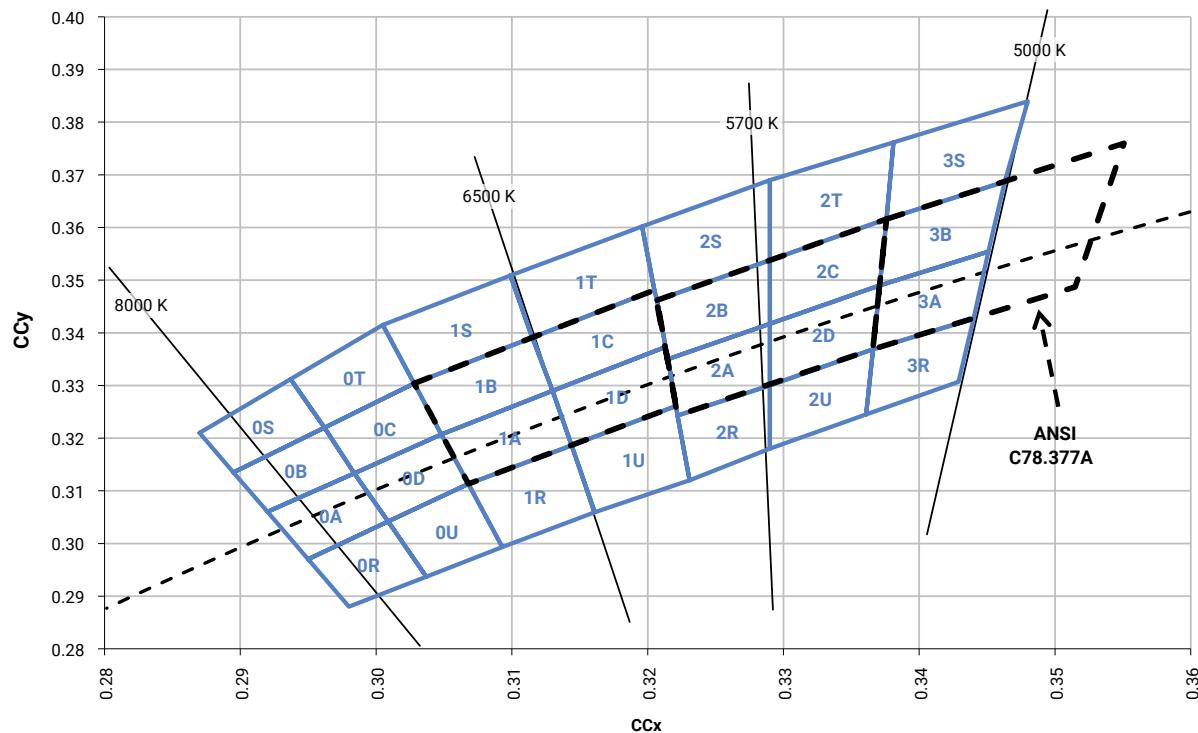
| Region | x      | y      |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 5A1    | 0.3670 | 0.3578 | 5A2    | 0.3686 | 0.3649 | 5A3    | 0.3744 | 0.3685 | 5A4    | 0.3726 | 0.3612 |
|        | 0.3686 | 0.3649 |        | 0.3702 | 0.3722 |        | 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)

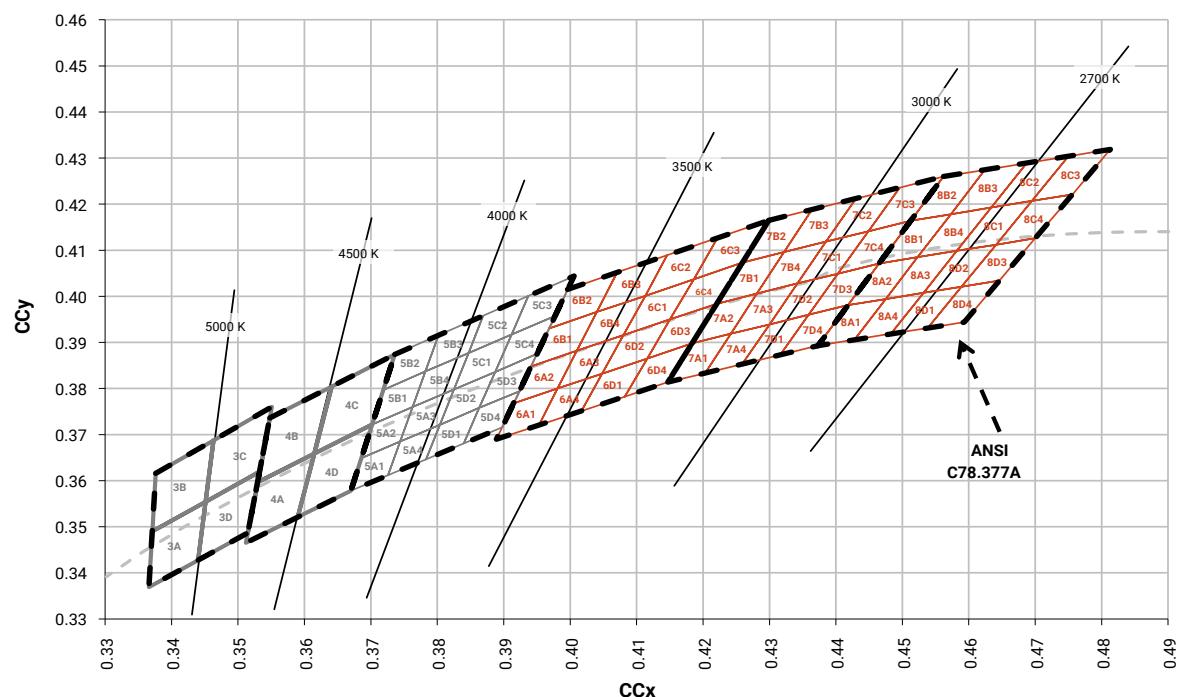
| Region | x      | y      |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 7C1    | 0.4342 | 0.4028 | 7C2    | 0.4385 | 0.4119 | 7C3    | 0.4449 | 0.4141 | 7C4    | 0.4403 | 0.4049 |
|        | 0.4385 | 0.4119 |        | 0.4430 | 0.4212 |        | 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 |
| AA1    | 0.4822 | 0.3973 | AA2    | 0.4884 | 0.4067 | AA3    | 0.4942 | 0.4066 | AA4    | 0.4879 | 0.3972 |
|        | 0.4884 | 0.4067 |        | 0.4946 | 0.4162 |        | 0.5006 | 0.4160 |        | 0.4942 | 0.4066 |
|        | 0.4942 | 0.4066 |        | 0.5006 | 0.4160 |        | 0.5066 | 0.4158 |        | 0.5001 | 0.4064 |
|        | 0.4879 | 0.3972 |        | 0.4942 | 0.4066 |        | 0.5001 | 0.4064 |        | 0.4936 | 0.3970 |
| AB1    | 0.4946 | 0.4162 | AB2    | 0.5008 | 0.4256 | AB3    | 0.5069 | 0.4254 | AB4    | 0.5006 | 0.4160 |
|        | 0.5008 | 0.4256 |        | 0.5070 | 0.4350 |        | 0.5133 | 0.4348 |        | 0.5069 | 0.4254 |
|        | 0.5069 | 0.4254 |        | 0.5133 | 0.4348 |        | 0.5196 | 0.4346 |        | 0.5131 | 0.4252 |
|        | 0.5006 | 0.4160 |        | 0.5069 | 0.4254 |        | 0.5131 | 0.4252 |        | 0.5066 | 0.4158 |
| AC1    | 0.5066 | 0.4067 | AC2    | 0.5131 | 0.4252 | AC3    | 0.5192 | 0.4250 | AC4    | 0.5126 | 0.4156 |
|        | 0.5131 | 0.4162 |        | 0.5196 | 0.4346 |        | 0.5258 | 0.4343 |        | 0.5192 | 0.4250 |
|        | 0.5192 | 0.4160 |        | 0.5258 | 0.4343 |        | 0.5321 | 0.4341 |        | 0.5253 | 0.4248 |
|        | 0.5126 | 0.4066 |        | 0.5192 | 0.4250 |        | 0.5253 | 0.4248 |        | 0.5186 | 0.4154 |
| AD1    | 0.4936 | 0.3970 | AD2    | 0.5001 | 0.4064 | AD3    | 0.5059 | 0.4062 | AD4    | 0.4993 | 0.3969 |
|        | 0.5001 | 0.4064 |        | 0.5066 | 0.4158 |        | 0.5126 | 0.4156 |        | 0.5059 | 0.4062 |
|        | 0.5059 | 0.4062 |        | 0.5126 | 0.4156 |        | 0.5186 | 0.4154 |        | 0.5118 | 0.4061 |
|        | 0.4993 | 0.3969 |        | 0.5059 | 0.4062 |        | 0.5118 | 0.4061 |        | 0.5050 | 0.3967 |

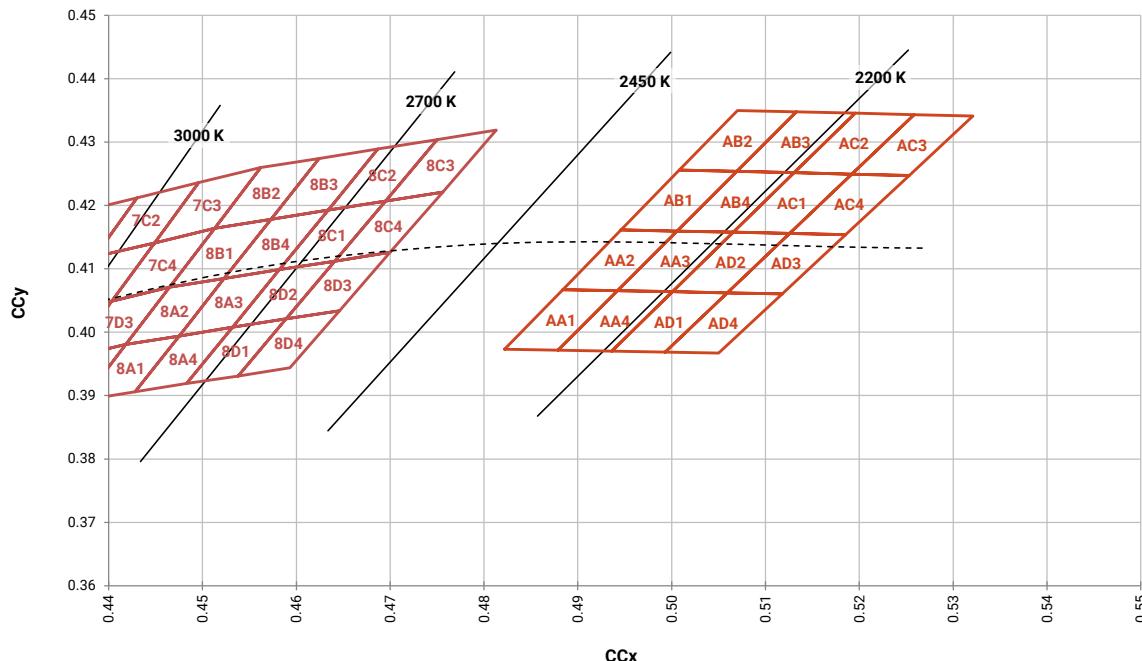
## CREE'S STANDARD WHITE CHROMATICITY REGIONS PLOTTED ON THE 1931 CIE CURVE

## ANSI Cool White

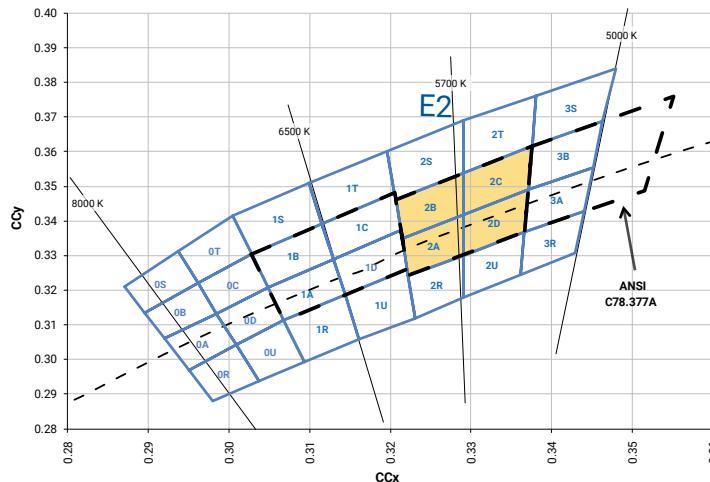
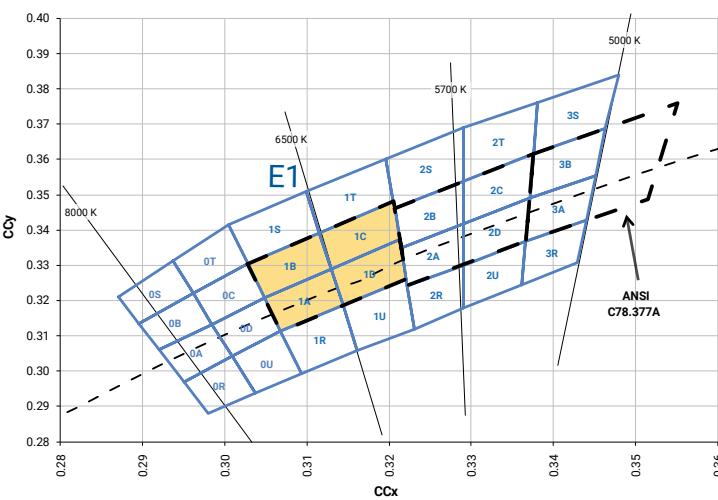
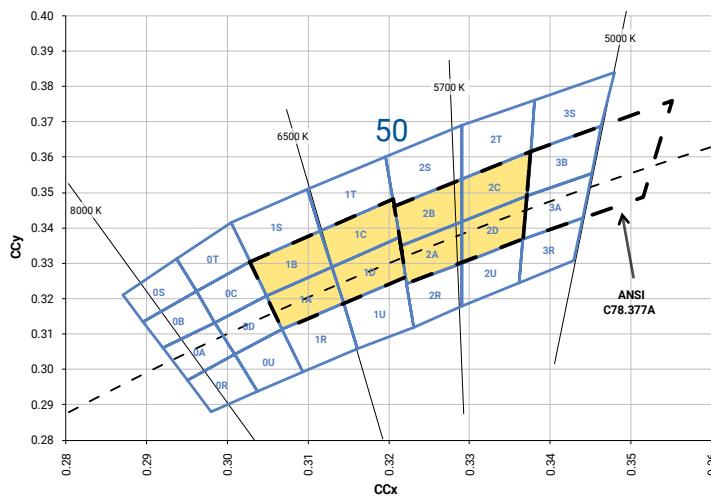
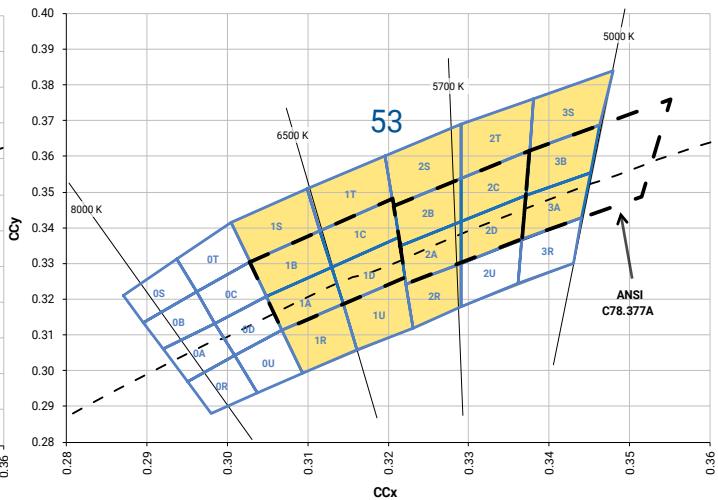
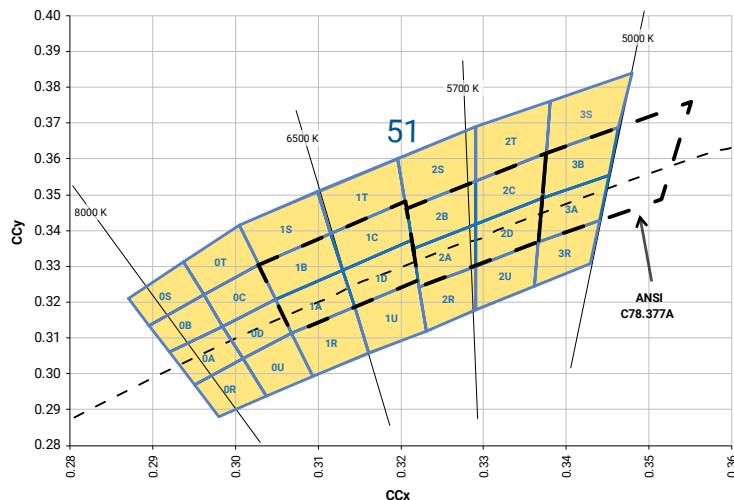


## ANSI Neutral White and ANSI Warm White

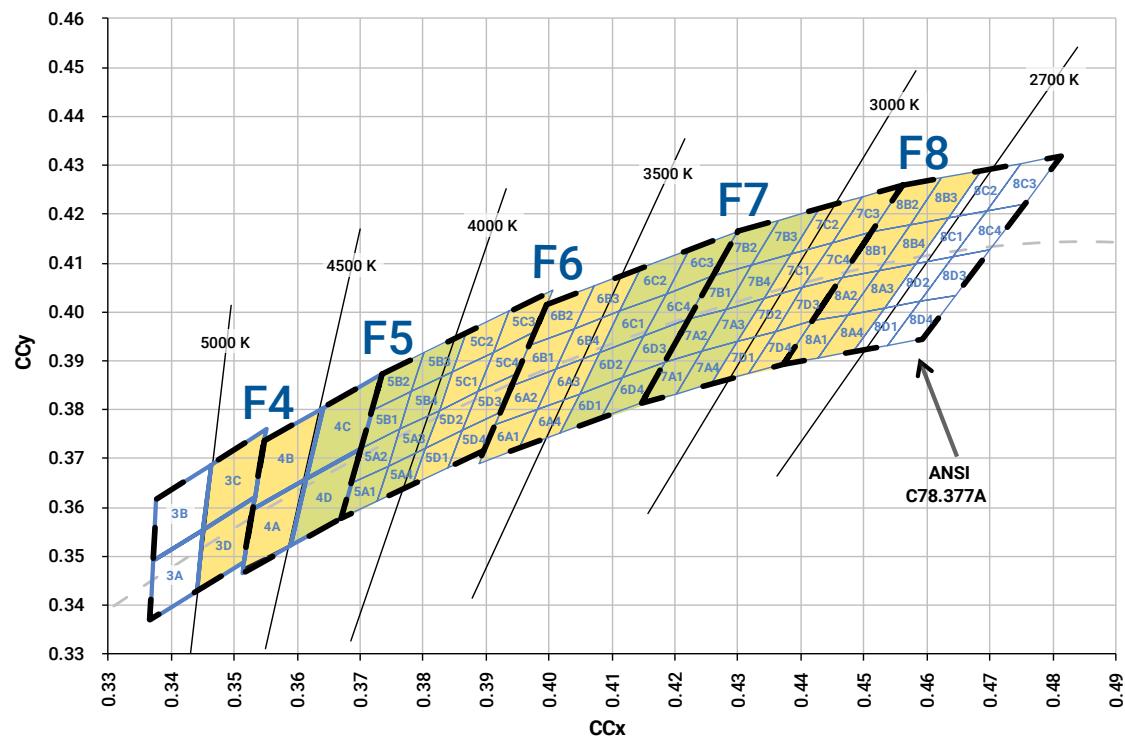
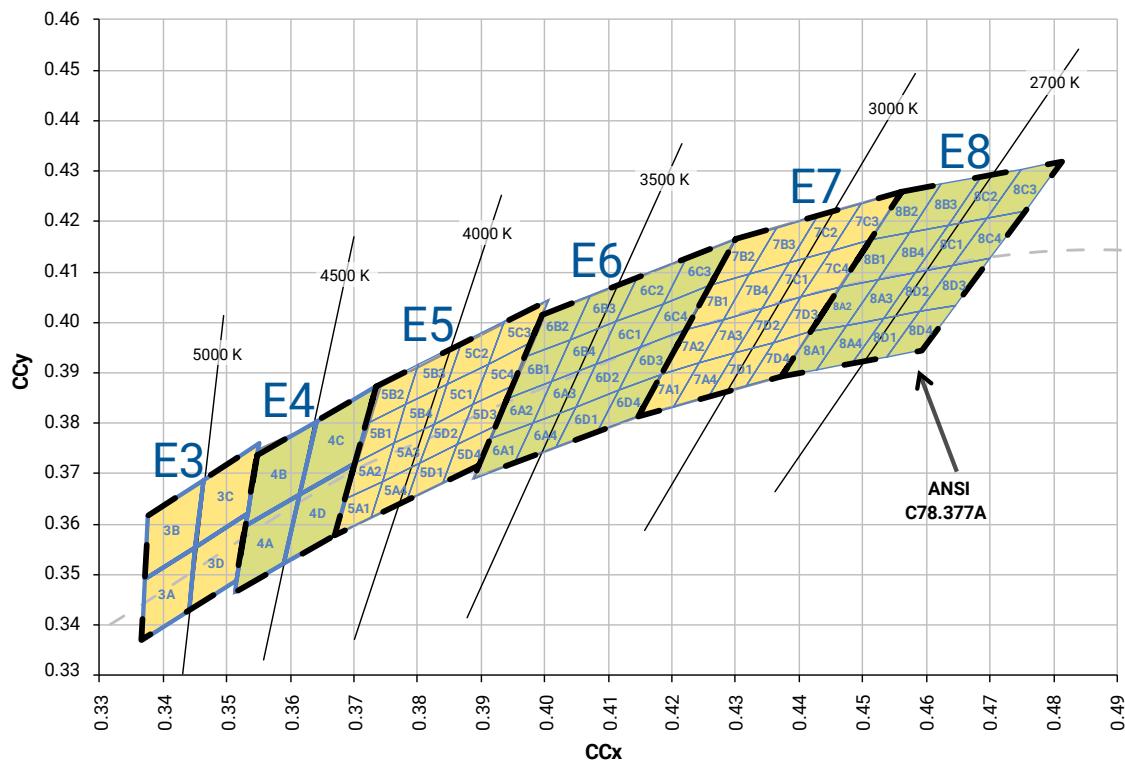


**CREE'S STANDARD WHITE CHROMATICITY REGIONS PLOTTED ON THE 1931 CIE CURVE - CONTINUED****ANSI Neutral White and ANSI Warm White - Continued**

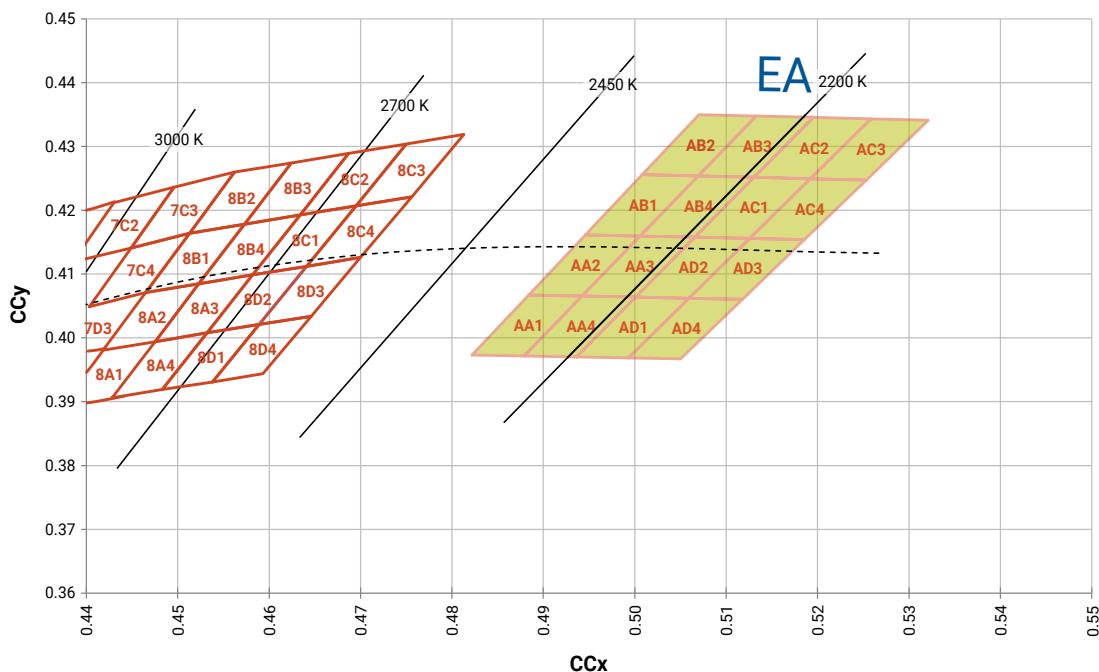
## CREE'S STANDARD COOL WHITE KITS PLOTTED ON ANSI STANDARD CHROMATICITY REGIONS



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



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



**CREE'S STANDARD CHROMATICITY KITS**

The following table provides the chromaticity bins associated with chromaticity kits.

| Color         | CCT    | Kit | Chromaticity Bins  |
|---------------|--------|-----|--|
| Cool White    | 6200 K | 51  | 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 |
|               | 6000 K | 53  | 1A, 1B, 1C, 1D, 1R, 1S, 1T, 1U, 2A, 2B, 2C, 2D, 2R, 2S, 2T, 3A, 3B, 3S   |
|               | 6200 K | 50  | 1A, 1B, 1C, 1D, 2A, 2B, 2C, 2D   |
|               | 6500 K | E1  | 1A, 1B, 1C, 1D   |
|               | 5700 K | E2  | 2A, 2B, 2C, 2D   |
| Neutral White | 5000 K | E3  | 3A, 3B, 3C, 3D   |
|               | 4750 K | F4  | 3C, 3D, 4A, 4B   |
|               | 4500 K | E4  | 4A, 4B, 4C, 4D   |
|               | 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                                 |
| Warm White    | 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                                 |
|               | 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                                 |
|               | 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                                 |
|               | 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 XH LEDs. For other flux and chromaticity combinations, contact Cree or an authorized distributor.

**STANDARD ORDER CODES AND BINS (XH-B ANSI COOL WHITE, T<sub>J</sub> = 25 °C)**

| XLamp XH-B LED Standard Kit Codes - White |        |                                    |           |                          |                          |                          |
|---|--------|------------------------------------|-----------|--------------------------|--------------------------|--------------------------|
| Chromaticity                              |        | Minimum Luminous Flux (lm) @ 65 mA |           | Order Codes              |                          |                          |
| Kit                                       | CCT    | Code                               | Flux (lm) | No Minimum CRI           | 70 CRI Minimum           | 80 CRI Minimum           |
| ANSI Cool White (5000 K – 8300 K)         |        |                                    |           |                          |                          |                          |
| E1  | 6500 K | J3                                 | 26.8      | XHBAWT-00-0000-00000LXE1 | XHBAWT-00-0000-00000BXE1 | XHBAWT-00-0000-00000HXE1 |
|   |        | J2                                 | 23.5      |                          |                          | XHBAWT-00-0000-00000HWE1 |
| 50  | 6000 K | J3                                 | 26.8      | XHBAWT-00-0000-00000LX50 | XHBAWT-00-0000-00000BX50 | XHBAWT-00-0000-00000HX50 |
|   |        | J2                                 | 23.5      |                          |                          | XHBAWT-00-0000-00000HW50 |
| 51  | 6000 K | J3                                 | 26.8      | XHBAWT-00-0000-00000LX51 | XHBAWT-00-0000-00000BX51 | XHBAWT-00-0000-00000HX51 |
|   |        | J2                                 | 23.5      |                          |                          | XHBAWT-00-0000-00000HW51 |
| 53  | 5700 K | J3                                 | 26.8      | XHBAWT-00-0000-00000LX53 | XHBAWT-00-0000-00000BX53 | XHBAWT-00-0000-00000HX53 |
|   |        | J2                                 | 23.5      |                          |                          | XHBAWT-00-0000-00000HW53 |
| E2  | 5700 K | J3                                 | 26.8      | XHBAWT-00-0000-00000LXE2 | XHBAWT-00-0000-00000BXE2 | XHBAWT-00-0000-00000HXE2 |
|   |        | J2                                 | 23.5      |                          |                          | XHBAWT-00-0000-00000HWE2 |

**STANDARD ORDER CODES AND BINS (XH-B NEUTRAL WHITE, T<sub>J</sub> = 25 °C)**

| XLamp XH-B LED Standard Kit Codes - White |        |                                    |           |                          |                          |                          |
|---|--------|------------------------------------|-----------|--------------------------|--------------------------|--------------------------|
| Chromaticity                              |        | Minimum Luminous Flux (lm) @ 65 mA |           | Order Codes              |                          |                          |
| Kit                                       | CCT    | Code                               | Flux (lm) | 70 CRI Minimum           | 75 CRI Typical           | 80 CRI Minimum           |
| ANSI Neutral White (3700 K – 5000 K)      |        |                                    |           |                          |                          |                          |
| E3  | 5000 K | J3                                 | 26.8      | XHBAWT-00-0000-00000BXE3 | XHBAWT-00-0000-00000LXE3 | XHBAWT-00-0000-00000HXE3 |
|   |        | J2                                 | 23.5      |                          |                          | XHBAWT-00-0000-00000HWE3 |
| F4  | 4750 K | J3                                 | 26.8      | XHBAWT-00-0000-00000BXF4 | XHBAWT-00-0000-00000LXF4 | XHBAWT-00-0000-00000HXF4 |
|   |        | J2                                 | 23.5      |                          |                          | XHBAWT-00-0000-00000HWF4 |
| E4  | 4500 K | J3                                 | 26.8      | XHBAWT-00-0000-00000BXE4 | XHBAWT-00-0000-00000LXE4 | XHBAWT-00-0000-00000HXE4 |
|   |        | J2                                 | 23.5      |                          |                          | XHBAWT-00-0000-00000HWE4 |
| F5  | 4300 K | J3                                 | 26.8      | XHBAWT-00-0000-00000BXF5 | XHBAWT-00-0000-00000LXF5 | XHBAWT-00-0000-00000HXF5 |
|   |        | J2                                 | 23.5      |                          | XHBAWT-00-0000-00000LWF5 | XHBAWT-00-0000-00000HWF5 |
| E5  | 4000 K | J3                                 | 26.8      | XHBAWT-00-0000-00000BXE5 | XHBAWT-00-0000-00000LXE5 | XHBAWT-00-0000-00000HXE5 |
|   |        | J2                                 | 23.5      | XHBAWT-00-0000-00000BWE5 | XHBAWT-00-0000-00000LWE5 | XHBAWT-00-0000-00000HWE5 |

**Notes:**

- Cree maintains a tolerance of ±7% on flux and power measurements, ±0.005 on chromaticity (CCx, CCy) measurements and ±2 on CRI measurements.
- Cree XLamp XH Family LED order codes specify only a minimum flux bin and not a maximum. Cree may ship reels in flux bins higher than the minimum specified by the order code without advance notice. Shipments will always adhere to the chromaticity or DWL bin restrictions specified by the order code.

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

| XLamp XH-B LED Standard Kit Codes - White |        |                                    |           |                          |                          |                          |                          |                          |
|---|--------|------------------------------------|-----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Chromaticity                              |        | Minimum Luminous Flux (lm) @ 65 mA |           | Order Codes              |                          |                          |                          |                          |
| Kit                                       | CCT    | Code                               | Flux (lm) | 70 CRI Minimum           | 80 CRI Typical           | 80 CRI Minimum           | 85 CRI Minimum           | 90 CRI Minimum           |
| ANSI Warm White (2700 K - 3700 K)         |        |                                    |           |                          |                          |                          |                          |                          |
| F6  | 3700 K | J3                                 | 26.8      | XHBAWT-00-0000-00000BXF6 |                          |                          |                          |                          |
|   |        | J2                                 | 23.5      | XHBAWT-00-0000-00000BWF6 | XHBAWT-00-0000-00000LWF6 | XHBAWT-00-0000-00000HWF6 |                          |                          |
| E6  | 3500 K | J3                                 | 26.8      | XHBAWT-00-0000-00000BXE6 |                          |                          |                          |                          |
|   |        | J2                                 | 23.5      | XHBAWT-00-0000-00000BWE6 | XHBAWT-00-0000-00000LWE6 | XHBAWT-00-0000-00000HWE6 |                          |                          |
| F7  | 3200 K | J3                                 | 26.8      | XHBAWT-00-0000-00000BXF7 |                          |                          |                          |                          |
|   |        | J2                                 | 23.5      | XHBAWT-00-0000-00000BWF7 | XHBAWT-00-0000-00000LWF7 | XHBAWT-00-0000-00000HWF7 |                          |                          |
|   |        | H0                                 | 18.1      |                          |                          |                          | XHBAWT-00-0000-00000PVF7 | XHBAWT-00-0000-00000UVF7 |
| E7  | 3000 K | J3                                 | 26.8      | XHBAWT-00-0000-00000BXE7 |                          |                          |                          |                          |
|   |        | J2                                 | 23.5      | XHBAWT-00-0000-00000BWE7 | XHBAWT-00-0000-00000LWE7 | XHBAWT-00-0000-00000HWE7 |                          |                          |
|   |        | H0                                 | 18.1      |                          |                          |                          | XHBAWT-00-0000-00000PVE7 | XHBAWT-00-0000-00000UVE7 |
| F8  | 2850 K | J2                                 | 23.5      | XHBAWT-00-0000-00000BWF8 | XHBAWT-00-0000-00000LWF8 | XHBAWT-00-0000-00000HWF8 |                          |                          |
|   |        | H0                                 | 18.1      |                          |                          |                          | XHBAWT-00-0000-00000PVF8 | XHBAWT-00-0000-00000UVF8 |
| E8  | 2700 K | J2                                 | 23.5      | XHBAWT-00-0000-00000BWE8 | XHBAWT-00-0000-00000LWE8 | XHBAWT-00-0000-00000HWE8 |                          |                          |
|   |        | H0                                 | 18.1      |                          |                          |                          | XHBAWT-00-0000-00000PVE8 | XHBAWT-00-0000-00000UVE8 |

## Notes:

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**STANDARD ORDER CODES AND BINS (XH-G ANSI COOL WHITE, T<sub>J</sub> = 25 °C)**

| XLamp XH-G LED Standard Kit Codes - White |        |                                    |           |                          |                          |                          |
|---|--------|------------------------------------|-----------|--------------------------|--------------------------|--------------------------|
| Chromaticity                              |        | Minimum Luminous Flux (lm) @ 65 mA |           | Order Codes              |                          |                          |
| Kit                                       | CCT    | Code                               | Flux (lm) | No Minimum CRI           | 70 CRI Minimum           | 80 CRI Minimum           |
| ANSI Cool White (5000 K – 8300 K)         |        |                                    |           |                          |                          |                          |
| E1  | 6500 K | K2                                 | 30.6      | XHGAWT-00-0000-00000L0E1 | XHGAWT-00-0000-00000B0E1 |                          |
|   |        | J3                                 | 26.8      | XHGAWT-00-0000-00000LXE1 | XHGAWT-00-0000-00000BXE1 | XHGAWT-00-0000-00000HXE1 |
| 50  | 6000 K | K2                                 | 30.6      | XHGAWT-00-0000-00000L050 | XHGAWT-00-0000-00000B050 |                          |
|   |        | J3                                 | 26.8      | XHGAWT-00-0000-00000LX50 | XHGAWT-00-0000-00000BX50 | XHGAWT-00-0000-00000HX50 |
| 51  | 6000 K | K2                                 | 30.6      | XHGAWT-00-0000-00000L051 | XHGAWT-00-0000-00000B051 |                          |
|   |        | J3                                 | 26.8      | XHGAWT-00-0000-00000LX51 | XHGAWT-00-0000-00000BX51 | XHGAWT-00-0000-00000HX51 |
| 53  | 5700 K | K2                                 | 30.6      | XHGAWT-00-0000-00000L053 | XHGAWT-00-0000-00000B053 |                          |
|   |        | J3                                 | 26.8      | XHGAWT-00-0000-00000LX53 | XHGAWT-00-0000-00000BX53 | XHGAWT-00-0000-00000HX53 |
| E2  | 5700 K | K2                                 | 30.6      | XHGAWT-00-0000-00000L0E2 | XHGAWT-00-0000-00000B0E2 |                          |
|   |        | J3                                 | 26.8      | XHGAWT-00-0000-00000LXE2 | XHGAWT-00-0000-00000BXE2 | XHGAWT-00-0000-00000HXE2 |

**STANDARD ORDER CODES AND BINS (XH-G NEUTRAL WHITE, T<sub>J</sub> = 25 °C)**

| XLamp XH-G LED Standard Kit Codes - White |        |                                    |           |                          |                          |                          |
|---|--------|------------------------------------|-----------|--------------------------|--------------------------|--------------------------|
| Chromaticity                              |        | Minimum Luminous Flux (lm) @ 65 mA |           | Order Codes              |                          |                          |
| Kit                                       | CCT    | Code                               | Flux (lm) | 70 CRI Minimum           | 75 CRI Typical           | 80 CRI Minimum           |
| ANSI Neutral White (3700 K – 5000 K)      |        |                                    |           |                          |                          |                          |
| E3  | 5000 K | K2                                 | 30.6      | XHGAWT-00-0000-00000B0E3 | XHGAWT-00-0000-00000L0E3 |                          |
|   |        | J3                                 | 26.8      | XHGAWT-00-0000-00000BXE3 | XHGAWT-00-0000-00000LXE3 | XHGAWT-00-0000-00000HXE3 |
| F4  | 4750 K | K2                                 | 30.6      | XHGAWT-00-0000-00000B0F4 |                          |                          |
|   |        | J3                                 | 26.8      | XHGAWT-00-0000-00000BXF4 | XHGAWT-00-0000-00000LXF4 | XHGAWT-00-0000-00000HXF4 |
| E4  | 4500 K | K2                                 | 30.6      | XHGAWT-00-0000-00000B0E4 |                          |                          |
|   |        | J3                                 | 26.8      | XHGAWT-00-0000-00000BXE4 | XHGAWT-00-0000-00000LXE4 | XHGAWT-00-0000-00000HXE4 |
| F5  | 4300 K | K2                                 | 30.6      | XHGAWT-00-0000-00000B0F5 |                          |                          |
|   |        | J3                                 | 26.8      | XHGAWT-00-0000-00000BXF5 | XHGAWT-00-0000-00000LXF5 | XHGAWT-00-0000-00000HXF5 |
| E5  | 4000 K | K2                                 | 30.6      | XHGAWT-00-0000-00000B0E5 |                          | XHGAWT-00-0000-00000H0E5 |
|   |        | J3                                 | 26.8      | XHGAWT-00-0000-00000BXE5 | XHGAWT-00-0000-00000LXE5 | XHGAWT-00-0000-00000HXE5 |

**Notes:**

- Cree maintains a tolerance of ±7% on flux and power measurements, ±0.005 on chromaticity (CCx, CCy) measurements and ±2 on CRI measurements.
- Cree XLamp XH Family LED order codes specify only a minimum flux bin and not a maximum. Cree may ship reels in flux bins higher than the minimum specified by the order code without advance notice. Shipments will always adhere to the chromaticity or DWL bin restrictions specified by the order code.

STANDARD ORDER CODES AND BINS (XH-G WARM WHITE, T<sub>J</sub> = 25 °C)

| XLamp XH-G LED Standard Kit Codes - White |        |                                    |           |                          |                          |                          |                          |                          |
|---|--------|------------------------------------|-----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Chromaticity                              |        | Minimum Luminous Flux (lm) @ 65 mA |           | Order Codes              |                          |                          |                          |                          |
| Kit                                       | CCT    | Code                               | Flux (lm) | 70 CRI Minimum           | 80 CRI Typical           | 80 CRI Minimum           | 85 CRI Minimum           | 90 CRI Minimum           |
| ANSI Warm White (2700 K - 3700 K)         |        |                                    |           |                          |                          |                          |                          |                          |
| F6  | 3700 K | J3                                 | 26.8      | XHGAWT-00-0000-00000BXF6 | XHGAWT-00-0000-00000LXF6 | XHGAWT-00-0000-00000HXF6 |                          |                          |
| E6  | 3500 K | J3                                 | 26.8      | XHGAWT-00-0000-00000BXE6 | XHGAWT-00-0000-00000LXE6 | XHGAWT-00-0000-00000HXE6 |                          |                          |
| F7  | 3200 K | J3                                 | 26.8      | XHGAWT-00-0000-00000BXF7 | XHGAWT-00-0000-00000LXF7 | XHGAWT-00-0000-00000HXF7 |                          |                          |
|   |        | J2                                 | 23.5      |                          |                          | XHGAWT-00-0000-00000HWF7 |                          |                          |
|   |        | H0                                 | 18.1      |                          |                          |                          | XHGAWT-00-0000-00000PVF7 | XHGAWT-00-0000-00000UVF7 |
| E7  | 3000 K | J3                                 | 26.8      | XHGAWT-00-0000-00000BXE7 | XHGAWT-00-0000-00000LXE7 | XHGAWT-00-0000-00000HXE7 |                          |                          |
|   |        | J2                                 | 23.5      |                          |                          | XHGAWT-00-0000-00000HWE7 |                          |                          |
|   |        | H0                                 | 18.1      |                          |                          |                          | XHGAWT-00-0000-00000PVE7 | XHGAWT-00-0000-00000UVE7 |
| F8  | 2850 K | J3                                 | 26.8      | XHGAWT-00-0000-00000BXF8 | XHGAWT-00-0000-00000LXF8 | XHGAWT-00-0000-00000HXF8 |                          |                          |
|   |        | J2                                 | 23.5      |                          | XHGAWT-00-0000-00000LWF8 | XHGAWT-00-0000-00000HWF8 |                          |                          |
|   |        | H0                                 | 18.1      |                          |                          |                          | XHGAWT-00-0000-00000PVF8 | XHGAWT-00-0000-00000UVF8 |
| E8  | 2700 K | J3                                 | 26.8      | XHGAWT-00-0000-00000BXE8 | XHGAWT-00-0000-00000LXE8 | XHGAWT-00-0000-00000HXE8 |                          |                          |
|   |        | J2                                 | 23.5      |                          | XHGAWT-00-0000-00000LWE8 | XHGAWT-00-0000-00000HWE8 |                          |                          |
|   |        | H0                                 | 18.1      |                          |                          |                          | XHGAWT-00-0000-00000PVE8 | XHGAWT-00-0000-00000UVE8 |

## Notes:

- Cree maintains a tolerance of ±7% on flux and power measurements, ±0.005 on chromaticity (CCx, CCy) measurements and ±2 on CRI measurements.
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