

# Cree® XLamp® CXA1512 LED



## PRODUCT DESCRIPTION

The XLamp CXA1512 LED array expands Cree's family of high-flux, multi-die arrays in a smaller, easy-to-use platform. With XLamp lighting-class reliability, the CXA1512's small, uniform emitting surface enables both directional and non-directional lighting applications including lamp retrofit and luminaire designs. Available in 2-step and 4-step color consistency, and featuring a 9-mm optical source, the CXA1512 brings new levels of flux and efficacy to this form factor.

## FEATURES

- Available in ANSI white bins as well as 4-step and 2-step EasyWhite bins at 2700K, 3000K, 3500K, 4000K and 5000K CCT
- 80 and 90 minimum CRI options
- Forward voltage: 37 V
- 85 °C binning and characterization
- Maximum drive current: 500 mA
- 115° viewing angle, uniform chromaticity profile
- Top-side solder connections
- Thermocouple attach point
- NEMA SSL-3 2011 standard flux bins
- UL-recognized component (E349212)



## TABLE OF CONTENTS

|                                                                  |    |
|------------------------------------------------------------------|----|
| Characteristics .....                                            | 2  |
| Flux Characteristics, Standard Order Codes and Bins .....        | 2  |
| Flux Characteristics, Standard Order Codes and Bins, 90 CRI..... | 4  |
| Flux Characteristics, Standard Order Codes and Bins, 80 CRI..... | 5  |
| Relative Spectral Power Distribution .                           | 6  |
| Relative Luminous Flux vs. Junction Temperature .....            | 6  |
| Electrical Characteristics.....                                  | 7  |
| Relative Luminous Flux vs. Current ..                            | 7  |
| Relative Chromaticity vs. Current and Temperature .....          | 8  |
| Typical Spatial Distribution.....                                | 9  |
| Performance Groups - Brightness.....                             | 9  |
| Performance Groups - Chromaticity.10                             |    |
| Cree EasyWhite Bins Plotted on the 1931 CIE Color Space .....    | 11 |
| Cree ANSI White Bins Plotted on the 1931 CIE Color Space .....   | 12 |
| Bin and Order Code Formats .....                                 | 13 |
| Mechanical Dimensions.....                                       | 13 |
| Notes.....                                                       | 14 |
| Packaging.....                                                   | 15 |

## CHARACTERISTICS

| Characteristics                                | Unit    | Minimum | Typical | Maximum |
|------------------------------------------------|---------|---------|---------|---------|
| Effective thermal resistance, junction to case | °C/W    |         | 2.1     |         |
| Viewing angle (FWHM)                           | degrees |         | 115     |         |
| ESD classification (HBM per Mil-Std-883D)      |         |         | Class 2 |         |
| DC forward current                             | mA      |         | 350     | 500     |
| Reverse current                                | mA      |         |         | -0.1    |
| Forward voltage (@ 350 mA, 85 °C)              | V       |         | 37      |         |
| Forward voltage (@ 350 mA, 25 °C)              | V       |         | 38      | 42      |
| LED junction temperature                       | °C      |         |         | 150     |
| Temperature coefficient of voltage             | mV/°C   |         | -16     |         |

## FLUX CHARACTERISTICS, STANDARD ORDER CODES AND BINS ( $I_f = 350$ mA, $T_j = 85$ °C)

The following tables provide order codes for XLamp CXA1512 LEDs. For a complete description of the order code nomenclature, please reference Bin and Order Code Formats (page 13).

| Color     | CCT Range | Base Order Codes<br>Min. Luminous Flux<br>@ 350 mA |                   |                    | 2-Step Order Code   |                          | 4-Step Order Code   |                          |
|-----------|-----------|----------------------------------------------------|-------------------|--------------------|---------------------|--------------------------|---------------------|--------------------------|
|           |           | Group                                              | Flux (lm) @ 85 °C | Flux (lm) @ 25 °C* | Chromaticity Region |                          | Chromaticity Region |                          |
| EasyWhite | 5000K     | M2                                                 | 1380              | 1563               | 50H                 | CXA1512-0000-000N00M250H | 50F                 | CXA1512-0000-000N00M250F |
|           |           | M4                                                 | 1485              | 1682               |                     | CXA1512-0000-000N00M450H |                     | CXA1512-0000-000N00M450F |
|           | 4000K     | K4                                                 | 1290              | 1461               | 40H                 | CXA1512-0000-000N00K440H | 40F                 | CXA1512-0000-000N00K440F |
|           |           | M2                                                 | 1380              | 1563               |                     | CXA1512-0000-000N00M240H |                     | CXA1512-0000-000N00M240F |
|           |           | M4                                                 | 1485              | 1682               |                     | CXA1512-0000-000N00M440H |                     | CXA1512-0000-000N00M440F |
|           | 3500K     | K2                                                 | 1200              | 1359               | 35H                 | CXA1512-0000-000N00K235H | 35F                 | CXA1512-0000-000N00K235F |
|           |           | K4                                                 | 1290              | 1461               |                     | CXA1512-0000-000N00K435H |                     | CXA1512-0000-000N00K435F |
|           |           | M2                                                 | 1380              | 1563               |                     | CXA1512-0000-000N00M235H |                     | CXA1512-0000-000N00M235F |
|           | 3000K     | K2                                                 | 1200              | 1359               | 30H                 | CXA1512-0000-000N00K230H | 30F                 | CXA1512-0000-000N00K230F |
|           |           | K4                                                 | 1290              | 1461               |                     | CXA1512-0000-000N00K430H |                     | CXA1512-0000-000N00K430F |
|           | 2700K     | J4                                                 | 1120              | 1269               | 27H                 | CXA1512-0000-000N00J427H | 27F                 | CXA1512-0000-000N00J427F |
|           |           | K2                                                 | 1200              | 1359               |                     | CXA1512-0000-000N00K227H |                     | CXA1512-0000-000N00K227F |
|           |           | K4                                                 | 1290              | 1461               |                     | CXA1512-0000-000N00K427H |                     | CXA1512-0000-000N00K427F |

### Notes:

- Cree maintains a tolerance of  $\pm 7\%$  on flux and power measurements,  $\pm 0.005$  on chromaticity (CCx, CCy) measurements and a tolerance of  $\pm 2$  on CRI measurements.
- Minimum CRI for standard color temperatures 0E8, 27F, 27H, 0E7, 30F, 30H, 0E6, 35F, 35H is 80.
- Minimum CRI for standard color temperatures 0E5, 40F, 40H, 0E3, 50F, 50H is 70.
- Typical CRI for standard color temperatures 0E5, 40F, 40H, 0E3, 50F, 50H is 75.
- \* Flux values @ 25 °C are calculated and for reference only.

| Color      | CCT Range | Base Order Codes<br>Min. Luminous Flux<br>@ 350 mA |                      |                       | Chromaticity Regions | Order Code               |
|------------|-----------|----------------------------------------------------|----------------------|-----------------------|----------------------|--------------------------|
|            |           | Group                                              | Flux (lm)<br>@ 85 °C | Flux (lm)<br>@ 25 °C* |                      |                          |
| ANSI White | 5000K     | M2                                                 | 1380                 | 1563                  | 3A0, 3B0, 3C0, 3D0   | CXA1512-0000-000N00M20E3 |
|            |           | M4                                                 | 1485                 | 1682                  |                      | CXA1512-0000-000N00M40E3 |
|            | 4000K     | K4                                                 | 1290                 | 1461                  | 5A0, 5B0, 5C0, 5D0   | CXA1512-0000-000N00K40E5 |
|            |           | M2                                                 | 1380                 | 1563                  |                      | CXA1512-0000-000N00M20E5 |
|            |           | M4                                                 | 1485                 | 1682                  |                      | CXA1512-0000-000N00M40E5 |
|            | 3500K     | K2                                                 | 1200                 | 1359                  | 6A0, 6B0, 6C0, 6D0   | CXA1512-0000-000N00K20E6 |
|            |           | K4                                                 | 1290                 | 1461                  |                      | CXA1512-0000-000N00K40E6 |
|            |           | M2                                                 | 1380                 | 1563                  |                      | CXA1512-0000-000N00M20E6 |
|            | 3000K     | K2                                                 | 1200                 | 1359                  | 7A0, 7B0, 7C0, 7D0   | CXA1512-0000-000N00K20E7 |
|            |           | K4                                                 | 1290                 | 1461                  |                      | CXA1512-0000-000N00K40E7 |
|            | 2700K     | J4                                                 | 1120                 | 1269                  | 8A0, 8B0, 8C0, 8D0   | CXA1512-0000-000N00J40E8 |
|            |           | K2                                                 | 1200                 | 1359                  |                      | CXA1512-0000-000N00K20E8 |
|            |           | K4                                                 | 1290                 | 1461                  |                      | CXA1512-0000-000N00K40E8 |

**Notes:**

- Cree maintains a tolerance of  $\pm 7\%$  on flux and power measurements,  $\pm 0.005$  on chromaticity (CCx, CCy) measurements and a tolerance of  $\pm 2$  on CRI measurements.
- Minimum CRI for standard color temperatures 0E8, 27F, 27H, 0E7, 30F, 30H, 0E6, 35F, 35H is 80.
- Minimum CRI for standard color temperatures 0E5, 40F, 40H, 0E3, 50F, 50H is 70.
- Typical CRI for standard color temperatures 0E5, 40F, 40H, 0E3, 50F, 50H is 75.
- \* Flux values @ 25 °C are calculated and for reference only.

## FLUX CHARACTERISTICS, STANDARD ORDER CODES AND BINS, 90 CRI ( $I_F = 350 \text{ mA}$ , $T_J = 85 \text{ }^\circ\text{C}$ )

The following tables provide order codes for XLamp CXA1512 90 CRI minimum LEDs. For a complete description of the order code nomenclature, please reference Bin and Order Code Formats (page 13).

| Color     | CCT Range | Base Order Codes<br>Min. Luminous Flux<br>@ 350 mA |                      |                       | 2-Step Order Code      |                          | 4-Step Order Code      |                          |
|-----------|-----------|----------------------------------------------------|----------------------|-----------------------|------------------------|--------------------------|------------------------|--------------------------|
|           |           | Group                                              | Flux (lm) @<br>85 °C | Flux (lm) @<br>25 °C* | Chromaticity<br>Region |                          | Chromaticity<br>Region |                          |
| EasyWhite | 3000K     | H2                                                 | 900                  | 1019                  | 30H                    | CXA1512-0000-000N0UH230H | 30F                    | CXA1512-0000-000N0UH230F |
|           |           | H4                                                 | 970                  | 1099                  |                        | CXA1512-0000-000N0UH430H |                        | CXA1512-0000-000N0UH430F |
|           |           | J2                                                 | 1040                 | 1178                  |                        | CXA1512-0000-000N0UJ230H |                        | CXA1512-0000-000N0UJ230F |
|           | 2700K     | G4                                                 | 840                  | 952                   | 27H                    | CXA1512-0000-000N0UG427H | 27F                    | CXA1512-0000-000N0UG427F |
|           |           | H2                                                 | 900                  | 1019                  |                        | CXA1512-0000-000N0UH227H |                        | CXA1512-0000-000N0UH227F |
|           |           | H4                                                 | 970                  | 1099                  |                        | CXA1512-0000-000N0UH427H |                        | CXA1512-0000-000N0UH427F |

| Color      | CCT Range | Base Order Codes<br>Min Luminous Flux<br>@ 350 mA |                      |                       | Chromaticity Regions | Order Code               |
|------------|-----------|---------------------------------------------------|----------------------|-----------------------|----------------------|--------------------------|
|            |           | Group                                             | Flux (lm)<br>@ 85 °C | Flux (lm)<br>@ 25 °C* |                      |                          |
| ANSI White | 3000K     | H2                                                | 900                  | 1019                  | 7A0, 7B0, 7C0, 7D0   | CXA1512-0000-000N0UH20E7 |
|            |           | H4                                                | 970                  | 1099                  |                      | CXA1512-0000-000N0UH40E7 |
|            |           | J2                                                | 1040                 | 1178                  |                      | CXA1512-0000-000N0UJ20E7 |
|            | 2700K     | G4                                                | 840                  | 952                   | 8A0, 8B0, 8C0, 8D0   | CXA1512-0000-000N0UG40E8 |
|            |           | H2                                                | 900                  | 1019                  |                      | CXA1512-0000-000N0UH20E8 |
|            |           | H4                                                | 970                  | 1099                  |                      | CXA1512-0000-000N0UH40E8 |

### Notes:

- Cree maintains a tolerance of  $\pm 7\%$  on flux and power measurements,  $\pm 0.005$  on chromaticity (CCx, CCy) measurements and a tolerance of  $\pm 2$  on CRI measurements.
- Minimum CRI for high CRI color temperatures 0E8, 27F, 27H, 0E7, 30F, 30H is 90.
- \* Flux values @ 25 °C are calculated and for reference only.

## FLUX CHARACTERISTICS, STANDARD ORDER CODES AND BINS, 80 CRI ( $I_F = 350 \text{ mA}$ , $T_J = 85^\circ\text{C}$ )

The following tables provide order codes for XLamp CXA1512 80 CRI minimum LEDs. For a complete description of the order code nomenclature, please reference Bin and Order Code Formats (page 13).

| Color     | CCT Range | Base Order Codes<br>Min. Luminous Flux<br>@ 350 mA |                      |                       | 2-Step Order Code      |                          | 4-Step Order Code      |                          |
|-----------|-----------|----------------------------------------------------|----------------------|-----------------------|------------------------|--------------------------|------------------------|--------------------------|
|           |           | Group                                              | Flux (lm) @<br>85 °C | Flux (lm) @<br>25 °C* | Chromaticity<br>Region |                          | Chromaticity<br>Region |                          |
| EasyWhite | 5000K     | K2                                                 | 1200                 | 1359                  | 50H                    | CXA1512-0000-000N0HK250H | 50F                    | CXA1512-0000-000N0HK250F |
|           |           | K4                                                 | 1290                 | 1461                  |                        | CXA1512-0000-000N0HK450H |                        | CXA1512-0000-000N0HK450F |
|           |           | M2                                                 | 1380                 | 1563                  |                        | CXA1512-0000-000N0HM250H |                        | CXA1512-0000-000N0HM250F |
|           | 4000K     | K2                                                 | 1200                 | 1359                  | 40H                    | CXA1512-0000-000N0HK240H | 40F                    | CXA1512-0000-000N0HK240F |
|           |           | K4                                                 | 1290                 | 1461                  |                        | CXA1512-0000-000N0HK440H |                        | CXA1512-0000-000N0HK440F |
|           |           | M2                                                 | 1380                 | 1563                  |                        | CXA1512-0000-000N0HM240H |                        | CXA1512-0000-000N0HM240F |

| Color      | CCT Range | Base Order Codes<br>Min Luminous Flux<br>@ 350 mA |                      |                       | Chromaticity Regions | Order Code               |
|------------|-----------|---------------------------------------------------|----------------------|-----------------------|----------------------|--------------------------|
|            |           | Group                                             | Flux (lm)<br>@ 85 °C | Flux (lm)<br>@ 25 °C* |                      |                          |
| ANSI White | 5000K     | K2                                                | 1200                 | 1359                  | 3A0, 3B0, 3C0, 3D0   | CXA1512-0000-000N0HK20E3 |
|            |           | K4                                                | 1290                 | 1461                  |                      | CXA1512-0000-000N0HK40E3 |
|            |           | M2                                                | 1380                 | 1563                  |                      | CXA1512-0000-000N0HM20E3 |
|            | 4000K     | K2                                                | 1200                 | 1359                  | 5A0, 5B0, 5C0, 5D0   | CXA1512-0000-000N0HK20E5 |
|            |           | K4                                                | 1290                 | 1461                  |                      | CXA1512-0000-000N0HK40E5 |
|            |           | M2                                                | 1380                 | 1563                  |                      | CXA1512-0000-000N0HM20E5 |

### Notes:

- Cree maintains a tolerance of  $\pm 7\%$  on flux and power measurements,  $\pm 0.005$  on chromaticity (CCx, CCy) measurements and a tolerance of  $\pm 2$  on CRI measurements.
- Minimum CRI for high CRI color temperatures 0E5, 40F, 40H, 0E3, 50F, 50H is 80.
- \* Flux values @ 25 °C are calculated and for reference only.

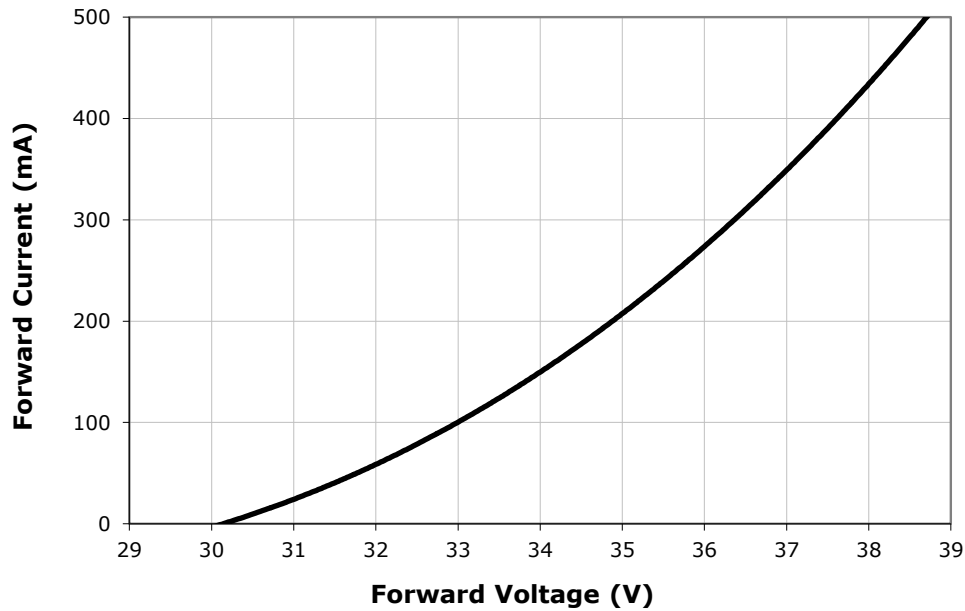
**RELATIVE SPECTRAL POWER DISTRIBUTION ( $I_F = 350 \text{ mA}$ ,  $T_J = 85 \text{ }^\circ\text{C}$ )**



**RELATIVE LUMINOUS FLUX VS. JUNCTION TEMPERATURE ( $I_F = 350 \text{ mA}$ )**



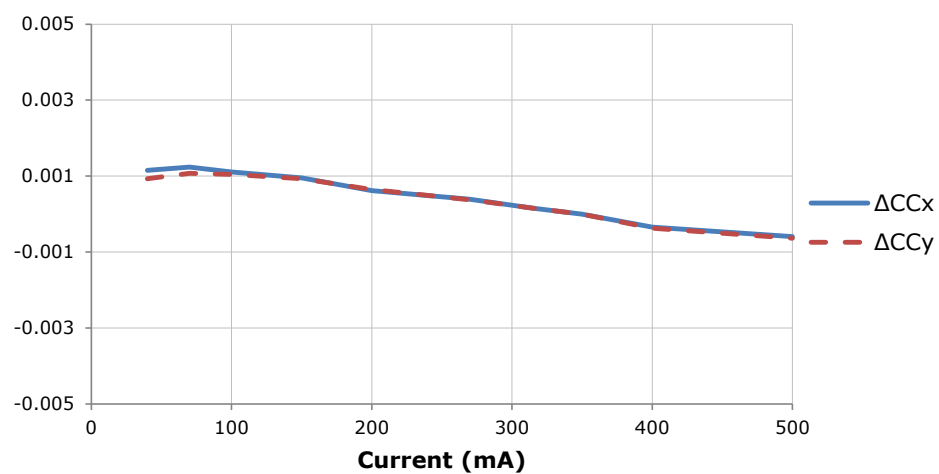
**ELECTRICAL CHARACTERISTICS ( $T_j = 85\text{ }^{\circ}\text{C}$ )**



**RELATIVE LUMINOUS FLUX VS. CURRENT ( $T_j = 85\text{ }^{\circ}\text{C}$ )**



## RELATIVE CHROMATICITY VS. CURRENT AND TEMPERATURE (3000K, 80 CRI)



## TYPICAL SPATIAL DISTRIBUTION



## PERFORMANCE GROUPS - BRIGHTNESS ( $I_f = 350\text{ mA}$ , $T_j = 85\text{ °C}$ )

XLamp CXA1512 LEDs are tested for luminous flux and placed into one of the following bins.

| Group Code | Min. Luminous Flux<br>@ 350 mA | Max. Luminous Flux<br>@ 350 mA |
|------------|--------------------------------|--------------------------------|
| G4         | 840                            | 900                            |
| H2         | 900                            | 970                            |
| H4         | 970                            | 1040                           |
| J2         | 1040                           | 1120                           |
| J4         | 1120                           | 1200                           |
| K2         | 1200                           | 1290                           |
| K4         | 1290                           | 1380                           |
| M2         | 1380                           | 1485                           |
| M4         | 1485                           | 1590                           |

## PERFORMANCE GROUPS - CHROMATICITY ( $T_j = 85^\circ\text{C}$ )

XLamp CXA1512 LEDs are tested for chromaticity and placed into one of the regions defined by the following bounding coordinates.

| EasyWhite Color Temperatures – 4-Step |       |        |        |
|---------------------------------------|-------|--------|--------|
| Code                                  | CCT   | x      | y      |
| 50F                                   | 5000K | 0.3407 | 0.3459 |
|                                       |       | 0.3415 | 0.3586 |
|                                       |       | 0.3499 | 0.3654 |
|                                       |       | 0.3484 | 0.3521 |
| 40F                                   | 4000K | 0.3744 | 0.3685 |
|                                       |       | 0.3782 | 0.3837 |
|                                       |       | 0.3912 | 0.3917 |
|                                       |       | 0.3863 | 0.3758 |
| 35F                                   | 3500K | 0.3981 | 0.3800 |
|                                       |       | 0.4040 | 0.3966 |
|                                       |       | 0.4186 | 0.4037 |
|                                       |       | 0.4116 | 0.3865 |
| 30F                                   | 3000K | 0.4242 | 0.3919 |
|                                       |       | 0.4322 | 0.4096 |
|                                       |       | 0.4449 | 0.4141 |
|                                       |       | 0.4359 | 0.3960 |
| 27F                                   | 2700K | 0.4475 | 0.3994 |
|                                       |       | 0.4573 | 0.4178 |
|                                       |       | 0.4695 | 0.4207 |
|                                       |       | 0.4589 | 0.4021 |

| EasyWhite Color Temperatures – 2-Step |       |        |        |
|---------------------------------------|-------|--------|--------|
| Code                                  | CCT   | x      | y      |
| 50H                                   | 5000K | 0.3429 | 0.3507 |
|                                       |       | 0.3434 | 0.3571 |
|                                       |       | 0.3475 | 0.3604 |
|                                       |       | 0.3469 | 0.3539 |
| 40H                                   | 4000K | 0.3784 | 0.3741 |
|                                       |       | 0.3804 | 0.3818 |
|                                       |       | 0.3867 | 0.3857 |
|                                       |       | 0.3844 | 0.3778 |
| 35H                                   | 3500K | 0.4030 | 0.3857 |
|                                       |       | 0.4061 | 0.3941 |
|                                       |       | 0.4132 | 0.3976 |
|                                       |       | 0.4099 | 0.3890 |
| 30H                                   | 3000K | 0.4291 | 0.3973 |
|                                       |       | 0.4333 | 0.4062 |
|                                       |       | 0.4395 | 0.4084 |
|                                       |       | 0.4351 | 0.3994 |
| 27H                                   | 2700K | 0.4528 | 0.4046 |
|                                       |       | 0.4578 | 0.4138 |
|                                       |       | 0.4638 | 0.4152 |
|                                       |       | 0.4586 | 0.4060 |

| ANSI White Bins |       |          |       |       |
|-----------------|-------|----------|-------|-------|
| Code            | CCT   | Bin Code | x     | y     |
| 0E3             | 5000K | 3A0      | .3371 | .3490 |
|                 |       |          | .3451 | .3554 |
|                 |       |          | .3440 | .3427 |
|                 |       |          | .3366 | .3369 |
|                 |       | 3B0      | .3376 | .3616 |
|                 |       |          | .3463 | .3687 |
|                 |       |          | .3451 | .3554 |
|                 |       |          | .3371 | .3490 |
|                 |       | 3C0      | .3463 | .3687 |
|                 |       |          | .3551 | .3760 |
|                 |       |          | .3533 | .3620 |
|                 |       |          | .3451 | .3554 |
|                 |       | 3D0      | .3451 | .3554 |
|                 |       |          | .3533 | .3620 |
|                 |       |          | .3515 | .3487 |
|                 |       |          | .3440 | .3427 |

| ANSI White Bins |       |          |       |       |
|-----------------|-------|----------|-------|-------|
| Code            | CCT   | Bin Code | x     | y     |
| 0E5             | 4000K | 5A0      | .3670 | .3578 |
|                 |       |          | .3702 | .3722 |
|                 |       |          | .3825 | .3798 |
|                 |       |          | .3783 | .3646 |
|                 |       | 5B0      | .3702 | .3722 |
|                 |       |          | .3736 | .3874 |
|                 |       |          | .3869 | .3958 |
|                 |       |          | .3825 | .3798 |
|                 |       | 5C0      | .3825 | .3798 |
|                 |       |          | .3869 | .3958 |
|                 |       |          | .4006 | .4044 |
|                 |       |          | .3950 | .3875 |
|                 |       | 5D0      | .3783 | .3646 |
|                 |       |          | .3825 | .3798 |
|                 |       |          | .3950 | .3875 |
|                 |       |          | .3898 | .3716 |

| ANSI White Bins |       |          |       |       |
|-----------------|-------|----------|-------|-------|
| Code            | CCT   | Bin Code | x     | y     |
| 0E6             | 3500K | 6A0      | .3889 | .3690 |
|                 |       |          | .3941 | .3848 |
|                 |       |          | .4080 | .3916 |
|                 |       |          | .4017 | .3751 |
|                 |       | 6B0      | .3941 | .3848 |
|                 |       |          | .3996 | .4015 |
|                 |       |          | .4146 | .4089 |
|                 |       |          | .4080 | .3916 |
|                 |       | 6C0      | .4080 | .3916 |
|                 |       |          | .4146 | .4089 |
|                 |       |          | .4299 | .4165 |
|                 |       |          | .4221 | .3984 |
|                 |       | 6D0      | .4017 | .3751 |
|                 |       |          | .4080 | .3916 |
|                 |       |          | .4221 | .3984 |
|                 |       |          | .4147 | .3814 |

| ANSI White Bins |       |          |       |       | ANSI White Bins |       |          |       |       |
|-----------------|-------|----------|-------|-------|-----------------|-------|----------|-------|-------|
| Code            | CCT   | Bin Code | x     | y     | Code            | CCT   | Bin Code | x     | y     |
| 0E7             | 3000K | 7A0      | .4147 | .3814 | 0E8             | 2700K | 8A0      | .4373 | .3893 |
|                 |       |          | .4221 | .3984 |                 |       |          | .4465 | .4071 |
|                 |       |          | .4342 | .4028 |                 |       |          | .4582 | .4099 |
|                 |       |          | .4259 | .3853 |                 |       |          | .4483 | .3919 |
|                 |       | 7B0      | .4221 | .3984 |                 |       | 8B0      | .4465 | .4071 |
|                 |       |          | .4299 | .4165 |                 |       |          | .4562 | .4260 |
|                 |       |          | .4430 | .4212 |                 |       |          | .4687 | .4289 |
|                 |       |          | .4342 | .4028 |                 |       |          | .4582 | .4099 |
|                 |       | 7C0      | .4342 | .4028 |                 |       | 8C0      | .4582 | .4099 |
|                 |       |          | .4430 | .4212 |                 |       |          | .4687 | .4289 |
|                 |       |          | .4562 | .4260 |                 |       |          | .4813 | .4319 |
|                 |       |          | .4465 | .4071 |                 |       |          | .4700 | .4126 |
|                 |       | 7D0      | .4259 | .3853 |                 |       | 8D0      | .4483 | .3919 |
|                 |       |          | .4342 | .4028 |                 |       |          | .4582 | .4099 |
|                 |       |          | .4465 | .4071 |                 |       |          | .4700 | .4126 |
|                 |       |          | .4373 | .3893 |                 |       |          | .4593 | .3944 |

### CREE EASYWHITE BINS PLOTTED ON THE 1931 CIE COLOR SPACE ( $T_j = 85^\circ\text{C}$ )



**CREE ANSI WHITE BINS PLOTTED ON THE 1931 CIE COLOR SPACE ( $T_j = 85^\circ\text{C}$ )**



Bin codes and order codes are configured as follows:

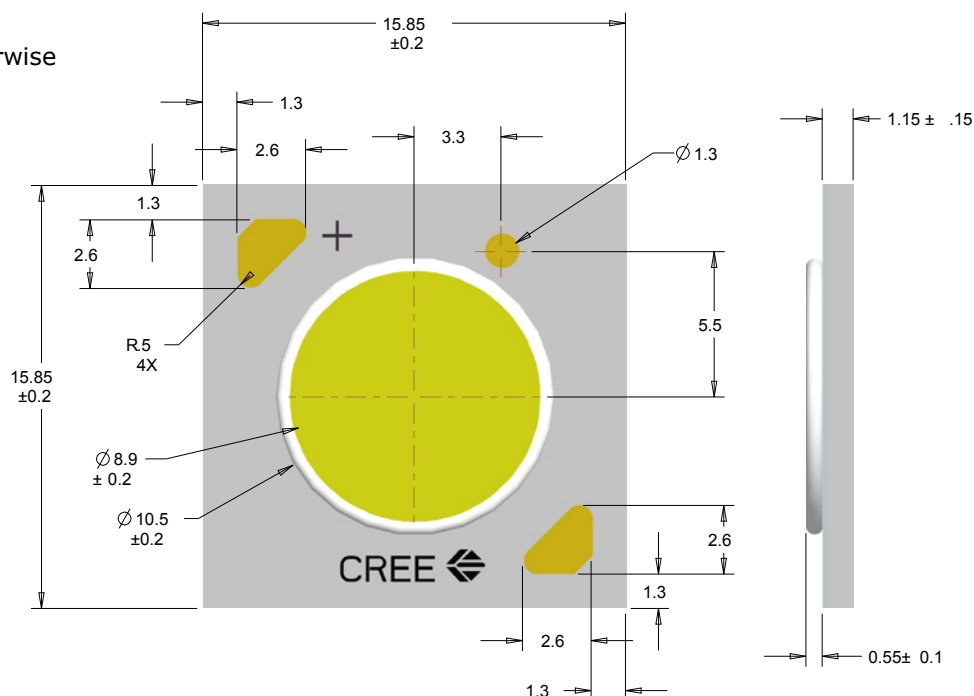


Dimensions are in mm.

Tolerances unless otherwise

specified:

$.x \pm .10$

$$.xx \pm .03$$
$$.xxx \pm .010$$
$$x^{\circ} \pm 1^{\circ}$$


## NOTES

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### **Lumen Maintenance Projections**

Cree now uses standardized IES LM-80-08 and TM-21-11 methods for collecting long-term data and extrapolating LED lumen maintenance. For information on the specific LM-80 data sets available for this LED, refer to the public LM-80 results document at [www.cree.com/xlamp\\_app\\_notes/LM80\\_results](http://www.cree.com/xlamp_app_notes/LM80_results).

Please read the XLamp Long-Term Lumen Maintenance application note at [www.cree.com/xlamp\\_app\\_notes/lumen\\_maintenance](http://www.cree.com/xlamp_app_notes/lumen_maintenance) for more details on Cree's lumen maintenance testing and forecasting. Please read the XLamp Thermal Management application note at [www.cree.com/xlamp\\_app\\_notes/thermal\\_management](http://www.cree.com/xlamp_app_notes/thermal_management) for details on how thermal design, ambient temperature, and drive current affect the LED junction temperature.

### **UL Recognized Component**

Level 4 enclosure consideration. The LED package or a portion thereof has been investigated as a fire and electrical enclosure per ANSI/UL 8750.

### **Vision Advisory Claim**

Users should be cautioned not to stare at the light of this LED product. The bright light can damage the eye.

### PACKAGING

Cree CXA1512 LEDs are packaged in tubes of 20, which are then combined in boxes of 5 tubes, or 100 LEDs. Boxes of 100 LEDs are of the same performance bin.

Dimensions are in mm.

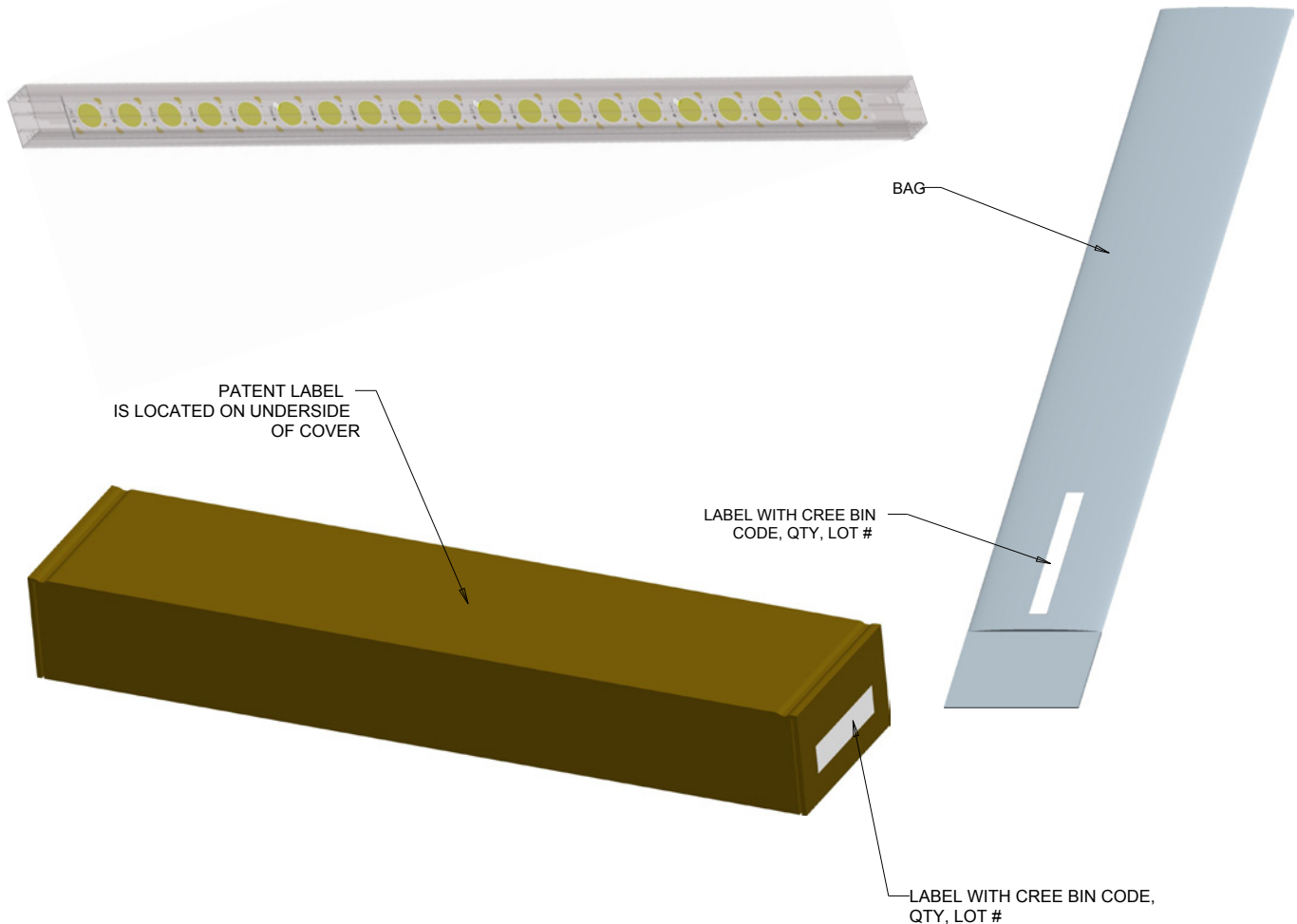
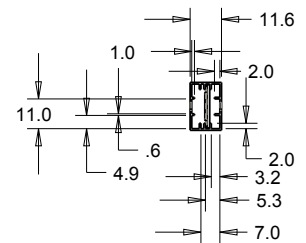
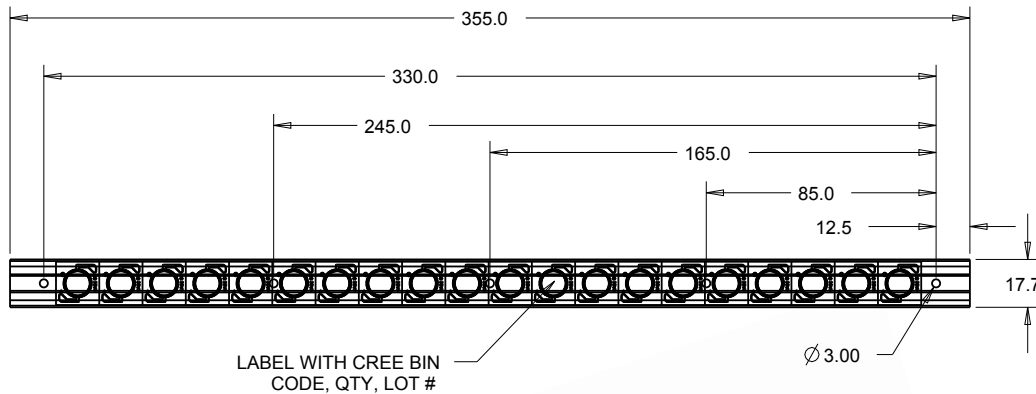
Tolerances unless otherwise specified:

.x  $\pm .10$

.xx  $\pm .03$

.xxx  $\pm .010$

x°  $\pm 1^\circ$



Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели,  
кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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