



LUXEON SunPlus 3030

Industry leading efficacy, 3V 3030 package



LUXEON SunPlus 3030 is a superior high efficacy, mid power package built on the legacy of the LUXEON 3030 product line. It serves as a go-to solution for horticulture applications that require top notch $\mu\text{mol/J}$ performance and long lifetime. Luxeon SunPlus 3030 adopt quadrant bin structure within 3 SDCM, which enables 2 SDCM by kitting.

FEATURES AND BENEFITS

Superior high efficacy at rated current enables outstanding $\mu\text{mol/J}$ at system level

Reliable package design from a proven product line affirms application long lifetime

Quadrant bin structure within 3 SDCM enables 2 SDCM by kitting

Industry standard package allows drop-in replacement for existing 3030 packages

Robust coating design for enhanced sulfurprotection capability ^[1]

[1] Refer to reliability datasheet for more details.

PRIMARY APPLICATIONS

Horticulture

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General Product Information

Product Test Conditions

LUXEON SunPlus 3030 LEDs are tested and binned with a 20ms monopulse of 65mA at a junction temperature, T_j , of 25°C.

Part Number Nomenclature

Part numbers for LUXEON SunPlus 3030 follows the convention below:

L 1 3 0 – **A A B B C C** 3 0 0 0 0 **D E**

Where:

- A A** – designates nominal CCT (27=2700K, 30=3000K, 35=3500K, 40=4000K, 50=5000K, 57=5700K, 65=6500K)
- B B** – designates minimum CRI (70=70CRI, 80=80CRI, 90=90CRI)
- C C** – designates product code (HA= LUXEON 3030 HE Plus, HB = LUXEON 3030 HE)
- D** – designates product code (B=generic version, C=upgraded version)
- E** – designates Lumileds internal code (i.e. 1, 2, 3, etc., share the same base part)

Therefore, the following part number is used for a LUXEON SunPlus 3030, 3000K 80CRI LED with generic version performance:

L 1 3 0 – **3 0 8 0** H A 3 0 0 0 0 **B 1**

Lumen Maintenance

Please contact your local Sales Representative or Lumileds Technical Solutions Manager for more information about the long-term performance of this product.

Environmental Compliance

Lumileds LLC is committed to providing environmentally friendly products to the solid-state lighting market. LUXEON SunPlus 3030 is compliant to the European Union directives on the restriction of hazardous substances in electronic equipment, namely the RoHS Directive 2011/65/EU and REACH Regulation (EC) 1907/2006. Lumileds LLC will not intentionally add the following restricted materials to its products: lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE).

Performance Characteristics

Product Selection Guide

Table 1. Product performance of LUXEON SunPlus 3030 at 65mA, T_j= 25°C.

| NOMINAL CCT ^[1] | MINIMUM CRI ^[2, 3] | PPF (μmol/s) ^[2, 3, 4] in PAR (400 to 700nm) | | PPF/W TYPICAL (μmol/J) | PART NUMBER |
|----------------------------|-------------------------------|---|---------|------------------------|--------------------|
| | | MINIMUM | TYPICAL | | |
| 2200K | 70 | 0.422 | 0.464 | 2.634 | L130-2270HA30000B1 |
| 3000K | 70 | 0.443 | 0.487 | 2.762 | L130-3070HA30000B1 |
| 3500K | 70 | 0.455 | 0.500 | 2.839 | L130-3570HA30000B1 |
| 4000K | 70 | 0.458 | 0.503 | 2.858 | L130-4070HA30000B1 |
| 5000K | 70 | 0.466 | 0.512 | 2.906 | L130-5070HA30000B1 |
| 5700K | 70 | 0.466 | 0.512 | 2.904 | L130-5770HA30000B1 |
| 6500K | 70 | 0.468 | 0.514 | 2.919 | L130-6570HA30000B1 |
| 2700K | 80 | 0.438 | 0.481 | 2.732 | L130-2780HA30000B1 |
| 3000K | 80 | 0.448 | 0.492 | 2.793 | L130-3080HA30000B1 |
| 3500K | 80 | 0.45 | 0.494 | 2.806 | L130-3580HA30000B1 |
| 4000K | 80 | 0.459 | 0.505 | 2.865 | L130-4080HA30000B1 |
| 5000K | 80 | 0.46 | 0.506 | 2.871 | L130-5080HA30000B1 |
| 5700K | 80 | 0.453 | 0.498 | 2.826 | L130-5780HA30000B1 |
| 6500K | 80 | 0.463 | 0.509 | 2.889 | L130-6580HA30000B1 |
| 2700K | 90 | 0.42 | 0.462 | 2.622 | L130-2790HA30000B1 |
| 3000K | 90 | 0.426 | 0.469 | 2.660 | L130-3090HA30000B1 |
| 3500K | 90 | 0.429 | 0.472 | 2.679 | L130-3590HA30000B1 |
| 4000K | 90 | 0.437 | 0.481 | 2.729 | L130-4090HA30000B1 |
| 5000K | 90 | 0.435 | 0.478 | 2.714 | L130-5090HA30000B1 |
| 5700K | 90 | 0.441 | 0.485 | 2.753 | L130-5790HA30000B1 |
| 6500K | 90 | 0.446 | 0.490 | 2.783 | L130-6590HA30000B1 |
| 2200K | 70 | 0.422 | 0.478 | 2.721 | L130-2270HA30000C1 |
| 3000K | 70 | 0.443 | 0.497 | 2.830 | L130-3070HA30000C1 |
| 3500K | 70 | 0.455 | 0.505 | 2.877 | L130-3570HA30000C1 |
| 4000K | 70 | 0.458 | 0.507 | 2.888 | L130-4070HA30000C1 |
| 5000K | 70 | 0.466 | 0.514 | 2.929 | L130-5070HA30000C1 |
| 5700K | 70 | 0.466 | 0.515 | 2.934 | L130-5770HA30000C1 |
| 6500K | 70 | 0.468 | 0.515 | 2.934 | L130-6570HA30000C1 |
| 2700K | 80 | 0.438 | 0.485 | 2.763 | L130-2780HA30000C1 |
| 3000K | 80 | 0.448 | 0.494 | 2.815 | L130-3080HA30000C1 |
| 3500K | 80 | 0.45 | 0.501 | 2.855 | L130-3580HA30000C1 |
| 4000K | 80 | 0.459 | 0.512 | 2.916 | L130-4080HA30000C1 |
| 5000K | 80 | 0.46 | 0.512 | 2.916 | L130-5080HA30000C1 |
| 5700K | 80 | 0.453 | 0.504 | 2.872 | L130-5780HA30000C1 |
| 6500K | 80 | 0.463 | 0.518 | 2.952 | L130-6580HA30000C1 |
| 2700K | 90 | 0.42 | 0.463 | 2.638 | L130-2790HA30000C1 |
| 3000K | 90 | 0.426 | 0.476 | 2.712 | L130-3090HA30000C1 |
| 3500K | 90 | 0.429 | 0.472 | 2.687 | L130-3590HA30000C1 |
| 4000K | 90 | 0.437 | 0.484 | 2.758 | L130-4090HA30000C1 |
| 5000K | 90 | 0.435 | 0.486 | 2.769 | L130-5090HA30000C1 |
| 5700K | 90 | 0.441 | 0.491 | 2.798 | L130-5790HA30000C1 |
| 6500K | 90 | 0.446 | 0.497 | 2.832 | L130-6590HA30000C1 |

Notes for Table 1:

1. Correlated color temperature is not targeted at T_j=85°C.
2. Luminous flux and CRI are specified at T_j=25°C. Typical CRI is approximately 2 points higher than the minimum CRI specified, but this is not guaranteed.
3. Lumileds maintains a tolerance of ±2 on CRI and ±7.5% on PPF.
4. PPF data is calculated from luminous flux measurements.

Optical Characteristics

Table 2. Optical characteristics for LUXEON SunPlus 3030 at 65mA, T_j= 25°C.

| PART NUMBER | TYPICAL TOTAL INCLUDED ANGLE ^[1] | TYPICAL VIEWING ANGLE ^[2] |
|--------------------|---|--------------------------------------|
| L130-xxxxHx30000x1 | 160° | 110° |

Notes for Table 2:

- Total angle at which 90% of total luminous flux is captured.
- Viewing angle is the off axis angle from the LED centerline where the luminous intensity is ½ of the peak value.

Electrical and Thermal Characteristics

Table 3. Electrical and thermal characteristics for LUXEON SunPlus 3030 at 65mA, T_j= 25°C.

| PART NUMBER | FORWARD VOLTAGE ^[1] (V _f) | | | TYPICAL TEMPERATURE COEFFICIENT OF FORWARD VOLTAGE ^[2] (mV/°C) | TYPICAL THERMAL RESISTANCE—JUNCTION TO SOLDER PAD (°C/W) |
|--------------------|--|---------|---------|---|--|
| | MINIMUM | TYPICAL | MAXIMUM | | |
| L130-xxxxHA30000x1 | 2.66 | 2.70 | 2.76 | -1.0 to -2.0 | 10.0 |

Notes for Table 3:

- Lumileds maintains a tolerance of ±0.1V on forward voltage measurements.
- Measured between 25°C and 85°C.

Absolute Maximum Ratings

Table 4. Absolute maximum ratings for LUXEON SunPlus 3030.

| PARAMETER | MAXIMUM PERFORMANCE |
|--|---------------------|
| DC Forward Current ^[1] | 240mA/480mA |
| Peak Pulsed Forward Current ^[2] | 350mA/700mA |
| ESD Sensitivity (ANSI/ESDA/JEDEC JS-001-2012) | Class 2 |
| LED Junction Temperature (DC & Pulse) | 125°C |
| Operating Case Temperature | -40°C to 105°C |
| LED Storage Temperature | -40°C to 105°C |
| Soldering Temperature | JEDEC 020D 260°C |
| Allowable Reflow Cycles | 3 |
| Reverse Voltage (V _{reverse}) ^[3] | -5V |

Notes for Table 4:

- Residual periodic variations due to power conversion from alternating current (AC) to direct current (DC), also called “ripple”, are acceptable if the following conditions are met:
 - The frequency of the ripple current is 100Hz or higher
 - The average current for each cycle does not exceed the maximum allowable DC forward current
 - The maximum amplitude of the ripple does not exceed 25% of the maximum allowable DC forward current
- Pulse operation with the maximum peak pulse forward current is acceptable if the pulse on time is ≤5ms per cycle and the duty cycle is ≤50%
- At a maximum reverse current of 10µA. LUXEON SunPlus 3030 LEDs are not designed to be driven in reverse bias.

Characteristics Curves

Spectral Power Distribution Characteristics

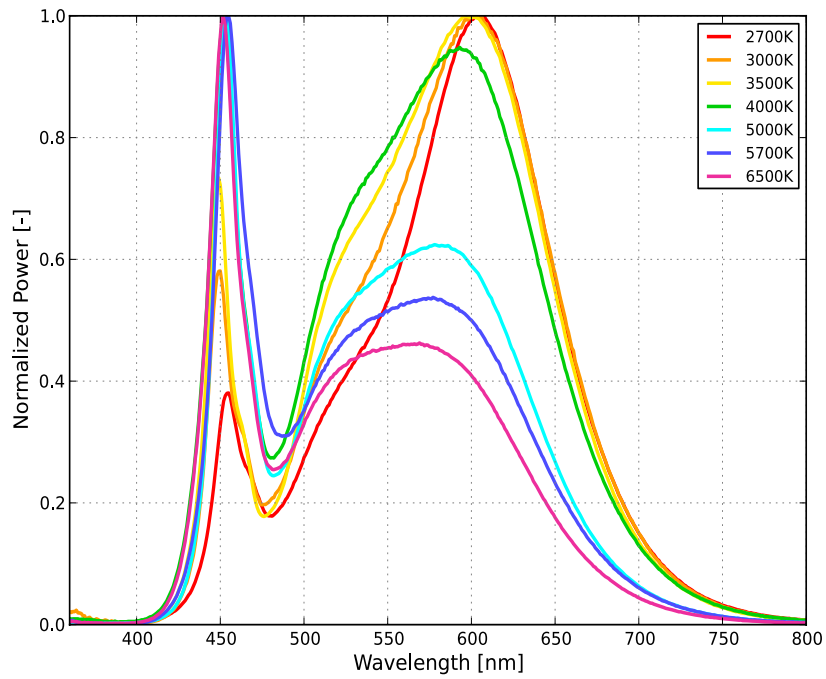


Figure 1a. Typical normalized power vs. wavelength for L130-xx80HA30000x1 at 65mA, $T_j=25^\circ\text{C}$.

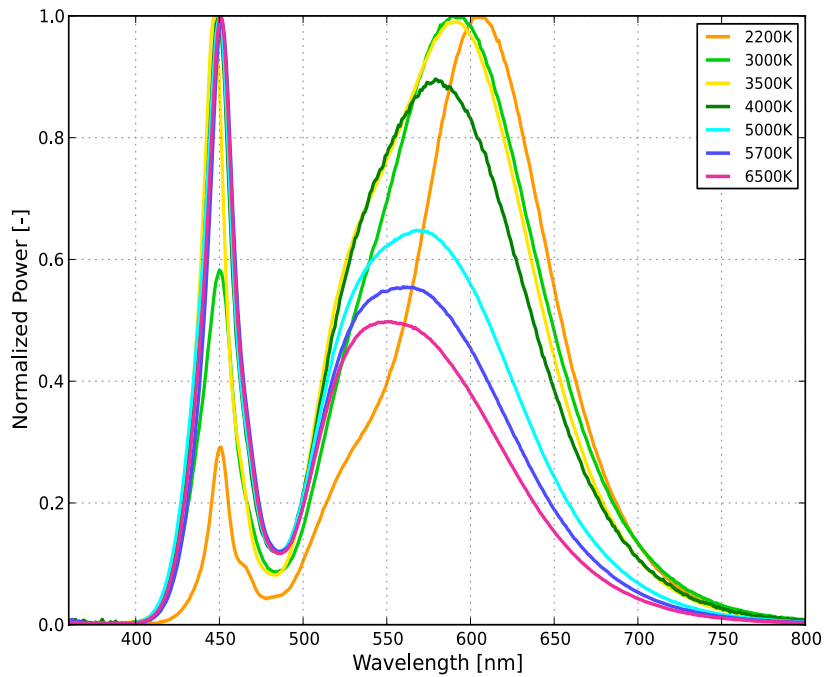


Figure 1b. Typical normalized power vs. wavelength for L130-xx70HA30000x1 at 65mA, $T_j=25^\circ\text{C}$.

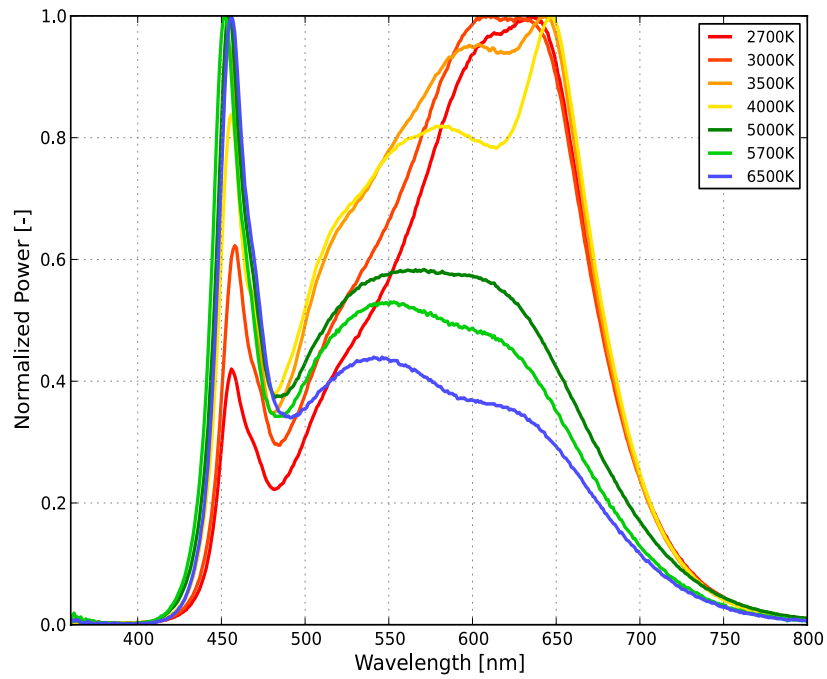


Figure 1c. Typical normalized power vs. wavelength for L130-xx90HA30000x1 at 65mA, $T_j=25^\circ\text{C}$.

Light Output Characteristics

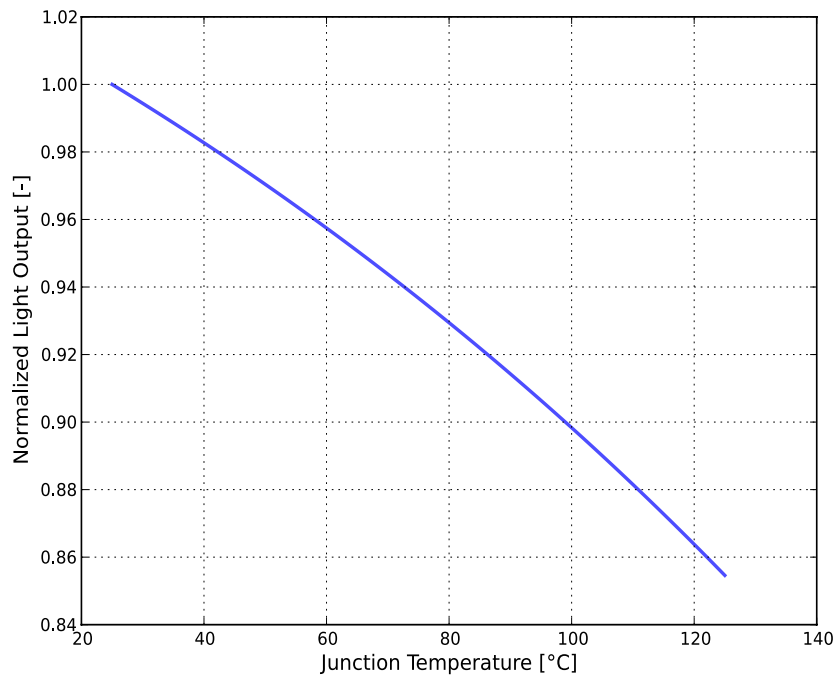
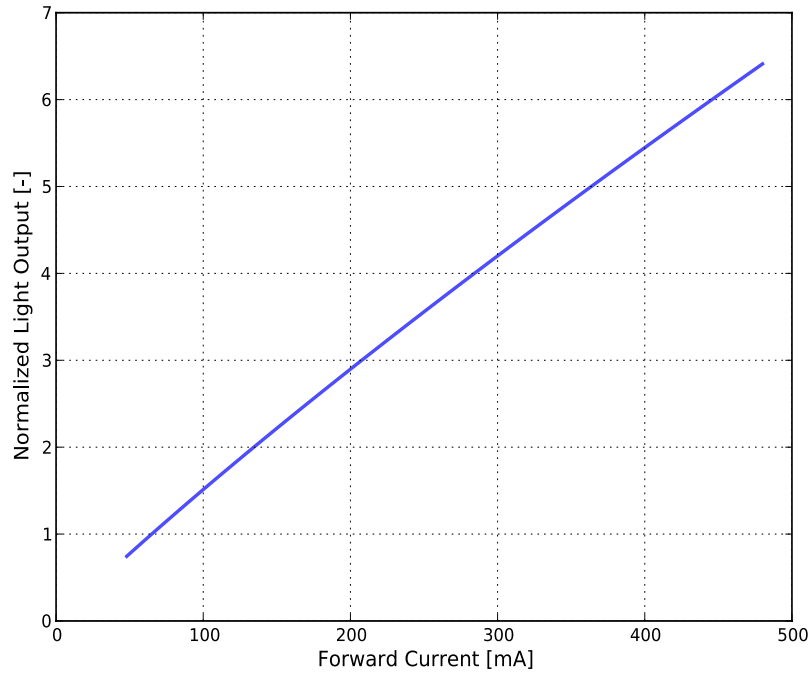


Figure 2. Typical normalized light output vs. junction temperature for L130-xxxxHA30000x1 at 65mA.



ESTIMATED TYPICAL RATIO COMPARED TO FLUX AT RATED CONDITION 65mA, $T_j=25^{\circ}\text{C}$.

| 60mA | 65mA | 120mA | 150mA | 480mA |
|------|------|-------|-------|-------|
| 93% | 100% | 180% | 222% | 641% |

Figure 3. Typical normalized light output vs. forward current for L130-xxxxHA30000x1 at $T_j=25^{\circ}\text{C}$.

Forward Current Characteristics

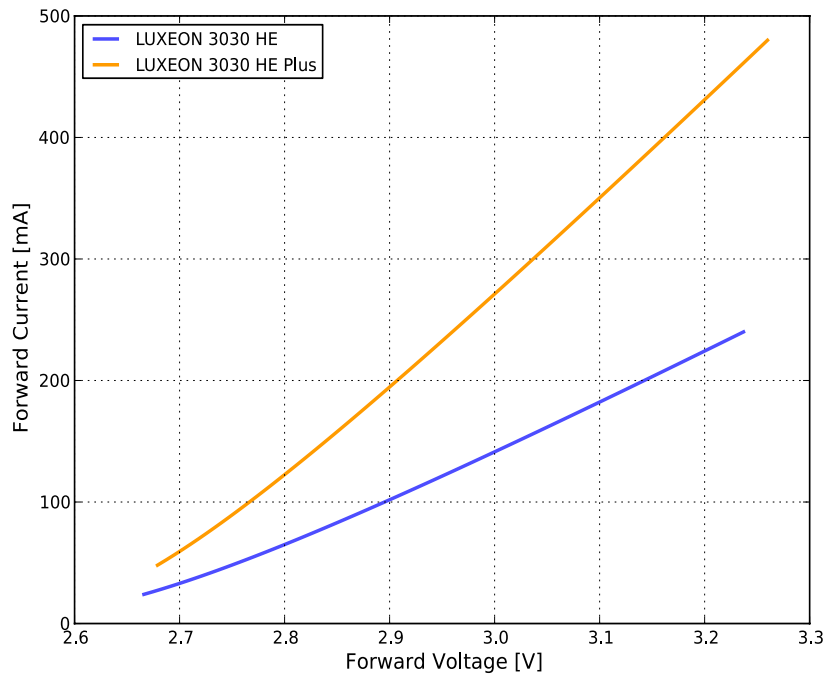


Figure 4. Typical forward current vs. forward voltage for L130-xxxxHA30000x1 at $T_j=25^{\circ}\text{C}$.

Radiation Pattern Characteristics

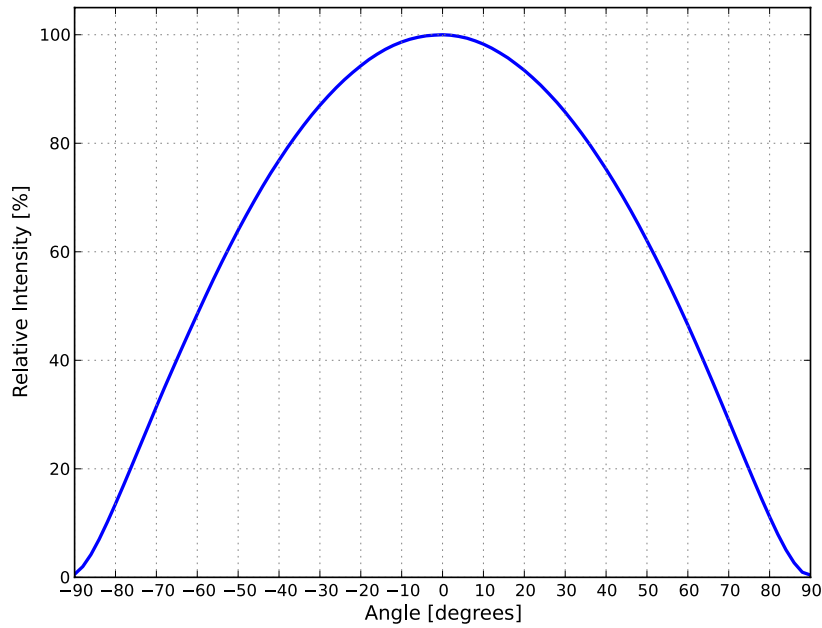


Figure 5. Typical radiation pattern for L130-xxxxHA30000x1 at 65mA, $T_j=25^{\circ}\text{C}$.

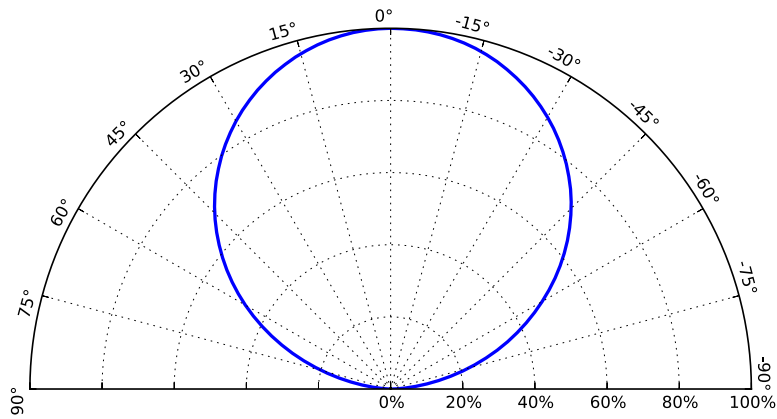


Figure 6. Typical polar radiation pattern for L130-xxxxHA30000x1 at 65mA, $T_j=25^{\circ}\text{C}$.

Product Bin and Labeling Definitions

Decoding Product Bin Labeling

In the manufacturing of semiconductor products, there are variations in performance around the average values given in the technical datasheet. For this reason, Lumileds bins LED components for luminous flux or radiometric power, color point, peak or dominant wavelength and forward voltage.

LUXEON SunPlus 3030 LEDs are labeled using a 4- or 5-digit alphanumeric CAT code following the format below:

A B C D or A x B C D

- A** – designates luminous flux bin (example: F=35.5 to 37.0 lm, G=37.0 to 38.5 lm)
- x** – designates Lumileds internal code
- B C** – designates color bin (example: 5E, 5H, 5F, 5G for 4000K parts)
- D** – designates forward voltage bin (K = 2.65 to 2.75V)

Therefore, a LUXEON SunPlus 3030 with a lumen range of 35.5 to 37.0 lm, color bin of 5E, and a forward voltage range of 2.65 to 2.75V has the following CAT code:

F 5 E K

Luminous Flux Bins

Table 5 lists the standard luminous flux bins for LUXEON SunPlus 3030 emitters. Although several bins are outlined, product availability in a particular bin varies by production run and by product performance. Not all bins are available in all CCTs.

Table 5. Luminous flux bin definitions for LUXEON SunPlus 3030 at 65mA, $T_j=25^\circ\text{C}$.

| BIN | LUMINOUS FLUX ⁽¹⁾ (lm) | |
|-----|-----------------------------------|---------|
| | MINIMUM | MAXIMUM |
| Y | 25.0 | 26.5 |
| Z | 26.5 | 28.0 |
| A | 28.0 | 29.5 |
| B | 29.5 | 31.0 |
| C | 31.0 | 32.5 |
| D | 32.5 | 34.0 |
| E | 34.0 | 35.5 |
| F | 35.5 | 37.0 |
| G | 37.0 | 38.5 |
| H | 38.5 | 40.0 |
| J | 40.0 | 41.5 |

Notes for Table 5:

1. Lumileds maintains a tolerance of $\pm 7.5\%$ on luminous flux measurements.

Color Bin Definitions

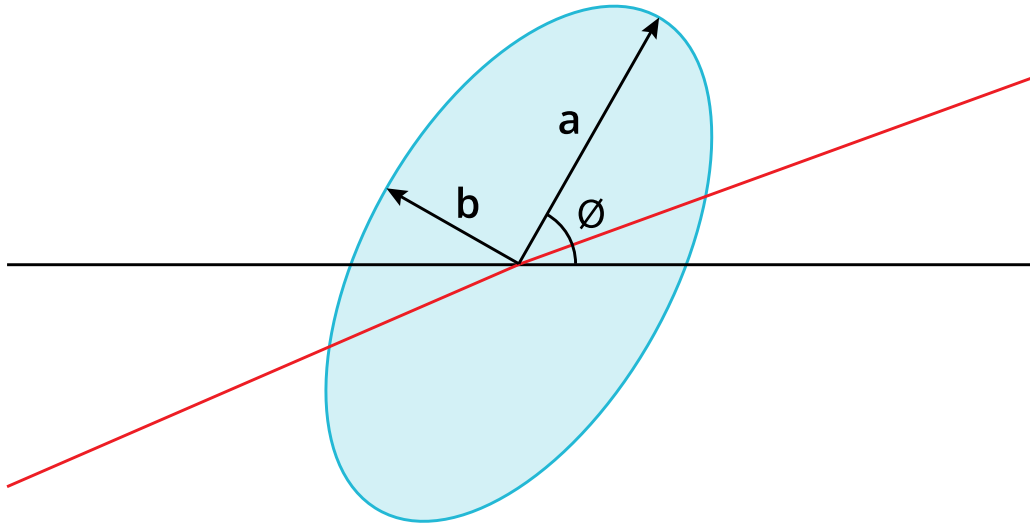


Figure 7.3- and 5-step MacAdam ellipse illustration for Tables 6a-6g.

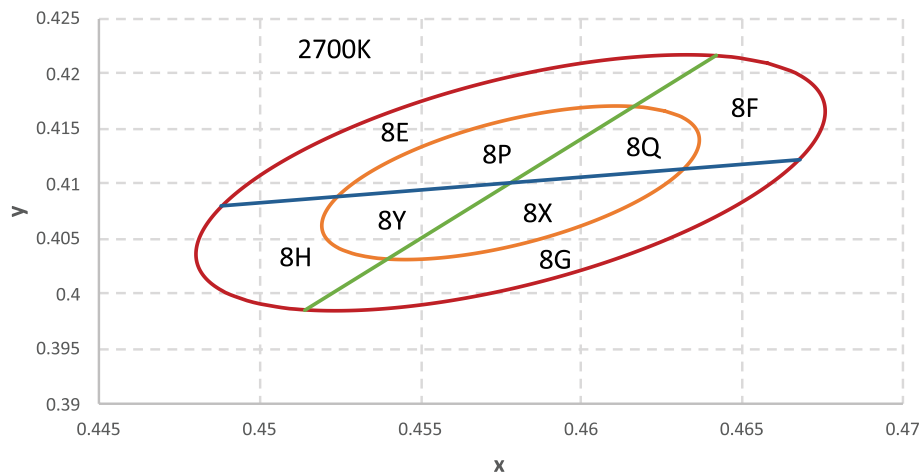


Figure 8a. 1/8th color bin structure for LUXEON SunPlus 3030 2700K, at 65mA, $T_j=25^\circ\text{C}$.

Table 6a. 3- and 5-step MacAdam ellipse color bin definitions for LUXEON SunPlus 3030 2700K, at 65mA, $T_j=25^\circ\text{C}$.

| NOMINAL CCT | COLOR SPACE | CENTER POINT ⁽¹⁾ (cx, cy) | MAJOR AXIS, a | MINOR AXIS, b | ELLIPSE ROTATION ANGLE, θ |
|-------------|-------------------------------|---|------------------|------------------|-------------------------------------|
| 2700K | Single 3-Step MacAdam ellipse | (0.4578, 0.4101) | 0.00810 | 0.00420 | 53.70° |
| 2700K | Single 5-Step MacAdam ellipse | (0.4578, 0.4101) | 0.01350 | 0.00700 | 53.70° |

Notes for Table 6a:

1. Lumileds maintains a tolerance of ± 0.007 on x and y color coordinates in the CIE 1931 color space.

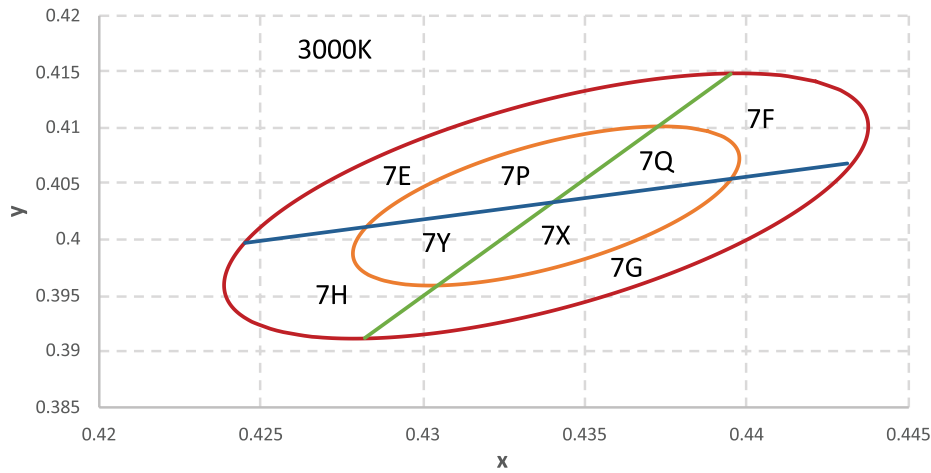


Figure 8b. 1/8th color bin structure for LUXEON SunPlus 3030 3000K, at 65mA, T_j=25°C.

Table 6b. 3- and 5-step MacAdam ellipse color bin definitions for LUXEON SunPlus 3030 3000K, at 65mA, T_j=25°C.

| NOMINAL CCT | COLOR SPACE | CENTER POINT ^[1] (cx, cy) | MAJOR AXIS, a | MINOR AXIS, b | ELLIPSE ROTATION ANGLE, θ |
|-------------|-------------------------------|---|------------------|------------------|-------------------------------------|
| 3000K | Single 3-Step MacAdam ellipse | (0.4338, 0.4030) | 0.00834 | 0.00408 | 53.22° |
| 3000K | Single 5-Step MacAdam ellipse | (0.4338, 0.4030) | 0.01390 | 0.00680 | 53.22° |

Notes for Table 6b:

1. Lumileds maintains a tolerance of ± 0.007 on x and y color coordinates in the CIE 1931 color space.

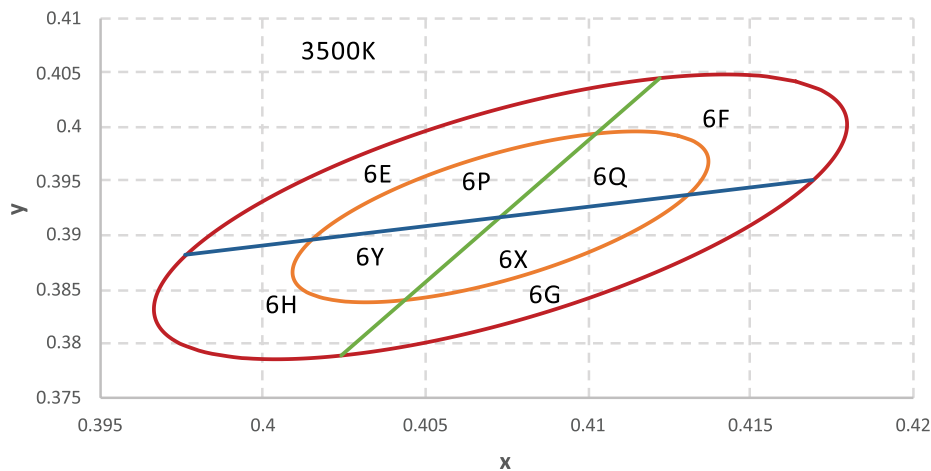


Figure 8c. 1/8th color bin structure for LUXEON SunPlus 3030 3500K, at 65mA, T_j=25°C.

Table 6c. 3- and 5-step MacAdam ellipse color bin definitions for LUXEON SunPlus 3030 3500K, at 65mA, T_j=25°C.

| NOMINAL CCT | COLOR SPACE | CENTER POINT ^[1] (cx, cy) | MAJOR AXIS, a | MINOR AXIS, b | ELLIPSE ROTATION ANGLE, θ |
|-------------|-------------------------------|---|------------------|------------------|-------------------------------------|
| 3500K | Single 3-Step MacAdam ellipse | (0.4073, 0.3917) | 0.00927 | 0.00414 | 54.00° |
| 3500K | Single 5-Step MacAdam ellipse | (0.4073, 0.3917) | 0.01545 | 0.00690 | 54.00° |

Notes for Table 6c:

1. Lumileds maintains a tolerance of ± 0.007 on x and y color coordinates in the CIE 1931 color space.

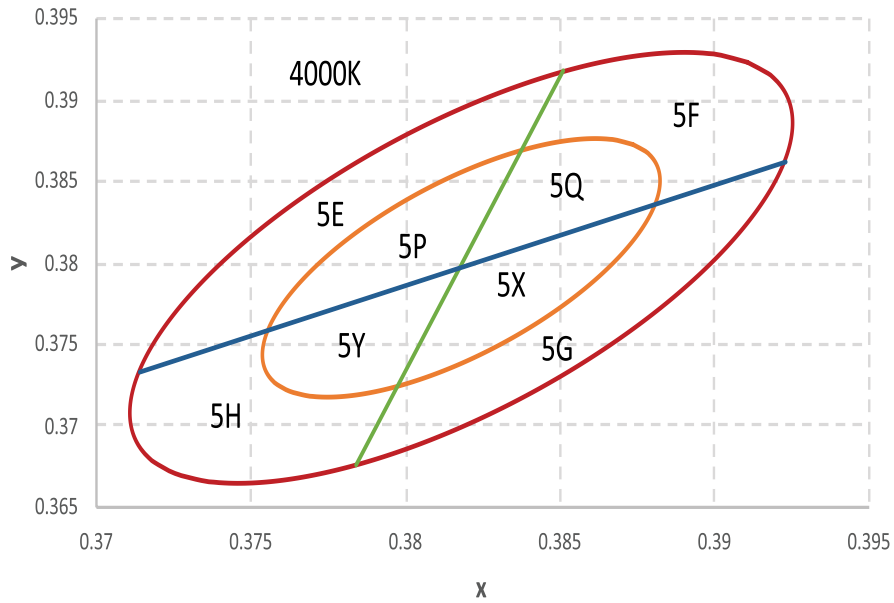


Figure 8d. 1/8th color bin structure for LUXEON SunPlus 3030 4000K, at 65mA, $T_j=25^\circ\text{C}$.

Table 6d. 3- and 5-step MacAdam ellipse color bin definitions for LUXEON SunPlus 3030 4000K, at 65mA, $T_j=25^\circ\text{C}$.

| NOMINAL CCT | COLOR SPACE | CENTER POINT ^[1] (cx, cy) | MAJOR AXIS, a | MINOR AXIS, b | ELLIPSE ROTATION ANGLE, θ |
|-------------|-------------------------------|---|------------------|------------------|-------------------------------------|
| 4000K | Single 3-Step MacAdam ellipse | (0.3818, 0.3797) | 0.00939 | 0.00402 | 53.72° |
| 4000K | Single 5-Step MacAdam ellipse | (0.3818, 0.3797) | 0.01565 | 0.00670 | 53.72° |

Notes for Table 6d:

1. Lumileds maintains a tolerance of ± 0.007 on x and y color coordinates in the CIE 1931 color space.

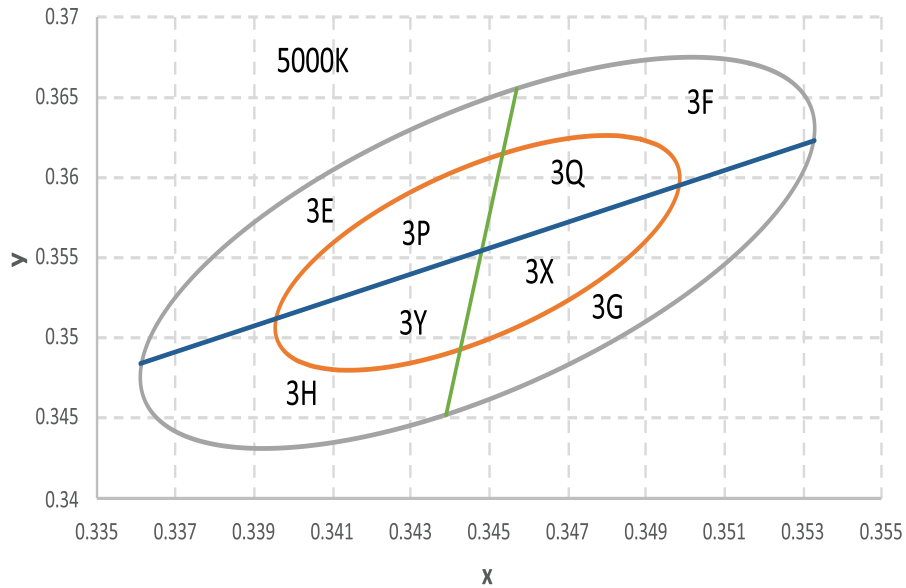


Figure 8e. 1/8th color bin structure for LUXEON SunPlus 3030 5000K, at 65mA, $T_j=25^\circ\text{C}$.

Table 6e. 3- and 5-step MacAdam ellipse color bin definitions for LUXEON SunPlus 3030 5000K, at 65mA, $T_j=25^\circ\text{C}$.

| NOMINAL CCT | COLOR SPACE | CENTER POINT ^[1] (cx, cy) | MAJOR AXIS, a | MINOR AXIS, b | ELLIPSE ROTATION ANGLE, θ |
|-------------|-------------------------------|---|------------------|------------------|-------------------------------------|
| 5000K | Single 3-Step MacAdam ellipse | (0.3447, 0.3553) | 0.00822 | 0.00354 | 59.62° |
| 5000K | Single 5-Step MacAdam ellipse | (0.3447, 0.3553) | 0.01370 | 0.00590 | 59.62° |

Notes for Table 6e:

1. Lumileds maintains a tolerance of ± 0.007 on x and y color coordinates in the CIE 1931 color space.

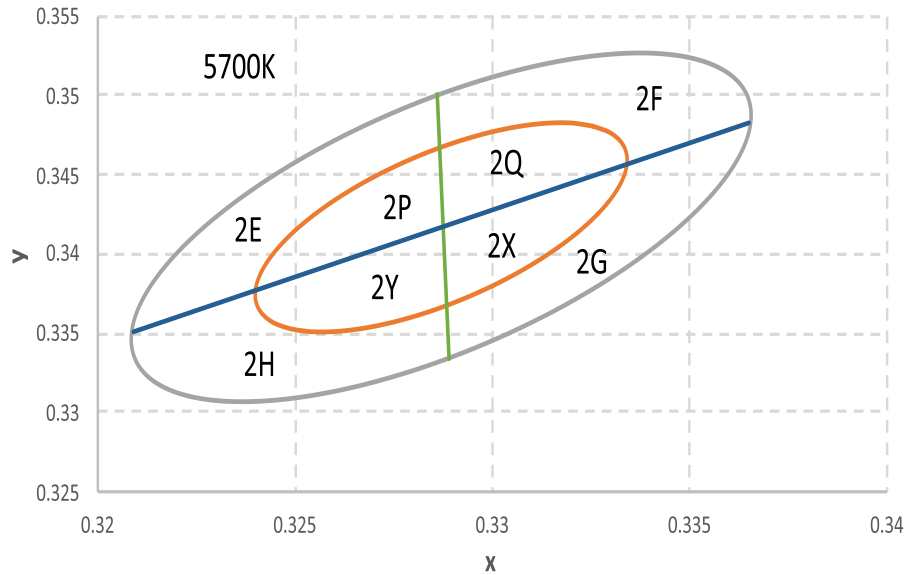


Figure 8f. 1/8th color bin structure for LUXEON SunPlus 3030 5700K, at 65mA, $T_j=25^{\circ}\text{C}$.

Table 6f. 3- and 5-step MacAdam ellipse color bin definitions for LUXEON SunPlus 3030 5700K, at 65mA, $T_j=25^{\circ}\text{C}$.

| NOMINAL CCT | COLOR SPACE | CENTER POINT ^[1] (cx, cy) | MAJOR AXIS, a | MINOR AXIS, b | ELLIPSE ROTATION ANGLE, θ |
|-------------|-------------------------------|---|------------------|------------------|-------------------------------------|
| 5700K | Single 3-Step MacAdam ellipse | (0.3287, 0.3417) | 0.00746 | 0.00320 | 59.09° |
| 5700K | Single 5-Step MacAdam ellipse | (0.3287, 0.3417) | 0.01243 | 0.00533 | 59.09° |

Notes for Table 6f:

1. Lumileds maintains a tolerance of ± 0.007 on x and y color coordinates in the CIE 1931 color space.

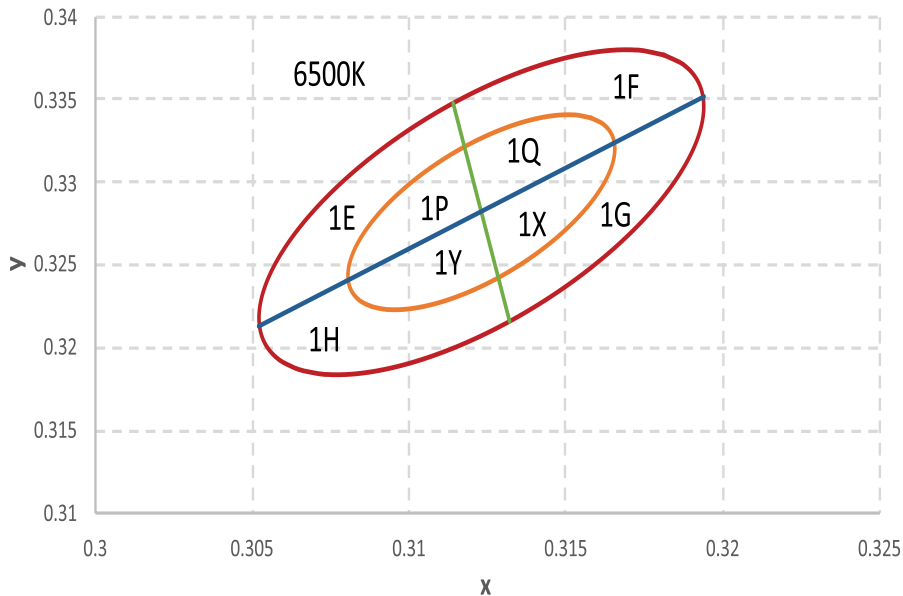


Figure 8g. 1/8th color bin structure for LUXEON SunPlus 3030 6500K, at 65mA, $T_j=25^{\circ}\text{C}$.

Table 6g. 3- and 5-step MacAdam ellipse color bin definitions for LUXEON SunPlus 3030 6500K, at 65mA, $T_j=25^{\circ}\text{C}$.

| NOMINAL CCT | COLOR SPACE | CENTER POINT ^[1] (cx, cy) | MAJOR AXIS, a | MINOR AXIS, b | ELLIPSE ROTATION ANGLE, θ |
|-------------|-------------------------------|---|------------------|------------------|-------------------------------------|
| 6500K | Single 3-Step MacAdam ellipse | (0.3123, 0.3282) | 0.00669 | 0.00285 | 58.57° |
| 6500K | Single 5-Step MacAdam ellipse | (0.3123, 0.3282) | 0.01115 | 0.00475 | 58.57° |

Notes for Table 6g:

1. Lumileds maintains a tolerance of ± 0.007 on x and y color coordinates in the CIE 1931 color space.

Forward Voltage Bins

Table 7. Forward voltage bin definitions for L130-xxxxHA30000x1, $T_j=25^{\circ}\text{C}$.

| BIN | FORWARD VOLTAGE ⁽¹⁾ (V _f) | |
|-----|--|---------|
| | MINIMUM | MAXIMUM |
| K | 2.66 | 2.76 |

Notes for Table 7:

1. Lumileds maintains a tolerance of $\pm 0.1\text{V}$ on forward voltage measurements.

Mechanical Dimensions

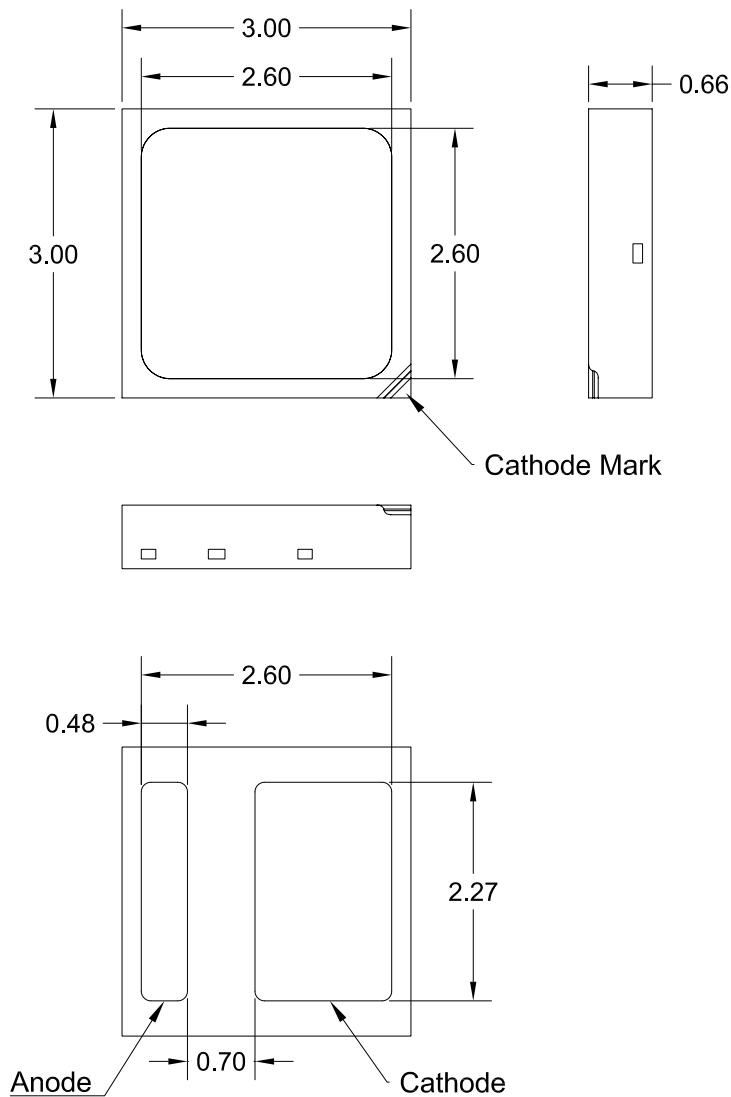


Figure 9. Mechanical dimensions for LUXEON SunPlus 3030.

Notes for Figure 9:

1. Drawings are not to scale.
2. All dimensions are in millimeters.
3. Tolerance: $\pm 0.10\text{mm}$.

Reflow Soldering Guidelines

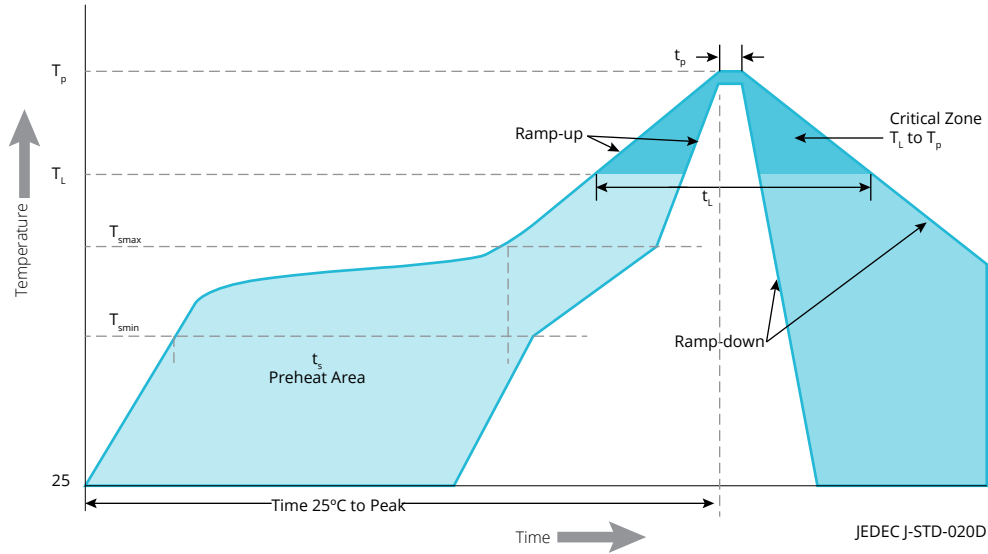


Figure 10. Visualization of the acceptable reflow temperature profile as specified in Table 8.

Table 8. Reflow profile characteristics for LUXEON SunPlus 3030.

| PROFILE FEATURE | LEAD FREE ASSEMBLY |
|--|----------------------|
| Preheat Minimum Temperature (T_{smin}) | 150°C |
| Preheat Maximum Temperature (T_{smax}) | 200°C |
| Preheat Time (t_{smin} to t_{smax}) | 60 to 120 seconds |
| Ramp-Up Rate (T_L to T_p) | 3°C / second maximum |
| Liquidous Temperature (T_L) | 217°C |
| Time Maintained Above Temperature T_L (t_L) | 60 to 150 seconds |
| Peak / Classification Temperature (T_p) | 260°C |
| Time Within 5°C of Actual Peak Temperature (t_p) | 20 to 40 seconds |
| Ramp-Down Rate (T_p to T_L) | 6°C / second maximum |
| Time 25°C to Peak Temperature | 8 minutes maximum |

Notes for Table 8:

1. All temperatures refer to the application Printed Circuit Board (PCB), measured on the surface adjacent to the package body.

JEDEC Moisture Sensitivity

Table 9. Moisture sensitivity levels for LUXEON SunPlus 3030.

| LEVEL | FLOOR LIFE | | SOAK REQUIREMENTS STANDARD | |
|-------|------------|---------------|----------------------------|---------------|
| | TIME | CONDITIONS | TIME | CONDITIONS |
| 3 | 168 Hours | 30°C / 60% RH | 192 Hours +5 / -0 | 30°C / 60% RH |

Solder Pad Design

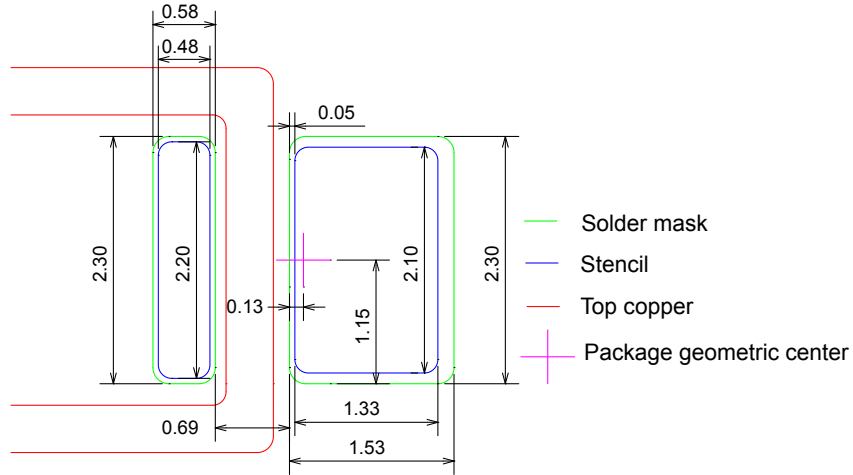


Figure 11. Recommended PCB solder pad layout for LUXEON SunPlus 3030.

Notes for Figure 11:

1. Drawings are not to scale.
2. All dimensions are in millimeters.

Packaging Information

Pocket Tape Dimensions

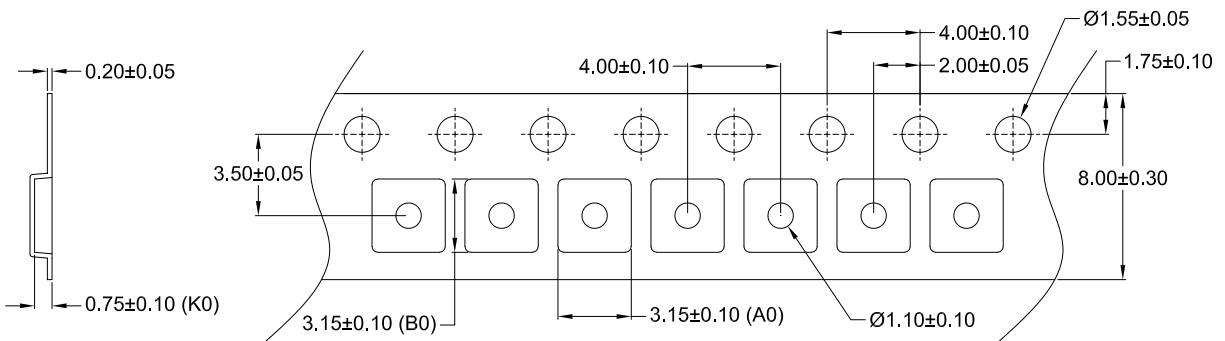


Figure 12. Pocket tape dimensions for LUXEON SunPlus 3030.

Notes for Figure 12:

1. Drawings are not to scale.
2. All dimensions are in millimeters.

Reel Dimensions

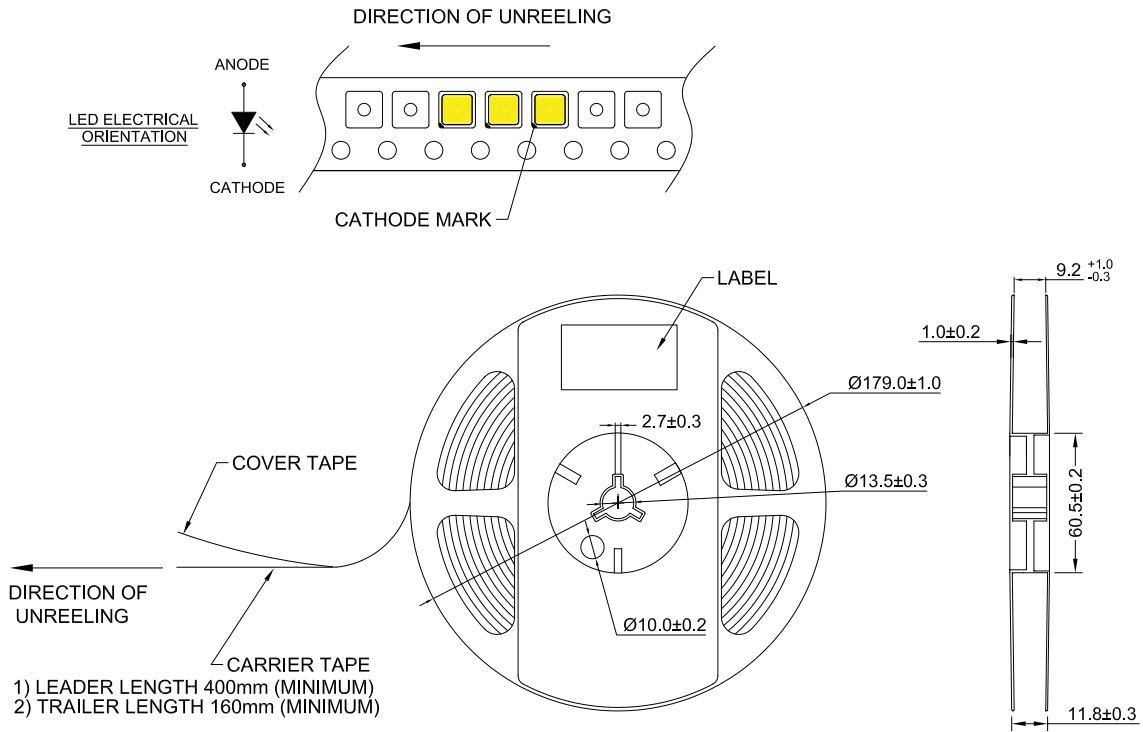


Figure 13. Reel dimensions for LUXEON SunPlus 3030.

Notes for Figure 13:

1. Drawings are not to scale.
2. All dimensions are in millimeters.

About Lumileds

Companies developing automotive, mobile, IoT and illumination lighting applications need a partner who can collaborate with them to push the boundaries of light. With over 100 years of inventions and industry firsts, Lumileds is a global lighting solutions company that helps customers around the world deliver differentiated solutions to gain and maintain a competitive edge. As the inventor of Xenon technology, a pioneer in halogen lighting and the leader in high performance LEDs, Lumileds builds innovation, quality and reliability into its technology, products and every customer engagement. Together with its customers, Lumileds is making the world better, safer, more beautiful—with light.

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