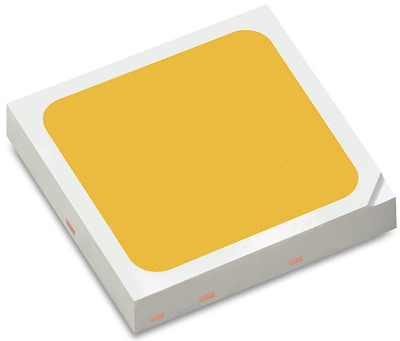
LUXEON SunPlus 3030

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 umol/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 umol/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

No. E507562

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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 A A B B** 3 0 C C C C C

Where:

A A A A – designates nominal CCT and CRI (2780=2700K, 80CRI; 3090 =3000K, 90CRI, etc., and NSC1 = Nightscape)

B B – designates product code (HA= LUXEON 3030 HE Plus, HB = LUXEON 3030 HE)

C C C C C – designates options for product specification (000B1 = base part number of performance proliferation B1, 000C1 = base part number of performance proliferation C1, 000D1 = base part number of performance proliferation D1, 00KD1 = base part number of performance proliferation D1 with KSF phosphor inside. Besides, there would be custom part numbers that are derived from base part number for kitting purpose, etc., and those would take the last five digits to differentiate from the base part number. For example, 000B4 = 3SDCM kitting by opposite bin of proliferation B1, 000B5 = pure 3SDCM of proliferation B1, 000B7 = 2SDCM by opposite bin kitting from four 3SDCM inner bins of proliferation B1.

Therefore, the following part number is used for a LUXEON SunPlus 3030, 3000K 80CRI LED with pure 3SDCM of proliferation:

L 1 3 0 – **3 0 8 0** H A 3 0 0 0 0 C 5

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 Holding B.V. 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 will not intentionally add the following restricted materials to its products: lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE).

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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	2.63	L130-2270HA30000B1
3000K	70	0.443	0.487	2.76	L130-3070HA30000B1
3500K	70	0.455	0.500	2.84	L130-3570HA30000B1
4000K	70	0.458	0.503	2.86	L130-4070HA30000B1
5000K	70	0.466	0.512	2.91	L130-5070HA30000B1
5700K	70	0.466	0.512	2.90	L130-5770HA30000B1
6500K	70	0.468	0.514	2.92	L130-6570HA30000B1
2700K	80	0.438	0.481	2.73	L130-2780HA30000B1
3000K	80	0.448	0.492	2.79	L130-3080HA30000B1
3500K	80	0.45	0.494	2.81	L130-3580HA30000B1
4000K	80	0.459	0.505	2.87	L130-4080HA30000B1
5000K	80	0.46	0.506	2.87	L130-5080HA30000B1
5700K	80	0.453	0.498	2.83	L130-5780HA30000B1
6500K	80	0.463	0.509	2.89	L130-6580HA30000B1
2700K	90	0.42	0.462	2.62	L130-2790HA30000B1
3000K	90	0.426	0.469	2.66	L130-3090HA30000B1
3500K	90	0.429	0.472	2.68	L130-3590HA30000B1
4000K	90	0.437	0.481	2.73	L130-4090HA30000B1
5000K	90	0.435	0.478	2.71	L130-5090HA30000B1
5700K	90	0.441	0.485	2.75	L130-5790HA30000B1
6500K	90	0.446	0.490	2.78	L130-6590HA30000B1
2200K	70	0.422	0.478	2.72	L130-2270HA30000C1
3000K	70	0.443	0.497	2.83	L130-3070HA30000C1
3500K	70	0.455	0.505	2.88	L130-3570HA30000C1
4000K	70	0.458	0.507	2.89	L130-4070HA30000C1
5000K	70	0.466	0.514	2.93	L130-5070HA30000C1
5700K	70	0.466	0.515	2.93	L130-5770HA30000C1
6500K	70	0.468	0.515	2.93	L130-6570HA30000C1
2700K	80	0.438	0.485	2.76	L130-2780HA30000C1
3000K	80	0.448	0.494	2.81	L130-3080HA30000C1
3500K	80	0.45	0.501	2.85	L130-3580HA30000C1
4000K	80	0.459	0.512	2.92	L130-4080HA30000C1
5000K	80	0.46	0.512	2.92	L130-5080HA30000C1
5700K	80	0.453	0.504	2.87	L130-5780HA30000C1
6500K	80	0.463	0.518	2.95	L130-6580HA30000C1
2700K	90	0.42	0.463	2.64	L130-2790HA30000C1
3000K	90	0.426	0.476	2.71	L130-3090HA30000C1
3500K	90	0.429	0.472	2.69	L130-3590HA30000C1
4000K	90	0.437	0.484	2.76	L130-4090HA30000C1
5000K	90	0.435	0.486	2.77	L130-5090HA30000C1
5700K	90	0.441	0.491	2.80	L130-5790HA30000C1
6500K	90	0.446	0.497	2.83	L130-6590HA30000C1

Table 1 continued on nexr page:

1. Correlated color temperature is hot targeted at T_j=25°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.

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

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	0.463	0.497	2.83	L130-2270HA30000D1
3000K	70	0.471	0.507	2.89	L130-3070HA30000D1
3500K	70	0.477	0.512	2.92	L130-3570HA30000D1
4000K	70	0.479	0.516	2.94	L130-4070HA30000D1
5000K	70	0.472	0.507	2.89	L130-5070HA30000D1
5700K	70	0.505	0.542	3.09	L130-5770HA30000D1
6500K	70	0.490	0.527	3.00	L130-6570HA30000D1
2700K	80	0.445	0.479	2.73	L130-2780HA30000D1
3000K	80	0.474	0.509	2.90	L130-3080HA30000D1
3500K	80	0.474	0.509	2.90	L130-3580HA30000D1
4000K	80	0.490	0.527	3.00	L130-4080HA30000D1
5000K	80	0.489	0.525	2.99	L130-5080HA30000D1
5700K	80	0.498	0.535	3.05	L130-5780HA30000D1
6500K	80	0.488	0.525	2.99	L130-6580HA30000D1
2700K	90	0.391	0.421	2.40	L130-2790HA30000D1
3000K	90	0.439	0.472	2.69	L130-3090HA30000D1
3500K	90	0.441	0.474	2.70	L130-3590HA30000D1
4000K	90	0.444	0.477	2.72	L130-4090HA30000D1
5000K	90	0.459	0.493	2.81	L130-5090HA30000D1
5700K	90	0.459	0.493	2.81	L130-5790HA30000D1
6500K	90	0.462	0.497	2.83	L130-6590HA30000D1
2700K	90	0.433	0.465	2.65	L130-2790HA3000KD1
3000K	90	0.437	0.470	2.68	L130-3090HA3000KD1
3500K	90	0.460	0.495	2.82	L130-3590HA3000KD1
4000K	90	0.475	0.511	2.91	L130-4090HA3000KD1
5000K	90	0.467	0.502	2.86	L130-5090HA3000KD1
5700K	90	0.462	0.497	2.83	L130-5790HA3000KD1
6500K	90	0.455	0.490	2.79	L130-6590HA3000KD1

Notes for Table 1:
1. Correlated color temperature is hot targeted at T_j=25°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.

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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:
1. Total angle at which 90% of total luminous flux is captured.
2. 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-xxxxHA30000B1	2.66	2.70	2.76	-1.0 to -2.0	10.0
L130-xxxxHA30000C1	2.66	2.70	2.76	-1.0 to -2.0	10.0
L130-xxxxHA30000D1	2.65	2.70	2.75	-1.0 to -2.0	4.0

Notes for Table 3:
1. Lumileds maintains a tolerance of ±0.1V on forward voltage measurements.
2. 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][2]	480mA/270mA
Peak Pulsed Forward Current [1][3]	700mA/300mA
ESD Sensitivity (ANSI/ESDA/JEDEC JS-001-2012)[1]	Class 2/Class 3B
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:
1. Maximum performance is listed for LUXEON Sunplus 3030 -0B1, -0C1/ -0D1.
2. 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
3. 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%.
4. At a maximum reverse current of 10µA. LUXEON Sunplus 3030 is not designed to be driven in reverse bias.

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Characteristics Curves

Spectral Power Distribution Characteristics

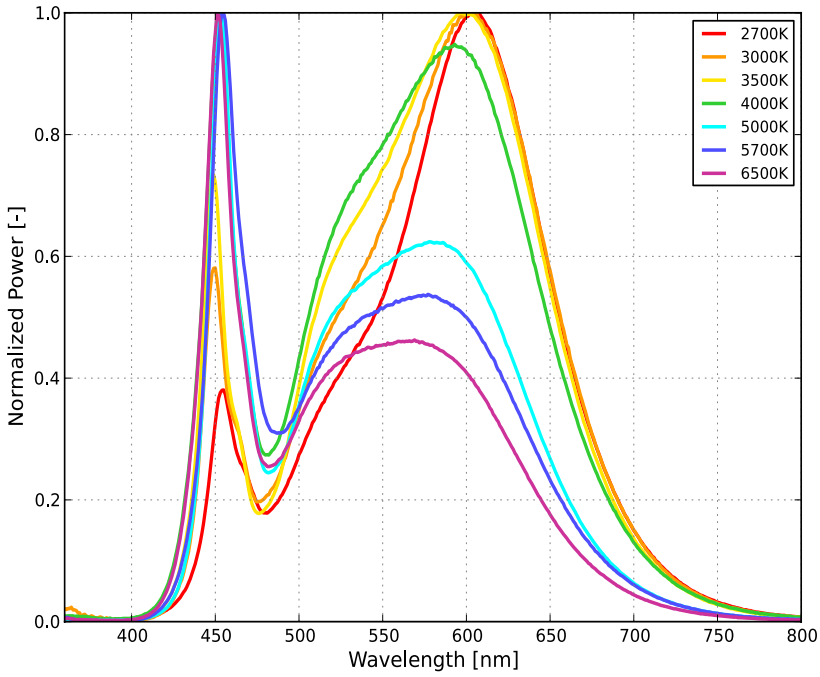


Figure 1. Typical normalized power vs. wavelength for LUXEON 3030 Sunplus 0B1/0C1/0D1 70CRI at 65mA, T_j=25°C

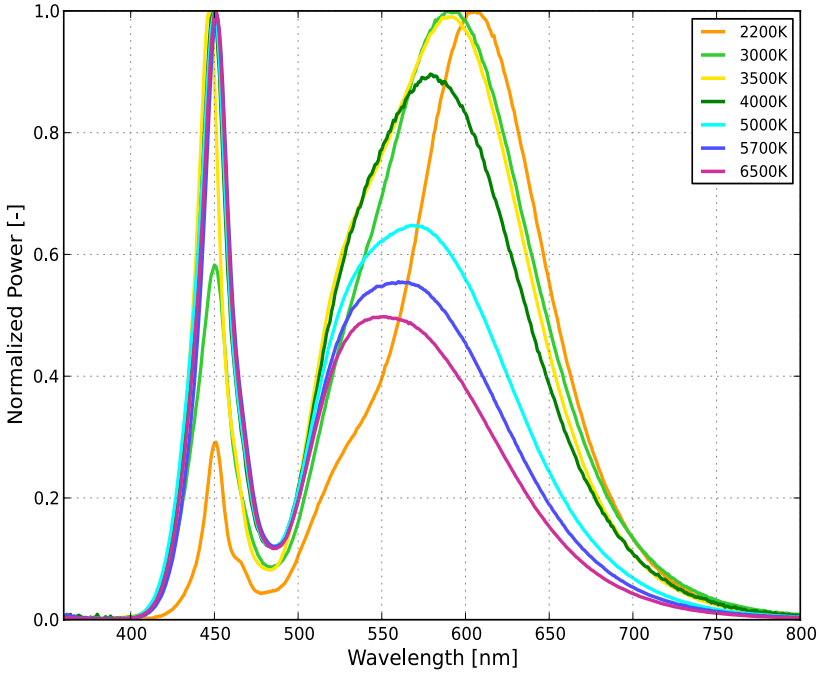


Figure 2. Typical normalized power vs. wavelength for LUXEON 3030 Sunplus 0B1/0C1/0D1 80CRI at 65mA, T_j=25°C

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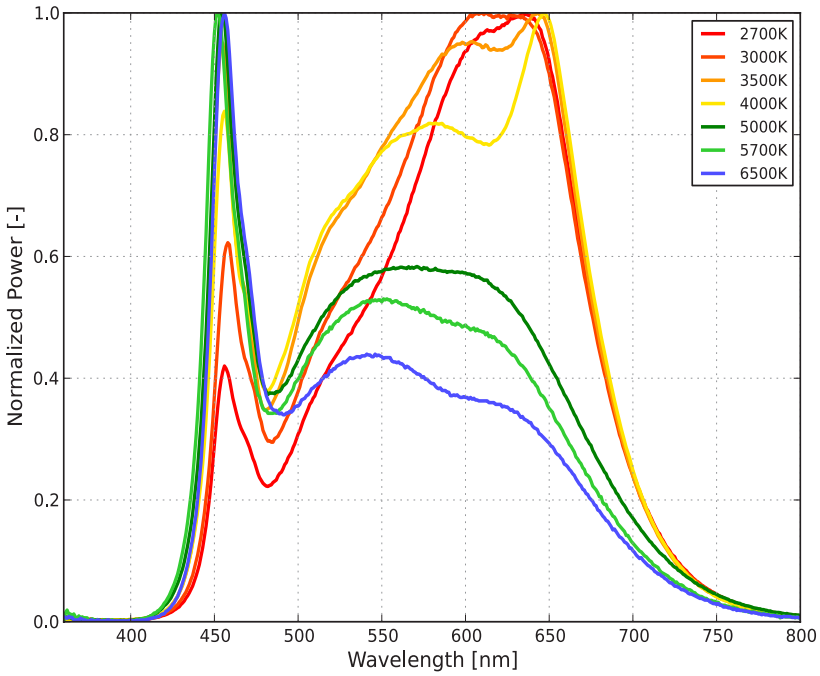


Figure 3a. Typical normalized power vs. wavelength for LUXEON 3030 Sunplus 0B1/0C1/0D1 90CRI at 65mA, T_j=25°C

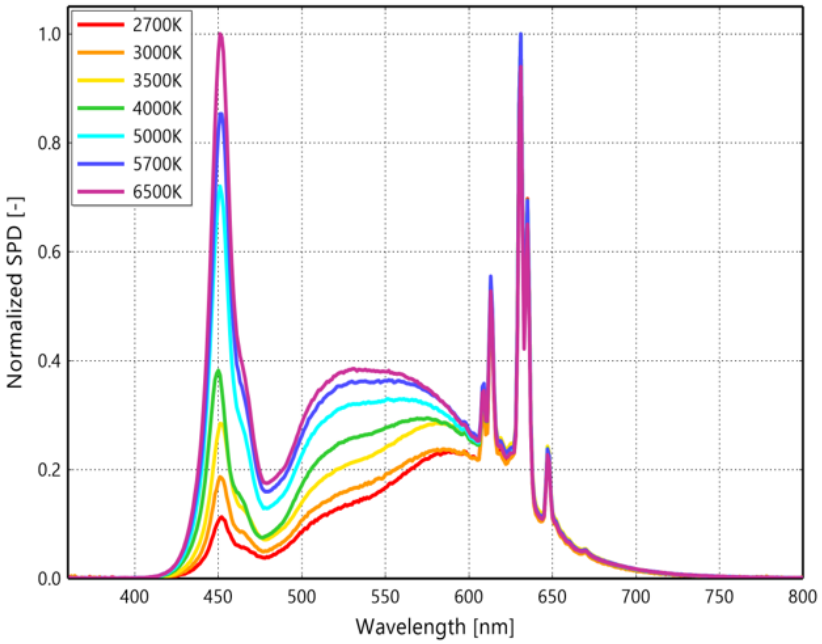


Figure 3b. Typical normalized power vs. wavelength for LUXEON 3030 Sunplus KD1 90CRI at 65mA, T_j=25°C

Light Output Characteristics

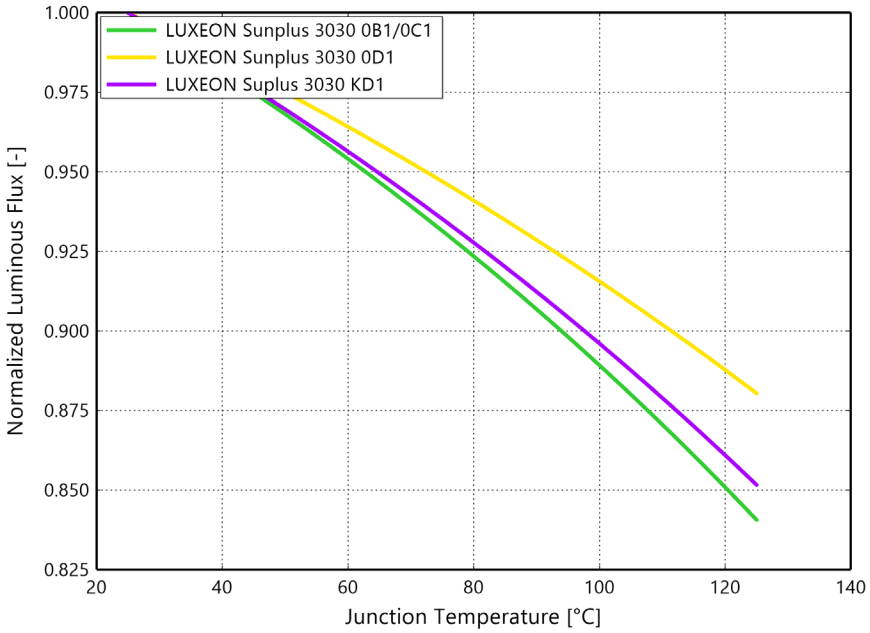


Figure 4. Typical normalized light output vs. junction temperature for LUXEON Sunplus 3030 at 65mA

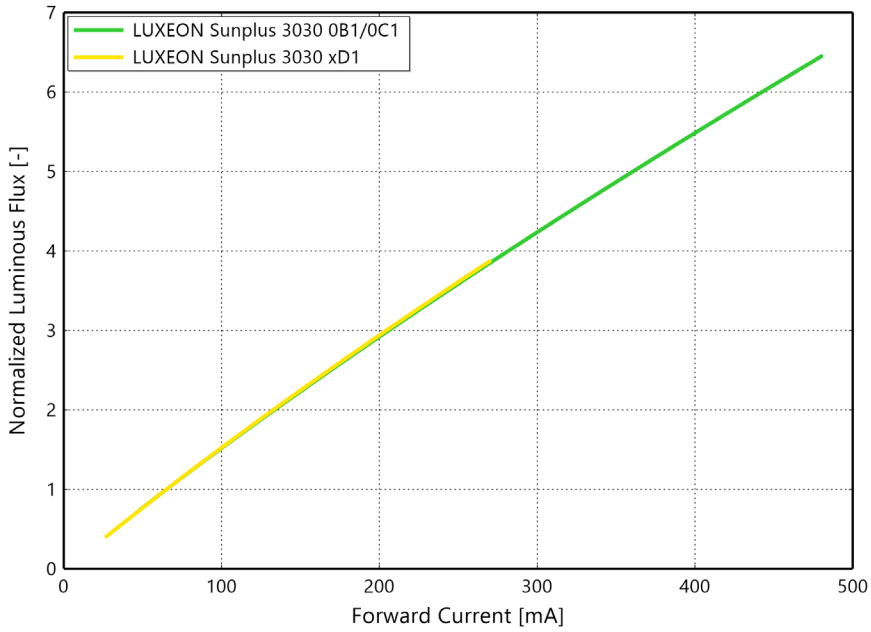


Figure 5. Typical normalized light output vs. forward current for LUXEON Sunplus 3030 at T_j=25°C

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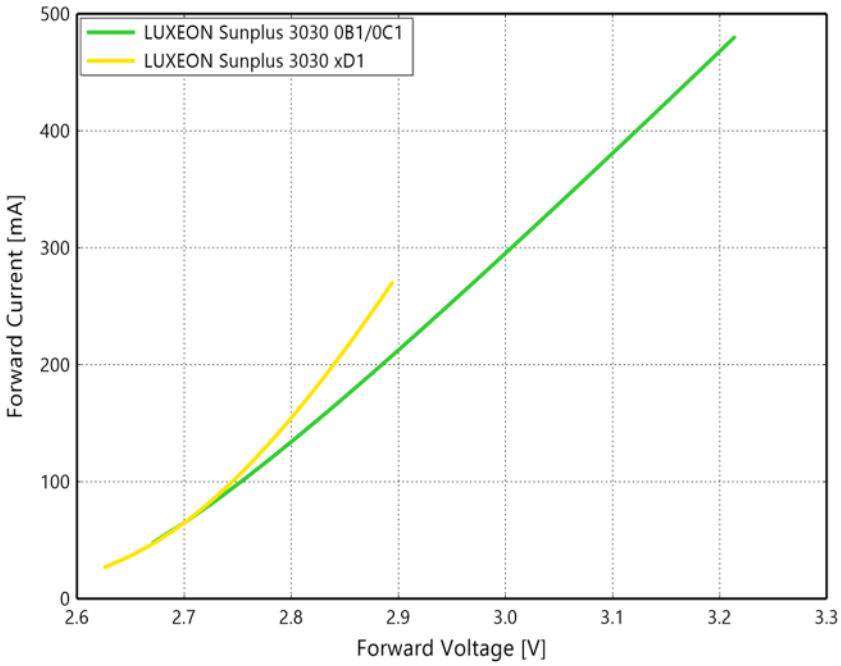


Figure 6. Typical forward current vs. forward voltage for LUXEON Sunplus 3030 at T_j=25°C

Forward Current Characteristics

Radiation Pattern Characteristics

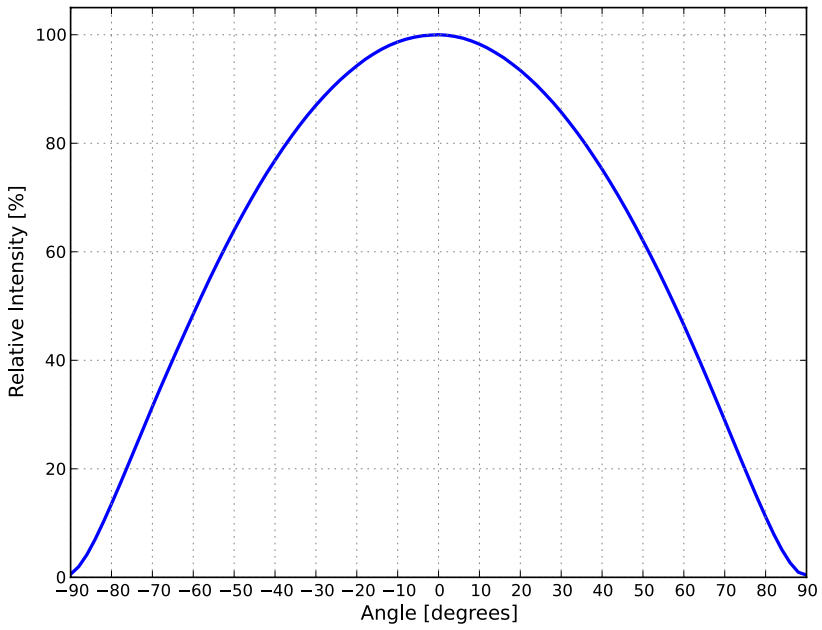


Figure 7. Typical radiation pattern for Sunplus 3030 at 65mA, T_j=25°C

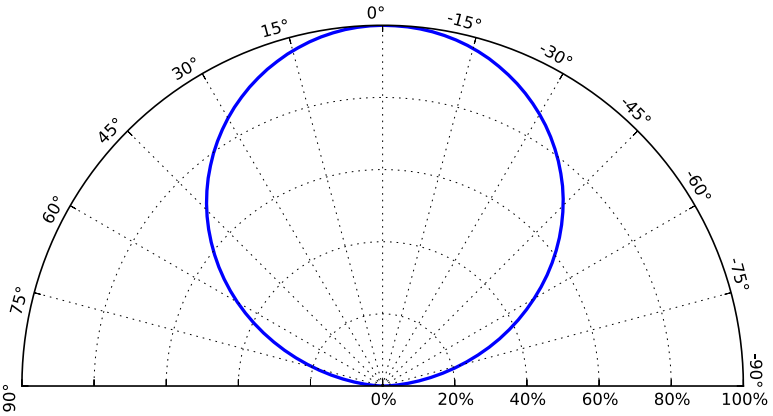


Figure 8. Typical polar radiation pattern for LUXEON Sunplus 3030 at 65mA, T_j=25°C

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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 (example: K=2.66 to 2.76V for LUXEON 3030 HE Plus 0B1/0C1)

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°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
K	41.5	43.0
L	43.0	44.5

Notes for Table 5:
1. Lumileds maintains a tolerance of ±7.5% on luminous flux measurements.

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Color Bin Definitions

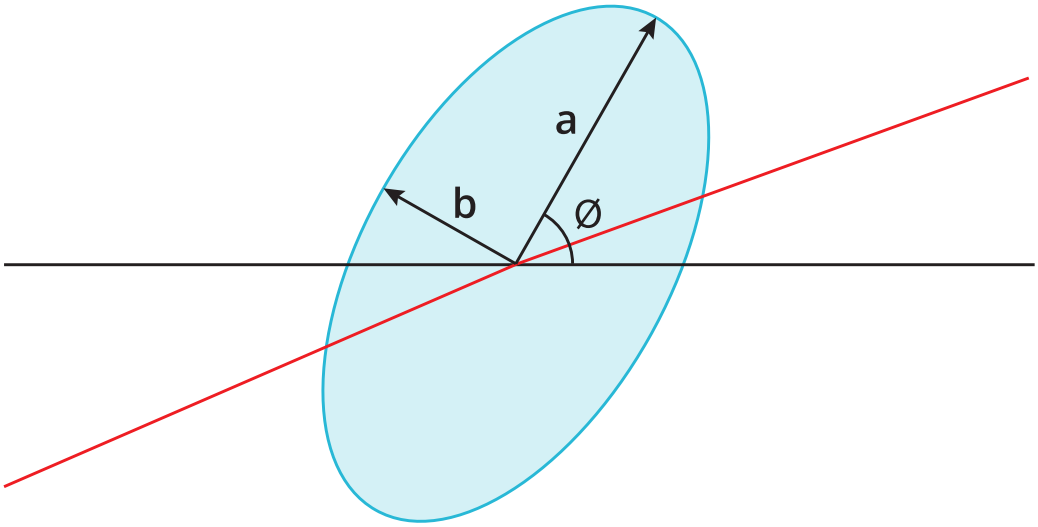


Figure 9. 3- and 5-step MacAdam ellipse illustration for Tables 6a-6g

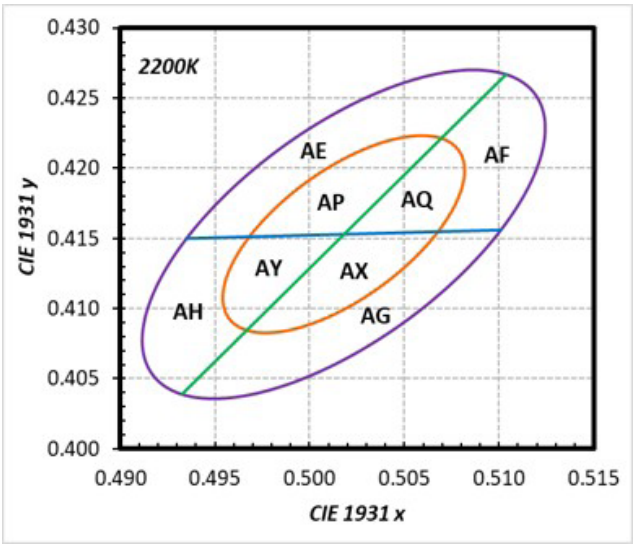


Figure 10a. 1/8th color bin structure for LUXEON 3030 HE and LUXEON 3030 HE Plus 2200K, at 65mA, T_j=25°C

Table 6a. 3- and 5-step MacAdam ellipse color bin definitions for LUXEON 3030 HE and LUXEON 3030 HE Plus 2200K, 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
2200K	Single 3-Step MacAdam ellipse	(0.5018, 0.4153)	0.00860	0.00400	49.27°
2200K	Single 5-Step MacAdam ellipse	(0.5018, 0.4153)	0.01440	0.00660	49.27°

Notes for Table 6a:
1. Lumileds maintains a tolerance of ±0.007 on x and y color coordinates in the CIE 1931 color space.

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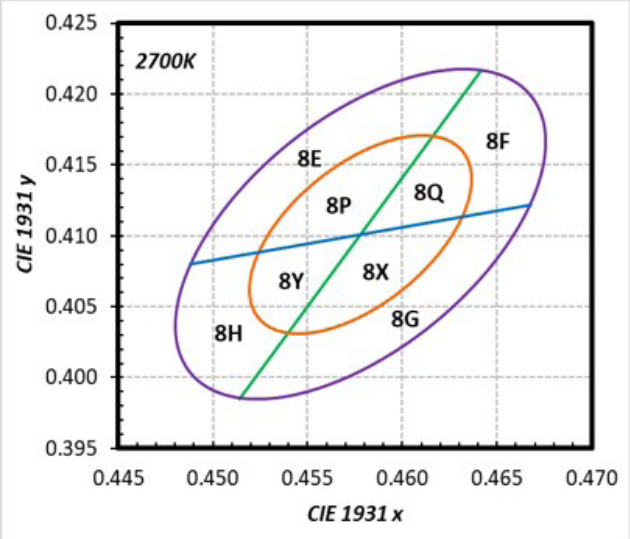


Figure 10b. 1/8th color bin structure for LUXEON SunPlus 3030 2700K, at 65mA, T_j=25°C

Table 6b. 3- and 5-step MacAdam ellipse color bin definitions for LUXEON SunPlus 3030 2700K, 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
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 6b:
1. Lumileds maintains a tolerance of ±0.007 on x and y color coordinates in the CIE 1931 color space.

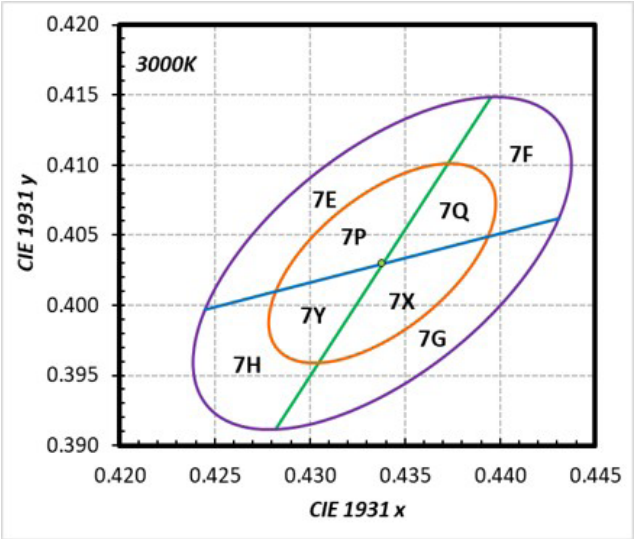


Figure 10c. 1/8th color bin structure for LUXEON SunPlus 3030 3000K, at 65mA, T_j=25°C

Table 6c. 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 6c:
1. Lumileds maintains a tolerance of ±0.007 on x and y color coordinates in the CIE 1931 color space.

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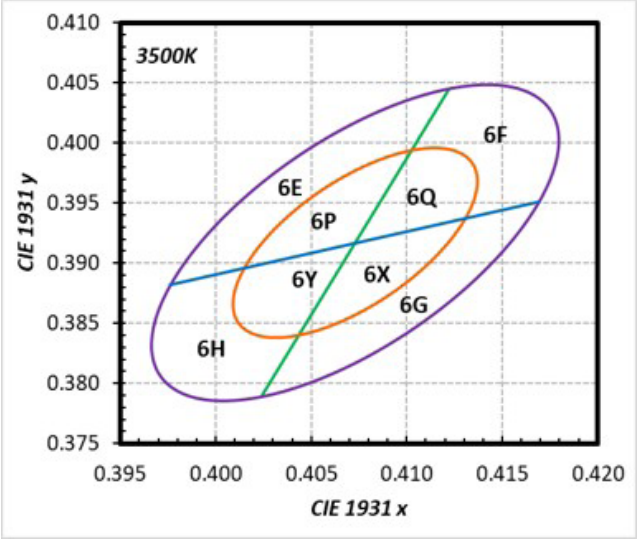


Figure 10d. 1/8th color bin structure for LUXEON SunPlus 3030 3500K, at 65mA, T_j=25°C

Table 6d. 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 6d:
1. Lumileds maintains a tolerance of ±0.007 on x and y color coordinates in the CIE 1931 color space.

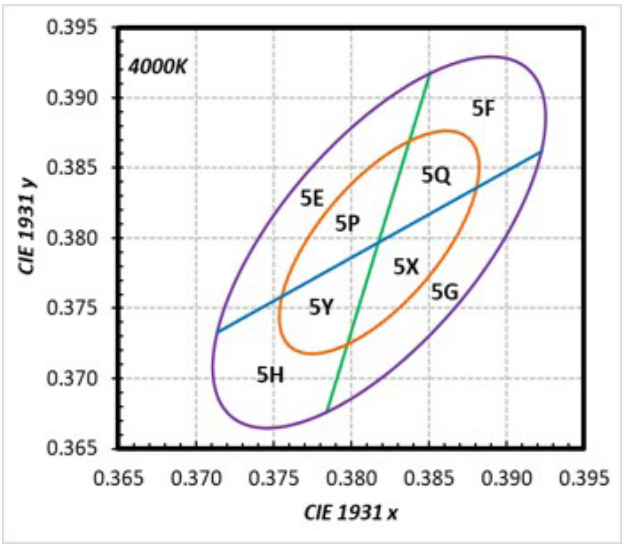


Figure 10e. 1/8th color bin structure for LUXEON SunPlus 3030 4000K, at 65mA, T_j=25°C

Table 6e. 3- and 5-step MacAdam ellipse color bin definitions for LUXEON SunPlus 3030 4000K, 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
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 6e:
1. Lumileds maintains a tolerance of ±0.007 on x and y color coordinates in the CIE 1931 color space.

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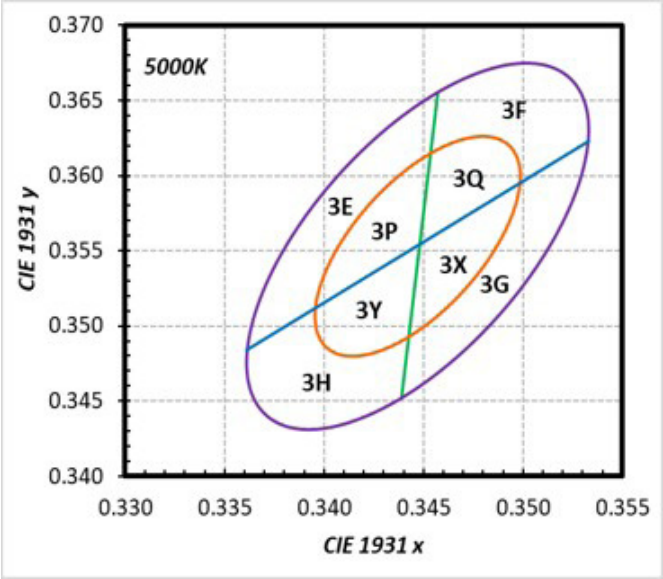


Figure 10f. 1/8th color bin structure for LUXEON SunPlus 3030 5000K, at 65mA, T_j=25°C

Table 6f. 3- and 5-step MacAdam ellipse color bin definitions for LUXEON SunPlus 3030 5000K,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
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 6f:
1. Lumileds maintains a tolerance of ±0.007 on x and y color coordinates in the CIE 1931 color space.

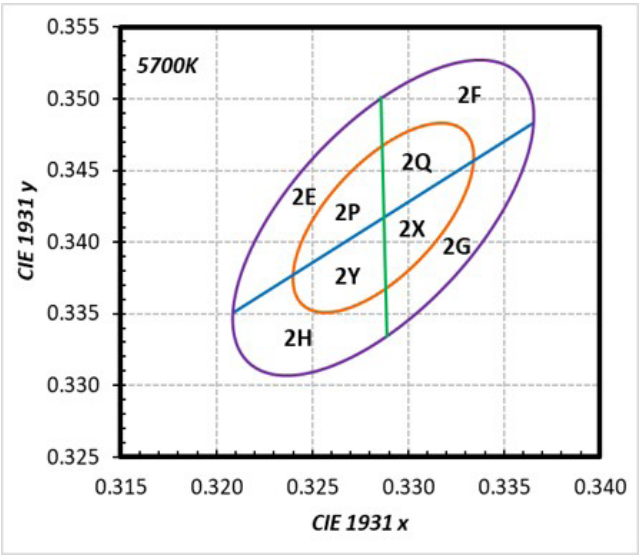


Figure 10g. 1/8th color bin structure for LUXEON SunPlus 3030 5700K, at 65mA, T_j=25°C

Table 6g. 3- and 5-step MacAdam ellipse color bin definitions for LUXEON SunPlus 3030 5700K, 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
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 6g:
1. Lumileds maintains a tolerance of ±0.007 on x and y color coordinates in the CIE 1931 color space.

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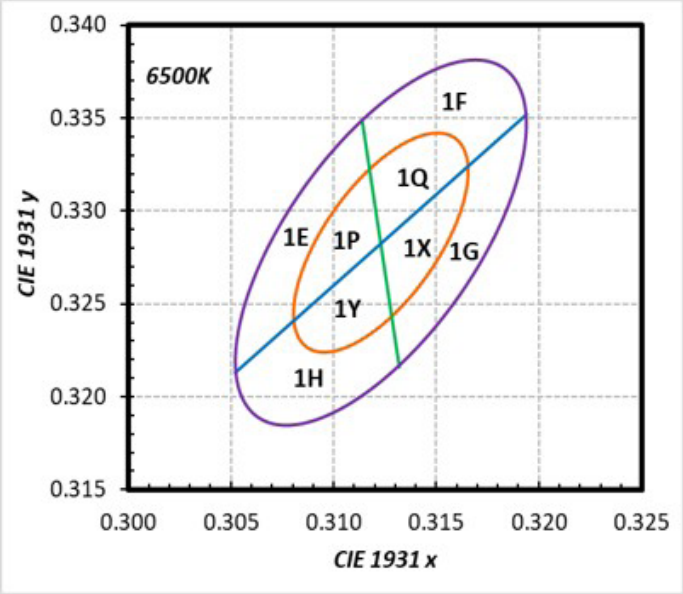


Figure 10h. 1/8th color bin structure for LUXEON SunPlus 3030 6500K, at 65mA, T_j=25°C

Table 6h. 3- and 5-step MacAdam ellipse color bin definitions for LUXEON SunPlus 3030 6500K, 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
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 6h:
1. Lumileds maintains a tolerance of ±0.007 on x and y color coordinates in the CIE 1931 color space.

Forward Voltage Bins

Table 7a. Forward voltage bin definitions for LUXEON Sunplus 3030 0B1/0C1, T_j=25°C

BIN	FORWARD VOLTAGE [1] (V_f)	
	MINIMUM	MAXIMUM
K	2.66	2.76

Notes for Table 7a:
1. Lumileds maintains a tolerance of ±0.1V on forward voltage measurements.

Table 7b. Forward voltage bin definitions for LUXEON Sunplus 3030 xD1, T_j=25°C

BIN	FORWARD VOLTAGE [1] (V_f)	
	MINIMUM	MAXIMUM
1	2.455	2.485
2	2.485	2.515

Notes for Table 7b:
1. Lumileds maintains a tolerance of ±0.1V on forward voltage measurements.
2. LUXEON Sunplus 3030 xD1 is binned at both 65mA (single bin) and 0.65mA (two bins).

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Mechanical Dimensions

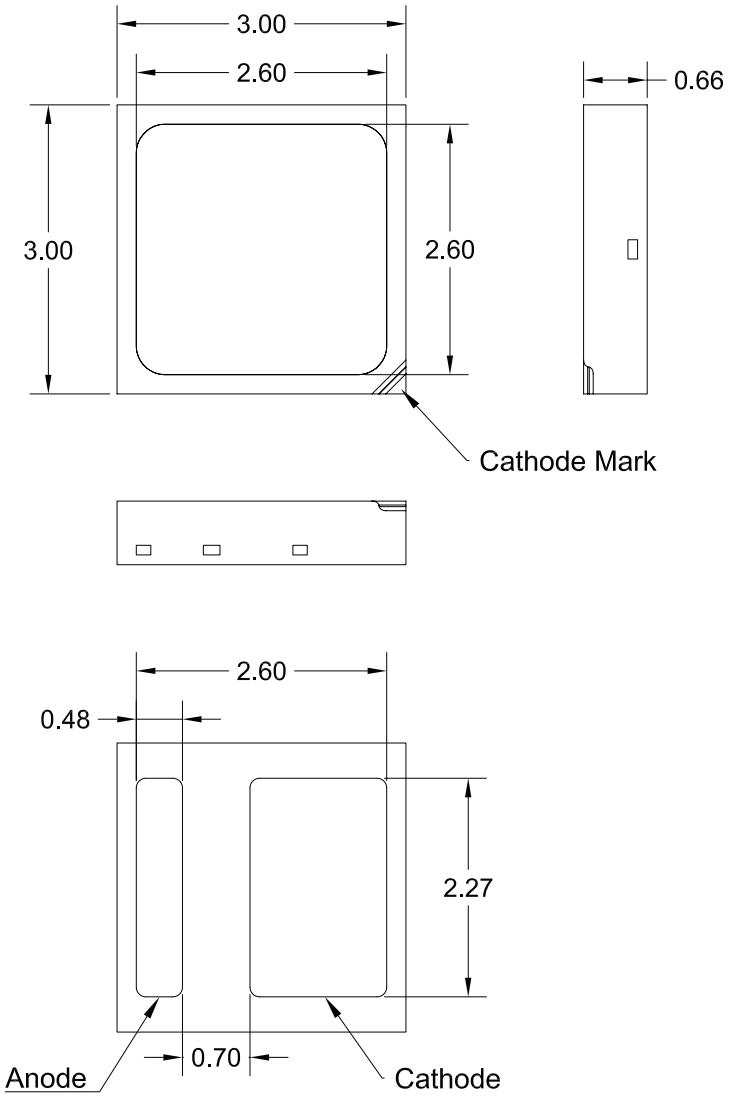


Figure 11a. Mechanical dimensions for LUXEON SunPlus 3030 0B1/0C1

Notes for Figure 11a:
1. Drawings are not to scale.
2. All dimensions are in millimeters.
3. Tolerance: ±0.10mm.

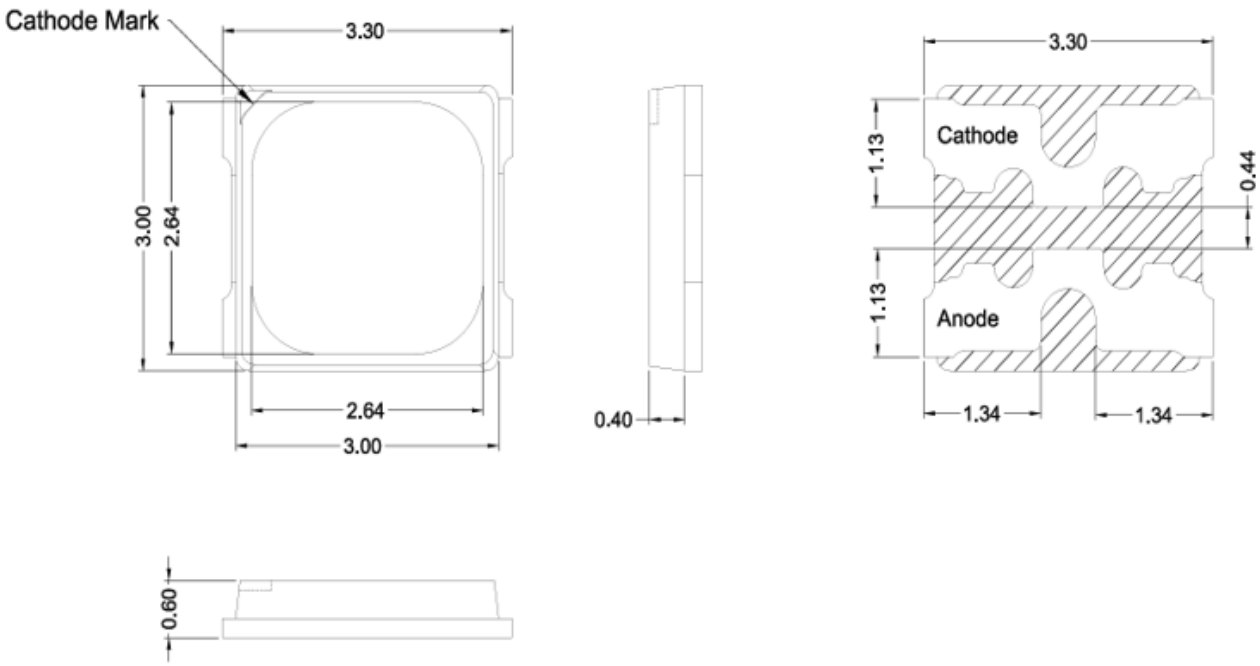


Figure 11b. Mechanical dimensions for LUXEON SunPlus 3030 xD1

Notes for Figure 11b:
1. Drawings are not to scale.
2. All dimensions are in millimeters.
3. Tolerance: ±0.10mm.

Reflow Soldering Guidelines

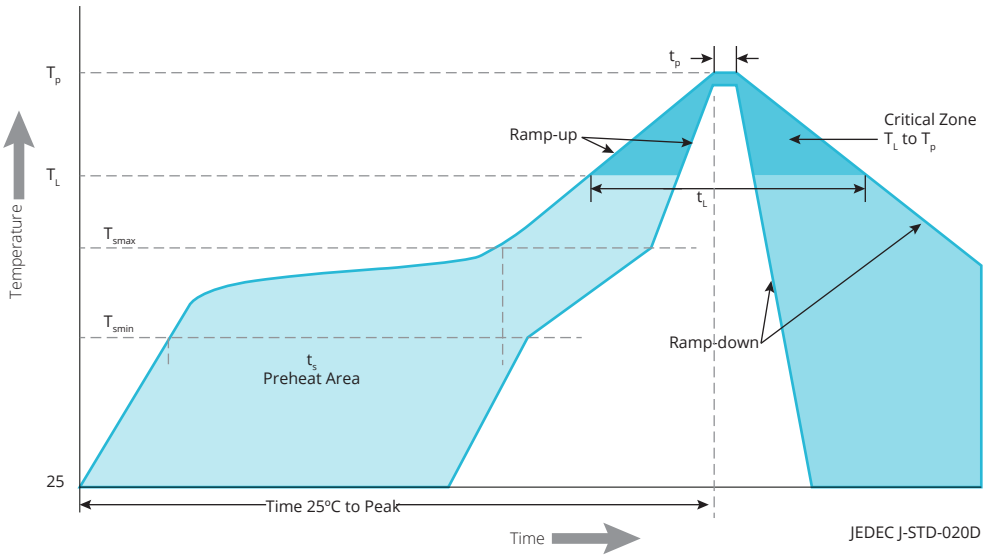


Figure 12. Visualization of the acceptable reflow temperature profile as specified in Table 8

Table 8a. Reflow profile characteristics for LUXEON SunPlus 3030 0B1/0C1

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 8a:
1. All temperatures refer to the application Printed Circuit Board (PCB), measured on the surface adjacent to the package body.

Table 8b. Reflow profile characteristics for LUXEON Sunplus 3030 xD1

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)	100 seconds maximum
Peak / Classification Temperature (T_p)	245°C typical, 260°C maximum
Time Within 5°C of Actual Peak Temperature (t_p)	10 to 30 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 8b:
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

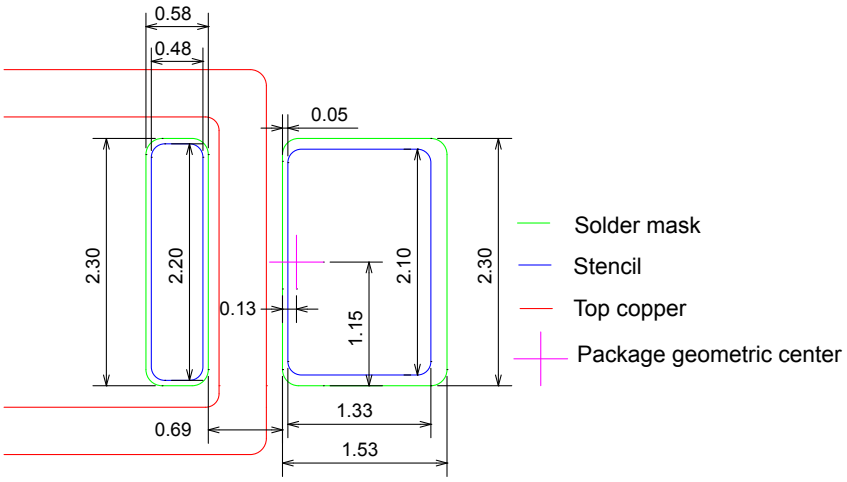


Figure 13a. Recommended PCB solder pad layout for LUXEON SunPlus 3030 0B1/0C1

Notes for Figure 13a:
1. Drawings are not to scale.
2. All dimensions are in millimeters.

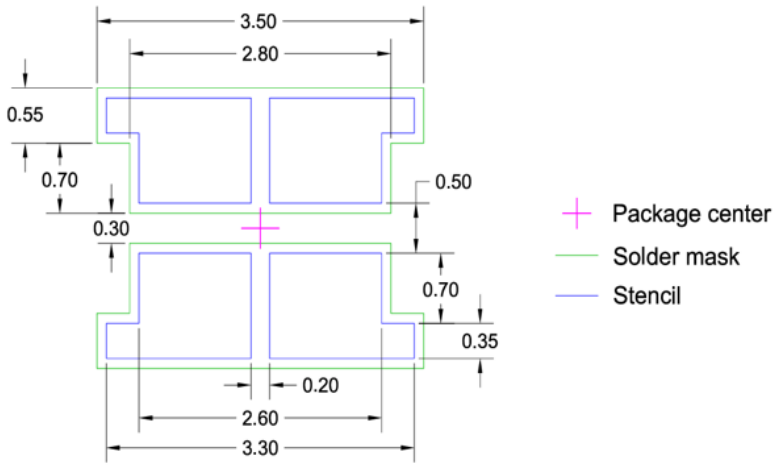


Figure 13b. Recommended PCB solder pad layout for LUXEON 3030 HE Plus xD1

Notes for Figure 13a:
1. Drawings are not to scale.
2. All dimensions are in millimeters.

Packaging Information

Pocket Tape Dimensions

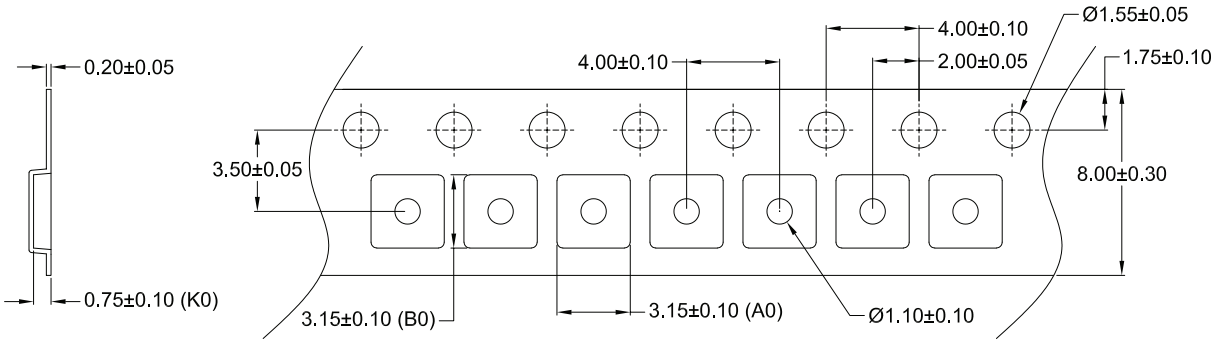


Figure 14a. Pocket tape dimensions for LUXEON SunPlus 3030 0B1/0C1

Notes for Figure 14a:
1. Drawings are not to scale.
2. All dimensions are in millimeters.

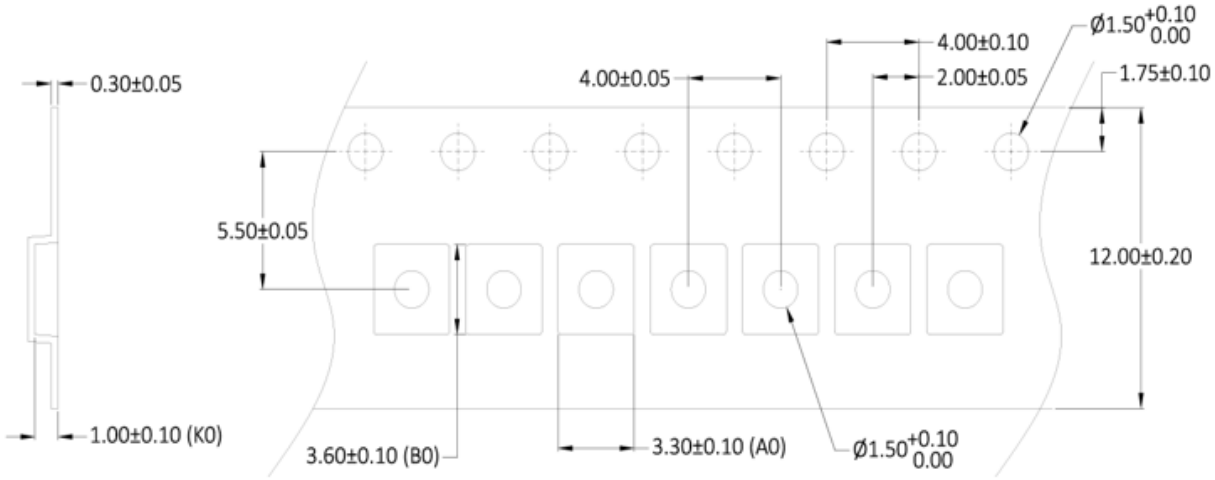


Figure 14b. Pocket tape dimensions for LUXEON SunPlus 3030 xD1

Notes for Figure 14b:
1. Drawings are not to scale.
2. All dimensions are in millimeters.

Reel Dimensions

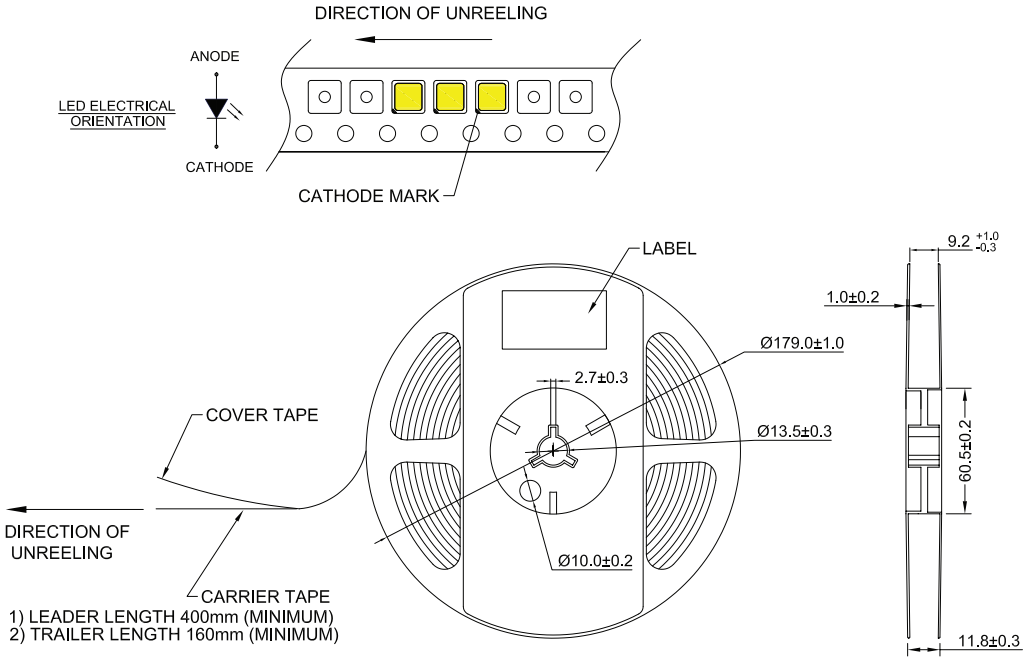


Figure 15a. Reel dimensions for LUXEON Sunplus 3030 0B1/0C1

Notes for Figure 15a:
1. Drawings are not to scale.
2. All dimensions are in millimeters.

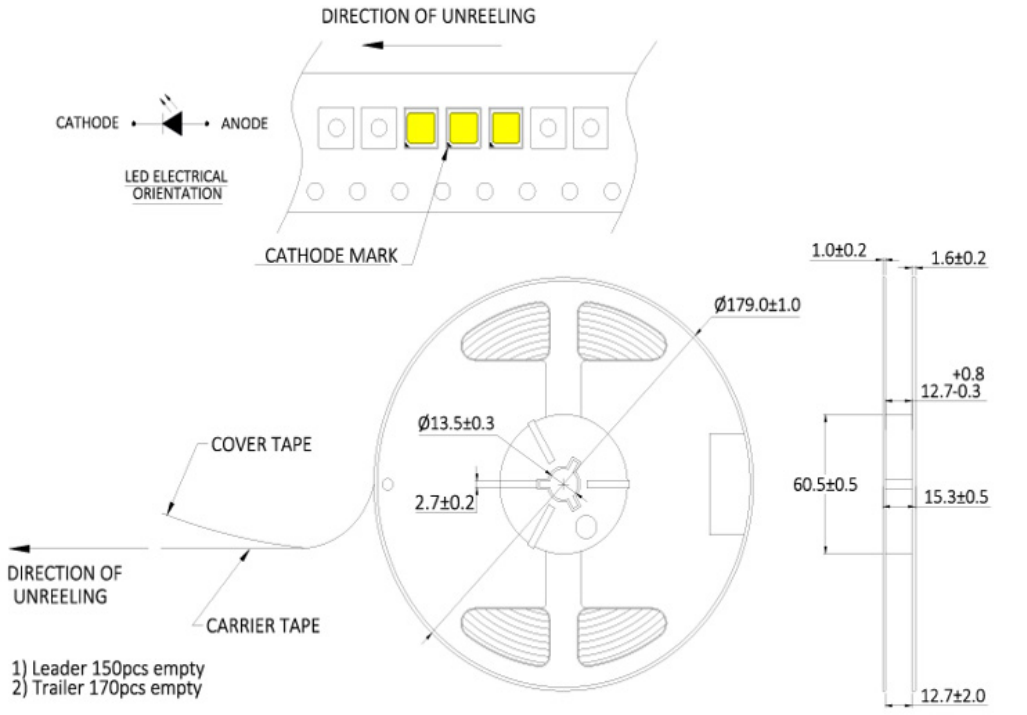


Figure 15b. Reel dimensions for LUXEON Sunplus 3030 xD1

Notes for Figure 15b:
1. Drawings are not to scale.
2. All dimensions are in millimeters.

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To learn more about our lighting solutions, visit lumileds.com.

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