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FAROLA VILLA



IK10



IP65

OPCION REGULABLE

DISPONIBLE EN 2200k,
3000K, 4000K Y 5000K

INFORMACIÓN DEL PRODUCTO

La nueva luminaria LED con modulo a elegir, es una combinación de calidad y rendimiento. La gama de esta farola se ha actualizado, esto hace que sea una de las mejores farolas del mercado. Para ello alcanza una eficacia mucho más alta. Esta farola brinda una luz uniforme excepcional a cualquier espacio donde se requiera una luz confiable y eficiente.

APLICACIÓN

·Esta farola es fácil de entregar, almacenar e instalar en diversas aplicaciones, tanto en fachadas como en báculos para alumbrado público.

MONTAJE

·Anclaje en pared con brazo.
·Anclaje en báculo.

HOUSING

·Esta farola está fabricado en Acero + PMMA.
·Tiene una protección IK10.
·Rango de temperatura: -20°+55°

OSRAM
Opto Semiconductors

MOSO®

bridgelux®

MONTAJE ÓPTICO Y LED

- Un producto de alto rendimiento que utiliza chips LED de Bridgelux o OSRAM CHIP, junto con la combinación del driver GXTRONIC o MOSO (Regulable).
- Versión **disponible en 2200, 3000k, 4000k y 5000k** con un CRI de 70.
- Tiene un **ángulo de apertura** a consultar.
- Tiene una vida estimada de 50.000H.
- **SE PUEDE ESCALONAR (hasta 5 niveles).**
- Opción de regulación Dali.

ELÉCTRICA

- 85v-265V / 50-60Hz
- Factor de potencia: 0.95
- Clase energética D



Gxtronic

bridgelux



FAROLA LED VILLA

REFERENCIA: VILLA CHAPA

Potencia nominal: 40W y 50W

Tensión Nominal: 85-265v.

Temperatura de Luz: 2200K - 3000K - 4000K – 5000K

CRI -Índice Reproducción Cromática: BRIDGELUX 70 / OSRAM 80

Material de Construcción: Acero + PMMA.

Clase Energética: D

Tipo de LEDs: 40w: SMD3030 Core Bridgelux// 50w Magnum: SMD3030 OSRAM

Angulo de Apertura (º): 40w: 80ºx10º // 50w: 136ºx78º

Eficacia Diodo LED (Lm/W): 40w: 160Lm/w // 50w: 180Lm/w

Eficacia luminosa (Lm/W): 40w: 135Lm/w // 50W: 150Lm/w

Medidas: 390x390xH710mm

Dimable (OPCIONAL): 1-10V / DALI2

Certificados: CE-RoSH-TÜV-ENEC

Grado de IP: IP65

Vida Estimada Diodo LED (H): 50.000

Factor de Potencia (PF): 0.95

Frecuencia de Trabajo (Hz): 50/60Hz

Rango Temperatura (ºC): -20º+70º

Ciclos de Encendidos: 100.000

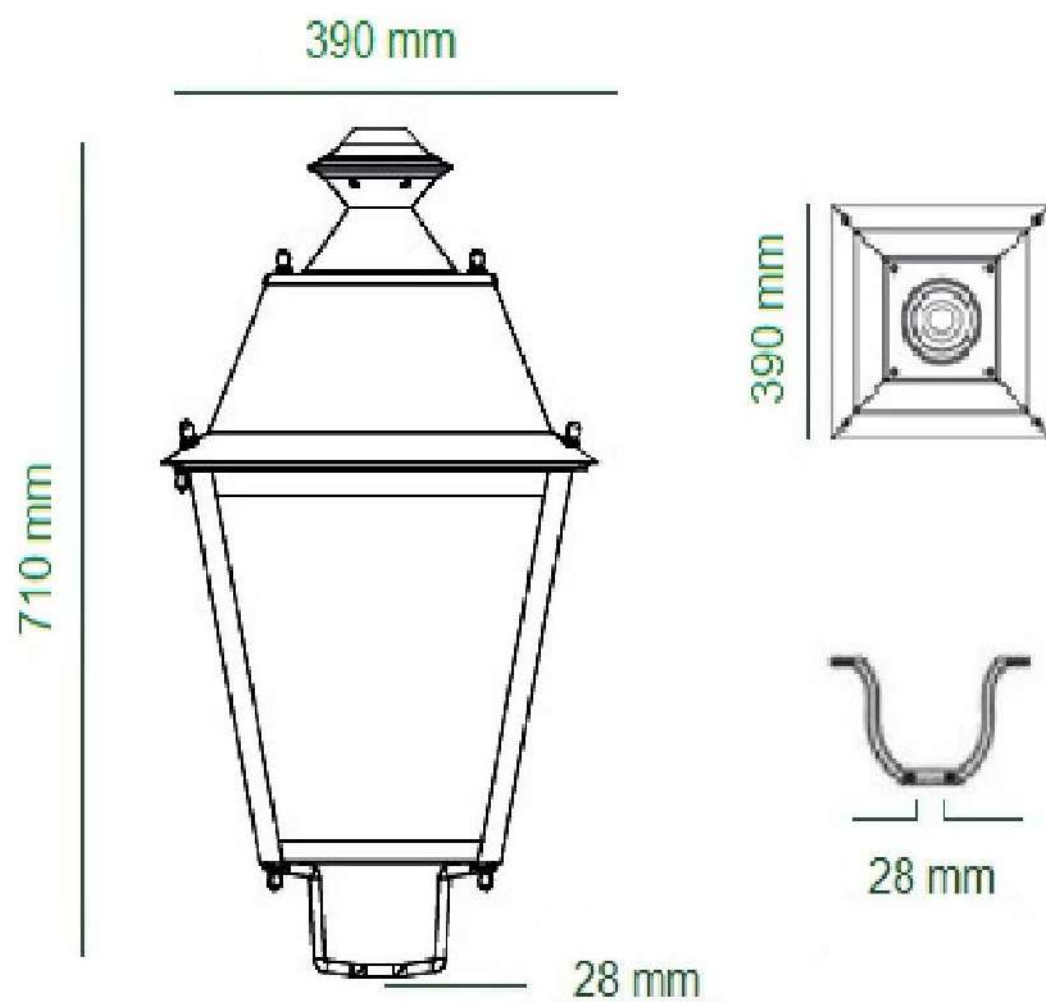
Tiempo de Arranque (s): 0,2s

Protección impacto (IK): IK10

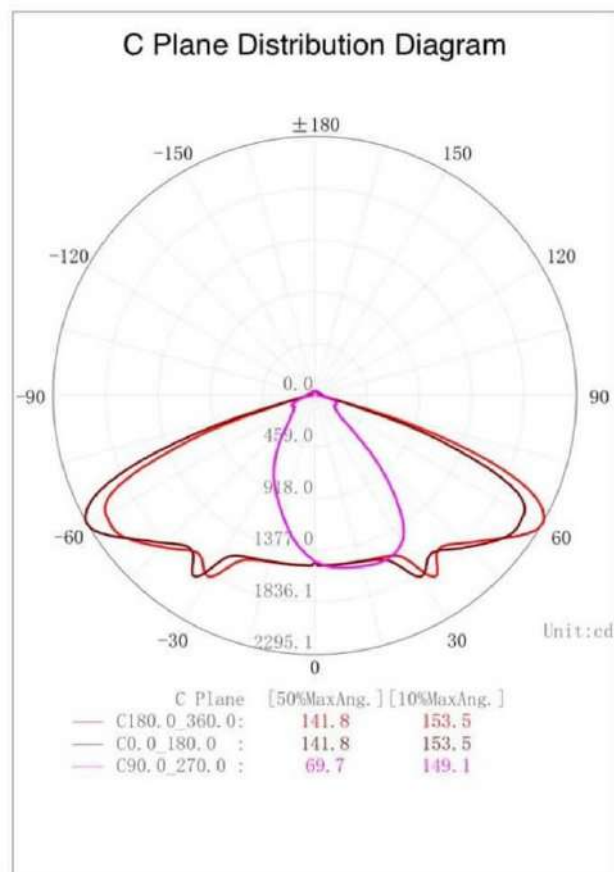
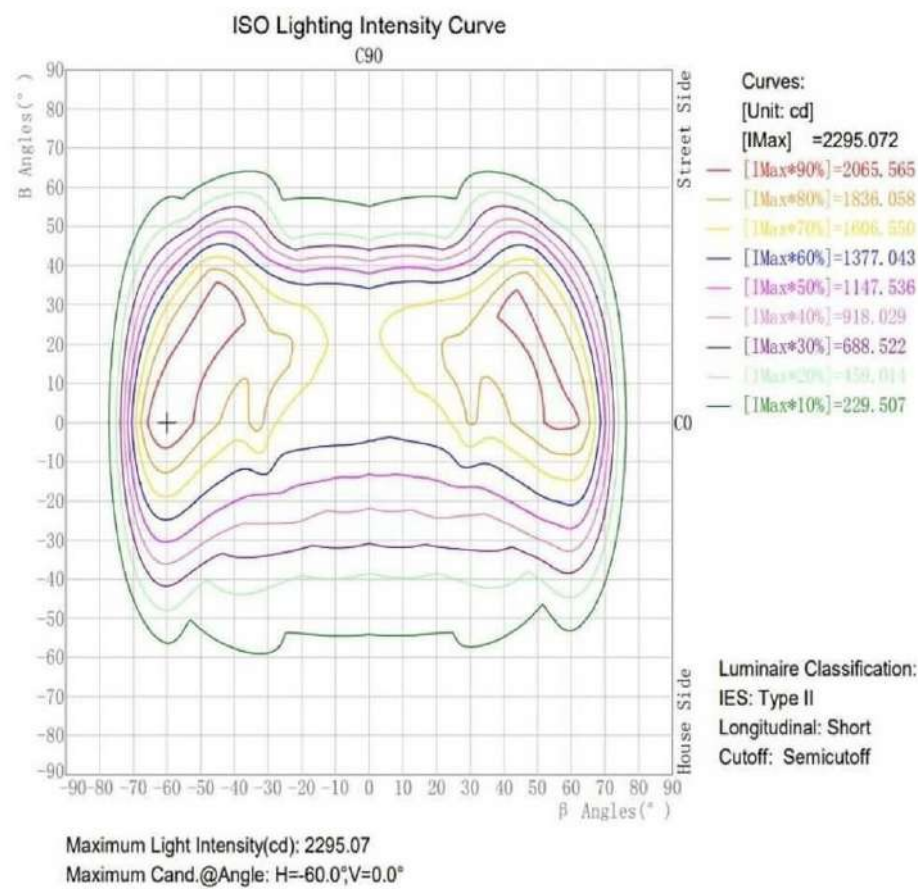
Driver incluido: GXTRONIC/ MOSO

Garantía años: 5

MEDIDAS



FOTOMETRIA





Bridgelux® SMD 3030 Gen2 1w 6v

Product Data Sheet DS230

Introduction

SMD 3030



The Bridgelux SMD 3030 offers exceptional performance in a compact LED package. This high power LED is hot-color targeted which ensures that the LEDs fall within their specified color bin at the typical application conditions of 85°C. With its broad lumen coverage and wide range of CCT and CRI options, the SMD 3030 provides unparalleled design-in flexibility for indoor and outdoor lighting applications. Its high flux capability reduces the number of LEDs and enables industry leading system level lumen per dollar. The SMD 3030 is ideal as a drop in replacement for emitters with an industry standard 3.0mm x 3.0mm footprint.

Features

- Industry-standard 3030 footprint
- Excellent color maintenance
- 9 bin color control
- Superior luminous flux at maximum current for reduced LED count
- Hot-color targeting ensures that color is within the ANSI bin at the typical application conditions of 85°C
- Enables 3- and 5-step MacAdam ellipse custom binning kits
- RoHS compliant and lead free
- Multiple CCT and CRI configurations for a wide range of lighting applications

Benefits

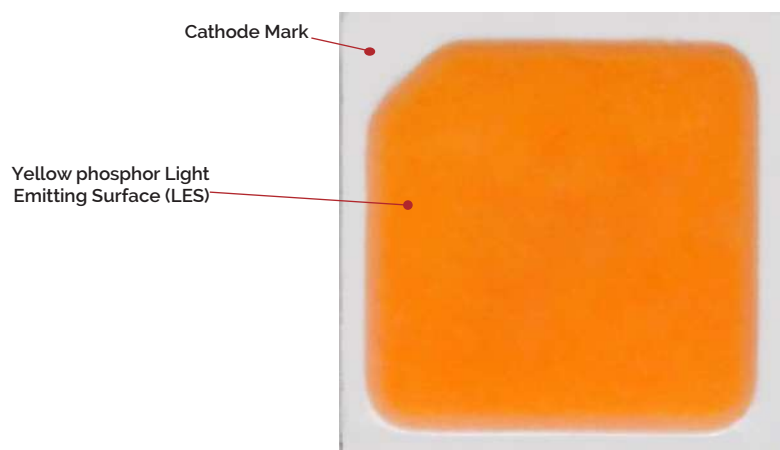
- Lower operating and manufacturing cost
- Ease of design and rapid go-to-market
- Uniform consistent white light
- Reliable and constant white point
- Compliant with environmental standards
- Design flexibility

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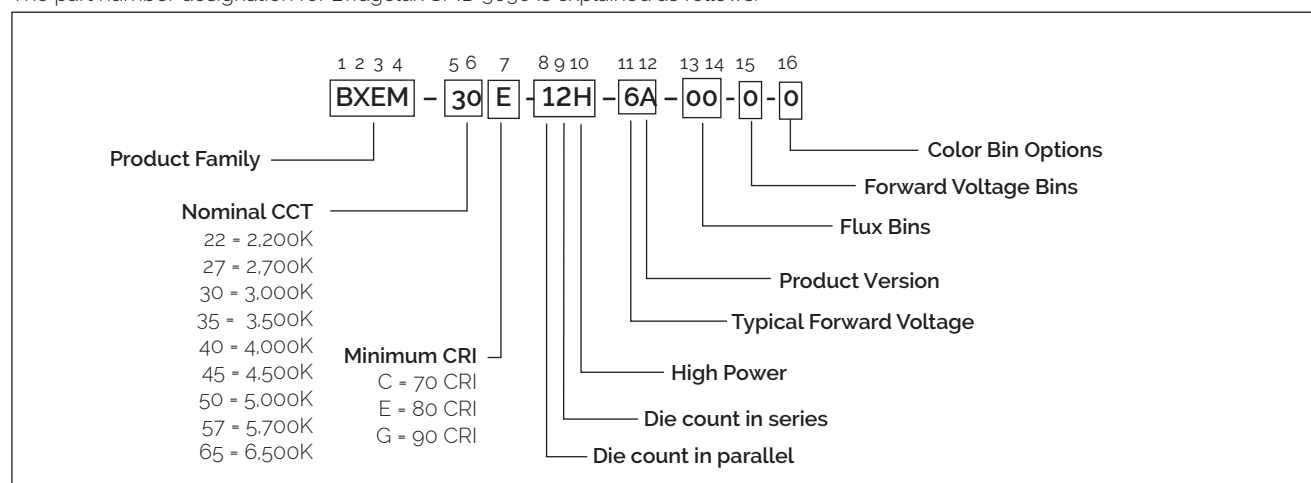
Product Feature Map

Bridgelux SMD LED products come in industry standard package sizes and follow ANSI binning standards. These LEDs are optimized for cost and performance, helping to ensure highly competitive system lumen per dollar performance while addressing the stringent efficacy and reliability standards required for modern lighting applications.



Product Nomenclature

The part number designation for Bridgelux SMD 3030 is explained as follows:



Product Test Conditions

Bridgelux SMD 3030 LEDs are tested and binned with a 10ms pulse of 150mA at T_j (junction temperature) = T_{sp} (solder point temperature) = 25°C. Forward voltage and luminous flux are binned at a $T_j = T_{sp} = 25^\circ\text{C}$, while color is hot targeted at a T_{sp} of 85°C.

Product Selection Guide

The following product configurations are available:

Table 1: Selection Guide, Pulsed Measurement Data at 150mA ($T_j = T_{sp} = 25^\circ\text{C}$)

Part Number ^{1,6}	Nominal CCT ² (K)	CRI ^{3,5}	Nominal Drive Current (mA)	Forward Voltage ^{4,5} (V)			Typical Pulsed Flux (lm) ^{4,5}	Typical Power (W)	Typical Efficacy (lm/W)
				Min	Typical	Max			
BXEM-22E-12H-6A-00-0-0	2200	80	150	5.8	6.1	6.6	114	0.9	126
BXEM-27C-12H-6A-00-0-0	2700	70	150	5.8	6.1	6.6	145	0.9	159
BXEM-27E-12H-6A-00-0-0	2700	80	150	5.8	6.1	6.6	133	0.9	146
BXEM-27G-12H-6A-00-0-0	2700	90	150	5.8	6.1	6.6	117	0.9	128
BXEM-30C-12H-6A-00-0-0	3000	70	150	5.8	6.1	6.6	150	0.9	164
BXEM-30E-12H-6A-00-0-0	3000	80	150	5.8	6.1	6.6	137	0.9	150
BXEM-30G-12H-6A-00-0-0	3000	90	150	5.8	6.1	6.6	121	0.9	132
BXEM-35C-12H-6A-00-0-0	3500	70	150	5.8	6.1	6.6	154	0.9	169
BXEM-35E-12H-6A-00-0-0	3500	80	150	5.8	6.1	6.6	140	0.9	154
BXEM-35G-12H-6A-00-0-0	3500	90	150	5.8	6.1	6.6	124	0.9	136
BXEM-40C-12H-6A-00-0-0	4000	70	150	5.8	6.1	6.6	158	0.9	173
BXEM-40E-12H-6A-00-0-0	4000	80	150	5.8	6.1	6.6	144	0.9	158
BXEM-40G-12H-6A-00-0-0	4000	90	150	5.8	6.1	6.6	127	0.9	139
BXEM-45C-12H-6A-00-0-0	4500	70	150	5.8	6.1	6.6	158	0.9	173
BXEM-45E-12H-6A-00-0-0	4500	80	150	5.8	6.1	6.6	144	0.9	158
BXEM-45G-12H-6A-00-0-0	4500	90	150	5.8	6.1	6.6	127	0.9	139
BXEM-50C-12H-6A-00-0-0	5000	70	150	5.8	6.1	6.6	158	0.9	173
BXEM-50E-12H-6A-00-0-0	5000	80	150	5.8	6.1	6.6	144	0.9	158
BXEM-50G-12H-6A-00-0-0	5000	90	150	5.8	6.1	6.6	127	0.9	139
BXEM-57C-12H-6A-00-0-0	5700	70	150	5.8	6.1	6.6	155	0.9	170
BXEM-57E-12H-6A-00-0-0	5700	80	150	5.8	6.1	6.6	143	0.9	156
BXEM-57G-12H-6A-00-0-0	5700	90	150	5.8	6.1	6.6	126	0.9	139
BXEM-65C-12H-6A-00-0-0	6500	70	150	5.8	6.1	6.6	153	0.9	168
BXEM-65E-12H-6A-00-0-0	6500	80	150	5.8	6.1	6.6	141	0.9	155
BXEM-65G-12H-6A-00-0-0	6500	90	150	5.8	6.1	6.6	125	0.9	137

Notes for Table 1:

- The last 6 characters (including hyphens '-') refer to flux, forward voltage, and color bins, respectively. "00-0-0" denotes the full distribution of flux, forward voltage, and 7 SDCM color.
Example: BXEM-30E-12H-6A-00-0-0 refers to the full distribution of flux, forward voltage, and color within a 3000K 7-step ANSI standard chromaticity region with a minimum of 80CRI, 1x2 die configuration, high power, 6.25V typical forward voltage.
- Product CCT is not targeted at $T_{sp} = 85^\circ\text{C}$. Nominal CCT as defined by ANSI C78.377-2011.
- Listed CRIs are minimum values and include test tolerance.
- Products tested under pulsed condition (10ms pulse width) at nominal drive current where $T_j = T_{sp} = 25^\circ\text{C}$.
- Bridgelux maintains a $\pm 7.5\%$ tolerance on luminous flux measurements, $\pm 0.1\text{V}$ tolerance on forward voltage measurements, and ± 2 tolerance on CRI measurements for the SMD 3030.
- Refer to Table 5 and Table 6 for Bridgelux SMD 3030 Luminous Flux Binning and Forward Voltage Binning information.
- Minimum flux values at elevated temperatures are provided for reference only and are not guaranteed by 100% production testing.

Product Selection Guide

Table 2: Selection Guide, Stabilized DC Performance ($T_{sp} = 85^{\circ}\text{C}$)^{6,7}

Part Number ^{1,5}	Nominal CCT ² (K)	CRI ^{3,4}	Nominal Drive Current (mA)	Forward Voltage ⁴ (V)			Typical DC Flux (lm) ⁴	Typical Power (W)	Typical Efficacy (lm/W)
				Min	Typical	Max			
BXEM-22E-12H-6A-00-0-0	2200	80	150	5.6	5.9	6.3	102	0.9	117
BXEM-27C-12H-6A-00-0-0	2700	70	150	5.6	5.9	6.3	129	0.9	144
BXEM-27E-12H-6A-00-0-0	2700	80	150	5.6	5.9	6.3	119	0.9	132
BXEM-27G-12H-6A-00-0-0	2700	90	150	5.6	5.9	6.3	105	0.9	117
BXEM-30C-12H-6A-00-0-0	3000	70	150	5.6	5.9	6.3	134	0.9	149
BXEM-30E-12H-6A-00-0-0	3000	80	150	5.6	5.9	6.3	122	0.9	137
BXEM-30G-12H-6A-00-0-0	3000	90	150	5.6	5.9	6.3	108	0.9	120
BXEM-35C-12H-6A-00-0-0	3500	70	150	5.6	5.9	6.3	137	0.9	153
BXEM-35E-12H-6A-00-0-0	3500	80	150	5.6	5.9	6.3	126	0.9	140
BXEM-35G-12H-6A-00-0-0	3500	90	150	5.6	5.9	6.3	111	0.9	124
BXEM-40C-12H-6A-00-0-0	4000	70	150	5.6	5.9	6.3	141	0.9	158
BXEM-40E-12H-6A-00-0-0	4000	80	150	5.6	5.9	6.3	129	0.9	144
BXEM-40G-12H-6A-00-0-0	4000	90	150	5.6	5.9	6.3	114	0.9	127
BXEM-45C-12H-6A-00-0-0	4500	70	150	5.6	5.9	6.3	141	0.9	158
BXEM-45E-12H-6A-00-0-0	4500	80	150	5.6	5.9	6.3	129	0.9	144
BXEM-45G-12H-6A-00-0-0	4500	90	150	5.6	5.9	6.3	114	0.9	127
BXEM-50C-12H-6A-00-0-0	5000	70	150	5.6	5.9	6.3	141	0.9	158
BXEM-50E-12H-6A-00-0-0	5000	80	150	5.6	5.9	6.3	129	0.9	144
BXEM-50G-12H-6A-00-0-0	5000	90	150	5.6	5.9	6.3	114	0.9	127
BXEM-57C-12H-6A-00-0-0	5700	70	150	5.6	5.9	6.3	139	0.9	155
BXEM-57E-12H-6A-00-0-0	5700	80	150	5.6	5.9	6.3	127	0.9	142
BXEM-57G-12H-6A-00-0-0	5700	90	150	5.6	5.9	6.3	112	0.9	126
BXEM-65C-12H-6A-00-0-0	6500	70	150	5.6	5.9	6.3	137	0.9	153
BXEM-65E-12H-6A-00-0-0	6500	80	150	5.6	5.9	6.3	126	0.9	141
BXEM-65G-12H-6A-00-0-0	6500	90	150	5.6	5.9	6.3	111	0.9	124

Notes for Table 2:

- The last 6 characters (including hyphens '-') refer to flux, forward voltage, and color bins, respectively. "00-0-0" denotes the full distribution of flux, forward voltage, and 7 SDCM color.
Example: BXEM-30E-12H-6A-00-0-0 refers to the full distribution of flux, forward voltage, and color within a 3000K 7-step ANSI standard chromaticity region with a minimum of 80CRI, 1x2 die configuration, high power, 6.0V typical forward voltage.
- Product CCT is not targeted at $T_{sp} = 85^{\circ}\text{C}$. Nominal CCT as defined by ANSI C78.377-2011.
- Listed CRIs are minimum values and include test tolerance.
- Bridgelux maintains a $\pm 7.5\%$ tolerance on luminous flux measurements, $\pm 0.1\text{V}$ tolerance on forward voltage measurements, and ± 2 tolerance on CRI measurements for the SMD 3030.
- Refer to Table 5 and Table 6 for Bridgelux SMD 3030 Luminous Flux Binning and Forward Voltage Binning information.
- Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.
- Typical performance is estimated based on operation under DC (direct current) with LED emitter mounted onto a heat sink with thermal interface material and the solder point temperature maintained at 85°C . Based on Bridgelux test setup, values may vary depending on the thermal design of the luminaire and/or the exposed environment to which the product is subjected.
- Minimum flux values at elevated temperatures are provided for reference only and are not guaranteed by 100% production testing.

Electrical Characteristics

Table 3: Electrical Characteristics

Part Number ¹	Drive Current (mA)	Forward Voltage (V) ^{2,3}			Typical Temperature Coefficient of Forward Voltage $\Delta V_f / \Delta T$ (mV/°C)	Typical Thermal Resistance Junction to Solder Point ^{4,5} R_{j-sp} (C/W)
		Minimum	Typical	Maximum		
BXEM-xxx-12H-6A-00-0-0	150	5.8	6.1	6.6	-2.0 to -4.0	12

Notes for Table 3:

1. The last 6 characters (including hyphens '-') refer to flux, forward voltage, and color bins, respectively. "00-0-0" denotes the full distribution of flux, forward voltage, and 7 SDCM color.
Example: BXEM-30E-12H-6A-00-0-0 refers to the full distribution of flux, forward voltage, and color within a 3000K 7-step ANSI standard chromaticity region with a minimum of 80CRI. 1x2 die configuration, high power, 6.0V typical forward voltage.
2. Bridgelux maintains a tolerance of $\pm 0.1V$ on forward voltage measurements. Voltage minimum and maximum values at the nominal drive current are guaranteed by 100% test.
3. Products tested under pulsed condition (10ms pulse width) at nominal drive current where $T_{sp} = 25^\circ C$.
4. Thermal Resistance values based on 3000K 80CRI product.
5. Thermal resistance value was calculated using total electrical input power; optical power was not subtracted from input power.

Absolute Maximum Ratings

Table 4: Maximum Ratings

Parameter	Maximum Rating
LED Junction Temperature (T_j)	125°C
Storage Temperature	-40°C to +100°C
Operating Solder Point Temperature (T_{sp})	-40°C to +100°C
Soldering Temperature	260°C or lower for a maximum of 10 seconds
Maximum Drive Current	240mA
Maximum Peak Pulsed Forward Current ¹	480mA
Maximum Reverse Voltage ²	-
Moisture Sensitivity Rating	MSL 3
Electrostatic Discharge	2kV HBM. JEDEC-JS-001-HBM and JEDEC-JS-001-2012

Notes for Table 4:

1. Bridgelux recommends a maximum duty cycle of 10% and pulse width of 10 ms when operating LED SMD at maximum peak pulsed current specified. Maximum peak pulsed currents indicate values where LED SMD can be driven without catastrophic failures.
2. Light emitting diodes are not designed to be driven in reverse voltage and will not produce light under this condition. no rating is provided.

Product Bin Definitions

Table 5 lists the standard photometric luminous flux bins for Bridgelux SMD 3030 LEDs. 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 at 150mA, $T_{sp}=25^{\circ}\text{C}$

Bin Code	Minimum	Maximum	Unit	Condition
09	90	100	lm	$I_F=150\text{mA}$
10	100	110		
11	110	120		
12	120	130		
13	130	140		
14	140	150		
15	150	160		
16	160	170		

Note for Table 5:

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

Table 6: Forward Voltage Bin Definition at 150mA, $T_{sp}=25^{\circ}\text{C}$

Bin Code	Minimum	Maximum	Unit	Condition
P	5.8	6.0	V	$I_F=150\text{mA}$
Q	6.0	6.2		
R	6.2	6.4		
S	6.4	6.6		

Note for Table 6:

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

Product Bin Definitions

Table 7: 3- and 5-step MacAdam Ellipse Color Bin Definitions

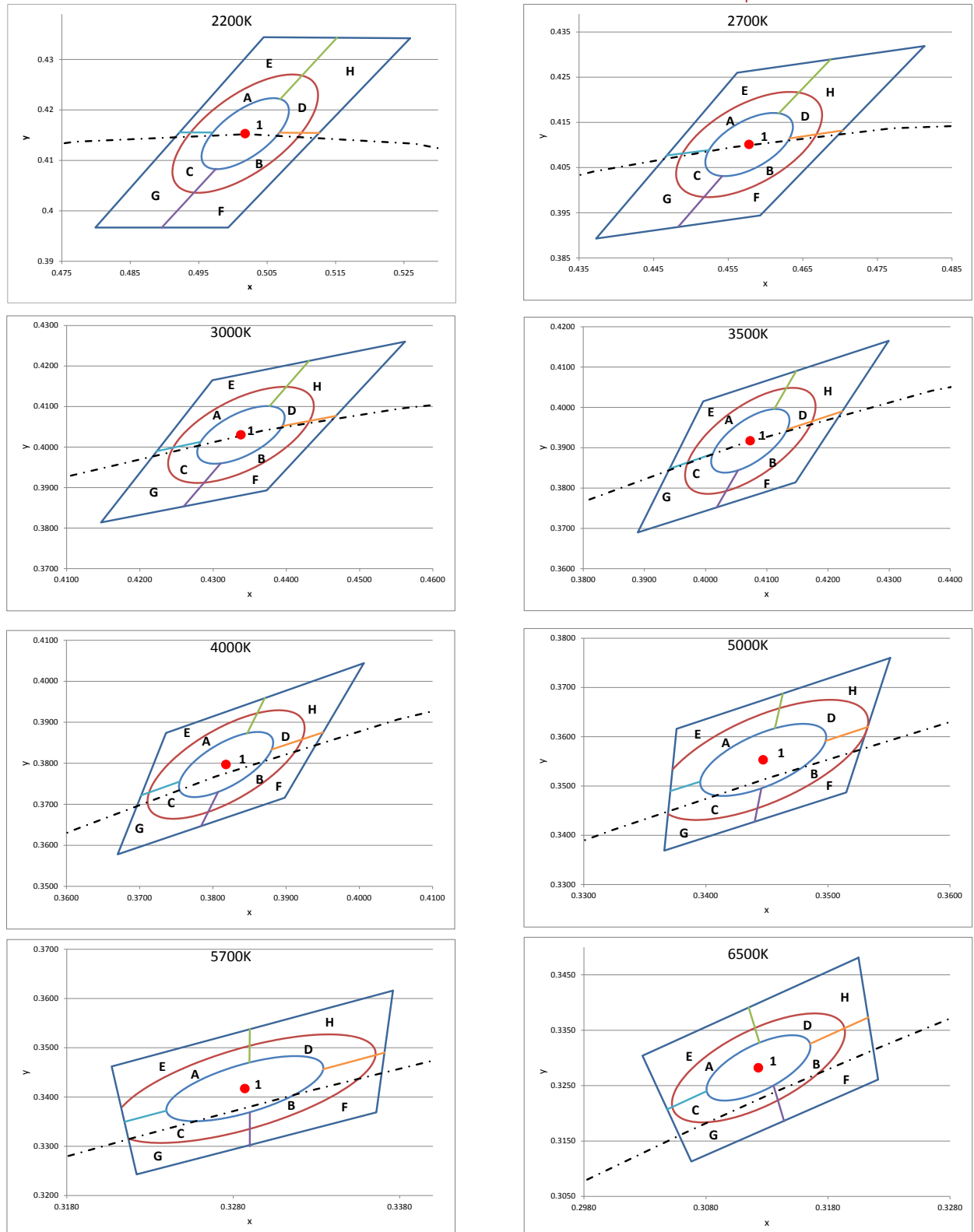
CCT	Color Space	Center Point		Major Axis	Minor Axis	Ellipse Rotation Angle	Color Bin
		X	Y				
2200K	3 SDCM	0.5018	0.4153	0.00863	0.00398	49.27	1
	5 SDCM	0.5018	0.4153	0.01438	0.00663	49.27	1/A/B/C/D
2700K	3 SDCM	0.4578	0.4101	0.00810	0.00420	53.70	1
	5 SDCM	0.4578	0.4101	0.01350	0.00700	53.70	1/A/B/C/D
3000K	3 SDCM	0.4338	0.4030	0.00834	0.00408	53.22	1
	5 SDCM	0.4338	0.4030	0.01390	0.00680	53.22	1/A/B/C/D
3500K	3 SDCM	0.4073	0.3917	0.00927	0.00414	54.00	1
	5 SDCM	0.4073	0.3917	0.01545	0.00690	54.00	1/A/B/C/D
4000K	3 SDCM	0.3818	0.3797	0.00939	0.00402	53.72	1
	5 SDCM	0.3818	0.3797	0.01565	0.00670	53.72	1/A/B/C/D
5000K	3 SDCM	0.3447	0.3553	0.00822	0.00354	59.62	1
	5 SDCM	0.3447	0.3553	0.01370	0.00590	59.62	1/A/B/C/D
5700K	3 SDCM	0.3287	0.3417	0.00746	0.00320	59.09	1
	5 SDCM	0.3287	0.3417	0.01243	0.00533	59.09	1/A/B/C/D
6500K	3 SDCM	0.3123	0.3282	0.00669	0.00285	58.57	1
	5 SDCM	0.3123	0.3282	0.01115	0.00475	58.57	1/A/B/C/D

Notes for Table 7:

1. Color binning at $T_{sp}=85^{\circ}\text{C}$
2. Bridgelux maintains a tolerance of ± 0.007 on x and y color coordinates in the CIE 1931 color space.

Product Bin Definitions

Figure 1: C.I.E. 1931 Chromaticity Diagram (g Color Bin Structure, Hot-color Targeted at $T_{sp}=85^{\circ}\text{C}$)



Performance Curves

Figure 2: Drive Current vs. Voltage ($T_{sp}=25^{\circ}\text{C}$)

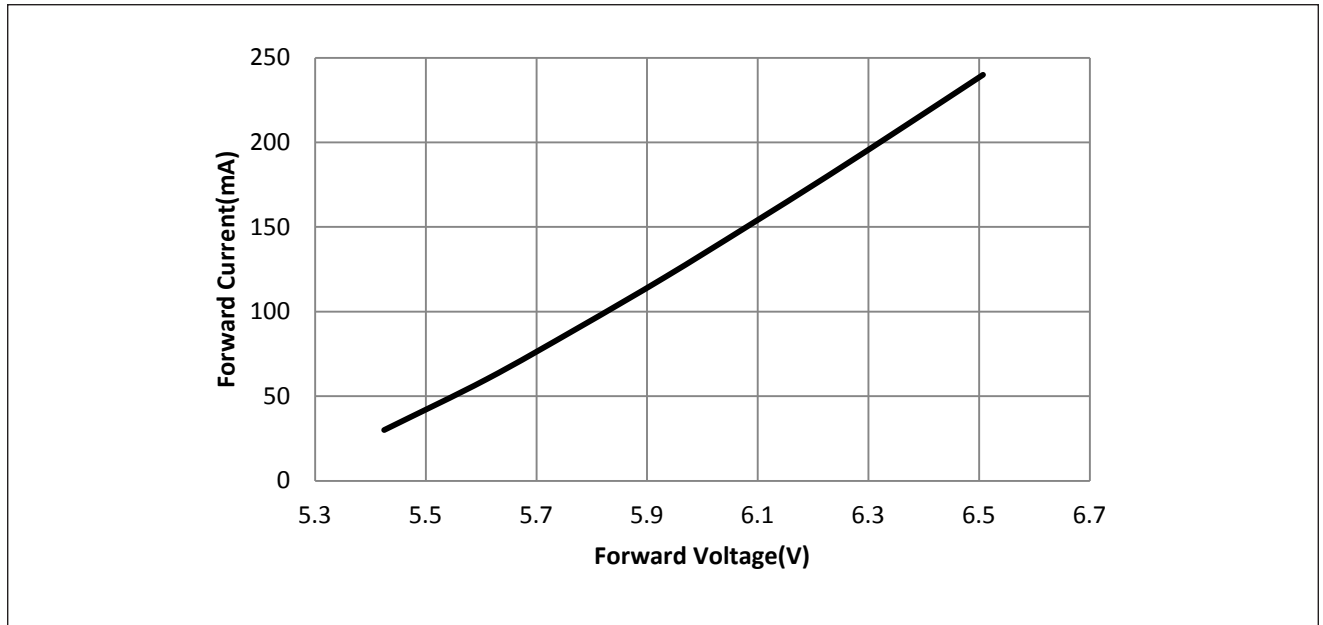
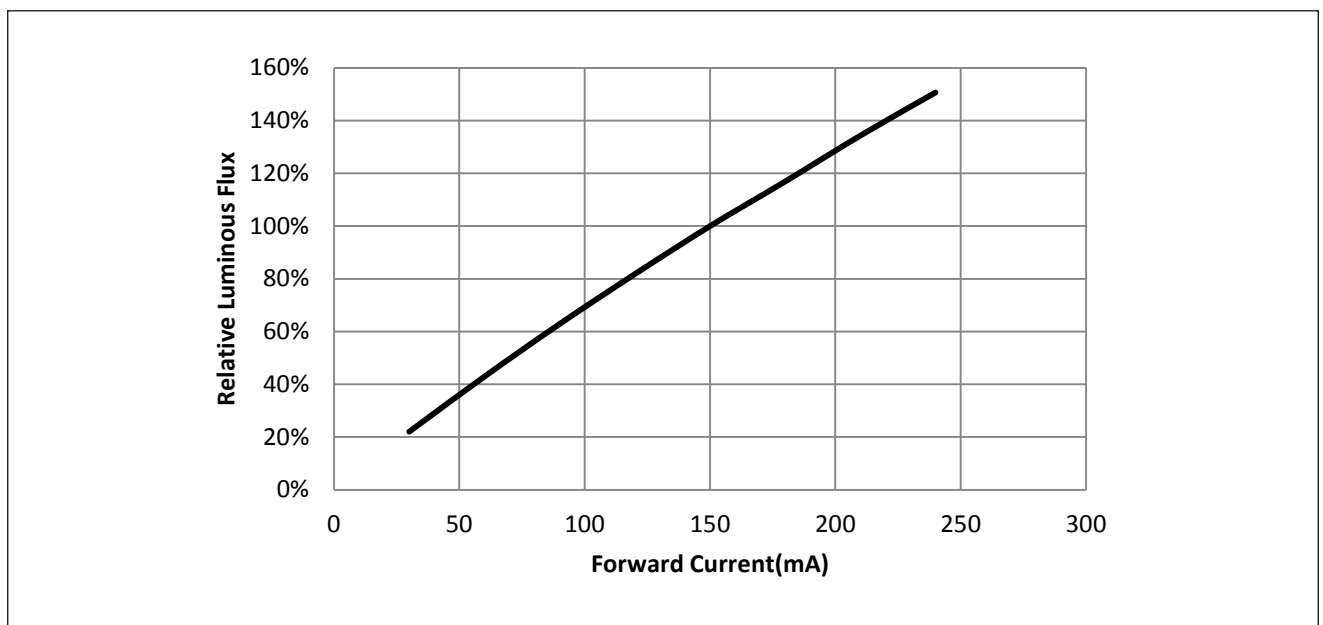


Figure 3: Typical Relative Luminous Flux vs. Drive Current ($T_{sp}=25^{\circ}\text{C}$)



Note for Figure 3:

1. Bridgelux does not recommend driving high power LEDs at low currents. Doing so may produce unpredictable results. Pulse width modulation (PWM) is recommended for dimming effects.

Performance Curves

Figure 4: Typical Relative DC Flux vs. Solder Point Temperature

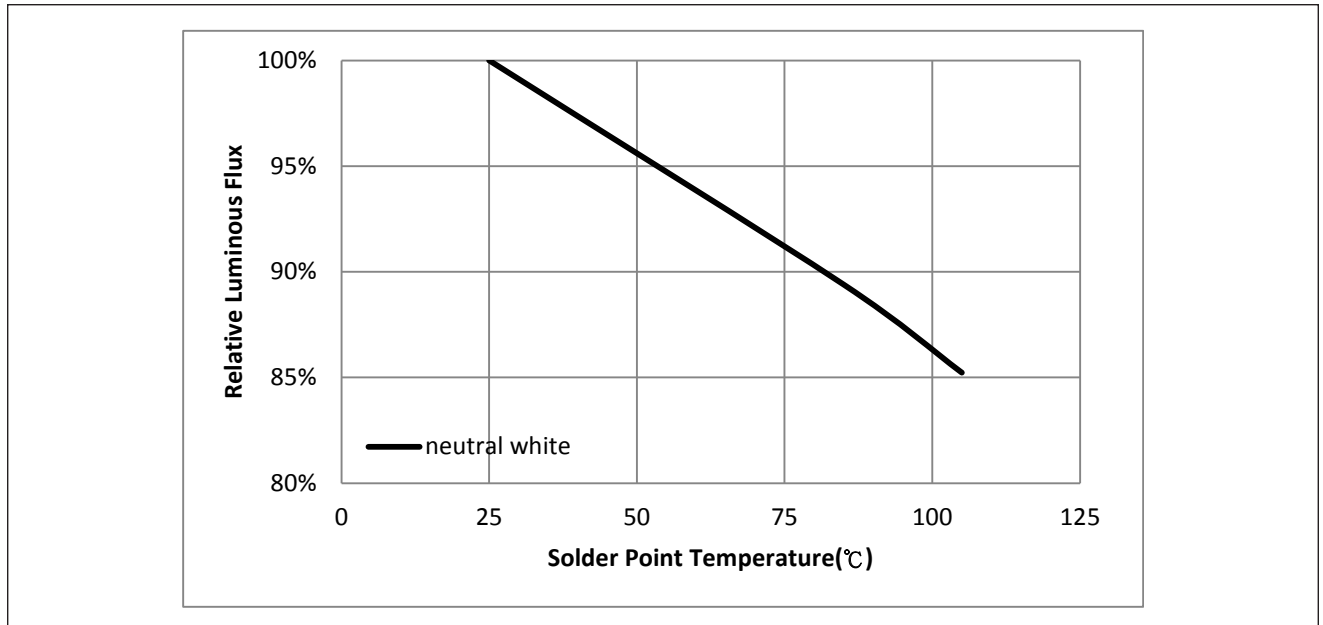
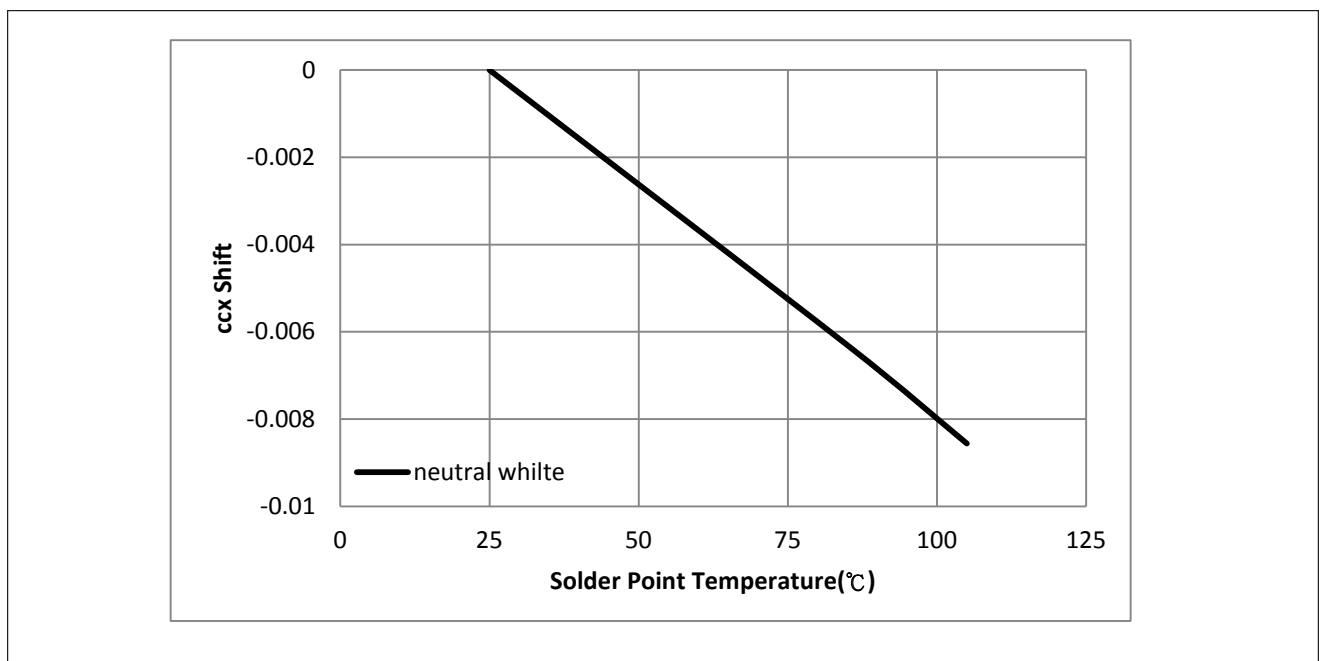


Figure 5: Typical DC ccx Shift vs. Solder Point Temperature

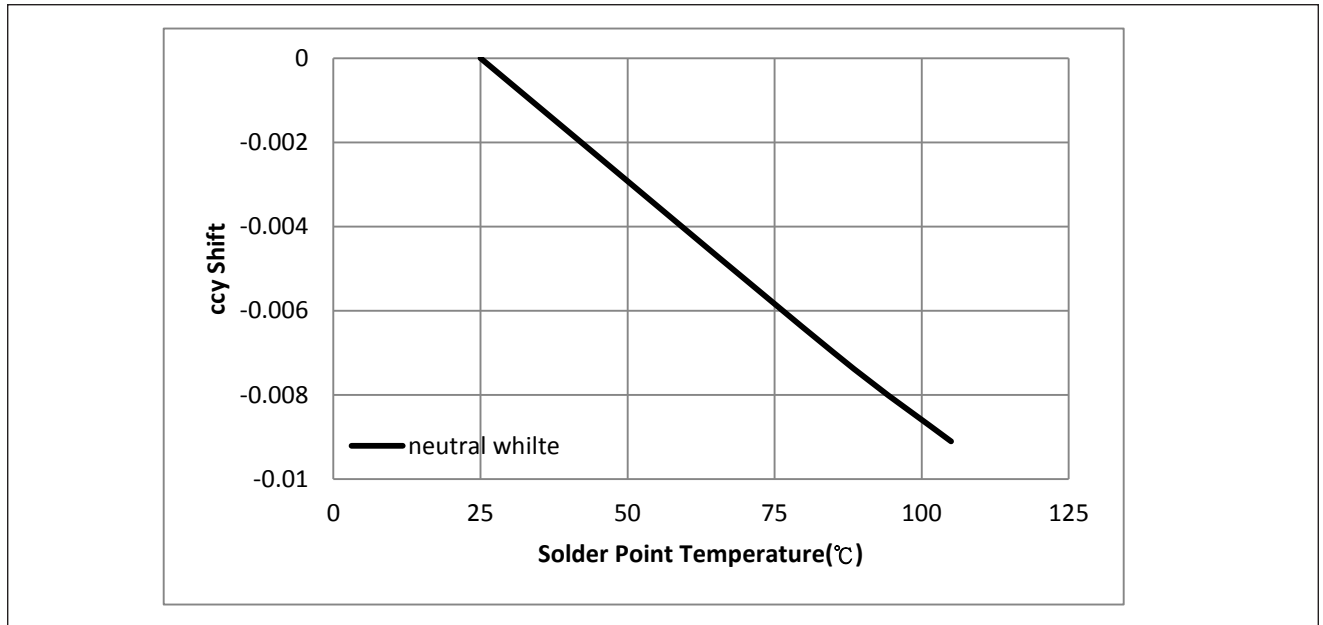


Notes for Figures 4 & 5:

1. Characteristics shown for neutral white based on 4000K and 70 CRI.
2. For other color SKUs, the shift in color will vary. Please contact your Bridgelux Sales Representative for more information.

Performance Curves

Figure 6: Typical DC ccy Shift vs. Solder Point Temperature

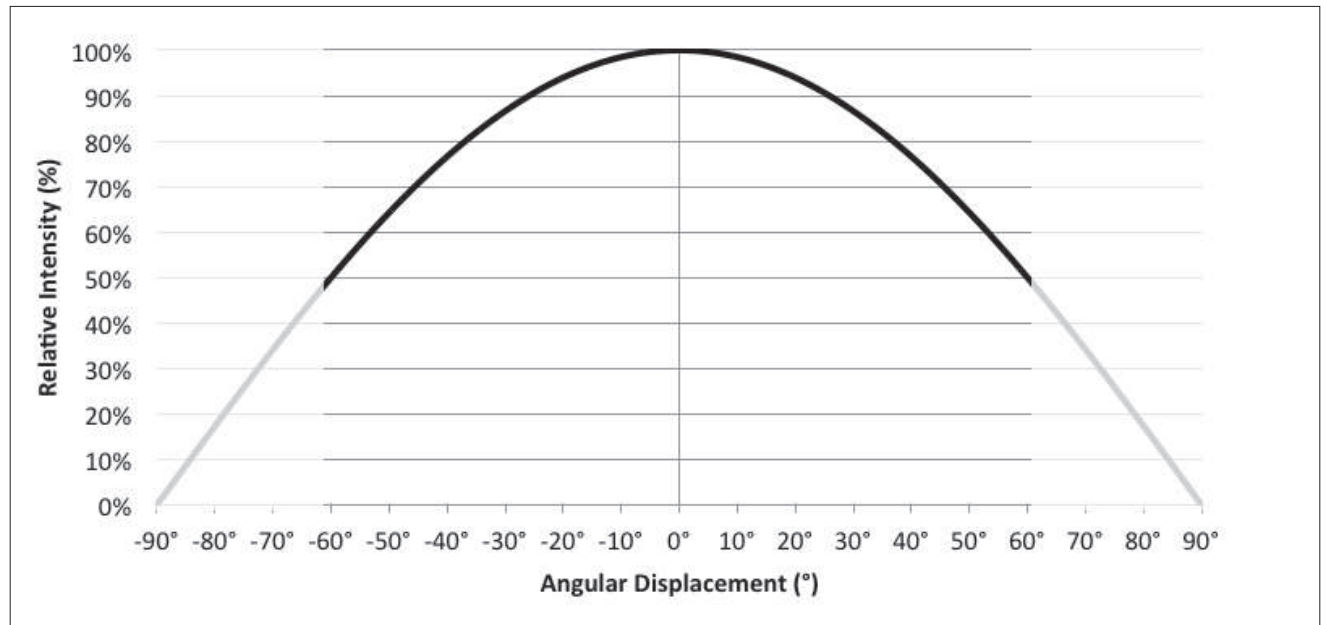


Notes for Figure 6:

1. Characteristics shown for neutral white based on 4000K and 70 CRI.
2. For other color SKUs, the shift in color will vary. Please contact your Bridgelux Sales Representative for more information.

Typical Radiation Pattern

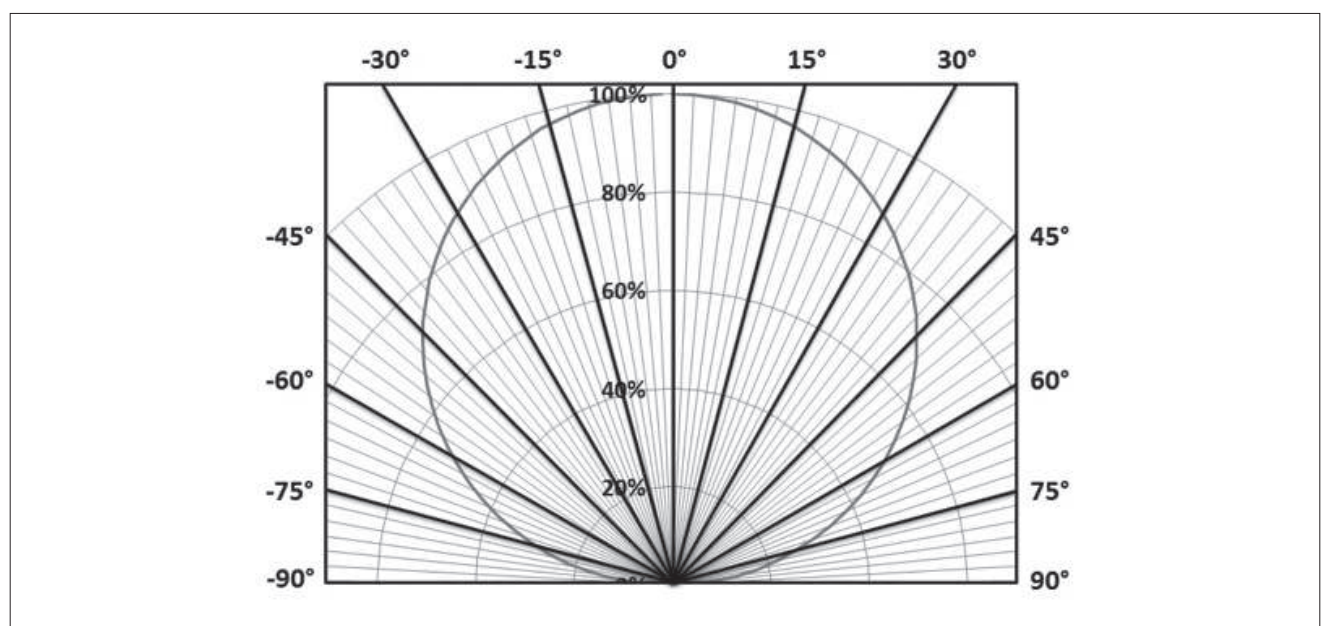
Figure 7: Typical Spatial Radiation Pattern at 150mA, $T_{sp}=25^{\circ}\text{C}$



Notes for Figure 7:

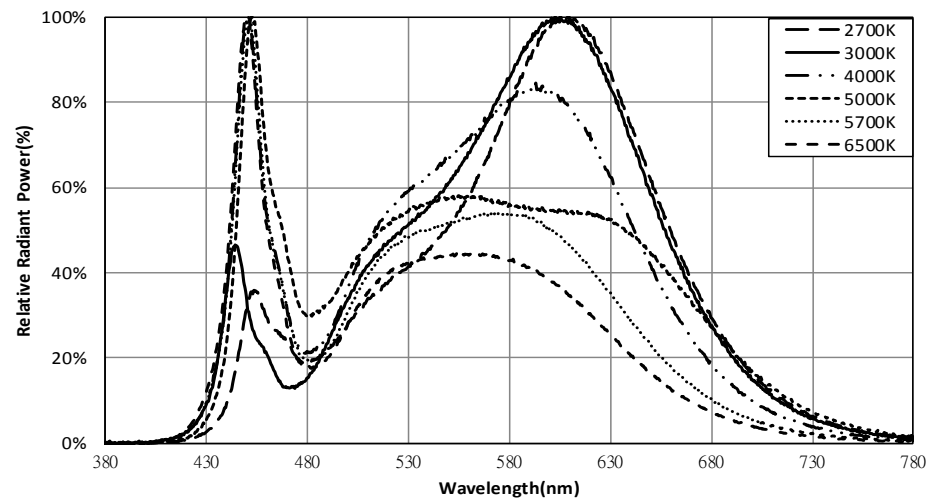
1. Typical viewing angle is 120° .
2. The viewing angle is defined as the off axis angle from the centerline where I_v is $\frac{1}{2}$ of the peak value.

Figure 8: Typical Polar Radiation Pattern at 150mA, $T_{sp}=25^{\circ}\text{C}$



Typical Color Spectrum

Figure 9: Typical Color Spectrum

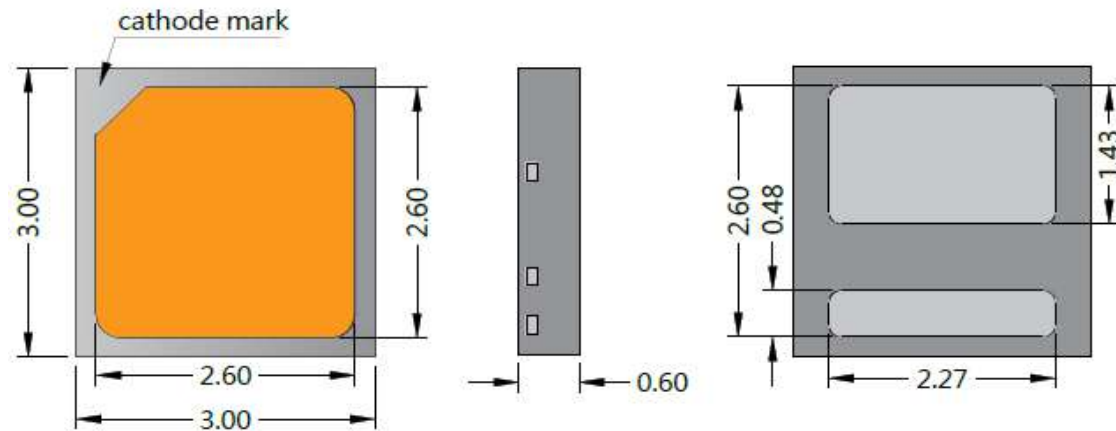


Note for Figure 9:

1. Color spectra measured at nominal current for $T_{sp} = 25^{\circ}\text{C}$
2. Color spectra shown for 80 CRI products.

Mechanical Dimensions

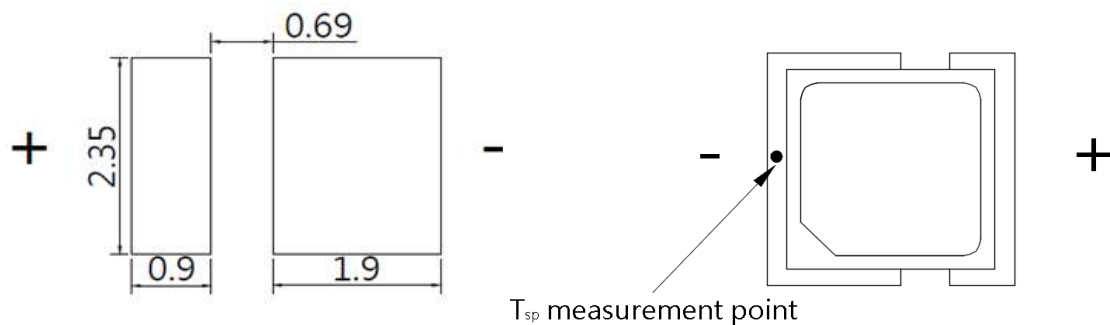
Figure 10: Drawing for SMD 3030



Notes for Figure 10:

1. Drawings are not to scale.
2. Drawing dimensions are in millimeters.
3. Unless otherwise specified, tolerances are $\pm 0.10\text{mm}$.
4. The optical center of the LED emitter is nominally defined by the mechanical center of the emitter. The light emitting surface (LES) is centered on the mechanical center of the LED emitter to a tolerance of $\pm 0.2\text{ mm}$

Recommended PCB Soldering Pad Pattern



Reliability

Table 8: Reliability Test Items and Conditions

No .	Items	Reference Standard	Test Conditions	Drive Current	Test Duration	Units Failed/ Tested
1	Moisture/Reflow Sensitivity	J-STD-020E	$T_{\text{slid}} = 260^{\circ}\text{C}$, 10sec, Precondition: 85°C , 60%RH, 168hr		3 reflows	0/22
2	Low Temperature Storage	JESD22-A119	$T_{\text{a}} = -40^{\circ}\text{C}$		1000 hours	0/22
3	High Temperature Storage	JESD22-A103D	$T_{\text{a}} = 100^{\circ}\text{C}$		1000 hours	0/22
4	Low Temperature Operating Life	JESD22-A108D	$T_{\text{a}} = -40^{\circ}\text{C}$	150mA	1000 hours	0/22
5	Temperature Humidity Operating Life	JESD22-A101C	$T_{\text{sp}} = 85^{\circ}\text{C}$, RH=85%	150mA	1000 hours	0/22
6	High Temperature Operating Life	JESD22-A108D	$T_{\text{sp}} = 105^{\circ}\text{C}$	240mA	1000 hours	0/22
7	Thermal Shock	JESD22-A106B	$T_{\text{a}} = -40^{\circ}\text{C} \sim 100^{\circ}\text{C}$; Dwell : 15min; Transfer: 10sec		200 Cycle	0/22
8	Temperature Cycle	JESD22-A104E	$T_{\text{a}} = -40^{\circ}\text{C} \sim 100^{\circ}\text{C}$; Dwell at extreme temperature: 15min; Ramp rate $< 105^{\circ}\text{C}/\text{min}$		200 Cycle	0/22
9	Electrostatic Discharge	JS-001-2012	HBM, 2KV, 15k Ω , 100pF, Alternately positive or negative			0/22

Passing Criteria

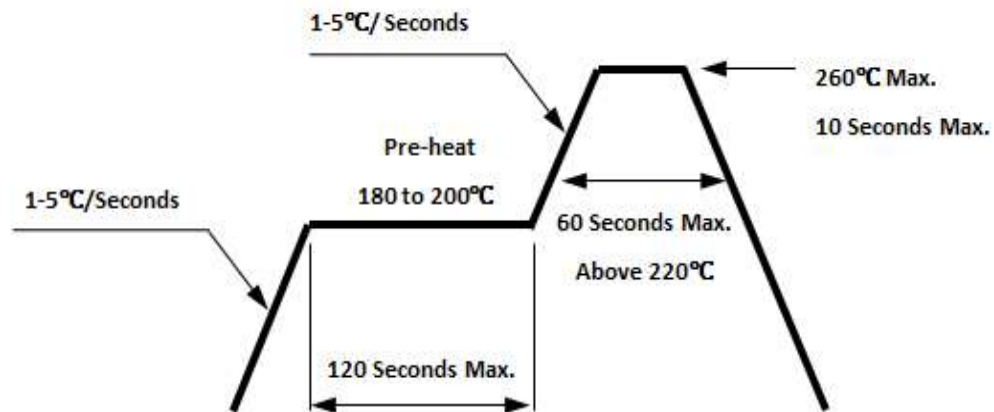
Item	Symbol	Test Condition	Passing Criteria
Forward Voltage	Vf	150mA	$\Delta V_f < 10\%$
Luminous Flux	Iv	150mA	$\Delta I_v < 30\%$
Chromaticity Coordinates	(x, y)	150mA	$\Delta u'v' < 0.007$

Notes for Table 8:

- Measurements are performed after allowing the LEDs to return to room temperature
- T_{slid} : reflow soldering temperature; T_{a} : ambient temperature

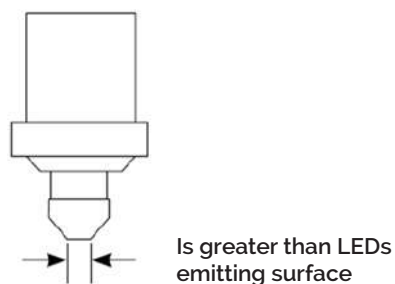
Reflow Characteristics

Figure 11 : Reflow Profile



Profile Feature	Lead Free Assembly
Preheat: Temperature Range	180°C – 200°C
Preheat: Time (Maximum)	120 seconds
Peak Temperature	260°C
Soldering Time (Maximum)	10 seconds
Allowable Reflow Cycles	2

Figure 12 : Pick and Place

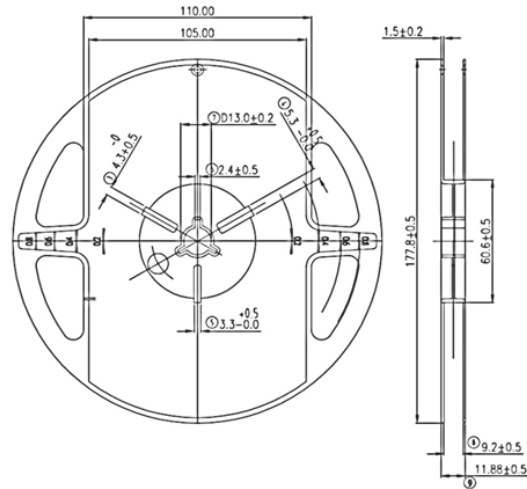


Note for Figure 12:

1. When using a pick and place machine, choose a nozzle that has a larger diameter than the LED's emitting surface. Using a Pick-and-Place nozzle with a smaller diameter than the size of the LEDs emitting surface will cause damage and may also cause the LED to not illuminate.

Packaging

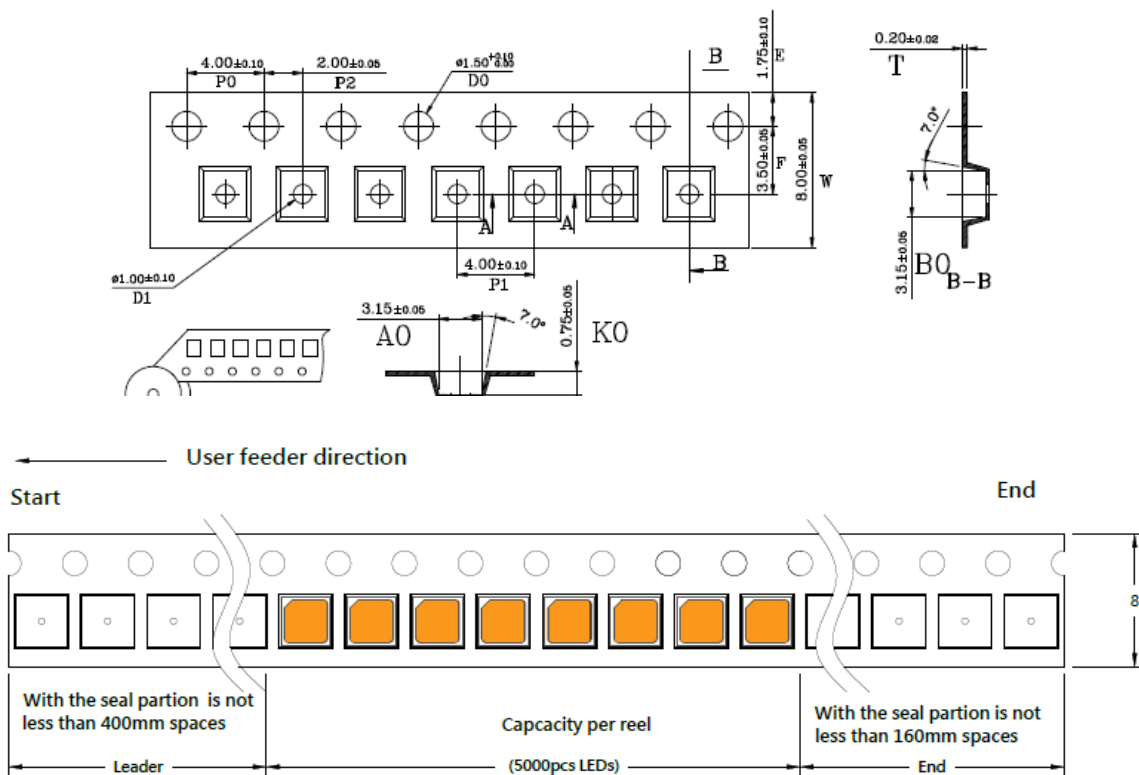
Figure 13: Emitter Reel Drawings



Note for Figure 13:

1. Drawings are not to scale. Drawing dimensions are in millimeters.

Figure 14: Emitter Tape Drawings

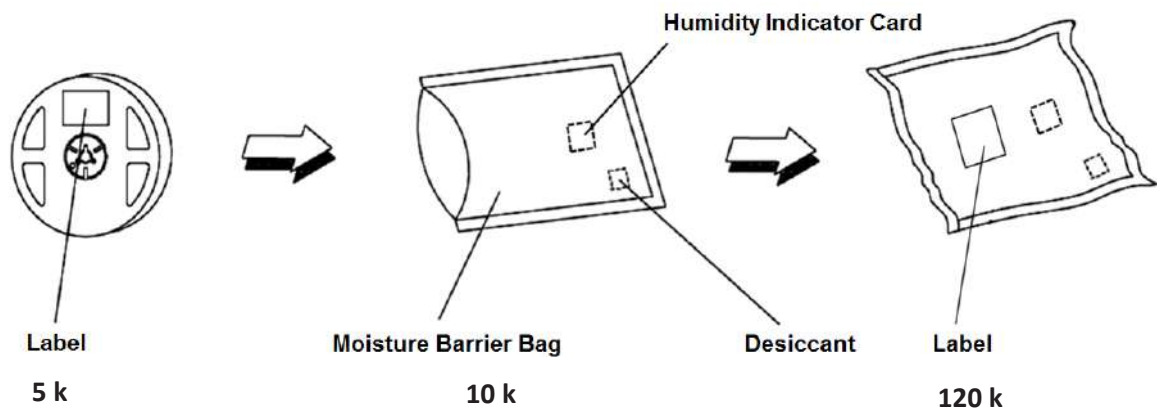


Note for Figure 14:

1. Drawings are not to scale. Drawing dimensions are in millimeters.

Packaging

Figure 15: Emitter Reel Packaging Drawings



Note for Figure 15:

1. Drawings are not to scale.

Design Resources

Optical Source Models

Please contact your Bridgelux sales representative for assistance.

Precautions

CAUTION: CHEMICAL EXPOSURE HAZARD

Exposure to some chemicals commonly used in luminaire manufacturing and assembly can cause damage to the LED emitter. Please consult Bridgelux Application Note AN51 for additional information.

CAUTION: EYE SAFETY

Eye safety classification for the use of Bridgelux SMD LED emitter is in accordance with IEC specification EN62471: Photobiological Safety of Lamps and Lamp Systems. SMD LED emitters are classified as Risk Group 1 when operated at or below the maximum drive current. Please use appropriate precautions. It is important that employees working with LEDs are trained to use them safely.

CAUTION: RISK OF BURN

Do not touch the SMD LED emitter during operation. Allow the array to cool for a sufficient period of time before handling. The SMD LED emitter may reach elevated temperatures such that could burn skin when touched.

CAUTION

CONTACT WITH LIGHT EMITTING SURFACE (LES)

Avoid any contact with the LES. Do not touch the LES of the emitter or apply stress to the LES (yellow phosphor resin area). Contact may cause damage to the emitter

Optics and reflectors must not be mounted in contact with the LES (yellow phosphor resin area).

Disclaimers

MINOR PRODUCT CHANGE POLICY

The rigorous qualification testing on products offered by Bridgelux provides performance assurance. Slight cosmetic changes that do not affect form, fit, or function may occur as Bridgelux continues product optimization.

STANDARD TEST CONDITIONS

Unless otherwise stated, LED emitter testing is performed at the nominal drive current.

About Bridgelux: Bridging Light and Life™

At Bridgelux, we help companies, industries and people experience the power and possibility of light. Since 2002, we've designed LED solutions that are high performing, energy efficient, cost effective and easy to integrate. Our focus is on light's impact on human behavior, delivering products that create better environments, experiences and returns—both experiential and financial. And our patented technology drives new platforms for commercial and industrial luminaires.

For more information about the company, please visit
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46430 Fremont Boulevard
Fremont, CA 94538 USA
Tel (925) 583-8400
www.bridgelux.com

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GW JTLRS1.EM



The compact, mid-power DURIS® E 2835 LED with an industry standard footprint. Optimum lumen packages for retrofit applications and a truly cost optimize product. It is the ideal choice for all indoor General Lighting applications.

Features:

- **Package:** white SMT package, colored diffused silicone resin
- **Viewing angle at 50 % I_V :** 120°
- **Color:** 2200 K - 6500 K (white)
- **CRI:** min. 80 (typ. 82)
- **Luminous Flux:** typ. 113 lm @ 3000 K
- **Luminous efficacy:** typ. 118 lm/W @ 3000 K
- **Lumen Maintenance:** Testing according to IESNA LM-80 in progress

Applications

- Indoor General Lighting
- Industrial lighting
- Linear lights
- Professional downlights
- Retrofits and fixtures

DURIS® E 2835 ist eine kompakte mid-Power-LED im Standard-Footprint. Die Lumenpakete sind auf Anwendungen wie LED-Lampen (Retrofits) zugeschnitten und durch sein kostenoptimiertes Design ist die DURIS® E 2835 die ideale Wahl für alle Anwendungen in der Innenraumbeleuchtung.

Besondere Merkmale:

- **Gehäusotyp:** weißes SMT Gehäuse, farbiger diffuser Silikon-Verguss
- **Abstrahlwinkel bei 50 % I_V :** 120°
- **Farbe:** 2200 K - 6500 K (weiß)
- **CRI:** min. 80 (typ. 82)
- **Lichtstrom:** typ. 113 lm @ 3000 K
- **Lichtausbeute:** typ. 118 lm/W @ 3000 K
- **Lichtstromerhaltung:** Tests nach IESNA LM-80 im Gange

Anwendungen

- Innen-Allgemeinbeleuchtung
- Industriebeleuchtung
- Linearbeleuchtung
- Professionelle Downlights
- Retrofits

Ordering Information
Bestellinformation

Type: Typ:	Color Temperature Farbtemperatur [K]	Luminous Flux 1) page 25 Lichtstrom 1) Seite 25 I_F = 100 mA Φ_V [lm]	Ordering Code Bestellnummer
GW JTLRS1.EM-KYK2-A10310-1	2200	95 ... 115	Q65112A4091
GW JTLRS1.EM-KYK2-XX510-1	2200	95 ... 115	Q65112A4094
GW JTLRS1.EM-KZK3-A838-1	2700	100 ... 120	Q65112A2656
GW JTLRS1.EM-KZK3-XX58-1	2700	100 ... 120	Q65112A2650
GW JTLRS1.EM-K1K4-A838-1	2700	105 ... 125	Q65112A2642
GW JTLRS1.EM-K1K4-XX58-1	2700	105 ... 125	Q65112A2640
GW JTLRS1.EM-K1K4-A737-1	3000	105 ... 125	Q65112A2655
GW JTLRS1.EM-K1K4-XX57-1	3000	105 ... 125	Q65112A2648
GW JTLRS1.EM-K2K5-A737-1	3000	110 ... 130	Q65112A2641
GW JTLRS1.EM-K2K5-XX57-1	3000	110 ... 130	Q65112A2639
GW JTLRS1.EM-K1K4-A636-1	3500	105 ... 125	Q65112A2654
GW JTLRS1.EM-K1K4-XX56-1	3500	105 ... 125	Q65112A2647
GW JTLRS1.EM-K2K5-A636-1	3500	110 ... 130	Q65112A2638
GW JTLRS1.EM-K2K5-XX56-1	3500	110 ... 130	Q65112A2637
GW JTLRS1.EM-K3LV-A535-1	4000	115 ... 135	Q65112A4089
GW JTLRS1.EM-K3LV-XX55-1	4000	115 ... 135	Q65112A4081
GW JTLRS1.EM-K3LV-A333-1	5000	115 ... 135	Q65112A4090
GW JTLRS1.EM-K3LV-XX53-1	5000	115 ... 135	Q65112A4079
GW JTLRS1.EM-K3LV-A232-1	5700	115 ... 135	Q65112A4085
GW JTLRS1.EM-K3LV-XX52-1	5700	115 ... 135	Q65112A4093
GW JTLRS1.EM-K3LV-A131-1	6500	115 ... 135	Q65112A4083
GW JTLRS1.EM-K3LV-XX51-1	6500	115 ... 135	Q65112A4092

Type:	Color Temperature	Luminous Flux	Ordering Code
Typ:	Farbtemperatur	Lichtstrom	Bestellnummer
		^{1) page 25}	
		^{1) Seite 25}	
		$I_F = 100 \text{ mA}$	
	[K]	$\Phi_V [\text{lm}] \text{ GW}$	
JTLRS1.EM-KYK2-A10310-1-L	2200	95 ... 115	Q65112A5666
GW JTLRS1.EM-KYK2-XX510-1-L	2200	95 ... 115	Q65112A5668
GW JTLRS1.EM-K2K5-A838-1-L	2700	110 ... 130	Q65112A5649
GW JTLRS1.EM-K2K5-XX58-1-L	2700	110 ... 130	Q65112A5652
GW JTLRS1.EM-K2K5-A737-1-L	3000	110 ... 130	Q65112A5648
GW JTLRS1.EM-K2K5-XX57-1-L	3000	110 ... 130	Q65112A5650
GW JTLRS1.EM-K3LV-A636-1-L	3500	110 ... 130	Q65112A5653
GW JTLRS1.EM-K3LV-XX56-1-L	3500	110 ... 130	Q65112A5684
GW JTLRS1.EM-K4LW-A535-1-L	4000	120 ... 140	Q65112A5657
GW JTLRS1.EM-K4LW-XX55-1-L	4000	120 ... 140	Q65112A5664
GW JTLRS1.EM-K4LW-A333-1-L	5000	120 ... 140	Q65112A5656
GW JTLRS1.EM-K4LW-XX53-1-L	5000	120 ... 140	Q65112A5662
GW JTLRS1.EM-K4LW-A232-1-L	5700	120 ... 140	Q65112A5655
GW JTLRS1.EM-K4LW-XX52-1-L	5700	120 ... 140	Q65112A5660
GW JTLRS1.EM-K4LW-A131-1-L	6500	120 ... 140	Q65112A5685
GW JTLRS1.EM-K4LW-XX51-1-L	6500	120 ... 140	Q65112A5686

Note: The above Type Numbers represent the order groups which include only a few brightness groups (see page 5). Only one group will be shipped on each packing unit (there will be no mixing of two groups on each packing unit). E. g. GW JTLRS1.EM-KZK3-XX58-1 means that only one group K1, K2, K3, KZ will be shippable for any packing unit.

In a similar manner for colors where color chromaticity coordinate groups are measured and binned, single groups will be shipped on any one packing unit. GW JTLRS1.EM-KZK3-XX58-1 means that the device will be shipped within the specified limits.

In a similar manner for colors where forward voltage groups are measured and binned, single forward voltage groups will be shipped on any packing unit. E. g. GW JTLRS1.EM-KZK3-XX58-1 means that only one forward voltage group D2,E1,E2,F1,F2,G1 will be shippable.

Anm.: Die oben genannten Typbezeichnungen umfassen die bestellbaren Selektionen. Diese bestehen aus wenigen Helligkeitsgruppen (siehe Seite 5). Es wird nur eine einzige Helligkeitsgruppe pro Verpackungseinheit geliefert. Z. B. GW JTLRS1.EM-KZK3-XX58-1 bedeutet, dass in einer Verpackungseinheit nur eine der Helligkeitsgruppen K1, K2, K3, KZ enthalten ist.

Gleiches gilt für die Farben, bei denen Farbortgruppen gemessen und gruppiert werden. Pro Verpackungseinheit wird nur eine Farbortgruppe geliefert. Z.B. GW JTLRS1.EM-KZK3-XX58-1 bedeutet, dass in einer Verpackungseinheit nur eine der Farbortgruppen enthalten ist. GW JTLRS1.EM-KZK3-XX58-1 bedeutet, dass das Bauteil innerhalb der spezifizierten Grenzen geliefert wird.

Gleiches gilt für die LEDs, bei denen die Durchlassspannungsgruppen gemessen und gruppiert werden. Pro Verpackungseinheit wird nur eine Durchlassspannungsgruppe geliefert. Z. B. GW JTLRS1.EM-KZK3-XX58-1 bedeutet, dass nach Durchlassspannungsgruppen gruppiert wird. In einer Verpackungseinheit ist nur eine der Durchlassspannungsgruppen D2,E1,E2,F1,F2,G1 enthalten (siehe Seite 5).

Maximum Ratings
Grenzwerte

Parameter Bezeichnung	Symbol Symbol	Values Werte	Unit Einheit
Operating temperature range Betriebstemperatur	T_{op}	-40 ... 100	°C
Storage temperature range Lagertemperatur	T_{stg}	-40 ... 100	°C
Junction temperature Sperrschichttemperatur	T_j	125	°C
Forward current Durchlassstrom ($T_j = 25\text{ °C}$)	I_F	10 ... 120	mA
Surge current Stoßstrom ($t \leq 10\text{ }\mu\text{s}$; $D = 0.005$; $T_j = 25\text{ °C}$)	I_{FM}	200	mA
ESD withstand voltage ESD Festigkeit (acc. to ANSI/ESDA/JEDEC JS-001 - HBM, Class 2)	V_{ESD}	2	kV

Characteristics ($T_J = 25\text{ }^{\circ}\text{C}$; $I_F = 100\text{ mA}$)

Kennwerte

Parameter Bezeichnung		Symbol Symbol	Values Werte	Unit Einheit
Viewing angle at 50 % I_V Abstrahlwinkel bei 50 % I_V	(typ.)	2ϕ	120	$^{\circ}$
Forward voltage ^{1) page 25} Durchlassspannung ^{1) Seite 25}	(min.) (typ.) (max.)	V_F V_F V_F	8.60 9.60 9.80	V V V
Reverse current Sperrstrom		I_R	not designed for reverse operation	
Color rendering index ^{2) page 25} Farbwiedergabe Index ^{2) Seite 25} (2200K - 6500K)	(typ.) (min.)	R_a R_a	82 80	- -
"Electrical" thermal resistance junction / solder point "Elektrischer" Wärmewiderstand Sperrschicht / Lötpad (with efficiency $\eta_e = 35\%$)	(typ.)	$R_{th\text{ JS el}}$	13	K/W

Note: Individual forward voltage groups see next page

Anm.: Durchlassspannungsgruppen siehe nächste Seite

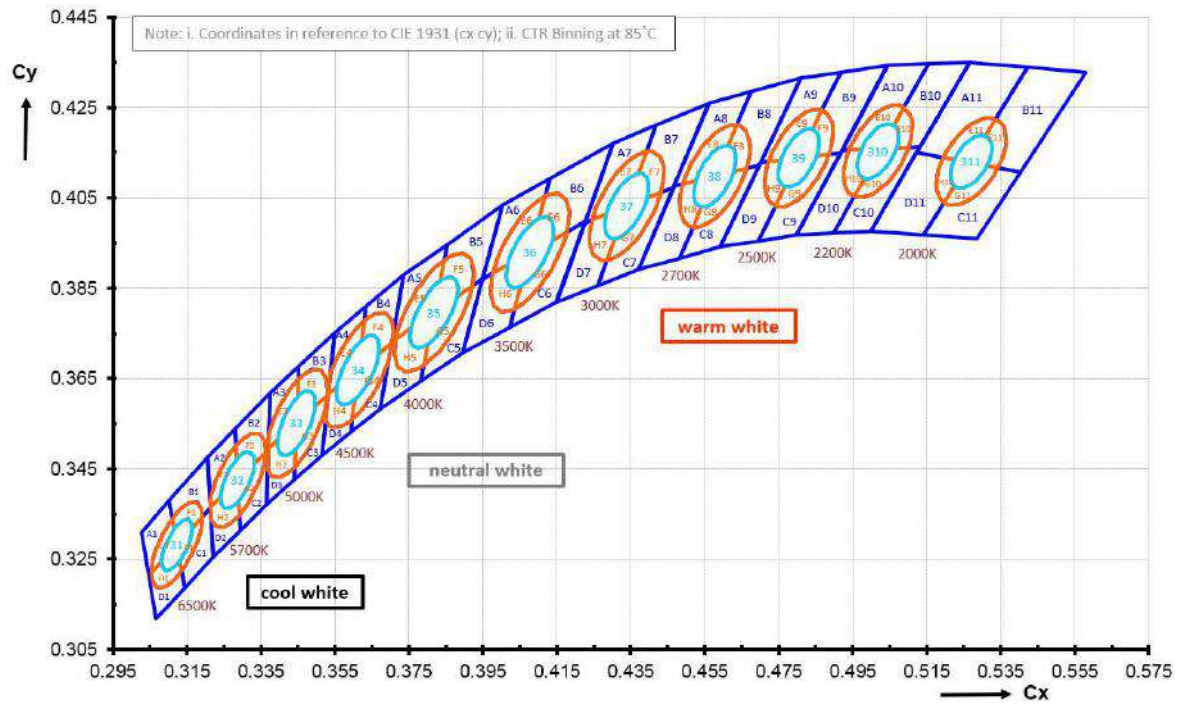
Brightness Groups
Helligkeitsgruppen

Group Gruppe	Luminous Flux ^{3) page 25} Lichtstrom ^{3) Seite 25} (min.) Φ_V [lm]	Luminous Flux ^{3) page 25} Lichtstrom ^{3) Seite 25} (max.) Φ_V [lm]
KY	95	100
KZ	100	105
K1	105	110
K2	110	115
K3	115	120
K4	120	125
K5	125	130
LV	130	135
LW	135	140

Forward Voltage Groups ^{1) page 25}
Durchlassspannungsgruppen ^{1) Seite 25}

Group Gruppe		
	(min.) V_F [V]	(max.) V_F [V]
D2	8.60	8.80
E1	8.80	9.00
E2	9.00	9.20
F1	9.20	9.40
F2	9.40	9.60
G1	9.60	9.80

Chromaticity Coordinate Groups 4) page 25
Farbortgruppen 4) Seite 25



Color Chromaticity Groups ^{4) page 25}
Farbortgruppen ^{4) Seite 25}

CCTs	Center		3Step		5Step		Ø
	Cx	Cy	a	b	a	b	
2200K	0.5020	0.4156	0.0072	0.0040	0.0120	0.0067	39.9
2500K	0.4804	0.4138	0.0076	0.0041	0.0126	0.0068	53.1
2700K	0.4577	0.4098	0.008	0.0041	0.0133	0.0068	54.1
3000K	0.4339	0.4032	0.0086	0.0042	0.0142	0.0069	53.7
3500K	0.4077	0.3929	0.0093	0.0042	0.0155	0.0069	53.9
4000K	0.3818	0.3796	0.0094	0.0041	0.0157	0.0068	53.4
4500K	0.3613	0.3669	0.0089	0.0038	0.0148	0.0063	57.0
5000K	0.3446	0.3551	0.0081	0.0035	0.0135	0.0059	59.8
5700K	0.3287	0.3425	0.0072	0.0032	0.0119	0.0052	58.8
6500K	0.3123	0.3282	0.0066	0.0027	0.011	0.0045	58.1

2200K	1		2		3		4		5	
Bin	Cx	Cy	Cx	Cy	Cx	Cy	Cx	Cy	Cx	Cy
A	0.5155	0.4347	0.5044	0.4344	0.4921	0.4156	0.4941	0.4156	0.5088	0.4249
B	0.5155	0.4347	0.5265	0.4350	0.5132	0.4163	0.5101	0.4161	0.5088	0.4249
C	0.5132	0.4163	0.4998	0.3975	0.4898	0.3971	0.4955	0.4054	0.5101	0.4161
D	0.4955	0.4054	0.4941	0.4156	0.4921	0.4156	0.4798	0.3967	0.4898	0.3971
E	0.5088	0.4249	0.4941	0.4156	0.4973	0.4157	0.5061	0.4210	NA	NA
F	0.5088	0.4249	0.5101	0.4161	0.5068	0.4160	0.5061	0.4210	NA	NA
G	0.5101	0.4161	0.4955	0.4054	0.4981	0.4093	0.5068	0.4158	NA	NA
H	0.4981	0.4093	0.4973	0.4157	0.4941	0.4156	0.4955	0.4054	NA	NA

2500K	1		2		3		4		5	
Bin	Cx	Cy	Cx	Cy	Cx	Cy	Cx	Cy	Cx	Cy
A	0.4917	0.4328	0.4811	0.4315	0.4701	0.4128	0.4723	0.4130	0.4867	0.4245
B	0.4917	0.4328	0.5044	0.4344	0.4917	0.4149	0.4885	0.4146	0.4867	0.4245
C	0.4917	0.4149	0.4798	0.3967	0.4695	0.3954	0.4741	0.4031	0.4885	0.4146
D	0.4741	0.4031	0.4723	0.4130	0.4701	0.4128	0.4591	0.3941	0.4695	0.3954
E	0.4867	0.4245	0.4723	0.4130	0.4755	0.4133	0.4842	0.4202	NA	NA
F	0.4867	0.4245	0.4885	0.4146	0.4853	0.4143	0.4842	0.4202	NA	NA
G	0.4885	0.4146	0.4741	0.4031	0.4766	0.4074	0.4853	0.4143	NA	NA
H	0.4766	0.4074	0.4755	0.4133	0.4723	0.4130	0.4741	0.4031	NA	NA

2700K	1		2		3		4		5	
Bin	Cx	Cy	Cx	Cy	Cx	Cy	Cx	Cy	Cx	Cy
A	0.4675	0.4285	0.4561	0.4259	0.4467	0.4076	0.4491	0.4081	0.4637	0.4212
B	0.4675	0.4285	0.4811	0.4315	0.4698	0.4123	0.4663	0.4115	0.4637	0.4212
C	0.4698	0.4123	0.4591	0.3941	0.4482	0.3917	0.4517	0.3984	0.4663	0.4115
D	0.4517	0.3984	0.4491	0.4081	0.4467	0.4076	0.4372	0.3892	0.4482	0.3917
E	0.4637	0.4212	0.4491	0.4081	0.4526	0.4088	0.4613	0.4166	NA	NA
F	0.4637	0.4212	0.4663	0.4115	0.4628	0.4108	0.4613	0.4166	NA	NA
G	0.4663	0.4115	0.4517	0.3984	0.4541	0.4030	0.4628	0.4108	NA	NA
H	0.4541	0.4030	0.4526	0.4088	0.4491	0.4081	0.4517	0.3984	NA	NA

3000K	1		2		3		4		5	
Bin	Cx	Cy	Cx	Cy	Cx	Cy	Cx	Cy	Cx	Cy
A	0.4418	0.4211	0.4302	0.4171	0.4226	0.3995	0.4246	0.4002	0.4393	0.4153
B	0.4418	0.4211	0.4561	0.4259	0.4465	0.4073	0.4432	0.4062	0.4393	0.4153
C	0.4465	0.4073	0.4372	0.3892	0.4261	0.3856	0.4285	0.3911	0.4432	0.4062
D	0.4285	0.3911	0.4246	0.4002	0.4226	0.3995	0.4149	0.3819	0.4261	0.3856
E	0.4393	0.4153	0.4246	0.4002	0.4283	0.4014	0.4371	0.4105	NA	NA
F	0.4393	0.4153	0.4432	0.4062	0.4395	0.4050	0.4371	0.4105	NA	NA
G	0.4432	0.4062	0.4285	0.3911	0.4307	0.3960	0.4395	0.4050	NA	NA
H	0.4307	0.3960	0.4283	0.4014	0.4246	0.4002	0.4285	0.3911	NA	NA

3500K	1		2		3		4		5	
Bin	Cx	Cy	Cx	Cy	Cx	Cy	Cx	Cy	Cx	Cy
A	0.4131	0.4093	0.4003	0.4034	0.3949	0.3871	0.3977	0.3883	0.4118	0.4054
B	0.4131	0.4093	0.4302	0.4171	0.4227	0.3997	0.4177	0.3975	0.4118	0.4054
C	0.4227	0.3997	0.4149	0.3819	0.4022	0.3763	0.4036	0.3804	0.4177	0.3975
D	0.4036	0.3804	0.3977	0.3883	0.3949	0.3871	0.3895	0.3707	0.4022	0.3763
E	0.4118	0.4054	0.3977	0.3883	0.4017	0.3902	0.4102	0.4004	NA	NA
F	0.4118	0.4054	0.4177	0.3975	0.4137	0.3957	0.4102	0.4004	NA	NA
G	0.4177	0.3975	0.4036	0.3804	0.4052	0.3854	0.4137	0.3957	NA	NA
H	0.4052	0.3854	0.4017	0.3902	0.3977	0.3883	0.4036	0.3804	NA	NA

4000K	1		2		3		4		5	
Bin	Cx	Cy	Cx	Cy	Cx	Cy	Cx	Cy	Cx	Cy
A	0.3853	0.3947	0.3737	0.3879	0.3704	0.3731	0.3714	0.3737	0.3845	0.3913
B	0.3853	0.3947	0.4003	0.4034	0.3949	0.3871	0.3922	0.3855	0.3845	0.3913
C	0.3949	0.3871	0.3895	0.3707	0.3783	0.3645	0.3791	0.3679	0.3922	0.3855
D	0.3791	0.3679	0.3714	0.3737	0.3704	0.3731	0.3671	0.3583	0.3783	0.3645
E	0.3845	0.3913	0.3714	0.3737	0.3756	0.3760	0.3834	0.3866	NA	NA
F	0.3845	0.3913	0.3922	0.3855	0.3880	0.3832	0.3834	0.3866	NA	NA
G	0.3922	0.3855	0.3791	0.3679	0.3802	0.3726	0.3880	0.3832	NA	NA
H	0.3802	0.3726	0.3756	0.3760	0.3714	0.3737	0.3791	0.3679	NA	NA

4500K	1		2		3		4		5	
Bin	Cx	Cy	Cx	Cy	Cx	Cy	Cx	Cy	Cx	Cy
A	0.3634	0.3809	0.3550	0.3752	0.3538	0.3664	0.3629	0.3779	NA	NA
B	0.3634	0.3809	0.3737	0.3879	0.3709	0.3753	0.3629	0.3779	NA	NA
C	0.3695	0.3690	0.3671	0.3583	0.3593	0.3532	0.3597	0.3559	NA	NA
D	0.3597	0.3559	0.3524	0.3555	0.3514	0.3480	0.3593	0.3532	NA	NA
E	0.3629	0.3779	0.3538	0.3664	0.3532	0.3616	0.3557	0.3632	0.3623	0.3735
F	0.3629	0.3779	0.3709	0.3753	0.3703	0.3728	0.3669	0.3706	0.3623	0.3735
G	0.3703	0.3728	0.3695	0.3690	0.3597	0.3559	0.3603	0.3603	0.3669	0.3706
H	0.3603	0.3603	0.3557	0.3632	0.3532	0.3616	0.3524	0.3555	0.3597	0.3559

5000K	1		2		3		4		5	
Bin	Cx	Cy	Cx	Cy	Cx	Cy	Cx	Cy	Cx	Cy
A	0.3452	0.3678	0.3375	0.3619	0.3372	0.3528	0.3451	0.3648	NA	NA
B	0.3452	0.3678	0.3550	0.3752	0.3532	0.3614	0.3530	0.3612	0.3451	0.3648
C	0.3532	0.3614	0.3514	0.3480	0.3440	0.3426	0.3441	0.3454	0.3530	0.3612
D	0.3441	0.3454	0.3369	0.3445	0.3366	0.3372	0.3440	0.3426	NA	NA
E	0.3451	0.3648	0.3372	0.3528	0.3371	0.3496	0.3396	0.3514	0.3449	0.3609
F	0.3451	0.3648	0.3530	0.3612	0.3496	0.3588	0.3449	0.3609	NA	NA
G	0.3530	0.3612	0.3441	0.3454	0.3443	0.3493	0.3496	0.3588	NA	NA
H	0.3443	0.3493	0.3396	0.3514	0.3371	0.3496	0.3369	0.3445	0.3441	0.3454

5700K	1		2		3		4		5	
Bin	Cx	Cy	Cx	Cy	Cx	Cy	Cx	Cy	Cx	Cy
A	0.3280	0.3539	0.3205	0.3475	0.3212	0.3373	0.3283	0.3502	NA	NA
B	0.3280	0.3539	0.3375	0.3619	0.3370	0.3493	0.3363	0.3486	0.3283	0.3502
C	0.3370	0.3493	0.3366	0.3372	0.3294	0.3314	0.3291	0.3348	0.3363	0.3486
D	0.3291	0.3348	0.3215	0.3337	0.3221	0.3255	0.3294	0.3314	NA	NA
E	0.3283	0.3502	0.3212	0.3373	0.3213	0.3365	0.3242	0.3388	0.3284	0.3471
F	0.3283	0.3502	0.3363	0.3486	0.3332	0.3462	0.3284	0.3471	NA	NA
G	0.3363	0.3486	0.3291	0.3348	0.3290	0.3379	0.3332	0.3462	NA	NA
H	0.3291	0.3348	0.3215	0.3337	0.3213	0.3365	0.3242	0.3388	0.3290	0.3379

6500K	1		2		3		4		5	
Bin	Cx	Cy	Cx	Cy	Cx	Cy	Cx	Cy	Cx	Cy
A	0.3102	0.3379	0.3027	0.3310	0.3047	0.3214	0.3054	0.3220	0.3110	0.3340
B	0.3102	0.3379	0.3205	0.3475	0.3213	0.3363	0.3192	0.3344	0.3110	0.3340
C	0.3213	0.3363	0.3221	0.3255	0.3144	0.3187	0.3136	0.3224	0.3192	0.3344
D	0.3136	0.3224	0.3054	0.3220	0.3047	0.3214	0.3067	0.3118	0.3144	0.3187
E	0.3110	0.3340	0.3054	0.3220	0.3082	0.3245	0.3115	0.3317	NA	NA
F	0.3110	0.3340	0.3192	0.3344	0.3165	0.3319	0.3115	0.3317	NA	NA
G	0.3192	0.3344	0.3136	0.3224	0.3131	0.3247	0.3165	0.3319	NA	NA
H	0.3136	0.3224	0.3054	0.3220	0.3082	0.3245	0.3131	0.3247	NA	NA

Group Name on Label**Gruppenbezeichnung auf Etikett**

Example: K1-31-D2

Beispiel: K1-31-D2

Brightness Helligkeit	Chromaticity Coordinate Farbort	Forward Voltage Durchlassspannung
K1	31	D2

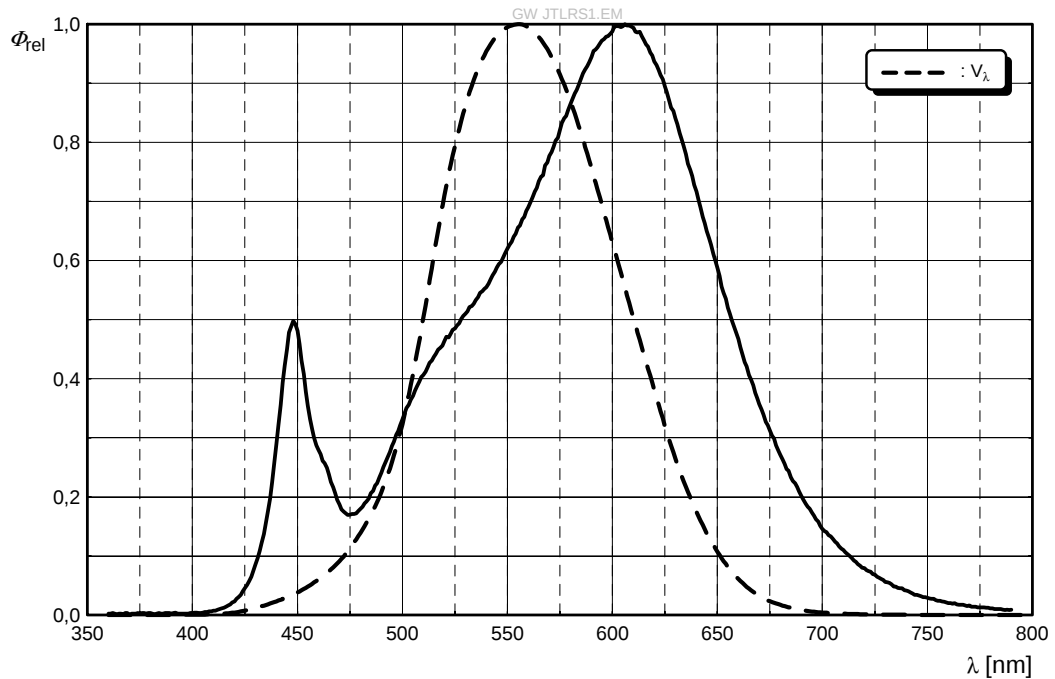
Note: No packing unit / tape ever contains more than one group for each selection.

Anm.: In einer Verpackungseinheit / Gurt ist immer nur eine Gruppe für jede Selektion enthalten.

Relative Spectral Emission - $V(\lambda)$ = Standard eye response curve ^{5) page 25}

Relative spektrale Emission - $V(\lambda)$ = spektrale Augenempfindlichkeit ^{5) Seite 25}

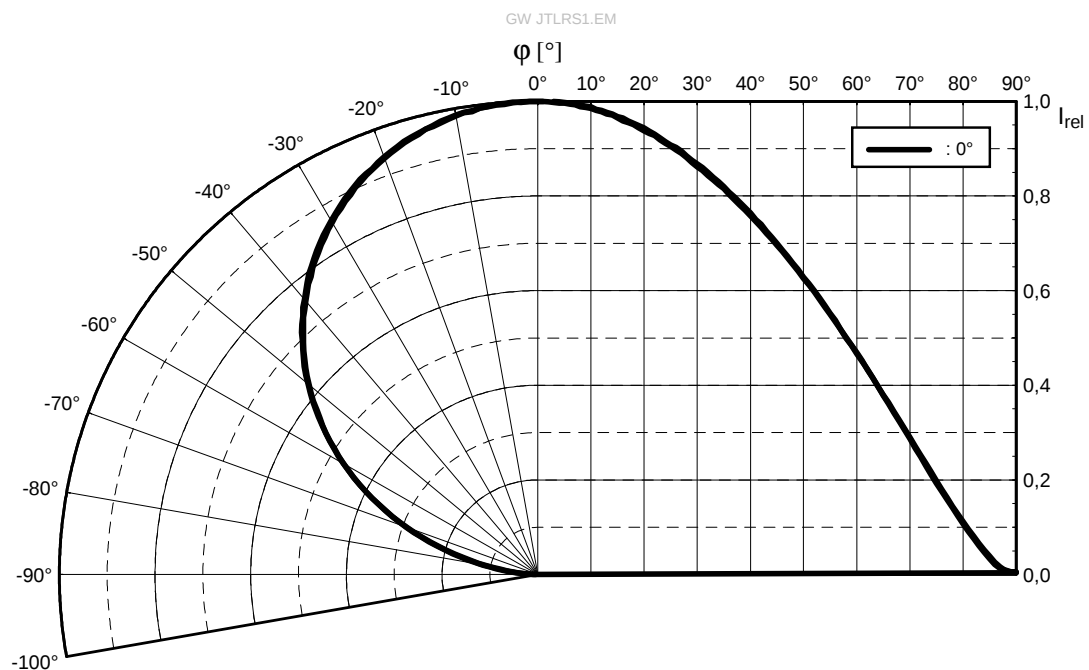
$\Phi_{\text{rel}} = f(\lambda)$; $T_J = 25^\circ\text{C}$; $I_F = 100\text{ mA}$



Radiation Characteristics ^{5) page 25}

Abstrahlcharakteristik ^{5) Seite 25}

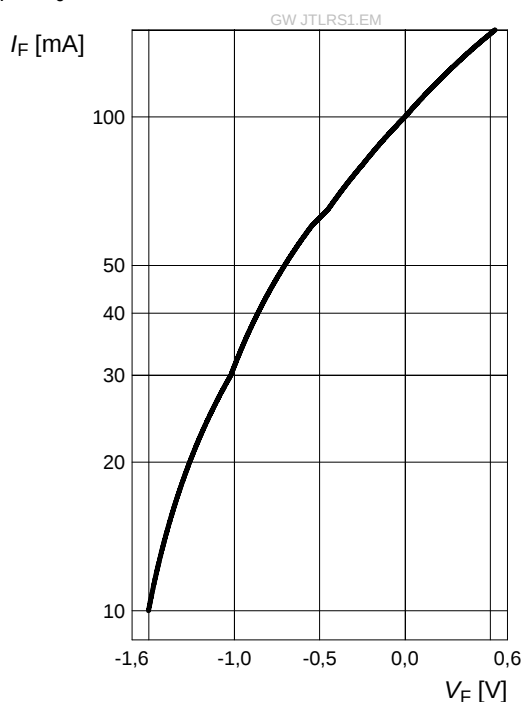
$I_{\text{rel}} = f(\phi)$; $T_J = 25^\circ\text{C}$



Forward Current ^{5) page 25, 6) page 25}

Durchlassstrom ^{5) Seite 25, 6) Seite 25}

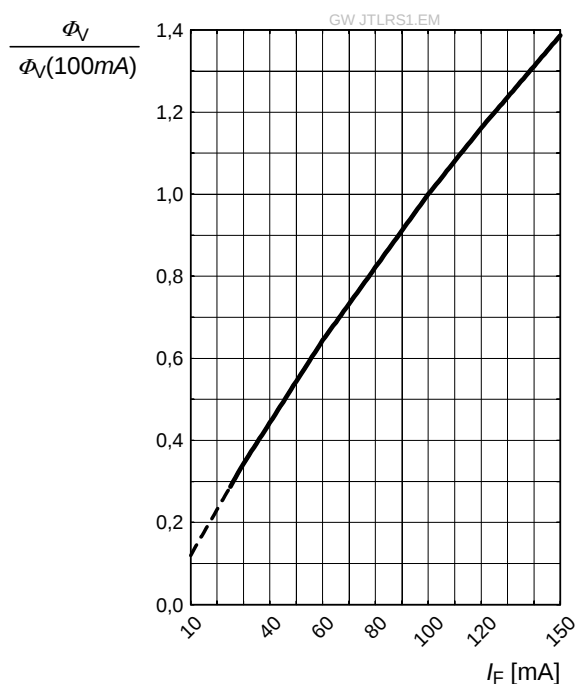
$I_F = f(V_F); T_J = 25\text{ °C}$



Relative Luminous Flux ^{5) page 25, 6) page 25}

Relativer Lichtstrom ^{5) Seite 25, 6) Seite 25}

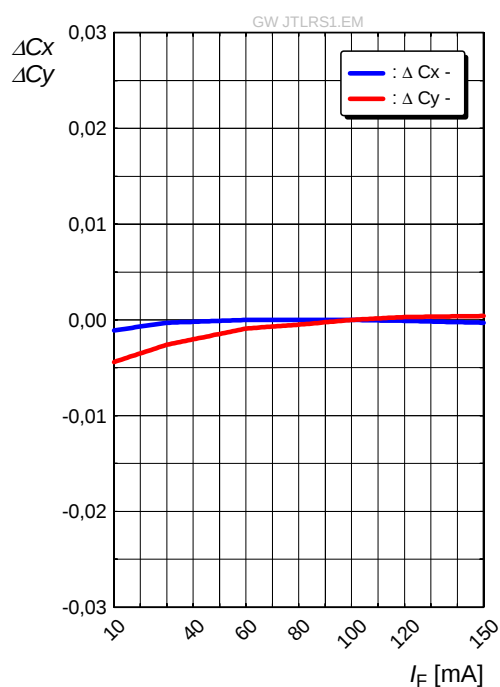
$\Phi_V/\Phi_V(100\text{ mA}) = f(I_F); T_J = 25\text{ °C}$



Chromaticity Coordinate Shift ^{5) page 25}

Farbortverschiebung ^{5) Seite 25}

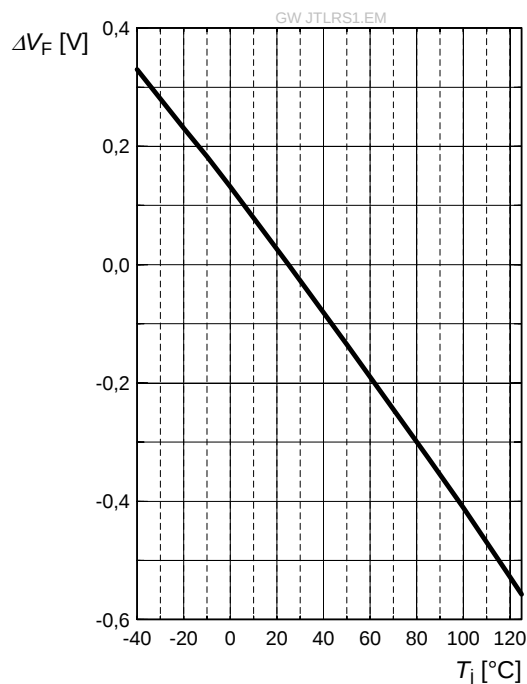
$\Delta C_x, \Delta C_y = f(I_F); T_J = 25\text{ °C}$



Relative Forward Voltage ^{5) page 25}

Relative Vorwärtsspannung ^{5) Seite 25}

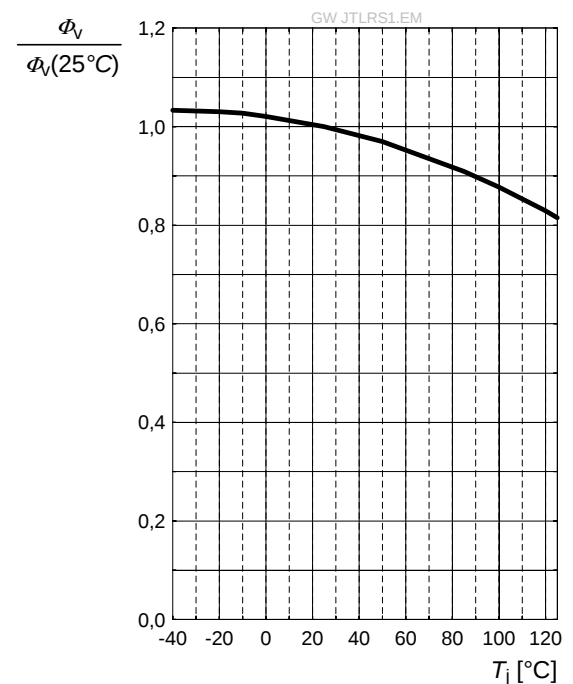
$$\Delta V_F = V_F - V_F(25^\circ\text{C}) = f(T_j); I_F = 100\text{ mA}$$



Relative Luminous Flux ^{5) page 25}

Relativer Lichtstrom ^{5) Seite 25}

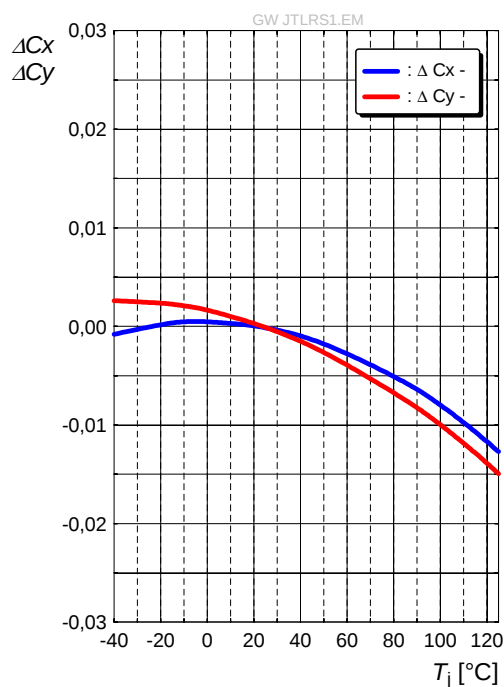
$$\Phi_V / \Phi_V(25^\circ\text{C}) = f(T_j); I_F = 100\text{ mA}$$



Chromaticity Coordinate Shift ^{5) page 25}

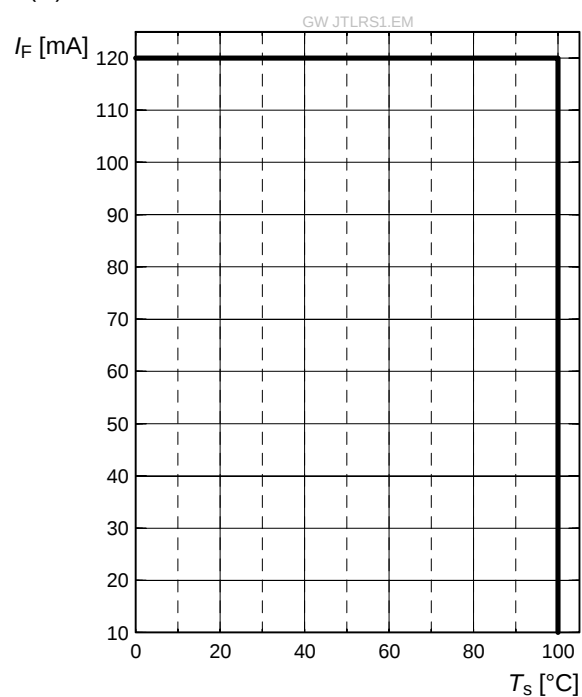
Farbortverschiebung ^{5) Seite 25}

$$\Delta C_x, \Delta C_y = f(T_j); I_F = 100\text{ mA}$$

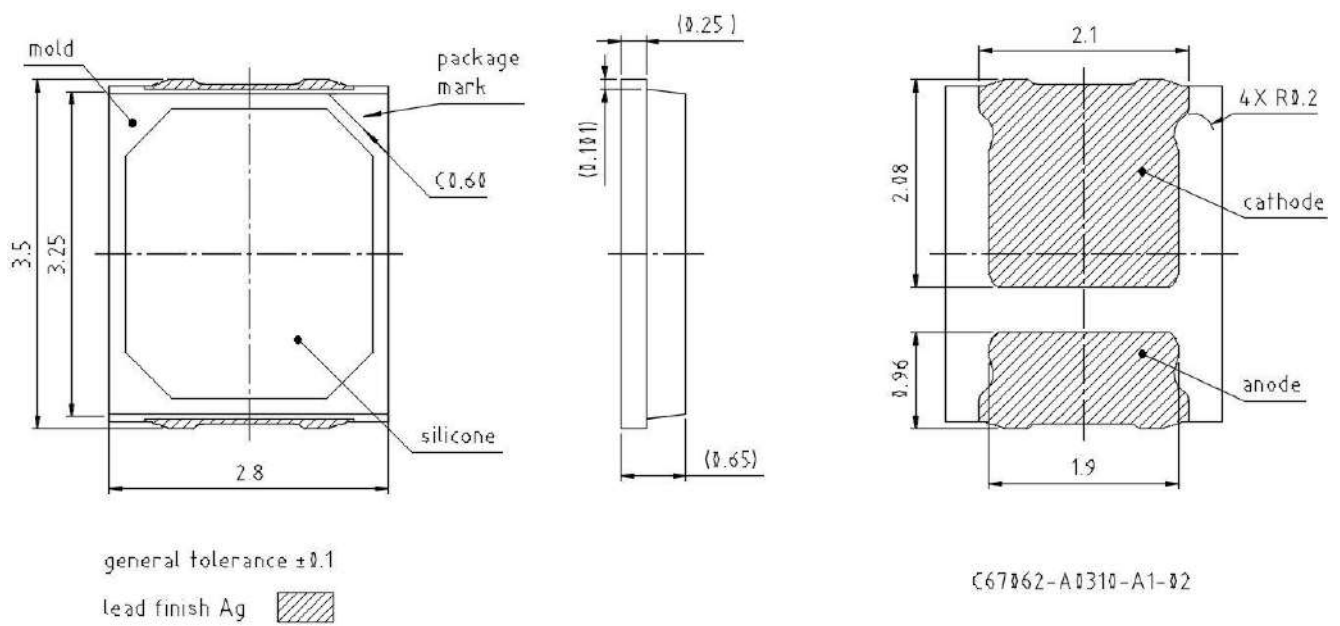


Max. Permissible Forward Current**Max. zulässiger Durchlassstrom**

$$I_F = f(T)$$



Package Outline ^{7) page 25}
Maßzeichnung ^{7) Seite 25}



Approximate Weight:

20 mg

Gewicht:

20 mg

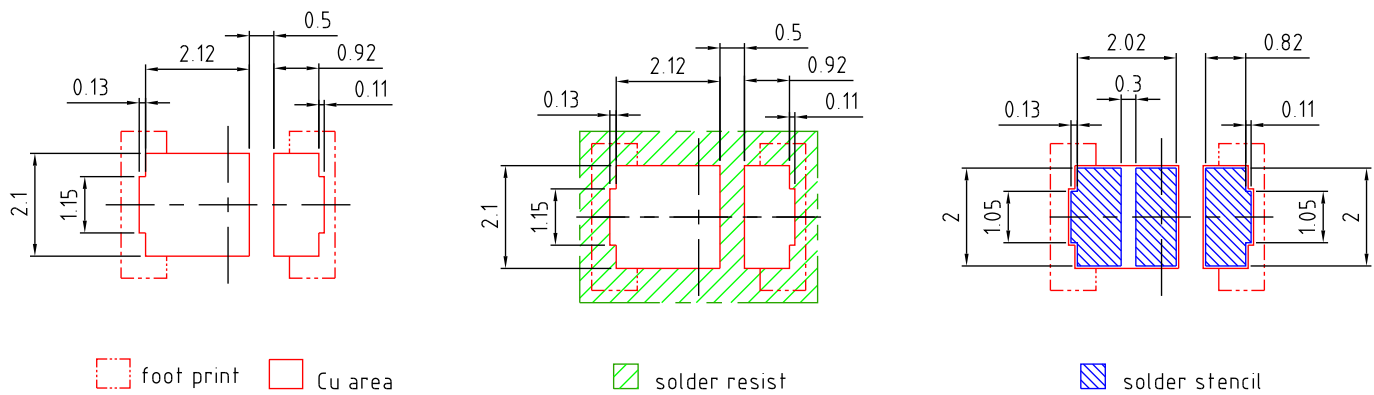
Mark:

Cathode

Markierung:

Kathode

Recommended Solder Pad 7) page 25
Empfohlenes Lötpadding 7) Seite 25



E067.0346.04-01

Note:

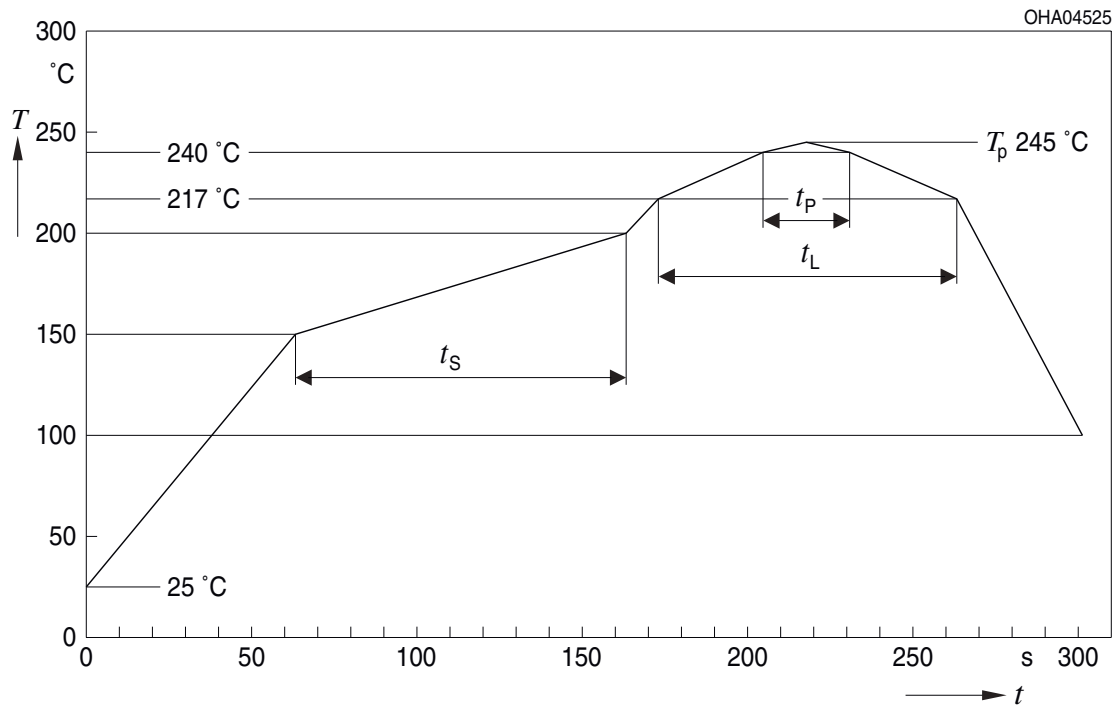
*Package not suitable for ultra sonic cleaning.
 For superior solder joint connectivity results we
 recommend soldering under standard nitrogen
 atmosphere.*

Anm.:

*Das Gehäuse ist für Ultraschallreinigung nicht
 geeignet.
 Um eine verbesserte Lötstellenkontaktierung zu
 erreichen, empfehlen wir, unter Standard-
 Stickstoffatmosphäre zu löten.*

Reflow Soldering Profile**Reflow-Lötprofil**

Product complies to MSL Level 3 acc. to JEDEC J-STD-020E



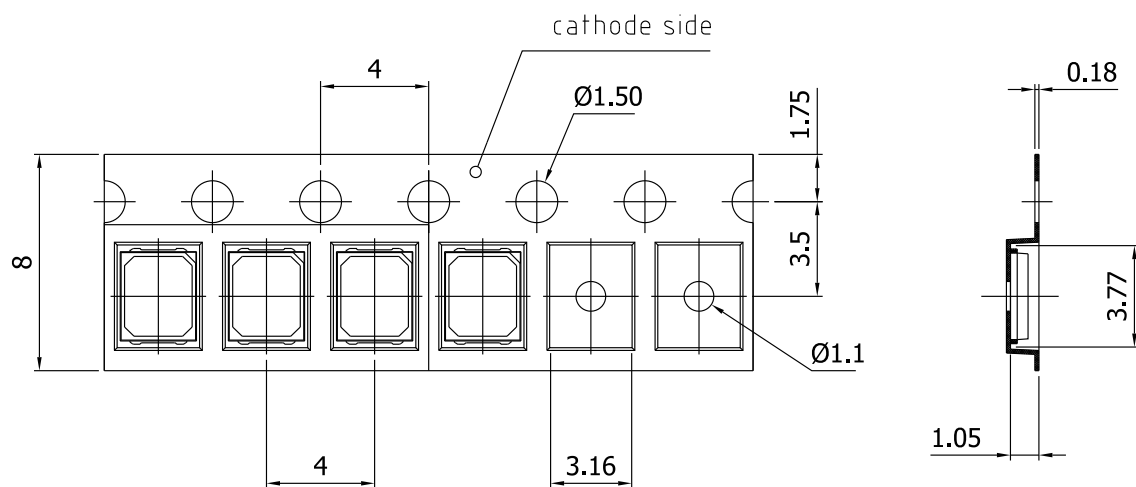
OHA04612

Profile Feature Profil-Charakteristik	Symbol Symbol	Pb-Free (SnAgCu) Assembly			Unit Einheit
		Minimum	Recommendation	Maximum	
Ramp-up rate to preheat*) 25°C to 150°C			2	3	K/s
Time t_S T_{Smin} to T_{Smax}	t_S	60	100	120	s
Ramp-up rate to peak*) T_{Smax} to T_P			2	3	K/s
Liquidus temperature	T_L	217			$^{\circ}\text{C}$
Time above liquidus temperature	t_L		80	100	s
Peak temperature	T_P		245	260	$^{\circ}\text{C}$
Time within 5°C of the specified peak temperature $T_P - 5\text{ K}$	t_P	10	20	30	s
Ramp-down rate* T_P to 100°C			3	6	K/s
Time 25°C to T_P				480	s

All temperatures refer to the center of the package, measured on the top of the component

* slope calculation DT/Dt : Dt max. 5 s; fulfillment for the whole T-range

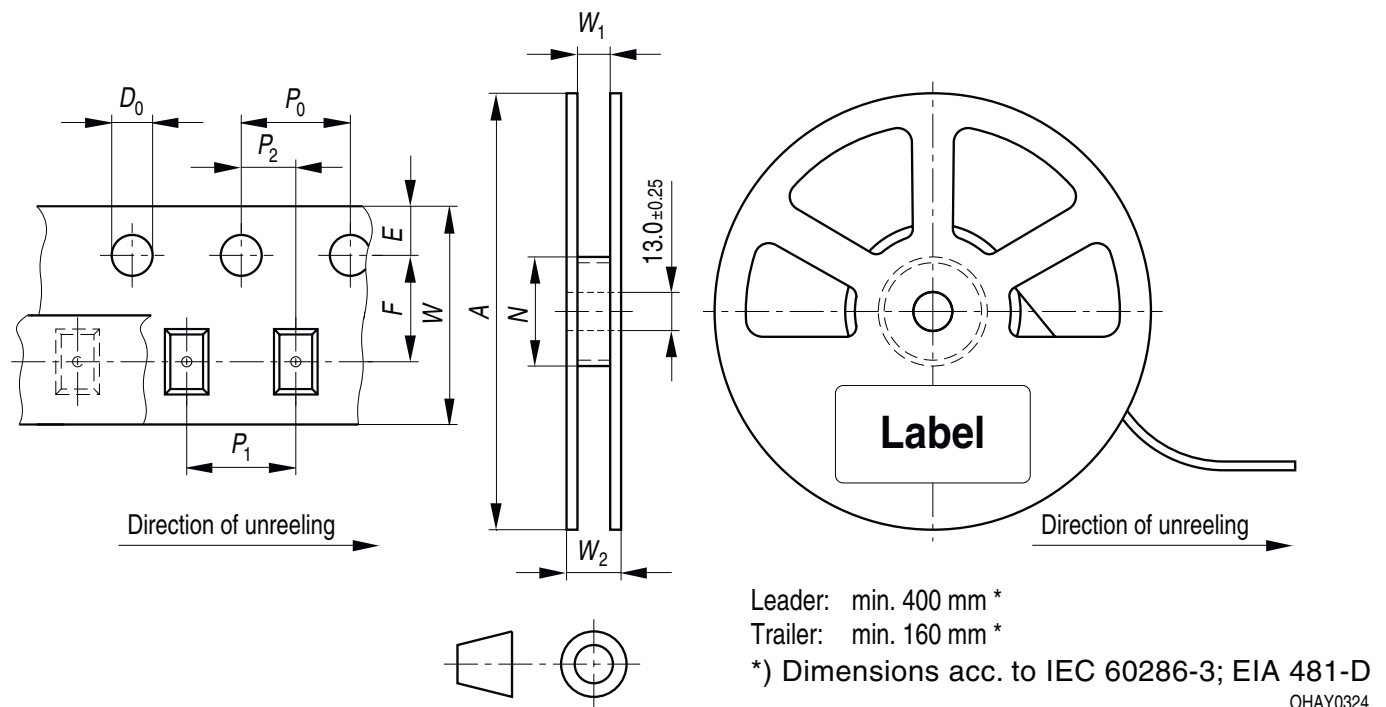
Taping ⁷⁾ page 25
Gurtung ⁷⁾ Seite 25



C67062-A0204-B9-01

Tape and Reel Gurtverpackung

8 mm tape with 4000 pcs. on $\varnothing$ 180 mm reel, 10000 pcs. on $\varnothing$ 330 mm reel



Tape dimensions [mm] Gurtmaße [mm]

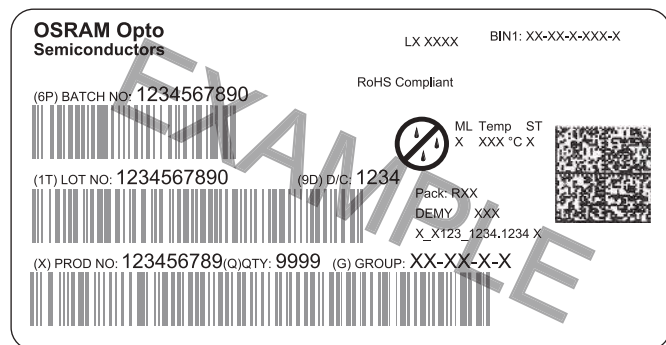
W	P ₀	P ₁	P ₂	D ₀	E	F
8 + 0.3 / -0.1	4 ± 0.1	2 ± 0.05 or 4 ± 0.1	2 ± 0.05	1.5 ± 0.1	1.75 ± 0.1	3.5 ± 0.05

Reel dimensions [mm] Rollenmaße [mm]

A	W	N _{min}	W ₁	W _{2max}
180	8	60	8.4 + 2	14.4

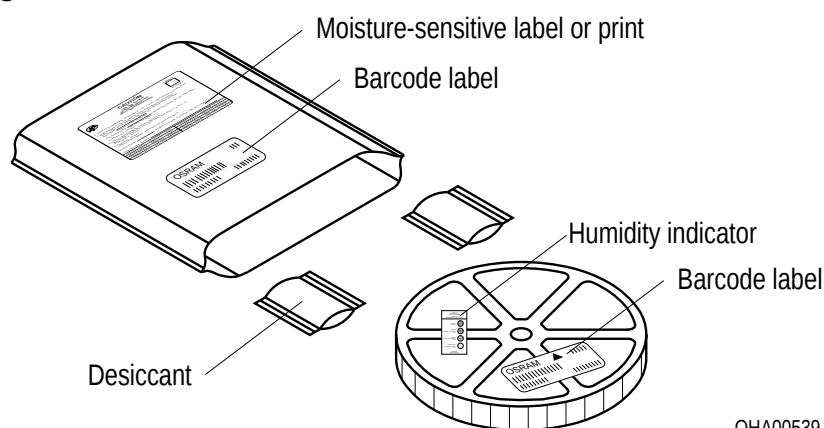
A	W	N _{min}	W ₁	W _{2max}
330	8	60	8.4 + 2	14.4

Barcode-Product-Label (BPL) Barcode-Produkt-Etikett (BPL)



OHA04563

Dry Packing Process and Materials Trockenverpackung und Materialien



OHA00539

Note:

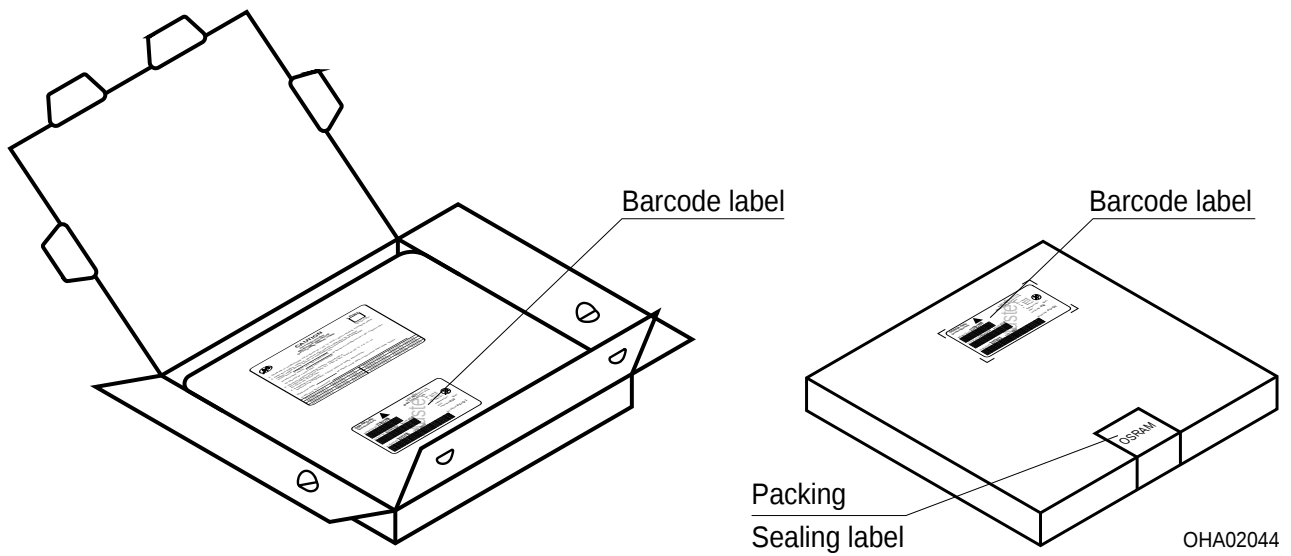
Moisture-sensitive product is packed in a dry bag containing desiccant and a humidity card.

Regarding dry pack you will find further information in the internet and in the Short Form Catalog in chapter "Tape and Reel" under the topic "Dry Pack". Here you will also find the normative references like JEDEC.

Anm.:

Feuchteempfindliche Produkte sind verpackt in einem Trockenbeutel zusammen mit einem Trockenmittel und einer Feuchteindikatorkarte.

Bezüglich Trockenverpackung finden Sie weitere Hinweise im Internet und in unserem Short Form Catalog im Kapitel "Gurtung und Verpackung" unter dem Punkt "Trockenverpackung". Hier sind Normenbezüge, unter anderem ein Auszug der JEDEC-Norm, enthalten.

Transportation Packing and Materials
Kartonverpackung und Materialien**Dimensions of transportation box in mm**

Width Breite	Length Länge	Height Höhe
200 ± 5	195 ± 5	30 ± 5
352 ± 5	352 ± 5	33 ± 5

Notes

The evaluation of eye safety occurs according to the standard IEC 62471:2008 ("photobiological safety of lamps and lamp systems"). Within the risk grouping system of this CIE standard, the LED specified in this data sheet fall into the class Low risk (exposure time 100 s). Under real circumstances (for exposure time, eye pupils, observation distance), it is assumed that no endangerment to the eye exists from these devices. As a matter of principle, however, it should be mentioned that intense light sources have a high secondary exposure potential due to their blinding effect. As is also true when viewing other bright light sources (e.g. spotlights), temporary reduction in visual acuity and afterimages can occur, leading to irritation, annoyance, visual impairment, and even accidents, depending on the situation.

This LED contains metal materials. Corroded metal may lead to a worsening of the optical performance of the LED and can in the worst case lead to a failure of the LED. Do not expose this LED to aggressive atmospheres. Note, that corrosive gases may as well be emitted from materials close to the LED in the final product.

This LED is designed for specific/recommended applications only. Please consult OSRAM Opto Semiconductors Sales Staff in advance for detailed information on other non-recommended applications (e.g. automotive)

OR

Please visit www.osram-os.com/apnotes.

Change management for this component is aligned with the requirements of the lighting market.

Hinweise

Die Bewertung der Augensicherheit erfolgt nach dem Standard IEC 62471:2008 ("photobiological safety of lamps and lamp systems"). Im Risikogruppensystem dieser CIE- Norm erfüllen die in diesem Datenblatt angegebenen LEDs folgende Gruppenanforderung - Low risk (Expositionsdauer 100 s). Unter realen Umständen (für Expositionsdauer, Augenpupille, Betrachtungsabstand) geht damit von diesen Bauelementen keinerlei Augengefährdung aus. Grundsätzlich sollte jedoch erwähnt werden, dass intensive Lichtquellen durch ihre Blendwirkung ein hohes sekundäres Gefahrenpotenzial besitzen. Nach einem Blick in eine helle Lichtquelle (z.B. Spotlights), kann ein temporär eingeschränktes Sehvermögen oder auch Nachbilder zu Irritationen, Belästigungen, Beeinträchtigungen oder sogar Unfällen führen.

Diese LED enthält teilweise metallische Bestandteile. Korrodiertes Metall kann zu einer Verschlechterung der optischen Eigenschaften und im schlimmsten Fall zum Ausfall der LED führen. Diese LED darf aggressiven Bedingungen nicht ausgesetzt werden. Es ist zu beachten, dass korrosive Gase auch von Materialien emittiert werden können, die sich im Endprodukt in unmittelbarer Umgebung der LED befinden.

Die LED ist ausschließlich für spezifisch empfohlene Anwendungen konzipiert. Bitte kontaktieren Sie das OSRAM Opto Semiconductors Vertriebspersonal für detaillierte Informationen über nicht empfohlene Anwendungsbereiche (z.B. Automobilbereich). oder besuchen Sie

www.osram-os.com/apnotes

Das Änderungsmanagement dieses Bauteils ist an den Anforderungen des Lichtmarktes ausgerichtet.

Disclaimer

Language english will prevail in case of any discrepancies or deviations between the two language wordings.

Attention please!

The information describes the type of component and shall not be considered as assured characteristics.

Terms of delivery and rights to change design reserved. Due to technical requirements components may contain dangerous substances.

For information on the types in question please contact our Sales Organization.

If printed or downloaded, please find the latest version in the Internet.

Packing

Please use the recycling operators known to you. We can also help you – get in touch with your nearest sales office.

By agreement we will take packing material back, if it is sorted. You must bear the costs of transport. For packing material that is returned to us unsorted or which we are not obliged to accept, we shall have to invoice you for any costs incurred.

Components used in life-support devices or systems must be expressly authorized for such purpose!

Critical components* may only be used in life-support devices** or systems with the express written approval of OSRAM OS.

*) A critical component is a component used in a life-support device or system whose failure can reasonably be expected to cause the failure of that life-support device or system, or to affect its safety or the effectiveness of that device or system.

**) Life support devices or systems are intended (a) to be implanted in the human body, or (b) to support and/or maintain and sustain human life. If they fail, it is reasonable to assume that the health and the life of the user may be endangered.

Disclaimer

Bei abweichenden Angaben im zweisprachigen Wortlaut haben die Angaben in englischer Sprache Vorrang.

Bitte beachten!

Lieferbedingungen und Änderungen im Design vorbehalten. Aufgrund technischer Anforderungen können die Bauteile Gefahrstoffe enthalten. Für weitere Informationen zu gewünschten Bauteilen, wenden Sie sich bitte an unseren Vertrieb. Falls Sie dieses Datenblatt ausgedruckt oder heruntergeladen haben, finden Sie die aktuellste Version im Internet.

Verpackung

Benutzen Sie bitte die Ihnen bekannten Recyclingwege. Wenn diese nicht bekannt sein sollten, wenden Sie sich bitte an das nächstgelegene Vertriebsbüro. Wir nehmen das Verpackungsmaterial zurück, falls dies vereinbart wurde und das Material sortiert ist. Sie tragen die Transportkosten. Für Verpackungsmaterial, das unsortiert an uns zurückgeschickt wird oder das wir nicht annehmen müssen, stellen wir Ihnen die anfallenden Kosten in Rechnung.

Bauteile, die in lebenserhaltenden Apparaten und Systemen eingesetzt werden, müssen für diese Zwecke ausdrücklich zugelassen sein!

Kritische Bauteile* dürfen in lebenserhaltenden Apparaten und Systemen** nur dann eingesetzt werden, wenn ein schriftliches Einverständnis von OSRAM OS vorliegt.

*) Ein kritisches Bauteil ist ein Bauteil, das in lebenserhaltenden Apparaten oder Systemen eingesetzt wird und dessen Defekt voraussichtlich zu einer Fehlfunktion dieses lebenserhaltenden Apparates oder Systems führen wird oder die Sicherheit oder Effektivität dieses Apparates oder Systems beeinträchtigt.

**) Lebenserhaltende Apparate oder Systeme sind für (a) die Implantierung in den menschlichen Körper oder (b) für die Lebenserhaltung bestimmt. Falls Sie versagen, kann davon ausgegangen werden, dass die Gesundheit und das Leben des Patienten in Gefahr ist.

Glossary

- 1) **Forward Voltage:** The Forward voltage is measured during a current pulse duration of typically 1 ms with a tolerance of $\pm 0.05V$.
- 2) **Color reproduction index:** Color reproduction index values (CRI-RA) are measured during a current pulse of typically 10 ms and with a tolerance of ± 2 .
- 3) **Brightness:** Brightness values are measured during a current pulse of typically 10 ms, with a tolerance of $\pm 7\%$.
- 4) **Chromaticity coordinate groups:** Chromaticity coordinate groups are measured during a current pulse duration of typically 10ms with a tolerance of ± 0.005 .
- 5) **Typical Values:** Due to the special conditions of the manufacturing processes of LED, the typical data or calculated correlations of technical parameters can only reflect statistical figures. These do not necessarily correspond to the actual parameters of each single product, which could differ from the typical data and calculated correlations or the typical characteristic line. If requested, e.g. because of technical improvements, these typ. data will be changed without any further notice.
- 6) **Characteristic curve:** In the range where the line of the graph is broken, you must expect higher differences between single LEDs within one packing unit.
- 7) **Tolerance of Measure:** Unless otherwise noted in drawing, tolerances are specified with ± 0.1 and dimensions are specified in mm.

Glossar

- 1) **Vorwärtsspannung:** Spannungswerte werden mit einer Stromeinprägedauer von 1 ms, mit einer Genauigkeit von $\pm 0.05 V$ ermittelt.
- 2) **Farbwiedergabe Index:** Werte des Farbwiedergabe Index (CRI-RA) werden während eines Strompulses einer typischen Dauer von 10 ms, mit einer Genauigkeit von ± 2 ermittelt.
- 3) **Helligkeit:** Helligkeitswerte werden während eines Strompulses mit einer typischen Dauer von 10 ms, mit einer Genauigkeit von $\pm 7\%$ ermittelt.
- 4) **Farbortgruppen:** Farbortgruppen werden mit einer Stromeinprägedauer von 10 ms, mit einer Genauigkeit von ± 0.005 ermittelt.
- 5) **Typische Werte:** Wegen der besonderen Prozessbedingungen bei der Herstellung von LED können typische oder abgeleitete technische Parameter nur aufgrund statistischer Werte wiedergegeben werden. Diese stimmen nicht notwendigerweise mit den Werten jedes einzelnen Produktes überein, dessen Werte sich von typischen und abgeleiteten Werten oder typischen Kennlinien unterscheiden können. Falls erforderlich, z.B. aufgrund technischer Verbesserungen, werden diese typischen Werte ohne weitere Ankündigung geändert.
- 6) **Kennlinien:** Im gestrichelten Bereich der Kennlinien muss mit erhöhten Abweichungen zwischen Leuchtdioden innerhalb einer Verpackungseinheit gerechnet werden.
- 7) **Maßtoleranz:** Wenn in der Zeichnung nicht anders angegeben, gilt eine Toleranz von $\pm 0,1$. Maße werden in mm angegeben.

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