[Ibérica de Iluminación]

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PROYECTOR MATRIX PHILIPS XITANIUM

IK10 **IP65** **5 AÑOS** **DESMONTADO** **ES MODULAR**

INFORMACIÓN DEL PRODUCTO

Luminaria LED PHILIPS XITANIUM es fiable, segura y asequible. Es una gama nueva que se ha mejorado para dar el mayor rendimiento y están diseñadas para reemplazar las luminarias de halogenuro, vapor de sodio, etc antiguas. Se ha mejorado para alcanzar una eficacia mucho más alta, teniendo 240lm/w. Alcanzan un rango de lúmenes entre 38.400 y 153.600.

APLICACIÓN

·ESTE PRODUCTO VIENE DESMONTADO (Opción de montaje en almacén).
·Es un producto versátil y fácil de trasportar.
·Diversas aplicaciones: campos de panel, campos de fútbol, etc.

HOUSING

·Está fabricado en ALUMINIO y PMMA.
·Opción de regulación por 1-10V o Dali.
·Rango de temperatura: -20°C ~ +55°C.

MONTAJE

·Anclaje en pared o en báculo.
·Colocación en soporte para varias luminarias a la vez.
·ESTE PRODUCTO VIENE DESMONTADO.

bridgelux®
Bridging Light and Life™

PHILIPS
Xitanium
LED driver

MONTAJE ÓPTICO Y LED

· Un producto de alto rendimiento que utiliza chips LED de Bridgelux y Driver Philips Xitanium, que ofrece una confiabilidad excepcional.
·Versión **disponible en 5000k** con un CRI de 70.
·Á**ngulo de apertura CONSULTAR.**
·Tiene una vida estimada de 50.000H.

ELÉCTRICA

·85-265V / 50-60Hz
·Factor de potencia: 0.95
·Clase energética C

PROYECTOR MATRIX PHILIPS XITANIUM LED DRIVER

REFERENCIA: 4863M240W40

Potencia nominal: 240W, 480W Y 960W

Tensión Nominal: 85-265V

Temperatura de Luz: 5000K

CRI -Índice Reproducción Cromática: 70

Material de Construcción: Aluminio +PMMA

Luminosidad-Lm: 240w (38.400Lm), 480w (76.800Lm) y 960w (153.600Lm)

Tipo de LEDs: SMD 5050-12D BRIDGELUX CHIP 2240 BXCD DS-C47

Angulo de Apertura (º): 20°, 40° y 90°

Eficacia Diodo LED (Lm/W): 240 Lm/W

Eficacia luminosa (Lm/W): 160 Lm/w

Certificados: CE - ROHS

Grado de IP: IP65-Exterior

Vida Estimada Diodo LED (H): 50.000

Medidas (mm): 240w (300x250x330mm), 480w (300x500x330mm) y 960w (615x500x330mm)

Factor de Potencia (PF): 0,94

Frecuencia de Trabajo (Hz): 50/60Hz

Rango Temperatura (ºC): -20°C ~ +55°C

Ciclos de Encendidos: 100.000

Clase Energética (2021-UE-2023): C

Información Adicional: ESTE PRODUCTO SE ENTREGA DESMONTADO

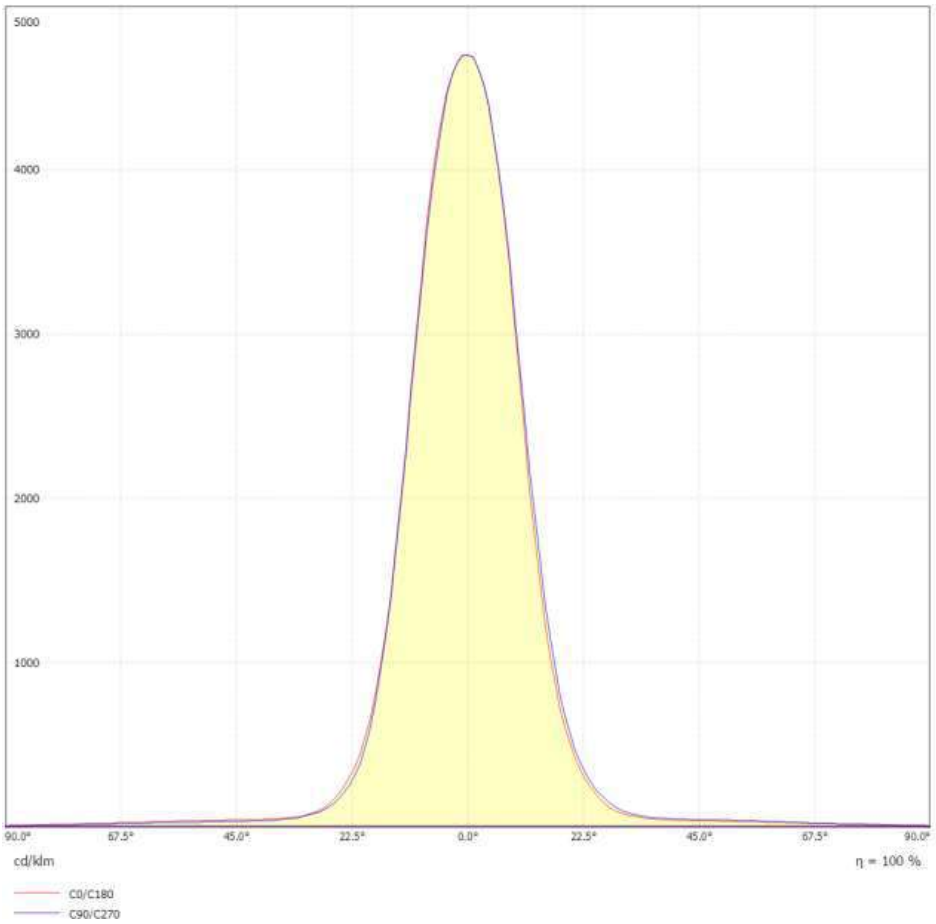
Protección impacto (IK): IK10

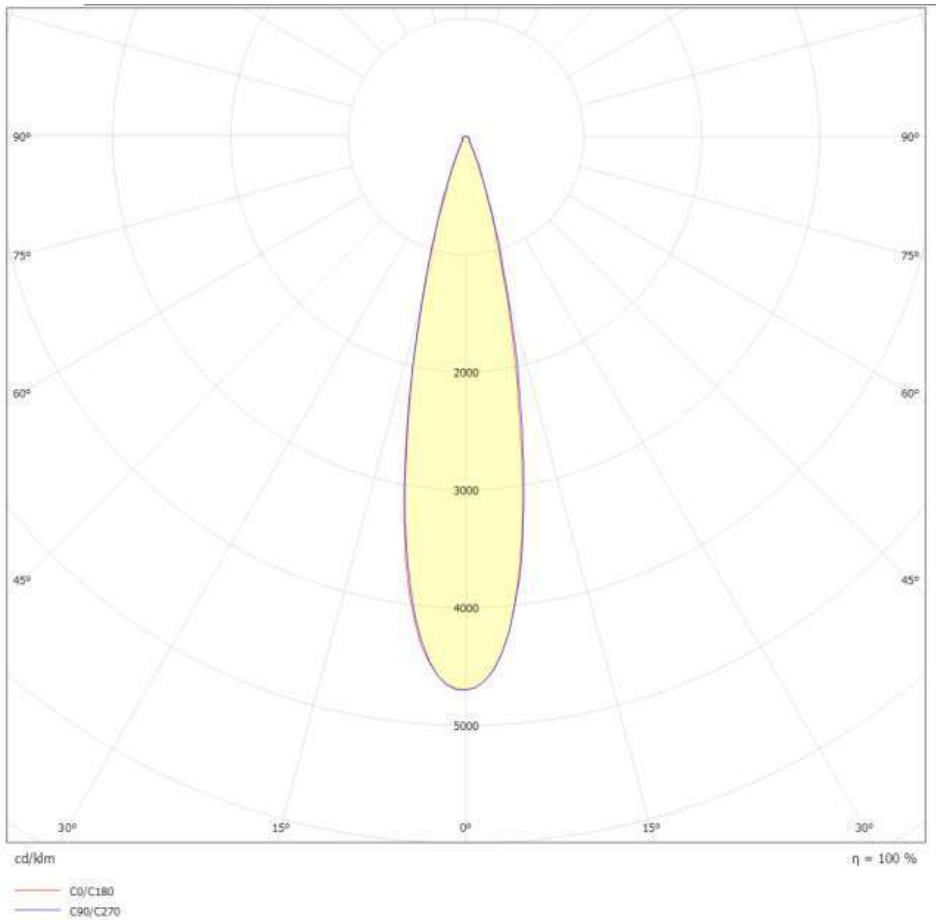
Driver incluido: PHILIPS XITANIUM 5 YEARS

Garantía años: 5

MEDIDAS

FOTOMETRÍAS





PHILIPS

Xitanium

LED driver

Datasheet

Xitanium Outdoor LV LED Drivers Adjustable Current Independent

Xitanium 200W 2.8-5.6A AOC 230V I250

Xitanium LV LED adjustable current drivers are specifically designed for maximum reliability and core flexibility in low voltage outdoor applications. With superior surge protection, these durable, independently housed drivers deliver consistent, high performance to luminaires even after multiple indirect lightning strikes – an ideal solution for OEMs that need reliable, adjustable output in a rugged independent form factor.

Benefits

- Low voltage/high current output fits the application of LED strings connecting in parallel
- IP rated housing could be put into a gearbox without fully sealed
- Quick solution without luminaries re-design (perfect for tunnel lighting application)
- AOC (Adjustable Output Current) gives the full flexibility to output different currents to spec-in different projects
- Easy adjustment of output current/voltage by only one screwdriver
- Robust specifications for moisture, vibration and extreme temperature protection
- Consistent quality of light over life cycle

Features

- Robust anti-surge protection
- Outrush current limitation to protect module
- Adjustable output current with wide window
- High lifetime warrantee at Tc Max and Tc Lifetime

Applications

- Road and street lighting
- Area and flood lighting
- Tunnel lighting
- High-bay lighting

October 2016

Electrical input data

Specification item	Value	Unit	Condition
Nominal Input Voltage	220…240	V_{ac}	
Input Voltage AC	198…264	V_{ac}	Performance range
Operation Voltage AC	110…305	V_{ac}	Safety operation
Nominal Input Frequency	50…60	Hz	
Input Frequency AC	47…63	Hz	Maximum permissible range
Nominal Input Current	0.9…1.09	A	220V…240V atfull load
Maximum Input Current	1.12	A	At 202V
Nominal Input Power	218	W	At 230V at full load
Power Factor	0.95		At 230V at full load
Total Harmonic Distortion	<10	%	At 230V at full load
Total Harmonic Distortion	<20	%	At 230V at 50-100% load
Efficiency	91.5	%	At 230V at full load

Electrical Output data

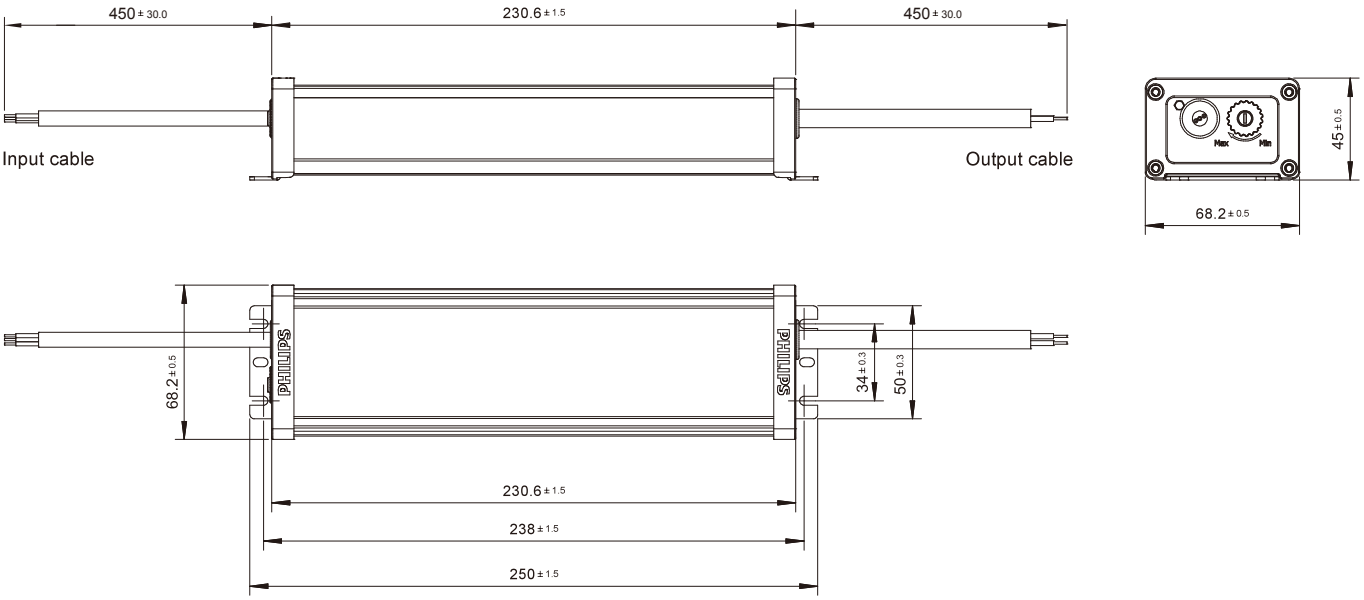
Specification item	Value	Unit	Condition
Regulation Method	Constant Current		
Output Voltage	18…71	V_{dc}	
Output Voltage Max	80	V_{dc}	Peak voltage at open circuit
Output Current	2.8…5.6	A	Performance range
Output Current Tolerance	5	%	At max. output currentt, Ta=25 °C
Output Current Ripple LF	5	%	Ripple = peak / average, at<1kHz
Output Power	200	W	At full load
Galvanic Isolation	Yes		Double; 3750V

Electrical data controls input

Specification item	Value	Unit	Condition
Control Method	N/A	V	
Digital Interface	N/A		According 2.0 specifications
Mains Control	N/A		Can be configured via MultiOne
Time-based Integrated Control	N/A		Can be configured via MultiOne
Dimming Range	N/A	%	

Wiring & Connections

Specification item	Value	Unit	Condition
Input Wire Size	1.0	mm^2	3-wire cable; 300V/500V rating or higher
Output Wire Size	1.5	mm^2	2-wire cable; 300V/500V rating or higher
Input & Output Wire Length	450 ±30	mm	Out of enclosure
Control Wire Size	N/A	mm	N/A
Control Wire Length	N/A	mm	



CE Isolation

	Input Wires	Output Wires	Chassis
Input Wires	N/A	Double	Basic
Output Wires	Double	N/A	Basic
Chassis	Basic	Basic	N/A

Operational Temperature and Humidity

Specification item	Value	Unit	Condition
Ambient Temperature	-40...+50	°C	
Tcase Maximum	85	°C	Measured at Tc-point
Tcase Life	75	°C	Measured at Tc-point
Tcase Cut-Off	90	°C	Power to LEDs is reduced

Storage Temperature and Humidity

Specification item	Value	Unit	Condition
Ambient Temperature	-40...+80	°C	

Lifetime

Specification item	Value	Unit	Condition
Lifetime	100,000	Hours	At T_{case} Life; Survival rate = 90%

Programmable Features

Specification item	Value	Remark	Condition
Adjustable Output Current (AOC)	N/A		See Design-In Guide
LED Module Temperature Derating (MTP)	N/A		
Constant Lumen Output (CLO)	N/A		
DC Emergency Dimming (DCEmDIM)	N/A		
Corridor Mode	N/A		
Energy Metering	N/A		
Diagnostics	N/A		

Features

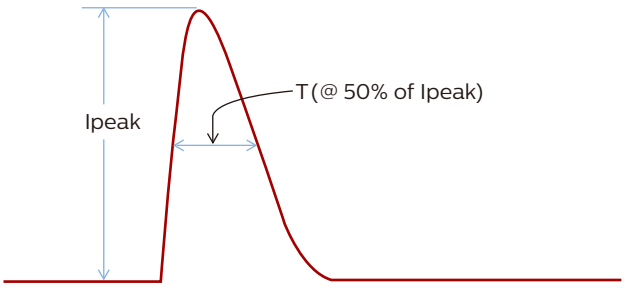
Specification item	Value	Remark	Condition
Over Temperature Protection	Yes	Dim Down	Automatic Recovery
Open Circuit Protection	Yes		Automatic Recovery
Short Circuit Protection	Yes		Automatic Recovery
Over Power Protection	Yes		
Hot Wiring	N/A		
Suitable for fixtures with Protection Class	Class I		

Certificates and Standards

Specification item	Value
Approval Marks	CE / CB / CCC / KC / TISI / ENEC
Ingress Protection Rating	IP65

Inrush current

Specification item	Value	Unit	Condition
Inrush Current Ipeak	62	A	At 230Vac
Inrush Current Twidth	684	µs	At 230Vac, measured at 50% Ipeak
Drivers per MCB 16A Type B	4	pcs	



Earth Leakage Current

Specification item	Value	Unit	Condition
Typical Touch Current	2	mApk	Meets IEC 60598; LED module not included

Surge Capability

Specification item	Value	Unit	Condition
Mains Surge Capability Differential Mode	4	KV	L-N, 2Ohm
Mains Surge Capability Common Mode	6	KV	L/N-GND, 12Ohm

Wiring & Connections

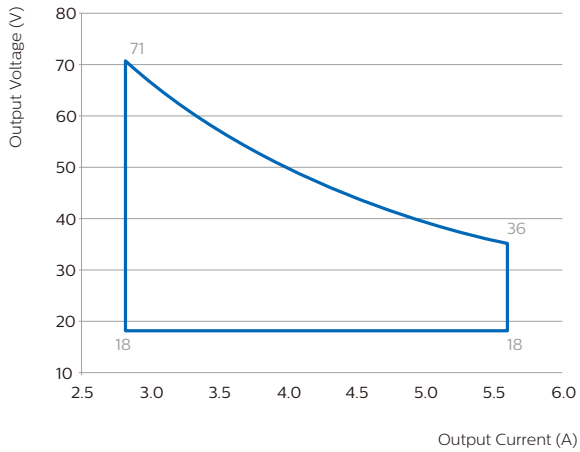
Specification item	Value	Unit	Condition
Length overall	250	mm	
Width overall	68.2	mm	
Height overall	45	mm	
Mounting Holes Distance	238	mm	
Mounting Holes Width	34	mm	
Mounting Holes Size	4	mm	For M4 with max head diameter of 10mm
Weight	920	g	

Logistical Data

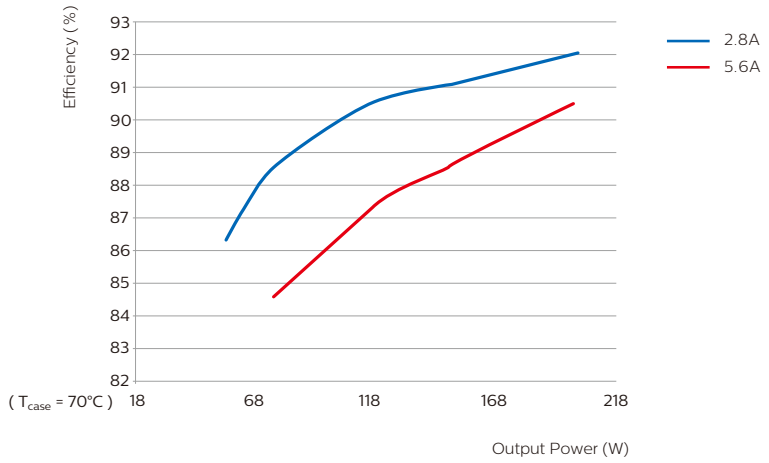
Specification item	Value
Product Name	Xitanium 200W 2.8-5.6A AOC 230V I250
Logistics Code 12NC	929001404680
Pieces per Box	10

Graphs

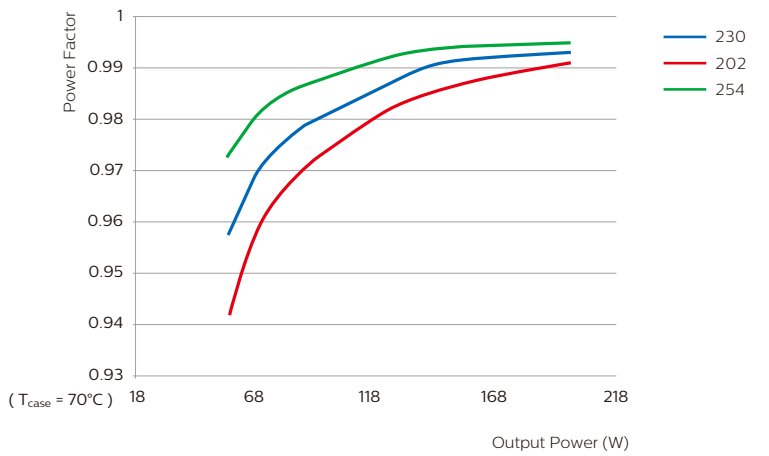
Operating window



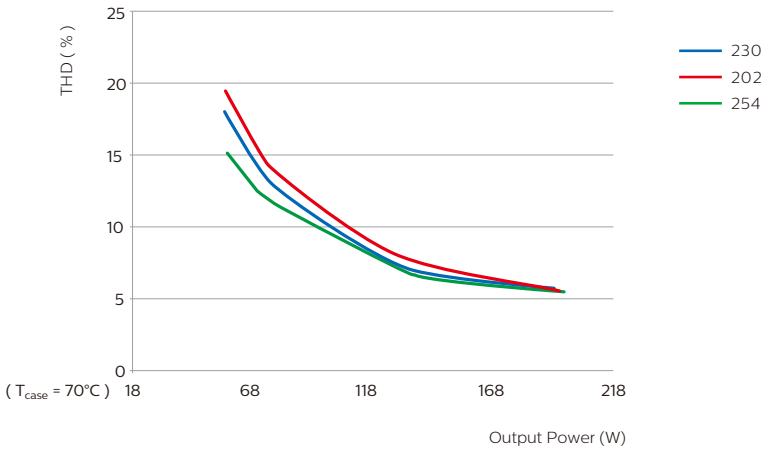
Efficiency versus output power



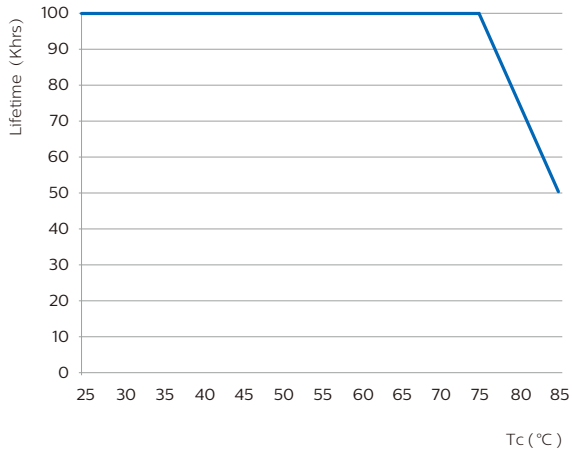
Power factor versus output power



Total Harmonic Distortion



Lifetime vs Tcase



Date of release: October 07, 2016

www.philips.com

Philips Lighting

PHILIPS

EU Declaration of Conformity

We, Philips Lighting
I.B.R.S./C.C.R.I. /Numéro 10461
5600 VB Eindhoven, The Netherlands

Internal Ref. Nr.: 2016A0038
Year in which CE Mark was first affixed: 2016

Declare under our responsibility for the products:

Product Range:	**NAME:** **DESCRIPTION:**	**#1**	CertaDrive 60W 360mA 170V 230V LED Electronic Driver	**#2**	CertaDrive 60W 300mA 200V 230V LED Electronic Driver
Product Code:	**12NC:**		9290 009 75006		9290 009 70006
Product Range:	**NAME:** **DESCRIPTION:**	**#3**	CertaDrive 40W 360mA 110V 230V LED Electronic Driver	**#4**	CertaDrive 40W 240mA 160V 230V LED Electronic Driver
Product Code:	**12NC:**		9290 009 74906		9290 009 34906
Product Range:	**NAME:** **DESCRIPTION:**	**#5**	CertaDrive 30W 350mA 82V 230V LED Electronic Driver	**#6**	CertaDrive 30W 330mA 82V 230V LED Electronic Driver
Product Code:	**12NC:**		9290 009 34806		9290 009 74806

The designated products are in conformity with the essential requirements of the following European Directives and harmonized standards:

Low Voltage Directive (LVD), 2014/35/EU

- EN 61347-1:2008 + A1:2011+A2:2013
- EN 61347-2-13:2014

Electromagnetic compatibility Directive (EMC), 2014/30/EU

- EN 55015:2013
- EN 61000-3-2:2006 +A1:2009 + A2:2009
- EN 61000-3-3:2013
- EN 61547:2009

EcoDesign requirements for energy-related products Directive (ErP), 2009/125/EC and applicable Implementing Measures

- Implementing Measure EC/1194/2012

Restriction of the use of certain Hazardous Substances in electrical and electronic equipment Directive (RoHS), 2011/65/EU

- EN 50581:2012

and are produced under a quality scheme at least in conformity with ISO 9001 or CENELEC permanent documents.

2016-04-21

Ms. C. Sweegers
Regulatory Affairs Manager Business Led Electronics
High Tech Campus 45,
5656 AE Eindhoven, The Netherlands

CERTIFICATE

Number: 89675

The management system of the organization(s) and locations mentioned on the addendum belonging to:

Philips Electronics Nederland B.V.

Philips Innovation Services
High Tech Campus 34
5656 AE Eindhoven
The Netherlands

including the implementation meets the requirements of the standard:

ISO 9001:2015

Scope:
Contract design and development of electronic, optical, mechatronic and software devices, components thereof and prototypes;

Contract manufacture of electronic, optical, and mechatronic devices and components thereof;

Provision of related service, secondment and consultancy

Certificate expiry date: 1 October 2023
Certificate effective date: 28 October 2020
Certified since: 1 January 1999

This certificate is valid for the organization(s) and/or locations mentioned on the addendum.

DEKRA Certification B.V.

B.T.M. Holtus
Managing Director

J.A. van Vugt
Certification Manager

MGMT. SYS. RvA C 599

ADDENDUM

To certificate: 89675

The management system of the organization(s) and/or location(s) of:

Philips Electronics Nederland B.V.

Philips Innovation Services

High Tech Campus 34
5656 AE Eindhoven
The Netherlands

Certified organization(s) and/or locations:

	Different scope
Philips Electronics Nederland B.V. Philips Innovation Services High Tech Campus 34 5656 AE Eindhoven The Netherlands	Contract design, development of electronic, optical, mechatronic and software devices, components thereof and prototypes; Provision of related service, secondment and consultancy
Activities at: HTC 29, 37 Eindhoven The Netherlands	
Philips MMD – Micro Devices Kastanjelaan 400 5616 LZ Eindhoven The Netherlands	Contract design, development of electronic, optical, and mechatronic devices, components thereof and prototypes; Contract manufacture of electronic, optical, and mechatronic devices and components thereof; Provision of related service and secondment
Philips GmbH, Innovation Services Philipsstrasse 8 52068 Aachen Germany	Contract design, development of mechatronic devices, components thereof and prototypes; Contract manufacture of mechatronic devices and components thereof; Provision of related service and secondment

ADDENDUM

To certificate: 89675

The management system of the organization(s) and/or location(s) of:

Philips Electronics Nederland B.V.

Philips Innovation Services

High Tech Campus 34
5656 AE Eindhoven

Philips MMD – MEMS High Tech Campus 4 5656 AE Eindhoven The Netherlands	Contract design, development of electronic, optical, and mechatronic devices, components thereof and prototypes; Contract manufacture of electronic, optical, and mechatronic devices and components thereof; Provision of related service and secondment

Addendum expiry date: 1 October 2023
Addendum effective date: 28 October 2020

CERTIFICATE

Number: 91936

The environmental management system of the organizations and locations mentioned on the addendum belonging to:

Philips Electronics Nederland B.V.
Philips Innovation Services

High Tech Campus 34
5656 AE Eindhoven
The Netherlands

including the implementation meets the requirements of the standard:

ISO 14001:2015

Scope:
Design, development and manufacture for third parties of electronic, optical, mechatronic and software devices, components thereof and prototypes; including provision of related services: secondment and consultancy.

The provision of consultancy services, instrumentation services, delivery of industrial and chemical supplies and collection and disposal of chemical waste for the High Tech Campus location in Eindhoven

Certificate expiry date: 1 February 2024
Certificate effective date: 26 February 2021
Certified since*: 1 February 2000

This certificate is valid for the organizations and locations mentioned on the addendum.

DEKRA Certification B.V.

B.T.M. Holtus
Managing Director

S. Dieperink
Certification Manager

* against this certifiable standard / possibly by another certification body

MGMT.SYS. RvAC 013

DEKRA Certification B.V. Meander 1051, 6825 MJ Arnhem P.O. Box 5185, 6802 ED Arnhem, The Netherlands
T +31 88 96 83000 F +31 88 96 83100 www.dekra-certification.nl Company registration 09085396

ADDENDUM

To certificate: 91936

The environmental management system of the organizations and locations of:

Philips Electronics Nederland B.V.
Philips Innovation Services

High Tech Campus 34
5656 AE Eindhoven
The Netherlands

Certified organizations and locations:

Legal entities:

- Philips GmbH,
  Innovation Services
  Philpsstrasse 8
  52068 Aachen
  Germany

- Philips Electronics Nederland B.V.
  Philips Innovation Services
  High Tech Campus 5
  5656 AE Eindhoven

Including office addresses:

- Philips Electronics Nederland BV
  Philips Innovation Services
  Kastanjelaan 400
  5616 LZ Eindhoven

  Philips Electronics Nederland B.V.
  Phillips Innovation Services
  High Tech Campus 34
  5656 AE Eindhoven

Addendum expiry date: 1 February 2024
Addendum effective date: 26 February 2021

CERTIFICATE

Issued to:
Applicant:
Philips Lighting B.V.
High Tech Campus 45
5656 AE Eindhoven The Netherlands

Manufacturer/Licensee:
Philips Lighting B.V.
High Tech Campus 45
5656 AE Eindhoven The Netherlands

Product(s) : Electronic LED drivers
Trade name(s) : PHILIPS
Type(s)/model(s) : Xitanium 100W 2.1-4.2A AOC 230V I220
Xitanium 150W 2.45-4.9A AOC 230V I220

The product and any acceptable variation thereto is specified in the Annex to this certificate and the documents therein referred to.

DEKRA hereby declares that the above-mentioned product has been certified on the basis of:
- a type test according to the standard EN 61347-1:2008 + A1:2011 +A2:2013; EN 61347-2-13:2014; EN 62384:2006 + A1:2009; EN 60598-1:2015;
- an inspection of the production location according to CENELEC Operational Document CIG 021
- a certification agreement with the number 947556

DEKRA hereby grants the right to use the ENEC KEMA-KEUR certification mark.

The ENEC KEMA-KEUR certification mark may be applied to the product as specified in this certificate for the duration of the ENEC KEMA-KEUR certification agreement and under the conditions of the ENEC KEMA-KEUR certification agreement.

This certificate is issued on: 14 February 2017 and expires upon withdrawal of one of the above mentioned standards.

Certificate number: 6002824.01

DEKRA Certification B.V.

drs. G.J. Zoetbrood
Managing Director

T. Drost
Certification Manager

ACCREDITED BY THE DUTCH ACCREDITATION COUNCIL

PRODUCTS RvA C 001

SPECIFICATION OF THE CERTIFIED PRODUCT

Product data

product	:	Electronic LED drivers
trade name	:	PHILIPS
types	:	Xitanium 100W 2.1-4.2A AOC 230V I220 Xitanium 150W 2.45-4.9A AOC 230V I220
rated voltage	:	220-240 V
nature of supply	:	ac
rated frequency	:	50/60 Hz
power factor	:	0,95
input current	:	see product data per type
output current	:	see product data per type
output voltage	:	see product data per type
Uout (max open circuit)	:	S=see product data per type
max. case temperature (tc)	:	80 °C
ambient temperature ranges (ta)	:	-40...+55 °C
degree of protection	:	IP65
description	:	Independent LED driver with SELV output circuit

Additional information

- Constant current type
- The LED driver is completely potted
- The LED driver is SELV

Product data - type Xitanium 100W 2.1-4.2A AOC 230V I220

input current	:	0,53-0,49 Aac
output current	:	2,1-4,2 Adc
output voltage	:	48 -13 Vdc
Uout (max open circuit)	:	70 Vdc

Product data - type Xitanium 150W 2.45-4.9A AOC 230V I220

input current	:	0,76-0,68 Aac
output current	:	2,45-4,9 Adc
output voltage	:	61 -15 Vdc
Uout (max open circuit)	:	75 Vdc

TESTS

Test requirements

EN 61347-1:2008 + A1:2011 +A2:2013
EN 61347-2-13:2014
EN 62384:2006 + A1:2009
EN 60598-1:2015

Test result
The test results are laid down in DEKRA test file 6002824.00

Remarks
- For component list refers to annex 1 of test reports 6002824.50.
- This certificate supersedes the original certificate 2198412.01,dated 2016-11-28 which is herewith declared invalid.

Conclusion
The examination proved that all test requirements were met.

The tests were performed by the manufacturer under the conditions of the agreement concerning the manufacturer's right to conduct type tests for the KEMA-KEUR / ENEC certification system under supervision of DEKRA (CTF Stage 3).

Supervised by : Vicky Zhang

Checked by : Lix Li

Factory locations
Hengdian Group Tospo lighting Co., Ltd.
Hengdian Industrial Zone, 322118 Dongyang City
Jinhua, Zhejiang Province
China

Taiwan Surface Mounting Technology (SuZhou) Co., Ltd.
No. 888 Ganquan Dong Road
Economic Technology Development Zone
Wujiang, Suzhou China

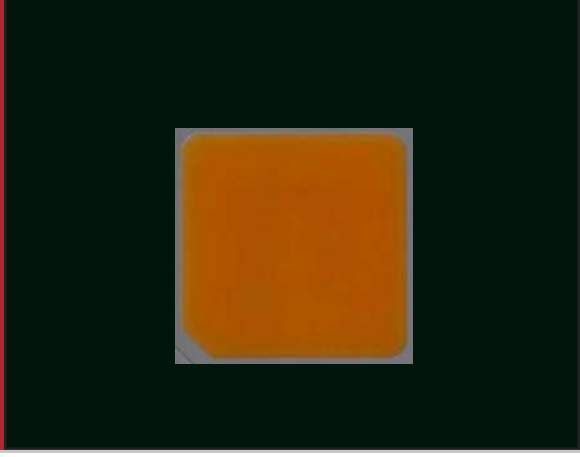
Bridgelux® SMD 5050 5W 9V

Product Data Sheet DS63

BXEP-27E | 30E | 35E | 40E | 45E | 50E | 57E | 65E

Introduction

SMD 5050



The Bridgelux SMD 5050 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 options, the SMD 5050 provides unparalleled design-in flexibility for indoor and outdoor lighting applications. The SMD 5050 is ideal as a drop in replacement for emitters with an industry standard 5.0mm x 5.0mm footprint.

Features

- Industry-standard 5050 footprint
- 3 bin color control enables tight color control
- 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 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
- Environmentally friendly, complies with standards
- Design flexibility

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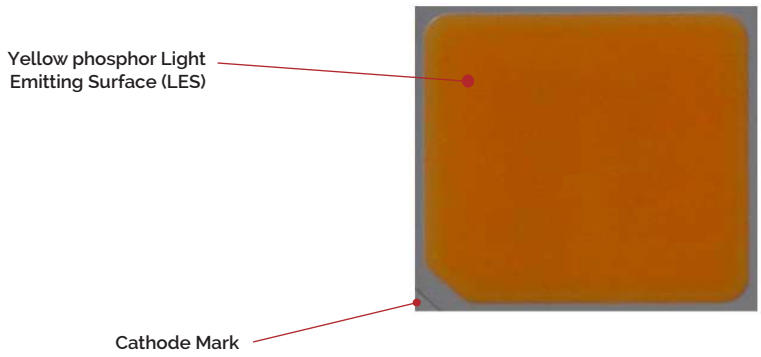
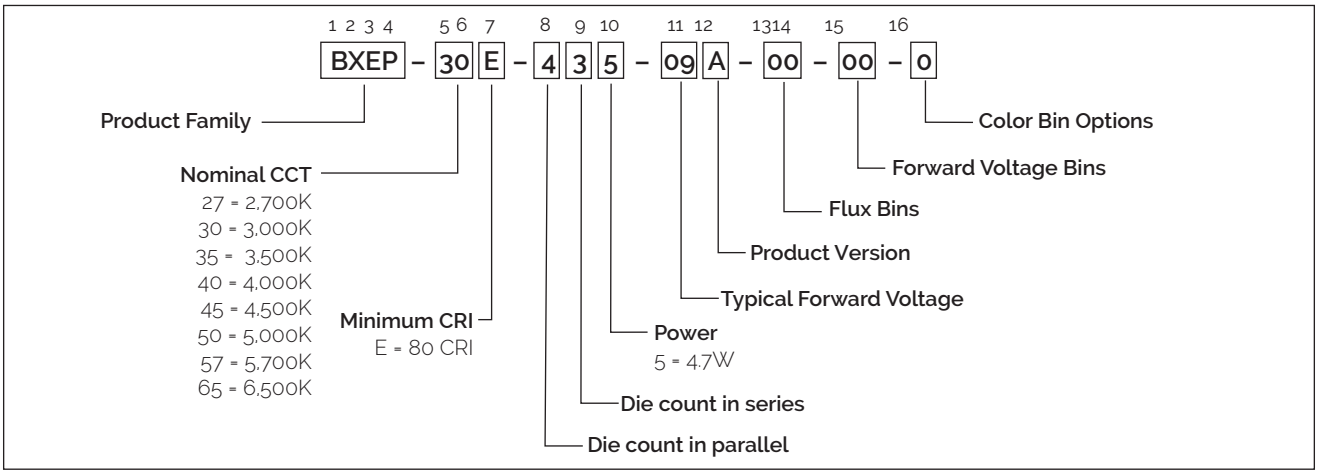
Product Feature Map

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 5050 is explained as follows:



Product Test Conditions

Bridgelux SMD 5050 LEDs are tested and binned with a 10ms pulse of 500mA 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˚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 500mA (T_j=T_{sp}=25˚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			
BXEP-27E-435-09A-00-00-0	2700	80	500	8.5	9.3	10.2	579	4.7	125
BXEP-30E-435-09A-00-00-0	3000	80	500	8.5	9.3	10.2	600	4.7	129
BXEP-35E-435-09A-00-00-0	3500	80	500	8.5	9.3	10.2	614	4.7	132
BXEP-40E-435-09A-00-00-0	4000	80	500	8.5	9.3	10.2	626	4.7	135
BXEP-45E-435-09A-00-00-0	4500	80	500	8.5	9.3	10.2	629	4.7	135
BXEP-50E-435-09A-00-00-0	5000	80	500	8.5	9.3	10.2	629	4.7	135
BXEP-57E-435-09A-00-00-0	5700	80	500	8.5	9.3	10.2	629	4.7	135
BXEP-65E-435-09A-00-00-0	6500	80	500	8.5	9.3	10.2	624	4.7	134

Table 2: Selection Guide, Stabilized DC Performance (T_{sp} = 85˚C)[7,8]

Part Number[1,6]	Nominal CCT[2] (K)	CRI[3, 5]	Nominal Drive Current (mA)	Forward Voltage[5] (V)			Typical DC Flux (lm)[5]	Typical Power (W)	Typical Efficacy (lm/W)
				Min	Typical	Max			
BXEP-27E-435-09A-00-00-0	2700	80	500	8.2	9.0	9.9	504	4.5	111
BXEP-30E-435-09A-00-00-0	3000	80	500	8.2	9.0	9.9	522	4.5	116
BXEP-35E-435-09A-00-00-0	3500	80	500	8.2	9.0	9.9	534	4.5	118
BXEP-40E-435-09A-00-00-0	4000	80	500	8.2	9.0	9.9	545	4.5	121
BXEP-45E-435-09A-00-00-0	4500	80	500	8.2	9.0	9.9	547	4.5	121
BXEP-50E-435-09A-00-00-0	5000	80	500	8.2	9.0	9.9	547	4.5	121
BXEP-57E-435-09A-00-00-0	5700	80	500	8.2	9.0	9.9	547	4.5	121
BXEP-65E-435-09A-00-00-0	6500	80	500	8.2	9.0	9.9	543	4.5	120

Notes for Table 1 & 2:

1. The last 7 characters (including hyphens '-') refer to flux bins, forward voltage bins, and color bin options, respectively. "00-00-0" denotes the full distribution of flux, forward voltage, and 7 SDCM color.

   Example: BXEP-30E-435-09A-00-00-0 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, 4x3 die configuration, 4.7w power, 9.3V typical forward voltage.
2. Product CCT is hot targeted at T_{sp} = 85˚C. Nominal CCT as defined by ANSI C78.377-2011.
3. Listed CRIs are minimum values and include test tolerance.
4. Products tested under pulsed condition (10ms pulse width) at nominal drive current where T_j=T_{sp}=25˚C.
5. Bridgelux maintains a ±7.5% tolerance on luminous flux measurements, ±0.1V tolerance on forward voltage measurements, and ±2 tolerance on CRI measurements for the SMD 5050.
6. Refer to Table 6 and Table 7 for Bridgelux SMD 5050 Luminous Flux Binning and Forward Voltage Binning information.
7. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.
8. 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.

Performance at Commonly Used Drive Currents

SMD 5050 LEDs are tested to the specifications shown using the nominal drive currents in Table 1. SMD 5050 may also be driven at other drive currents dependent on specific application design requirements. The performance at any drive current can be derived from the current vs. voltage characteristics shown in Figure 2 and the relative luminous flux vs. current characteristics shown in Figure 3. The performance at commonly used drive currents is summarized in Table 3.

Table 3: Performance at Commonly Used Drive Currents

Part Number	CRI	Drive Current[1] (mA)	Typical V_f T_{sp} = 25°C (V)	Typical Power T_{sp} = 25°C (W)	Typical Pulsed Flux[2] T_{sp} = 25°C (lm)	Typical DC Flux[3] T_{sp} = 85°C (lm)	Typical Efficacy T_{sp} = 25°C (lm/W)
BXEP-27E-435-09A-00-00-0	80	125	8.2	1.0	161	145	157
		250	8.6	2.2	311	277	144
		375	9.0	3.4	451	396	134
		500	**9.3**	**4.7**	**579**	**504**	**125**
		800	10.1	8.1	846	698	105
BXEP-30E-435-09A-00-00-0	80	125	8.2	1.0	167	150	163
		250	8.6	2.2	323	287	150
		375	9.0	3.4	467	410	138
		500	**9.3**	**4.7**	**600**	**522**	**129**
		800	10.1	8.1	877	724	109
BXEP-35E-435-09A-00-00-0	80	125	8.2	1.0	171	153	167
		250	8.6	2.2	330	294	153
		375	9.0	3.4	478	419	142
		500	**9.3**	**4.7**	**614**	**534**	**132**
		800	10.1	8.1	897	741	111
BXEP-40E-435-09A-00-00-0	80	125	8.2	1.0	174	156	170
		250	8.6	2.2	337	299	156
		375	9.0	3.4	488	428	144
		500	**9.3**	**4.7**	**626**	**545**	**135**
		800	10.1	8.1	915	755	113
BXEP-45E-435-09A-00-00-0	80	125	8.2	1.0	175	157	171
		250	8.6	2.2	338	301	157
		375	9.0	3.4	490	430	145
		500	**9.3**	**4.7**	**629**	**547**	**135**
		800	10.1	8.1	919	759	114

Notes for Table 3:

1. Alternate drive currents in Table 3 are provided for reference only and are not a guarantee of performance.
2. Bridgelux maintains a ± 7.5% tolerance on flux measurements.
3. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.

Performance at Commonly Used Drive Currents

Table 3: Performance at Commonly Used Drive Currents (Continued)

Part Number	CRI	Drive Current[1] (mA)	Typical V_f T_{sp} = 25°C (V)	Typical Power T_{sp} = 25°C (W)	Typical Pulsed Flux[2] T_{sp} = 25°C (lm)	Typical DC Flux[3] T_{sp} = 85°C (lm)	Typical Efficacy T_{sp} = 25°C (lm/W)
BXEP-50E-435-09A-00-00-0	80	125	8.2	1.0	175	157	171
		250	8.6	2.2	338	301	157
		375	9.0	3.4	490	430	145
		500	**9.3**	**4.7**	**629**	**547**	**135**
		800	10.1	8.1	919	759	114
BXEP-57E-435-09A-00-00-0	80	125	8.2	1.0	175	157	171
		250	8.6	2.2	338	301	157
		375	9.0	3.4	490	430	145
		500	**9.3**	**4.7**	**629**	**547**	**135**
		800	10.1	8.1	919	759	114
BXEP-65E-435-09A-00-00-0	80	125	8.2	1.0	174	156	169
		250	8.6	2.2	336	298	156
		375	9.0	3.4	486	426	144
		500	**9.3**	**4.7**	**624**	**543**	**134**
		800	10.1	8.1	912	753	113

Notes for Table 3:

1. Alternate drive currents in Table 3 are provided for reference only and are not a guarantee of performance.
2. Bridgelux maintains a ± 7.5% tolerance on flux measurements.
3. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.

Electrical Characteristics

Table 4: 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] $R_{j\text{-}sp}$ (°C/W)
		Minimum	Typical	Maximum		
BXEP-xxE-435-09A-00-00-0	500	8.5	9.3	10.2	-4.4	1.9

Notes for Table 4:

1. The last 7 characters (including hyphens '-') refer to flux bins, forward voltage bins, and color bin options, respectively. "00-00-0" denotes the full distribution of flux, forward voltage, and 7 SDCM color.

   Example: BXEP-30E-435-09A-00-00-0 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, 4x3 die configuration, 4.7w power, 9.3V typical forward voltage.
2. Bridgelux maintains a tolerance of ± 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˚C.
4. Thermal resistance value was calculated using total electrical input power; optical power was not subtracted from input power.

Absolute Maximum Ratings

Table 5: Maximum Ratings

Parameter	Maximum Rating
LED Junction Temperature (T_j)	125˚C
Storage Temperature	-40˚C to +105˚C
Operating Solder Point Temperature (T_{Sp})	-40˚C to +105˚C
Soldering Temperature	260˚C or lower for a maximum of 10 seconds
Maximum Drive Current[2]	800mA
Maximum Peak Pulsed Forward Current[1]	960mA
Maximum Reverse Voltage	Bridgelux LEDs are not designed to be driven in reverse bias
Moisture Sensitivity Rating	MSL 3
Electrostatic Discharge	2kV HBM. JEDEC-JS-001-HBM and JEDEC-JS-001-2012

Notes for Table 5:

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 current indicate values where LED SMD can be driven without catastrophic failures.
2. The maximum drive current for LM80 test results is at 640mA.

Product Bin Definitions

Table 6 lists the standard photometric luminous flux bins for Bridgelux SMD 5050 LEDs. Although several bins are listed, product availability in a particular bin varies by production run and by product performance. Not all bins are available in all CCTs.

Table 6: Luminous Flux Bin Definitions at 500mA, T_{sp}=25˚C

Bin Code	Minimum	Maximum	Unit	Condition
A8	505	545	lm	I_F=500mA
A9	545	590		
B1	590	635		
B2	635	685		
B3	685	740		
B4	740	800		
B5	800	865		

Note for Table 6:

1. Bridgelux maintains a tolerance of ± 7.5% on luminous flux measurements.

Table 7: Forward Voltage Bin Definition at 500mA, T_{sp}=25˚C

Bin Code	Minimum	Maximum	Unit	Condition
CD	8.5	9.0	V	I_F=500mA
CE	9.0	9.5		
CF	9.5	10.0		
CG	10.0	10.5		

Note for Table 7:

1. Bridgelux maintains a tolerance of ± 0.1V on forward voltage measurements.

Product Bin Definitions

Table 8: 3- and 5-step MacAdam Ellipse Color Bin Definitions

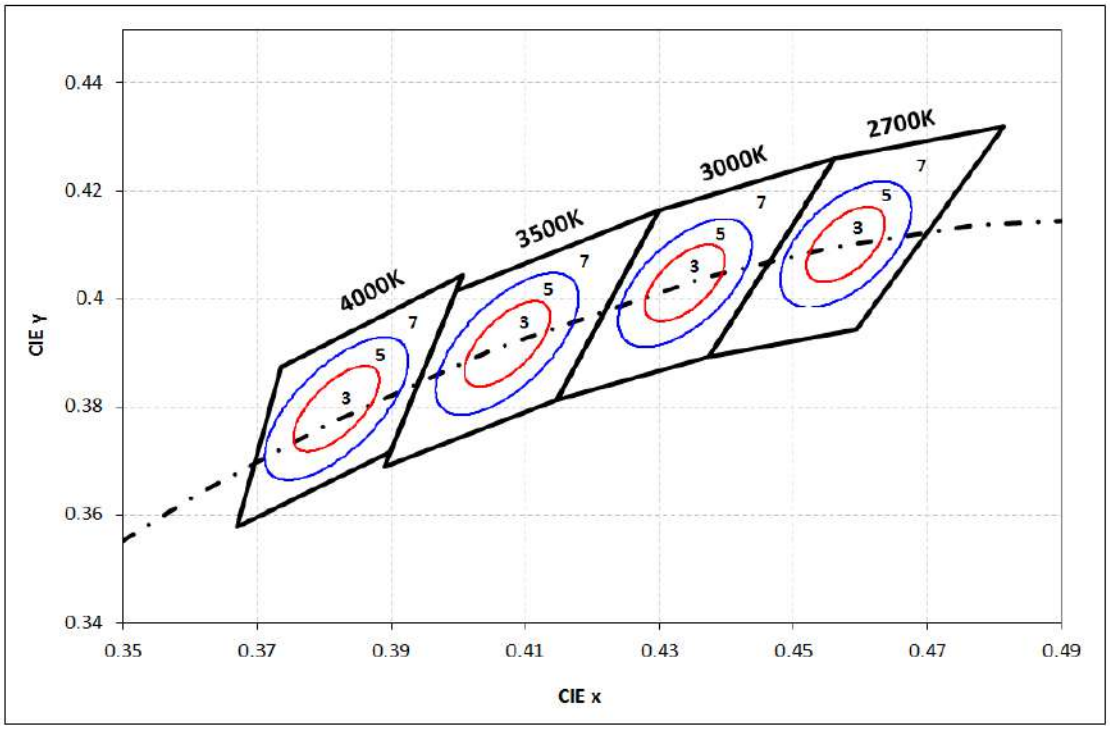
CCT	Color Space	Center Point		Major Axis	Minor Axis	Ellipse Rotation Angle	Color Bin
		X	Y				
2700K	3 SDCM	0.4578	0.4101	0.00810	0.00420	53.70	3
	5 SDCM	0.4578	0.4101	0.01350	0.00700	53.70	5
3000K	3 SDCM	0.4338	0.4030	0.00834	0.00408	53.22	3
	5 SDCM	0.4338	0.4030	0.01390	0.00680	53.22	5
3500K	3 SDCM	0.4103	0.3961	0.00927	0.00414	54.00	3
	5 SDCM	0.4103	0.3961	0.01545	0.00690	54.00	5
4000K	3 SDCM	0.3818	0.3797	0.00939	0.00402	53.72	3
	5 SDCM	0.3818	0.3797	0.01565	0.00670	53.72	5
4500K	3 SDCM	0.3611	0.3658	0.00756	0.00338	57.58	3
	5 SDCM	0.3611	0.3658	0.01260	0.00563	57.58	5
5000K	3 SDCM	0.3447	0.3553	0.00822	0.00354	59.62	3
	5 SDCM	0.3447	0.3553	0.01370	0.00590	59.62	5
5700K	3 SDCM	0.3287	0.3417	0.00746	0.00320	59.09	3
	5 SDCM	0.3287	0.3417	0.01243	0.00533	59.09	5
6500K	3 SDCM	0.3123	0.3282	0.00669	0.00285	58.57	3
	5 SDCM	0.3123	0.3282	0.01115	0.00475	58.57	5

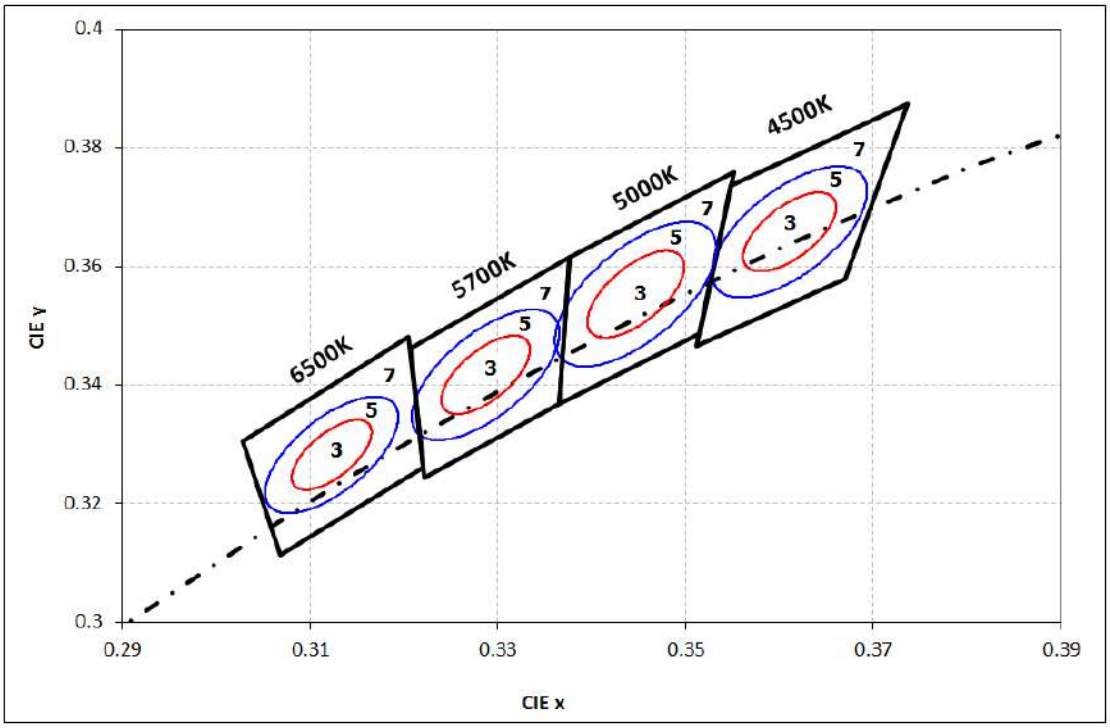
Notes for Table 8:

1. Color binning at T_{sp}=85˚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 (3 Color Bin Structure, hot-color targeted at T_{sp}=85˚C)





Performance Curves

Figure 2: Drive Current vs. Voltage (T_{sp}=25˚C)

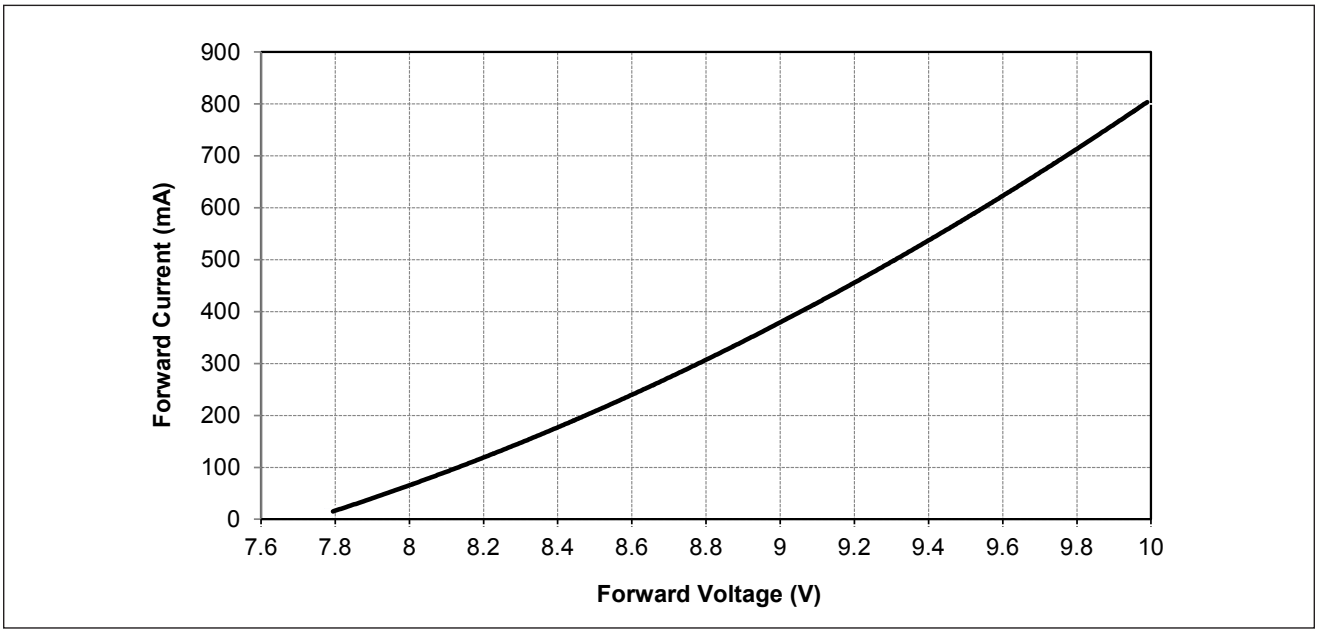
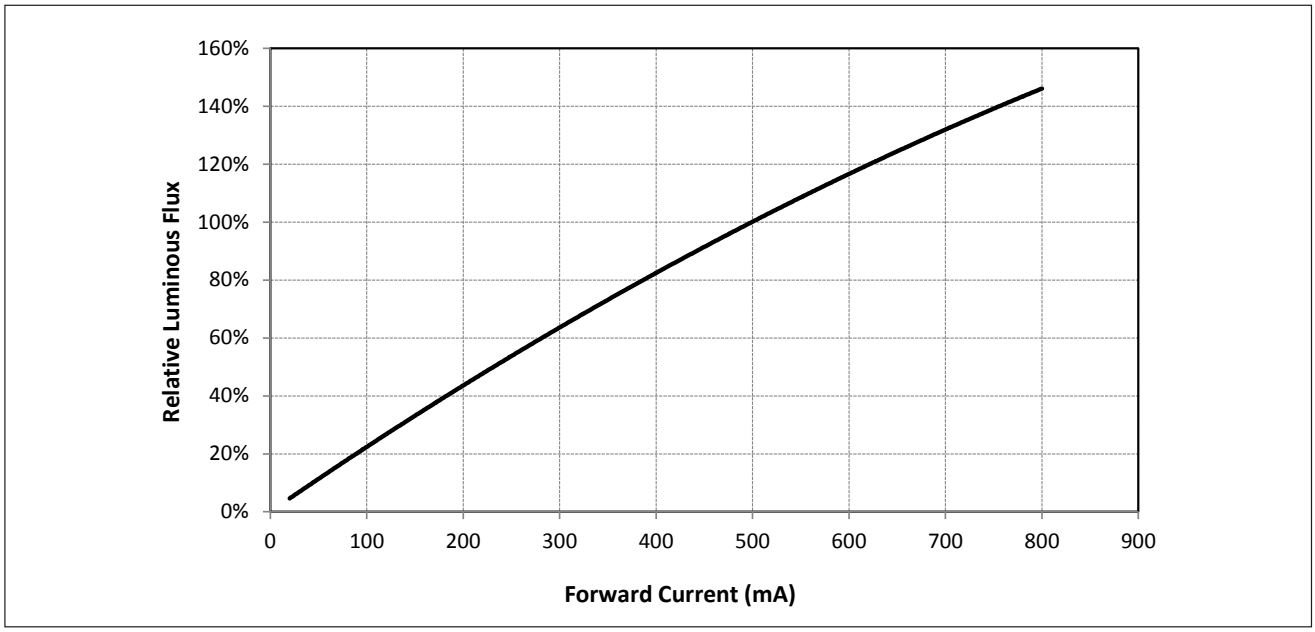


Figure 3: Typical Relative Luminous Flux vs. Drive Current (T_{sp}=25˚C)



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

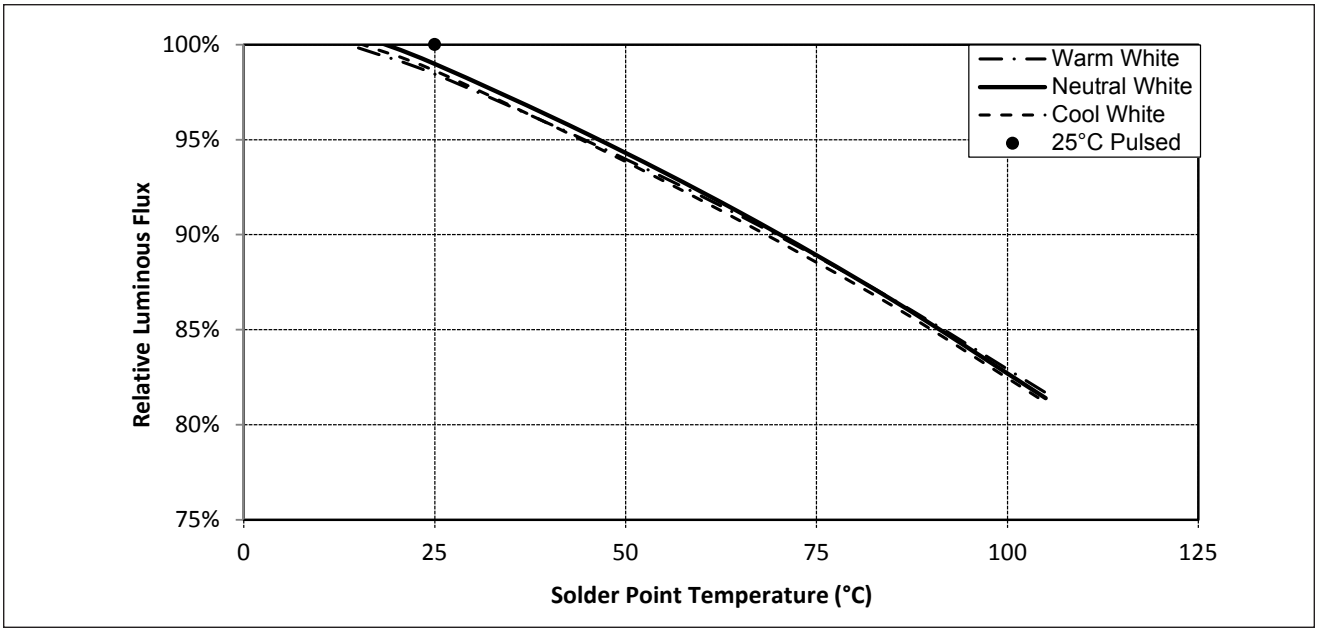
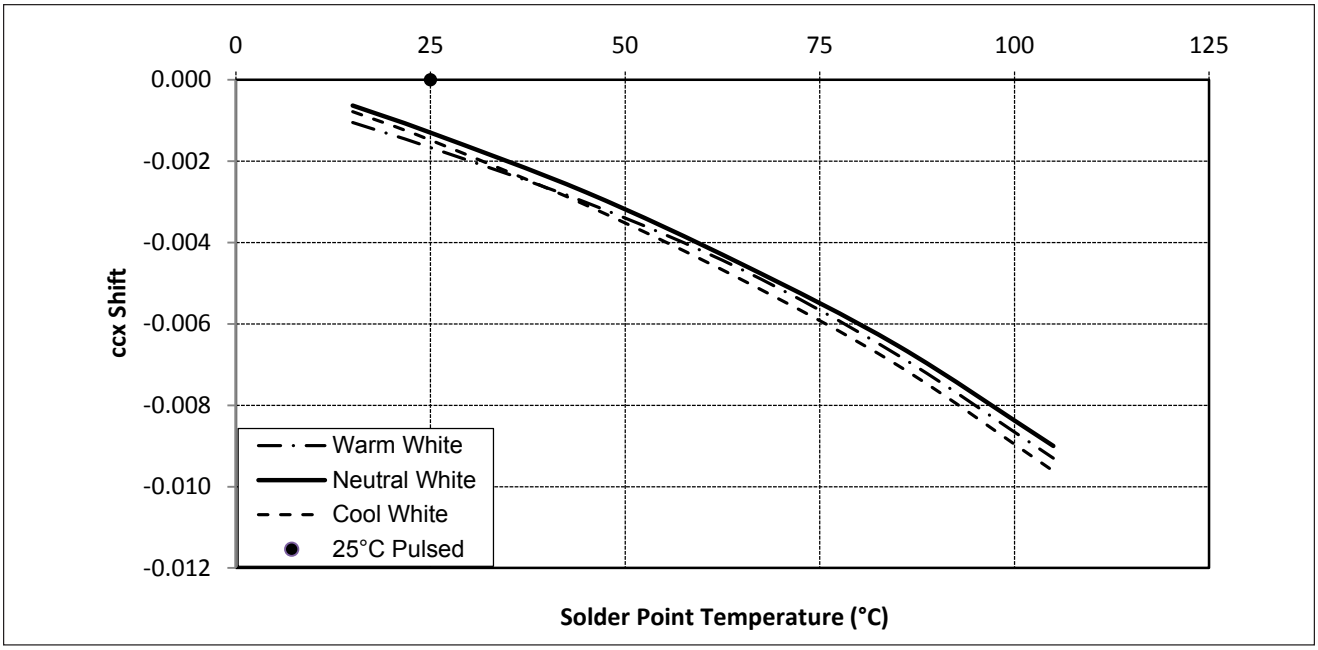


Figure 5: Typical DC ccx Shift vs. Solder Point Temperature

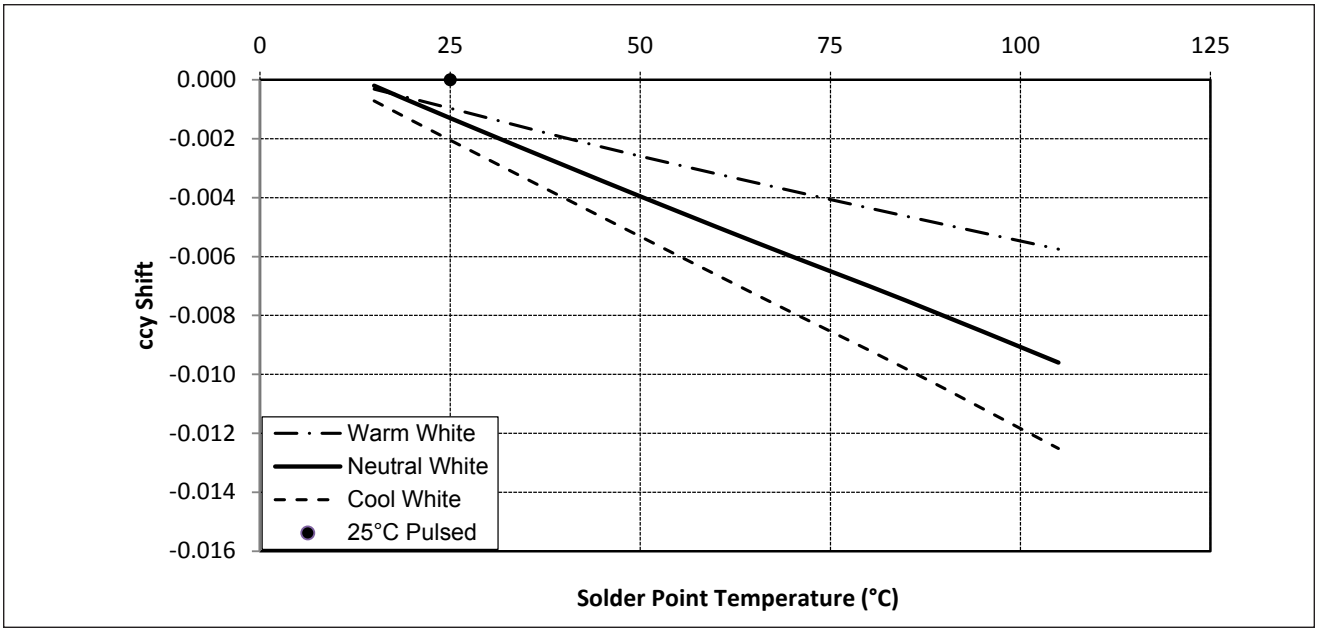


Notes for Figures 4 & 5:

1. Characteristics shown for warm white based on 3000K and 80 CRI.
2. Characteristics shown for neutral white based on 4000K and 80 CRI.
3. Characteristics shown for cool white based on 5000K and 80 CRI.
4. 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**

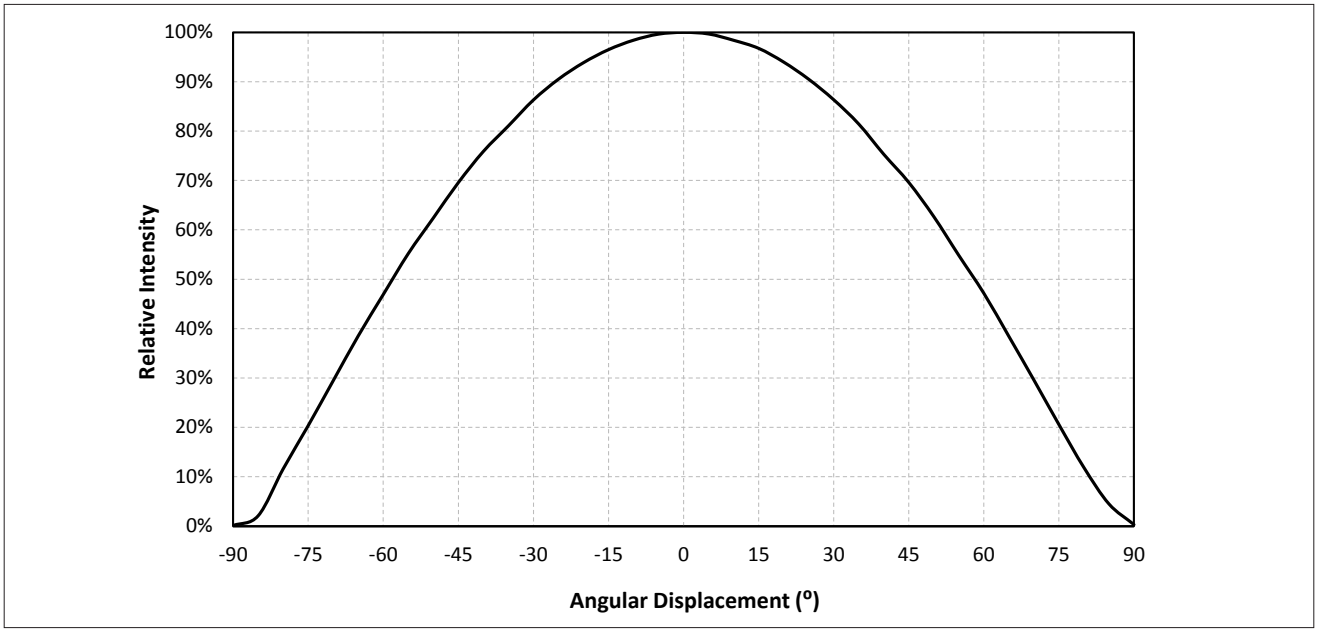


Notes for Figure 6:

1. Characteristics shown for warm white based on 3000K and 80 CRI.
2. Characteristics shown for neutral white based on 4000K and 80 CRI.
3. Characteristics shown for cool white based on 5000K and 80 CRI.
4. For other color SKUs, the shift in color will vary. Please contact your Bridgelux Sales Representative for more information.

Typical Radiation Pattern

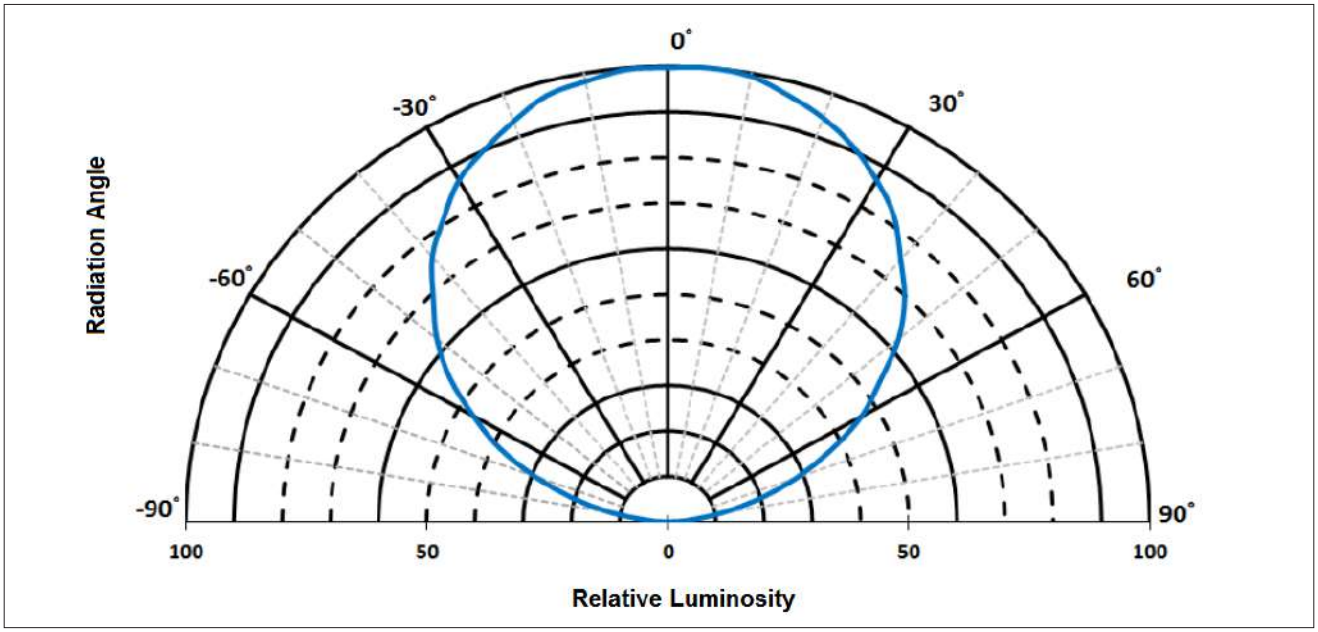
Figure 7: Typical Spatial Radiation Pattern at 500mA, T_{sp}=25°C



Notes for Figure 7:

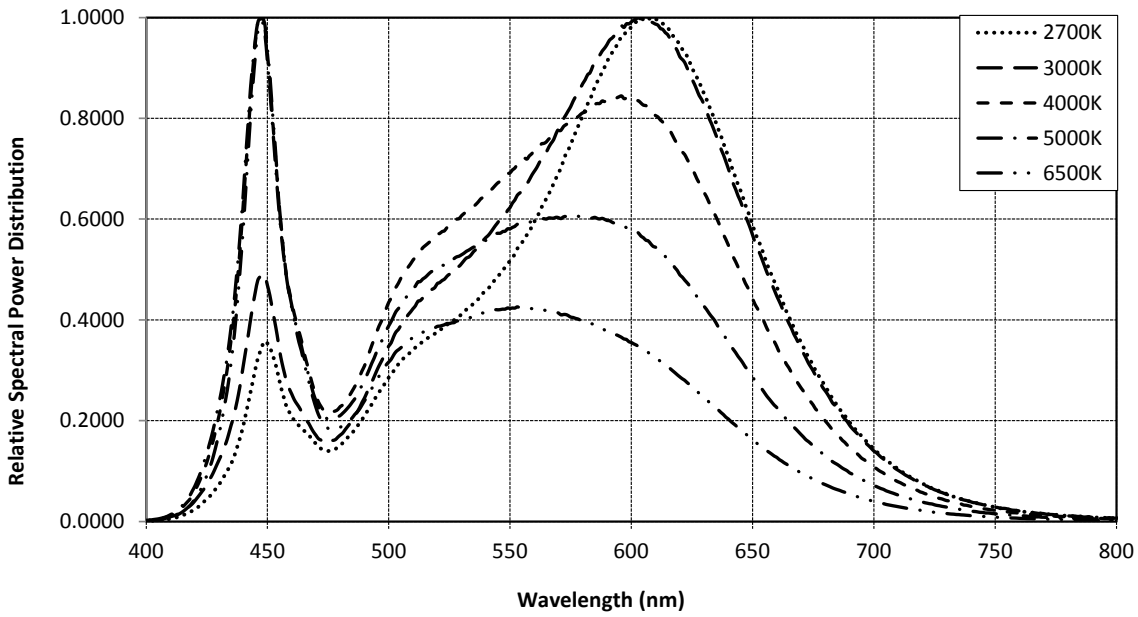
1. Typical viewing angle is 116°.
2. The viewing angle is defined as the off axis angle from the centerline where luminous intensity (Iv) is ½ of the peak value.

Figure 8: Typical Polar Radiation Pattern at 500mA, T_{sp}=25°C



Typical Color Spectrum

Figure 9: Typical Color Spectrum

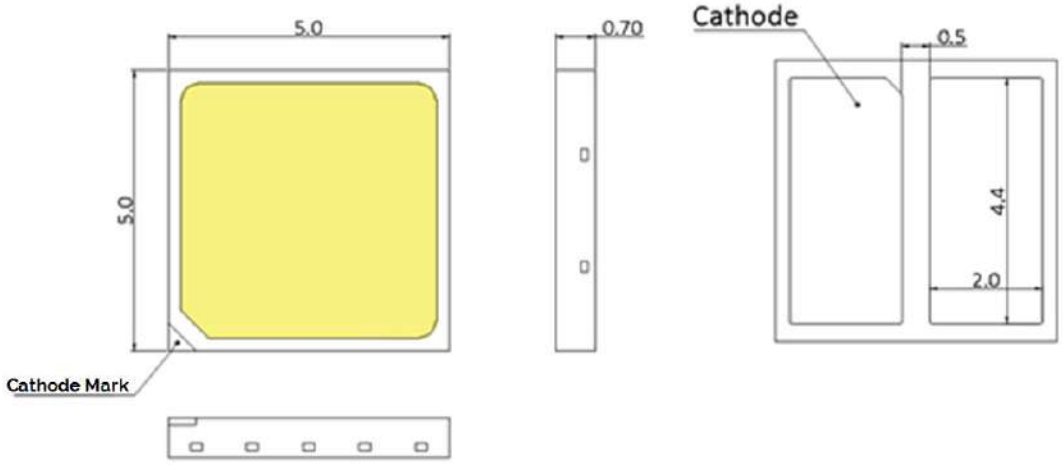


Notes for Figure 9:

1. Color spectra measured at nominal current for T_{sp} = 25°C
2. Color spectra shown for warm white is 2700K and 80 CRI.
3. Color spectra shown for warm white is 3000K and 80 CRI.
4. Color spectra shown for neutral white is 4000K and 80 CRI.
5. Color spectra shown for cool white is 5000K and 80 CRI.
6. Color spectra shown for cool white is 6500K and 80 CRI.

Mechanical Dimensions

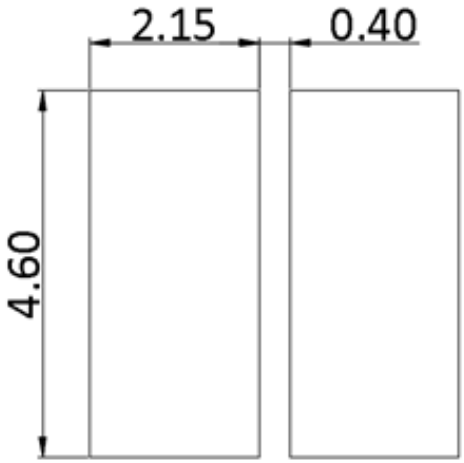
Figure 10: Drawing for SMD 5050



Notes for Figure 10:

1. Drawings are not to scale.
2. Drawing dimensions are in millimeters.
3. Unless otherwise specified, tolerances are ± 0.10mm.

Recommended PCB Soldering Pad Pattern



Reliability

Table 9: 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_{sld} = 260˚C, 10sec, Precondition: 60˚C, 60%RH, 168hr	-	3 reflows	0/22
2	Low Temperature Storage	JESD22-A119	T_a=-40˚C	-	1000 hours	0/22
3	High Temperature Storage	JESD22-A103D	T_a= 105˚C	-	1000 hours	0/22
4	Low Temperature Operating Life	JESD22-A108D	T_a=-40˚C	500mA	1000 hours	0/22
5	Temperature Humidity Operating Life	JESD22-A101C	T_{sp}=85˚C, RH=85%	500mA	1000 hours	0/22
6	High Temperature Operating Life	JESD22-A108D	T_{sp}=105˚C	640mA	1000 hours	0/22
7	Power switching	IEC62717:2014	T_{sp}= 105˚C 30 sec on, 30 sec off	640mA	30000 cycles	0/22
8	Thermal Shock	JESD22-A106B	T_a=-40˚C ~100˚C; Dwell : 15min; Transfer: 10sec	-	200 cycles	0/22
9	Temperature Cycle	JESD22-A104E	T_a=-40˚C ~100˚C; Dwell at extreme temperature: 15min; Ramp rate < 105˚C/min	-	200 cycles	0/22
10	Electrostatic Discharge	JS-001-2012	HBM, 2KV, 1.5kΩ, 100pF, Alternately positive or negative	-	-	0/22

Passing Criteria

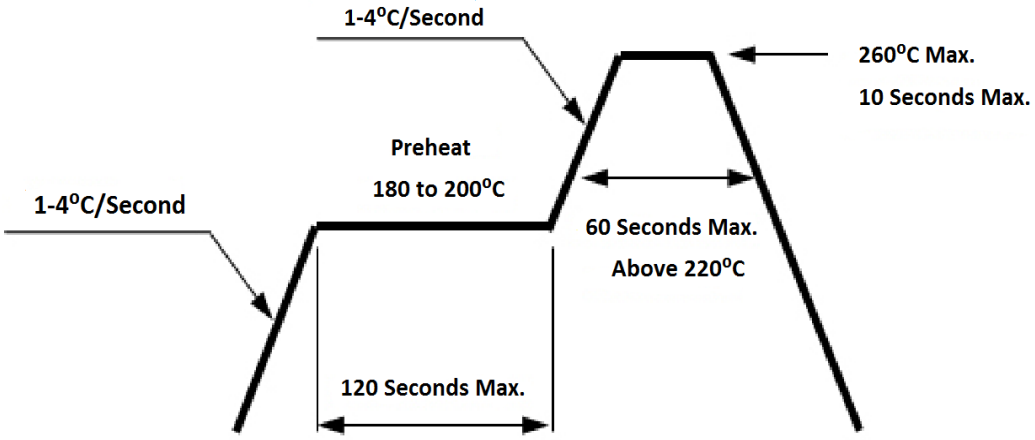
Item	Symbol	Test Condition	Passing Criteria
Forward Voltage	Vf	500mA	ΔVf<10%
Luminous Flux	Fv	500mA	ΔFv<30%
Chromaticity Coordinates	(x, y)	500mA	Δu'v'<0.007

Notes for Table 9:

1. Measurements are performed after allowing the LEDs to return to room temperature
2. T_{sld} : reflow soldering temperature; T_a : ambient temperature

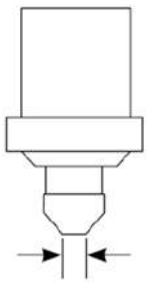
Reflowing Characteristics

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

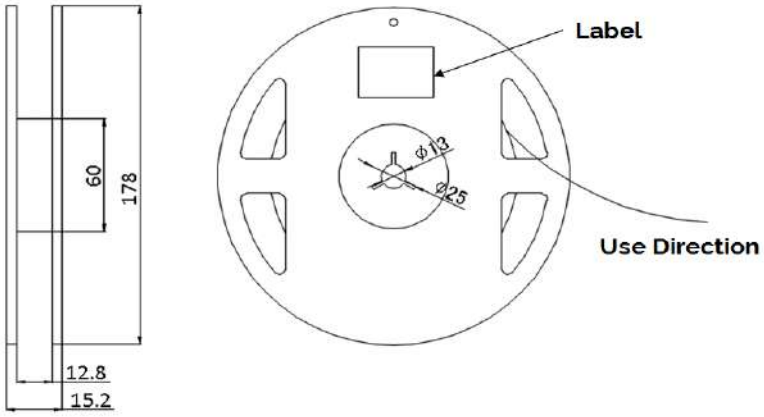


Note for Figure 12:

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

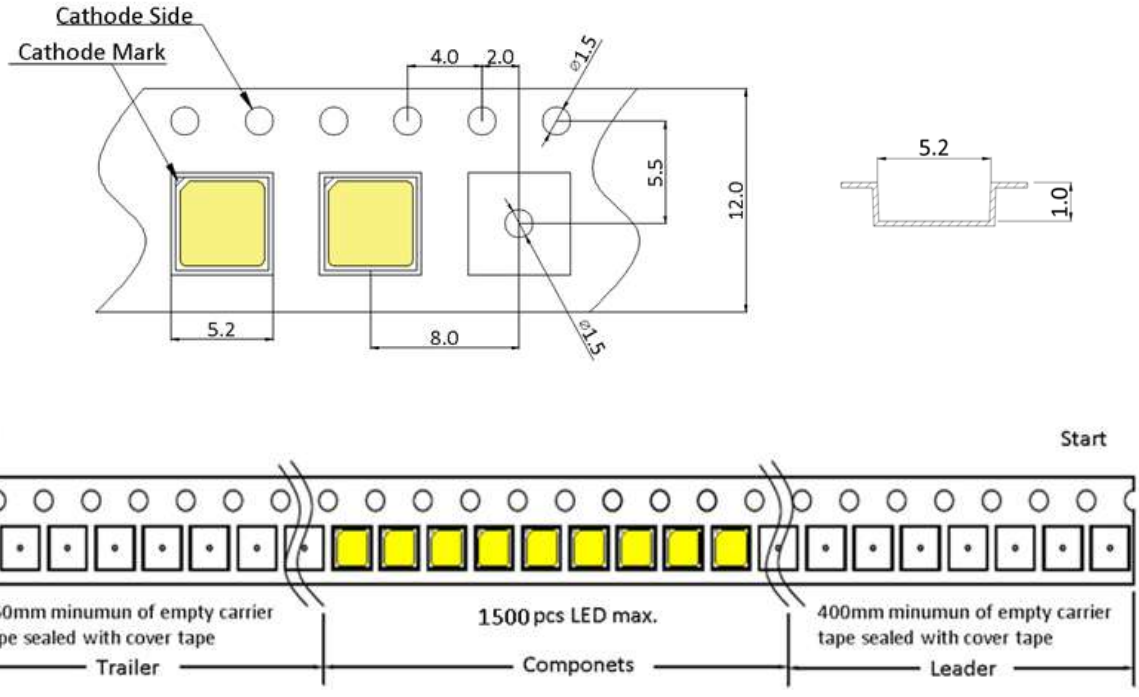
Figure 13: Emitter Reel Drawings



Note for Figure 13:

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

Figure 14: Emitter Tape Drawings

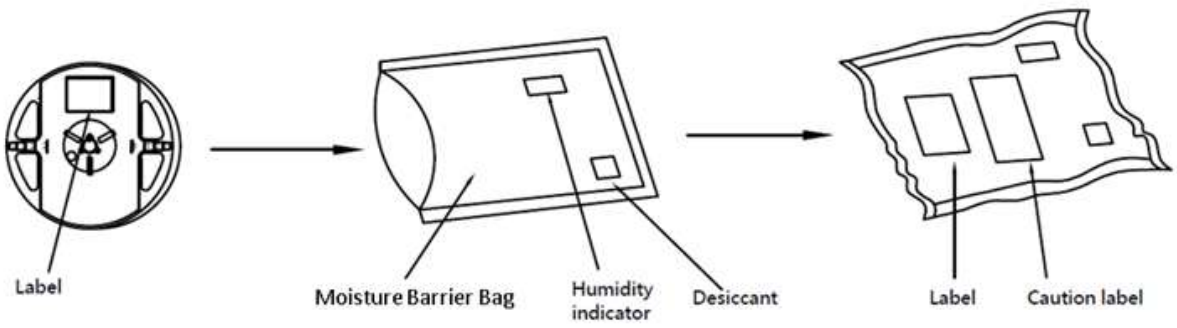


Note for Figure 14:

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

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

This SMD package emits visible light, that, under certain circumstances, could be harmful to the eye. Proper safe-guards must be used.

CAUTION: RISK OF BURN

Do not touch the SMD LED emitter during operation. Allow the emitter 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: We Build Light That Transforms

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.

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