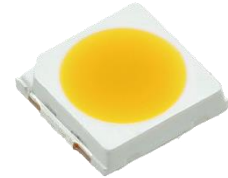




P3210003.00

Surface Mount Device



Applications

- Horticulture lighting and relevant research
- Photoelectric device and relevant research

Features

- Enhanced near infrared spectrum to 600nm-800nm
- Homogeneous spectral power distribution
- 3.0mm × 3.0mm universal package

[About Yujileds[®]](#)

Document Number: YJWJ140

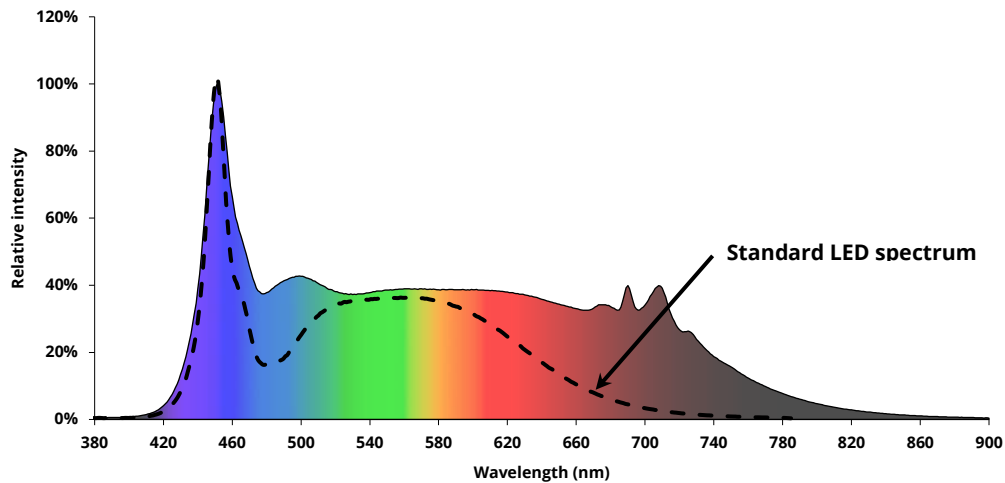
Rev Version: 2.0

Table of Contents

General description	2
Ordering information	3
Characteristics	4
Electrical-optical characteristics ($T_A = 25^\circ\text{C}$, 300mA)	4
Absolute maximum ratings ($T_A = 25^\circ\text{C}$)	4
Chromaticity group and diagram	5
Chromaticity bins & coordinates	5
CIE 1931 diagram.....	5
Package material and dimension.....	6
Package layout.....	6
Package materials.....	6
Characteristic graph	7
Typical spectral power distribution (normalized).....	7
Solder and reflow profile	8
Recommended solder pad layout.....	8
Reflow profile.....	8
SMT instruction	9
Problems caused by improper selection of collet.....	9
Collet selection.....	9
Other notes of caution.....	9
Tape and reel specifications	10
Box packaging	12
About Yujileds	13

General description

This mid-power LED is applied in a 3030 package. It is designed with enhanced near-infrared spectral power distribution particularly to the range of 600nm-800nm. Compared to a standard LED, it extends nearly 50% of the longer wavelength and achieves 90 CRI.

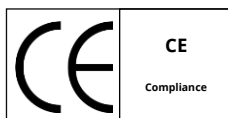


With much richer red and near-infrared radiance within one compact package, this LED provides more possibilities and convenience for the users who are in specific applications like horticulture lighting where the photomorphogenesis of infrared is a signal for plants, or relevant photoelectric device and research where the homogeneous and sufficient radiance of infrared are necessary.

This LED also supports the unique service/certification by Yujileds® as described below.



RoHS 2011/65/EU compliance



CE compliance



REACH compliance (Phosphor)

Ordering information

PRODUCT CODE	CCT	CHROMATICITY BINS	VOLTAGE RANGE
P3210003.65	6500K	65M	0.1V

Characteristics

Electrical-optical characteristics ($T_A = 25^\circ\text{C}$, 300mA)

PARAMETER	SYMBOL	VALUE			UNIT	TOLERANCE
		MIN.	TYP.	MAX.		
Forward voltage	V_F	3.0	-	3.4	V	± 0.05
Luminous flux	Φ_v	-	71	-	lm	-
Radiant flux	Φ_e	-	315	-	mW	-
Correlated color temperature¹	CCT	-	6500	-	K	-
Color rendering index	Ra	90	-	-	-	± 1
Reverse current	I_r	-	-	10	μA	$\pm 0.1 (V_r = 10\text{V})$
View angle	$2\theta_{1/2}$	-	120	-	Deg	± 5

1. Yujileds® promises the chromaticity coordinate tolerance of ± 0.0015 (CIE 1931 x,y) based on Yuji standard equipment shall prevail.

Absolute maximum ratings ($T_A = 25^\circ\text{C}$)

PARAMETER	SYMBOL	LIMIT	UNIT
Power Consumption	P_D	1350	mW
DC Forward Current (pulsed)¹	I_{FP}	600 ²	mA
DC Forward Current	I_F	400	mA
Reverse Voltage	V_R	5	V
Junction Temperature	T_j	125	$^\circ\text{C}$
Solder Point Temperature³	T_s	105	$^\circ\text{C}$
Operating Temperature	T_{opr}	-40 ~ +85	$^\circ\text{C}$
Storage Temperature	T_{stg}	-30 ~ +85	$^\circ\text{C}$
Soldering Temperature	T_{sol}	260 \pm 5	$^\circ\text{C}$
Reflow Cycles Allowed	-	2	-

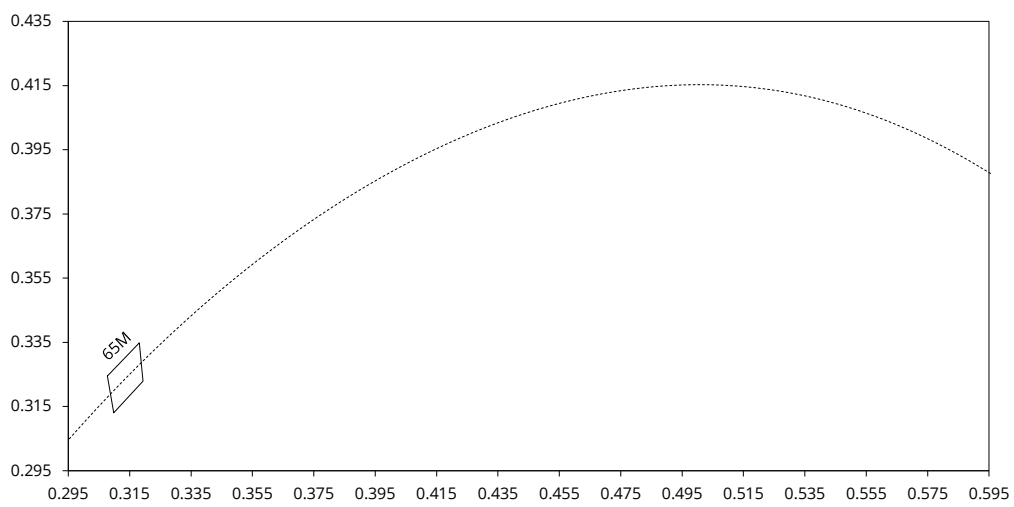
1. Pulse width $\leq 0.1\text{ms}$, duty $\leq 1/10$.
2. Theoretical data.
3. See page [Package material and dimension](#).

Chromaticity group and diagram

Chromaticity bins & coordinates

CCT	BIN	CIE 1931 COORDINATES							
		X0	Y0	X1	Y1	X2	Y2	X3	Y3
6500K	65M	0.3078	0.3245	0.3098	0.3131	0.3194	0.3230	0.3181	0.3349

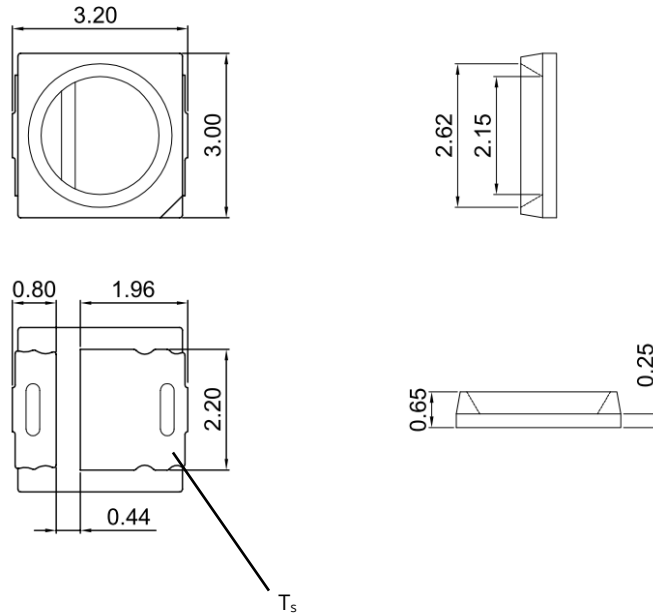
CIE 1931 diagram



Package material and dimension

Package layout

All dimensions in mm, tolerance unless mentioned is ± 0.1 mm.

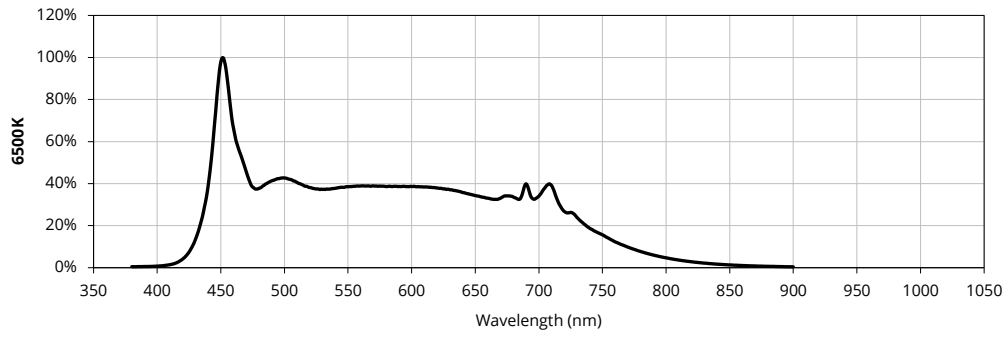


Package materials

ITEM	DESCRIPTION
Die material	InGaN
Lead frame material	PCT
Encapsulant resin material	Silicon + Phosphor
Electrodes material	Silver-plated copper

Characteristic graph

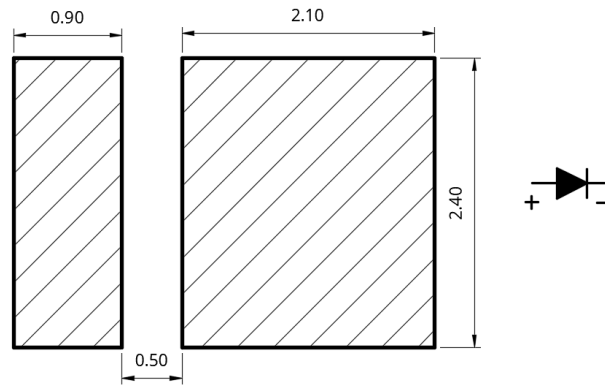
Typical spectral power distribution (normalized)



Solder and reflow profile

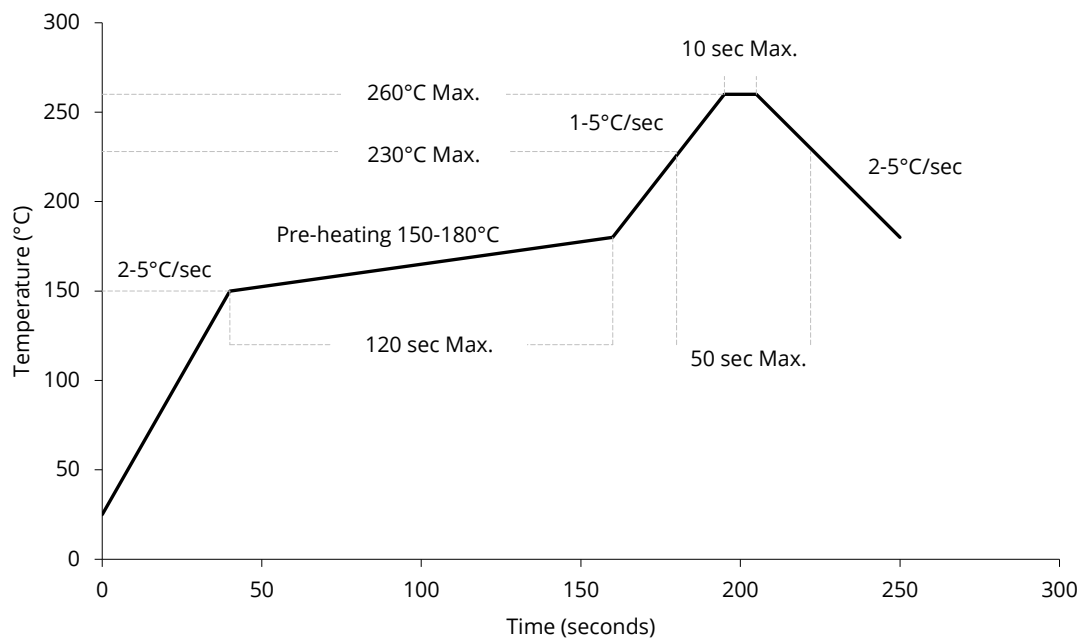
Recommended solder pad layout

All dimensions in mm, tolerance unless mentioned is ± 0.1 mm.



Reflow profile

Soldering ramp-up time (Pb-FREE).



Note: Soldering paste with the melting point at 230°C is recommended.

SMT instruction

Problems caused by improper selection of collet

Choosing the right collet is important in ensuring product quality after SMT. LEDs are different from other electronic components, as they are not only concerned with electrical output but also optical output. This characteristic makes LEDs more fragile in the process of SMT. If the collet's lowering height is not well set, it will bring damage to the gold wire at the time of collet's pick-and-place process which can cause the LED to not illuminate, flicker or contribute to other quality problems, some of which may not be immediately detectable.

Collet selection

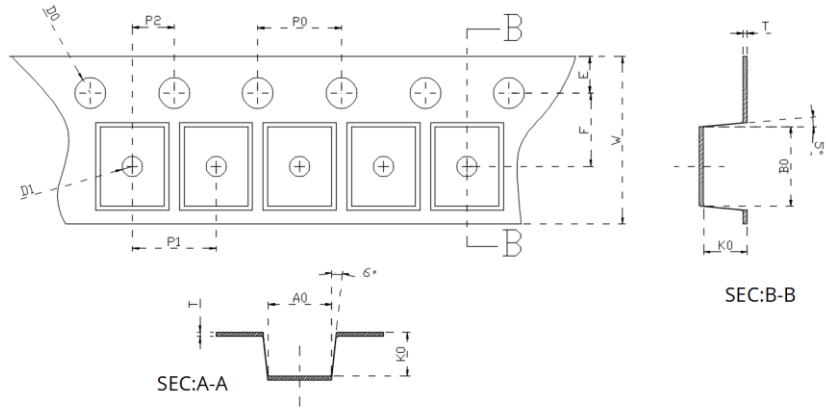
During SMT, please choose the appropriate collet in order to avoid damage the gold wire inside the LED or insufficient suction. Setting the height of the collet is crucial in order to avoid damage to the top view SMD. If the collet setting is set to too low of an altitude, the collet will press down on the SMD, causing damage or breakage to the encapsulant and cause distortion or breakage of the gold wire.

Other notes of caution

- No pressure should be exerted to the epoxy shell of the SMD under high temperature.
- Do not scratch or wipe the lens since the lens and gold wire inside are rather fragile and cross out easy to break.
- LED should be used as soon as possible when being taken out of the original package, and should be stored in anti-moisture and anti-ESD package.
- This usage and handling instructions are for reference only.

Tape and reel specifications

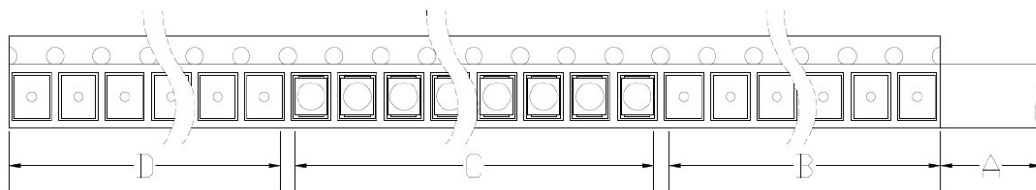
Tape dimensions (unit: mm)



Code	W	T	D1	E	F	D0
Value	8.000	0.180	1.000	1.750	3.500	1.600
Tolerance	±0.100	±0.020	±0.100	±0.100	±0.100	±0.100
Code	P0	P1	P2	A0	B0	K0
Value	4.000	4.000	2.000	3.250	3.400	0.850
Tolerance	±0.100	±0.100	±0.100	±0.100	±0.100	±0.100

Tape layout

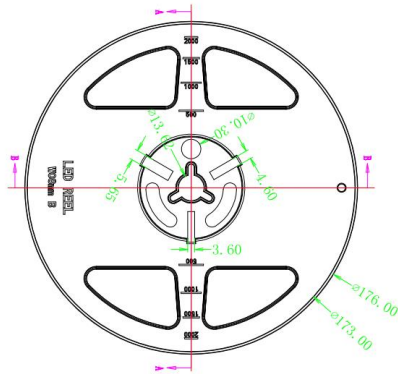
Not drawn to scale.



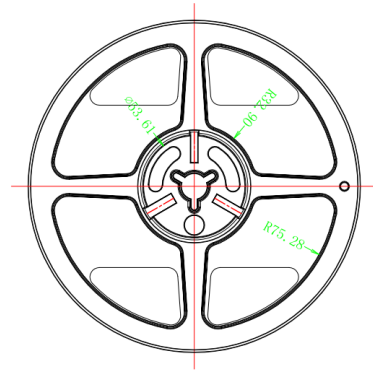
- A: Cover tape, 300mm;
- B: Empty leader, 200mm;
- C: LED, 5000pcs;
- D: Empty trailer, 200mm.

Tape and reel specifications

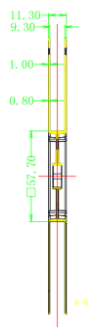
Reel dimensions top (unit: mm)



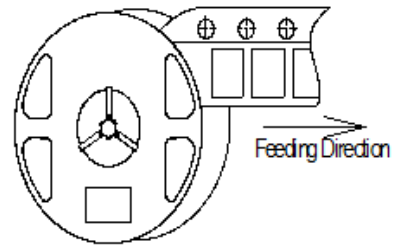
Reel dimensions bottom (unit: mm)



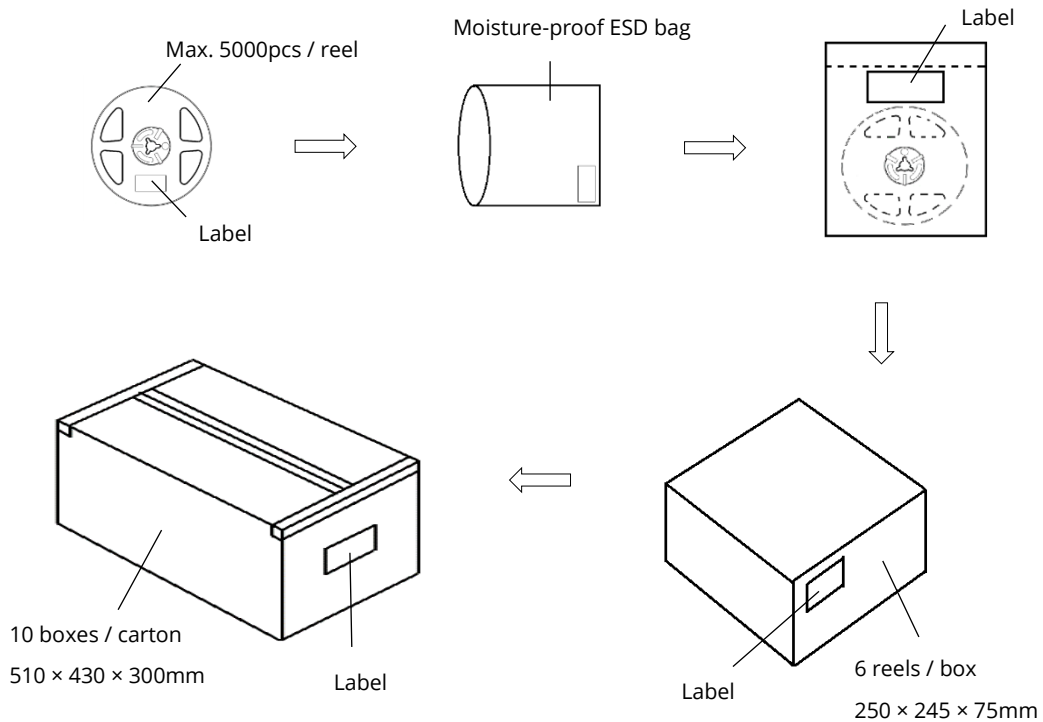
Reel dimensions side (unit: mm)



Feeding direction



Box packaging



- Reeled products (max 5000pcs / reel) are packed in a moisture-proof bag along with a moisture desiccant pack.
- Each inner box contains up to 6 moisture-proof bag (total maximum number of SMDs is 30000pcs). Box package size: 250 mm × 245 mm × 75 mm.
- Each outer package contains 10 inner boxes. Box size: 510 mm × 430 mm × 300 mm.
- Outer package is sealed with protective bubble wrap and foam. (Part numbers, lot numbers, quantity should appear on the label on the moisture-proof bag, part numbers).
- This packaging merely intended as a reference for standard quantity orders only – please note that actual packaging can differ depending on the order circumstances.

About Yujileds



The Yuji story

Yuji started with LED phosphor materials in 2006, and today we are known for nitride red LED phosphor with superior brightness and stability in the world. With the rapid growth in LED industry during the past years, we have serviced over 260 business customers in over 33 different countries or regions, and established subsidiaries or distributors in 6 locations including China, US, UK and Japan, now we are reaching the global markets with the full coverage efficiently.

Our capabilities and achievements

In Yujileds®, we are a group of people passionate in creating the maximum value for customers. Dedicated to developing LED phosphor, LED light source and final products, we have accumulated unique experience in different projects. Nowadays, over 30 experts are gathered in a variety of areas including but not limited to semiconductor, chemistry, optics, photoelectricity, circuitry, materials and color science.

In commercial markets, we have been dedicating to providing comprehensive solutions for specific applications by deeply understanding these markets. Our goal is not only to offer an LED product simply but is to grow with customers and share the success of a business.

Main website: www.yujiintl.com

Find the comprehensive introduction of Yuji company and our insights into a variety of advanced technologies and applications.

Contact: info@yujigroup.com

Subordinative website: www.yujileds.com

Find more about our products, technical posts, featured support and service, blogs, news and whatever interesting and practical information.

Contact: contact@yujileds.com

Online shop: store.yujiintl.com

Find your favorite Yujileds® products with outstanding quality, fast shipment and superb sale service.

Contact: webstore@yujigroup.com