



Planck Shenzhen Opto-Electronic Technology Co.,Ltd

SPECIFICATION FOR PRODUCTION

Custome :

Product Name : PLK-T50503W55L20R85

Version number :

Deliver date :

Customer confirm and sign		
TESTED BY	CHECKED BY	APPROVED BY
INSPECT RESULT	ACCEPT	REJECT
(REMARK) : _____		



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<http://www.planckled.com>

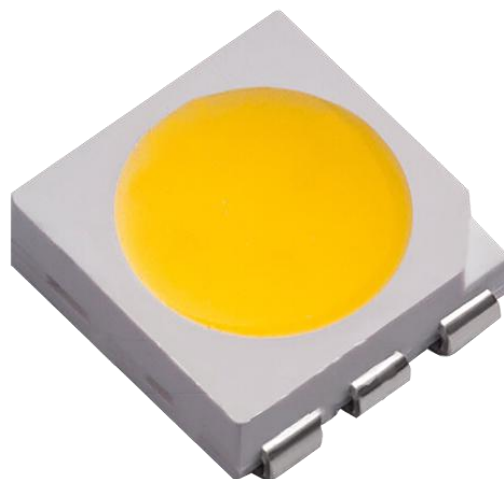
Part Number: PLK-T50503W55L20R85

Features

- Package Size : 5.0(L) ×5.0(W) ×1.5(T)
mm
- Silicone Packed
- Suitable for different working environment
- Super long lifetime : 30000HRs
- Anti UV
- White colors are available in(2300K- 25000K)
- Wide viewing angle ($2\Theta_{1/2}=120^\circ$)

Device Selection Guide

ITEM	MATERIALS
Resin	Silicon
Bonding wire	23 μ m Au
Lens color	Yellow
Dice	InGaN



Applications

- Indoor lighting: Fluorescent lamp, tube
- Commercial illumination and displays: Advertising words, light box
- LCD Backlighting
- Decorative lighting: light strip
- Automotive interior auxiliary lighting
- Other illumination and displays



ATTENTION

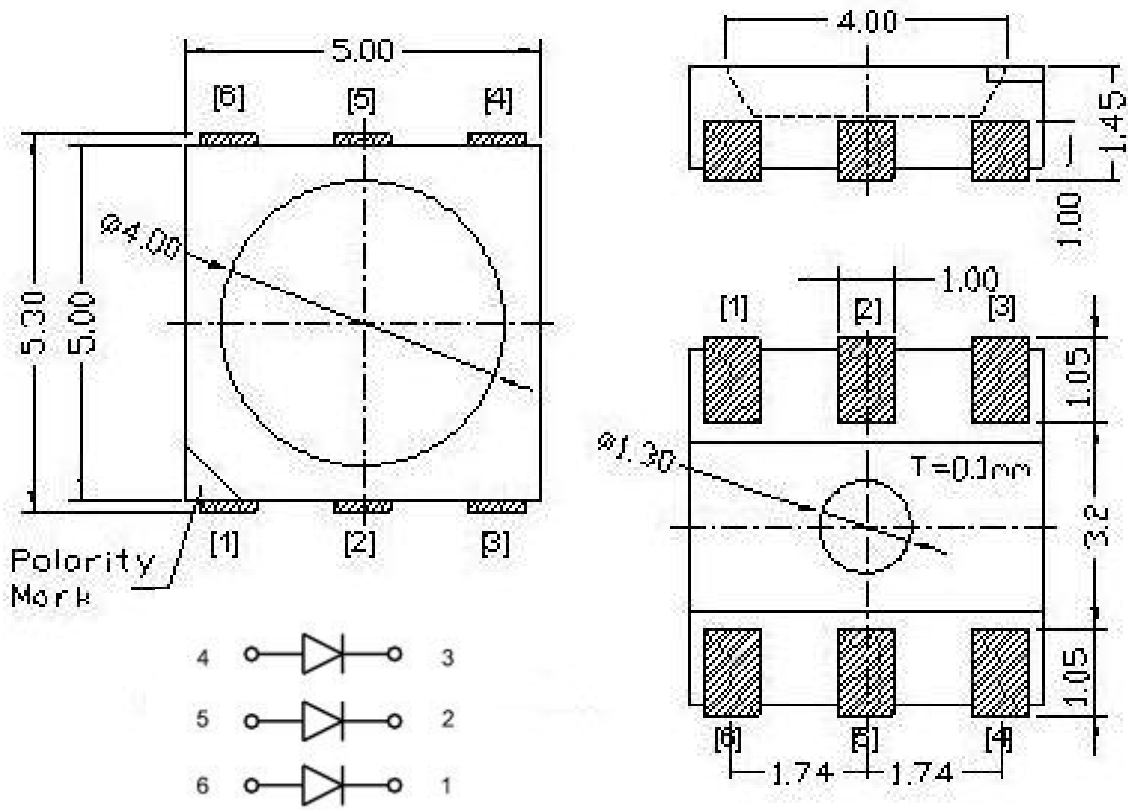
OBSERVE
PRECAUTIONS
FOR HANDLING



REFLECTOR COATING TYPE HIGH-PERFORMANCE LEDs

High Performance SMD Single-Color Top LEDs

Part Number: PLK-T50503W55L20R85



NOTES :

- 1、 All dimensions are in millimeters (inches) ;
- 2、 Tolerances are $\pm 0.2mm$ (0.008inch) unless otherwise noted.



Part Number: PLK-T50503W55L20R85

Absolute maximum ratings (TA=25°C)

Parameter	Symbol	Rat	Unit
Forward current	I _F	60	mA
Reverse voltage	V _r	5	V
Power dissipation	P _d	200	mW
Operating Temperature	T _{op}	-20 ~+80	°C
Storage Temperature	T _{stg}	-40 ~+80	°C
Peak Forward Current (Duty 1/10 @ 1KHz)	I _{FP}	60	mA
Lead Soldering Temperature (5mm From Body)	T _{sol}	260°C For 5 Seconds)/°C	

Electro-optical characteristics (T_A=25°C)

Parameter	Test Condition	Symbol	Value			Unit
			Min	Avg	Max	
CIE Coordinates	I _F =60mA	X	0.31	0.318	0.325	---
		Y	0.32	0.335	0.35	
Forward voltage	I _F =60mA	V _f	3.0	---	3.4	V
Color Temperature	I _F =60mA	TC	5500	5750	6000	K
Luminous Flux	I _F =60mA	φ	20	21	22	lm
Luminous intensity	I _F =60mA	I _v	6000	6300	6600	mcd
Viewing Angle	-----	2θ1/2	---	120	---	deg
Reverse Current	-----	IR	--	--	10	μA



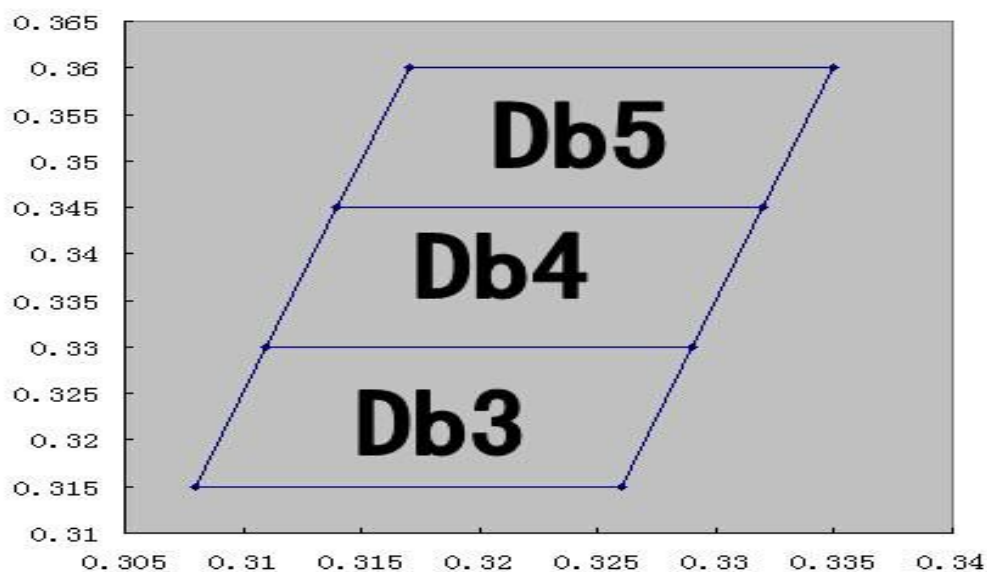
Luminous Intensity Ranking (TA=25°C) :

Part Number	PLK-T50503W55L20R85	
CCT Range (K)	5500-6000	
CIE Coordinates	X:0.31-0.325	Y:0.32-0.35
Luminous intensity (mcd)	6000-6600	
Φ @ 60mA Luminous Flux(lm)	20-22	
Vf@60mA Voltage(V)	3.0-3.4	
@60mA ColorRenderingIndex	85	
Color	Daylight White	

Note:

1. Tolerance of Forward Voltage is .
2. Tolerance of Luminous Flux is .
3. If Ra is over 80, the brightness of products will be lower than listed below. For further information of Ra, please consult marketing staff of Sunlight.

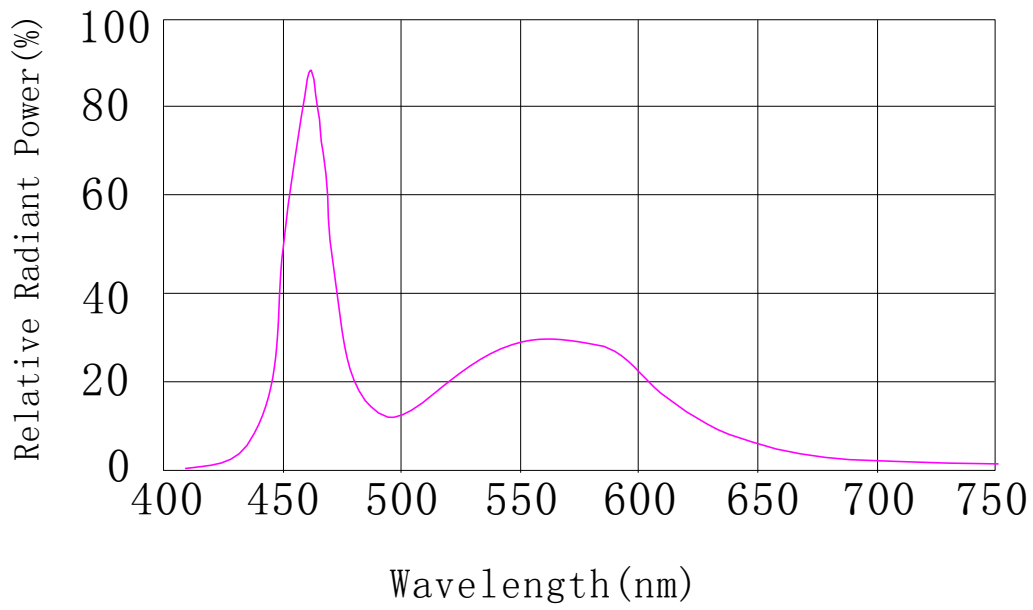
Color Bin Limit (IF=60mA)



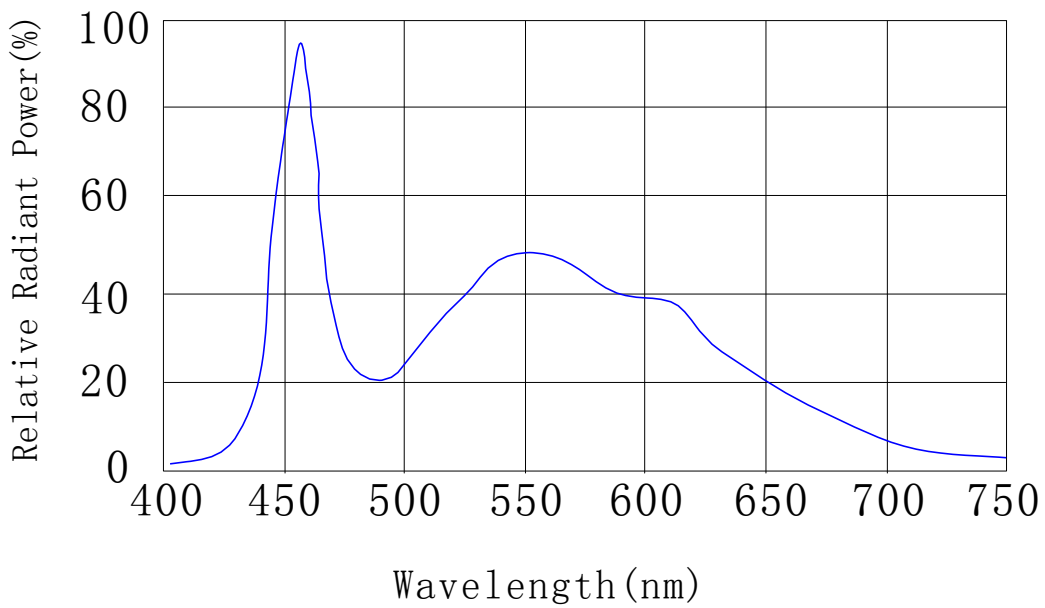


Relative Spectral Power

CRI>70



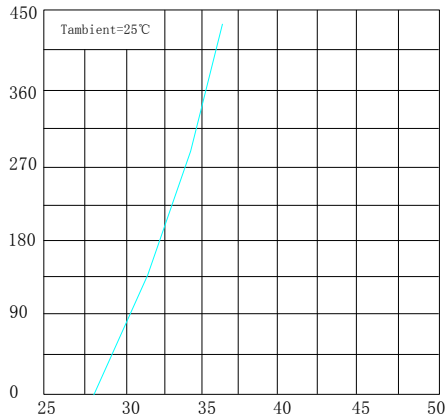
CRI>80





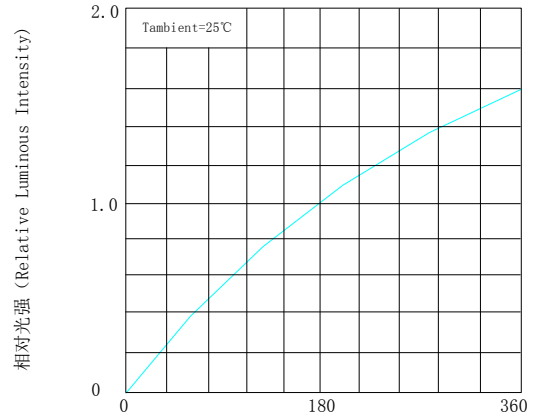
Optical-Electrical Characteristic

Volt-Ampere Characteristics



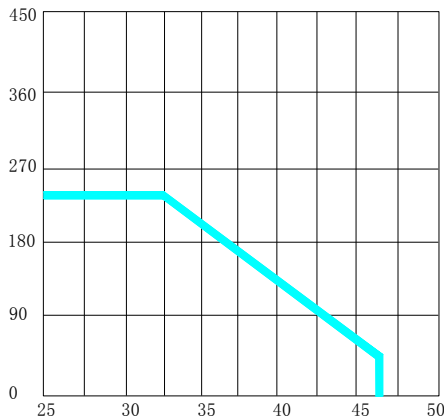
Forward Voltage(V)

Relative Luminous VS Forward Current



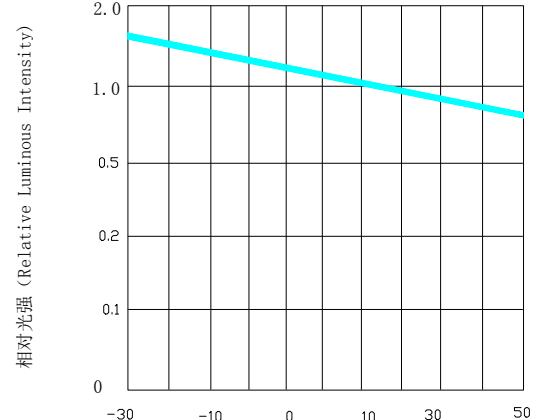
Forward Current(ma)

Forward Current Derating Curve



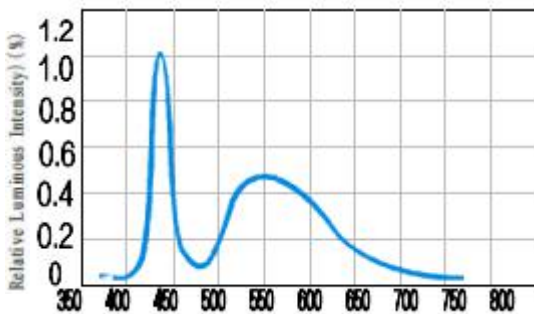
Ambient Temperature(°C)

Luminous Intensity VS Ambient Temperature



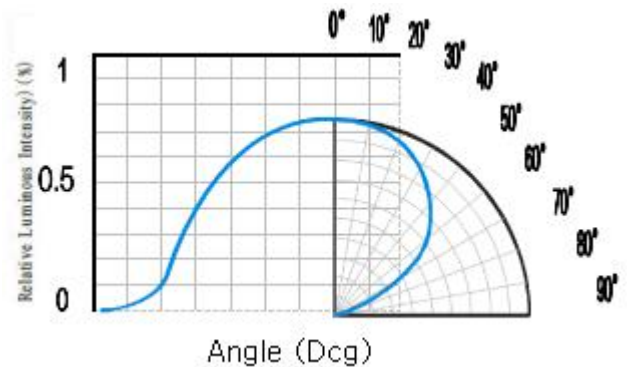
Ambient Temperature(°C)

Relative Spectral Distribution



Wavelength (nm)

Typical Spectral Distribution





Reliability Test Items And Conditions

Test Items	Reference	Test Conditions	Time	Quantity	Criterion
Thermal Shock	MIL-STD-202G	-40°C (30min) -100°C (30min)	100 Cycles	22	0/22
Temperature And Humidity Cyclic	JEITA ED-4701 200 203	-10°C~65°C ; 0%~90%RH	10cycles	22	0/22
High Temperature Storage	JEITA ED -4071 200 201	Ta=100°C	1000H	22	0/22
Low Temperature Storage	JEITA ED -4071 200 202	Ta=-40°C	1000H	22	0/22
High Temperature High Humidity Storage	JEITA ED -4071 100 103	Ta=60°C ; RH=90%	1000H	22	0/22
High Temperature Life Test	JESD22-A108D	Ta=80°C	1000H	22	0/22
Life Test	JESD22-A108D	Ta=25°C IF=150mA	1000H	22	0/22
Resistance to Soldering Heat	GB/T 4937, II, 2.2&2.3	Tsol*=(240±5)°C 10secs	2 times	22	0/22

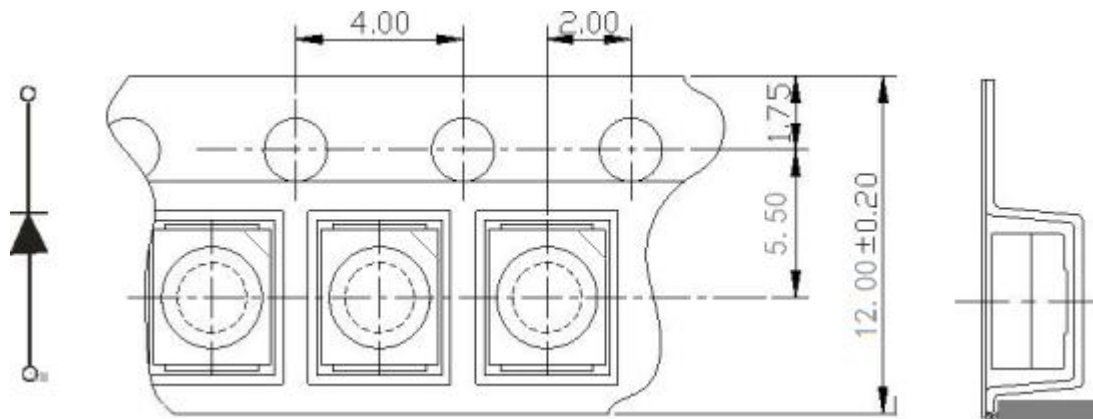
Criteria For Judging Damage

Test Items	Symbol	Test Conditions	Criteria For Judging Damage
Forward Voltage	V _F	I _F =I _{FT}	Initial Data±10%
Reverse Current	I _R	V _R =5V	I _R ≤10uA
Luminous Intensity	I _V	I _F =I _{FT}	Average I _V degradation≤30% ; Single LED I _V degradation≤50%
Resistance to Soldering Heat			Material without internal cracks, no material between stripped, no dead light

*Note T_{sol}-Temperature of tin liquid

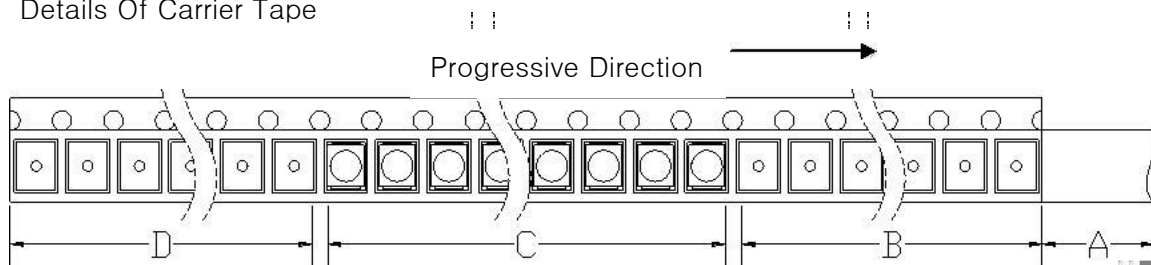
Packaging(1)

Carrier Tape



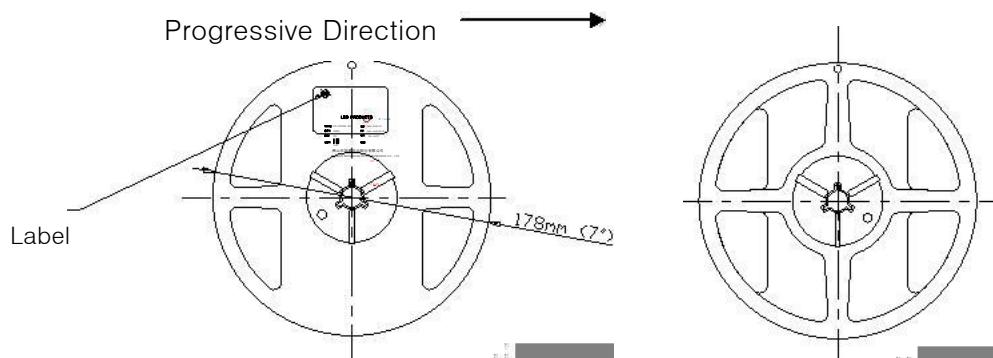
All dimensions in mm, tolerances unless mentioned is ± 0.1 mm

Details Of Carrier Tape



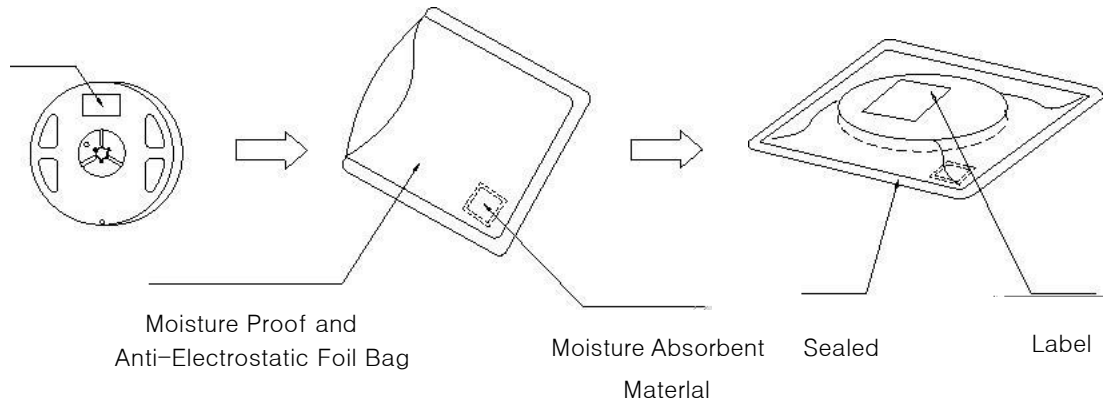
A: Top Cover Tape 300mm; B: Leader Empty 200mm; C: 1000 Lamps Loaded; D: Trailer Empty 200mm

Reel Dimension

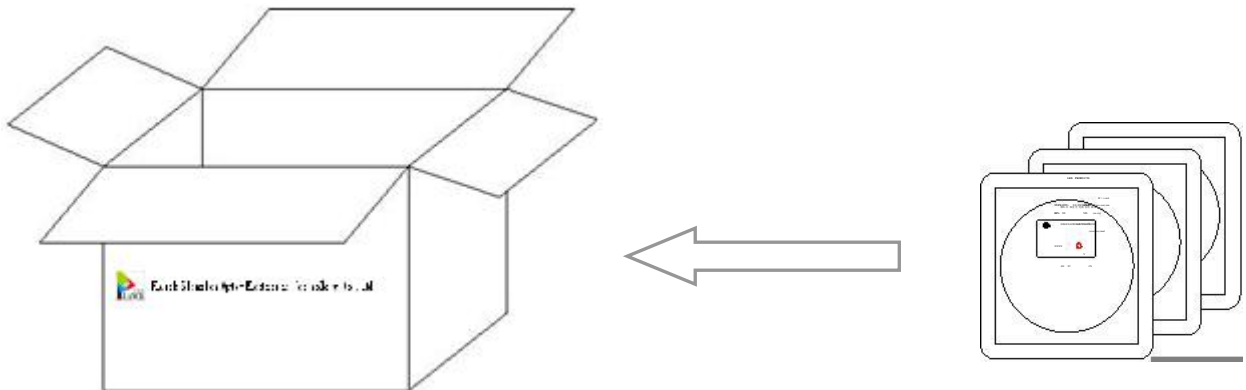


Packaging (2)

✧ Moisture Proof and Anti-Electrostatic Foil Bag



✧ Cardboard Box



✧

	 深圳市普朗克光电科技有限公司 Planck Shenzhen Opto-Electronic Technology Co., Ltd		
Product model	←	Item: PL-XXXXXXXX-XX-XX	
Batch number	←	Lot No: PLXXXXXXXX	
Colour			
temperature/Band	←	TC: XXXX-XXXXK	Bin Code: XXX → Colour zone
Luminance	←	Φ : XX-XXLM	VF: X. X-X. XV → Voltage
Date	←	Date: XXXX/XX/XX	QTY: XXXXPCS → Amount
		Http: //www. planckled. com	

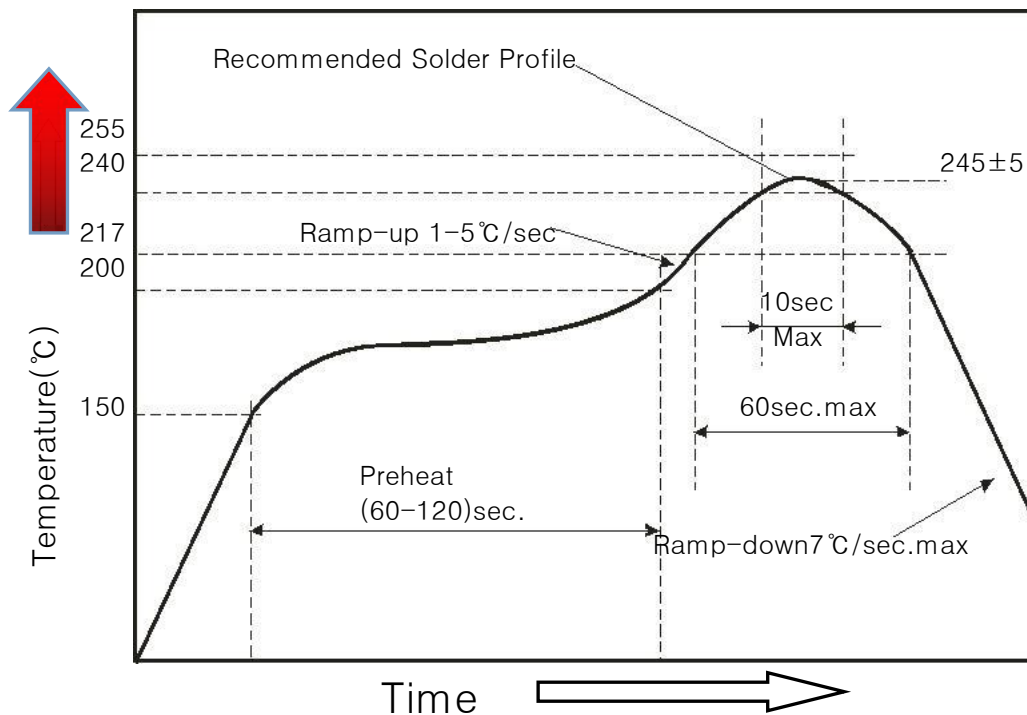
Useful hint :

1、 Hand Soldering

A soldering iron of less than 20W is recommended to be used in Hand Soldering. Please keep the temperature of the soldering iron under 360°C while soldering. Each terminal of the LED is to go for less than 3 seconds and for one time only.

Be careful because the damage of the product is often started at the time of the hand soldering.

2、 Reflow Soldering: Use the conditions shown in the under Figure of Pb-Free Reflow Soldering



- Reflow soldering should not be done more than two times
- Stress on the LEDs should be avoided during heating in soldering process
- After soldering, do not deal with the product before its temperature drops down to room Temperature.



Precautions(1)

1. Storage

- Moisture proof and anti-electrostatic package with moisture absorbent material is used, to keep moisture to a minimum.
- Before opening the package, the product should be kept at 30℃ or less and humidity less than 60% RH, and be used within a year.
- After opening the package, the product should be stored at 30℃ or less and humidity less than 10%RH, and be soldered within 24 hours (1 day). It is recommended that the product be operated at the workshop condition of 30℃ or less and humidity less than 60%RH.
- If the moisture absorbent material has faded away or the LEDs have exceeded the storage time, baking treatment should be performed based on the following condition: (70±5)℃ for 24 hours.

2. Static Electricity

Static electricity or surge voltage damages the LEDs. Damaged LEDs will show some unusual characteristics such as the forward voltage becoming lower, or the LEDs do not light at the low current, even not light.

All devices, equipment and machinery must be properly grounded. At the same time, it is recommended that wrist bands or anti-electrostatic gloves, anti-electrostatic containers be used when dealing with the LEDs.



Precautions (2)

3. Vulcanization

LED curing is due to sulfur being in bracket and the +1 price of silver in the chemical reaction generated Ag₂S in the process. It will lead to the capacity of reflecting of silver layer reducing, light color temperature drift and serious decline ,seriously affecting the performance of the product. So we should take corresponding measures to avioding vulcanization, such as to avoid using sulphur volatile substances and keeping away from high sulphur content of the material.

4. Safety Advice For Human Eyes

Viewing direct to the light emitting center of the LEDs, especially those of great Luminous Intensity will cause great hazard to human eyes. Please be careful.