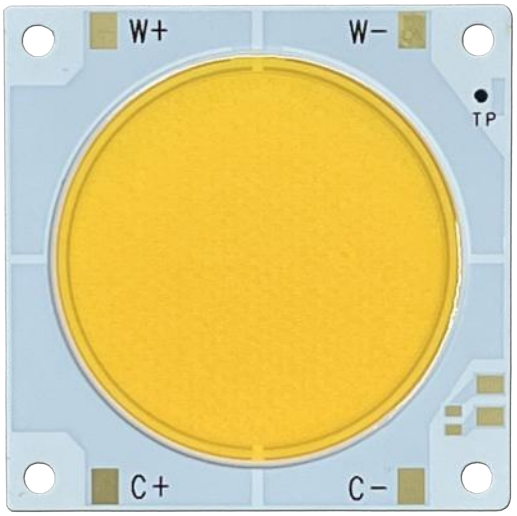
High Power LED
Chip on Board

COB Cu Series
Cool White



Features & Benefits

- High lumen output
- Simple assembly reduces manufacturing cost
- Low thermal resistance
- InGaN/GaN MQW LED with long time reliability

Applications

- Film production
- Still photography
- Outdoor Illumination

立德达
ledestar

Table of Contents

1. Characteristics

a) Absolute Maximum Rating

Item	Symbol	Rating	Unit	Condition
Ambient / Operating Temperature	T_a	-40 ~ +85	℃	-
Storage Temperature	T_{stg}	-40 ~ +105	℃	-
LED Junction Temperature	T_j	125	℃	-
Forward Current	I_F	5500	mA	-
Power Dissipation	P_D	300	W	-

b) Electro-optical Characteristics (I_F = 5500 mA, Ts = 25℃)

Item	Unit	Rank	Min.	Typ.	Max.
Forward Voltage (V_F)	V	V0	52.0	-	58.0
Color Temperature(CCT)	K		5400	-	5800
Color Rendering Index (R_a)	-		95	-	-
Color Rendering Index (R_9)	-		90	-	-
Television Lighting Consistency Index (TLCI)	-		97	-	-
Lux @1m	lx		11000	-	13000

Note:

Ledstar maintains measurement tolerance of: forward voltage = ±0.5 V, luminous flux = ±5 %, CRI = ±3

2. Product Code Information

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
L	D	R	-	5	5	4	5	B	C	A	1	8	3	6	-	0	3	0	0	-	5	6	K	5	9	5

Digit	PKG Information	Code	Specification
1 2 3	Ledstar Package Middle Power	LDR	
5 6 7 8	Package Model and Size	55 45	dimension: 55.0 x55.0 x 2.0mm lens: 45mm
9	Product Category	B	COB
10	Bractek Type	C	Cu
11	Version	A	
12 13 14 15	Tandem mode	18 36	18 series 36 parallel
17 18 19 20	Power	0300	300W
22 23 24 25	Nominal CCT/Color	56	5400-5800K
26 27	Ra	95	Ra≥95

a) Voltage Bins (I_F = 5500 mA, T_s= 25 ºC)

Product Code	Voltage Rank	Voltage Range (V)
LDR-5545BCA1836-0300-56K595	V0	52.0 ~ 58.0

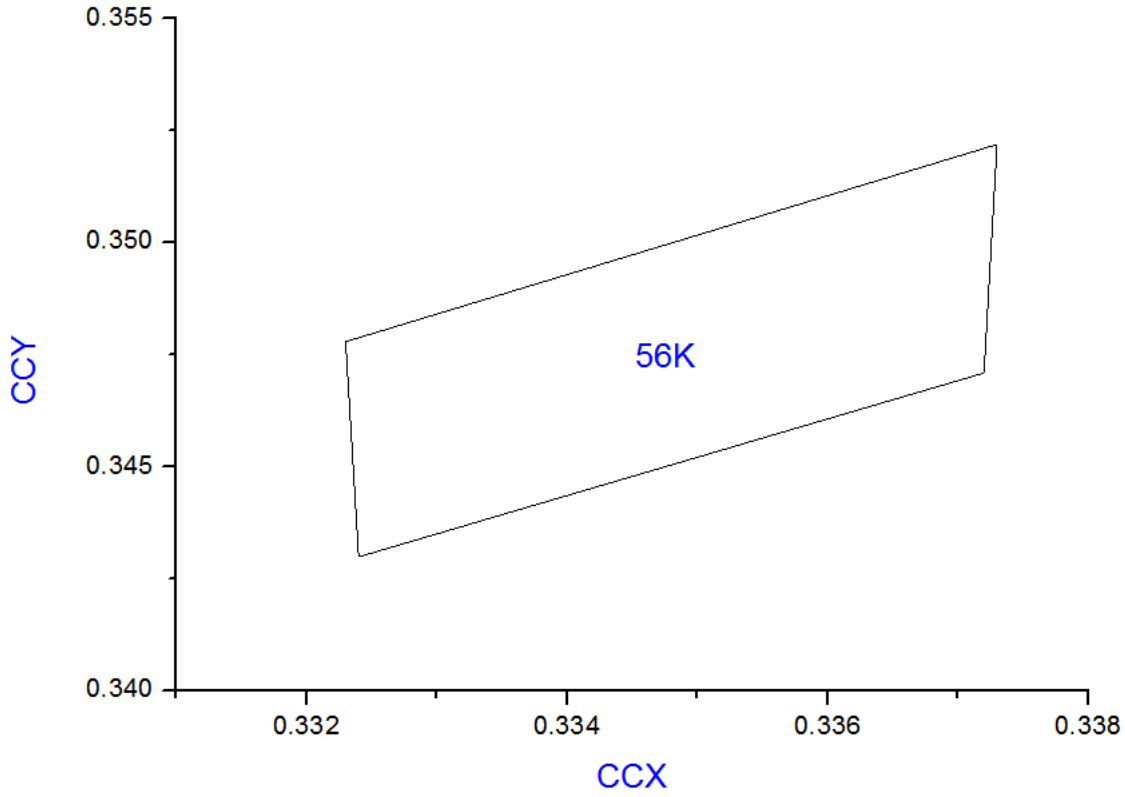
b) Color Bins (I_F = 5500 mA, T_s= 25 ºC)

Product Code	BIN	CCT Range (K)
LDR-5545BCA1836-0300-56K595	56K	5400 ~ 5800

d) Lux Bins (I_F = 5500 mA, T_s= 25ºC)

Product Code	Lux Range (lx)
LDR-5545BCA1836-0300-56K595	11000 ~ 13000

d) Chromaticity Region & Coordinates (I_F = 5500 mA, T_s = 25℃)



e) Chromaticity Region & Coordinates (I_F =5500 mA, T_s = 25℃)

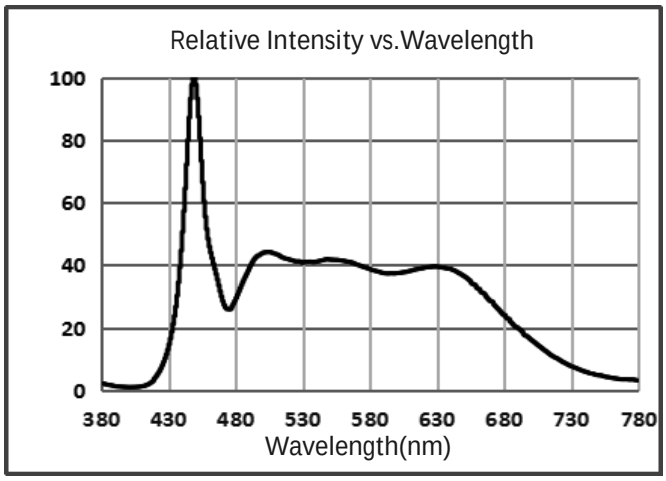
CCT	CIE-X	CIE-Y	BIN
5400-5800K	0.3372	0.3471	56K
	0.3373	0.3522	
	0.3323	0.3478	
	0.3324	0.3430	

Note:

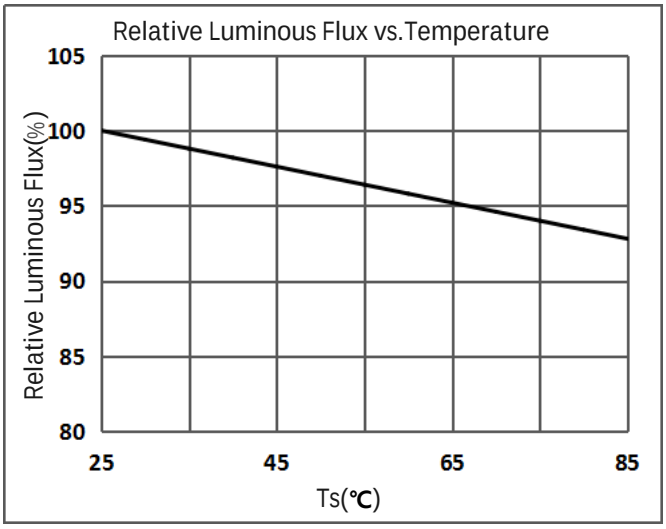
Ledstar maintains measurement tolerance of: Cx, Cy = ±0.005

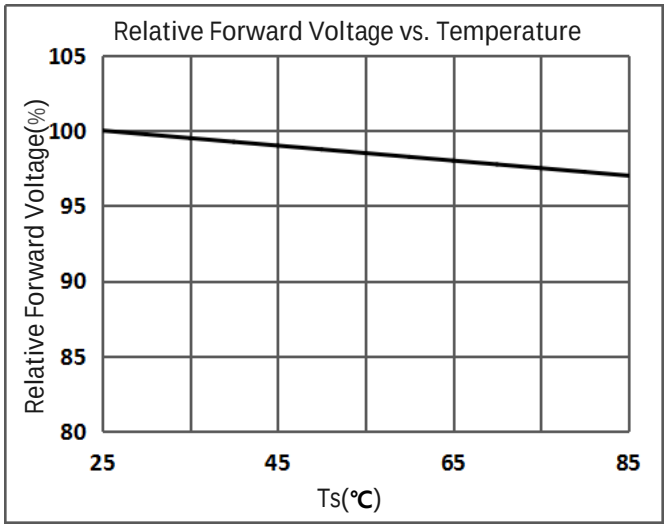
3. Typical Characteristics Graphs

a) Spectrum Distribution (I_F = 5500 mA, T_s = 25℃)

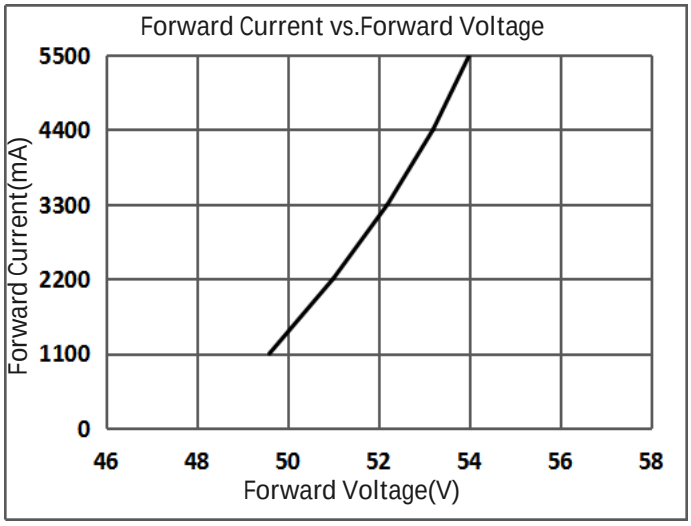


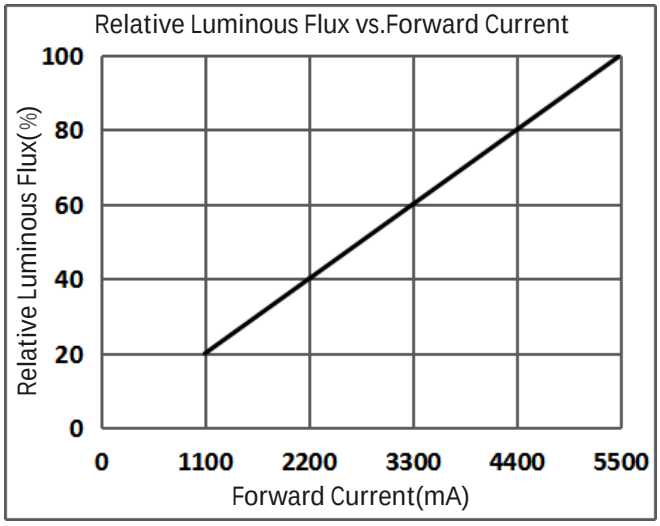
b) Temperature Characteristics (I_F = 5500 mA)



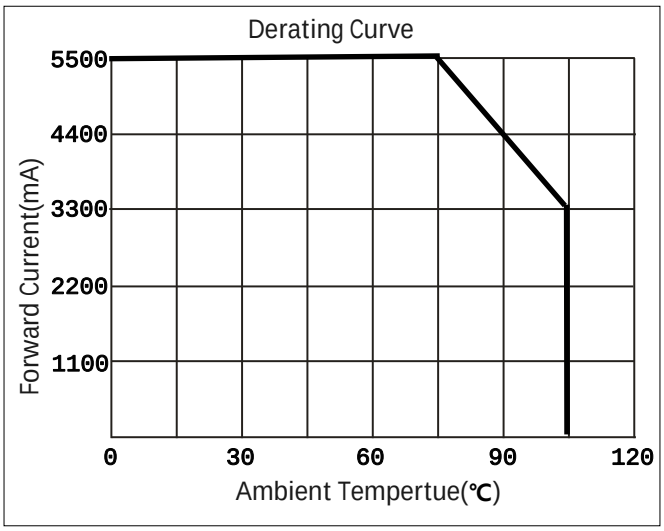


c) Forward Current Characteristics (T_s = 25℃)

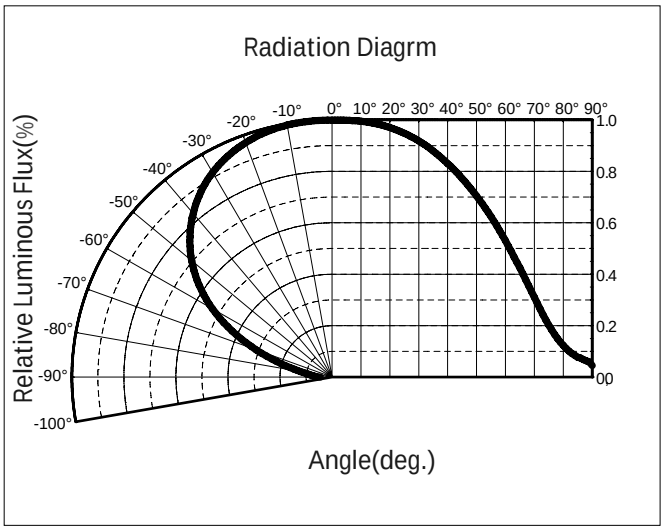




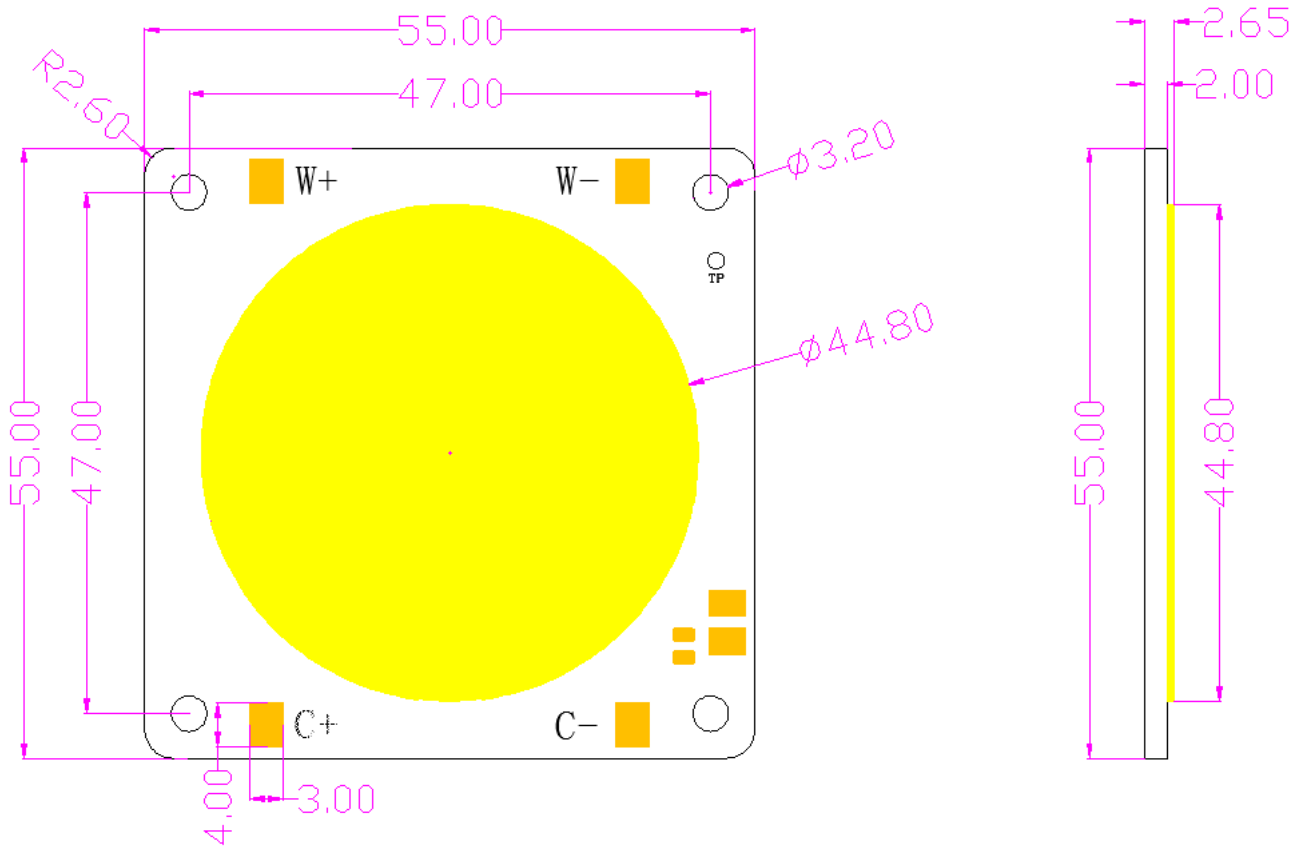
d) Derating Curve



e)Beam Angle Characteristics (T_s = 25℃, I_F = 5500 mA)



4. Outline Drawing & Dimension



Circuit mode :18 series 36 parallel

Notes:

T_s point and measurement method:

① Measure one point at the cathode pad, if necessary remove PSR of PCB to reach T_s point.

② All pads must be soldered to the PCB to dissipate heat properly, otherwise the LED can be damaged.

③ All dimensions in mm. Tolerances unless mentioned is ±0.2mm.

Precautions:

1) Pressure on the LEDs will influence to the reliability of the LEDs. Precautions should be taken to avoid strong pressure on the LEDs. Do not put stress on the LEDs during heating.

2) Re-soldering should not be done after the LEDs have been soldered. If re-soldering is unavoidable, LED`s characteristics should be carefully checked before and after such repair.

3) Do not stack assembled PCBs together. Since materials of LEDs is soft, abrasion between two PCB assembled with LED might cause catastrophic failure of the LEDs.

5. Reliability Test Items & Conditions

a) Test Items

Test Item	Test Condition	Test Hour / Cycle	Sample No.
Room Temperature Life Test	25℃, DC 5500mA	1000 h	10
High Temperature Life Test	85℃, DC 5500 mA	1000 h	10
High Temperature Humidity Life Test	85℃, 85 % RH, DC 5500 mA	1000 h	10
Low Temperature Life Test	-40℃, DC 5500 mA	1000 h	10
Powered Temperature Cycle Test	-40 ℃ ~ 85℃, each 10 min, On/Off 5min , Temp. Change Time 20min, DC 5500 mA	100 cycles	10
Thermal Cycle	-40℃ / 15 min ↔ 105℃ / 15 min → Hot plate 180℃	100 cycles	10
High Temperature Storage	105℃	1000 h	10
Low Temperature Storage	-40℃	1000 h	10

b) Criteria for Judging the Damage

Item	Symbol	Test Condition (Ts = 25℃)	Limit	
			Min	Max
Forward Voltage	V_F	I_F = 5500 mA	Init. Value * 0.9	Init. Value * 1.1
Lux @1m	Ix	I_F = 5500 mA	Init. Value * 0.7	Init. Value * 1.1

6. Label Structure

a) Label Structure

Note: Denoted bin code and product code above is only an example (see description on page 5)

b) Label Explannation

Part No.:Product Code

IF:Testing Current

VF:Forward Voltage Range

Lux:Lux Range

CCT:Color Temperature Range

Date:Packing Date

Bin Code:Rank

C/N:Internal Identification Code

Remark:Special Remark

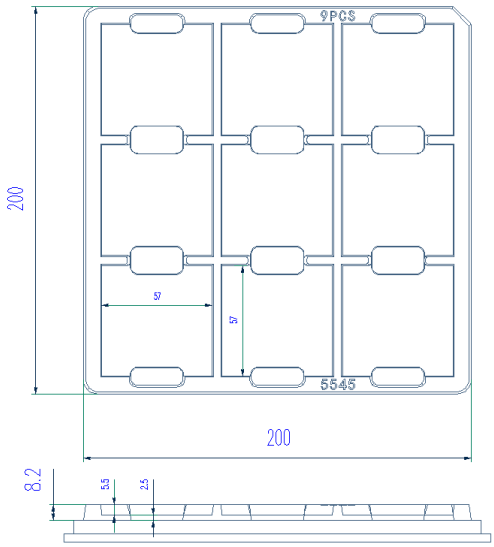
QTY:Quantity

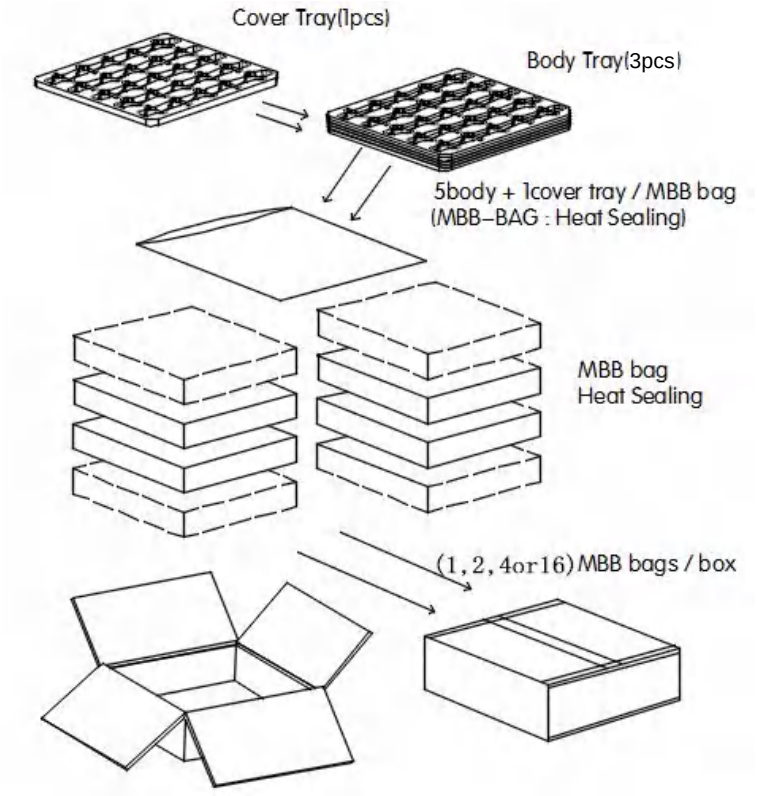
Lot No.:Production batch Number

7. Packing Structure

a) Packing Process

Progressive Direction ⟶





Notes:

① An empty tray is placed on top a 3-tier tray which contain 9 PCS each.(Smallset packing unit:27 PCS)

②A labei whit product name,quantity and lot number is placed on the upper empty.(Tray Dimension:200*200*8mm)

8. Precautions in Handling & Use

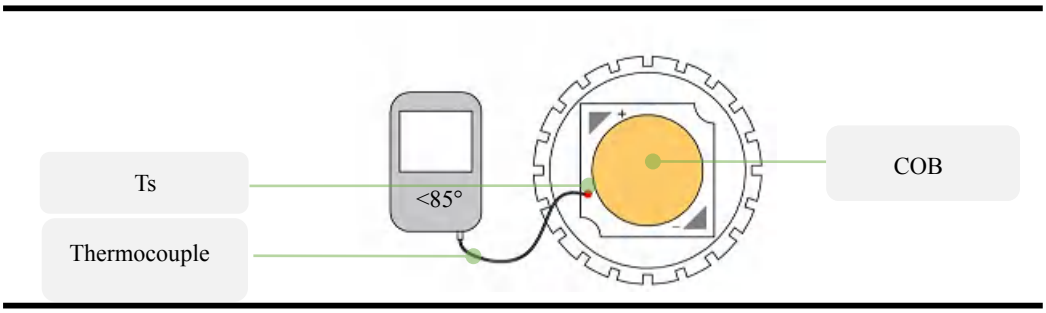
1) Store the parts in a dry, nitrogen-purged cabinet or container that actively maintains the temperature at 20℃-30℃ and the RH at no greater than 60%.

2) By using anti-static-electricity bracelets/ cushions/ overalls/ shoes/gloves and anti-static-electricity containers, it can effectively prevent static electricity and surge. The soldering iron point should be properly grounded. Use soldering by hand：Soldering bit temperature shall be 280℃ or less Heatin time: 10 seconds or less.

3) You need to take the protective measures for the product being sensitive to static electricity. It can lead to product damage or even the total invalid when the high voltage current made by static electricity is beyond the maximum rating. The ground resistance can't beyond 10Ω.

4) Please do not make the thermal grease, oil exposed to the light-emitting surface, air gun can be used to remove dirt. Guns Pressure: 0.5MPa, Time: 1 to 2 seconds, Distance: more than 20cm.

5) Any time, don't press colloid part, lest product surface come to be damaged or even invalid. It is recommended to design PCB with ground circuit. Pay special attention to the use environment of the products: Humidity must be between 50% and 80%, or else electrostatic breakdown and overcurrent damage would occur. The use temperature is -40℃~85℃. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these data sheets. LEDTEEN assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the included in these data sheets.



6) The thermal design to draw heat away from the LED junction is most critical parameter for an LED illumination system. High operating temperatures at the LED junction adversely affect the performance of LED's light output and lifetime. Therefore the LED junction temperature should not exceed the absolute maximum rating in LED illumination system.

7) During using this product, the country relative safety standards (eg. GB7000.1-2007) should be accorded with. We will not be liable for the users' acts of non-observance of the country safety standards.