



DATASHEET

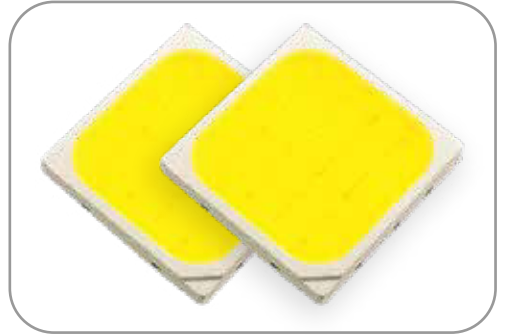
ES-E5050-509V-XX-XXX

ES-E5050-509V-XX-XXX Datasheet



FEATURES

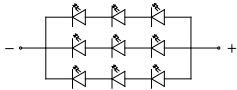
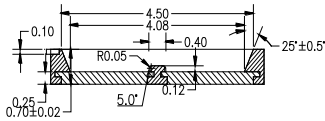
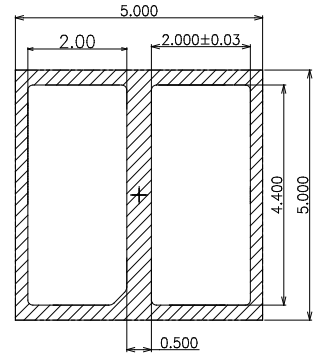
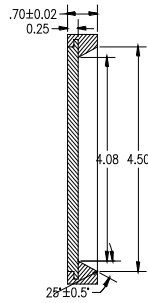
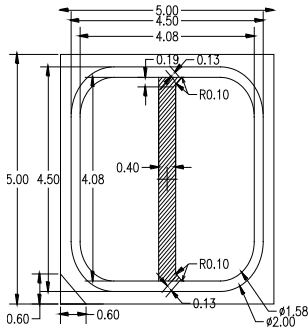
- Small Package with High Efficiency
- Low Voltage Operation, Instant Light
- Long Operation Life
- Lead Free Product
- RoHS Compliant



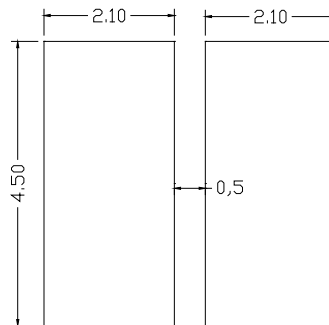
APPLICATION

- Traditional Lighting Replacement
- Ordinary Lighting
- Indoor and Outdoor Signboard Back Light
- Architechtrual / Decorative Lighting

PACKAGE DIMENSIONS



Soldering Pattern



Notes:

1. All dimensions in millimeters.
2. Tolerance is +0.15mm unless otherwise noted

OPTOELECTRONICS CHARACTERISTICS (TA=25°C)

Parameter	Test Condition	Symbol	Min	Type	Max	Unit
Forward Voltage	I _F =550mA	V _F	8.5	---	10	V
Reverse Current	V _R =20V	I _R	---	---	20	μA
View Angle	I _F =550mA	2θ _{1/2}	---	120	---	deg.
Electrostatic Discharge	HBM	ESD	---	---	2000	V
Color Tolerance	I _F =550mA	SDCM	---	---	5	---

ABSOLUTE MAXIMUM RATINGS (TA=25°C)

Parameter	Symbol	Rating	Unit
Forward Current	I _F	500	mA
Pulse Forward Current	I _{FP}	1000	mA
Power Dissipation	P _d	5000	mW
Reverse Voltage	V _R	20	V
Operating Temperature	T _{OPR}	-40~+105	°C
Storage Temperature	T _{stg}	-40~+105	°C
Junction Temperature	T _j	125	°C
Thermal Resistance	R _θ	2.2	°C/W
Photoelectric Efficiency	IPCE	≥60	%
Soldering Temperature	T _{slid}	260°C for 10sec	

Notes:

1. Frequency 10KHz, duty ratio ≤10%.
2. The forward pulse current is the maximum current used by the chip at 25°C.

MASS PRODUCTION LIST (IF=550MA;TA=25°C)

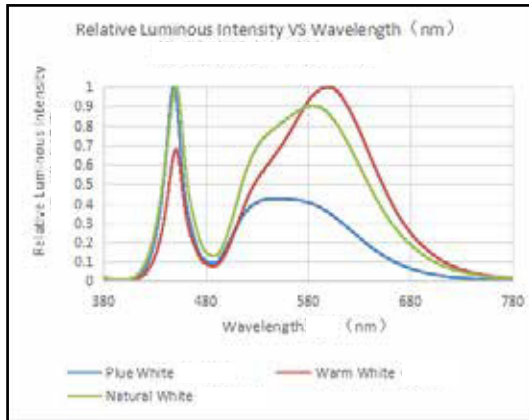
Part no.	CRI	CCT(K)	Lumen (lm)	
			Min	Max
ES-E5050-509V-L1-XXX	70	6500	750	800
	70	5700	750	800
	70	4000	750	800
	70	3000	700	750
ES-E5050-509V-L2-XXX	70	6500	900	950
	70	5700	850	900
	70	4000	850	900
	70	3000	850	900

Note:

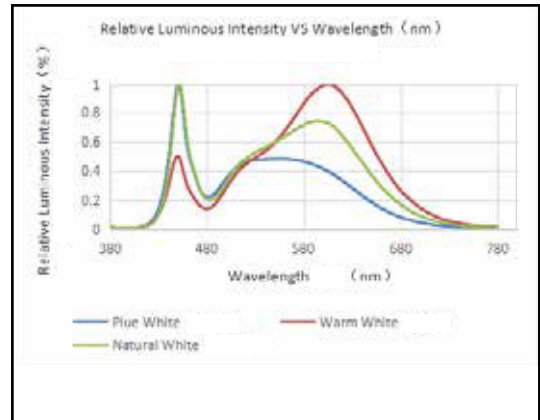
1. The test error

Vf: ±3% XY : ±0.005 Φ : ±10% Ra:- 0.5+2

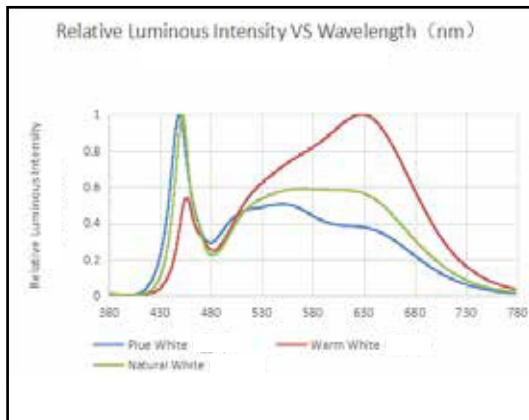
SPECTRAL DISTRIBUTION Ra70



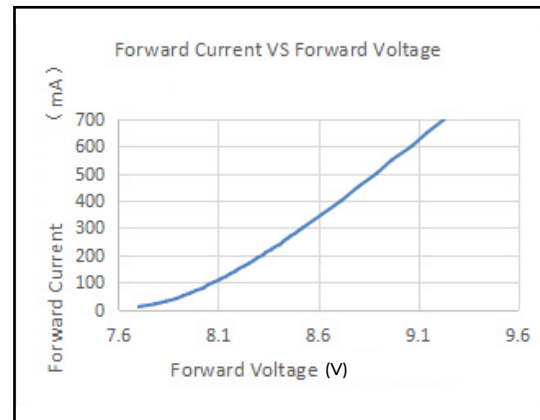
SPECTRAL DISTRIBUTION Ra80



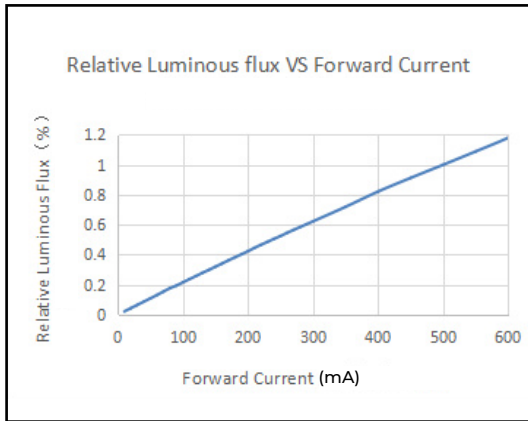
SPECTRAL DISTRIBUTION Ra90



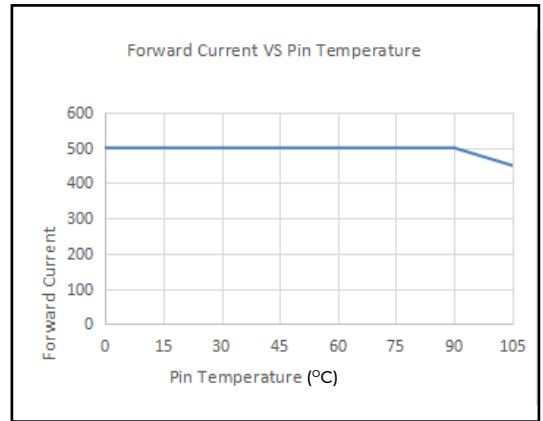
FORWARD VOLTAGE VS FORWARD CURRENT



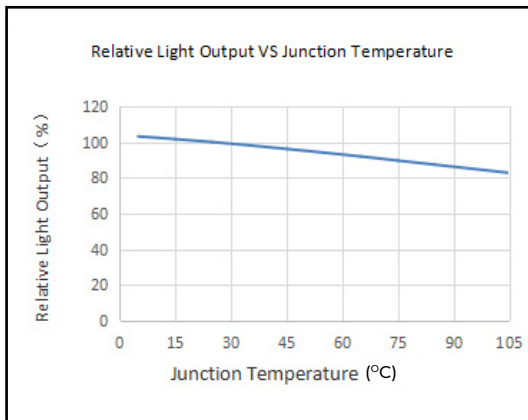
RELATIVE LUMINOUS VS FORWARD CURRENT



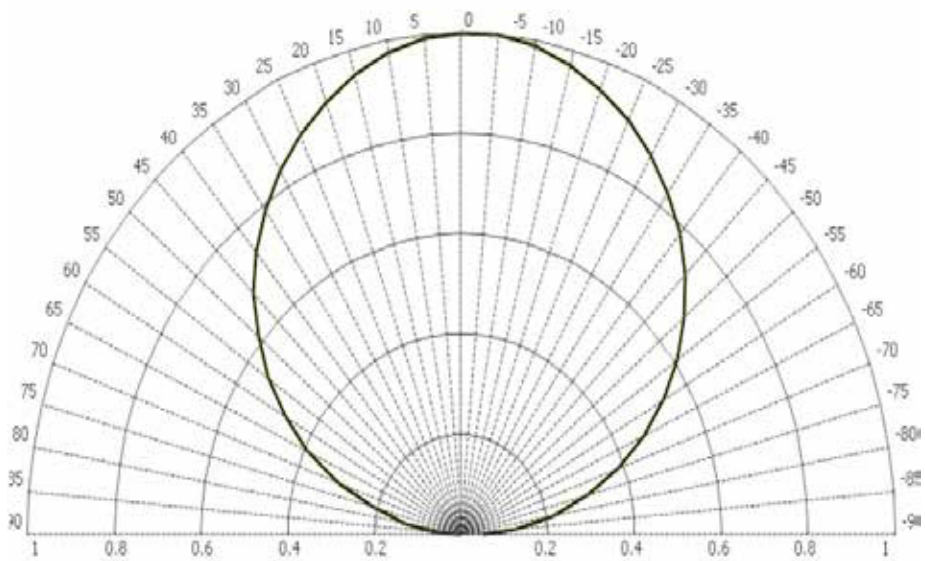
AMBIENT TEMPERATURE VS FORWARD CURRENT



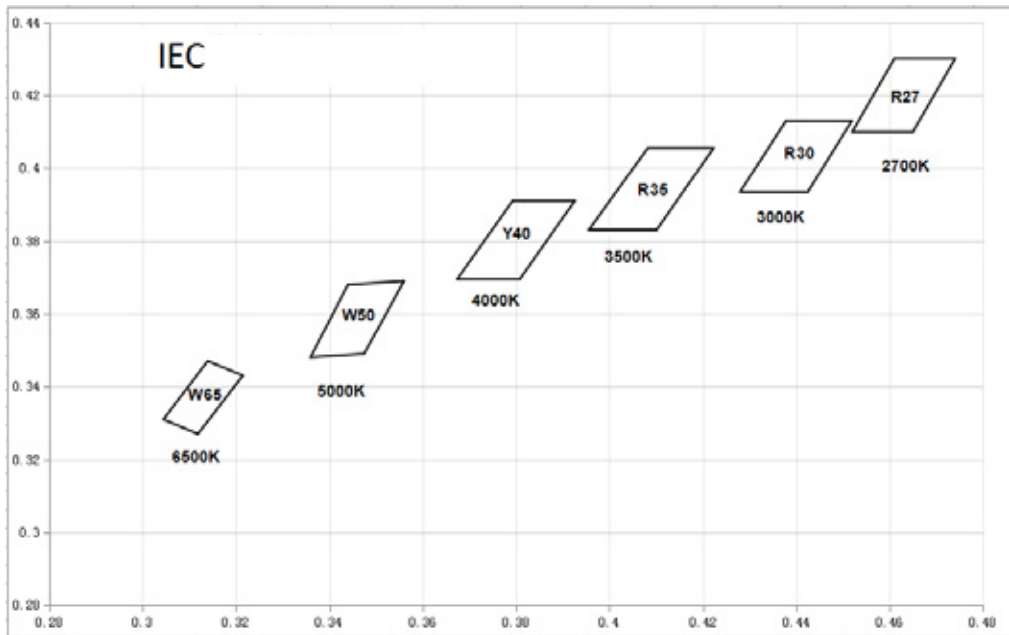
RELATIVE FLUX VS JUNCTION TEMPRATURE



VIEW ANGLE DISTRIBUTRATION



CIE CHROMACITY DIAGRAM (IF=800mA; TA=25°C (CIE))



COLOR RANK: (IF=800mA;TA=25°C) Bin

CODE	CCT	X	Y
R27	2700K	0.461	0.43
		0.452	0.41
		0.465	0.41
		0.474	0.43

CODE	CCT	X	Y
R30	3000K	0.4378	0.413
		0.428	0.3935
		0.4425	0.3935
		0.4519	0.413

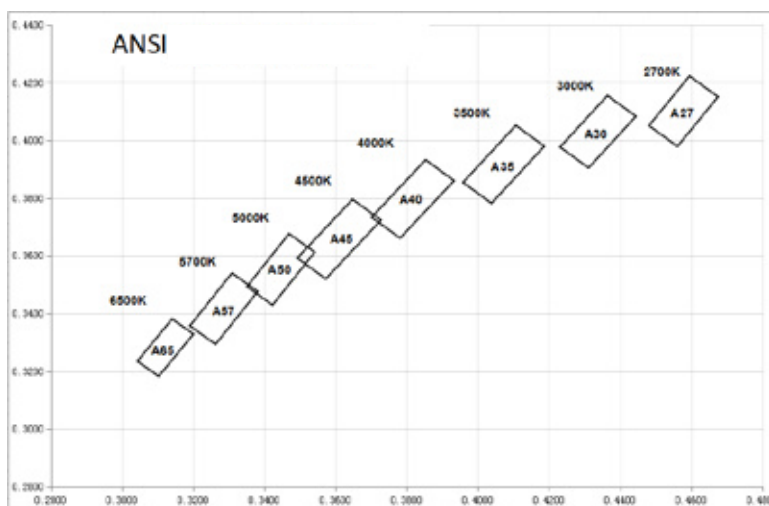
CODE	CCT	X	Y
R35	3500K	0.4082	0.4055
		0.3956	0.383
		0.4101	0.383
		0.4223	0.4055

CODE	CCT	X	Y
Y40	4000K	0.3793	0.391
		0.3674	0.3695
		0.3808	0.3695
		0.3926	0.391

CODE	CCT	X	Y
W50	5000K	0.344	0.368
		0.336	0.348
		0.3475	0.349
		0.356	0.369

CODE	CCT	X	Y
W65	6500K	0.314	0.347
		0.3045	0.331
		0.3119	0.327
		0.3215	0.343

CIE CHROMACITY DIAGRAM (IF=800mA; TA=25°C (CIE)



COLOR RANK: (IF=800mA;TA=25°C) Bin

CODE	CCT	X	Y
A27	2700K	0.4595	0.4223
		0.4481	0.4051
		0.4561	0.3979
		0.4675	0.4151

CODE	CCT	X	Y
A30	3000K	0.4365	0.4155
		0.4231	0.3977
		0.4311	0.3905
		0.4445	0.4083

CODE	CCT	X	Y
A35	3500K	0.4107	0.4052
		0.3959	0.3854
		0.4039	0.3782
		0.4187	0.3980

CODE	CCT	X	Y
A40	4000K	0.3854	0.3932
		0.3702	0.3734
		0.3782	0.3662
		0.3934	0.3860

CODE	CCT	X	Y
A45	4500K	0.3649	0.3796
		0.3493	0.3592
		0.3573	0.3520
		0.3729	0.3724

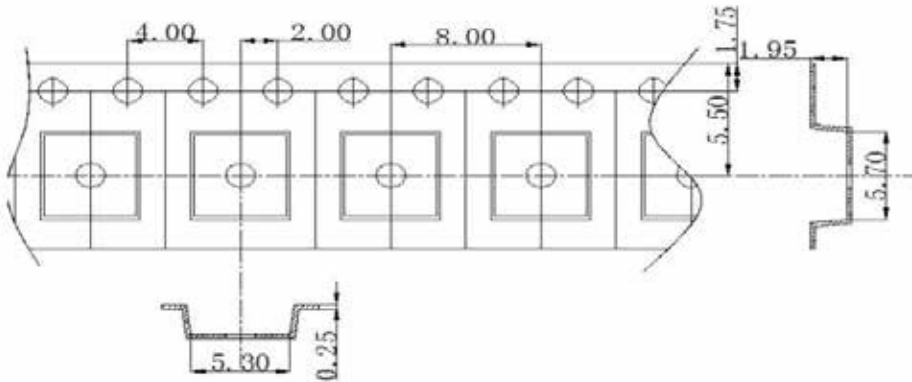
CODE	CCT	X	Y
A50	5000K	0.3470	0.3677
		0.3352	0.3493
		0.3424	0.3429
		0.3542	0.3613

CODE	CCT	X	Y
A57	5700K	0.3310	0.3541
		0.3192	0.3357
		0.3264	0.3293
		0.3382	0.3477

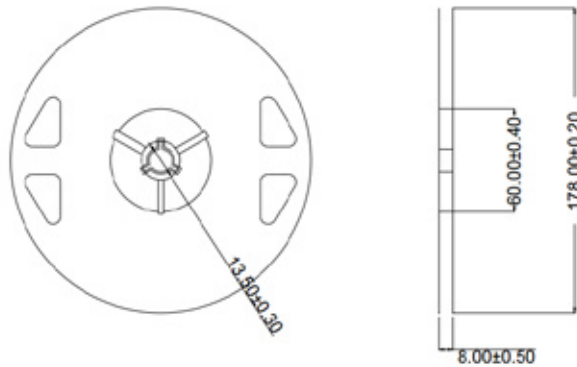
CODE	CCT	X	Y
A65	6500K	0.3142	0.3381
		0.3044	0.3235
		0.3104	0.3183
		0.3202	0.3329

PACKAGING SPECIFICATIONS

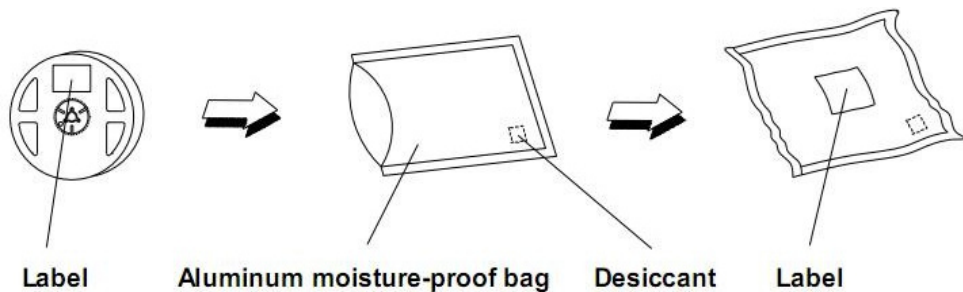
Dimensions Of Tape



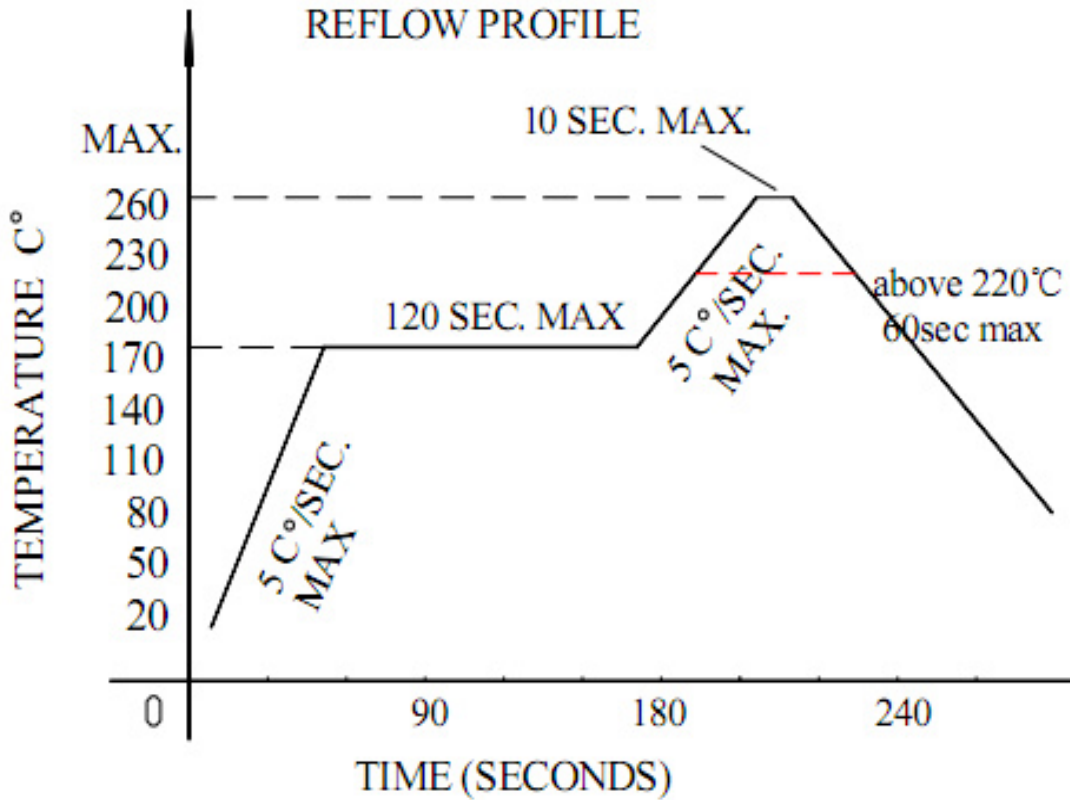
Dimensions Of Reel



Specification



PACKAGING SMT REFLOW SOLDERING INSTRUCTIONS SMT



Notes:

1. Reflow soldering should not be done more than two times.
2. When soldering, do not put stress on LEDs during heating.

PRECAUTIONS FOR USE

1) The encapsulated material of the LEDs is silicone ,so the surface of LED colloid is softer, forcing the colloid surface hard will affect the reliability of LED.

2) Material confirmation. Whether the LED Bin specifications of the material are consistent , such as whether VF, XY, brightness and so on belong to the same specification, the same specification should be used together, if not the same specification LED is applied to the same object, it should be evaluated first, (if different VF or XY cast together may produce difference in brightness or color).

3) Packaging and storage.

3.1) Before opening packaging, avoid moisture entry into LED. SMD series LED is suggested to be stored in a drying cabinet with built-in desiccant. The storage environment is 5-30 centigrade, no more than 50% humidity. If storage time is over 3 months, LED needs to be re dehumidifying (65 degrees centigrade for more than /24 hours).

3.2) Open the precautions after packing. LED is a surface mount. When the LED is welded, the internal separation of LED may occur. The luminescence efficiency is affected and the luminance decreases or the color variation. The following are the matters to be paid attention to:

A) Before opening the package, please check the packaging bag for air leakage. If there is any air leakage, please return it to our company to re-bake the dehumidifying package before use.

B) After opening the package, welding should be completed as soon as possible (within 12hours).

C) The remaining materials are sealed or placed in an environment of 5~40 C and no more than 30% humidity.

D) If the open package is more than 24 hours (< 168 hours) or the humidity card is changed from blue to pink, LED needs to be dehumidifying again (65 degrees centigrade for more than /24 hours). If the package is opened for more than 168 hours, it is necessary to dismantle the tape and remove the moisture at 150°C /2h.

PRECAUTIONS FOR USE

3.3) LED electrode and bracket are made of silver plated copper alloy. The silver layer on the surface is easy to be affected by corrosive gases. Please avoid contacting with corrosive environment to cause LED discoloration, so as to avoid the poor weldability of LED and influence the photoelectric performance. Avoid sudden changes in temperature and humidity of the environment, especially under high humidity environment, easy to produce water vapor condensation.

4) Electrostatic protection. LED is a chip sensitive electronic component. Various measures should be taken to avoid static electricity, such as wearing an electrostatic bracelet or anti-static gloves during use. All devices, equipment and instruments should be well grounded.