

承認書

SPECIFICATION FOR APPROVAL

● 客戶名称	
● Customer	
● 客戶品號	
● Customer Part No.	
● 产品品號	HC-B3-60628A02-RGBA6
● Brightek Part No.	
● 产品規格描述	6028 四脚共阴极 RGB
● Specification	
● 製錶人	王清
● Prepared By	
● 審 核	李东平
● Checkedy	
● 客 戶 回 簽	
● Customer	
● 送样日期:	
● Deliver date:	

說明：一、謹致執事者：茲提供敝公司產品之有關詳細規格及圖面資料，敬請給予辦理測試認定手續。同時敬請 送返一份附有貴公司簽認之測試認定後之樣品認定書。

We are sending you our specification and drawings for your approval. Please return to us one copy "For Approval" with your approved signatures.

二、客戶意見欄 Customer' S Proposal

☐ Approve 承認 (請於認可欄中簽名)

☐ Disagree 不同意

Reason 原因:

光宇集团

中高端光电元件定制企业，20 多年封装经验，品质稳定，值得信赖，体现光的价值。

光宇集团国际（香港）有限公司

GTU Group International (HK) Co., Limited

广东光宇半导体科技有限公司

工厂地址：东莞市寮步镇松湖智谷 A2 栋 3 楼

东莞市弘呈光电有限公司

DongGuan Hong cheng Optoelectronics Co., Ltd.

工厂地址：广东省东莞市樟木头镇莞樟路樟木头段 15 号 15 栋 2108 号

ADD: Room 2108, No.1 building, Wanhui Garden, East Guanzhang Road, Zhangmutou, Dongguan, Guangdong, China

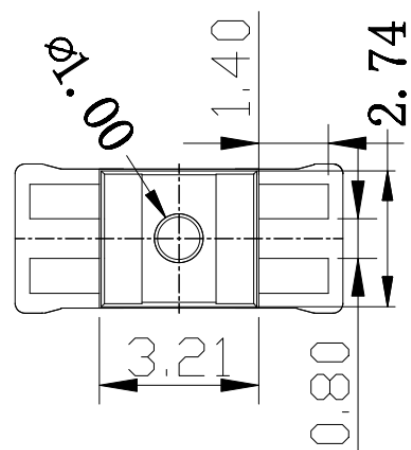
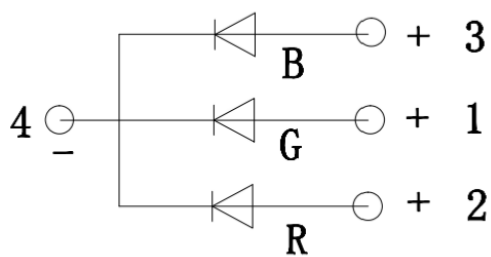
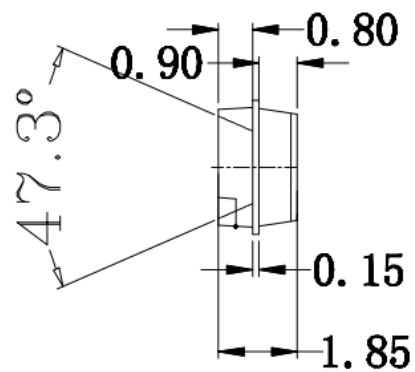
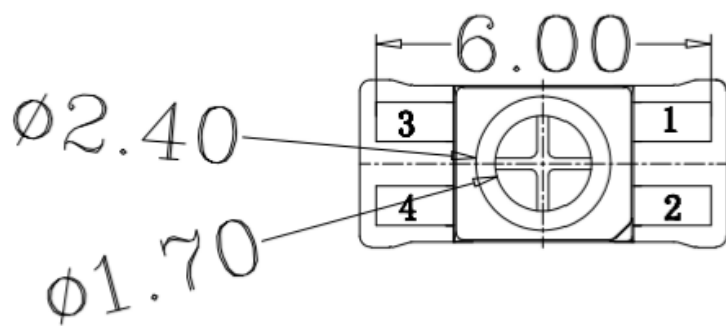
TEL: 0769-87797616 87182291 Fax: 0769-82337396 www.hc-led168.com

业务联系人：李顺阳 13925714318 (微信同号) 销售总监 企业邮箱: sales@led-hc.com



版本/版次	修改日期	修改内容

一、□ □ □ Outline dimensions □



二、□□□□ Photoelectricity Parameter

□□□□□ Ambient temperature□ 25℃ □□ humidity□ RH60%□

Parameter	Symbol		Value			Unit	Test condition
			Min.	Typ.	Max.		
Forward Voltage	Vf	R	2.0	...	2.4	V	If=20mA
		G	2.8	...	3.4	V	If=20mA
		B	2.8	...	3.4	V	If=20mA
Luminous intensity	IV	R	400	...	1000	mcd	If=20mA
		G	1400	...	2200	mcd	If=20mA
		B	300	...	500	mcd	If=20mA
Wavelength	WLD	R	620	...	630	nm	If=20mA
		G	520	...	530	nm	If=20mA
		B	460	...	470	nm	If=20mA
Reverse current	Ir		...	...	2	μ A	Vr=5V
Viewing angle	2 θ 1/2		...	120	...	Deg	If=20mA
Junction Temperature	Tj		110			℃	If=20mA
Electrostatic Discharge clsification	ESD		1000V				

□□□□□□□□ ±15%□□□□□□□ ±1nm□□□□□□□□ ±0.05V

Remark□ The tolerance of intensity:±15%, The tolerance of wave length:±1nm,The tolerance of forwards voltage: ±0.05V.
Only reference for above data when testing.

绝对最大额定值
环境温度 25℃ 湿度 RH60%

Item	Symbol	Value	Unit	Remark
Forward Current	IF	60	mA	---
Peck forward current	IFM	75	mA	F=1KHZ, (duty cycle)1/10
Reverse Voltage	VR	7	V	---
Power Dissipation	Pm	200	mW	---
Operation temperature	Tamb	-25 +80	℃	---
Storage temperature	Tstg	-40 +60	℃	---
Soldering temperature	Tsol	240	℃	≤3S Soldering≤3S

Typical photoelectricity characteristic curve chart

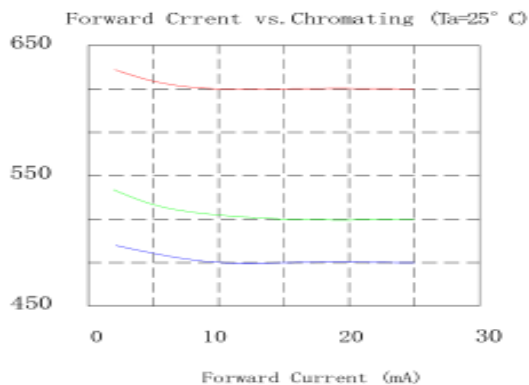
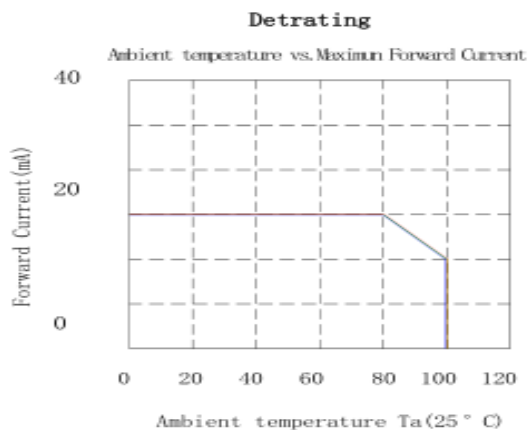
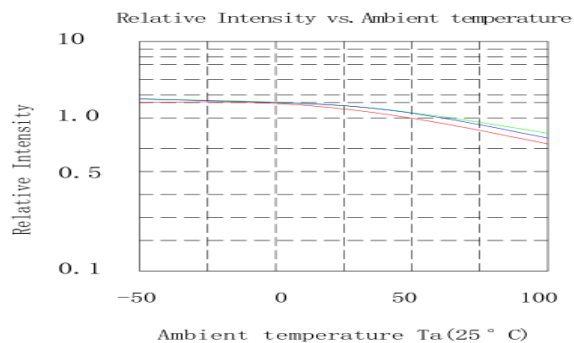
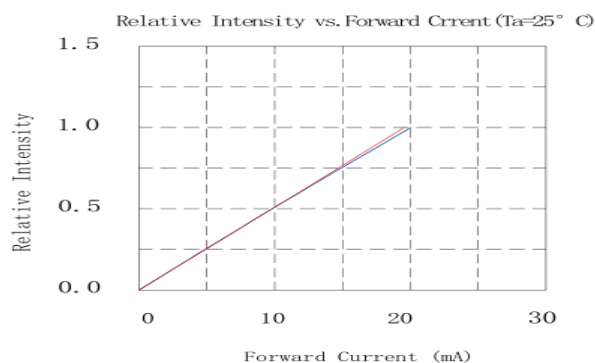
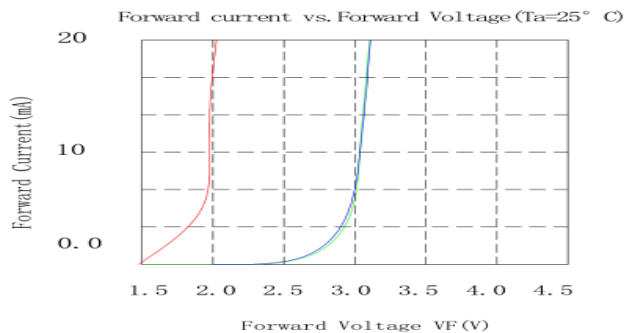
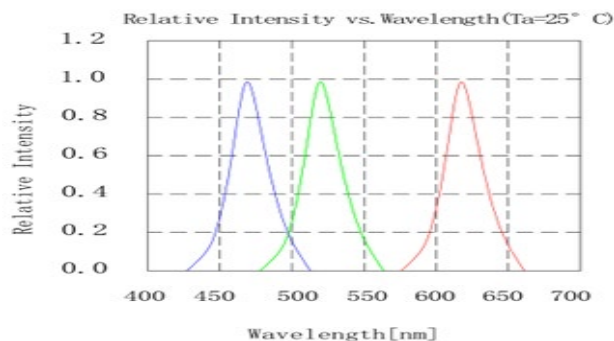
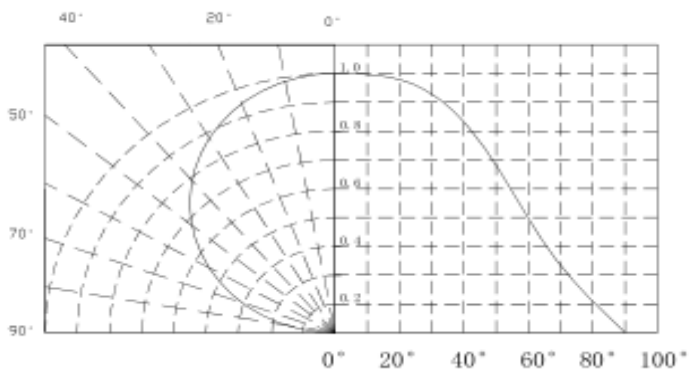


Diagram characteristics of radiation



五、□□□□□□□ Reliability Test Project

□□ Description	□□ Item	□□□□ Test criterion	□□□□ Test condition	□□□□ Test time	□□ Qty	□□□□ Fail qty
□□□□ Life test	□□□□□□ Life test(room temperature)	JIS7021:B4	Ta=25°C±5°C IF=60mA	1000Hrs	22	0
□□□□ Ambience test	□□□□ High temperature store	JIS7021:B10 MIL-STD-202:210A MIL-STD-750:2031	Ta=85°C±5°C	1000Hrs	22	0
	□□□□ Low temperature store	JIS7021:B12	Ta=-35°C±5°C	1000Hrs	22	0
	□□□□□□ High temperature/ humidity test	JIS7021:B11 MIL-STD-202:103D	Ta=85°C±5°C RH=85%	1000Hrs	22	0
	□□□□□□ Cold / Heat strike test	JIS7021::B4 MIL-STD-202:107D MIL-STD-750:1026	30min -10°C±5°C→100°C±5°C 5min 5min	50Cycles	22	0
	□□□□□□ Cold and heat cycle test	JIS7021:A3 MIL-STD-202:107D MIL-STD-705:105E	5min 5min 5min -35°C□25°C□85°C□-35°C 30min 5min 30min 5min	50Cycles	22	0

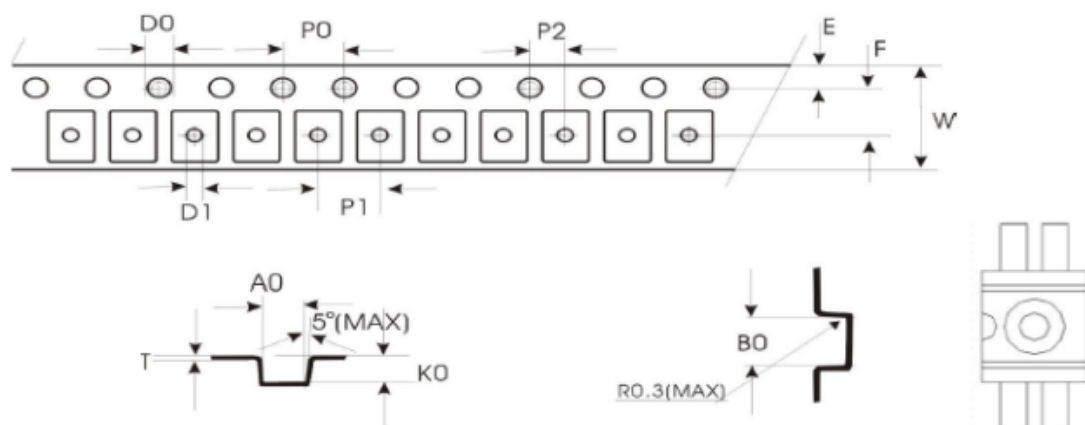
□□□□ Judging criterion:

□□ Item	□□ Symbol	□□□□ Experiment condition	□□□□ Criteria	
			Min.	Max.
Forward Voltage	V _F	I _F =3*20mA	----	Initial Datex1.1
Reverse Current	I _R	V _R =7V	----	2μ A
Luminous Intensity	I _V	I _F =3*20mA	Initial Datex0.8	----

六、Tapping specifications (Units: mm) 载带规格 (单位: mm)

Loaded quantity: 2000 pcs/reel 装载数量: 2000个/卷

Tape Dimension



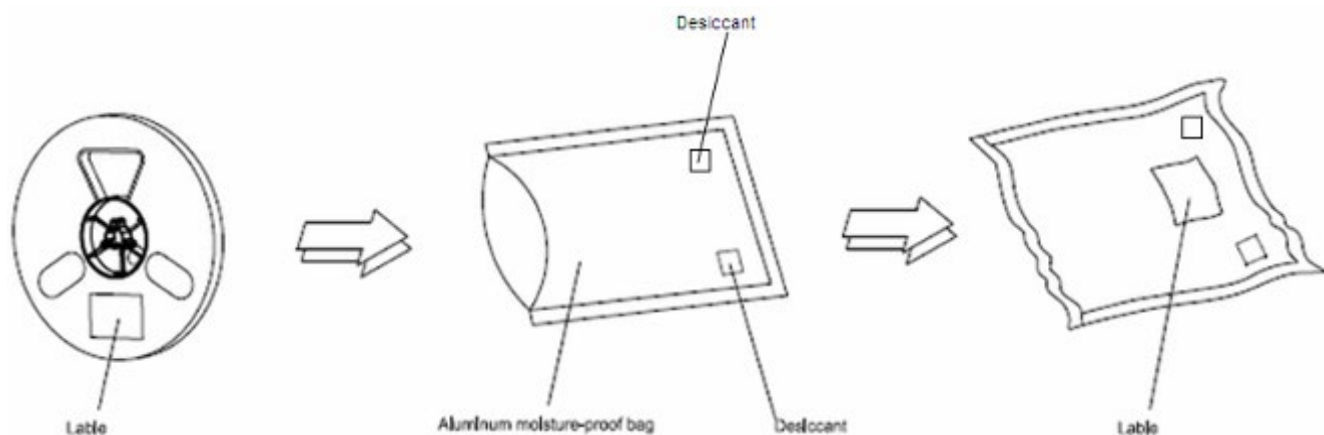
Symbol	A0	B0	K0	P0	P1	P2	T
Spec	3.10±0.1	6.45±0.05	2.15±0.05	4.0±0.1	4.0±0.1	2.00±0.05	0.23±0.03
Symbol	E	F	D0	D1	W	10P0	
Spec	1.75±0.10	5.5±0.05	1.5±0.1	1.5±0.1	12±0.1	40.0±0.2	

Unit: mm

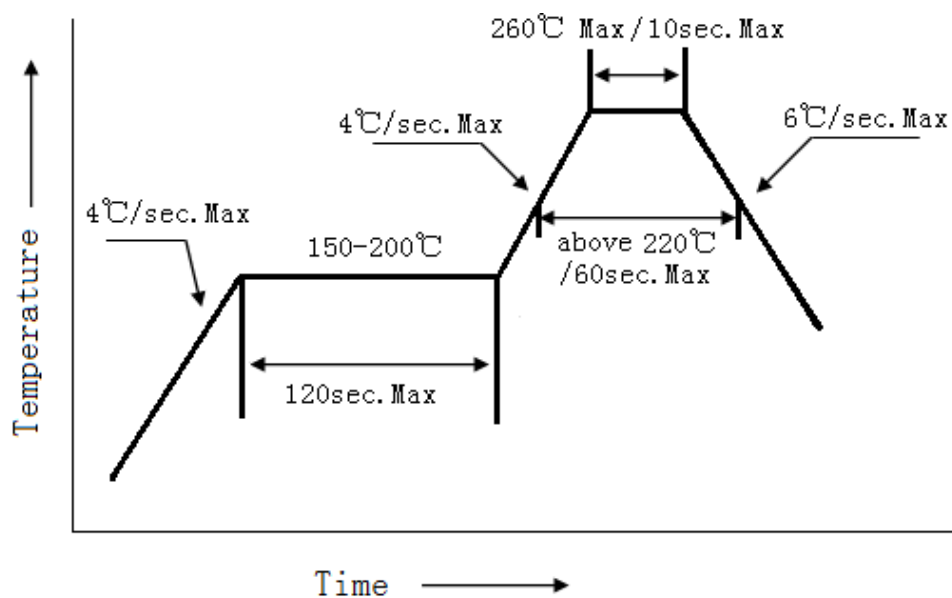
Note: The tolerances unless mentioned is $\pm 0.1\text{mm}$, Unit: mm

备注: 标注公差为 $\pm 0.1\text{mm}$, 单位: mm

七、Moisture Resistant Packaging 防潮袋包装



SMT Reflow Soldering Instructions SMT 回流焊说明



•Soldering iron 烙铁焊接

1.When hand soldering, keep the temperature of iron below less 300°C less than 3 seconds.

当手工焊接时，烙铁的温度必须小于 300°C，焊接时间不可超过 3 秒。

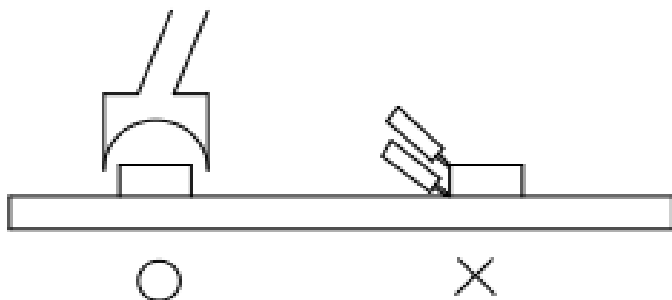
2.The hand solder should be done only one time.

手工焊接次数只可一次。

• Repairing 修补

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure).It should be confirmed in advance whether the characteristics of LEDs will not be damaged by repairing.LED.

回流焊后的材料不得返修。当产品必须返修时，必须使用双头烙铁（如下图）作业，但必须事先确认此种方式会不会损坏 LED 本身的特性。



八、Cautions 注意事项

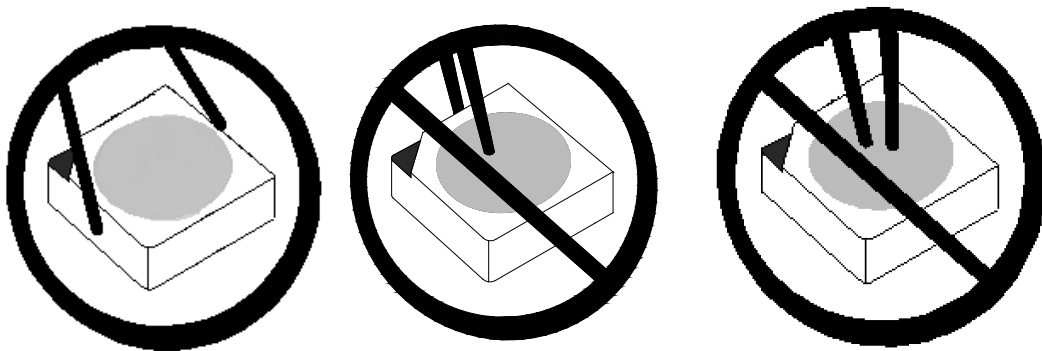
The encapsulated material of the LEDs is silicone. Therefore the LEDs have a soft surface on the top of package. The pressure to the top surface will be influence to the reliability of the LEDs. Precautions should be taken to avoid the strong pressure on the encapsulated part. So when use the picking up nozzle, the pressure on the silicone resin should be proper.

LED 封装胶为硅胶/硅树脂，故 LED 胶体表面较软，用力按压胶体表面会影响 LED 可靠性。因此应采取相应的预防措施，避免对封装材料表面施加过大的力。当使用吸嘴时，胶体表面的压力要恰当。

Handling Precautions 处理防备措施

1.Handle the component along the side surface by using forceps or appropriate tools; do not directly touch or Handle the silicone lens surface, it may damage the internal circuitry.

使用适当的工具从材料侧面夹取，不可直接用手或尖锐金属挤压胶体表面，它可能会损坏 LED。



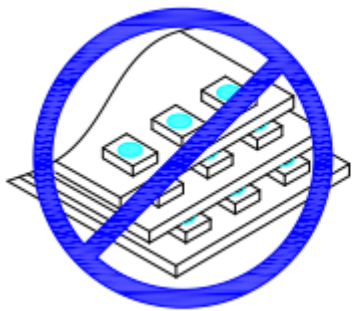
2. The outer diameter of the SMD pickup nozzle should not exceed the size of the LED to prevent air leaks. The inner diameter of the nozzle should be as large as possible. A pliable material is suggested for the nozzle tip to avoid scratching or damaging the LED surface during pickup. The dimensions of the component must be accurately programmed in the pick-and-place machine to insure precise pickup and avoid damage during production.

为防止气压泄漏，SMD 吸咀外径不可以超过 LED 尺寸，吸咀内径尺寸应尽可能大，吸咀顶端材质建议采用柔软材料以防在吸取期间刮伤或损坏 LED 胶体表面。零件的尺寸必须在取料机中精确编程，以确保精确取料，避免在生产过程中损坏。



3. Do not stack together assembled PCBs containing LEDs. Impact may scratch the silicone lens or damage the internal circuitry.

不可将模组材料堆积在一起，它可能会损坏 LED。



4. Not suitable to operate in acidic environment, PH<7.

不可用在 PH<7 的酸性场所。



5. LED operating environment and sulfur element composition cannot be over 100PPM in the LED mating usage material.

LED 配套使用材料中的工作环境和硫元素成分不能超过 100PPM。

6. When we need to use external glue for LED application products, please make sure that the external glue matches the LED packaging glue. Additionally, as most of LED packaging glue is silica gel, and it has strong Oxygen permeability as well as strong moisture permeability; in order to prevent external material from getting into the inside of LED, which may cause the malfunction of LED, the single content of Bromine element is required to be less than 900PPM, the single content of Chlorine element is required to be less than 900PPM, the total content of Bromine element and Chlorine element in the external glue of the application products is required to be less than 1500PPM.

当我们需要使用外封胶涂抹 LED 产品时，应确保外封胶与 LED 封装胶水相匹配，因为大多数 LED 的封装胶水为硅胶，它有较强的氧化性和较强的吸湿性，必须防止外封材质进入 LED 内部以造成 LED 的损伤，单一的溴元素含量要求小于 900PPM，单一氯元素含量要求小于 900PPM，在涂抹 LED 产品时要求外封胶溴元素与氯元素总含量必须小于 1500PPM。

九、Storage 存储

1. The LED should be stored at 30°C or less and 60%RH or less before opening the package. The storage shall not be over three month.

打开包装之前，LED必须储存在温度30°C以下，湿度60%以下的环境下。 储存期不得超过三个月。

2. After opening the package, if the LEDs will be infrared reflow soldering, Oxygen phase reflow soldering or any other welding.

打开包装后，如果LED将进行红外回流焊，氧相回流焊或其他任何焊接，需满足以下两个条件。

a. must be used within 24 hours.必须在24小时内使用。

b. stored at less than 30%RH.储存在低于30%RH。

3. If the situation does not satisfy a or b, the LEDs must be roasted.

如果情况不满足a或b，则必须经过烘烤后方可使用。

4. If the LEDs need to be roasted, the roast conditions is :65°C±5°C/12hours.

如果需要烘烤LED，烘烤条件为：65°C ± 5°C / 12小时。

5. Acid, alkali and corrosive gas should be avoided in storage environment and intensively shock and high magnetic field also avoided.

材料储存环境中应避免接触酸、碱、腐蚀性气体，强烈震动或挤压和强磁场环境。

ESD(Static Electricity) ESD（静电）

1. Static electricity or Peak surge voltage may damage LED and instantaneous voltage shall be avoided when turning on or off the lights.

静电或峰值浪涌电压可能会损坏LED，并且在打开或关闭灯时应避免瞬时电压。

2. Please wear anti-static wrist strap, anti-static glove and anti-static shoes and , and all the equipment as well as instruments must be grounded well. After LED damaged, leakage current increases obviously and forward voltage drops under low current, , which leads failed light under low current.

请佩戴防静电腕带、防静电手套和防静电鞋，并且，所有设备和仪器必须良好接地。 LED损坏后，在低电流下漏电流明显增加，正向电压下降，从而导致在低电流下无法点亮。

Cleaning 清洁用品

1. Ultrasonic cleaning is not allowed. We recommend isopropyl alcohol or pure alcohol to for cleaning or dipping within 1 minute and reuse after 15 minutes in room temperature. The radiant surface shall be clean after cleaning and otherwise may influence radiant color.

不允许超声波清洗。 我们建议在1分钟内清洁或浸入异丙醇或纯酒精，并在室温下放置15分钟后再使用。 清洁后应清洁辐射表面，否则可能影响辐射颜色。

2. Isoamyl acetate, trichloroethylene, acetone, sulfide, nitride, acid, alkali and salt shall be avoided from LED, which may cause damage to LED.

应避免LED胶面使用乙酸异戊酯，三氯乙烯，丙酮，硫化物，氮化物，酸，碱和盐清洁，否则会损坏LED。

Test 测试

1.The LED should be driven under rated current and current-limiting resistor shall be added in the circuit so as to avoid damage to LED from enormous current fluctuation caused by slight voltage change.

LED应在额定电流下驱动，并在电路中增加限流电阻，以免因轻微电压变化而引起的巨大电流波动从而损坏LED。

2.Surge voltage shall be avoided when the circuit turns on or off, so to not damage the LED.

电路打开或关闭时，应避免浪涌电压，以免损坏LED。

Other 其他

Radiant color of LED will be slightly changed under different current and it is recommended that LED is be used in series with resistor. when LED lighted, please don't watch the radiant surface, otherwise LED may damage your eyes.

在不同的电流下，LED的辐射颜色会略有变化，建议与电阻串联后使用。当LED点亮时，请勿观看辐射表面，否则可能损坏眼睛。