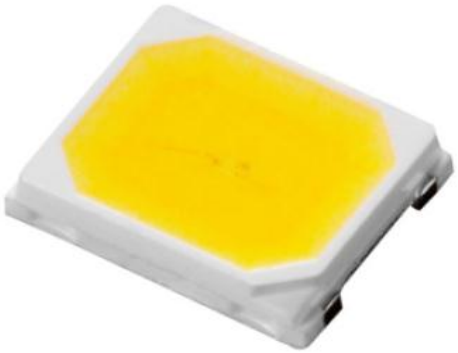
SMD • 2835 0.2W Series
A2835SS1-03-12-XXX-0



Sinotron 2835 0.2W Series is a Mid-power LED have high efficiency, High CRI, wide viewing angle. Sinotron 2835 0.2W Series is a direct drop-in replacement for other industry standard 2835 product.
中电晶创 2835 0.2W 系列有高光效、高显色指数、大发光角度特点的中功率 LED，并且可以直接替代 2835 其他标准产品。

Features 特征

- Top View White LEDs
  表面白光LEDs
- High luminous intensity and high efficiency
  高光通量和高光效
- Wide viewing angle
  宽的发光角度
- For SMT Assembly
  适用SMT组装
- Pb-free
  无铅
- RoHS compliance.
  符合RoHs指令要求

Application 应用

- T8,Panel Lighting
  T8、平板灯等照明
- Indicator and in office and family equipment
  指示器、办公和家庭设备
- General use
  其他一般照明应用

Naming Rule 命名规则

A 2835-SS 1-03-12-65 E-0

A B C D E F G H I

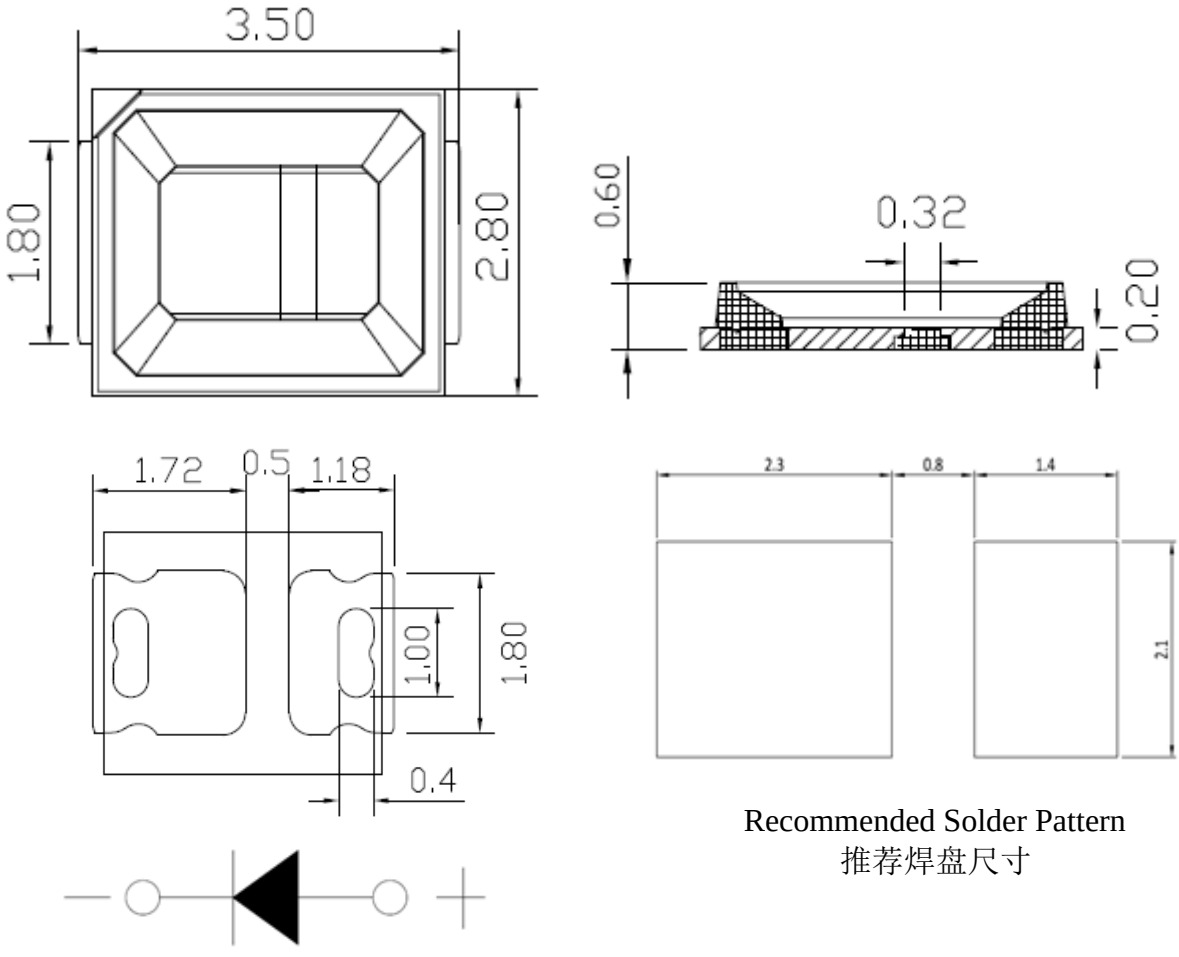
C Power 功率 0.2W

E Voltage 电压 (03=3V)

G CCT 色温 (65=6500K)

H CRI 显色指数 (E=80CRI)

Package Outline Dimensions 外观尺寸



Recommended Solder Pattern
推荐焊盘尺寸

Remarks 备注：

1. All dimensions are in millimeters.
   所有尺寸单位是毫米
2. Dimension tolerance: ±0.25mm (0.010 in). (unless otherwise noted).
   除了特别标注外，尺寸公差为±0.25mm

Product Selection Guide 产品选择指南

(Ts=25℃, IF=60mA)

Part number 料号	CRI Minimum 显色指数最小值	Φlm Minimum 光通量最小值	Φlm Typical 光通量典型值	CCT 色温
A2835SS1-03-12-27C-0	70	22	24	2700
A2835SS1-03-12-30C-0	70	24	25	3000
A2835SS1-03-12-40C-0	70	26	27	4000
A2835SS1-03-12-50C-0	70	26	27	5000
A2835SS1-03-12-65C-0	70	26	27	6500
A2835SS1-03-12-27E-0	80	20	22	2700
A2835SS1-03-12-30E-0	80	22	23	3000
A2835SS1-03-12-40E-0	80	24	25	4000
A2835SS1-03-12-50E-0	80	24	25	5000
A2835SS1-03-12-65E-0	80	24	25	6500

Remarks 备注:

1. Tolerance of Luminous Flux is ± 10%.
   光通量公差为± 10%。

Absolute Maximum Rating Value 极限规格 (Ts=25℃)

Parameter 参数	Symbol 符号	Maximum Rating 最大值	Unit 单位
Forward Current 正向电流	I_F	75	mA
Pulse Forward Current 正向脉冲电流	I_{FP}	150	mA
Power Dissipation 消耗功率	P_D	255	mW
Operating Temperature 操作温度	T_{opr}	-40 ~ 85	℃
Storage Temperature 储存温度	T_{stg}	-40 ~ 100	℃
Junction Temperature 结温	Tj	115	℃
Reverse Voltage 反向电压	V_R	6	V

Remarks 备注:

1. IFP condition with pulse width ≦10ms and duty cycle ≦10%.
   正向脉冲电流条件：脉冲宽度≦10ms 和占空比≦10%。
2. Sinotron 2835 series LED product are not designed to be driven in reverse bias, so we strongly recommended driving our production with right way.
   中电晶创 2835 系列 LED 产品不是设计用于反向偏置驱动，因此我们推荐正确方式驱动此产品。

Electrical/Optical Characteristics 电性与光学特性 (Ts=25℃)

Parameter 参数	Symbols 符号	Min 最小	Typical 典型值	Max 最大	Units 单位	Conditions 测试条件
Viewing Angle 角度	2θ1/2	---	120	---	Deg	IF=60mA
Forward Voltage 正向电压	VF	2.8	---	3.4	V	IF=60mA
Color Rendering Index^{70} 显色指数	CRI	70	---	---	---	IF=60mA
Color Rendering Index^{80} 显色指数	CRI	80	---	---	---	IF=60mA
Reverse Current 反向电流	I_R	---	---	10	uA	VR=6V
Thermal Resistance 热阻	R_{th}	---	25	---	℃/W	IF=60mA

Remarks 备注：

1. 2θ1/2 angle is from optical centerline at the luminous intensity is 1/2 the optical centerline value.
   2θ1/2角度是光强为法向光强的1/2的位置夹角。
2. Tolerance of Luminous Flux is ± 10%.
   光通量公差为± 10%。
3. Tolerance of Voltage is ±0.1V.
   电压公差为±0.1V
4. Tolerance of chromaticity coordinate is ±0.007.
   色坐标公差为±0.007
5. Tolerance of CRI is ±2.
   显色指数公差为±2

Luminous Flux Bin 光通量档位 (Ts=25℃)

Parameter 参数	Symbols 符号	Bin Code 档位代码	Actual parameter 实际参数	Units 单位	Testing Conditions 测试条件
Luminous Flux 光通量	Φ	22-24	22-24	Lm	IF=60mA
		24-26	24-26		
		26-28	26-28		

Remarks 备注：

1. Tolerance of Luminous Flux is ± 10%.
   光通量公差为± 10%。

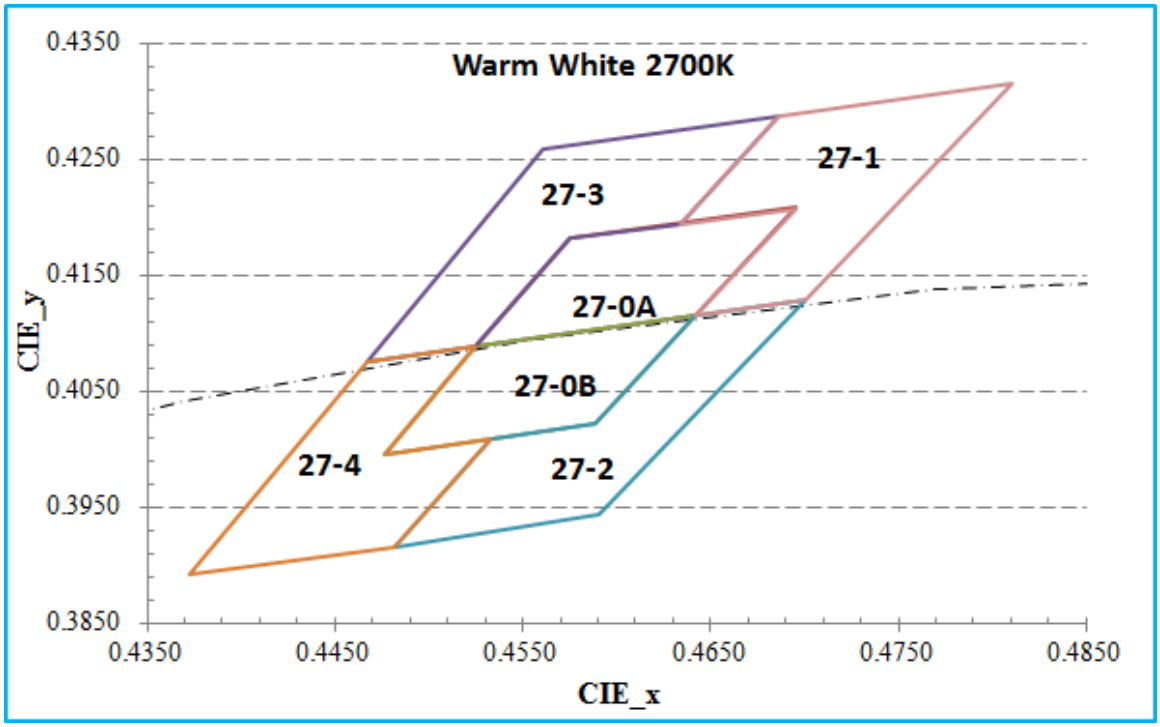
Voltage Bin 电压档位 (Ts=25℃)

Parameter 参数	Symbols 符号	Bin Code 档位代码	Actual parameter 实际参数	Units 单位	Testing Conditions 测试条件
Voltage 电压	VF	2.8-2.9	2.8-2.9	V	IF=60mA
		2.9-3.0	2.9-3.0		
		3.0-3.1	3.0-3.1		
		3.1-3.2	3.1-3.2		
		3.2-3.3	3.2-3.3		
		3.3-3.4	3.3-3.4		

Remarks 备注：

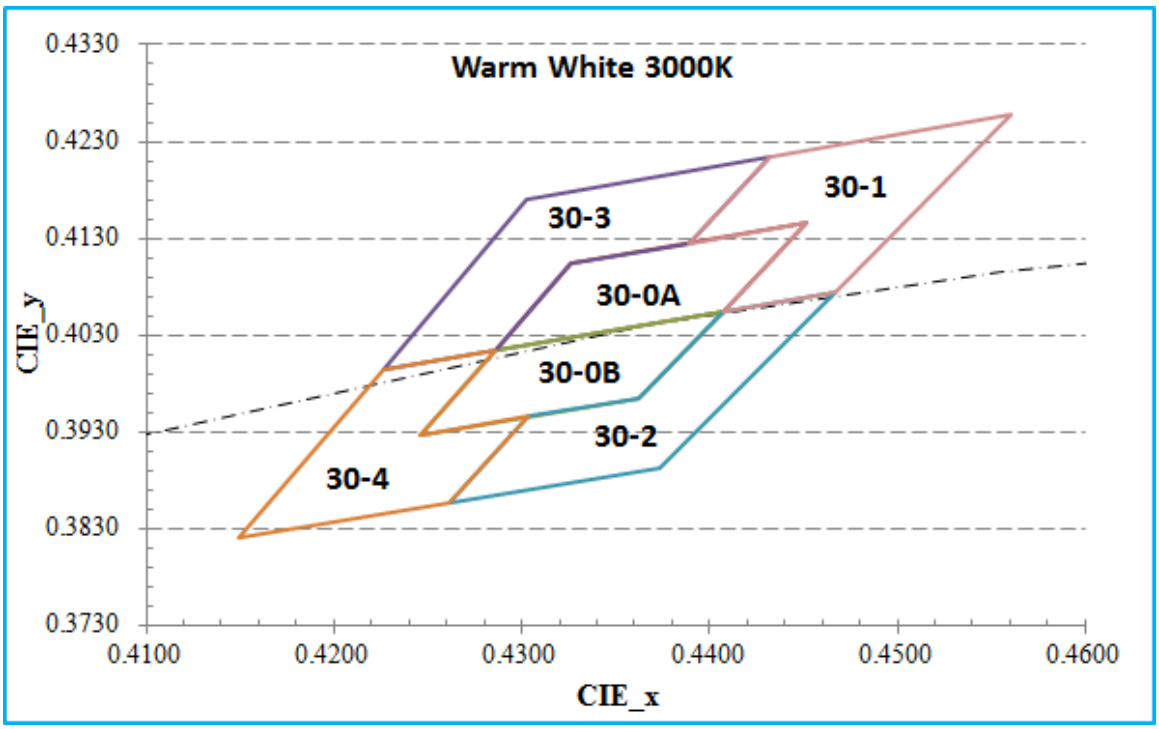
1. Tolerance of Voltage is ±0.1V.
   电压公差为±0.1V

The CIE Chromaticity Diagram CIE色度图 (Ts=25℃)

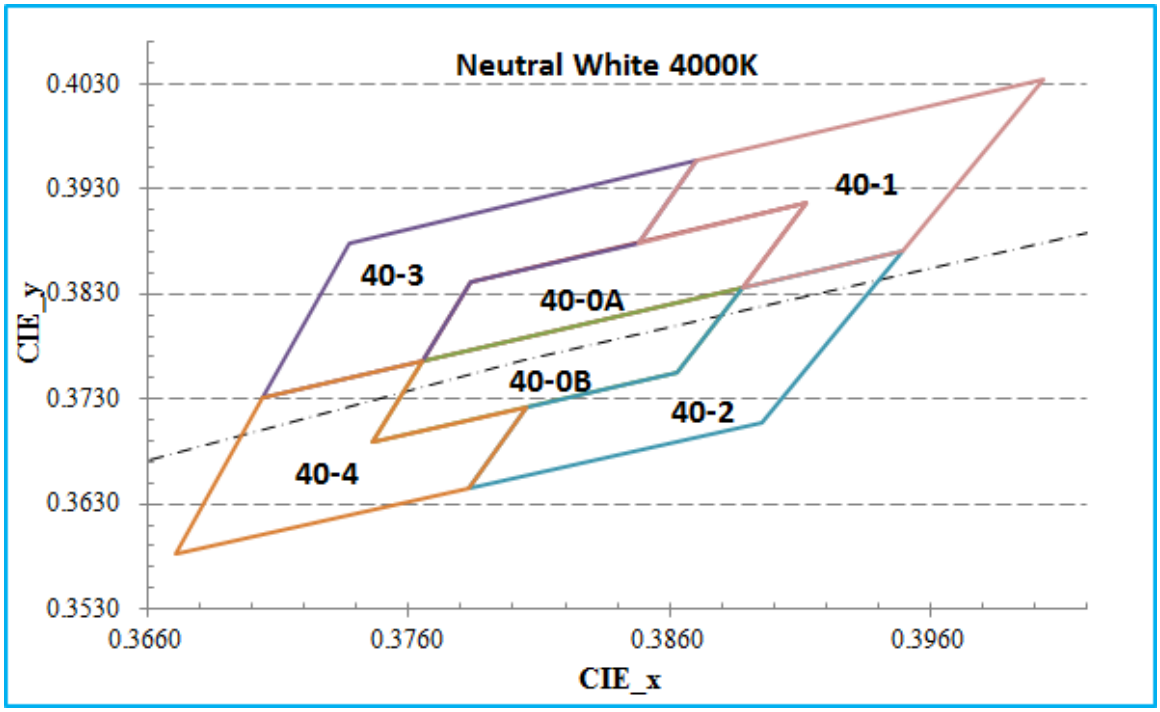


27-0A（2650-2800K）		27-0B（2650-2800K）		27-1(2550-2750K)	
X	Y	X	Y	X	Y
0.4525	0.4088	0.4476	0.3996	0.4642	0.4115
0.4575	0.4181	0.4525	0.4088	0.4695	0.4206
0.4695	0.4208	0.4642	0.4115	0.4634	0.4193
0.4642	0.4115	0.4589	0.4022	0.4686	0.4287
				0.4811	0.4315
				0.4701	0.4128

27-2(2550-2750K)		27-3(2700-2900K)		27-4(2700-2900K)	
X	Y	X	Y	X	Y
0.4482	0.3916	0.4467	0.4075	0.4373	0.3892
0.4533	0.4009	0.4561	0.4259	0.4467	0.4075
0.4589	0.4022	0.4686	0.4287	0.4525	0.4088
0.4642	0.4115	0.4634	0.4193	0.4476	0.3996
0.4701	0.4128	0.4575	0.4181	0.4533	0.4009
0.4591	0.3944	0.4525	0.4088	0.4482	0.3916

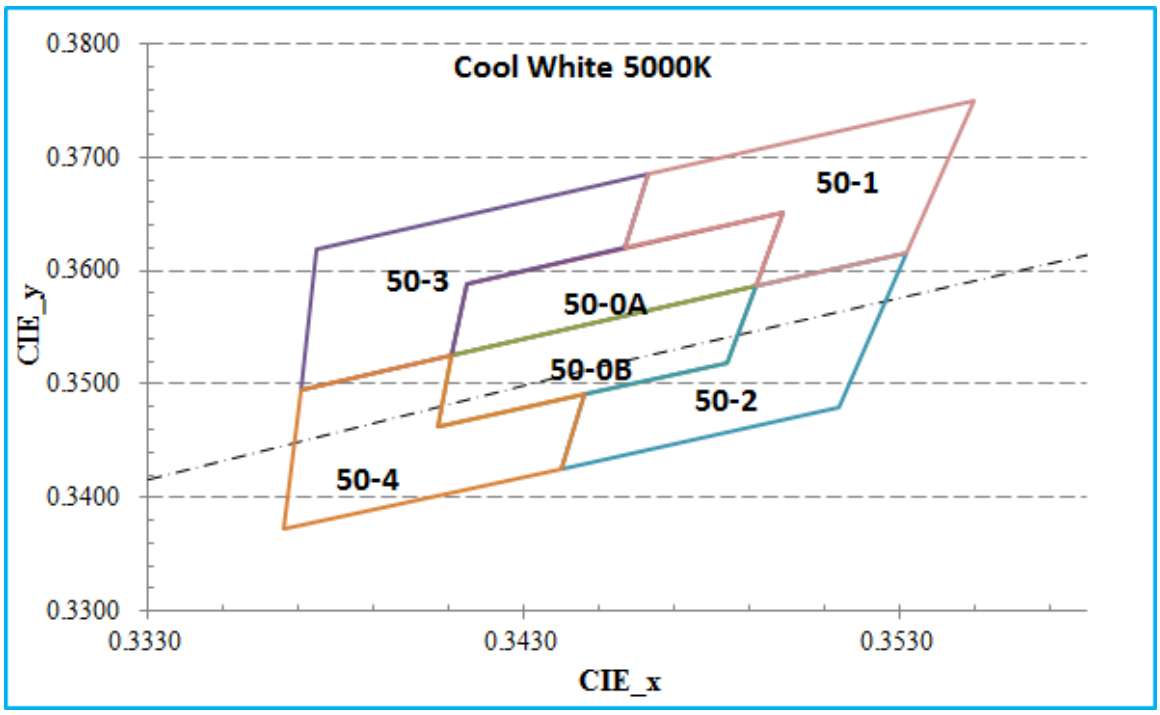


30-0A（2950-3150K）		30-0B（2950-3150K）		30-1(2850-3050K)	
X	Y	X	Y	X	Y
0.4286	0.4015	0.4246	0.3927	0.4407	0.4055
0.4326	0.4104	0.4286	0.4015	0.4452	0.4146
0.4452	0.4146	0.4407	0.4055	0.4389	0.4125
0.4407	0.4055	0.4362	0.3965	0.4432	0.4215
				0.4561	0.4259
				0.4467	0.4075
30-2(2850-3050K)		**30-3(3050-3200K)**		**30-4(3050-3200K)**	
X	Y	X	Y	X	Y
0.4261	0.3856	0.4226	0.3995	0.4149	0.3820
0.4304	0.3946	0.4302	0.4171	0.4226	0.3995
0.4362	0.3965	0.4432	0.4215	0.4286	0.4015
0.4407	0.4055	0.4389	0.4125	0.4246	0.3927
0.4467	0.4075	0.4326	0.4104	0.4304	0.3946
0.4373	0.3892	0.4286	0.4015	0.4261	0.3856



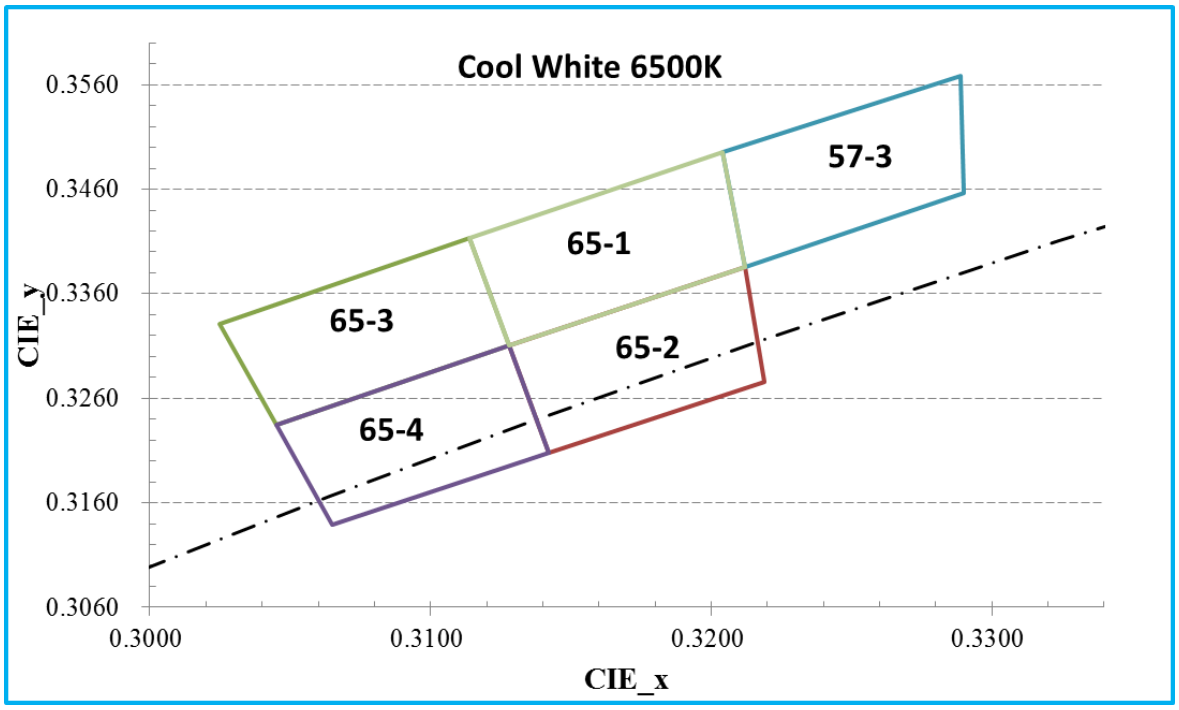
40-0A（3800-4100K）		40-0B（3800-4100K）		40-1(3700-4000K)	
X	Y	X	Y	X	Y
0.3765	0.3766	0.3746	0.369	0.3848	0.3879
0.3784	0.3842	0.3765	0.3766	0.3870	0.3957
0.3912	0.3916	0.3888	0.3836	0.4003	0.4034
0.3888	0.3836	0.3863	0.3756	0.3949	0.3871
				0.3888	0.3836
				0.3912	0.3916

40-2(3700-4000K)		40-3(3950-4300K)		40-4(3950-4300K)	
X	Y	X	Y	X	Y
0.3783	0.3645	0.3704	0.3731	0.3671	0.3583
0.3805	0.3723	0.3737	0.3879	0.3704	0.3731
0.3863	0.3756	0.3870	0.3957	0.3765	0.3766
0.3888	0.3836	0.3848	0.3879	0.3746	0.3690
0.3949	0.3871	0.3784	0.3842	0.3805	0.3723
0.3895	0.3708	0.3765	0.3766	0.3783	0.3645



50-0A（4850-5150K）		50-0B（4850-5150K）		50-1(4750-5050K)	
X	Y	X	Y	X	Y
0.3411	0.3525	0.3407	0.3462	0.3457	0.3621
0.3415	0.3589	0.3411	0.3525	0.3463	0.3685
0.3499	0.3652	0.3492	0.3586	0.3550	0.3750
0.3492	0.3586	0.3484	0.3519	0.3532	0.3616
				0.3492	0.3586
				0.3499	0.3652

50-2(4750-5050K)		50-3(5000-5350K)		50-4(5000-5350K)	
X	Y	X	Y	X	Y
0.3440	0.3426	0.3371	0.3495	0.3366	0.3372
0.3446	0.3491	0.3375	0.3619	0.3371	0.3495
0.3484	0.3519	0.3463	0.3685	0.3411	0.3525
0.3492	0.3586	0.3457	0.3621	0.3407	0.3462
0.3532	0.3616	0.3415	0.3589	0.3446	0.3491
0.3514	0.3480	0.3411	0.3525	0.3440	0.3426

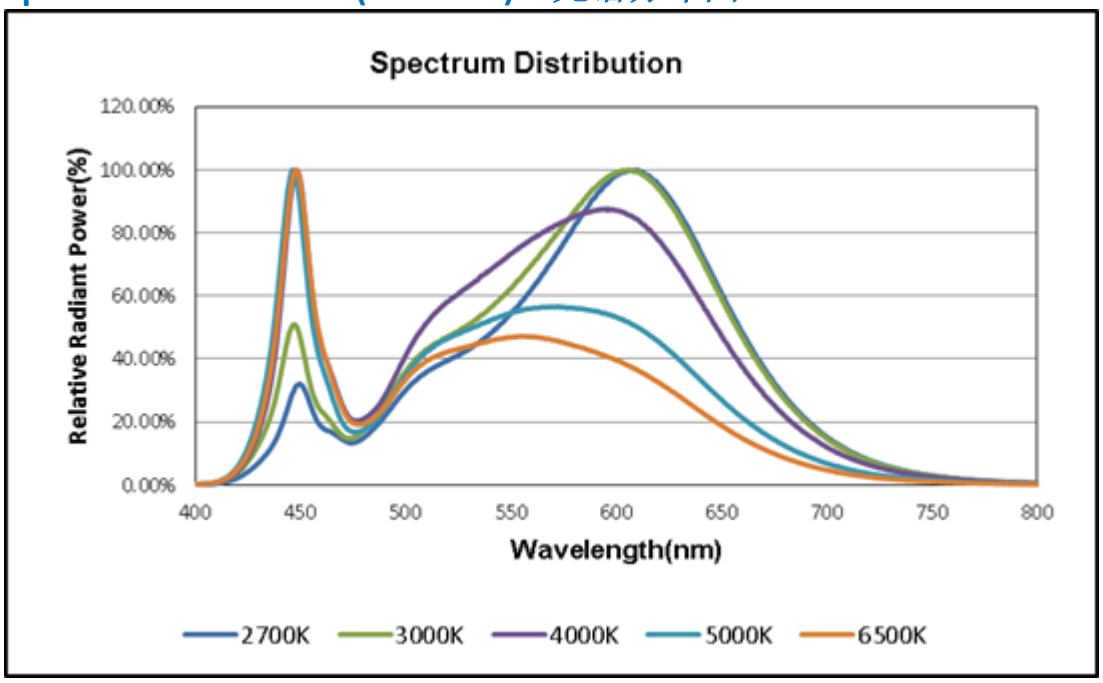


65-1(6000-6500K)		65-3(6500-7000K)		57-3(5653-6024K)	
X	Y	X	Y	X	Y
0.3128	0.3311	0.3045	0.3235	0.3212	0.3386
0.3114	0.3413	0.3025	0.3331	0.3204	0.3496
0.3204	0.3496	0.3114	0.3413	0.3289	0.3568
0.3212	0.3386	0.3128	0.3311	0.329	0.3457

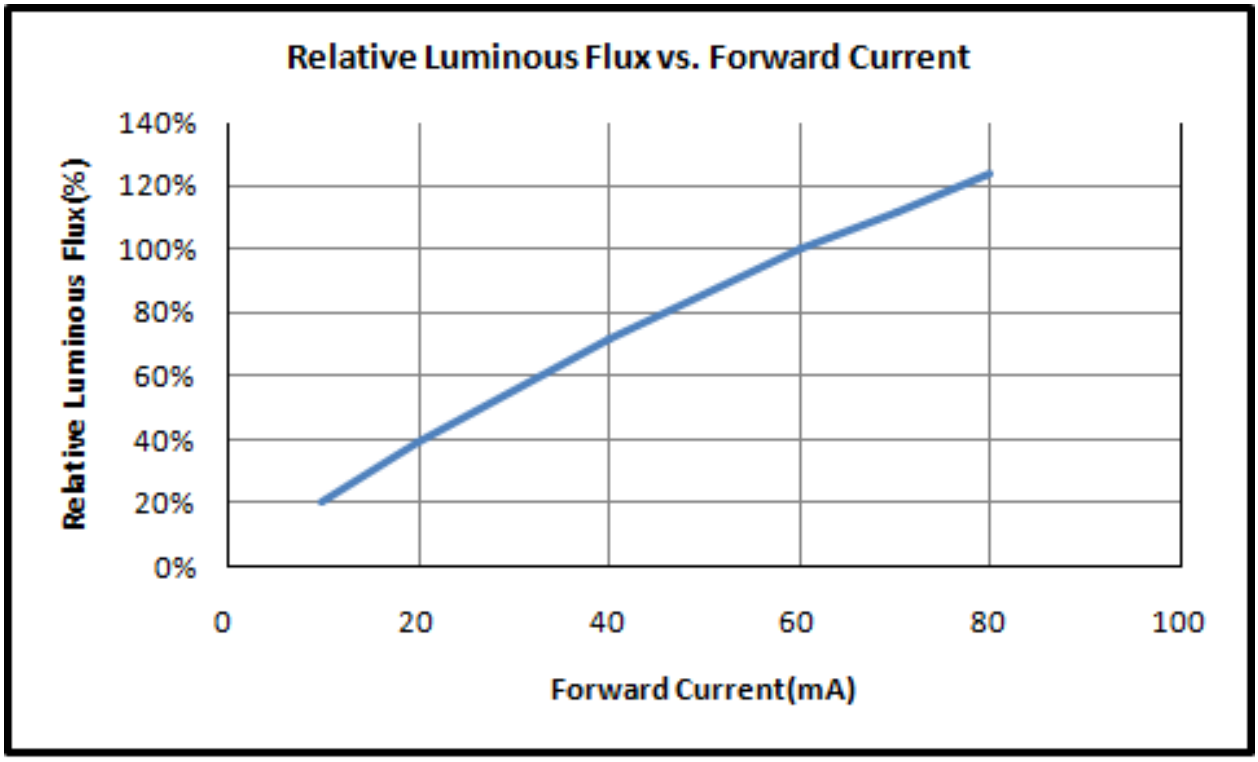
65-2(6000-6500K)		65-4(6500-7000K)	
X	Y	X	Y
0.3142	0.3208	0.3065	0.3139
0.3128	0.3311	0.3045	0.3235
0.3212	0.3386	0.3128	0.3311
0.3219	0.3276	0.3142	0.3208

Typical Optical and Electrical Characteristic Curve (Ts=25℃) 典型光电特性曲线图

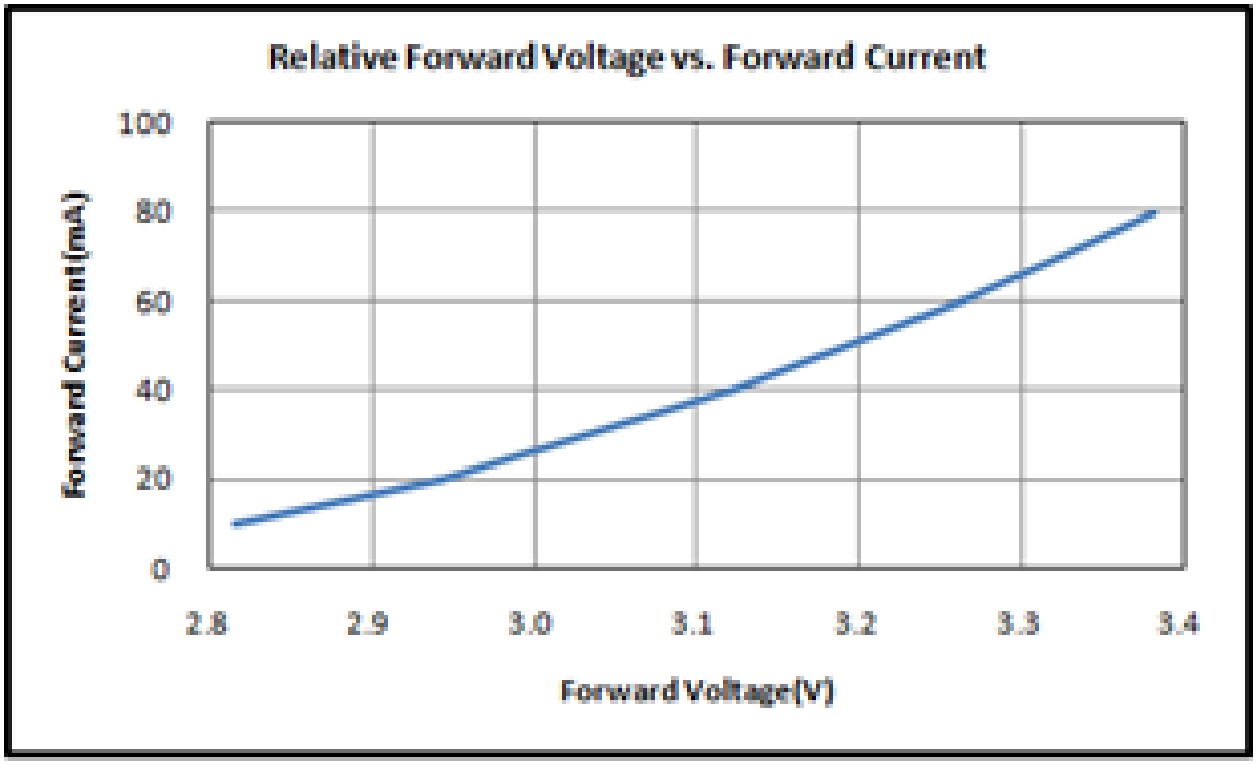
Spectrum Distribution (IF=60mA) 光谱分布图



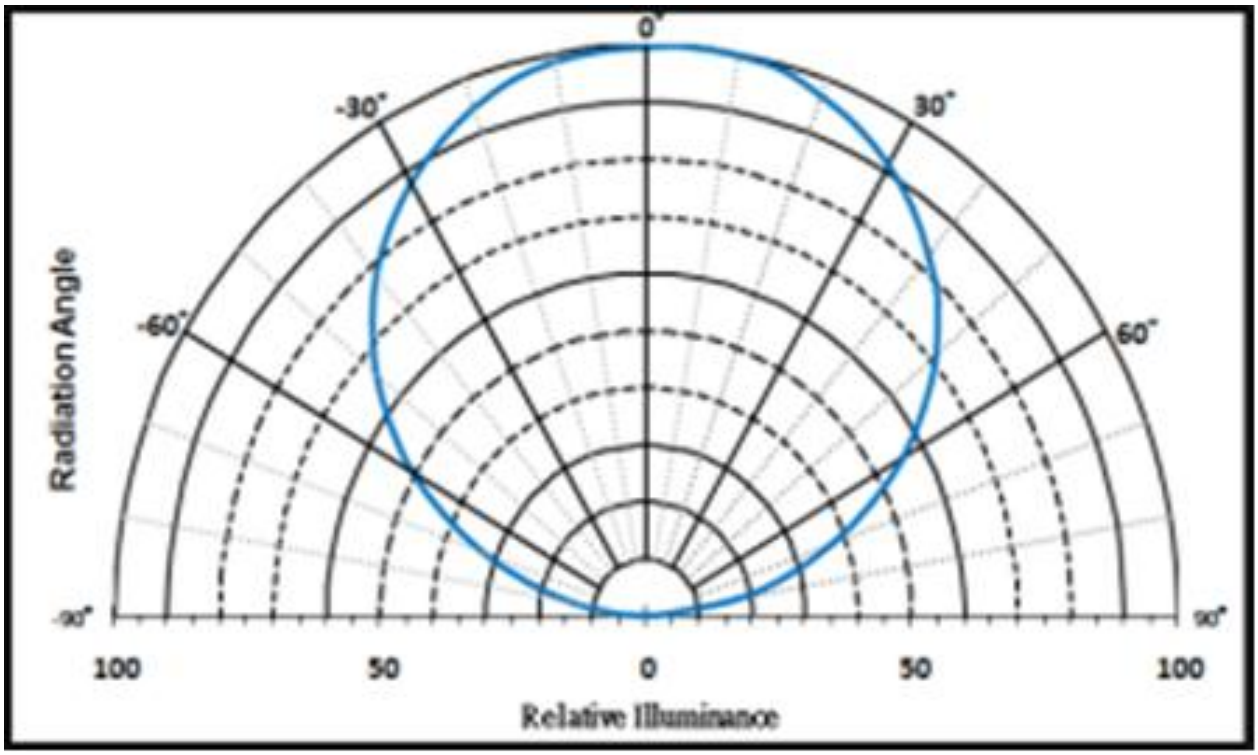
Relative Luminous Flux vs. Forward Current 相对光通量与正向电流特性曲线图



Relative Forward Voltage vs. Forward Current　正向电压与正向电流特性曲线图



Radiation Diagram　辐射特性图



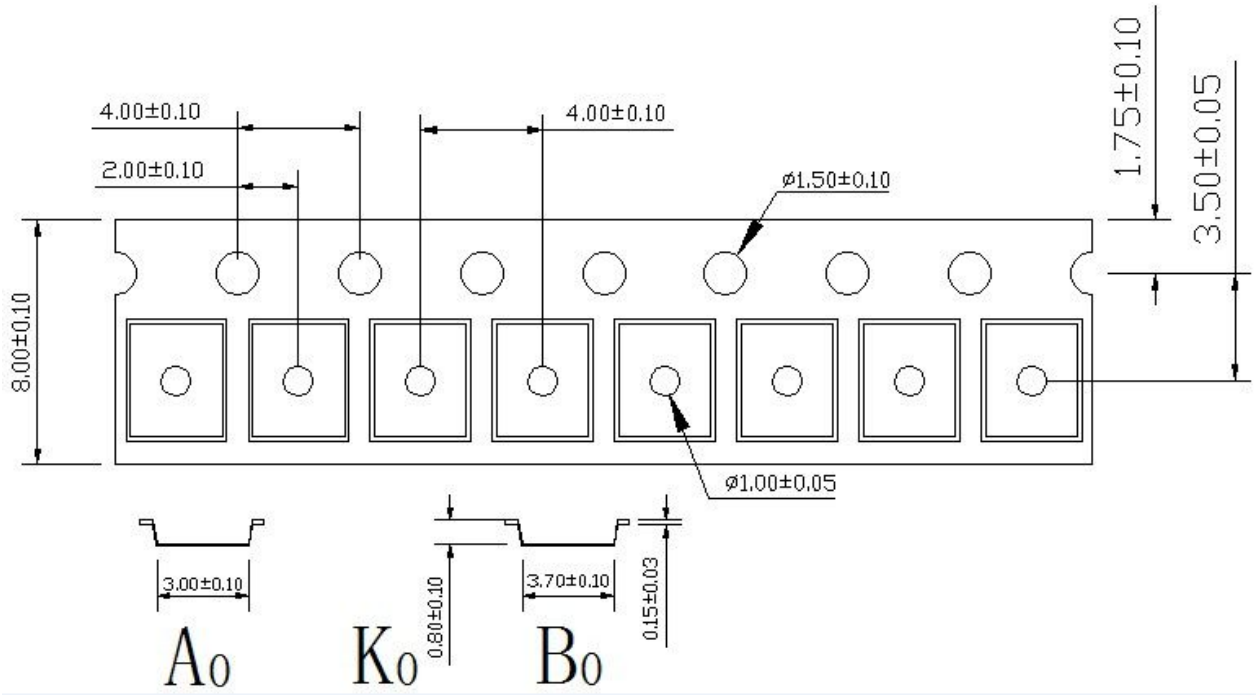
Label on Reel / Anti-Static Bag/ Carton　卷轴、静电袋和外箱标签

Reel Label
卷轴标签
Label size: 35mm*50mm
标签尺寸：35mm*50mm

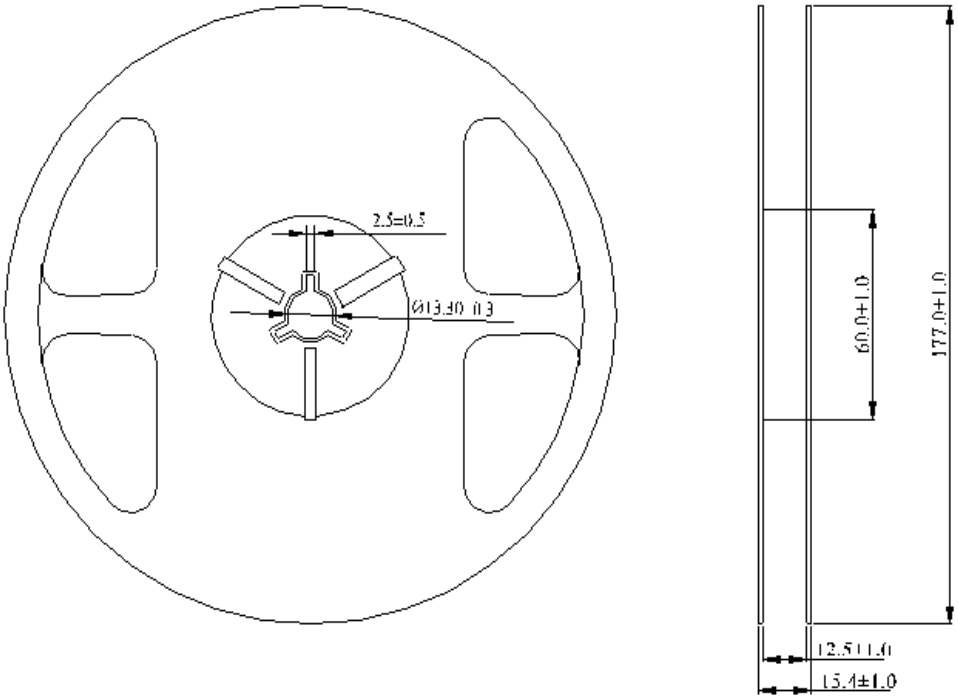
Anti-static Bag Label
静电袋标签
Label size: 48mm*80mm
标签尺寸：48mm*80mm

Carton Label
外箱标签
Label size: 48mm*80mm
标签尺寸：48mm*80mm

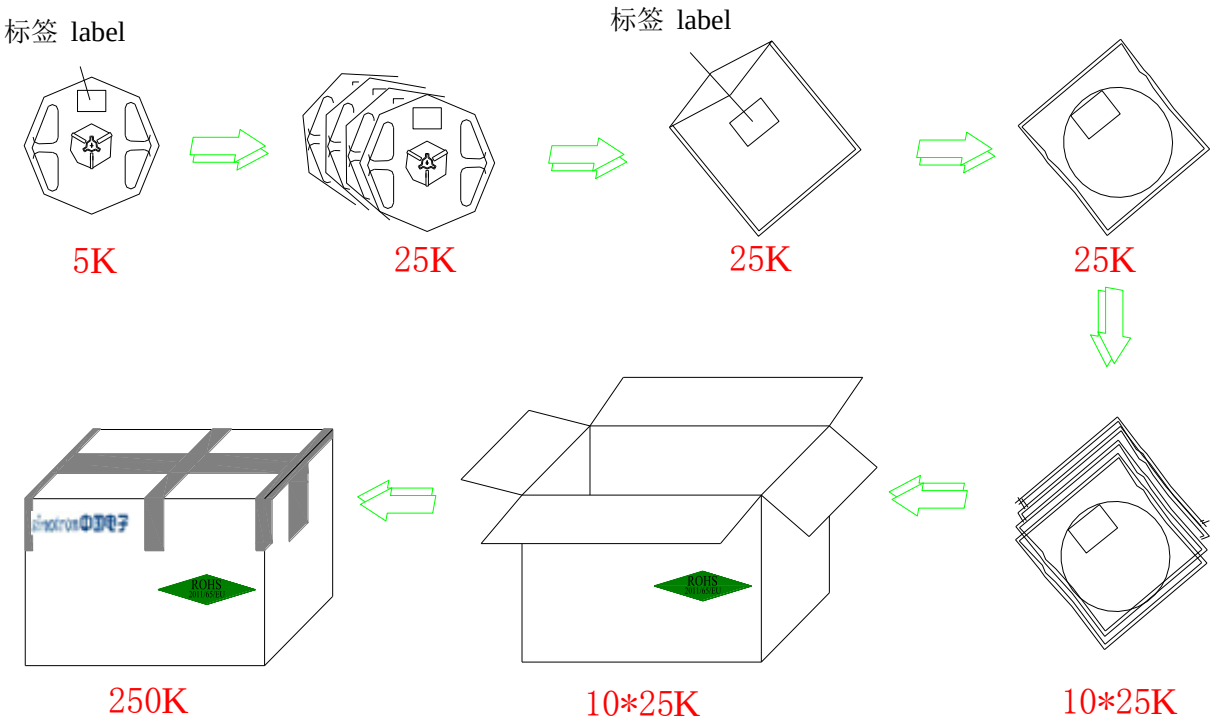
Taping Specifications (Unit:mm)　　编带规格（单位：毫米）



Reel Size (Unit:mm)　卷轴尺寸（单位：毫米）



Humidity Proof packaging　防潮包装



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文件中规格如有变更，未通知，请联系业务。

Version 1.0; Issue Date:20160914

Reliability Test Items and Test Conditions 可靠性测试项目和测试条件

Number 序号	Test Item 测试项目	Test Conditions 测试条件	Acceptance/Rejection 判定标准
01	Reflow Solder 回流焊	Temperature： Max 260℃ Time：10S Cycles： 3times	0/22
02	Life Test 常温通电	Temperature=25℃±5℃ Current=60mA±2mA Cycles：1000H	0/22
03	Temperature Cycling 温度循环	85℃ ~ 25℃ ~ -40℃ ~ 25℃ 30 mins 5 mins 30 mins 5 mins Cycles： 100 Cycles	0/22
04	Thermal Shock 冷热冲击	100℃±5℃ ~-40℃±5℃ 15 mins 15 mins Cycles： 100 Cycles	0/22
05	Low Temperature Storage 低温储存	Temperature：-40℃±5℃ Cycles：1000H	0/22
06	High Temperature Storage 高温储存	Temperature：100℃±5℃ Cycles：1000H	0/22

Failure Criteria 判定标准

Item 项目	Conditions 测试条件	Failure Criteria 判定标准
Forward Voltage (Vf) 正向电压(Vf)	IF=60mA	＞U.S.L.*1.1
Luminous Flux (Φv) 光通量(Φv)	IF=60mA	＜L.S.L.*0.7

Remarks 备注:

1. The range of Working temperature is -40-85℃.
   工作温度范围为-40-85℃
2. U.S.L.: Upper specification limit; L.S.L.: Lower specification limit.
   U.S.L.:规格上限，L.S.L.:规格下限

Storage 储存注意事项

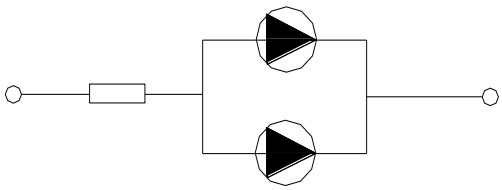
1. Do not open moisture-proof aluminum bag before the products are ready to use.
   产品使用前，请勿打开铝防潮袋。
2. Absorbed moisture in LED packages can vaporize and expand during soldering, which can cause interface delamination and result in optical performance degradation. Products are packed in moisture-proof aluminum bags to minimize moisture absorption during transportation and storage.
   已受潮的LED在焊接过程中，蒸发的水分会导致界面分层及降低光学性能。产品使用防潮铝袋在运输及储存可以减少受潮。
3. Before opening the package: The LEDs should be used within one year and kept at <30℃ or< 70% RH or less.
   未拆封前储存条件：30℃/70%RH 下，保存期限为一年。
4. After opening the package: We recommend that the LEDs should be soldered quickly (within 24 hours). The storage condition is 30℃ or less and 60% RH or less. If unused LEDs remain, it should be stored in moisture proof packages.
   打开包装后：建议LEDs尽快焊接（24小时内）；储存条件30℃/60%RH下；针对未使用完LEDs，请储存在防潮袋中并封口。
5. Do not store the LEDs in a dusty environment.
   不要将LEDs储存在不洁净的环境。
6. Do not expose the LEDs to direct sunlight and/or an environment where the temperature is higher than normal room temperature.
   LEDs产品放置时请避免阳光直射和高温。

Direction For Use 使用说明

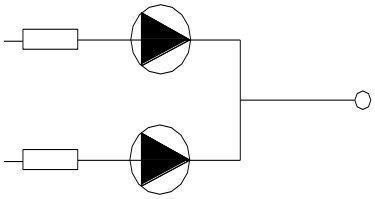
1. When designing a circuit, the current through each LED must not exceed the Absolute Maximum Rating. Operating at a constant current per LED is recommended. In case of operating at a constant voltage, Circuit B is recommended. If the LEDs are operated with constant voltage using Circuit A, the current through the LEDs may vary due to the variation in Forward Voltage characteristics of the LEDs.
   当设计电路时，通过每个LED的电流一定不能超过允许最大值。建议产品使用恒流工作。若产品采用恒压驱动，建议采用B电路。如果产品在A电路采用恒压工作，会因为LEDs电压不同导致通过不同LED电流不一致。

**Driving Method 驱动方式:*

(A)



(B)



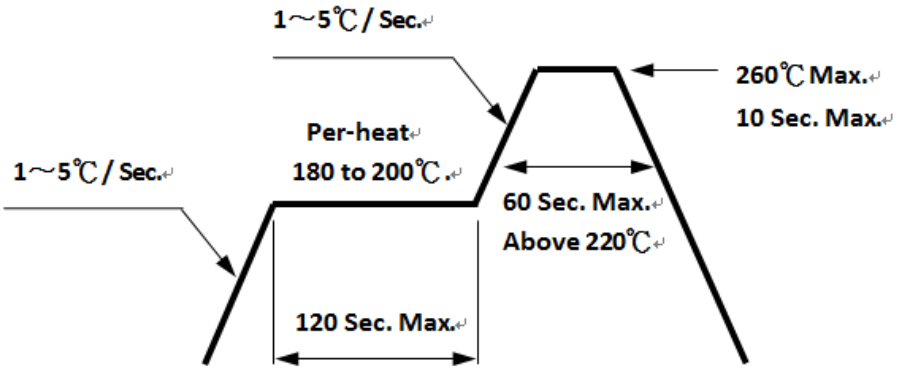
2. It is recommended that our product should be operated using forward current. Ensure that the product is not subjected to either forward or reverse voltage while it is not in use. In particular, subjecting it to continuous reverse voltage may cause migration, which may cause damage to the LED die. When used in displays that are not used for a long time, the main power supply should be switched off for safety.
   建议产品使用正向电流工作，确保产品在非工作状态不会施加正向或反向电压。特别，连续反向电压可能损坏LED。产品用于展览而不会使用很长时间时，请切断电源确保安全。
3. It is recommended to operate the LEDs at a current greater than 10% of the sorting current to stabilize the LED characteristics.
   建议LEDs使用电流大于10%的测试电流以确保产品稳定工作。
4. Ensure that excessive voltages such as lightning surges are not applied to the LEDs.
   确保无超过允许的电压施加于LEDs如浪涌电压。

5. VOCs (Volatile organic compounds) emitted from materials used in the construction of fixtures can penetrate silicone encapsulants of LEDs and discolor when exposed to heat and photonic energy. The result can be a significant loss of light output from the fixture. Knowledge of theproperties of the materials and carefully selected materials used can help prevent these issues.
   从设备材质中发出挥发性有机物可以穿透LEDs硅胶层并当处于热下会使LEDs变色，这样会导致光通量输出减少。了解材质特性并选好材料才能避免此类问题。

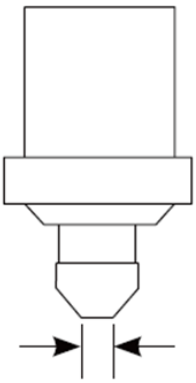
6. Do not use sulfur-containing materials in commercial products. Some materials, such as seals and adhesives, may contain sulfur. The extremely corroded or contaminated plating of LEDs might cause an open circuit. Silicone rubber is recommended as a material for seals. Bear in mind, the use of silicones may lead to silicone contamination of electrical contacts inside the products, caused by low molecular weight volatile siloxane.
   产品不要选择含硫材料，比如密封胶和粘合剂可能含硫。硫极易腐蚀或污染LEDs，可能导致开路。建议硅胶作为密封材质。注意，硅的使用可能引起产品内部电触点硅污染，硅来源于低分子挥发性硅氧烷。
7. For outdoor use, necessary measures should be taken to prevent water, moisture and salt air damage.
   室外使用时，应该做好防水、防潮、防盐损伤的措施。

Soldering Condition 焊接条件

**Recommended Reflow Soldering Condition (Lead-free Solder) 建议回流焊条件（无铅焊料）*



1. Reflow soldering should not be done more than two times.
   回流焊不可以做2次以上。
2. When soldering, do not put stress on the LEDs during heating.
   当焊接时，不要在材料受热时按压LEDs
3. After soldering, do not warp the circuit board.
   焊接后，电路板不允许翘曲。
4. Avoid rapid cooling. Ramp down the temperature gradually form the peak temperature
   避免快速冷却，高温缓慢降温。
5. The LED is designed to be reflow soldered on to a PCB. If dip soldered, Sinotron cannot guarantee its reliability.
   LED产品设计用于回流焊工艺。若采用浸焊，不保证产品可靠性。
6. Nitrogen reflow soldering is recommended.
   建议氮气回流焊。
7. Since the silicone used in the encapsulating resin is soft, do not press on the encapsulate resin.
   因为封装胶用硅胶是较软的，所以不能按压产品胶体。
8. When using a pick and place machine, choose a nozzle for this product. Using a pick-and-place nozzle with a smaller diameter than the size of the LEDs emitting surface will cause damage to the emitting surface and may also cause the LED not to illuminate.
   请选择产品合适的吸嘴。如吸嘴直径小于LED发光直径，将损坏发光面或造成LED不发光。
9. Do not stack assembled PCBs together. Otherwise, it can cause the resin portion of the product to be cut, chipped, delaminated and /or deformed. This may cause wire to break, leading to catastrophic failures.
   不要将焊好产品的PCB堆在一起，否则会导致产品硅胶部分被划伤、开裂、或变形。这可能引起断线，导致产品失效。



Is greater than LEDs emitting surface
尺寸大于 LEDs 发光面

Soldering Iron 烙铁焊接

Each terminal is to go to the tip of soldering iron temperature less than 350℃ for 3 seconds within once. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand-solder.

每次烙铁焊接，烙铁温度要低于350℃，时间不超过3秒。每次焊接间隔2秒或更长时间。注意，因为往往手工焊接会损坏产品。

Static Electricity 静电

1. LED package is extremely sensitive to static electricity. It's recommended that anti-electrostatic glove and wrist band is necessary when handling the LEDs. All devices are also be grounded properly as well.
   LED封装对静电极敏感。建议操作LEDs时佩戴防静电手套和防静电环。所有设备及工作台面都要接地。
2. Protection devices design should be considered in the LED driving circuit.
   LED驱动电路设计应考虑保护器件设计。

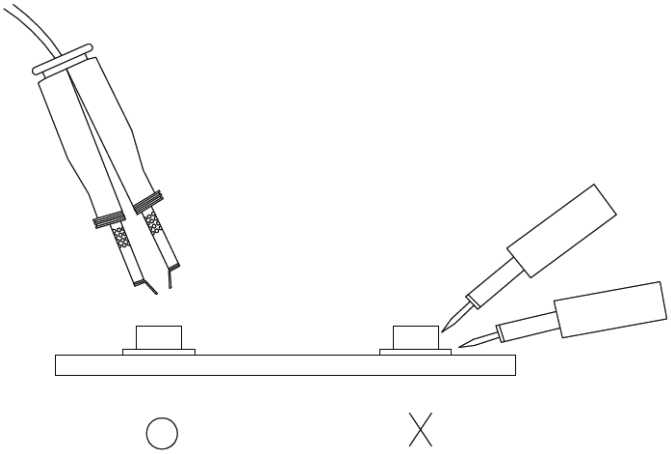
Cleaning 清洁

1. The LEDs should not be cleaned with water, benzene, or thinner.
   LEDs产品不要用水、苯、稀释剂清洗。
2. If washing is required, recommend to use alcohol as a solvent.
   如果需要清洗，建议使用酒精作为溶剂。
3. Recommend to avoid cleaning the LEDs by ultrasonic. If necessary, pre-test the LED is necessary to confirm whether any damage occur after the process.
   建议避免使用超声波清洗。如果必要，请先验证此清洗工艺是否会损坏LED产品。

Repairing 修补

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

LED回流焊后不应该修补，当不可避免时，请使用双头烙铁（如下图）。但请事先确认这种方式不会损坏LEDs本身的特性。



单击下面可查看定价，库存，交付和生命周期等信息

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