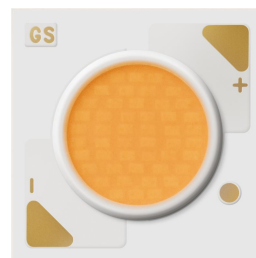


CQD系列产品规格书

GS-CQD series SPECIFICATION



目录 Contents

一、产品概述 Product overview.....	1
1. 产品型号命名原则 Part code.....	1
2. 特点 Features.....	1
3. 应用 Applications.....	1
4. 封装尺寸 Package Dimensions.....	2
5. 性能 Performance.....	2
二、产品分级 Product bins.....	3
三、光电特性曲线 Electro-Optical Characteristics.....	9
四、 信赖性测试 Reliability Test.....	10
五、包装说明 Package instructions.....	11
六、防护措施 Precaution for use.....	12

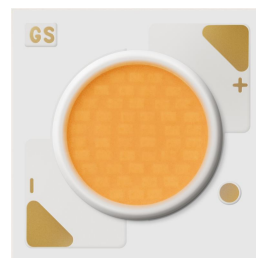


一、产品概述 Product overview

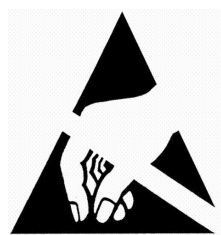
1. 产品型号命名原则 Part code

GSCOBWXX-600W24-CQD11

① ② ③ ④ ⑤ ⑥



- ① 光硕代码 Greatshine code
- ② 光源类型 Light type
- ③ 色温 27-2700K、30-3000K . . .
Color temperature 27-2700K、30-3000K . . .
- ④ 额定电流 Rated current
- ⑤ 额定功率 Rated power
- ⑥ 光源系列
Series of light source



注意 ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES
请勿裸手接触器件

2. 特点 Features

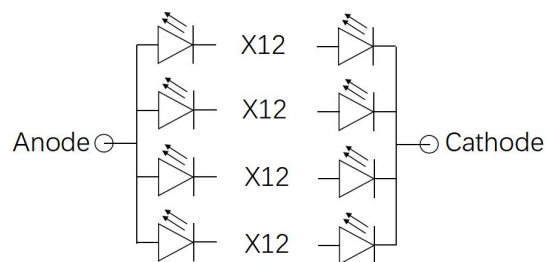
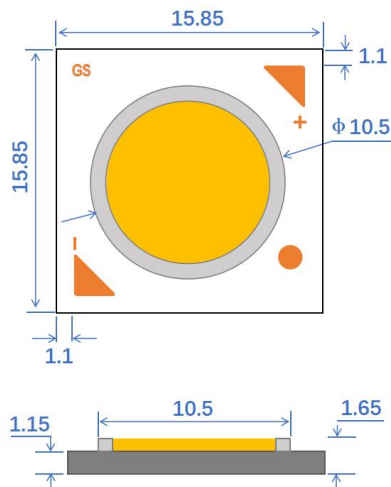
低蓝光全光谱
Low blue light full spectrum
健康照明
Health Lighting
荧光粉沉降工艺
Phosphor powder sedimentation process
手工焊接
Manual Soldering

3. 应用 Applications

商超照明 Business super lighting	博物馆照明 Museum lighting
酒店照明 Hospitality Lighting	护眼灯 Eye lamp
建筑和专业照明 Architectural and Specialty Lighting	



4. 封装尺寸 Package Dimensions



Concatenation: 12S4P

尺寸公差为 ± 0.3 毫米除非另有说明

Tolerance unless otherwise specified: ± 0.3 mm

5. 性能 Performance

(1) 绝对最大额定值 Absolute Maximum Ratings

参数	Parameter	符号Symbol	值 Value	单位 Units
输入功率	Input Power	Pi	31.0	W
直流正向电流	DC Forward Current	I _F	800	mA
反向电流	Reverse Current	I _R	0.5	mA
工作温度	Operating Temperature	T _{op}	-35°C To +100	°C
储藏温度	Storage Temperature	T _{st}	-40°C To +100	°C
结温	Junction Temperature	T _j	125	°C
表面温度	Case Temperature	T _C	105	°C

注意: Notes

1、LED 的工作电流不能超过直流正向电流。

DC forward current should not exceed LED's operating current.

2、使用时应当适当的降低工作电流，以保证结温始终低于最大值。

Proper current derating must be observed to maintain junction temperature below the maximum at all time.

3、直流电流下结温 D.C Current: $T_j = T_C + R_{j-C} \times P_i$



(2) 光电参数 (Tc=25℃)

Photoelectric parameters

参 数 Parameter	符号Symbol	条件 Condition	Min.	Typ.	Max.	LM/W (Typ.)	单位 Unit
正向电压 Forward Voltage	VF	IF=600mA	34.0	36.5	38.0	—	V
光通量 Luminous Flux	Φv	TC=2700K	1650	1850	2100	84	Lm
		TC=3000K	1760	1960	2200	89	
		TC=3500K	1870	2070	2300	94	
		TC=4000K	1980	2180	2400	99	
		TC=5000K	2020	2220	2450	101	
显色指数 CRI	Ra	IF=600mA	98	—	—	—	—
显色指数 CRI	R1-R15	IF=600mA	95	—	—	—	—
热阻 Thermal Resistance	R (j-c)	IF=600mA	—	2.1	—	—	°C/W

1、不同标准源测试存在仪器公差：电压±3%；光通量±10%；Ra、R9 和 R12±2。

The instrument tolerance of different light source test standards: voltage±3%;luminous flux±10%;Ra, R9 and R12±2.

2、色坐标的测量误差允许在±0.005。

Tolerance of ±0.005 on x,y coordinates.

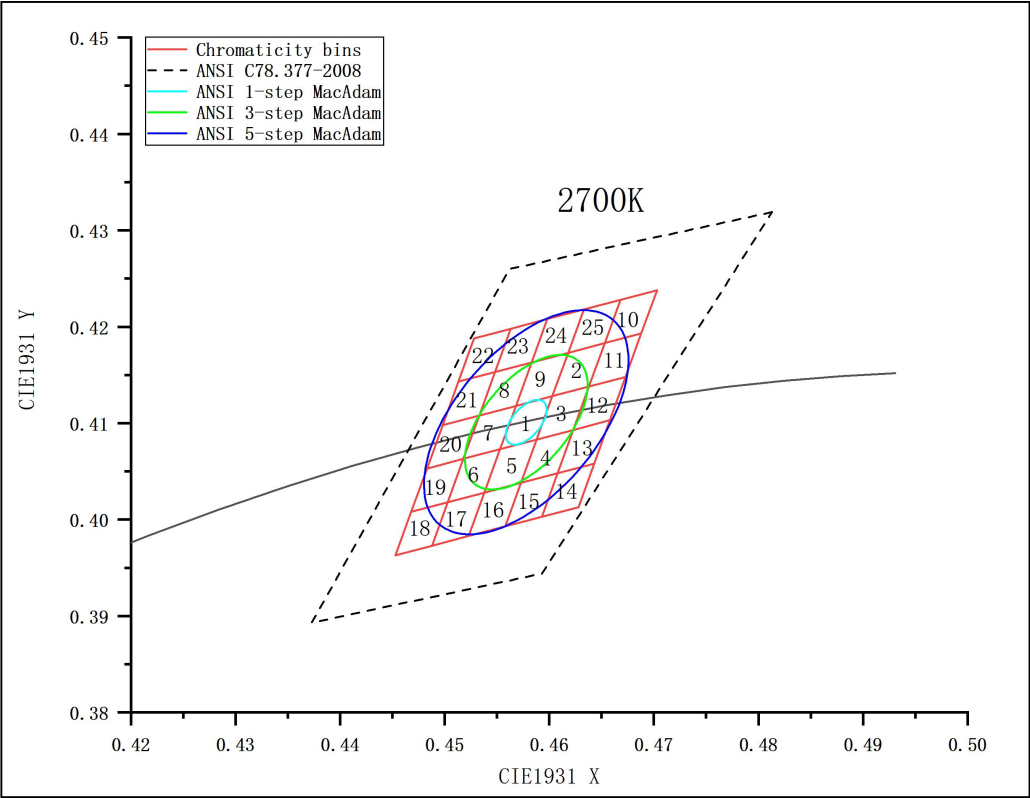
二、产品分级 Product bins

下表描述了各色温中心点、麦克亚当椭圆的方向角以及椭圆的最大半径。ANSI 分 Bin 以供参考。

The following tables describe the chromaticity bin center point, the orientation angle for the MacAdam ellipse, and the maximum radii for the ellipses. the ANSI Bin is provided for reference

Nominal	Center Point		MAJOR AXIS(a,b)			Angle(θ)
	X	Y	2 step	3step	5step	
2700K	0.4578	0.4101	0.0054, 0.0028	0.0081, 0.0042	0.0135, 0.0070	53.7°
3000K	0.4339	0.4033	0.0055, 0.0027	0.0083, 0.0041	0.0138, 0.0068	53.2°
3500K	0.4078	0.3930	0.0061, 0.0028	0.0093, 0.0041	0.0153, 0.0070	52.5°
4000K	0.3818	0.3797	0.0062, 0.0026	0.0094, 0.0040	0.0155, 0.0065	53.7°
4500K	0.3613	0.3670	0.0062, 0.0026	0.0094, 0.0040	0.0155, 0.0065	53.7°
5000K	0.3446	0.3551	0.0055, 0.0028	0.0082, 0.0035	0.0138, 0.0070	59.6°
5700K	0.3287	0.3425	0.0054, 0.0024	0.0075, 0.0032	0.0135, 0.0060	59.6°
6500K	0.3123	0.3283	0.0045, 0.0020	0.0067, 0.0029	0.0113, 0.0050	58.2°

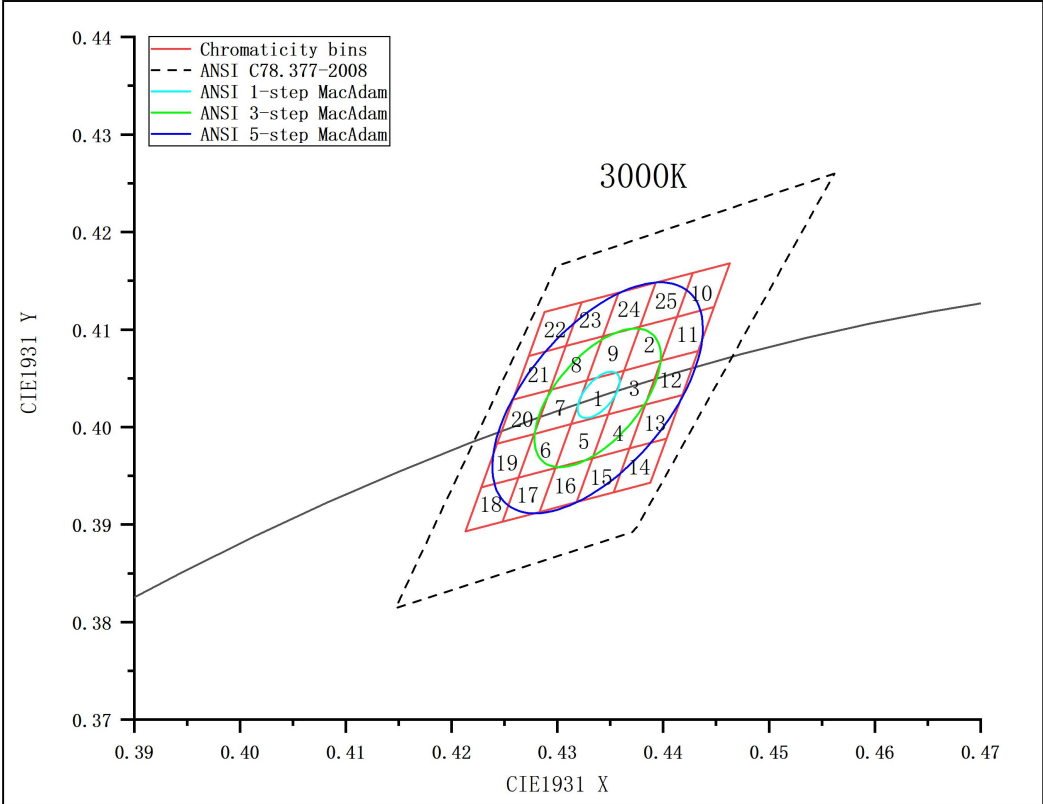




不同 BIN 号对应标签色温与色温范围。
Different BIN correspond to the CCT and CCT range .

标称色温 CCT	BIN	色温范围 CCT range	标称色温 CCT	BIN	色温范围 CCT range
2700K	1: 27A0	2680-2750K	2700K	14: 27B5	2570-2640K
2700K	2: 27A1	2650-2720K	2700K	15: 27B6	2630-2700K
2700K	3: 27A2	2640-2710K	2700K	16: 27B7	2660-2730K
2700K	4: 27A3	2620-2690K	2700K	17: 27B8	2710-2780K
2700K	5: 27A4	2680-2750K	2700K	18: 27B9	2740-2810K
2700K	6: 27A5	2720-2790K	2700K	19: 27B10	2760-2830K
2700K	7: 27A6	2720-2790K	2700K	20: 27B11	2770-2840K
2700K	8: 27A7	2740-2810K	2700K	21: 27B12	2790-2860K
2700K	9: 27A8	2700-2770K	2700K	22: 27B13	2810-2880K
2700K	10: 27B1	2630-2700K	2700K	23: 27B14	2760-2830K
2700K	11: 27B2	2630-2700K	2700K	24: 27B15	2720-2790K
2700K	12: 27B3	2610-2680K	2700K	25: 27B16	2670-2740K
2700K	13: 27B4	2590-2660K			



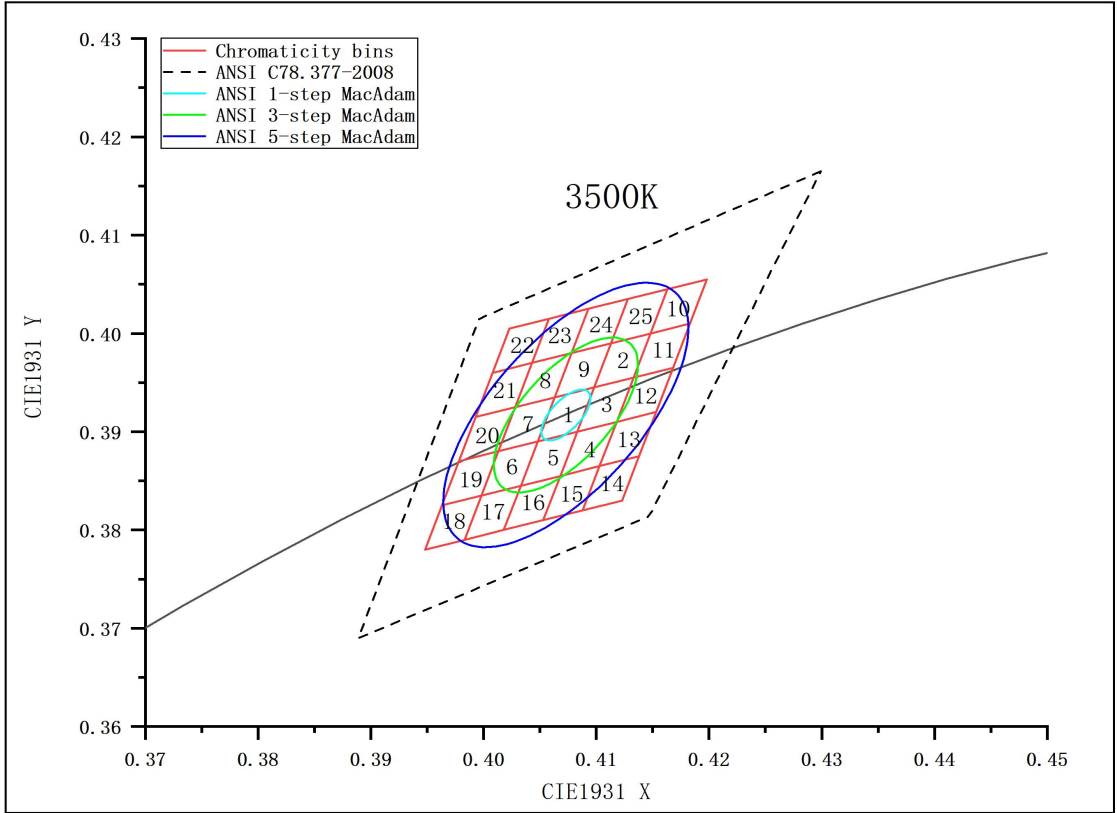


不同 BIN 号对应标签色温与色温范围。

Different BIN correspond to the CCT and CCT range .

标称色温 CCT	BIN	色温范围 CCT range	标称色温 CCT	BIN	色温范围 CCT range
3000K	1: 30A0	3010-3080K	3000K	14: 30B5	2880-2950K
3000K	2: 30A1	2970-3040K	3000K	15: 30B6	2930-3000K
3000K	3: 30A2	2960-3030K	3000K	16: 30B7	2990-3060K
3000K	4: 30A3	2950-3020K	3000K	17: 30B8	2950-3120K
3000K	5: 30A4	2900-3070K	3000K	18: 30B9	3090-3160K
3000K	6: 30A5	3060-3130K	3000K	19: 30B10	3110-3180K
3000K	7: 30A6	3070-3140K	3000K	20: 30B11	3120-3190K
3000K	8: 30A7	3080-3150K	3000K	21: 30B12	3130-3200K
3000K	9: 30A8	3020-3090K	3000K	22: 30B13	3140-3210K
3000K	10: 30B1	2940-3010K	3000K	23: 30B14	3080-3150K
3000K	11: 30B2	2930-2990K	3000K	24: 30B15	3030-3100K
3000K	12: 30B3	2910-2980K	3000K	25: 30B16	2980-3050K
3000K	13: 30B4	2890-3060K			

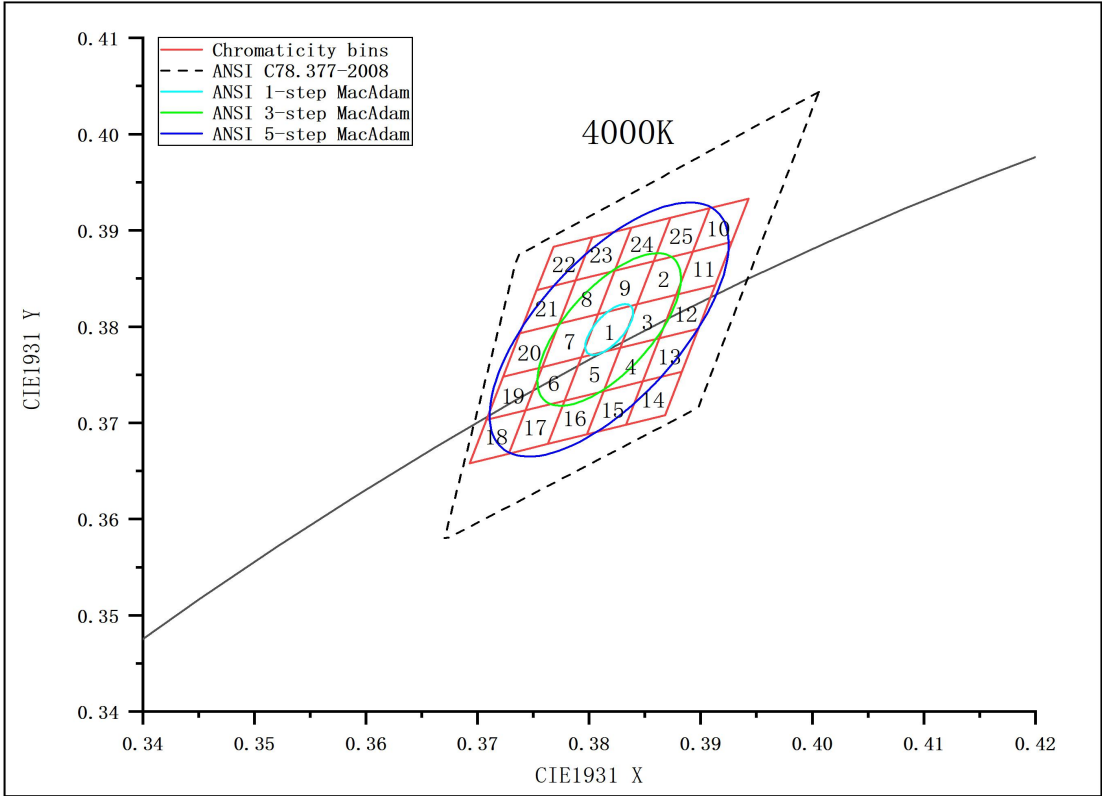




不同 BIN 号对应标签色温与色温范围。
Different BIN correspond to the CCT and CCT range .

标称色温 CCT	BIN	色温范围 CCT range	标称色温 CCT	BIN	色温范围 CCT range
3500K	1: 35A0	3450-3530K	3500K	14: 35B5	3280-3360K
3500K	2: 35A1	3360-3440K	3500K	15: 35B6	3350-3430K
3500K	3: 35A2	3360-3440K	3500K	16: 35B7	3420-3500K
3500K	4: 35A3	3350-3430K	3500K	17: 35B8	3480-3560K
3500K	5: 35A4	3420-3500K	3500K	18: 35B9	3560-3640K
3500K	6: 35A5	3490-3570K	3500K	19: 35B10	3560-3640K
3500K	7: 35A6	3490-3570K	3500K	20: 35B11	3560-3640K
3500K	8: 35A7	3490-3570K	3500K	21: 35B12	3560-3640K
3500K	9: 35A8	3430-3510K	3500K	22: 35B13	3560-3640K
3500K	10: 35B1	3300-3380K	3500K	23: 35B14	3480-3560K
3500K	11: 35B2	3300-3380K	3500K	24: 35B15	3440-3520K
3500K	12: 35B3	3300-3380K	3500K	25: 35B16	3370-3450K
3500K	13: 35B4	3290-3360K			

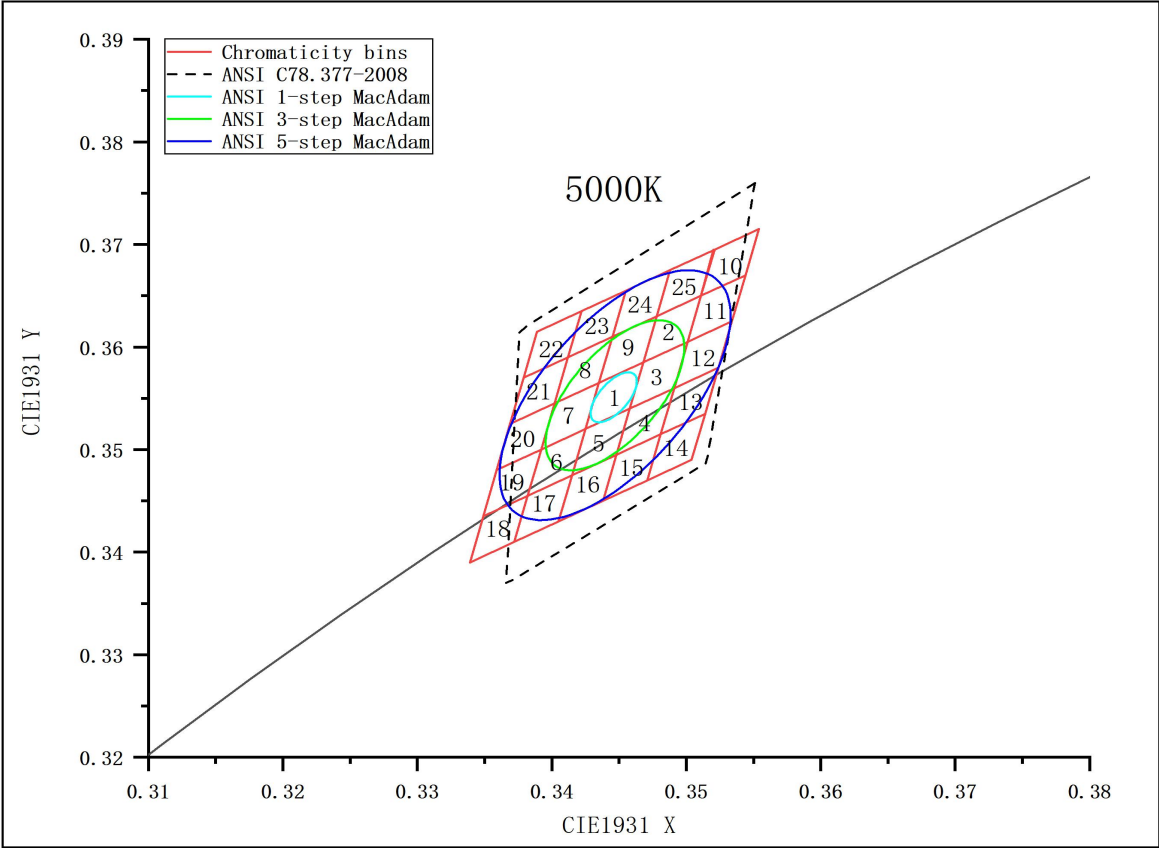




不同 BIN 号对应标签色温与色温范围。
Different BIN correspond to the CCT and CCT range .

标称色温 CCT	BIN	色温范围 CCT range	标称色温 CCT	BIN	色温范围 CCT range
4000K	1: 40A0	3920-4050K	4000K	14: 40B5	3780-3910K
4000K	2: 40A1	3850-3980K	4000K	15: 40B6	3850-3980K
4000K	3: 40A2	3860-3990K	4000K	16: 40B7	3930-4060K
4000K	4: 40A3	3880-4010K	4000K	17: 40B8	4040-4170K
4000K	5: 40A4	3920-4050K	4000K	18: 40B9	4120-4250K
4000K	6: 40A5	4050-4180K	4000K	19: 40B10	4100-4230K
4000K	7: 40A6	4030-4160K	4000K	20: 40B11	4090-4220K
4000K	8: 40A7	4010-4140K	4000K	21: 40B12	4070-4200K
4000K	9: 40A8	3910-4040K	4000K	22: 40B13	4050-4180K
4000K	10: 40B1	3740-3870K	4000K	23: 40B14	3990-4120K
4000K	11: 40B2	3750-3880K	4000K	24: 40B15	3900-4030K
4000K	12: 40B3	3760-3890K	4000K	25: 40B16	3830-3960K
4000K	13: 40B4	3770-3900K			





不同 BIN 号对应标签色温与色温范围。

Different BIN correspond to the CCT and CCT range .

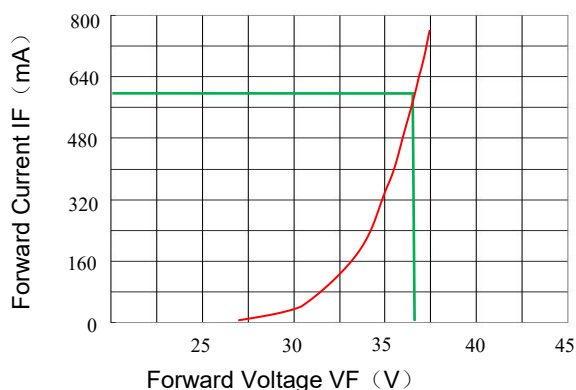
标称色温 CCT	BIN	色温范围 CCT range	标称色温 CCT	BIN	色温范围 CCT range
5000K	1: 50A0	4940-5100K	5000K	14: 50B5	4760-4920K
5000K	2: 50A1	4800-4960K	5000K	15: 50B6	4880-5040K
5000K	3: 50A2	4820-4980K	5000K	16: 50B7	4990-5150K
5000K	4: 50A3	4840-5000K	5000K	17: 50B8	5120-5280K
5000K	5: 50A4	4960-5120K	5000K	18: 50B9	5240-5400K
5000K	6: 50A5	5060-5220K	5000K	19: 50B10	5230-5390K
5000K	7: 50A6	5040-5200K	5000K	20: 50B11	5200-5360K
5000K	8: 50A7	5020-5180K	5000K	21: 50B12	5160-5320K
5000K	9: 50A8	4930-5090K	5000K	22: 50B13	5120-5280K
5000K	10: 50B1	4700-4860K	5000K	23: 50B14	5060-5220K
5000K	11: 50B2	4720-4880K	5000K	24: 50B15	4920-5080K
5000K	12: 50B3	4730-4890K	5000K	25: 50B16	4780-4940K
5000K	13: 50B4	4740-4900K			



三、光电特性曲线 Electro-Optical Characteristics

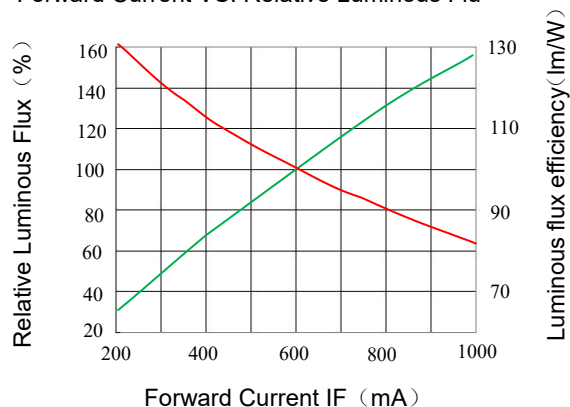
正向电流与正向电压曲线图

Forward Current VS. Relative Forward Voltage



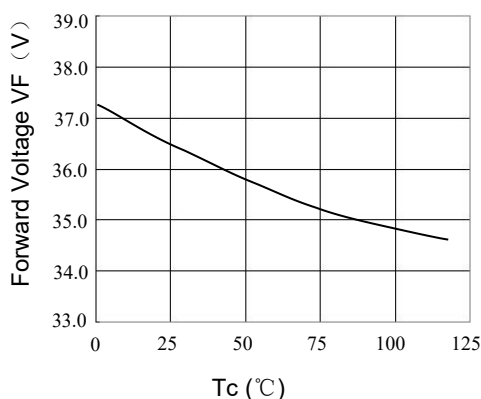
正向电流与相对光通量曲线图

Forward Current VS. Relative Luminous Flu



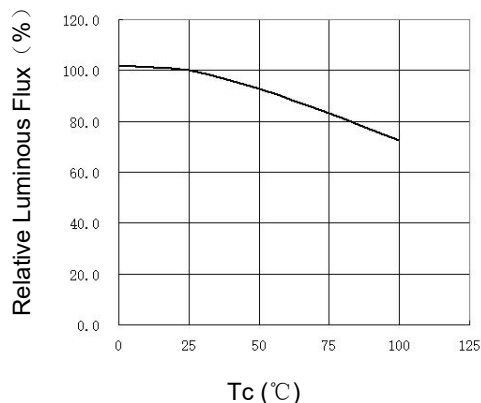
温度与正向电压曲线图

Temperature VS. Forward Voltage (IF=0.6A)

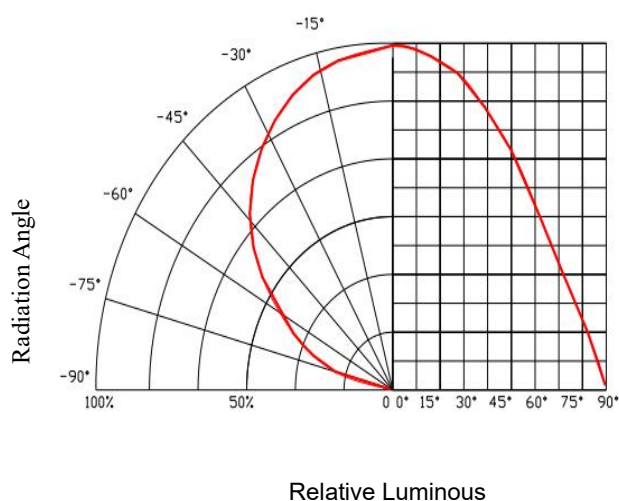


温度与相对光通量曲线图

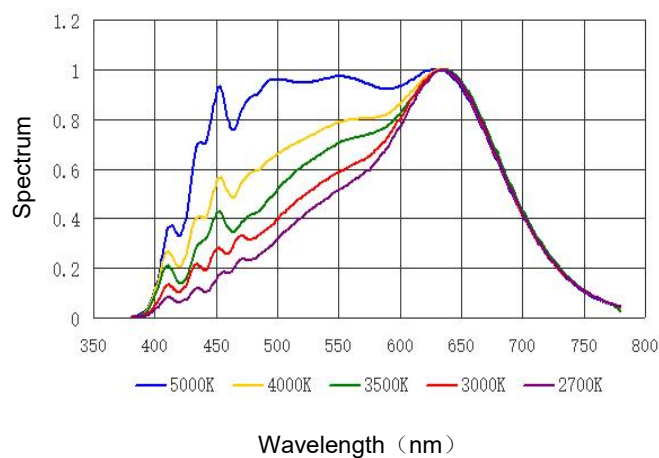
Temperature VS. Relative Luminous FLux (IF=0.6A)



发光角度
Radiation Angle



相对光谱分布曲线图
Relative Spectral Distribution



四、信赖性测试 Reliability Test

测试项目 Test Items	参考标准 Ref. Standard	测试条件 Test Conditions	失效判定 Failure judgment	抽样标准 Sampling standards
冷热冲击 Thermal Shock	JEDEC JESD22-A106	-40℃ (15min) ~ 120℃ (15min), 200 cycles	No catastrophic failure	0/22
高温存储 High Temperature Storage	JESD22-A103	Ta=120℃, 1000h	$\Delta V_f \geq 0.2V$, Luminance decay $\geq$ 10%	0/22
低温存储 Low Temperature Storage	JESD22-A119	Ta=-40℃, 1000h	$\Delta V_f \geq 0.2V$, Luminance decay $\geq$ 10%	0/22
高温高湿测试 High Temperature High Humidity Life Test	JESD22-A101	Ta=85℃, RH>=85%, 1000h	$\Delta V_f \geq 0.2V$, Luminance decay $\geq$ 10%	0/22
高温寿命测试 High-Temperat ure Life Test	JESD22 -A108	Tc=105℃, If=150mA, 1000h	$\Delta V_f \geq 0.2V$, Luminance decay $\geq$ 10%	0/22
硫化测试 Vulcanization Test	——	Sulfur powder concentration =1g/500mL, Ta=80℃, T=4h	No catastrophic failure, No obvious blackening, Luminance decay $\geq$ 5%	0/22

注意: Notes for Table

1、灾难性失效: 死灯、封装材料受损或发生形变。

No catastrophic failure: Dead lights、Damage or deformation of packaging material.

2、因 COB 各型号串并联的不同, 本测试项目中的 V_f 和 I_f 是代表单晶的电压和电流。

Due to the different series-parallel connection of COB models, the V_f and I_f in this test project are the voltage and current representing the single chip.



五、包装说明 Package instructions

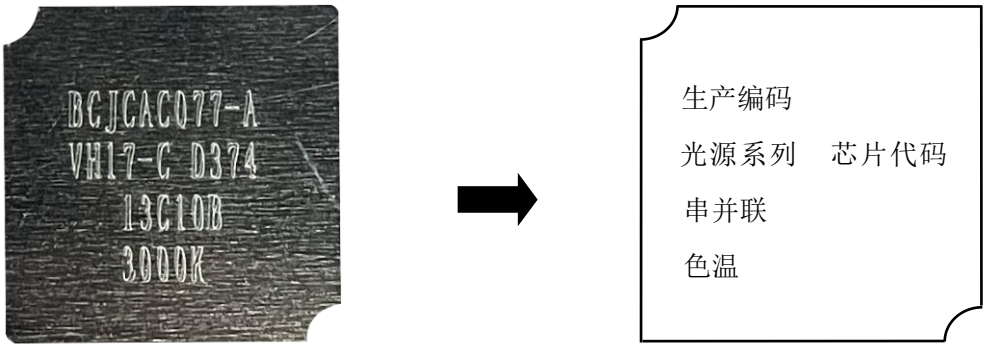
吸塑盒

铝箔袋

包装箱

规格 specification	数量（PCS）/盒 quantity(PCS)/dish	数量（PCS）/包 quantity(PCS)/bag
1616-11	40	200

- 我司在每个 COB 产品背面都有一个激光打标标签，有助于辨别产品情况。
We have a laser marking label on the back of each COB product to help identify the product.



六、防护措施 Precaution for use

1. 存储: storage

为避免受潮的影响, 我司建议产品在未开包装前除储存条件为15-40℃, 相对湿度20%-60%。已开包装的LED光源请在168小时内使用安装完毕, 如未用完的产品, 请进行除潮并抽真空后密封保存。除潮条件: 100° C±5° C, 6小时。产品密封保存有效使用期为一年。

To avoid moisture, we recommend storage conditions for the unopened LED +15 ~ +40 °C, relative humidity 20%-60%. LED should be used within 168 Hrs. of opening the package. Please make sure to dehumidify and vacuum pack the remaining/unused LED. Dehumidifying condition: +100 ° C ± 5 ° C, 6 Hrs. Effective age for the sealed led is one year.

本产品电极采用镀金工艺, 暴露在包含腐蚀性气体的环境中可能会使电极发生变质, 导致LED出现不良。禁止长期暴露在多尘埃、紫外直射以及过高室温的环境中。

The electrodes of this product are gold-plated, and exposure to corrosive gases may deteriorate the electrodes, resulting in adverse effects on the LEDs. Long-term exposure to dust, direct ultraviolet rays and excessive room temperature is prohibited.

2. 组装注意事项: The soldering precautions

焊接条件: 此产品不推荐使用回流焊接的作业方式, 手工焊接烙铁温度设定350℃, 焊接时间不可超过5秒, 第一焊点焊接后请确保基板表面温度恢复到环境温度, 方可进行第二次的焊接。焊接时请注意不可有外力作用与胶体表面及外圈的围坝胶上(如压力, 摩擦或锋利金属钉等), 以免造成金线变形或断线等异常; 如果超出此使用条件, 我司将不能保证产品的稳定性, 如果使用超出操作条件, 请务必进行风险评估。

Soldering conditions: Reflow soldering is not recommended for this LED. If hand soldering, set soldering iron temperature at 350°C and soldering time not More than 5 seconds, after the first soldering, make sure the substrate surface temperature returns to ambient temperature before a second soldering. Please make sure when soldering, there is no external force on the soldering surface and silicon batardeau (such as pressure, friction or sharp metal nails, etc.), to avoid gold wire deformation or damage and other abnormalities. If beyond recommended conditions, we cannot guarantee the LED stability, please do the risk assessment first.

灯具的组装材料(灯具外壳、垫圈、粘合剂、二次光学透镜、透镜盖)发出的挥发性有机化合物可能会侵入到LED封装胶中。在密闭条件下, 这些挥发性有机化合物因为受热可能会导致LED光输出大幅度降低和出现颜色差异。为了预防以上不良发生, 请贵司必须事先进行产品组装后的亮灯测试, 以确认在实际使用中光学特性不会收到不良影响。

Volatile organic compounds emitted by the luminaire's assembly materials (luminaire housings, gaskets, adhesives, secondary optical lenses, lens covers) can invade the LED encapsulant. Under closed conditions, these volatile organic compounds may cause a significant reduction in LED light output and color differences due to heating. In order to prevent the above defects, you must conduct a lighting test after product assembly in advance to confirm that the optical properties will not be adversely affected in actual use.

使用不合适的固定支架可能会使本产品表面胶体受力从而发生金线变形或断线, 因此在组装过程中最好使用专用的



固定支架。

The use of an unsuitable fixing bracket may cause the surface colloid of this product to be stressed and the gold wire will be deformed or broken, so it is best to use a special fixing bracket during the assembly process.

最好在本产品与模块之间使用导热胶，否则可能导致散热性能低下。

It is best to use thermal adhesive between this product and the module, otherwise it may result in poor heat dissipation.

3. 防静电措施： Anti-Static Measures

本产品对静电与浪涌电压敏感，在静电与浪涌电压冲击下芯片可能会发生损伤，使本产品可靠性受到影响，因此在实际操作中请采取足够的措施来防止静电产生。

This product is sensitive to static electricity and surge voltage, and the chip may be damaged under the impact of static electricity and surge voltage, which affects the reliability of this product, so please take sufficient measures to prevent static electricity in actual operation.

使用静电环、防静电手指套、导电式服装。

Use electrostatic rings, antistatic finger covers, conductive clothing.

将操作区域内的设备、工具接地除去电荷。

Ground equipment and tools in the operating area to remove charge.

使用导电性材料制作的工作台和货架。

Workbenches and shelves made of conductive materials.

本产品的防静电敏感度超过2000V，装配后的最终灯具产品建议检查是否损坏LED（漏电现象）。

The ESD sensitivity of this product is > 2000V, after assembly the final lamp, please make sure to discharge Static Electricity by proper ESD equipment.

4. 温度控制： Temperature Control

保证散热前提条件为：TS点（负极焊盘）在85℃以下，并且控制胶体表面温度 $\leq 130^{\circ}\text{C}$ 。

Recommended temperature conditions for enhanced product life: TS (Cathode Point) is $< 85^{\circ}\text{C}$, And control the colloid surface temperature $\leq 130^{\circ}\text{C}$.

使用不同的散热材料（导热片、导热硅脂等）、热沉的材料特性和表面状态，都会导致热阻发生变化。为确保在组装时降低接触热阻，请注意导热胶涂布均匀并且分布面积合理，不可出现导热胶太少或涂抹高低不平等现象。如果使用导热胶垫时，请确保螺丝安装后基板与导热胶垫的完全接触，不可存在中空现象。产品在此类耐热介质下，能通过至少500V的耐压测试。

Changes in thermal resistance can occur due to different heat dissipation materials (thermal conductive sheets, thermal greases), material



properties and surface conditions of the heat sink. Therefore, pay attention to the following points. During assembly, please ensure that a good quality thermal paste is applied and distributed evenly over the surface. While using thermal pad (Heat Sink), make sure LED is firmly tightened and there is no gap between surfaces. In such heat-media products, through a pressure test of at least 500 volts.

5. 清洗: Clean

不能使用水和有机溶剂（轻油精或稀释剂等）清洗本产品。

Do not use water and organic solvents (light olein or thinner, etc.) to clean this product.

本产品最好使用酒精清洗。如果使用其他清洗剂必须实现确认不会对外封装和封装硅胶造成不良影响。

This product is best cleaned with alcohol. If other cleaning agents are used, confirmation must be achieved that there is no adverse effect on the external encapsulation and encapsulation of the silicone.

需要对本产品附着污垢清洗时，最好使用无尘布沾取少量酒精进行擦拭。

When it is necessary to clean the dirt attached to this product, it is best to use a dust-free cloth dipped in a small amount of alcohol to wipe.

6. 其他: Other

本产品不可在以下条件下使用，如果产品在以下条件下使用，评估其使用效果和风险是有必要的：

Product is not suitable to use in following conditions:

- 直接或间接的打湿会受潮，比如淋雨等；
- Direct or indirect wet / damp conditions, such as rain, etc.;
- 被海水损害或侵蚀；
- In contact with sea water and erosive materials
- 被暴露于腐蚀性气体（如Cl₂、H₂S、NH₃、SO_x、NO_x等）；
- Exposed to corrosive gases (e.g., Cl₂, H₂S, NH₃, SO_x, NO_x, etc.);
- 被暴露于粉尘、液体或油。
- Exposed to dust, liquids or oils.

