

# SPECIFICATIONS

## COB产品规格书

# TOPLITE



MODEL: TE-AR20-13X220XX

**上海鼎晖科技股份有限公司**  
SHANGHAI TOPLITE TECHNOLOGY CO.,LTD.

[www.ledtoplight.com.cn](http://www.ledtoplight.com.cn)  
[www.ledtoplite.com](http://www.ledtoplite.com)

## TECHNICAL DATA SHEET 产品数据表

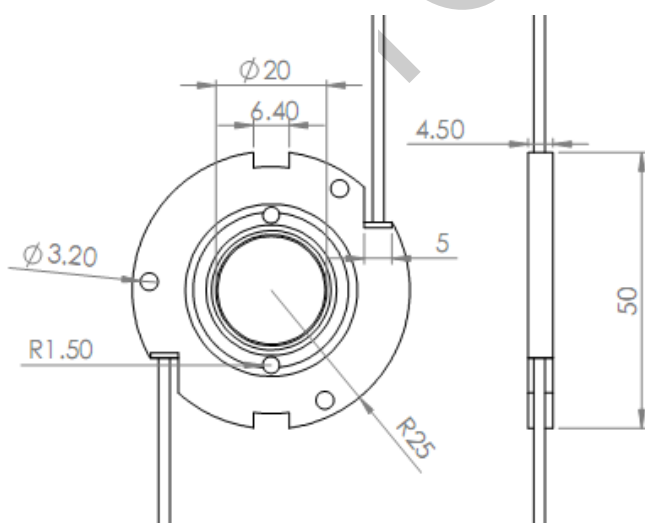
TE-AR20-13 XXXX <FOR COB MODULE>

1 / 9

### 1. PRODUCT APPEARANCE 产品实物图



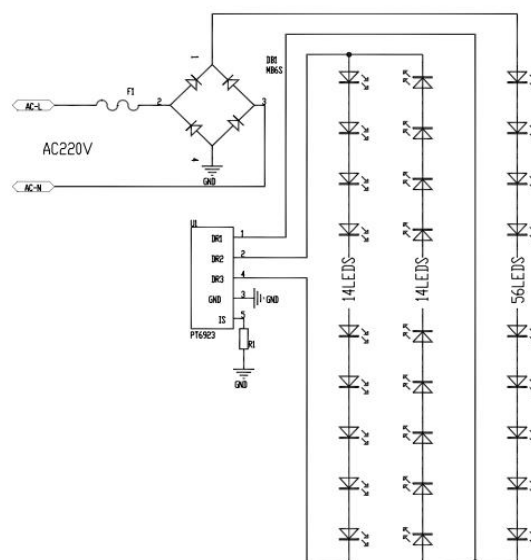
### 2. OUTLINE DRAWING 尺寸图



Unit: mm

Tolerance:  $\pm 0.25$

### 3. SCHEMATIC DIAGRAM 原理图





## TECHNICAL DATA SHEET 产品数据表

TE-AR20-13 XXXX <FOR COB MODULE>

2 / 9

### 4. DESCRIPTION 性能描述

The TE-AR20 series, which are designed for AC drive(or operation), do not need the standard converter essential for a conventional general lighting product. The modules also have a high power factor which can contribute to high energy savings in many lighting applications. Since there is no need for a converter, the TE-AR20 series life-time can be estimated closer to the LED because it is not as dependent on the other electronics in the system. It also allows for better utilization of space without the converter.

TE-AR20 系列，是专门用于交流直接驱动设计，不需要像传统的普通照明产品那样需要一个 AC/DC 转换。该模块具有较高的功率因数，可以有助于在许多照明应用的高能量的节省。因为不需要一个转换器，可估计的 TE-AR20 系列寿命接近 LED 本身寿命，由于它是不依赖于其他电子系统中，它也可以更好地利用空间，无需其他转换器件。

### 5. FEATURES 特点

- Long Life Time 寿命长
- Automatic switching 自动切换
- Connect to AC power 直接交流电源连接
- High Power Efficiency 高功率效率
- High Power Factor 高功率因数
- Low THD 低 THD
- Simplest BOM 简化 BOM
- Miniaturization 小型化
- Lead Free product 无铅产品
- RoHS complian 绿色环保
- Applications 应用场合
- Backlight 背光源



## TECHNICAL DATA SHEET 产品数据表

TE-AR20-13 XXXX <FOR COB MODULE>

3 / 9

### 6. PERFORMANCE PARAMETERS 性能参数

#### 6-1. ELECTRICAL CHARACTERISTICS 电气特性

ITEM 名称	SYMBOL 符号	RATING 数值	UNIT 单位
Power Dissipation 功率	P	13	W
Current 电流	I	62	mA
Voltage 电压	V	220	V
Power factor 功率因素	PF	0.95	-

#### 6-2. ABSOLUTE MAXIMUM RATINGS 绝对最大额定参数

ITEM 名称	SYMBOL 符号	RATING 数值	UNIT 单位
Power Dissipation 功率	P	15	W
Max Current 最大电流	I	64	mA
Max Voltage 最大电压	V	240	V
Operating Temperature 使用温度范围	T <sub>OP</sub>	- 30 ~ + 80	°C
Storage Temperature 储藏温度范围	T <sub>ST</sub>	- 40 ~ + 100	°C
Junction Temperature 结温	T <sub>J</sub>	≤110	°C

**Note:**

- \*1. Forward Current allows maximum surge current ≤ 10ms.  
正向电流允许最大冲击电流小于 10 毫秒
- \*2. Power and the forward current value, should be within the rated parameters of the LED.  
功率与正向电流的数值, 应在该 LED 的额定参数范围内



## TECHNICAL DATA SHEET 产品数据表

TE-AR20-13 XXXX &lt;FOR COB MODULE&gt;

4 / 9

## 6-3. ELECTRICAL/OPTICAL CHARACTERISTICS 电气光学特性

(T<sub>c</sub>=25°C)

**	PARAMETER 参数	SYMBOL 符号	CONDITION 条件	MIN. 最小值	TYP. 典型值	MAX. 最大值	UNIT 单位
common	Operating Voltage <sup>*1</sup>	V <sub>F</sub>	AC220V 50Hz	—	220	—	V
	Beam Angle	Deg		—	120	—	Deg
	Operating Frequency	Hz		—	50	—	Hz
	CRI <sup>*3</sup>	Ra		80	—	—	—
W	Color Temp.	—	AC220V 50Hz	2870	3045	3220	K
	Luminous Flux <sup>*2</sup>	Φ		1080	1150	—	lm
	Luminous Efficiency	η		85	90	—	lm/W
D	Color Temp.	—	AC220V 50Hz	4745	5028	5311	K
	Luminous Flux <sup>*2</sup>	Φ		1230	1300	—	lm
	Luminous Efficiency	η		95	100	—	lm/W

## Note:

- \*1. Color Temp (W: warm white; D: natural white) ;  
色温(W: 暖白; D: 自然白)。
- \*2. After 20 ms drive, Measurement tolerance: ± 5 %  
经过 20 毫秒测试, 测试公差: ±5%。
- \*3. After 20 ms drive, Measurement tolerance: ± 2%  
经过 20 毫秒测试, 测试公差: ±2%。
- \*4. After 20 ms drive, Measurement tolerance: ± 3%  
经过 20 毫秒测试, 测试公差: ±3%。
- \*5. The data above comes from Shanghai Toplite -ZVISION 1 meter integrating sphere  
以上数据来源于鼎晖科技-中为光电 1 米积分球

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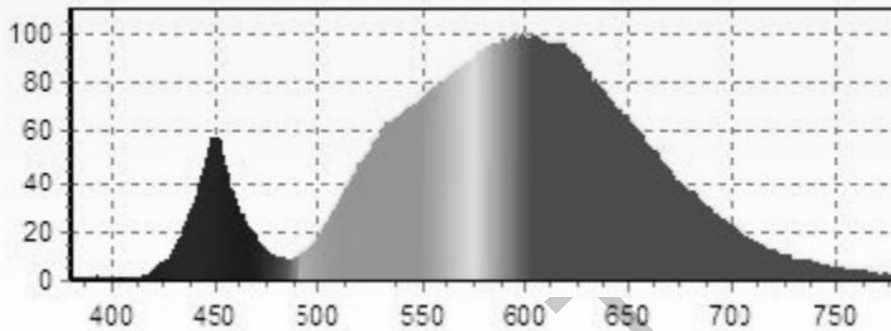
TE-AR20-13 XXXX <FOR COB MODULE>

5 / 9

### 6-4. RELATIVE SPECTRAL DISTRIBUTION 光谱分布图

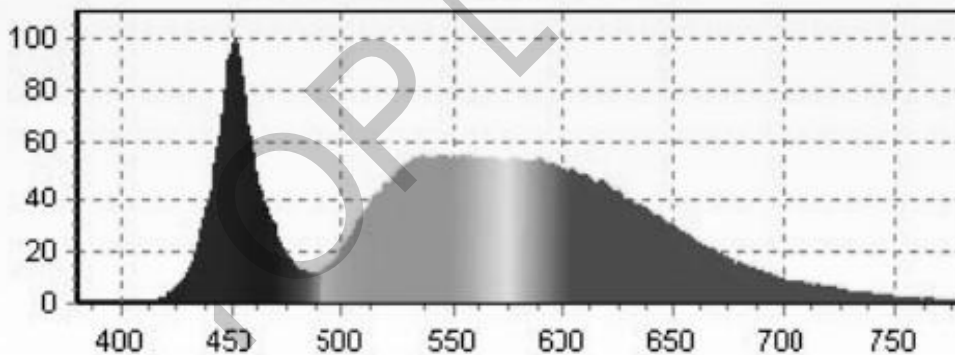
#### Relative Spectral Distribution vs. Wavelength Characteristic-3000K

相对光谱分布与波长特性-3000K



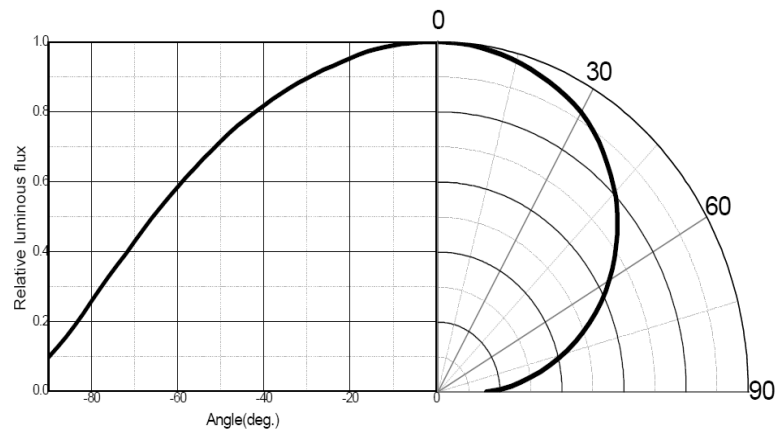
#### Relative Spectral Distribution vs. Wavelength Characteristic-5000K

相对光谱分布与波长特性-5000K



#### Relative Luminous flux Spectral Distribution vs. Emitting angle

相对光通量 Vs 发光角度





## TECHNICAL DATA SHEET 产品数据表

TE-AR20-13 XXXX <FOR COB MODULE>

6 / 9

### 7. RELIABILITY 可靠性

The reliability of products shall be satisfied with items listed below.

产品可靠性应满足以下各项要求

#### 7-1. TEST ITEMS AND TEST CONDITIONS 检验/测试项目

NO.	TEST ITEM 测试项目	TEST CONDITIONS 测试条件
1	Continuous operation test 持续性测试	$T_a = 25^{\circ}\text{C}$ , $V_F = 220\text{V}$ 50Hz $\times$ 1000 hours (with Al fin)
		$T_j = 110^{\circ}\text{C}$ , $V_F = 220\text{V}$ 50Hz $\times$ 1000 hours (with Al fin)
2	Low temperature storage 低温储藏测试	$T_a = -40^{\circ}\text{C} \times 1000$ hours
3	High temperature storage 高温储藏测试	$T_a = 100^{\circ}\text{C} \times 1000$ hours
4	Moisture resistance 防潮测试	$T_a = 60^{\circ}\text{C}$ , 90%RH for 500 hours
5	Thermal shock 冷热冲击测试	$T_a = -40^{\circ}\text{C} \times 30$ minutes $\sim$ $100^{\circ}\text{C} \times 30$ minutes, 100 cycle

#### 7-2. FAILURE CRITERIA 失效准则

NO.	PARAMETER 测试项目	SYMBOL 符号	FAILURE CRITERIA 失效准则
1	Forward Voltage 正向电压	$V_F$	$V_F > \text{Initial value} \times 1.1$
2	Luminous Flux 光通量	$\Phi$	$\Phi < \text{Initial value} \times 0.7$



TECHNICAL DATA SHEET 产品数据表

TE-AR20-13 XXXX <FOR COB MODULE>

8. CHROMATICITY COORDINATES REGIONAL 色度坐标

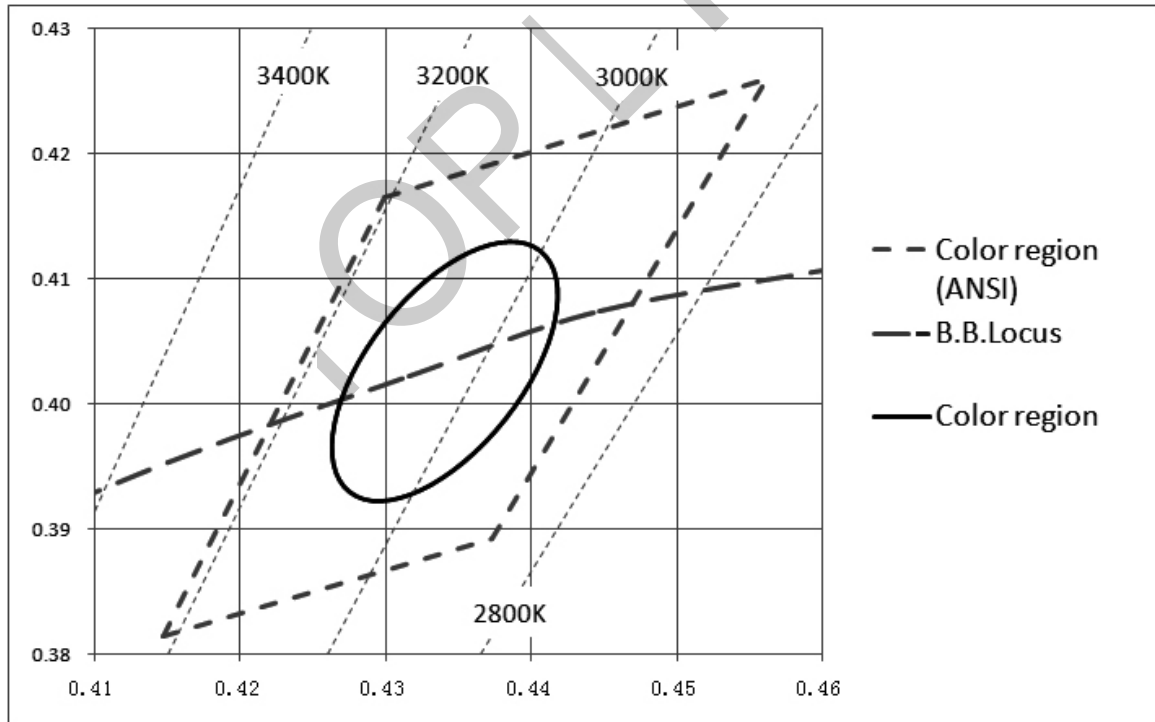
8-1. 3000K CHROMATICITY COORDINATES 3000K 的色度坐标

(Tolerance: x, y  $\pm$  0.005)

( $V_F$  =220V 50Hz,  $T_c$  = 25 $^{\circ}$ C)

Range		Chromaticity coordinates				
		NO.1	NO.2	NO.3	NO.4	CENTER
	x	0.4562	0.4299	0.4147	0.4373	0.4338
	y	0.4260	0.4165	0.3814	0.3893	0.4030

Chromaticity Diagram



Note: The tolerance of measurement at our tester is  $V_F \pm 3\%$  ,  $D_v \pm 10\%$  , Chromaticity(x,y)  $\pm 0.005$ .

注： 我司测试误差值，  $V_F \pm 3\%$  ,  $D_v \pm 5\%$  , 色坐标  $\pm 0.005$



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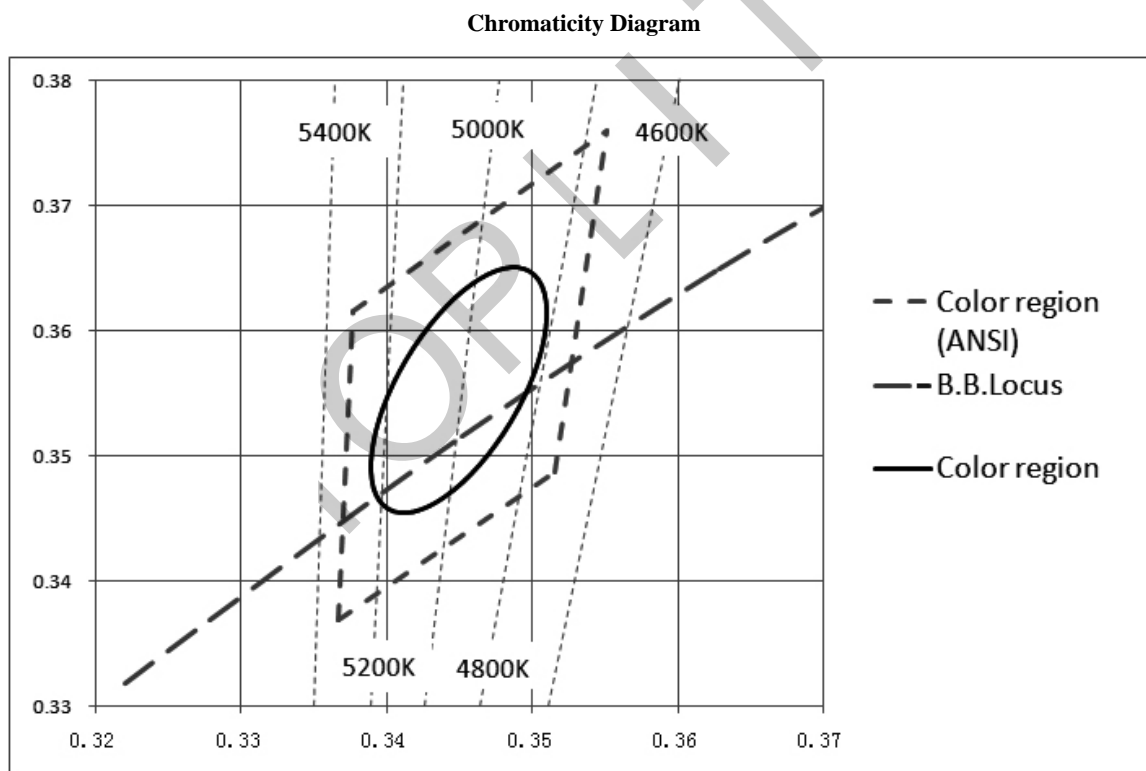
TE-AR20-13 XXXX <FOR COB MODULE>

8-2. 5000K CHROMATICITY COORDINATES 5000K 的色度坐标

(Tolerance: x, y  $\pm$  0.005)

( $V_F = 220V$  50Hz,  $T_c = 25^\circ C$ )

Range		Chromaticity coordinates				
		NO.1	NO.2	NO.3	NO.4	CENTER
	x	0.3551	0.3376	0.3366	0.3515	0.3447
	y	0.3760	0.3616	0.3369	0.3487	0.3553



Note: The tolerance of measurement at our tester is  $V_F \pm 3\%$ ,  $D_v \pm 10\%$ , Chromaticity(x,y)  $\pm 0.005$ .

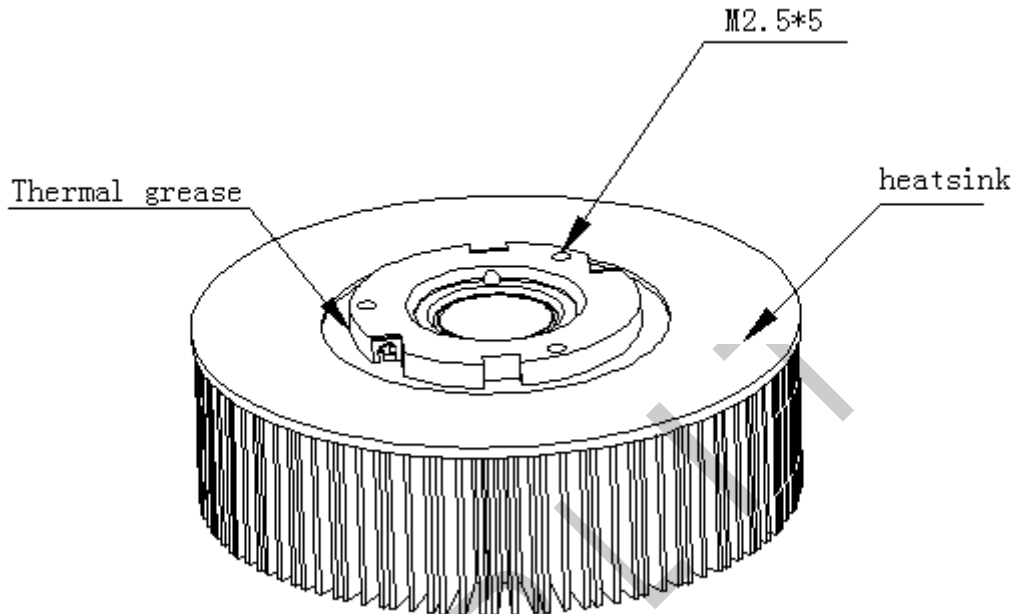
注： 我司测试误差值，  $V_F \pm 3\%$ ，  $D_v \pm 5\%$ ， 色坐标  $\pm 0.005$

## TECHNICAL DATA SHEET 产品数据表

TE-AR20-13 XXXX <FOR COB MODULE>

9 / 9

### 9. INSTALLATION DIAGRAM METHOD 安装方式



### 10. ATTENTION 注意事项

- Please review the TE-AR20Module Application Note for protective circuitry component usage.  
请仔细阅读 TE-AR20 模块应用,注意保护电路组件的使用.
- The AC-products run on high voltage so use caution when near the device which the circuit.  
该 AC 产品运行在高电压,使用时要小心焊接点裸露的位置.
- DO NOT touch any of the circuit board, components or terminals with body or metal while circuit is active.  
电路工作时,请不要碰任何的电路板,元件或终端体或金属部件.
- Please do not add or change wires while TE-AR20 circuit is active  
请不要增加或者改变线路.
- The appearance and specifications of the product may be modified for improvement without notice.  
产品的外观和规格可能被修改,改进恕不另行通知.
- Long time exposure of sunlight or occasional UV exposure will cause lens discoloration.  
长时间曝光的阳光或紫外线照射会导致偶尔硅胶变色.
- Please do not use adhesives to attach the LED that outgas organic vapor.  
请不要使用粘合剂将导致气体的有机蒸汽.
- Please do not use together with the materials containing Sulfur  
请不要使用含硫材料一起.
- Please do not assemble under the condition of moisture and oxidizing gas in their (Cl, H<sub>2</sub>S,NH<sub>3</sub>,SO<sub>2</sub>,NOX,etc)  
请不要安装湿度条件下的空气中的氧化性气体(Cl、H<sub>2</sub>S、NH<sub>3</sub>、SO<sub>2</sub>、NOX 等).