

# TX-6070RGBLLAC50FC120-NUVENG-02

## PRODUCT SPECIFICATION

### Features:

- ◆Excellent transiting heat from LED chip operating under R/G/B/L1/L2/A/C:IF=1.0 A
- ◆High luminous output
- ◆Encapsulated materials are environmentally certified and meet environmental requirements.

### Chip Material:

- ◆Red:AlInGaP
- ◆Green: GaInN
- ◆Blue:GaInN
- ◆Lemon light:GaInN
- ◆PC Amber:GaInN
- ◆Cyan:GaN

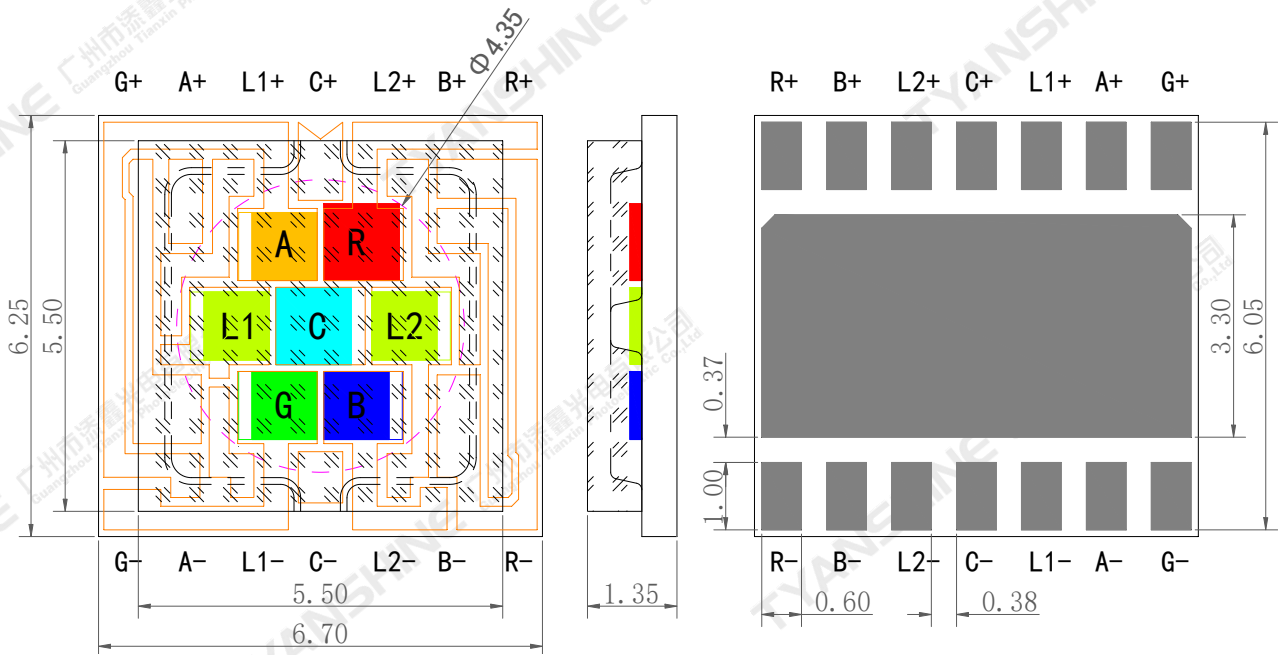
### Emitting Color:

- ◆Red (R)
- ◆Green (G)
- ◆Blue (B)
- ◆Lemon light (L1/L2)
- ◆PC Amber (A)
- ◆Cyan (C)

### Applications:

- ◆Auxiliary lighting
- ◆Ambient lighting
- ◆Architectural lighting
- ◆Entertainment lighting
- ◆Stage lighting

**Package Dimensions:**



**Notes:**

- 1.All dimensions are in millimeters .
- 2.Tolerances unless otherwise mentioned are  $\pm 0.1\text{mm}$  .

**Absolute Maximum Ratings (Tc=25°C)**

Parameter	Symbol	Max Ratings	Unit	
Forward Current	IF	R	1.8	A
		G	2.5	
		B	2.5	
		L1	2.0	
		L2	2.0	
		A	2.0	
		C	1.8	
Reverse Voltage	V <sub>R</sub>	Not designed for reverse operation	V	
Power Dissipation	P <sub>D</sub>	R	5.4	W
		G	9.0	
		B	9.0	
		L1	7.2	
		L2	7.2	
		A	7.2	
		C	6.4	
Junction Temperature	T <sub>j</sub>	R	115	°C
		G	150	
		B	150	
		L1	150	
		L2	150	
		A	150	
		C	150	
Electrostatic Discharge Threshold (ESD)	ESD	2000	V	
Storage Temperature	T <sub>stg</sub>	-20~+70	°C	
Operation Temperature	T <sub>opr</sub>	-30~+85		

**Notes:**

- Specifications are subject to change without notice.
- The data on this specification is for reference only and the actual data is in accordance with the acknowledgment.
- Precautions for ESD:  
STATIC SHIELD Electricity and surge damages the LED. It is recommended to use a wrist band or anti-electrostatic glove when handling the LED. All devices, equipment and machinery must be properly grounded.

**Electrical Optical Characteristics (Tc=25°C)**

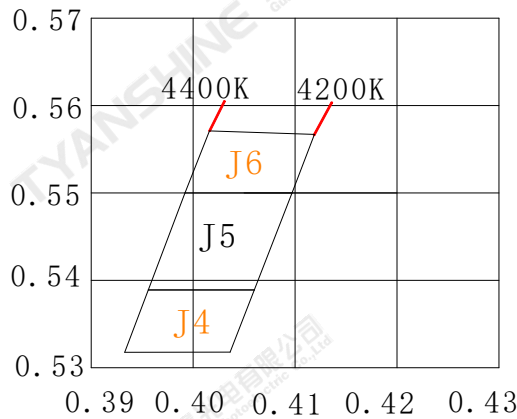
Parameter	Symbol	Condition	Emitting Color	Min.	Typ.	Max.	Units
Luminous Flux	$\Phi_v$	If=1A	R	100	—	130	lm
			G	220	—	255	
			B	40	—	52	
			L1	300	—	370	
			L2	300	—	370	
			A	150	—	190	
Dominant Wavelength	$\lambda_d$	If=1A	R	620	—	630	nm
			G	525	—	535	
			B	450	—	460	
			L1/L2	565	—	570	
			C	485	—	495	
Correlated Colour Temperature	CCT	If=1A	L1/L2	4200	—	4400	K
			A	1770	—	1850	
Peak-emission Wavelength	$\lambda_p$	If=1A	R	625	—	635	nm
			G	520	—	525	
			B	448	—	453	
			L1/L2	545	—	560	
			C	482	—	488	
Spectral Line Half-Width	$\Delta\lambda$	If=1A	R	12	17	22	nm
			G	28	33	38	
			B	14	19	24	
			L1/L2	106	111	116	
			A	85	90	95	
			C	22	27	32	
Forward Voltage	$V_f$	If=1A	R	2.0	2.5	3.0	V
			G	2.8	3.2	3.6	
			B	2.8	3.2	3.6	
			L1	2.8	3.2	3.6	
			L2	2.8	3.2	3.6	
			A	2.8	3.2	3.6	
			C	2.8	3.2	3.6	
Reverse Current	$I_R$	$V_R=5V$	—	—	—	—	$\mu A$
Viewing Angle at 50 % IV	$2\theta_{1/2}$	—	—	—	120	—	Deg

Thermal Resistance Junction to Case	R $\theta_{J-c}$	If=1A	R	—	2.9	—	K/W
			G	—	2.9	—	
			B	—	2.9	—	
			L1	—	2.9	—	
			L2	—	2.9	—	
			A	—	2.9	—	
			C	—	2.9	—	
Temperature Coefficient of Voltage	V $\Delta$ F/T	If=1A	R	—	-3.65	—	mV/°C
			G	—	-1.02	—	
			B	—	-0.65	—	
			L1	—	-0.67	—	
			L2	—	-0.67	—	
			A	—	-1.98	—	
			C	—	-3.52	—	

**Notes:**

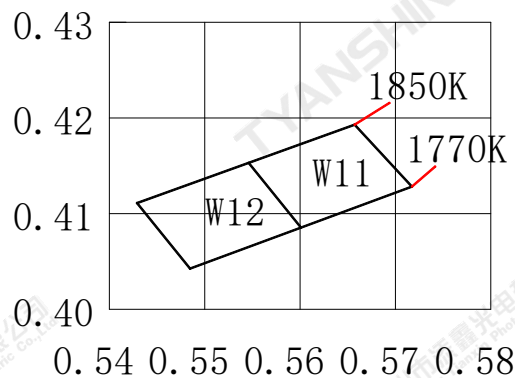
- 1.Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
2. $\theta_{1/2}$  is the off-axis angle at which the luminous intensity is half the axial luminous intensity.
- 3.The dominant wavelength ( $\lambda_d$ ) is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.
- 4.Luminous flux measurement tolerance:±15%.
- 5.Forward voltage measurement tolerance:±0.15V.

**Lemon light (L) light Color coordinate filing (If=1A, Tc=25 °C)**



Grade	TC	P1		P2		P3		P4	
		X1	Y1	X2	Y2	X3	Y3	X4	Y4
J4	4200-4400K	0.3933	0.5318	0.3956	0.5389	0.4060	0.5389	0.4036	0.5318
J5	4200-4400K	0.406	0.5389	0.4097	0.55	0.3992	0.55	0.3956	0.5389
J6	4200-4400K	0.4097	0.55	0.4119	0.5567	0.4016	0.5571	0.3992	0.55

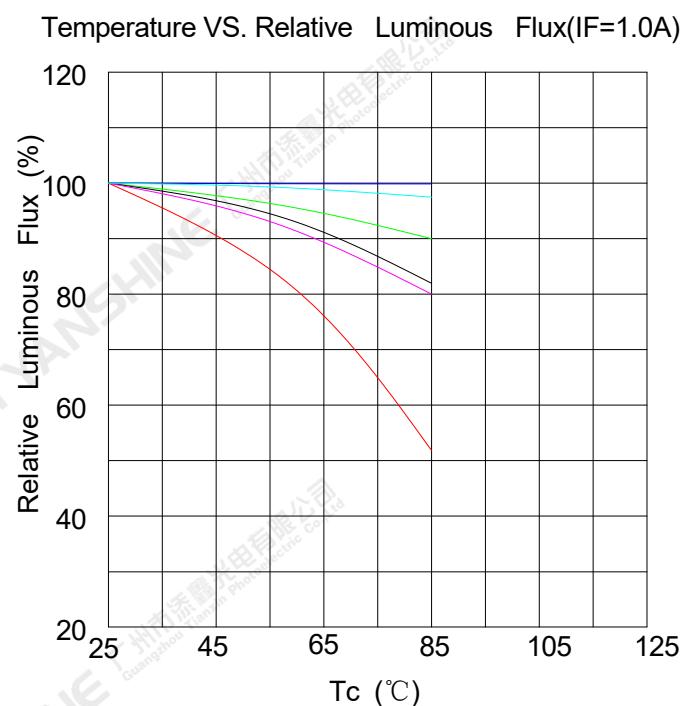
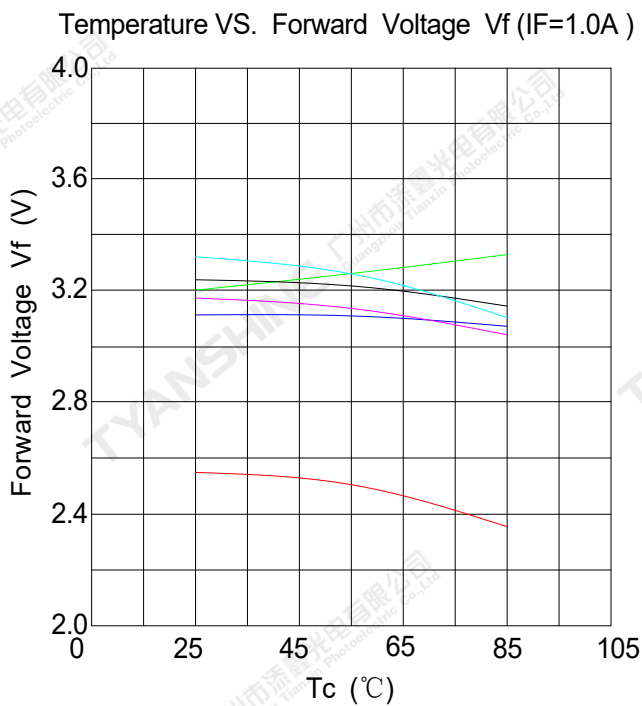
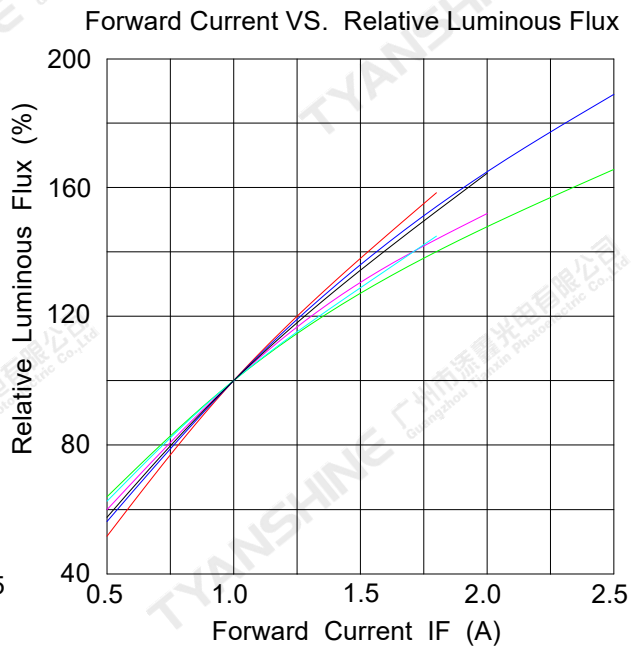
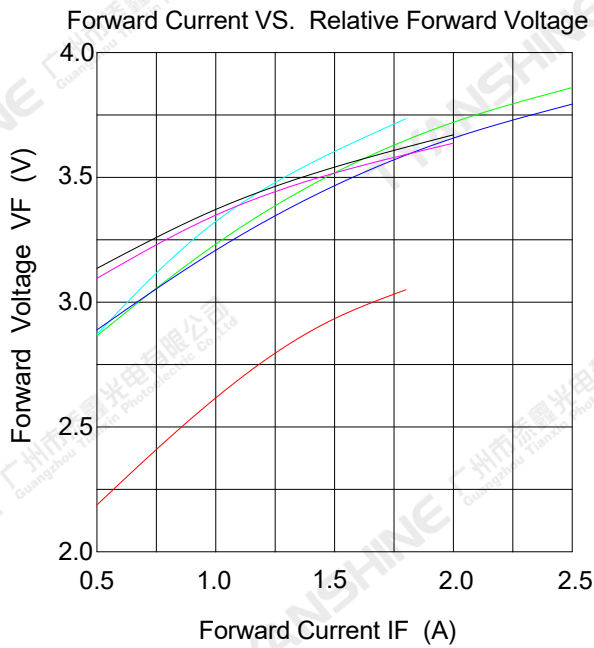
**PC Amber (A) light Color coordinate filing (If=1A, Tc=25 °C)**



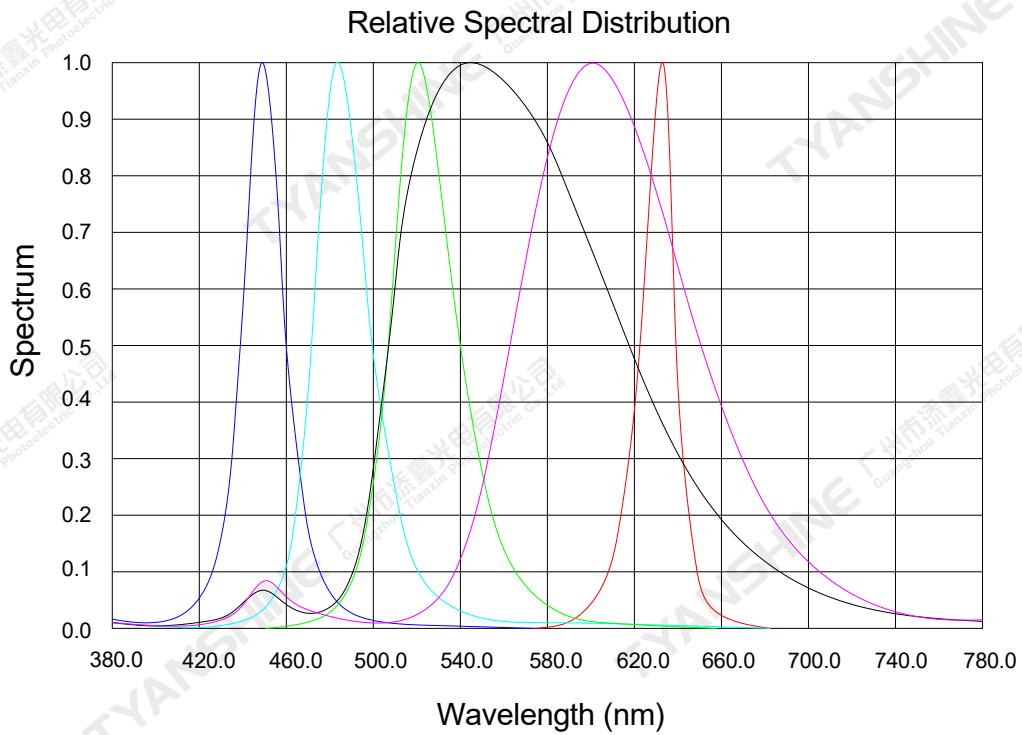
Grade	TC	P1		P2		P3		P4	
		X1	Y1	X2	Y2	X3	Y3	X4	Y4
W11	1770-1850K	0.5546	0.4154	0.56	0.4088	0.5718	0.413	0.5658	0.4194
W12	1770-1850K	0.5429	0.4112	0.5485	0.4044	0.56	0.4088	0.5546	0.4154

# Typical Electrical/Optical Characteristics Curves

(25°C Ambient Temperature Unless Otherwise Noted)



**Notes:** ■ Red; ■ Green; ■ Blue; ■ Lemon light(L1/L2); ■ PC Amber; ■ Cyan;



**Notes:**    — Red;    — Green;    — Blue;    — Lemon light(L1/L2);    — PC Amber;    — Cyan;

**Notes:**

1.  $2\theta_{1/2}$  is the off axis angle from lamp centerline where the luminous intensity is 1/2 of the peak value.
2. View angle tolerance is  $\pm 5^\circ$ .



## Usage Precautions

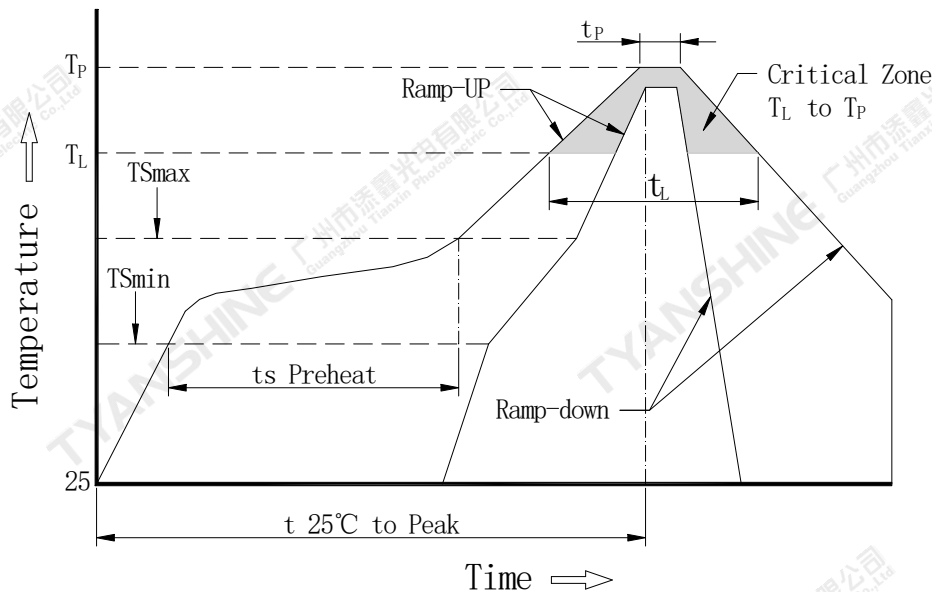
### Storage Environment Condition

Temperature: 5°C ~ 30°C (41°F ~ 86°F)

Humidity: 60% RH Max.

### Soldering Condition

Use the conditions shown to the under figure.



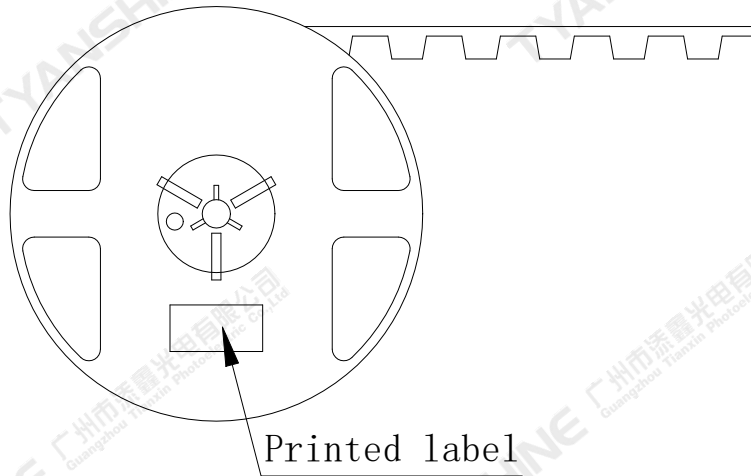
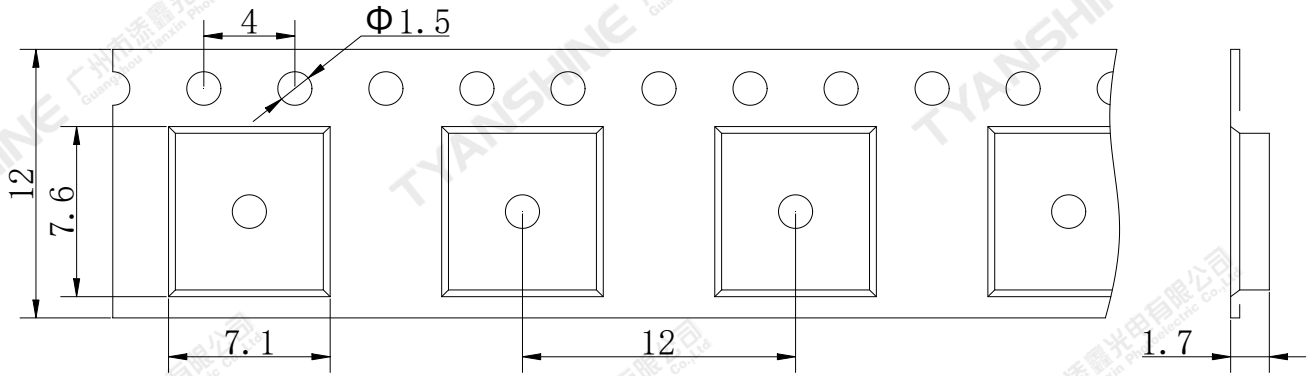
Profile Feature	Pb-Free Solderr(SnBi35Ag0.3)
Average Ramp-Up Rate ( $T_{Smax}$ to $T_P$ )	3°C/second max.
Preheat: Temperature Min ( $T_{Smin}$ )	100°C
Preheat: Temperature Max ( $T_{Smax}$ )	150°C
Preheat: Time ( $T_{Smin}$ to $T_{Smax}$ )	60-120 seconds
Time Maintained Above: Temperature ( $T_L$ )	183°C
Time Maintained Above: Time ( $T_L$ )	60-150 seconds
Peak/Classification Temperature ( $T_P$ )	225°C
Time Within 5°C of Actual Peak Temperature ( $T_P$ )	10-30 seconds
Ramp-Down Rate	6°C/second max.
Time 25°C to Peak Temperature	6 minutes max.

**Note:**

All temperatures refer to topside of the package, measured on the package body surface.

**Dimensions For Cannulation And Packaging**

**Quantity: 1000PCS**



**Notes:**

1. All dimensions are in millimeters.
2. Tolerances are  $\pm 2.0$  mm unless otherwise noted.
3. The products are packaged together with silica gel, Transport, not to the weight of welding LED light-emitting area, As a result of the weight of LED light-emitting zone in the quality of, Irresponsible of the Company.