# TX-3850RGBW120D180-001

# PRODUCT SPECIFICATION

## Features:

◆Excellent transiting heat from LED chip operating under 1.4 A.

◆Mixing any two colors of light, there will be no partial color and color spots uneven phenomenon.

◆High luminous output.

◆No UV.

◆Encapsulated materials are environmentally certified and meet environmental requirements.

## Chip Material:

◆Red: AlGaInP

◆Green: GaInN

◆Blue: GaN

◆White: GaN

## Emitting Color:

◆Red

◆Green

◆Blue

◆white

## Applications:

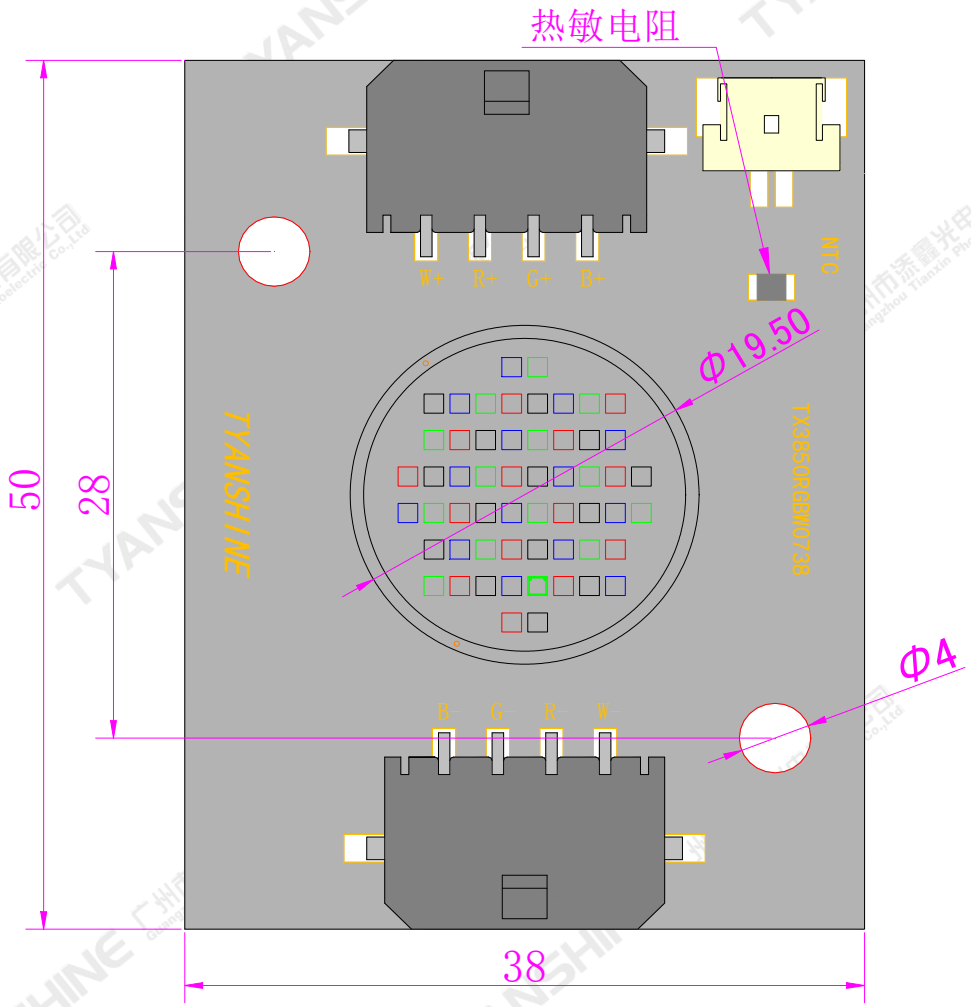
◆Entertainment lighting

◆Landscape lighting

◆Commercial lighting

◆Decorative lighting

## Package Dimensions:




**Notes:**

1.All dimensions are in millimeters .

2.Tolerances unless otherwise mentioned are ±0.1mm .

# Absolute Maximum Ratings (Tc=25℃)

| Parameter | Symbol | | Ratings | Unit |
|---|---|---|---|---|
| Forward Current | IF | | 1.6 | A |
| Reverse Voltage | $V_R$ | | Not designed for reverse operation | V |
| Power Dissipation | $P_D$ | R | 24500 | mW |
| | | G | 31500 | |
| | | B | 32200 | |
| | | W | 32200 | |
| Junction Temperature | Tj | R | 115 | ℃ |
| | | G | 150 | |
| | | B | 150 | |
| | | W | 150 | |
| Electrostatic Discharge Threshold (ESD) | ESD | | 2000 | V |
| Storage Temperature | $T_{stg}$ | | -20~+70 | ℃ |
| Operation Temperature | $T_{opr}$ | | -40~+100 | |

**Notes:**

1.Specifications are subject to change without notice.

2.Under the stipulated Characteristics parameters above, the life span of the LED is more than 50,000hours.

3.The data on this specification is for reference only and the actual data is in accordance with the acknowledgment.

4.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 | $\varphi_v$ | If=1.4A | R | 900 | 1100 | — | lm |
| | | | G | 2000 | 2250 | — | |
| | | | B | 500 | 550 | — | |
| | | | W | 2300 | 2650 | — | |
| Dominant Wavelength | λd | | R | 620 | 625 | 628 | nm |
| | | | G | 524 | 528 | 532 | |
| | | | B | 455 | 457 | 461 | |
| Correlated Colour Temperature | CCT | | W | 6000 | 6500 | 7000 | K |
| Peak-emission Wavelength | λp | | R | 632 | 637 | 640 | nm |
| | | | G | 520 | 524 | 530 | |
| | | | B | 445 | 451 | 456 | |
| Spectral Line Half-Width | △λ | | R | 15 | 17.5 | 20 | nm |
| | | | G | 30 | 35 | 40 | |
| | | | B | 20 | 23 | 26 | |
| | | | W | 24 | 28 | 30 | |
| Forward Voltage | $V_f$ | | R | 14.5 | 16 | 17.5 | V |
| | | | G | 19.5 | 21 | 22.5 | |
| | | | B | 20 | 21.5 | 23 | |
| | | | W | 20 | 21.5 | 23 | |
| Viewing Angle at 50％IV | $2\theta_{1/2}$ | — | — | — | 120 | — | Deg |
| Thermal Resistance Junction to Case | $R\theta_{J-C}$ | — | R | — | 0.08 | — | K/W |
| | | | G | — | 0.07 | — | |
| | | | B | | 0.07 | | |
| | | | W | — | 0.07 | — | |
| Temperature Coefficient of Voltage | V△F/T | — | R | — | -10 | — | mV/℃ |
| | | | G | — | -22 | — | |
| | | | B | | -14 | | |
| | | | W | — | -13 | — | |

# White light Color coordinate filing (IF=1.4A )

| Grade | TC | P1 | | P2 | | P3 | | P4 | |
|---|---|---|---|---|---|---|---|---|---|
| | | X1 | Y1 | X2 | Y2 | X3 | Y3 | X4 | Y4 |
| E121 | 6750 - 7000 K | 0.3078 | 0.3099 | 0.3068 | 0.3143 | 0.3098 | 0.3173 | 0.3106 | 0.3127 |
| E111 | | 0.3068 | 0.3143 | 0.3054 | 0.3213 | 0.3086 | 0.3246 | 0.3098 | 0.3173 |
| E011 | | 0.3054 | 0.3213 | 0.3044 | 0.3262 | 0.3078 | 0.3297 | 0.3086 | 0.3246 |
| E013 | | 0.3044 | 0.3263 | 0.3035 | 0.3309 | 0.3070 | 0.3344 | 0.3078 | 0.3297 |
| E122 | 6500 - 6750 K | 0.3106 | 0.3127 | 0.3098 | 0.3173 | 0.3139 | 0.3214 | 0.3145 | 0.3167 |
| E112 | | 0.3098 | 0.3173 | 0.3086 | 0.3246 | 0.3128 | 0.3289 | 0.3139 | 0.3214 |
| E012 | | 0.3086 | 0.3246 | 0.3078 | 0.3297 | 0.3120 | 0.3339 | 0.3128 | 0.3289 |
| E014 | | 0.3078 | 0.3297 | 0.3070 | 0.3344 | 0.3114 | 0.3389 | 0.3121 | 0.3340 |
| F121 | 6250 - 6500 K | 0.3146 | 0.3161 | 0.3139 | 0.3210 | 0.3177 | 0.3249 | 0.3183 | 0.3199 |
| F111 | | 0.3139 | 0.3210 | 0.3129 | 0.3283 | 0.3169 | 0.3325 | 0.3177 | 0.3249 |
| F011 | | 0.3129 | 0.3283 | 0.3122 | 0.3334 | 0.3164 | 0.3377 | 0.3169 | 0.3326 |
| F013 | | 0.3122 | 0.3334 | 0.3115 | 0.3386 | 0.3158 | 0.3430 | 0.3164 | 0.3377 |
| F122 | 6000 - 6250 K | 0.3183 | 0.3199 | 0.3177 | 0.3249 | 0.3219 | 0.3294 | 0.3223 | 0.3238 |
| F112 | | 0.3177 | 0.3249 | 0.3169 | 0.3325 | 0.3214 | 0.3373 | 0.3219 | 0.3294 |
| F012 | | 0.3169 | 0.3325 | 0.3164 | 0.3377 | 0.3210 | 0.3425 | 0.3214 | 0.3373 |
| F014 | | 0.3164 | 0.3377 | 0.3158 | 0.3430 | 0.3207 | 0.3479 | 0.3211 | 0.3426 |

**Notes:**

1.Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.

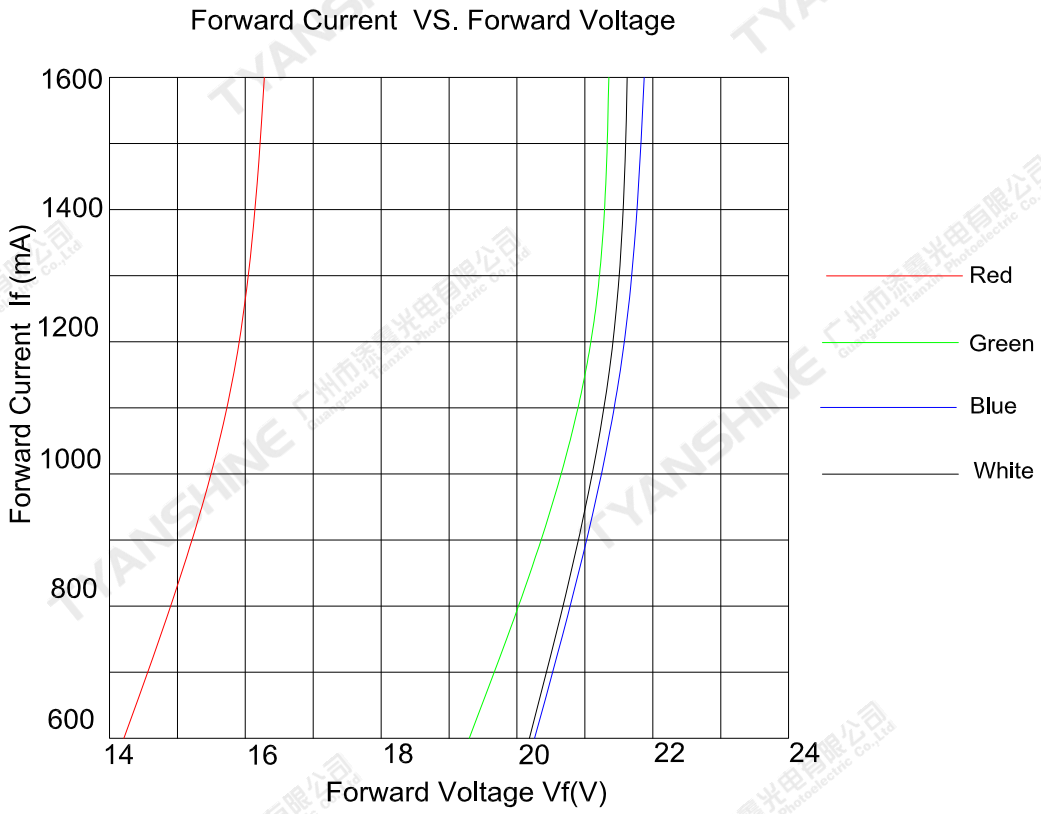
2.$\theta_{1/2}$ is the off-axis angle at which the luminous intensity is half the axial luminous intensity.

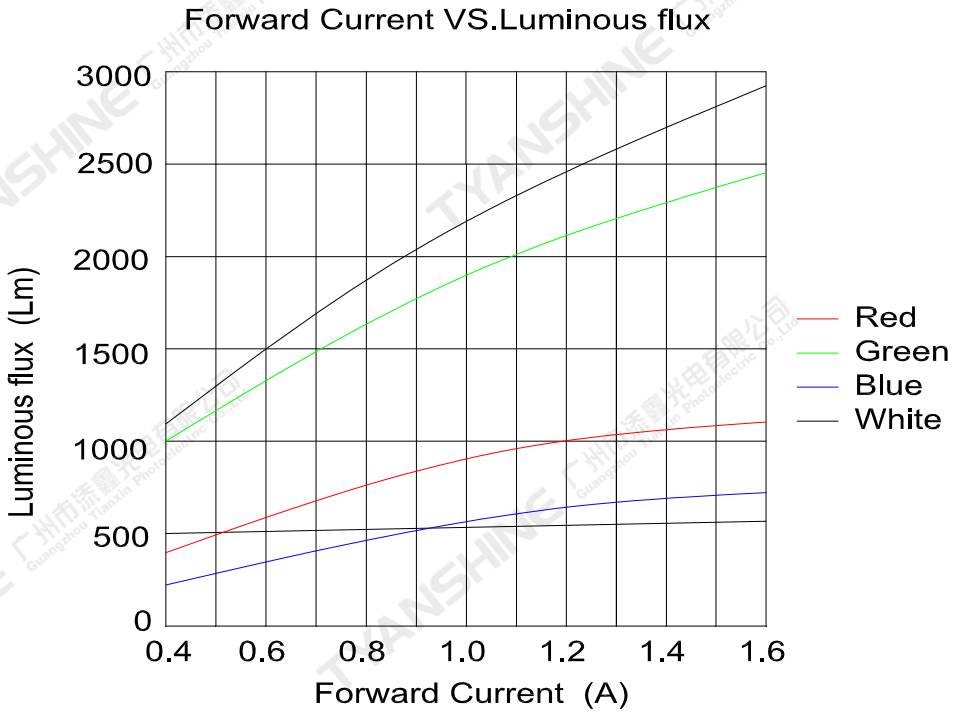
3.Luminous flux measurement tolerance:±15%.

4.Forward voltage measurement tolerance:±0.15V.

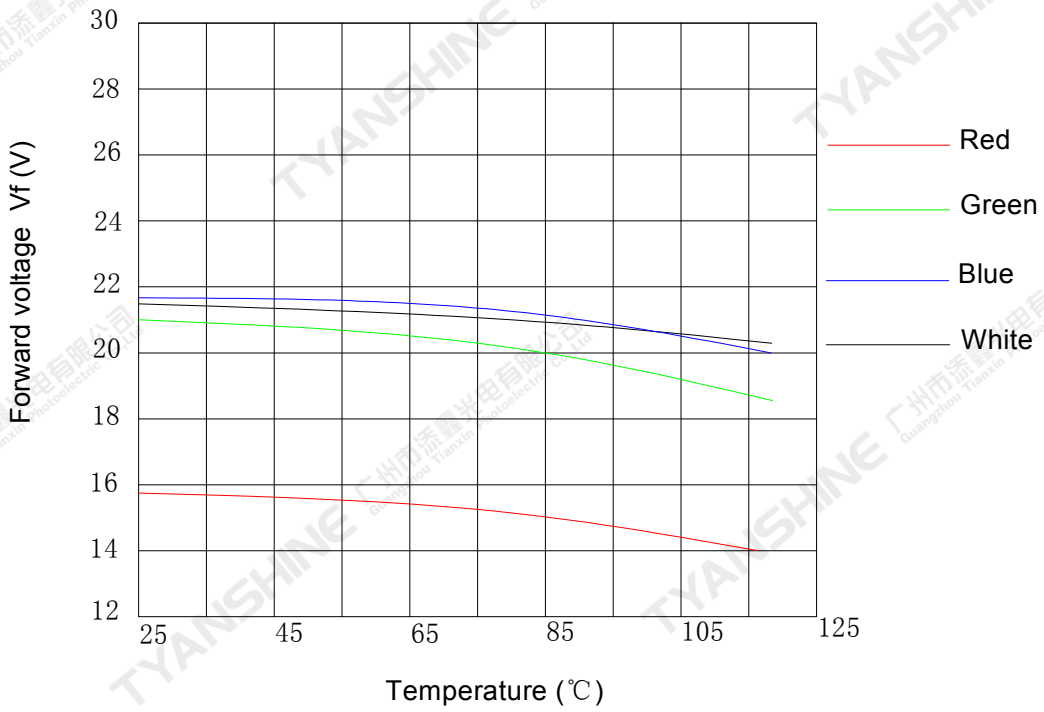
# Typical Electrical/Optical Characteristics Curves

(25℃ Ambient Temperature Unless Otherwise Noted)

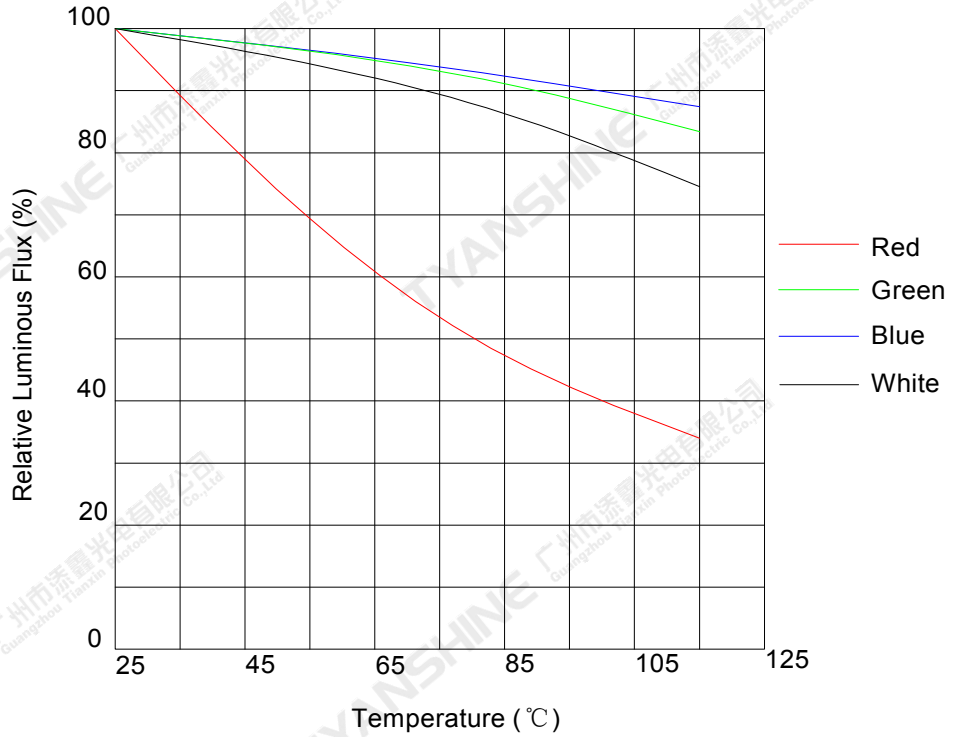


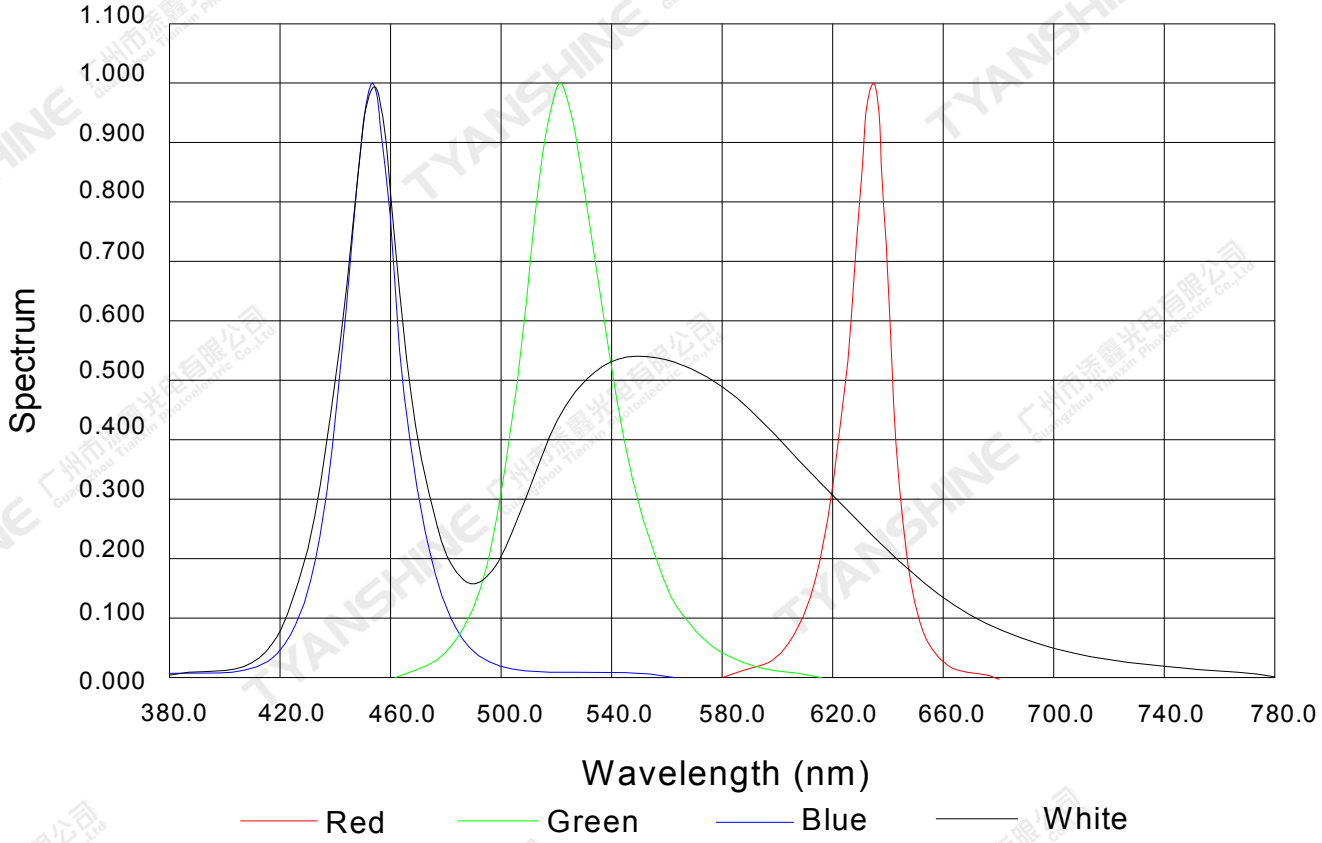
Temperature VS. Forward Voltage (IF=1.4A)



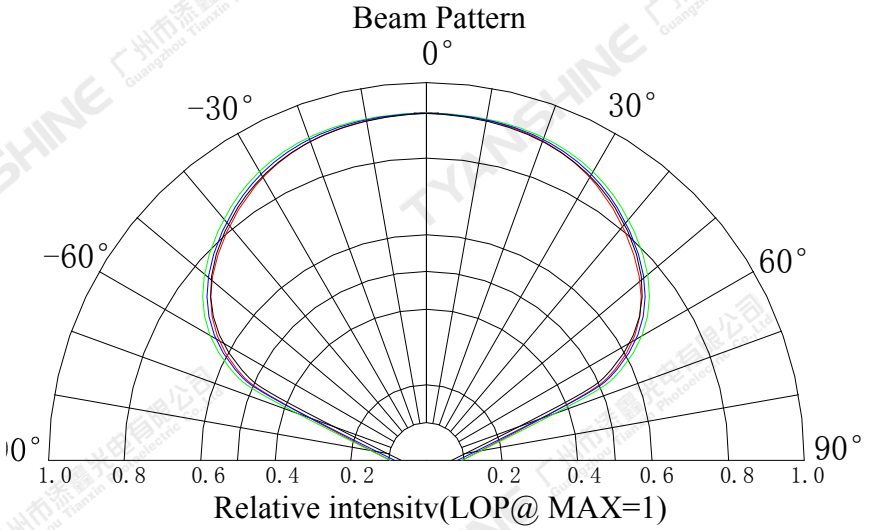

Temperature VS. Relative Luminous Flux (IF=1.4A)



## Relative Spectral Distribution




## Beam Pattern

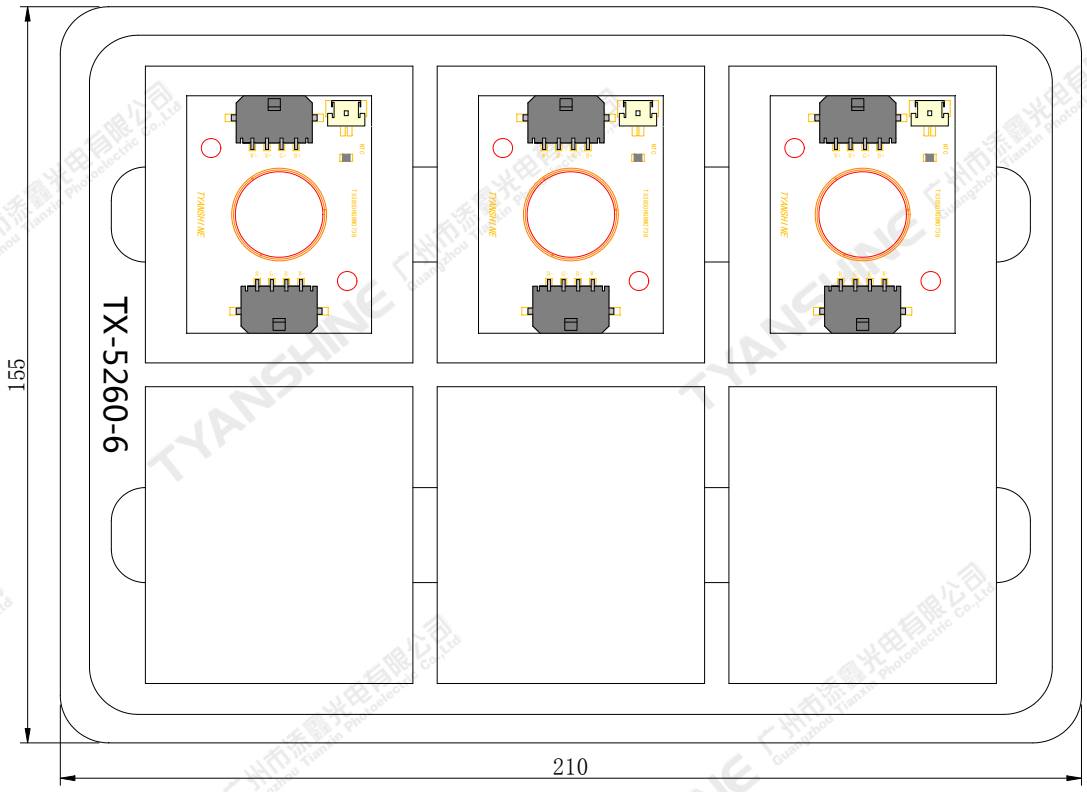



**Notes:**

1. 2θ 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 ± 5°.

# Dimensions For Cannulation And Packaging

## Quantity: 6PCS




**Notes:**

1. All dimensions are in millimeters.
2. Tolerances are ±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, Irre sponsible of the Company.