



CHINA INTERNATIONAL CO.  
SHENZHEN FURUIER PHOTOELECTRIC CO., LTD.

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## SPECIFICATION FOR APPROVAL

CUSTOMER :

ARTICLE : 5mm Standard Round White LED

PART NO : FLR-50T04-HW7

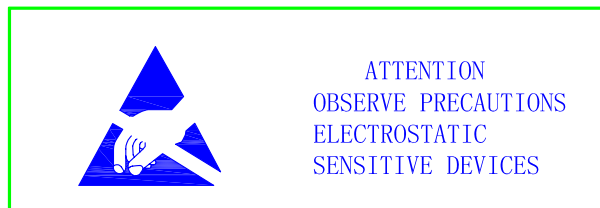
DATE : 2011-03-22

CUSTOMER MODEL :

RoHS PRODUCT

## Authorized Signature

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\_\_\_\_\_





## ∅ Absolute Maximum Rating

| Item                       | Symbol | Absolute Maximum Rating | Unit |
|----------------------------|--------|-------------------------|------|
| Forward Current            | IF     | 20                      | mA   |
| Peak Forward Current       | IFP    | 120                     | mA   |
| Reverse Voltage            | VR     | 5                       | V    |
| Power Dissipation          | PD     | 85                      | mW   |
| Operation Temperature      | Topr   | -35~+80                 | ℃    |
| Storage Temperature        | Tstg   | -40~+80                 | ℃    |
| Lead Soldering Temperature | Tsol   | Max. 260° for 3sec Max. |      |

\*IFP Conditions:Pulse Width≤10msec duty≤1/10

\*Tsol Conditions:4mm from the base of the epoxy bulb

## ∅ Typical Optical/Electrical Characteristics

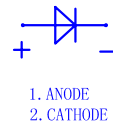
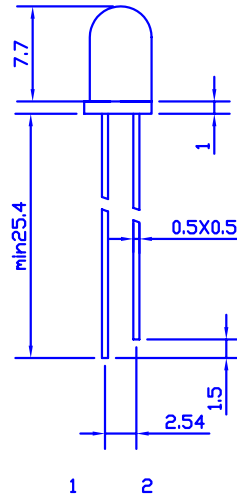
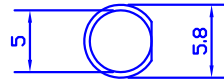
| Item                      | Symbol          | Condition | Min.  | Typ.             | Max. | Unit |
|---------------------------|-----------------|-----------|-------|------------------|------|------|
| Forward Voltage           | VF              | IF=20mA   | --    | 3.0              | 3.4  | V    |
| Reverse Current           | IF              | VR=5V     | --    | --               | 10   | uA   |
| 50% Power Angle           | $2\theta_{1/2}$ | IF=20mA   | --    | 12               | --   | deg  |
| Luminous Intensity        | IV              | IF=20mA   | 15000 | 20000            | --   | mcd  |
| Chromaticity coordinates  |                 | IF=20mA   | --    | x=0.33<br>y=0.32 | --   | nm   |
| Recommend Forward Current | IF(rec)         | --        | --    | 10~20            | --   | mA   |

## Notes:

1. Absolute maximum ratings Ta=25° C .
2. Tolerance of measurement of forward voltage±0.1V.
3. Tolerance of measurement of peak Wavelength±2.0nm.
4. Tolerance of measurement of luminous intensity±15%.



ØPackage Dimensions And Materials



1. ANODE  
2. CATHODE

□ 0.5 SQUARE\*2

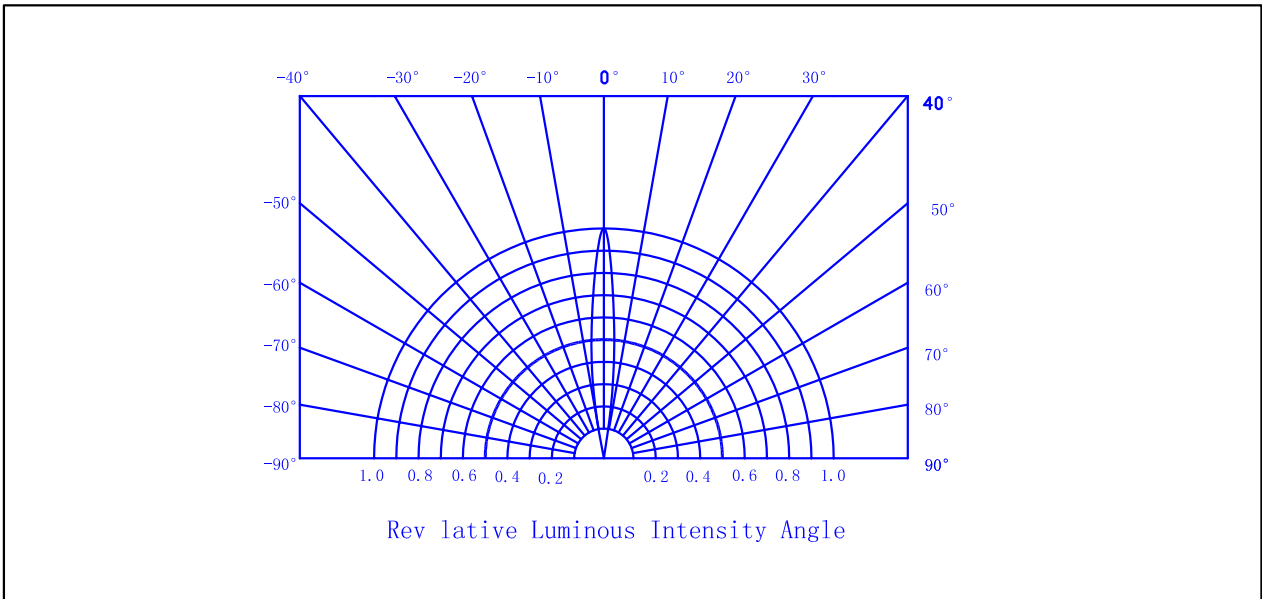
| Chip          |                | Lens Color  |
|---------------|----------------|-------------|
| Dice Material | Emitting Color |             |
| InGaN         | WHITE          | WATER CLEAR |
|               |                |             |

Notes:

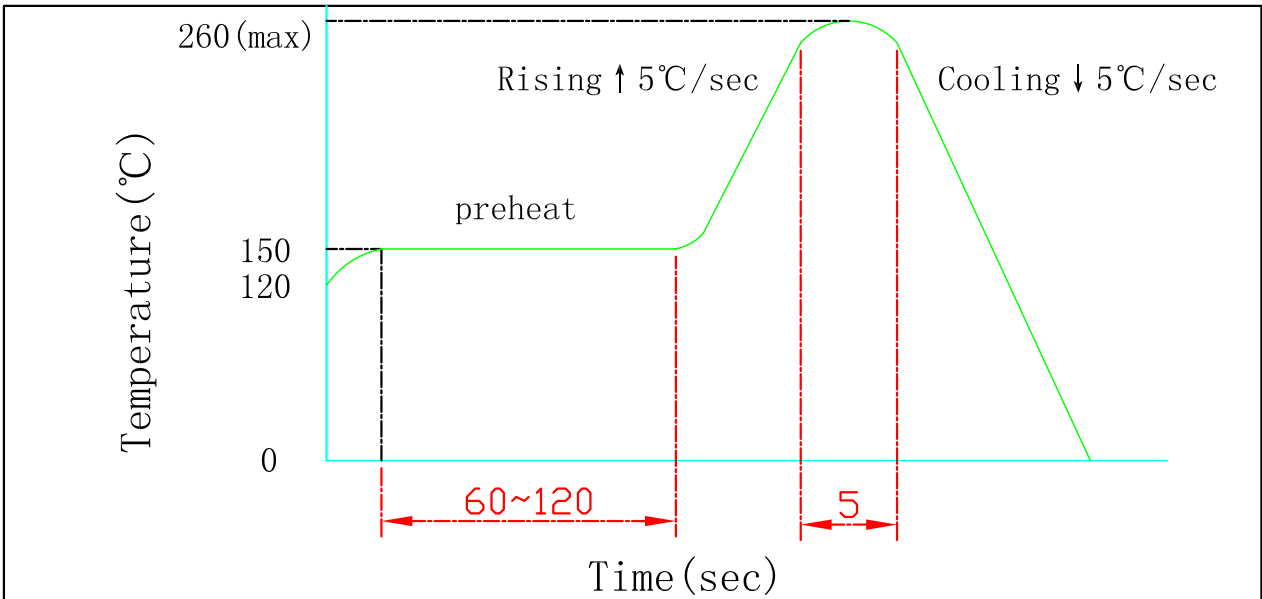
1. All dimension units are millimeters
2. All dimension tolerance is  $\pm 0.2$ mm unless otherwise noted
3. An epoxy meniscus may extend about 1.5mm down the leads
4. Burr around bottom of epoxy may be 0.5mm max



∅ Spatial Distribution



∅ Reflow Temp/Time



∅ Soldering iron

Basic spec is  $\leq 5$ sec when 260°C. If temperature is higher, time should be shorter (+10°C-1sec) Power dissipation of iron should be smaller than 15W, and temperatures should be controllable. surface temperature of the device should be under 230°C



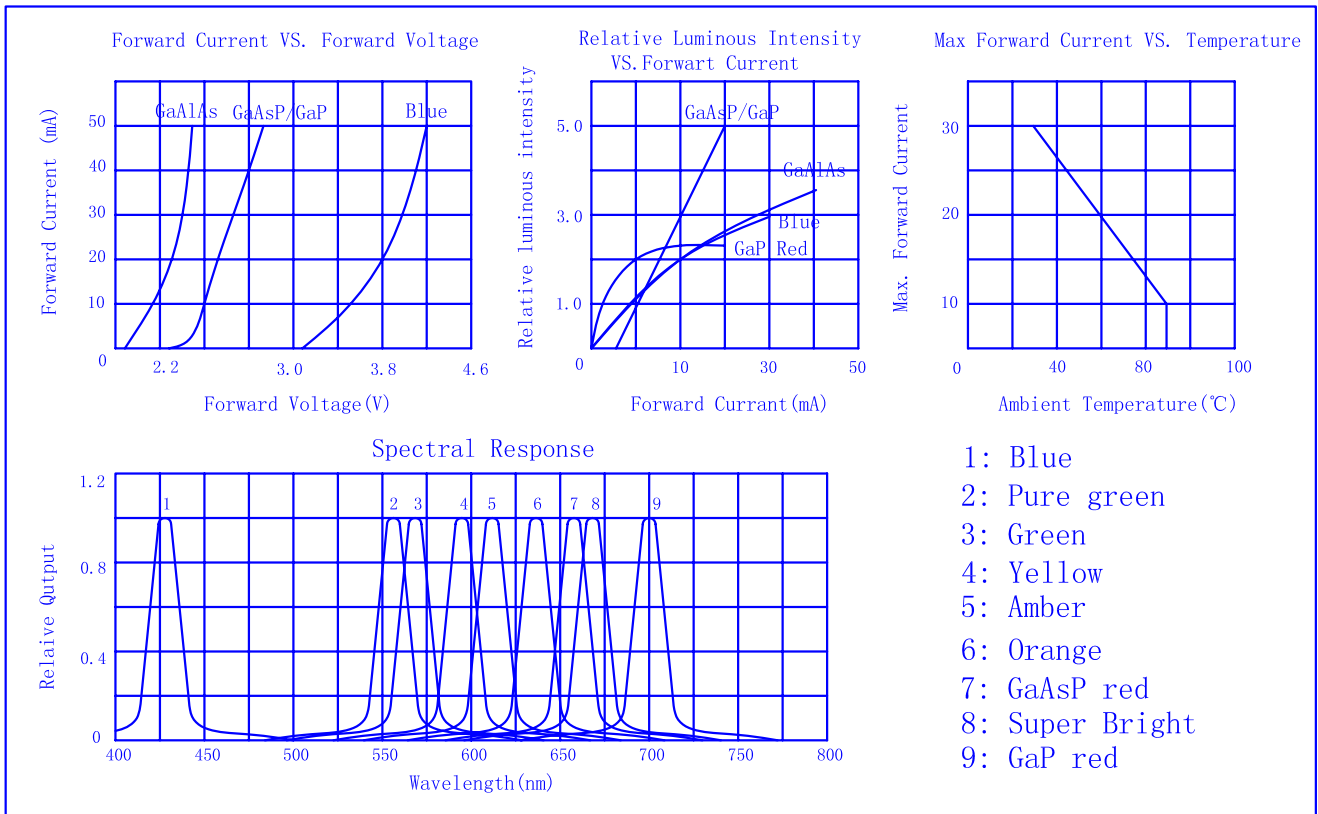
### Electro-Optical Characteristic (Ta=25°C)

| PARAMETER               | SYMBOL | TEST CONDITIONS | Green |      | Orange |      | GaP Red |      | HI-EFF |      | Yellow |      | GaAlAs |      | Blue |      | UNIT |
|-------------------------|--------|-----------------|-------|------|--------|------|---------|------|--------|------|--------|------|--------|------|------|------|------|
|                         |        |                 | TYP.  | MAX. | TYP.   | MAX. | TYP.    | MAX. | TYP.   | MAX. | TYP.   | MAX. | TYP.   | MAX. | TYP. | MAX. |      |
| Forward Voltage         | VF     | IF=20mA         | 2.3   | 2.8  | 2.2    | 2.8  | 2.3     | 2.8  | 2.2    | 2.8  | 2.2    | 2.8  | 1.8    | 2.5  | 3.5  | 4.5  | V    |
| Reverse Current         | IR     | VR=5V           |       | 100  |        | 100  |         | 100  |        | 100  |        | 100  |        | 100  |      | 100  | uA   |
| Wavelength              | λ P    | IF=20mA         | 570   |      | 635    |      | 700     |      | 625    |      | 590    |      | 660    |      | 430  |      | nm   |
| Spectral Line Halfwidth | Δ λ    | IF=20mA         | 30    |      | 35     |      | 100     |      | 35     |      | 35     |      | 20     |      | 30   |      | nm   |

### Absolute Maximum Ratings (Ta=±25°C)

| PARAMETER                               | Green          | Orange | GaP Red | HI-EFF | Yellow | GaAlAs | Blue | UNIT |
|---|----------------|--------|---------|--------|--------|--------|------|------|
| Reverse Voltage Per Segment or D.P.     | 5              | 5      | 5       | 5      | 5      | 5      | 5    | V    |
| Average Forward Current (IF)            | 25             | 25     | 25      | 25     | 25     | 30     | 50   | mA   |
| Peak Forward Current Per Segment Or Dp  | 200            | 200    | 200     | 200    | 200    | 200    | 200  | mA   |
| Power Dissipation                       | 85             | 85     | 85      | 85     | 85     | 100    | 120  | mW   |
| Operating Temperature Range             | -35°C ~ +80°C  |        |         |        |        |        |      |      |
| Recommend Storage Temperature Range     | -35°C ~ +80°C  |        |         |        |        |        |      |      |
| Lead Solder Temperature (4mm From Body) | 260°C for 3sec |        |         |        |        |        |      |      |
| Life                                    | 100000H        |        |         |        |        |        |      |      |

### Typical Electron-Optical Characteristic Curves 25°C Free Air Temperature Unless Otherwise Specified



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