

# PRODUCT SPECIFICATION

*Part Number*  
**PLC764-WCW04**

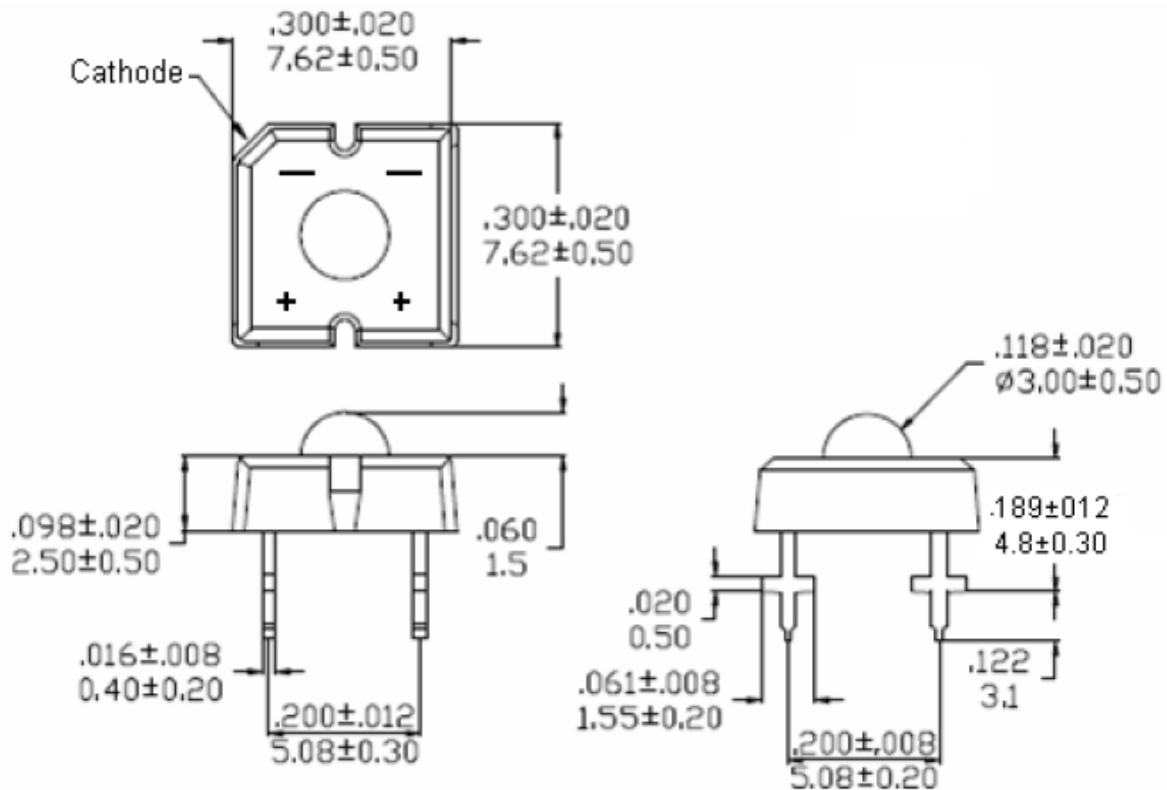
## Details

- Piranha LED
- 7.62 x 7.62 x 9.4mm
- Emitting Color White
- InGaN Dice Used

## Features

- 3mm Lens
- High Luminous Output
- High Current Operation
- RoHS Compliant

## Mechanical Dimensions



### Notes:

1. Dimensions in millimeters [inch], and tolerance is  $\pm 0.25$  [.010] unless otherwise noted.
2. Specifications subject to change without notice





### Device Selection Guide

| Model Number | Chip     |                |
|--------------|----------|----------------|
|              | Material | Emitting Color |
| PLC764-WCW04 | InGaN    | White          |

### Absolute Maximum Ratings at Ta=25°C

| Parameter                            | Symbol                                             | Rating   | Unit |
|--------------------------------------|----------------------------------------------------|----------|------|
|                                      |                                                    | W        |      |
| Power Dissipation                    | PAD                                                | 266      | mW   |
| Continuous Forward Current           | IAF                                                | 70       | mA   |
| Peak Current (duty cycle 1/10, 1KHz) | IPF                                                | 100      | mA   |
| Reverse Voltage                      | VR                                                 | 5        | V    |
| Operating Temperature                | Topr                                               | -40~+80  | °C   |
| Storage Temperature                  | Tstg                                               | -40~+100 | °C   |
| Soldering Conditions                 | Max. 260°C for 5 sec Max.(3mm from the epoxy body) |          |      |

### Electrical and Optical Characteristics at Ta=25°C

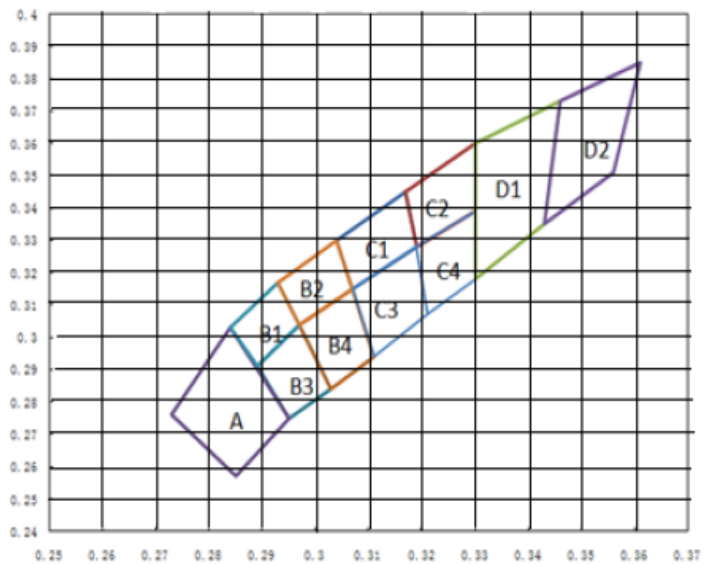
| Parameter                | Symbol | Min. | Typ.      | Max. | Unit | Condition |
|--------------------------|--------|------|-----------|------|------|-----------|
| Forward Voltage          | VF     | --   | 3.3       | 3.8  | V    | IF=30mA   |
| Luminous Flux            | Iv     | 6000 | 8500      | --   | mlm  |           |
| Chromaticity Coordinates | X/Y    | --   | 0.31/0.32 | --   | nm   |           |
| Viewing Angle            | 2θ1/2  | --   | 50        | --   | deg  |           |
| Reverse Current          | IR     | --   | --        | 10   | μA   | VR=5V     |

### Luminous Flux Rank Limits ( IF = 30mA )

| Code | Unit: mlm |       |
|------|-----------|-------|
|      | Min.      | Max.  |
| K    | 6000      | 7000  |
| L    | 7000      | 8000  |
| M    | 8000      | 10000 |
| N    | 10000     | 12000 |

### Color Rank Limits ( IF = 30mA )

| A  |       |       |       |       |       |
|----|-------|-------|-------|-------|-------|
| X  | 0.285 | 0.295 | 0.284 | 0.273 | 0.285 |
| Y  | 0.257 | 0.275 | 0.303 | 0.276 | 0.257 |
| B1 |       |       |       |       |       |
| X  | 0.289 | 0.297 | 0.293 | 0.284 | 0.289 |
| Y  | 0.291 | 0.304 | 0.317 | 0.303 | 0.291 |
| B2 |       |       |       |       |       |
| X  | 0.297 | 0.307 | 0.304 | 0.293 | 0.297 |
| Y  | 0.304 | 0.315 | 0.33  | 0.317 | 0.304 |
| B3 |       |       |       |       |       |
| X  | 0.295 | 0.303 | 0.297 | 0.289 | 0.295 |
| Y  | 0.275 | 0.284 | 0.304 | 0.291 | 0.275 |
| B4 |       |       |       |       |       |
| X  | 0.303 | 0.311 | 0.307 | 0.297 | 0.303 |
| Y  | 0.284 | 0.294 | 0.315 | 0.304 | 0.284 |
| C1 |       |       |       |       |       |
| X  | 0.307 | 0.319 | 0.317 | 0.304 | 0.307 |
| Y  | 0.315 | 0.328 | 0.345 | 0.33  | 0.315 |
| C2 |       |       |       |       |       |
| X  | 0.319 | 0.33  | 0.33  | 0.317 | 0.319 |
| Y  | 0.328 | 0.339 | 0.36  | 0.345 | 0.328 |
| C3 |       |       |       |       |       |
| X  | 0.311 | 0.321 | 0.319 | 0.307 | 0.311 |
| Y  | 0.294 | 0.307 | 0.328 | 0.315 | 0.294 |
| C4 |       |       |       |       |       |
| X  | 0.321 | 0.33  | 0.33  | 0.319 | 0.321 |
| Y  | 0.307 | 0.318 | 0.339 | 0.328 | 0.307 |



| D1 |       |       |       |       |       |
|----|-------|-------|-------|-------|-------|
| X  | 0.33  | 0.343 | 0.346 | 0.33  | 0.33  |
| Y  | 0.318 | 0.335 | 0.373 | 0.36  | 0.318 |
| D2 |       |       |       |       |       |
| X  | 0.343 | 0.356 | 0.361 | 0.346 | 0.343 |
| Y  | 0.335 | 0.351 | 0.385 | 0.373 | 0.335 |

**Forward Voltage Rank Limits (  $I_F = 30\text{mA}$  )**

| Code | Unit: V |      |
|------|---------|------|
|      | Min.    | Max. |
| H    | 2.8     | 3.0  |
| J    | 3.0     | 3.2  |
| K    | 3.2     | 3.4  |
| L    | 3.4     | 3.6  |
| M    | 3.6     | 3.8  |

## Notes:

1. Tolerance of measurement of luminous Flux:  $\pm 15\%$
2. Tolerance of measurement of Dominant wavelength:  $\pm 2\text{nm}$
3. Tolerance of measurement of forward voltage:  $\pm 0.05\text{v}$
4. All data measured by P-tec's test equipment
5. One delivery will include several color rank, VF and Iv ranks of the products.
6. The quantity-ratio of the ranks is decided by P-tec
7. Please confirm with P-tec salesman, if your request differs from standard specifications.

### Typical Electrical/Optical Characteristic Curves

- $T_a = 25^\circ\text{C}$  Unless Otherwise Noted

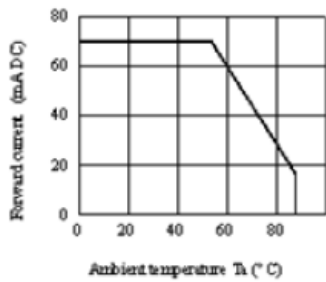


Fig 1. Forward Current  
Vs. Ambient Temperature

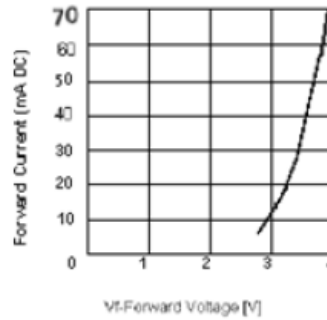


Fig. 2 Forward Current  
Vs. Forward Voltage

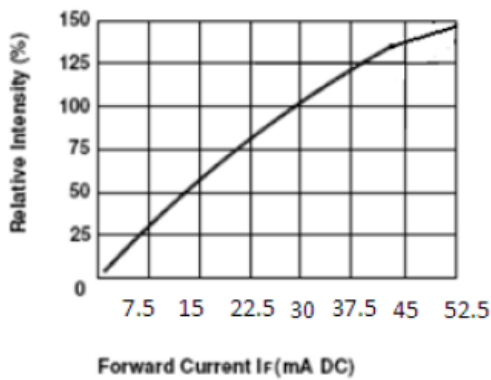


Fig 3. Relative Intensity  
Vs. Forward Current

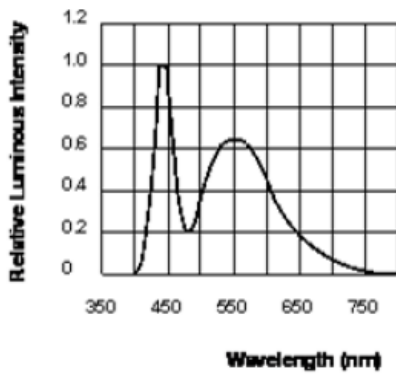
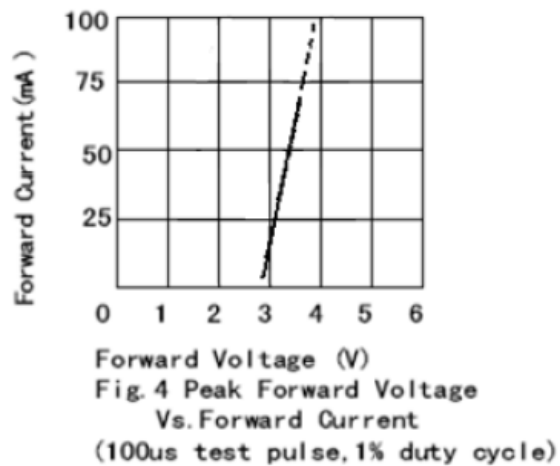


Fig 5. Relative Intensity Vs. Wavelength

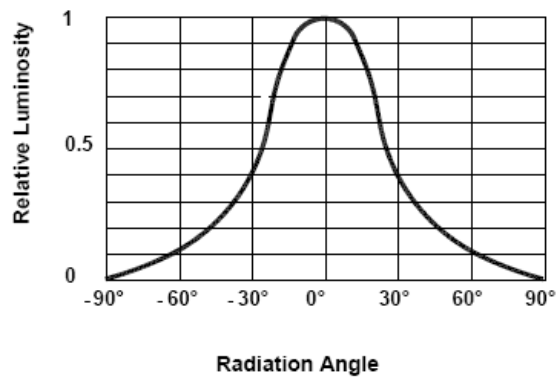


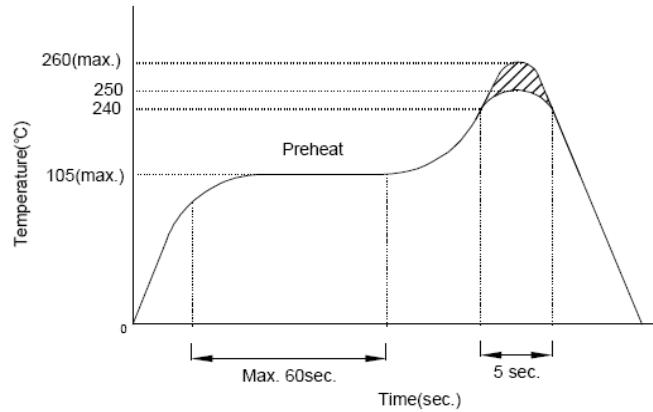
Fig 6. Radiation Diagram

## ***Precautions for Use***

### 1. Recommended soldering conditions

#### 1.1. Wave soldering

Basic SPEC. is  $\leq 5\text{sec.}$  When  $260^{\circ}\text{C}$ . If temperature is higher, time should be shorter ( $+10^{\circ}\text{C} \rightarrow -1\text{sec.}$ ).



#### 1.2. Recommended Soldering:

Power dissipation of iron should be smaller than 15W and temperature should be controllable.  
Soldering temperature should be under  $230^{\circ}\text{C}$ , time 3sec.

### 2. Static Electricity

#### 2.1 Static electricity or surge voltage damages LEDs.

It is recommended that a wrist band or an anti-electrostatic glove be used when handling the LEDs.

#### 2.2 All devices, equipment and machinery must be properly grounded. It is recommended that measures be taken against surge voltage to the equipment that mounts the LEDs.



|                                 |             |            |             |
|---------------------------------|-------------|------------|-------------|
| Customer Approval<br>Signatures | Approved By | Checked By | Prepared By |
|                                 |             |            |             |

[illegible]