

## PRODUCT SPECIFICATION

# Part Number PLC760-WCW04

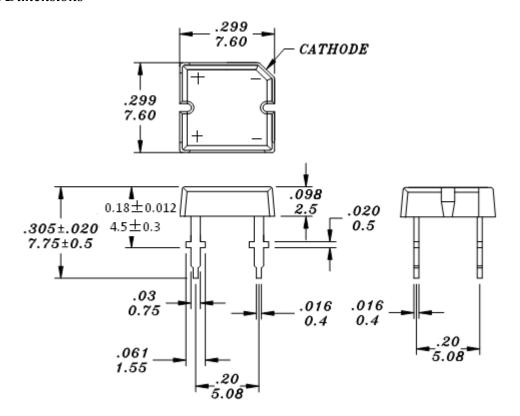
#### Details

- Piranha LED
- 7.60 x 7.60 x 7.75mm
- Emitting Color White
- InGaN Dice Used

#### **Features**

- Flat 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		
wiodel Number	Material	<b>Emitting Color</b>	
PLC760-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	-30~+80	°C
Storage Temperature	Tstg	<b>-</b> 40~+100	°C
Soldering Conditions	Max. 260°C for 5	5 sec Max.(3mm from the epoxy body)	

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

Parameter	Symbol	Min.	Тур.	Max.	Unit	Condition
Forward Voltage	VF		3.3	3.8	V	
Luminous Flux	Iv	5000	7000		mlm	IF=30mA
Chromacity Coordinates	X/Y		0.31/0.32		nm	1F-30IIIA
Viewing Angle	201/2		140		deg	
Reverse Current	IR			10	μΑ	VR=5V

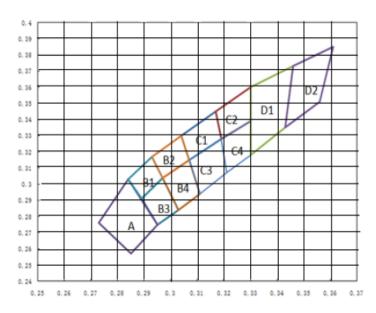


### Luminous Flux Rank Limits (IF = 30mA)

Code	Unit: mlm			
Couc	Min.	Max.		
J	5000	6000		
K	6000	7000		
L	7000	8000		
M	8000	10000		

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

X	_					
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           X         0.303         0.311         0.307         0.297         0.303           Y         0.284         0.294         0.315         0.304         0.284           X         0.307         0.319         0.317         0.304         0.307           Y         0.315         0.328         0.345         0.33 <t< td=""><td>L.,</td><td></td><td></td><td>A</td><td></td><td></td></t<>	L.,			A		
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           X         0.303         0.311         0.307         0.297         0.303           Y         0.284         0.294         0.315         0.304         0.284           X         0.307         0.319         0.317         0.304         0.307           Y         0.315         0.328         0.33         0.317         0.319           Y         0.328         0.339         0.36	X	0.285	0.295	0.284	0.273	0.285
X	Y	0.257	0.275	0.303	0.276	0.257
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         0.317         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<				B1		
B2	X	0.289	0.297	0.293	0.284	0.289
X	Y	0.291	0.304	0.317	0.303	0.291
Y   0.304   0.315   0.33   0.317   0.304	L.,			B2		
B3	X	0.297	0.307	0.304	0.293	0.297
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         0.333         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	0.304	0.315	0.33	0.317	0.304
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				В3		
B4	X	0.295	0.303	0.297	0.289	0.295
X   0.303   0.311   0.307   0.297   0.303   Y   0.284   0.294   0.315   0.304   0.284	Y	0.275	0.284	0.304	0.291	0.275
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				В4		
C1   C1   C1   C2   C3   C3   C3   C3   C3   C3   C3	X	0.303	0.311	0.307	0.297	0.303
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	0.284	0.294	0.315	0.304	0.284
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           X         0.321         0.33         0.33         0.319         0.321	C1					
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	X	0.307	0.319	0.317	0.304	0.307
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	0.315	0.328	0.345	0.33	0.315
Y     0.328     0.339     0.36     0.345     0.328       C3     C3     C3     C3     C3       X     0.311     0.321     0.319     0.307     0.311       Y     0.294     0.307     0.328     0.315     0.294       C4     C4     C4     C3     0.319     0.321				C2		
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	X	0.319	0.33	0.33	0.317	0.319
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	0.328	0.339	0.36	0.345	0.328
Y     0.294     0.307     0.328     0.315     0.294       C4       X     0.321     0.33     0.33     0.319     0.321	C3					
C4  X 0.321 0.33 0.33 0.319 0.321	X	0.311	0.321	0.319	0.307	0.311
X 0.321 0.33 0.33 0.319 0.321	Y	0.294	0.307	0.328	0.315	0.294
				C4		
₩ 0.907 0.919 0.990 0.900 0.907	X	0.321	0.33	0.33	0.319	0.321
1 1 0.001   0.010   0.000   0.079   0.001	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 (IF = 30mA)

Code	Unit: V			
	Min.	Max.		
Н	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: ±2nm
- 3. Tolerance of measurement of forward voltage:  $\pm 0.05v$
- 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

• Ta=25°C Unless Otherwise Noted

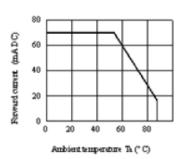
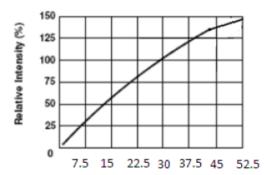


Fig 1. Forward Current Vs. Ambient Temperature



Forward Current Ir (mA DC) Fig 3. Relative Intensity Vs. Forward Current

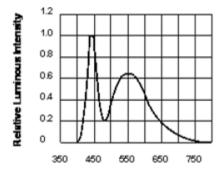


Fig5. Relative Intensity Vs. Wavelength

Wavelength (nm)

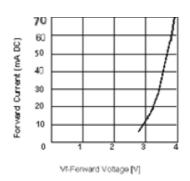
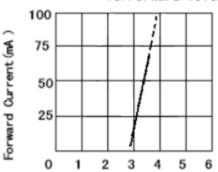
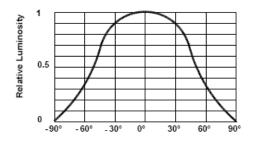


Fig. 2 Forward Current Vs. Forward Voltage



Forward Voltage (V)
Fig. 4 Peak Forward Voltage
Vs. Forward Current
(100us test pulse, 1% duty cycle)



Radiation Angle

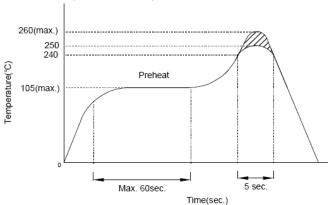
Fig 6. Radiation Diagram



### Precautions for Use

- 1. Recommended soldering conditions
  - 1.1. Wave soldering

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



1.2. Recommended Soldering:

Power dissipation of iron should be smaller than 15W and temperature should be controllable. Soldering temperature should be under 230, 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.



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Signatures			

Record Of Revisions				
Rev.	Comments	Page	Date	
0	Released Spec		10/08/14	