

## 3mm Dome Power LED

### Features

- High flux output
- Low profile
- Low thermal resistance
- Design for high current operation
- Packaged in Tubes for use with automatic insertion equipment



**Piranha**

### Descriptions

- This revolutionary package design allows the light designer to reduce the number of LEDs required and provide a more uniform and unique illuminated appearance than with other LED solutions. This is possible through the efficient optical package design and high-current capabilities.
- The low profile package can be easily coupled with reflectors or lenses to efficiently distribute light and provide the desired light appearance.

### Applications

- Automotive Exterior Lighting
- Electronic Signs and Signals
- Channel Letter
- Special Lighting application

### Device Selection Guide

Part No.	Chip		Lens Color
	Material	Emitted Color	
TLH-Q1W3-3001	AllnGaP	Super Red	Water Clear

**Absolute Maximum Ratings** ( $T_a=25^{\circ}\text{C}$ )

Parameter	Symbol	Value	Unit
Reverse Voltage	$V_R$	5	V
Continuous Forward Current	$I_F$	70	mA
Power Dissipation	$P_d$	120	mW
Soldering Temperature (Note.1)	$T_{sol}$	$260 \pm 5$	$^{\circ}\text{C}$
Operating Temperature	$T_{opr}$	-40 ~ +85	$^{\circ}\text{C}$
Storage Temperature	$T_{stg}$	-40 ~ +100	$^{\circ}\text{C}$

**Note 1:** Soldering time  $\leq$  5 seconds

**Electro-Optical Characteristics** ( $T_a=25^{\circ}\text{C}$ )

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Flux	$\Phi_v$	500	1310	-----	mlm	$I_F = 70\text{mA}$
Viewing Angle	$2\theta_{1/2}$	-----	70	-----	deg	$I_F = 20\text{mA}$
Peak wavelength	$\lambda_p$	-----	632	-----	nm	
Dominant wavelength	$\lambda_d$	-----	624	-----	nm	
Spectrum Radiation Bandwidth	$\Delta\lambda$	-----	35	-----	nm	
Forward Voltage	$V_F$	1.71	2.30	2.91	V	$I_F = 70\text{mA}$
Reverse Current	$I_R$	-----	-----	10	$\mu\text{A}$	$V_R = 5\text{V}$
Recommend Operating Current	$I_F(\text{Rec})$	20	-----	70	mA	
DC Forward Current	$I_F(\text{mA})$	-----	-----	70	mA	

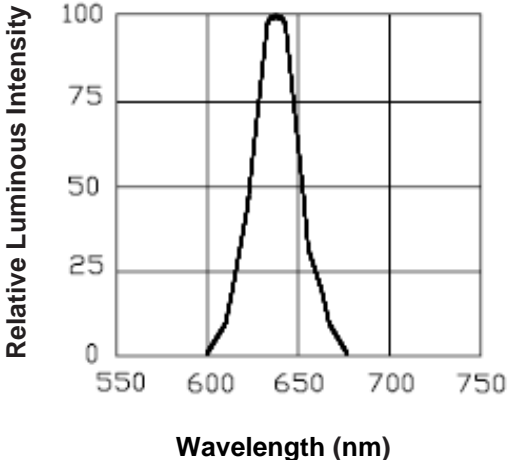
**Notes:** Tolerance of Luminous Flux:  $\pm 15\%$

Tolerance of Forward Voltage:  $\pm 0.1\text{V}$

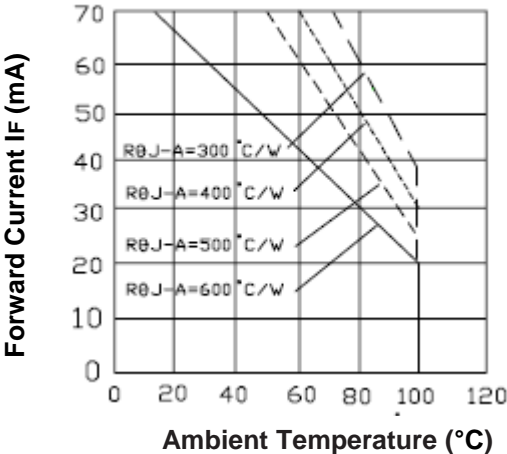
Tolerance of Dominant Wavelength  $\pm 1.0\text{nm}$

Typical Electro-Optical Characteristics Curves (Ta=25°C)

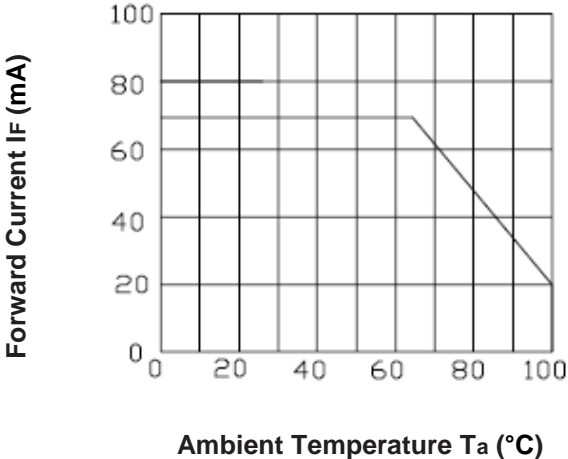
Relative Intensity vs. Wavelength



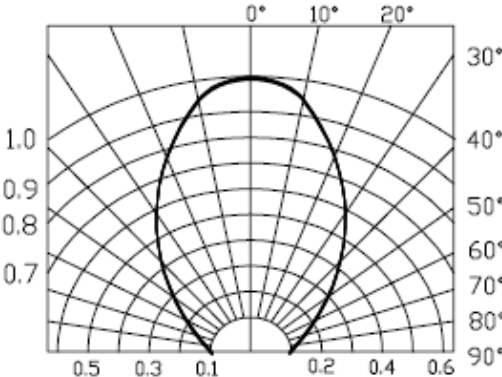
DC forward Current vs. Ambient Temperature



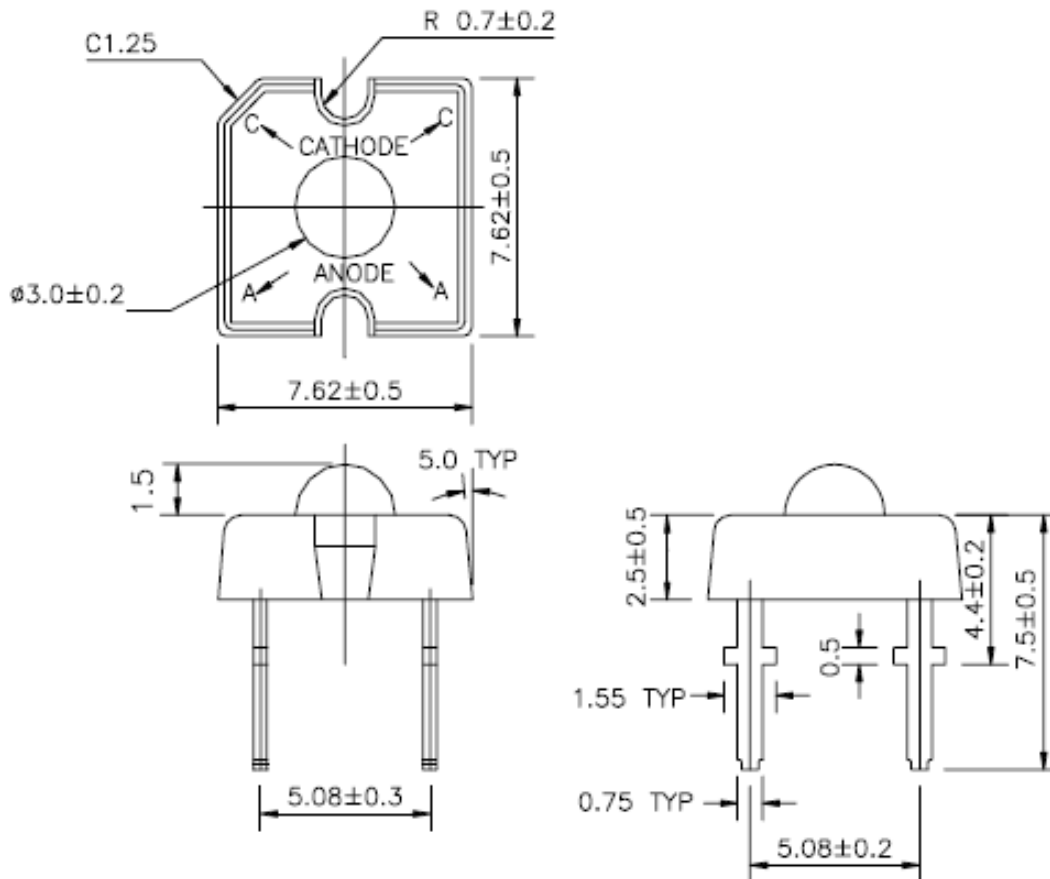
Forward Current vs. Ambient Temp



Radiation Diagram



### Package Dimensions (In mm)



#### Notes:

1. All dimensions are in millimeters, and tolerance is 0.25mm without special declared.
2. An epoxy meniscus may extend about 1.5mm (0.059") down the lead.

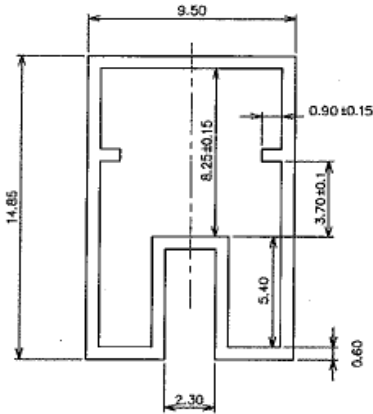
### Packing Information

Packing Type	PCS per Tube	PCS Per Inner Box	PCS Per Carton
Tube	60	1,200	14,400

**Packing Specification**

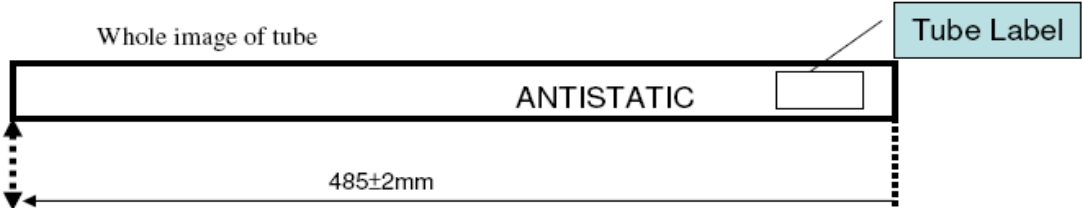
**1. Tube**

Cross section image of tube

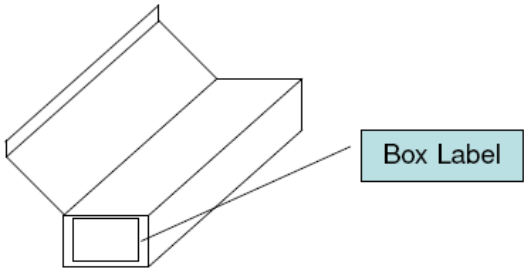


Unit: mm

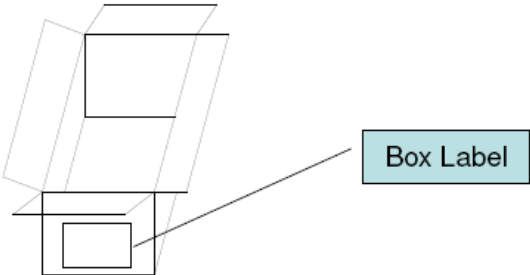
Whole image of tube



**2. Inner Box**

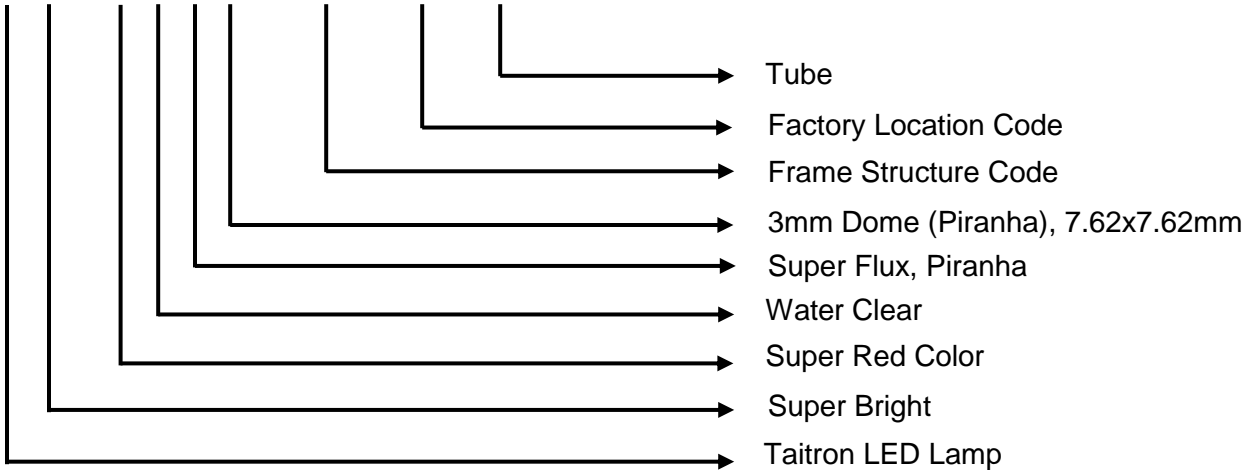


**3. Carton (out box)**



Ordering Information

TL H - Q 1 W 3 - 3001 - 92 - C



## Rank Combinations

### Bin Range of Luminous Flux

Bin Code	Min.	Max.	Unit	Condition
U	500	830	mlm	IF=70 mA
V	680	1310		
W	990	1760		
X	1440	2750		
Y	2550	4100		

### Bin Range of Dominant Wavelength

Bin Code	Min.	Max.	Unit	Condition
L	618	630	nm	IF=20 mA

### Bin Range of Forward Voltage

Bin Code	Min.	Max.	Unit	Condition
1	1.71	1.95	V	IF=70 mA
2	1.83	2.07		
3	1.95	2.19		
4	2.07	2.31		
5	2.19	2.43		
6	2.31	2.55		
7	2.43	2.67		
8	2.55	2.79		
9	2.67	2.91		

**Notes:** Tolerance of Luminous Flux:  $\pm 15\%$

### How to contact us

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