

# 4-Pin Super Flux Red LED Lamp Orca R Series (4.6mm Dome)



## R50RED-4-0045

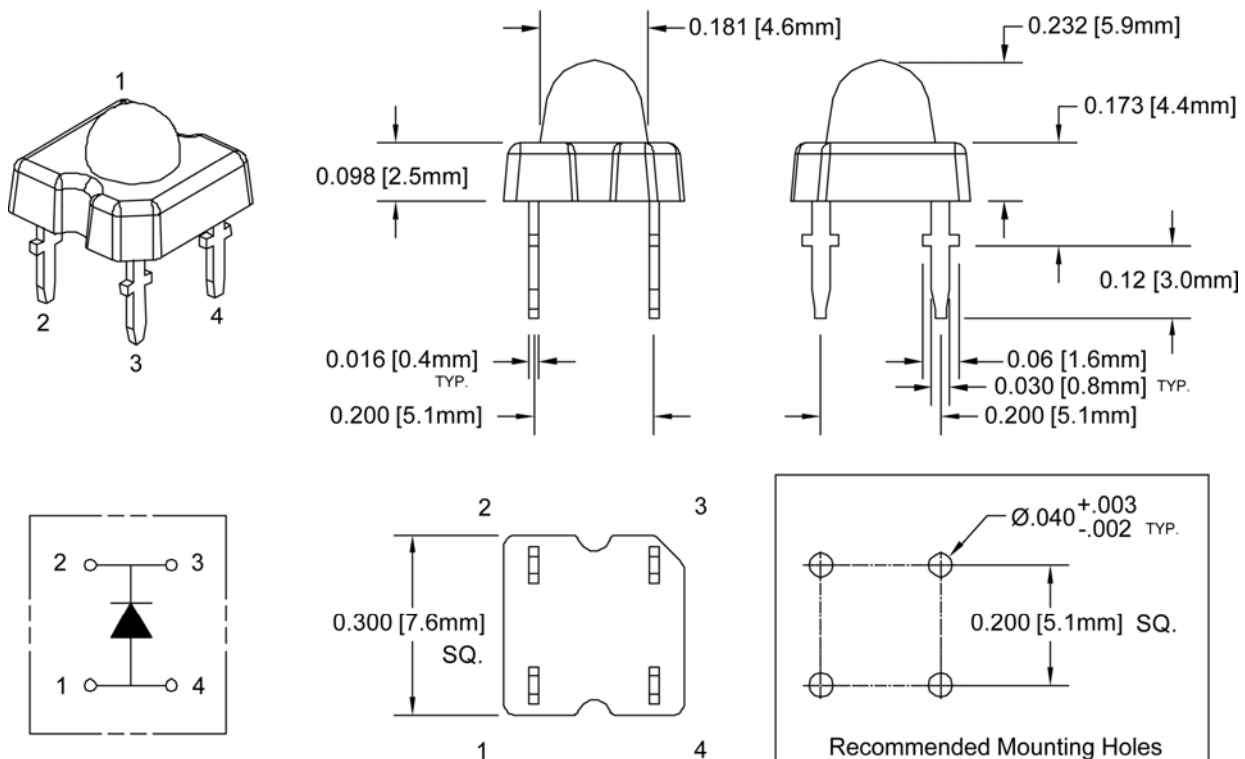
- ◆ RoHS Compliant
- ◆ Low Profile Dome Lens
- ◆ Automatic Insertion Compatible — Tubular Packaging
- ◆ Automatic Placement Compatible
- ◆ High Intensity Output
- ◆ High Power Efficiency



Bivar **R50RED-4-0045** comes with low profile package design incorporating higher forward current to maximize intensity while minimizing the number of LEDs required to achieve uniform and enhanced light distribution. Low power consumption with quick response time means savings in electricity.

Bivar **R50RED-4-0045** can be coupled with reflectors or lenses for optimal light distribution needs. Typical applications are automotive exterior lighting, decorative interior or exterior lighting, specialty stage lighting, and electronic signage.

Part Number	Material	Emitted Color	Lumen Typ. mcd	Lens Color	Viewing Angle
R50RED-4-0045	AlGaInP/GaAs	Red	6000	Water Clear	45°



### Outline Drawings Notes:

1. All dimensions are in inches [millimeters].
2. Standard tolerance:  $\pm 0.010$ " unless otherwise noted.
3. Tolerance of overall epoxy outline:  $\pm 0.020$ " unless otherwise noted.
4. Epoxy meniscus may extend to 0.060" max.



Bivar reserves the right to make changes at any time.

# 4-Pin Super Flux Red LED Lamp R50RED-4-0045



## Absolute Maximum Ratings

$T_A = 25^\circ\text{C}$  unless otherwise noted

Power Dissipation	140 mW
Forward Current ( DC )	80 mA
Peak Forward Current <sup>1</sup>	160 mA
Electrostatic Discharge ( Class1 )	1000 V
Reverse Voltage	5 V
Operating Temperature Range	-25 ~ +80°C
Storage Temperature Range	-30 ~ +80°C
Lead Soldering Temperature ( 3 mm from the base of the epoxy bulb ) <sup>2</sup>	260°C

- Notes: 1. 10% Duty Cycle, Pulse Width  $\leq 0.1$  msec.  
2. Solder time less than 5 seconds at temperature extreme.

## Electrical Characteristics

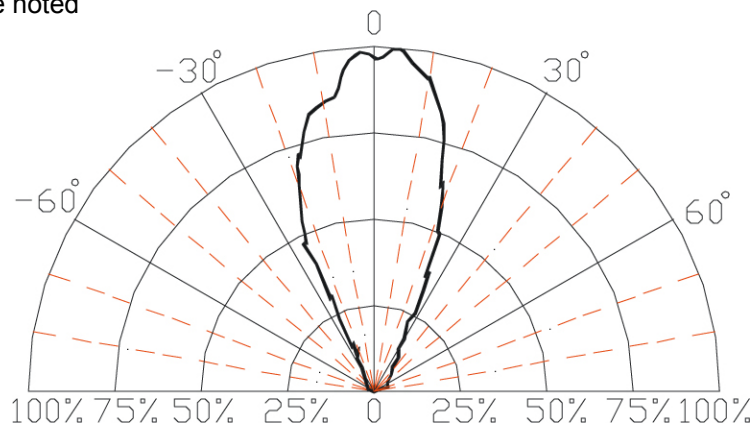
$T_A = 25^\circ\text{C}$  &  $I_F = 50$  mA unless otherwise noted

Emitting Color	Forward Voltage (V) <sup>1</sup>			Recommend Forward Current (mA)	Reverse Current ( $\mu\text{A}$ ) $V_R=5\text{V}$	Dominant Wavelength (nm) <sup>2</sup>		Luminous Intensity (mcd) <sup>3</sup>		Viewing Angle $2\theta_{1/2}$ (deg)
	MIN	TYP	MAX	TYP	MAX	MIN	MAX	MIN	TYP	TYP
Red	2.0	2.4	2.8	50	10	620	635	5000	6000	45

- Notes: 1. Tolerance of Forward Voltage :  $\pm 0.05\text{V}$ .  
2. Tolerance of Dominant Wavelength :  $\pm 0.1\text{nm}$ .  
3. Tolerance of Luminous Intensity :  $\pm 15\%$ .

## Directivity Radiation

$T_A = 25^\circ\text{C}$  unless otherwise noted



Relative Luminous Intensity vs. Radiation Angle

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## Typical Electrical / Optical Characteristics Curves

$T_A = 25^\circ\text{C}$  unless otherwise noted

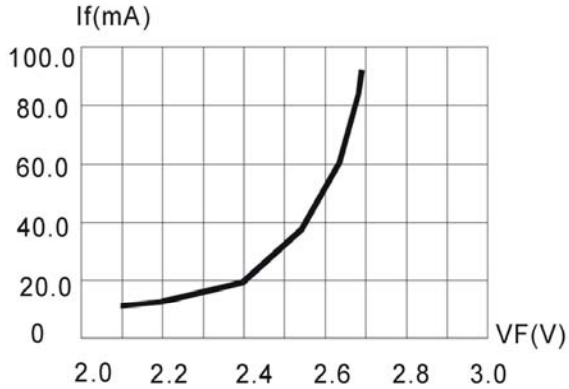


Fig. 1 Forward Current vs. Forward Voltage

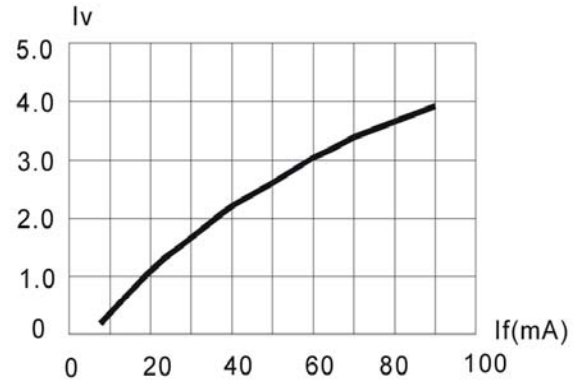


Fig. 2 Relative Luminous Intensity vs. Forward Current

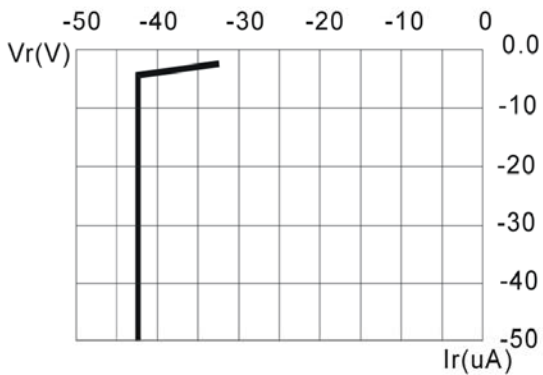


Fig. 3 Reverse Current vs. Reverse Voltage

Half Width =  $\Delta \lambda 20\text{nm}$   
Domi WL = 630nm

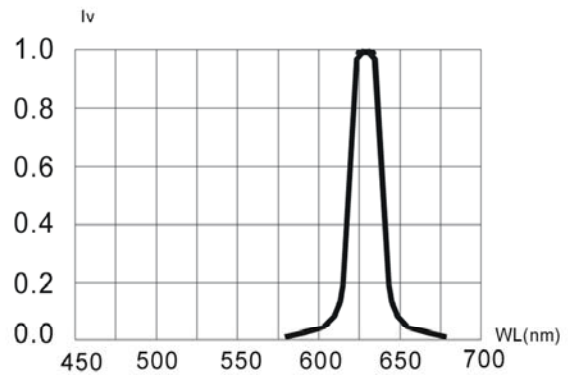


Fig. 4 Relative Luminous Intensity vs. Wavelength

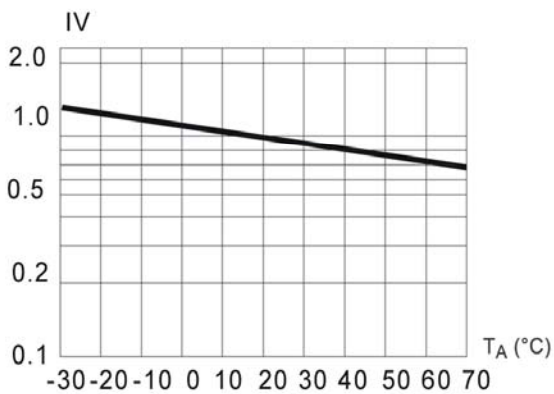


Fig. 5 Reverse Luminous Intensity vs. Ambient Temperature

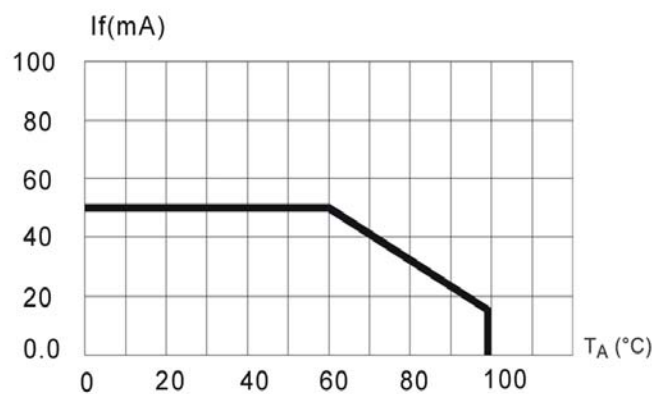


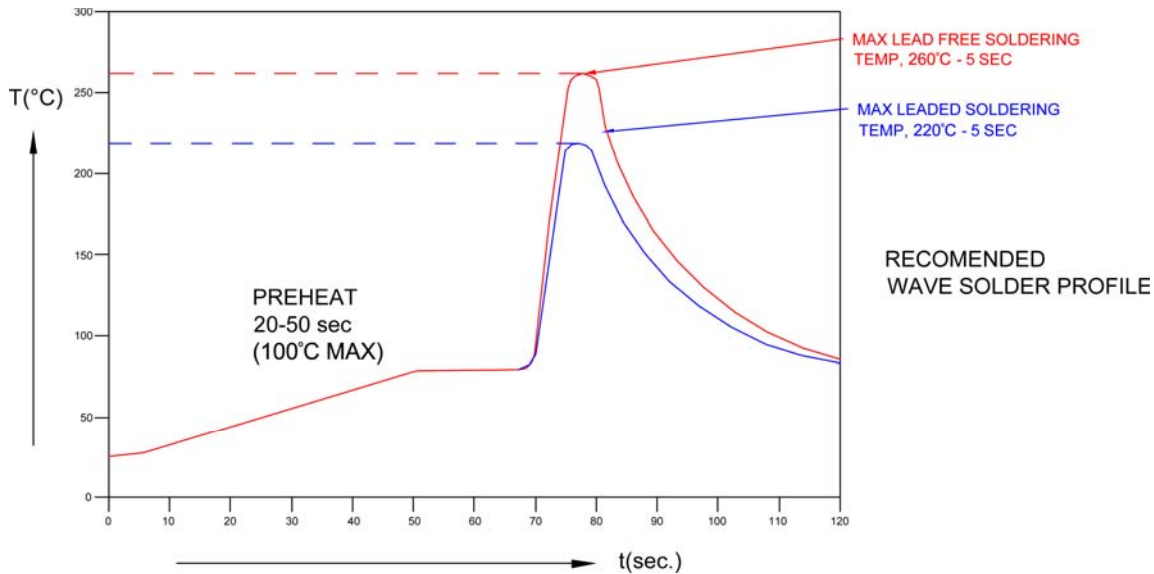
Fig. 6 Maximum Forward Current vs. Ambient Temperature

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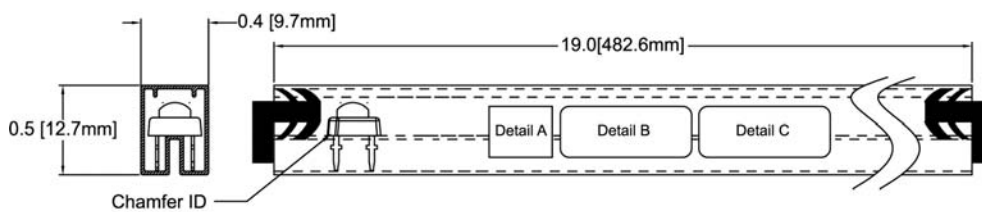
## Recommended Soldering Conditions



Recommended Lead Free Wave Soldering Profile	
Preheat Temperature: 100°C Max.	Peak Temperature: 260°C Max.
Preheat Time: 20 ~ 50 Seconds	Solder Time Above 217°C: 5 Seconds Max.
Note: Turn off top heater at preheat to prevent the lamp body directly exposed to the heat source.	

## Packaging and Labeling Plan

Bivar Orca R series Super Flux LEDs are packaged in tubes, each of which contains 60 LEDs; and each tube contains a rubber stopper at each end.



**Note: 60 pcs Max./Antistatic Tube**



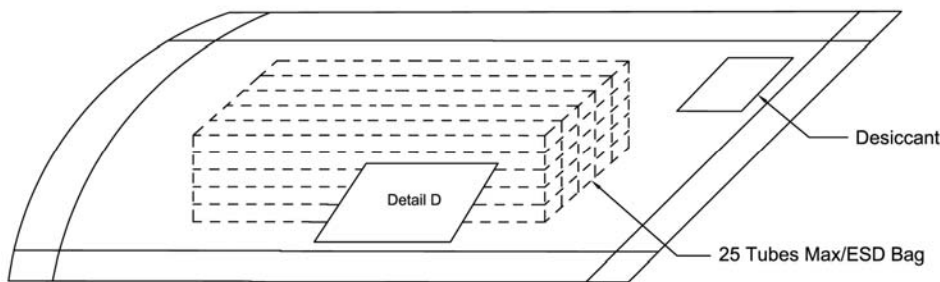
Detail A

BIVAR INC.	
PO No.:XXXXXX	PN: RXXXXX-X-XXXX

Detail B

BIN: XXXX	VF: X.X-X.X	QYT: 60 PCS
XXXX-XXXX mod	XXX-XXX nm	DATE:XXXX/XX/XX

Detail C



**Note: 1500 pcs Max/ESD bag**

<b>Bivar, Inc.</b> MSL 1	
4 Thomas, Irvine, CA 92618-2593	
LOT: XXX.XXXXX.XX	
Part: <b>RXXXXX-X-XXXX</b>	
Quantity: <b>1.5</b>	

Detail D

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