

## 3mm LEDs

Order code	Manufacturer code	Description
56-0620	L-93WEGW	3MM RED/GREEN TRICOLOUR LED (RC)

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The enclosed information is believed to be correct, Information may change without notice due to product improvement. Users should ensure that the product is suitable for their use. E. & O. E.	Revision A 20/02/2007

# Kingbright®

## T-1 (3mm) BI-COLOR INDICATOR LAMPS

L-93WEG HIGH EFFICIENCY RED / GREEN

L-93WEY HIGH EFFICIENCY RED / YELLOW

L-93WGY GREEN / YELLOW

### Features

- UNIFORM LIGHT OUTPUT.
- LOW POWER CONSUMPTION.
- BOTH MILKY WHITE DIFFUSION AND WATER CLEAR LENS ARE AVAILABLE.
- 3 LEADS WITH ONE COMMON LEAD.
- THIRD COLOR (MIXED COLOR) AVAILABLE.
- SUPER BRIGHT VERSION AVAILABLE.
- I.C. COMPATIBLE.
- LONG LIFE - SOLID STATE RELIABILITY.

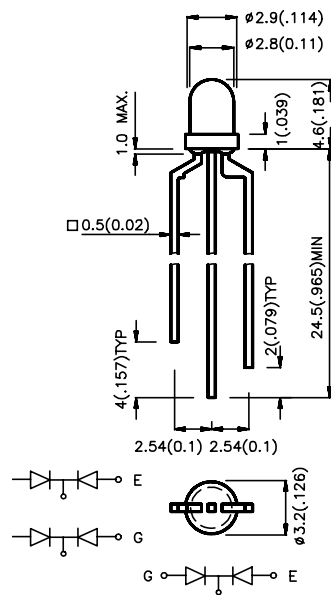
### Description

The Green source color devices are made with Gallium Phosphide Green Light Emitting Diode.

The High Efficiency Red source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Orange Light Emitting Diode.

The Yellow source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Yellow Light Emitting Diode.

### Package Dimensions



- Notes:
1. All dimensions are in millimeters (inches).
  2. Tolerance is  $\pm 0.25(0.01)$  unless otherwise noted.
  3. Lead spacing is measured where the lead emerge package.
  4. Specifications are subjected to change without notice.

### Selection Guide

Part No.	Dice	Lens Type	Iv (mcd) @ 20 mA		Viewing Angle
			Min.	Max.	
L-93WEGW	HIGH EFFICIENCY RED (GaAsP/GaP)	WHITE DIFFUSED	20	50	60°
	GREEN (GaP)		20	50	
L-93WEYW	HIGH EFFICIENCY RED (GaAsP/GaP)	WHITE DIFFUSED	20	50	60°
	YELLOW (GaAsP/GaP)		20	50	
L-93WGYW	GREEN (GaP)	WHITE DIFFUSED	20	50	60°
	YELLOW (GaAsP/GaP)		20	50	
L-93WEGC	HIGH EFFICIENCY RED (GaAsP/GaP)	WATER CLEAR	40	160	24°
	GREEN (GaP)		20	80	
L-93WEYC	HIGH EFFICIENCY RED (GaAsP/GaP)	WATER CLEAR	40	160	24°
	YELLOW (GaAsP/GaP)		20	80	
L-93WGYC	GREEN (GaP)	WATER CLEAR	20	80	24°
	YELLOW (GaAsP/GaP)		20	80	

- Note:
1.  $\theta 1/2$  is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.

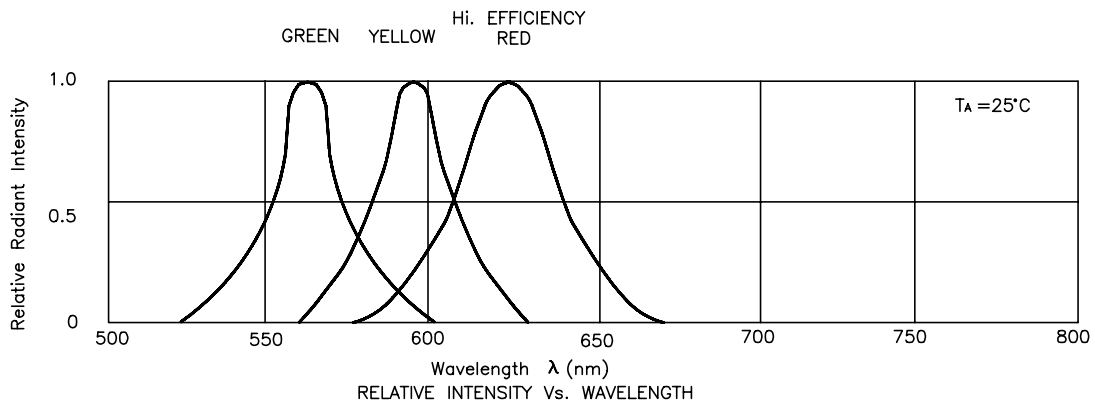
### Electrical / Optical Characteristics at T<sub>A</sub>=25°C

Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
$\lambda_{\text{peak}}$	Peak Wavelength	High Efficiency Red Green Yellow	625 565 590		nm	IF=20mA
$\Delta\lambda_{1/2}$	Spectral Line Halfwidth	High Efficiency Red Green Yellow	45 30 35		nm	IF=20mA
C	Capacitance	High Efficiency Red Green Yellow	12 45 10		pF	VF=0V;f=1MHz
V <sub>F</sub>	Forward Voltage	High Efficiency Red Green Yellow	2.0 2.2 2.1	2.5 2.5 2.5	V	IF=20mA
I <sub>R</sub>	Reverse Current	All	10		uA	VR = 5V

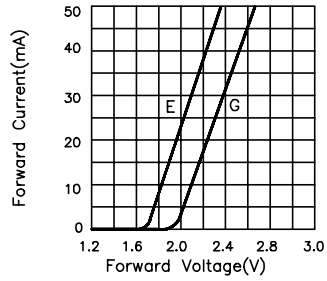
### Absolute Maximum Ratings at T<sub>A</sub>=25°C

Parameter	High Efficiency Red	Green	Yellow	Units
Power dissipation	105	105	105	mW
DC Forward Current	30	25	30	mA
Peak Forward Current [1]	150	150	150	mA
Reverse Voltage	5	5	5	V
Operating/Storage Temperature	-40 °C To +85 °C			
Lead Soldering Temperature [2]	260 °C For 5 Seconds			

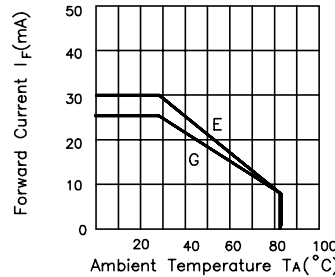
- Notes:  
 1. 1/10 Duty Cycle, 0.1ms Pulse Width.  
 2. 4mm below package base.



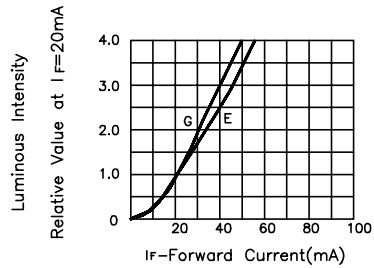
### High Efficiency Red / Green L-93WEGW,L-93WEGC



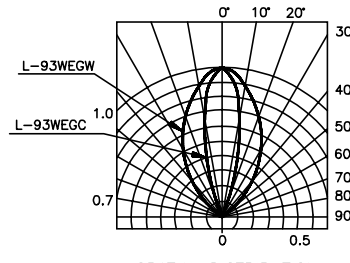
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

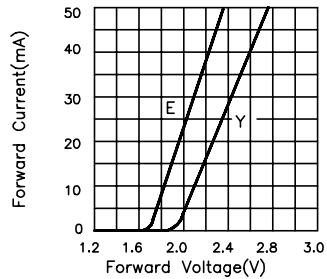


LUMINOUS INTENSITY Vs. FORWARD CURRENT

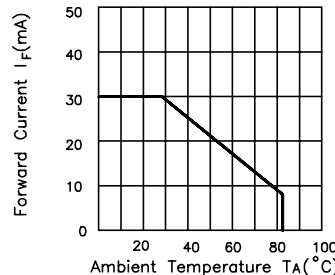


SPATIAL DISTRIBUTION

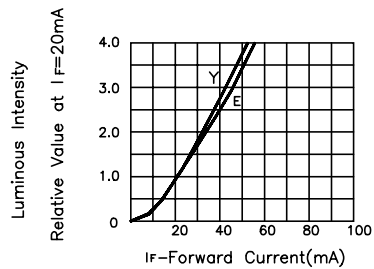
### High Efficiency Red / Yellow L-93WEYW,L-93WEYC



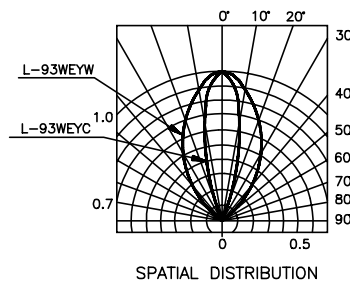
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE



LUMINOUS INTENSITY Vs. FORWARD CURRENT



SPATIAL DISTRIBUTION

**Green / Yellow L-93WGYW,L-93WGYC**

