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Agilent HLMP-WL02, HLMP-WG02 High Intensity AlInGaP LED Lamps

Data Sheet

Description

This 5 mm LED lamps is specially designed for applications requiring higher levels of intensity than is achieved with a standard lamp. The 5 mm lamp is available with 65 degree viewing angle.

Features

- **T-1 3/4 (5 mm) General Purpose LED Lamps**
- **AlInGaP SunPower Intensity**
- **High Light Output**
- **Tinted Diffused Lens**
- **Amber and Red**
- **Available on Tape and Reel**

Applications

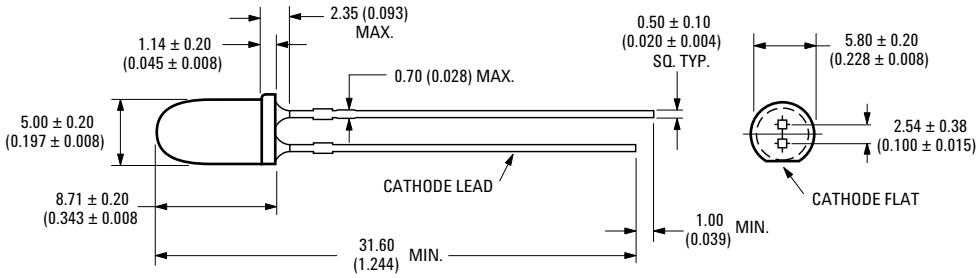
- **General Purpose**
- **Consumer Goods**
- **Indicator Lights**

Device Selection Guide

T-1 ¾ (5 mm) Lamp		Luminous Intensity Min. mcd,	Viewing Angle
Color	**Part Number**	**I_f @ 20 mA**	**2θ½ (Degrees)**
Amber	HLMP-WL02	35	65
Red	HLMP- WG02	26	65

Notes:
1. Dominant Wavelength, λd, is derived from the CIE Chromaticity Diagram, and represents the color of the lamp.
2. $\theta_{1/2}$ is the off-axis angle where the luminous intensity is one half the on-axis intensity.
3. The luminous intensity is measured on the mechanical axis of the lamp package.
4. The optical axis is closely aligned with the package mechanical axis.

Package Dimensions



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Absolute Maximum Ratings at T_A = 25°C

Parameter	5 mm
DC Forward Current	50 mA [1,3,4]
Peak Pulsed Forward Current [3,4]	70 mA
Average Forward Current	30 mA
Reverse Voltage (I_R = 100 mA)	5 V
LED Junction Temperature	130°C
Operating Temperature	-40°C to + 100°C
Storage Temperature	-40°C to + 120°C
Wave Soldering Temperature Soldering Dipping Temperature [1.59 mm (0.06 in.) below body]	250°C for 3 seconds 260°C for 5 seconds

Notes:
1. Derate linearly as shown in Figure 4.
2. For long term performance with minimal light output degradation, drive currents between 10 and 30 mA are recommended.
3. Please contact your Agilent sales representative about operating currents below 10 mA.

Electrical/Optical Characteristics at T_A = 25°C

Parameter	Symbol	Min.	Typ.	Max.	Units	Test Conditions
Forward Voltage Amber (λ_d = 590 nm) Red (λ_d = 626 nm)	V_F		2.02 1.90	2.4	V	I_F = 20 mA
Reverse Voltage	V_R	5	20		V	I_R = 100 mA
Peak Wavelength Amber Red	λ_{PEAK}		592 635		nm	Peak of Wavelength of Spectral Distribution at I_F = 20 mA
Spectral Halfwidth	$\Delta\lambda$½		17		nm	Wavelength Width atSpectral Distribution ½ Power point at I_F = 20 mA
Speed of Response	τ_s		20		ns	Exponential Time Constant, $e^{-t/\tau s}$
Capacitance	C		40		pF	V_F = 0, f = 1 MHz
Thermal Resistance	$R\theta_{J\text{-}PIN}$		240		°C/W	LED Junction-to-Cathode Lead
Luminous Efficacy[5] Amber Red	ηv		500 155		lm/W	Emitted Luminous Power/Emitted RadiantPower

Note:
1. The radiant intensity, Ie, in watts per steridian, may be found from the equation Ie = Iv/ηv, where Iv is the luminous intensity in candelas and ηv is the luminous efficacy in lumens/watt.

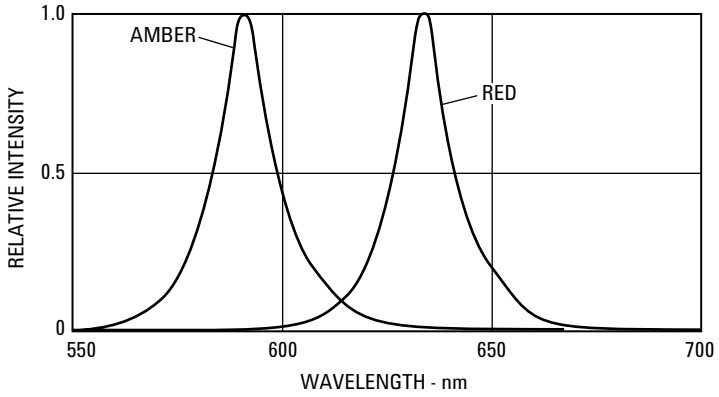

Figure 1. Relative Intensity vs. Peak Wavelength.

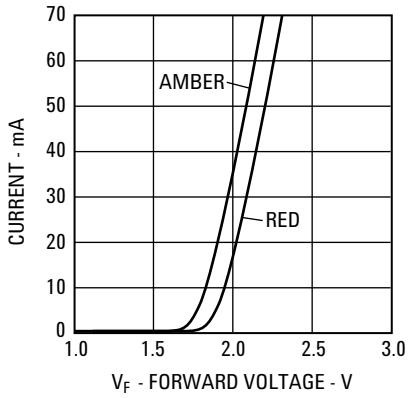

Figure 2. Forward Current vs. Forward Voltage.

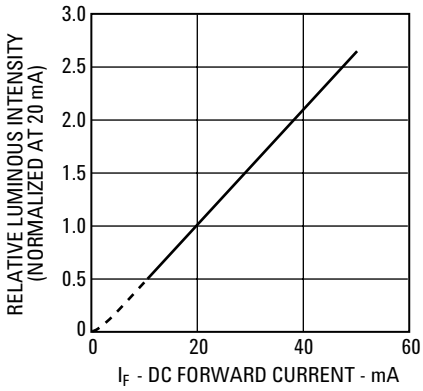

Figure 3. Relative Luminous Intensity vs. Forward Current.

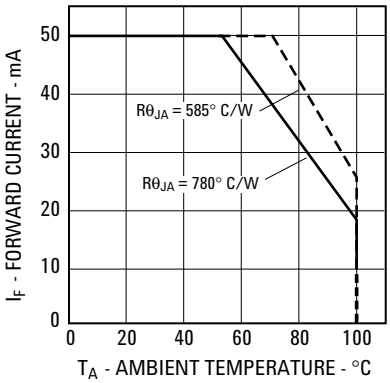

Figure 4. Maximum Forward Current vs. Ambient Temperature. Derating Based on T_JMAX = 130°C.

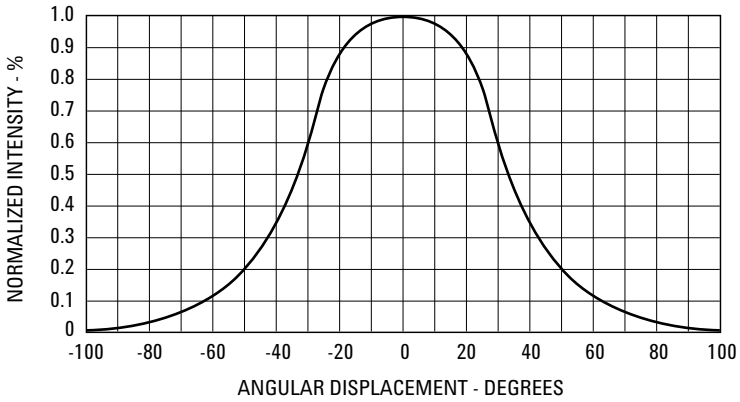

Figure 5. Representative Spatial Radiation Pattern for 65°

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Data subject to change.

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