

Ultra Brightness BLUE LED Lamp

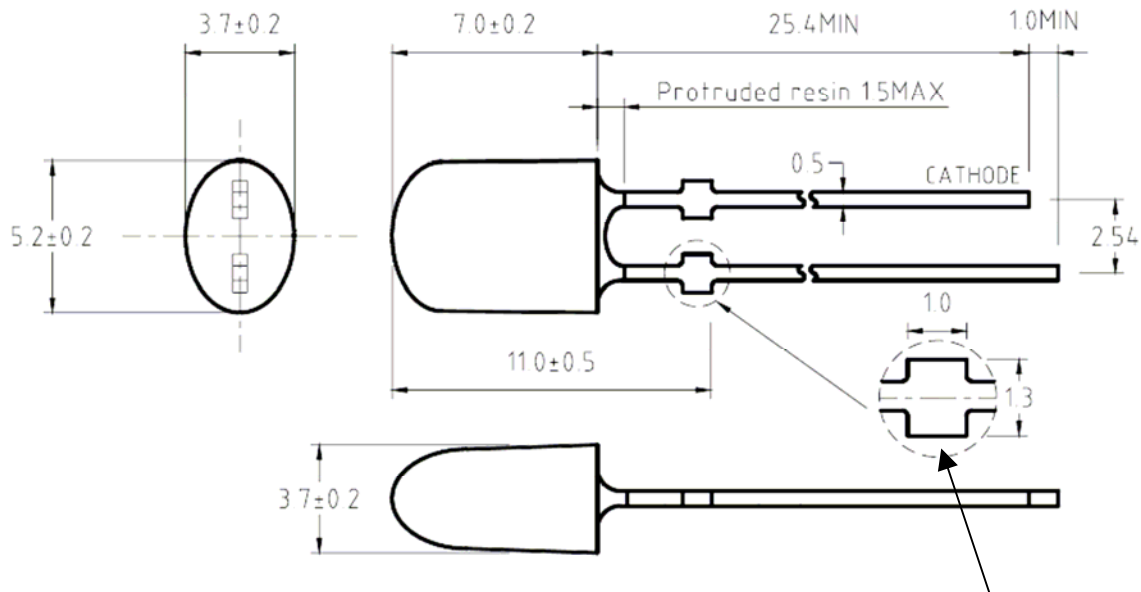
5mm Oval Precision Through-Hole Package

PL-LBBL5VC1D series



FEATURES	APPLICATIONS
<ul style="list-style-type: none"> • Super luminosity Blue 470nm LED • GaN / Sapphire die. • 5.2mm X 3.7mm Oval Precision Package. • Blue Diffused Lens. • Very Wide viewing angles: 110°(H) / 40° (V). • UV Resistant Epoxy for Outdoor use. 	<ul style="list-style-type: none"> • Outdoor Score/Clock Boards • Full Color RGB Video Displays • VMS. • Back or Side lighting. • Automotive. • Traffic Signals. • Architectural Lighting

PACKAGE OUTLINE DIMENSIONS:



Lead Stoppers Optional

NOTES:

1. All dimensions are in millimeters.
2. Tolerance is ± 0.25 mm unless otherwise noted.
3. Lead spacing is measured where the leads emerge from the package.
4. Specifications are subject to change without notice.



Electrostatic Sensitive Devices

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ABSOLUTE MAXIMUM RATING (at T_A = 25°C)

Parameter	Symbol	Value	Unit
Continuous Forward Current	I _F	30	mA
Peak Forward Current (≤1/10 Duty Cycle, ≤10 msec Pulse Width)	I _{Fp}	100	mA
Power Dissipation	P _d	114	mW
Derating Factor	D _F	0.4	mA / °C
Reverse Voltage	V _R	5.0	V
Operating Temperature	T _{opr}	-30 to +85	°C
Storage Temperature	T _{stg}	-40 to +100	°C
Lead Soldering Temperature (1.6mm (0.063") from body)	260°C for 5 seconds		

ELECTRICAL / OPTICAL CHARACTERISTICS (at T_A = 25°C)

Parameter	Symbol	MIN	TYP	MAX	Unit
Forward Voltage	I _F = 20 mA V _F		3.2	3.8	V
Luminous Intensity	I _F = 20 mA I _v	400	600	1150	mcd
Dominant Wavelength	I _F = 20 mA λ _d	460	470	480	nm
Spectrum Radiation Bandwidth	I _F = 20 mA Δλ		20		nm
Reverse Current	V _R = 5 V I _R			50	μA
Viewing Angle Major Axis X	2 θ 1/2		110		deg
Viewing Angle Minor Axis Y	2 θ 1/2		40		deg

LUMINOUS INTENSITY (I_v) RANKS (mcd at 20mA)

Rank	Min	Max
L	400	520
M	520	680
N	680	880
P	880	1150

Tolerance for each Bin limit is ±15%

COLOR BIN TABLE (λ_d at 20mA)

Rank	Min	Max
1	460	465
2	465	470
3	470	475
4	475	480

Tolerance for each Bin limit is ± 1 nm

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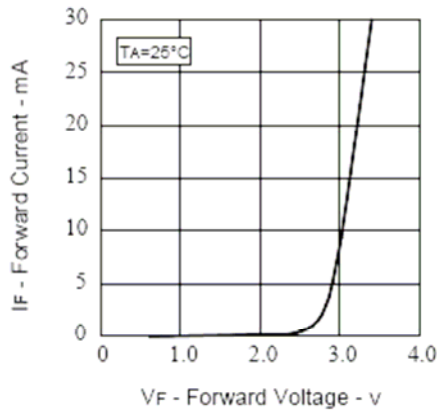
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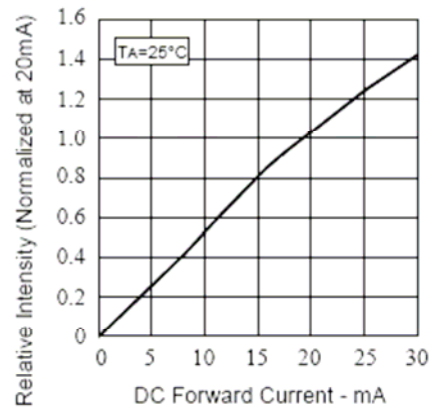
TYPICAL ELECTRICAL CHARACTERISTICS CURVES

(at 20 mA DC / $T_A = 25^\circ\text{C}$)

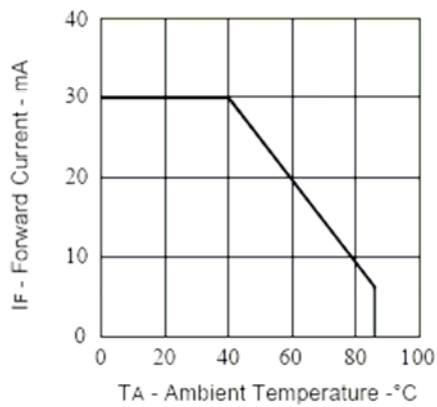
Forward Current vs. Forward Voltage



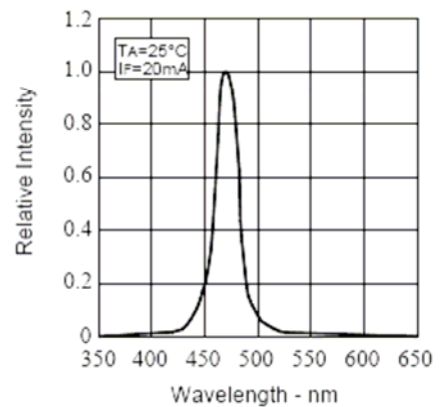
Relative Intensity vs. Forward Current



Forward Current vs. Ambient Temperature



Relative Intensity vs. Wavelength



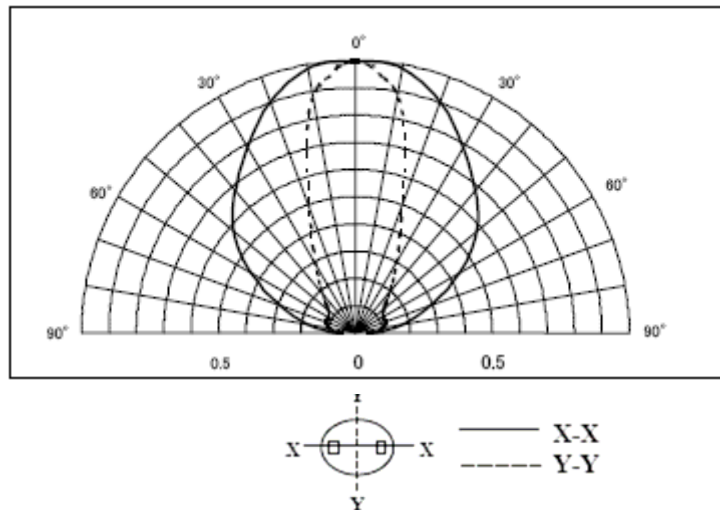
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BEAM RADIATION PATTERNS



GENERAL NOTES:

1. Luminous Intensity (I_v) is measured with a light sensor and filter combination (goniospectroradiometer) and is the Luminous Flux per unit solid angle (steradian) emitted by the LED lamp in the direction of the mechanical axis of the lamp and then weighed by the eye response curve (1931 CIE 2° Observer Chromaticity Diagram).
2. Luminous Intensity measurement uncertainty is +/- 15% due to test procedures and equipment variations.
3. $\theta_{1/2}$ is the off-axis angle at which the luminous intensity is half the axial luminous intensity. Tolerance +/- 3°.
4. Dominant wavelength is derived from the 1931 CIE 2° Observer Chromaticity Diagram.
5. Peak and Dominant wavelength measurement uncertainty is +/- 0.05 due to variations. Tolerance +/- 1nm.
6. Caution for ESD: Static Electricity and surges can damage the LED. It is recommended using a wristband or anti-electrostatic glove when handling the LED. All devices, equipment and machinery must be properly grounded.
7. Do not apply excess mechanical stress to the leads, especially when heated or while soldering.

ADDITIONAL NOTES:

1. Due to production variations and yields, one delivery will include several color and luminous intensity ranks.
2. The quantity ratio of each bin will be decided by Brite-LED.
3. Binning code information will be printed on the product labels (example: Bin M2 means intensity (I_v) rank M and color code 2).

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PRODUCT CODE BREAKDOWN

