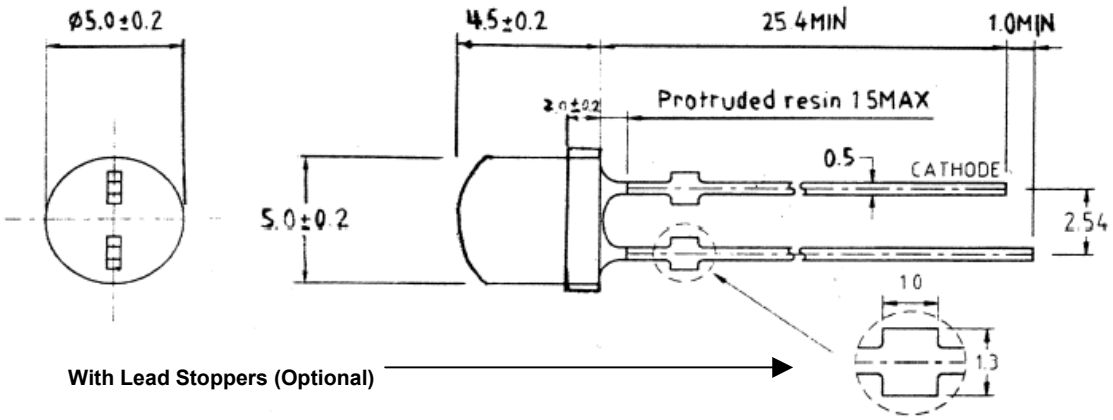
Ultra Brightness White LED Lamp

T-1 ¾ (5mm) Through-Hole Package

BL–LBUW5SC5M series

FEATURES	APPLICATIONS
• Extremely uniform white LED. • Super luminosity white LED (GaN die). • Wide viewing angle (150 degrees). • Milky diffused lens. • T-1¾ (5mm) low profile package. • Class 1 ESD rating • RoHS Compliant	• Night-lights. • Garden Lights. • Backlighting for signs. • Strip Lighting.

PACKAGE OUTLINE DIMENSIONS:

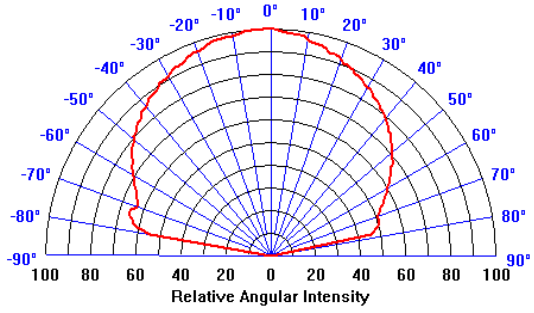


NOTES:

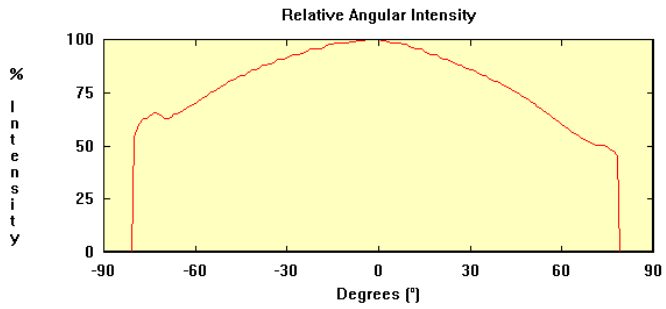
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25 (0.01") mm unless otherwise noted.
3. Lead spacing is measured where the leads emerge from the package.
4. Specifications are subject to change without notice.

BEAM RADIATION PATTERNS

Polar Plot



Cartesian Plot



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ABSOLUTE MAXIMUN RATING (at T_A = 25°C)

Parameter	Symbol	Value	Unit
Continuous Forward Current	I_F	30	mA
Peak Forward Current (1/16 Duty Cycle, 0.1msec Pulse width)	I_{Fp}	150	mA
Power Dissipation	P_d	120	mW
Forward Voltage	V_f	3.2 ± 0.2	V
Derating Factor	D_F	0.4	mA / °C
Reverse Voltage	V_R	5.0	V
Operating Temperature	T_{opr}	-25 to +85	°C
Storage Temperature	T_{stg}	-35 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		3.1	3.4	V
Reverse Current		V_R= 5 V	I_R			100	μA
Viewing Angle			2 θ 1/2	145	150	155	deg
Luminous Intensity	**Rank T**	I_F= 20 mA	I_V	600	750	1000	mcd
	Rank S	I_F= 20 mA	I_V	300	450	600	mcd
	Rank R	I_F= 20 mA	I_V	100	200	300	mcd

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COLOR RANK LIMITS (at 20 mA DC / T_A = 25°C)

BIN	Color Rendering Index	Approximate Color Temperature (K)
A	50 - 65	9,500 -15,000
B	70 - 90	5,500 - 9,500
C	75 - 95	4,500 - 5,500
D	70 - 85	2,800 - 3,200

COLOR RANKS CIE CHROMATICITY COORDINATES

A-Rank (Approximate Color Temperature: 9,500-15,000K)

	Rank A			
X	0.280	0.264	0.283	0.296
Y	0.248	0.267	0.305	0.276

B-Rank (Approximate Color Temperature: 5,500-9,500K)

	Rank B1			
X	0.287	0.283	0.330	0.330
Y	0.295	0.305	0.360	0.339

	Rank B2			
X	0.296	0.287	0.330	0.330
Y	0.276	0.295	0.339	0.318

C-Rank (Approximate Color Temperature: 4,500-5,500K)

	Rank C			
X	0.330	0.330	0.361	0.356
Y	0.318	0.360	0.385	0.351

D-Rank (Approximate Color Temperature: 2,800-3,200K)

	Rank D			
X	0.440	0.440	0.500	0.500
Y	0.400	0.500	0.500	0.400

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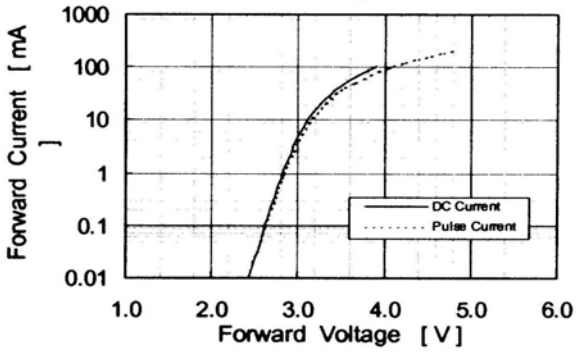
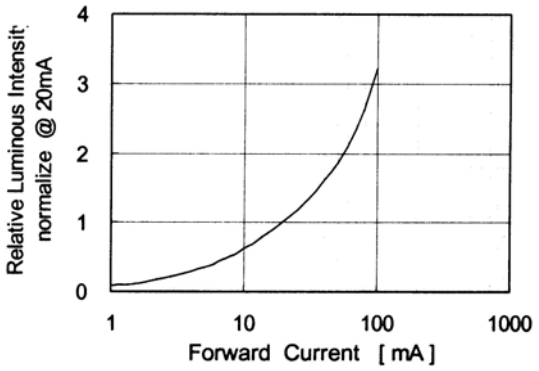
TYPICAL ELECTRICAL CHARACTERISTICS CURVES

(at 20 mA DC / T_A = 25°C)

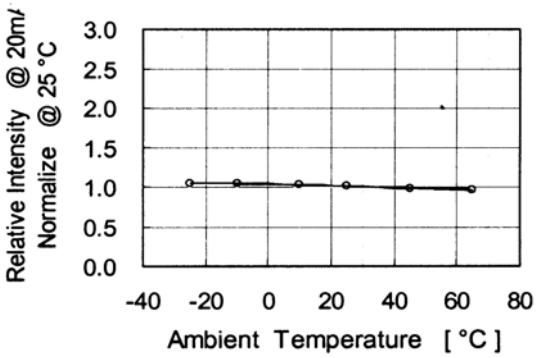
Forward Current vs. Forward Voltage



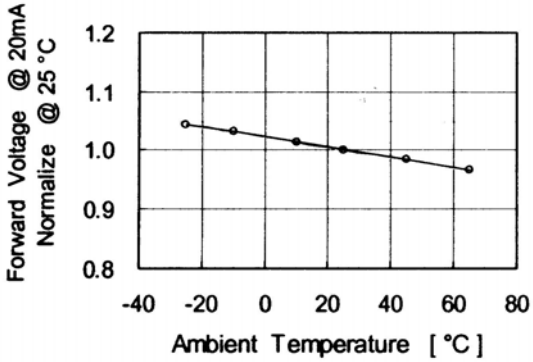
Luminous Intensity vs. Forward Current



Relative Intensity vs. Temperature



Forward Voltage vs. Temperature



GENERAL NOTES:

1. Luminous Intensity (Iv) 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. The Chromaticity Coordinates (x,y), are derived from the 1931 CIE 2° Observer Chromaticity Diagram.
5. Chromaticity Coordinate measurement uncertainty is +/- 0.05 due to variations.
6. Color Temperature derived from black body curve on 1964 u-v CIE chromaticity diagram.
7. **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.
8. Do not apply excess mechanical stress to the leads, especially when heated or while soldering.

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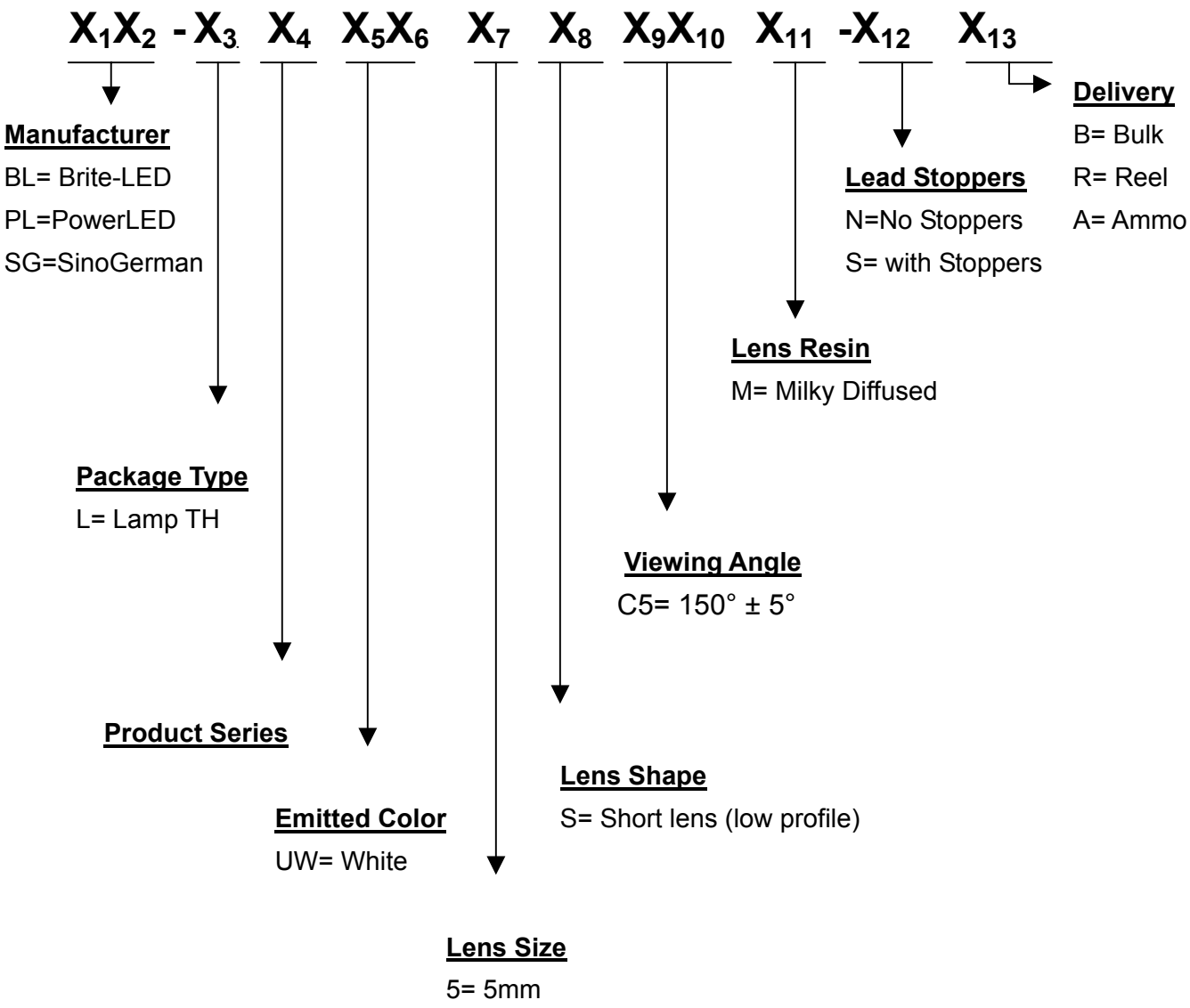
PRODUCT CODE BREAKDOWN



WARNING: White LEDs are made using a blue (GaN) die. GaN die is highly susceptible to Electro Static Discharge (ESD) damage, therefore proper storage, handling and manufacturing procedures need to be followed at all times. ESD damage can vary in its degree; from very subtle to catastrophic, and invariably will affect the LED's performance and life. ESD damaged parts are not covered by warranty.