LIGHTHOUSE LEDs

Technical Data Sheet

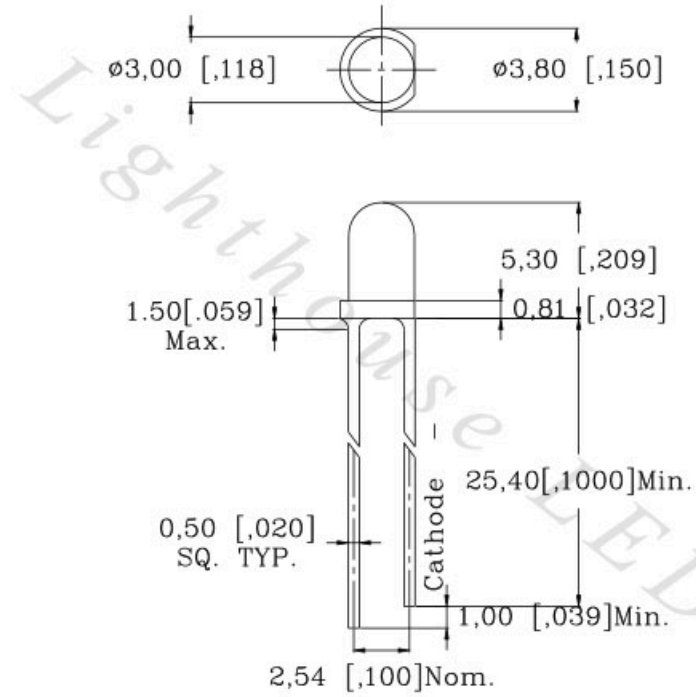
Product Name:	3mm Round Top with Frosted Lens LED - Cool Clear White LED - Ultra Bright
Part Number:	3MMROUNDTOPFROSTEDLEDWHITE
SKU:	3MMROUNDTOPFROSTEDLEDWHITE
Package:	3mm (T-1) Round Top
Date:	2026-03-30

Document Control		
Prepared by	Checked by	Approved by

1. Features

- Package: 3mm (T-1) Round Top
- Color: Ultra Bright Cool/Clear White
- Lens: Frosted / Milky / White - Not Colored
- Die Material: InGaN
- RoHS Compliant, Lead-Free

2. Outline Dimensions



**LED leads for a specific size/color/type may be a different length than shown,but will be the same consistency in size for that specific size/shape/color LED.*

Unit	Tolerance	Die Material	Lens Color	Emission Color
mm	±0.2mm	InGaN	Frosted / Milky / White - Not Colored	Cool/Clear White

3. Electrical / Optical Characteristics (Ta = 25°C, RH 60%)

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward Voltage	VF	IF = 20mA	3.0	—	3.4	V
Reverse Current	IR	VR = 5V	—	—	5	μA
Luminous Intensity	IV	IF = 20mA	14000	—	15000	mcd
Viewing Angle	2θ1/2	IF = 20mA	—	120	—	°
Dominant Wavelength	λd	IF = 20mA	—	460	—	nm
Spectral Line Half-Width	Δλ	IF = 20mA	—	20	—	nm

Remark: Tolerance of intensity ±15%, wavelength ±1nm, forward voltage ±0.05V. For reference only.

4. Absolute Maximum Ratings (Ta = 25°C, RH 60%)

Parameter	Symbol	Value	Unit	Remark
Forward Current	IF	20	mA	—
Peak Forward Current	IFM	75	mA	F=1kHz, duty cycle 1/10
Reverse Voltage	VRP	15	V	—
Power Dissipation	Pd	85	mW	—
Operating Temperature	Tamb	-25 to +80	°C	—
Storage Temperature	Tstg	-35 to +85	°C	—
Soldering Temperature	Tsol	320°C wave, 3mm from body, ≤5s		

5. Typical Electrical / Optical Characteristic Curves

Fig.1 Relative Intensity vs. Wavelength

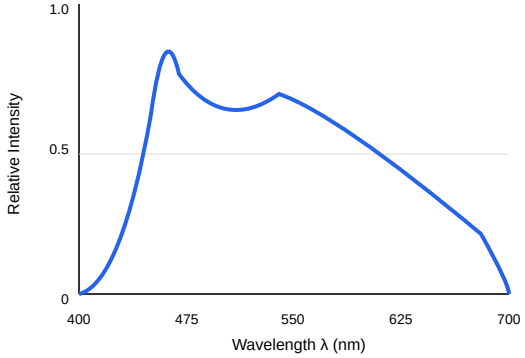


Fig.2 Forward Current Derating vs. Temperature

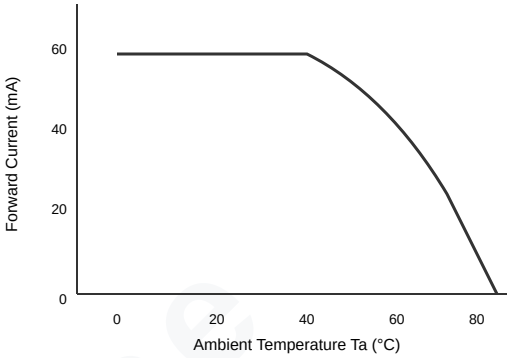


Fig.4 Relative Intensity vs. Forward Current

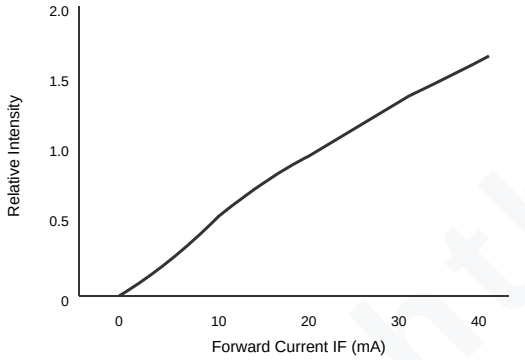


Fig.5 Intensity vs. Ambient Temperature

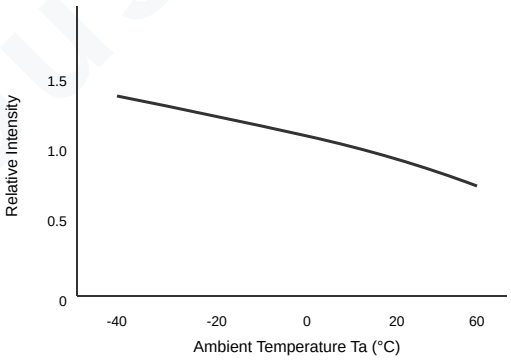
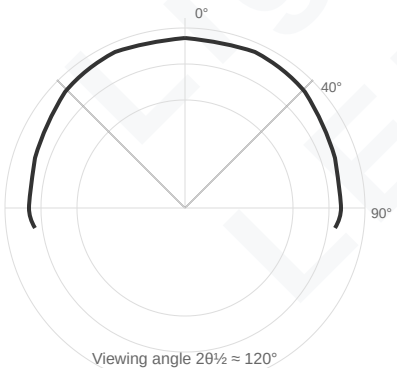


Fig.6 Spatial Distribution (Radiation Pattern)



6. Reliability Test Data

Test	Standard	Conditions	Duration	Qty	Failures
Life Test (room temp)	JIS7021:B4	Ta = 25°C ±5°C, IF = 30mA	100 hrs	22	0
High Temperature Storage	JIS7021:B10 / MIL-STD-202:210A	Ta = 85°C ±5°C	1000 hrs	22	0
Low Temperature Storage	JIS7021:B12	Ta = -35°C ±5°C	1000 hrs	22	0
High Temp / Humidity	JIS7021:B11 / MIL-STD-202:103D	Ta = 85°C ±5°C, RH = 85%	1000 hrs	22	0
Thermal Shock	JIS7021:B4 / MIL-STD-202:107D	-10°C ↔ +100°C, 5min each	50 cycles	22	0
Temperature Cycling	JIS7021:A3 / MIL-STD-705:105E	-35°C ~ -25°C ~ 85°C ~ -35°C	50 cycles	22	0

7. Application Notes

- Always use a current-limiting resistor. See **lighthouseleds.com/blog/led-resistor-calculator.html**
- For AC or DCC power, add a bridge rectifier. See **lighthouseleds.com/blog/bridge-rectifier-led-ac-dcc-landscape-lighting.html**
- Observe polarity: longer lead = anode (+), shorter lead with flat = cathode (−).
- Do not exceed maximum forward current (20mA continuous).

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