



*SPECIFICATION FOR LED LAMP*

*PART NO. : LT33B1-81-UAC2-ECL*

*10mm ROUND TYPE*

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**10mm ROUND TYPE**

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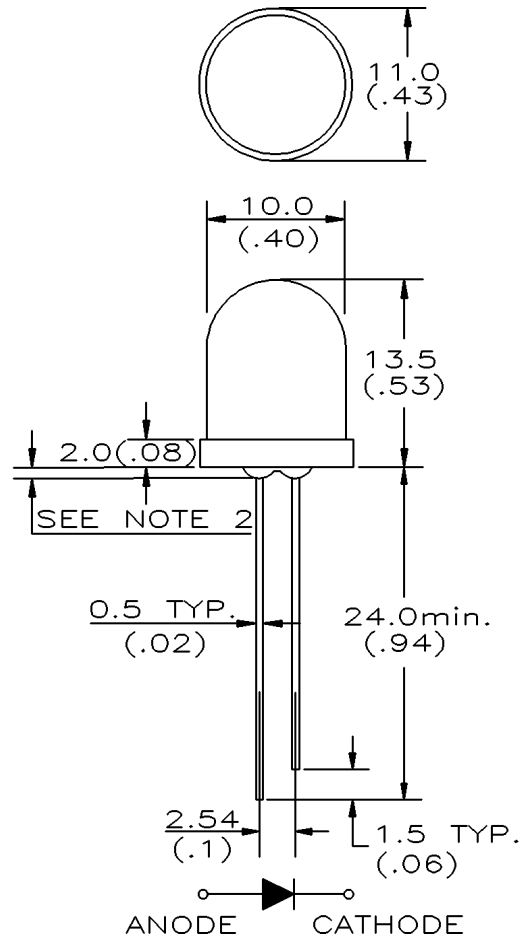
**Features**

- \* High intensity
- \* Reliable and rugged
- \* Low current requirement
- \* IC compatible

**Description**

The blue lamps are made with InGaN chips and blue diffused epoxy resin.

**Package Dimensions**



Notes :

1. All dimensions are in millimeters (inches).
2. Protruded resin under flange is 1.0mm (.04" ) max.
3. Tolerance is  $\pm 0.25\text{mm}$  (0.01" ) unless otherwise noted.

Part No.	Led Chip		Lens Color
	Material	Emitting Color	
LT33B1-81-UAC2-ECL	InGaN	Blue	Blue Diffused



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### Absolute Maximum Ratings at Ta=25°C :

Parameter	Symbol	Rating	Unit
Power Dissipation	Pd	80	mW
Reverse Voltage	Vr	5	V
D.C. Forward Current	If	20	mA
Peak Current (1/10 Duty Cycle,0.1ms pulse width)	If (Peak)	100	mA
Operating Temperature Range	Topr	-25 to +85	°C
Storage Temperature Range	Tstg	-40 to +100	°C
Lead Soldering Temp. (1.6mm from body) for 5 seconds		260	°C
Electric Static Discharge Threshold (HBM)		1000	V

### Electrical and Optical Characteristics :

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Luminous Intensity	Iv	If=20mA	90	150		mcd
Forward Voltage	Vf	If=20mA		3.6	4.0	V
Dominant Wavelength	$\lambda_d$	If=20mA		470		nm
Reverse Current	Ir	Vr=5V			50	$\mu A$
Viewing Angle	$2\theta_{1/2}$	If=20mA		50		deg

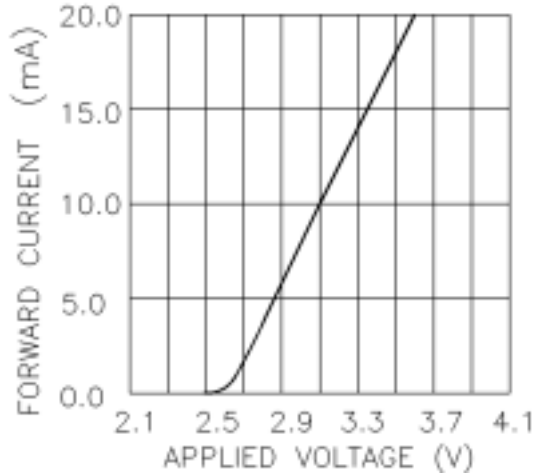


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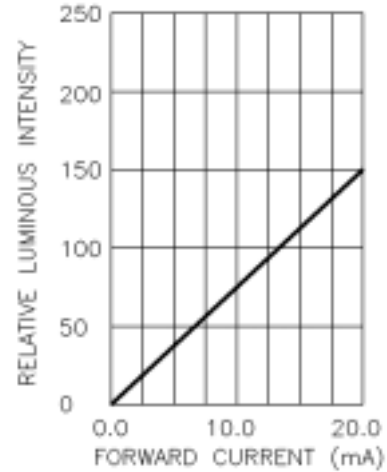
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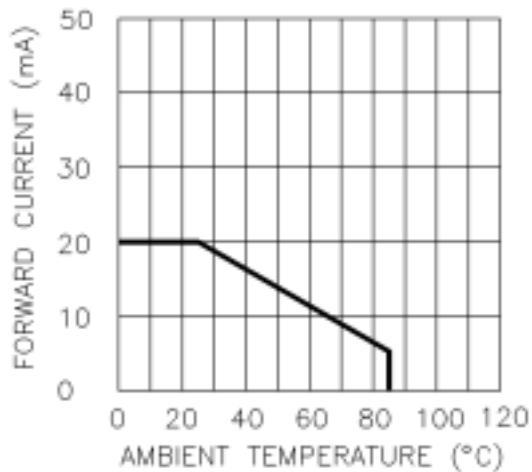
Typical Electrical / Optical Characteristics Curves :



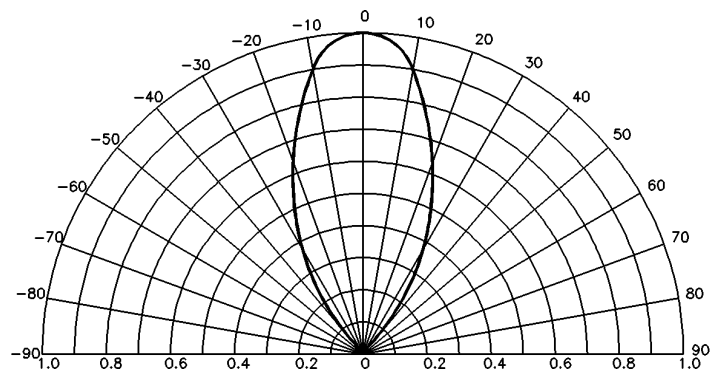
Forward Current vs. Forward Voltage



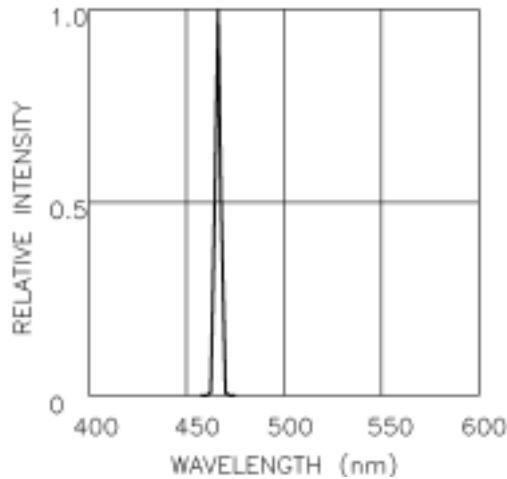
Forward Current vs. Relative Luminous Intensity



Ambient Temperature vs. Forward Current



Radiation Diagram



Relative Intensity vs. Wavelength



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### Reliability Test Method :

Test Item	Test Condition	Duration Time
Operation Life	If=20mA / Ta=25°C	168 hrs
Storage at High Temperature	Ta=100°C	168 hrs
Storage at Low Temperature	Ta=-40°C	168 hrs
Storage at High Temperature/High Humidity	Ta=85°C / RH=85%	168 hrs
Operating at High Temperature	Ta=85°C / If=20mA	168 hrs
Operating at Low Temperature	Ta=-25°C / If=20mA	168 hrs
Thermal Shock	Ta/T=100°C/30min~ - 40°C/30min	10 cycles
Solderability	Tsol=260°C	5 sec

### Criteria for Judging The Damage :

Item	Symbol	Test Condition	Criteria for Judgment	
			Min.	Max.
Forward Voltage	Vf	If=20mA	---	Initial Data x1.1
Reverse Current	Ir	Vr=5V	---	50 $\mu$ A
Luminous Intensity	Iv	If=20mA	Initial Data x0.8	---

### Precautions :

If the lead is formed, the lead should be formed up to 5mm from the body of the device without forming stress to the resin. Soldering should be performed after lead forming.