



Through Hole Lamp Product Data Sheet LTL30ECBKRJS

Spec No.: DS20-2007-0072

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LITE-ON DCC

RELEASE

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LITE-ON ELECTRONICS, INC.

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Absolute Maximum Ratings at TA=25°C

Parameter	AlInGaP Red	InGan Blue	Unit
Power Dissipation	75	120	mW
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	90	100	mA
Continuous Forward Current	30	30	mA
Derating Linear From 50°C ,30 °C	0.4	0.4	mA/°C
Operating Temperature Range	-55°C to + 100°C		
Storage Temperature Range	-55°C to + 100°C		
Lead Soldering Temperature [2.0 mm(.078") From Body]	260°C for 5 Seconds		

Electrical Optical Characteristics at TA=25°C

Parameter	Symbol	Color	Min.	Typ.	Max.	Unit	Test Condition
Luminous Intensity	I _v	Red Blue	180 180	310 310		mcd	I _F = 20mA I _F = 20mA Note 1,4
Viewing Angle	2θ _{1/2}	Red Blue		25 25		deg	Note 2 (Fig.6)
Peak Emission	λ _p	Red Blue		639 468		nm	Measurement @Peak (Fig.1)
Dominant Wavelength	λ _d	Red Blue		631 470		nm	Note 3
Spectral Line Half-Width	Δλ	Red Blue		20 26		nm	
Forward Voltage	V _F	Red Blue		2.0 3.1	2.4 3.9	V	I _F = 20mA
Reverse Current	I _R	Red Blue			100	μA	V _R = 5V
Electrostatic Discharge Threshold	HBM				700	V	

Note: 1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commission International De L'Eclairage) eye-response curve.

2. θ_{1/2} is the off-axis angle at which the luminous intensity is half the axial luminous intensity.

3. The dominant wavelength, λ_d is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.

4. The I_v guarantee should be added ±15%.

5. Reverse voltage (V_R) condition is applied for I_R test only. The device is not designed for reverse operation.

Typical Electrical / Optical Characteristics Curves

(25°C Ambient Temperature Unless Otherwise Noted)

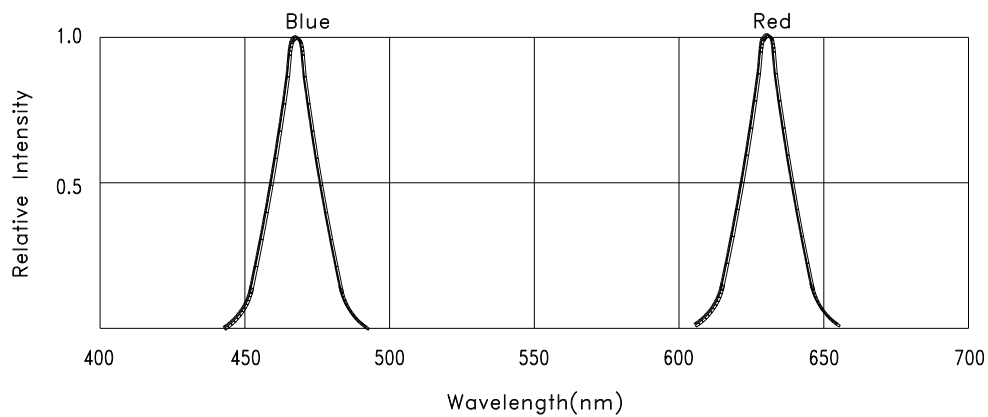


Fig.1 Relative Intensity vs. Wavelength

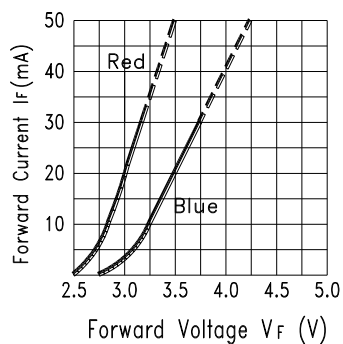


Fig.2 Forward Current vs. Forward Voltage

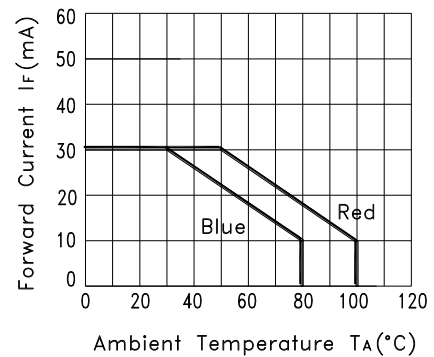


Fig.3 Forward Current Derating Curve

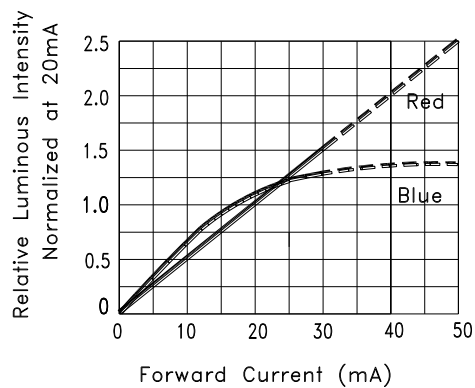


Fig.4 Relative Luminous Intensity vs. Forward Current

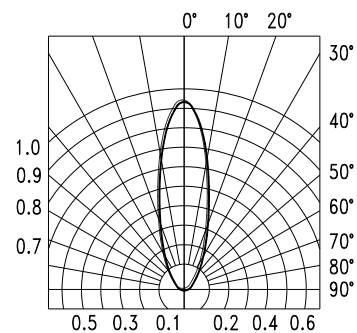


Fig.5 Spatial Distribution



Bin Table Specifications

Luminous Intensity AllnGaP Red Unit : mcd @20mA		
Bin Code	Min.	Max.
H	180	240
J	240	310
K	310	400
L	400	520

Luminous Intensity InGan Blue Unit : mcd @20mA		
Bin Code	Min.	Max.
H	180	240
J	240	310
K	310	400
L	400	520

Note: Tolerance of each bin limit is $\pm 15\%$

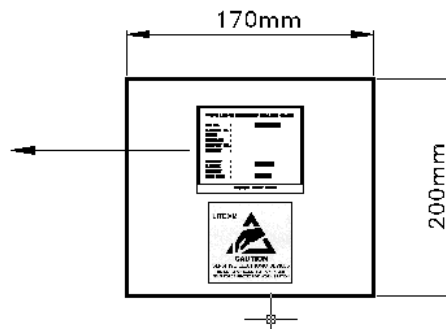
Bin Code : X-X (Luminous Intensity BLUE – Luminous Intensity RED)

Packing Spec

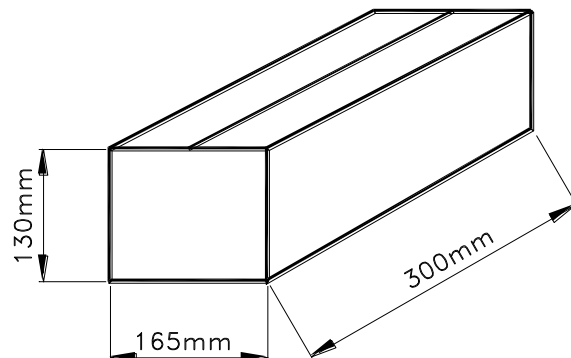
500 or 250 pcs per packing bag

LITEON LITE-ON ELECTRONICS (THAILAND) CO.,LTD.	
LOT NO. :	■■■■■■■■■■
MATERIAL NO. :	
BATCH :	
CUSTOMER :	
CUS.PART NO. :	
QUANTITY :	■■■■■■■■
MACHINE :	
COMMENT :	
DATE CODE :	■■■■■■■■

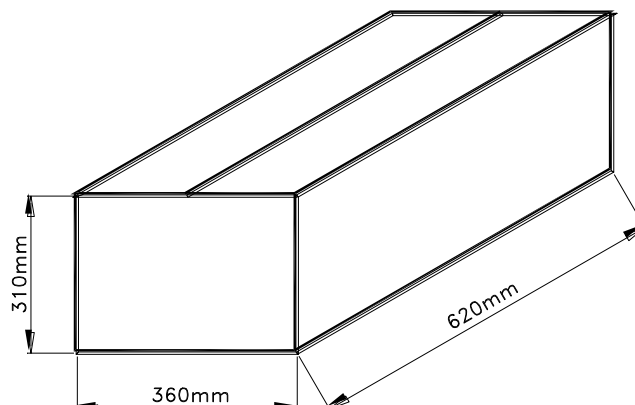
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10 packing bags per inner carton
total 5000 pcs per inner carton



8 Inner cartons per outer carton
total 40000 pcs per outer carton
In every shipping lot, only the last pack will be non-full packing



CAUTIONS

1. Application

The LEDs described here are intended to be used for ordinary electronic equipment (such as office equipment, communication equipment and household applications). Consult Liteon's Sales in advance for information on applications in which exceptional reliability is required, particularly when the failure or malfunction of the LEDs may directly jeopardize life or health (such as in aviation, transportation, traffic control equipment, medical and life support systems and safety devices).

2. Storage

The storage ambient for the LEDs should not exceed 30°C temperature or 70% relative humidity. It is recommended that LEDs out of their original packaging are used within three months.

For extended storage out of their original packaging, it is recommended that the LEDs be stored in a sealed container with appropriate desiccant or in a dessicator with nitrogen ambient.

3. Cleaning

Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LEDs if necessary.

4. Lead Forming & Assembly

During lead forming, the leads should be bent at a point at least 3mm from the base of LEDlens.

Do not use the base of the lead frame as a fulcrum during forming.

Lead forming must be done before soldering, at normal temperature.

During assembly on PCB, use minimum clinch force possible to avoid excessive mechanical stress.

5. Soldering

When soldering, leave a minimum of 2mm clearance from the base of the lens to the soldering point.

Dipping the lens into the solder must be avoided.

Do not apply any external stress to the lead frame during soldering while the LED is at high temperature.

Recommended soldering condition (for Lamp):

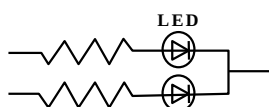
Soldering iron		Wave soldering	
Temperature	300°C Max.	Pre-heat	100°C Max.
Soldering time	3 sec. Max. (one time only)	Pre-heat time	60 sec. Max.
		Solder wave	260°C Max.
		Soldering time	5 sec. Max.

Note: Excessive soldering temperature and/or time might result in deformation of the LED lens or catastrophic failure of the LED. IR re-flow is not suitable process for through hole type LED lamp production.

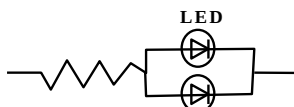
6. Drive Method

An LED is a current operated device, In order to ensure intensity uniformity on multiple LEDs connected in parallel in an application; it is recommended that a current limiting resistor be incorporated in the drive circuit. In series with each LED as shown in Circuit A below.

Circuit model A



Circuit model B



(A) Recommended circuit.
(B) The brightness of each LED might appear different due to the differences in the I-V

8. Reliability Test

Classification	Test Item	Test Condition	Reference Standard
Endurance Test	Operation Life	Ta= Under Room Temperature As Per Data Sheet Maximum Rating *Test Time= 1000HRS (-24HRS,+72HRS)	MIL-STD-750D:1026 (1995) MIL-STD-883D:1005 (1991) JIS C 7021:B-1 (1982)
	High Temperature High Humidity Storage	Ta= 65±5℃ RH= 90 ~ 95% Test Time= 240HRS±2HRS	MIL-STD-202F: 103B(1980) JIS C 7021 : B-11(1982)
	High Temperature High Humidity Reverse BIAS	Ta= 65±5℃ RH= 90 ~ 95% VR=5V Test Time = 500HRS (-24HRS, +48HRS)	JIS C 7021 : B-11(1982)
	High Temperature Storage	Ta= 105±5℃ *Test Time= 1000HRS (-24HRS,+72HRS)	MIL-STD-883D:1008 (1991) JIS C 7021:B-10 (1982)
	Low Temperature Storage	Ta= -55±5℃ *Test Time=1000HRS (-24HRS,+72HRS)	JIS C 7021:B-12 (1982)
Environmental Test	Temperature Cycling	105℃ ~ 25℃ ~ -55℃ ~ 25℃ 30mins 5mins 30mins 5mins 10 Cycles	MIL-STD-202F:107D (1980) MIL-STD-750D:1051(1995) MIL-STD-883D:1010 (1991) JIS C 7021: A-4(1982)
	Thermal Shock	105 ± 5℃ ~ -55℃ ± 5℃ 10mins 10mins 10 Cycles	MIL-STD-202F:107D(1980) MIL-STD-750D:1051(1995) MIL-STD-883D:1011 (1991)
	Solder Resistance	T.sol = 260 ± 5℃ Max. Dwell Time= 5 secs Max 3 times dip.	MIL-STD-202F:210A(1980) MIL-STD-750D:2031(1995) JIS C 7021: A-1(1982)
	Solderability	T. sol = 230 ± 5℃ Dwell Time= 5 ± 1secs	MIL-STD-202F:208D(1980) MIL-STD-750D:2026(1995) MIL-STD-883D:2003(1991) JIS C 7021: A-2(1982)

9. Others

The appearance and specifications of the product may be modified for improvement, without prior notice.