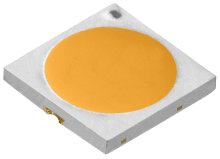
3030 Mid Power LED (1.0W)



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Features:

- High efficacy
- Low thermal resistance
- Compatible with automatic placement equipment
- Compatible with infrared reflow solder process
- RoHs and REACH compliant

Applications

- Replacement lamps
- Panel lighting
- Down lights
- Architectural lighting

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Technology Overview

Luminus XNOVA mid power LEDs are lighting class solutions designed for high performance general lighting applications. These state-of-the-art LEDs allow illumination engineers and designers to develop lighting solutions with maximum efficacy, brightness and overall quality.

Reliability

XNOVA mid power LED is one of the most reliable light sources in the world today. Having passed a rigorous suite of environmental and mechanical stress tests, including mechanical shock, vibration, temperature cycling and humidity, it is fully qualified for use in a wide range of high performance and high efficacy lighting applications.

REACH & RoHS Compliance

The XNOVA 3030 Mid Power LED is compliant to the Restriction of Hazardous Substances Directive or RoHS. The restricted materials including lead, mercury cadmium hexavalent chromium, polybrominated biphenyls (PBB) and polybrominated diphenyl ether (PBDE) are not used.

Understanding XNova™ Mid Power LED Test Specifications

Every XNova LED is fully tested to ensure it meets the high quality standards customers have come to expect from Luminus products.

Testing Temperature

XNova Mid Power products are measured at a junction temperature of 25C and placed into intensity, chromaticity and voltage bins as described here in

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Product Selection Table

Test condition = 150 mA, 25 °C

Nominal CCT	Minimum CRI	Ordering Part Number	Minimum Flux (Lumens)	Typical Flux (Lumens)
2700K	80	MP-3030-2200-27-80	98	104
3000K	80	MP-3030-2200-30-80	100	107
4000K	70	MP-3030-2200-40-70	117	125
	80	MP-3030-2200-40-80	106	114
5000K	70	MP-3030-2200-50-70	114	122
	80	MP-3030-2200-50-80	106	114
5700K	70	MP-3030-2200-57-70	126	134
	80	MP-3030-2200-57-80	118	126
6500K	70	MP-3030-2200-65-70	126	134
	80	MP-3030-2200-65-80	118	126

**IFP condition with Pulse: Width ≤100µs Duty cycle ≤1/10*

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3030 Mid Power Operating Characteristics

Optical and Electrical Characteristics(Ta=25ºC)

Parameter	Symbol	Minimum	Typical	Maximum	Unit	Condition
Forward Voltage	V_F		6.2	6.8	V	IF=150mA
Reverse Current	I_R			10	uA	VR=5V
View Angle	2θ1/2		110		º	IF=150mA
Thermal Resistance	$Rth_{j\text{-}sp}$		11		ºC/W	IF=150mA
Electrostatic Discharge	ESD	1000			V	

Note 1: To prevent damage refer to operating conditions and derating curves for appropriate maximum operating conditions

Note 2: Maximum operating case temperature combined with maximum drive current defines the total maximum operating condition for the device. To prevent damage, please follow derating curves for all operating conditions.

Note 3: Mid power LEDs are designed for operation up to an absolute maximum forward drive current as specified above. Product lifetime data is specified at typical forward drive currents. Sustained operation at absolute maximum currents will result in a reduction of device lifetime compared to typical forward drive currents. Actual device lifetimes will also depend on case temperature. Refer to the current vs. case temperature derating curves for further information.

Note 4: Caution must be taken not to stare at the light emitted from these LEDs. Under special circumstances, the high intensity could damage the eye.

Absolute Maximum Ratings (Ta=25ºC)

Parameter	Symbol	Rating	Unit
Forward Current	I_F	240	mA
Pulse Forward Current	I_{FP}	300	mA
Power Dissipation	P_D	1,632	mW
Reverse Voltage	V_R	5	V
Operating Temperature	T_{OPR}	-40~+80	ºC
Storage Temperature	T_{STG}	-40~+80	ºC
Junction Temperature	T_J	115	ºC
Soldering Temperature	T_{SLD}	230 °C or 260 °C for 10 sec	

**IFP condition with Pulse: Width ≤100μs Duty cycle ≤1/10*

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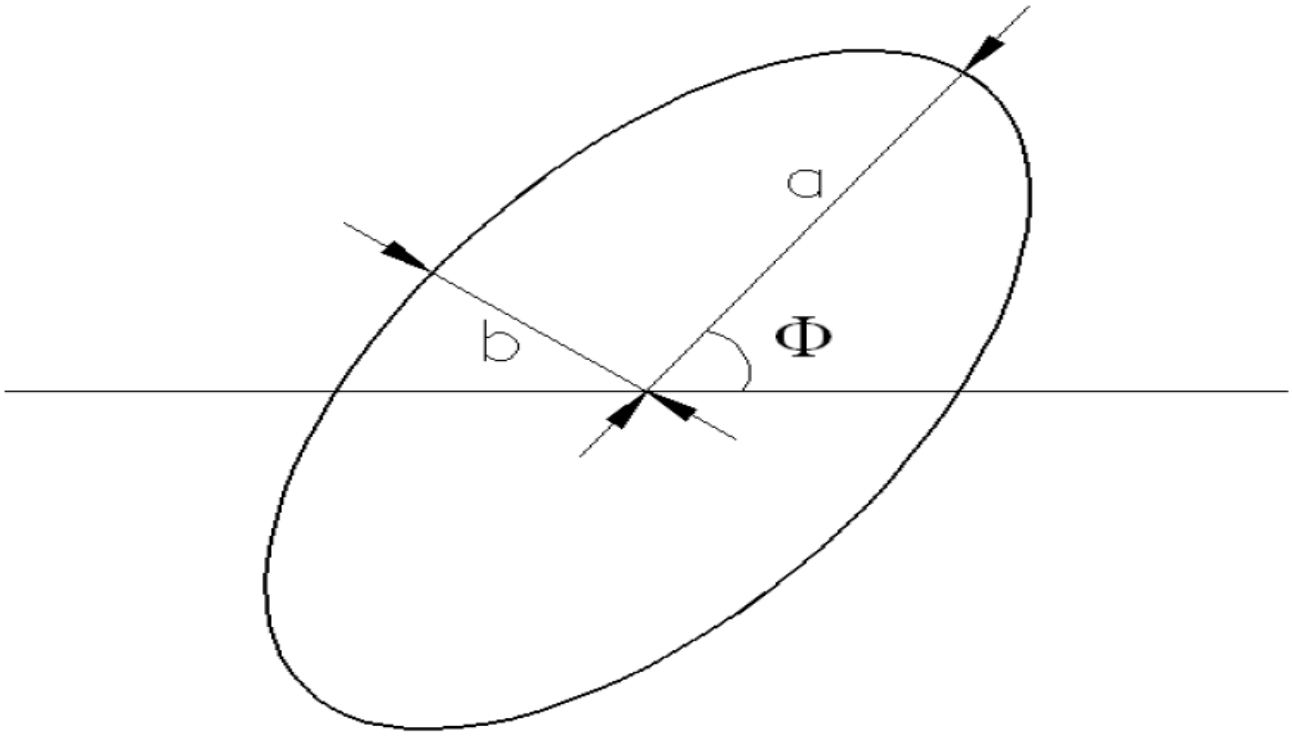
Chromaticity Diagram



Color Bins

Color Code	Center		Radius		Angle(deg)
	x	y	a	b	ϕ
27m5	0.4582	0.4099	0.013500	0.00700	53.42
30m5	0.4342	0.4028	0.013900	0.00680	53.13
40m5	0.3825	0.3789	0.015650	0.00670	53.43
50m5	0.3451	0.3554	0.013700	0.00590	59.37
57m7	0.3290	0.3417	0.015645	0.00770	58.35
65m7	0.3130	0.3290	0.015610	0.006650	58.34

*Note: Tolerance of measurements of the chromaticity Coordinate is ±0.005
Chromaticity coordinates as per ANSI standard.

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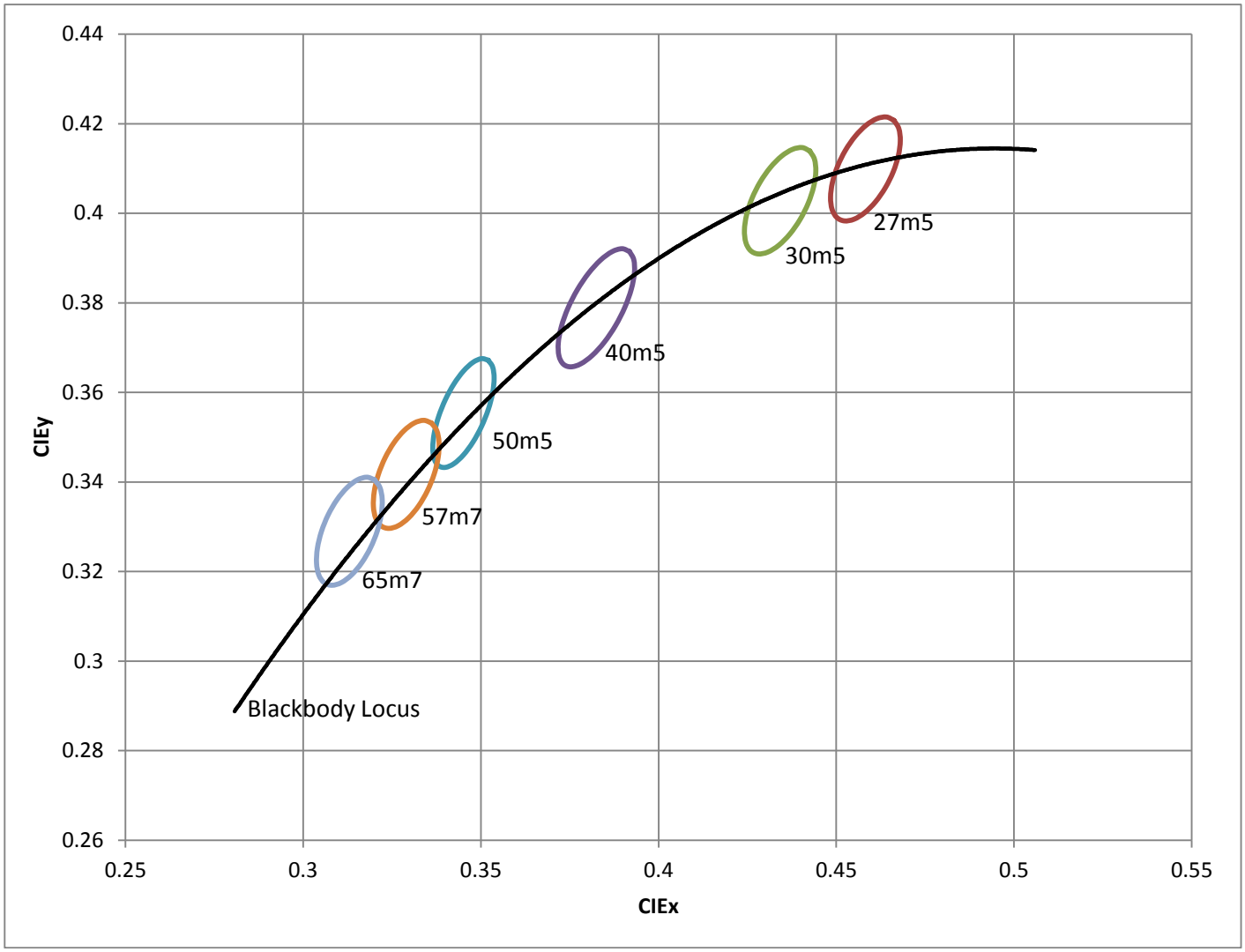
Chromaticity Coordinate Group



*Note: Luminus maintains a +/- 0.01 tolerance on chromaticity (CIEx and CIEy) measurements.

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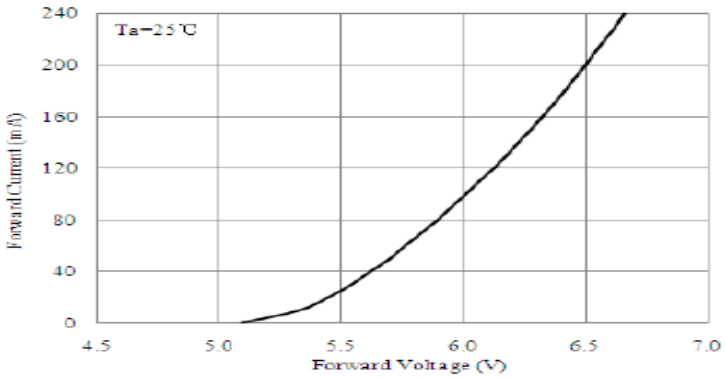
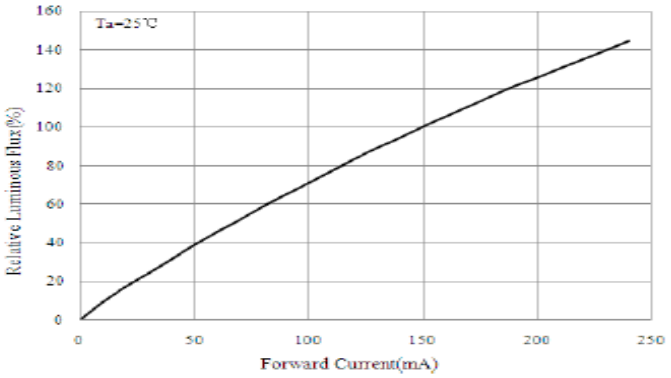
Typical optical/Electrical Characteristics Graphs

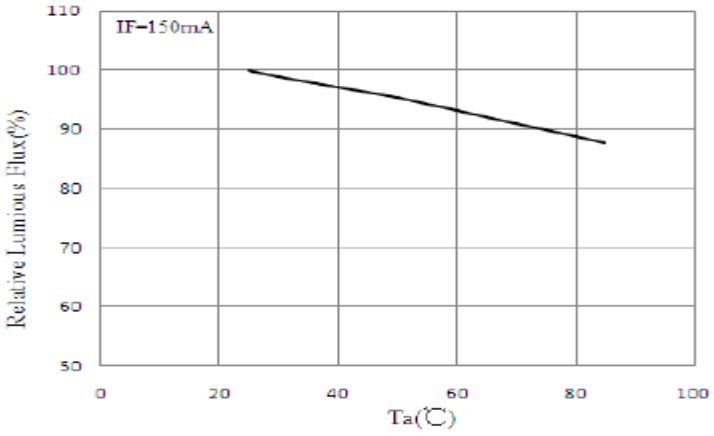
Vf-------IF



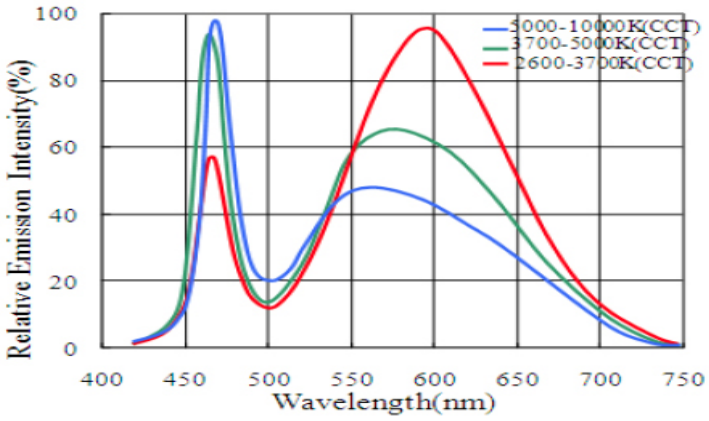
IF---- Relative Luminous flux



Tj-----Relative Luminous Flux



Wavelength- Relative Emission Intensity



*Note: Luminus maintains a +/- 0.01 tolerance on chromaticity (CIEx and CIEy) measurements.

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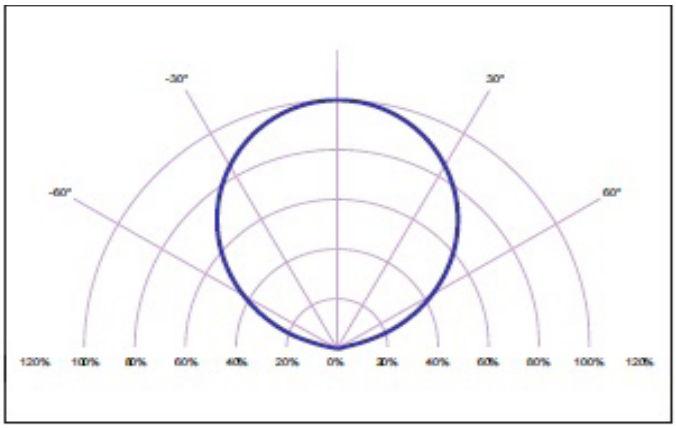
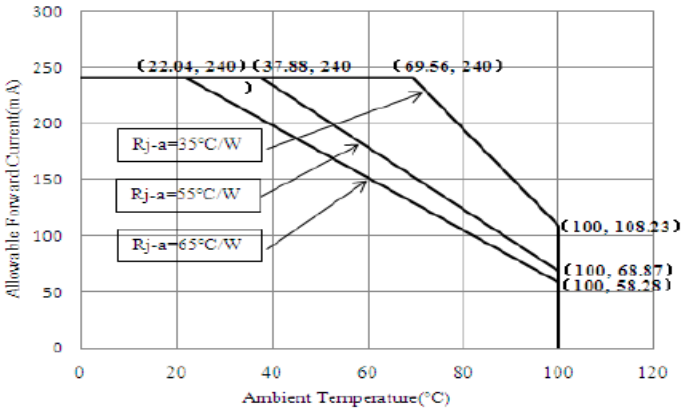
Solder Profile

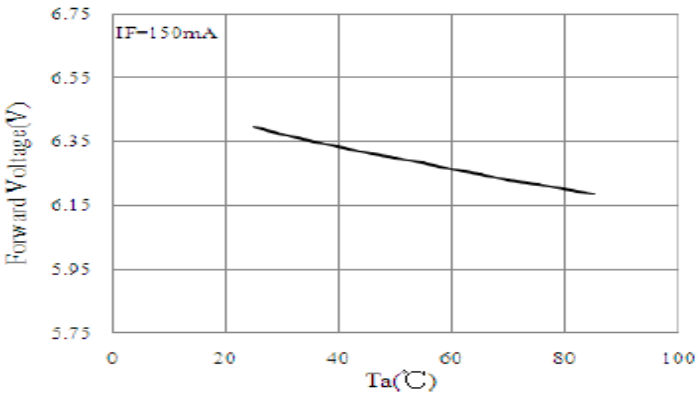
Typical Polar Radiation Pattern



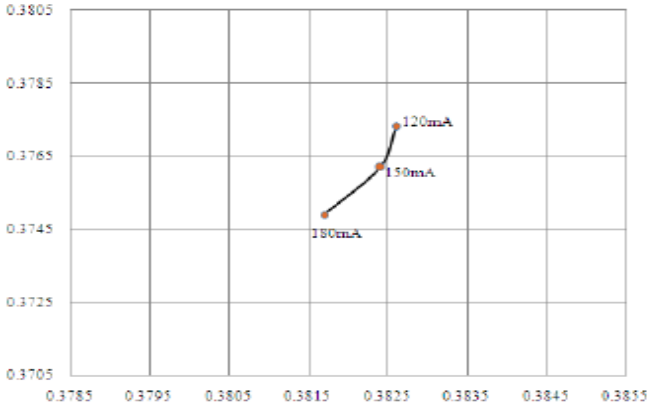
Ambient Temperature-Allowable Forward Current



Tj--Forward Voltage



Forward Current-Chromaticity Coordinate



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Product Ordering and Shipping Part Number Nomenclature

All mid power products are packaged and labeled with part numbers as outlined in below. When shipped, each reel will contain only a single flux and voltage bin. The part number designation is as follows:

3030 Mid Power LEDs

Mid Power	Package Type	Package Configurator	Nominal CCT	Minimum CRI
MP	3030	2200	##	##

Example :

The part number MP-3030-2200-30-80 refers to a 3030 mid power emitter with nominal color tempecture of 3,000k and minimum CRI of 80. Please refer to page 5 for a description of available CCT and CRI combinations.

Note 1: CCT Codes:
27 = 2700 k
30= 3000 k
40 = 4000 k
50 = 5000 k
57= 5700 k
65 = 6500 k

Note 2: CRI Codes:
70
80

Each mid power product shipped will be labeled with its specific flux and voltage bins. Not all bins listed are available in all CCTs and CRIs.

Luminus Flux Bins

Bin Code	Minimum Flux (Lumens)	Maximum Flux (Lumens)
1Z	87	94
2A	94	100
2B	100	107
2C	107	114
2D	114	122
2E	122	130
2F	130	139

Forward Voltage Bins (Ta=25°C)

Bin Code	Minimum Voltage (Volts)	Maximum Voltage (Volts)
B	5.5	6.0
C	6.0	6.5
D	6.5	7.0

** Tolerance of measurements f the Forward Voltage is ±0.1V*

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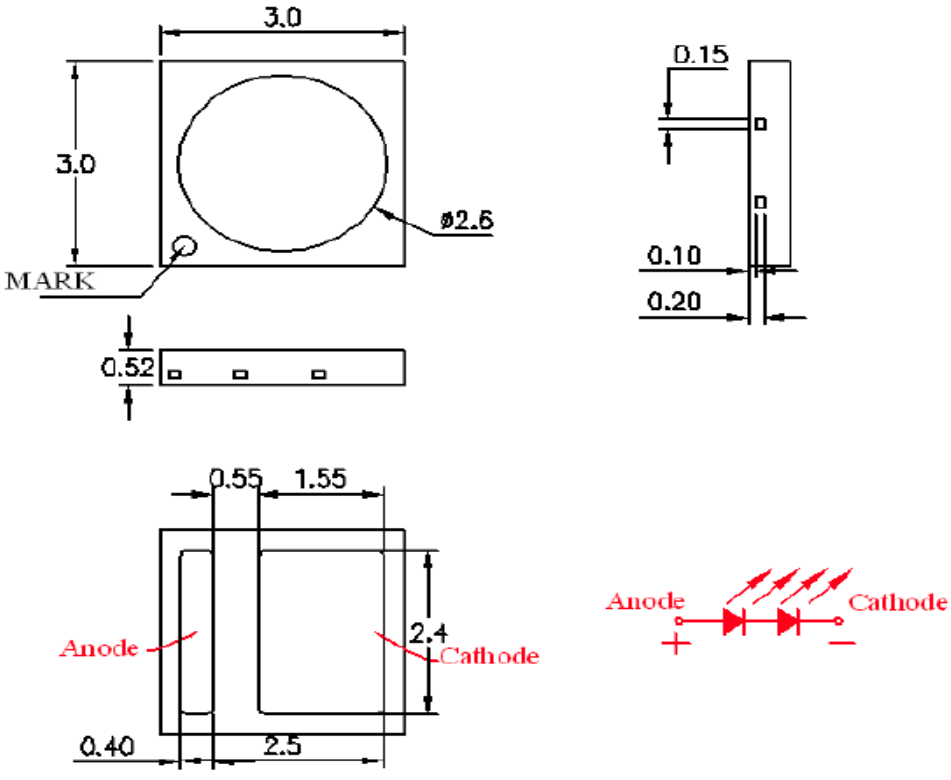
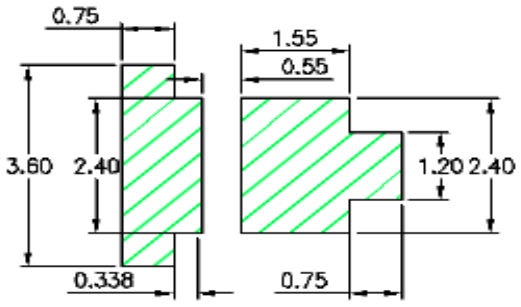
Package Dimension (mm)



Recommended Soldering Pad Pattern



Note: tolerance : .X: ±0.10mm .XX: ±0.05mm

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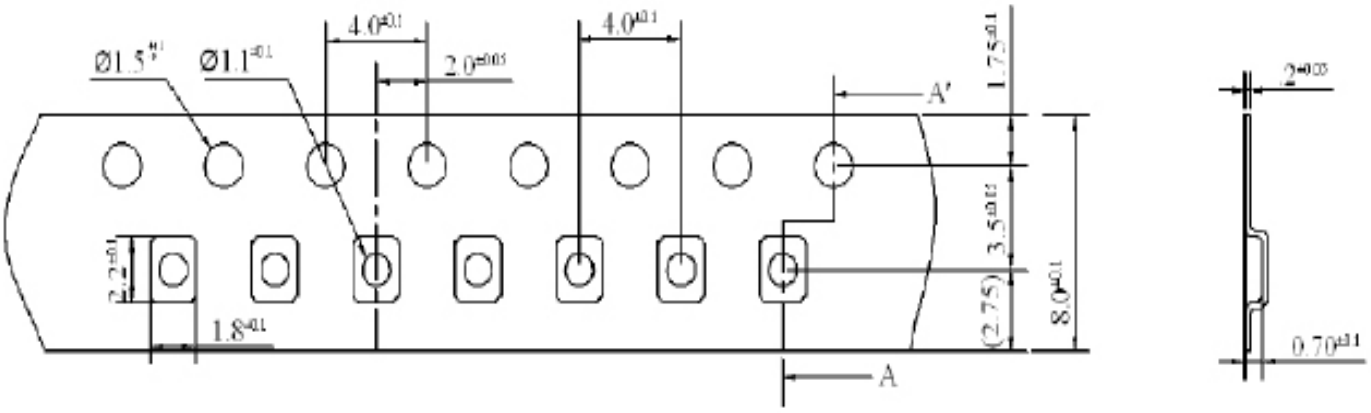
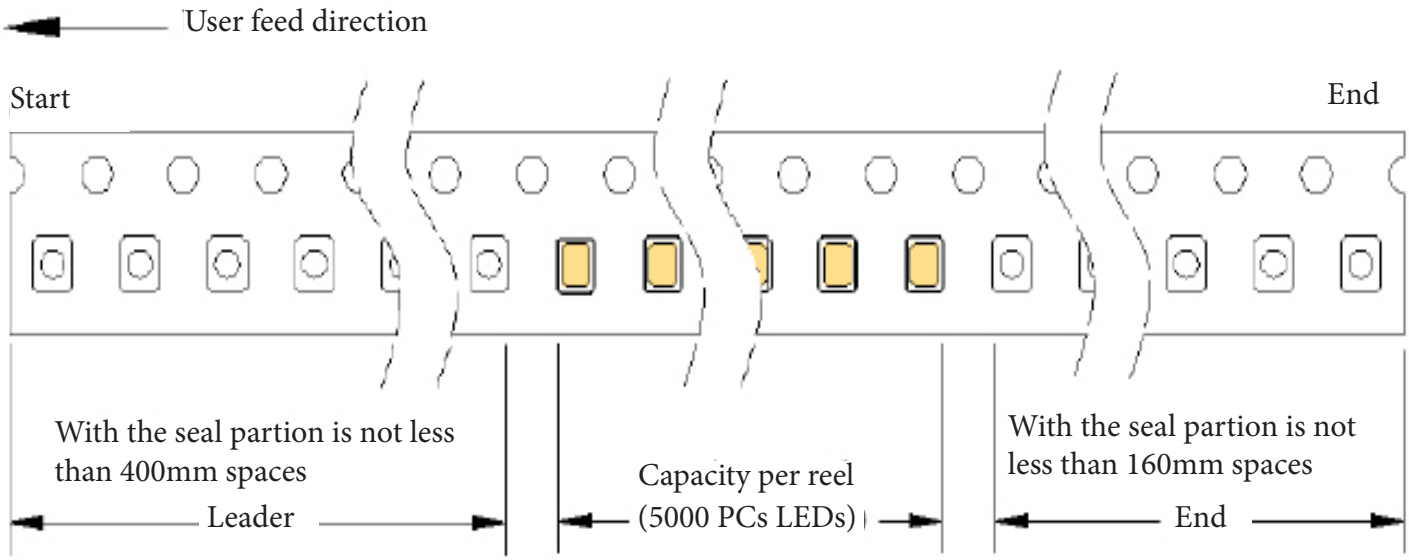
Package Dimensions Of Type(mm)





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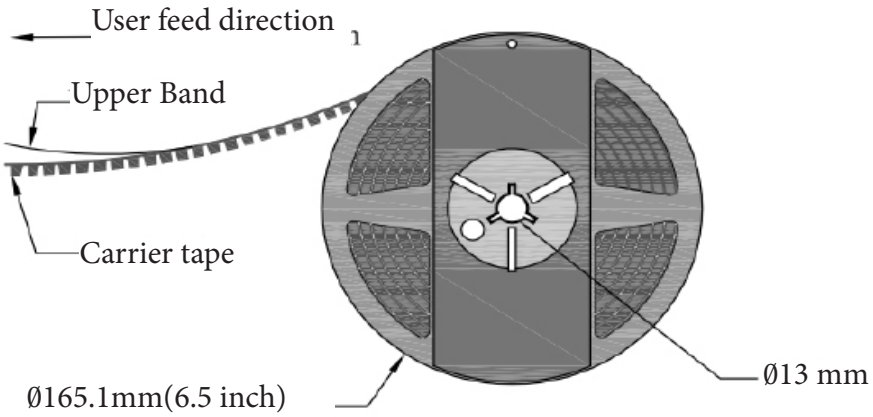
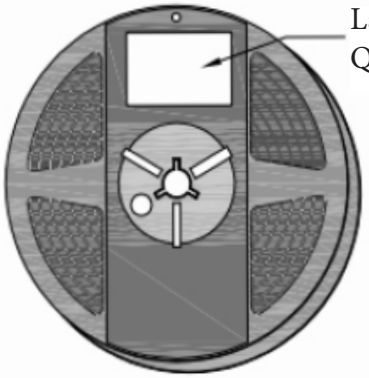
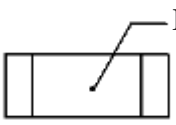
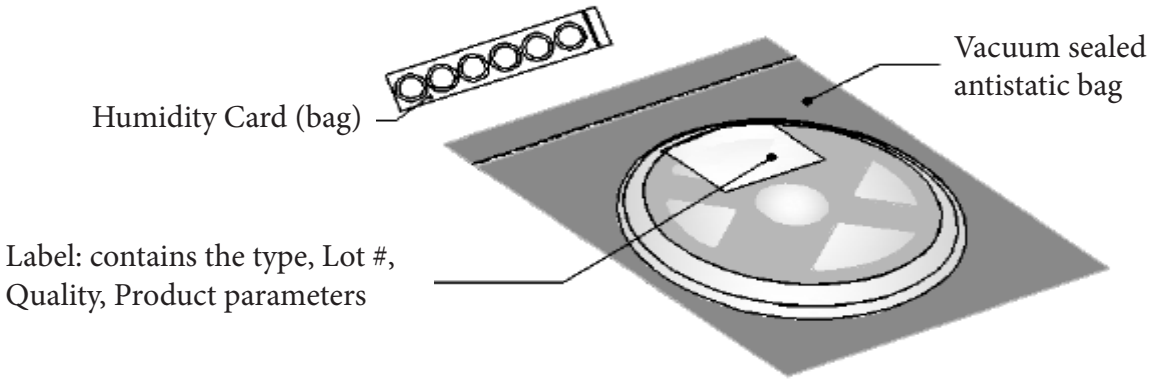
Package Dimensions of Reel (mm)



Package Dimensions of Reel (mm)







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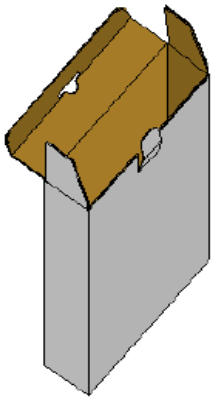
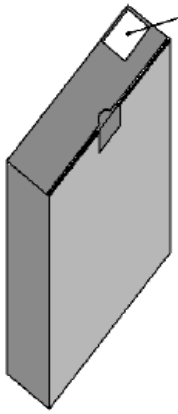
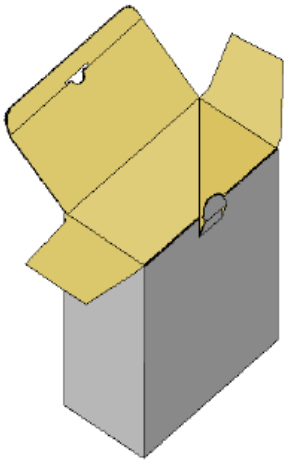
Inner Box

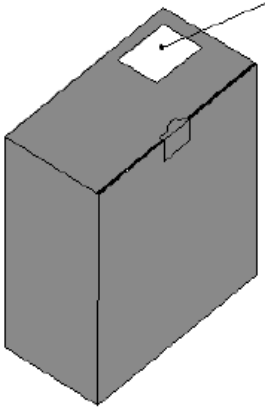




Label: contains the type, Lot #, Quality, Product parameters

*Capacity 5 reels per box





Label: contains the type, Lot #, Quality, Product parameters

*Capacity 10 reels per box

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Precaution for Use

Storage:

1. Recommended storage condition:
   At 5 °C - 30 °C and relative humidity 60% RH max.

2. After this bag is opened, devices that will be applied to infrared reflow, vapor- phase reflow, or equivalent soldering process must be :
   a) Completed within 24 hours.
   b) Stored at less than 30% RH.

3. Devices require baking before mounting, if :
   2a or 2b is not met.

4) If baking is required, devices must be baked under below conditions:
   24 hours at 60 °C ± 5 °C.

Static Electricity:

1. The products are sensitive to static electricity, and care should be taken when handling them.

2. Static electricity or surge voltage will damage the LEDs. It is recommended to wear a anti-electrostatic wristband or an anti-electrostatic gloves when handling the LEDs.

3. All devices, equipment and machinery must be properly grounded. It is recommended that measures be taken against surge voltage to the equipment that mounts the LEDs.

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