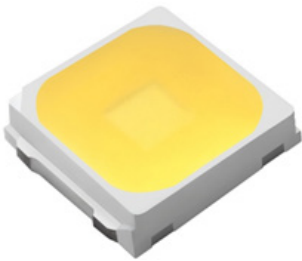


MP-3030-11F2

Mid Power LED



Features

- High efficacy
- CRI Options: Minimum 70, 80, 90
- Low thermal resistance
- Compatible with automatic placement equipment
- Compatible with infrared reflow solder process
- Sulfur resistant



Applications

- Replacement lamps
- Panel lighting
- Down lights
- Horticulture

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Ordering Information

Ordering Part Numbers

Minimum CRI ¹	Nominal CCT	Luminous Flux ²		Ordering Part Number
		Minimum Flux (lm) ³	Typical Flux (lm) ³	
70	2700K	36.0	38.0	MP-3030-11F2-27-70
80		34.0	35.5	MP-3030-11F2-27-80
90		30.0	31.0	MP-3030-11F2-27-90
70	3000K	36.0	39.0	MP-3030-11F2-30-70
80		36.0	37.0	MP-3030-11F2-30-80
90		30.0	32.0	MP-3030-11F2-30-90
70	3500K	38.0	41.0	MP-3030-11F2-35-70
80		36.0	38.5	MP-3030-11F2-35-80
90		32.0	33.5	MP-3030-11F2-35-90
70	4000K	38.0	41.0	MP-3030-11F2-40-70
80		38.0	40.0	MP-3030-11F2-40-80
90		33.0	35.0	MP-3030-11F2-40-90
70	5000K	38.0	41.0	MP-3030-11F2-50-70
80		38.0	40.0	MP-3030-11F2-50-80
90		33.0	35.0	MP-3030-11F2-50-90
70	5700K	38.0	41.0	MP-3030-11F2-57-70
80		37.5	39.5	MP-3030-11F2-57-80
90		32.5	34.5	MP-3030-11F2-57-90
70	6500K	38.0	41.0	MP-3030-11F2-65-70
80		37.5	39.5	MP-3030-11F2-65-80
90		32.5	34.5	MP-3030-11F2-65-90

Notes:

1. CRI tolerance ± 2 .
2. Luminous flux tolerance $\pm 7\%$.
3. Test condition: $I_f=65\text{ mA}$, $T_c=25^\circ\text{C}$



Ordering Information

PPF and PPF/W Performance¹

PPF (μmol/s)	PPF/W (μmol/J)	Ordering Part Number
0.53	3.01	MP-3030-11F2-27-80
0.56	3.18	MP-3030-11F2-30-80
0.58	3.36	MP-3030-11F2-35-80
0.60	3.40	MP-3030-11F2-40-80
0.58	3.31	MP-3030-11F2-50-80
0.57	3.26	MP-3030-11F2-57-80
0.55	3.18	MP-3030-11F2-65-80

Notes:

1. Test condition: $I_f=65\text{ mA}$, $T_c=25^\circ\text{C}$



Ordering Information

Part Number Nomenclature

MP	3030	11F2	##	##
Product Family	Package Type	Package Configurator	Nominal CCT ¹	Minimum CRI
MP: Mid Power LED	3030: 3.0 mm x 3.0 mm	11F2: Package code	27: 2700K 30: 3000K 35: 3500K 40: 4000K 50: 5000K 57: 5700K 65: 6500K	70: CRI>70 80: CRI>80 90: CRI>90

Note:
1. Correlated Color Temperatures (CCT)



Binning Structure

All MP-3030-11F2 monochromatic LEDs are tested for luminous flux/ dominant wavelength and placed into one of the following flux/wavelength bins. The binning structure is universally applied across each monochromatic color of the MP-3030-11F2 product line.

Flux Bins

Bin Code	Binning @ 65 mA, $T_c = 25^\circ\text{C}^1$	
	Minimum Flux (lm)	Maximum Flux (lm)
D7	28.0	30.0
D8	30.0	32.0
D9	32.0	34.0
E1	34.0	36.0
E2	36.0	38.0
E3	38.0	40.0
E4	40.0	42.0

Forward Voltage Bins²

Bin Code	Binning @ 65 mA, $T_c = 25^\circ\text{C}^1$	
	Minimum Voltage (V)	Maximum Voltage (V)
Y1	2.5	2.6
Z1	2.6	2.7
A1	2.7	2.8

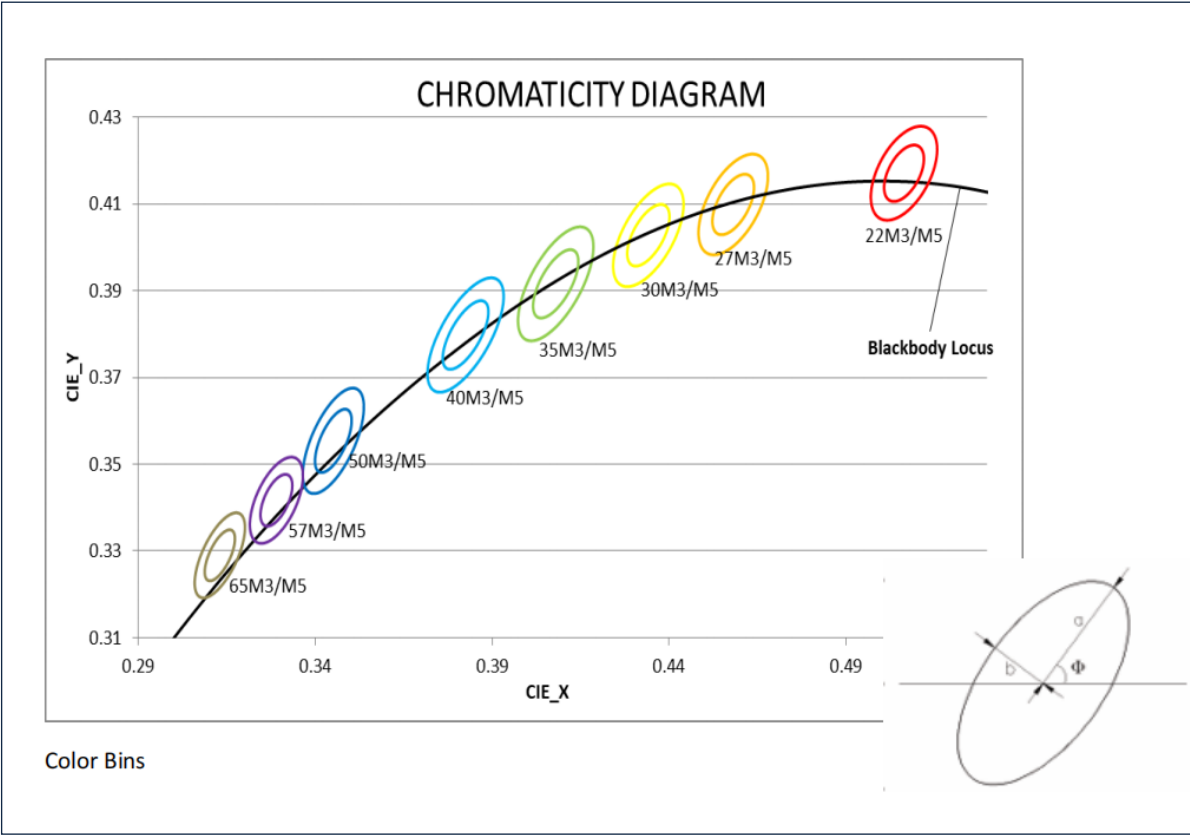
Notes:

- LEDs are measured at drive current 65 mA and $T_c = 25^\circ\text{C}$.
- Forward Voltage measurement tolerance ± 0.1 V.



Binning Structure

Chromaticity Binning Diagram





Binning Structure

Color Bins¹

Color Code	Center		Radius		Angle(°)
	x	y	a	b	Φ
22M3	0.5065	0.4171	0.007500	0.004200	53.00
22M5	0.5065	0.4171	0.012500	0.007000	53.00
27M3	0.4582	0.4099	0.008100	0.004200	53.42
27M5	0.4582	0.4099	0.013500	0.007000	53.42
30M3	0.4342	0.4028	0.008340	0.004080	53.13
30M5	0.4342	0.4028	0.013900	0.006800	53.13
35M3	0.4080	0.3916	0.009270	0.004140	54.00
35M5	0.4080	0.3916	0.015450	0.006900	54.00
40M3	0.3825	0.3798	0.009390	0.004020	53.43
40M5	0.3825	0.3798	0.015650	0.006700	53.43
50M3	0.3451	0.3554	0.008220	0.003540	59.37
50M5	0.3451	0.3554	0.013700	0.005900	59.37
57M3	0.3290	0.3417	0.006705	0.003300	58.35
57M5	0.3290	0.3417	0.011175	0.005500	58.35
65M3	0.3130	0.3290	0.006690	0.002850	58.34
65M5	0.3130	0.3290	0.011150	0.004750	58.34

Note:

1. Chromaticity Coordinate measurement tolerance ± 0.005 .



Absolute Maximum Ratings^{1,2,3}

Parameter		Symbol	Values	Unit
Forward Current	Maximum	$I_{f\ max}$	400	mA
Pulse Forward Current	Maximum	$I_{fp\ max}$	600	mA
Power Dissipation		P_d	1100	mW
Reverse Voltage		V_r	5	V
Operating Temperature Range		T_{opr}	-40 to 85	°C
Storage Temperature Range		T_{stg}	-40 to 85	°C
Junction Temperature		T_j	125	°C

Notes:

1. Maximum operating case temperature combined with maximum current defines the total maximum operating condition for the device. To prevent damage, please do not exceed rated conditions.
2. All ratings are based on standard testing conditions at drive current 65 mA and $T_c = 25^\circ\text{C}$.
3. Pulse Forward Current condition: Pulse width $\leq 100\ \mu\text{s}$, Duty cycle $\leq 1/10$



Characteristics^{1,2,3}

Parameter ($I_f=65\text{ mA}$, $T_c=25^\circ\text{C}$)		Symbol	Value	Unit
Forward Voltage	Minimum	$V_{f\text{ min}}$	2.55	V
	Typical	$V_{f\text{ typ}}$	2.65	
	Maximum	$V_{f\text{ max}}$	2.75	
Reverse Current ($V_r=5\text{ V}$)	Maximum	$I_{r\text{ max}}$	10	μA
Viewing Angle		$2\theta_{1/2}$	120	$^\circ$
Thermal Resistance		$R_{th\text{ J-C}}$	10	$^\circ\text{C/W}$
Electrostatic Discharge		V_{ESD}	8000	V

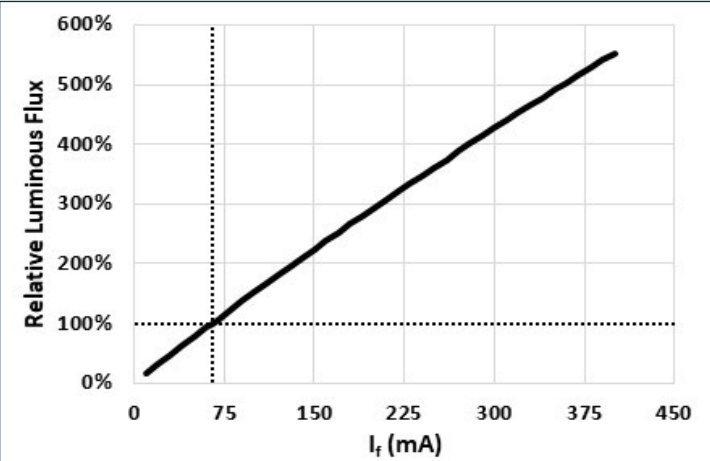
Notes:

1. Product test condition: 65 mA, $T_c = 25^\circ\text{C}$.
2. To prevent damage refer to operating conditions and derating curves for appropriate maximum operating conditions
3. Mid power LEDs are designed for operation up to an absolute maximum forward drive current as specified below. 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.



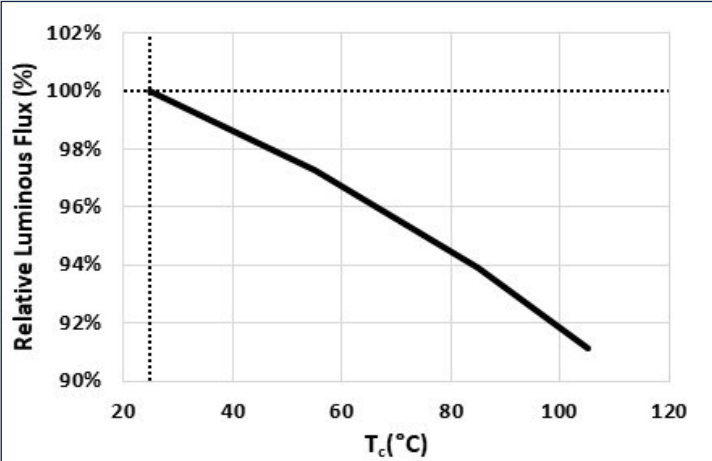
Relative Luminous Flux vs Forward Current

$T_c = 25^{\circ}\text{C}$



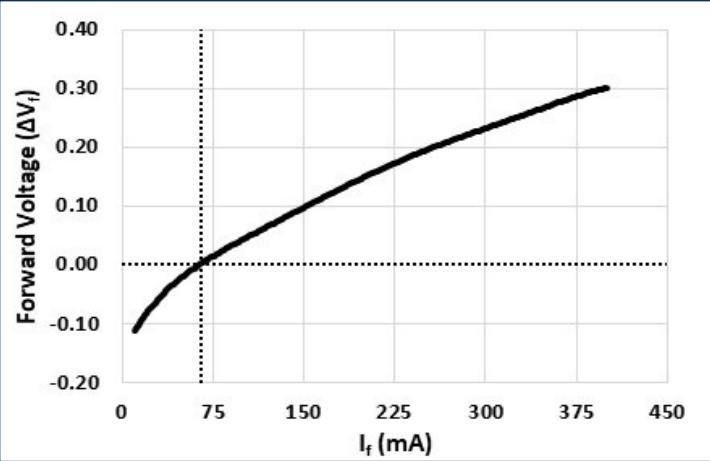
Relative Luminous Flux vs Temperature

$I_f = 65\text{ mA}$



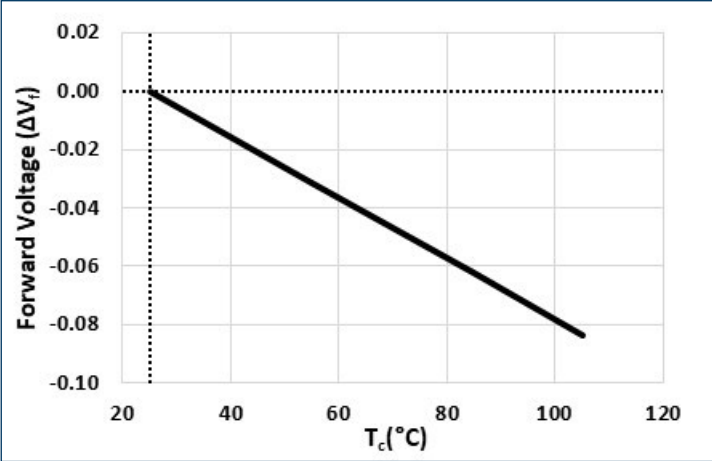
Forward Voltage vs Forward Current

$T_c = 25^{\circ}\text{C}$



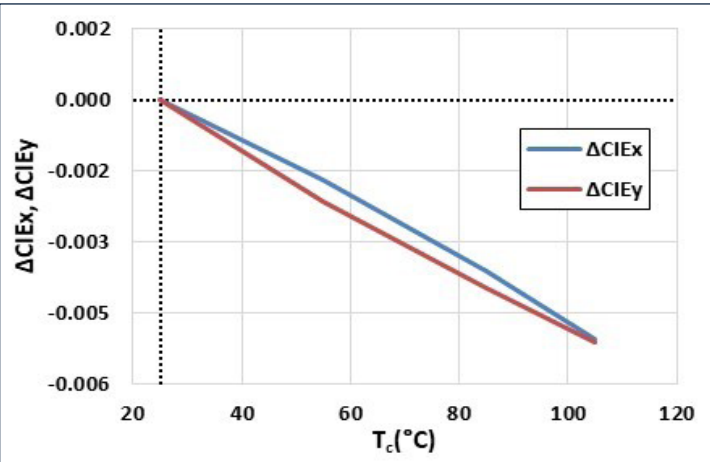
Forward Voltage vs Temperature

$I_f = 65\text{ mA}$



Relative Chromaticity vs Temperature

$I_f = 65\text{ mA}$

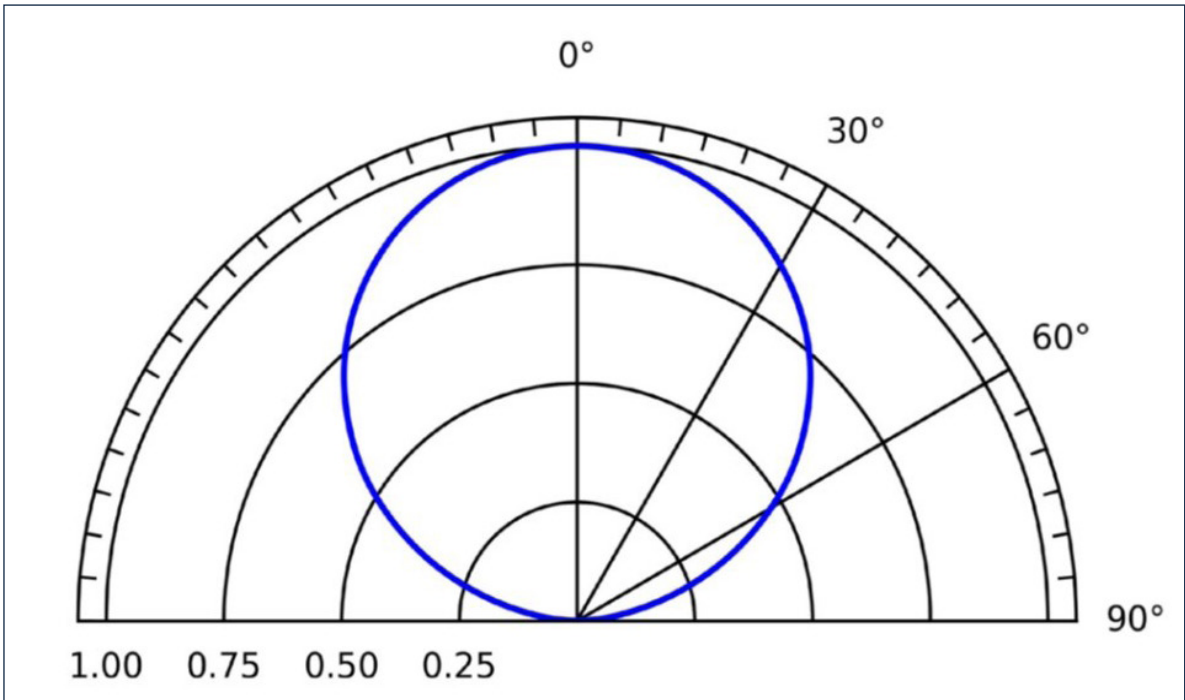




Angular Distribution and Typical Spectrum

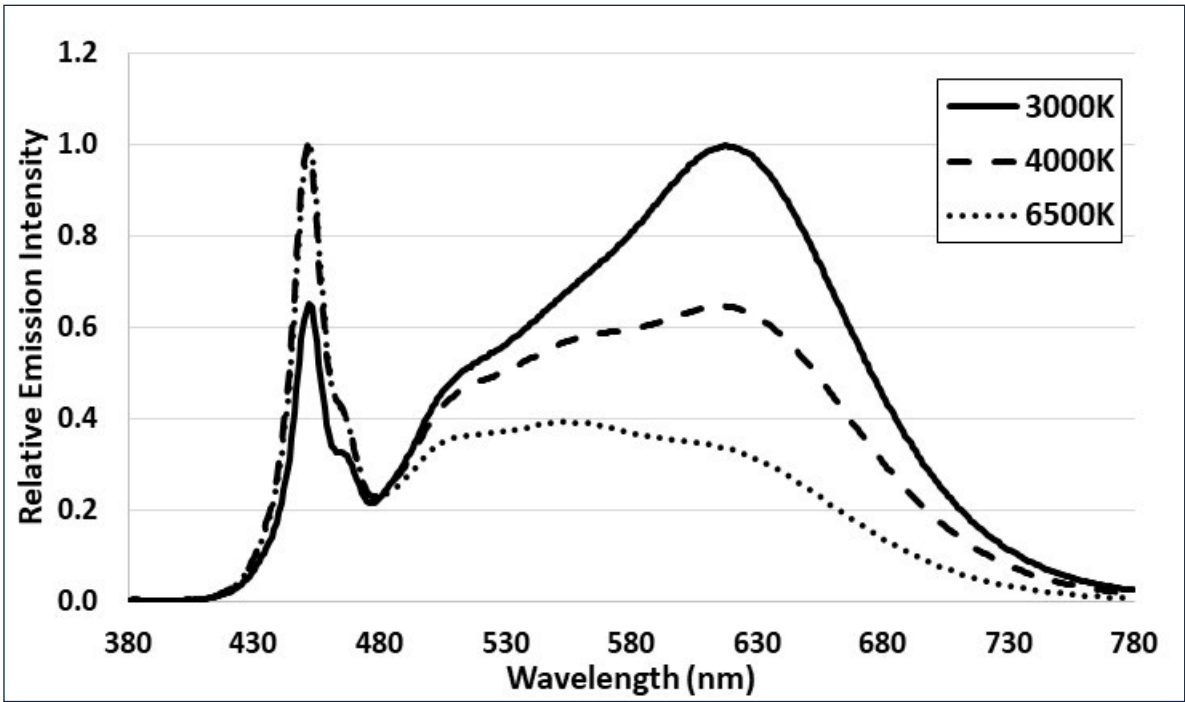
Typical Polar Radiation Pattern

$T_c = 25^{\circ}\text{C}$



Relative Spectral Power Distribution

$R_a \geq 90, T_c = 25^{\circ}\text{C}$

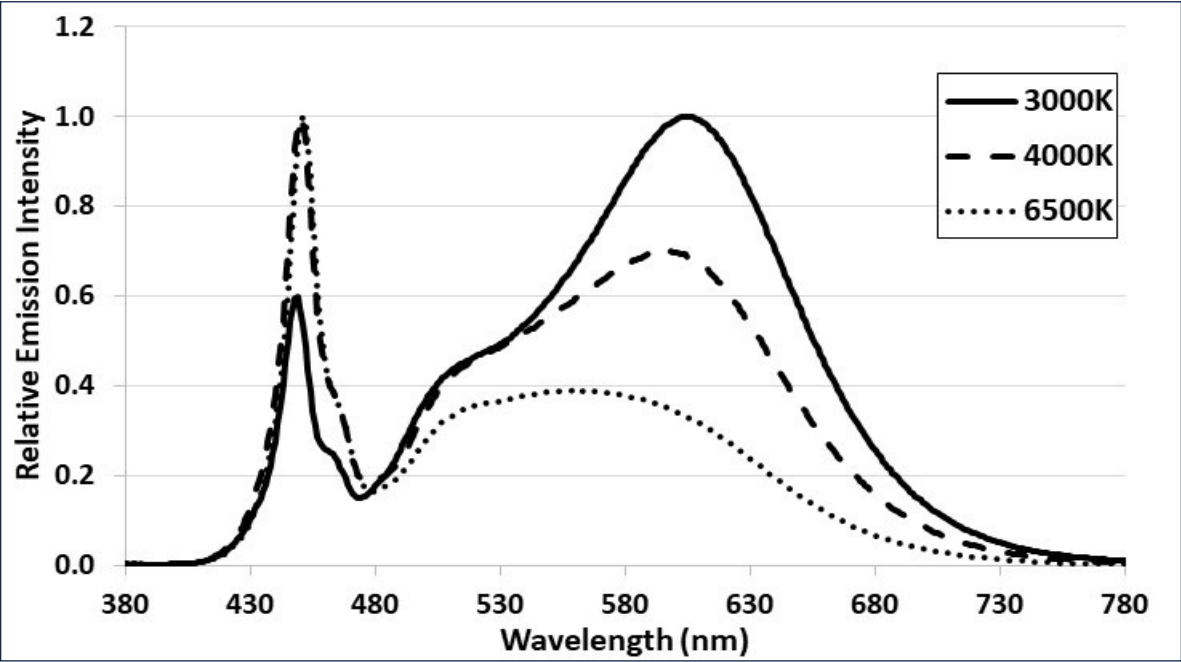




Angular Distribution and Typical Spectrum

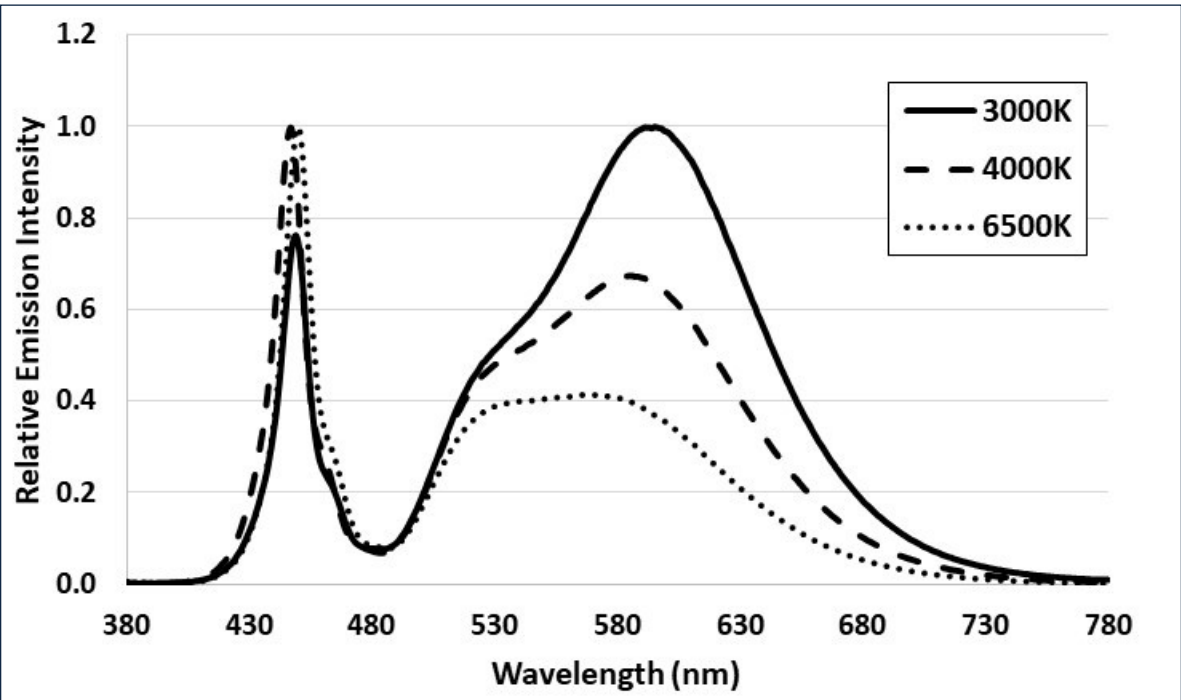
Relative Spectral Power Distribution

Ra≥ 80, T_c= 25°C



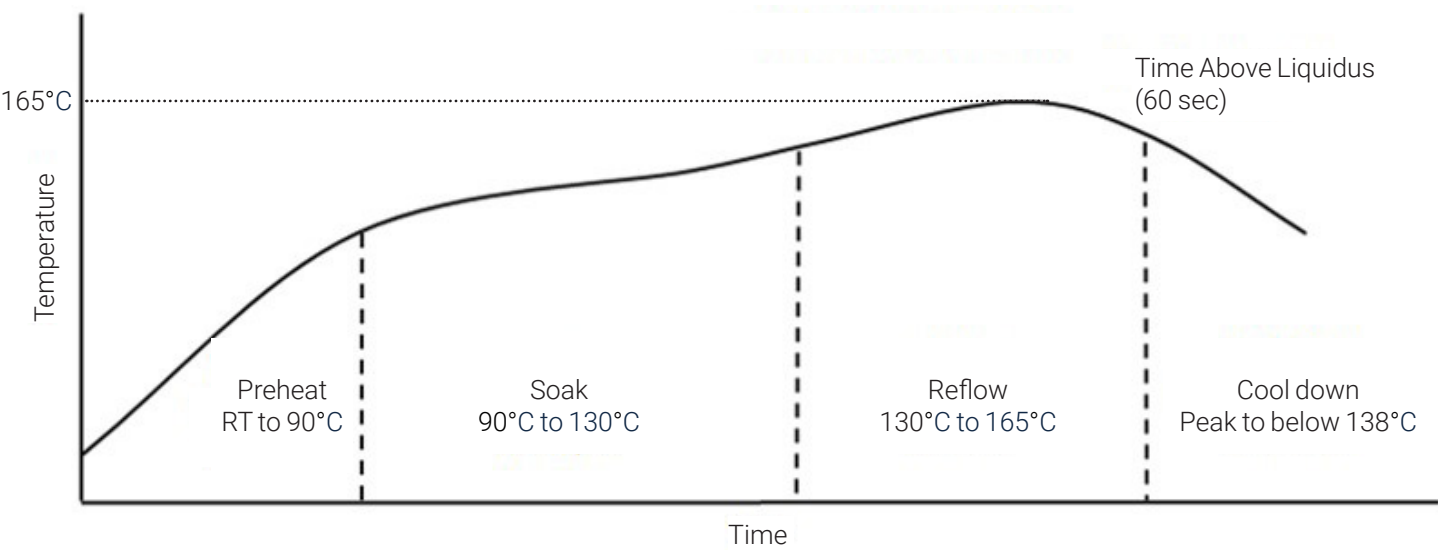
Relative Spectral Power Distribution

Ra≥ 70, T_c= 25°C





Soldering Profile



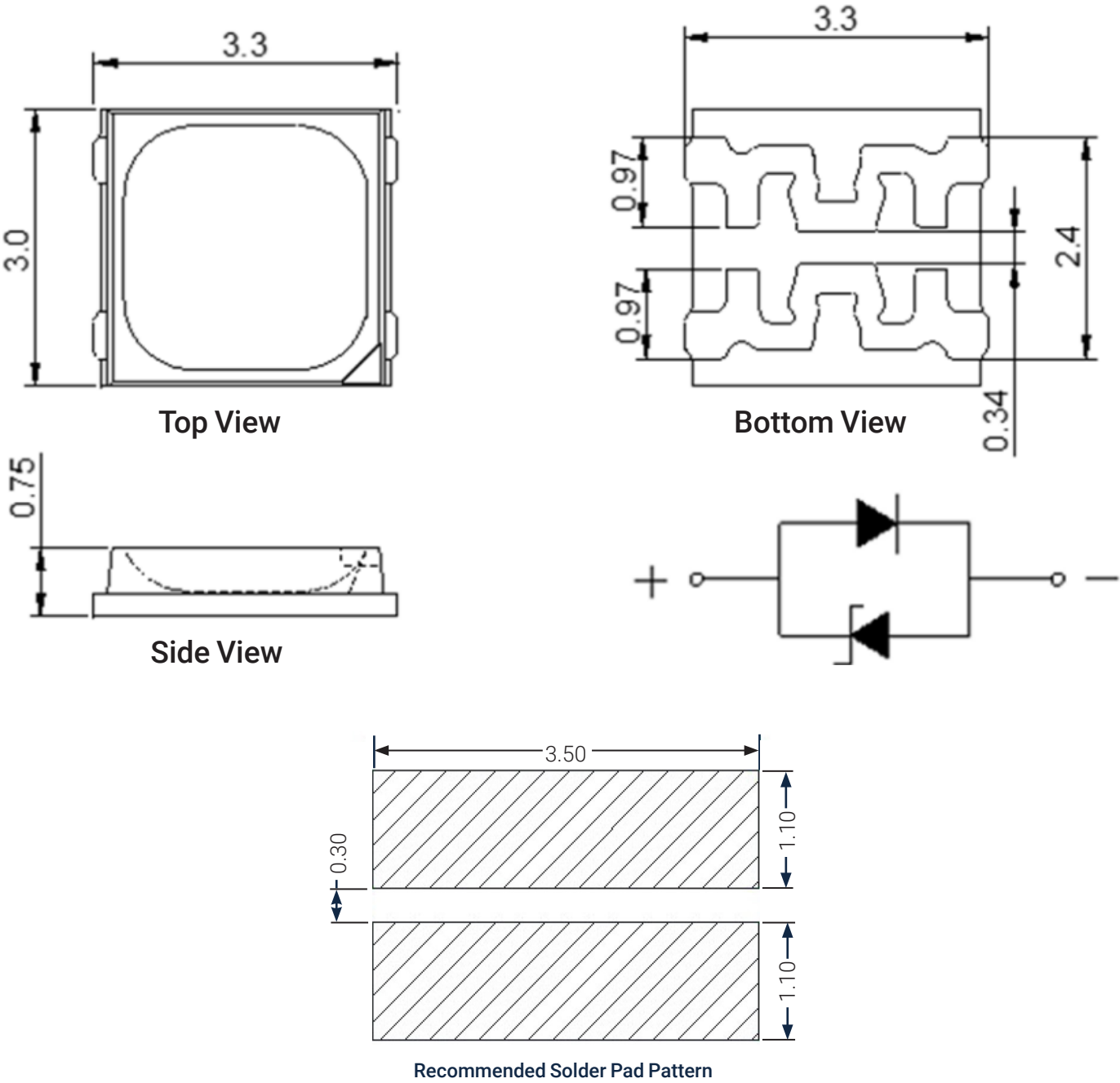
SMT Rework Guideline	Manual Hotplate Reflow	Hot Air Gun Reflow
Heating Time	< 60 sec	

Notes:

1. Product complies to Moisture Sensitivity Level 3 (MSL 3).
2. Please note this product is only suitable for low temp solder reflow. See soldering profile graph above for tin bismuth, Sn42/Bi57.6/Ag0.4, reflow.
3. During the pick and place process, axial forces on the dome (or window) should not exceed 0.5 Newtons (N).
4. Use of a multi-zone IR reflow oven with a nitrogen blanket is recommended.
5. Time-temperature profile of the reflow process showing the four functional profile zones are defined in IPC-7801. Temperature is referenced to the center of the PCB.
6. Luminus recommends to use the solder paste data sheet information as a starting point in time-temperature process development.
7. For any technical questions about soldering process, please contact Luminus at techsupport@luminus.com.



Mechanical Dimensions

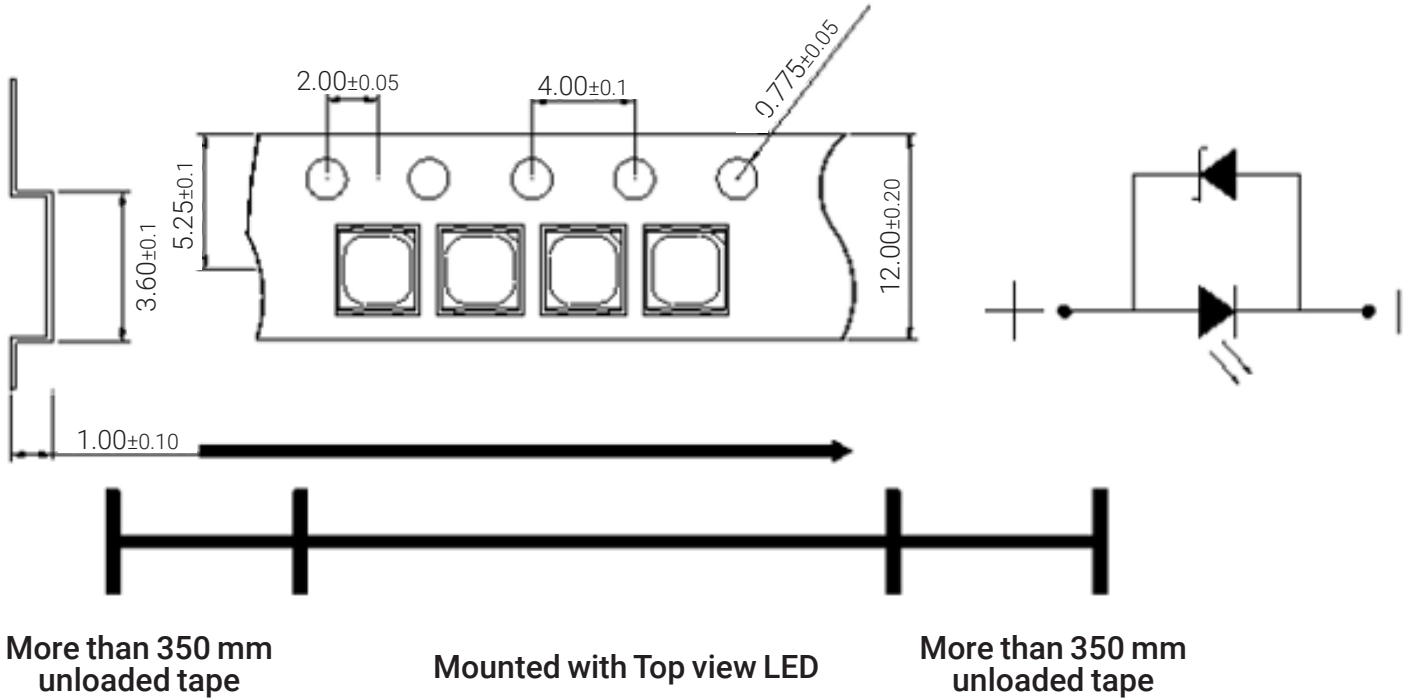


Note:
1. All dimensions are in mm, tolerance is ± 0.1 mm.



Tape and Reel Outline

Tape Package Dimensions



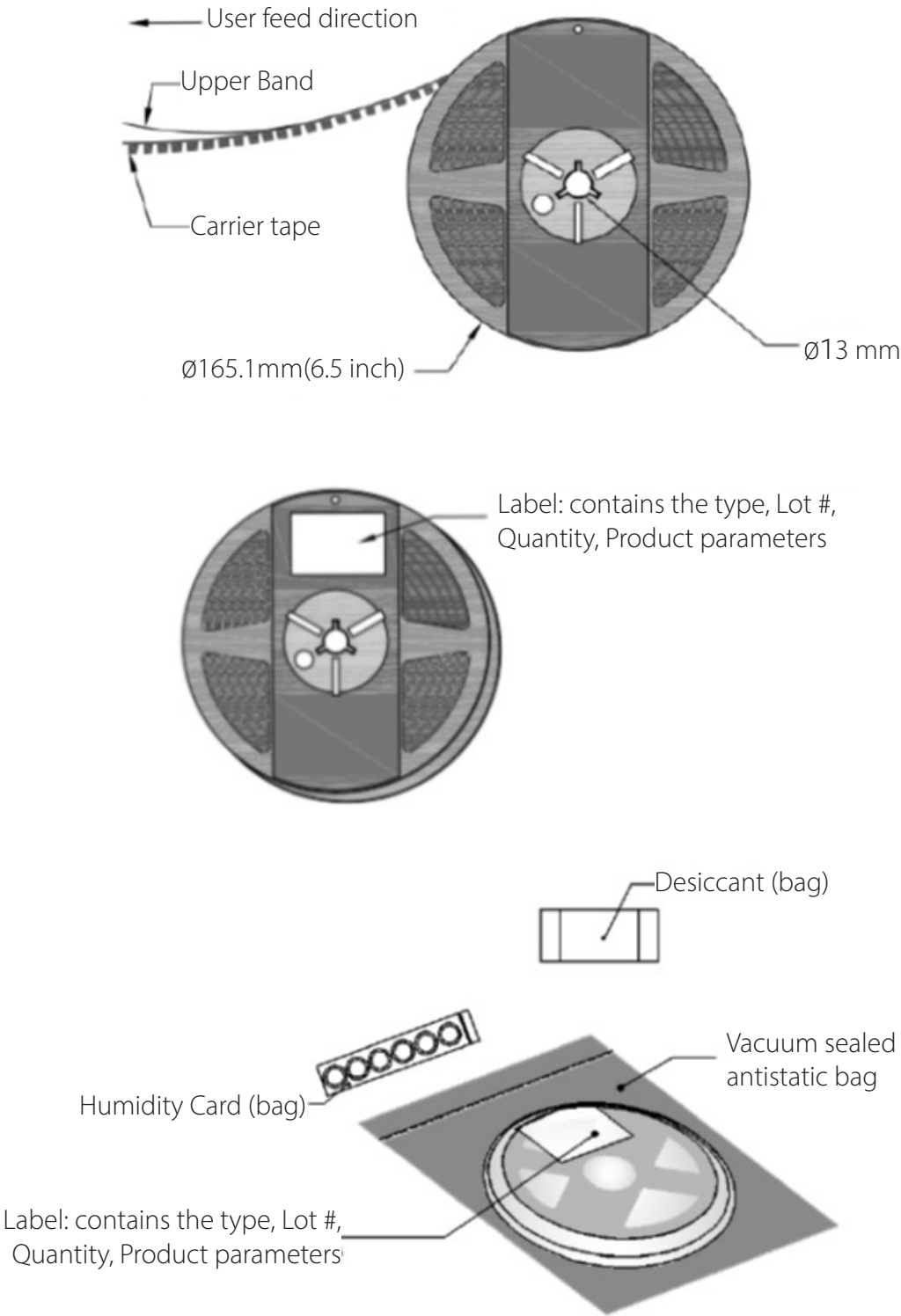
Notes:

1. Quantity : Max 4000 pcs/Reel
2. Cumulative Tolerance : Cumulative Tolerance/10 pitches to be ± 0.2 mm
3. Adhesion Strength of Cover Tape Adhesion strength to be 0.1-0.7 N when the cover tape is turned off from the carrier tape at the angle of 10° to the carrier tape.
4. Package : P/N, Manufacturing data Code No. and Quantity to be indicated on a damp proof Package



Tape and Reel Outline

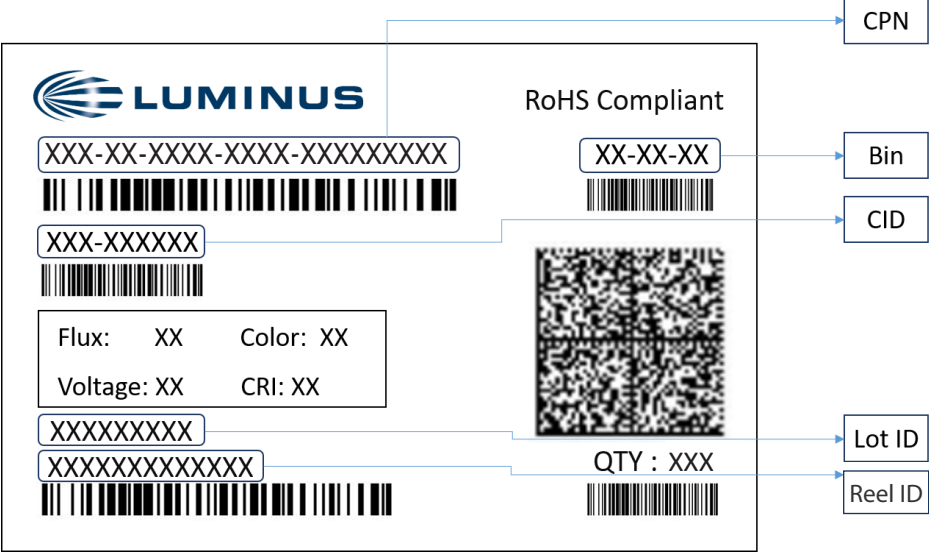
Reel Package Dimensions





Shipping Label

Label on Packaging Box



Label Fields:

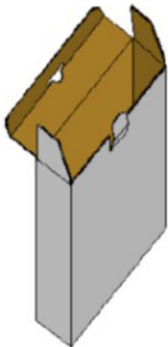
- CPN: Luminus ordering part number
- CID: Customer's part number
- QTY: Quantity of parts per reel
- Flux: Bin as defined on page 5
- Voltage: Bin as defined on page 5
- Color: Bin as defined on page 6
- CRI: Bin as defined on page 2

Packing Configuration:

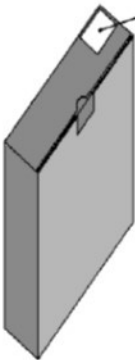
- 4000 pieces per reel
- Partial pack or tray may be shipped
- Each pack is enclosed in anti-static bag
- Shipping label is placed on top of each pack



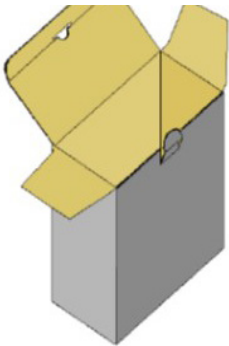
Packaging Boxes



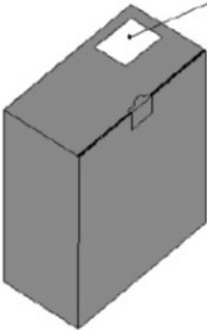
*Capacity 5 reels per box



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



*Capacity 10 reels per box



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



Notes

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.

Storage

1. This device is rated at MSL 3 per JEDEC J-STD-020 standard.
2. Recommended storage condition:
At 5°C - 30°C and relative humidity 60 % RH in its original package
3. 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 168 hours
 - b) Stored at less than 60 %RH
 - c) If not completely used within 168 hours, seal the remaining in the moisture barrier bag
4. Devices require baking before mounting, if 3 a) is not met.
5. If baking is required, devices must be baked under below conditions:
24 hours at 60°C±5°C



Revision History

Rev	Date	Description of Change
01	08/03/2023	Initial release
02	11/25/2024	Format, solder pad drawing udpate
03	02/12/2025	Update Chromaticity Diagram and Chromaticity Coordinate