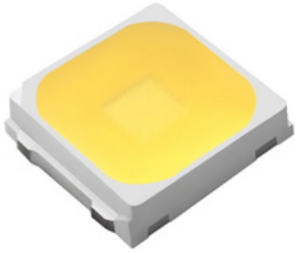
MP-3030-11FK

Mid Power LED



Features

- Up to 15% higher efficacy for 90 CRI over MP-3030-11F2 version
- Available in both 80 and 90 CRI options
- Industry-compatible size : 3.0 x 3.0 x 0.5 mm
- Thermally ennhanced package design
- High luminous flux output
- High current capability
- Sulfur resistant

RoHS REACH

Applications

- Interior lighting
- Retrofits (replacement)
- General lighting
- Architectural / Decorative lighting

Table of Contents

Ordering Information

Ordering Part Numbers

Minimum CRI[1]	Nominal CCT	Luminous Flux[2]		Ordering Part Number
		Minimum Flux (lm)[3]	Typical Flux (lm)[3]	
80	3000K	36.0	38.1	MP-3030-11FK-30-80
90		34.0	36.8	MP-3030-11FK-30-90
80	3500K	38.0	39.4	MP-3030-11FK-35-80
90		36.0	38.0	MP-3030-11FK-35-90
80	4000K	38.0	39.8	MP-3030-11FK-40-80
90		36.0	38.4	MP-3030-11FK-40-90

Notes:

1. CRI tolerance ±2.

2. Test condition: I_f=65 mA, T_c=25°C.

Ordering Information

Part Number Nomenclature

MP	3030	11FK	##	##

Product Family	Package Type	Package Configurator	Nominal CCT[1]	Minimum CRI
MP: Mid Power LED	**3030**: 3.0 mm x 3.0 mm	**11FK**: Package code	**30**: 3000K **35**: 3500K **40**: 4000K	**80**: CRI>80 **90**: CRI>90

Note:

1. Correlated Color Temperatures (CCT)

Binning Structure

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.

Flux Bins

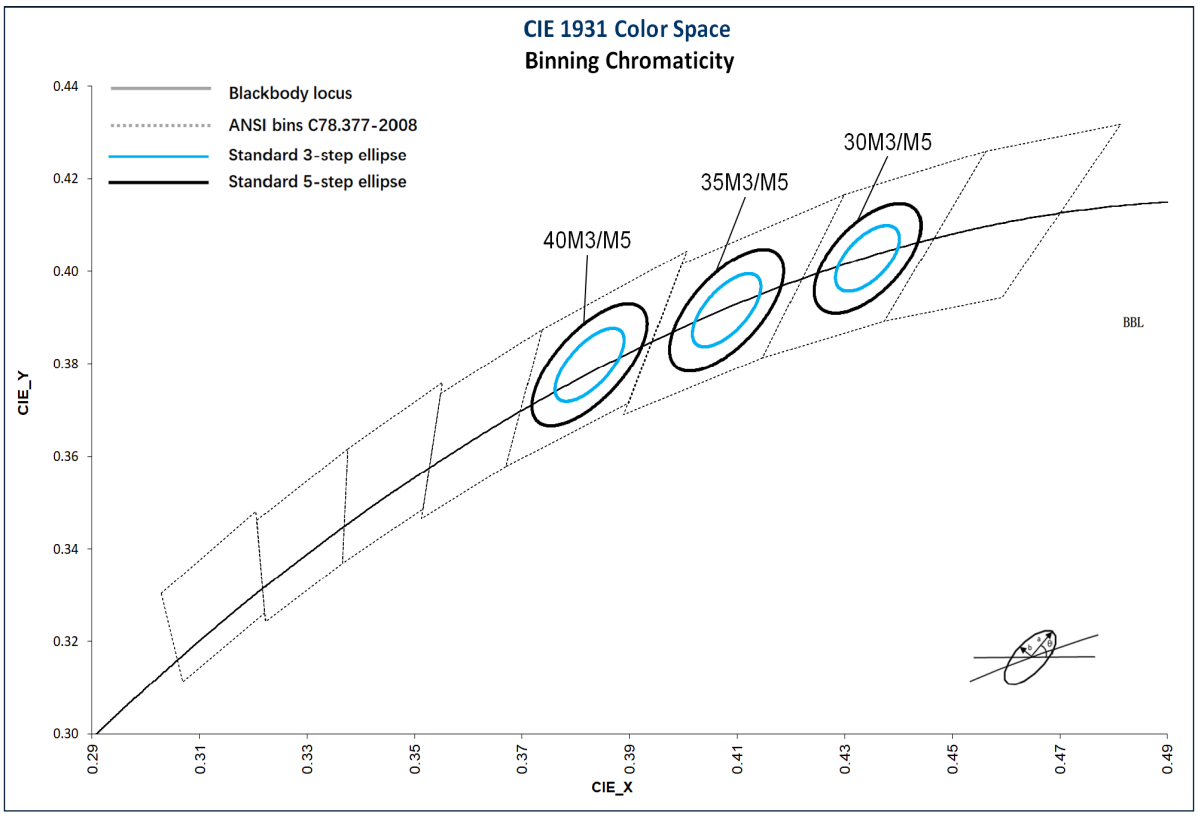
Bin Code	Binning @ 65 mA, T_c= 25°C	
	Minimum Flux (lm)	Maximum Flux (lm)
E1	34.0	36.0
E2	36.0	38.0
G1	38.0	40.0
G2	40.0	42.0
G3	42.0	44.0

Forward Voltage Bins

Bin Code	Binning @ 65 mA, T_c= 25°C	
	Minimum Voltage (V)	Maximum Voltage (V)
Y1	2.5	2.6
Z1	2.6	2.7
A1	2.7	2.8

Binning Structure

Chromaticity Binning Diagram



Color Bins[1]

Color Code	Center		Radius		Angle(°)
	x	y	a	b	Φ
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

Note:

1. Chromaticity Coordinate measurement tolerance ±0.005.

Absolute Maximum Ratings

Parameter	Symbol	Values	Unit
Forward Current	$I_{f\ max}$	200	mA
Power Dissipation	P_d	560	mW
Reverse Voltage	V_r	5	V
Operating Temperature Range	T_{opr}	-40 to 105	°C
Storage Temperature Range	T_{stg}	-40 to 105	°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°C.

Characteristics

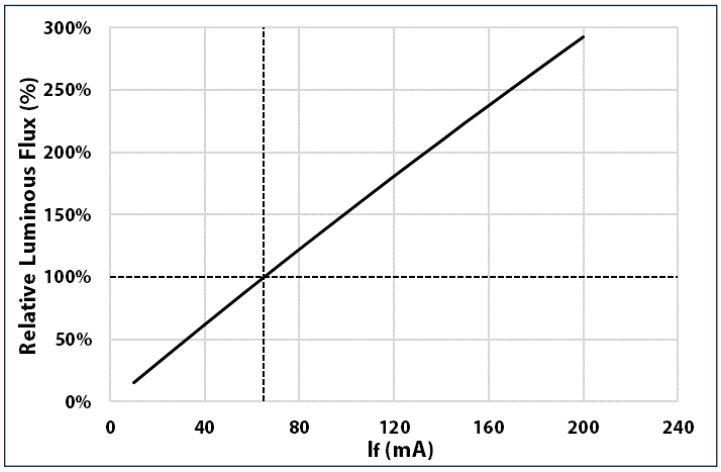
Parameter (I_f=65 mA, T_c=25°C)		**Symbol**	**Value**	**Unit**
Forward Voltage	Minimum	$V_{f\ min}$	2.55	V
	Typical	$V_{f\ typ}$	2.65	
	Maximum	$V_{f\ max}$	2.8	
Reverse Current (V_r=5 V)	Maximum	$I_{r\ max}$	10	µA
Viewing Angle		$2\theta_{1/2}$	120	°
Thermal Resistance		$R_{th\ J\text{-}C}$	7	˚C/W
ESD withstand Voltage ANSI/ESDA/JEDEC JS-001 (HBM, Class)		V_{ESD}	8000	V

Notes:

1. Product test condition: 65 mA, T_c = 25°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.

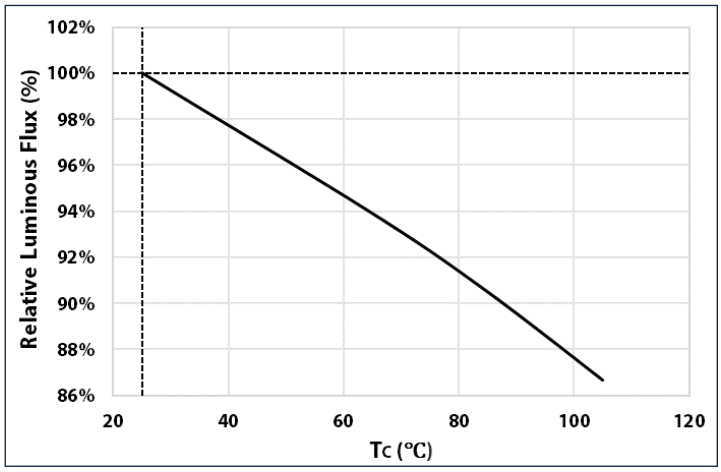
Relative Luminous Flux vs Forward Current

T_c = 25°C



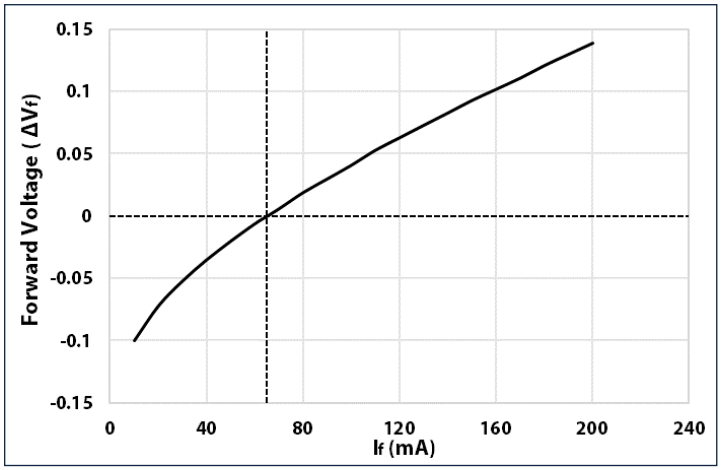
Relative Luminous Flux vs Temperature

I_f = 65 mA



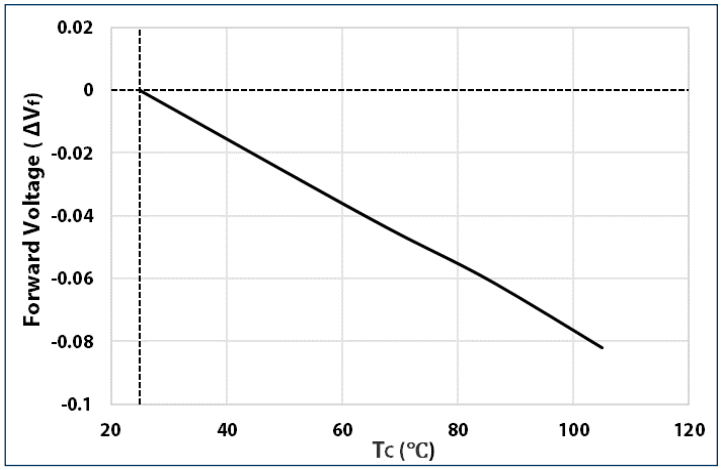
Forward Voltage vs Forward Current

T_c = 25°C

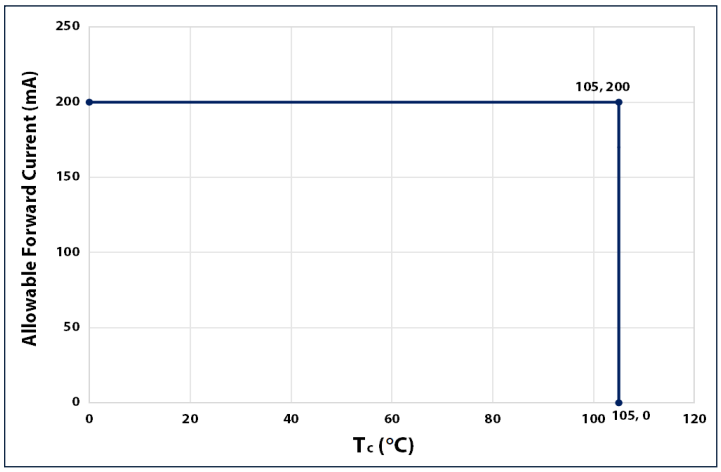


Forward Voltage vs Temperature

I_f = 65 mA



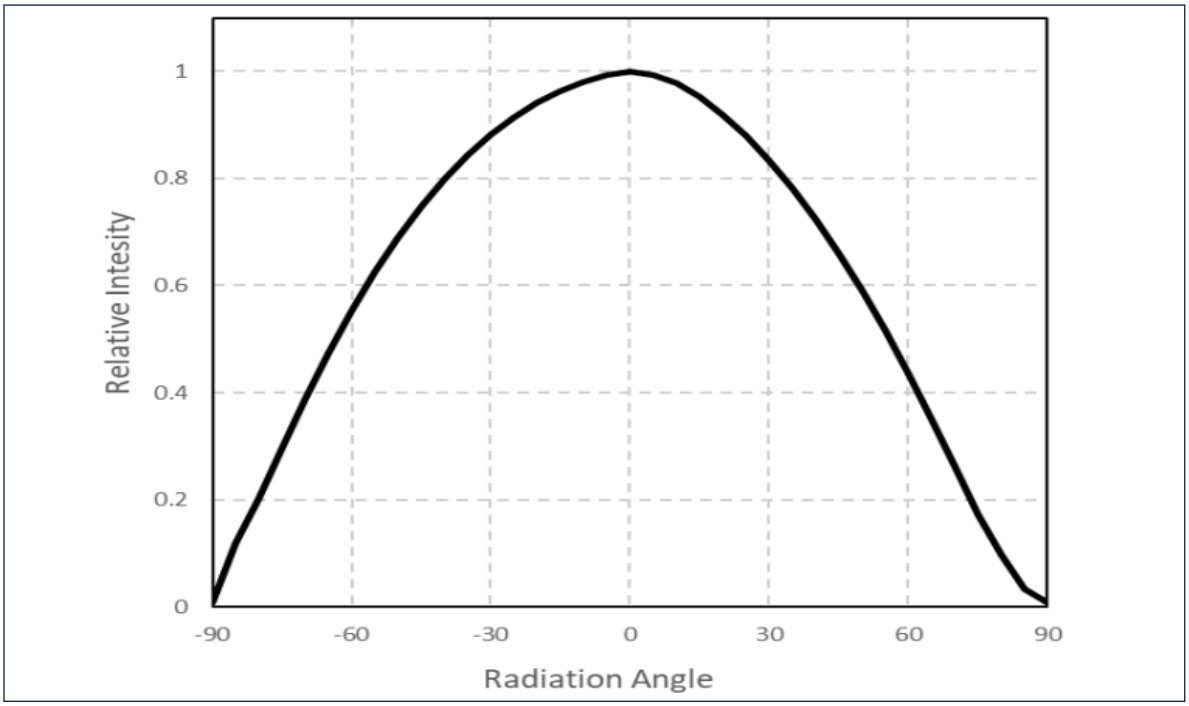
Allowable Forward Current vs Temperature



Angular Distribution and Typical Spectrum

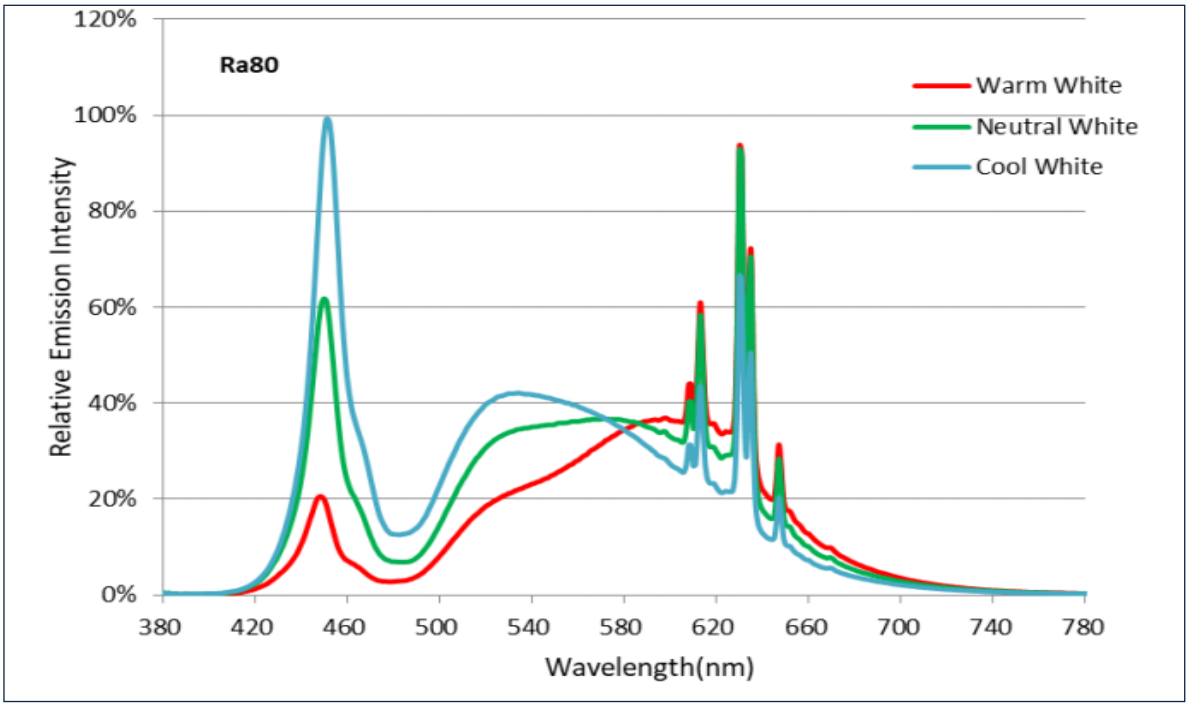
Typical Polar Radiation Pattern

T_c= 25°C



Relative Spectral Power Distribution

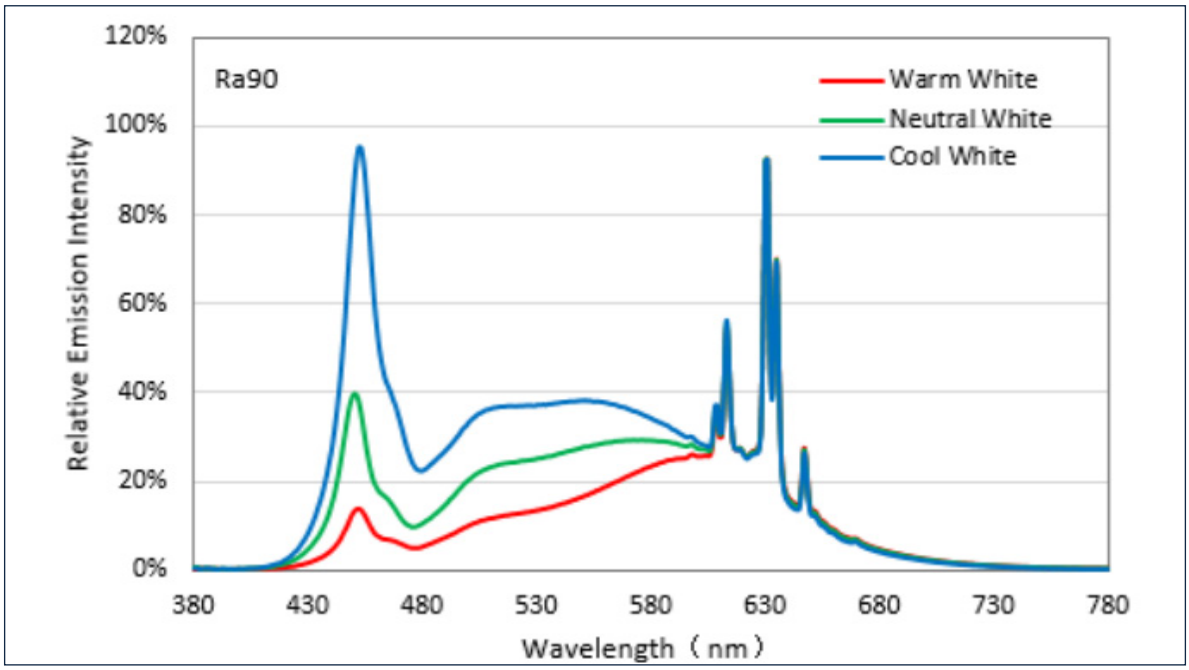
Ra≥ 80, T_c= 25°C



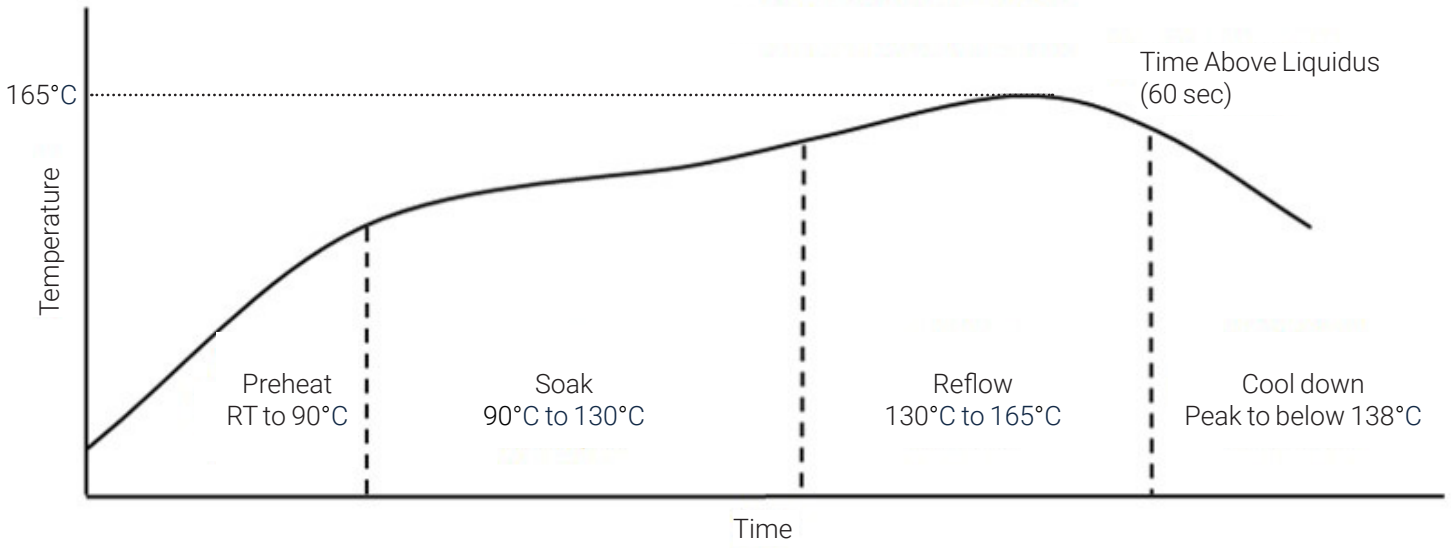
Angular Distribution and Typical Spectrum

Relative Spectral Power Distribution

Ra≥ 90, T_c = 25°C



Soldering Profile

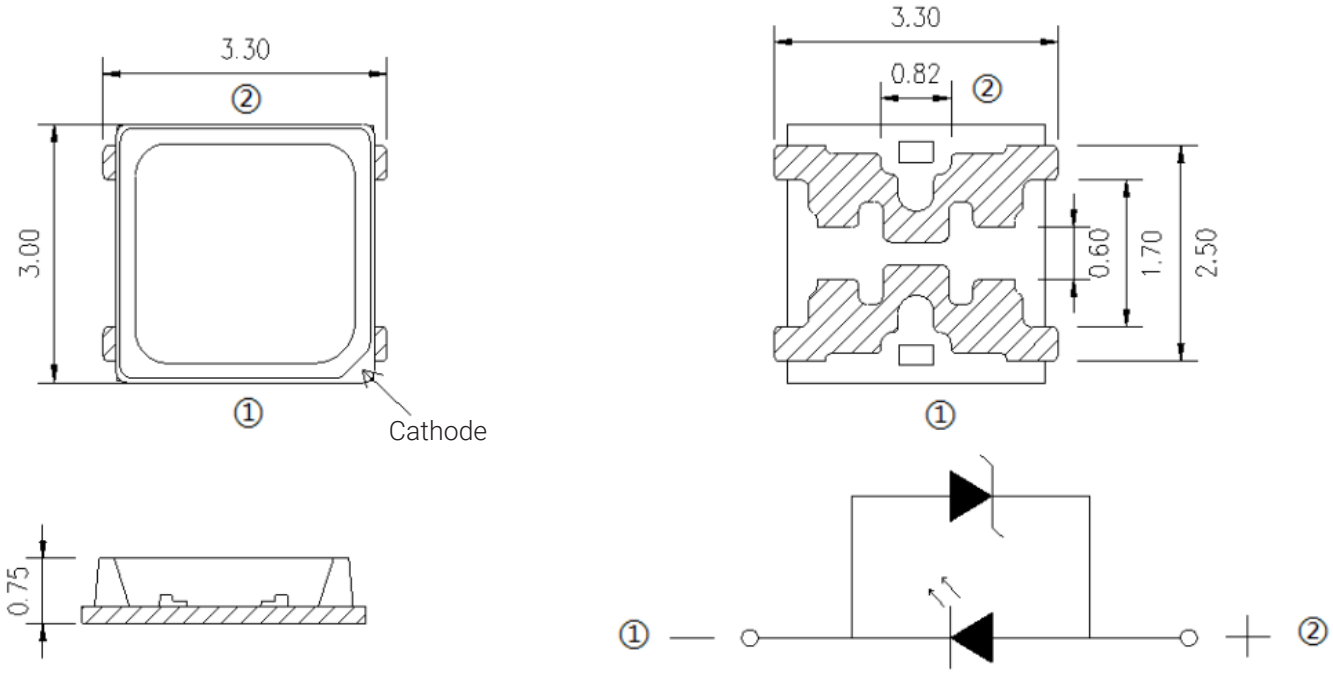


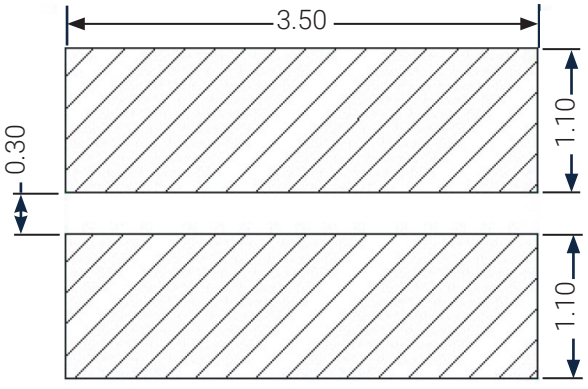
SMT Rework Guideline	Manual Hotplate Reflow	Hot Air Gun Reflow
Heating Time	< 60 sec	

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





Recommended Solder Pad Pattern

Notes:

1. ①: Cathode, ②: Anode.
2. All dimensions are in mm, tolerance is ± 0.1 mm.

Mechanical Characteristics

JEDEC Moisture Sensitivity[1, 2]

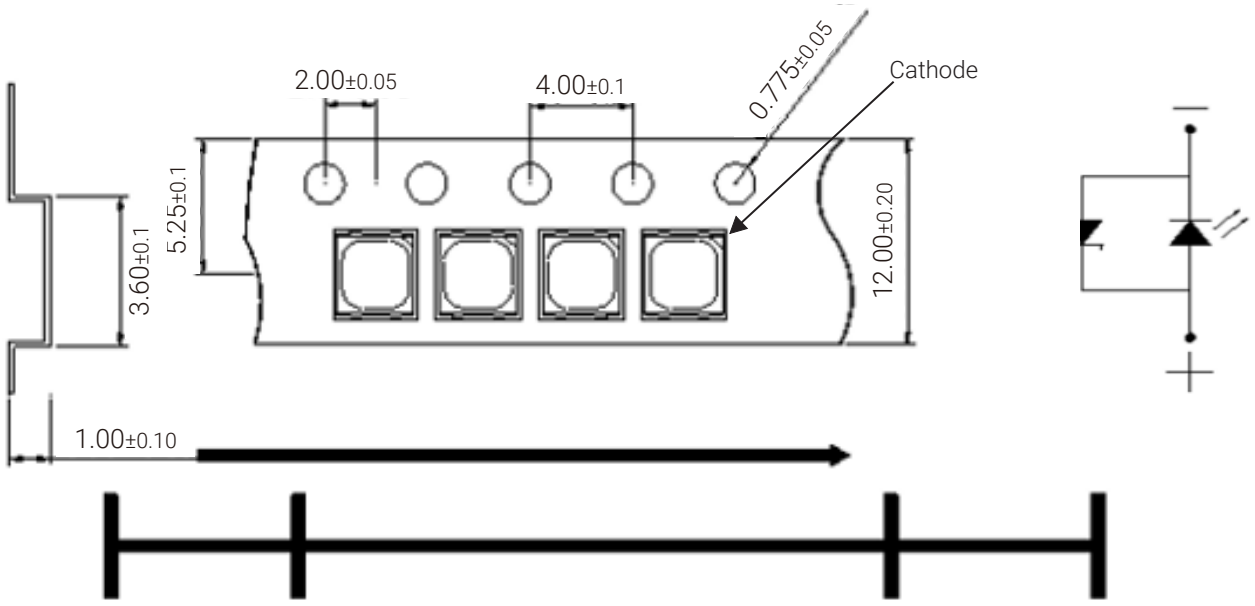
Level	Floor Life	
	Time	Conditions
3	168 Hours	≤30°C / 60% RH

Notes:

1. Please note that the above MSL level based on the MSL qualification rating.
2. This LED has silver-plated pads, and for LEDs with silver plating, MSL3 environment control is required to protect silver-plated surface from oxidation, even though the products may be qualified as MSL1 or 2.

Tape and Reel Outline

Tape Package Dimensions



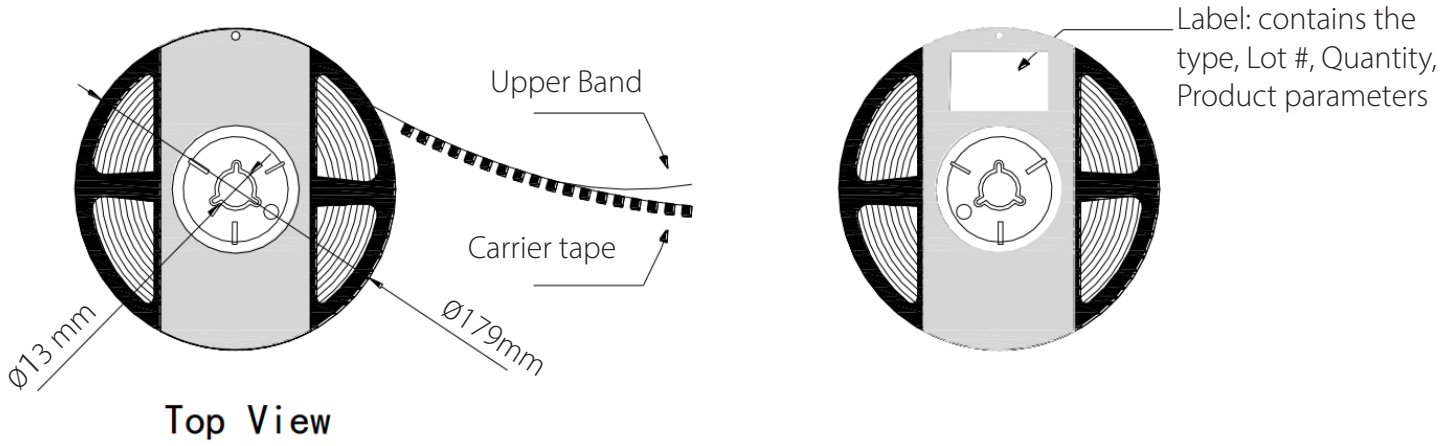
More than 350 mm unloaded tape | **Mounted with Top view LED** | **More than 350 mm unloaded tape**

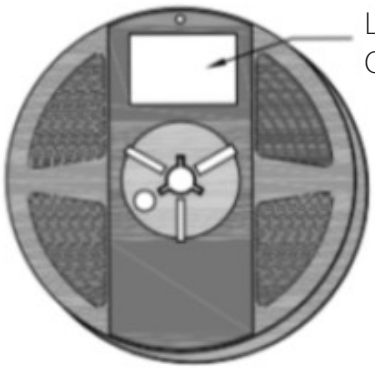
Notes:

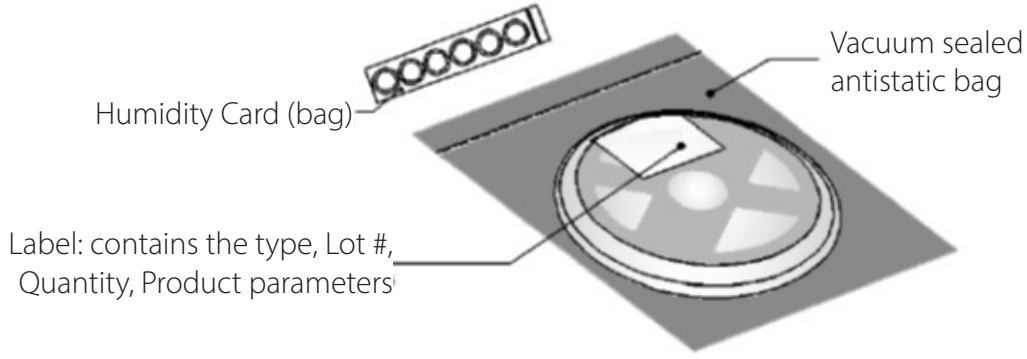
1. Quantity : Max 5000 pcs per reel.
2. Cumulative Tolerance : Cumulative Tolerance/10 pitches to be ±0.2 mm
3. Adhesion Strength of Cover Tape Adhesion strength to be 0.1-0.7 N when the cover tape is turned off from the carrier tape at the angle of 10° to the carrier tape.
4. Package : P/N, Manufacturing data Code No. and Quantity to be indicated on a damp proof Package

Tape and Reel Outline

Reel Package Dimensions

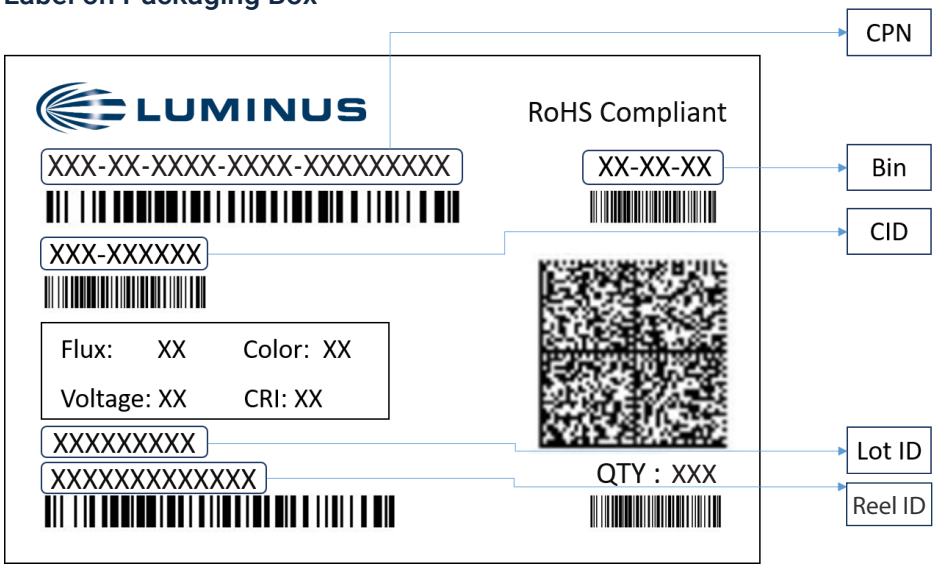






Shipping Label

Label on Packaging Box



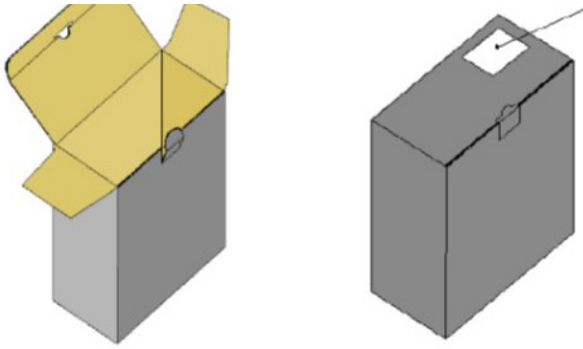
Label Fields:

- CPN: Luminus ordering part number
- CID: Customer's part number
- QTY: Quantity of parts per reel
- Flux: Bin as defined on page 4
- Voltage: Bin as defined on page 4
- Color: Bin as defined on page 5
- CRI: Bin as defined on page 2

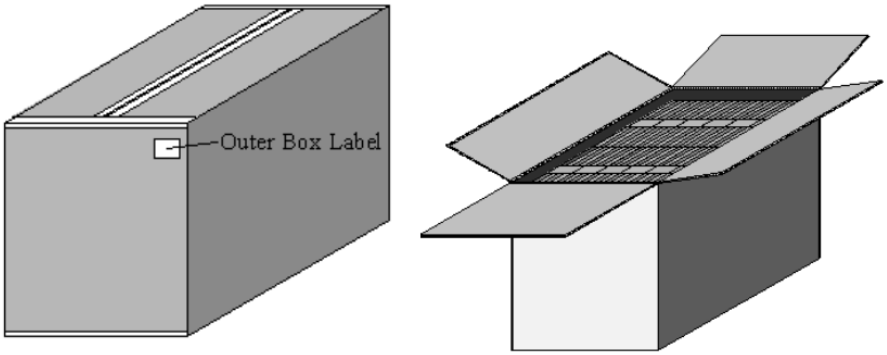
Packing Configuration:

- 5000 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 or 10 reels per box



*Capacity 40 or 60 reels per box

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	05/06/2025	Initial release
02	07/16/2025	Update Mechanical Dimensions
03	09/26/2025	Update reel quantity