HONGLIZHIHUI 鸿利智汇 BYTECH

Technical Data Sheet

Specification

CMH268A2V112Z1-S4P1

（385nm)

RoHS

BYTECH

Bytech Electronics CO., Ltd is the first company in China to launch the real inorganic package UV LED devices and core components for application based on CMH technology.

CMH technology platform is a kind of package technology which adopts ceramic, metal, hard glass as package materials. CMH technology platform originates independent intellectual property owned by Bytech Electronics CO., LTD, which is suitable for vacuum encapsulation, especially suitable for ensuring reliability of deep UV products.

DESIGN	CHECKED	APPROVED
2017.06.03	2017.06.03	2017.06.03
CHEN		TANG

广州市鸿利秉一光电科技有限公司 研发专用章

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

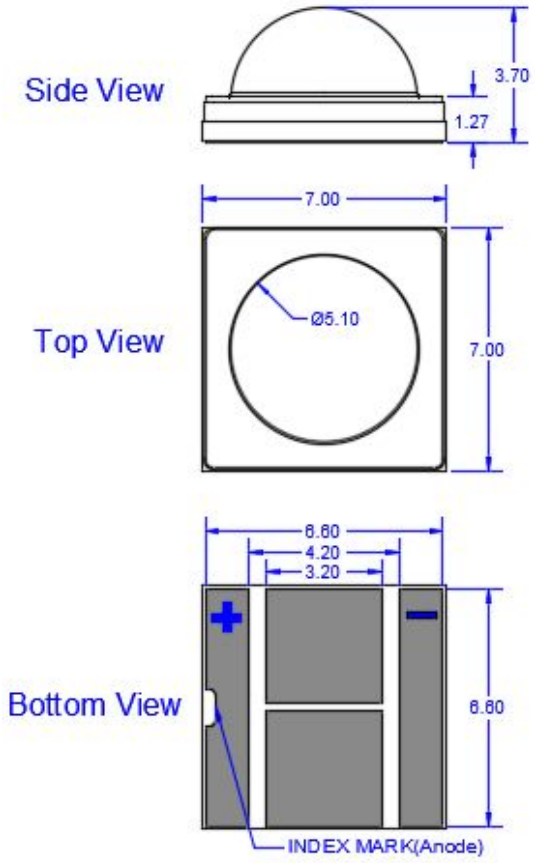
Features

- CMH real inorganic package
- Hermetic package
- Dimension 7.0mm×7.0mm×3.7mm
- Long operating life
- High reliability
- Superior ESD protection
- RoHS compliant

Applications

- Fluorescent spectroscopy
- Sensors and monitors
- Bio-analysis/detection
- Phototherapy
- UV curing

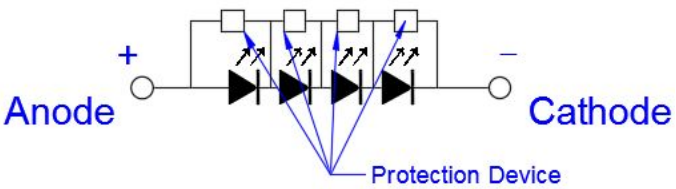
Package Dimensions（Unit: mm）



Product ID:

385nm: CMH268A2V112Z1-S4P1

Circuit:



Tolerance： ± 0.20mm

Characteristics of UV LED

1. Electrical / Optical Characteristics（Ta=25℃,RH=40%）

Parameter	Symbol	Units	CMH268A2V112Z1-S4P1 (IF=1000mA)
Peak Wavelength [1]	λ_p	nm	380-390
Radiant Flux [2]	Φ_e [3]	mW	7000-8000
Forward Voltage [4]	VF	V	13.8-16.2
Thermal Resistance [5]	R_{th}	°C/W	1-2
Spectrum Half Width	Δλ	nm	12
View Angle	$2\theta_{1/2}$	deg	60

Notes:

[1].Peak wavelength measurement tolerance:±3nm

[2].Radiant flux measurement tolerance:±10%

[3].Φ_e is the total radiant Flux as measured with an integrated sphere

[4].Forward voltage measurement tolerance:±3%

[5].R_{th} is the thermal resistance between chip junction to PCB board bottom

2. Absolute Maximum Ratings (T_a=25°C,RH=40%)

Parameter	Symbol	Units	CMH268A2V112Z1-S4P1
Maximum Rating Forward Current	I_{Fmax}	mA	1200
Maximum Rating Junction Temperature	T_{jmax}	°C	125
Operating Temperature Range	T_{opr}	°C	-40 ~ +85
Storage Temperature Range	T_{stg}	°C	-40 ~ +100

Notes:

Operating the LED beyond the listed maximum ratings may affect device reliability and cause permanent damage.

These or any other conditions beyond those indicated under recommended operating conditions are not implied.

The exposure to the absolute maximum rated conditions may affect device reliability.

3.Ranks（ IF=1000mA, Ta=25℃,RH=40%)

波长(nm)	电压(V)	光功率(mw)					
		5000-6000	6000-7000	7000-8000	8000-9000	9000-10000	10000-11000
380-385	13.6-13.8	A2161	A2162	A2163	A2164	A2165	A2166
	13.8-14.0	A2167	A2168	A2169	A2170	A2171	A2172
	14.0-14.2	A2173	A2174	A2175	A2176	A2177	A2178
	14.2-14.4	A2179	A2180	A2181	A2182	A2183	A2184
	14.4-14.6	A2185	A2186	A2187	A2188	A2189	A2190
	14.6-14.8	A2191	A2192	A2193	A2194	A2195	A2196
	14.8-15.0	A2197	A2198	A2199	A2200	A2201	A2202
	15.0-15.2	A2203	A2204	A2205	A2206	A2207	A2208
	15.2-15.4	A2209	A2210	A2211	A2212	A2213	A2214
	15.4-15.6	A2215	A2216	A2217	A2218	A2219	A2220
	15.6-15.8	A2221	A2222	A2223	A2224	A2225	A2226
	15.8-16.0	A2227	A2228	A2229	A2230	A2231	A2232
	16.0-16.2	A2233	A2234	A2235	A2236	A2237	A2238
	16.2-16.4	A2239	A2240	A2241	A2242	A2243	A2244
385-390	13.6-13.8	A2359	A2360	A2361	A2362	A2363	A2364
	13.8-14.0	A2365	A2366	A2367	A2368	A2369	A2370
	14.0-14.2	A2371	A2372	A2373	A2374	A2375	A2376
	14.2-14.4	A2377	A2378	A2379	A2380	A2381	A2382
	14.4-14.6	A2383	A2384	A2385	A2386	A2387	A2388
	14.6-14.8	A2389	A2390	A2391	A2392	A2393	A2394
	14.8-15.0	A2395	A2396	A2397	A2398	A2399	A2400
	15.0-15.2	A2401	A2402	A2403	A2404	A2405	A2406
	15.2-15.4	A2407	A2408	A2409	A2410	A2411	A2412
	15.4-15.6	A2413	A2414	A2415	A2416	A2417	A2418
	15.6-15.8	A2419	A2420	A2421	A2422	A2423	A2424
	15.8-16.0	A2425	A2426	A2427	A2428	A2429	A2430
	16.0-16.2	A2431	A2432	A2433	A2434	A2435	A2436

Notes:

*Forward voltage measurement tolerance:±3%

*Radiant flux measurement tolerance:±10%

*Φ_e is the total radiant Flux as measured with an integrated sphere

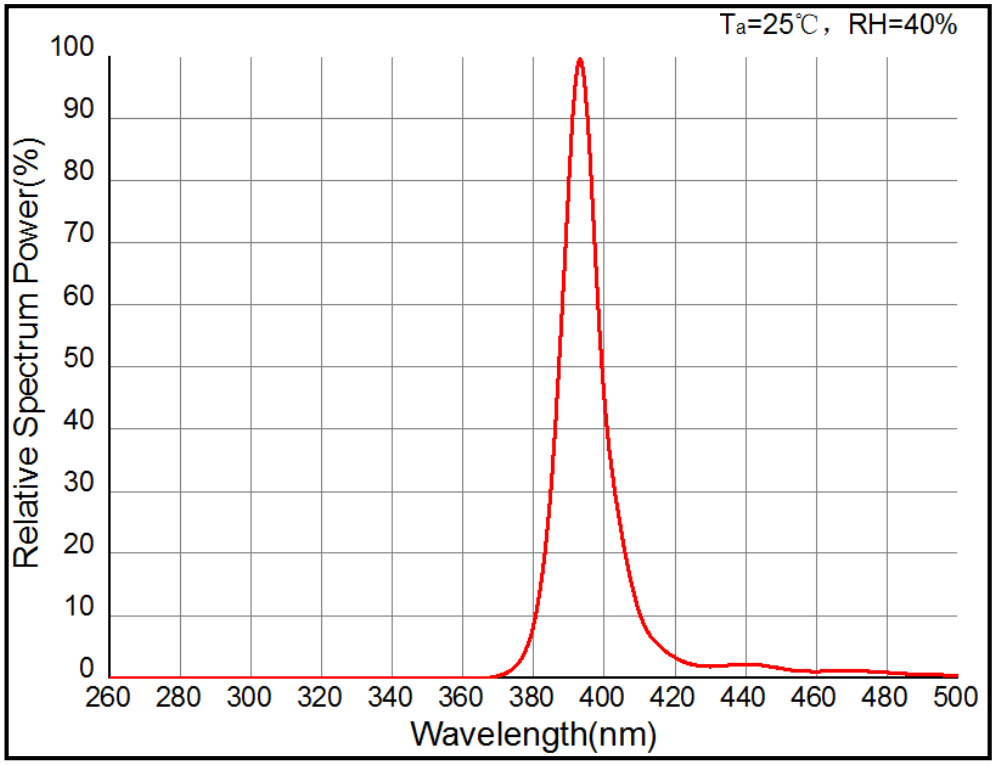
*LEDs from the above ranks will be shipped.

*The rank combination ratio per shipment will be decided by Bytech.

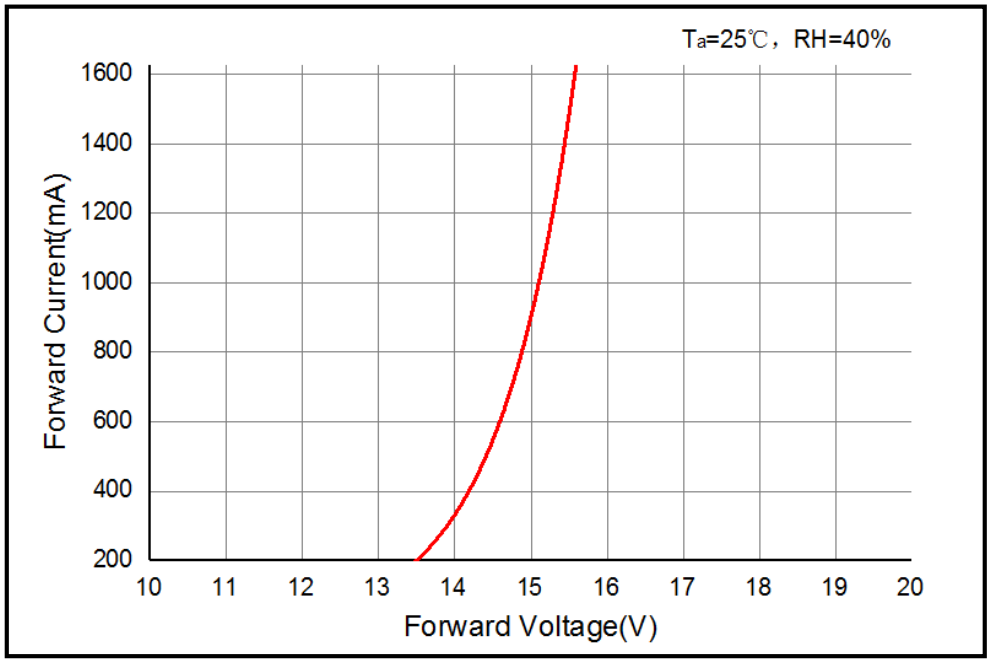
*Peak wavelength measurement tolerance:±3nm

Characteristics Diagrams

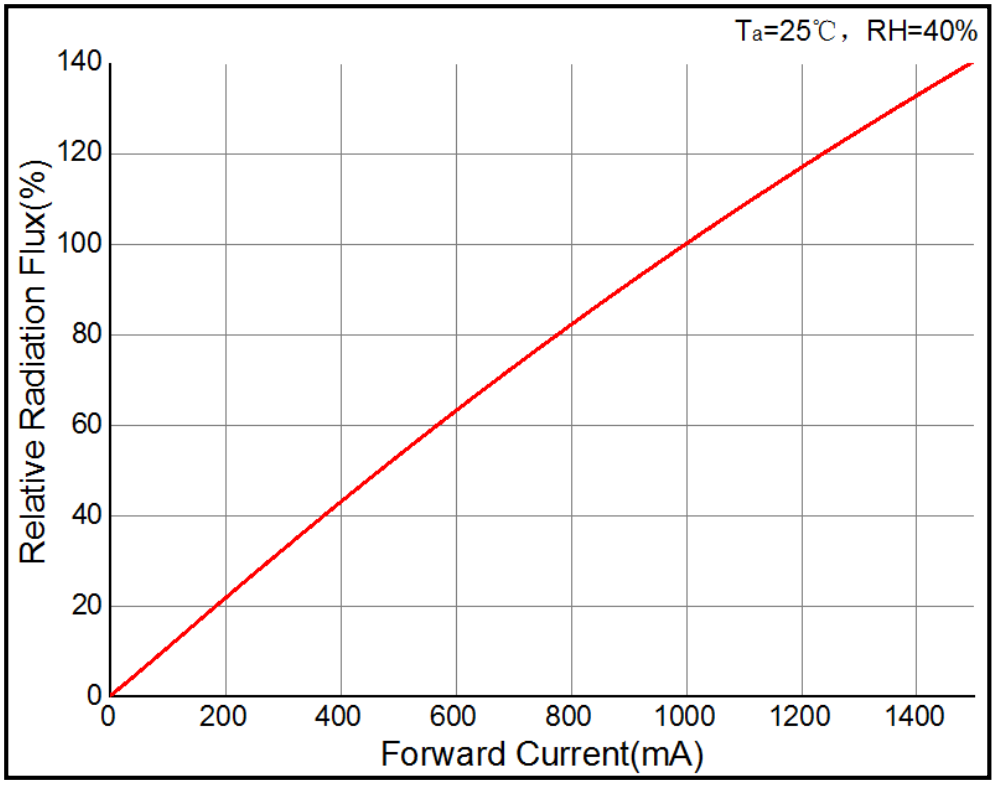
1.Relative Spectrum Power Distribution



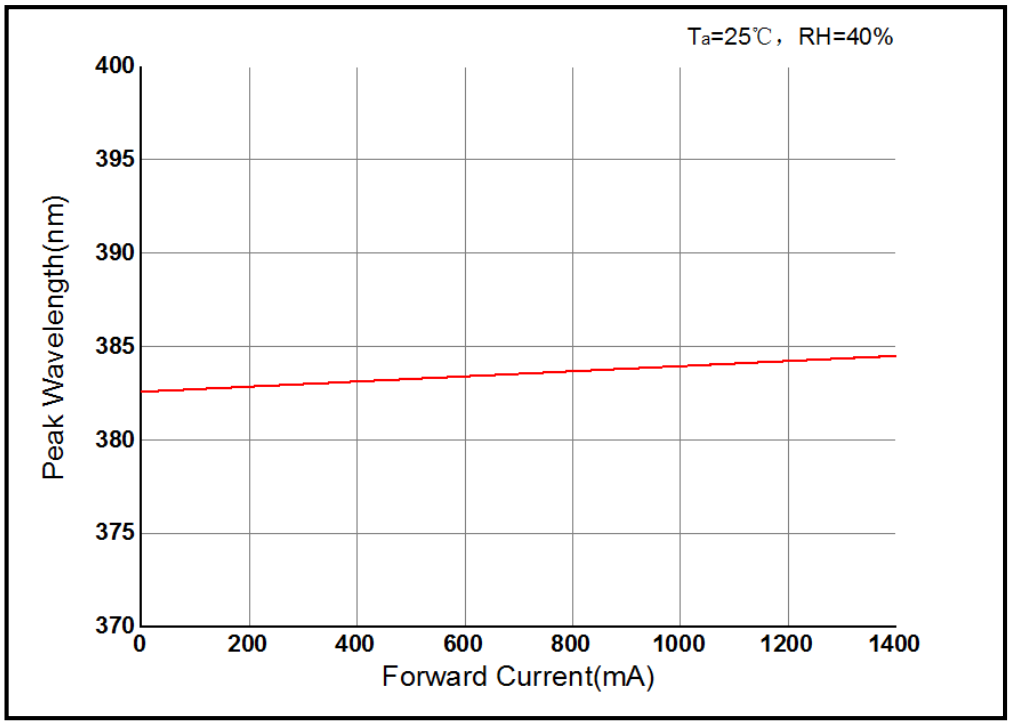
2.Forward Voltage vs Forward Current



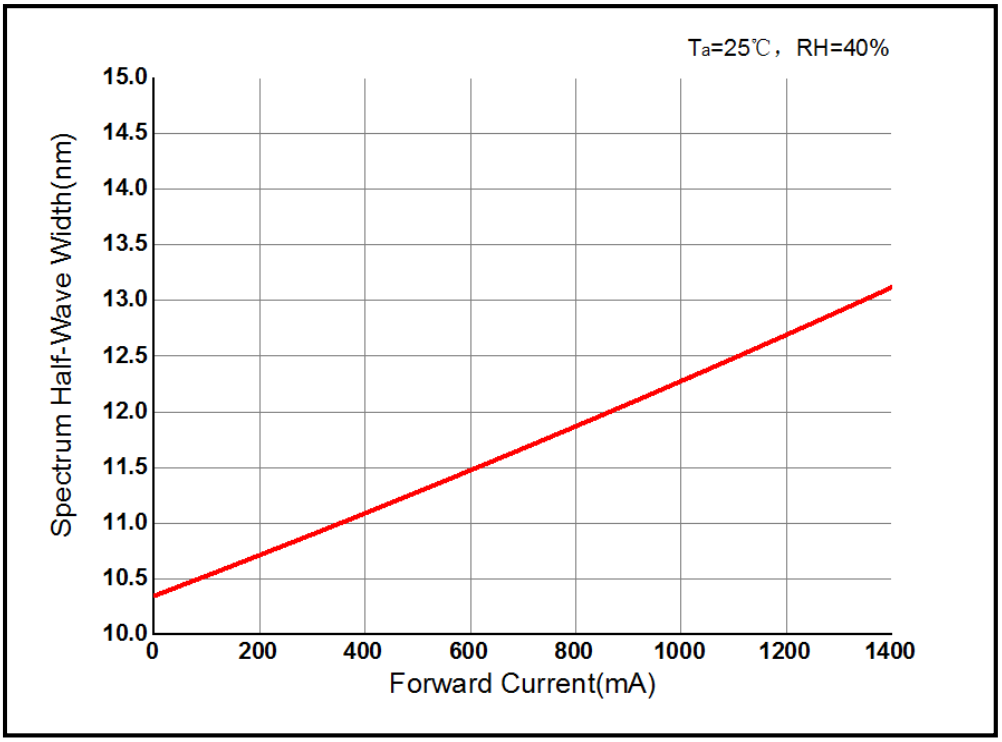
3.Relative Radiation Flux vs Forward Current



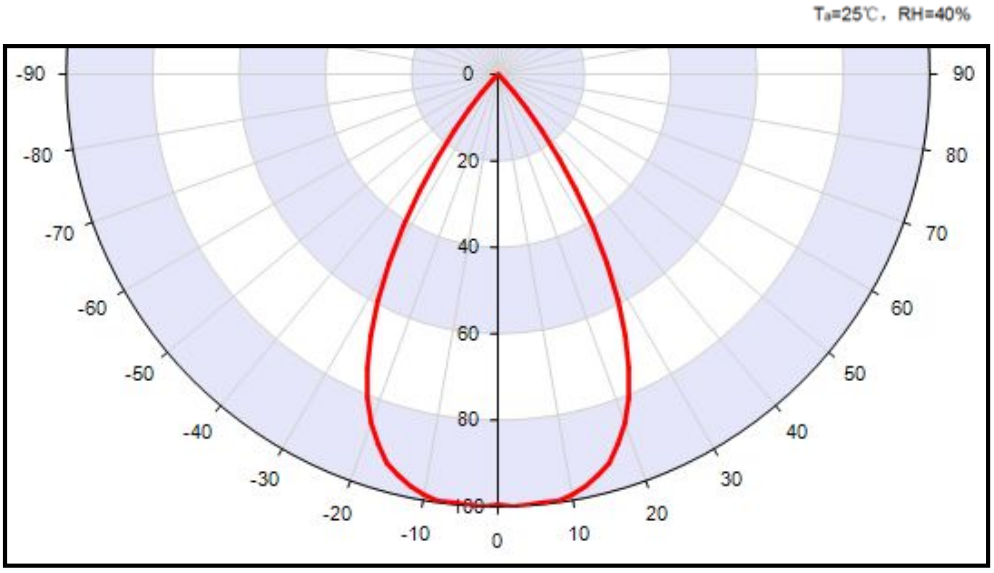
4.Peak Wavelength vs Forward Current



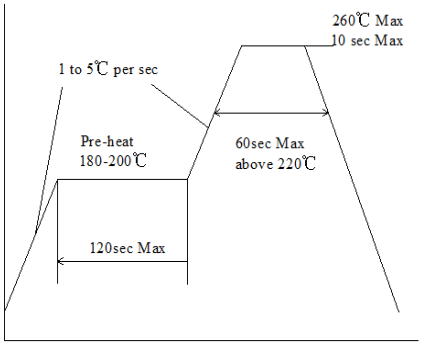
5.Spectrum Half-Wave Width vs Forward Current



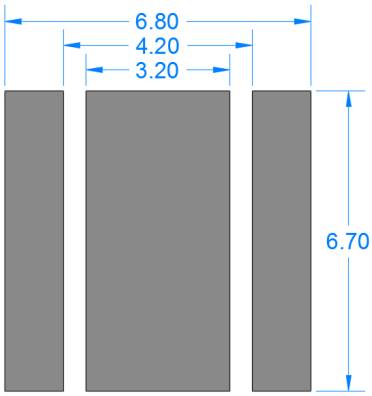
6.Spatial Distribution Graph



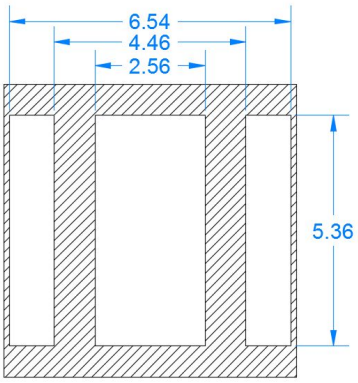
Product Application Information



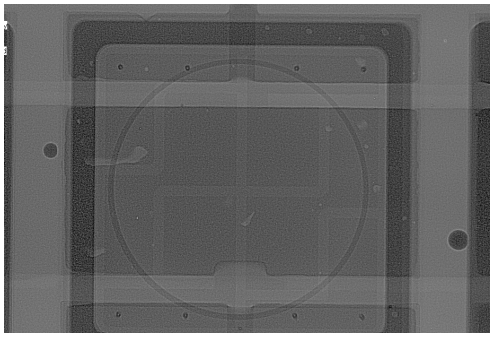
Recommended Reflow Soldering Condition
（Lead-free solder）



Recommended Soldering pad Layout
（Unit: mm）



Recommended Soldering Mask Layout
Thickness:0.12mm
（Unit: mm）



Recommended the void rate should be less than 15%; otherwise, Bytech cannot guarantee its reliability.

Notes:

*This LED is designed to be reflow soldered on to a PCB. If dip soldered or hand soldered, Bytech cannot guarantee its reliability.

***Recommended the void rate should be less than 15%; otherwise, Bytech cannot guarantee its reliability.**

*Reflow soldering must not be performed more than twice.

*Avoid rapid cooling. Ramp down the temperature gradually from the peak temperature.

*Nitrogen reflow soldering is recommended. Air flow soldering conditions can cause optical degradation, caused by heat and/or atmosphere.

*Since the glass used in the encapsulating glass is fragile, do not press on the encapsulant glass. pressure can cause nicks, chip-outs, encapsulant delamination and deformation, and wire breaks, decreasing reliability

*Repairing should not be done after the LEDs have been soldered. It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.

*The Die Heat Sink should be soldered to customer PCB. If it is difficult or impossible, use high heat-dissipating adhesive.

*When soldering, do not apply stress to the LED while the LED is hot.

*When using a pick and place machine, choose an appropriate nozzle for this product.

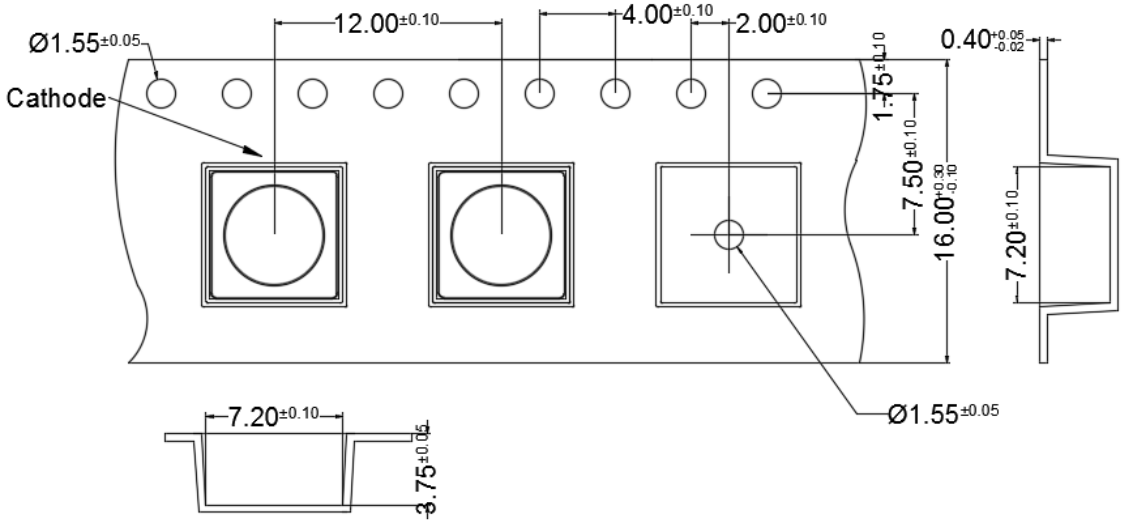
*When flux is used, it should be a halogen free flux. Ensure that the manufacturing process is not designed in a manner Where the flux will come in contact with the LEDs.

*Make sure that there are no issues with the type and amount of solder that is being used.

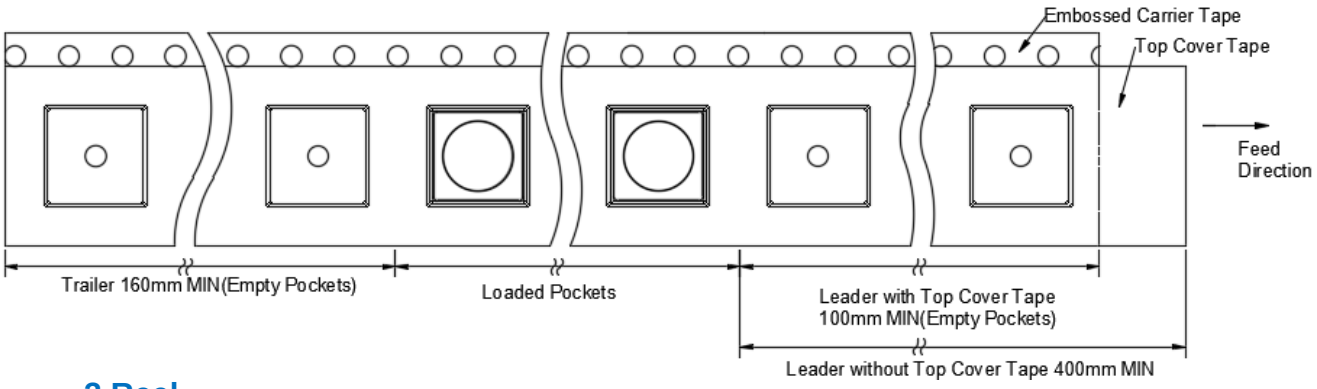
Packing Information

Unit：mm

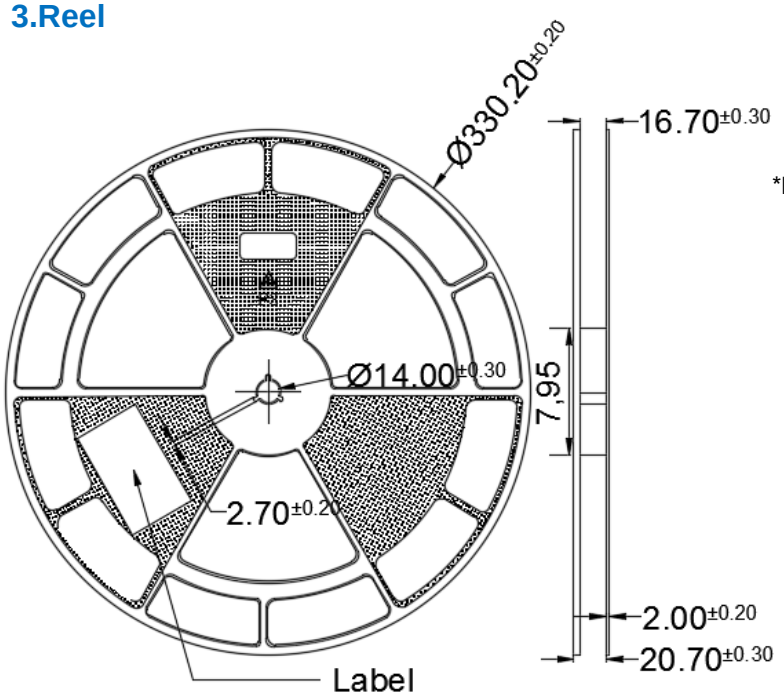
1.Tape



2.Trailer and Leader



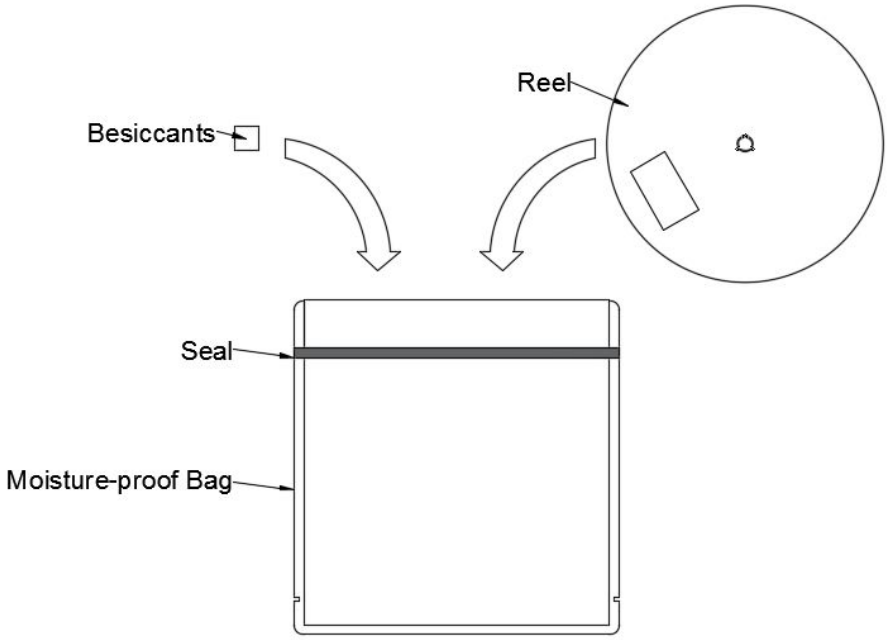
3.Reel



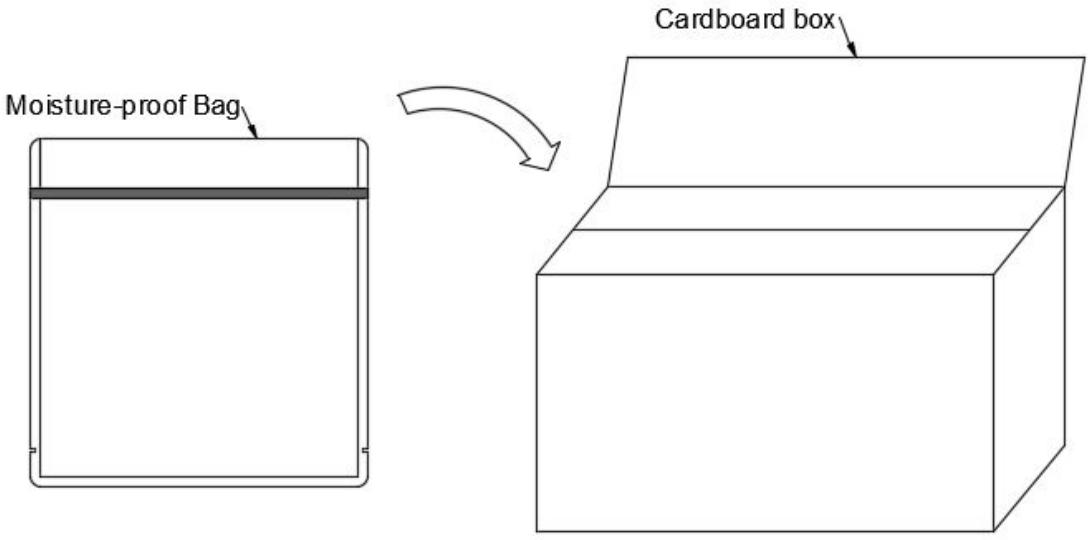
*Reel Size: 1500pcs

Packing Information

4.Reels are shipped with desiccants in heat-sealed moisture-proof bags.



5.Moisture-proof bags are packed in cardboard boxes.



*LEDs shipped on tape and reel are packed in a moisture-proof bag.
They are shipped in cardboard boxes to protect them from external forces during transportation.
*Do not drop or expose the box to external forces as it may damage the LEDs.
*Do not expose to water. The box is not water-resistant.
*Using the original package material or equivalent in transit is recommended.

CAUTIONS

1. Handling Precautions

● Do not handle the LEDs with bare hands as it will contaminate the LENS surface and may affect the optical characteristics.

● When handling the product with tweezers, be careful not to apply excessive force to glass LENS as it may cause the surface scratch.

● Dropping the product may cause damage.

2. Electrostatic Discharge (ESD)

● The product are sensitive to static electricity or surge voltage. ESD can damage a die and its reliability. When handling the products, the following measure against electrostatic discharge are strongly recommended:

Eliminating wrist strap, ESD footwear, clothes, and floors

Grounded workstation equipment and tools

ESD table/shelf mat made of conductive materials

● Ensure that tools, jigs and machines that are being used are properly grounded and that proper grounding techniques are used in work areas. For devices/equipment that mount the LEDs, protection against surge voltages should also be used.

● The customer is advised to check if the LEDs are damage by ESD

When performing the characteristics inspection of the LEDs in the application.

Damage can be detected with a forward voltage measurement at low current(≤1mA).

3. Eye Safety

● Please proceed with caution when handling any UVLEDs driven at low or high current.

Since UV light can be harmful to eyes, do Not look directly into the UV light, even through an optical instrument.

● UV protective glasses are required to use in order to avoid damage by UV light in case of viewing UV light directly.

History of Revision

Revision	Date	Contents of Revision Change	Remark
REV NO: 1.0	2017.06.03	New Establishment	
REV NO: 2.0	2018.04.08	Increase the ranks	