



HONGLI ZHIHUI  
鸿利智汇

**BYTECH**

## Technical Data Sheet

# Specification

## CMH268A4V111Z6-S2P2



### **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
2017.06.22	2017.06.22	2017.06.22
CHEN	研发专用章	TANG



Under Development	
Mass Production	●



**ATTENTION**  
OBSERVE PRECAUTIONS  
FOR HANDLING  
ELECTROSTATIC  
DISCHARGE  
SENSITIVE  
DEVICES



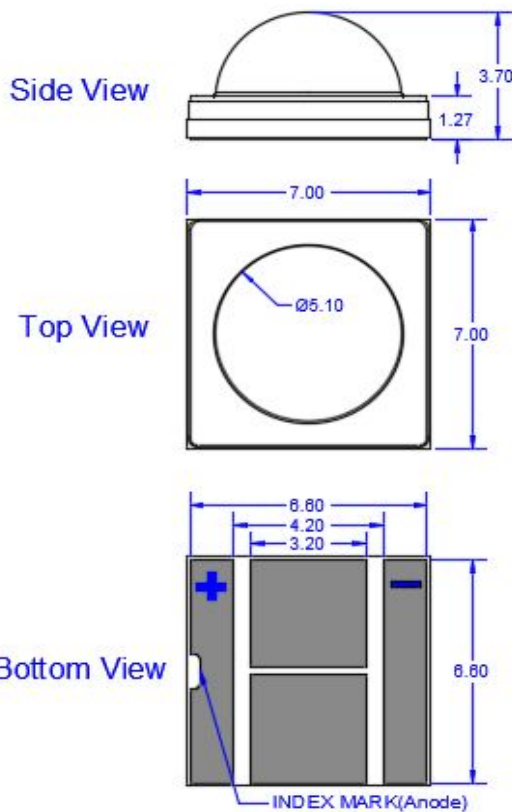
**Features**

- 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

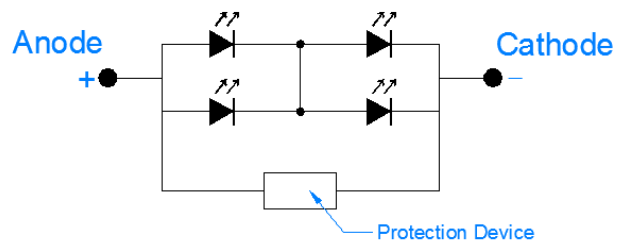
**Package Dimensions (Unit: mm)**



**Product ID:**

**365nm: CMH268A4V111Z6-S2P2**

**Circuit:**



**Tolerance : ± 0.20mm**



## Characteristics of UV LED

### 1. Electrical / Optical Characteristics (Ta=25°C,RH=40%)

Parameter	Symbol	Units	CMH268A4V111Z6-S2P2 (IF=2000mA)
Peak Wavelength [1]	$\lambda_p$	nm	360-370
Radiant Flux [2]	$\Phi_e$ [3]	mW	4000-5000
Forward Voltage [4]	VF	V	7.0-9.0
Thermal Resistance [5]	R <sub>th</sub>	°C/W	1-2
Spectrum Half Width	$\Delta\lambda$	nm	15
View Angle	2 $\theta_{1/2}$	deg	60

**Notes:**

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

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

[3]. $\Phi_e$  is the total radiant Flux as measured with an integrated sphere

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

[5].R<sub>th</sub> is the thermal resistance between chip junction to PCB board bottom

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

Parameter	Symbol	Units	CMH268A4V111Z6-S2P2
Maximum Rating Forward Current	I <sub>Fmax</sub>	mA	3000
Maximum Rating Junction Temperature	T <sub>jmax</sub>	°C	125
Operating Temperature Range	T <sub>opr</sub>	°C	-40 ~ +85
Storage Temperature Range	T <sub>stg</sub>	°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=2000mA, Ta=25°C,RH=40%)**

波长 (nm)	电压 (V)	光功率 (mw)					
		4000-5000	5000-6000	6000-7000	7000-8000	8000-9000	9000-10000
360-365	7.0-7.2	A4119	A4120	A4121	A4122	A4123	A4619
	7.2-7.4	A4124	A4125	A4126	A4127	A4128	A4620
	7.4-7.6	A4129	A4130	A4131	A4132	A4133	A4621
	7.6-7.8	A4134	A4135	A4136	A4137	A4138	A4622
	7.8-8.0	A4139	A4140	A4141	A4142	A4143	A4623
	8.0-8.2	A4144	A4145	A4146	A4147	A4148	A4624
	8.2-8.4	A4149	A4150	A4151	A4152	A4153	A4625
	8.4-8.6	A4154	A4155	A4156	A4157	A4158	A4626
	8.6-8.8	A4159	A4160	A4161	A4162	A4163	A4627
	<b>8.8-9.0</b>	A4164	A4165	A4166	A4167	A4168	A4628
365-370	7.0-7.2	A4299	A4300	A4301	A4302	A4303	A4655
	7.2-7.4	A4304	A4305	A4306	A4307	A4308	A4656
	7.4-7.6	A4309	A4310	A4311	A4312	A4313	A4657
	7.6-7.8	A4314	A4315	A4316	A4317	A4318	A4658
	7.8-8.0	A4319	A4320	A4321	A4322	A4323	A4659
	8.0-8.2	A4324	A4325	A4326	A4327	A4328	A4660
	8.2-8.4	A4329	A4330	A4331	A4332	A4333	A4661
	8.4-8.6	A4334	A4335	A4336	A4337	A4338	A4662
	8.6-8.8	A4339	A4340	A4341	A4342	A4343	A4663
	<b>8.8-9.0</b>	A4344	A4345	A4346	A4347	A4348	A4664

**Notes:**

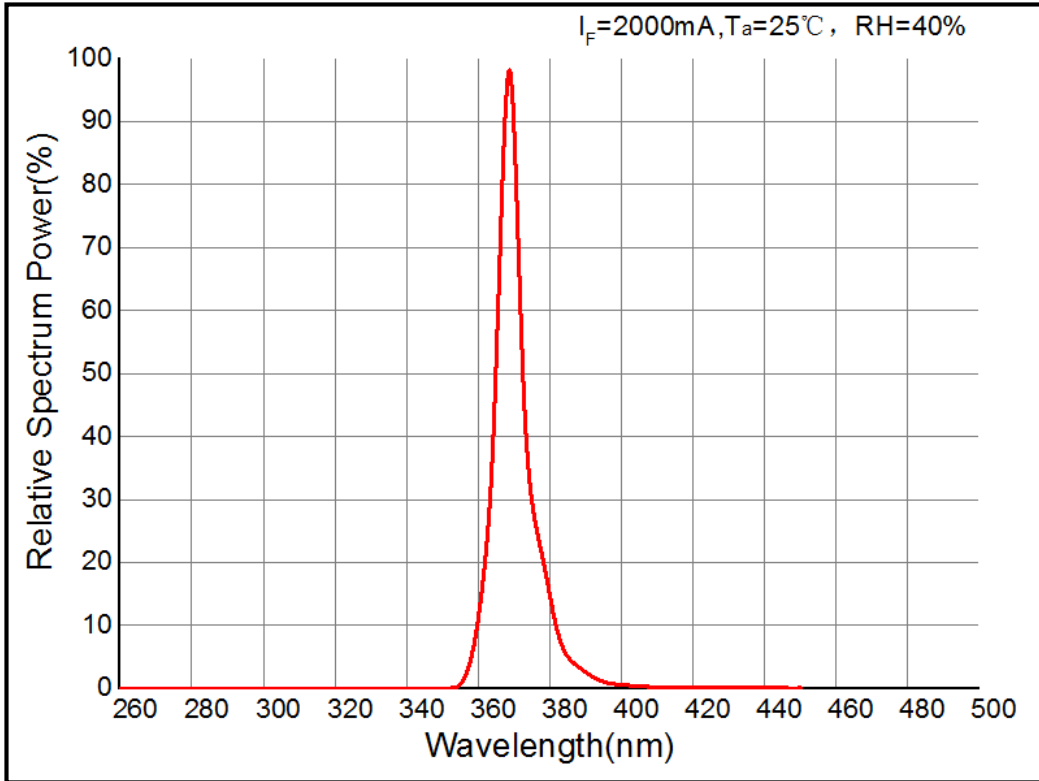
- \*Forward voltage measurement tolerance:±3%
- \*Radiant flux measurement tolerance:±10%
- \*Φ<sub>e</sub> is the total radiant Flux as measured with an integrated sphere
- \*LEDs from the above ranks will be shipped.
- \*The rank combination ratio per shipment will be decided by Bytech.
- \*Peak wavelength measurement tolerance:±3nm



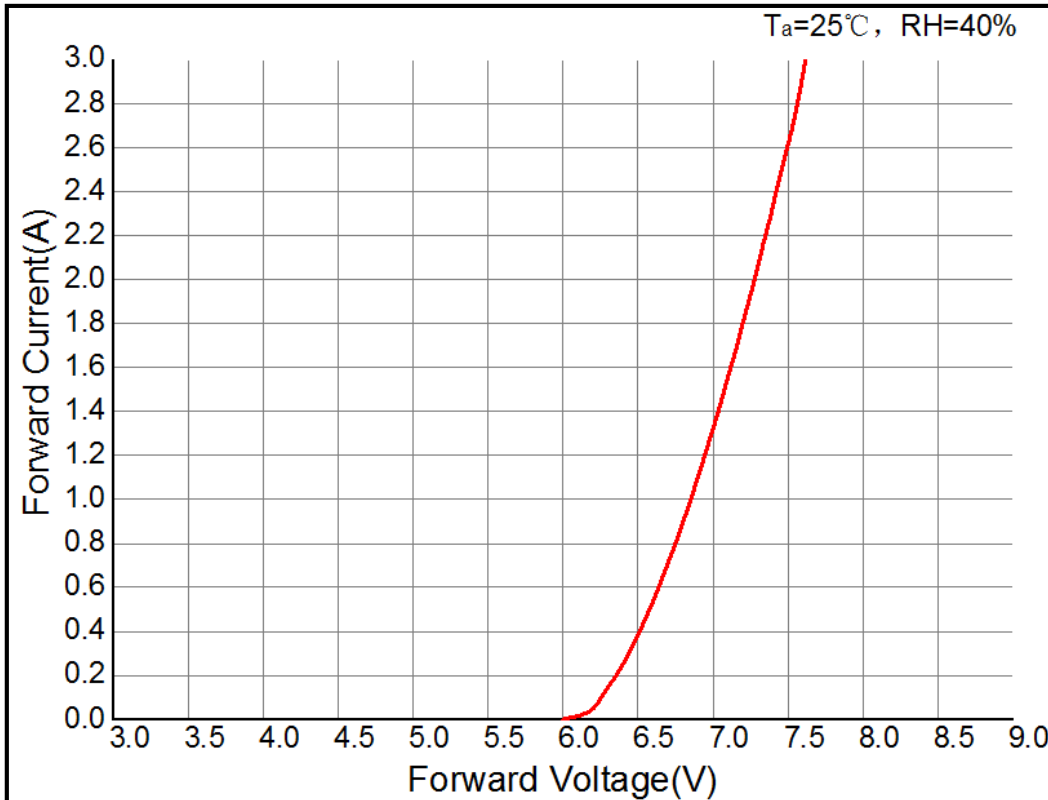
Under Development	
Mass Production	●

# Characteristics Diagrams

## 1. Relative Spectrum Power Distribution



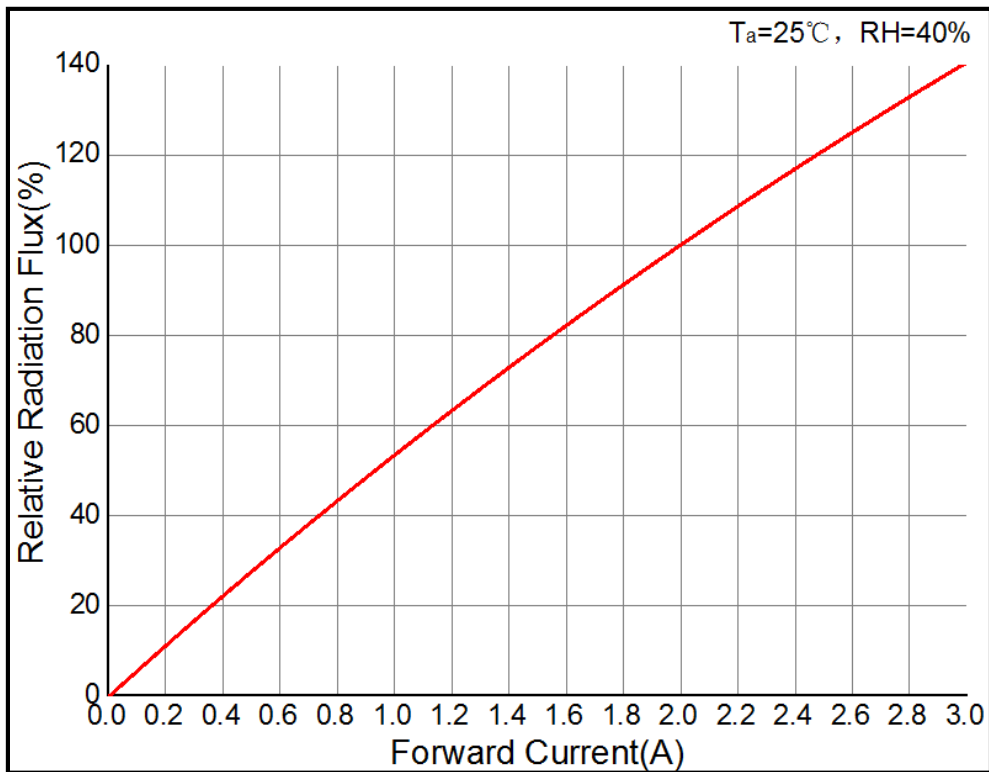
## 2.



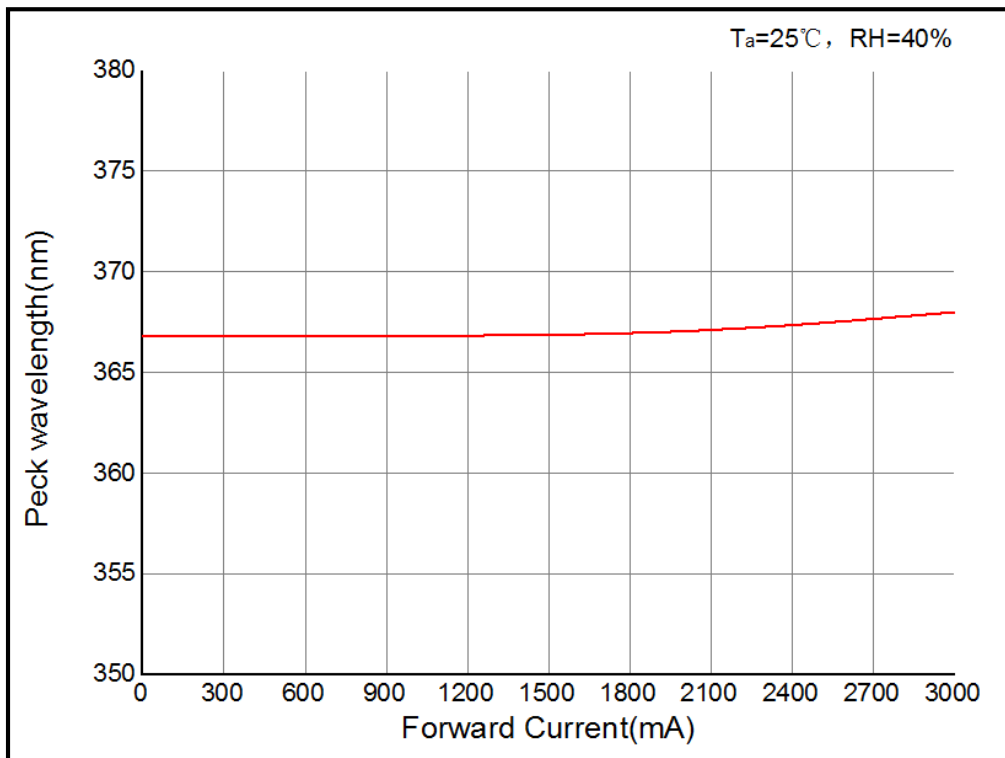


Under Development	
Mass Production	●

### 3. Relative Radiation Flux vs Forward Current



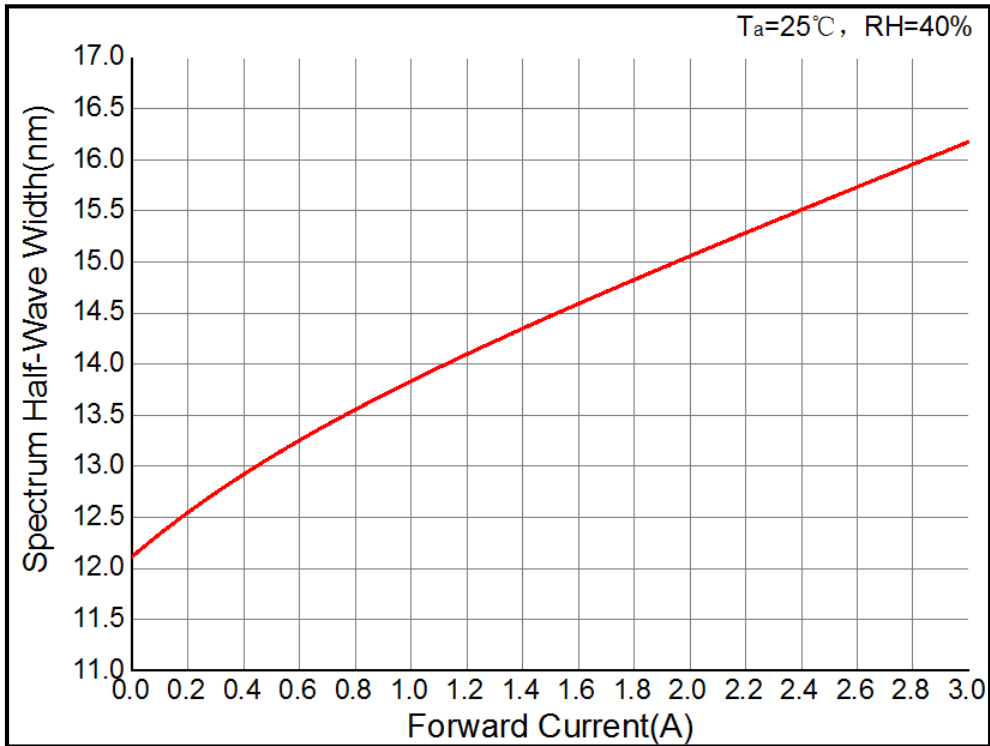
### 4. Peak Wavelength vs Forward Current



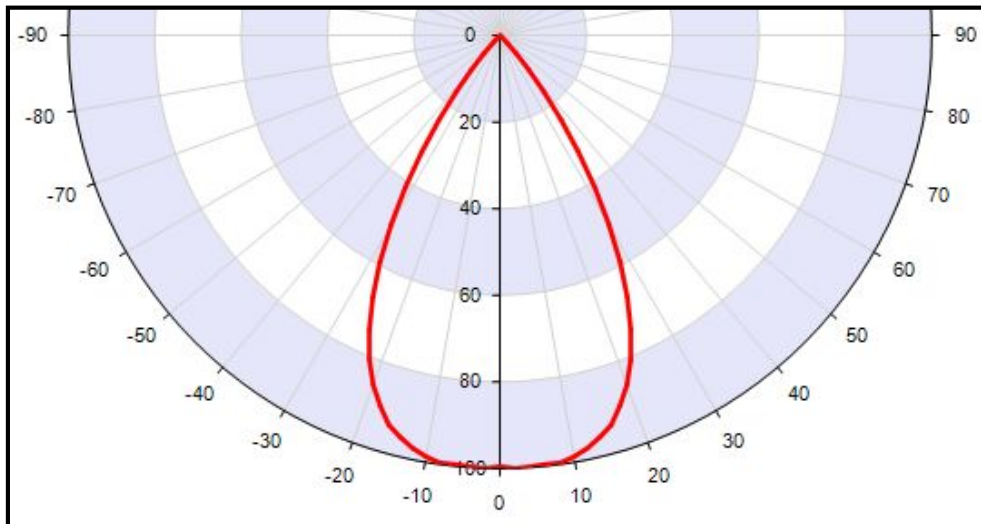


Under Development	
Mass Production	●

### 5. Spectrum Half-Wave Width vs Forward Current



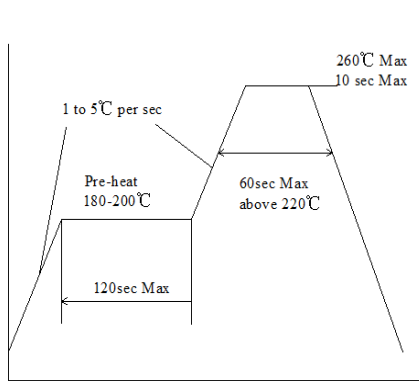
### 6. Spatial Distribution Graph



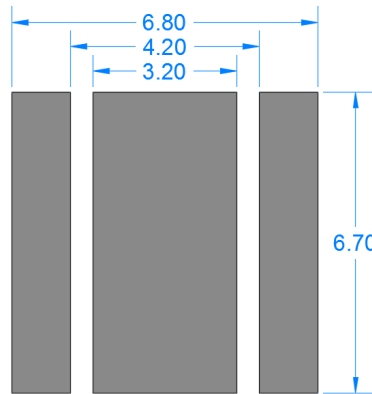


Under Development	
Mass Production	●

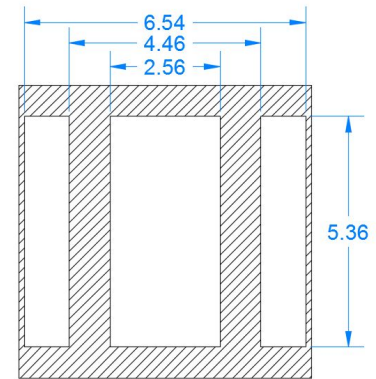
## Product Application Information



Recommended Reflow Soldering Condition  
(Lead-free solder)



Recommended Soldering pad Layout  
(Unit: mm)



Recommended Soldering Mask Layout  
(Unit: mm)

### Notes:

- \*This LED is designed to be reflow soldered on to a PCB. If dip soldered or hand soldered, 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.
- \*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.
- \*The recommended soldering pad pattern is designed for attachment of the LED without problems.  
When precise mounting accuracy is required, such as high-density mounting, ensure that the size and shape of the pad are suitable for the circuit design.
- \*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.



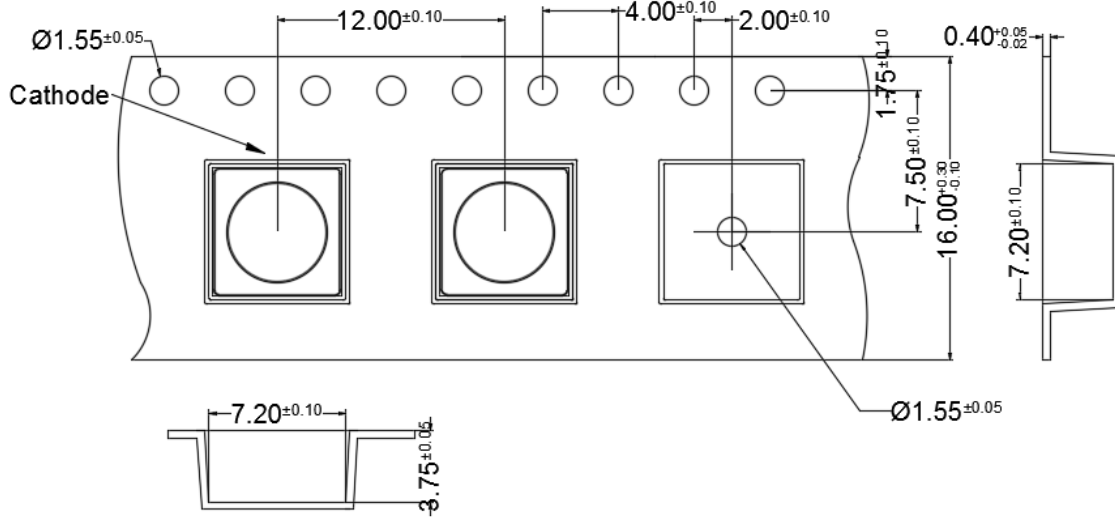


Under Development	
Mass Production	●

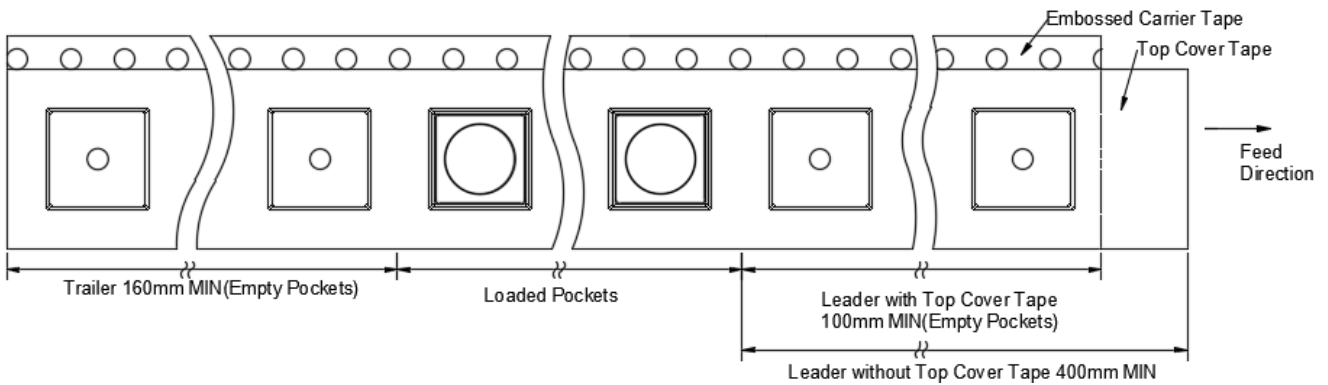
# Packing Information

Unit : mm

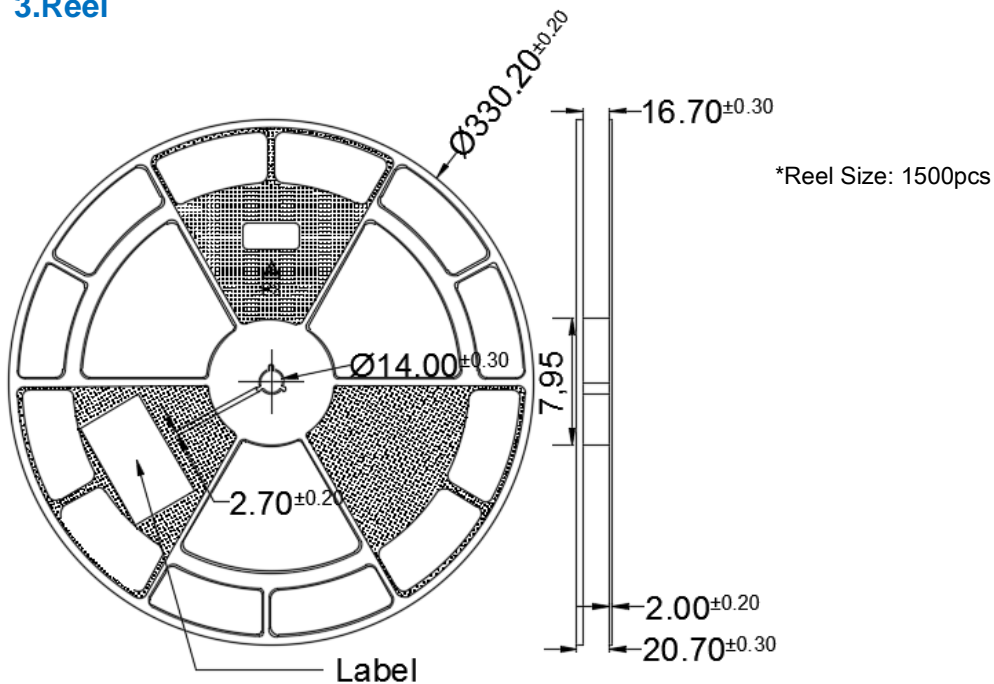
## 1. Tape



## 2. Trailer and Leader



## 3. Reel

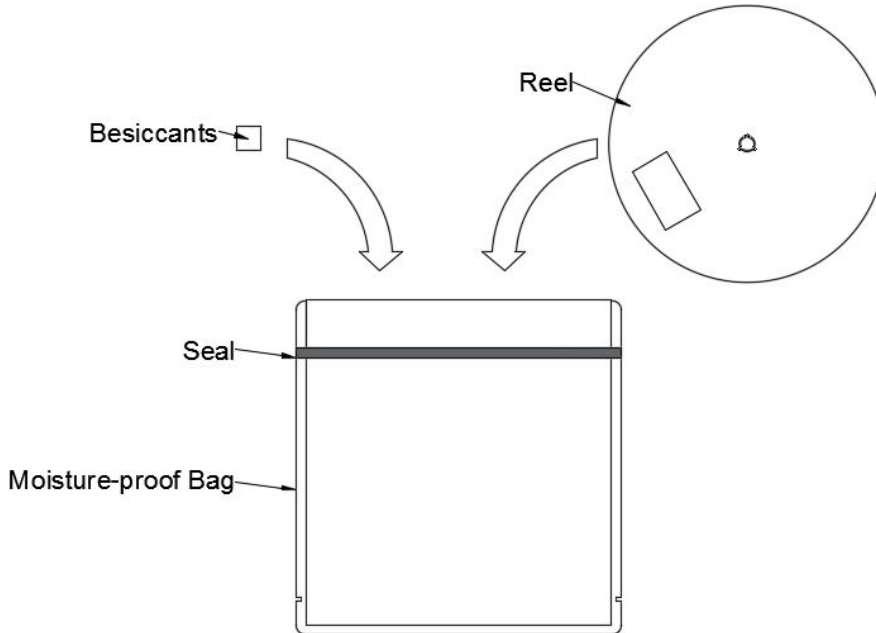




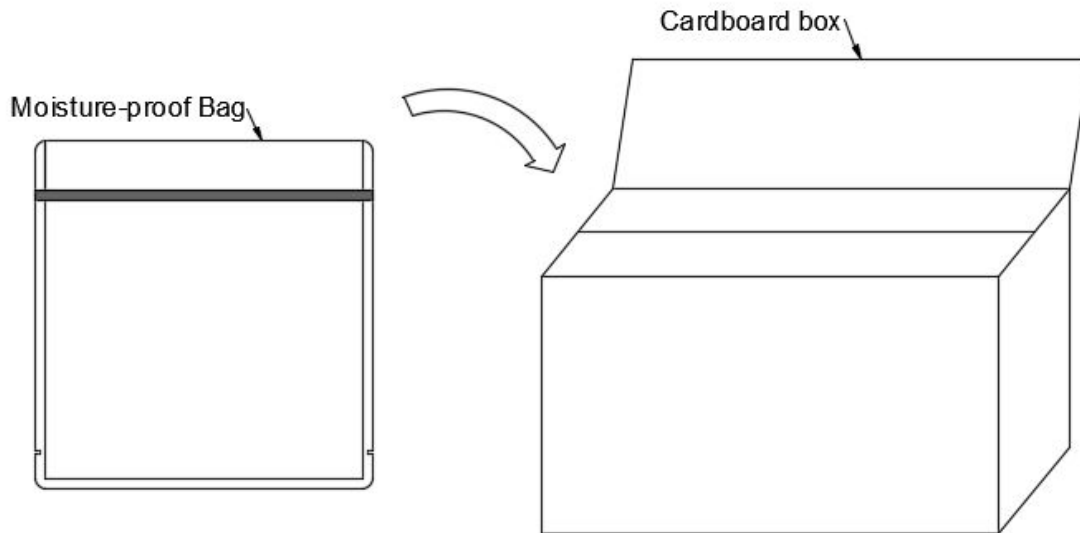
Under Development	
Mass Production	●

## Packing Information

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



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





Under Development	
Mass Production	●

## 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( $\leq 1\text{mA}$ ).

### 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	2017.06.22	New Establishment	