



HONGLI ZHIHUI
鸿利智汇

BYTECH

Technical Data Sheet

Specification

CMH268A1V113Z1-S4P1



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	研发专用章	TANG

By technology, for people.



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Mass Production	●



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES



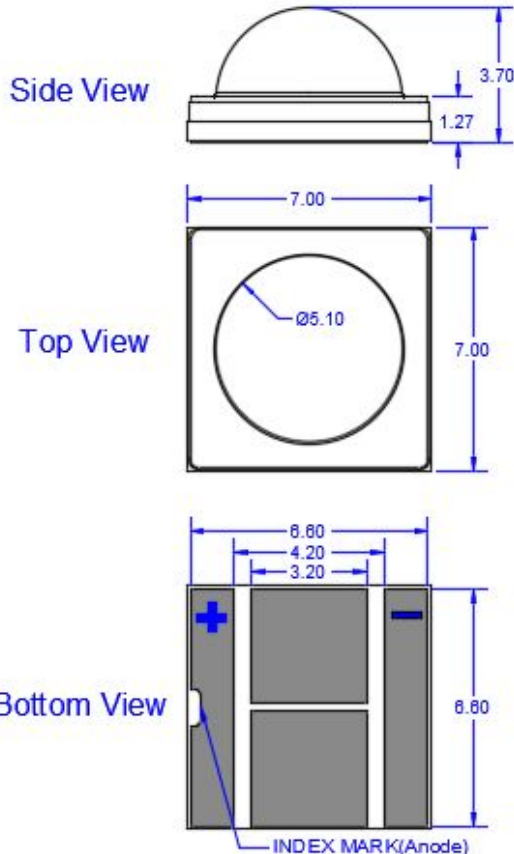
Features

- 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

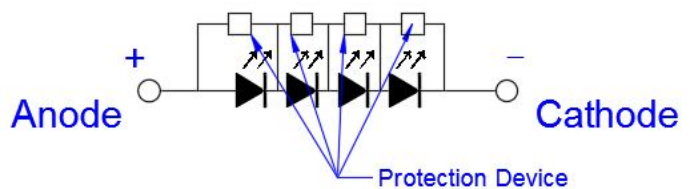
Package Dimensions (Unit: mm)



Product ID:

395nm: CMH268A1V113Z1-S4P1

Circuit:



Tolerance : ± 0.20 mm



Characteristics of UV LED

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

Parameter	Symbol	Units	CMH268A1V113Z1-S4P1 (IF=1000mA)
Peak Wavelength [1]	λ_p	nm	390-400
Radiant Flux [2]	Φ_e [3]	mW	7000-9000
Forward Voltage [4]	VF	V	13.8-16.2
Thermal Resistance [5]	R_{th}	°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]. 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 (Ta=25°C,RH=40%)

Parameter	Symbol	Units	CMH268A1V113Z1-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°C,RH=40%)

波长 (nm)	电压 (V)	光功率 (mw)					
		5000-6000	6000-7000	7000-8000	8000-9000	9000-10000	10000-11000
390-395	13.6-13.8	A1161	A1162	A1163	A1164	A1165	A1166
	13.8-14.0	A1167	A1168	A1169	A1170	A1171	A1172
	14.0-14.2	A1173	A1174	A1175	A1176	A1177	A1178
	14.2-14.4	A1179	A1180	A1181	A1182	A1183	A1184
	14.4-14.6	A1185	A1186	A1187	A1188	A1189	A1190
	14.6-14.8	A1191	A1192	A1193	A1194	A1195	A1196
	14.8-15.0	A1197	A1198	A1199	A1200	A1201	A1202
	15.0-15.2	A1203	A1204	A1205	A1206	A1207	A1208
	15.2-15.4	A1209	A1210	A1211	A1212	A1213	A1214
	15.4-15.6	A1215	A1216	A1217	A1218	A1219	A1220
	15.6-15.8	A1221	A1222	A1223	A1224	A1225	A1226
	15.8-16.0	A1227	A1228	A1229	A1230	A1231	A1232
	16.0-16.2	A1233	A1234	A1235	A1236	A1237	A1238
395-400	13.6-13.8	A1359	A1360	A1361	A1362	A1363	A1364
	13.8-14.0	A1365	A1366	A1367	A1368	A1369	A1370
	14.0-14.2	A1371	A1372	A1373	A1374	A1375	A1376
	14.2-14.4	A1377	A1378	A1379	A1380	A1381	A1382
	14.4-14.6	A1383	A1384	A1385	A1386	A1387	A1388
	14.6-14.8	A1389	A1390	A1391	A1392	A1393	A1394
	14.8-15.0	A1395	A1396	A1397	A1398	A1399	A1400
	15.0-15.2	A1401	A1402	A1403	A1404	A1405	A1406
	15.2-15.4	A1407	A1408	A1409	A1410	A1411	A1412
	15.4-15.6	A1413	A1414	A1415	A1416	A1417	A1418
	15.6-15.8	A1419	A1420	A1421	A1422	A1423	A1424
	15.8-16.0	A1425	A1426	A1427	A1428	A1429	A1430
	16.0-16.2	A1431	A1432	A1433	A1434	A1435	A1436

Notes:

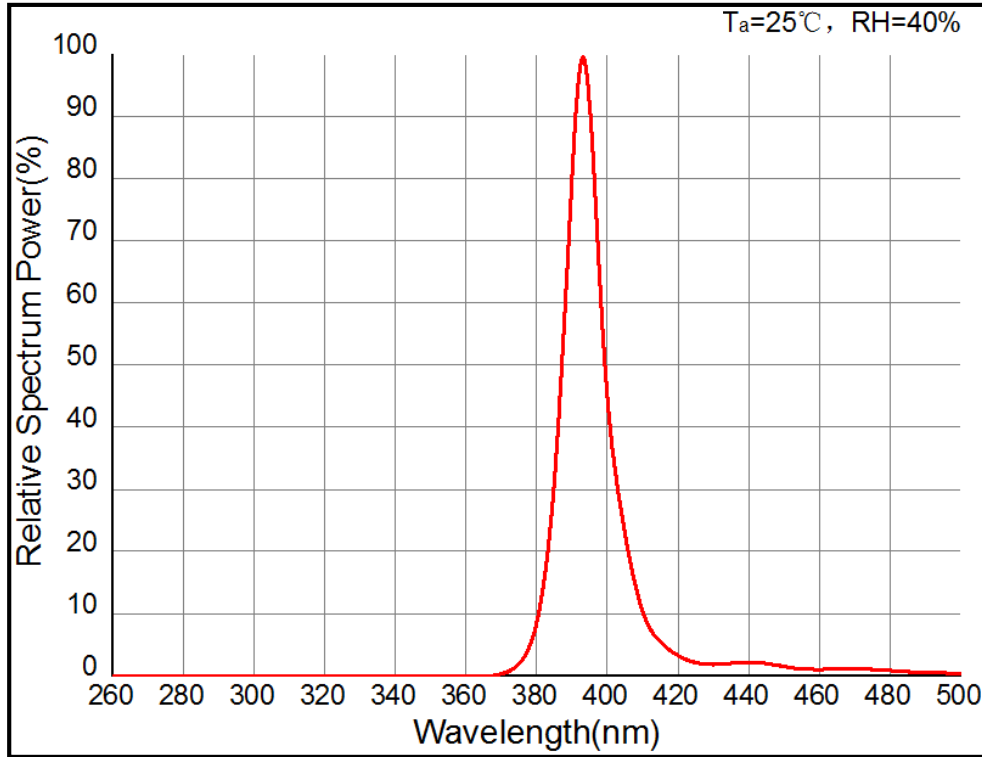
- *Forward voltage measurement tolerance:±3%
- *Radiant flux measurement tolerance:±10%
- *Φ_e is the total radiant Flux as measured with an integrated sphere
- *LEDs from the above ranks will be shipped.
- *The rank combination ratio per shipment will be decided by Bytech.
- *Peak wavelength measurement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



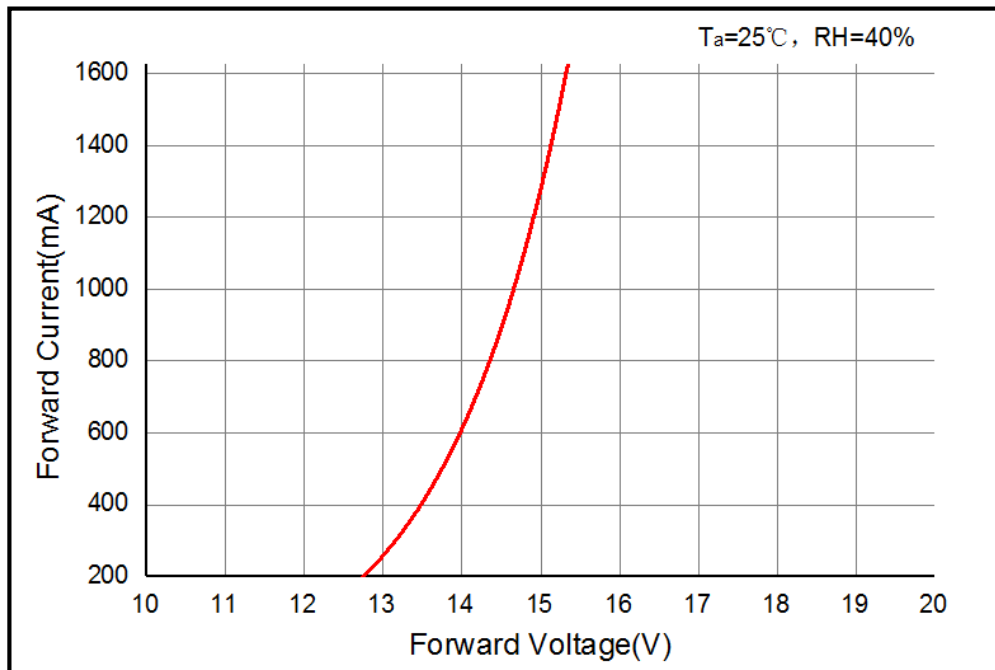
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Characteristics Diagrams

1. Relative Spectrum Power Distribution



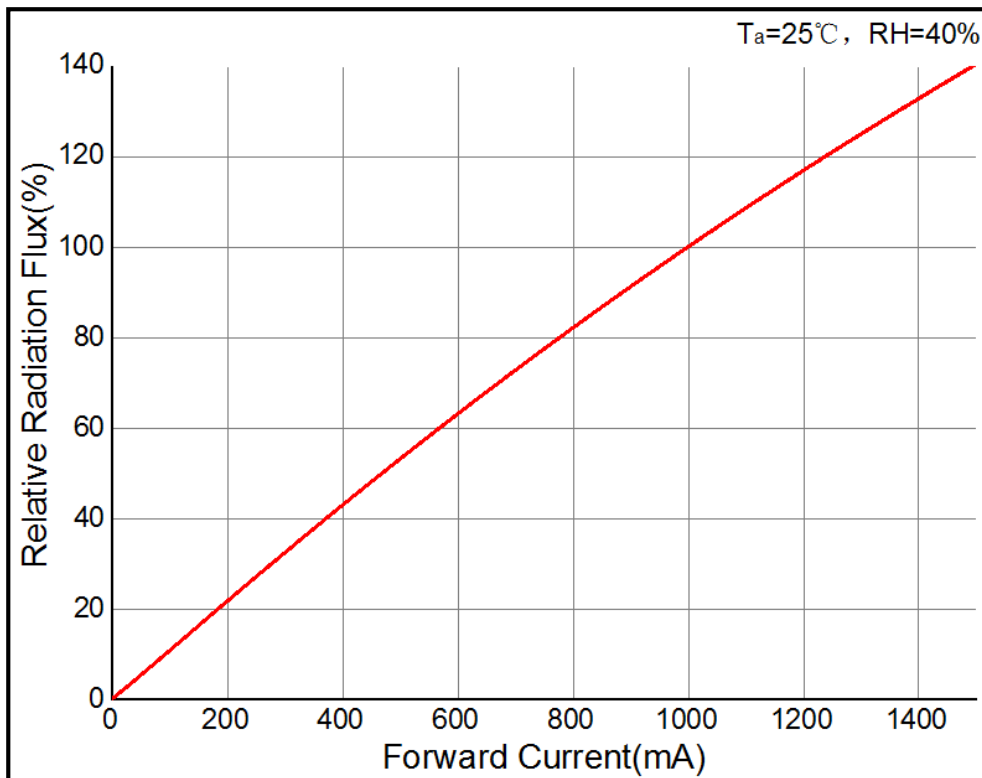
2. Forward Voltage vs Forward Current



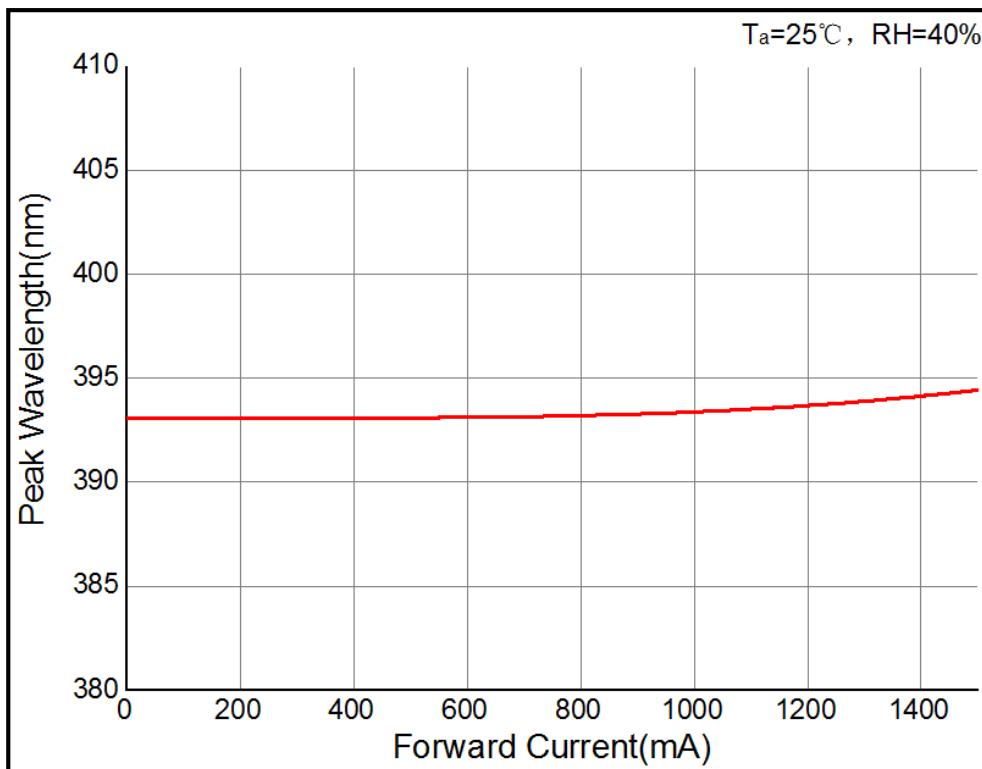


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3. Relative Radiation Flux vs Forward Current



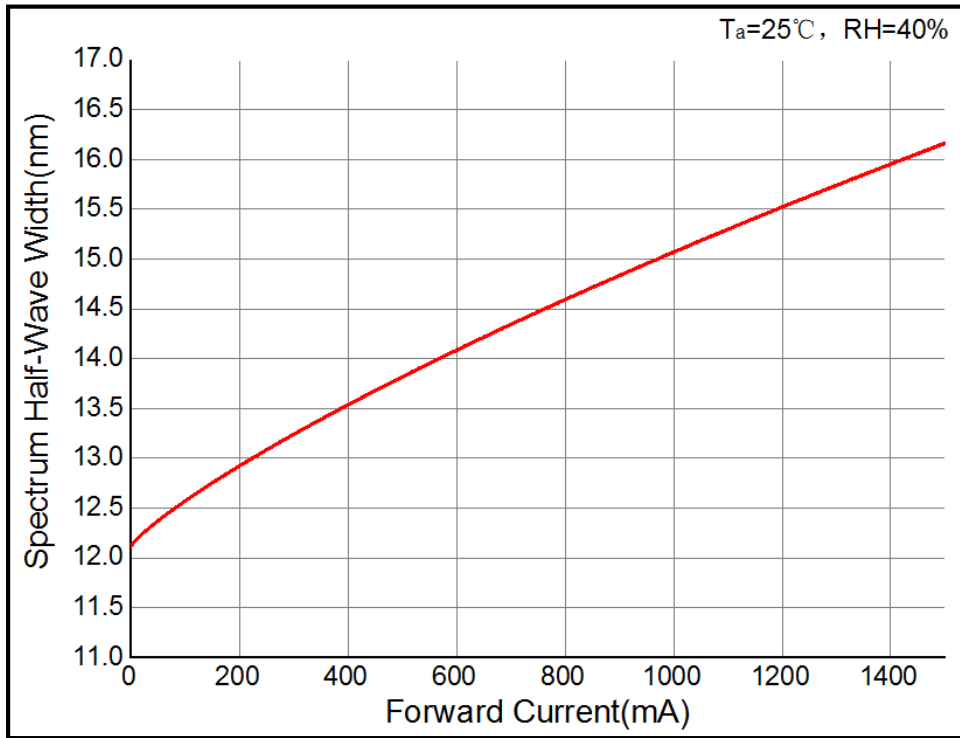
4. Peak Wavelength vs Forward Current



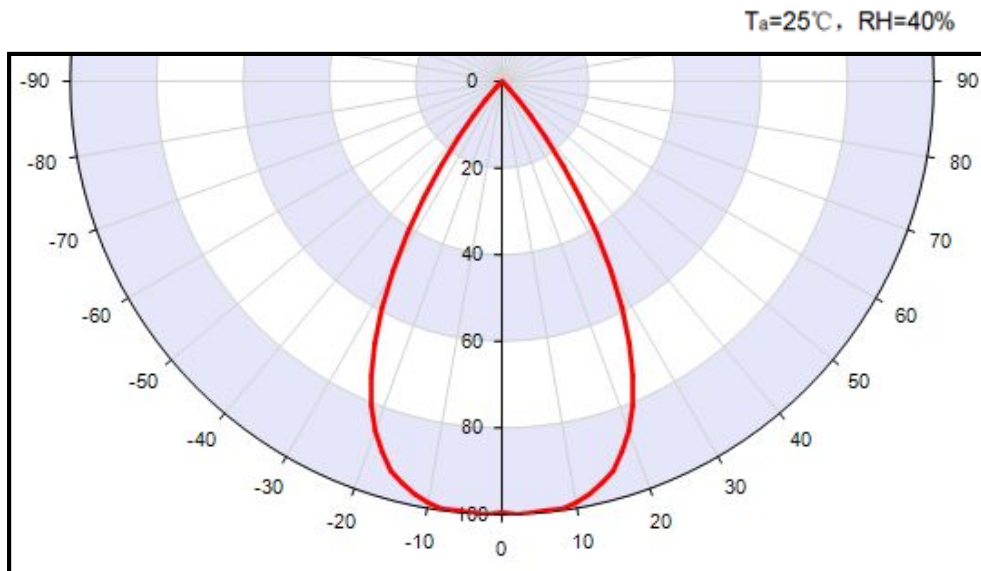


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5. Spectrum Half-Wave Width vs Forward Current



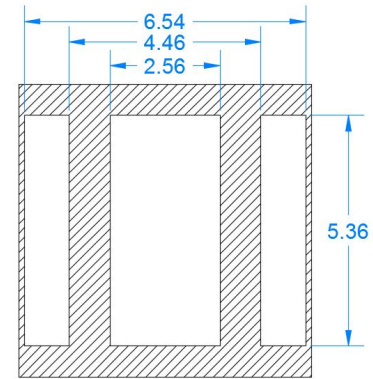
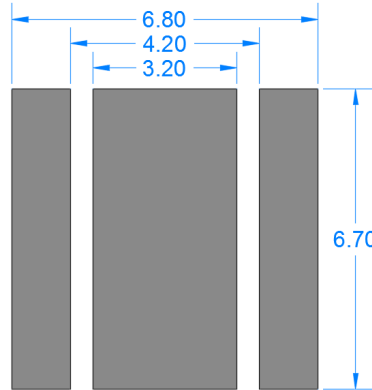
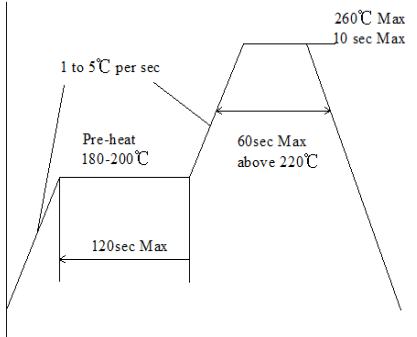
6. Spatial Distribution Graph





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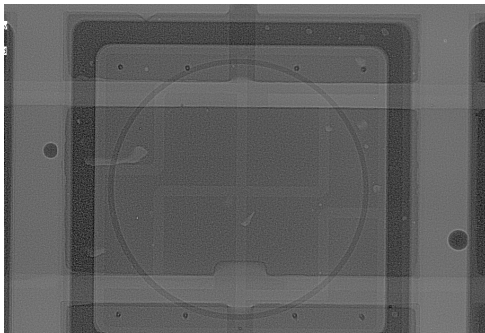
Product Application Information



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.

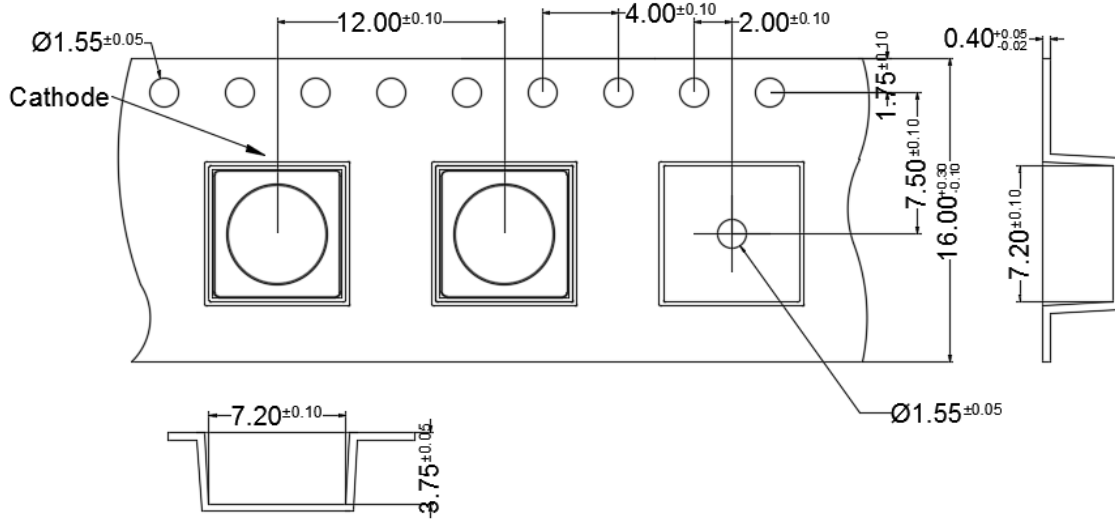


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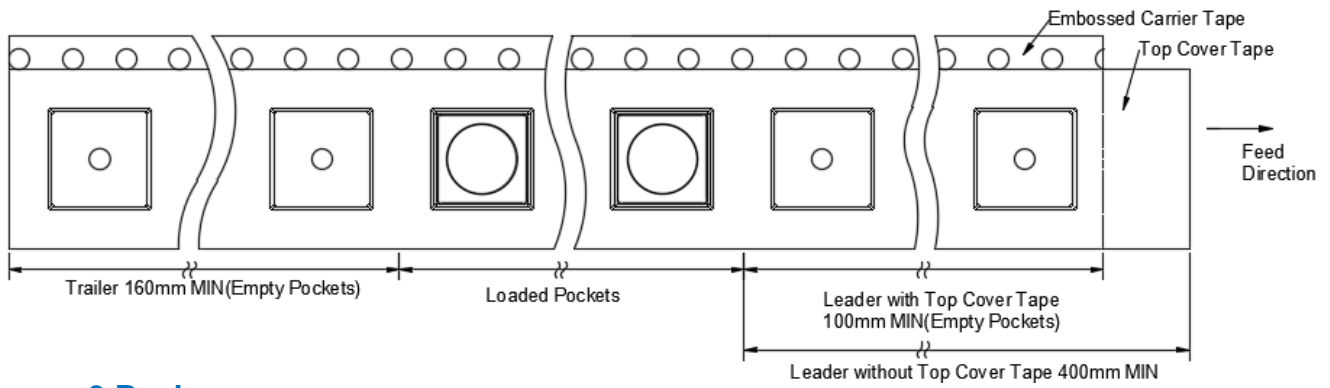
Packing Information

Unit : mm

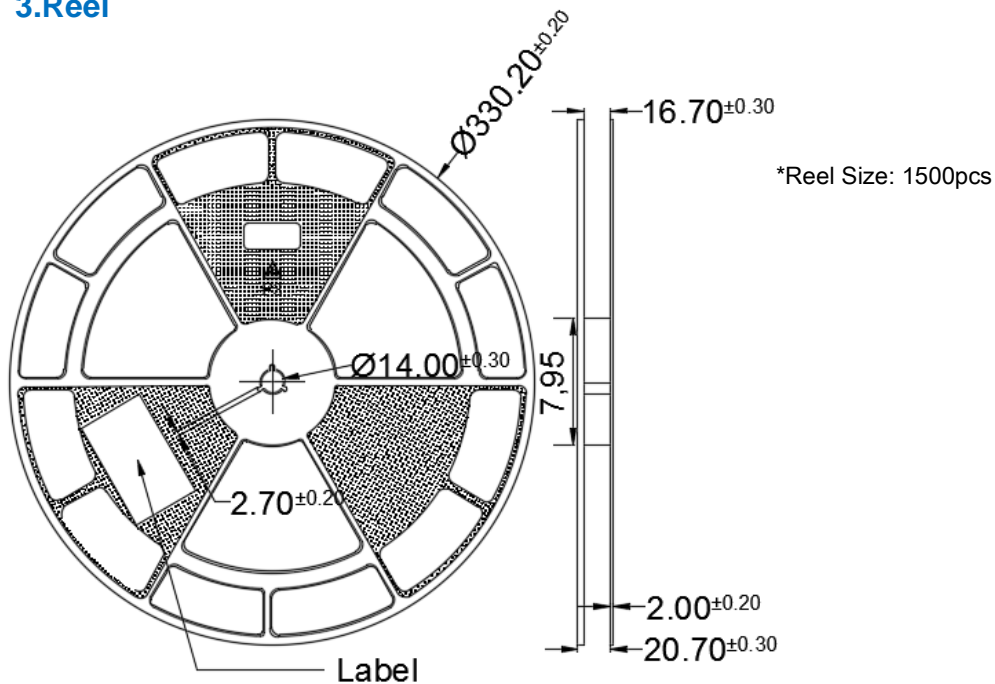
1. Tape



2. Trailer and Leader



3. Reel

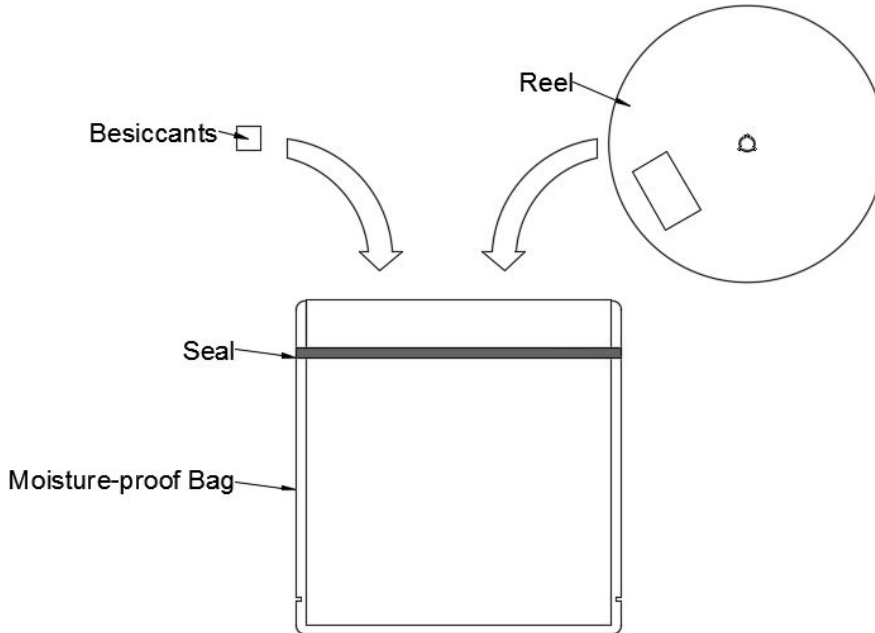




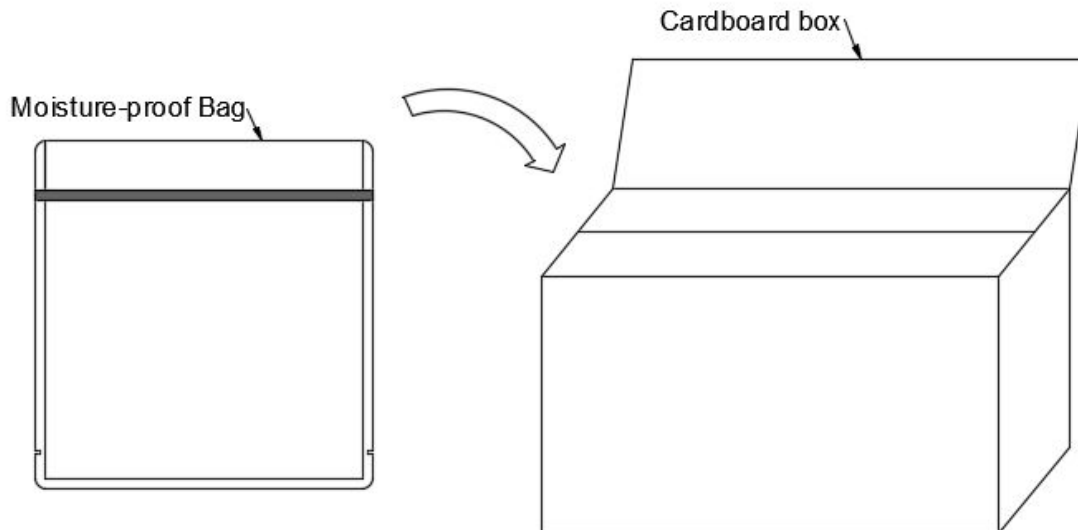
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Packing Information

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.



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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.



