1. **IK Level Tester**

IK ratings are defined as IKXX, where “XX”  is a number from 00 to 10 indicating the degrees of protection provided by enclosures (including luminaires) against external mechanical impacts. The different IK ratings relate to the ability of an enclosure to resist impact energy levels measured in joules (J). IEC 62262 specifies how the enclosure must be mounted for testing, the atmospheric conditions required, the quantity and distribution of the test impacts and the impact hammer to be used for each level of IK rating. The IK test applicate on lighting luminaires test according to IEC60598 (GB7000) and IEC60068-2-75 (GB2423.55).

Degrees of protection against external mechanical impacts:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| IK01 | IK02 | IK03 | IK04 | IK05 | IK06 | IK07 | IK08 | IK09 | IK10 |
| 0.14J | 0.2J | 0.35J | 0.5J | 0.7J | 1J | 2J | 5J | 10J | 20J |

## Dustproof Testing Machine (IP 0-6x)

The Dustproof Test Chamber SC-015 is according to IEC60529, GB2423.37-89 (Test L: dust test methods), GB 4208-93 protective casing grade (IP code), GB/T 4942.2-93(protective casing grade of low-voltage apparatus), GB 7000.1-1996, GB 7001-1986(protective casing grade of lamps), DIN40050 and IP5K0. The SC-015 is applied in LED or other luminaries for IP5X and IP6X test.

|  |  |  |
| --- | --- | --- |
| Model Number | Working Room Size (mm) | Remark |
| SC-500 | 700\*800\*900 | Single door structure |
| SC-800 | 800\*800\*800 |
| SC-010 | 1000\*1000\*1000 |
| SC-015 | 1000\*1500\*1000 | Cabinet can be put in a horizontal direct or vertical direct |
| SC-020 | 1000\*2000\*1000 |

• Temperature Range: environmental temperature + 5~50℃ (Adjustable)
• Humidity Range: 45%~75% (Adjustable)
• Metal net standard nominal line diameter: 50μm•  Airflow velocity in the chamber: 1.5m/s (adjustable range 0~4.99m/s)
• Environmental air pressure: 85Kpa~106Kpa
• Test dust: dry talcum powder, portland cement, smoke ash and etc.
• Line spacing between the standard: 32μm, 75μm and 250μm (There are three Metal nets)
• Selecting dust concentration control instrument: get sample through the optical principle, show the dust concentration and automatic control powder quantity that entering into the Cabinet according to the concentration of the set: (needed cleaning compressed air source configuration, require the pressure: 1~3 kg/cm3)
• Power supply: 380V 3phases 50 Hz/60Hz

## High and Low Temperature Humidity Chamber

It is according to IEC60068-2-1 (GB/T2423.1) and IEC60068-2-2 (GB/T2423.2). It is used to test the CFL/LED which meets IES LM-80-08, electricity products, electronic components, material and so on.

**Specification:**
•The chamber is produced by SUS304 Steel, the temperature keeping material is produced by Polyurethane hard foam and ultra-fine fibre glass, the doorframe heat insulated by Double high temperature aging silicone rubber door sealing strip.
•The temperature controller is used by Korean TEMI display in English/Chinese and German Siemens PLC, it can be communicated to PC via RS-232. The temperature accuracy is 0.1℃ and humidity is 0.1%R.H
•The temperature sensor is platinum PT100 Ohms/MV resistor
•The heating system is full separately system which produced by Nickel chromium alloy electric heating type heater
•The cold system is applied by fully enclosed fan cooled single-stage and cascade refrigeration mode, the compressor is from France TECUMSEH brand which can allow you get after sales support from many countries
•The cyclical system is applied by High temperature low noise air conditioning type motor and Multi blade centrifugal wind wheel
•The safety self-protection function include Electric leakage, short circuit, over temperature, motor overheating, compressor pressure, overload, over-current protection
•Working Power: AC380V±10% 3phases and frequency 50Hz/60Hz
•Working Environmental: Temperature is 5℃～+30℃  Humidity ≤85%R.H

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| --- |
| High & Low Temperature and Humidity Chamber with Programmable Function (GDJS Series) |
| Model (cm) | GDJS-225\* | GDJS-500\* | GDJS-010\* | GDJS-013\* | GDJS-015\* |
| Workroom Dimensions | 50x60x75 | 70x80x90 | 100x100x100 | 100x100x130 | 100x100x150 |
| Exterior Dimensions | 105\*102\*200 | 132\*132\*217 | 167\*152\*231 | 217\*152\*231 | 245\*160\*231 |
| Work Power | 7.0kW | 13.5kW | 15.0kW | 16.5kW | 16.5kW |
| Temperature Range | A: -20℃-150℃      B: -40℃-150℃     C: -60℃-150℃ |
| Humidity Range | 30%~98% R.H |
| Fluctuation/Evenness | ±0.5℃/±2℃ |
| Humidity Deviation | -2%~-3% R.H |
| Temperature Rise Speed | 1.0℃~3.0℃/min |
| Temperature Down Speed | 0.7℃~1.0℃/min |

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| High and Low Temperature Chamber with Programmable Function (GDJW Series) |
| Working Room Size | GDJW-225\* | GDJW-500\* | GDJW-010\* | GDJW-013\* | GDJW-015\* |
| Workroom Dimensions (cm) | 50x60x75 | 70x80x90 | 100x100x100 | 100x100x130 | 100x100x150 |
| Temperature Range | A: -20℃-150℃      B: -40℃-150℃     C: -60℃-150℃ |
| Fluctuation/Evenness | ±0.5℃/±2℃ |
| Temperature Rise Speed | 1.0℃~3.0℃/min |
| Temperature Down Speed | 0.7℃~1.0℃/min |

**The \* in GDJS-225\* means the temperature range A: -20℃-150℃, B: -40℃-150℃,  C: -60℃-150℃**

1. **Waterproof Test (IPx1-7)**

Waterproof test system is according to IEC60529, IEC60598, IEC60335 and IEC 60034-5: 2000. System includes the following test grades: IPX1, IPX2, IPX3, IPX4, IPX5, IPX6, IPX7 and IPX8 (Refer to page 51 of IEC60529). It is widely used in the authentication test organization for the products such as electrical & electronic products such as LED luminaires as well as in the relevant quality control department for the waterproof detection of the enclosures protection grades.

The whole waterproof test system includes:
• Drip Box (JL-12): The drip box is for IPX1 and IPX2 drip test. The drip box size is 800x800x75mm (LxWxH). The diameter of drip hole is 0.4mm, distant of drip hole is 20mm, sample can be over 150kg
• Swing Pipe Water Spray Test Equipment (JL-34): It is for IPX3 and IPX4 test, the semi-diameter of swing pipe is 1meter. IPX3 is 120degree and IPX4 is 180degree. The diameter of inside swing pipe is 0.4mm. The automatic sample rotating base diameter is 600mm and speed is 1~5rpm which controlled by PLC panel
• Waterproof Jet Test Device (JL-56): With water supply device size is 1000x1000x600mm, the bore diameter is ф6.3mm (IPX5) and ф12.5mm (IPX6). Diameter of hole is 6.3mm for IPX5 and 12.5mm for IPX6. The water speed is 12.5 ±0.626L/min for IPX55 and 100 ±5L/min for IPX6
• Immersion tank Waterproof test Device (JL-7): It is for IPX7 test. The top of the water tank size is 1000x1000x1200mm. The sample testing base is max 120kg. It includes two temperature channels meter and digital display.
• Immersion tank Waterproof test Device (JL-8): It is for IPX8 test. It can measure 0~50m water depth. The water immersion size is diameter is 600mm and height is 1200mm. The compressive stress is 10 atmospheric pressures or design customer request.

1. **GL GONIO SPECTROMETER GLG\_20-1500**

**https://www.youtube.com/watch?v=xVPDb9743Ns**

**GLG-20-1500** is a goniometer system designed for the testing of large lamps and luminaires. Max load of over 20kg and 1500mm diameter will cover most of the demand for testing. Additionally the usable depth along horizontal axis up to 800mm will help to test very long high bay lamps with extended radiators. This is also an ideal solution for long tubular architectural luminaires.

### WHAT DOES A GONIOSPECTROMETER MEASURE?

Use a goniospectrometer to check the angle dependence luminous intensity along with colorimetric values like color, color temperature and CRI.

### A STANDARD GONIOMETER SYSTEM INCLUDES:

* C type goniometer in C-γ coordinate
* Optical axis in horizontal direction
* Angular luminous intensity measurements
* Luminous flux measurements
* EULUMDAT and IES file generation

### OPTIONAL FEATURES

* Class A laboratory photometer
* Current or power sources and power meter
* TEC Control or temperature measurement

### GONIOMETRIC MEASUREMENT PRINCIPLE

The luminaire is rotated around the horizontal and vertical axis and at each position the photometric signal is measured at a fixed photometer location in the far field of radiation. The C-plane in which the luminous intensity is measured is controlled by the horizontal axis. In each C-plane, the angular luminous intensity distribution of the luminaire under test (LUT) is measured as a function of γ angle by turning the LUT with the vertical axis.

### HOW DO YOU CHOOSE THE OPTIMAL GONIOMETER?

The dimensions and luminous area shape of a luminaire and required accuracy determine the size of the goniometer. The instrument needs to be adjustable to position the photometric center of luminaires with varying thicknesses (distance from its back surface to the photometric center) to the turning axes. For measurement of luminaires with an upward radiation, the maximum γ angle of the goniometer and luminaire mounting should be such that the dead angle is minimized and the total radiation angular range is covered.

|  |  |
| --- | --- |
|  | GLG-20-1500 |
| CIE Goniometer type | Far Field Type C with horizontal optical axis DUT moving; 3 axis stepper motors; Direct drive system |
| Angular range C axis | ± 180° |
| Angular range γ axis | ± 180° theoretical (usable depending on geometry due to shadowing) |
| Angular positioning precision | 0.1° |
| Reproducibility C axis | 0.004° |
| Reproducibility γ axis | 0.004° |
| Angular speed C axis | up to 45°/s |
| Angular speed γ axis | up to 45°/s |
| DUT photometric center positioning | 0 to 800 mm stepper motor operated  |
| Photometric distance | 7.5 m - 22.5 m Distance >= largest DUT dimension x (5 to 15) (CIE\_S025/E:2015) |
| DUT mounting plate (bread board) | Round d=150 mm; Fixing: Multiple mounting holes: M3, M4, M5, M6; Chuck with sliding blocks |
| Maximum DUT dimension | ≤ 1500 mm (diameter or diagonal) |
| Goniometer dimensions | 1950(L) x 750(W) x 1400(H)mm |
| Maximum operating footprint diameter | 2400 mm   |
| Maximum load | 20 kg |
| Goniometer weight | 80 kg |
| Power supply and max. consumption | PC connection by USB A-B; 110-230V; 600W |
| Sensor type | GL OPTIC Spectrometer range: GL Spectis 1.0; GL Spectis 1.0 Touch; GL Spectis 5.0 Touch, |