



□ **SO₂ Noxious Gas Corrosion Chamber**



Model: SO-225

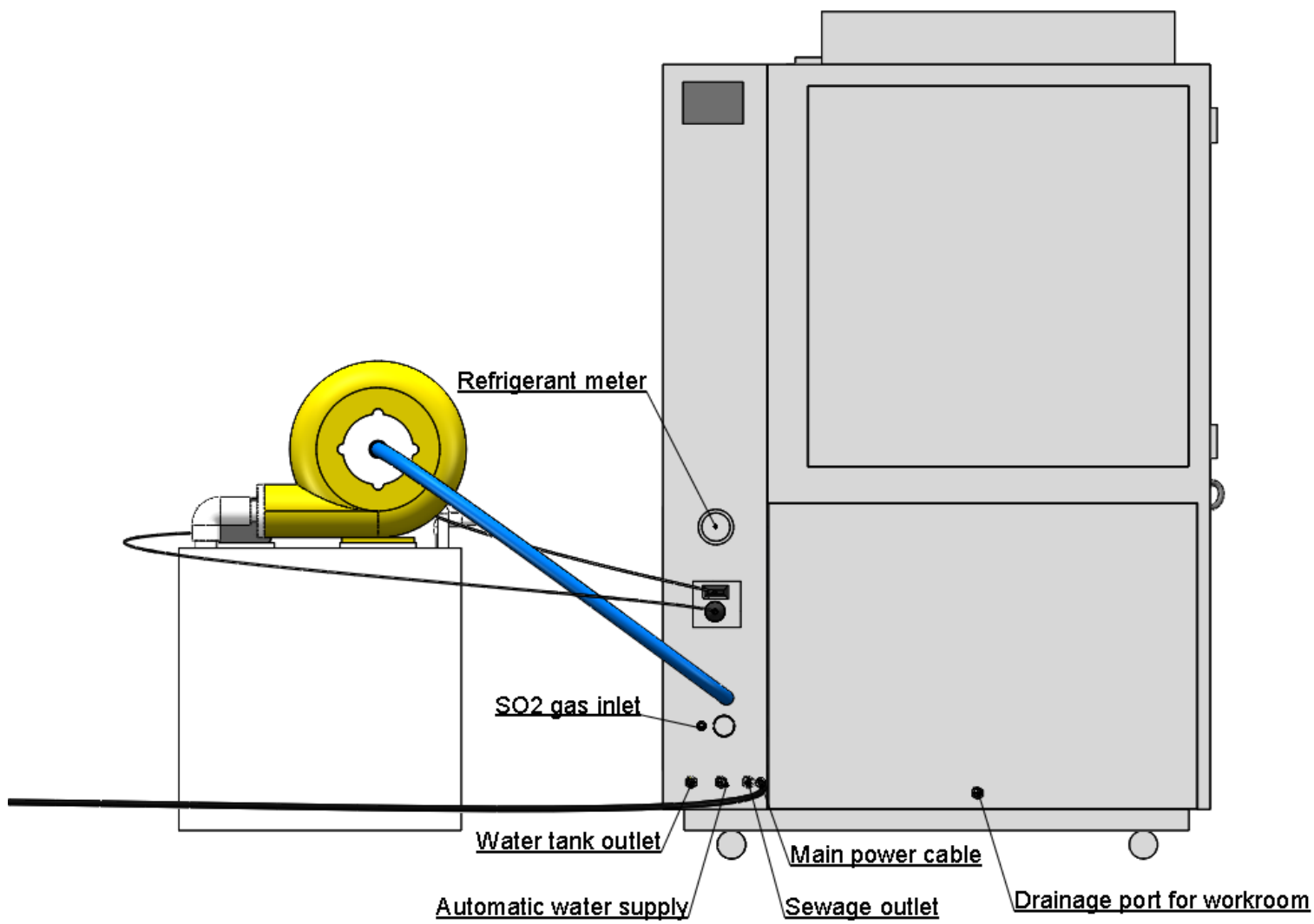
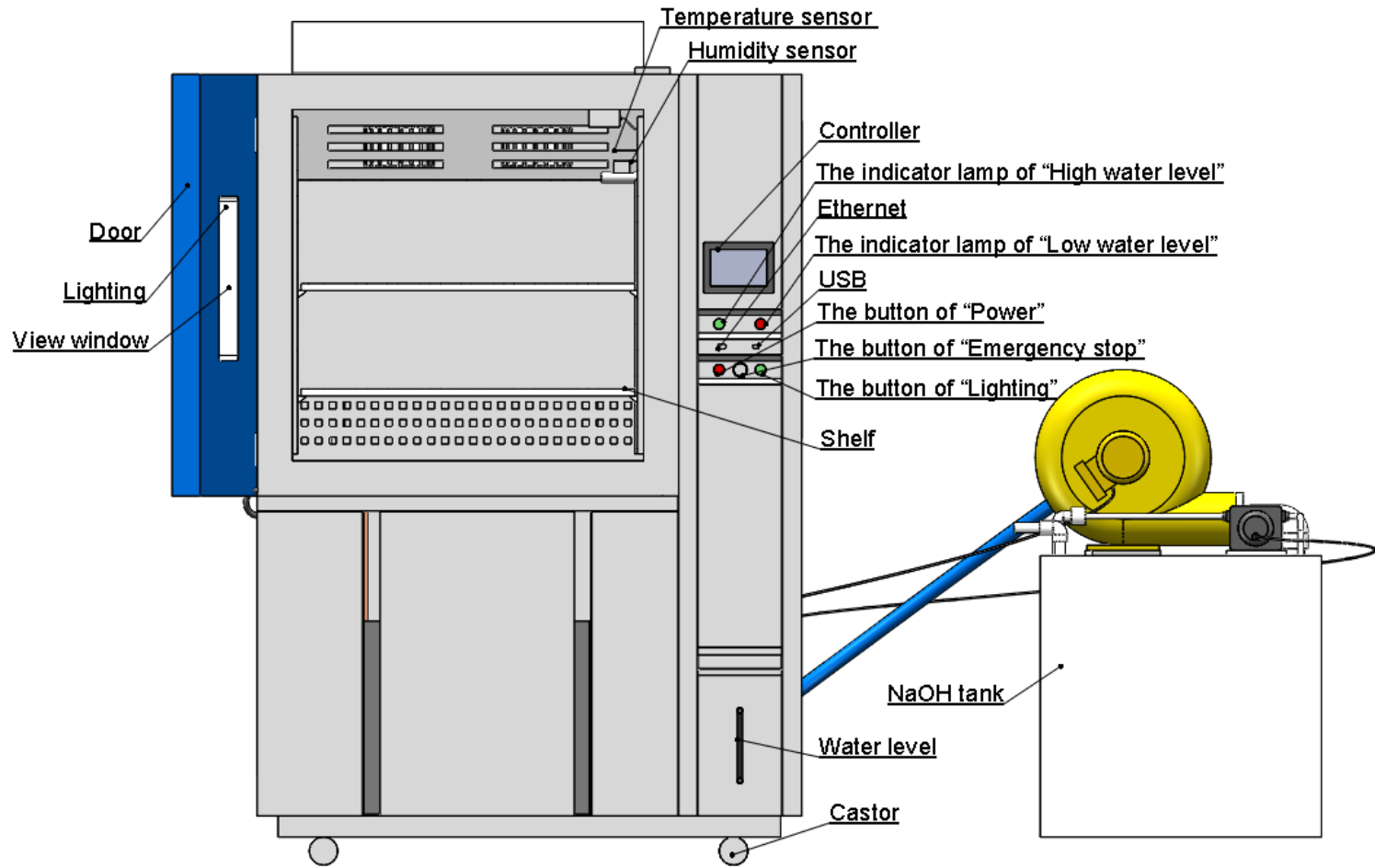
Standard

ISO 22479 method B

Table of Contents

1.Diagram	3
2.Test Standard.....	4
3.Technical Parameters	5
3.1 Technical Table	5
3.2 Construction	6
3.2.1 Workroom	6
3.2.2 Viewing Window	6
3.2.3 Controller	6
3.2.4 Electromagnetic Lock	6
3.2.5 Castor	7
3.2.6 Insulation	7
3.2.7 External Materials.....	7
3.2.8 Exhaust Device	7
3.3 Core Function.....	7
3.3.1 Cooling System	7
3.3.2 Humidity System	7
3.3.3 Air Circulation	8
3.3.4 Temperature and Humidity Sensor	8
3.3.5 Gas Sensor	8
3.3.6 Protection System	8
4.Calibration	8
5.Packing	9
6.Shipping	9
7.Installation	9
9.Warranty & Service	10

1. Diagram



2. Test Standard

Standard: ISO22479

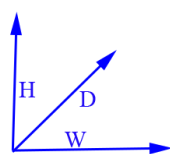
Corrosion of metals and alloys Sulfur dioxide test in a humid atmosphere (fixed gas method)

Table 2 — Test conditions of Method B

Conditions	Sulfur dioxide	Standard atmosphere
Time of exposure	8 h	16 h
One test cycle	24 h	
Temperature	(40 ± 3) °C	(23 ± 5) °C
Relative humidity	Approximately 100 %	Less than 75 %
Volume of sulfur dioxide	<u>0,2 l</u> , 1,0 l or 2,0 l [at (300 ± 10) l of capacity]	—
Quantity of water	(2,0 ± 0,2) l [at (300 ± 10) l of capacity]	
<p>NOTE 1 Theoretical concentrations of sulfur dioxide at the beginning of each test cycle are 0,067 %, 0,33 % and 0,67 %, corresponding to 0,2 l, 1,0 l and 2,0 l of sulfur dioxide gas, respectively. However, much of the sulfur dioxide is quickly dissolved into the water at the bottom of the test cabinet. Thus, the effective real sulfur dioxide concentration in the gas cabinet is much lower than the theoretical concentration (see Figure C.1).</p> <p>NOTE 2 The ± tolerances given for the temperature are allowable fluctuations, which are defined as the positive and negative deviation from the setting of the sensor at the operational control set point during equilibrium conditions. This does not mean that the set value can vary by plus/minus the amount indicated from the given value.</p>		

3. Technical Parameters

3.1 Technical Table



Model	SO-100	SO-225	SO-500	SO-800	SO-1000
Internal Dimensions (mm)	400*500*500	500*600*750	700*800*900	800*1000*1000	1000*1000*1000
Overall Dimensions (mm)	860*1050*1620	960*1150*1860	1180*1350*2010	1280*1550*2110	1500*1550*2110
Interior Volume (L)	100	225	500	800	1000
Parameter	Temperature Range	15 °C ~ 80 °C			
	Temperature Fluctuation	± 0.5 °C			
	Temperature Deviation	± 2.0 °C			
	Humidity Range	30% ~ 100% RH			
	Humidity Deviation	±1% RH			
	SO2 Concentration	0.067% (0.15Liters)			
	Air Change Rate	3~5 /h			
Structure	Cooling	Cooling system	Mechanical compression refrigeration system		
		Refrigerating unit	French TECUMSEH compressor		
		Refrigerant	R404A		
	Heating Element	Nichrome heater			
	Humidity	Humidifier	External isolation, stainless steel surface evaporation humidifier		
		Water Supply System	Water purification system		
			Automatic water supply		
	Dehumidification	Evaporator			
	Controller	Programmable color LCD touch screen controller			
		Ethernet connection, PC Link			
	Sensor	Temperature Sensor	PT100Ω / MV A-class		
		Humidity Sensor	Dry and wet bulb sensor		
		Gas Sensor	SO ₂ gas sensor		
	Build-in Water Tank(mm)	270*300*400			
	View Window Size (mm)	355*435			
Air Circulation	Centrifugal wind fan				
Door Lock	Electromagnetic lock				
Gas Exhaust Device	SO ₂ Exhaust Unit				
Safety Device	Humidifier Dry-combustion Protection; Over-temperature Protection; Over-current Protection; Water Shortage Protection; Earth leakage Protection				
Interior material	SUS304 stainless steel +Glass fiber reinforced plastics				
Exterior material	Steel Plate with protective coating				
Power Supply	380V 60Hz 3 phase				
Maximum Noise	65 dBA				
Standard	ISO 22479 method B				
Environmental Conditional	5°C~+35 °C ≤85% RH				

SO2 cylinder will be prepared by the user;

3.2 Construction

3.2.1 Workroom

- The inner material is a double-layer material made of SUS304 stainless steel to ensure the robustness, and the outer layer is affixed with Fiber Reinforce Plastic for corrosion protection.
- Standard configuration of two sample holders made of FRP.
- Install 1 pc Temp sensor, 1 pc Humid sensor, 1 pc SO2 sensor



3.2.2 Viewing Window

- Double layer insulating glass 8cm thick, made of tempered glass;
- The conductive film is located on the interior glass to prevent window frosting, built-in LED light for the work room lighting ;can clearly observe samples;
- The light control button is located below the controller;



3.2.3 Controller

- PID programmable color touch screen controller;
- Ethernet for PC link, USB;
- Can edit 100 programs 20 segment;
- The set system language is English for standard;
- Control and display Temperature, Humidity, Ozone Concentration, Elongation, Sample Rotation Speed, Test Time;



3.2.4 Electromagnetic Lock

- Door lock is an electromagnetic lock, which will generate a strong suction force and tightly attract the iron plate to lock the door;
- Unlocking is operated on the controller for safety and prevent malfunction;



3.2.5 Castor

- Install 4 castors for ease moving, and with brakes function;
- Caster height adjustable;



3.2.6 Insulation

- 10cm thick polyurethane foam and insulation cotton;
- Better insulation performance, degradation resistance, environmental protection, noise reduction.

3.2.7 External Materials

- A3 steel plate with galvanized coating;
- Electrostatic treatment; High and low temperature corrosion resistance; High hardness, anti - impact;
- Very high safety factor;
- Color can be customized.

3.2.8 Exhaust Device

- The exhaust device is equipped with an NAOH solution tank to dilutes gas to make workplace clean and safe.
- Exhaust the gas after the test, automatic controlled on controller.

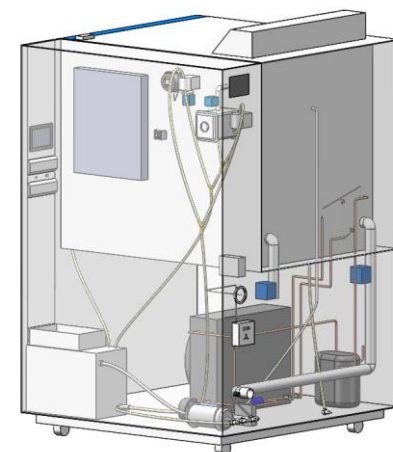


3.3 Core Function

3.3.1 Cooling System

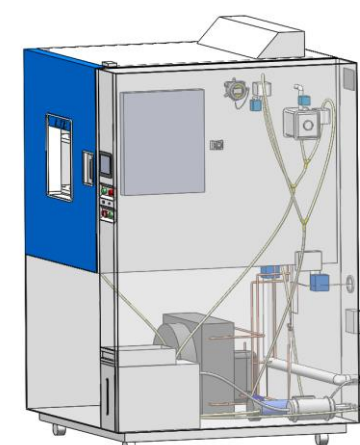
After the liquid refrigerant absorbs the heat of the cooled object in the evaporator, it is vaporized into low-temperature and low-pressure steam, sucked by the compressor, compressed into high-pressure high-temperature steam, discharged into the condenser, and radiated to the cooling medium in the condenser, condensed into a high-pressure liquid, throttling through a throttle valve into a low-pressure low-temperature refrigerant, and again entering the evaporator to absorb heat and vaporize, to achieve the purpose of cycle refrigeration.

In this way, the refrigerant completes a refrigeration cycle through four basic processes of evaporation, compression, condensation, and throttling in the system.



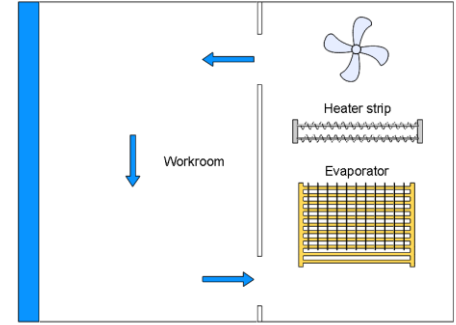
3.3.2 Humidity System

When the current humidity is less than the set point humidity, the equipment is automatically humidified. The humidification of is automatically heated by the humidification tank. When the water is heated, steam is generated, and then the steam is injected into the working room to increase the test humidity.



3.3.3 Air Circulation

The centrifugal fan is installed at the rear of the chamber body, and the air is uniformly distributed through the air outlet. Air circulation adopts air outlet at top and air return at bottom, and the wind speed and pressure are in compliance with the test standard, and the temperature is stabilized at the moment of switching. The high-quality centrifugal fan is used to strongly supply air circulation, making the temperature distribution in the test area uniform.



3.3.4 Temperature and Humidity Sensor

PT-100 Class A sensor, real-time accurate detection and display of temperature changes at 0.001 degrees.

A wet gauze and a real-time temperature, converted by temperature difference, showing real-time relative humidity.



3.3.5 Gas Sensor

Gas concentration detection transmitter
High accuracy, easy to exchange

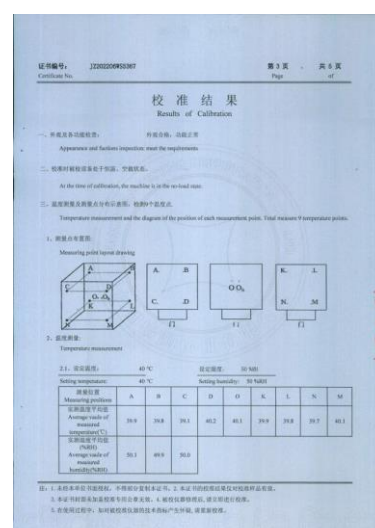
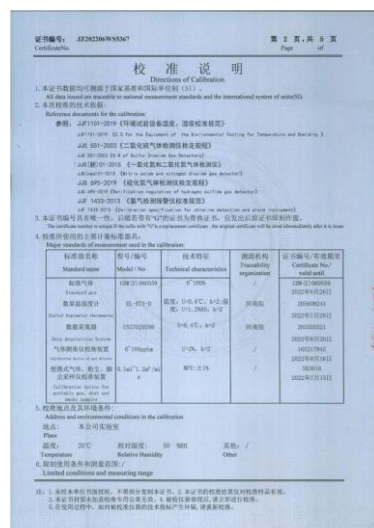


3.3.6 Protection System

- Over Temperature Protection
- Water Shortage Protection
- Over Current Protection
- Earth Leakage Protection
- Phase Sequence Protection
- Humidifier Dry Combustion Protection
- Refrigerant High Pressure Protection

4. Calibration

- Before delivery, LIB engineer will calibrate it, and issue "Calibration Report";
- Calibration Items
 - ✓ Workroom temperature
 - ✓ Workroom humidity
 - ✓ Workroom SO₂ gas concentration



5.Packing

- First, Seal chamber with waterproof plastic film. Protect chamber from seawater corrosion.
- Second, buffer foam is placed in the four corners of the chamber. It is used for fixing equipment to prevent shaking and damaging chamber during transportation.
- Plywood: standard wood export packaging.
- The wooden box is fixed by sheet metal to prevent damage during transportation.



Appendix

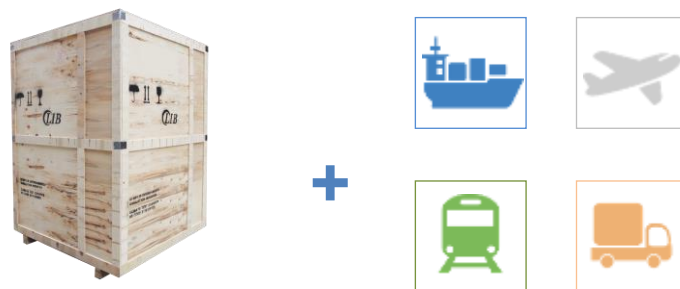
Documentation attached with the packing:

- ✓ 1 set of Chamber;
- ✓ Warranty Card;
- ✓ Certificate of Qualification;
- ✓ Calibration Report, issued by LIB (manufacturer);
- ✓ Operation Manual;
- ✓ Circuit diagram

6.Shipping

❖ Material: Export standard wooden box

Can be used for Sea, Air, Railway, Truck and Multi modal transport.



7.Installation

Before delivery, LIB team will finish all installation and commissioning works. When you receive, you can use it directly.

● Environment Conditions

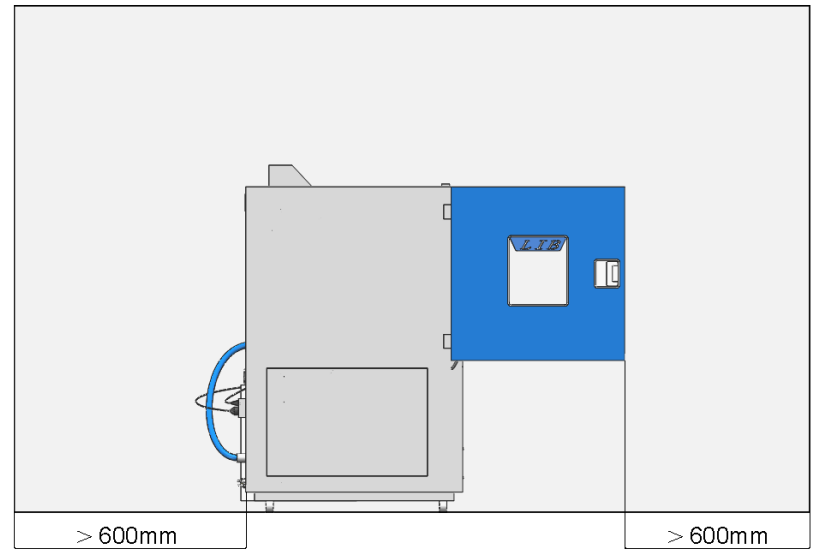
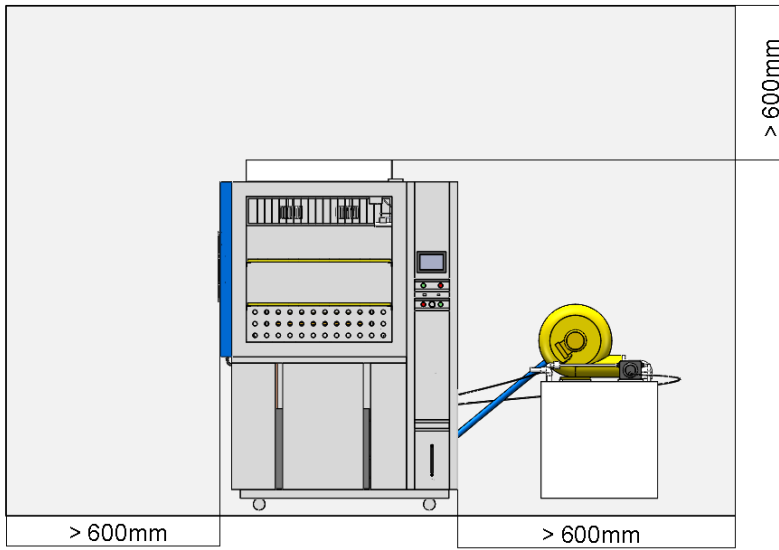
- ✓ Temperature: +5°C ~ +35°C
- ✓ Relative humidity: ≤85%;
- ✓ Pressure: 86 KPa—106 KPa

● Safety Instruction

- ✓ Prohibited to test explosive, inflammable and high corrosive substance
- ✓ Chemical exposure to the equipment is prohibited
- ✓ Equipment must be safety on the ground to avoid electrostatic induction

● Space Requirements

- ✓ Door: larger than width and height of the equipment, ensure the goods can into the room sucessfully
- ✓ Space Requirements
- ✓ Door: larger than width and height of the equipment, ensure the goods can into the room sucessfully
- ✓ Distance from the front:600mm;
- ✓ Distance from the back: 600mm;
- ✓ Distance from the left: 600mm;
- ✓ Distance from the right:600mm;
- ✓ Distance from the top:600mm



9. Warranty & Service

3 Years Warranty, Lifelong Follow-up Services

■ Warranty Condition

Our company will repair the product, if the product, the material of the parts, the design and manufacturing of the products raised hardware problems caused by product itself rather than human error within three years warranty period since the date of dispatching by the customer.

Our company repairs the products, but will collect the basic costs of the spare parts after the warranty period, but labor costs is free always.

■ How to Service

1. At first, our test chambers are produced based on 20 years product lifetime.

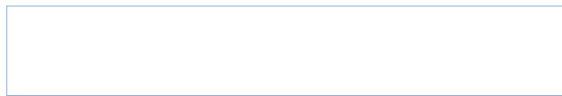
Normally once test chambers have problems, we judge the problems, and send spare parts to our customers, and teach them how to change new parts on by email or video, all spare parts and shipping cost (by DHL, TNT, and FedEx) paid by LIB.

2. If the customer needs our engineer on-site service, they only need pay the ticket accommodation to our Engineers, service is for free.

3. If products still can't use after our engineers repair, we will produce a new test chamber (same as the old one) to our customers with no charge.



PARTNER



CE
ROHS

CERTIFICATE OF CONFORMITY

Certificate No. : BKC-18060913C

Certificate of Conformity

Applicant : Xi'an LIB Environmental Simulation Industry
No.5 Zhangba First Street, Xi'an High-Tech Area, Shaanxi Province, P.R.China 710025

Manufacturer : Xi'an LIB Environmental Simulation Industry
No.5 Zhangba First Street, Xi'an High-Tech Area, Shaanxi Province, P.R.China 710025

Trademark : LIB

Product : Temperature Humidity Test Chamber

Model : TH-50
TH-50A, TH-50B, TH-50C, TH-50A, TH-50B, TH-50C, TH-100A, TH-100B, TH-100C, TH-225A, TH-225B, TH-225C, TH-225A, TH-225B, TH-225C, TH-400A, TH-400B, TH-400C, TH-800A, TH-800B, TH-800C, TH-1000A, TH-1000B, TH-1000C, T-50A, T-50B, T-50C, T-100A, T-100B, T-100C, T-225A, T-225B, T-225C, T-400A, T-400B, T-400C, T-800A, T-800B, T-800C, T-1000A, T-1000B, T-1000C

Test Standard : EN ISO 12100:2010
EN 60204-1:2006+A1:2009+AC:2010

The certificate of conformity is based on an evaluation of a sample of the above mentioned products. It does not imply an assessment of the whole production. It is possible to use CE marking to demonstrate the compliance with this MD Directive 2006/42/EC and LVD Directive 2014/35/EU. It is only valid in connection with the test report number: BKC-18060913S.

Shenzhen BKC Testing Co., Ltd.
6/F, Building 3, Zhouting Industrial Park, Nanwan Street, Longgang District, Shenzhen, Guangdong, China. Tel:4000-875-382 0755-32025341
E-mail: bkc@bkc-lab.com Certificate Search: <http://www.bkc-lab.com>

CERTIFICATE OF CONFORMITY

CERTIFICATE OF CONFORMITY

Certificate No. : BKC-18060914C

Certificate of Conformity

Applicant : Xi'an LIB Environmental Simulation Industry
No.5 Zhangba First Street, Xi'an High-Tech Area, Shaanxi Province, P.R.China 710025

Manufacturer : Xi'an LIB Environmental Simulation Industry
No.5 Zhangba First Street, Xi'an High-Tech Area, Shaanxi Province, P.R.China 710025

Trademark : LIB

Product : Temperature Humidity Test Chamber

Model : TH-50
TH-50A, TH-50B, TH-50C, TH-50A, TH-50B, TH-50C, TH-100A, TH-100B, TH-100C, TH-225A, TH-225B, TH-225C, TH-225A, TH-225B, TH-225C, TH-400A, TH-400B, TH-400C, TH-800A, TH-800B, TH-800C, TH-1000A, TH-1000B, TH-1000C, T-50A, T-50B, T-50C, T-100A, T-100B, T-100C, T-225A, T-225B, T-225C, T-400A, T-400B, T-400C, T-800A, T-800B, T-800C, T-1000A, T-1000B, T-1000C

Test Standard : IEC62321-1:2013

The EUT described above has been consolidated by us and found in compliance with the council RoHS directive 2011/65/EU. It is possible to use CE marking to demonstrate the compliance with this RoHS Directive. It is only valid in connection with the test report number: BKC-18060914R.

Shenzhen BKC Testing Co., Ltd.
6/F, Building 3, Zhouting Industrial Park, Nanwan Street, Longgang District, Shenzhen, Guangdong, China. Tel:4000-875-382 0755-32025341
E-mail: bkc@bkc-lab.com Certificate Search: <http://www.bkc-lab.com>

CERTIFICATE OF CONFORMITY