



□ **Temperature Humidity Test Chamber**



Model: TH-50A

🔥 **TEMPERATURE**

-20°C ~ +150°C;

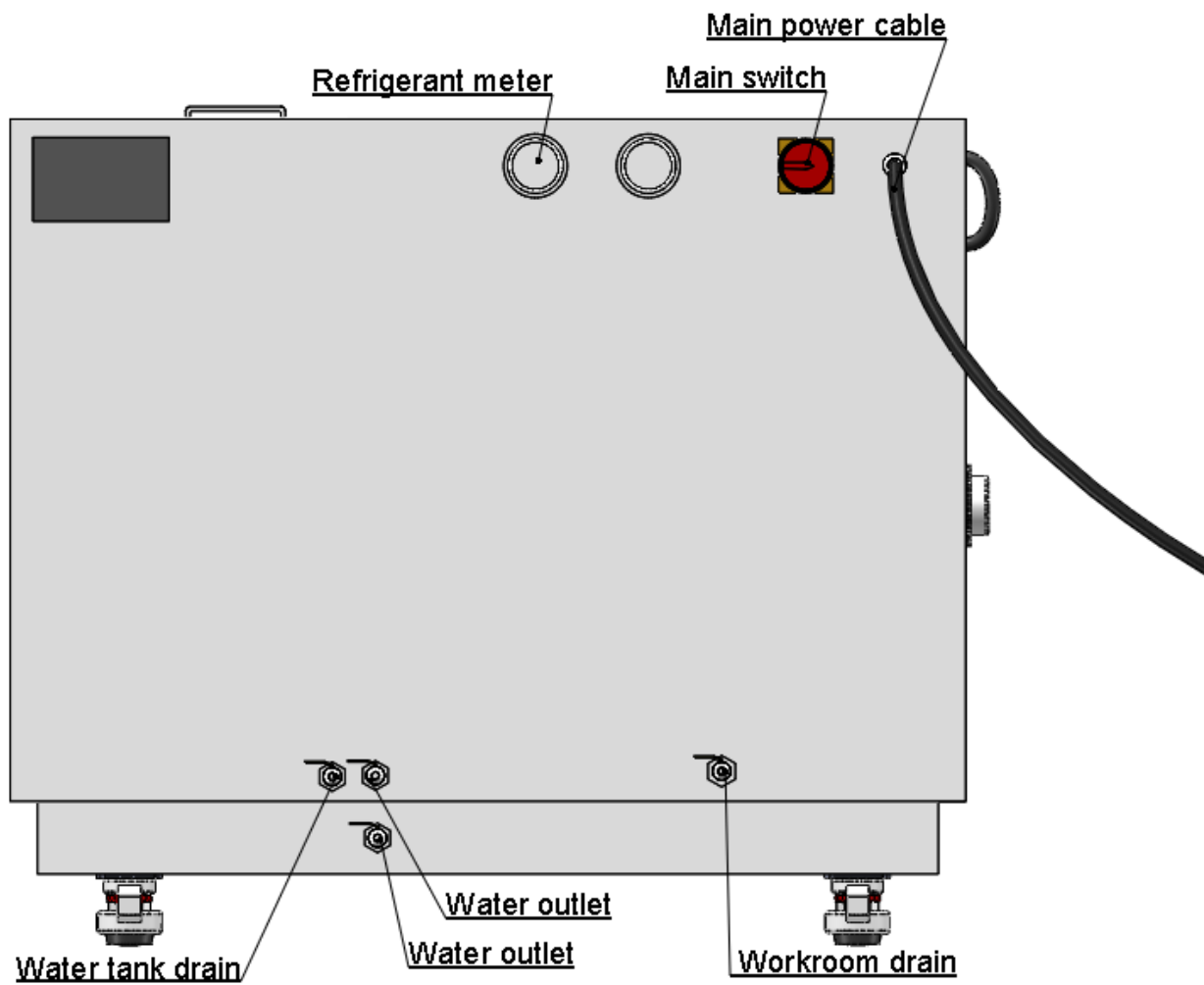
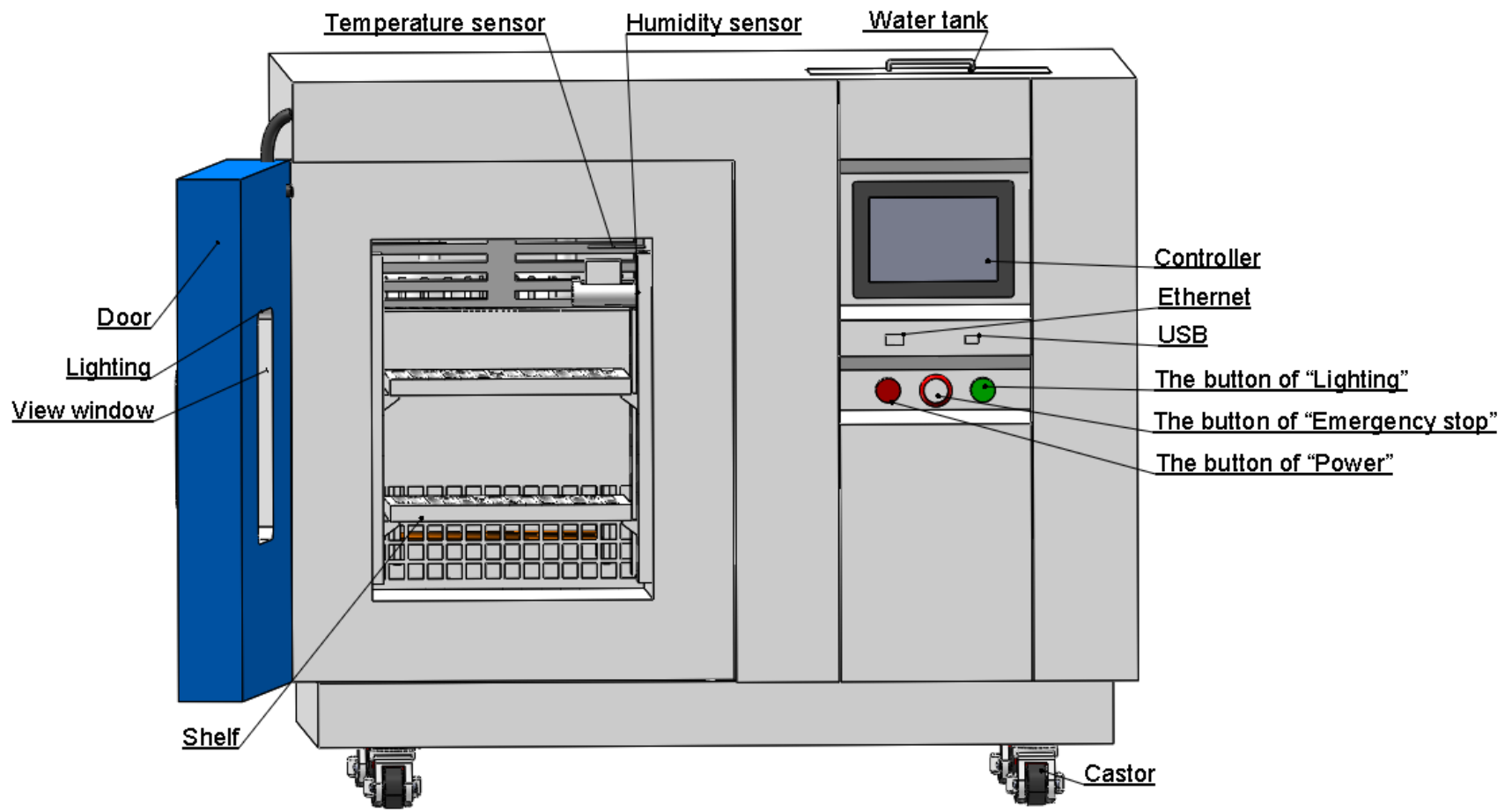
💧 **HUMIDITY**

20%~98%RH;

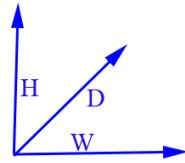
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1. Diagram



2. Technical Parameters



2.1 [Technical Parameter]

| Model | | TH-50 | TH-80 |
|---------------------------|--|--|--|
| Internal Dimension (mm) | | 320*350*450 D*W*H | 400*400*500 D*W*H |
| Overall Dimension (mm) | | 800*1050*950 D*W*H | 900*1210*1000D*W*H |
| Interior Volume | | 50L | 80L |
| Heat load | | 1000W | |
| Parameter | Temperature Range | A: -20°C ~ 150 °C B: -40°C ~ 150 °C C: -70°C ~ 150 °C | |
| | Temperature Fluctuation | ± 0.5 °C | |
| | Temperature Deviation | ± 2.0 °C | |
| | Humidity Range | 20% ~ 98% RH | |
| | Humidity Deviation | ± 2.5% RH | |
| | Cooling Rate | 1 °C / min | |
| | Heating Rate | 3 °C / min | |
| Structure | Cooling | Cooling system | Mechanical compression refrigeration system |
| | | Refrigerating unit | French TECUMSEH compressor |
| | | Refrigerant | R404A |
| | Heating Element | Nichrome heater | |
| | Controller | Programmable color LCD touch screen controller | |
| | | Ethernet connection, PC Link | |
| | Humidity | Humidifier | External isolation, stainless steel surface evaporation humidifier |
| | | Dehumidification | Evaporator |
| | Sensor | Temperature Sensor | PTR Platinum Resistance PT100Ω/MV A-class, accuracy 0.001°C |
| | | Humidity Sensor | Dry and wet bulb sensor |
| | Build-in Water Tank(mm) | 150*350*180 | |
| View Window Size(mm) | 120*150 | | |
| Air Circulation | Centrifugal wind fan | | |
| Safety Device | Humidifier Dry-combustion protection; Over-temperature Protection; Over-current Protection; Refrigerant High-pressure protection; Water Shortage Protection; Earth leakage Protection | | |
| Material | Exterior Material | Steel Plate with protective coating | |
| | Interior Material | SUS304 stainless steel | |
| | Thermal Insulation | Polyurethane foam and insulation cotton | |
| | Observation Window | Interior lighting, double-layer thermo stability silicone rubber sealing | |
| Standard Configuration | 1 Cable hole (Φ 50,) with plug; 2 shelves | | |
| Power Supply | 230V 50Hz, 1P | | |
| Maximum Noise | 65 dBA | | |
| Environmental Conditional | 5°C~+35 °C ≤85% RH | | |

2.2 【Construction】

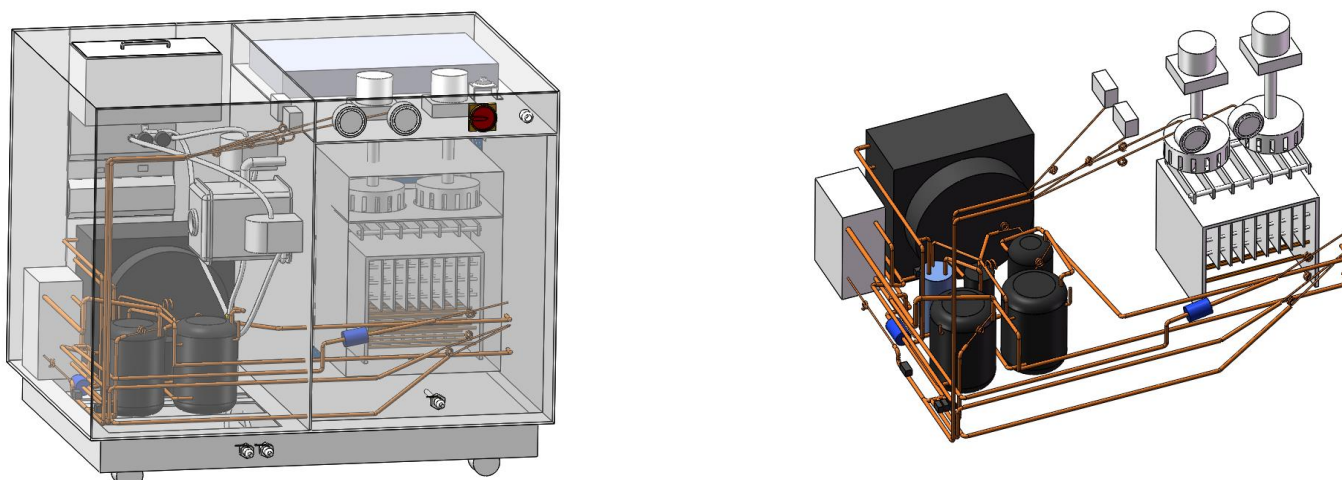
2.2.1. Test area

- The internal material is 304 stainless steel, mirror surface, rust-proof to high and low temperature and moisture corrosion; Nice ruggedness and long life.
- SUS304 stainless steel punching sample shelf 2pcs, to place your samples.
- Standard load of 25KGS for each layer of the sample shelf.
- The height of the shelf is adjustable and can be removed directly to facilitate the various sizes of samples. Conducive to the air circulation.
- 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.



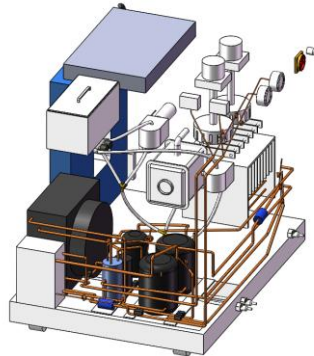
2.2.2 Cooling System

- Mechanical compression refrigeration system
- The refrigerating unit is a French Tecumseh compressor.
- Environment friendly refrigerant R449B.
- Principle: 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.



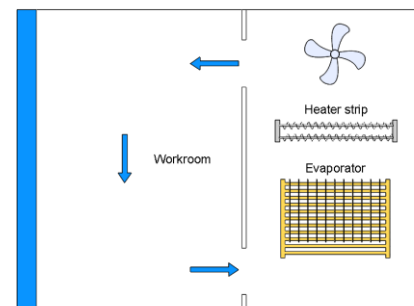
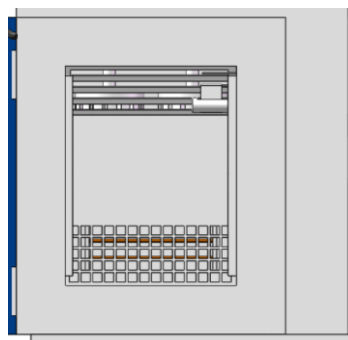
2.2.3 Humidification & Dehumidification System

- External isolation, stainless steel surface evaporation humidifier With water drainage valve at the backside of chamber
- Principle: When the current humidity is less than the set point humidity, the equipment is automatically humidified. The humidification 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.



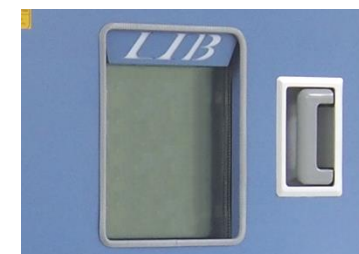
2.2.4 Air circulation

- Forced air circulation in testing room to ensure the temperature
- Uniformity. 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.



2.2.5 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 workroom lighting; can clearly observe samples.
- The light control button is located below the controller.



2.2.6 Cable Hole

- The standard test hole, located at the left side of the workroom, is provided with a sleeve inside to prevent moisture from entering the insulation layer. Equipped with flange.
- The standard inner hole diameter is 50mm. Soft silicone plug seal; Metal enclosure closed, beautiful designed.



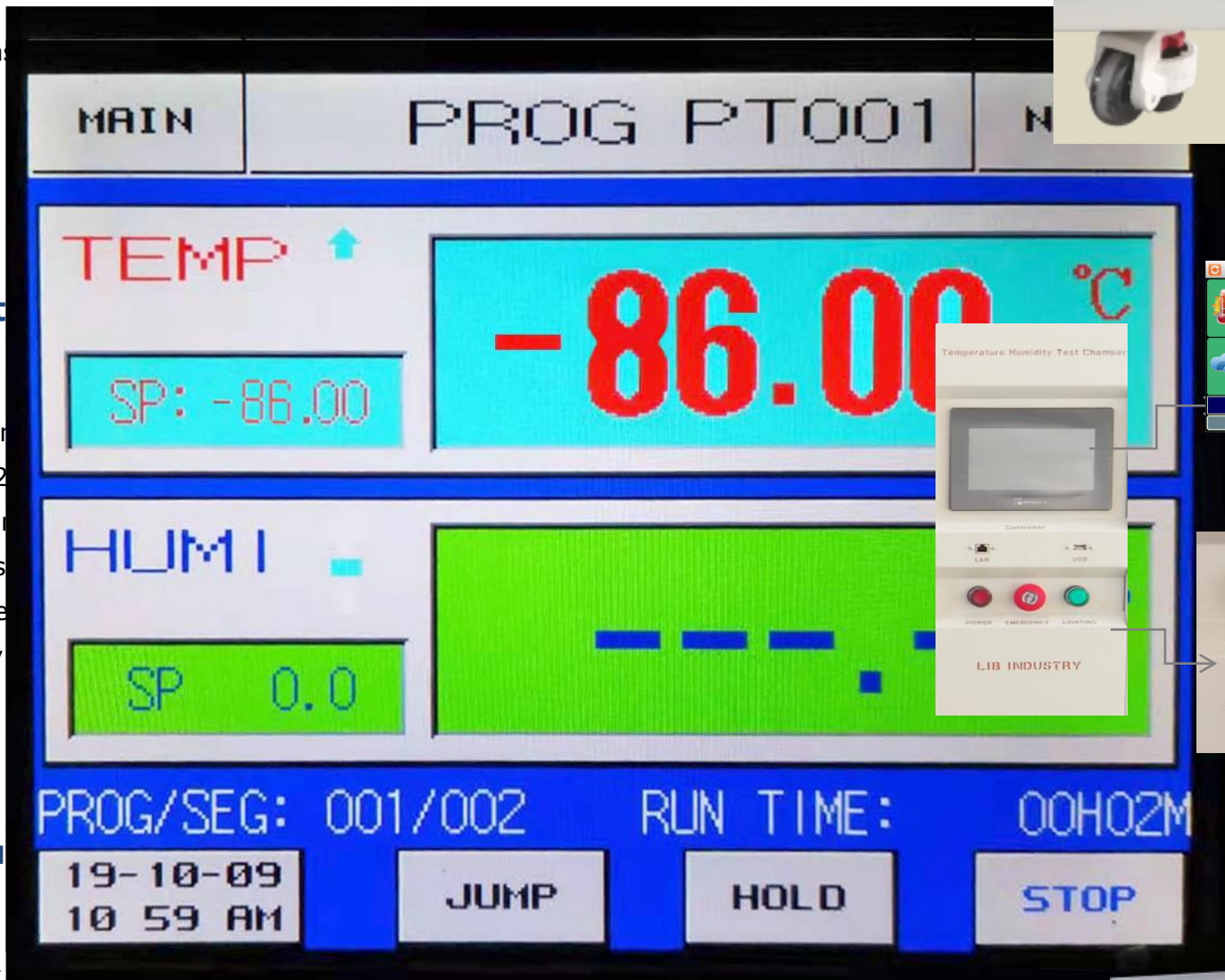
2.2.7 Castor

- Install 4 castors



2.2.8 Control Panel

- PID program
- Can edit 12
- LIB also can
- The set sys
- USB & Ethe
- Emergency



2.2.9 Insulation

- 10cm thick
- Better insulation performance, degradation resistance, environmental protection, noise reduction.



2.2.10 Protection System

- Humidifier Dry-combustion protection;
- Over-temperature Protection;
- Over-current Protection;
- Refrigerant High-pressure protection;
- Earth leakage Protection

3. Accessory

- 1). Wet wick for humidity sensor - 1 pc;
- 2). Relay - 1 pc;
- 3). Heating tube - 1 pc

4. Calibration

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

检测报告
INSPECTION REPORT

Xian LIB Environmental Simulation Industry
www.lib-industry.com
sales@lib-industry.com
Add: No.3 Zhongda First St., Xian High Tech Area,
Shaanxi Province 710085

签发日期 DATE OF ISSUE: 2022.10.26

产品名称 PRODUCT NAME: Temperature Humidity Test Chamber
产品型号 PRODUCT MODEL: TH-50A
出厂编号 SERIAL NUMBER: LP002108TH021
出厂日期 DATE OF PRODUCTION: 2021-10

检测环境 ENVIRONMENT: 15°C, 65%RH
检测仪器 REFERENCE EQUIPMENTS: Temperature and humidity four detector
检测标准 QUALITY SYSTEM / Product: parameters of TH-50A

Temperature Humidity Test Chamber TH-50A is qualified in accordance with specifications.

| 检测项目 | 设定值 | 显示值及平均值 | 测试结果 | 技术要求 | 结论 |
|-------------------------------|-------|-----------------|--|--|-----------------|
| 温度 Workroom Temperature | -20°C | -20.18°C | 温度均匀性 ±0.48°C Temp uniformity ±0.48°C | 温度均匀性 ±0.2°C Temp uniformity ±0.2°C | 合格 Qualified |
| | | -20.53°C | | | |
| | | -20.81°C | | | |
| | | -20.81°C | | | |
| | | -20.81°C | | | |
| | 40°C | -20.71°C | 温度均匀性 ±0.62°C Temp uniformity ±0.62°C | 合格 Qualified | |
| | | -20.81°C | | | |
| | | -20.81°C | | | |
| | | -20.81°C | | | |
| | | -20.81°C | | | |
| 湿度 Workroom Humidity | 40°C | 40.02%, 89.10RH | 湿度偏差 ±0.10RH Humid Deviation ±0.10RH | 湿度偏差 ±0.10RH Humidity Deviation ±0.10RH | 合格 Qualified |
| | 80°C | 80.01%, 88.00RH | 湿度偏差 ±0.10RH Humid Deviation ±0.10RH | 湿度偏差 ±0.10RH Humidity Deviation ±0.10RH | 合格 Qualified |
| | 75°C | 75.02%, 20.00RH | 湿度偏差 ±0.10RH Humid Deviation ±0.10RH | 湿度偏差 ±0.10RH Humidity Deviation ±0.10RH | 合格 Qualified |
| | 20°C | 20.00%, 20.00RH | 湿度偏差 ±0.10RH Humid Deviation ±0.10RH | 湿度偏差 ±0.10RH Humidity Deviation ±0.10RH | 合格 Qualified |
| 安全保护 Safety Protection | | | 有 Yes | 合格 Qualified | 合格 Qualified |
| 外观质量 Product Appearance | | | 良好 Good | 合格 Qualified | 合格 Qualified |



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.



Package Size and Weight

- ✓ 1280*1010*1170 mm
- ✓ 265KG

Appendix

Documentation attached with the packing:

- ① 1 set of TH chamber;
- ② Warranty Card;
- ③ Certificate of Qualification;
- ④ Calibration Report, issued by LIB (manufacturer);
- ⑤ Operation Manual;
- ⑥ Circuit diagram

6.Shipping

- ❖ **Material:** Export standard wooden box

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



Temperature Humidity Test Chamber TH-50A

Port of departure: Shanghai, China

7.Installation

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

- **Environment Conditions**

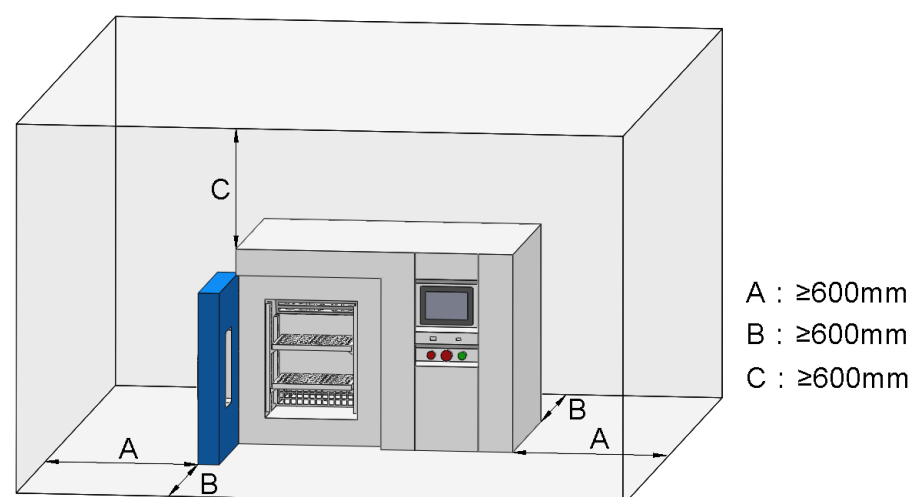
- ❖ Temperature: +5°C ~ +35°C
- ❖ Relative humidity: ≤85%;
- ❖ Pressure: 86 KPa—106 KPa

- **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
- ❖ Sufficient space for ventilation ambient temperature of the installation site must not change sharply
- ❖ Where there is no direct sunlight;
- ❖ Keep away from combustibles, explosives and high temperature heat generation;
- ❖ A place with less dust;
- ❖ As close to the power supply as possible.

- **Space Requirements**

- ❖ Door: larger than width and height of the equipment, ensure the goods can into the room successfully
- ❖ 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



8. 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.

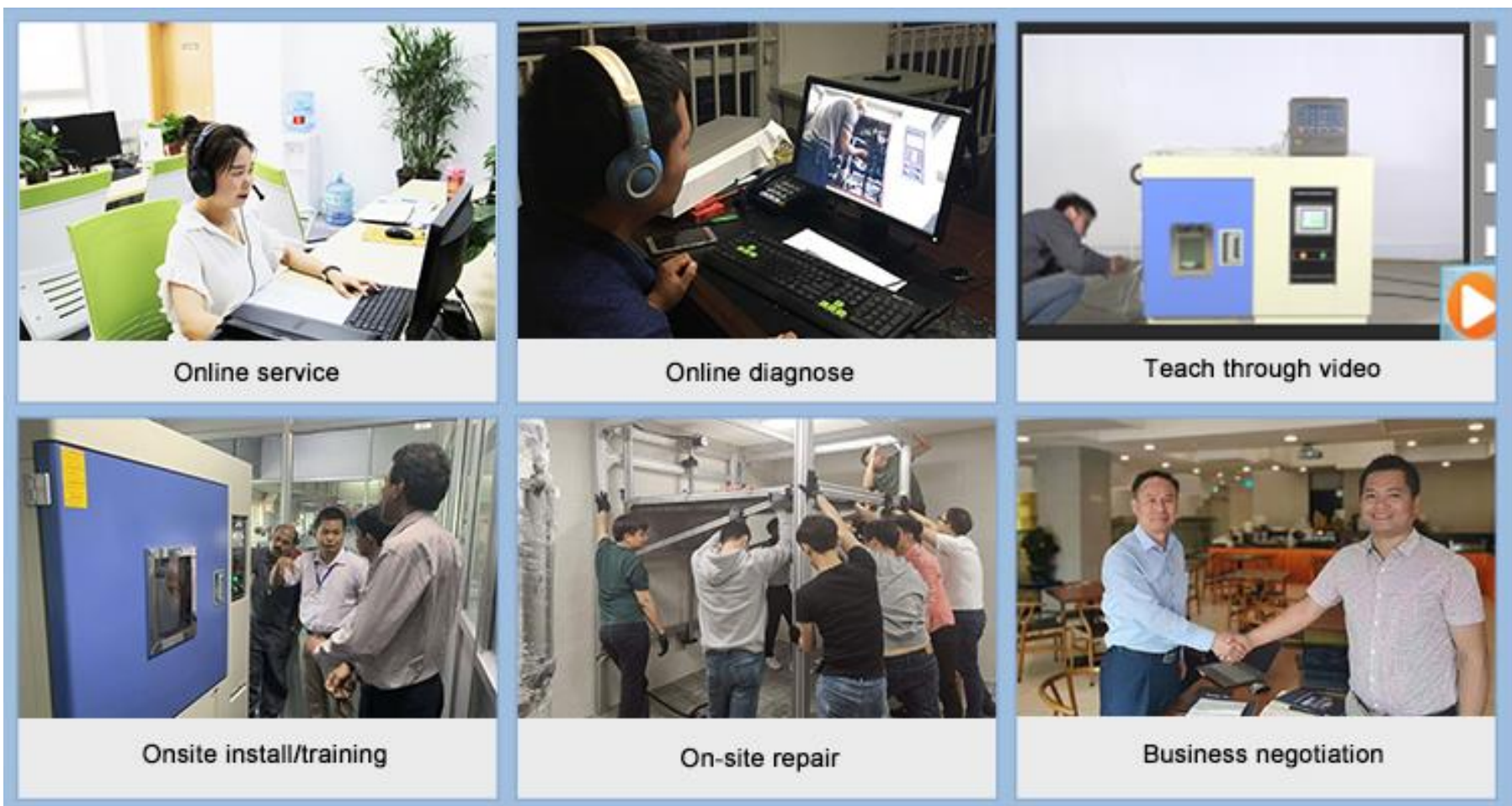
■ How to Service

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.



PROVIDING TEST SOLUTION, PROVIDING TEST EQUIPMENT

Xi'an LIB Environmental Simulation Industry is a lead provider of environmental test chamber in China, with its own brand (LIB) design, production, sales and service since 2009. We continually update technology and develop new products for customer's needs.

Our main products included temperature and climate test chambers, corrosion chambers, weathering testers, IP dust and rain chambers, ozone test chamber, noxious gas SO2 H2S chamber, walk-in chambers. We provide test chamber, we provide test solution. Standard and customized products to meet different customer needs.

By 2018, global market has spread to 53 countries to USA, Canada, Mexico, Brazil, Peru, Russia, German, UK, France, Finland, Netherlands, Poland, Switzerland, Thailand, Philippines, Singapore, Malaysia, Australian, South Africa etc. and the market continues to expand.

At present 7 Tier-one agents around the world provide LIB products, installation and maintenance service for customers. Make things simple and convenient.

Contact Us

Website: www.lib-industry.com
 Add: No.5 Zhangba First St, Xian High-Tech Area, Shaanxi Province P.R.China 710065
 Tel: +86 29 68918976
 WhatsApp: +86 13659285944
 Skype: belle_LIB
 Email: belle@lib-industry.com

Sales Team: sales@lib-industry.com

After Sales Team: asd@lib-industry.com

Shipping Team: vip@lib-industry.com

Finance Team: account@lib-industry.com

LIB

LIB became a registered trademark of our company since 2017 year.

PARTNER



CE ROHS

