

# TEMPERATURE CHAMBERS & HUMIDITY CHAMBERS

Xi An LIB Environmental Simulation Industry

## PRODUCT AND SERVICE

[www.lib-industry.com](http://www.lib-industry.com)

Manufacturer and Supplier of Environmental Test Chamber

## Company

Xi An LIB Environmental Simulation Industry manufactures and sells environmental test chambers since 2009, including design, manufacturing, as well as sales and service around the world. All LIB products have passed CE and ROHS certification, as well as other national certifications.

We deeply realized that quality is the first and most. We control quality from every aspect of raw material, production and inspection. After test chamber completed, we test its performance, inspect its functionality, go commissioning, work on calibration, and issue report for every steps, to guarantee the quality. We also pay more attention to delivery and shipment. We guarantee delivery on time, and have the obligation to advance delivery.

LIB Industry concentrates on providing the Turn-key solution for environmental testing, that research, design, producing, commissioning, delivery, install and training, provide the whole products and service according to customer's requirements..

Regarding sales, LIB direct sales and setting up local agents around the world allow customers to purchase LIB test chambers more conveniently. By 2020, our market has spread to 56 countries around the world, and the market continues to expand.

Regarding service, LIB Industry provides 3 years warranty service. In order to ensure that the customer has a timely and effective solution to the after-sales, LIB's after-sales service center and local service center work together to serve customers around the world.

We have elite team to service our customers. We provide professional solutions, right equipment, and timely reply to our worldwide customers. When we get questions and requests, we reply within 1-3 hours to our clients.



# Temperature Humidity Test Chamber

Supply a large range of standard and custom temperature and humidity test chambers to suit many types of environmental test conditions. Our climate and humidity test chambers are available in a variety of sizes and configurations, ranging in size from 50 Liters to 3000 Liters, including benchtops, floor type and walk-in. Floor types have more than 26 models to achieve various tests.

To perform temperature and humidity test, cold resistance test, thermal cycle test, ultra low temperature test, high temperature test, storage condition, and calibration function.

## Full Climate

Can achieve low temperature, high temperature, low humidity and high humidity environmental testing.

## Network communication

The source code of the LIB control system can be opened to customers, which can match the operating software or connect to the lab WEB system.

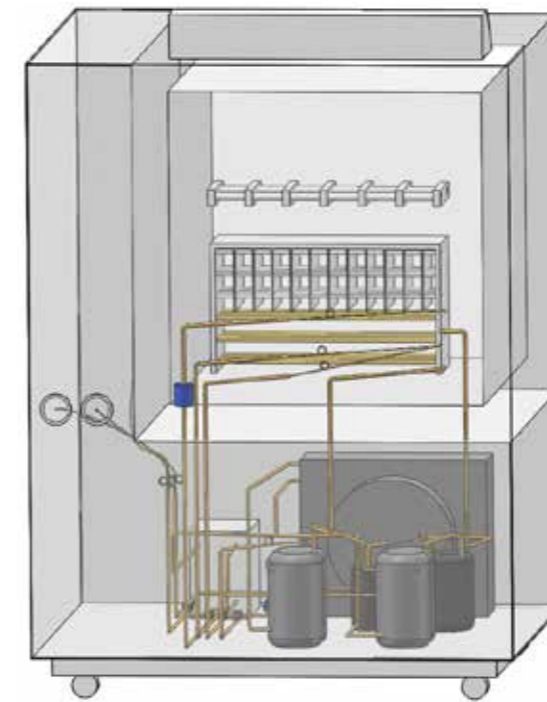


## Multi-language controller display

Multiple languages can be selected, English, Chinese, Russian, Korean, German, French, Polish, Spanish, Turkish, Romanian.

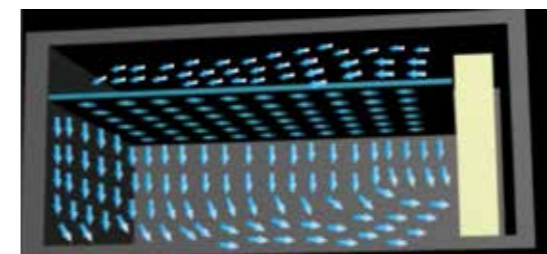
## Steady Cooling

The compressor of the LIB test chamber can be turned on at 150°C. We specially designed a refrigeration bypass to prevent the compressor damage caused by the excessively high refrigerant temperature in the initial stage of cooling, which greatly improves the stability of the cooling.



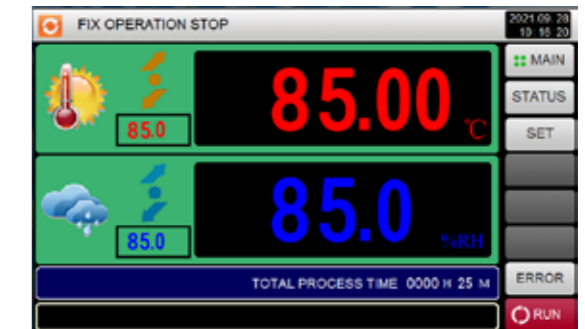
## Air Circulation

Circulating air enters the air from one side of the workroom, and air exits from the other side. The air circulates evenly, so that the temperature and humidity environment in the working room is evenly distributed.



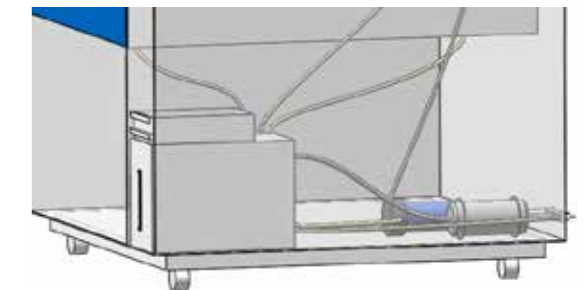
## PID Control

The main unit PID controller is to command, operate, detect and redistribute the various components of the equipment to high speed processing.



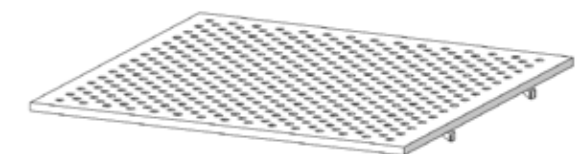
## Save Water

The automatic water inlet system has realized water circulation and water resources saving, and also realized automated testing.



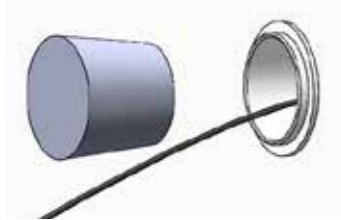
## Sample Shelf

The height of the shelf is adjustable and can be removed directly to facilitate the various sizes of test samples.



### Cable Hole

A standard test hole, located at the one side of the work room, is provided with a sleeve inside to prevent moisture from entering the insulation layer.



### A Variety of Models to Choose

Type: Benchtop, Floor Stand & Walk In. Size available 50L/80L/100L/225L/500L/1000L/1500L/2000L and more.

### Standard and Custom

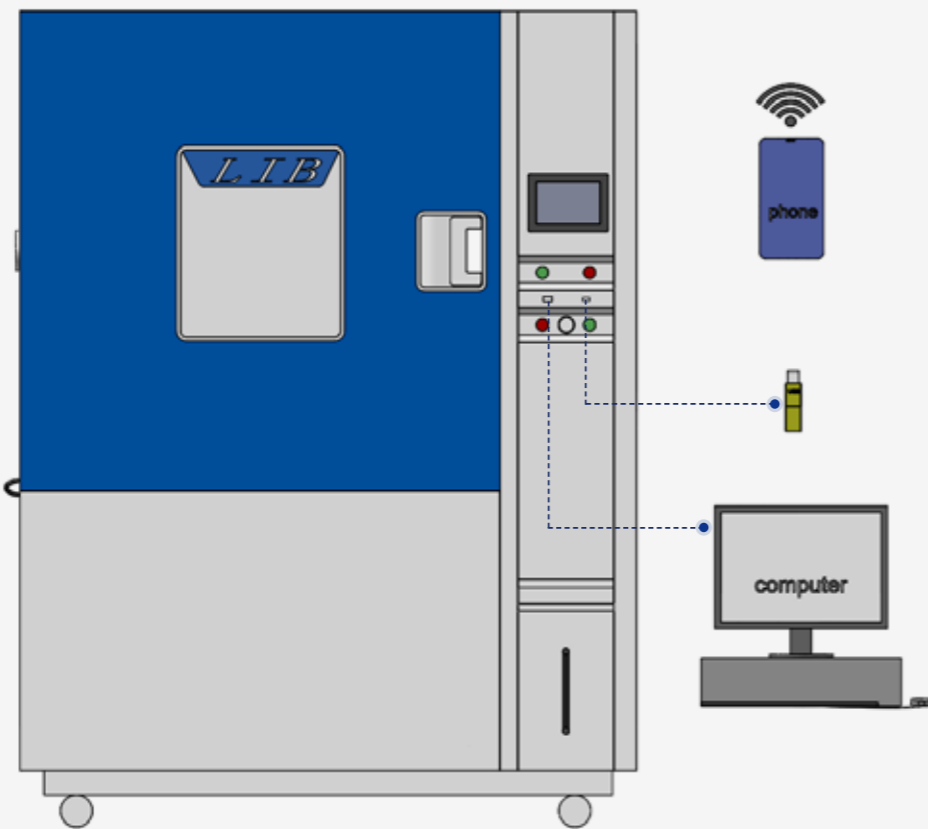
In addition to standard models, there are also customized chambers according to special requirements.

### Remote Communication

Standard network port and USB interface are used for computer and smartphone remote control. The test data exported via USB flash drive can be download (CSV and excel format).

### Viewing Window

Double layer insulating glass 8cm thickness, 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.



### Specification

Model	TH-100	TH-225	TH-500	TH-800	TH-1000
Internal Dimension (mm)	400*500*500	500*600*750	700*800*900	800*1000*1000	1000*1000*1000
Overall Dimension (mm)	900*1050*1620	1000*1140*1870	1200*1340*2020	1300*1540*2120	1500*1540*2140
Interior Volume	100L	225L	500L	800L	1000L
Heat load	1000W				
Temperature Range	A : -20℃ ~ +150 ℃ B : -40℃ ~ +150 ℃ C : -70℃ ~ +150 ℃				
Temperature Fluctuation	± 0.5 ℃				
Temperature Deviation	± 2.0 ℃				
Humidity Range	20% ~ 98% RH				
Humidity Deviation	± 2.5% RH				
Cooling Rate	1 ℃ / min				
Heating Rate	3 ℃ / min				
Cooling system	Mechanical compression refrigeration system				
Refrigerating unit	French TECUMSEH compressor				
Heating Element	Nichrome heater				
Controller	Programmable color LCD touch screen controller,Ethernet connection, PC Link				
Water supply system	Automatic water supply,Water purification system				
Humidifier	External isolation, stainless steel surface evaporation humidifier				
Temperature Sensor	PTR Platinum Resistance PT100Ω/MV A-class				
Humidity Sensor	Dry and wet bulb sensor				
Safety Device	Humidifier dry-combustion protection; over-temperature protection; over-current protection; Refrigerant high-pressure protection; Water shortage protection; Earth leakage protection				
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	380V 50Hz				
Maximum Noise	65 dBA				

## Benchtop Environmental Test Chamber

Benchtop Temperature humidity Test Chambers are Small, bench-top test chamber for simulating temperature and humidity environments. Included only temperature, temperature and humidity test chambers. Widely used in electronics, automotive, manufacturing, research and laboratories. Its very good advantages are small, desktop, small footprint, portable, stable performance and Full function. A Benchtop Environmental Chamber offers flexibility, uniformity, and control accuracy.



### Small and Affordable

The benchtop chamber is specially designed to meet the customer's small space and small test specimens, and has a more competitive price.

### Full functioning

Can perform precise testing of temperature only, temperature and humidity.

### Quik ship

Popular models are in stock and can be shipped quickly in 3 days

### EMC Test

The calibration test chamber is EMC tested and will not cause electromagnetic interference to the tested electronic products.

## Specification

Model	TH-50	TH-80
Internal Dimension (mm)	320*350*450	400*400*500
Overall Dimension (mm)	820*1160*950	900*1210*1000
Interior Volume	50L	80L
Heat load	1000W	
Temperature Range	A : -20℃ ~ +150 ℃ B : -40℃ ~ +150 ℃ C: -70℃ ~ +150 ℃	
Temperature Fluctuation	± 0.5 ℃	
Temperature Deviation	± 2.0 ℃	
Humidity Range	20% ~ 98% RH	
Humidity Deviation	± 2.5% RH	
Cooling Rate	1 ℃ / min	
Heating Rate	3 ℃ / min	
Cooling system	Mechanical compression refrigeration system	
Refrigerating unit	French TECUMSEH compressor	
Heating Element	Nichrome heater	
Controller	Programmable color LCD touch screen controller, Ethernet connection, PC Link	
Humidifier	External isolation, stainless steel surface evaporation humidifier	
Temperature Sensor	PTR Platinum Resistance PT100Ω/MV A-class	
Humidity Sensor	Dry and wet bulb sensor	
Safety Device	Humidifier Dry-combustion protection; Over-temperature Protection; Over-current Protection; Refrigerant High-pressure protection; Water Shortage Protection; Earth leakage Protection	
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	220V 50Hz	
Maximum Noise	65 dBA	

## Fast Change Rate Thermal Cycle Chamber



The rapid rate thermal cycle chamber is designed for testing specimens under the rapid temperature change. LIB TR models meet the ESS (Environment Stress Screen) test. The temperature ramp rate is controllable at 5 °C / 10 °C / 15 °C per minute.



### Energy saving

When the temperature needs to be stabilized again, the advanced PID control can effectively control the output value of the constant phase and the recovery phase.

### Specification

Model	TR5-100	TR5-225	TR5-500	TR5-800	TR5-1000
Internal Dimension (mm)	400*500*500	500*600*750	700*800*900	800*1000*1000	1000*1000*1000
Overall Dimension (mm)	900*1050*1620	1000*1140*1870	1200*1340*2020	1300*1540*2120	1500*1540*2140
Interior Volume	100L	225L	500L	800L	1000L
Heat load	1000W				
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				
Cooling Rate	5 °C / min				
Heating Rate	5 °C / min				
Cooling system	Mechanical compression refrigeration system				
Refrigerating unit	French TECUMSEH compressor				
Heating Element	Nichrome heater				
Controller	Programmable color LCD touch screen controller, Ethernet connection, PC Link				
Temperature Sensor	PTR Platinum Resistance PT100Ω/MV A-class				
Air Circulation	Centrifugal wind fan				
Safety Device	Over-temperature Protection; Over-current Protection; Refrigerant High-Pressure Protection; Earth leakage Protection				
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	380V 50Hz				
Maximum Noise	65 dBA				

## Thermal Shock Test Chamber

LIB 2-zone hot cold thermal shock test chamber is available in small capacity and large capacity to meet different testing requirements. The specimen automatic transferred from cold chamber to hot chamber by basket. The basket slides vertically and smoothly through rails, to make the specimen is exposed to the two chambers.

Thermal shock test chamber has upgraded to touch-screen controller with Ethernet, you are easy to operate over network.

### Quick Temperature Recovery

Thermal shock chamber has preheat room and pre-cool room, which achieves temperature recovery time within 5 minutes.

### Elevator Transfer System

Pneumatically lift the basket, the moving time is within 3 seconds. The basket is equipped with a lifting track to ensure the stability during moving.

### Drain Water Inside Of Workroom

Condensation will occur during high and low temperature impact testing, and the condensed water generated in the workroom will be discharged in time, so as not to freeze and affect the test.



## Specification

Model	TS-162	TS-340	TS-500	TS-1000
Internal Dimensions (mm)	300*300*250	450*450*360	650*650*500	850*850*700
Overall Dimension (mm)	1560*870*1545	1710*1020*1845	1910*1220*2265	2110*1420*2665
Interior Volume (mm)	22L	72L	211L	505L
Loading Capacity	20kg	30kg	50kg	60kg
Pre-heat Room	Upper limit Temperature	+220°C		
	Heating Time	Ambient ~ + 200°C , within 30 minutes		
Pre-cool Room	Lower limit Temperature	-75°C		
	Cooling Time	Ambient ~ -70°C , within 30 minutes		
Test Room	High Temperature Exposure Range	Ambient +20 ~ +200°C		
	Low Temperature Exposure Range	-65 ~ -5°C		
Temperature Fluctuation	≤ ±0.5°C			
Temperature Deviation	≤ ±3 °C			
Temperature Recovery Time	Within 5 minutes			
Cooling System	Mechanical compression refrigeration system			
Refrigerating Unit	French TECUMSEH compressor			
Heating Element	Nichrome heater			
Controller	Programmable color LCD touch screen controller Ethernet connection, PC Link			
Temperature Sensor	PTR Platinum Resistance PT100Ω/MV A-class			
Air Circulation	Centrifugal wind fan			
Safety Device	Over-temperature protection, Over-current protection; Refrigerant high-pressure protection; Earth leakage protection			
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			
Power Supply	380V 50Hz			
Maximum Noise	65 dBA			

## 3-Zone Thermal Shock Test Chamber

LIB 3TS series thermal shock test chamber, it is just one chamber for test room, it circulates cold and hot air through the pneumatic damper on the left and right sides. This design makes external size smaller, and this 3TS series thermal shock chamber are pre-heated and pre-cooled to achieve faster test temperature.

### Test Specimen Does Not Move

With the three-zone design, the test specimen does not need to be moved for thermal shock testing. It is very easy to place the test specimens.

### Suitable For Large Objects

Test area of 3TS chambers does not move. The size of the workroom is not limited by the size of the basket and is the actual size that can be used.



### Can Observe The Changes Of The Test Specimen

Designed with a transparent window made of reinforced tempered glass, you can view the changes of the test specimen in real time.

## Specification

Model	3TS-100	3TS-210	3TS-300	3TS-500
Internal Dimensions (mm)	500*500*400	700*600*500	700*780*550	900*800*700
Overall Dimension (mm)	1150*1950*2100	1350*2100*2200	1350*2250*2300	2500*2250*2150
Interior Volume (mm)	100L	210L	300L	500L
Loading Capacity	10kg	15kg	25kg	35kg
Pre-heat Room	Upper limit Temperature	+220°C		
	Heating Time	Ambient ~ +200°C, within 30 minutes		
Pre-cool Room	Lower limit Temperature	-70°C		
	Cooling time	Ambient ~ -70°C, within 30 minutes		
Test Room	High Temperature Exposure Range	Ambient +20 ~ +200°C		
	Low Temperature Exposure Range	-65 ~ -5°C		
Temperature Fluctuation		≤±0.5°C		
Temperature Deviation		≤±3 °C		
Temperature Recovery Time		Within 5 minutes		
Cooling	Cooling System	Mechanical compression refrigeration system		
	Refrigerating Unit	French TECUMSEH compressor		
Heating Element		Nichrome heater		
Controller		Programmable color LCD touch screen controller, Ethernet connection, PC Link		
Temperature Sensor		PTR Platinum Resistance PT100Ω/MV A-class		
View Window Size(mm)		250*280	300*330	
Air Circulation		Centrifugal wind fan		
Safety Device		Over-temperature Protection; Over-current Protection; Refrigerant High-pressure Protection; Earth leakage Protection		
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		380V 50HZ		
Maximum Noise		65 dBA		
Environmental Conditional		5°C ~ +35°C	≤85% RH	

## Cryogenic Chamber

LIB cryogenic chamber uses a mechanical compressor to cool to  $-120^{\circ}\text{C}$ , which replaces the traditional liquid nitrogen cooling method. The test chamber sizes are 100L, 225L, 500L, 800L, 1000L for choose. The temperature test range is  $-120^{\circ}\text{C}$  to  $150^{\circ}\text{C}$ . It can be applied to various field for test by simulating extreme natural environments, to detect product substitution and performance stability.

Mainly used in aerospace, military, electronic component testing and other high-precision fields, as well as high-end processing industry quenching process.

### Mechanical Refrigeration

Cryogenic chamber uses triple refrigeration, using combined refrigerants and mechanical refrigeration to control the temperature at  $-120^{\circ}\text{C}$ .

### Energy Saving

When the temperature needs to be stabilized again, the advanced PID control can effectively control the output value of the constant phase and the recovery phase.



### Specification

Model	CF-100	CF-225	CF-500	CF-800	CF-1000
Internal Dimension (mm)	400*500*500	500*600*750	700*800*900	800*1000*1000	1000*1000*1000
Overall Dimension (mm)	900*1050*1620	1000*1140*1870	1200*1340*2020	1300*1540*2120	1500*1540*2140
Interior Volume	100L	225L	500L	800L	1000L
Temperature Range	$-120^{\circ}\text{C} \sim +150^{\circ}\text{C}$				
Temperature Fluctuation	$\pm 0.5^{\circ}\text{C}$				
Temperature Deviation	$\pm 2.0^{\circ}\text{C}$				
Cooling Rate	$1^{\circ}\text{C} / \text{min}$				
Heating Rate	$3^{\circ}\text{C} / \text{min}$				
Cooling	Cooling System	Mechanical compression refrigeration system			
	Refrigerating Unit	Cascade compressor			
Heating Element	Nichrome heater				
Controller	Programmable color LCD touch screen controller, Ethernet connection, PC Link				
Temperature Sensor	PTR Platinum Resistance PT100 $\Omega$ /MV A-class				
Air Circulation	Centrifugal wind fan				
Safety Device	Over-temperature Protection; Over-current Protection; Refrigerant High-Pressure Protection; Earth leakage Protection				
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 ( $\Phi 50$ .) with plug; 2 shelves				
Power Supply	380V 50Hz				
Maximum Noise	65 dBA				



## Temperature Humidity Vibration Chamber

LIB THV Series vibration chambers combine temperature, humidity and vibration environmental conditions, which consists of temperature humidity chamber and vibration shaker.

### Simulate Up To 3 Combined Environmental Conditions In One Chamber

Combined high and low Temperature, temperature/humidity and vibration system in one chamber. One-stop solution for customization, production.

### Installation And Training

Customize the size, temperature, humidity and vibration table according to customer requirements. Provide one-stop solutions for design, production, installation, commissioning and training



PRODUCT AND SERVICE

## Manufacturer And Supplier of Environmental Test Chamber

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