

Lab Companion

Temperature And Humidity Test Chamber

C-800-40

Custom Solution

Brief Introduction



The humidity test can be conducted at the same time as the temperature test, so that the test effect is closer to the natural climate, simulating a worse natural climate, so that the reliability of the tested sample is higher.

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Particularities:

* High-strength, high-reliability structural design - to ensure the high reliability of the equipment;

* The inner chamber material is SUS304 stainless steel - anti-corrosion, strong hot and cold fatigue function, and long service life;

* High density polyurethane foam insulation - ensures minimal heat loss;

* Plastic-sprayed surface – to ensure the lasting anti-corrosion function and appearance life of the equipment;

* High-strength temperature-resistant silicone rubber sealing strip – ensures the high sealing performance of the equipment door;

* A variety of optional functions (test hole, recorder, water purification system, etc.) meets the user's needs for various functions and tests;

* Large-area electric heating anti-frost observation window, built-in lighting - can provide good observation effect;

* Environmentally friendly refrigerants – to ensure that the equipment is more in line with your environmental protection requirements;

* Customized constant temperature and humidity test chamber, tell us any function you want and we will make it.

* Triple protection mechanism.

* USB interface and Ethernet communication function enable the communication and software expansion function of the device to meet various needs of customers.

* Adopting internationally popular refrigeration control mode, which can automatically adjust the refrigeration power of the compressor by 0%~100%, reducing energy consumption by 30% compared with the traditional heating balance temperature control mode.

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Technical Features:

Dimensions (mm)	Width	Height	Depth
Useful	1000	1000	800
Overall	1320	2020	1820

Temperature range

from -40°C to +150°C (water-cooled)

Humidity range

20~98%RH

Homogeneity and Regulation:

Temperature fluctuation:

$\leq \pm 0.5^\circ\text{C}$

Temperature uniformity:

$\leq 2^\circ\text{C}$

Temperature rise time:

$\geq 3.5^\circ\text{C}/\text{min}$ (+20°C → +150°C) The whole process of nonlinear heating, no-load)

Temperature drop time:

$\geq 1.2^\circ\text{C}/\text{min}$ (+20°C → -40°C) The whole process of nonlinear cooling, no-load)

Humidity fluctuation:

$\leq 1\% \text{RH}$

Humidity uniformity:

$\leq 2.5\% \text{RH}$

Other parameters:

Controller model:

C100

Compressor model:

ZF18KQE

Refrigerant:

R-404A

Temperature electric heating:

5.4 KW

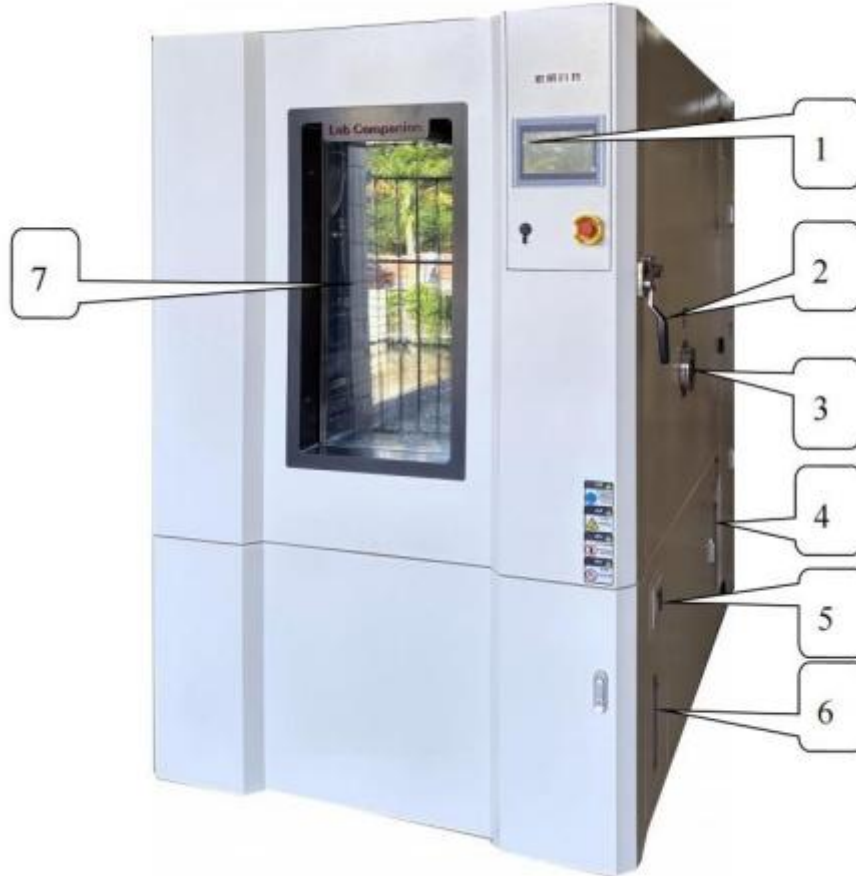
Humidity electric heating:

6 KW

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Appearance Introduction and Description:

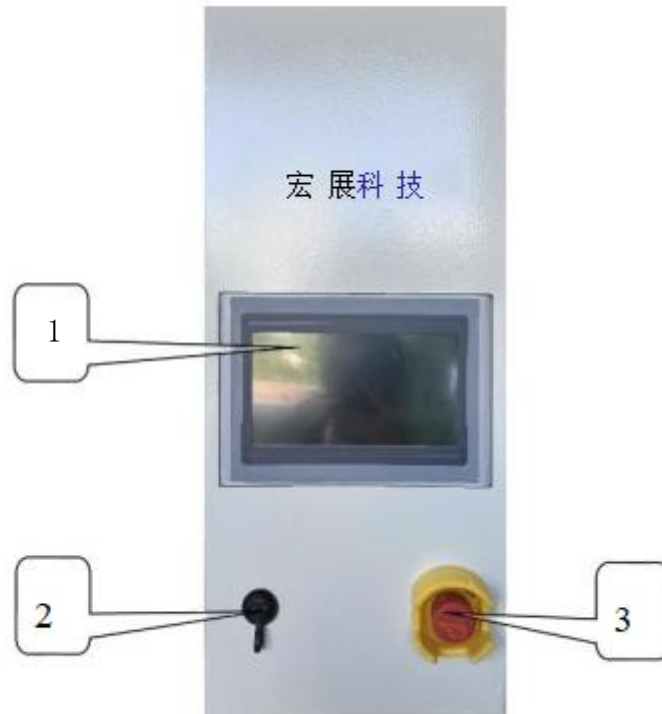
1. Front and side of the machine



Number	Name	Illustration
1	Controller panel	The intelligent operating panel
2	The door lock	Hold the handle and pull outwards to open the door
3	The test hole	An external power supply can be plugged in from the test hole for live product testing
4	Control panel	Leakage protector and safety control
5	Water injection tank	Add water when doing humidity test
6	Water level gauge	How much water can be observed when adding water
7	Glass window	To observe the inner workings of the laboratory

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2. Control panel



Number	Name	Illustration
1	Controller	Touch screen programmable controller (Refer to controller manual)
2	USB interface	Used to copy curves or document-related data
3	Scram switch	Used to connect the device and cut off the power supply

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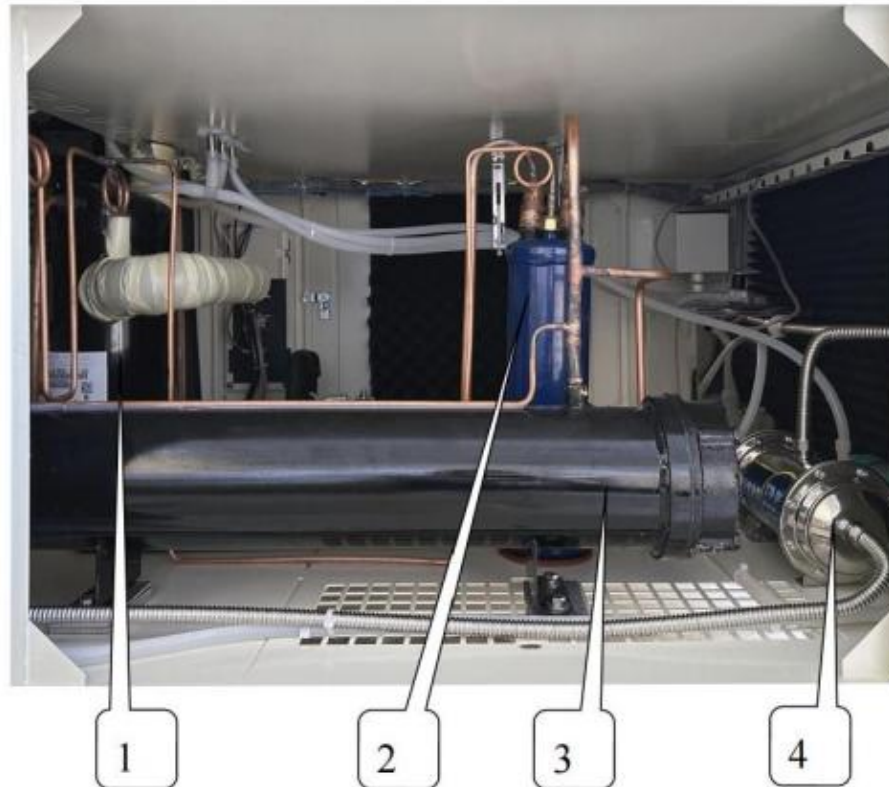
3. Test area



Number	Name	Illustration
1	Thermal resistance sensor	Used for panel overtemperature sensing the temperature of the inner chamber
2	Thermal resistance sensor	Used for the controller to sense the temperature of the inner chamber
3	Thermal resistance sensor	Used for the controller to sense the temperature of the inner chamber
4	Water tank	When hanging a wet cloth, one end of the wet cloth should be penetrated about half of the sensor, and the other end should be completely immersed in the water tank
5	Air outlet	Test area circulates air outlet
6	Sealant	Heat preservation and air leakage prevention
7	Sample rack track	Used to secure the sample holder
8	Sample holder	Used to place test products

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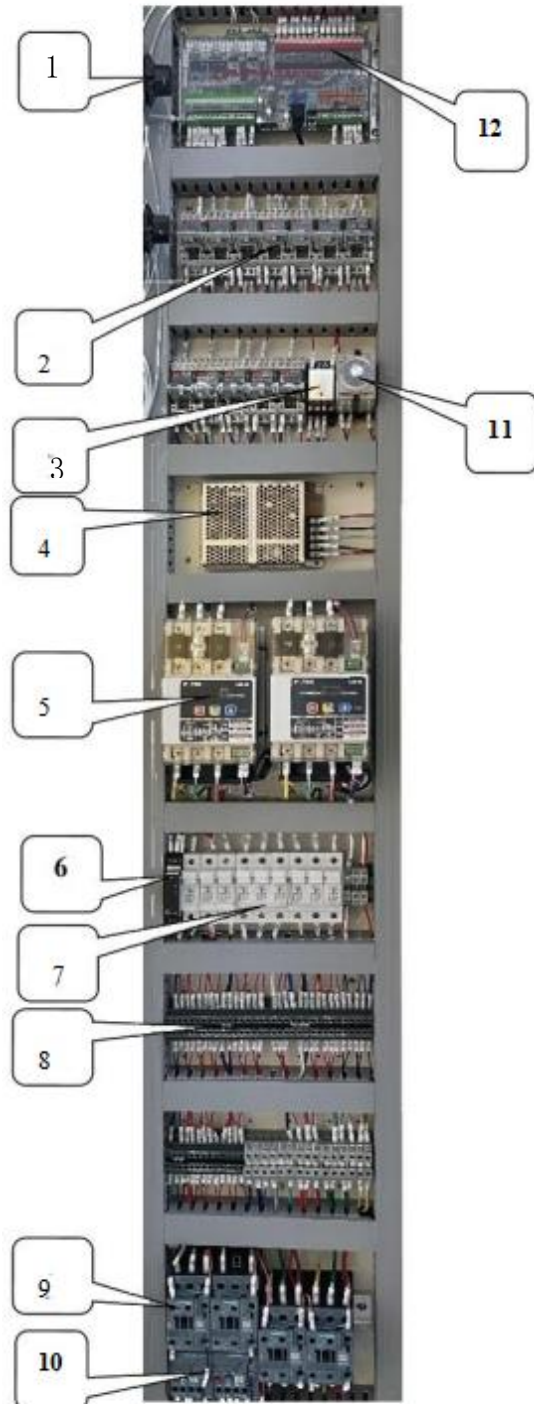
4. The cooling machine room



Number	Name	Illustration
1	Compressor	Compression refrigeration
2	Oil separator	Separate refrigerant and refrigerant oil
3	Condenser	Cooling refrigerant
4	Water purifier	The device filters impurities in the water when humidity is used

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5. Power distribution room



1	Dry burn protector
2	Intermediate relay
3	Cold and hot valve solid state relay
4	Dc power supply
5	Power regulator
6	Underinverting phase protector
7	Fuse
8	Connector terminal
9	Ac contactor
10	Thermal overload relay
11	Time relay
12	Temperature controller

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Test Report:

Temperature Sensor °C	40°C	-20°C	0°C	85°C	125°C	25°C 25%	50°C 50%	60°C 95%
1	-39.7	-20.3	0.5	85.3	126.0	25.6	50.3	60.3
2	-39.5	-20.1	0.2	85.5	126.2	25.9	50.7	60.1
3	-39.9	-19.9	0.4	85.9	125.9	26.0	50.1	59.8
4	-40.2	-19.7	0.7	86.0	125.5	25.4	50.5	59.5
5	-40.6	-20.1	0.9	86.3	125.1	25.7	50.9	59.9
6	-40.1	-20.6	1.2	86.5	125.6	25.1	51.0	60.0
7	-40.3	-20.4	1.0	86.1	125.0	25.3	50.7	60.2
8	-40.0	-20.7	1.3	85.8	125.3	24.8	50.3	60.5
9	-40.5	-20.9	0.9	85.3	125.7	25.0	50.4	60.7
Temperature deviation	0.6	0.9	1.3	1.5	1.2	1.0	1.0	0.7
Humidity display						24.8%	49.3%	94.5%
Temperature uniformity	1.1	1.2	1.1	1.2	1.2	1.2	0.9	1.2