

Lab Companion

Rapid Temperature Change Test Chamber TC-1000-10

Custom Solution

Brief Introduction



Rapid temperature change test chamber is suitable for instruments, chemistry, plastic, electronics, food, clothing, vehicles, metal, chemical, building materials, aerospace and other parts or machine. With rapid temperature change, gradient adaptability test and temperature stress screening test functions, helps to test the performance and change under the proposed conditions, for the purposes of product design, improvement, identification and factory inspection.

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Particularities:

1. The structure design of the Test Chamber is advanced and reasonable, and the supporting products and functional components have the international advanced level, which can meet the long-term, stable, safe and reliable production needs.
2. It can apply temperature stress and realize the change rapidly between the desired temperature values (such as +85~ 40°C temperature range, the lifting temperature rate is 10°C/min).
3. It has a large temperature control range, which can provide: high and low temperature rapid change test, one or more temperature change test (cycle); It can also carry out low temperature(ultra-low temperature) and high temperature test separately.
4. It adopts the perfect modeling design, the appearance has excellent texture and beautiful atmosphere.
5. The control system adopts special control system, with strong expansibility, simple operation, accurate control.

Technical Features:

Dimensions (mm)	Width	Height	Depth
Useful	1000	1000	1000
Overall	1318	2034	2470

Temperature range

from -70°C to +150°C

Homogeneity and Regulation:

Temperature fluctuation:

≤±0.5°C

Temperature deviation:

≤±2.0°C

Temperature uniformity:

≤2°C

Temperature rise time:

≥10°C/min (-40°C→ +85°C) The whole process of linear heating, full load 150KG aluminum ingot)

Temperature drop time:

≥10°C/min (+85°C→-40°C) The whole process of linear cooling, full load 150KG aluminum ingot)

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Appearance Introduction and Description:

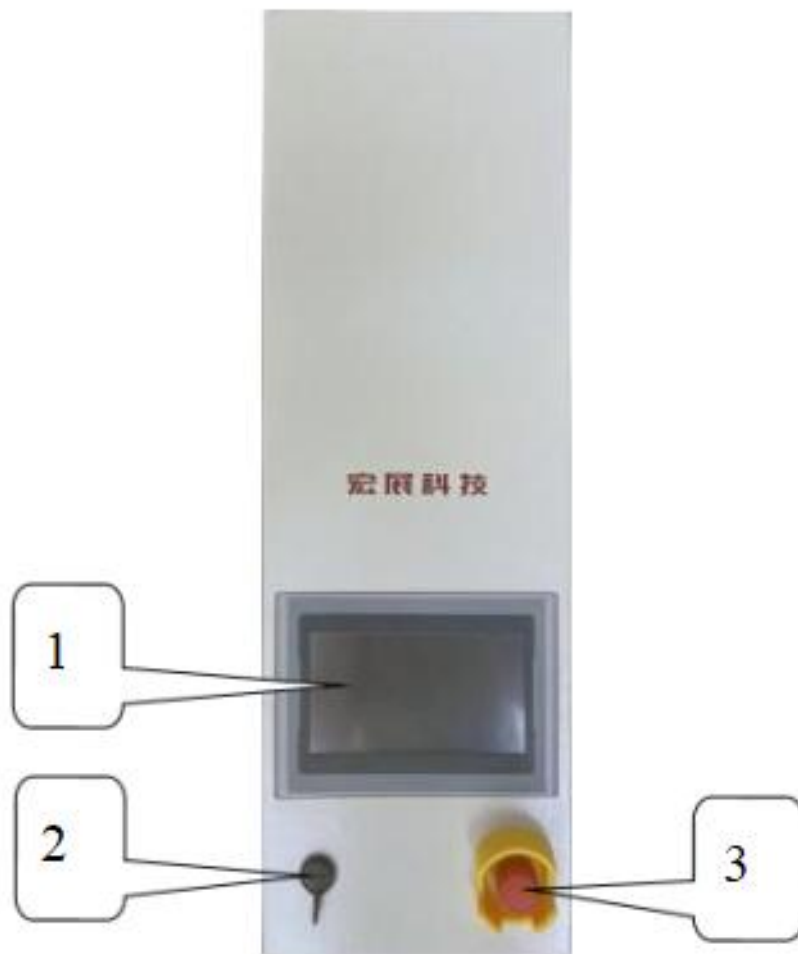
1. Front and side of the machine



Number	Name	Illustration
1	Three color lights	Green running, yellow standby, red fault
2	Electromagnetic lock	Prevent the door from opening while the device is running
3	The control panel	Operation panel for machine operation
4	The test hole	An external power supply can be plugged in from the test hole for live product testing
5	The door lock	Pull the vertical door to open it
6	Glass window	To observe the inner workings of the laboratory

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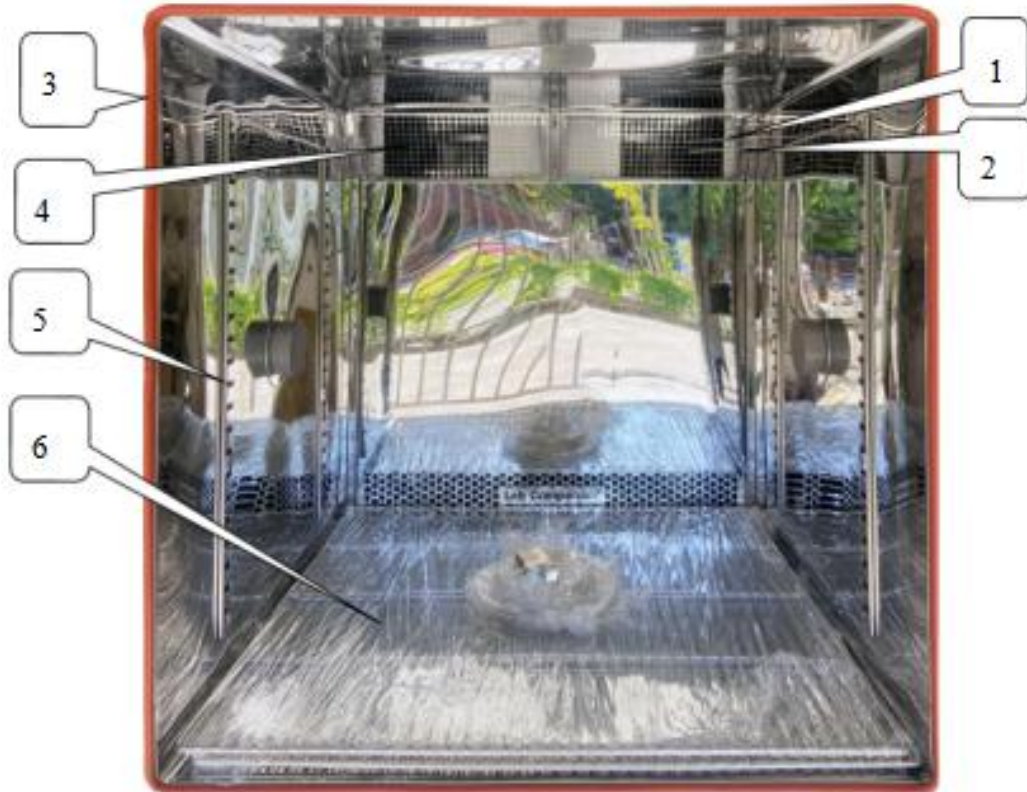
2. Control panel



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	sealant	Heat preservation and air leakage prevention
4	Air outlet	Test area circulates air outlet
5	Sample rack track	Used to secure the sample holder
6	Sample holder	Used to place test products

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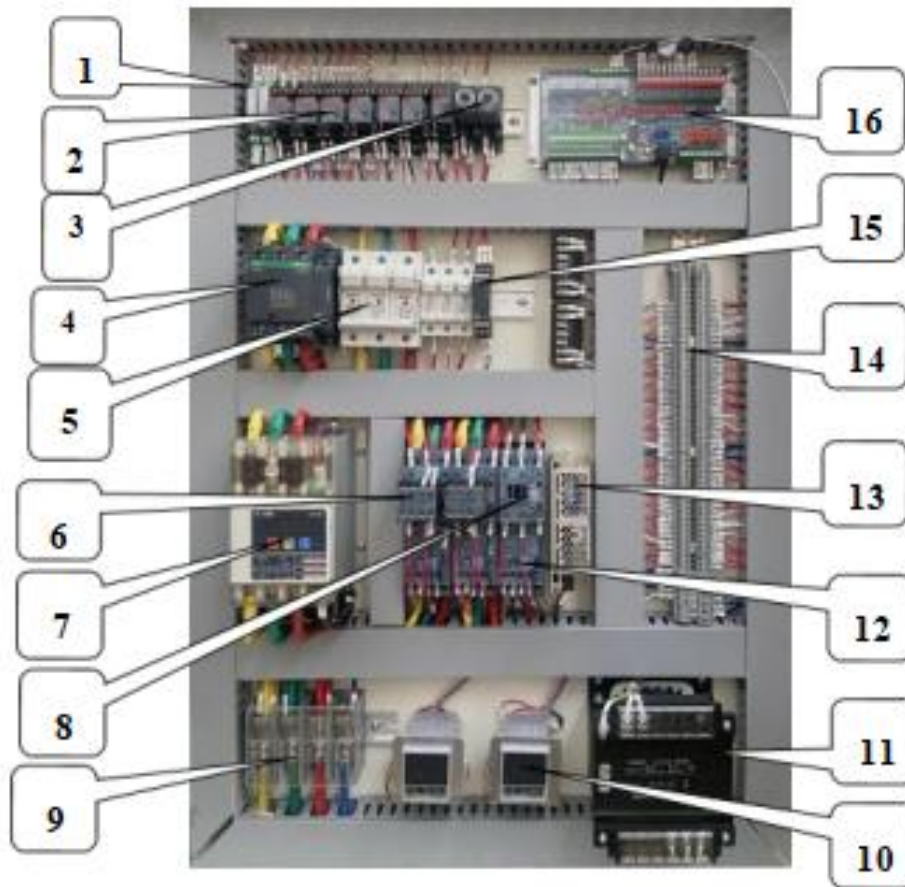
4. The cooling machine room



Number	Name	Illustration
1	Oil separator	Separate refrigerant and refrigerant oil
2	condenser	Cooling refrigerant
3	Pressure protection controller	When the pressure in the pipeline is too high or too low, the controller will alarm
4	compressor	Compression refrigeration

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5. Power distribution room



Number	Name	Number	Name
1	Cold end solid state relay	9	Terminals(One in six out)
2	Intermediate relay	10	Temperature controller
3	Time relay	11	transformer
4	Ac contactor	12	Thermal overload relay
5	fuse	13	Dc power supply
6	Auxiliary contact	14	Connector terminal
7	SCR solid state relay	15	Underinverting phase protector
8	Ac contactor	16	Temperature controller

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Test Report:

Temperature Sensor °C	-60°C	-40°C	-20°C	0°C	85°C	125°C
1	-58.9	-39.7	-20.5	0.3	85.6	125.4
2	-59.1	-40.0	20.3	0.6	85.8	125.1
3	-59.3	-39.9	20.1	0.7	86.0	124.8
4	-59.5	-40.1	20.4	0.9	86.1	125.0
5	-59.8	-40.3	20.5	1.0	85.9	125.4
6	-60.0	-40.5	20.8	0.8	85.7	125.7
7	-60.2	-40.7	21.0	1.1	85.4	125.3
8	-60.5	-40.4	21.3	1.3	85.2	125.0
9	-60.3	-40.5	21.0	1.5	84.9	124.8
Temperature deviation	1.1	0.7	1.3	1.5	1.1	0.7
Temperature uniformity	1.6	1.0	1.2	1.2	1.2	0.9