

KUALA LUMPUR (HQ)

No. 141-2, Jalan Radin Bagus,
Bandar Baru Sri Petaling,
57000 Kuala Lumpur.

PENANG BRANCH

7206, Mez Floor, Kompleks
Perniagaan Pangsapuri Seri
Cemerlang, Jalan Kampong Paya,
12200 Butterworth, Penang.

JOHOR BRANCH

No.25, Jalan Bestari 24/3, Taman
Bestari Indah, 81800 Ulu Tiram,
Johor.

T: +603 - 9054 6939 F: +603-90545 7939 M: +6012-499 2103 / +6013-399 2103 (Penang) / +6017-228 2103 (Johor)
E: sales@redmarkindustry.com

Temperature Humidity Test Chamber



Model: TH-225

TEMPERATURE

-40°C ~ +150°C;

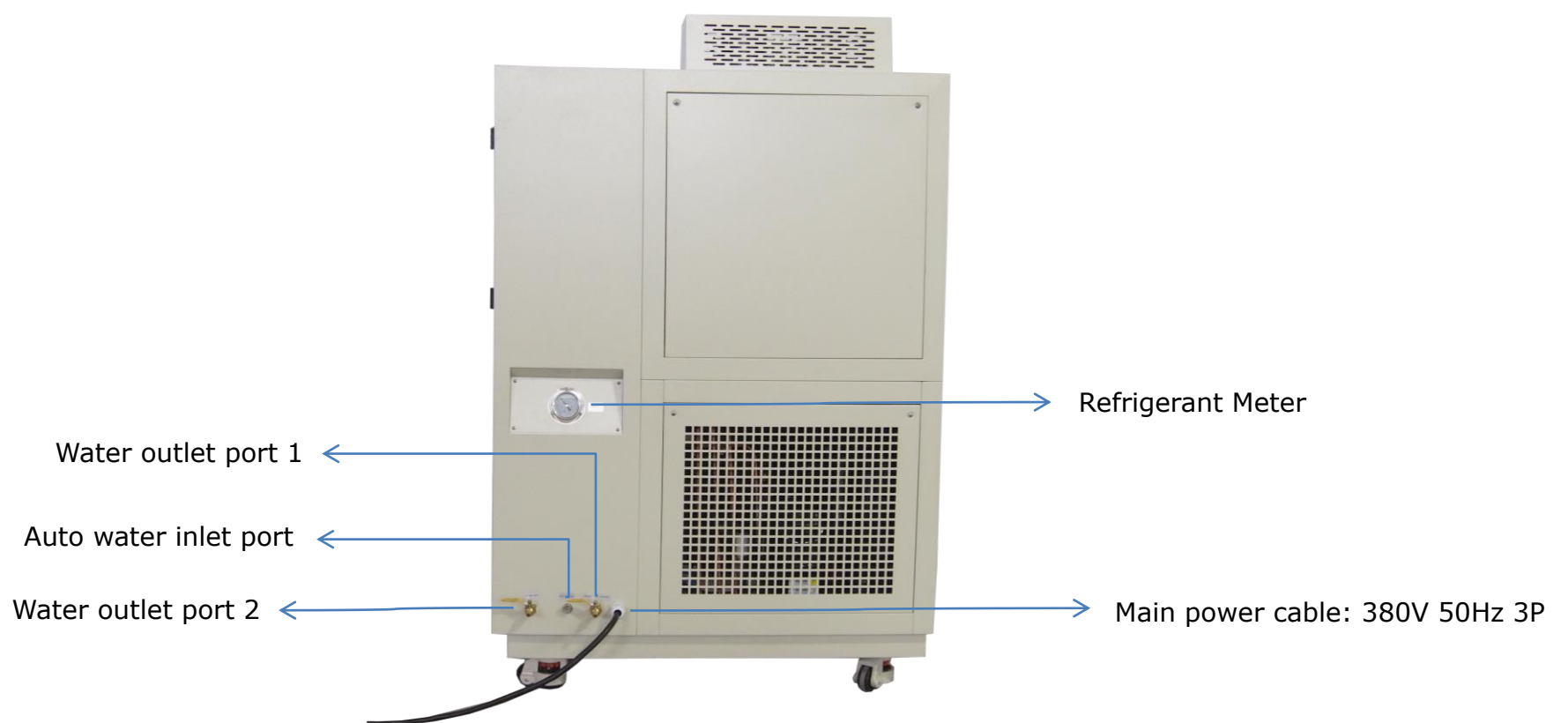
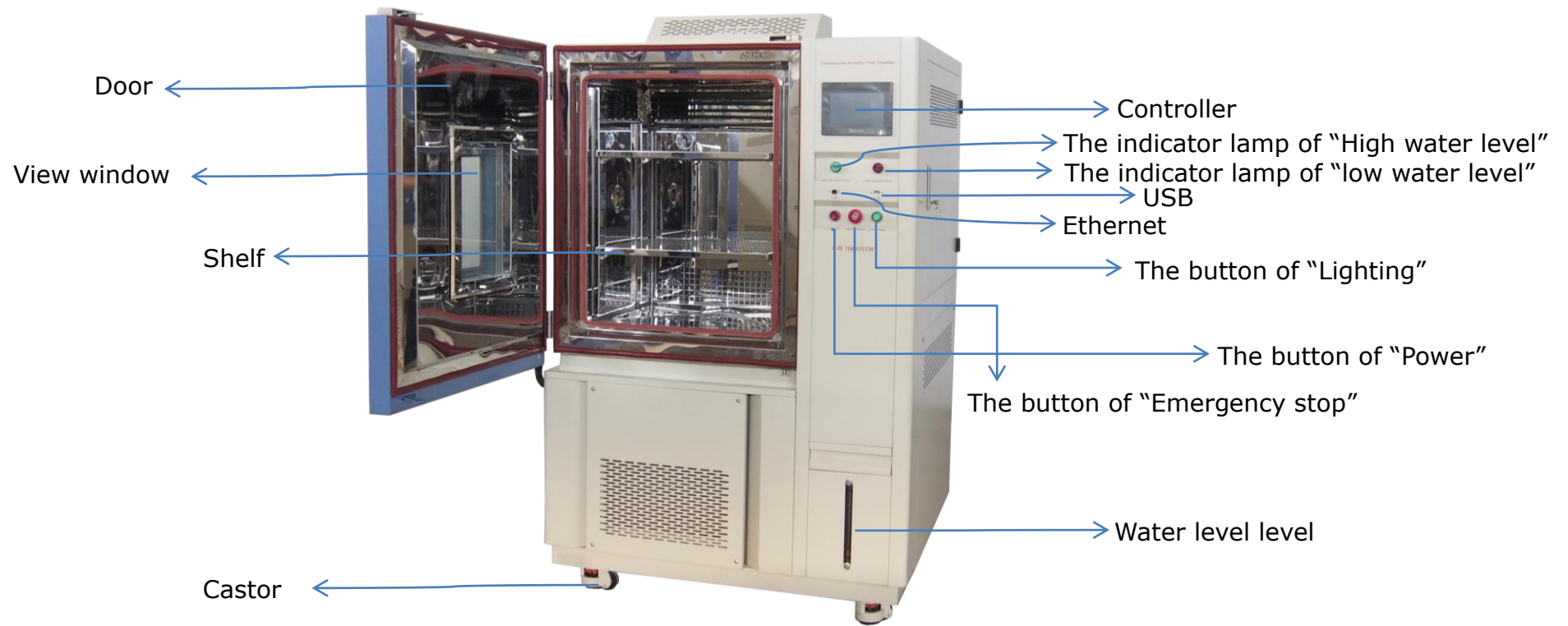
HUMIDITY

20%~98%RH;

Table of Contents

1. Diagram	3
2. Test Requirements.....	3
3. Technical Parameters	4

1 Diagram

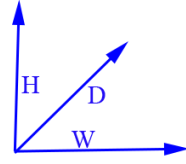


2 Test Requirements

- Climatic chamber
- 100 liters
- -20 ~ +150 degree C
- 20% ~ 98% RH

3 Technical Parameters

3.1 【Technical Parameter】



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				
Parameter	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			
Structure	Cooling	Cooling system	Mechanical compression refrigeration system		
		Refrigerating unit	French TECUMSEH compressor		
		Refrigerant	R404A, R23		
	Heating Element	Nichrome heater			
	Controller	Programmable color LCD touch screen controller			
		Ethernet connection, PC Link			
	Humidity	Water supply system	Automatic water supply		
		Water supply system	Water purification system		
		Humidifier	External isolation, stainless steel surface evaporation humidifier		
		Dehumidification	Evaporator		
	Sensor	Temperature Sensor	PTR Platinum Resistance PT100Ω/MV A-class, accuracy 0.001℃		
		Humidity Sensor	Dry and wet bulb sensor		
	Build-in Water Tank(mm)	270*300*400		270*300*450	
View Window Size(mm)	250*280		300*330	330*370	
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	380V 50Hz				
Maximum Noise	65 dBA				
Environmental Conditional	5℃~+35℃ ≤85% RH				

3.2 【Construction】

3.2.1 Workroom

- The internal material is 304 stainless steel, mirror surface, rust-proof to high and low temperature and moisture corrosion, nice ruggedness and long life;
- Single-open door, with one view window;
- 1pc technological hole, diameters is 100mm;
- 2pcs SUS304 stainless steel punching sample shelf, conducive to the air circulation.
- The height of the shelf is adjustable and can be removed directly to facilitate the various sizes of test samples.



3.2.2 Cable Hole

- A 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 100mm.
- Soft silicone plug seal;
- Metal enclosure closed, beautiful designed.



3.2.3 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.



3.2.4 Controller

- PID programmable color touch screen controller
- Ethernet for PC link
- USB for download the test data
- Can edit 120 programs 100 segment.
- LIB also can preset program into the controller based on user testing requirements.
- The set system language is English for standard.



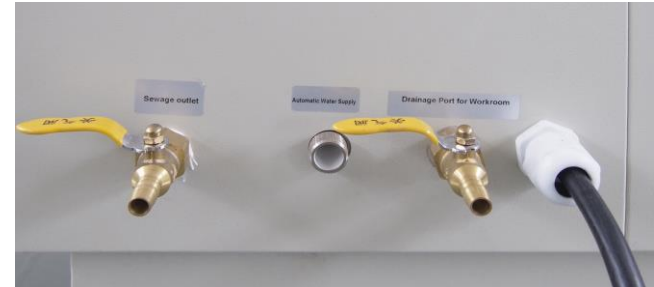
3.2.5 Water Re-circulation

- Water purifier: mainly purification from water source to water tank.
- The filter element is suggested to be replaced once a year.
- Water re-circulation system that reduced water use and a series of water pipes



3.2.6 Automatic Water Inlet

- Automatic control of the water intake of equipment, the customer can be directly connected to the laboratory faucet, so as to achieve automated testing;
- Automatic inlet diameter 1/2 inch (13.5MM);
- High and low water level alarm, water shortage lights and sound.
- Standard 2 meter drain, longer.



3.2.7 Castor

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



3.2.8 Insulation layer

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



3.2.9 External Materials

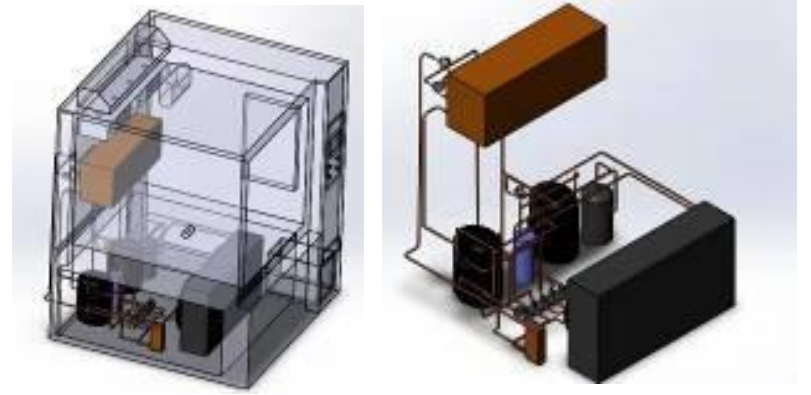
- A3 steel plate with galvanized coating;
Electrostatic treatment; High and low temperature corrosion resistance; High hardness, anti - impact
Very high safety factor;
- Color can be customized.

3.3 【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

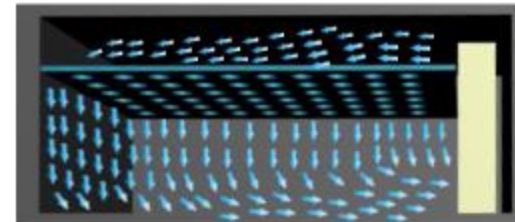
When the current humidity is less than the set point humidity, the equipment is automatically humidified. The humidification of is automatically heated by the humidification tank.

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 Control System

The PID controller as the main control unit to command, operate, detect and redistribute the various components of the equipment to achieve maximum effective use.

The temperature control adopts P.I.D. S.S.R. system synchronous coordinated control, which can improve the stability and life of the control components and interface.

Screen display function: LCD display, which can display test conditions (including temperature section, cycle number, running time and remaining time, etc.).



3.3.5 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.



3.3.6 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