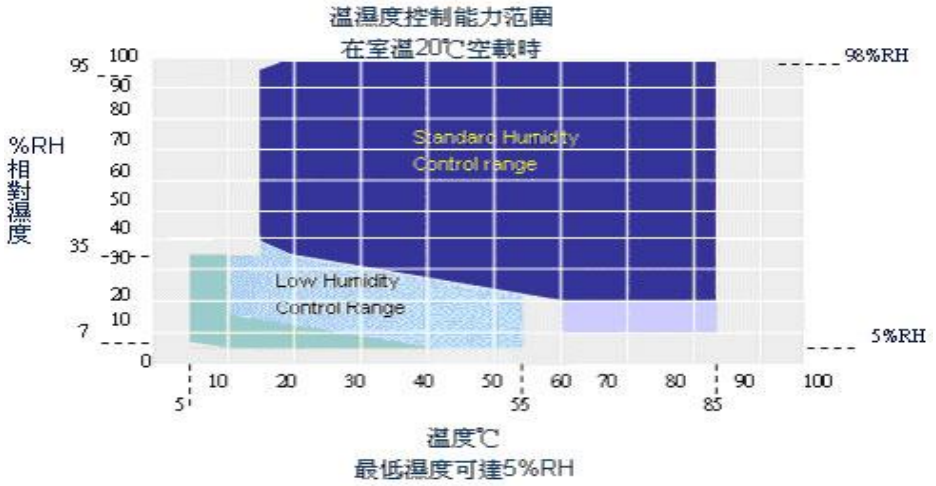
Constant Temperature and Humidity Test Chamber 8001B-150L

1. Product name	Constant Temperature and Humidity Test Chamber
2. Product model	8001B-150L
3. Test sample limit	This test equipment is prohibited by: ① Test or storage of samples of flammable and volatile substances ② Test or storage of test samples of corrosive substances ③ Test or storage of biological samples ④ Test or storage of samples of a strong electromagnetic emission source
4. Volume, size, and weight	
4.1 Volume	150L
4.2 Internal size	500×600×500mm (W×H×D)
4.3 External size	850×1670×1600mm (W×H×D)
4.4 Weight	250kg
5. Function	
5.1 Test environmental conditions	The ambient temperature is + 25℃, the relative humidity is 85%, and there are no samples in the test box.
5.2 Test method	GB / T 5170.2-1996 temperature test equipment; GB/T2423.2-2008 (IEC60068-2-2:2007) High-temperature test method Bb; GJB150.3-1986 High-temperature test; GB/T2423.1-2008 (IEC60068-2-1:2007) Low-temperature test Method Ab; GJB150.4-1986 Low-temperature test; GJB150.9-1986 Thermal test; GB/T2423.3-2006 (IEC60068-2-78:2007) Constant humidity-heat test method Cab; GB/T2423.4-2008 (IEC60068-2-30:2005) Heat heat test method Db.
5.3 Temperature range	-40℃~+150℃
5.4 Humidity range	20%~98%RH
5.5 Temperature fluctuation	±0.5℃

5.6 Relative humidity fluctuation	±2.5%
5.7 Temperature departure	±2.0℃
5.8 Humidity deviation	±3.0%RH
5.9 Humidity range	 (30~95)% RH (refer to the temperature and humidity control range diagram, no active humidity and thermal load).
5.10 Heating-up time	+ 25℃~ 85℃ :room temperature to 85℃ in about 30 minutes(nonlinear 1~3℃ / min no load).
5.11 Hemperature fall time	+ 25℃~-40℃:room temperature to -40℃ in about 60 minutes(nonlinear 0.7~1℃ / min no load).
5.12 Load condition	/
5.13 Work noise	A sound level 70dB (A); (Measured in the sound insulation chamber with ring temperature of 25℃ and less echo; use A to test the average value of 8 points; each test point is 1 m from the noise source and 1 m from the ground).
5.14 Meet the test standards	② GB / T 2423.2-2001 test B: High-temperature test method; ③ GJB 150.3-1986 High-temperature test; ⑥ GB 11158 Technical Conditions of High Temperature Test Box; ⑦ GB / T 2423.2 Basic Environmental Test Procedures for Electrical and Electronic Products B: High temperature Test Method.

6. Key features

6.1 Thermal insulation enclosure structure	① Outer wall material:, electrostatic spraying and baking paint; ② Inner wall material: mirror stainless steel plate SUS 304; ③Box insulation material: 100mm high temperature resistant rigid polyurethane foam; ④Door insulation material: 100mm high temperature resistant hard polyurethane foam.
6.2 Bottom structure strength	Rail heavy capacity at the bottom of the test box: 100kg/m² (load), and the studio floor is welded with 4mm groove steel overall.
6.3 Air regulation channel	① Stainless steel long-axis centrifugal fan: 1 set / 90W; ② Fan, heater, evaporator (and dehumidifier), drainage device, pressure balance port, adjustable air guide plate, temperature sensor.
6.4 Standard configuration of the test box	① Window 250x350x40mm 3 layer of vacuum tempered glass; ② Plane-type embedded handle; ③ Door hinge: SUS # 304 inlet hinge; ④ Energy-saving lamp in the box: LED light emitting mode; ⑤ Lead hole: φ50mm 1 (1 plug).
6.5 Box door	① Single door, open outward, hinges on the left, handle on the right (when facing the front of the box); ② With security door lock mechanism (the door can be opened in the test room), power distribution and heat prevention on the door; 2 viewing range of hollow glass observation Windows (W200×H280mm). Door frame for Anti-condensation electric heating device.
6.6 Control panel	Weilong (TH7010) display, temperature (humidity) control display, equipment timing device (0~99999 hours, no complex zero), overtemperature protection setting device, emergency stop switch, operation indicator, fault indicator, buzzer, USB interface, with USB function can download curve and data.
6.7 Machine room	Refrigeration unit, compressor connecting water plate, pressure discharge device, heating device, standby sample test power supply.
6.8 Distribution box	Distribution board, cooling fan, main power switch, device IO board, machine tool transformer, ballast, intermediate relay, time relays, solid state relays, AC contactors, thermal relays, fuse, circuit breaker.
6.9 Heaters	① Fin-type cooling tube-shaped stainless steel electric heater; ② Heating control mode: SSR (solid state relay) without contact and other periodic pulse widening; ③ Heating power: about 5.0KW.

6.10 Other configuration	Power cord hole and drain hole: located on the back of the box; Explosion-proof device: pressure relief port and explosion-proof door chain.

7. Electrical control system

7.1 Controller model number	TH7010 Touch-type intelligent programmable temperature controller
7.2 Controller specifications	1. 7-inch real-color touch-thin screen; 2. Two control modes: program/fixed value; 3. Sensor type: two-way PT 100 input (optional electronic sensor input); 4. Output mode: voltage pulse (SSR)/control output: 2 circuit (temperature/humidity)/2 circuit 4-20 mA analog output/16 circuit relay output (passive); 5. Control signal: 8 channel IS control signal/8 channel T control signal/4 channel AL control signal; 6. Alarm signal: 16 DI external obstacle alarm; 7. Temperature measurement range: -90.00℃~200.00℃, (optional-90.00℃ ~ -300.00℃) error ± 0.2℃; 8. Humidity measurement range: 1.0%~100% RH, error ± 1% RH; 9. Communication interface: (RS232/RS485, the longest communication distance is 1.2km [optical fiber up to 30km]); 10. Interface language type: Chinese/English; 11. With the function of Chinese characters; 12. With a printer (USB function is optional); 13. Multiple signal combination relay output, the signal can perform logical operation (NOT, AND, OR, NOR, XOR), PLC programming ability for short; 14. Variety of relay control modes: parameters-> relay mode, relay-> parameter mode, logical combination Mode, composite signal mode; 15. Program editor: 120 groups of programs, each group of programs can be compiled up to 100 segments; 16. With the network function, the IP address can be set; 17. Remote control instrument;

	18. The product display is clear and intuitive three-dimensional sense, the programmable control system is flexible and convenient in operation, stable performance and more efficient work; Specifications: External size: 205×146×43 (mm) (L×W×D); Installation opening size: 172×133 (mm) (L×W); TFT resolution: 800480 64K color.
7.3 Technical parameters of the controller	Accuracy: temperature ± 0.1℃ + 1digit, humidity ± 1%R.H＋1digit; Resolution: temperature ± 0.01℃, humidity ± 0.1%R.H.; Temperature slope: 0.1~9.9 can be set; With the upper and lower limit of standby and alarm functions; Temperature and humidity into the force signal dry and wet ball PT100x2; Group 9 P.I. D. Control parameter setting, P.I. D Automatic calculus; Dry and wet ball automatic correction screen.
7.4 Control mode	① Anti-integral saturation PID; ② BTC balanced temperature control mode + DCC intelligent cooling control + DEC intelligent electrical control (temperature test equipment); ③ BTHC balance temperature and humidity control control mode + DCC intelligent cooling control + DEC intelligent electrical control (temperature and humidity test equipment).

7.5 Picture display function	Take the screen conversation type, without key input, the screen directly touch the option; Direct display of temperature setting (SV) and actual (PV) values; Can display the current execution program number, segment number, remaining time and cycle number; Operation of accumulated time function; The temperature program setting point is displayed as a graphical curve, with a real-time display program curve execution function; With a separate program editing screen, each page can input at least 5 periods of secondary temperature and humidity and time; Chinese and English can be switched; The fault prompt screen displays; The screen is available for a backlight adjustment; The screen display protection function can be timing, TIMER or manually closed setting.
7.6 Program capacity and control function	Program program groups: Maxto 120 PATTEN; Available memory capacity: 12,000 SEGMENTS in total; Replicate commands: up to 3,200 times per command; The production of the program, with editing, clearing, insertion and other functions; SEGMENTS Time setting of 0~99Hour59Min; The programmable timing control module device x2 group; With power off program memory, automatically start and execute the program function after the return; With the RS-485 or RS-232 communication interface; With a USB interface function; The graphical curve can be displayed in real time; Has the function of automatic adjustment of freezing ability; With the reservation start and shutdown function; It has the date, and time adjustment function; Key and screen lock (LOCK) function.
8. Safety protection device	
8.1 Test box	Adjustable overtemperature protection device; Extreme overtemperature of the air conditioning channel; The fan motor is overheated.
8.2 Else	Earth leakage protection; The heating pipe is not protected by air-drying fire; Power-off protection.

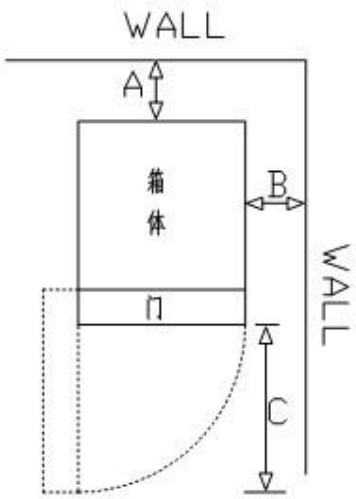
9. Other special notes

9.1 Power cable	3 core (single phase two lines + protection ground wire) cable 4 meters 1 (can be provided according to customer requirements).
9.2 Terminal hole	One lead hole with adhesive plug, with a diameter of φ 50mm, its position and quantity can be customized according to user requirements if the box structure allows and does not affect the performance.

10. Transportation

Car packaging transportation

11. Operating Conditions

11.1 Installation site	The ground is flat and well ventilated; No strong vibration around the equipment; There is no strong electromagnetic field influence around the equipment; There is no flammable, explosive, corrosive substances and dust around the equipment; Appropriate use and maintenance space is left around the equipment, as shown in the figure below: 
11.2 Environmental conditions	① Temperature: 5℃ ~35℃; ② Relative humidity: 85% ; ③ Air pressure: 86 kPa ~ 106 kPa.
11.3 Water supply conditions	External water supply requires softened deionized water.

11.4 Power supply conditions source Power Maximum current Mains switch	AC220V Single-phase + protected ground line; Allowable voltage fluctuation range: AC (220 ± 10)V; Allowable fluctuation range of frequency: (50 ± 0.5)Hz; The protective ground ground resistance is less than 4Ω; The user is required to configure an air or power switch for the equipment at the installation site, and the switch must be independent for the equipment; About 5KW; 22A; 32A (plastic-case leakage protector);
11.5 Requirements for the storage environment	When the equipment is not working, the ambient temperature shall be kept within 0℃ ~ + 45℃; When the ambient temperature is lower than 0℃, the water remaining in the equipment shall be discharged clean to avoid freezing the water in the pipeline and damaging the pipeline (except the air-cooled machine);

Configuration list

The following main components are used in international quality brand products, are high quality large constant temperature and humidity environment test equipment commonly used accessories.(All use authentic products, the reliability and stability of the whole test equipment have an absolute guarantee.）

Order number	Name	Origin brand	Remarks
1	Controller (including R232 communication and software)	Weishuo	TH7010
2	AC contactor	Schneider	LC1D12、LC1D18
3	Thermal relay	Schneider	LRD12C(14-17A)
4	Auxiliary relay	Schneider	MY2J
5	Time relay	Taiwan CKC	AH3-3(3M)
5	Direct current switch power supply	Taiwan Ming wei	DC24V
6	Overcoming electrical appliances	Taiwan AVN	APR-4-380
7	Overtemperature protection	Korea, South Korea, RAINBOW	TS-320S

8	SSR	Taiwan scholar-graduate	SSR-40DA
9	Temperature sensor	Taiwan one electricity	PT100
10	Headlamp	Philips	220V\9W
11	Signal indicator light	Taiwan TEND	TPWL5-220
12	Flash buzzer	Shanghai day billion	LA42S
13	Control transformer	IT	300VA
14	Leakage protector	Schneider	C100/3P+N+PE
15	Button switch	Taiwan tiande	LAS1-A
16	Heater (heating)	Taiwan longxing	Custom made
17	Circulating fan	Taiwan SAN Yue Electric	220V90W
18	Wind wheel	Taiwan Shang Yu	6F
22	Anti-sweat line	The Taiwan GOOLMAX	24VDC50W
23	Multilayer vacuum glass window	Hong Kong qingqiang	Custom made
24	High temperature line	China all day	/
25	Wire and cable	China all day	/
26	Compression engine	Taikang, France, or Sanyo, Japan	/
27	Condensator	Taiwan Zhongli Refrigeration	Custom made
29	Device for drying and filtering	Denver, Denmark	DCL083S
30	Expansion valve	Denver, Denmark	TES5
31	Electromagnetic valve	The Japanese heron palace	NEV202
32	Evaporimeter	Taiwan zhongli	Custom made
33	Cryogen	Honeywell, USA	R404A/R23
34	Refrigeration oil	British ice bear	RL32H
35	Oil extractor	Emerson	A-55877
36	Flow regulation device	Denvers	1/2"
37	High-pressure cock	Denver, Denmark	KP5
38	Process valve	Taiwan Fuzhou	3/8"

Note: The above main parts are actually used parts, and other parts shall be subject to the actual use.