

Constant Temperature & Humidity Test Chamber

Brand: JNG

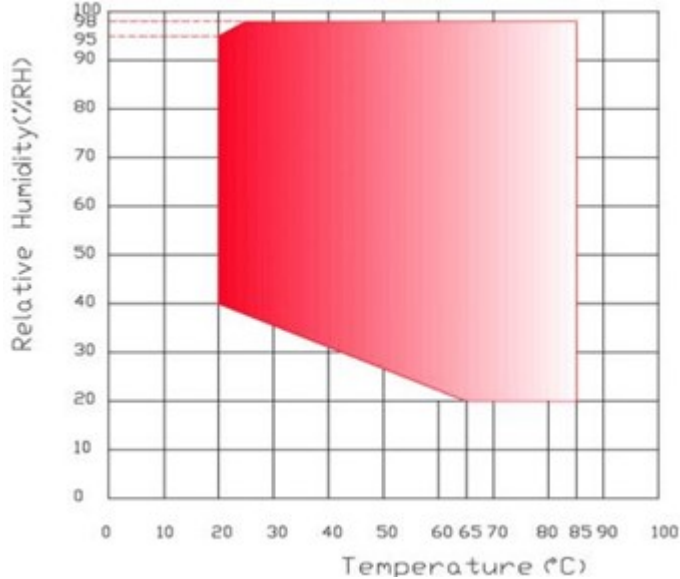
Model: JG-100HD



(Photo for reference only)



Standard Features

Item	Description
Internal Dimension	400*500*500mm (W*H*D)
External Dimension	670mm X 1390mm X 1450mm (W*H*D)
Temperature Range	-40°C ~ +150°C
Temperature Fluctuations	≤±0.5°C (without load and temperature stable)
Temperature Uniformity	≤2°C (without load and temperature stable)
Temperature Deviation	≤±2°C (without load and temperature stable)
Heating Rate	+25°C~+100°C ≥ 25min (without load)
Cooling Rate	+20°C~-20°C ≥ 40min (without load)
Power	1 phase, AC220V, 50Hz
Humidity Range	<p>Temperature: +20°C~+85°C, Humidity: 20%~98%RH</p>  <p style="text-align: center;">Special Test Condition: Temperature 90°C, Humidity 95%</p>
Humidity Deviation	±2%RH
Noise	≤ 75db, measured from one meter in front of door, at 1.2 meter height



Structure Features

Cabinet

- ✓ The cabinet is the previous studio and is an independent studio with independent temperature control. There are circulating air ducts, heaters, cooling systems, etc
- ✓ Outer wall: stainless steel plate
- ✓ Insulation layer: 100mm polyurethane foam + ultra-fine glass wool, to ensure that the outer surface of the test box does not frost and dew
- ✓ Inner wall: 1.0mmSUS304 # stainless steel plate

Circulation Duct

- ✓ The circulating air duct is set at the back of the interior of the studio.
- ✓ Motor, impeller, heater and evaporator are installed in order from top to bottom inside the air duct.

Door, Observation Window, Lighting

- ✓ Door
 - One set of manual single-opening door is set on the front of each floor box, and the door adopts imported hinges and door locks.
 - A constant temperature heating belt is installed around the door, and the heating belt is automatically turned on for defrosting according to the temperature of the equipment working room.
- ✓ Viewing window
 - Each door is equipped with a set of three-layer hollow electric vacuum glass observation windows. The observation windows automatically turn on the defogging function according to the temperature of the working room to ensure clear observation in any working state.
- ✓ Lighting
 - The observation window is equipped with a set of moisture-proof lighting fixtures to ensure that the test pieces in the box can be clearly observed under any working conditions. The lamp has the function of automatic delay to turn off the lamp, which prolongs the service life of the lamp.

Test Hole

- ✓ Φ 100mm test hole, installed on the left side of the box;
- ✓ Test holes are equipped with custom accessories and flexible silicone rubber plugs.

Sample Rack

- ✓ The equipment provides 2 layers of stainless steel punching screen sample racks with adjustable spacing.
- ✓ Air pressure balance window
- ✓ To maintain air pressure balance between the interior of the chamber and the external environment during the test, the box is provided with a set of air pressure balance windows.



Cooling System

Refrigeration Method

- ✓ Mechanical compression refrigeration;
- ✓ Compressor starts at the suitable time, reducing the compressor starting current and reducing the interference to the power grid;
- ✓ The controller + solenoid valve on and off to control the refrigerant flow for cold balance control;
- ✓ No cooling during heating, no heating during cooling, because the cooling balance method can reduce the consumption of compressor and heating system, and theoretically can save 20% or more energy at low temperature;

Cooling Method

- ✓ Air-cooled
- ✓ Refrigerant
- ✓ High temperature class: R404a / R23, DuPont
- ✓ The above refrigerants are all environmentally friendly that meet international environmental protection requirements.

Reliability

- ✓ The main refrigeration accessories are internationally renowned brands, such as: France Tecumseh compressors, Denmark DANFOSS pressure controller, thermal expansion valve, sight glass, American EMERSON oil separator, drying filter, American EMERSON or Italian CASTEL solenoid valve, Shut-off valves, etc.,

Temperature Control

Temperature

- ✓ Temperature measurement: High-precision A-class PT100 platinum resistance sensor
- ✓ Temperature control

The controller collects the temperature sensor signal and the set value for comparison, and automatically adjusts the heating power or refrigerant flow through the PID + SSR output, so that the air temperature in the equipment box reaches a dynamic equilibrium.

- ✓ Heater: adopts high-quality nickel-cadmium alloy wire heater, and the heater is driven by non-contact zero-cross triggering by solid state controller.

The water vapor condensation on the surface of the evaporator is achieved by the cooling capacity of the previous stage compressor. When the dew point temperature of the air in the box is lower than the surface temperature of the dehumidification evaporator, the water vapor in the air will condense on the surface of the evaporation coil.



Control System

Controller



✓ 7 "TFT color touch screen controller

✓ Controller parameters

Accuracy: temperature $\pm 0.1^{\circ}\text{C} + 1\text{digit}$, humidity $\pm 1\% \text{ R.H} + 1\text{digit}$

Resolution: temperature $\pm 0.01^{\circ}\text{C}$, humidity $\pm 0.1\% \text{ R.H}$

Temperature input signal dry and wet ball PT100x1

P.I.D control parameters: 9 sets of PID control parameters are automatically calculated

✓ Screen functions

Touch input, display temperature and humidity set value and measured value, display various parameters of program operation, operation timing, display equipment operation curve and history curve, Chinese and English interface optional, fault prompt screen, screen backlight adjustable.

Program Capacity

Available program groups: up to 250 PATTEN

Usable memory capacity: 12500 SEGMENTS in total

Repeatable command execution: each command can reach 3200 times

✓ Program editing adopts conversational style, with functions such as editing, clearing, inserting, etc.

✓ SEGMENTS time setting 0 ~ 540 Hour 59 Min

✓ Control method

PID temperature control method. Controller PID adjustment, with auto-tuning function.

✓ Record function

✓ It can save the setting value, sampling value and sampling time of the equipment, the maximum storage time is 90 days.

✓ Data stored in the controller can be called, analyzed, and processed using office programs;

✓ Communication function

✓ The control system can export the data saved by the device operation through the USB interface;

✓ The control system can communicate with the host computer through RS232 interface, or can communicate with the host computer by optional Ethernet interface;