

Walk-in Temperature Test Chamber

Brand: JNG

Model: JG-E7058



(Photo for reference only)

Summary of Instrument

The walk-in constant temperature test room is widely used in aerospace, aviation, electronics, automobiles, batteries and other industries for accelerated thermal cycle test, alternating temperature test and constant temperature test of electronic and electrical products, materials, parts, equipment, etc.

Product Application

High and low temperature routine tests and low temperature storage can also be done to evaluate the behavior and performance of the sample under given environmental conditions.



It can meet other large parts and subsystems such as small and medium-sized car walking/steering systems, fuel/battery heating systems, etc. New energy vehicle power batteries, high-voltage lines and other components.

Product Feature

For aerospace, aviation, electronics, automobiles, batteries and other products and quality inspection institutes, research institutes, colleges and universities and other testing units, provide virtual space to simulate the real environment, and verify product inspection and research and development results.

The test box is to shorten the development cycle. An indispensable right-hand man to improve product quality and reliability.

Main Technical Parameters

MODEL	JG-E7058
Internal Dimensions	W2000mm * D2000mm * H2100mm
External Dimensions	About W2400mm * 2400mm * 3000mm
Temperature Range	5°C ~ 40°C
Temperature Fluctuation	≤ ±0.5°C
Temperature Uniformity	≤ ±2°C
Cooling Rate	+30°C ~ 5°C ≥25 min (average 1°C/min)
Heating Rate	5°C ~ +35°C ≥10min (average 3°C/min)
Door Opening Method	Single Door or Double Door
Meet the Standard	GB/T5170.2-2008 Temperature Testing Equipment GB/T5170.5-2008 Damp Heat Testing Equipment
Test Method	GB/T 2423.2/IEC 60068-2-2-2008 Basic environmental test procedures for electrical and electronic products Test B: High temperature test GB10592-2008/IEC 60068-3-5 high and





	<p>low temperature test chamber technical conditions</p> <p>GB/T 5170.1-2008/IEC 60068-1 Basic parameter verification method general rules</p> <p>GB/T5170.2-2008/ IEC 60068-2 Inspection method of environmental testing equipment for electrical and electronic products Temperature testing equipment</p>
Power	Three phase, AC 380V
Noise	Sound level $\leq 75\text{dB(A)}$ (1m in front of the gate, 1.2m from the ground, measured in free space)
Machine Shock Absorption	The main parts of the machine have shock absorption function
Cooling method	Air cooling
Machine Structure Feature	
Structure	Integral double door, integral welded type, movable integral sheet metal forming;
External Materials	The outer box uses 1.5mm electrolytic plate double-sided high-grade powder paint
Internal Materials	Heat-resistant and cold-resistant stainless steel plate full-circle welding (SUS #304) thickness 1.0mm
Thermal Insulation Materials	Environment-friendly hard polyurethane and high temperature resistant composite insulation materials, thickness $\geq 100\text{mm}$
Floor Material	1.0mm thick steel plate
Surface Temperature Test Chamber	During the normal operation of the test box, where the surface can be touched, the temperature of the metal part does not exceed 40°C , and the temperature of the non-metal part does not exceed 50°C
Floor height and slope	The height of the bottom plate of the test box is not higher than 150mm to facilitate the in and out test samples. Configure slopes to facilitate sample entry.
Drainage Function	Designed with working room and unit condensate water drainage function, there is no water accumulation in the test




	chamber and no water leakage at the bottom of the unit;
Main Structure Design	Sheet metal area, circuit area, freezing area, waterway area, composed of four parts
Air Duct	Adopt the structure design of the upper part of the box with air outlet and lower part of the return air, and the uniformity of the air volume can be adjusted through the swing leaf window achieve the effect of uniformity
Observation window	Install 2 rectangular; multi-layer insulating glass observation windows with electronic anti-fog function
Door Structure	Taiwan imported flat embedded rotatable handle; Hinge: originally imported from Japan, it can prevent the door from shaking randomly, and its material is SUS #304 2 high and low temperature resistant high-tensile silicone foams are pressed; Heating wire is embedded in the inner frame to prevent frost; The door has a protective device that can be opened from the inside to prevent personnel from being locked
Explosion-proof pressure relief port	The port on top of chamber will automatically open when pressure inner chamber getting larger
Gas Detection System	The System will alarm when detected there have the gas leakage in chamber and open the exhaust system
Heating System	
Electric Heating Cycle System	The temperature adopts special moisture-proof and heat dissipation design, stainless steel extended axis circulation motor
Circulating Wind Dispersion	High/Low temperature resistant aluminum alloy multi-win circulating fan
Electric Heating Control Method in Heat Storage Area	Balanced thermostat P.I.D control S.S.R
Structure Microcomputer Control	Microcomputer control, pre-cooling and pre-heating temperature conversion control, the output power is calculated by



	the computer to achieve high precision and high power saving benefits
Automatic Control	Nickel-chromium alloy heating wire heater completely independent system does not affect freezing and control circuits. The heating rate is calculated with the heat content load of the test object.
Refrigeration System	
Refrigeration Compressor	Imported German BOCK semi-enclosed high-horsepower mechanical compressor 
Cold and Heat Exchange Device	It adopts super high efficiency SWEP plate cold coil, cold and heat exchange design, which has higher efficiency than traditional internal spiral type.
Thermal Load Adjustment	The computer automatically adjusts the flow of the cold coil to effectively remove the heat
Condenser	Coil or barrel type (used in larger systems) water-cooled heat dissipation or air-cooled heat dissipation
Super-Efficient Freezing Control Refrigerant	Nitrogen welding and pressure leak detection test for refrigerant pipeline
Evaporator	High efficiency components adopt slope evaporation (AC&R compound spoiler aluminum fin)
Refrigerant	Dupont Green refrigerant R404a and R23
Throttle Device	Automatic expansion valve and capillary tube 
Expansion Performance	The control system can be reserved for isothermal control liquid nitrogen valve



	LN2V & refrigerant valve FV control
Special Functions	Adopt multi-wing circulating fan, force air flow convection, improve uniform temperature efficiency
Special Functions	P.I.D + S.S.R microcomputer temperature control system is adopted in the test area to achieve the control accuracy of automatic calculation
Control System	
Controller	
Display	640X480 dot matrix 8.3-inch TFT color LCD display
Operation mode	Program mode, fixed value mode, according to different test conditions automatically select the operating state of the refrigerator
Setting Method	Chinese and English menu (free choice), Touch Screen Input
Program Capacity	Editable program Quantity: Maximum 120 Number of Steps: up to 100 steps Number of Cycles: Maximum 999 Each period of time can be set to a maximum of 999 hours, each period time setting mode is hour/minute/second, and the program can be linked (program can be set for outer loop, program segment can be set for inner loop)
Setting Range	Temperature: Adjust according to the temperature working range of the equipment (upper limit +5°C, lower limit -5°C). Humidity: (0~100)%RH (temperature and humidity test equipment).
Test Data Display	Default value, measured value, total running time, running time and remaining time of each period, heating state.
Communication Function (Standard Configuration)	Equipped with RS-232 interface, with local and remote communication functions

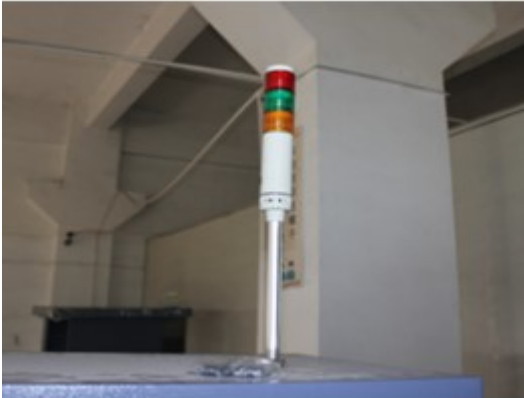


	(need to occupy a PC COM port); Up to 16 devices can be connected at the same time, and the cumulative cable length is up to 800m; anti-integration saturation
Control Method	BTC (balanced temperature control mode) + DCC (intelligent cooling capacity control) + DEC (intelligent electrical control) (temperature test equipment) BTHC (balanced temperature and humidity control mode) + DCC (intelligent cooling capacity control) + DEC (intelligent electrical control) (temperature and humidity test equipment)
Curve Record function	RAM with battery protection can save the set value, sampling value and sampling time of the device; The maximum recording time is 350 days (when the sampling period is 1.5min) The memory controller can automatically record the test curve and data, equipment status, anti-integration saturation, alarm status, etc., and can be downloaded via SD card.
Auxiliary Functions	Function of fault alarm, cause and treatment prompt; Power off protection functions; Upper and lower temperature protection functions; Calendar timing function (automatic start and automatic stop); Self-diagnosis function: Operation data recording, PID partition and automatic setting, deviation setting, online help, etc.
Software use environment	IBM PC compatibles, P II above CPU, more than 128MB of memory, simplified (traditional) Chinese (English) Windows or Windows XP operating system;
Temperature Measurement	Temperature: Class A PT100 armored thermocouple;
Safety Protections	
Circuit Safety Protection	Meet the national electrical safety standards, wiring specifications, wiring terminals are clearly marked, no bare;



	<p>Absolute insulation from power supply, safe and reliable;</p> <p>Reliable grounding protection</p> <p>Each electrical component has a label (Relay, Switch)</p> <p>The label of the electrical component is placed on the installation line slot of the electric cabinet so that it can be easily checked even after the electrical component is removed and the label is printed clearly.</p> <p>The label shall be designed on the mounting plate for easy identification by the operator and electrical engineer;</p> <p>Each end of the line will have a line number, the line number is the same as the drawing</p> <p>The circuit diagram is consistent with the manual. The circuit diagram is pasted on the inside of the electric control cabinet door to facilitate the maintenance and use of the circuit. Posting safety labels for electrical appliances;</p> <p>In line with China's national safety standard GB58-96</p>
Leakage/Surge Prevention Protection	Leakage circuit breaker leakage protection. Electronic surge protection. Heater short circuit and other overcurrent protection;
Overload Protection Device	AC power supply three phase power out. Inverse phase protection and over current (over load) of each load independent studio over temperature protection; Fan overheat protection:
Compressor Protection	<p>Refrigerant pressure protection and over load protection device</p> <p>Compressor internal overheating protection</p> <p>Compressor internal overcurrent protection</p> <p>Compressor high and low overpressure protection</p> <p>Compressor starting abnormal protection</p> <p>Compressor oil deficiency protection</p> <p>Water shortage protection of cooler</p> <p>Exhaust temperature protection</p>



Protection Device	<p>Humidification system water shortage protection, humidification tube overheating protection</p> <p>Wet bucket dry heat protection switch 1 set</p> <p>Low humidification water level protection group 1</p> <p>Heating system protection switch 1 set</p> <p>Heater short circuit protection</p> <p>Temperature and humidity over temperature balancing device</p>
Fault Protection	<p>Cut off the control power when the faulty occurs and faulty cause indication and alarm output signal.</p> <p>Emergency stop alarm button (directly stop the device in case of accident)</p> <p>Sound and light alarm prompts.</p> 
Personnel Escape Device	Used for remote centralized monitoring, device operation, data operation, record export and other functions
Pressure Compensation Balance System required for temperature alternation	The cooling water tower is not included in the equipment configuration.
Other Optional Configuration	
Centralized Monitoring Software	Used for remote centralized monitoring, device operation, data operation, record export and other functions
Standard Configuration	
Over-temperature protector	LED digital display microcomputer controller to prevent the sample from being damaged due to too high or too low temperature
Spare parts	A set of spare fuses and a set of common maintenance tools.



Safe Use Conditions	
Environmental Requirements	Allowable operating temperature range 0~30°C
	Performance guarantee range: 5~25°C
	Relative humidity: ≤ 85%RH
	Air pressure: 86kPa~106kPa
Site Requirements	<p>The ground is flat, well ventilated, free of flammable, explosive, corrosive gas and dust</p> <p>There is no strong electromagnetic radiation source nearby</p> <p>There is a drainage floor drain near the equipment</p> <p>Ground load-bearing capacity of the site: not less than 800KG/m²</p> <p>Leave proper maintenance space around the equipment</p>
Requirement for storage environment	When the equipment is working, the temperature of the environment should be kept within 0~+4°C (no freezing)

Main Configurations

Name
Controller
Refrigeration Compressors
Oil Separator
Plate Heat Exchanger
Condenser
Evaporator
The Electromagnetic Valve
Condensing Pressure Switch



Leakage Protection Switch
AC Contactor
Thermal Relay
Phase Sequence Relay
Solid State Relay
Temperature Sensor
Circulation Motor
Over Temperature Protection

