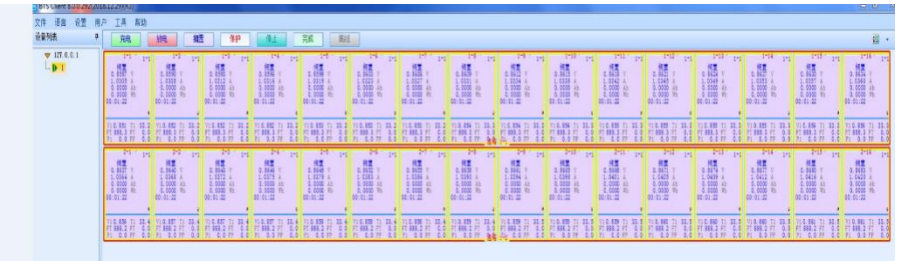
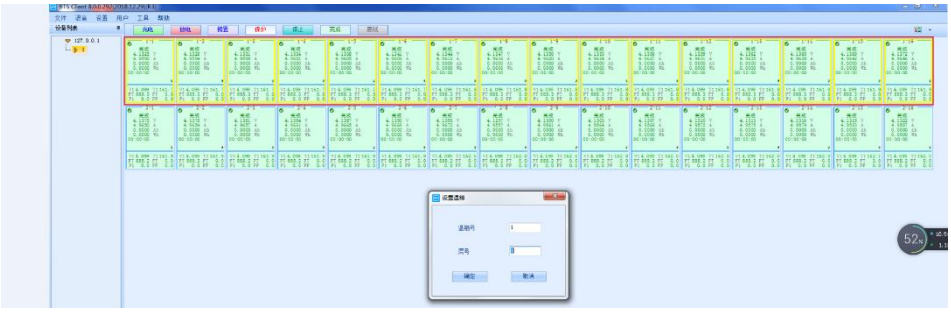
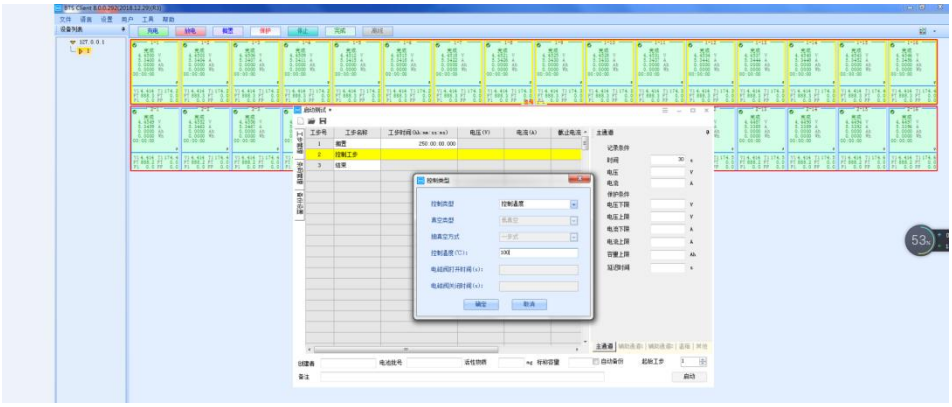
High and Low Temperature All-in-One Testing System

1. Product model	
1.1 Material code	WGDW-200L-40C-380V-6U
1.2 Equipment appearance	 The picture is for reference only, subject to the actual product
2. Product application	
Application scenarios	It is suitable for the adaptability test of electrical, electronic and other products, parts and materials used in aviation, automobile, scientific research and other fields when stored, transported and used in high and low temperature environment. It is a reliable testing equipment for cell performance testing of new energy production enterprises and research institutes
3. Sample restrictions	
	This test equipment is prohibited: Test or storage of samples of inflammable, explosive and volatile substances Testing or storage of corrosive material samples Test or storage of samples from strong electromagnetic sources Testing and storage of radioactive material samples Testing and storage of samples of highly toxic substances Tests or storage of samples of the above substances or objects during testing or storage
4. Volume, size and weight	
4.1 Nominal volume	200L
4.2 Inner box size	W600 mm×D500 mm×H750 mm
4.3 External dimensions	W1110 mm×D1350 mm×H1900 mm (including the height of protrusions)
4.4 Weight	About 360 kg
5. Performance	
5.1 Test environment conditions	The ambient temperature is +25℃, the relative humidity is less than or equal to 85%, and there is no sample in the test chamber (no load)
5.2 Test method	GB/T 5170.2-2017 Temperature test equipment

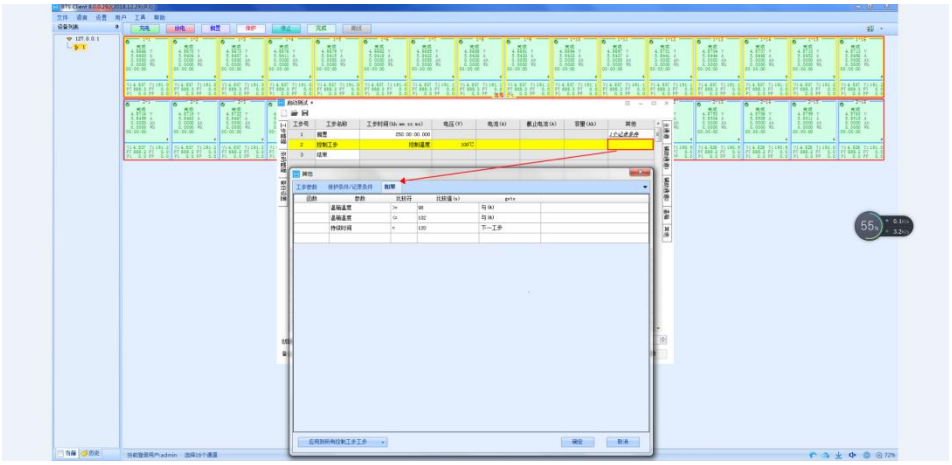
5.3 Temperature range	-40℃~150℃
5.4 Temperature fluctuation	≤±0.5℃ (no load, temperature stable)
5.5 Temperature deviation	±2℃ (no load, temperature stable)
5.6 Heating time	+20℃→+150℃ ≤60 min (no load, average nonlinearity)
5.7 Cooling time	+20℃→-40℃ ≤60 min (no load, average nonlinearity)
5.8 Meet the test method	GB/T 2423.1-2008 Low temperature test method Ab GB/T 2423.2-2008 High temperature test method Bb GJB 150.3A-2009 High temperature test GJB 150.4A-2009 Low temperature test GB/T 10592-2008, technical conditions for high and low temperature test chamber (The heat capacity of the load is not greater than 35kg/m³ steel, and there is no active wet and hot load during the wet and hot test)
6. Structural characteristics	
6.1 Insulation envelope structure	Exterior wall material: high quality cold rolled steel plate, surface spray and paint treatment Inner wall material: stainless steel plate SUS304 Insulation material of the box: hard polyurethane foam + aluminum silicate cotton (insulation thickness 100mm) Door insulation material: rigid polyurethane foam + aluminum silicate cotton
6.2 Air conditioning channel	**Centrifugal fan, heater, evaporator (also dehumidifier), etc., C-type air supply and return mode**
6.3 Standard configuration of test chamber	Lead hole (can be increased): φ50mm /4 One (with soft rubber stopper, located on the right side of the box) Wheels: 4 (with adjustable feet)  Observation window: multi-layer hollow electric heating film heating anti-fog observation window (located on the door) Visible range: approximately 330×450 mm (width×height), with heated glass for defogging, ensuring optimal visibility Lighting: 1 Cell pallet (optional): high temperature resistant electric insulation cell pallet 2 layers, load-bearing (evenly distributed): 10kg/layer (the total bearing of samples in the box does not exceed 40kg) 
6.4 Doors	Single hinge door (left hinge, right handle), with observation window and lighting lamp Window frame/door frame anti condensation electric heating device, double layer silicone

	rubber sealing strip
6.5 Control panel	Controller display, over temperature protection setter, etc
6.6 Refrigeration unit room	Refrigeration unit, water tray, drainage hole, condensing fan, etc
6.7 Distribution control cabinet	Total power supply leakage circuit breaker, distribution board, exhaust fan, Ethernet physical interface 1 Temperature and humidity controller, AC contactor, circuit breaker, thermal relay Temperature limiting protector, solid state relay and transformer
6.8 Heater	Nickel-chromium alloy electric heating wire heater Heater control mode: contactless periodic pulse width modulation, SSR (solid state relay)
6.9 Power cable hole and drainage hole	Located on the side or back of the box
7. Refrigeration system	
7.1 Working mode	Mechanical compression cascade refrigeration
7.2 Refrigeration compressor	France imports "Taikang" fully enclosed compressor or Emerson gas turbine compressor 
7.3 Main refrigeration components	Throttle valve, pressure controller, drying filter Cooling solenoid valve, reservoir, oil separator, etc
7.4 Evaporator	Finned tube heat exchanger (also used as dehumidifier)
7.5 Condenser	Air-cooled type: finned tube heat exchanger
7.6 Throttle device	Throttle valve / capillary tube
7.7 Refrigeration machine control mode	The control system automatically adjusts the operating condition of the refrigeration unit according to the test conditions Compressor return gas cooling circuit
7.8 Refrigerant for manufacturing	R404A (ozone depletion index 0)/R23
7.9 Welding process	Nitrogen protection welding
8. Control system	
8.1 Controller model	Professional temperature controller
8.2 Display	High color LCD touch screen
8.3 Operation mode	Program mode, set value mode
8.4 Setting method	Color touch human-computer interaction, Chinese/English interface
8.5 Control mode	Anti-integral saturation PID BTC balance temperature control mode
8.6 Temperature	Grade A armored PT100 sensor

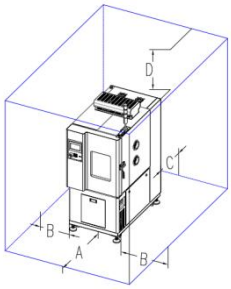
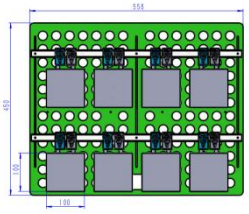
measurement method	
8.7 Display accuracy	Temperature: 0.01℃; Time: 1min
8.8 Over-temperature protection	Independent over-temperature protector, when the studio temperature exceeds the temperature set by this protection device, it will protect the shutdown and send an alarm signal
9. Cell testing equipment and test interconnection	
9.1 Testing equipment	**5V15A32CH, located on the side of the box**
9.2 Control unit	1
9.3 Network switch	1
9.4 Upper computer programming control interface (see the equipment random materials for details)	Step 1: Open the software interface  Step 2: Select the test chamber  Step 3: Find the test chamber to be set up  Step 4: Set the control temperature of the test chamber



Step 5: Set the work step control conditions



10.Safety protection device	
10.1 Refrigeration system	Compressor overheating, compressor overload, compressor over-pressure
10.2 Test chamber	Adjustable over-temperature protection, abnormal protection of in-box circulating fan
10.3 Other	Power supply phase sequence and phase loss protection, leakage protection, overload and short circuit protection, power failure recovery protection
11. Other configurations	
11.1 Power cable	**One five-core (three-phase four-wire + protective earth wire) cable (the specific specification is selected according to the contract requirements)**
11.2 Total power leakage circuit breaker	Three phase four wire + protective earth wire
11.3 Data	Provide Chinese user manual and Chinese technical data
12. Transportation (the test chamber is integral and transported as a whole)	
12.1 Dimensions	Maximum transport size (excluding packaging): "see 4.3 External dimensions"
12.2 Weight	Maximum transport weight (excluding packaging): "see 4.4 weight"
13. Conditions of use: The user shall guarantee the following conditions (the installation of power supply lines for the equipment shall be the responsibility of the user)	

13.1 Installation site	The ground is flat and conforms to GB50209-2002 specification: flatness is less than 5mm/2m Well-ventilated There is no strong vibration around the equipment There is no strong electromagnetic field around the equipment There is no flammable, explosive, corrosive substances and dust around the equipment Appropriate space for use and maintenance is left around the equipment, as shown in the figure: A: no less than 80cm; B: no less than 60cm C: not less than 70cm; D: not less than 50cm 
13.2 Environmental conditions	Temperature: 5℃~35℃; Relative humidity: less than or equal to 85%; Air pressure: 86kPa~106kPa
13.3 Power supply conditions	AC (380±38) V (50±0.5) Hz three-phase five-wire system The grounding resistance of the protective earth wire is less than 4Ω Power supply: The user is required to configure the corresponding capacity of air or power switch for the equipment at the installation site, and this switch must be independently supplied for the use of the equipment Power distribution: 7kW (thermosphere box) + 3kW (test equipment) Maximum current: 20A
13.4 Others	Opening the door of the test chamber during the test will cause temperature fluctuations in the chamber; if the door is opened repeatedly or kept open for a long time during the test, or if the test sample emits moisture, it may cause the heat exchanger of the refrigeration system to freeze and fail to work normally
14. Cell specifications and placement method	
14.1 Cell specification	The soft pack cell 5V15A32CH is shown in the figure below (blue model cell)
14.2 Cell placement method	Four layers are placed, each layer 8CH
14.3 Cell tray form and cell fixing method (cell tray can be customized according to needs) The cell pallet is made of imported high temperature resistant electric insulation material, and the height position can be adjusted appropriately	 Note: 1.The equipment is equipped with four layers of standard cell pallet; 2.Each cell pallet is equipped with 2 C-shaped rails, a total of 8 rails for four layers; 3.Silicone soft wire should be used for the channel line. 

15. Simulation diagram of stable operation of temperature in the test chamber (only schematic)	
No-load run	