



上海厚耀试验设备有限公司

Shanghai Hou Yao Test Equipment Co. Ltd.



Shanghai Hou Yao Test Equipment Co. Ltd.

Sales Address: No. 497 Hufan Road, Jiading District, Shanghai
Factory Address: Building 14, Chuangjin Industrial Park, Zhitang Town,
Changshu City, Suzhou City

Telephone: 17712471297

Web site: <http://www.houyaotest.com>

Collaboration, Win-Win, Innovation, Growth



Company profile

Shanghai Houyao was founded in 2012, the company has 47 technical personnel, is one of the few domestic research and development of large environment simulation cabin and optical simulation equipment production units, the company set up a Suzhou factory in 2017 to gather the industry's top talents, independently developed a low-pressure test chamber, vehicle sunshine simulation test chamber, Pv 2000 w and 4000 w uv and sunlight simulation system, and constantly develop to meet optical and environmental composite products such as composite ultraviolet, composite sun simulation cabin in sectors such as blank products, products to all the standard international first-line brand, the company main products are widely used in aerospace, automotive electronics, photovoltaic, bio-pharmaceutical, etc.

Houyao has always adhered to the principle of integrity and people-oriented. Close attention to customer needs and tireless pursuit of excellent technology and quality make Houyao a reliable supplier in the testing industry.

We are trustworthy because we are professional

Corporate honors



ISO 19001:44823MS012401R0



ISO 14001:44823MS078001R0



High-Tech Enterprise Certificate



Specialized and Innovative Enterprise Certificate



Environmental Certification Certificate



Quality Management System Certification Certificate



Calibration Certificate



Company Strategy

Shanghai Hou Yao Testing Equipment Co., Ltd., located in the renowned "Pearl of the Orient" city of Shanghai, specializes in the research, development, production, and sales of testing equipment. Backed by a team of industry-leading experts and scholars, the company has been dedicated to the continuous development and innovation of new products.

Currently, the company operates two business divisions, offering one-stop testing system solutions tailored for automotive and photovoltaic industry clients, effectively meeting diverse testing requirements.



PARTNERS



Contents

Product introduction

9-10. Damp Heat Test Chamber



15-16. Sunlight Simulation Test Chamber



11-12. Thermal Cycling Test Chamber



17-18. UV Aging Test Chamber



13-14. Humidity Freeze Test Chamber



19-20. Power Continuity Monitor



Walk-In Damp Heat Test Chamber(DH)

- Good Temperature Uniformity and High Testing Accuracy
- Equipped with adjustable air deflectors for regulating airflow, wind speed, and direction, ensuring smooth air circulation.
- Optional surface temperature control function allows precise temperature adjustment to meet experimental requirements for sample temperature.
- Automatic load calculation optimizes system output, ensuring efficiency.
- Fully welded chamber design prevents moisture leakage and offers higher pressure resistance.
- Integrated sample fixtures accommodate various sample sizes, providing excellent insulation and thermal protection.



Referenced Testing Standards

- IEC 61215-2:2016 MQT13 – Damp Heat Test
- IEC 62804-1:2015 – Potential-Induced Degradation (PID)
- GB/T 2423.3 – Requirements for Equipment in “Constant Damp Heat Test”
- GB/T 19394-2003
- GB/T 6495.4-1996
- GB/T 2423.3-2001 Test B – High Temperature Test Method
- GB 11158 – Technical Conditions for High-Temperature Test Chambers
- Other relevant product standards.

Walk-In Damp Heat Test Chamber(DH)

Model	HY-BRS-DH-5.2	HY-BRS-DH-7.8	HY-BRS-DH-11.4	HY-BRS-DH-X
Temperature Range	RT-125°C			
Humidity Range	20%-98%RH (Between 20 °C and 90 °C)			
Insulation Thickness	≥150mm			
Working Chamber Volume (D*W*H)mm	1800*1000*2900	1800*1500*2900	1800*2200*2900	X
Temperature Fluctuation	≤±0.5°C			
Temperature Uniformity	≤2°C			
Heating/Cooling Rate	Customizable			
Humidity Fluctuation	≤±1°C			
Humidity Uniformity	≤3%RH			
Number of Test Samples	3-5 pcs	6-8 pcs	10-12 pcs	X
Cooling Method	Air Cooling/Water Cooling			
Compliance Standards	IEC+UL			
Non-Standard Customization Accepted				

Walk-In Thermal Cycling Test Chamber (TC)

- Good Temperature Uniformity and High Testing Accuracy
- Equipped with adjustable air deflectors for regulating airflow, wind speed, and direction, ensuring smooth air circulation.
- Optional surface temperature control function allows precise temperature adjustment to meet experimental requirements for sample temperature.
- Automatic load calculation optimizes system output, ensuring efficiency.
- Fully welded chamber design prevents moisture leakage and offers higher pressure resistance.
- Integrated sample fixtures accommodate various sample sizes, providing excellent insulation and thermal protection.



Compliance with Testing Standards

- IEC 61215-2:2016 MQT11 – Thermal Cycling Test
- IEC 61730-2:2016 MST55 – Cold Test
- IEC 61730-2:2016 MST56 – Dry Heat Test
- UL 1703:2018 Chapter 35 – Temperature Cycling Test
- GB/T 2423.2-2008 – High and Low Temperature Test Method Bb
- GB/T 2423.1-2008 – High and Low Temperature Test Method Aa
- GB 11158 – Technical Conditions for High-Temperature Test Chambers
- GJB 150.4A-2009 – Low Temperature Test
- GJB 150.3A-2009 – High Temperature Test

Walk-In Thermal Cycling Test Chamber (TC)

Model	HY-BRS-TC-5.2	HY-BRS-TC-7.8	HY-BRS-TC-11.4	HY-BRS-TC-X
Temperature Range	-45°C-125°C			
Insulation Thickness	≥150mm			
Working Chamber Volume (D*W*H)mm	1800*1000*2900	1800*1500*2900	1800*2200*2900	X
Temperature Fluctuation	≤±0.5°C			
Temperature Uniformity	≤2°C			
Heating/Cooling Rate	Customizable			
Refrigeration Method	Compressor Refrigeration			
Refrigeration System	Binary Cascade System			
Compressor Brand	German Bitzer			
Number of Test Samples	3-5 pcs	6-8 pcs	10-12 pcs	X
Cooling Method	Water Cooling			
Compliance Standards	IEC+UL			
Non-Standard Customization Accepted				

Walk-In Humidity Freeze Test Chamber(HF)

- Good Temperature Uniformity and High Testing Accuracy
- Equipped with adjustable air deflectors for regulating airflow, wind speed, and direction, ensuring smooth air circulation.
- Optional surface temperature control function allows precise temperature adjustment to meet experimental requirements for sample temperature.
- Automatic load calculation optimizes system output, ensuring efficiency.
- Fully welded chamber design prevents moisture leakage and offers higher pressure resistance.
- Integrated sample fixtures accommodate various sample sizes, providing excellent insulation and thermal protection.



Reference Standards:

- IEC 61215-2:2016 MQT11 – Thermal Cycling Test
- IEC 61215-2:2016 MQT12 – Damp Freeze Test
- IEC 61215-2:2016 MQT13 – Damp Heat Test
- IEC 61730-2:2016 MST55 – Cold Test
- IEC 61730-2:2016 MST56 – Dry Heat Test
- UL 1703:2018 Chapter 35 – Temperature Cycling Test
- GB 11158 – Technical Conditions for High-Temperature Test Chambers
- GB 10589-89 – Technical Conditions for Low-Temperature Test Chambers
- GB 10592-89 – Technical Conditions for High and Low-Temperature Test Chambers
- GB 10586-89 – Technical Conditions for Damp Heat Test Chambers
- GB/T 2423.1-2008 – Low-Temperature Test Conditions for Test Chambers
- GB/T 2423.2-2008 – High-Temperature Test Methods for Test Chambers
- GB/T 2423.3-2006 – Damp Heat Test Methods for Test Chambers
- GB/T 2423.4-2008 – Alternating Damp Heat Test Methods
- GB/T 2423.22-2002 – Temperature Change Test Methods
- IEC 60068-2-1:1990 – Low-Temperature Test Methods for Test Chambers
- IEC 60068-2-2:1974 – High-Temperature Test Methods for Test Chambers
- GJB 150.3 – High Temperature Test
- GJB 150.4 – Low Temperature Test
- GJB 150.9 – Damp Heat Test

Walk-In Humidity Freeze Test Chamber(HF)

Model	HY-BRS-HF-6.2	HY-BRS-HF-7.8	HY-BRS-HF-11.4	HY-BRS-HF-X
Temperature Range	-45°C-125°C			
Humidity Range	20%-98%RH (Between 20 °C and 90 °C)			
Insulation Thickness	≥150mm			
Working Chamber Volume (D*W*H)mm:	1800*1000*2900	1800*1500*2900	1800*2200*2900	Customizable
Temperature Fluctuation	≤±0.5°C			
Temperature Uniformity	≤2°C			
Heating/Cooling Rate	Customizable			
Humidity Fluctuation	≤±1°C			
Humidity Uniformity	≤3%RH			
Refrigeration Method	Compressor Refrigeration			
Refrigeration System	Binary Cascade System			
Compressor Brand	German Bitzer			
Number of Test Samples	3-5 pcs	6-8pcs	10-12pcs	Customizable
Cooling Method	Water Cooling			
Compliance Standards	IEC+UL			
Non-Standard Customization Accepted				

Sunlight Simulation Test Chamber

- Good temperature uniformity and high test accuracy.
 - The air volume, wind speed, and wind direction can be adjusted through the air conditioning plate to ensure smooth air circulation.
- The optional function of controlling the surface temperature of the sample can ensure that the temperature of the sample reaches the required test time.
- Automatic load calculation, reasonable adjustment of system output, automatic compensation of lighting intensity.
 - The number of light sources is small, the intensity is high, and the uniformity of light intensity is good.



According to the standard

IEC61215/IEC61646

Sunlight Simulation Test Chamber

Model	HY-SUN-600	HY-SUN-2624	HY-SUN-3226	HY-SUN-5228
Light Source Type	Metal Halide Lamp			
Spectral distribution	280nm - 3000nm			
Irradiance Intensity	1000W/m ² - 1200W/m ²			
Irradiance Adjustment Range	50% to 100% Linear Adjustment			
Irradiated Area (mm)	600*600	2600*2400	3200*2600	5200*2800
Non-Uniformity	Class B (≤5%)			
Spectral Class	Class B (300nm - 1200nm)			
Instability	Class A			
Temperature Range	50°C±10°C (Extended Temperature Range-45°C-150°C)			
Humidity Range	Optional Humidity Control:Can be upgraded to composite high-temperature and high-humidity sunlight simulation or high-low temperature and humidity sunlight simulation 20% - 95%			
Temperature Deviation	≤2°C			
Lamp Power	2kW/unit or 4kW/unit			
Number of Lamps	1	4	8	14
Refrigeration System	Single-Stage Refrigeration			
Compressor Brand	German Bitzer / French Tecumseh			
Number of Components Tested	Parts Testing	2 pcs	2 pcs	4 pcs
Cooling Method	Air Cooling / Water Cooling			
Non-Standard Customization Accepted				

UV Aging Test Chamber (UV)

- Good temperature uniformity, high light source intensity, and excellent irradiance uniformity
- Airflow, wind speed, and direction can be adjusted via air deflectors to ensure smooth air circulation. An optional surface temperature control feature ensures the sample meets the required temperature within the specified testing time.
- Automatic load calculation adjusts system output efficiently and compensates for light intensity fluctuations.
- Fewer light sources with high intensity ensure excellent uniformity of irradiance.



According to the standard

IEC61215/IEC61646/IEC60904;

UV Aging Test Chamber (UV)

Model	HY-UV-600	HY-UV-2624	HY-UV-3226	HY-UV-5228
Light Source Type	Metal Halide Lamp			
Spectral distribution	280nm - 400nm			
Irradiance Intensity	≥200W/m ²			
Irradiance Adjustment Range	50% to 100% Linear Adjustment			
Irradiated Area (mm)	600*600	2600*2400	3200*2600	5200*2800
Non-Uniformity	≤15%			
Spectral Ratio	UVB accounts for 3% to 10% of the combined UVA + UVB spectrum			
Temperature Range	60°C±5°C (Extended Temperature Range-45°C-150°C)			
Humidity Range	Optional Humidity Control: Can be upgraded to composite high-temperature and high-humidity UV simulation or high-low temperature and humidity UV simulation 20% - 95% (Between 20 °C and 90 °C)			
Temperature Deviation	≤2°C			
Lamp Power	2kW/unit			
Number of Lamps	1	9	12	24
Refrigeration System	Single-Stage Refrigeration			
Compressor Brand	German Bitzer / French Tecumseh			
Number of Components Tested	Parts Testing	2pcs	2 pcs	4 pcs
Cooling Method	Air Cooling / Water Cooling			
Non-Standard Customization Accepted				

Power Continuity Monitor

The HY-DL01 Current Continuity Testing System is specifically designed to meet the requirements of the IEC 61215 standard, including 10.11 High-Low Temperature Cycling Test and 10.12 Damp Freeze Test. This system primarily provides stable DC power supply, current recording, temperature recording, and temperature control functionalities. It enables long-term real-time monitoring of multiple current and temperature channels by controlling the DC power supply through temperature regulation. When used in conjunction with high-low temperature cycling chambers, it can monitor the continuity of internal circuits across multiple components. This allows for the assessment of the fatigue resistance of materials, the rationality of lamination processes, and the stability of soldering quality in solar modules under alternating high and low-temperature environments.



technical parameter

一. Power Supply ①

- Voltage Range: 0-100V
- Accuracy: $\pm 1\%$
- Source Voltage Regulation: Voltage Stability $\leq 1\%$, Current Stability $\leq 2\%$
- Load Regulation: Voltage Stability $\leq 1\%$, Current Stability $\leq 2\%$
- Operating Environment: $-10 \sim 45^{\circ}\text{C}$
- Current Range: 0-25A
- Accuracy: $\pm 1\%$
- Overheat Protection Threshold: 70°C

二. Power Supply ②

- Voltage Range: 0-100V
- Accuracy: $\pm 1\%$
- Source Voltage Regulation: $\leq 0.2\%$
- Load Regulation: Voltage Stability $\leq 1\%$, Current Stability $\leq 2\%$
- Operating Environment: $-10 \sim 45^{\circ}\text{C}$
- Current Range: 0-1A
- Accuracy: $\pm 1.5\%$
- Overheat Protection Threshold: 70°C

三. Temperature Sensor

- OMGGA Thermocouple Wire
- Material: Teflon
- Temperature Resistance Range: $-267^{\circ}\text{C} \sim 260^{\circ}\text{C}$
- Load Regulation: Voltage Stability $\leq 1\%$, Current Stability $\leq 2\%$
- Testing Range: $-50 \sim 200^{\circ}\text{C}$
- Accuracy: $\pm 1\%$

四. Data Acquisition and Control

- Supports RS485 Communication, Supports J, K, T, E, R, S, and B Thermocouple Inputs
- 16-Bit Resolution
- 20 Differential Input Channels
- T/C Software Configuration, Low Voltage Current Input
- Isolation Voltage: 300Vac
- Supports Modbus/RTU Control
- DC24V Power Supply

Core Culture

Our Mission

To provide world-class testing technologies and equipment for our customers!

Our Vision

Dedicated service, becoming a trusted high-tech enterprise for our clients!

Our Business Philosophy

Harmony in diversity, a bright future!

Our Core Values

Openness and Progress,
Hard Work, Integrity and Trust,
Customer Success



On-Site Test Chamber Case Studies



On-Site Test Chamber Case Studies

