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Quality is more than a word

ESPEC



We Chat Code



ISO 9001:2015/ISO 14001:2015/45001:2018
ESPEC(Guang Dong)has been assessed by and registered in the
Quality management system/Environmental management
systems/Occupational health and safety management systems
based on the International Standard ISO 9001:2005/ISO
14001:2015/45001:2018 through the TUV Rheinland (Guangdong)
Ltd.(Member of TUV Rheinland Group in Greater China).



ISO 27001:2013
Information security management system in
accordance with GB / T 22080-2016 / ISO / IEC
27001: 2013 has been assessed and registered
through the Gainshine Assessment(GAC).



CQC Certification
ESPEC(Guang Dong)has been assessed by
and registered in the China Quality
Certification based on the Standard CQC31-
66-2018 through the China Quality
Certification Centre.

CAT.NO.EGD2026-E-M03

The contents of this catalog is as of March.2026

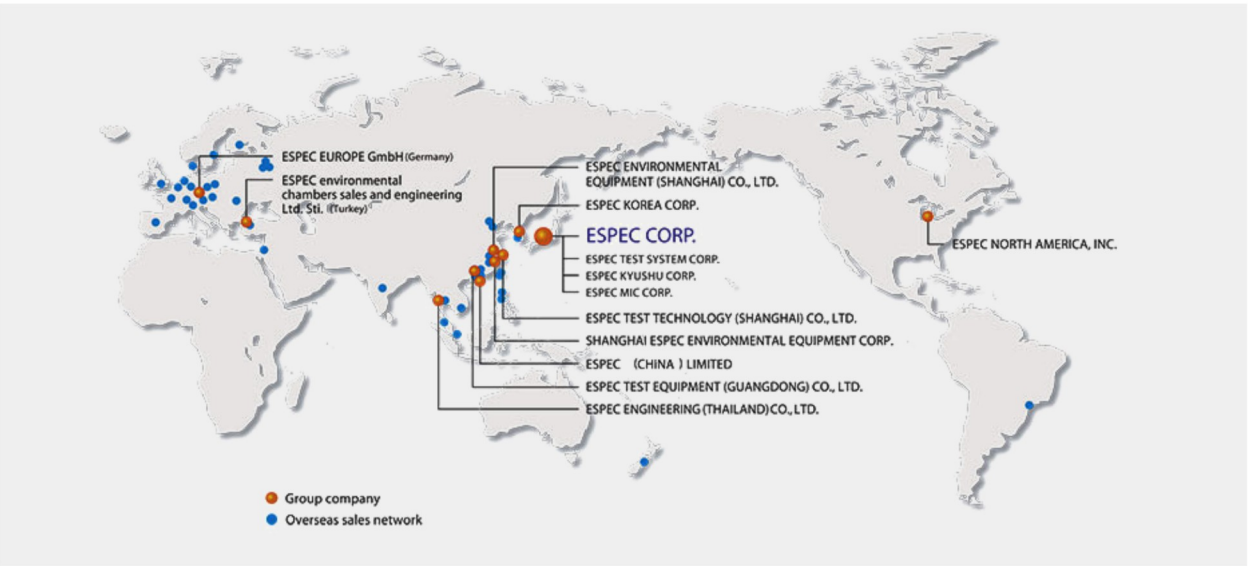
Specifications are subject to change without notice due to design improvement.



Established in 1947,ESPEC has a long history of environmental reliability test research and development,manufacture and sales,which has created a professional brand image of superior quality and technology in the world.

In order to meet the technical requirements and service needs from customers,ESPEC are always striving to expand production capability by established independent group company in China, including production, sales, service and commissioned test facility, and has more than 10 local branches. Each of them has provided high quality products and services to the market every year, and cultivating a large number of excellent production, technology, service and management personnel.

Among them, the production base includes the SHANGHAI ESPEC ENVIRONMENTAL EQUIPMENT CORP.in ShangHai, the ESPEC TEST EQUIPMENT (GUANGDONG) CO.,LTD in GuangDong, and the ESPEC TEST TECHNOLOGY (SHANGHAI) CO., LTD.as test facility in ShangHai.



In order to globally offer the highest quality products and meet the technical requirements and service needs of customers,ESPEC provides world-class quality and reliability. We are developing our international business activities in a wide range of areas,and personnel exchanges.

ESPEC's worldwide network comprises overseas production plants in China (ShangHai&GuangDong), the U.S. (Michigan and Colorado), and Korea,sales and service operations,and international sales agents. This network ensures thta ESPES provides worldwide products and after-sales service of the highest quality.

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COMPANY PROFILE

About ESPEC(GuangDong)

In March 2014, ESPEC Test Equipment (GuangDong) Co., Ltd., which is fully funded by ESPEC, began operations. Built in an industrial park in the Nansha District of GuangZhou (GuangDong), an area flourishing in the electronics and automobile industries, it features 17,854m² of factory floor area spread out over a 28,579m² site.

We utilizes production technology developed and designed in Japan to manufacture kinds of chambers, such as Temperature(&Humidity)Chamber, Rapid-Rate Temperature(&Humidity)Cycle Chamber, Bench-Top Type Temperature(&Humidity)Chamber, Compact Rapid Temperature Change(humidity) Chamber, Thermal Shock Chamber, Temperature Chamber(Oven), Compact Ultra

low Temperature Chamber.

Our test equipment is designed to handle many different quality and reliability evaluation applications. Suitable for a broad range of applications from high and low temperature alternating Testing, to humidity Testing, which can handle testing ranging from semiconductor and aircraft equipment evaluations to secondary battery safety tests.

ESPEC Test Equipment (GuangDong) plans to continue to develop as a new center supporting the activities of the global ESPEC brand.

Quality is more than a word
ESPEC



Company Profile

ESPEC TEST EQUIPMENT (GUANGDONG) CO., LTD

Company Overview

Company Name:	ESPEC TEST EQUIPMENT (GUANGDONG) CO.,LTD
Location:	NO.14,Meide 2nd Road, Pearl River Street,NanSha,GuangZhou.China.
Established:	May.2013
Start of Operations:	February 2014
Company Attribute:	limited liability company(sole proprietorship from Taiwan,Hong Kong & Macao)
Registered Capital:	47 million yuan (RMB)
Scope of Business:	Instruments Manufacturing
ISO Certification:	ISO9001、ISO14001、ISO45001、ISO27001
Number of Employees:	190(As of March,2026)
R&D Employees:	20(As of March,2026)
Land Area:	28,579m ²
Floor Area:	17,854m ²
Home Page:	http://www.gd-espec.com/



Company Development

May.2013	ESPEC GuangDong is established.
Jun.2014	First shipment of Temperature Chamber(Oven).
Jul.2014	First shipment of Temperature (&Humidity) Chamber and Compact Ultra Low Temperature Chamber(GMC).
Jan.2016	Rapid-Rate Temperature(&Humidity)Cycle Chamber(GFS/G-400/800-10/15)is announced and public offering.
Jul.2016	Accredited under the ISO9001, ISO14001,ISO45001,ISO27001 standard.
May.2017	Rapid-Rate Temperature(&Humidity)Cycle Chamber-1000L is announced and public offering.
Sep.2017	Temperature (&Humidity) Chamber(5type-1000L) is announced and public offering.
Mar.2018	Temperature (&Humidity) Chamber(Wide view)is announced and public offering.
Mar.2018	Low Humidity Type Temperature Humidity Chamber(GPDL) is announced and public offering.
Jul.2018	Temperature Chamber(for battery test)is announced and public offering.
May.2019	Bench-Top Type Temperature(&Humidity)Chamber is announced and public offering.
May.2019	Obtained 12 National Patent Certificates of utility model.
Jun.2019	Construction of an independent painting workshop.
Aug.2019	Parts Evaluation Centre established.
Oct.2019	Temperature (&Humidity) Chamber(wide frame-4W)is announced and public offering.
Nov.2019	Accreditation is achieved under CQC Certification(GPU/L-3),the China standard for quality systems.
Dec.2019	Rapid-Rate Temperature (& Humidity)Cycle Chamber(GFS/G-800-20/GFS/G-1000-15)are announced and public offering.
Apr.2020	Temperature(&Humidity)Chamber(wide frame-5W)is announced and public offering.
Oct.2020	Compact Ultra Low Temperature Chamber-New model:GMC-81 is announced and public offering.
Nov.2020	New model of Rate Temperature (&Humidity)Cycle Chamber(GFG-300/200-20 & 20 K)is announced and public offering.
Nov.2020	Stability Test Chamber (GCSH-11/12/13HG)are announced and public offering.
Dec.2020	ERP management system production planning module online.
Mar.2021	Bench-Top Type Temperature (& Humidity) Chamber(vertical - V series)is announced and public offering.
Sep.2021	Temperature (&Humidity) Chamber(i-Instrumentation)(EGD Self-developed PLC Instrumentation)is announced and public offering.
Oct.2021	High Performance Temperature Humidity Chamber-GH Series are announced and public offering.
Feb.2022	New model of Rapid-Rate Temperature (&Humidity)Chamber(GFS-300/200-20&20 K)is announced and public offering.
Apr.2022	New model of Temperature Chamber(GPH series)--GPH(H)10 is announced and public offering.
May.2023	Compact Rapid Temperature Change(humidity) Chamber-GMS/G is announced and public offering.
Jul.2023	GP/GS series chambers have obtained the CE certification.
Mar.2024	New model of OVEN-with EGD Self-developed PLC Instrumentation -GPH/GPV-e is announced and public offering.
Oct.2025	New model of Compact Rapid Temperature Change(humidity) Chamber-GMS-100-20 is announced and public offering.
Oct.2025	New model of Rapid-Rate Temperature (&Humidity)Chamber (GFS-400-25/GFG-200-25 & 25 K)is announced and public offering.
Oct.2025	New series-Thermal Shock Chamber(GTSD-100 model)is announced and public offering.
Dec.2025	GF series/GPV-GPH(e Instrumentation) series chambers have obtained CE certification.



Our Production System

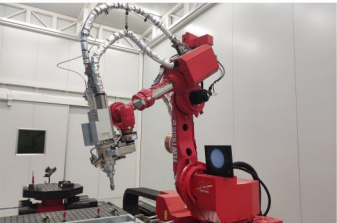
Products with the same Japanese quality

Based on policy of "safely, comfortably, and surely fulfill the mission" as well as to provide more reliable products , We are not only striving to achieve energy conservation of our products, but also continue to make positive contributions in the field of green technology.



• Technology Support

Utilizing production technology developed and designed in Japan to manufacture kinds of Chambers,together with local R&D team,we can respond to various standard and customized requirements of domestic customers.



• Main Core Components and advanced production equipment

The main core components, such as controllers and compressors, are the same as those in Fukuchiyama Plant in Japan. What's more,our production equipment,such as the punch machines,laser cutting machines,panel bending machines, automatic welding machine and other important production equipment brands are consistent with Japanese factories, mainly Amada (imported from Japan), Savanini (imported from Italy),etc.



• Following ESPEC Japan's production management

As evident by our newest facilities, QMC (Quality Management Circle) activities, 3S (Seiri:organized, Seiton:neat, Seiketsu:clean) activities that introduced from the Japanese factories, and other endeavors, we make our best to improve our production facilities to create goods of the utmost quality.



Quality Assurance

• Companies Approach to Development

- Modern management, excellent quality to win customer trust;
- Energy Conservation& Emission Reduction, enhancing social responsibility with environmental protection;
- Concern human rights,ensure employees'health care with safety production;
- Risk Prevention,ensure information security with stringent specifications.



• The Modern Enterprise Management

Using the ERP management system for procurement, sales, production, warehouse, and financial-related management to ensure that data is interrelated and timely feedback.



• Excellent geographical location ensure easy exporting

The products manufactured here will not only be sold in China, but also throughout Southeast Asia,European region and the CIS countries.



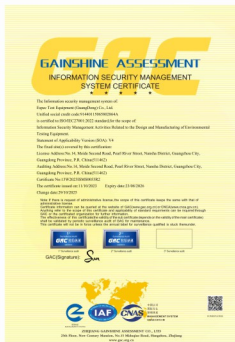
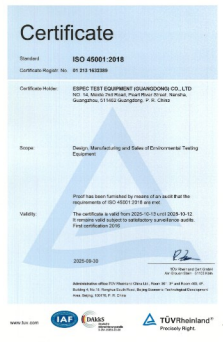
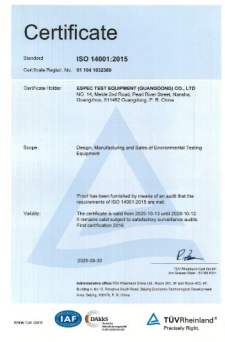
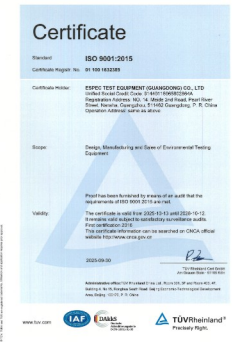
We have achieved lots of exports and our exports are becoming more and more convenient with short delivery,fast correspondence and good price, thanks to the Nansha new port that close to our factory,who has nearly 100 domestic and international shipping routes, and whose cargo routes cover the world's major trade areas, such as Europe, the Americas, South East Asia, the Middle East, and Australia.

• The ISO Certification &Other Certification

As of December 2017, ESPEC (GuangDong)was accredited under the ISO9001, ISO14001,ISO45001,ISO27001 standard. And in 2019,accreditation is achieved under CQC Certification,the China standard for quality systems. And GP/GF/GS/GPH-(e)/GPV-(e) series chambers have obtained CE certification. We strictly follow the above management system standards for production and management to further improve product quality, earn customer trust, and establish a good brand image.



—| The ISO Certification |—



—| GP/GS/GF/GPH-(e)/GPV-(e) series -CE certification:EMC/LVD standard |—



Product **Introduction**

IProducts Profile

| Temperature (&Humidity) Chamber | CE



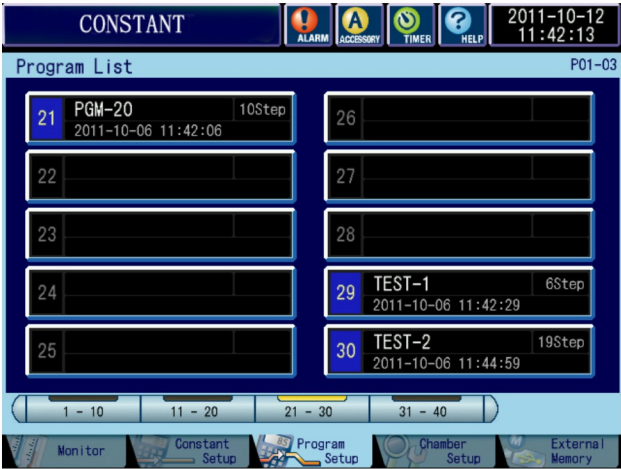
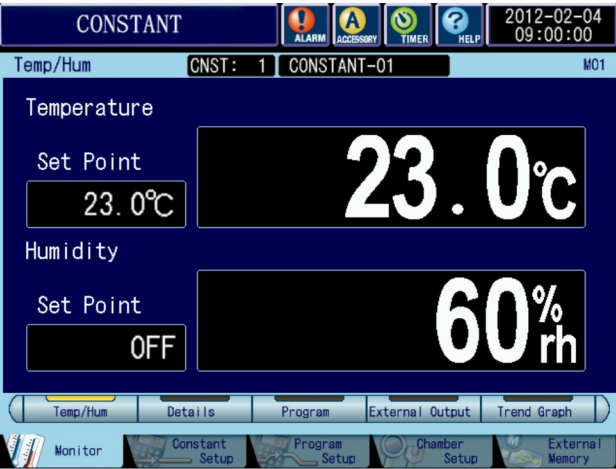
From the side,Model2,Model 3 and Model 4

Suitable for a broad range of applications from high and low temperature alternating testing, to humidity testing for the tests of various industrial products in various links such as research and development, production and inspection.It is necessary to provide constant damp heat and alternating high and low temperature (damp heat) and other test environments and conditions for the tests of various industrial products.The balanced temperature and humidity control system (BTHC) based on ESPEC patent, dynamic PID and steam partial pressure control, has mature technology and extremely high precision. The product is green and environment-friendly, saving energy and consumption. It range covers a wide range of demands from electronics, mechanical and electrical products, materials and energy, pharmaceutical and chemical industries to automotive and aerospace industries.

Features:

- **Color LCD touch panel**
Easy-to-use color LCD touch panel is included as standard. It is much easier to set various patterns of Constant-, Program-, Remote-Operation to meet various testing conditions.
- **Two types of program instrumentation to suit different applications:**
Including 3 constant operation modes:Program /Constant/Cycle Operation. Features programmed operation with operational settings such as constant mode and automatic start/stop.
Suitable for a range of applications from temperature-characteristics testing to heat/humidification treatment and drying. Programmed operation now allows storing 40 program operation patterns, each up to 99 steps. Provides a wide range of functions, including temperature ramp settings and a maximum of 999 repeat cycles.
- **Balanced Temperature (&Humidity)Control system(BT(H)C system)and PID control function.**
Using the BT(H)C system to control,provides highly accurate temperature/humidity

- environment.Consisting of PID controlled refrigerrator,and instrumentation,which delivers hight speed processing.
- **Interface (option)for device communication can be selected between RS-485, GPIB ,Web Lan and RS-232C.**
 - **Multilingual display**
Can change the display languague from English to Japanese,Simplified /Traditional Chinese at any time from the language icon on the top of the display(Russian as option).
 - **USB output of trend graph data**
Data can be recorded directly to a USB flash drive,backup and measurement intervals and other setting can be configured as required.
 - **Cable ports on both sides (Ø50) as standard to allow easy wiring access**
 - **GP series chambers has obtained CE certification.**
It is possible to correspond to a 400V Abnormal voltage modification with CE mark.



Specifications of Temperature (&Humidity) Chamber Humidity Type

Model	GPR-2	GPR-3	GPR-4	GPR-5	GPL-1	GPL-2	GPL-3	GPL-4	GPL-5	GPS-3	GPS-4	GPS-5			
System	Balanced Temperature Humidity Control (BTHC) System														
Utilities	Power Supply & Max.Load Current(A) AC380V 3φ 4W 50Hz	10.0A		19.5A		10.0 A		11.0 A		22.0A		18.0A	30.0A		
	Allowable ambient conditions	Ambient Temperature:0~+40°C;Relative Humidity:Up to 75%rh													
Performance ※	Temp.&Hum Range※1	-20~+180°C/10%~98%rh				-40~+180°C/10%~98%rh				-70~+180°C/10%~98%rh					
	Temp. fluctuation※1	± 0.3°C													
	Temp.variation※1	± 1.5°C (-20~+150°C) ± 2.5°C (+150.1~+180°C)				± 1.5°C (-40~+150°C) ± 2.5°C (+150.1~+180°C)				± 1.5°C (-70~+150°C) ± 2.5°C (+150.1~+180°C)					
	Humid. fluctuation※1	± 2.5%rh													
	Temp.rate of Change※2	Heat Up Rate:3°C/min Pull Down Rate:2°C/min (Range0°C↔+160°C)		Heat Up Rate:3°C/min Pull Down Rate:1°C/min (Range0°C↔+160°C)		Heat Up Rate:45°C/min Pull Down Rate:15°C/min (Range-18°C↔+158°C)		Heat Up Rate:3.3°C/min Pull Down Rate:3.5°C/min (Range-18°C↔+158°C)		Heat Up Rate:3.3°C/min Pull Down Rate:3.0°C/min (Range-18°C↔+158°C)		Heat Up Rate:6.0°C/min Pull Down Rate:2.0°C/min (Range-45°C↔+155°C)		Heat Up Rate:6.0°C/min Pull Down Rate:1.5°C/min (Range-45°C↔+155°C)	
	Temperature Extremes Achievement Time※2	Heat Up: From+20°C to +180°C<60 min Pull Down: From+20°C to -20°C<40 min				Heat Up: +20°C ~ +180°C<45 min Pull Down: +20°C ~ -40°C<100 min		Heat Up: From+20°C to +180°C<60 min Pull Down: From+20°C to -40°C<45 min				Heat Up: From+20°C to +180°C<55min Pull Down: From+20°C to -70°C<65min		Heat Up: From+20°C to +180°C<55min Pull Down: From+20°C to -70°C<75min	
Construction	Allowable Heat Load※3	800W	1100W	1250W	1050W	650W	1400W	1500W	3000W	2700W	700W	3000W	2700W		
	Noise Level※4	36dB~57dB		45dB~57dB		36dB~57dB			45dB~60dB		36dB~64dB		45dB~65dB		
	Exterior	Galvanized cold-rolled steel sheet, hot-rolled steel sheet													
	Test Area	Stainless steel plate:18—8 Cr—Ni stainless steel plate, 2B polish													
Cooling System	Heater	Nichrome strip wire heater													
	Humidifier	Sheathed heater (18-12-2.5 Cr-Ni-Mo-LC stainless steel, surfaceevaporation type)													
	Cooler	Plate-fin cooler (also works as a dehumidifier)													
	Air Circulator	Sirocco (Centrifugal) fan													
	Water supply type	Pump water supply system													
	Water Tank	16L		32L		16L		32L		16L		32L			
	System	Mechanical single-stage refrigeration system										Mechanical double-stage refrigeration system			
	Refrigerator	Rotary compressor		Scroll Compressor		Rotary compressor			Scroll Compressor		Rotary compressor		Scroll Compressor		
Capacity(kW)	0.65		1.5		0.65			1.5		3		1.5X1.5		3.0X3.0	
	Electronic expansion valve														
	R404A/R508B (Low GWP Refrigerant)R449A is available on request as option)														
Standard Accessories		Shelves 2pcs;Racks 2sets;Cable Port Plug(Ø50mm) 2pcs;Breaker Handle Stopper 1pcs;Door Keys 2pcs; Wet-bulb wick 1box(24PCS); Cartridge Fuse 4pcs(GPR/GPL-1:3pcs);Operation manual 1set													
Inside(W×H×Dmm)		500×730×600	600×830×800	1000×980×800	1000×980×1000	500×730×300	500×730×600	600×830×800	1000×980×800	1000×980×1000	600×830×800	1000×980×800	1000×980×1000		
Outside(W×H×Dmm)※5		700x1590[1715] x1425	800x1690[1815] x1625	1200x1840[1965] x1625	1200x1840[1965] x1825	700x1590[1715] x1125	700x1590[1715] x1425	800x1690[1815] x1625	1200x1840[1965] x1625	1200x1840[1965] x1825	800x1690[1815] x1625	1200x1850[1978] x1625	1200x1850[1978] x1825		
Volume(L)		220	400	784	980	110	220	400	784	980	400	784	980		
Weight(Kg)		350	410	505	545	350	370	450	620	670	500	700	750		

※ The temperature chamber's performance values are based on GB/T5170.2,and IEC60068-3-5.And humidity chamber's performance values are based on GB/T5170.5 and IEC60068-3-6.Performance figures are given for a +23°C ambient temperature, relative humidity 65±20% RH, rated voltage, with no specimens inside the test area.

※1 Values are based on GB/T5170.2-2008.

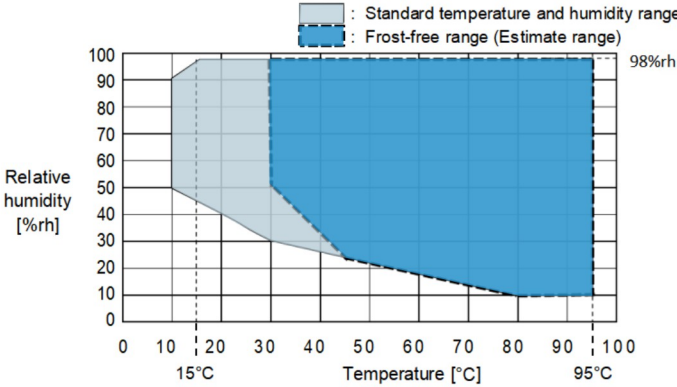
※2 Values are based on IEC60068-3-5.

※3 When the temperature inside the chamber:+20°C.

※4 Noise level was measured in an anechoic room at a height of 1.2 m from the floor and a distance of 1 m from the chamber front panel (ISO 1996-1:2003 A-weighted sound pressure level).

※5 Dimensions shown in [] include protrusions.

*Note:When the chamber is operated to attain temperature of +40°C or lower,continuous operation may be limited due to the frost formed on the cooler(which works as a dehumidifier).



Products Profile

Specifications of Low Temperature Chamber Temperature type(No Humidity)

Model		GPU-2	GPU-3	GPU-4	GPU-5	GPG-3	GPG-4	GPG-5	
System		Balanced Temperature Control (BTC) System							
Utilities	Power Supply & Max. Load Current(A) AC380V/3φ 4W 50Hz	10.5A		13.5A		17.5A		23.0A	
	Allowable ambient conditions	Ambient Temperature:0~+40°C;Relative Humidity:Up to 75%rh							
Performance ※	Range※1	-40~+180°C				-70~+180°C			
	Temp. fluctuation※1	±0.3°C							
	Temp. variation※1	±1.5°C (-40~+150°C) ±2.5°C (+150.1~+180°C)				±1.5°C (-70~+150°C) ±2.5°C (+150.1~+180°C)			
	Temp.rate of Change※2	Heat Up Rate:3.3°C/min Pull Down Rate:3.5°C/min (Range-18°C⇄+158°C)		Heat Up Rate:3.3°C/min Pull Down Rate:3.0°C/min (Range-18°C⇄+158°C)		Heat Up Rate:6.0°C/min Pull Down Rate:2.0°C/min (Range-45°C⇄+155°C)		Heat Up Rate:6.0°C/min Pull Down Rate:1.5°C/min (Range-45°C⇄+155°C)	
	Temperature Extremes Achievement Time※2	Heat Up:From+20°Cto+180°C<60 min Pull Down:From+20°Cto-40°C<45 min				Heat Up:From+20°C to +180°C<55min Pull Down:From+20°C to -70°C<65min		Heat Up:From+20°C to+180°C<55 min Pull Down:From+20°C to-70°C<75 min	
	Allowable Heat Load※3	1400W	1500W	3000W	2700W	700W	3000W	2700W	
	Noise Level※4	36dB~57dB		45dB~60dB		36dB~64dB	45dB~65dB		
Construction	Exterior		Galvanized cold-rolled steel sheet, hot-rolled steel sheet						
	Test Area		Stainless steel plate:18—8 Cr—Ni stainless steel plate, 2B polish						
	Heater		Nichrome strip wire heater						
	Cooler		Plate-fin cooler						
	Air Circulator		Sirocco (Centrifugal) fan						
	Cooling System	System	Mechanical single-stage refrigeration system				Mechanical single-stage refrigeration system		
		Refrigerator	Rotary compressor		Scroll Compressor		Rotary compressor	Scroll Compressor	
		Capacity(kW)	1.5		3		1.5X1.5	3.0X3.0	
Expansion System		Electronic expansion valve							
	Refrigerant	R404A/R508B(Low GWP Refrigerant;R449A is available on request as option)							
Standard Accessories		Shelves 2pcs;Racks 2sets;Cable Port Plug(Ø50mm) 2pcs;Breaker Handle Stopper 1pcs; Door Keys 2pcs;Cartridge Fuse 4pcs(GPU:3 pcs);Operation manual 1set							
Inside(W×H×Dmm)		500×730×600	600×830×800	1000×980×800	1000×980×1000	600×830×800	1000×980×800	1000×980×1000	
Outside (W×H×Dmm)※5		700×1590[1715]×1425	800×1690[1815]×1625	1200×1840[1965]×1625	1200×1840[1965]×1825	800×1690[1815]×1625	1200×1853[1978]×1625	1200×1853[1978]×1825	
Volume(L)		220	400	784	980	400	784	980	
Weight(Kg)		360	440	610	660	490	690	740	

※ The temperature chamber's performance values are based on GB/T5170.2,and IEC60068-3-5.And humidity chamber's performance values are based on GB/T5170.5 and IEC60068-3-6.Performance figures are given for a +23°C ambient temperature, relative humidity 65±20% RH, rated voltage, with no specimens inside the test area.

※1 Values are based on GB/T5170.2-2008.

※2 Values are based on IEC60068-3-5.

※3 When the temperature inside the chamber: +20°C.

※4 Noise level was measured in an anechoic room at a height of 1.2 m from the floor and a distance of 1 m from the chamber front panel (ISO 1996-1:2003 A-weighted sound pressure level).

※5 Dimensions shown in [] include protrusions.

Low Humidity Type Temperature Humidity Chamber |

A rotary regenerating(adsorption)dehumidification system ensures accurate low humidity test at low temperature from +10°C/15%rh to 40°C/5%rh,suitable for electrostatic reliability tests.



Features:

- Maintain the advantages of GP series.
- Using the turn drum recycling drying method to balance the humidity, no need to replace the desiccant, fast and efficient.
- Mini humidifier humidifying, could reduce interference and control stably.
- A rotary regenerating(adsorption)dehumidification system ensures accurate low humidity test at low temperature from +10°C/15%rh to 40°C/5%rh.
- Range: -40°C~+150°C (When the temperature inside chamber exceeds 100°C, the main body and the dehumidifier must be separated.).

Specifications	
Model	GPDL-3/GPDL-4
System	Balanced Temperature Humidity Control (BTHC) System
Power Supply & Max. Load Current(A)	AC380V 3φ 4W 50Hz 18.5A(3type)/29A(4type)
Temp&Hum Range※1	-40~+150°C/5%~98%rh
Temp.fluctuation※1	±0.3°C
Temp.variation※1	±1.5°C (-40~+150°C)
Humid.fluctuation※1	±2.5%rh relative humidity
Temp.rate of Change※2	Heat Up Rate:3.3°C/min/Pull Down Rate:2.5°C/min(Range-21°C⇄+131°C)
Temperature Extremes Achievement Time※2	Heat Up: From+20°C to+150°C <40 min Pull Down :From+20°C to-40°C < 50 min
Allowable Heat Load※3	1500W(3type)/2850W(4type)
Noise Level※4	40dB~62dB(3type)/45dB~62dB(4type)
Dimensions/Weight	
Dimensions	GPDL-3 GPDL-4
Inside(W×H×Dmm)	600x830x800 1000x980x800
Outside※5(W×H×Dmm)	1885x1690[1815]x1625 2075x1840[1965]x1625
Volume(L)	400 784
WeightKg/(chamber/Dehumidifier)	780/(450)/(330) 950/(620)/(330)

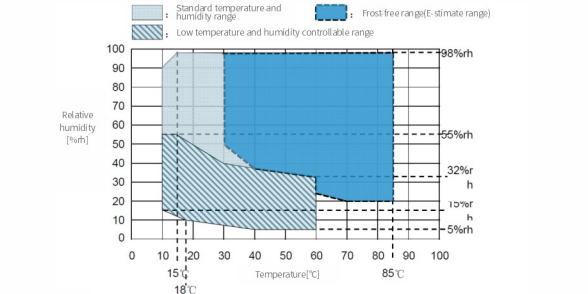
※1 Values are based on GB/T5170.2-2008.

※2 Values are based on IEC60068-3-5.

※3 When the temperature inside the chamber: +20°C.

※4 Noise level was measured in an anechoic room at a height of 1.2 m from the floor and a distance of 1 m from the chamber front panel (ISO 1996-1:2003 A-weighted sound pressure level).

※5 Dimensions shown in [] include protrusions.



*Note:When the chamber is operated to attain temperature of +40°C or lower,continuous operation may be limited due to the frost formed on the cooler(which works as a dehumidifier).

Temperature (& Humidity) Chamber(Wide view) |

This product is an extensive model that base on the design of GP series,and mainly corresponds to the test requirements of large wide-view door for better observation from inside chamber. An all-glass wide-view door provides an unrestricted view of every bit of space inside the chamber,which is the optimum choice when observation of or operations on a specimen are require during testing.



Features:

- Maintain the advantages of GP series.
- An all-glass wide-view door provides an unrestricted view, wide-view door hand-in ports to allow easy operations

An all-glass wide-view door provides an unrestricted view of every bit of space inside the chamber, and the wide-view door hand-in ports to allow easy operations.Temperature differential with the outside of the chamber can be controlled to suppress the formation of condensation on the glass surface(Japanese patent.).This chamber is the optimum choice when observation of or operations on a specimen are require during testing.

• Greatly improved performance.

In the past, glass was limited to +80°C, but our chamber's high temperature was expanded to +120°C. The performance of temperature range and temperature Heat up & pull down still maintain the advantages of GP series.The testing of on-board parts and automobile-related testing is now possible for automotive applications.

Model	Power Supply & Max. Load Current(A)	Temp&Hum range※1	Inside & Outside(W×H×Dmm)※2
GPL-3WV	AC380V 3φ 4W 50Hz 11.0A	-40~+120°C/20%~98%rh	Inside600*830*800(400L) Outside800[910]*1690[1815]*1625[1725]
GPL-4WV	AC380V 3φ 4W 50Hz 22.0A	-40~+120°C/20%~98%rh	Inside1000*980*800(784L) Outside1200[1310]*1840[1965]*1625[1725]
GPL-5WV	AC380V 3φ 4W 50Hz 22.0A	-40~+120°C/20%~98%rh	Inside1000*980*1000(980L) Outside1200[1310]*1840[1965]*1825[1925]
GPU-3WV	AC380V 3φ 4W 50Hz 10.5A	-40~+120°C/No Humidity	Inside600*830*800(400L) Outside800[910]*1690[1815]*1625[1725]
GPU-4WV	AC380V 3φ 4W 50Hz 13.5A	-40~+120°C/No Humidity	Inside1000*980*800(784L) Outside1200[1310]*1840[1965]*1625[1725]
GPU-5WV	AC380V 3φ 4W 50Hz 13.5A	-40~+120°C/No Humidity	Inside1000*980*1000(980L) Outside1200[1310]*1840[1965]*1825[1925]

※1 When wide-view door with hand-in ports,the upper limit temperature is limited to 100°C.

※2 Dimensions shown in [] include protrusions.



Products Profile

Temperature Humidity Chamber(Wide Humidity) |

The product is green and environment-friendly, saving energy and consumption.Suitable for a broad range of applications from high and low temperature alternating Testing, to humidity Testing,which widely used in aviation, automotive, electronic parts, materials, energy, chemical, medical, pharmaceutical and other industries. Temperature and humidity control can reach 10°C/20%rh, 40°C/10%rh,which is your best choose for Wide Humidity Testing.



GPL-4D

Features:

- Maintain the advantages of GP series
- Using the compressed air+desiccant drying method to balance the humidity, fast and efficient.
- Small humidifier humidifying, could reduce interference and control stably.
- Temperature and humidity control can reach 10°C/20%rh, 40°C/10%rh.

Specifications	
Model	GPL-4D
System	Balanced Temperature Humidity Control (BTHC) System
Power Supply & Max. Load Current(A)	AC380V 3φ 4W 50Hz/23.5A
Temp&Hum Range※1	-40~+180°C/10%~98%rh
Temp.fluctuation※1	± 0.3°C
Temp.variation※1	± 1.5°C (-40~+150°C) ± 2.5°C (+150.1~+180°C)
Humid.fluctuation※1	± 2.5%rh
Temp.rate of Change※2	Heat Up Rate:3.3°C/min/Pull Down Rate:3.0°C/min (Range-18°C⇄+158°C)
Temperature Extremes Achievement Time※2	Heat Up:From+20°C to +180°C <60 min Pull Down:From+20°C to -40°C <45 min
Allowable Heat Load※3	3000W
Noise Level※4	45dB~60dB
Inside(W×H×Dmm)	1000 x 980 x 800
Outside※5(W×H×Dmm)	1200 x 1840[1965] x 1625
Volume(L)	784

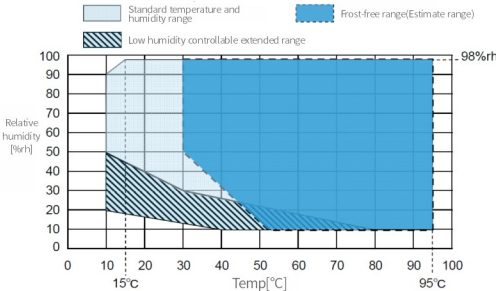
※1 Values are based on GB/T5170.2-2008.

※2 Values are based on IEC60068-3-5.

※3 When the temperature inside the chamber: +20°C.

※4 Noise level was measured in an anechoic room at a height of 1.2 m from the floor and a distance of 1 m from the chamber front panel (ISO 1996-1:2003 A-weighted sound pressure level).

※5 Dimensions shown in [] include protrusions.



*Note1: When the chamber is operated to attain temperature of +40°C or lower,continuousoperation may be limited due to the frost formed on the cooler (which works as a dehumidifier).Note2: In the extended range of low humidity, it may take longer to reach the target compared to the standard range.

Temperature (& Humidity) Chamber (Wide Frame) |

This product is an extensive model that base on the design of GP series,and mainly corresponds to the test requirements of large size specimens and specialsize of test area.

The purpose of "same performance but larger volume" is achieved to meet the market's increasing demand for larger test area by providing the custom solution of inside dimensions.



GPS-5W

Features:

- Maintain the advantages of GP series
- 5 standard Models for Wide Frame:
GPL-4W/GPS-4W/GPU-4W/GPG-4W,GPL-5W/GPS-5W/GPU-5W/GPG-5W, same excellent performance but larger volume.
- Custom solution for inside dimensions would be available.

Standard-Model	Power Supply & Max. Load Current(A)	Temp & Hum range	Inside & Outside (W×H×Dmm)
GPL-4W	AC380V 3φ 4W 50Hz 22A	-40~+180°C/ 10%~98%rh	Inside1200*980*800(940L) Outside1400*1840[1965]*1625
GPL-5W	AC380V 3φ 4W 50Hz	-40~+180°C/ 20%~98%rh	Inside1200*980*1000(1176L) Outside1400*1840[1965]*1825
GPS-4W	AC380V 3φ 4W 50Hz 30.0A	-70~+180°C/ 10%~98%rh	Inside1200*980*800(940L) Outside1400*1853[1978]*1625
GPS-5W	AC380V 3φ 4W 50Hz	-70~+180°C/ 20%~98%rh	Inside1200*980*1000(1176L) Outside1400*1853[1978]*1825
GPU-4W	AC380V 3φ 4W 50Hz 13.5A	-40~+180°C/ No Humidity	Inside1200*980*1000(1176L) Outside1400*1840[1965]*1625
GPU-5W	AC380V 3φ 4W 50Hz	-40~+180°C/ No Humidity	Inside1200*980*1000(1176L) Outside1400*1840[1965]*1825
GPG-4W	AC380V 3φ 4W 50Hz 30.0A	-70~+180°C/ No Humidity	Inside1200*980*800(940L) Outside1400*1853[1978]*1625
GPG-5W	AC380V 3φ 4W 50Hz	-70~+180°C/ No Humidity	Inside1200*980*1000(1176L) Outside1400*1853[1978]*1825

Test Area Custom Solution※

The custom solution for inside dimensions offered by ESPEC GuangDong precisely answer the various testing needs for specimens with different size of customers(for -4W type)(see more information as below):

	Alternative inside dimensions(mm) ①	Alternative inside dimensions(mm) ②	Alternative inside dimensions(mm) ③	Alternative inside dimensions(mm) ④	Remarks
W	500	600	1000	1200	The maximum capacity is 1000 L.
H	730	830	980~1180		
D	200~1150			1200	

※If you have requirements for inside dimensions modification,please contact your local sales compay for detail solution.

Temperature (& Humidity) Chamber&Low Temperature Chamber(for battery test) |



GPL-3B/GPU-4B/GPU-4B

Our new Temperature & Humidity Chamber(for battery test) with safety equipment was designed to meet this demand,with easy access to the specimen and comes with accident safety functions,which could protect and minimize the damage to operators and the property surrounding the chamber from harm.With its temperature uniformity in the test area and high accuracy control during long continuous operation, this chamber is the ideal tester for battery&new energy testing.

Features:

- Maintain the advantages of GP series.
- Uniform temperature distribution

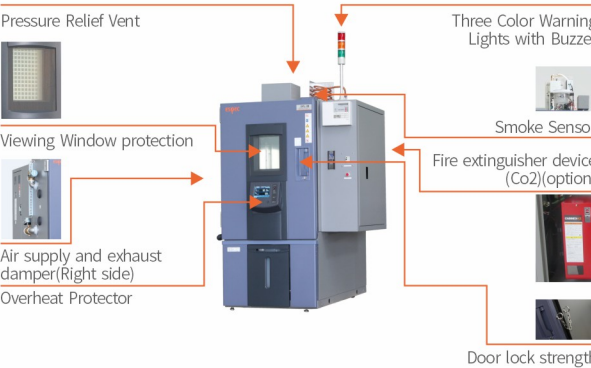
Capacity of vertical airflow from the top is increased so that the air reaches every corner of the test area,realizing more uniform temperature distribution in the test area.

- Safety features.

The chamber comes standard with safety features such as pressure relief vent, smoke detector and hand-tighten bolt door lock, 3-colored light tower etc.In addition, you can select optional features like various detectors,Fire extinguisher device,communication function and cable ports to suit youe application.

- More option to promote the performance

Frost-free continuous operation:The chamber comes with a frost-free function to enable long continuous operation without having to stop operation for defrosting when the temperature setting is +15°C or higher.



Illustrateed Product Model:GPL-3B

The safety features also could be added to our chambers based on the EUCAR Hazard Level.We describe recommended safety features needed in the event of an abnormality in the secondary battery during tests. To ensure the safety of surrounding workers and installation site, we suggest adding safety features according to the EUCAR (European Councilfor Automotive R&D) Hazard Level.The safety features can be adapted individually, according to customer specifications.

HAZARD LEVEL AND RECOMMENDED SAFETY DEVICE OPTIONS					
Hazard Level 0-2	Status indicator light	Emergency stop switch	Electronic door lock	Lever door lock	
Hazard Level 3-4	Forced air supply/exhaust damper	Window protection cover	Gas sensor (CO, H2, Hg)	Smoke sensor	Sheathed fin heaters
Hazard Level 5-6	Pressure relief vent 300 x 300mm	Screw door lock	Additional overheat protector	Port for CO2 fire extinguisher	External signal terminal

Model		GPU-3B	GPU-4B	GPU-5B	GPL-3B	GPL-4B	GPL-5B
System		Balanced Temperature Control (BTC) System+PID control			Balanced Temperature Humidity Control (BTHC) System+PID control		
Allowable ambient conditions		Ambient Temperature:0~+40°C;Relative Humidity:Up to 75%rh ;					
※ Performance	Temp Range※1	-40~+150°C/No Humidity			-40~+150°C/10%~98%rh		
	Temp.fluctuation※1	± 0.3°C					
	Temp.variation※1	± 1.5°C (-40°C~+100°C)			± 2.5°C (100.1°C~150°C)		
	Temp.rate of Change (IEC60068-3-5)	Heat Up:3.0°C/min Pull Down:3.0°C/min (Temp Range-21°C↔+131°C)	Heat Up:3.0°C/min Pull Down:2.5°C/min (Temp Range-21°C↔+131°C)		Heat Up:3.0°C/min Pull Down:3.0°C/min (Temp Range-21°C↔+131°C)	Heat Up:3.0°C/min Pull Down:2.5°C/min (Temp Range-21°C↔+131°C)	
	Temperature Extremes Achievement Time(IEC60068-3-5)	Heat Up:From+20°C to +150°C<60 min Pull Down:From+20°C to -40°C<55 min				Heat Up:From+20°C to +150°C<60 min Pull Down:From+20°C to -40°C<55 min	
	Allowable Heat Load (Temp inside chamber:+20°C.)	1300W	2700W	2500W	1300W	2700W	2500W
Inside Dimensions(W×H×Dmm)		600 x 830 x 800	1000 x 980 x 800	1000 x 980 x 1000	600 x 830 x 800	1000 x 980 x 800	1000 x 980 x 1000
Outside Dimensions(W×H×Dmm) Dimensions shown in [] include protrusions.		800[1100] x1690[2040] x 1625	1200 [1500]x 1840[2290]x 1625	1200 [1500]x 1840[2290]x 1825	800[1100] x1690[2040] x 1625	1200 [1500]x 1840[2290]x 1625	1200 [1500]x 1840[2290]x 1825
Volume(L)		400	740	980	400	740	980
Weight(Kg)		490	660	720	500	670	730

※1 The temperature chamber's performance values are based on GB/T5170.2,and IEC60068-3-5.And humidity chamber's performance values are based on GB/T5170.5 and IEC60068-3-6.Performance figures aregiven for a +23°C ambient temperature, relative humidity 65±20% RH, rated voltage, with no specimens inside the test area.

Standard Function

- Pressure Relief Valve
- Viewing Window protection &door lock strength
- Additional Overheat Protector
- Smoke Sensor
- Three Color Warning Lights with Buzzer
- Communication functionRS-485
- Air supply and exhaust damper
- Fin armored heater
- Frost-free function

Options

- Fire extinguisher device(CO2/N1230)
- Flammable gas sensor
- Gas sensor(CO/CO2/H2)
- Communication functionWEB LAN/RS-232C
- Strong Exhaust Air Circulator
- Specimen temperature control

Products Profile

Option list forTemperature (&Humidity) Chamber ※1 |

Option		Model	HumidityType						NoHumidity			
			GPR-2/ 3/4/5	GPL-1/2/3/4/ 5/4D/4W/5W	GPS-3/4/ 5/4W/5W	GPDL -3/4	GPL-WV (3/4/5)	GPL-B (3/4/5)	GPU-2/3/ 4/5/4W/5W	GPG-3/4/ 5/4W/5W	GPU-WV (3/4/5)	GPU-B (3/4/5)
Evaluation System(Linkage with AMI and AMR, etc.)			●	●	●	●	●	●	●	●	●	●
Recorder output terminal (Temp & Humidity)			●	●	●	●	●	●	●	●	●	●
Potable temp recorder (Paperless)			●	●	●	●	●	●	●	●	●	●
Temp recorder wiring		Reserved opening	●	●	●	●	●	●	●	●	●	●
Communication Function	Web(Lan)		●	●	●	●	●	●	●	●	●	●
	RS-485		●	●	●	●	●	●	●	●	●	●
	RS-232C		●	●	●	●	●	●	●	●	●	●
	GPIO		●	●	●	●	●	●	●	●	●	●
Inner glass door with hand-in port (Main door with viewing window)		With hand-in ports※2	●	●	●	●	●	●	●	●	●	●
Cable port (with rubber plug)※3	ø 50		●	●	●	●	●	●	●	●	●	●
	ø 100		●	●	●	●	●	●	●	●	●	●
	ø 150		●	●	●	●	●	●	●	●	●	●
	ø 50		●	●	●	●	●	●	●	●	●	●
Rubber plug for cable port	ø 50		●	●	●	●	●	●	●	●	●	●
	ø 100		●	●	●	●	●	●	●	●	●	●
	ø 150		●	●	●	●	●	●	●	●	●	●
	ø 150		●	●	●	●	●	●	●	●	●	●
Standard shelf brackets		2pcs/1set	●	●	●	●	●	●	●	●	●	●
Standard shelf※4		1pcs	●	●	●	●	●	●	●	●	●	●
Shelf+ shelf brackets※4		1set	●	●	●	●	●	●	●	●	●	●
Insulation treatment for shelf + shelf brackets		1set	●	●	●	●	●	●	●	●	●	●
Heavy-duty shelf 30KG		1set※5	●	●	●	●	●	●	●	●	●	●
Heavy-duty shelf 50KG		1set※5	●	●	●	●	●	●	●	●	●	●
Heavy-duty shelf 100KG		1set※5	●	●	●	●	●	●	●	●	●	●
Heavy-duty shelf 50KG(Reinforce)※5		1set※5	●	●	●	●	●	●	●	●	●	●
Heavy-duty shelf 100KG(Reinforce)※5		1set※5	●	●	●	●	●	●	●	●	●	●
Air drying unit			●	●	●	—	●	●	●	●	●	●
N2(Nitrogen) introduction device			●	●	●	●	●	●	●	●	●	●
Frost-free function			●	●	●	●	●	●	●	●	●	●
Airflow adjuster			●	●	●	●	●	●	●	●	●	●
Humidity sensor			●	●	●	—	●	●	—	—	—	—
Specimen temperature control (non-Insulated type)※6			●	●	●	●	●	●	●	●	●	●
Defrost circuit※13			※	※	※	※	※	※	※	※	※	※
Water-cooled※7			●	●	●	●	●	●	●	●	●	●
Continuous water supply		With pressure reducing valve	●	●	●	●	●	●	—	—	—	—
Floor load reinforcement(100KG)			●	●	●	●	●	●	●	●	●	●
Floor load reinforcement(200KG)			●	●	●	●	●	●	●	●	●	●
Floor load reinforcement(300KG)			●	●	●	●	●	●	●	●	●	●
Alarm output terminal※8			●	●	●	●	●	●	●	●	●	●
Emergency push stop button			●	●	●	●	●	●	●	●	●	●
Three Color Status indicator Warning Lights ※8	No alarm buzzer		●	●	●	●	●	●	●	●	●	●
	With alarm buzzer		●	●	●	●	●	●	●	●	●	●
	φ 100		●	●	●	—	—	●	●	●	—	●
Pressure Relief Valve※10	200*200		●	●	●	—	—	●	●	●	—	●
	300*300		●	●	●	—	—	●	●	●	—	●
	300*300		●	●	●	—	—	●	●	●	—	●
Viewing Window protection&door lock strength			●	●	●	—	—	●	●	●	—	●
Additional Overheat Protector			●	●	●	●	●	●	●	●	●	●
Smoke Sensor			●	●	●	—	—	●	●	●	●	●
Air supply and exhaust damper			●	●	●	—	—	●	●	●	●	●
Fin armored heater			●	●	●	●	●	●	●	●	●	●
Fire extinguisher device(CO2)			●	●	●	—	—	●	●	●	—	●
Flammable gas sensor			●	●	●	—	—	●	●	●	—	●
Gas sensor(CO/CO2/H2)			●	●	●	—	—	●	●	●	—	●
Strong Exhaust Air Circulator			●	●	●	—	—	●	●	●	—	●
Electromagnetic door lock			●	●	●	●	●	●	●	●	●	●
Leakage protection switch			●	●	●	●	●	●	●	●	●	●
Automatic pumping water to slow down evaporator corrosion renovation※11			●	●	●	●	●	●	—	—	—	—
Stainless steel evaporator			●	●	●	●	●	●	●	●	●	●
Electrophoretic evaporator			●	●	●	●	●	●	●	●	●	●
Abnormal voltage modification(400V)※12			●	●	●	—	—	●	●	●	●	●
CE Certificate Modification ※12			●	●	●	—	—	●	●	●	●	●
GB specifications inspection report			●	●	●	●	●	●	●	●	●	●
Additional operation manual(paper)			●	●	●	●	●	●	●	●	●	●
Standard inspection report※9			※	※	※	※	※	※	※	※	※	※

- ※1 "●" means that this option could modify to completed stock or modify with newly manufactured chamber.
- ※2 "1 pair hand-in ports" is suitable for type 1/2/3 products; "2 pairs hand-in ports" is suitable for type 4/5/4W/5W products; please note that additional operation hand-in ports have an impact on chamber's performance.
- ※3 Each cable port is equipped with a cap and a rubber plug. For custom opening positions, please consult your local sales company for detail.
- ※4 Shelf load capacity of type GPL-1 is 5KG; Shelf load capacity of type 2/3 is 10KG, of type 4/5/4W/5W is 30KG.
- ※5 Max.Qty in chamber for heavy-duty shelf 30KG is 3pcs, available for type 1/2/3; Max.Qty in chamber for heavy-duty shelf 50KG is 2pcs, available for type 2/3/4, and heavy-duty shelf 50KG(Reinforce) as complete set is necessary; Max.Qty in chamber for heavy-duty shelf 100KG is 1pcs, available for type 4/5, and heavy-duty shelf 100KG(Reinforce) as complete set is necessary.
- ※6 Specimen temperature control (non-Insulation) and Recorder output terminal (Temp&Hum) cannot be fitted together.
- ※7 Water-cooled is not available for type 2 chamber & GPL-1.
- ※8 Alarm output terminal and three color Status indicator warning lights cannot be fitted together.
- ※9 As standard accessories and delivery with chamber.
- ※10 Pressure Relief Valve is unavailable for GPL-1 chamber.
- ※11 When the specimen are semiconductor, chip, or component containing corrosive gases or liquids, this option is selected as a countermeasure for preventing evaporator corrosion.
- ※12 Power Supply : AC400V 3φ 4W 50Hz; Voltage range: 360V~440V(±10%). And not available for GPL-D&GPDL.
- ※13 This option is suitable for models GPL/U-2/3, GPR-4/5, GPS-4/5.

For details about specifications and options, refer to the relative products on our website: <http://www.gd-espec.com/>

Products Profile

Rapid-Rate Temperature(&Humidity)Cycle Chamber | C C



In response to the demand for rapid temperature change tests of Chinese market,we has developed and launched a Rapid-Rate Temperature (&Humidity)Cycle Chamber that called "GF Series" by integrating the rapid freezing technology of the G-N series produced by ESPEC NORTH AMERICA and the high-precision temperature and humidity control technology of ESPEC Japan. Suitable for specimen test requiring quick changes of temperature thanks to the the Balanced Temperature (&Humidity)Control system(BT(H)C system)and PID control function. It range covers a wide range of demands for various industries,especially for automotive and aerospace industries.And covers various applications from JEDEC, IEC standards to screening.

Features:

- **Meets International standards.**
Covers various applications from JEDEC, IEC standards,automobile related specification test to screening. Suitable for condensation test and durability to automobile parts .
- **Balanced Temperature (&Humidity)Control system(BT(H)C system)and PID control function.**
highly accurate temperature/humidity environment.Consisting of PID controlled refrigerrator,and instrumentation,which delivers hight speed processing.
- **Uniform and reproducible temperature rate of change, temperature ramp control function.**
The chamber is available that achieves a temperature change rate of 1~20°C K/min . In addition, controlled humidity from 10 to 95% is an available feature.
- **Air-cooled models available as option.**
High performance test chambers usually mean water cooling utilities are required. The GFS/G-400 models of are available with integrated air-cooling. The condenser is mounted on top with low speed fans for minimal noise impact.
- **Two types of program instrumentation to suit different applications:**
Including 3 constant operation modes:Program/Constant/Cycle Operation. Features programmed operation with operational settings such as constant mode and automatic

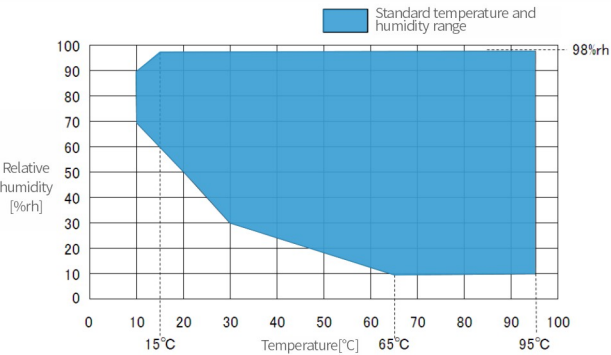
- start/stop.
- Programmed operation now allows storing 40 program operation patterns, each up to 99 steps. Provides a wide range of functions, including temperature ramp settings and a maximum of 999 repeat cycles. Besides,time signal settings can also be configured in each step to control external equipment .
- **Color LCD touch panel**
Easy-to-use color LCD touch panel (N-instrumentation) is included as standard. It is much easier to set various patterns of Constant, Program-, Remote-Operation to meet various testing conditions.
- **Multilingual display.**
Can change the display language from English to Japanese,Simplified /Traditional Chinese at any time from the language icon on the top of the display.
- **USB output of trend graph data.**
Data can be recorded directly to a USB flash drive,backup and measurement intervals and other setting can be configured as required.
- **Interface (option)for device communication can be selected between RS-485, GPIB,Web Lan and RS-232C.**
- **Cable ports on both sides (Ø50) as standard to allow easy wiring access.**

※GF series are only sold to Chinese domestic market (including HK),sorry for any inconvenience caused.

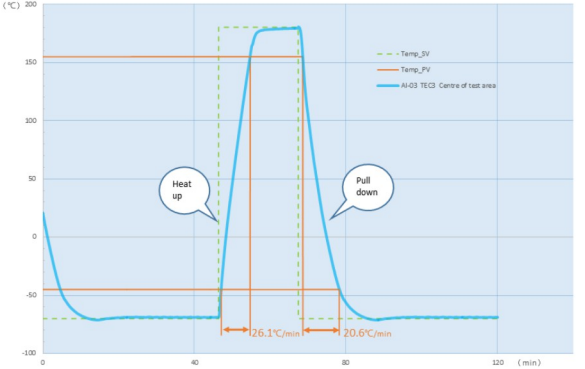
Specifications of Rapid-Rate Temperature (&Humidity)Cycle Chamber Humidity Type

Model	GFS-400-10	GFS-400-15	GFS-800-5	GFS-800-10	GFS-800-15	GFS-800-20	GFS-1000-5	GFS-1000-10	GFS-1000-15	
System	Balanced Temperature Humidity Control (BTHC) System									
Power Supply & Max. Load Current(A) AC380V 3φ 4W 50Hz	25.0A	32.0A	25.0A	35.0A	52.0A	80.0A	25.0A	52.0A	80.0A	
Utilities	Ambient Temperature:0~+40°C;Relative Humidity:Up to 75%rh ;Cooling water temperature:+5~+32°C									
※	Temp.&Hum Range※1	-70~+180°C/10%~98%rh		-70~+180°C/15%~98%rh		-70~+180°C/20%~98%rh		-70~+180°C/15%~98%rh		
	Temp.fluctuation※1	±0.3°C								
	Temp.variation※1	±1.5°C								
	Humid.fluctuation※1	±2.5%rh								
	Temp.rate of Change※2	Heat Up Rate:10°C/min Pull Down Rate:10°C/min (Range-45°C⇄+155°C)	Heat Up Rate:15°C/min Pull Down Rate:15°C/min (Range-45°C⇄+155°C)	Heat Up Rate:6°C/min Pull Down Rate:6°C/min (Range-45°C⇄+155°C)	Heat Up Rate:10°C/min Pull Down Rate:10°C/min (Range-45°C⇄+155°C)	Heat Up Rate:15°C/min Pull Down Rate:15°C/min (Range-45°C⇄+155°C)	Heat Up Rate:23°C/min Pull Down Rate:20°C/min (Range-45°C⇄+155°C)	Heat Up Rate:5°C/min Pull Down Rate:5°C/min (Range-45°C⇄+155°C)	Heat Up Rate:15°C/min Pull Down Rate:13°C/min (Range-45°C⇄+155°C)	Heat Up Rate:21°C/min Pull Down Rate:17°C/min (Range-45°C⇄+155°C)
Performance	Temperature Extremes Achievement Time※2	Heat Up: +20°C to +180°C<20 min Pull Down: +20°C to -70°C<20 min	Heat Up: +20°C to +180°C<15 min Pull Down: +20°C to -70°C<15 min	Heat Up: From+20°C to+180°C<35 min Pull Down: From+20°C to -70°C<35 min	Heat Up: +20°C to +180°C<20 min Pull Down: +20°C to -70°C<20 min	Heat Up: +20°C to +180°C<15 min Pull Down: +20°C to -70°C<15 min	Heat Up: From+20°C to+180°C<10 min Pull Down: From+20°C to -70°C<10 min	Heat Up: +20°C to +180°C<40 min Pull Down: +20°C to -70°C<40 min	Heat Up: +20°C to +180°C<15 min Pull Down: +20°C to -70°C<17 min	
	Allowable Heat Load※3	6000W		5000W		6000W		18500W		
	Noise Level※4	Less than 65dB.								
	Construction	Exterior	Galvanized cold-rolled steel sheet, hot-rolled steel sheet							
		Test Area	Stainless steel plate:18—8 Cr—Ni stainless steel plate, 2B polish							
Heater		Nichrome strip wire heater								
Humidifier		sheathed heater (18-12-2.5 Cr-Ni-Mo-LC stainless steel, surfaceevaporation type)								
Cooler		Plate-fin cooler								
Air Circulator		Propeller fan								
Water supply		Pump water supply system								
		Water Tank	16L		32L					
Cooling System		System	Mechanical double-stage refrigeration system							
		Refrigerator	Scroll Compressor					Semi-hermetic compressor		Scroll Compressor
	Capacity(kW)	4.47(6HP)2pcs	5.59(7.5HP)2pcs	4.47(6HP)2pcs	5.59(7.5HP)2pcs	9.69(13HP)2pcs	11.19kW(15HP) 2 pcs	4.47(6HP)2pcs	9.69(13HP)2pcs	
	Expansion System	Electronic expansion valve								
	Refrigerant	R404A/R508B								
Utilities	Pure water	Pure water:Conductivity 0.1~10μS/cm.								
	Cooling water	Water supply (L/h) (Reference temperature 23°C)	3300	4740	3300	4740	6360	7260	3300	6360
		Water supply pressure (Mpa) connection piping diameter	20A 3/4 inch(NPT)		20A 3/4 inch(NPT)		32A 1 1/4 inch(NPT)		20A 3/4 inch(NPT)	
Standard Accessories		Shelve 1pcs;Racks 2pcs;Cable Port Plug 850mm 2pcs;Breaker Handle Stopper 1pcs;Door Keys 2pcs;Wet-bulb wick 1box(24PCS);Cartridge Fuse 4pcs;Operation manual 1set (Power cable is not included).								
Inside(W×H×Dmm)		600×830×800		600×830×800		1000×980×800		1000×980×800		
Outside(W×H×Dmm)※5		800×1703×2200		800×1703×2200		1200×1853×2200		1200×1853×2200		
Volume(L)		400		400		784		784		
Weight(Kg)		750		755		850		910		

- ※1 The temperature chamber's performance values are based on GB/T5170.2.And humidity chamber's performance values are based on GB/T5170.5 and IEC60068-3-6.Performance figures aregiven for a +23°C ambient temperature, relative humidity 65±20% RH,cooling water temperature is +25°C,rated voltage, without specimens inside the test area.
- ※2 Values are based on IEC60068-3-5.Average rate within the highest to lowest temperatures excluding the top and bottom 10%.
- ※3 When the temperature inside the chamber: +20°C.
- ※4 Noise level was measured in an anechoic room at a height of 1.2 m from the floor and a distance of 1 m from the chamber front panel (ISO 1996-1:2003 A-weighted sound pressure level).
- ※5 Dimensions shown in [] include protrusions.



Humidity range for 400-10/15+800-10/15+1000-10.
Note: The No frost control is in all range,so the continuous operation is not restricted.



Note: IEC60068-3-5 GFS-800-20 (Measured data of the chamber under no specimen inside the test area).

Specifications of Rapid-Rate Temperature Cycle Chamber

Temperature Type(No Humidity)

Model		GFG-400-10	GFG-400-15	GFG-800-10	GFG-800-15	GFG-800-20	GFG-1000-10	GFG-1000-15	
System		Balanced Temperature Control (BTC) System							
Utilities	Power Supply & Max. Load Current(A) AC380V 3φ 4W 50Hz	23.0A	29.0A	32.0A	52.0A	80.0A	52.0A	80.0A	
	Allowable ambient conditions	Ambient Temperature:0~+40°C;Relative Humidity:Up to 75%rh ;Cooling water temperature:+5~+32°C							
Performance ※	Range※1	-70~+180°C							
	Temp.fluctuation※1	±0.3°C							
	Temp.variation※1	±1.5°C							
	Temp.rate of Change※2	Heat Up Rate: 10°C/min Pull Down Rate: 10°C/min (Range-45°C ⇄+155°C)	Heat Up Rate: 15°C/min Pull Down Rate: 15°C/min (Range-45°C ⇄+155°C)	Heat Up Rate: 10°C/min Pull Down Rate: 10°C/min (Range-45°C ⇄+155°C)	Heat Up Rate: 15°C/min Pull Down Rate: 15°C/min (Range-45°C ⇄+155°C)	Heat Up Rate: 23°C/min Pull Down Rate: 20°C/min (Range-45°C ⇄+155°C)	Heat Up Rate: 15°C/min Pull Down Rate: 13°C/min (Range-45°C ⇄+155°C)	Heat Up Rate: 21°C/min Pull Down Rate: 17°C/min (Range-45°C ⇄+155°C)	
	Temperature Extremes Achievement Time※2	Heat Up: +20°C to+180°C <20 min Pull Down: +20°C to-70°C <20 min	Heat Up: +20°C to+180°C <15 min Pull Down: +20°C to-70°C <15 min	Heat Up: +20°C to+180°C <20 min Pull Down: +20°C to-70°C <20 min	Heat Up: +20°C to+180°C <15 min Pull Down: +20°C to-70°C <15 min	Heat Up: +20°C to+180°C <10 min Pull Down: +20°C to-70°C <10 min	Heat Up: +20°C to+180°C <15 min Pull Down: +20°C to-70°C <17 min	Heat Up: +20°C to+180°C <12 min Pull Down: +20°C to-70°C <12 min	
	Allowable Heat Load※3	6000W		6000W	9000W	18500W	8000W	16700W	
	Noise Level※4	Less than 65dB.							
	Construction	Exterior	Galvanized cold-rolled steel sheet, hot-rolled steel sheet						
Test Area		Stainless steel plate:18—8 Cr—Ni stainless steel plate, 2B polish							
Heater		Nichrome strip wire heater							
Cooler		Plate-fin cooler							
Air Circulator		Propeller fan							
Cooling System		System	Mechanical double-stage refrigeration system						
		Refrigerator	Scroll Compressor				Semi-hermetic compressor	Scroll Compressor	Semi-hermetic compressor
		Capacity(kW)	4.47(6HP)2 pcs	5.59(7.5HP)2 pcs	5.59(7.5HP)2 pcs	9.69(13HP)2 pcs	11.19kW(15HP) 2 pcs	9.69(13HP)2 pcs	11.19kW(15HP) 2 pcs
	Expansion System	Electronic expansion valve							
Utilities	Refrigerant	R404A/R508B							
	Water supply (L/h) (Reference temperature 23°C)	3300	4740	4740	6360	7260	6360	7260	
	Water supply pressure (Mpa)	0.2~0.5							
	Connection piping diameter	20A 3/4 inch(NPT)			32A 1 1/4 inch(NPT)				
Standard Accessories		Shelves 1pcs;Racks 2pcs;Cable Port Plug(Ø50mm) 2pcs;Breaker Handle Stopper 1pcs;Door Keys 2pcs; Cartridge Fuse 4pcs;Operation manual 1set(Not included Power cable).							
Inside(W×H×Dmm)		600×830×800	600×830×800	1000×980×800	1000×980×800	1000×980×800	1000×980×1000	1000×980×1000	
Outside(W×H×Dmm)※5		800×1703×2200	800×1703×2200	1200×1853×2200	1200×1853×2200	1200×1910×2930	1200×1853×2400	1200×1910×3130	
Volume(L)		400	400	784	784	784	980	980	
Weight(Kg)		740	745	910	1000	1460	1030	1600	

※1 The temperature chamber's performance values are based on GB/T5170.2,and IEC60068-3-5.And humidity chamber's performance values are based on GB/T5170.5 and IEC60068-3-6.Performance figures are given for a +23°C ambient temperature, relative humidity 65±20% RH,cooling water temperature is +25°C, rated voltage, without specimens inside the test area.

※2 Values are based on IEC60068-3-5,Average rate within the highest to lowest temperatures excluding the top and bottom 10%.

※3 When the temperature inside the chamber: +20°C.

※4 Noise level was measured in an anechoic room at a height of 1.2 m from the floor and a distance of 1 m from the chamber front panel (ISO 1996-1:2003 A-weighted sound pressure level).

※5 Dimensions shown in [] include protrusions.

| Rapid-Rate Temperature (& Humidity)Cycle Chamber |



According to the increasing demand for semiconductor and automotive electronic component testing, Espec (Guangdong) has developed and launched the small capacity Rapid-Rate Temperature (Humidity) Chamber, which has the 200L and 300L Volume. This product is also suitable for the automotive related market and can be used for reliability testing of automotive components and various condensation tests of automotive parts.

Features:

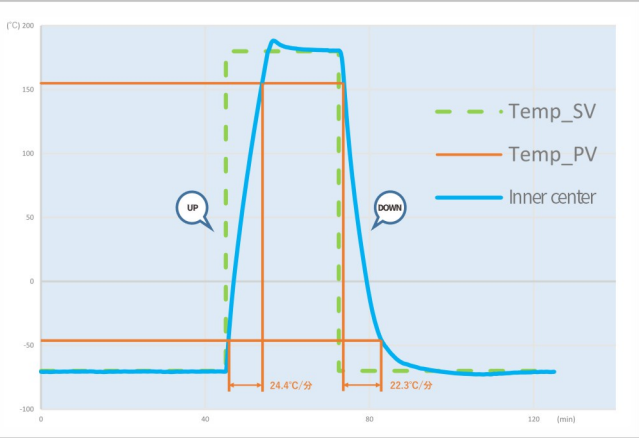
- **Balanced Temperature (& Humidity) Control system (BT(H)C system) and PID control function.**
Using the BT(H)C system to control, provides highly accurate temperature/humidity environment. Consisting of PID controlled refrigerator, and instrumentation, which delivers high speed processing.
- **Energy efficiency and Environmental**
When operating below 0°C, it is basically possible to operate temperature control (PID control) with the refrigerator only, when the heater output is OFF.
- **Interface (option) for device communication can be selected between RS-485, GPIB, Web Lan and RS-232C.**
- **Cable ports on both sides (Ø50) as standard to allow easy wiring access.**
- **Color LCD touch screen controller, easy to operate**
Programmed operation allows storing 40 program operation patterns, each up to 99 steps. temperature ramp settings and a maximum of 999 repeat cycles.
Multilingual display: Can change the display language at any time from the language icon.
USB output of trend graph data.
- **A wide range of options can be added to meet the diverse needs of customers.**
Additional safety options such as pressure relief valves, smoke sensors, emergency push stop button, alarm output terminals and three color status indicator warning Lights are available.
- **Compact structure with High performance**
Temp change rate: 18~20 K/min.
Temp range: -70°C ~ +180°C, Volume: 200L, 300L.

- **Suitable for the reliability test of semiconductor and vehicle electronic components**
Suitable for life assessment of semiconductor electronic devices, solder joints, and reliability testing of semiconductor packaging.
Suitable for reliability testing of automotive electronic components, automotive battery management assemblies (BMS), automotive electronic control systems, and more.
Can effectively meet the requirements and industry standards of high-end electronics, semiconductor, and automotive industry customers.
- **GFG-200-20 can meet JEDEC, IEC standard for accurate life evaluation testing.**
Meet the following performance standards, please consult the sales company for more requirements.
▶ JESD22-A104F B should be soaked for 5 minutes and circulated twice per hour.
▶ JESD22-A104F H is soaked for 5 minutes, with 2 cycles per hour.
IEC60749-25 (* Please consult the sales company first)
IEC60068-2-14 Nb (JIS C 60068-2-14 Nb)
EIAJ ED-2531B Nb
JESD22-A105C
IPC-9701
IPC-TM-650 2.6.6 B
LV 124 L-03V
SAE J1211
(Note: Load: 5kg epoxy plate, 4kg stainless steel, no heat)

Specifications of Rapid-Rate Temperature (&Humidity)Cycle Chamber

Model		GFG-200-20	GFG-300-20	GFS-200-20	GFS-300-20	
System		Balanced Temperature Control (BTC) System		Balanced Temperature Humidity Control (BTHC) System		
Power Supply & Max.Load Current(A) AC380V 3φ 4W 50Hz		29.0A	29.0A	29.0A	29.0A	
Allowable ambient conditions		Ambient Temperature:0~+40°C;Relative Humidity: Up to 75%rh ;Cooling water temperature: +5~+32°C				
Performance ※	Temp&Hum Range※1	-70~+180°C		-70°C~+180°C/10%~98%rh		
	Temp.fluctuation※1	±0.3°C		±0.3°C		
	Temp.variation※1	±2°C		±2°C		
	Humid.fluctuation※1	—		±2.5%rh		
	Temp.rate of Change (IEC60068-3-5) (Temp range:45°C⇄+155°C)	Heat Up:20°C/min Pull Down:20°C/min	Heat Up:20°C/min Pull Down:18°C/min	Heat Up:20°C/min Pull Down:18°C/min	Heat Up:18°C/min Pull Down:18°C/min	
	Temperature Extremes Achievement Time(IEC60068-3-5)	Heat Up: +20°C to +180°C<10 min Pull Down: +20°C to -70°C<15 min		Heat Up: +20°C to +180°C<10 min Pull Down: +20°C to -70°C<15 min		
	Allowable Heat Load (Temp inside chamber: +20°C.)	8000W	8000W	8000W	8000W	
	Noise Level(JIS-Z-8731:1999 A)	Less than 65dB.		Less than 65dB.		
Construction	Exterior	Galvanized cold-rolled steel sheet, hot-rolled steel sheet				
	Test Area	Stainless steel plate:18—8 Cr—Ni stainless steel plate, 2B polish				
	Heater	Nichrome strip wire heater				
	Humidifier	—		Sheathed heater (18-12.2.5 Cr-Ni-Mo-LC stainless steel, surface evaporation type)		
	Cooler	Plate-fin cooler				
	Air Circulator	Propeller fan		Propeller fan		
	Water supply	Water supply	—		Pump water supply system	
		Water Tank	—		16L	
	Cooling System	System	Mechanical double-stage refrigeration system		Mechanical double-stage refrigeration system	
		Refrigerator	Scroll Compressor			
Capacity(kW)		5.59kW(7.5HP) 2sets				
Expansion System		Electronic expansion valve				
Refrigerant		R404A/R508B				
Utilities	Cooling water	Water supply (L/h) (Reference temperature 23°C)	4740			
		Water supply pressure (MPa)	0.2~0.5			
		Connection piping diameter	20A 3/4 inch(NPT)			
Standard Accessories		Shelve 1pcs;Racks 2pcs; Cable Port Plug Ø50mm 2pcs; Breaker Handle Stopper 1pcs; Door Keys 2pcs; Wet-bulb wick 1box(24PCS-only for GFS); Cartridge Fuse 4pcs; Operation manual 1set (Power cable is not included).				
Inside Dimensions(W×H×Dmm)		600×830×400	600×830×600	600×830×400	600×830×600	
Outside Dimensions(W×H×Dmm)		800×1703×1800	800×1703×2000	800×1703×1800	800×1703×2000	
Volume(L)		200	300	200	300	
Weight(Kg)		640	700	640	700	

※1 The temperature chamber's performance values are based on GB/T5170.2,and IEC60068-3-5.And humidity chamber's performance values are based on GB/T5170.5 and IEC60068-3-6.Performance figures are given for a +23°C ambient temperature, relative humidity 65±20% RH, rated voltage, with no specimens inside the test area.
※2 Values are based on IEC60068-3-5.Average rate within the highest to lowest temperatures excluding the top and bottom 10%.

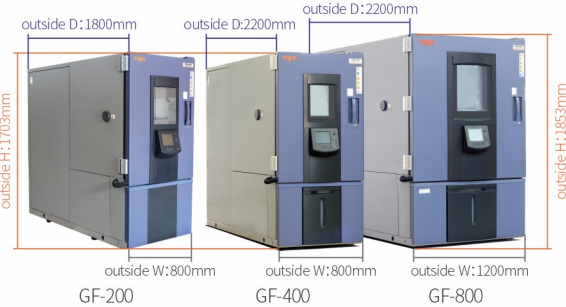


Note: GFG-200-20 actual test data(with no specimens)

Model	Inside Dimensions (W×H×Dmm)	Outside Dimensions (W×H×Dmm)
GF-200	600x830x400	800x1703x1800
GF-300	600x830x600	800x1703x2000
GF-400	600x830x800	800x1703x2200
GF-800	1000x980x800	1200x1853x2200
GF-1000	1000x980x1000	1200x1853x2400

Note: GF-800-20 Outside Dimensions(W×H×Dmm): 1200x1910x2930

Compact structure with High performance



Outside dimensions comparison for 200/400/800 models

| GFS/G-400-25, GFG-200-25: More compact structure with Higher performance(25k) |



According to the increasing demand for semiconductor and automotive electronic component testing, Espec (Guangdong) has developed and launched the small capacity Rapid-Rate Temperature (Humidity) Chamber,which has the 210L and 410L volume,while the Temp change rate can reach 25 K/min.. This product is also suitable for the automotive related market and can be used for reliability testing of automotive components and various condensation tests of automotive parts.

Features:

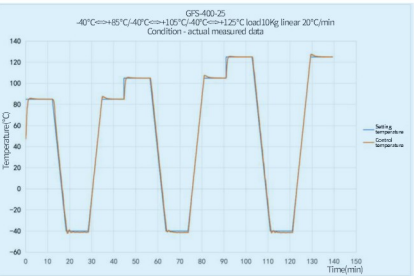
- Balanced Temperature (&Humidity)Control system(BT(H)C system)and PID control function.
Using the BT(H)C system to control,provides highly accurate temperature/humidity environment.Consisting of PID controlled refrigerator,and instrumentation,which delivers high speed processing.
- Energy efficiency and Environmental
When operating below 0°C, it is basically possible to operate temperature control (PID control) with the refrigerator only, when the heater output is OFF.
- Interface (option)for device communication can be selected between RS-485, GPIB,Web Lan and RS-232C.
- Cable ports on both sides (Ø50) as standard to allow easy wiring access.
- Color LCD touch screen controller, easy to operate
Programmed operation allows storing 40 program operation patterns, each up to 99 steps. temperature ramp settings and a maximum of 999 repeat cycles.
Multilingual display:Can change the display language at any time from the language icon.
USB output of trend graph data.
- A wide range of options can be added to meet the diverse needs of customers.
Additional safety options such as pressure relief valves, smoke sensors, emergency push stop button, alarm output terminals and three color status indicator warning Lights are available.
- Compact structure with High performance
Temp change rate:25 K/min.
Temp range:-70°C~+180°C
Volume:216L,410L

- Suitable for the reliability test of semiconductor and vehicle electronic components
Suitable for life assessment of semiconductor electronic devices, solder joints, and reliability testing of semiconductor packaging.
Suitable for reliability testing of automotive electronic components, automotive battery management assemblies (BMS), automotive electronic control systems, and more.
Can effectively meet the requirements and industry standards of high-end electronics, semiconductor, and automotive industry customers.
- GFS/G-400-25,GFG-200-25 can meet JEDEC, IEC standard for accurate life evaluation testing.
Meet the following performance standards, please consult the sales company for more requirements.
▶JESD22-A104F B should be soaked for 5 minutes and circulated twice per hour.
▶JESD22-A104F H is soaked for 5 minutes, with 2 cycles per hour.
IEC60749-25(* Please consult the sales company first)
IEC60068-2-14 Nb(JIS C 60068-2-14 Nb)
EIAJ ED-2531B Nb
JESD22-A105C
IPC-9701
IPC-TM-650 2.6.6 B
LV 124 L-03V
SAE J1211
(Note: Load: 5kg epoxy plate, 4kg stainless steel, no heat)

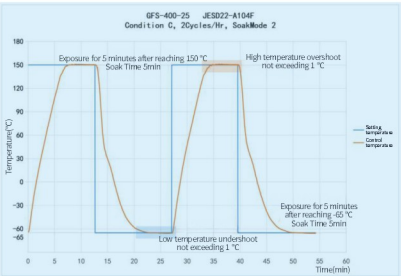
Specification of Rapid-Rate Temperature (& Humidity)Cycle Chamber

Model		GFG-200-25	GFG-400-25	GFS-400-25
System		Balanced Temperature Control (BTC) System	Balanced Temperature Control (BTC) System	Balanced Temperature Humidity Control (BTHC) System
Power Supply & Max.Load Current(A)		AC380V 3φ 4W 50Hz(52A)	AC380V 3φ 4W 50Hz(80A)	AC380V 3φ 4W 50Hz(80A)
Allowable ambient conditions		Ambient Temperature:0~+40°C;Relative Humidity: Up to 75%rh ;Cooling water temperature: +5~+32°C	Ambient Temperature:0~+40°C;Relative Humidity:Up to 75%rh ;Cooling water temperature: +5~+32°C	
Performance ※	Temp Range※1	-70~+180°C	-70~+180°C	-70~+180°C/10%RH ~98%RH
	Temp.fluctuation※1	±0.5°C		±0.5°C
	Temp.variation※1	±2°C		±2°C
	Humid.fluctuation※1	—	—	±2.5%/rh
	Temp.rate of Change(IEC60068-3-5)(Temp range:45°C⇄+155°C)	Heat Up:25°C/min Pull Down:25°C/min	Heat Up:30°C/min Pull Down:26°C/min	Heat Up:25°C/min Pull Down:25°C/min
	Temperature Extremes Achievement Time(IEC60068-3-5)	Heat Up:+20°C to +180°C<8 min Pull Down:+20°Cto-70°C<10 min	Heat Up:+20°C to +180°C<6 min Pull Down:+20°Cto-70°C<8 min	Heat Up:+20°C to +180°C<8 min Pull Down:+20°Cto-70°C<8 min
	Allowable Heat Load (Temp inside chamber: +20°C.)	9000W	16000W	16000W
Construction	Noise Level(JIS-Z-8731:1999 A)	Less than 65dB.	Less than 65dB.	
	Exterior	Galvanized cold-rolled steel sheet, hot-rolled steel sheet	Galvanized cold-rolled steel sheet, hot-rolled steel sheet	
	Test Area	Stainless steel plate:18—8 Cr—Ni stainless steel plate, 2B polish	Stainless steel plate:18—8 Cr—Ni stainless steel plate, 2B polish	
	Heater	Nichrome strip wire heater	Nichrome strip wire heater	
	Humidifier	—	Sheathed heater (18-12-2.5 Cr-Ni-Mo-LC stainless steel, surface evaporation type)	
	Cooler	Plate-fin cooler	Plate-fin cooler	
	Air Circulator	Propeller fan	Propeller fan	
	Water supply	—	—	
	Water Tank	—	Pump water supply system	
	System	Mechanical double-stage refrigeration system	Mechanical double-stage refrigeration system	Mechanical double-stage refrigeration system
	Refrigerator	Scroll Compressor	Semi-hermetic Compressor	
	Capacity(kW)	9.69kW(13HP) 2 sets	11.19kW(15HP) 2sets	
Utilities	Expansion System	Electronic expansion valve	Electronic expansion valve	
	Refrigerant	R404A/R508B	R404A/R508B	
	Water supply (L/h)(Reference temperature 23°C)	4740	7260	
	Water supply pressure (MPa)	0.2~0.5	0.2~0.5	
Standard Accessories		Shelve 1pcs;Racks 2pcs;Cable Port Plug 950mm 2pcs; Breaker Handle Stopper 1pcs;Door Keys 2pcs; Cartridge Fuse 3pcs;Operation manual 1set (without Power cable).	Shelve 1pcs;Racks 2pcs;Cable Port Plug 950mm 2pcs;Breaker Handle Stopper 1pcs;Door Keys 2pcs; Wet-bulb wick 1box(24PCS-only for GFS);Cartridge Fuse 4pcs;Operation manual 1set (without Power cable).	
Inside Dimensions(W×H×Dmm)		600×900×400	600×1050×650	600×1050×650
Outside Dimensions(W×H×Dmm)		1040×1725×1780	1035×1960×2785	1035×1960×2785
Volume(L)		216	410	410
Weight(Kg)		800	1060	1110

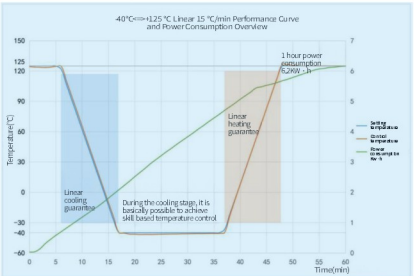
※1 The temperature chamber's performance values are based on GB/T5170.2,and IEC60068-3-5.And humidity chamber's performance values are based on GB/T5170.5 and IEC60068-3-6.Performance figures aregiven for a +23°C ambient temperature, relative humidity 65±20% RH, rated voltage, with no specimens inside the test area.



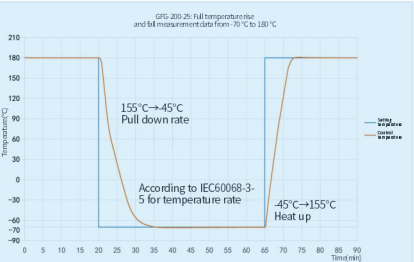
※GFS-400-25"-40°C⇄+85°C/40°C⇄+105°C/40°C⇄+125°C load10Kg linear 20°C/min" Condition - actual measured data



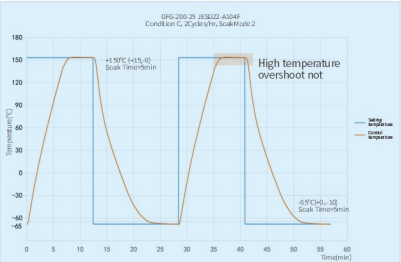
※Actual measurement data of GFS-400-25 in accordance with JE5D 114C requirements



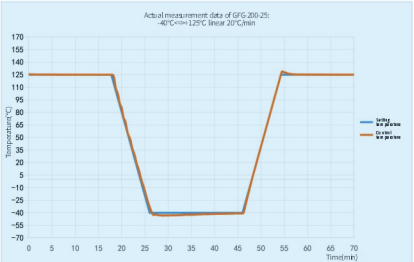
※GFS-400-25 40°C⇄+125°C Linear 15 °C/min Performance Curve and Power Consumption Overview



※GFG-200-25 Full temperature rise and fall measurement data from -70 °C to 180 °C



※Actual measurement data of GFG-200-25 JE5022-A104 Condition C,2Cycles/Hr,SoakMode 2



※Actual measurement data of GFG-200-25: 40°C⇄+125°C linear 20°C/min

Option list for Rapid-Rate Temperature(&Humidity)Cycle Chamber※1

Model		Humidity Type						Temperature Type(No Humidity)						
		GFS-200/300-20	GFS-400-10/15	GFS-400-25	GFS-800-5	GFS-800-10/15	GFS-800-20	GFG-200/300-20	GFG-200-25	GFG-400-10/15	GFG-400-25	GFG-800-10/15	GFG-800-20	GFG-1000-10/15
Evaluation System(Linkage with AMI and AMR, etc.)		●	●	●	●	●	●	●	●	●	●	●	●	●
Recorder output terminal (Temp&Hum)		●	●	●	●	●	●	●	●	●	●	●	●	●
Potable temp recorder (Paperless)		●	●	●	●	●	●	●	●	●	●	●	●	●
Communication function	Web(Lan)	●	●	●	●	●	●	●	●	●	●	●	●	●
	RS-485	●	●	●	●	●	●	●	●	●	●	●	●	●
	RS-232C	●	●	●	●	●	●	●	●	●	●	●	●	●
	GPB	●	●	●	●	●	●	●	●	●	●	●	●	●
Inner glass door with hand-in port (Main door with viewing window)	with hand-in ports1pair※2	●	●	●	—	—	—	●	●	●	●	—	—	—
	with hand-in ports2 pairs※2	—	—	—	●	●	●	—	—	—	—	●	●	●
Cable port (with rubber plug)※3	Ø50	●	●	●	●	●	●	●	●	●	●	●	●	●
	Ø100	●	●	●	●	●	●	●	●	●	●	●	●	●
	Ø150	●	●	●	●	●	●	●	●	●	●	●	●	●
Rubber plug for cable port	Ø50	●	●	●	●	●	●	●	●	●	●	●	●	●
	Ø100	●	●	●	●	●	●	●	●	●	●	●	●	●
	Ø150	●	●	●	●	●	●	●	●	●	●	●	●	●
Standard shelf brackets	2pcs/1set	●	●	●	●	●	●	●	●	●	●	●	●	●
Standard shelf※4	1pcs	●	●	●	●	●	●	●	●	●	●	●	●	●
Shelf-shelf brackets※4	1set	●	●	●	●	●	●	●	●	●	●	●	●	●
Insulation treatment for shelf-shelf brackets	1set	●	●	●	●	●	●	●	●	●	●	●	●	●
Heavy-duty shelf 30KG	1set※5	●	●	●	—	—	—	●	●	●	●	—	—	—
Heavy-duty shelf 50KG	1set※5	●	●	●	●	●	●	●	●	●	●	●	●	●
Heavy-duty shelf 100KG	1set※5	—	—	—	—	—	—	—	—	—	—	—	—	—
Heavy-duty shelf 50KG(Reinforce)※5	—	●	●	●	●	●	●	●	●	●	●	●	●	●
Heavy-duty shelf 100KG(Reinforce)※5	—	—	—	—	●	●	●	—	—	—	—	●	●	●
Air drying unit	—	●	●	●	●	●	●	●	●	●	●	●	●	●
N2(Nitrogen) introduction device	—	●	●	●	●	●	●	●	●	●	●	●	●	●
Airflow adjuster	—	●	●	●	●	●	●	●	●	●	●	●	●	●
Humidity sensor	—	●	●	●	●	●	●	—	—	—	—	—	—	—
Specimen temperaturecontrol(non-Insulated type)※6	—	●	●	●	●	●	●	●	●	●	●	●	●	●
Air-cooled models※7	—	—	●	—	—	—	—	—	—	—	—	—	—	—
Continuous water supply(with pressure reducing valve)	—	●	●	●	●	●	●	—	—	—	—	—	—	—
Floor load reinforcement(100KG)	—	●	●	●	●	●	●	●	●	●	●	●	●	●
Floor load reinforcement(200KG)	—	●	●	●	●	●	●	●	●	●	●	●	●	●
Floor load reinforcement(300KG)	—	●	●	●	●	●	●	●	●	●	●	●	●	●
Alarm output terminal※8	—	●	●	●	●	●	●	●	●	●	●	●	●	●
Emergency push stopbutton	—	●	●	●	●	●	●	●	●	●	●	●	●	●
Three Color Status Indicator	No alarm buzzer	●	●	●	●	●	●	●	●	●	●	●	●	●
	With alarm buzzer	●	●	●	●	●	●	●	●	●	●	●	●	●
Warning Lights ※8	200*200	●	●	●	●	●	●	●	●	●	●	●	●	●
	300*300	●	●	●	●	●	●	●	●	●	●	●	●	●
Pressure Relief Valve	—	●	●	●	●	●	●	●	●	●	●	●	●	●
Viewing Window protection&door lock strength	—	●	●	●	●	●	●	●	●	●	●	●	●	●
Additional Overheat Protector	—	●	●	●	●	●	●	●	●	●	●	●	●	●
Smoke Sensor	—	●	●	●	●	●	●	●	●	●	●	●	●	●
Electromagnetic door lock	—	●	●	●	●	●	●	●	●	●	●	●	●	●
Leakage protection switch	—	●	●	●	●	●	●	●	●	●	●	●	●	●
GB specifications inspection report	—	●	●	●	●	●	●	●	●	●	●	●	●	●
Additional operation manual(paper)	—	●	●	●	●	●	●	●	●	●	●	●	●	●
Standard inspection report※9	—	※	※	※	※	※	※	※	※	※	※	※	※	※

※1 "●" means that this option could modify to completed stock or modify with newly manufactured chamber.
※2 "1 pair hand-in ports" is suitable for type 200/300/400 product; "2 pairs hand-in ports" is suitable for type 800/1000 products;please note that additional operation hand-in ports have an impact on chamber's performance.
※3 Each cable port is equipped with a cap and a rubber plug.For custom opening positions,please consult your local sales company for detail.
※4 Shelf load capacity of type 400 is 10KG,of type 800/1000 is 30KG.
※5 Max.Qty in chamber for heavy-duty shelf 30KG is 3pcs,available for type 200/300/400; Max.Qty in chamber for heavy-duty shelf 50KG is 2pcs,available for type 200/300/400/800,and heavy-duty shelf 50KG(Reinforce)as complete set is necessary; Max.Qty in chamber for heavy-duty shelf 100KG is 1pcs,available for type 800/1000,and heavy-duty shelf 100KG(Reinforce)as complete set is necessary.
※6 Specimen temperaturecontrol(non-Insulation)and Recorder output terminal(Temp&Hum)cannot be fitted together.
※7 Air-cooled models is only available for 400-10 Model.Please note that Air-cooled modification would have an impact on chamber's performance.
※8 Alarm output terminaland three color Status indicator warning lights cannot be fitted together.
※9 As standard accessories and delivery with chamber.

For details about specifications and options,refer to the relative products on our website: <http://www.gd-espec.com/>

Products Profile

| Compact Rapid Temperature Change(humidity) Chamber |



In response to the testing and R&D needs of electronic components such as semiconductors and automotive electronics, ESPEC(Guangdong)has developed a smaller capacity -Compact Rapid Temperature Change(humidity) Chamber -GMS/G series, which can meet the needs of customers with space size requirements While possessing superior rapid temperature change performance, with single-phase 220VAC/380VAC voltage specifications, and can meet the equipment use needs of customers in civil office areas such as research institutions and universities.

Features:

- **Strong Temperature performance**
A fast temperature change rate:15°C/min、20°C/min is available.
Humidity range: 10% ~ 98%rh.(Temperature range: -45°C⇄+155°C)
- **GMSG/100-15 models: Single-phase 220VAC**
Single-phase 220VAC, which is suitable for industrial and residential power supply specifications, can meet the equipment power requirements of customers in research institutions, universities and other residential office areas. *Note:380 voltage modification for GMS/G-100-15 is available.
- **Small and exquisite body, compact structure, easy to move**
Miniaturization of the chamber structure design, can effectively save configuration space;
Inner tank volume of 100L, size width 600mm, depth less than 1400mm, volume less than 1.1m3, suitable for most residential and commercial elevators in China (GB/T7025.1);
Standard universal wheels enable the chamber to move freely.
- **Air-cooled specifications as standard for ease of movement and installation**
It also eliminates the cost and space for customers to configure cooling water towers.
- **Color LCD touch screen controller, easy to operate**
- **More ergonomic operation touch screen design**
Through the multi-angle adjustment of the touch screen, it can meet the operation needs of users of different heights and the best view, more convenient and comfortable.
- **Balanced Temperature (&Humidity)Control system(BTHC system)and**

- PID control function.**
- **Interface (option)for device communication can be selected between RS-485, GPIB,Web Lan and RS-232C.**
- **Cable ports on both sides (Ø50mm) as standard to allow easy wiring access.**

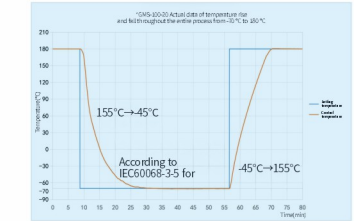
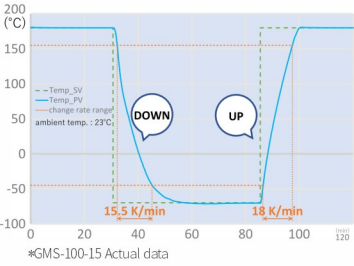


Touch screen can be adjusted from multiple angles

Specification of Compact Rapid Temperature Change(humidity) Chamber Products Profile

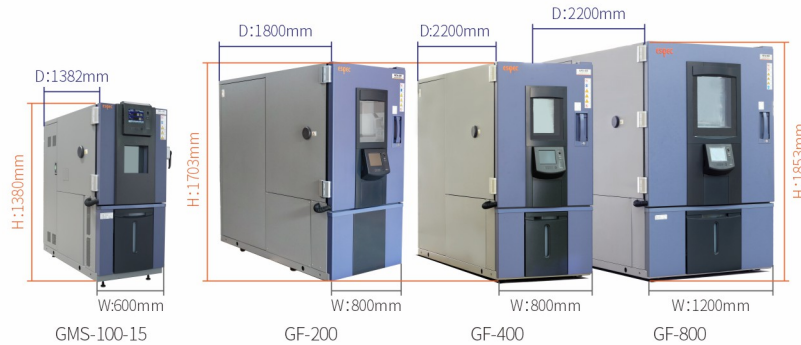
Model	GMG-100-15	GMG-100-20	GMS-100-15	GMS-100-20
System	Balanced Temperature Control (BTC) System		Balanced Temperature Humidity Control (BTHC) System	
Power Supply & Max.Load Current(A)	AC220V 1Ø2W 50Hz(40A)	AC380V 3Ø4W 50Hz(28A)	AC220V 1Ø2W 50Hz(40A)	AC380V 3Ø4W 50Hz(28A)
Allowable ambient conditions	Ambient Temperature: 0~+40°C;Relative Humidity: Up to 75%rh			
Performance ※	Temp&Hum Range※1	-70~+180°C	-70~+180°C	-70~+180°C/10%RH ~98%RH
	Temp.fluctuation ※1	± 0.5°C		
	Temp.variation ※1	± 2.0°C (-45°C⇄+155°C)		
	Humid.fluctuation ※1	—	—	± 2.5%RH
	Temp.rate of Change※2(IEC60068-3-6)(Temp range-45°C⇄+155°C)	Heat Up:15°C/min Pull Down:15°C/min	Heat Up:20°C/min Pull Down:20°C/min	Heat Up:15°C/min Pull Down:15°C/min
	Temperature Extremes Achievement Time(IEC60068-3-5)	Heat Up: +20°C to +180°C<15 min Pull Down: +20°Cto-70°C<15 min	Heat Up: +20°C to +180°C<10 min Pull Down: +20°Cto-70°C<15 min	Heat Up: +20°C to +180°C<10 min Pull Down: +20°Cto-70°C<15 min
	Allowable Heat Load (Temp inside chamber: +20°C.)	3200W	4000W	3200W
	Noise Level(JIS-Z-8731:1999 A)	Less than 70dB.		
	Exterior	Galvanized cold-rolled steel sheet, hot-rolled steel sheet		
	Test Area	Stainless steel plate:18—8 Cr—Ni stainless steel plate, 2B polish		
Construction	Heater	Nichrome strip wire heater		
	Humidifier	—	—	Sheathed heater (SUS316L, surface evaporation type)
	Cooler	Plate-fin cooler		
	Air Circulator	Propeller fan		
	Cooling System	Water supply	—	Pump water supply system
		Water Tank	—	16L
		System	Mechanical double-stage refrigeration system	Mechanical double-stage refrigeration system
		Refrigerator	Reciprocating Compressors	Reciprocating Compressors
		Capacity(kW)	2.2kW(3HP)2sets	2.2kW(3HP) 2sets
	Expansion System	Electronic expansion valve	Electronic expansion valve	Electronic expansion valve
		Refrigerant	R404A/R508B	R404A/R508B
	Standard Accessories	Shelve 1pcs;Racks 2pcs;Cable Port Plug Ø50mm 2pcs;Breaker Handle Stopper 1pcs;Door Keys 2pcs; Wet-bulb wick 1box(24PCS-only for GMS);Cartridge Fuse 4pcs;Operation manual 1set (Power cable is 2.5M included).		
	Inside Dimensions(W×H×Dmm)	400 x 500 x 500	400 x 500 x 500	400 x 500 x 500
	Outside Dimensions(W×H×Dmm)	600[705]×1380[1400]×1382[1400]	600[705]×1380[1400]×1442[1460]	600[705]×1380[1400]×1442[1460]
	Volume(L)	100	100	100
	Weight(Kg)	400	420	400

※1 The temperature chamber's performance values are based on GB/T5170.1,and IEC60068-3-5.And humidity chamber's performance values are based on GB/T5170.5 and IEC60068-3-6.Performance figures are given for a +23°C ambient temperature, relative humidity 65±20% RH, rated voltage, with no specimens inside the test area.
※2 Values are based on IEC60068-3-5.Average rate within the highest to lowest temperatures excluding the top and bottom 10%.



*GMS-100-20 Actual data of temperature rise and fall throughout the entire process from -70 °C to 180 °C

Compact structure, free access to elevators



Outside dimensions comparison for GMS-100-15 and GF-200/400/800 models

Products Profile

| Thermal Shock Chamber |



GTSD-100

This product is suitable for safety performance testing, reliability testing, product screening testing, etc. of electronic components and materials, which can shorten the development cycle and improve the reliability and quality control level of products. It is an indispensable and powerful partner for related enterprises, research institutions, etc. Widely used in thermal shock testing in industries such as aerospace, automotive, electrical and electronic, semiconductor, battery, new energy, solar photovoltaic modules, etc. Used to test and determine the parameters and performance of electrical, electronic, and other products and materials after temperature environmental impact changes during high and low temperature testing.

Features:

Short temperature recovery time

►Multiple industry standards require the control of surface recovery time for specimen, and the standard STT sensor can be linked with the controller to easily and perfectly reproduce standard conditions.

The standard temperature recovery time of the specimen can reach within 15 minutes.

(* Refer to the figure on the right: when the temperature is set to +100 °C and -68 °C and the plastic mold IC specimen is 10KG)

Improved temperautre uniformity

►Uniform airflow in the test area allows outstanding temperature uniformity. Uniform thermal stress is applied to each specimen,minimizing variation in test results.

Smooth specimen transfer

►Soft move mode" is automatically activated when specimens move between the hot and cold chambers to reduce vibration and shock.

Test area anti-drop mechanism to protect specimens

►The test area's drive unit is equipped with a braking device to prevent specimens from falling the test area under any abnormal situations.

Comprehensive safety system

►A double safety system ensures that any transfer between test areas stops automatically when the door is open,and that the door locks while transfer is in progress.

Specimen Temperature Trigger (STT)

►With up to two sensors attached tospecimen(s), the STT function begins counting the exposure time once thenspecimen reaches a set temperature, or promptly activates moving of the specimen for the next exposure. This reduces overall testing time and ensures accurate specimen temperatures Temperature readings can be recorded for each specimen and test area by connecting a temperature recorder.

Cable ports on right sides (100mm) as standard to allow easy wiring access.

►A cable port on right sideallows for easy wiring specimen measuremn.

Safe specimen handling thanks to ambient temperature recovery

►The ambient temperature recovery feature intakes external air to return the test area to an ambient temperature after testing has finished or been paused.

Viewing window (including light) as standard

►Can check the status of specimen at any time during the test.

Interface (option)for device communication can be selected between RS-485, GPIB, and RS-232C.

Color LCD touch screen controller, easy to operate

►Temperature settings and measurements can be stored in the internal memory and exported with the use of USB flashdrives. This enables them to be displayed as graphs on web browsers and stored for back-up purposes.Test data can also be recorded in real time to a USB flash drive.

* USB flash drives not included

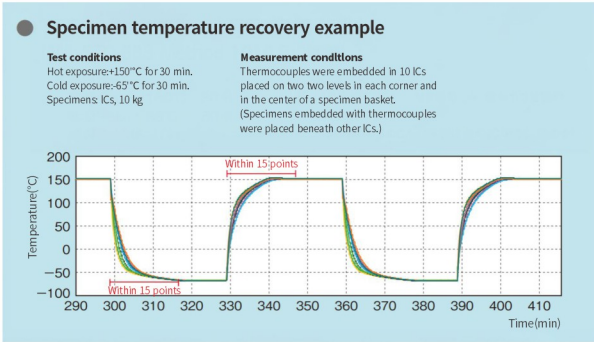
►Programmed operation allows storing 40 program operation patterns, each up to 99 steps. temperature ramp settings and a maximum of 999 repeat cycles.

►Can change the display lauguage from Japanese to Enlish,Simplified Chinese,Traditional Chiese at any time from the lanuage icon.

Remote monitor and control(Ethernet connection)

►The chamber comes with an ESPEC original web application. Connecting to the chamber Ethernet port (LAN's port) makes it possible to control chamber monitoring, pattern setting, operation start/stop, and other operations from a computer web browser. Installation of special software is not required.

All you need is a standard computer web browser to connect with the chamber.



GTSD specimen temperature recovery example

Specification of Thermal Shock Chamber

Products Profile

Model			GTSD-100
Power supply(Voltage fluctuation: rating ±10%)			AC380V 3φ 4W 50Hz
Maximum load current			34A
System			2-zone transition by vertical transfer of specimens
Ambient temp. range			+5°C~+40°C (For places with an ambient temperature of 0-40 °C and an ambient humidity of 75% RH (+23 °C is optimal))
performance ※	Test area	Hot exposure range	+60°C ~ +205°C
		Cold exposure range	-77°C ~ 0°C
		Temp, fluctuation ※	±1.0°C
	Hot chamber	Pre-heat upper limit	+205°C
		Heat-up time	Within 90 min from ambient temp.to +200°C (Setting: +205°C)
	Cold chamber	Pre-cool lower limit	-77°C
		Pull-down time	Within 90 min from ambient temp.to-77°C(Setting:-77°C
	Temp.recovery performance (2-zone)	Recovery conditions	· Hot exposure: +150°C(setting: +155°C 30 min)· Cold exposure: -65°C (setting: -68°C 30 min) ·Power supply rated voltage· Sensor position: downstream· Specimen:Plastic molded ICs, 10kg
		Temp. recovery time	Specimen IC temp. within 15 min ※2
	Transfer time between hot & cold chambers		Within 10 seconds
	Ambient recovery	Recovery conditions	· Hot exposure: +150°C to max.+55°C · Ambient temp.:+23°C ·Power supply rated voltage ·Plastic molded ICs, 10 kg
		Ambient temp. recovery time	Within 90 min
Noise level ※3(ISO1996-1:2016)		Max.65dB	
Exhaust heat rate			12600KJ/h(3000kcal/h)
Test area			helf brackets on 2 levels (up to 4 baskets can be installed)
Door			Door handle (right handle, left hinge), door lock mechanism components 2 sets
Refrigeration unit	System	Mechanical cascade refrigeration system(Water-cooled condenser)	
	Compressor	Scroll-type Compressor	
	Compressor capacity	3.73kW(5HP)※4 x2sets	
	Refrigerant	R404A/R23	
Cooler			Plate fin cooler and cold accumulator
Elevating unit			Power slider (250W)
Equipment			USB memory port, Ethernet port (LAN port), specimen power supply control termina,time signal output terminal (x2), specimen temperature input terminal (x2),cable port φ 100mm (x1) on right side (left side available as option).
Standard accessories			Stainless steel specimen baskets * 2 (5 mesh (wire diameter φ 0.8mm) made of wire mesh; W700×H40×D410mm; 1.1kg/piece; Each load is 5kg (equally distributed load); Bracket 0.25kg/piece * 4 pieces; Glass tube fuse (spare parts AC380V specification B type 250V 3A, 5A, 7A, 10A, 15A); 2 rubber plugs for cable port; 1 cable port cover; 2 specimen temperature measurement thermocouples; 2 specimen temperature input connectors; Pipe joint R 1 1/4 "(32A); filter R1 1/4" (32A); filter R 1 1/4 "(32A); circuit breaker handle block * 1 set; 1 set of user manual (CD, installation manual); One standard inspection report; *Power cables are not included.
Inside dimensions(W×H×Dmm)			W710×H345×D410mm
Test area capacity(L)			100L
Load capacity of test area (kg)			30 kg (When using the test area floor or heavy-duty shelves (option))
Specimen basket load capacity(kg)			5kg per basket
Outside dimensions			W1100×H1885×D1965mm(Excluding protrusions)
Weight(Kg)			Approx. 1100 kg
Utilities	Cooling water supply pressure:※5	0.2 ~ 0.5Mpa(2-5Kg/cm²G)	
	Cooling water supply rate ※6※7	2050L/h(at reference water temp.+25°C)	
	Piping connection size	32A RC 1 1/4" (32A)	
	Cooling water temp. range	+5°C~ +38°C	

※1 Under the conditions of a +23°C ambient temperature, cooling water temperature +25°C, rated voltage, and no specimen inside the test area.The performance values are based on IEC 60068-3-5:2001 & JIS C60068-3-5:2006, JTM K07:2007.The temperature Heat-up time and temperature Pull-down time are the performance of each chamber is operated independently

※2 Two specimen baskets are set in the testing area from the top layer to the second layer, and from the bottom layer to the second layer. The surface temperature of the plastic mold IC (QFP208 pin) placed in the center of each 5kg specimen in the specimen baskets is measured.

※3 Measurements are to be taken in an anechoic room at a height of 1.2m from the floor, and a distance of 1m from the front panel (ISO 1996-1:2016 characteristics). According to different environmental settings and the influence of surrounding echoes, the noise level may increase, and attention should be paid to the installation environment of the equipment.

※4 The compressor is represented by HP, and kW represents the conversion value.

※5 A pressure regulator valve is required if the pressure exceeds 0.5MPa(5Kg/cm²G).

※6 When using a chiller for cooling water, if the cooling water temperature is lower than the ambient temperature, the pipes inside and outside the product may condense and drip water. If you believe that the cooling temperature provided to the device is low, please contact after-sales service

※7 Rate depends on the cleanliness of the heat exchanger.

Products Profile

| High performance temperature(humidity)chamber |



In response to the high heat and high load testing needs of semiconductors and electronic components, Espec (Guangdong) has developed the high performance temperature(humidity)chamber - GH series, which can achieve faster temperature rise and fall rates while maintaining the advantages of the standard GP series, and can correspond to high load and hight heat reliability tests with a maximum allowable heat load of up to 4500W.

Features:

- Can achieve higher performance. Compared to GP chambers, it has a faster temperature rise and fall rate: Rise rate: 7°C/min, Fall rate: 3.5~5°C/min. Humidity range: 10% ~ 98RH.
- Corresponding high heat and high load tests. Suitable for reliability testing of electronic components related to semiconductors and automotive components, as it can handle high heat and high loads up to 4500W.(*When te temperature inside the chamber:+20°C)
- Easy to further performance modifications,high expansibility. The scientific structural design allows it to be assembled with different numbers and specification of compressors , which facilitates the modification to improve performance. The inner box size can be flexibly modified,to meet the demand of high heat and high load for large size specimen.
- Balanced Temperature (&Humidity)Control system(BT(H)C system)and PID control function. Using the BT(H)C system to control,provides highly accurate temperature/humidity environment.Consisting of PID controlled refrigerator,and instrumentation,which delivers hight speed processing.
- Interface (option)for device communication can be selected

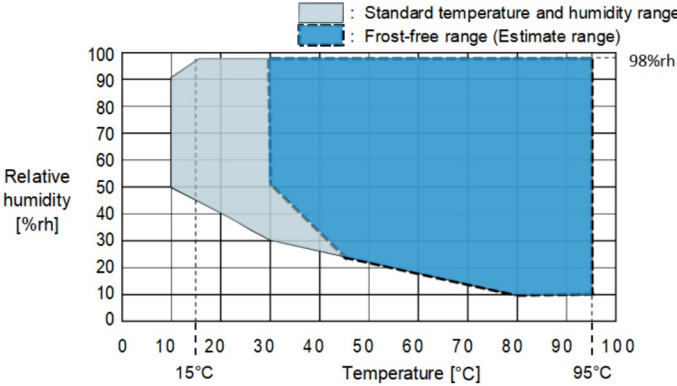
- between RS-485, GPIB,Web Lan and RS-232C.
- Cable ports on both sides (Ø50) as standard to allow easy wiring access.
- A wide range of options can be added to meet the diverse needs of customers. Additional safety options such as pressure relief valves, smoke sensors, emergency push stop button, alarm output terminals and three color status indicator warning Lights are available.
- Air-cooled specifications. Air-cooled specifications as standard for ease of movement and installation.
- Interface (option)for device communication can be selected between RS-485, GPIB,Web Lan and RS-232C.
- Cable ports on both sides (Ø50) as standard to allow easy wiring access.
- Color LCD touch screen controller, easy to operate. Programmed operation allows storing 40 program operation patterns, each up to 99 steps. temperature ramp settings and a maximum of 999 repeat cycles. Multilingual display:Can change the display language at any time from the lanuage icon. USB output of trend graph data.

Specifications of High performance temperature(humidity)chamber

Model		GHL-400	GHL-1000	GHS-400	GHS-1000	
System		Balanced Temperature Humidity Control (BTHC) System+PID control				
Power Supply & Max.Load Current(A) AC380V 3 φ 4W 50Hz		22.0A	44.0A	30.0A	60.0A	
Allowable ambient conditions		Ambient Temperature:0~+40°C; Relative Humidity:Up to 75%rh ;				
Performance※	Temp&Hum Range※1	-40~+180°C/10%rh ~98%rh		-70~+180°C/10%rh ~98%rh		
	Temp.fluctuation※1	±0.3°C				
	Temp.variation※1	±1.5°C (-40°C~+150°C) ±2.5°C (150.1°C~180°C)	±1.5°C (-40°C~+150°C) ±2.5°C (150.1°C~180°C)	±1.5°C (-70°C~+150°C) ±2.5°C (150.1°C~180°C)	±1.5°C (-70°C~+150°C) ±2.5°C (150.1°C~180°C)	
	Humid.fluctuation※1	±2.5%rh				
	Temp.rate of Change※2 (IEC60068-3-5) (Temp range-45°C⇄+155°C)	Heat Up Rate:7.0°C/min Pull Down Rate:5.0°C/min (Temp Range-18°C⇄+158°C)	Heat Up Rate:7.0°C/min Pull Down Rate:4.5°C/min (Temp Range-18°C⇄+158°C)	Heat Up Rate: 6.5°C/mim Pull Down Rate: 3.5°C/min (Temp Range-45°C⇄+155°C)	Heat Up Rate: 6.5°C/min Pull Down Rate: 3.5°C/min (Temp Range-45°C⇄+155°C)	
	Temperature Extremes Achievement Time(IEC60068-3-5)	Heat Up: From+20°C to +180°C<25 min Pull Down: From+20°C to -40°C<30 min	Heat Up: From+20°C to +180°C<35 min Pull Down: From+20°C to -40°C<30 min	Heat Up: From+20°C to +180°C<30 min Pull Down: From+20°C to -70°C<35 min	Heat Up: From+20°C to +180°C<30 min Pull Down: From+20°C to -70°C<35 min	
	Allowable Heat Load(Temp inside chamber: +20°C.)	2500W	4500W	2600W	4500W	
	Noise Level(JIS-Z-8731:1999A)	45~60dB				
Construction	Exterior	Galvanized cold-rolled steel sheet, hot-rolled steel sheet				
	Test Area	Stainless steel plate:18—8 Cr— Ni stainless steel plate, 2B polish				
	Heater	Nichrome strip wire heater				
	Humidifier	Sheathed heater (SUS316L, surface evaporation type)				
	Cooler	Plate-fin cooler				
	Air Circulator	Propeller fan				
	Water supply	Pump water supply system				
	Water Tank	16L	32L	16L	32L	
	Cooling System	System	Mechanical single-stage refrigeration system		Mechanical double-stage refrigeration system	
		Refrigerator	Scroll Compressor		Scroll Compressor	
		Capacity(kW)	3.0KW	3.0x3.0KW	3.0x3.0KW	3.0x3.0KW x2
Expansion System		Electronic expansion valve				
Refrigerant	R404A		R404A/R508B			
Standard Accessories		Shelve 2pcs; Racks 4pcs; Cable Port Plug Ø 50mm 2pcs; Breaker Handle Stopper 1pcs; Door Keys 2pcs; Wet-bulb wick 1box(24PCS); Cartridge Fuse 4pcs; Operation				
Inside Dimensions(W×H×Dmm)		600 x 830 x 800	1000 x 980 x 1000	600 x 830 x 800	1000 x 980 x 1000	
Outside Dimensions(W×H×Dmm)		800 x 1753 x 2200	1200 x 1903 x 2500	800 x 1753 x 2200	1200 x 1903 x 2500	
Volume(L)		400	980	400	980	
Weight(Kg)		550	770	600	850	

※1 The temperature chamber's performance values are based on GB/T5170.2, and IEC60068-3-5. And humidity chamber's performance values are based on GB/T5170.5 and IEC60068-3-6. Performance figures are given for a +23°C ambient temperature, relative humidity 65±20% RH, cooling water temperature is +25°C, rated voltage, without specimens inside the test area.

※2 Values are based on IEC60068-3-5.



*Note:When the chamber is operated to attain temperature of +40°C or lower,continuous operation may be limited due to the frost formed on the cooler(which works as a dehumidifier).

Products Profile

Option list for High performance temperature(humidity)chamber |

Option	Model	GHL-400	GHL-1000	GHS-400	GHS-1000
Evaluation System(Linkage with AMI and AMR, etc.)		●	●	●	●
Recorder output terminal (Temp & Humidity)		●	●	●	●
Potable temp recorder (Paperless)		●	●	●	●
Temp recorder wiring	Reserved opening	●	●	●	●
Communication Function	Web(Lan)	●	●	●	●
	RS-485	●	●	●	●
	RS-232C	●	●	●	●
	GPIB	●	●	●	●
Inner glass door with hand-in port (Main door with viewing window)	With hand-in ports※2	●	●	●	●
Rubber plug for cable port※3	Ø 50	●	●	●	●
	Ø 100	●	●	●	●
	Ø 150	●	●	●	●
Rubber plug for cable port	Ø 50	●	●	●	●
	Ø 100	●	●	●	●
	Ø 150	●	●	●	●
Standard shelf brackets	2pcs/1set	●	●	●	●
Standard shelf※4	1pcs	●	●	●	●
Shelf・shelf brackets※4	1set	●	●	●	●
Insulation treatment for shelf・shelf brackets	1set	●	●	●	●
Heavy-duty shelf 30KG	1set※5	●	—	●	—
Heavy-duty shelf 50KG	1set※5	●	●	●	●
Heavy-duty shelf 100KG	1set※5	—	●	—	●
Heavy-duty shelf 50KG (Reinforce) ※5		●	●	●	●
Heavy-duty shelf 100KG (Reinforce) ※5		—	●	—	●
Air drying unit		●	●	●	●
N2(Nitrogen) introduction device		●	●	●	●
Frost-free function		●	●	●	●
Airflow adjuster		●	●	●	●
Humidity sensor		●	●	●	●
Specimen temperaturecontrol (non-insulated type) ※6		●	●	●	●
Continuous water supply	With pressure reducing valve	●	●	●	●
Floor load reinforcement (100KG)		●	●	●	●
Floor load reinforcement (200KG)		●	●	●	●
Floor load reinforcement (300KG)		●	●	●	●
Alarm output terminal※7		●	●	●	●
Emergency push stopbutton		●	●	●	●
Three Color Status indicator Warning Lights ※7	No alarm buzzer	●	●	●	●
	With alarm buzzer	●	●	●	●
Pressure Relief Valve	200*200	●	●	●	●
	300*300	●	●	●	●
Viewing Window protection&door lock strength		●	●	●	●
Additional Overheat Protector		●	●	●	●
Smoke Sensor		●	●	●	●
Air supply and exhaust damper		●	●	●	●
Fin armored heater		●	●	●	●
Fire extinguisher device (CO2)		●	●	●	●
Flammable gas sensor		●	●	●	●
Gas sensor (CO/CO2/H2)		●	●	●	●
Strong Exhaust Air Circulator		●	●	●	●
GB specifications inspection report		●	●	●	●
Additional operation manual(paper)		●	●	●	●
Standard inspection report※8		※	※	※	※

※1 "●"means that this option could modify to completed stock or modify with newly manufactured chamber.
※2 "1 pair hand-in ports" is suitable for type 400/1000; "2 pairs hand-in ports" is suitable for type 1000;please note that additional operation hand-in ports have an impact on performance.
※3 Each cable port is equipped with a cap and a rubber plug.For custom opening positions,please consult your local sales company for detail.
※4 Shelf load capacity of type 400 is 10KG,of type 1000 is 30KG.
※5 Max.Qty in chamber for heavy-duty shelf 30KG is 3pcs,available for type 400; Max.Qty in chamber for heavy-duty shelf 50KG is 2pcs,available for type 400/1000,and heavy-duty shelf 100KG(Reinforce)as complete set is necessary; Max.Qty in chamber for heavy-duty shelf 100KG is 1pcs,available for type 1000,and heavy-duty shelf 100KG(Reinforce)as complete set is necessary.
※6 Specimen temperaturecontrol(non-Insulation)and Recorder output terminal(Temp&Hum)cannot be fitted together As standard.
※7 Alarm output terminal and three color Status indicator warning lights cannot be fitted together.
※8 As standard accessories and delivery with chamber.

For details about specifications and options,refer to the relative products on our website: <http://www.gd-espec.com/>

Products Profile

Bench-Top Type Temperature(&Humidity)Chamber | CE



High performance in a compact design,efficient environment testing achieved by networking.Of a bench-top size that can fit on a personal desk, this small temperature and humidity chamber achieves high performance to fulfill your environmental testing needs. The lineup including 10 models available in two sizes (22.5L and 64L) with a temperature range of -40°C/-60°C to +150°C for temperature tests or climate tests allow you to choose the performance best suited for your test applications.

Features:

- **Ten styles and multiple performance specifications**
There are ten models to choose from according to the volume and temperature and humidity range.
Can meet the temperature and humidity test requirements of -60/-40~+150°C / 30%~95%, 22.5L, 64L.
The Heat up & pull down of GSH/U-24-5V can reach 5.0°C/min.
(Temp range: -21°C~+131°C).
In a small and light structure that can even fit on a desk.
Option "temperature range extends up to 180 °C",can reach high temperature control until 180°C.
- **Can provides highly accurate temperature/humidity environment**
Balanced Temperature (&Humidity)Control system(BT(H)C system)and PID control function.
Standard program instrumentation can suit various applications.
- **Viewing window equipped as standard(Except GSH/U-24-5V/24V model)**

- Allows to observe and check the status of test specimen during a test.
- **Color LCD touch screen controller, easy to operate**
Programmed operation allows storing 9 program operation patterns, each up to 99 steps. temperature ramp settings and a maximum of 999 repeat cycles.
Multilingual display:Can change the display language at any time from the lanuage icon.
USB output of trend graph data.
- **Interface (option)for device communication can be selected between RS-485, GPIB,Web Lan and RS-232C.**
- **Cable port on right sides (Ø50) as standard to allow easy wiring access.**
- **Optimal space use with stand options.**
- **GS series chambers has obtained CE certification.**
It is possible to correspond to a 400V abnormal voltage modification with CE mark.



GSH-24V/GSH-26V/GSU-26V

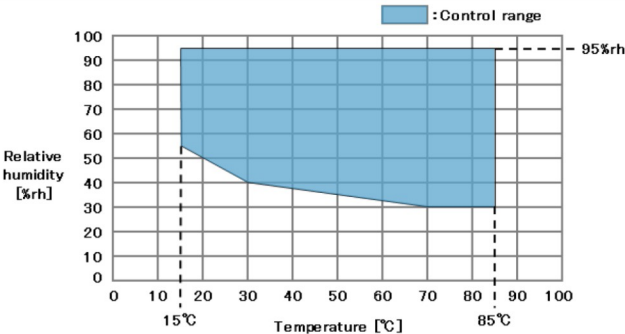


GSH-66V+M stand with water tank

Specifications of Bench-Top Type Temperature(&Humidity)Chamber

Humidity Type-Model ※2		GSH-24V	GSH-24-5V	GSH-26V	GSH-64V	GSH-66V	
System		Balanced Temperature Humidity Control (BTHC) System					
Power Supply & Max.Load Current(A) AC220V 1φ 2W 50Hz		5.7A	9.8A	14A	14.5A	14.5A	
Allowable ambient conditions		Ambient Temperature:+5~+35°C;Relative Humidity:Up to 75%rh					
※ Performance	Temp&Hum Range※1	-40°C~+150°C / 30%~95%	-40°C~+150°C / 30%~95%	-60°C~+150°C / 30%~95%	-40°C~+150°C / 30%~95%	-60°C~+150°C / 30%~95%	
	Temp.fluctuation※1	±0.3°C(-40°C~+100°C) ±0.5°C(+100.1°C~+150°C)	±0.3°C(-40°C~+100°C) ±0.5°C(+100.1°C~+150°C)	±0.3°C(-60°C~+100°C) ±0.5°C(+100.1°C~+150°C)	±0.3°C(-40°C~+100°C) ±0.5°C(+100.1°C~+150°C)	±0.3°C(-60°C~+100°C) ±0.5°C(+100.1°C~+150°C)	
	Temp.variation※1	±2.0°C(-40°C~+100°C) ±2.5°C(+100.1°C~+150°C)	±2.0°C(-40°C~+100°C) ±2.5°C(+100.1°C~+150°C)	±2.0°C(-60°C~+100°C) ±2.5°C(+100.1°C~+150°C)	±2.0°C(-40°C~+100°C) ±3.0°C(+100°C~+150°C)	±2.0°C(-60°C~+100°C) ±3.0°C(+100°C~+150°C)	
	Humid.fluctuation※1	±2.5%					
	Temp.rate of Change (IEC60068-3-5)※2	Heat Up: 3.2°C/min Pull Down : 2.1°C/min (Range -21°C⇄+131°C)	Heat Up: 5.0°C/min Pull Down : 5.0°C/min (Range -21°C⇄+131°C)	Heat Up: 2.7°C/min Pull Down : 1.5°C/min (Range -39°C⇄+129°C)	Heat Up: 2.4°C/min Pull Down : 1.1°C/min (Range -21°C⇄+131°C)	Heat Up: 2.4°C/min Pull Down : 1.1°C/min (Range -39°C⇄+129°C)	
	Temperature Extremes Achievement Time(IEC60068-3-5)	Heat Up: +20°C to +150°C < 40min Pull Down : +20°C to -35°C < 60min※5	Heat Up: +20°C to +150°C < 35min Pull Down : +20°C to -40°C < 20min	Heat Up: +20°C to +150°C < 40min Pull Down : +20°C to -60°C < 100min	Heat Up: +20°C to +150°C < 40min Pull Down : +20°C to -40°C < 70min	Heat Up: +20°C to +150°C < 40min Pull Down : +20°C to -60°C < 120min	
	Noise Level (JIS-Z-8731:1999 A) ※3	42dB~50dB	42dB~54dB	42dB~54dB	48dB~53dB	48dB~53dB	
Construction	Exterior	Galvanized cold-rolled steel sheet, hot-rolled steel sheet					
	Test Area	Stainless steel plate:18—8 Cr—Ni stainless steel plate, 2B polish					
	Heater	Nichrome strip wire heater					
	Humidifier	Sheathed heater (18-12-2.5 Cr-Ni-Mo-LC stainless steel, surfaceevaporation type)					
	Cooler	Plate-fin cooler (also works as a dehumidifier)					
	Air Circulator	Axial fan					
	Viewing window	NO	NO	YES	YES	YES	
	Cable port	Right side φ50 mm×1					
	Water supply	Water supply	Pump water supply system				
		Water Tank	5L				
Cooling System	System	Mechanical single-stage refrigeration system	Mechanical double-stage refrigeration system	Mechanical double-stage refrigeration system	Mechanical double-stage refrigeration system		
	Refrigerator	Rotary compressor	Rotary compressor	Reciprocating compressor	Reciprocating compressor	Reciprocating compressor	
	Capacity(kW)	400	400×400	400×400	400×400	400×400	
	Expansion System	Capillary					
Standard Accessories		Shelves 1pcs;Cable Port Plug(Ø50mm) 1pcs;Connector for Temperature and humidity recorder 2pcs(GSU 1pcs);Wet-bulb wick 1box(24PCS) (only for GSH model);Cartridge Fuse 2pcs(type 64*2pcs;type 24*1pcs);Operation manual 1set. Power cable is 2.5M included.					
Inside Dimensions(W×H×Dmm)		300×300×250			400×400×400		
Outside Dimensions(W×H×Dmm)※4		440×710×696[747]	440×710×786[837]			540×750×921[983]	
Volume(L)		22.5			64		
Weight(Kg)		85	108	113	139	139	

- ※ The temperature chamber's performance values are based on GB/T5170.2,and IEC60068-3-5.And humidity chamber's performance values are based on GB/T5170.5 and IEC60068-3-6.Performance figures are given for a +23°C ambient temperature, relative humidity 65±20% RH, rated voltage, with no specimens inside the test area.Sometimes the minimum temperature cannot be reached when the ambient temperature is above 23 °C.
- ※1 Values are based on GB/T5170.2-2008.
- ※2 Values are based on IEC60068-3-5.
- ※3 Noise level was measured in an anechoic room at a height of 1.2 m from the floor and a distance of 1 m from the chamber front panel (ISO 1996-1:2003 A-weighted sound pressure level).
- ※4 Dimensions shown in [] include protrusions.
- ※5 The time from +20°C to -40°C of the effective space center is within 100 minutes.(Greatly affected by ambient temperature,The recommended ambient temperature is below 28).



Note:When the chamber is operated to attain temperature of +40°C or lower,continuous operation may be limited due to the frost formed on the cooler(which works as a dehumidifier).

Specifications of Bench-Top Type Temperature Chamber

NoHumidity-Model		GSU-24V	GSU-24-5V	GSU-26V	GSU-64V	GSU-66V
System		Balanced Temperature Control (BTC) System				
Power Supply & Max.Load Current(A) AC220V 1ϕ 2W 50Hz		5.7A	9.8A	14A	14.5A	14.5A
Allowable ambient conditions		Ambient Temperature : +5~+35°C; Relative Humidity : Up to 75%rh				
※	Temp.Range※1	-40°C~+150°C	-40°C~+150°C	-60°C~+150°C	-40°C~+150°C	-60°C~+150°C
	Temp.fluctuation ※1	±0.3°C(-40°C~+100°C) ±0.5°C(+100.1°C~+150°C)	±0.3°C(-40°C~+100°C) ±0.5°C(+100.1°C~+150°C)	±0.3°C(-60°C~+100°C) ±0.5°C(+100.1°C~+150°C)	±0.3°C(-40°C~+100°C) ±0.5°C(+100.1°C~+150°C)	±0.3°C(-60°C~+100°C) ±0.5°C(+100.1°C~+150°C)
	Temp.variation ※1	±2.0°C(-40°C~+100°C) ±2.5°C(+100.1°C~+150°C)	±2.0°C(-40°C~+100°C) ±2.5°C(+100.1°C~+150°C)	±2.0°C(-60°C~+100°C) ±2.5°C(+100.1°C~+150°C)	±2.0°C(-40°C~+100°C) ±3.0°C(+100°C~+150°C)	±2.0°C(-60°C~+100°C) ±3.0°C(+100°C~+150°C)
	Humid.fluctuation ※1	—				
	Temp.rate of Change (IEC60068-3-5) ※2	Heat Up Rate : 3.2°C/min Pull Down Rate : 2.1°C/min (Range -21°C⇄+131°C)	Heat Up Rate : 5.0°C/min Pull Down Rate : 5.0°C/min (Range -21°C⇄+131°C)	Heat Up Rate : 2.7°C/min Pull Down Rate : 1.5°C/min (Range -39°C⇄+129°C)	Heat Up Rate : 2.4°C/min Pull Down Rate : 1.1°C/min (Range -21°C⇄+131°C)	Heat Up Rate : 2.4°C/min Pull Down Rate : 1.1°C/min (Range -39°C⇄+129°C)
	Temperature Extremes Achievement Time(IEC60068-3-5)	Heat Up:+20°Cto+150°C<40min Pull Down:+20°Cto-35°C<60min※5	Heat Up:+20°Cto+150°C<35min Pull Down:+20°Cto-40°C<20min	Heat Up:+20°Cto+150°C<40min Pull Down:+20°Cto-60°C<100min	Heat Up:+20°Cto+150°C<40min Pull Down:+20°Cto-40°C<70min	Heat Up:+20°Cto+150°C<40min Pull Down:+20°Cto-60°C<120min
	Noise Level (JIS-Z-8731:1999 A) ※3	42dB~50dB	42dB~54dB	42dB~54dB	48dB~53dB	48dB~53dB
Construction	Exterior	Galvanized cold-rolled steel sheet, hot-rolled steel sheet				
	Test Area	Stainless steel plate:18—8 Cr—Ni stainless steel plate, 2B polish				
	Heater	Nichrome strip wire heater				
	Humidifier	—				
	Cooler	Plate-fin cooler (also works as a dehumidifier)				
	Air Circulator	Axial fan				
	Viewing window	No	No	Yes	Yes	Yes
	Cable port	I.D. Ø50 mm on the right ×1				
	Water supply	—				
	Water Tank	—				
Cooling system	Refrigerator	Mechanical single-stage refrigeration system	Mechanical double-stage refrigeration system	Mechanical double-stage refrigeration system	Mechanical double-stage refrigeration system	
	Refrigerator	Rotary compressor	Rotary compressor	Reciprocating compressor	Reciprocating compressor	Reciprocating compressor
	Capacity (kW)	400	400×400	400×400	400×400	400×400
	Expansion System	Capillary				
Refrigerant		R404A	R404A / R23	R404A / R508B		
Standard Accessories		Shelves 1pcs; Cable Port Plug(Ø 50mm) 1pcs; Connector for Temperature and humidity recorder 2pcs (GSU 1pcs); Wet-bulb wick 1box (24PCS) (only for GSH model); Cartridge Fuse 2pcs (type 64*2pcs; type 24*1pcs); Operation manual 1set. Power cable is 2.5M included.				
Inside Dimensions(W×H×Dmm)		300×300×250			400×400×400	
Outside Dimensions(W×H×Dmm)※4		440×645×696[747]	440×645×786[837]			540×685×921[983]
Volume (L)		22.5			64	
Weight (Kg)		79	103	108	132	132

※ The temperature chamber's performance values are based on GB/T5170.2, and IEC60068-3-5.And humidity chamber's performance values are based on GB/T5170.5 and IEC60068-3-6.Performance figures are given for a +23℃ ambient temperature, relative humidity 65±20% RH, rated voltage, with no specimens inside the test area.Sometimes the minimum temperature cannot be reached when the ambient temperature is above 23℃.

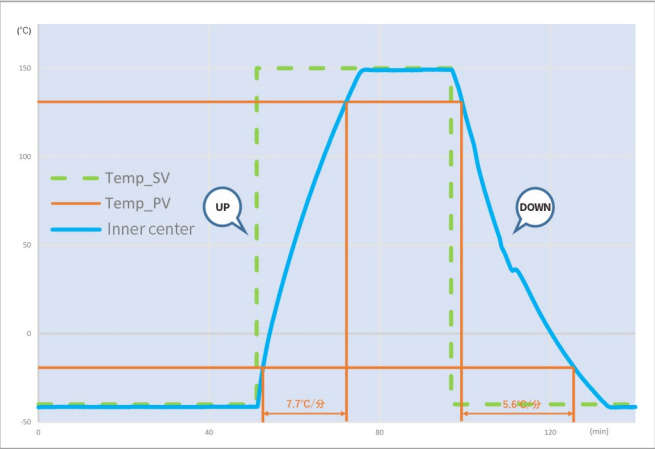
※1 Values are based on GB/T5170.2-2008.

※2 Values are based on IEC60068-3-5.

※3 Noise level was measured in an anechoic room at a height of 1.2 m from the floor and a distance of 1 m from the chamber front panel (ISO 1996-1:2003 A-weighted sound pressure level).

※4 Dimensions shown in [] include protrusions.

※5 The time from +20℃ to -40℃ of the effective space center is within 100 minutes.(Greatly affected by ambient temperature, The recommended ambient temperature is below 28).



Heat Up:5℃/min
Pull Down:5℃/min
(Range-21℃⇄+131℃)

Note: GSH-24-5V actual test data(with no specimens)

Option list for Bench-Top Type Temperature(&Humidity)Chamber※1

Model	HumidityType					TemperatureType(NoHumidity)				
	GSH-24V	GSH-24-5V	GSH-26V	GSH-64V	GSH-66V	GSU-24V	GSU-24-5V	GSU-26V	GSU-64V	GSU-66V
Evaluation System (Linkage with AMI and AMR, etc.)	●	●	●	●	●	●	●	●	●	●
Communication function	Web(Lan)	●	●	●	●	●	●	●	●	●
	RS-485	●	●	●	●	●	●	●	●	●
	RS-232C	●	●	●	●	●	●	●	●	●
	GPIO	●	●	●	●	●	●	●	●	●
Hand-in port (130mm)	●	●	●	●	●	●	●	●	●	●
Cable port (with rubber plug) ※2	ϕ 50	●	●	●	●	●	●	●	●	●
	ϕ 100	●	●	●	●	●	●	●	●	●
Rubber plug for cable port	ϕ 50	●	●	●	●	●	●	●	●	●
	ϕ 100	●	●	●	●	●	●	●	●	●
Standard shelf	1pcs	●	●	●	●	●	●	●	●	●
180℃ extended range	●	●	●	●	●	●	●	●	●	●
Airflow adjuster	●	●	●	●	●	●	●	●	●	●
Specimen temperature control (Insulated type)	●	●	●	●	●	●	●	●	●	●
Continuous water supply(without pressure reducing valve)	●	●	●	●	●	—	—	—	—	—
Emergency push stop button	●	●	●	●	●	●	●	●	●	●
Additional Viewing Window※3 (Only for GSH/U-24V)	●	—	—	—	—	●	—	—	—	—
Remove the Viewing Window (Only for 26V/64/66V)	—	—	●	●	●	—	—	●	●	●
C stand	●	●	●	●	●	●	●	●	●	●
L stand	●	●	●	●	●	●	●	●	●	●
L stand with water tank	●	●	●	●	●	—	—	—	—	—
M stand	●	●	●	●	●	●	●	●	●	●
M stand with water tank	●	●	●	●	●	—	—	—	—	—
H stand	●	●	●	●	●	●	●	●	●	●
Abnormal voltage modification (230V)※4	●	●	●	●	●	●	●	●	●	●
CE Certificate Modification ※4	●	●	●	●	●	●	●	●	●	●
GB specifications inspection report	●	●	●	●	●	●	●	●	●	●
Power plug	●	●	●	●	●	●	●	●	●	●
Additional operation manual(paper)	●	●	●	●	●	●	●	●	●	●
Standard inspection report※5	※	※	※	※	※	※	※	※	※	※

※1 "●" means that this option could modify to completed stock or modify with newly manufactured chamber.

※2 Each cable port is equipped with a cap and a rubber plug.For custom opening positions,please consult your local sales company for detail.

※3 After adding an observation window, the temperature pull down performance cannot be guaranteed. The time from the effective space center+20℃ to -40℃ is about 110 minutes (greatly affected by environmental temperature, recommended ambient temperature below 28℃)

※4 Power Supply : AC230V 1ϕ 2W 50Hz ; Voltage range: 207V~253V(±10%).

※5 As standard accessories and delivery with chamber.

For details about specifications and options, refer to the relative products on our website: <http://www.gd-espec.com/>

IProducts Profile

| Temperature Chamber(Horizontal Type) | C €



GPH-20/GPH-30/GPH-40

Our temperature chambers are suitable for a broad range of applications from high-temperature testing, to heat treatment or drying for production lines, which widely used in aviation, automotive, electronic parts, materials, energy, chemical, medical, pharmaceutical and other industries.

Features:

• **High performance chamber**

A temperature-indication controller with an advanced PID operation, and a special chamber configuration provide unmatched oven performance. Temperature uniformity, temperature constancy, temperature heat-up rate, and temperature recovery time are performed with the upmost reliability.

• **Several volumes are available in horizontal models.**

• **Two types of program instrumentation to suit different applications:**

Features programmed operation with operational settings such as constant mode and automatic start/stop. Suitable for heat treatment, drying, and similar production-line applications.

Suitable for a range of applications from temperature-characteristics testing to heat

treatment and drying. Programmed operation now allows storing 10 patterns, each up to 20 steps. Provides a wide range of functions, including temperature ramp settings and a maximum of 999 repeat cycles.

• **Easy setup with on-screen display.**

• **Interface (option) for device communication can be selected between RS-485 and RS-232C.**

• **Energy Saver Duct (GPH series)**

Energy saving approximately 20% by heat recycling from exhaust through the duct to maintain temperature while damper opens (GPH series).

• **Safety measure**

Triple safety mechanisms are employed for excessive overheating.



GPH-20



GPH-40

Specifications of Temperature Chamber(Horizontal type)

Model		GPH-20	GPH-30	GPH-40	GPH-H20	GPH-H30	GPH-H40
Ventilation system		Forced hot air circulation/ventilation system					
Control System		PID control system					
Power Supply & Max. Load Current(A)		AC220V 1φ 2W 50Hz	AC380V 3φ 4W 50Hz		AC220V 1φ 2W 50Hz	AC380V 3φ 4W 50Hz	
Power Consumption		2.7 kVA	5.0 kVA	6.5 kVA	3.8 kVA	6.5 kVA	9.5 kVA
Allowable ambient conditions		Ambient Temperature:0~+40°C;Relative Humidity:Up to 75%rh					
Performance ※	Range	(Ambient Temperature+20)°C~+200°C			(Ambient Temperature +20)°C~+300°C		
	Temp. fluctuation※1	± 0.1°C at +100°C ± 0.2°C at +200°C	± 0.2°C at +100°C ± 0.4°C at +200°C		± 0.1°C at +100°C ± 0.2°C at +200°C ± 0.2°C at +300°C	± 0.2°C at +100°C ± 0.4°C at +200°C ± 0.4°C at +300°C	
	Temp.variation※1	± 1.0°C at +100°C ± 1.5°C at +200°C		± 1.5°C at +100°C ± 2.0°C at +200°C	± 1.0°C at +100°C ± 1.5°C at +200°C ± 2.0°C at +300°C	± 1.0°C at +100°C ± 1.5°C at +200°C ± 3.0°C at +300°C	± 1.5°C at +100°C ± 2.0°C at +200°C ± 4.0°C at +300°C
	Temperature Heat-Up Rate	Ambient Temp to+200°C<30 min		Ambient Temp to+200°C<50 min	Ambient Temp to+300°C <50 min		Ambient Temp to+300°C<60 min
Construction	Exterior	Galvanized cold-rolled steel sheet, hot-rolled steel sheet					
	Test Area	Stainless steel					
	Insulation	Glass wool					
	Door	Single door (handle on the right, left-hinged) ;Double door (GPH-(H)40 only) (GPH-(H)40: Doors can be unlocked from the inside)					
Heater		Iron-chrome stripped-wire-heater					
Air Circulator		Stainless steel-propeller fan					
Equipment		Power Cable(Approximately 2 m from the chamber),Specimen Power Supply Control Terminal(with Plug).					
Standard Accessories		Shelves 2pcs;Racks 2sets;Cartridge Fuse 2pcs;Operation manual 1set					
Inside(W×H×Dmm)		600×600×600	800×800×800	1000×1000×1000	600×600×600	800×800×800	1000×1000×1000
Outside(W×H×Dmm)		1190×970×785	1500×1210×1065	1730×1480×1275	1190×970×785	1500×1210×1065	1730×1480×1275
Volume(L)		216	512	1000	216	512	1000
Weight(Kg)		130	240	430	130	240	430

※ The performance figures are given for an ambient temperature of 23±5 °C, no specimens inside the chamber and the damper set for air circulation. The measuring points are in accordance to GB/T518.2 and IEC60068-3-5.

※1 The measuring points are in accordance to GB/T518.2-2008.

Model	shelf pitch	Shelve	Shelf load capacity※(Equally distributed load)	Total load resistance※
GPH-(H)20	50mm	11	20Kg	50Kg
GPH-(H)30	80mm	9	20Kg	60Kg
GPH-(H)40	140mm	6	40Kg	100Kg

※Including shelf weight.

Safety Devices:

Leakage breaker for power supply

Electric parts compartment cover switch

Chamber door switch (only GPH-(H)40)

Thermal fuse

Temperature switch for air circulator (except GPH-(H)40)

Thermal relay for air circulator (only GPH-(H)40))

Phase sequence protection relay(only GPH-(H)40))

Cartridge Fuse

Upper and lower temperature limit alarm (controller built-in)

Overheat protector

Specimen Power Supply Control Terminal

Products Profile

| Temperature Chamber(Vertical Type) | CE



Our temperature Chambers are suitable for a broad range of applications from high-temperature testing, to heat treatment or drying for production lines, which widely used in aviation, automotive, electronic parts, materials, energy, chemical, medical, pharmaceutical and other industries.

The components are incorporated into the top portion of the vertical chamber, reducing installation space by 20 to 60% (comparison with conventional model), which can increase productivity on the production line, and save laboratory space.

Features:

• **High performance chamber**

A temperature-indication controller with an advanced PID operation, and a special chamber configuration provide unmatched oven performance. Temperature uniformity, temperature constancy, temperature heat-up rate, and temperature recovery time are performed with the utmost reliability.

• **Excellent heating performance**

Heating performance is greatly enhanced so that the chamber temperature remains constant even if the ventilation damper is opened (at +20°C ambient temperature).

• **Several volumes are available in vertical models.**

• **Two types of program instrumentation to suit different applications:**

Features programmed operation with operational settings such as constant mode and automatic start/stop. Programmed operation now allows storing 10 patterns, each up to 20 steps. Provides a wide range of functions, including temperature ramp settings and a maximum of 999 repeat cycles.

• **Easy setup with on-screen display.**

• **Interface (option) for device communication can be selected between RS-485 and RS-232C.**

• **A space-saving upright chamber**

Components are incorporated into the top portion of the vertical chamber, reducing installation space by 20 to 60% (comparison with conventional model). Increases productivity on the production line, and saves laboratory space.

• **Seamless door interior structure**

Door back is a single molded structure preventing heat losses from loose joints.

• **Large processing capacity**

Since the floor and shelves of the chamber have been greatly reinforced, a large amount of specimens can be loaded and processed at the same time. The sliding shelves ensure easy handling of the specimens.

• **Safety measure**

Various of safety Devices can be chosen as option.



Specifications of Temperature Chamber(Vertical Type)

Model		GPV-21	GPV-22	GPV-33	GPV-H21	GPV-H22	GPV-H33
Ventilation system		Forced hot air circulation/ventilation system					
Control System		PID control system					
Power Supply & Max. Load Current(A)		AC220V 1φ 2W 50Hz	AC380V 3φ 4W 50Hz		AC220V 1φ 2W 50Hz	AC380V 3φ 4W 50Hz	
Power Consumption		3.9 kVA	4.8 kVA	6.8 kVA	3.9 kVA	5.8 kVA	8.8 kVA
Allowable ambient conditions		Ambient Temperature:0~+40°C;Relative Humidity:Up to 75%rh					
Performance ※	Range	(Ambient Temperature+20)°C~+200°C			(Ambient Temperature +20)°C~+300°C		
	Temp. fluctuation※1	±0.2°C at +100°C ±0.4°C at +200°C			±0.2°C at +100°C ±0.4°C at +200°C ±0.4°C at +300°C		
	Temp.variation※1	±1.5°C at +100°C ±2.0°C at +200°C			±1.5°C at +100°C ±2.0°C at +200°C ±3.0°C at +300°C		
	Temperature Heat-Up Rate	Ambient Temperature to +200°C Less than 30 minutes			Ambient Temperature to +300°C Less than 50 minutes		
Construction	Exterior	Galvanized cold-rolled steel sheet, hot-rolled steel sheet					
	Test Area	Stainless steel					
	Insulation	Glass wool					
	Door	Single door (handle on the right, left-hinged) ;GPV-H33: Doors can be unlocked from the inside.					
Heater		Iron-chrome stripped-wire-heater					
Air Circulator		Stainless steel centrifugal fan					
Equipment		Power Cable(Approximately 2 m from the chamber),Specimen Power Supply Control Terminal (with Plug) .					
Standard Accessories		Shelves 2pcs;Racks 2sets;Kick Plate/Rubber plate 1pcs;Cartridge Fuse 2pcs;Operation manual 1set.					
Inside(W×H×Dmm)		600×600×600	600×900×600	800×1200×800	600×600×600	600×900×600	800×1200×800
Outside(W×H×Dmm)		770×1200×925	770×1500×925	1030×1800×1145	770×1200×925	770×1500×925	1030×1800×1145
Volume(L)		216	324	768	216	324	768
Weight(Kg)		165	190	325	165	190	325

※ The performance figures are given for an ambient temperature of 23±5 °C, no specimens inside the chamber and the damper set for air circulation.
The measuring points are in accordance to GB/T518.2 and IEC60068-3-5.
※1 The measuring points are in accordance to GB/T518.2-2008.

Model	Shelf pitch	Shelve	Shelf load capacity※(Equally distributed load)	Total load resistance※
GPV-(H)21	50mm	11	25Kg	200Kg
GPV-(H)22	50mm	17	25Kg	
GPV-(H)33	80mm	14	45Kg	

※ Including shelf weight.

Safety Devices:

Leakage breaker for power supply	Temperature switch for air circulator
Electric parts compartment cover switch	Upper and lower temperature limit alarm (controller built-in)
Chamber door switch	Overheat protector
Thermal fuse	Specimen Power Supply Control Terminal
Cartridge Fuse	

Products Profile

| Temperature Chamber-e Instrumentation (Horizontal Type) |



Our temperature chambers are suitable for a broad range of applications from high-temperature testing, to heat treatment or drying for production lines, which are widely used in aviation, automotive, electronic parts, materials, energy, chemical, medical, pharmaceutical and other industries.

Features:

- **Equipped with a 7-inch LCD screen**
The display is clear and easy to operate. The interface language: Chinese and English.
- **Trend chart function, running data USB export function(in CSV format) is available.**
- **Can achieve the non- overshoot control**
PID with overshoot control can be within 2 °C, the overshoot suppression function can achieve the non- overshoot control.
Calculate and control the fluctuation of each point within 0.5 °C according to GB/T 5170.
- **Higher temperature indication resolution**
Increase the resolution of indication control to 0.1 °C.
- **Segmentation deviation correction function, user single point correction, manufacturer 10 point segmented correction is available.**
- **Two types of program instrumentation to suit different applications:**

- Features programmed operation with operational settings such as constant mode and automatic start/stop. Suitable for heat treatment, drying, and similar production-line applications.
- Suitable for a range of applications from temperature-characteristics testing to heat treatment and drying. Programmed operation now allows storing 10 patterns, each up to 20 steps. Provides a wide range of functions, including temperature ramp settings and a maximum of 999 repeat cycles.
- **Interface (option) for device communication can be selected between RS-485 and RS-232C.**
 - **Energy Saver Duct (GPH series)**
Energy saving approximately 20% by heat recycling from exhaust through the duct to maintain temperature while damper opens (GPH series).



Specification of Temperature Chamber-e Instrumentation (Horizontal Type)

Model		GPH-20e	GPH-30e	GPH-40e	GPH-H20e	GPH-H30e	GPH-H40e
Ventilation system		Forced hot air circulation/ventilation system					
Control System		PID control system					
Power Supply & Max. Load Current(A)		AC220V 1φ 2W 50Hz	AC380V 3φ 4W 50Hz		AC220V 1φ 2W 50Hz	AC380V 3φ 4W 50Hz	
Power Consumption		2.7 kVA	5.0 kVA	6.5 kVA	3.8 kVA	6.5 kVA	9.5 kVA
Allowable ambient conditions		Ambient Temperature:0~+40°C;Relative Humidity:Up to 75%rh					
Performance ※	Range	(Ambient Temperature+20)°C~+200°C			(Ambient Temperature +20)°C~+300°C		
	Temp. fluctuation※1	± 0.1°C at +100°C ± 0.2°C at +200°C	± 0.2°C at +100°C ± 0.4°C at +200°C		± 0.1°C at +100°C ± 0.2°C at +200°C ± 0.2°C at +300°C	± 0.2°C at +100°C ± 0.4°C at +200°C ± 0.4°C at +300°C	
	Temp.variation※1	± 1.0°C at +100°C ± 1.5°C at +200°C		± 1.5°C at +100°C ± 2.0°C at +200°C	± 1.0°C at +100°C ± 1.5°C at +200°C ± 2.0°C at +300°C	± 1.0°C at +100°C ± 1.5°C at +200°C ± 3.0°C at +300°C	± 1.5°C at +100°C ± 2.0°C at +200°C ± 4.0°C at +300°C
	Temperature Heat-Up Rate	Ambient Temp to+200°C<30 min		Ambient Temp to+200°C<50 min	Ambient Temp to+300°C <50 min		Ambient Temp to+300°C<60 min
Construction	Exterior	Galvanized cold-rolled steel sheet, hot-rolled steel sheet					
	Test Area	Stainless steel					
	Insulation	Glass wool					
	Door	Single door (handle on the right, left-hinged) ;Double door (GPH-(H)40 only) (GPH-(H)40: Doors can be unlocked from the inside)					
Heater		Iron-chrome stripped-wire-heater					
Air Circulator		Stainless steel-propeller fan					
Equipment		Power Cable(Approximately 2 m from the chamber),Specimen Power Supply Control Terminal(with Plug).					
Standard Accessories		Shelves 2pcs;Racks 2sets;Cartridge Fuse 2pcs;Operation manual 1set					
Inside(W×H×Dmm)		600×600×600	800×800×800	1000×1000×1000	600×600×600	800×800×800	1000×1000×1000
Outside(W×H×Dmm)		1190×970×785	1500×1210×1065	1730×1480×1275	1190×970×785	1500×1210×1065	1730×1480×1275
Volume(L)		216	512	1000	216	512	1000
Weight(Kg)		130	240	430	130	240	430

※ The performance figures are given for an ambient temperature of 23±5 °C, no specimens inside the chamber and the damper set for air circulation. The measuring points are in accordance to GB/T518.2 and IEC60068-3-5.

※1 The measuring points are in accordance to GB/T518.2-2008.

Model	shelf pitch	Shelve	Shelf load capacity※(Equally distributed load)	Total load resistance※
GPH-(H)20	50mm	11	20Kg	50Kg
GPH-(H)30	80mm	9	20Kg	60Kg
GPH-(H)40	140mm	6	40Kg	100Kg

※Including shelf weight.

Safety Devices:

- Leakage breaker for power supply

Electric parts compartment cover switch

Chamber door switch (only GPH-(H)40)

Thermal fuse

Temperature switch for air circulator (except GPH-(H)40)

Thermal relay for air circulator (only GPH-(H)40)
- Phase sequence protection relay(only GPH-(H)40)

Cartridge Fuse

Upper and lower temperature limit alarm (controller built-in)

Overheat protector

Specimen Power Supply Control Terminal

Products Profile

| Temperature Chamber-e Instrumentation(Vertical Type) | €



Our temperature Chambers are suitable for a broad range of applications from high-temperature testing, to heat treatment or drying for production lines,which widely used in aviation, automotive, electronic parts, materials, energy, chemical, medical, pharmaceutical and other industries.

The components are incorporated into the top portion of the vertical chamber, reducing installation space by 20 to 60% (comparison with conventional model),which can increases productivity on the production line, and saves laboratory space.

Features:

- **Equipped with a 7-inch LCD screen**
The display is clear and easy to operate. The interface language: Chinese and English.
- **Trend chart function, running data USB export function(in CSV format) is available.**
- **Can achieve the non- overshoot control**
PID with overshoot control can be within 2 °C, the overshoot suppression function can achieve the non- overshoot control.
Calculate and control the fluctuation of each point within 0.5 °C according to GB/T 5170."
- **Higher temperature indication resolution**
Increase the resolution of indication control to 0.1 °C.
- **Segmentation deviation correction function, user single point correction, manufacturer 10 point segmented correction is available.**
- **Two types of program instrumentation to suit different applications:**
Features programmed operation with operational settings such as constant mode and automatic start/stop.

- Programmed operation now allows storing 10 patterns, each up to 20 steps. Provides a wide range of functions, including temperature ramp settings and a maximum of 999 repeat cycles.
- **Interface (option)for device communication can be selected between RS-485 and RS-232C.**
 - **A space-saving upright chamber**
Components are incorporated into the top portion of the vertical chamber, reducing installation space by 20 to 60% (comparison with conventional model). Increases productivity on the production line, and saves laboratory space.
 - **Seamless door interior structure**
Door back is a single molded structure preventing heat losses from loose joints.
 - **Large processing capacity**
Since the floor and shelves of the chamber have been greatly reinforced, a large amount of specimens can be loaded and processed at the same time. The sliding shelves ensure easy handling of the specimens.



Specification of Temperature Chamber-e Instrumentation(Vertical Type)

Model		GPV-21e	GPV-22e	GPV-33e	GPV-H21e	GPV-H22e	GPV-H33e
Ventilation system		Forced hot air circulation/ventilation system					
Control System		PID control system					
Power Supply & Max. Load Current(A)		AC220V 1φ 2W 50Hz	AC380V 3φ 4W 50Hz		AC220V 1φ 2W 50Hz	AC380V 3φ 4W 50Hz	
Power Consumption		3.9 kVA	4.8 kVA	6.8 kVA	3.9 kVA	5.8 kVA	8.8 kVA
Allowable ambient conditions		Ambient Temperature:0~+40°C;Relative Humidity:Up to 75%rh					
Performance ※	Range	(Ambient Temperature+20)°C~+200°C			(Ambient Temperature +20)°C~+300°C		
	Temp. fluctuation※1	±0.2°C at +100°C ±0.4°C at +200°C			±0.2°C at +100°C ±0.4°C at +200°C ±0.4°C at +300°C		
	Temp.variation※1	±1.5°C at +100°C ±2.0°C at +200°C			±1.5°C at +100°C ±2.0°C at +200°C ±3.0°C at +300°C		
	Temperature Heat-Up Rate	Ambient Temperature to +200°C Less than 30 minutes			Ambient Temperature to +300°C Less than 50 minutes		
Construction	Exterior	Galvanized cold-rolled steel sheet, hot-rolled steel sheet					
	Test Area	Stainless steel					
	Insulation	Glass wool					
	Door	Single door (handle on the right, left-hinged) ;GPV-H33: Doors can be unlocked from the inside.					
Heater		Iron-chrome stripped-wire-heater					
Air Circulator		Stainless steel centrifugal fan					
Equipment		Power Cable(Approximately 2 m from the chamber),Specimen Power Supply Control Terminal (with Plug) .					
Standard Accessories		Shelves 2pcs;Racks 2sets;Kick Plate/Rubber plate 1pcs;Cartridge Fuse 2pcs;Operation manual 1set.					
Inside(W×H×Dmm)		600×600×600	600×900×600	800×1200×800	600×600×600	600×900×600	800×1200×800
Outside(W×H×Dmm)		770×1200×925	770×1500×925	1030×1800×1145	770×1200×925	770×1500×925	1030×1800×1145
Volume(L)		216	324	768	216	324	768
Weight(Kg)		165	190	325	165	190	325

※ The performance figures are given for an ambient temperature of 23±5 °C, no specimens inside the chamber and the damper set for air circulation.
The measuring points are in accordance to GB/T518.2 and IEC60068-3-5.
※1 The measuring points are in accordance to GB/T518.2-2008.

Model	Shelf pitch	Shelve	Shelf load capacity※(Equally distributed load)	Total load resistance※
GPV-(H)21	50mm	11	25Kg	200Kg
GPV-(H)22	50mm	17	25Kg	
GPV-(H)33	80mm	14	45Kg	

※ Including shelf weight.

Safety Devices:

- | | |
|---|---|
| Leakage breaker for power supply | Temperature switch for air circulator |
| Electric parts compartment cover switch | Upper and lower temperature limit alarm (controller built-in) |
| Chamber door switch | Overheat protector |
| Thermal fuse | Specimen Power Supply Control Terminal |
| Cartridge Fuse | |

Products Profile

Option list of Temperature Chamber-(e Instrumentation) (Horizontal Type)&Temperature Chamber-(e Instrumentation) (Vertical Type) ※1

Model		Horizontal Type						Vertical Type					
		GPH-20(e)	GPH-30(e)	GPH-40(e)	GPH-H20(e)	GPH-H30(e)	GPH-H40(e)	GPV-21(e)	GPV-22(e)	GPV-33(e)	GPV-H21(e)	GPV-H22(e)	GPV-H33(e)
Exhaust port flange		●	●	●	●	●	●	●	●	●	●	●	●
Stand	HorizontalL-2/3/4	●	●	●	●	●	●	—	—	—	—	—	—
	HorizontalM-2/3/4	●	●	●	●	●	●	—	—	—	—	—	—
	HorizontalH-2/3/4	●	●	●	●	●	●	—	—	—	—	—	—
	VerticalMV-23	—	—	—	—	—	—	●	●	—	●	●	—
	VerticalMV-26	—	—	—	—	—	—	●	—	—	●	—	—
Casters for stand	Horizontal-type 2/Vertical	●	—	—	●	—	—	●	●	—	●	●	—
Stand(with door)	Horizontal H-2/3	●	●	—	●	●	—	—	—	—	—	—	—
Casters for stand	Horizontal/Vertical	●	●	●	●	●	●	●	●	●	●	●	●
Communication function	RS-485	●	●	●	●	●	●	●	●	●	●	●	●
	RS-232C	●	●	●	●	●	●	●	●	●	●	●	●
	GPiB ※2	●	●	●	●	●	●	●	●	●	●	●	●
Shelf•shelf brackets		●	●	●	●	●	●	●	●	●	●	●	●
Shelf brackets	(1set /2pcs)	●	●	●	●	●	●	●	●	●	●	●	●
Cable port※3	Ø50	●	●	●	●	●	●	●	●	●	●	●	●
	Ø100	●	●	●	●	●	●	●	●	●	●	●	●
Rubber plug for cable port (200℃ only)	Ø50	●	●	●	—	—	—	●	●	●	—	—	—
	Ø100	●	●	●	—	—	—	●	●	●	—	—	—
Double stacking brackets	GPH-(H)20 only	●	—	—	●	—	—	—	—	—	—	—	—
Potable temp recorder (Paperless)		●	●	●	●	●	●	●	●	●	●	●	●
Temp recorder wiring		●	●	●	●	●	●	●	●	●	●	●	●
Recorder output terminal (Temp)		●	●	●	●	●	●	●	●	●	●	●	●
Emergency push stopbutton		●	●	●	●	●	●	●	●	●	●	●	●
Three Color Status indicator Warning Lights ※4	No alarm buzzer	●	●	●	●	●	●	●	●	●	●	●	●
	With alarm buzzer	●	●	●	●	●	●	●	●	●	●	●	●
Alarm output terminal		●	●	●	●	●	●	●	●	●	●	●	●
Airflow adjuster		●	●	●	●	●	●	●	●	●	●	●	●
Automatic damper		●	●	●	●	●	●	●	●	●	●	●	●
GB specifications inspection report		●	●	●	●	●	●	●	●	●	●	●	●
Additional operation manual(paper)		●	●	●	●	●	●	●	●	●	●	●	●
Standard inspection report※5		※	※	※	※	※	※	※	※	※	※	※	※

※1 “●” means that this option could modify to completed stock or modify with newly manufactured chamber.
※2 GPiB is non-standard option
※3 Each cable port is equipped with a cap and without rubber plug.For custom opening positions,please consult your local sales company for detail.
※4 Alarm output terminal and three color Status indicator warning lights cannot be fitted together.
※5 As standard accessories and delivery with chamber.

For details about specifications and options,refer to the relative products on our website: <http://www.gd-espec.com/>

Products Profile

| Compact Ultra Low Temperature Chamber |



High performance and reliability in a compact package covers from an ultra-low temperature of -70°C/ -85°C to +180°C. Thanks to Instrument and its optional Ethernet connection, you can control and monitor the chamber remotely via web browser.

Features:

- **Color LCD touch panel**
- **WideTemperature range**
Available models: a chamber with a temperature range from -70°C/ -85°C to +180°C . It can be used for various tests including temperature characteristic and low temperature storage.
- **Balanced Temperature Control system(BTC system)and PID control function.**
Using the BTC system to control,provides highly accurate temperature/humidity environment.Consisting of PID controlled refrigerrator,and instrumentation,which delivers hight speed processing.
- **Remote monitoring & control (Ethernet connection as option)**
A unique web application allows the user to monitor the chamber operation from a PC. Without any software, the chamber can be accessed and controlled via web browser on the PC, Smartphone, and Tablet. Wireless connection and multiple units' connection are also possible.
* This operation can only be performed when the power breaker is ""ON"
- **USB port for data memory & output**
Trend graphs can be displayed on the web application, downloaded, and registered on a USB memory.
* USB memory is not included.
- **Backtrace function**
When the chamber stops because of trouble,the operation status just before the chamber stops is automatically recorded and saved.Saved data can be transferred by USB memory.
- **Multilingual display**
A simple operation changes display text to English , Japanese,Simplified Chinese (Russian as option) .
- **Register up to 8 test patterns setting with maximum of 99 steps and 3 constant operation modes(Program /Constant/Cycle Operation) .**
- **Cable port on left sides (Ø50) as standard to allow easy wiring access**

| Compact Ultra Low Temperature Chamber |

Model		GMC-71	GMC-81
System		Balanced Temperature Control (BTC) System	
Utilities	Power Supply & Max.Load Current(A) AC380V 3φ 4W 50Hz	8.3A	9.2A
	Allowable ambient conditions	Ambient Temperature:0~+40°C;Relative Humidity:Up to 75%rh	
Performance ※	Range※1	-70~+180°C	-85~+180°C
	Temp.fluctuation※1	±0.5°C	±0.5°C(-85°C~+100°C) ±1.0°C(+100.1°C~+180°C)
	Temp.variation※1	±2.0°C (-70~+100°C) ±4.0°C (+100.1~+180°C)	±2.0°C(-85°C~+100°C) ±4.0°C(+100.1°C~+180°C)
	Temp.rate of Change※2	Heat Up Rate:6.5°C/min;Pull Down Rate:2.2°C/min (Range-45°C⇄+155°C)	Heat Up Rate:5.5°C/min;Pull Down Rate:2.2°C/min (Range -58.5°C⇄+153.5°C)
	Temperature Extremes Achievement Time※2	Heat Up:From+20°C to+180°C Less than 30 min Pull Down:From+20°C to-70°C Less than 70 min	Heat Up:From+20°Cto+180°C Less than 30 min Pull Down:From+20°Cto-80°C Less than 80 minu
Construction	Exterior	Galvanized cold-rolled steel sheet, hot-rolled steel sheet	
	Test Area	Stainless steel plate:18—8 Cr—Ni stainless steel plate, 2B polish	
	Heater	Nichrome strip wire heater	
	Cooler	Plate-fin cooler	
	Air Circulator	Propeller fan	
	Cooling System	System	Mechanical double-stage refrigeration system
		Refrigerator	Rotary compressor
		Capacity(kW)	0.65X0.650.8 X 0.8
		Expansion System	Capillary tube system
		Refrigerant	R404A/R508B
	Standard Accessories		Shelves 2pcs;Racks 2sets; Cable Port Plug(Ø50mm) 1pcs;Breaker Handle Stopper 1pcs;Door Keys 2pcs;Cartridge Fuse 2pcs;Operation manual 1set
Inside(W×H×Dmm)		400×400×400	400×400×400
Outside(W×H×Dmm)		900×1300×610	900×1300×610
Volume(L)		64	64
Weight(Kg)		164	168

※ The performance values are based on GB/T 5170.2 and IEC60068-3-5:2001, at+23°C ambient temperature, 65% relative humidity, rated power supply and with no specimens inside the test area.
※1 Values are based on GB/T5170.2-2008.
※2 Values are based on IEC60068-3-5.
※3 When the temperature inside the chamber:+20°C.

Options:

- Temp recorder wiring
Potable temp recorder (Paperless)
Communication functionWeb(Lan)/RS-485/RS-232C
Cable port (with rubber plug)Ø50/Ø100/Ø150
Rubber plug for cable portØ50/Ø100/Ø150
Shelf• Shelf brackets
- Emergency push stopbutton
Three Color Status indicator Warning Lights
Alarm output terminal
Specimen Power Supply Control Terminal

For details about specifications and options,refer to the relative products on our website: <http://www.gd-espec.com/>

Products Profile

| Stability Test Chamber |



For a long time, Stability test chambers have been used in research and development and quality control engineering for medical supplies, pharmaceuticals, cosmetics, foodstuffs, packaging materials, etc. They are suitable for simple temperature and humidity tests to confirm the maintenance of quality characteristics. Our Stability test chambers offer basic performance and good reliability for long-term continuous operation. They also have the advantage of being easy to operate and easy to maintain.

Features:

• **Excellent performance and high precision.**

With a temperature and humidity range of +15°C~+60°C/50%RH~90%RH, the chamber can achieve a Temp./humid. max-min range of ±1°C/5%RH to meet the relatively higher requirements of stability testing.

Note: The ICH Guidline Q1A standards is ±2°C/±5%RH.

• **Balanced temperature and humidity control system (BTHC system), Virtual air jacket system.**

• **Vacuum Insulation.**

HG model stability test chamber is the first in the environment test chamber industry to adopt vacuum insulation.which reduces the effect of ambient temperature.

• **Full-view inner glass door.**

Full-view inner glass door is equipped as standard. It lets you easily check on samples without temperatureand humidity fluctuation that caused by opening andclosing the outer door.

• **Reliable temperature andhumidity sensor.**

A high-accuracy resistance temperature detector (Pt100) is used for the temperature sensor, and a capacitive thin-film polymer sensor is used for the humidity sensor.You are free from wet-bulb wick replacement in dry-bulb systems and the effects of microorganisms that have become attached to the wick.

• **Smooth specimen access.**

Sliding shelves are used to allow easy access to specimens. Shelves

can be pulled out to one-half of their depth. When heavy specimens such as liquids are placed on the shelves, a fall-prevention mechanismkeeps them from being pulled out when slid forward. (Equally distributed load per shelf is 30kg).

• **Cable port (Ø25mm)for validation.**

A cable port that can be used to insert a temperature and humidity distribution measurement sensor is standard. A silicon rubber plug is also included to ensure air tightness when the sensor is inserted in the chamber.

• **Color LCD touch paneland Multilingual display.**

Easy-to-use color LCD touch panel is included as standard. It is much easier to set various patterns of Constant-, Program-, Remote-Operation to meet various testing conditions.

• **Multilingual display.**

Can change the display lauguage from English to Simplified Chinese,Japanese at any time from the lanuage icon on the top of the display.

• **USB output of trend graph data.**

Data can be recorded directly to a USB flash drive,backup and measurement intervals and other setting can be configured as required.

• **Easy maintenance.**

Maintenance work such as cleaning thecondenser fins and filling the water tankcan be easily operated.

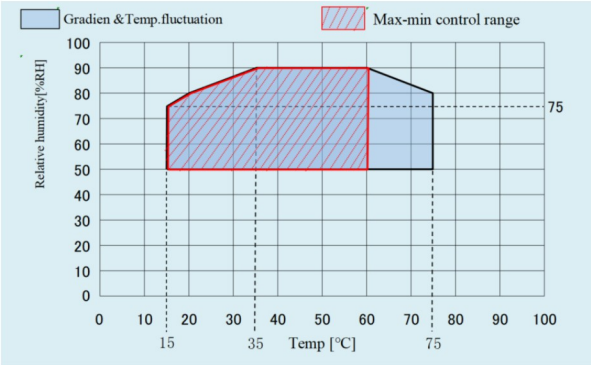
Specifications of Stability Test Chamber

Model			GCSH-11HG	GCSH-12HG	GCSH-13HG
System			Balanced temperature and humidity control system (BTHC system), Virtual air jacket system.		
Power Supply & Max.Load Current(A)			AC220V 1 φ 2W 50/60Hz; Voltage fluctuation:198~242V (±10%) ; Max.Load Current:5.9A		
Allowable ambient conditions			Ambient Temperature:: +5~+40℃		
Performance ※	Temp&Hum Range※1		+15℃~+75℃/50%RH~90%RH		
	Temp&Hum fluctuation※1		±0.3℃/±3%RH		
	Temp./humid. max-min variationrange ※2		±1℃/±5%RH		
	Temp&Hum gradient ※1		2.0℃/5%RH (Set Temp:+15℃~+60℃); 3.0℃/5%RH (Set Temp:+60.1℃~+75℃)		
	Noise Level ※3 (JIS-Z-8731:1999A)		Less than 50dB		
Construction	Exterior		Galvanized cold-rolled steel sheet, hot-rolled steel sheet		
	Test Area		Stainless steel plate:18—8 Cr—Ni stainless steel plate, 2B polish		
	Heater		Sheathed heater 18Cr-9Ni-Ti stainless steel-0.8KW		
	Humidifier		Sheathed heater 18Cr-12Ni-2Mo-LC stainless steel,surface evaporation type-0.8KW		
	Cooler		Plate-fin cooler (also works as a dehumidifier)		
	Air Circulator		Sirocco fan		
	Water supply	Water supply	Pump water supply system		
		Water Tank	10L		
	Cooling system	Refrigerator	Mechanicalsingle-stage air-cooled refrigeration system		
		Refrigerator	Reciprocatingcompressor		
		Capacity (kW)	170Wx 1		
		Expansion System	Capillary		
Refrigerant		R134a			
Standard Accessories			Shelves3pcs; Racks3sets; Cable Port Plug(φ 25mm) 1pcs; Temperature sensor terminal connector 1pcs; Humidity sensor terminal connector 1pcs; Door Keys 2pcs; Cartridge Fuse 1pcs; Water Filter 1pcs; Water tank 1pcs; Operation manual 1set		
Inside(W×H×Dmm)			600×700×560	750×950×660	1100×950×760
Outside(W×H×Dmm) ※4			740×1550×774	890×1800×874	1240×1800×974
Volume(L)			235	470	794
Weight(kg)			200	240	370

※1 The performance values are based on IEC 60068-3-6:2008, JTM K09; 2009.Performance figures are given for a +5°C to +35°C ambient temperature(Ambient temperature +18°C to +35°C for setting temperature over +40.1°C),relative humidity 65±20%/rh, rated power supply and no specimens inside the test area.
※2 Temperature and humidity maximum and minimum range means maximum difference after stabilization, at any moment in time in the working space against the setting values.Ambient temperature of +5°C to +32°C,no load,no specimens.
※3 Noise level was measured in an anechoic room at a height of 1.2 m from the floor and a distance of 1 m from the chamber front panel (ISO 1996-1:2003 A-weighted sound pressure level).
※4 Excluding protrusions.

Options

- Temp recorder wiring
- Potable temp recorder (Paperless)
- Shelf-Shelf brackets
- Continuous water supply
- Chamber dew tray
- Anchoring fixture
- GB Specifications inspection report
- Test and inspection report(As standard accessories)



Note:Performance of when ambient temperature is 23 °C± 5 °C, the relative humidity is 65 ± 20% RH, and rated voltage,no load,no specimens .Except for situations where the ambient temperature rapidly changes by more than 5 °C within a few minutes.

Quality is more than a word