

High performance temperature (humidity) chamber

Suitable for reliability testing of semiconductor electronic components

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 high 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 temperature inside the chamber: +20°C)

Easy to further performance modifications, high expansibility

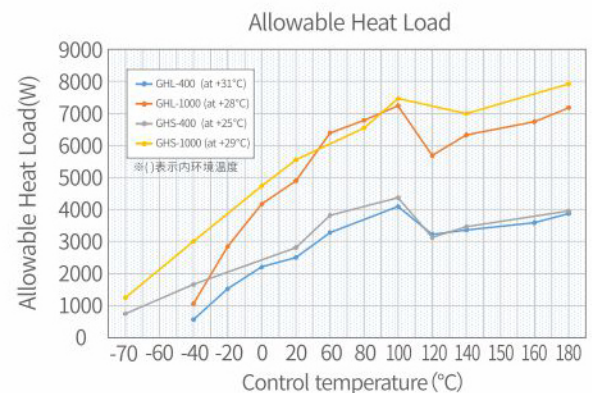
- ▶ The scientific structural design allows it to be assembled with different numbers and specification of compressors, which facilitates the modification to improve performance. The inner box size can be flexibly modified, such as widening/heightening, enlarging/shrinking, to meet the demand of high heat and high load for large size specimen. It is easier to modify the appearance of shaped structure.

Air-cooled specifications

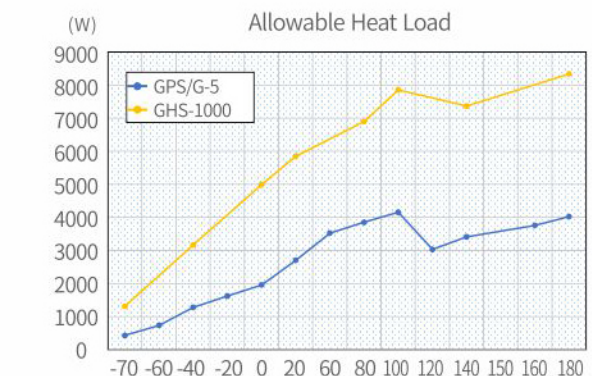
- ▶ Air-cooled specifications as standard for ease of movement and installation.

Can provides highly accurate temperature/humidity environment

- ▶ Balanced Temperature (& Humidity) Control system (BTHC system) and PID control function.
- ▶ Standard program instrumentation can suit various applications.



* Chamber actual test data



* Comparison of the actual test data between GHS-1000 and GPS/G-5

Features

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

Cable ports on both sides (φ50) 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.

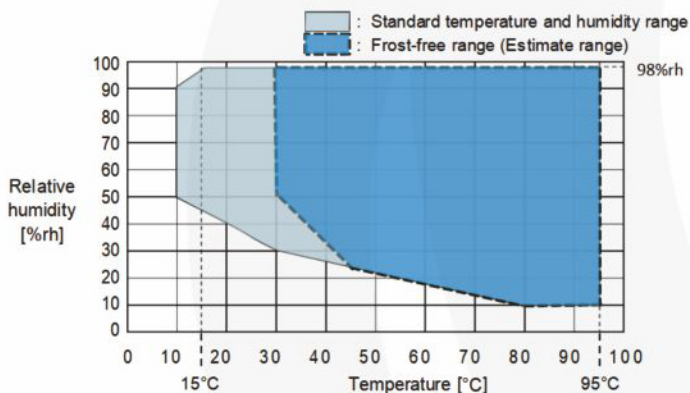
▶ Additional safety options such as pressure relief valves, smoke sensors, emergency push stop button, alarm output terminals and three color status indicator warning Lights are available.

*More detail please see HP: <http://www.gd-espec.com/en/>



Model		GHL-400	GHL-1000	GHS-400	GHS-1000
System		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~+180°C	-40~+180°C	-70~+180°C	-70~+180°C
	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)
	Temp.rate of Change (IEC60068-3-5)	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/min 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-8731:1999 A)	40~60dB			
Constri- -uction	Air Circulator	Propeller fan			
	Water supply	Pump water supply system			
	Cooling System	Mechanical single-stage refrigeration system		Mechanical double-stage refrigeration system	
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)	800×1753×2200	1200×1903×2500	800×1753×2200	1200×1903×2500	
Volume (L)	400	1000	400	1000	
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, rated voltage, with no specimens inside the test area.



*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).



ESPEC TEST EQUIPMENT (GUANGDONG) CO.,LTD
 NO.14, Meide 2nd Road, Pearl River industrial park,
 Pearl River Street, NanSha, GuangZhou, China. 511462
 Tel: (86) 20-8452-8103 Fax: (86) 20-8452-8107
 E-Mail: info@gd-espec.com

Sales Company of Southeast Asia:
ESPEC ENGINEERING (THAILAND) CO.,LTD.
 Tel: (+66) 038-109353
 FAX: (+66) 038-109356
 E-Mail: info@espec.co.th