

Temperature (& Humidity) Chamber (for Battery test)



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

Simple and ideal performance and design for battery testing

Our new Temperature & Humidity Chamber(for Battery test) with safety equipment was designed to meet demand of environmental tests for devices such as secondary batteries and power semiconductors,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 it's 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

Uniform temperature distribution

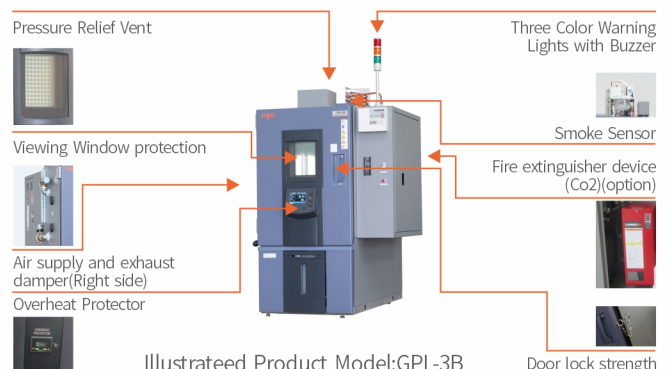
►Capacity of vertical airflow from the top is increased so that the air reaches every corner of the test area,realizing more uniform temperature distribution in the test area.

Safety features

- The chamber comes standard with safety features such as pressure relief vent, smoke detector and hand-tighten bolt door lock, Three Color Warning Lights etc.
- In addition, you can select optional features like various detectors,Fire extinguisher device,communication function and cable ports to suit your 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.



EUCAR Hazard Levels

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 Council for Automotive R&D) Hazard Level. The safety features can be adapted individually, according to customer specifications.

Hazard Level	Description	Classification criteria, effect
0	No effect	No effect. No loss of functionality.
1	Passive protection activated	No defect; no leakage; no venting, fire or flame; no rupture; no explosion; no exothermic reaction or thermal runaway. Cell reversibly damaged. Repair is needed.
2	Defect / Damage	No leakage; no venting, fire or flame; no rupture; no explosion; no exothermic reaction or thermal runaway. Cell irreversibly damaged. Repair is needed.
3	Leakage Δ mass < 50%	No leakage; no venting, fire or flame; no rupture; no explosion; no exothermic reaction or thermal runaway. Cell irreversibly damaged. Repair is needed.
4	Venting Δ mass \geq 50%	No fire or flame, no rupture; no explosion. Weight loss \geq 50% of electrolyte weight (electrolyte = solvent + salt).
5	Fire or Flame	No rupture; no explosion (i.e., no flying parts).
6	Rupture	No explosion, but flying parts of the active mass.
7	Explosion	Explosion (i.e. disintegration of the cell)

HAZARD LEVEL AND RECOMMENDED SAFETY DEVICE OPTIONS

Hazard Level 0-2

Hazard Level 3-4

Hazard Level 5-6



Status indicator light



Emergency stop switch



Electronic door lock



Lever door lock



Forced air supply/exhaust damper



Window protection cover



Gas sensor (CO, H₂, HG)



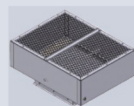
Smoke sensor



Sheathed fin heaters



External Signal terminal



Pressure relief vent 300x300mm



Screw door lock



Additional overheat protector



Port for CO₂ fire extinguisher

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	1000×980×1000	600 x 830 x 800	1000 x 980 x 800	1000×980×1000	
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	

※1The 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.

Standard Function

- Pressure Relief Valve(Φ100/200*200/300*300)
- 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



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

<http://www.gd-espec.com/>