

High-Rate Thermal Cycle Chamber



Today, the automotive industry accelerates electronic multi-functions. According to this trend, safety standards such as ISO26262 and IEC61508 require high environmental stress that is generated by thermal shock chambers for higher reliability of vehicle equipments.

The HRS and HRG models are the ideal temperature and humidity chambers for environmental testing of automotive parts for which test demands are becoming stricter. It is available from a 306-liter or 800-liter capacity, a temperature rate of change of 5°C, 10°C or 15°C per minute, and whether or not to have humidity control.

Not only do these models feature a high temperature rate of change performance, but by adding an added boiler humidifier, the humidity change time can be shortened and dew condensation test standards for automotive parts (e.g. in-vehicle Li-ion battery modules, electric turbochargers, intercoolers, radiators, and in-vehicle inverters) can be supported. These models use the same touch panel instrumentation adopting Platinous flagship series for improving operability.

Same instrumentation as standard chambers for easy operation

These models use the operation mode screen based on the functions of our Platinous flagship series, maintaining consistency in operability.

Safety devices

It is possible to equip safety devices for testing flammable or gaseous specimens, including rechargeable batteries and fuel cells.

Typical devices:

- Pressure release vent
- Gas detector
- Forced ventilation system
- CO₂ gas extinguisher
- Safety lock mechanism

* Be sure to install the safety device if the chamber is used for charge-discharge testing or testing Li-ion battery packs or Li-ion battery modules.

Specifications

Model	Temperature range	Humidity range	Performance		Inside dimensions (mm)	Outside dimensions (mm)	Inside capacity (L)	
			Specimen	Temperature rise/fall time Temperature rate of change				
HRS-306L	-70 to +180°C	20 to 98%rh	Iron 5 kg	-55 ⇔ +125°C Heat up: within 36 min. (5°C/min.) Cool down: within 36 min. (5°C/min.)	W600 H850 D600	W1050 H1975 D2159	306	
HRG-306L		-		-55 ⇔ +125°C Heat up: within 18 min. (10°C/min.) Cool down: within 18 min. (10°C/min.)				
HRS-306M		20 to 98%rh						-55 ⇔ +125°C Heat up: within 18 min. (10°C/min.) Cool down: within 18 min. (10°C/min.)
HRG-306M		-						
HRS-306H		20 to 98%rh	None	-45 ⇔ +155°C Heat up: within 9 min. (23°C/min.) Cool down: within 11 min. (18°C/min.)				
HRG-306H		-						
HRS-800L		-70 to +180°C	20 to 98%rh	Iron 5 kg	-55 ⇔ +125°C Heat up: within 36 min. (5°C/min.) Cool down: within 36 min. (5°C/min.)	W1000 H1000 D800	W1450 H1975 D2370	800
HRG-800L			-		-55 ⇔ +125°C Heat up: within 18 min. (10°C/min.) Cool down: within 18 min. (10°C/min.)			
HRS-800M			20 to 98%rh					
HRG-800M			-					
HRS-800H			20 to 98%rh	None	-45 ⇔ +155°C Heat up: within 13 min. (15°C/min.) Cool down: within 13 min. (15°C/min.)		W1450 H1975 D2962	
HRG-800H			-					

* Customized parts. Each comes with a specimen temperature control function.

* Temperature rate of change indicated under performance is ramp operation (rate control) chamber performance.

Actual application examples

15°C/min
· -40°C $\begin{matrix} \rightarrow \\ \leftarrow \end{matrix}$ +55°C Specimen: ECU
-15°C/min

7°C/min
· -40°C $\begin{matrix} \rightarrow \\ \leftarrow \end{matrix}$ +125°C Specimen: PTC test
-6°C/min

15°C/min
· -40°C $\begin{matrix} \rightarrow \\ \leftarrow \end{matrix}$ +130°C Specimen: ECU
-15°C/min

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Bench-Top Type Temperature (& Humidity) Chamber



Large Capacity Thermal Shock Chamber 603EL (600L)



Large Capacity Thermal Shock Chamber



Highly Accelerated Air to Air Thermal Shock Chamber (HAATS)

