

# Climate Chamber



**HHS-256/756/506**

## Scope of Application:

Drug stability tests (made for stability studies according to ICH guidelines), cosmetic stability tests, food shelf life tests, electronic components aging tests, packaging material stability tests.

## Innovative Design

- Energy-Saving and Reducing Cost
- Intelligent Management
- Low Noise
- Compliant with FDR 21 CFR Part 11 and ICH Temperature and Humidity
- Water Saving

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## Product Advantages



### Silent

Peltier technology ensures low vibration and noise output with no pollution into the environment



### Precise control

Accurate temperature and humidity control, long-term stability, 25 °C temperature uniformity  $\pm 0.5^{\circ}\text{C}$  and central temperature fluctuation  $\pm 0.2^{\circ}\text{C}$ , 60%rh humidity fluctuation  $\pm 1\%\text{rh}$

\* Ambient temp. 22°C, ambient humidity 40% RH.



### Water-saving

Intelligent control of PTC humidification, daily water consumption of 120-320ml, no need to recycle waste water, saving space

\* test condition: 40°C , 75%rh



### Power saving

Peltier technology means the daily power consumption is as low as 5kWh; 90% more energy efficient than compressor technologies



## Product Features



Optional electromagnetic lock, suitable for multiple users with independent management for safety



High precision temperature sensor, dual PT1000 sensors for more accurate temperature control



High precision capacitive humidity sensor



Microprocessor control system

- PID control principle, 10-inch touch screen, temperature control precision  $0.1^{\circ}\text{C}$ , humidity control precision 0.1%, temperature range 5-70°C, humidity range 10%-90%
- Display temperature, humidity and ambient temperature; users can query the historical curve
- Temperature alarm, humidity alarm, door alarm, sensor alarm and water shortage warning
- USB, RS485 and interface as standard



Multiple protection protocols - equipped with delay start, high/low temperature and light intensity protection in line with DIN12880 requirement for over/under temperature protection



Expandable large capacity data storage, the touchscreen memory can be expanded to 64GB, storing up to 15 years data which can be exported via a USB



High insulating performance polyethurane foam provides excellent insulation and stable cabinet temperatures reducing energy consumption



An access port with a diameter of 35mm on the left side of the cabinet to facilitate independent testing of temperature and humidity



## Product Parts



### ⦿ With ICH-compliant Light Source and Light-dose Control (optional)



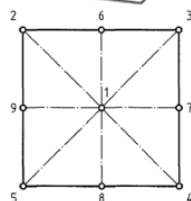
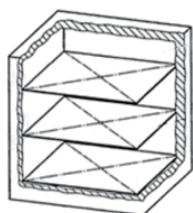
ICH compliant illumination for photo-stability testing [0~10000LUX, UV-A 320~400nm, 0~1.1W/m<sup>2</sup>]

Positionable illumination cassettes with ICH-compliant UV/Vis-light source Independent light-dose control of UV-A and visible light with sensors

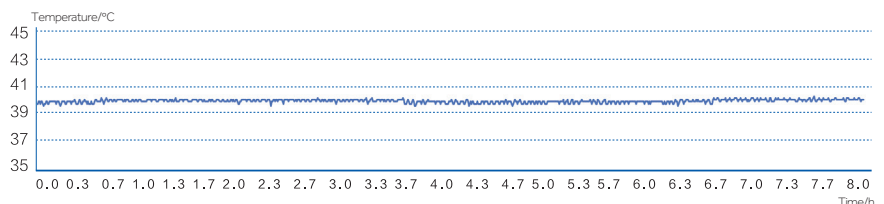


## International Quality Assurance

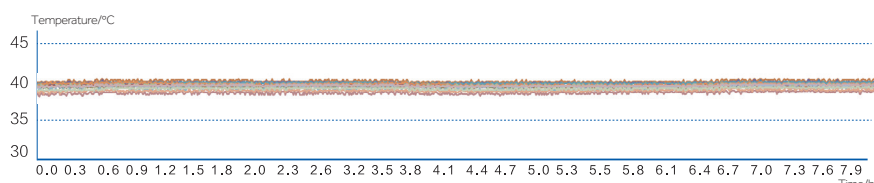
### Accurate Temperature Control



DIN12880 standard 27 test points

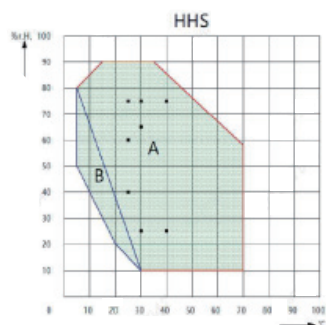


Central point temperature fluctuation within  $\pm 0.2^{\circ}\text{C}$  (ambient temperature:  $22^{\circ}\text{C}$ , setting temperature:  $40^{\circ}\text{C}$ )

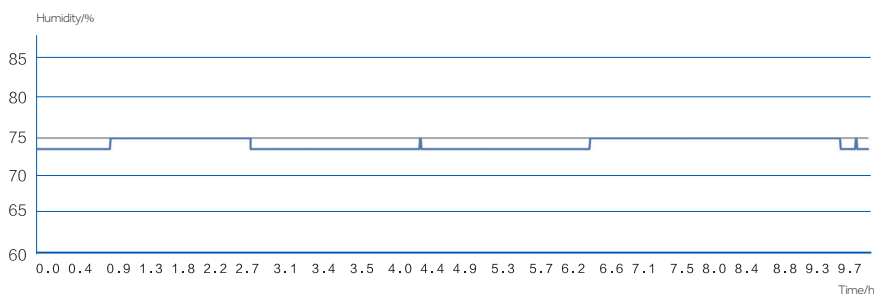


27 test points temperature uniformity is  $\pm 0.5^{\circ}\text{C}$  (ambient temperature:  $22^{\circ}\text{C}$ , setting temperature:  $40^{\circ}\text{C}$ )

### Accurate Humidity Control



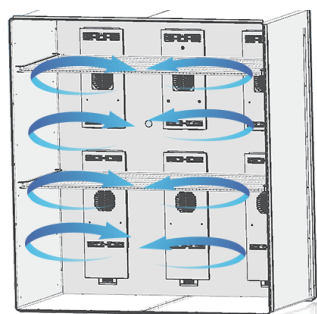
A area: Stable temperature and relative humidity control range.  
B area: Ambient temperature and humidity requirements: less than  $22^{\circ}\text{C}$ , 40%RH  
+ : Temperature and relative humidity measurement points required in ICH guidelines



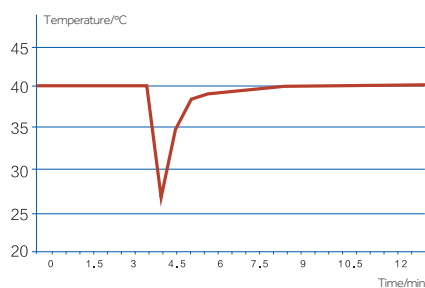
Humidity fluctuation  $\pm 1\%rh$ : Accurate temperature control (ambient temperature:  $22^{\circ}\text{C}$ , ambient humidity: 40%rh, setting temperature:  $40^{\circ}\text{C}$ , setting humidity: 75%rh)

- There shall be some gap around the product, and there must be no less than 150cm gap on the back side, so as to facilitate heat dissipation of pletier module and cut off the power supply in case of emergency;
- Sample dehumidification is not applicable, which may cause humidity deviation from the initial setup;
- The ambient temperature changes may cause the temperature and humidity to fluctuate beyond the limit;
- In area B, ensure that the ambient temperature is less than  $22^{\circ}\text{C}$  and the ambient humidity is less than 40%Rh. If the ambient temperature exceeds the range, the humidity may deviate from the setup.

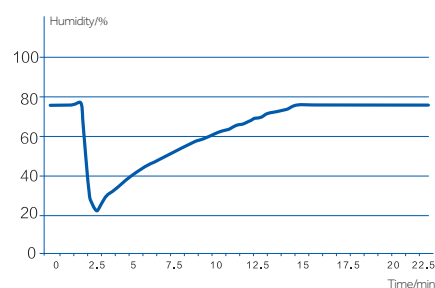
## Internal Cabinet Environment Quick Recovery System



Professional air duct design,  
ensuring temperature and  
humidity uniformity



The time required for temperature to return to to 40°C after 30s door opening is <4 minutes



The time required for humidity recovery to 75% after opening door for 30s is <14 minutes



## Intelligent Management

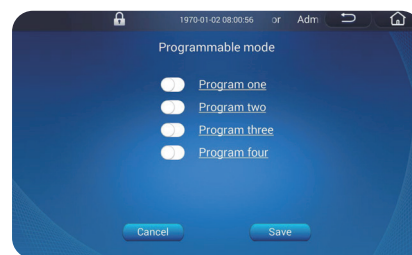
### Convenient and intelligent management to improve working efficiency



- The intelligent 10-inch touchscreen controller is easy to operate and sensitive to touch, even in rubber gloves. The PID control algorithm ensures the accuracy of temperature control



- Data and multi-user authority management and permissions conforms to FDA 21 CFR Part 11



- Unlimited programs with infinite humidity and temperature settings to allow users to customise to their needs

### High quality manufacture and reliable operation



#### Capacitive humidity sensor, long-term operating reliability

- Interference-free humidity data collection.
- Long-term reliability without the need for calibration.
- High precision  $\pm 0.1\%$ .
- Anti-condensation design for more accurate humidity monitoring.



#### High precision temperature sensor, accurate and reliable

- Adopts PT1000 temperature sensors for accurate, stable and repeatable measurement without deviation.
- Dual sensors further improve accuracy.



#### Peltier heating and refrigerating system, superior energy-saving and mute effect

- Peltier temperature control technology is based on the thermoelectric principle and can achieve environmental protection, no vibration and low noise.

### Intelligent control, ensures temperature and humidity accuracy



#### Intelligent control PTC humidification, energy-saving and water-saving

The temperature and purity of vapour is accurately controlled by the intelligent water supply system and ceramic high-temperature heating apparatus.



#### Intelligent dehumidification, accurate humidity control

Dehumidification by cold trap using the Peltier technology accurately controls heating and cooling.



## Specifications

	Model		HHS-256	HHS-506	HHS-756
Construction	Chamber Volume (L)		256L	506L	756L
	Interior Chamber		Stainless Steel	Stainless Steel	Stainless Steel
	Exterior Chamber		Coated Cold Rolled Steel	Coated Cold Rolled Steel	Coated Cold Rolled Steel
	Access Port		35mm Diameter	35mm Diameter	35mm Diameter
Dimensions	Net/Gross Weight	kg	175/188	225/260	280/328
	Interior Dimensions (W*D*H)	mm	650*570*700	740*570*1200	1100*570*1200
	Exterior Dimensions (W*D*H)	mm	835*890*1190	930*890*1690	1290*890*1690
	Packing Dimensions (W*D*H)	mm	1030*955*1280	1110*955*1780	1380*955*1780
Shelves	Shelves Qty (standard/max.)		597*531	687*531	1048*531
	Standard Qty / Max Qty		2/16	2/31	2/31
	Max. Load Per Shelf	kg	20	20	20
	Structure		Slide Rail, Adjustable	Slide Rail, Adjustable	Slide Rail, Adjustable
Electrical	Voltage / Frequency (V/Hz)		220-240-50/60	220-240-50/60	220-240-50/60
	Power (W)		750	1100	1760
	Day Consumption at 25°C & 40% RH (kwh)		4.6	5.4	5.6
Control	Controller		The Microprocessor	The Microprocessor	The Microprocessor
	Display		10" Smart LCD Screen	10" Smart LCD Screen	10" Smart LCD Screen
The Temperature Parameter	The Set Range (°C)		without Humidity without Light: 5-70°C with Humidity without Light: 5-70°C with Humidity with Light: 15-60°C	without Humidity without Light: 5-70°C with Humidity without Light: 5-70°C with Humidity with Light: 15-60°C	without Humidity without Light: 5-70°C with Humidity without Light: 5-70°C with Humidity with Light: 15-60°C
	Control Precision (°C)		±0.1	±0.1	±0.1
	Temperature Uniformity at 25°C		±0.5	±0.5	±0.5
	Temperature Fluctuation at 25°C		±0.2	±0.2	±0.2
	The Sensor		PT1000*2	PT1000*2	PT1000*2
	Rate of Temperature Rise (°C / min)		1	0.8	0.6
	30 Seconds Recovery Time After Door Opening at 40°C (min)		3	3.8	5
Humidity Parameter	Humidity Setting Range (% RH)		10-90	10-90	10-90
	Humidity Setting Accuracy (% RH)		0.1	0.1	0.1
	Humidity Fluctuation at 25°C & 60% RH (% RH)		±1	±1	±1
	Daily Water Consumption (ml)		120	240	320
Optional	Electromagnetic lock (password)		Y	Y	Y
	Printer		Y	Y	Y
	ICH compliant illumination for photo-stability testing [lx]		0-10000	0-10000	0-10000
	ICH compliant illumination for photo-stability testing [W/m2]		0-1.1	0-1.1	0-1.1
Standard	Remote Alarm Interface		Y	Y	Y
	RS485		Y	Y	Y
	Water Level Alarm		Y	Y	Y
Others	Certification		CE	CE	CE

Product appearance and specifications are subject to change without notice