



TECHNICAL PROPOSAL

Model Number: C-H150-SP Humidity Test Chamber



(image for illustrative purposes only)

Description:

Humidity Test Chamber capable of testing assemblies, components and materials for tolerance to the applied environmental conditions

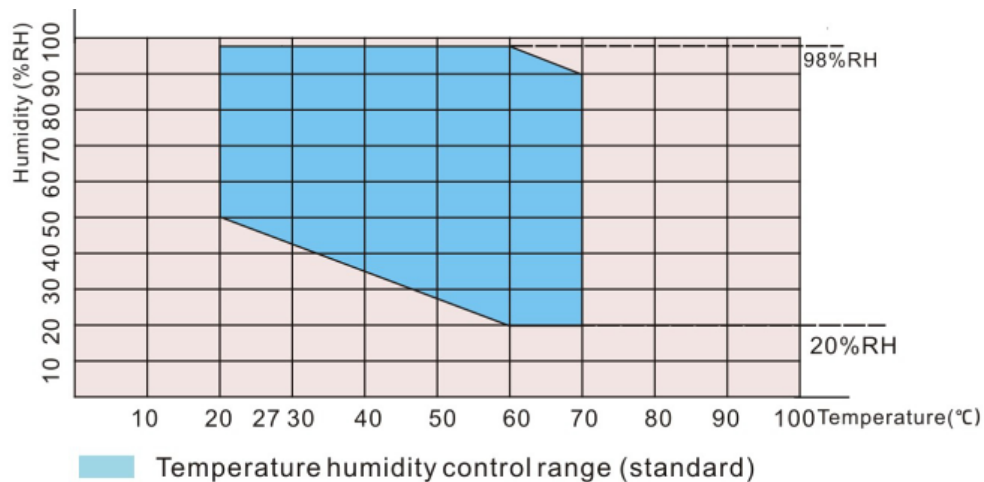
Specifications:

External dimensions (D x W x H):	1580 x 950 x 1745 (mm) approx.
Internal dimensions (D x W x H):	500 x 500 x 600 (mm)
Test Space:	150 litres
Temperature range:	-20°C ... +180°C
Temperature fluctuation:	within $\pm 0.5^{\circ}\text{C}$
Temperature deviation:	$\leq \pm 2.0^{\circ}\text{C}$
Temperature control resolution:	0.1°C
Heating time:	average 1.0°C/min over range
Cooling time:	average 1.0°C/min over range
Humidity range:	20%RH ... 98%RH
RH fluctuation:	$\pm 2.0\%RH$
RH deviation:	$\pm 2.5\%RH$
RH control resolution:	0.1%RH

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Temperature Humidity Control range:



Test Chamber Features:

- Stainless Steel interior SUS304 mounted on thermal breaks and insulated from outer cabinet
- Cabinet in box section steel and painted steel panels (GREY – RAL7045)
- Maximum loading weight 600kg/m³
- 1 x 50mm diameter access port with silicone thermal barrier and plug
- 2 x shelf; adjustable position
- Full-opening hinged door with heated window and internal illumination (BLUE – RAL5017)
- CE compliance
- Emergency Stop button on of chamber adjacent to controller
- Mains electrical power isolator
- Touch-screen programmable controller with RS232 (or Ethernet) and SD card
- Remote PC control; software and set-up provided (excludes suitable pc / laptop)
- Calibration report
- Installation drawings, operator and maintenance manuals (electronic copies)
- 1-year parts warranty

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Electrical Control System:

- Controller features:** 5-inch programmable touch-screen with LCD display. Program mode and constant operation (manual) mode. English menu. 120 programmes; 999 segments per programme; 99 repeat cycles. Display resolution: Temperature 0.1°C; Time 0.1 minute. Remote control by pc or laptop via RS485 adaptor with software provided.
- Heating:** *Nichrome* Electrical Heaters controlled by solid-state relay
- Air circulation fan:** Low-noise, multi-wing centrifugal
- Control method:** PID control; BTHC Balanced temperature and humidity control
- Graphical display:** Records and displays temperature and humidity over time. RAM with battery protection records set data, sampled data for up to 60 days. Data can be saved to SD memory card for quick and easy transfer to pc or laptop in excel format.
- Additional features:** Multi-function warning with diagnostics, system management guide, power-cut protection, upper and lower limit protection, and self-diagnosis functions.

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Main components list:

Temperature-Humidity controller	Samwontech TEMI 2500	
Protection switch	Schneider Electric	
AC contactor	Schneider Electric	
Thermal relay	Schneider Electric	
Phase sequence relay	Carlo Gavazzi	
Time delay relay	Omron	
AC relay	Schneider / Omron	

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Main components list:

**Refrigeration compressor /
condenser unit**

Tecumseh



Oil separator

ALCO / ESK



**Condenser – Plate heat
exchanger**

Danfoss



Pressure switch

Danfoss



Dry filter

Danfoss



Magnetic valve

Saginomiya



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Safety devices and systems:

Refrigeration system

- Compressor over-temperature protection
- Compressor over-current protection
- Compressor over-pressure protection

Test Chamber

- Operator adjustable over-temperature control
- Over-temperature protection for the air treatment compartment
- Fan motor over-heat relay
- Power phase sequence and phase loss protector
- Current leakage protector
- Overload and short circuit protector

Utility requirements and operating conditions:

Ambient environments:

- Operating: Temperature 0°C ... +35°C; Humidity ≤85%RH
- Storage: Temperature 0°C ... +45°C (When ambient is sub-zero and the chamber is not being used, the water systems should be drained to prevent ice and the potential for pipes cracking)

Chamber site:	A flat and even surface with 800mm clear access around the chamber
Electrical supply:	230V 1-ph + N + E; 50Hz; 30A. The supply must be exclusive for the chamber
Water supply:	Demineralised water supply

Accessories:

- Operation and maintenance manuals; controller programming manual
- Software for remote chamber operation and monitoring (customer to supply pc or laptop)
- Plugs and caps for portholes

Delivery:

Packaged in wooden crate suitable for sea-freight and road transport.

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Installation:

Installation, commissioning and operator training can be provided at additional cost

Warranty:

Standard parts warranty 12 months

Note:

Our design, development and continuous improvement policies may result in component changes. Dimensions are approximate and subject to final design. If there are any critical dimension requirements, please inform us before acceptance of any purchase orders.

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