

Pack Nature in a
BOX



Global Simulator

for Temperature and Humidity Reliability Testing

Temperature and...

Chamber Design

RESISTIBLE. The external bodywork is a single shell construction in zinc-coated steel with a powder-coated finish providing utmost protection against ambient conditions prevailing in factory but also laboratory environments.

ENCLOSED. The test chamber comprises a vapour tight welded stainless steel inner test space container. Numerous supports allow the insertion of shelves at various heights for an optimum utilization of the available test space. Double emission-free silicone gaskets combined with a self-tensing lock mechanism provide an effective seal between test space and door.



FLEXIBLE. As the control and air conditioning compartment are located in the back of the chamber, entry ports are possible from 4 sides: left/right side wall, door, and ceiling. All temperature and humidity chambers feature one 50 mm port on the left and one 125 mm port on the right hand side wall of the test space as standard.

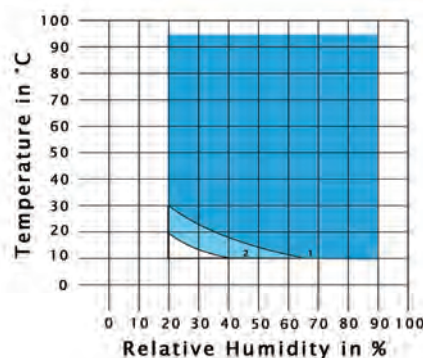
INSULATED. Minimum heat loss is achieved by compacted mineral wool insulation within the chamber wall cavity.

Temperature and Humidity System

TEMPERED. The air-handling compartment at the rear of the test chamber takes care on highly accurate air conditioning. The circulating air is cooled while flowing over a patented heat exchanger and heated by electrical resistance heaters in order to achieve the desired set values in the shortest possible time. An intelligent air flow system guarantees utmost spatial as well as temporal accuracies even with the test space loaded.

HUMIDIFIED. The innovative humidification water bath humidifies the air stream assuring rapid and aerosol-free humidity control while adopting the dehumidifying function as well. A proprietary psychrometric measurement system allows high accuracy over a long operational lifetime. The water bath technology combined with the innovative sensor assures a highly accurate climatic control in an extensive climatic range.

TROUBLE FREE. The built-in humidification water reservoir comes with a low water level alarm as well as an automatic water replenishment feature.



HUMIDITY GRAPHS.

1. Standard range
2. Dewpoint range +4°C to -3°C discontinuously

Operation and Control

TOUCH ME. A colour touch panel represents the interface between the operator and the test chamber's **SIMPAC**[®] controller. Self-explanatory graphic symbols create an intuitive user environment making the manual as well as automatic operation of the test chamber a breeze. Even complex test profiles can be defined with ease. A selection of international testing standards is pre-programmed and readily available.



ACCURATE. The **SIMPAC**[®] control system is an in-house development and guarantees precise control processes even under varying test space loads.

SAFE. The **SIMPAC**[®] not only supervises the highly accurate control of set values for temperature and humidity but also monitors all internal functions of the test chamber during operation. Whenever necessary, the **SIMPAC**[®] takes protective action in favour of the operator, test chamber, and even the test specimen.

COMMUNICATIVE. The **SIMPAC**[®] is a communication wonder hardly found elsewhere: TCP/IP, ASCII-Interface, RS 232, RS 485, IEEE (optional), Digital-I/Os, ... as well as USB interface for stick or printer.

Controller Highlights

- Storage for 100 programs with a total of 1000 program steps
- Loop and Call functions
- Digital-I/Os
- Remote monitoring
- Multi-languages: Chinese, German, English, French, Italian as well as Korean

...Humidity Chambers

Test Specimen Access

SIMPATI*

ACCESSIBLE. The single-handed operated door, hinged on the left hand side, provides full access to the test space. A multilayered heated window combined with an internal test space illumination allows great visual access to the devices under test at any time. Entry ports come with thermal breaks and stoppers for optimum sealing.

TIGHT AND SAVE. The door lock mechanism is a small innovation: an even pressure is maintained on the door seal while still conforming to all current safety standards.



PROGRAM-DOCUMENT-ARCHIVE. Interfacing with Excel and various word processors, **SIMPATI*** significantly eases the compilation of sophisticated test reports. This applies for multiple chambers as **SIMPATI*** allows the monitoring of up to 99 test chambers via a RS 485 or TCP/IP network. Graphical program editors make even complex profiles easily programmable.



INSTALLABLE. The **SIMPATI*** networking software runs on all recent MS Windows-OS including Windows 7.

Standard Chamber Features

- Observation Window with size of (W) 450mm X (H) 600mm
- Ethernet Interface
- 4 Potential-free digital I/O channels
- Solid state heater relays
- 2 Soft silicon plugs
- 2 Port holes of 50 mm and 125 mm diameter on the left and right hand side, respectively
- 1 insert Shelf
- Movable Design
- Adjustable specimen protection device with separate sensor (specimen protection according to EN 60519-2, 1993)
- Dehumidifier coil to prevent forming of condensation on test specimens
- **SIMPAC*** equipped with a high performance CPU and threshold monitoring system
- Patented psychrometric humidity measurement system (C series)
- Water shortage indicator (C series)
- Special temperature conditioning system at climatic operation for best temperature and humidity constancies (C series)

Options

- Software **SIMPATI***
- Serial RS 232/485 interface
- Additional shelves
- Temperature up to 150 °C
- Extend Warranty Period
- After-Sales Service Contract



Technical Data

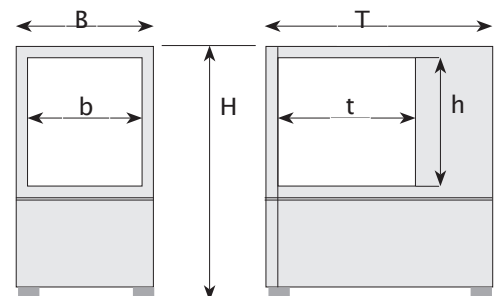
Model		C 180, -40		C 340, -40 C 340, -70		C 600, -40 C 600, -70		C 1000, -40 C 1000, -70		C 1500, -40 C 1500, -70	
Chamber Design											
Test Space Contents	Litres	190		335		600		990		1540	
Test Space Dimensions	Height (h)	750		750		950		950		950	
	Width (b)	580		580		800		1100		1100	
	Depth (t)	450		765		800		950		1475	
Chamber Dimensions	Height (H)	1785		1785		2060		2060		2060	
	Width (B)	870		870		1090		1390		1390	
	Depth (T)	1375		1670		1725		1875		2400	
Test Parameter Temperature Tests											
Min. Temperature	°C	-40	-40	-70	-40	-70	-40	-70	-40	-70	
Max. Temperature	°C	+100 and +180 (option)									
Temperature changing rate heating	K/min	2.5	2.5	2.5	2.2	2.2	2.0	2.0	2.0	2.0	
Temperature changing rate cooling	K/min	2.5	2.5	2.5	2.2	2.2	2.0	2.0	2.0	2.0	
Temperature Constancy in time	K	±0.3 to ±0.7									
Temperature Homogeneity in Space	K	±0.5 to ±2.0									
Max. Heat Compensation	W	1700	1700	1200	2000	1600	2000	2000	2000	2000	
Calibration Values	°C	+23 and +80									
Test Parameter Climatic Tests											
Temperature Range	°C	+10 to +95									
Temperature Constancy in time	K	±0.1 to ±0.3									
Temperature Homogeneity in Space	K	±0.5 to ±1.0									
Humidity Range	% r.h.	20 to 90									
Dew Point Temperature Range	°C	+4 to +92									
Humidity Deviation in time	% r.h.	±1 to ±3									
Max. Heat Compensation	W	400									
Calibration Values	°C/% r.h.	23/50 and 95/50									
Electrical Connection											
Electrical connection	V	3/N/PE AC 380/400V ±10% 50Hz									
Max. Nominal Power	kW	3.5	3.5	4.4	7.8	9.1	11.5	13.8	11.5	13.8	
Max. Current Consumption	A	12	12	13	15	19	22	29	22	29	
Sound Pressure Level	dB(A)	58	58	60	66	66	66	70	66	70	
Chamber Weight	kg	~425	~475	~520	~610	~675	~850	~950	~990	~1110	
Condenser		air-cooled									

Remarks:

Temperature and humidity performance data is taken at the control sensor with an empty test space
 Temperature Deviation in time are measured after stabilization at set values
 Temperature changing rates are evaluated according to IEC 60068-3-5
 Test space dimensions in h*w*d in mm
 Chamber dimensions in H*W*D in mm (without touch panel)
 The performance values refer to +25°C ambient temperature

This literature is for general guidance only. It does not constitute recommendations, representations or advice and nor is it part of any contract. Our policy is one of continuous product improvement and the right is reserved to modify the specifications contained herein without notice.

We reserve the right to make any technical alternations.



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