

INNOTECH

ENGINEERING DEVICES PRIVATE LIMITED

ENVIRONMENTAL TESTING SYSTEMS

TEMPERATURE & HUMIDITY CHAMBER

8000LITRES / WALK-INCLASS / 8m³



CONCEPTUAL EQUIPMENT ILLUSTRATION

-40°C TO +150°C

20% TO 95% RH*

Engineered climatic simulation for product validation and quality assurance.

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BUILT FOR CONTROLLED CLIMATIC TESTING

A large-capacity environmental chamber designed for programmable temperature and humidity exposure of components, assemblies and materials. The proposed configuration combines electrical heating, cascade refrigeration, humidification and dehumidification with integrated control and data recording.

8 m³

Working volume

2 × 2 × 2 m

Internal dimensions

-40 to +150°C

Proposed temperature range

PLC / PID

Touchscreen control

SYSTEM ARCHITECTURE

01

Thermal system

Electrical heaters and engineered low-temperature cascade refrigeration

02

Humidity system

Controlled humidification, dehumidification and condensate management

Automation

*Humidity range proposed within an agreed temperature band, nominally +20°C to +85°C. Final capabilities depend on engineering

design and customer-approved operating envelope.

Programmable profiles, alarms, data logging and USB/Ethernet export

TECHNICAL SPECIFICATION

Chamber capacity	8000 litres (8 m ³)
Internal working dimensions	2000 × 2000 × 2000 mm (L × W × H)
Temperature operating range	-40°C to +150°C; empty chamber; design-dependent
Humidity control range	Proposed 20%-95% RH; nominally +20°C to +85°C
Temperature stability	Target ±0.5°C; empty chamber; FAT verification
Temperature uniformity	Target ±2°C; empty chamber; FAT mapping
Humidity accuracy	Target ±3% RH at defined steady-state setpoints
Inner / outer material	SS304 liner / powder-coated steel
Insulation / heating	Insulated construction / electrical heating
Refrigeration	Engineered cascade refrigeration
Humidification	Controlled system with condensate management
Dehumidification	Engineered dehumidification system
Controller / programming	PLC/PID touchscreen; programmable profiles
Alarms / data recording	Configurable alarms; integrated data logging
Data export	USB/Ethernet; final I/O configuration to confirm
Electrical supply	415 V, 3-phase, 50 Hz
Connected electrical load	To be finalized during engineering design
Safety protection	Over-temperature, compressor overload, phase failure, door interlock/alarm and emergency stop, as applicable
Applicable standards	Relevant IEC 60068-2 methods; scope to be agreed

ENGINEERING & ACCEPTANCE NOTE

Performance targets are subject to final engineering design and agreed FAT conditions. Temperature and humidity performance is not asserted over the full combined operating envelope. Test-method compliance shall be established against customer-approved procedures.