



TORONTECH



TEMPERATURE & HUMIDITY TEST CHAMBER

Temperature and humidity test chambers, also known as climate or climatic test chambers, precisely simulate a wide range of environmental conditions such as heat, moisture, low temperatures, and high temperatures. They are ideal for reliability testing in industrial products.

These chambers are widely used for quality testing in industries such as electronics, electrical appliances, mobile devices, communication systems, automotive components, plastics, metals, food, chemicals, construction materials, medical products, and aerospace.

With standard capacities ranging from 64 to 1,000 liters, our ToronTHC series meets typical temperature and humidity testing needs. For specialized requirements, contact us to design a custom solution tailored to your specifications.

APPLICATIONS

1. **Smart Control:** Intelligent temperature and humidity regulation with automatic adjustments.
2. **Enhanced Safety:** Multiple protective devices reduce failures and extend the machine's lifespan.
3. **Efficient Design:** Streamlined circuit layout for quick troubleshooting and repairs.
4. **Reliable Performance:** High-quality compressor ensures stable and consistent operation.
5. **Data Storage:** Standard USB interface for easy test data storage.
6. **Remote Connectivity:** Optional RS-485 and LAN interfaces for remote control and monitoring.
7. **Easy Mobility:** Mobile casters for effortless balancing and machine movement.
8. **Condensation Prevention:** Door frame equipped with anti-condensation heating and high/low-temperature-resistant sealing strip.
9. **Clear Observation:** Vacuum glass window with interior lighting for easy monitoring during tests.
10. **Efficient Drainage:** Bottom drainage interface for effective water discharge.
11. **Standard Accessories:** Includes cable port, shelves, mobile casters, LED lighting, and USB interface for comprehensive functionality.

Temperature & Humidity Test Chamber ToronTHC-Series

Temperature & Humidity Test Chamber ToronTHC-Series

Temperature & Humidity Test Chamber ToronTHC-Series

Temperature & Humidity Test Chamber ToronTHC-Series

Temperature & Humidity Test Chamber ToronTHC-Series

Temperature & Humidity Test Chamber ToronTHC-Series

Temperature & Humidity Test Chamber ToronTHC-Series

Temperature & Humidity Test Chamber ToronTHC-Series

Temperature & Humidity Test Chamber ToronTHC-Series

FEATURES

1. Wide Temperature Range

The chamber heats and cools across a broad span, supporting both high-temperature and sub-zero environmental tests.

2. Precise Humidity Control

A humidity generation and dehumidification system holds relative humidity at the set point for steady-state and cyclic testing.

3. Programmable Profiles

A digital controller runs multi-step temperature and humidity programs, which reproduce complex real-world conditions automatically.

4. Stable, Uniform Conditions

Forced air circulation keeps temperature and humidity even throughout the workspace, so every sample sees the same environment.

5. Sample and Equipment Protection

Safety features such as over-temperature protection guard both the samples and the chamber during long, unattended runs.

6. Observation and Access

A viewing window and cable ports let operators monitor and connect powered samples without interrupting the test.

THEORY & METHOD

A temperature and humidity test chamber creates a precisely controlled climate so manufacturers can see how a product performs under heat, cold, and moisture. Environmental testing reveals weaknesses such as condensation damage, material expansion, and electronic failure before a product reaches the field.

Controlling Temperature

The chamber combines electric heaters with a refrigeration system. A controller compares the measured chamber temperature against the set point and balances heating and cooling to hold the target value, and to ramp between temperatures at a programmed rate.

Controlling Humidity

To raise humidity, the chamber adds water vapor, usually by heating water in a humidity generator. To lower it, the refrigeration system condenses moisture out of the air. By managing temperature and moisture together, the chamber holds a stable relative humidity, and can cycle through demanding profiles that combine heat and humidity over time.

TECHNICAL SPECIFICATIONS

Model No.	ToronTHC-64	ToronTHC-150	ToronTHC-225	ToronTHC-408	ToronTHC-1000
Test Space Volume Liters	64	150	225	408	1000
Inner chamber size W×H×D(mm)	400×400×400	600×600×460	700×700×480	700×750×800	1000×1000×1000
Exterior chamber size W×H×D(mm)	700×1652×1170	800×1715×1230	900×1660×1470	900×1710×1790	1200×1910×1725
Temperature range	R: -20°C to +150°C L: -40°C to +150°C S: -70°C to +150°C (180°C optional)				
Humidity range	20% to 98% RH (10% to 98% RH , 5% to 98% RH (optional))				
Temperature & humidity fluctuation	±0.5°C/±2.0% RH				
Temperature & humidity uniformity	≤ 2.0°C/3% RH				

Temperature change rate acc. IEC 60068-3-5	Heating rate 3°C/min, cooling rate 1°C/min(average rate, no load)				
Exterior chamber material	High-quality carbon steel with painting				
Interior chamber material	SUS304 matte stainless steel plate				
Insulation material	Rigid polyurethane foam insulation				
Refrigeration system	Air cooled/Water cooled				
	Hermetic compressor, single stage or cascade refrigeration system, environmental-friendly refrigerant				
Controller	“7””LCD Touch Screen Controller with PID control”				
Safety protection device	NFB(No fuse breaker), over pressure, over heat and over current protectors for compressor, over temperature protectors, over load protector of fan, dry heat protector,short of water protector				
Standard accessory	Sight window*1, Cable port(port Φ50mm / Φ100mm)*2, Shelves*2, LED Lighting device*1 Mobile Casters with foot cups, Power cable*5m				
Ambient temp.	+5 to +35°C				
Voltage	220V AC 1Ø 50Hz (110V is also available)	380V AC 3Ø 50Hz	380V AC 3Ø 50Hz	380V AC 3Ø 50Hz	380V AC 3Ø 50Hz
Customization service	Non-standard or special requirements can be customized.				
Note	Our R&D team will optimize and upgrade standard environmental chambers every year, so some parameters may change. Please consult our salesperson for confirmation of specific specifications.				



Torontech Inc.

251 Consumers Road, Suite 1200
Toronto, Ontario, M2J 4R3, Canada 

Phone: +1 416 368 2721 | Fax: +1 416 981 7652
Email: info@torontech.com

Torontech, LLC

601 Brickell Key Drive, Suite 700
Miami, FL 33131, USA 

Toll-Free: 1-866-383-7919
Email: sales@torontech.com

Torontech ME FZE

Meydan Grandstand, 6th Floor,
Meydan Road, Nad Al Sheba,
Dubai-261440, UAE 

Phone: +971 488 19252
Email: me@torontech.com

