Walk-In Environmental Test Chambers

THERMOTRON

Multiple Configurations for Versatile Applications

From aerospace and avionics to refrigerators and automobiles, Thermotron walk-in chambers are the test sites for a wide range of components, assemblies and finished products. These chambers can be used for testing and storage as well as a versatile laboratory environment for conducting test procedures in telecommunications, pharmaceutical, automotive, and scientific areas. Whatever the situation, Thermotron has the solution that works.

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Custom Solutions

When testing specifications demand large capacity chambers, Thermotron has the answer. Choose from over 30 standard room configurations and 15 types of conditioning equipment to create the walk-in, high-capacity test chamber that will meet your needs. And if that's not enough, we will build a custom walk-in chamber that handles your product's specific requirements.

Leading the Industry

Thermotron has been making environmental chambers for more than 37 years. This means generations of testing knowledge working for you. We provide you with the most experienced staff of engineers in the field and the most collective array of testing solutions available. With this wide base of problem-solving experience, chances are we've done an application similar to yours.

Assessing Your Needs

Here at Thermotron, we are dedicated to supplying you with testing equipment designed to meet your needs. The size, quantity, and testing requirements of the product under test help in determining the chamber size that is needed. The quality, reliability, and safety of your product is as important to us as it is to you. If our standard equipment does not address your testing requirements, we will create a custom test facility that can.

Modular Design Equals Easy Installation

Thermotron walk-in chambers are made for fast and easy installation. Panels are light in weight and easily handled. Locating pins assure an accurate fit and the "cam over center" locks securely join panels in place. The corner posts are built at a defined 90° angle in order to strengthen and align the entire chamber. With their sturdy construction and top-quality parts these chambers are designed and built to last.

Multiple Customized Solutions

- Ante Rooms
  - -maintains environmental conditions of the test when entry to the chamber is necessary.
- Custom Port Sizes and Shapes
  - -various chamber openings for easier testing
- Defrosting Capabilities
- Special Panel Sizes
  - -available to custom configure your chamber
- Water Spray for Moisture Testing
- Humidity Water Recirculation System
  - -capable of purifying low volume
  - -eliminates need for constant supply of water
- Non-sparking Interior
  - -designed to minimize spark in the workplace
- Low Humidity Applications
  - -suitable for electrostatic reliability testing
- Internal Air Monitoring
- Special Electrical Standards
  - -various power configurations available
- Interior Suspended Ceiling
  - -reduces air supply velocity
  - -controls distribution of air
- "CE" Mark
  - -available for units being installed in Europe
- Product Feedthrough
  - -electrical feedthrough, product connector internal raceways
- Various Floor Reinforcement
  - -stainless steel spreader plate
  - -heavy-duty welded construction
  - -design using existing floor
- Variable Speed Control of Airflow
  - -delivery from ceiling, wall, or floor

Pre-Fabricated Panels

Feature	Benefit
-Outside metal surface: Patterned aluminum or painted and galvanized steel	-Choose an aluminum color or painted surface to better coordinate with your lab environment.
-4" rigid urethane foamed-in-place insulation	-Insulation locks in temperature during test.
-Cam action speed lock	-Ensures a tight fit. Locks in humidity.
-Steel straps around perimeter	-Provides positive seal. Increases chamber rigidity.
-Inside metal surface: Aluminum or stainless steel	-Aluminum surface improves durability. Stainless steel protects interior during optional humidity testing.
-Inside floor surface: 16 gauge stainless steel	-Can support product loads up to 600 lbs. per sq. foot.

Quality Performance

Multiple Applications

Whether your testing needs require a chamber as small as a closet or one as large as a house, Thermotron has made them all. Walk-in chambers can be used to test extremely large products or several smaller ones. These chambers are used for a variety of applications.

- É Psychrometric test cells
- É Low humidity for ESD
- É Solar simulation materials
- É Extremely heavy products
- É Electronics
- É Aerospace
- É Automotive
- É Computers

Enhanced Instrumentation

The 7800 Programmer/Controller is the latest in instrumentation and chamber control technology. Incorporating additional memory capacity, increased operating speed, and state-of-the-art electronics, the 7800 gives you the ultimate blend of convenience and sophistication.

Solid Testing Solutions

Due to the urethane panel construction, the high temperature limitation of the panel box is +85°C. If your testing needs requires a higher temperature range, Thermotron designs and manufactures solid-weld constructed chambers. These chambers are ideal for extended temperature testing and high temperature testing applications. The solid-welded construction is also used for large altitude chambers.

This two-room walk-in chamber efficiently tests the performance and reliability of air-conditioning units.

Optional Accessories

Air-Cooled Condenser	Eliminates the requirement for cooling water.
Shelving	Free-standing, foldable, and wall-attached shelves are available.
Dry Air Purge	Utilizes compressed air as the supply source. Helpful in minimizing moisture in the chamber.
Multiple Door Sizes	Choose from several sizes of hinged, sliding, vertical lift, and bi-parting hinged doors.
Humidity Purification System	A five-micron pre-filter and demineralizer for purifying the humidity inlet water.
LN2 Injection	Liquid nitrogen injection through a cooling coil located in the conditioning plenum. Note: Direct injection of the nitrogen will displace the oxygen.
Interior Lighting	Incandescent or fluorescent, mounted on the interior ceiling.
Electrical Outlets	Outlets installed on the interior side walls, customer provides power drop.
Refrigeration Quiet Package	Reduces noise levels produced by the machinery, internal and external available.
Internal and External Ramps	Assists in bringing products into the walk-in.
Remote Refrigeration Package	Machinery package can be remotely located up to 50 line feet from the chamber.
Spreader Plate	Increases point load capabilities and rolling loads.

Conditioning Module Interface

Standard Available Modules

Model	Compressor Horsepower	Heater Wattage,KW	Air Flow CFM
TCM 1-3	3 HP Single	4.5	1,500
TCM 1-3-3	6 HP Cascade	4.5	1,500
TCM 1-5	5 HP Single	4.5	1,500
TCM 1-5-5	10 HP Cascade	4.5	1,500
TCM 2-5	5 HP Single	7.5	3,000
TCM 2-5-5	10 HP Cascade	7.5	3,000
TCM 2-705	7.5 HP Single	12	3,000
TCM 2-705-705	15 HP Cascade	12	3,000
TCM 2-10	10 HP Single	15	3,000
TCM 2-10-10	20 HP Cascade	15	3,000
TCM 3-10	10 HP Single	15	4,500
TCM 3-10-10	20 HP Cascade	15	4,500
TCM 3-15	15 HP Single	18	4,500
TCM 3-15-15	30 HP Cascade	18	4,500
TCM 4-25	25 HP Single	24	6,000
TCM 4-25-25	50 HP Cascade	24	6,000

Single Stage Refrigeration Performance
Temperature Range= -34°C to +85°C

Cascade Refrigeration Performance
Temperature Range= -68°C to +85°C

Standard Available Chambers

Model	Interior Dimensions						Volume	
	Inches			Centimeters				
	W	D	H	W	D	H	Cu. Ft.	Liters
WP-286	62	85	94	158	216	239	286	8,100
WP-323	62	85	106	158	216	269	323	9,147
WP-364	62	108	94	158	274	239	364	10,308
WP-410	62	108	106	158	274	269	410	11,611
WP-499	85	108	94	216	274	239	499	14,132
WP-563	85	108	106	216	274	269	563	15,944
WP-605	85	131	94	216	333	239	605	17,134
WP-683	85	131	106	216	333	269	683	19,343
WP-769	108	131	94	274	333	239	769	21,778
WP-867	108	131	106	274	333	269	867	24,553
WP-904	108	154	94	274	391	239	904	25,601
WP-1020	108	154	106	274	391	269	1020	28,886
WP-1097	131	154	94	333	391	239	1097	31,067
WP-1237	131	154	106	333	391	269	1237	35,032
WP-1261	131	177	94	333	450	239	1261	35,712
WP-1422	131	177	106	333	450	269	1422	40,271

The specifications reflect the workspace prior to plenum interface. Some of the interior workspace will be used by the conditioning module plenum.

Flexible Interface

Thermotron has a wide variety of standard conditioning module configurations ready for interface to a panel assembly. This flexible interface allows you to mix and match the box size and module in order to meet your individual test requirements.

Custom Conditioning

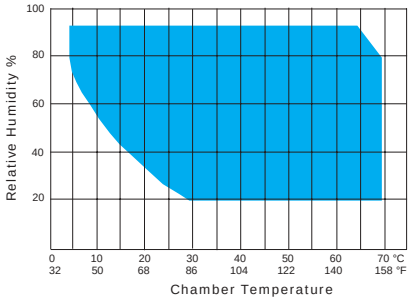
Conditioning modules are predesigned and prepackaged with conditioning plenum and refrigeration machinery mounted on a common base. If the standard module sizes fail to meet your needs, custom configurations are available as well.

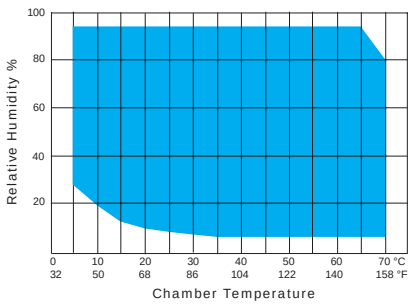
Committed to Quality

The construction of your chamber, and the design and assembly of your conditioning equipment are closely supervised. Operation verification tests are run on every chamber prior to shipping from our manufacturing facility. This ensures a high-quality piece of testing equipment will arrive at your site fully operational and ready to go.

Humidity Applications

If your testing specifications require humidity applications, Thermotron has THCM conditioning modules available that incorporate humidity control.





HUMIDITY RANGE:
20% to 95% relative humidity, limited by a dewpoint range of +5°C to +65°C and a maximum drybulb temperature of +70°C.

OPTIONAL LOW HUMIDITY RANGE:
5% to 95% relative humidity, limited by a dewpoint range of -10°C to +65°C and a drybulb temperature of +5°C to +70°C.

-Low humidity capability expanded down to 5% RH primarily for the purposes of electrostatic reliability testing. Accomplished by utilizing an electrical desiccant drier.
-Utilizing an electronic humidity sensor, the need for the traditional wet bulb has been eliminated.
-Specifications subject to change. The addition of accessories may impact performance.