



REFRIGERATOR / FREEZER TEST ROOM



The chamber shall be equipped with a raised floor that provides an adequately sized floor cavity to accommodate the circulating conditioned air. The floor shall allow for against-the wall air plenums that will take the circulating conditioned air from the floor cavity to the ceiling.

The chamber walkable floor surface shall consist of an appropriate mix of solid vinyl composition tiles and perforated metal tiles suitably arranged to facilitate the air-flow requirements through the test chamber to the floor cavity and up to the ceiling via the against-the-wall air plenums.

The number and placement of the perforated floor tiles shall be such to facilitate a laminar airflow through the test chamber.

System Standards

- > ANSI-AHAM 1-2004 Energy, Performance and Capacity of Household Refrigerators, Refrigerator-Freezers and Freezers
- > ASHRAE 41.1 Standard Method for Temperature Measurement.
- > ASHRAE 41.3 Standard Method for Pressure Measurement
- > ASHRAE 41.6 Standard Method for Measurement of Moist Air Properties
- > ASHRAE 72 Method of Testing Open and Closed Commercial Refrigerators and Freezers
- > ISO 15502:2005 Household refrigerating appliances - Characteristics and test methods

Performance Specifications:

Room Dry bulb Temperature	
Dry Bulb Temperature Range	10 to 45°C
Control	≤±0.5°C
Temperature Gradient	Vertical gradient from 50 mm above floor to 2.286m not to exceed 0.9°C/m
Control Type	Single Point PID
Sensor Type	100- Ω, 3-Wire Platinum RTD
Sensor	Location Center of Room
Room Relative Humidity	
Relative Humidity Range	up to 90%RH
Dew point Limits	10°C to 20°C
Room Airflow	
Room Air Circulation	2,000 CMH (Variable)
Maximum Air Velocity around Test Units	≤0.254 m/s
Radiation Shielding	
Test Refrigerator Shields	Shield provided on two sides of each test refrigerator
Refrigeration system	
Compressor	Industrial
Refrigerant	R-404a or R-134a
Condenser	Air cooled
Cooling Coil	DX
Heating System	
Heat Type	Electric Heat
Capacity Control	SSR
Heating System	
Steam Generator	Steam Humidifier

DAQ and SOFTWARE

The test room will be supplied with a completely automated Data Acquisition System (DAS) and supervisory control software.

The system control and data acquisition system will be user friendly, and written in a Windows environment using LabView by National Instruments.

The software will have the capability to run the system either in automatic or manual mode. Some of the basic features of the software are listed below:



Software Features

- Software will save raw data in spread sheet format that is easily configurable with Microsoft Excel or other spreadsheet tools.
- The software will monitor and display each channel in real time.
- Timing control for test data collection and test duration.
- Averaging of test data.
- Calculations will be accomplished per governing standards.
- Test report generation at the end of the test.
- Visual indication of “Out of tolerance parameters”.
- Password security for access authorization
- Loop Calibration Utility.



Bringing the Desired Climate to Your Doorstep

Climatic Testing Systems

2367 North Penn Road
Hatfield, Pa 19440

Phone (215) 773-9322

Fax (215) 773-9323

www.climatictesting.com