Hot & Cold Chamber

Key Words

Hot & Cold Chamber, Temperature, Heating, Cooling.

Compliance

It is constructed in compliance with DIN, MIL, IEC, IS 9000, IS.

Introduction

Hot & Cold Chamber is intended for performing different type of test where the temperature of sample environment must be controlled within certain limits. Our policy of continual liaison with leading researchers ensures we maintain our premier position as suppliers of high quality Hot & Cold Chamber and associated facilities. Our Hot & Cold chamber, were designed with Safety, Reliability, Ease of operating and ergonomically.

Main Features

Test space dimensions are 50 litres to 3000 litres. Temperature Range - 75° C to +200° C. Temperature deviation +/-0.5°C to 1.0°C. Temperature Resolution 0.1° C. Temperature Gradient +/- 1° C to 2° C. Average Temperature Raise /Fall 1° C to 10° C.

Construction

Interior structure made of non frost vapour / air tight type. 16 Or 18 SWG 304 grade stainless Steel with adjustable / removable shelving. Outer external structure made of 16 Or 18 SWG CRCA /GI/ Stainless steel with electrostatic powder super fine coating finishing for a good appearance.

Insulation is environmentally friendly free of asbestos and CFC free mineral fiber insulation guarantees the best possible insulation values and hence, it will decrease the operating costs.

Door hinges fitted on the right hand side of the chamber with front opening single door. Double lined 'A' grade silicon gasket on door as well as chamber body so that like proof tightens the door for better performance with multi pan glass viewing window. Defogger heaters provided with an auto cut - off as well as suitable illumination provided to view the specimen under test.

Performance

Air circulation within the chamber with suitable capacity of fan motor and impeller for uniform distribution of temperature and humidity to maintain within desired limits. Only the impeller will be exposed in the conditioning plenum with drive motor from outside of the chamber. Condition plenum covered with a detachable type sheet for friendly maintenance of the chamber. Noise level is <70db.

Quick responding jacket type air heaters are used for heating system to achieve the set value temperature. Highly uniform temperature distribution minimises variations in test results over multiple specimens. Air heaters are placed in such manner that, there is no direct heat radiation from the heaters on to the test specimen.

Water Cooled / Air-cooled mechanical type single stage non CFC refrigeration system / mechanical type cascade compression refrigeration system. Ozone friendly refrigerant with hermetically sealed / low power consumption high boosted semi sealed compressor provided and system is designed such a way that, safety protection against high / low pressure and temperature. Electronic auto expansion valve system for expansion mechanism. Water / Air cooled condenser. Plate fin type cooler. Refrigerant R404A & R23. Pressure measuring device provided for measuring suction and head / discharge pressure of refrigeration systems. HP / LP cutoff / Oil separators with oil return system.

Instrumentation System.

Programmable controller using large screen display. Instrumentation package features flexible. Other functions are included user friendly operation with TFT LCD touch screen as well as key input, graphical display of program patterns, testing history trend grapes. A no. of programs & profile segments with ramp & soak duration provided for cyclic operation.

The controller is able to communicate with many different types of hardware using high speed RS 232/485 communications ports, networking and USB communications for fast downloads. Power failure recovery operation system. Password protection system.

Microprocessor PID Non Programable controller for Temperature in REmodels.

P.T 100 sensor is measuring the temperature.

Safety Devices

Hot &Cold Chamber equipped with an emergency stop switch. High reliability and operator safety. Easy protection of chamber and specimen in case of failure. Chambers stop if the door is opening as operator safety. European style design signal tower.

Control circuit over current protection. Thermal fuse. Adjustable adequate safety cut - out against high and low temperatures. Chamber door limit switch. Every electrical functional circuit is equipped its own safety facility which shuts down the functional circuit affected or the entire test chamber in case of a malfunction.

Utility

Cable Port holes are located on the left or on the right side of the test chamber and shall be used for inserting measurement and control cables, other supply connections or additional equipment with rubber plug.

Standard specification shelves and shelf are added as required.

Drain out let pipe with suitable fittings.

Electrical connection 415 / 220 V AC +/- 10%, 3 / 1 phase/N/PE 50 Hz.

Model No	Temperature Range	Test space dimensions in liters.
ITCLD - 75 RE	-75° C to + 200° C	100 liters to 2500 liters
ITCLD - 60 RE	-60 ° C to + 200° C	100 liters to 2500 liters
ITCLD - 40 RE	-40 ° C to + 200° C	100 liters to 2500 liters
ITCLD - 20 RE	-20 ° C to + 200° C	100 liters to 2500 liters
ITCLD - 10 RE	-10 °C to + 200°C	100 liters to 2500 liters
ITCHD - 10 RE	+10 °C to + 200°C	100 liters to 2500 liters
ITCHD - 20 RE	+20 °C to + 200°C	100 liters to 2500 liters
ITCLD - 75 LO	-75° C to + 200° C	100 liters to 2500 liters
ITCLD - 60 LO	-60 ° C to + 200° C	100 liters to 2500 liters
ITCLD - 40 LO	-40 ° C to + 200° C	100 liters to 2500 liters
ITCLD - 20 LO	-20 ° C to + 200° C	100 liters to 2500 liters
ITCLD - 10 LO	-10 ° C to + 200° C	100 liters to 2500 liters
ITCHD - 10 LO	+10 °C to + 200°C	100 liters to 2500 liters
ITCHD - 20 LO	+20 °C to + 200°C	100 liters to 2500 liters

Note: LO = Logic programmable models. RE = Non Programable models.