

# Dust Chamber

## Key Words

Dust chamber, Temperature, Heating.

## Compliance

It is constructed in compliance with MIL, DIN, IEC, JSS 55555, ISO, IS 9000.

## Introduction

Dust 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 Dust Chamber and associated facilities. Our Dust chamber were designed with Safety, Reliability, Ease of operating and ergonomically.



## Main Features

Test space dimensions are 750 litres to 3000 litres. Temperature Range RT + 5° C to +80° C. Temperature deviation +/- 0.5° C to 1.0° C. Temperature Resolution 0.1° C. Temperature Gradient +/- 1° C to 2° C. Temperature Range +20° C Humidity: less than 30% RH non controllable this facilities is available only in ITDUS models.

## Construction

Interior structure made of 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 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. The test chamber is mounted on a stable frame and equipped with vibration absorbers in order to avoid the transfer of vibrations from the fan section.

The fan constantly sucks the dusty air. A speed controlled drive-motor enabling continuous setting of air flow, with properly calibration method between air velocity and fan speed provided. A suitable air duct to maintain linearity of air flow in the whole test space as per MIL Std Provided. Wind speed: In the centre of the test chamber Air born dust test: 1.5 m/ sec to 9m/ sec +/- 1.3m/s in time. This test facilities is available only in ITDUS models.

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.

## 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.

Microprocessor PID non programmable controller for Temperature is available only in RE models.

P.T 100 sensor is measuring the temperature.

#### Safety Devices

Dust 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 VAC +/- 10%, 3 / 1 phase/N/PE 50 Hz. 230 VAC +/-10%, 1 phase



Model No	Temperature Range	Test space dimensions in liters.
ITDU - 80 RE	RT +5° C to + 80° C	750 liters to 3000 liters
ITDU - 60 RE	RT +5° C to + 60° C	750 liters to 3000 liters
ITDU - 80 LO	RT +5° C to + 80° C	750 liters to 3000 liters
ITDU - 60LO	RT +5° C to + 60° C	750 liters to 3000 liters
ITDUS - 80M	+20° C to + 80° C	750 liters to 3000 liters
ITDUS - 60M	+20° C to + 60° C	750 liters to 3000 liters

**Note: LO = Logic programmable type models. RE = Non Programmable models. M = MIL Standards Models**