Thermal Shock Chamber | Temperature Shock Chamber



Model : PTS Series

Thermal Shock Test Chamber is a specialized testing machine to evaluate the resilience of products against rapid and extreme temperature uctuations. The chamber is also capable of performing cyclic tests and simulated climatic conditions. Thermal shock chamber can perform all tests as per ASTM, ISO, JIS & DIN standards and is suitable for test samples in the aviation, automobile, home appliance, and research industries.

Presto Enviro thermal shock test machine is designed to simulate extreme temperature differentials, enabling rigorous testing of materials, components, and products under conditions akin to rapid environmental changes. Its advanced technology and precise control mechanisms make it an indispensable tool for industries such as electronics, automotive, aerospace, and materials science.

Technical Specificaations

Temperature Range	-75°C to +210°C
Test Basket High Temperature Range	70 °C to 200 °C / 158 °F to 392°F
Test Basket Low Temperature Range	0 °C to -65°C / 32°F to 149°F
Hot Chamber High Temperature range	Pre heating upper limit 210°C
Cold Chamber Low Temperature range	Pre cooling lower limit -75°C
Temperature Fluctuation	±1°C
Calibrated Values Cold Chamber / Hot Chamber	-40°C / 125°C
Altering time between Hot to Cold	±10sec
Basket Load Carrying Capacity	25 – 30KG
Basket Recovery Time*	Basket Recovery Time will be
Weight of the chamber	< 1000kg

Dimensions

Specification	Medium sized (PTS- 150, 300)	Large sized (PTS- 600, 900)
Basket Movement Type	2-Zone Vertical movement of specimen	2-Zone Horizontal movement of specimen
Movement Mechanism	Vibration free Pneumatic	Vibration free Pneumatic/Motorised mechanism
Transition Time	From Hot to Cold and Cold to Hot Zone < 5 Sec.	From Hot to Cold and Cold to Hot Zone < 10 S

- Hot Chamber Pre-Heating: Upper limit 210°C; Ambient to 210°C within 40 min.
- Cold Chamber Pre-Cooling: Lower limit -75°C; Ambient to -75°C within 35 min.
- Basket Recovery Time: < 5 min at 200°C and -65°C.
- Ambient Recovery (without load):
- Hot Zone: 120 min (200°C to 70°C)
- Cold Zone: 60 min (-65°C to 25°C)

Performance Data

Test Basket

High Temp Range: 70°C to 200°C (158°F to 392°F)
Low Temp Range: 0°C to -65°C (32°F to -85°F)
Fluctuation: +/- 1°C
Gradient:
PTS-150: +/- 1°C
PTS-300/600: +/- 1.5°C
PTS-900: +/- 2°C

Instrumentation & Control

Controller Hardware:
The colour touchscreen controller is built on high-performance core hardware with integrated functionality. It is housed in a robust cast aluminium enclosure with IP66 protection for the front panel
Memory & Connectivity:
The controller is equipped with dual USB host ports, onboard 256 MB non-volatile ash memory, and supports expandable external memory up to 2 GB for enhanced data storage and handling
User Interface:
A 7-inch resistive analog touchscreen provides a user-friendly interface, enabling easy monitoring and control of system parameters
Remote Access & Data Handling:
The controller supports web server functionality, allowing users to access and monitor the system via a PC. The USB host ports enable direct transfer of log les, program les, and reports to external storage devices such as USB drives or hard disks

Safety Funtions

- Incoming supply electromagnetic interference (EMI) lter for suppression
- Surge protection for incoming power supply
- MPCB protection for all individual 3-phase power devices
- MCB protection for all individual 1-phase power devices
- Protection against single phasing, phase reversal, under-voltage, and over-voltage for main input power
- High and low temperature mechanical safety protection (oating type)
- High and low temperature software safety protection
- Over-temperature thermal protection for heaters
- Mechanical high/low pressure safety protection for the refrigeration system
- Software-based high/low pressure safety protection for the refrigeration system
- Inbuilt winding thermal protection for compressor (only for semi-hermetic type
- Compressor oil level protection (OPS) (only for semi-hermetic compressors < 10 HP)
- Compressor high discharge temperature protection