

ATSS - 80 AUTOMATED THERMAL STRESS SYSTEM

THERMOTRON®

Versatile Multiple-Use Chamber

Thermotron's ATSS-80 is a versatile chamber designed to accelerate Thermal Stress Testing. The ATSS-80 facilitates extremely rapid product temperature change rate performance in a space-saving, self-contained design - maximizing throughput while minimizing footprint. Set-point Margining software optimizes product temperature recovery performance via controlled temperature offset. The ATSS-80 meets the latest MIL-STD 883E & 202F thermal shock specs as well as IEC, JEDEC, and IPC test methods. Rapid thermal shocking, accelerated product stressing, and controlled thermal cycling are all possible with this chamber. The ATSS-80 meets the demanding test needs of many industries such as: Automotive, Military, Aerospace, Electronics, Telecommunications, and Computers & Peripherals.



Airflow Designed to Meet the Test

High volume airflow is delivered to each zone via powerful circulator motors and blower wheels. Finned cooling coils in both zones draw the airflow directly over the area occupied by the product under test. Intensely washing the product with conditioned air results in very rapid product temperature recovery upon transfer. This airflow configuration is ideal for meeting 15 minute product temperature recovery specifications required by current thermal shock standards. This distribution also provides excellent control, tight gradients, and repeatability required by a thermal stress testing system.

With Our Extensive Experience and Capabilities, Thermotron can also provide:

- Turn-key system integration for single head and multi-head testing requirements utilizing either custom or commercially-off-the-shelf (COTS) instrumentation.
- Stimulus and monitoring capabilities for data acquisition, functional and parametric testing applications.
- Specialized software for system configuration, communication, control and reporting.
- Environmentally, mechanically and electrically robust solutions for uninterrupted testing.
- Control and monitoring for power cycling and voltage margining requirements.
- Reliable product fixturing with minimum mass and superior airflow.
- Dependable test system interconnect wiring.

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Two-Zone Multi-Purpose Test Chamber

Bi-Directional Zone Control

Bi-Directional cooling and heating is incorporated in both the hot and cold zones. This feature allows air temperature overshoots or offsets to be closely controlled in an effort to maximize product temperature change rates or recovery. Heating in the cold zone provides an efficient means for automatic defrost. It also allows this portion of the chamber to be used as a conventional thermal cycling chamber.

Convenient Product Loading Offers Performance and Throughput Advantages

The convenient "door-within-a-door" design provides access to the hot zone without disturbing the conditions in the cold zone. Test articles in the hot zone can be cooled back down to ambient conditions and unloaded. Reloading the next batch of test articles and resuming the heat cycle will limit the build-up of moisture and frost during cold zone transfers.

Retractable Transfer Mechanism: Efficient and Safe

The patented retractable transfer mechanism makes full use of the available working volume in each zone. This feature increases product loading and throughput potential while reducing overall height requirements. The transfer carrier basket is designed to withstand rigorous temperature changes, yet be as light as possible to minimize thermal loading restraints. Safety interlocks are built-in to detect transfer basket jams and to prevent the doors from being opened during transfer.

	ATSS-80-6-6	ATSS-80-10-10
Temperature Range Cold Zone	-73°C to +180°C (-100°F to +356°F)	
Hot Zone	25°C to +215°C (77°F to 419°F)	
Temperature Control Tolerance	+/- 1°C (+/-2°F)	
Maximum Weight Capacity in Basket	100 lb. (45 kg)	
Transfer Time Between Zones	Approximately 15 seconds	
Noise Level at 1 meter in front of unit	78 dBA	
Transfer Basket Size	25"W x 14"D x 14.5"H (63cm x 35cm x 37cm)	
Actual Test Zone Size	30"W x 23"D x 16"H (76cm x 58cm x 40cm)	
Exterior Dimensions	49"W x 70"D x 83"H (124cm x 178cm x 211cm)	
Interior Airflow	1200 scfm (33.9 cubic meters/minute)	
Performance to Mil Std 883E, 1010.7, A (+85°C to -55°C) 1010.7, B (+125°C to -55°C) 1010.7, C (+150°C to -65°C) 1010.7, D (+200°C to -65°C) 1010.7, F (+175°C to -65°C)	55 lb (25 kg) ICs 33 lb (15 kg) ICs 14 lb (6.5 kg) ICs 2 lb (1 kg) ICs 9 lb (4 kg) ICs	60 lb (27 kg) ICs 60 lb (27 kg) ICs 30 lb (13.5 kg) ICs 15 lb (7 kg) ICs 25 lb (11.5 kg) ICs
Compressors	2@ 6 Hp Scroll Air-Cooled	2@ 10 Hp Scroll Water-Cooled
Shipping Weight (Approx.)	2000 lb (910 kg)	2160 lb (980 kg)
Electrical Voltage 460/3/60 230/3/60 400/3/50	44 FLA; 60 amp min service 88 FLA; 125 amp min service 52 FLA	64 FLA; 80 amp min service 107 FLA; 125 amp min service 68 FLA

ATSS-80 Features and Benefits

- Covers a wide range of MIL-STD and other industrial test specifications with temperature conditions from -73°C to +215°C
- Enhanced high volume air distribution allows for improved product temperature change rates and better uniformity
- Self-contained, compact design - on-board air-cooled condenser on the 6Hp model and hydraulic transfer pump save floor space and require fewer utility connections
- Heating and cooling capabilities in both zones enhance performance and control
- Adjustable shelves and trays in transfer basket equalizes product loading and accommodates products with variable sizes
- 8825 Programmer/Controller including:
 - A 3 1/2" disk drive for convenient storage and transfer of test data
 - 5" LCD display accommodates lots of easy-to-read information
 - Graphing of test profiles
 - Display of transfer basket location
 - Programmed automatic defrost cycle
 - Product temperature control, programmable off-set, and selectable transfer soak software algorithms
 - Built-in system status, monitor, and alarm functions
 - Pre-programmed thermal shock and stress profiles

Chambers are designed for use under normal laboratory conditions of 23°C (75°F) and 50% relative humidity on operation of 60Hz power. For other applications, please consult factory.

It is Thermotron's understanding that the quoted unit will be used in a non-hazardous process. The unit is not designed for use with or for the purpose of processing hazardous materials. If hazardous materials are involved, please consult the factory for an alternative quote for a properly designed unit.

Chambers are not designed for open petroleum products. Any applications involving open transmission fluids, oils, etc. need to be examined by the applications group for suitable protection.

Specifications subject to change.