THERMOTRON®

ATSS-80 AUTOMATED THERMAL STRESS SYSTEM

Note: Data Sheet For Reference Only - Actual Chamber May Vary Depending on Model Year, Options, Controllers, and Individual Configuration

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.

■ **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.

■ **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 SPECIFICATIONS

Model	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	+/-1.1°C (+/- 2°F)	
Maximum Weight Capacity in Basket		
Pounds (Kg)	100 (45)	
Transfer Time Between Zones	Approximately 8 seconds	
Noise Level at 1 Meter in Front of Unit	78 dBA	
Transfer Basket Size — W x D x H		
Inches / Centimeters	25 x 14 x 14.5 / 63 x 35 x 37	
Actual Test Zone Size — W x D x H		
Inches / Centimeters	30 x 23 x 16 / 76 x 58 x 41	
Exterior Dimensions — W x D x H		
Inches / Centimeters	49 x 70 x 83 / 124 x 178 x 211	
Interior Airflow	1,200 SCFM (33.9 cubic meters / minute)	
Performance to Mil-Std 883E,		
1010.7, A (-85°C to -55°C)	55 lb (25 kg) ICs	60 lb (27 kg) ICs
1010.7, B (+125°C to -55°C)	33 lb (15 kg) ICs	60 lb (27 kg) ICs
1010.7, C (+150°C to -65°C)	14 lb (6.5 kg) ICs	30 lb (13.5 kg) ICs
1010.7, D (+200°C to -65°C)	2 lb (1 kg) ICs	15 lb (7 kg) ICs
1010.7, F (+175°C to -65°C)	9 lb (4 kg) ICs	25 lb (11.5 kg) ICs
Compressor Size	2 @ 6 Hp Scroll Air-Cooled	2 @ 10 Hp Scroll Water-Cooled
Shipping Weight — Pounds (Kg)	2,000 (910)	2,160 (980)
Electrical Service — Full Load Amps		
460 / 3 / 60	44; 60 amp min service	59; 70 amp min service
230 / 3 / 60	88; 125 amp min service	107; 125 amp min service
400 / 3 / 50	54	68

Performance is based upon 60 Hz and laboratory ambient conditions of 23.9°C (75°F) with 50% relative humidity, and may vary slightly on 50 Hz power or at other temperature and humidity levels. Chambers are designed for use under normal laboratory operating conditions. For other applications, please consult us

This unit to be used in a non-hazardous environment. The unit is not designed for use with or for the purpose of processing hazardous materials.

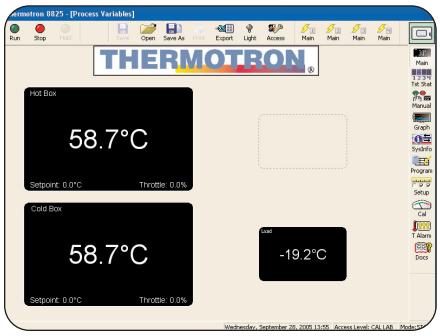
Chambers are not designed for open petroleum products. Any applications involving open transmission fluids, oils, etc. need to be examined by the applications group for suitable protection.

Specifications subject to change without notice.

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 6 Hp 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 equalize product loading and accommodates products with variable sizes.

8825 Thermal Shock Programmer Controller includes:



- Display of transfer basket location (above photograph - when a transfer is made, the box at right moves up or down illustrating which zone the transfer basket is in).
- Programmed automatic defrost cycle.
- Pre-programmed thermal shock and stress profiles.
- 12" color touch screen display (800 x 600 resolution).
- Ethernet-compatible and web-enabled.
- External USB port with flash drive.
- Multi-level, password based security system.
- Main Screen Quick Navigation buttons.
- Automatic or manual operation modes.
- User selectable Celsius or Fahrenheit temperature scales.
- Permanent history of all test data and user activity.
- Diagnostic screens.
- Online help and documentation.
- Printer support for printing test results and graphical data.
- Automatic remote backup/restore of test programs and data.
- Easy-to-use wizards for calibration, exporting test data and programming.
- Graphing of test profiles.
- Product temperature control, programmable off-set, and selectable transfer soak software algorithms.
- Built-in system status, monitor, and alarm functions.