Thermotron's innovative Accelerated Stress Testing systems for Highly Accelerated Life Testing (HALT) and Highly Accelerated Stress Screening (HASS) find product failures fast with patented industry-leading technology. Performing HALT and HASS improves product reliability by maximizing lab efficiencies, all while reducing costs associated with warranties and recalls.
FEATURES

Adjustable Air Ducts
Allows users to force air directly onto the product under test.

Individual Impactor Monitoring and Control
Maximizes vibration effectiveness.

AST-8800 Controller
Intuitive program displays temperature and vibration levels on one screen.

Ergonomic Workstation
Ideal for standing or sitting.

Oxygen Monitor and Alarm
Cuts off LN₂ supply to the chamber and sounds an alarm when oxygen levels are low.

Adjustable Air Ducts
optimizes airflow to the product(s) under test

Convenient Product Access
maintain visual and physical access to products under test through windows, doors, and ports

Data Acquisition (DAQ) System
optional, allows control and monitoring of product under test

Door Interlocks
prevent the door(s) from opening while operating, and prevents operation when the doors are open

Internal Thermocouple Junction Box
enables convenient multi-point temperature monitoring

Oxygen Monitor and Alarm
interfaces with the chamber’s LN₂ system to ensure safe oxygen levels

Product Temperature Change Rates
up to 70°C/minute heating and cooling

Proportional Control Liquid Nitrogen System
maximizes cooling change rates while reducing LN₂ consumption

Safety Stop Mode
automatic purge and reset protects operators, products, and the equipment

Sound-deadening Insulation
minimizes noise during operation

Additional Optional Features

- Accumulated Fatigue, Transmissibility, and Peak Probability Distribution Software
- Additional Accelerometers
- Additional Access Ports
- Custom Finishes
- Data Acquisition System

- Gaseous Nitrogen (GN₂) Injection System
- Mechanical Refrigeration Options
- Multi-Zone Control, patented
- TestTools Communication Boards
- Vacuum Jacketed Valves
- Vibration Fixtures
HALT and HASS are powered by repetitive shock vibration, which is achieved through a shaker table. Pneumatic impact hammers strike the bottom of the table, providing vibration in 3 axes and 3 rotations, simultaneously.

Thermotron’s patented repetitive shock tables have a unique thermal isolation system that minimizes thermal loading on the chamber and provides a stable condition for impactor operation. Impactor cooling mechanisms help impactors last longer and reduce maintenance downtime for more effective and efficient testing. The shaker’s standoff mounting design maximizes vibration transmissibility and provides accurate test results.

By nature, repetitive shock shakers are not uniform across the table’s entire surface, nor can it control to one Grms level; this can produce inaccurate results because the vibration level the product actually experiences can be higher or lower, depending on accelerometer location.

Thermotron’s exclusive, patented Multi-Zone Control fixes this problem. This optional feature controls the repetitive shock table in one, two, or four table zones. Through the AST-8800, Multi-Zone Control automatically makes dynamic adjustments to each zone, compensating for system variability including table inconsistencies, impactor wear, air supply, fixtures, and product mounting to accurately test multiple products simultaneously. Multi-Zone Control guarantees superb uniformity to test products within 5% of each zone’s control Grms making HALT and HASS testing more controllable and consistent.

Each zone can also be set to a different Grms level or Multi-Zone Control can be turned off to control the entire table to one Grms level.

The AST-8800 Controller features an intuitive Windows®-based graphical user interface. The color monitor displays power spectral density, temperature, and vibration data on one screen. Users define how multiple accelerometers and thermocouples are used to control and monitor stresses delivered to the product under test.

The AST-8800 Controller can be configured to monitor run-time on wear items and automatically alert the operator when periodic maintenance is required. The system is Ethernet-compatible and web-enabled for virtual anytime/anywhere access. Thermotron’s multi-level, password-based security system protects sensitive data.

ThermAlarm®
Independently prevents temperature from exceeding user-defined limits.

Product Temperature Control
Controls air temperature based on the temperature of the product.

Data Logging
Reports system events, temperature, and vibration levels.

Program and Data Storage
Available on a hard drive, DVD, USB, or a network drive.

Built-In Vibration Spectrum Analyzer
Displays table and product vibration response.

Product Vibration Control
Allows vibration control of up to 16 product locations.

System Monitor
Monitors the chamber’s refrigeration pressures (mechanical refrigeration only).

Power Spectral Density Abort Limits
Prevents inconsistent vibration during HASS.

Multi-Channel Vibration Control
Monitors and controls accelerometers using maximum, minimum, mean, or median readings.

Vibration Alarm and Abort Limits
Prevents vibration levels from exceeding user-defined limits.

On-Board Signal Generator Verification
Simplifies vibration calibration.

Impactor Monitor System (patented)
Illustrates the impactors’ status on the screen.

The controller monitors the air pressure of each impactor during tests, adjusting air pressure for more consistent and accurate results.
For more than 55 years, Thermotron has provided quality environmental test equipment. We’ve worked to establish a trusted reputation among our peers, and when people hear the name Thermotron, they have confidence in the testing of their own product. We’ve been building our name since 1962; now it’s your turn.

Custom sizes and performance configurations available. The addition of accessories may impact performance.

General specifications subject to change without notice. Certain export limitations may apply, consult factory for details.

¹ Dependent on range and chamber loading.
² Smaller-size heating systems available, which reduces electrical service.
³ Other input voltages and frequencies available.