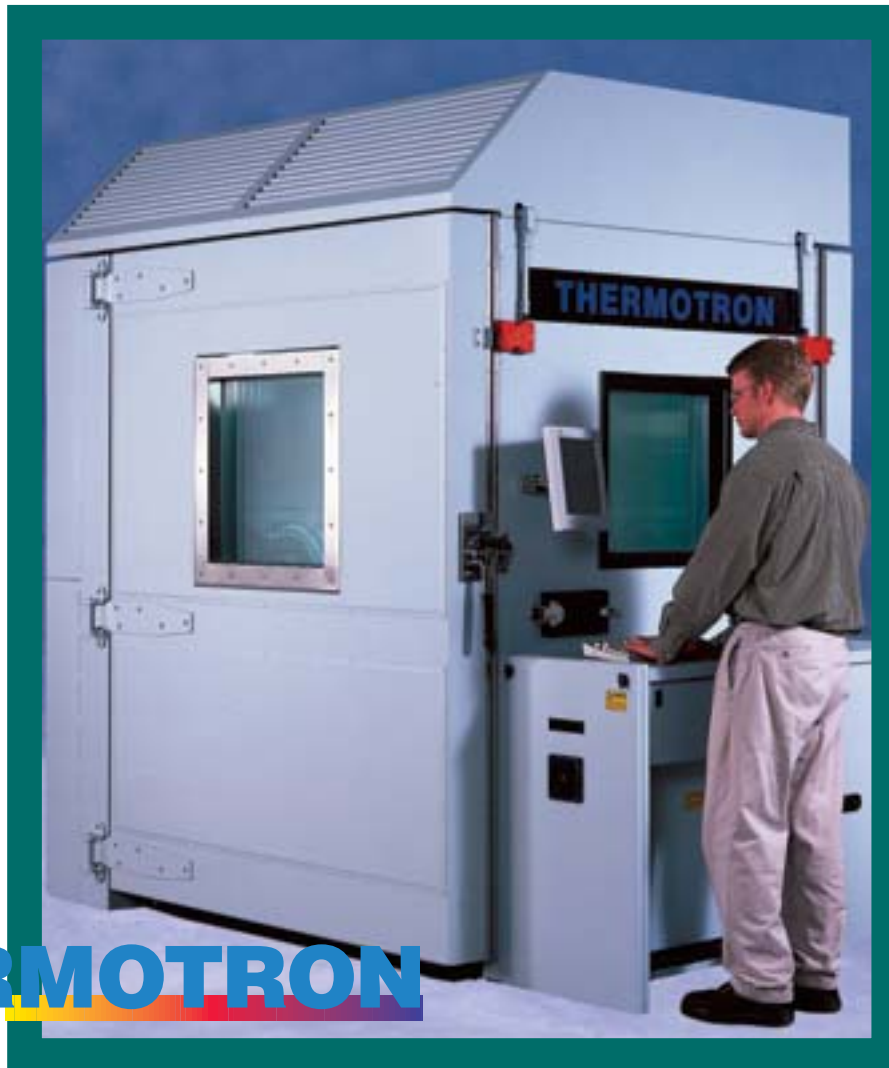


# AST-70 Accelerated Stress Test System



## THERMOTRON

## Improving Reliability, Reducing Warranty Expense

### Accelerated Stress Screening and Auditing

Accelerated stress testing and screening can reduce product development time, help get higher reliability products to market faster, and lower field failure and warranty costs. The goal of accelerated stress testing is to quickly force products to fail, understand the failure modes and mechanisms, and take appropriate corrective action to optimize the design. Once the design is optimized,

accelerated stress screening can be implemented to optimize manufacturing processes and ship mature products with high confidence.

The AST-70 provides plenty of capacity to perform Highly Accelerated Stress Screening (HASS) or Highly Accelerated Screen Audits (HASA) on a high volume of products. It can also be utilized for Highly Accelerated Life Testing (HALT) for large rack or cabinet type products.

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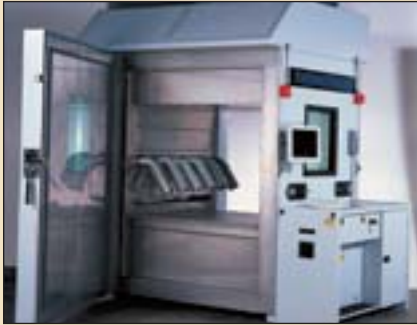
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# High Performance – Quick and Effective Screening



## Rapid Thermal Transitions

Extreme thermal stresses are imparted to products through high rates of temperature change in excess of 70°C/min. High volume, high velocity airflow is configured through adjustable slots or ducts to maximize thermal stress directly on the product, which minimizes thermal inconsistencies. Ramp rates can be accurately controlled to perform step stress tests, meaningful detection screens and modulated excitation profiles.

## Six Axis Vibration

Multi-axis, repetitive shock vibration produces acceleration levels in excess of 50 grms over a wide frequency range. Consistent power spectral density energy across the broad range of frequencies imparts a nearly flat, random distribution of dynamic stress



into the product. Direct coupling of the product to the vibration table improves transmissibility. Imparting energy in all six axes simultaneously saves time and increases dynamic stress.

## Control System

The graphical user interface control system is intuitive to operate. The monitor displays power spectral density, temperature and acceleration data all on one easy-to-read screen. Ramp rates for temperature and vibration are also displayed and easily accessed. The AST Control System allows the user to define how multiple accelerometers and thermocouples are used to control and monitor stresses delivered to the product. The controller can be configured to monitor run time on wear items and alert the operator that periodic maintenance is required.

## Functional Testing and Continuous Failure Monitoring – A Cornerstone Issue

It is critically important to functionally test and continuously monitor the product(s) as accelerated stresses are being applied. Thermotron's exclusive Product Test System and system integration capabilities can do just that. Software-based instrumentation will provide a full suite of information describing the conditions and parameters at the exact moment of failure.

## Fixturing Solutions to Improve Product Throughput and Optimize Stress

Thermotron can accommodate your HALT and HASS fixturing needs. Solutions are designed to uniformly distribute thermal and vibration stress. Fixtures maintain light-weight rigidity to minimize thermal load without compromising shaker capacities. Other considerations such as adjustability, ease of loading, and production throughput are also taken into account. Thermotron can provide customized solutions to conveniently accommodate product wiring and interconnect that will reduce test set-up time and minimize thermal and moisture migration problems.

## EXTREME TRANSITION RATE CHAMBER

<b>Workspace Dimensions</b>	54" W x 56" D x 40" H (1.37 m x 1.42 m x 1.01 m)
<b>Temperature Range</b>	-100°C to +200°C (-148°F to +392°F)
<b>Temperature Change Rate</b>	Greater than 70°C/min (125°F/min) on products*
<b>Liquid Nitrogen Cooling System</b>	Minimum 30 psi (2.1 kg/sq cm) input
<b>Exterior Dimensions</b>	104" W x 69" D x 104" H (2.64 m x 1.75 m x 2.64 m)
<b>Doors</b>	Two (front and rear)
<b>Windows</b>	Three 20" x 20" (50 cm x 50 cm)
<b>Blower HP</b>	10 HP
<b>Airflow</b>	6000 SCFM (2830 liters/sec)
<b>Heater Size</b>	Over 100 kW**
<b>Power</b>	460v/3PH/60Hz 152 Amps Full Load, 200 Amp Minimum Service*** 400v/3PH/6Hz 180 Amp Full Load, 200 Amp Minimum Service***
<b>Door Interlock</b>	Mechanical Lockout
<b>Control System</b>	PC- Based with Lab View Interface
<b>Hi/Low Limit</b>	Therm-Alarm
<b>CE or CSA Option</b>	Available

\* Dependent on range and chamber loading

\*\* Smaller size heating systems available which reduces electrical service sizes

\*\*\* Other input voltages and frequencies available

Specifications subject to change.

## MULTI-AXIS REPETITIVE SHOCK VIBRATION SYSTEM

<b>Frequency Range</b>	0 to >10,000 Hz
<b>Acceleration Levels</b>	Greater Than 50 gs bare table*
<b>Number of Impactors</b>	Dependent on Performance Option Selected
<b>Impactor Air Requirement</b>	90 PSI Compressed Air
<b>Axes Excited</b>	3 Linear, 3 Rotational
<b>Maximum Payload Support Capability</b>	1230 lbs. (559 kg)**
<b>Table Sizes</b>	46" x 46" (117 cm x 117 cm) 50" x 50" (127 cm x 127 cm)
<b>Grid Pattern</b>	4" x 4" Grid (10 cm x 10 cm)

\* Dependent on table size and performance option selected

\*\* Can be increased for larger loads