

CLASSIC THERMAL SHOCK CHAMBERS



Taking Environmental Product Testing to the Next Level

Our classic Thermal Shock Chambers subject products to widely varying temperatures at a fast change rate. The vertical, horizontal, and double duty models have independent hot- and cold-controlled temperature zones. Products under test are automatically transferred between the zones, producing severe thermal stresses.

THERMAL SHOCK CHAMBERS

Thermotron's Thermal Shock Chambers are designed and engineered to operate in accordance with an array of reliability, quality control, military, and other commercial test programs. Most Thermal Shock Chamber models feature cascade refrigeration systems to allow full cooling, using only mechanical refrigeration.

- 8825 Windows®-based Controller
- Assorted Product Carrier Sizes
- Multiple Configurations & Chamber Sizes
- System Monitor for Chamber Troubleshooting
- Temperature Range: -73°C to 200°C
- Worldwide Service and Support



ATS-320-DD

Options

- Air-Cooled Condenser
- Circular Chart Recorders
- Customization
- Electrical Disconnect
- GN₂ or Dry Air Purge
- IEEE-488 or RS-232 Interface
- Interior Lights
- LN₂ or CO₂ Boost
- Quiet Package
- Shelves
- ThermAlarm™
- Traveling Port
- Windows

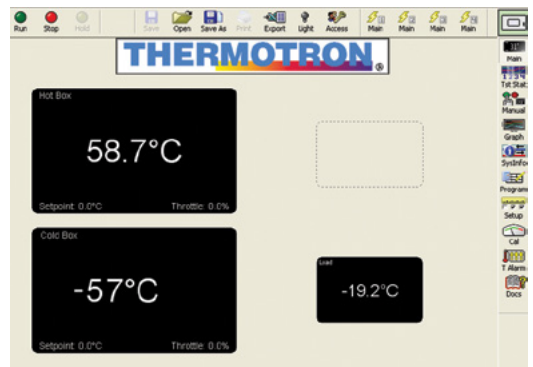
Safety Features

- Circulator-Interlock for Heaters and Refrigeration
- Enclosed Machinery
- Factory Set High Heat Limit
- Refrigeration System Relief Valves
- Heater Heat-Links
- Inherent Compressor Overload Protection
- Master Heat Contactor (separate from control contactors)
- OSHA-approved Fan Guards

8825 PROGRAMMER CONTROLLER

The 8825 Controller is designed and engineered in-house at our world headquarters in Holland, Michigan, USA. It has an intuitive Windows® look and feel to easily navigate from screen to screen.

- Automatic Product Carrier Transitions
- Product Carrier Location Display
- Programmed Automatic Defrost Cycle
- Pre-Programmed Profiles
- Ethernet-Compatible and Web-Enabled
- Guided Program Creation
- Multi-Level, Password-Based Security System
- Main Screen Navigation Buttons
- Automatic or Manual Operation Modes
- Automatic Backup/Restore & Manual
- Step-by-Step Calibration
- Data Export via USB Port
- Detailed Test Profile Graphs
- Product Temperature Control
- Selectable Transfer Soak Methods
- Built-In System, Monitor, and Alarm Status Screens



CONFIGURATION OPTIONS

Horizontal

Horizontal Orientation Thermal Shock Chambers have three side-by-side independent zones: hot, ambient, and cold. The addition of the ambient zone allows for three zone testing, which is a requirement of some military standards.

This unique and versatile chamber configuration can also be used for two zone tests. This is accomplished by programming the product carrier to automatically transfer the product from hot to cold, and back again, eliminating a dwell in the ambient zone.



ATS-320-H

Vertical

Vertical Orientation Thermal Shock Chambers have two independently controlled hot and cold zones; one atop the other. A single product carrier moves between each zone, subjecting the product to dramatic changes in temperature.

An advantage of the Vertical Orientation chamber is it uses less floor space, making it ideal for smaller labs.



ATS-900-V

Double Duty

Thermotron's Double Duty Thermal Shock Chambers have a cold zone positioned between two hot zones, aligned vertically top and bottom. Products under test are placed in one of two product carriers and transferred between the zones producing severe thermal stress. At least one product carrier always occupies the cold zone.

This design makes efficient use of the chamber cooling system, providing increased product testing throughput over standard thermal shock designs. Heaters are incorporated into the cold zone for defrost, allowing the zone to be operated as a temperature cycling chamber when it is not being used for thermal shock tests.



ATS-320-DD

GENERAL SPECIFICATIONS

	Model	Product Carrier W x D x H	Exterior Dimensions W x D x H*	Max. Loading LN ₂ Assist ¹	Maximum Loading Mechanical Refrigeration ¹		MIL-STD 883 1010.7 Test Load ²
		Inches Centimeters	Inches Centimeters	-65°C to 200°C (-85°F to 392°F)	-55°C to 85°C (-67°F to 185°F)	-65°C to 150°C (-85°F to 302°F)	-65°C to 150°C (-85°F to 302°F)
Horizontal	ATS-320-H-7.5-75**	15 x 25 x 15	155 x 65 x 96	80 lbs	77 lbs / 35 kg	37 lbs / 17 kg	30 lbs / 14 kg
	ATS-320-H-15-15**	38 x 64 x 38	394 x 165 x 244	36 kg	80 lbs / 36 kg	65 lbs / 29 kg	60 lbs / 27 kg
	ATS-900-H-7.5-75**	25 x 25 x 25 64 x 64 x 64	185 x 60 x 106 470 x 152 x 269	120 lbs 54 kg	40 lbs / 18 kg	LN ₂ Boost	LN ₂ Boost Required
	ATS-900-H-15-15**				120 lbs / 54 kg	40 lbs / 18 kg	40 lbs / 18 kg
	ATS-900-H-25-25**				120 lbs / 54 kg	80 lbs / 36 kg	80 lbs / 36 kg
Vertical	ATS-320-V-LN ₂	25 x 15 x 15 64 x 38 x 38	74 x 57 x 85 188 x 145 x 216	80 lbs 36 kg	80 lbs / 36 kg	80 lbs / 36 kg	30 lbs / 14 kg
	ATS-320-V-10-75**		74 x 72 x 85 188 x 183 x 216		80 lbs / 36 kg	35 lbs / 16 kg	30 lbs / 14 kg
	ATS-900-V-7.5-75**	25 x 25 x 25 64 x 64 x 64	77 x 112 x 96 196 x 284 x 244	120 lbs 54 kg	45 lbs / 20 kg	LN ₂ Boost	25 lbs / 11 kg
	ATS-900-V-15-15**				120 lbs / 54 kg	40 lbs / 18 kg	60 lbs / 27 kg
	ATS-900-V-25-25**				120 lbs / 54 kg	80 lbs / 36 kg	80 lbs / 36 kg
Double Duty	ATS-320-DD-10-75**	25 x 15 x 15 64 x 38 x 38	99 x 50 x 92 251 x 127 x 234	120 lbs 54 kg	120 lbs / 54 kg	40 lbs / 18 kg	50 lbs / 23 kg
	ATS-1040-DD-30-25**	30 x 25 x 24 76 x 64 x 61	99 x 66 x 107 251 x 168 x 272	240 lbs 109 kg	240 lbs / 109 kg	200 lbs / 91 kg	200 lbs / 91 kg

Performance based on 60 Hz and ambient conditions of 23.9°C (75°F) with 50% RH, and may vary slightly on other power, temperature, or humidity levels. Chambers are designed for use under normal laboratory operating conditions and non-hazardous materials only.

*Traveling port may increase exterior dimensions.

**LN₂ is optional on these models. Temperature Range is -73°C to 177°C (-99°F to 350°F) in the Cold/Hot Chamber and 60°C to 200°C (140°F to 392°F) in the Hot Zone.

¹ Performance Notes:

- The reference test load consists of 12-gauge steel plates. Each pound of steel has 65 in³ of exposed surface area. Each steel plate is oriented in the product carrier with air flow parallel to it.
- The weight of any additional shelves must be included as part of the test load shown above.
- Capacity is based on the product being stabilized at the extreme temperatures before transferring. No ambient dwell is used.
- When using LN₂ assist, the mechanical refrigeration system will maintain low temperatures. LN₂ is required to meet recovery times.
- Tests are run in accordance with MIL-STD 883, Method 1010.7 and MIL-STD 202, Method 107G.
- For LN₂-only chambers, the maximum load is with LN₂ cooling and no mechanical refrigeration.

² 9-point product recovery in 15 minutes or less using IC chip product load.

- The weight of any additional shelves must be included as part of the test load shown above.
- Capacity is based on product being stabilized at the extreme temperatures before transferring. No ambient dwell is used.

Thermotron Classic Thermal Shock Chambers can meet many specifications for IEC, BS, MIL-STD, and more. Additional sizes, configurations, and LN₂-only models are also available. Consult your local sales representative for specific information.

General specifications subject to change without notice.

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.

**QUALITY. TRUST.
CONFIDENCE.**
— BUILD YOURS WITH A —
THERMOTRON.

T H E R M O T R O N . C O M

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