

AUTOMOTIVE LITHIUM-ION BATTERY TEST CHAMBER

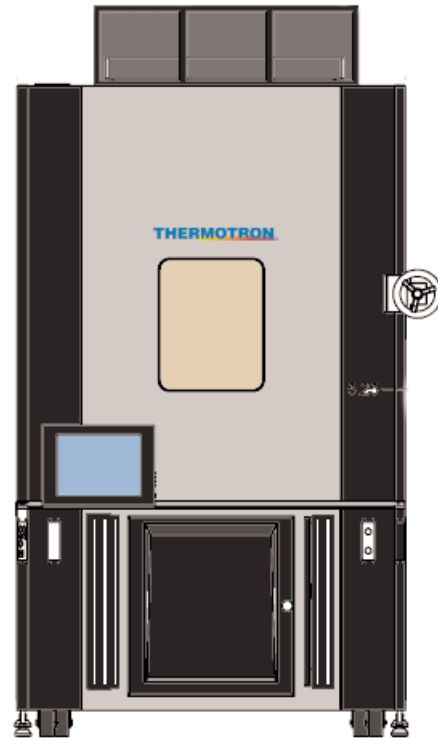
As the popularity of hybrid electric vehicles (HEVs) continues to grow around the world, the automotive industry is looking for new technologies that will improve vehicle performance. Utilizing its 40+ years experience with the automotive industry, Thermotron can provide automotive lithium-ion battery manufacturers specialized equipment and features that have proven to be the solution to their unique testing specifications.

A major manufacturer in the lithium-ion battery industry, was looking for chamber to test lithium-ion batteries for hybrid cars and light trucks. The customer needed a chamber capable of rapid temperature change rates causing the greatest amount of stress to the battery. With its large workspace measuring 48" X 48" X 52" (122 cm X 122 cm X 132 cm), Thermotron's SE-2000 proved to be the solution for this customer's lithium-ion battery testing requirements.

■ Safety Precautions and Features

Due to safety issues concerning the danger of battery explosions, certain safety features are incorporated and precautions taken when designing the chamber. Thermotron provides an interior workspace designed to minimize sparking, greatly reducing the risk of explosion during testing. The chamber design incorporates a blow off pressure relief panel in the ceiling allowing for controlled pressure relief in the event of an explosion. A hand wheel door clamp ensures a tight seal during testing and helps to prevent door damage should an explosion occur. A special heavy duty floor allows the chamber to withstand up to 900 lbs of batteries under test. ThermAlarm™ provides over and under temperature alarm protections. The chamber also features GN2 purge to prevent a build up of dangerous gases and to provide a dry, inert environment.

Because of the sizes and orientation of many lithium-ion battery packs, specialized shelving and fixtures are also available to allow for easy



loading and unloading.

■ High Performance Product Testing

SE-Series environmental test chambers are engineered to provide the most accurate and reliable test results in the marketplace. Our standard model is able to produce temperatures ranging from 180°C to -70°C (356°F to -94°F), however SE-Series chambers can be customized to feature special performance. Application-specific compressor selections from 3 to 15 Hp allow for customized temperature ranges tailored to meet individual testing needs. An optional modular humidity system allows the SE-Series to reach 10% to 98% RH.

Optimized airflow systems provide conditioning throughout the entire workspace, providing more consistent test results, improving product temperature change rates. It also means better performance, greater accuracy and tighter uniformity throughout the chamber for consistent stress on products being tested. Chambers can be customized to feature a non-sparking propeller type fan in the airflow system.

■ Patented, Innovative Universal Port

The versatile universal port in the sidewall of our popular SE-Series Chambers interfaces with slide-up modules expanding your chamber's ability to perform thermal shock tests, HALT and HASS, product test system integration and remote conditioning applications. The universal port increases the flexibility and productivity of the chamber.

■ 8800 Programmer Controller

With a brilliant 12" color touch screen display, the powerful 8800 Programmer Controller is *Thermotrak II™* ready, making operations and data collection easier and more reliable than ever before. Our controller has a Windows look and feel to support familiar and robust operations. The 8800 is ethernet-compatible and web-enabled with an Internet-ready front end for virtual anytime/anywhere access. Multi-level, password-based security protects sensitive data.



Design Characteristics

Workspace Dimensions:	48" x 48" x 52" (122 cm x 122 cm x 132 cm)
Exterior Dimensions:	56" x 92" x 95" (142 cm x 234 cm x 241 cm)
Temperature Range:	-94°F to 356°F (-70°C to 180°C)
Window:	1 - 15" x 19" (38 cm x 48 cm)

Standard Features for all Models

- USB Port with Flash Drive Replaces Floppy Disk.
- 40 Gigabyte Hard Drive.
- Paperless Recorder Generates Tamper-Proof Data.
- Pre-Programmed Test Profiles (IEC, MIL STD, etc.).
- Electronic Refrigeration Gauges and Pressure Switches.
- Product Temperature Control Software.
- System Monitor Provides Continual Diagnostics.
- Clean Top and Sides, Nothing Mounted Externally.
- Top Exhaust for Cooling Air.
- Right Hand Side Port for Convenient Access to Test Items.
- Lift-Off Panels For Easy Access.
- Extensive Direct Factory-Trained Service Force.
- Electronic Humidity Sensor Requires Minimal Maintenance and Increases Accuracy (Humidity Models Only).
- Main Power Disconnect Switch.
- Therm-Alarm® Over/Under Temperature Protection Instrument.
- Casters for Mobility Into and Throughout Lab.
- Adjustable Stainless Steel Shelf Increases Product Loading Capacity.

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