

## S-SERIES ENVIRONMENTAL TEST CHAMBERS



SM-16-2-3



SM-27-2-3



SM-32-2-3

## THE TESTING STANDARD

Thermotron's S-Series delivers the quality and accuracy you expect from a premier worldwide environmental test equipment manufacturer.

Featuring the 8200+ Controller, wide temperature and humidity ranges, and multiple sizes and configurations, Thermotron's S-Series is the ideal choice for every test lab.

## Key Advantages

### Variety of Sizes

Chamber workspaces range from 1.5 to 906 liters to accommodate many product sizes.

### Multiple Power Options

By utilizing multiple compressors in multiple size configurations, S-Series Chambers can achieve the change rates you require. Thermotron offers single-stage (one compressor) and cascade (two compressors) chamber models.

### Superior, Optimized Airflow

Direct airflow over the product under test improves product temperature change rates, helping achieve superior testing results.

### Continuous Monitoring

Thermotron offers multiple features that assist in monitoring the product under test to maximize test results, including innovative data acquisition and Product Temperature Control (PTC).

### Unparalleled Control System

The 8200+ Controller is standard on all S-Series Chamber models. The controller is intuitive, robust, and secure. The controller's hardware and software is designed in-house, specifically for environmental testing.

### Unique Humidity System

The patented humidity system provides a wide range of humidity conditions. Its unique design allows for quick access and convenience on our SM-Series Chambers.

### Custom Solutions

Can't find an S-Series Chamber to match your exact testing requirement? Thermotron provides custom chambers to meet individual size or performance needs.

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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.**

# FEATURES & BENEFITS



## Powerful, Reliable & Flexible

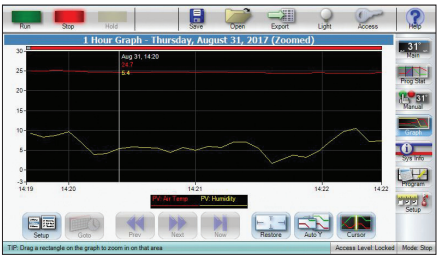
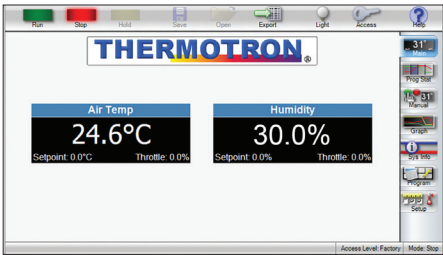
Your testing chamber should be able to handle quick change rates and dynamic temperature fluctuations, over and over again. The S-Series chambers are engineered to give you best performance through a wide range of temperatures without worry.

## Additional Chamber Options

- Additional Access Ports
- Additional Shelving
- Auxiliary Event Relay Board
- Cable Notch
- CE and CSA Compliant
- Chart Recorders
- Custom Shape, Size, and Placement of Access Ports
- Dry Air or Nitrogen Purge
- Extra Heat
- Glove Ports
- GPIB or RS-232/485 Computer Interface
- Humidity Water Purification and Recirculation System
- Inner Glass Doors
- LN<sub>2</sub> or CO<sub>2</sub> Boost
- Low Humidity Package
- Minimal Spark
- Single-Stage and Larger Compressor Systems
- ThermAlarm™
- ThermoTrak II™
- Water-Cooling

*Make your chamber specific to your needs. Contact your regional sales rep or visit us online to learn more about these additional chamber options.*

# Take Control from Anywhere



S-Series Environmental Test Chambers feature the robust and intuitive 8200+ Controller. The controller's software and hardware are designed by Thermotron engineers, specifically for programming and controlling environmental chambers. Operation and data collection are easy with a 7-inch color touchscreen display and familiar Windows® look and feel. Test data can be exported securely, quickly, and easily with a USB port. Built-in ethernet capabilities give the 8200+ Controller network-wide accessibility.

*Visit [thermotron.com](http://thermotron.com) for an interactive demo*

## 8200+ Controller

The enhanced 8200+ Controller features an intuitive touchscreen display, with quick and efficient performance. Users can securely and easily enter and monitor test data with a familiar Windows®-based interface.



### Built-in Graphing Capabilities

users pinpoint the exact data they wish to see



### Ethernet Connection

easy and secure data export and remote PC access



### Password-Based Security

multi-level, system protects sensitive data



### Quick Step Wizards

easy program entry, test setup, and product monitoring



### Transferable Spreadsheet Data

test data can be exported to commonly used spreadsheet formats and transferred via USB

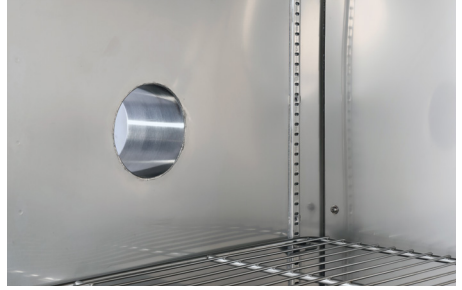


### Web Server

view the controller status from any computer connected to the network

# FEATURES & BENEFITS

## Customized Ports



Customized ports allow easy access to your product being tested without affecting the entire environment. Customize the size and location of your ports to fit your specific testing needs.

## Refrigeration Gauges



Check your testing performance without needing a device. Visible gauges can help you monitor your chamber with a simple glance.

## Emergency Shut-Off



Immediately stop a test for any reason and save your product and chamber with the Emergency Shut-Off Button

## Liquid Nitrogen Boost



Adding a Liquid Nitrogen Boost can help you achieve lower temperatures quickly with your current system.

## Exterior Colors Options



Chamber Blue™



Lab Gray™



Your Choice of Color\*

# Chamber Interior



## Inside the Workspace

### 4" thick door and 4.5" thick walls

The chamber is well insulated and stays cool to the touch, protecting the user.

### Advanced Air Baffle Design

Forces air directly over the product for better temperature change rates.

### Electronic Humidity Sensor (humidity models)

Eliminates the need for thermocouple wicks, producing more repeatable, dependable humidity tests with less downtime.

### Interior Lights

Illuminate the workspace during a test and while the door is open.

### Product Temperature Control (PTC) Thermocouple

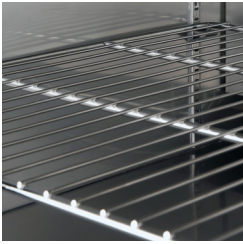
Attaches to the product under test to control and monitor its temperature.

### ThermAlarm®

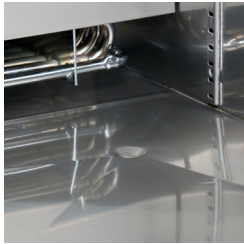
Prevents temperature from exceeding user-defined limits.



**Interior light.** See the inside of your chamber and how your product is functioning with the push of a button



**Adjustable shelves.** Whether you're testing rows of semiconductors or multiple brake pads, adjustable shelves can improve your testing experience.



**Patented drain system.** On humidity models, the floor is scored slightly to allow condensated water to drain.

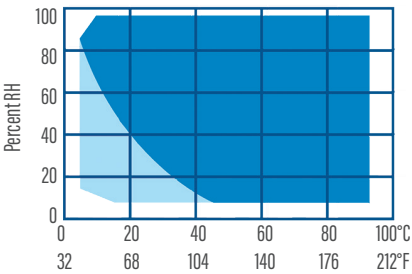


Water Purification and Recirculation System

Achieving the proper humidity can help you test your products to the fullest extent. Using Thermotron's Water Purification and Recirculation System, you can improve the quality of water used, while also recirculating excess liquid.



Humidity Specifications\*



|   |                             |
|---|-----------------------------|
| Humidity Range <sup>1</sup>             | 10% to 98% RH               |
| Dry Bulb Temperature Range              | 7°C to 88°C (45°F to 190°F) |
| Dewpoint Temperature Range              | 7°C to 87°C (45°F to 188°F) |
| Humidity Control Tolerance <sup>2</sup> | ±2.5% RH                    |

<sup>1</sup> Limited by a 7°C (45°F) minimum dewpoint temperature and a maximum dry bulb temperature of 88°C (190°F).

<sup>2</sup> At a dry bulb temperature above 20°C (68°F).

\*Relative humidity indication at or near the physical limits may be affected by sensor accuracy and control tolerance. An optional humidity package can be added for applications requiring humidity levels lower than those covered by the full-range humidity system.

\*\*Standard deviation from mean, measured at -25°C (-13°F) or at +100°C (212°F).

<sup>1</sup>Noise Level: A-weighted sound pressure level measured at a distance of 1.0 meter (39.4 inches) from the surface of the equipment at a height of 1.6 meters (63 inches) from the floor in free-field conditions using a calibrated instrument.

Performance is based on 60Hz and 23.9°C (75°F) ambient air, and may vary slightly at other ambient temperatures. Chambers are designed for use under normal laboratory conditions. For other applications, please consult Thermotron.

Specifications subject to change without notice.



# SINGLE STAGE SPECIFICATIONS

When speed and performance rates are not a factor, but maintaining consistent temperature and humidity levels are important, then a single-stage system may be all you need for your test lab.

| Temperature Range                   | Temperature Only (S Models)     |       | Temperature and Humidity* (SM Models) |       |
|-------------------------------------|---------------------------------|-------|---------------------------------------|-------|
|                                     | -40°C to 180°C (-40°F to 356°F) |       | -40°C to 180°C (-40°F to 356°F)       |       |
| Model                               | S-4S                            | SM-4S | S-8S                                  | SM-8S |
| Compressor Sizes: Hp Single Stage   | 2-0                             |       |                                       |       |
| Workspace Dimensions — W x D x H    |                                 |       |                                       |       |
| Inches                              | 20 x 20 x 20                    |       | 24 x 24 x 24                          |       |
| Centimeters                         | 51 x 51 x 51                    |       | 61 x 61 x 61                          |       |
| Exterior Dimensions — W x D x H     |                                 |       |                                       |       |
| Inches                              | 31 x 42 x 68                    |       | 35 x 49 x 73                          |       |
| Centimeters                         | 79 x 107 x 173                  |       | 89 x 124 x 185                        |       |
| Volume                              |                                 |       |                                       |       |
| Cubic Feet                          | 4                               |       | 8                                     |       |
| Liters                              | 113                             |       | 227                                   |       |
| Temperature Control Tolerance       | ±0.3°C (±0.5°F)                 |       |                                       |       |
| Temperature Uniformity**            | ±0.7°C (±1.3°F)                 |       |                                       |       |
| Shipping Weight (Approx.)           |                                 |       |                                       |       |
| Pounds                              | 700                             | 775   | 800                                   | 875   |
| Kilograms                           | 318                             | 350   | 363                                   | 397   |
| Cooling Change Rates — °C / Minutes |                                 |       |                                       |       |
| 85°C to -20°C (185°F to -4°F)       | 14                              | 14    | 20                                    | 20    |
| 180°C to -35°C (356°F to -31°F)     | 40                              | 40    | 50                                    | 50    |
| Heating Change Rates — °C / Minutes |                                 |       |                                       |       |
| -20°C to 85°C (-4°F to 185°F)       | 8                               | 8     | 13                                    | 13    |
| -35°C to 180°C (-31°F to 356°F)     | 22                              | 22    | 38                                    | 38    |
| Electrical Service — Full Load Amps |                                 |       |                                       |       |
| 208/1/60                            | 26                              | 33    | 26                                    | 33    |
| 208/3/60                            | 23                              | 23    | 23                                    | 23    |
| 230/1/60                            | 25                              | 33    | 25                                    | 33    |
| 230/3/60                            | 23                              | 23    | 23                                    | 23    |
| 460/3/60                            | 12                              | 12    | 12                                    | 12    |
| 400/3/50                            | 15                              | 15    | 15                                    | 15    |
| Noise Level† — dBA                  |                                 |       |                                       |       |
| Heating                             | 60                              |       |                                       |       |
| Cooling                             | 68                              |       |                                       |       |

\*Relative humidity indication at or near the physical limits may be affected by sensor accuracy and control tolerance. An optional humidity package can be added for applications requiring humidity levels lower than those covered by the full-range humidity system.

†Noise Level: A-weighted sound pressure level measured at a distance of 1.0 meter (39.4 inches) from the surface of the equipment at a height of 1.6 meters (63 inches) from the floor in free-field conditions using a calibrated instrument.

\*\*Standard deviation from mean, measured at -25°C (-13°F) or at +100°C (212°F).

Performance is based on 60Hz and 23.9°C (75°F) ambient air, and may vary slightly at other ambient temperatures. Chambers are designed for use under normal laboratory conditions. For other applications, please consult Thermotron.

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# S-SERIES

*The S-Series is the perfect addition to any testing lab. With various sizes and options, you can construct your own S-Series chamber today.*



## Key Benefits

- 1

**Moderate Change Rates.** Get all the Thermotron quality and performance at an affordable price.
- 2

**8200+ Controller.** Record and utilize your data easier than ever. Our 8200 Windows-based controller makes controlling and data collection a walk in the park.
- 3

**Centered Observation Window.** Check on your product under test directly. The centered window gives you a full view of your products during test.
- 4

**Standard Size.** Fit your S/SM chamber easily in your lab. Designed with your needs in mind.

## DIMENSIONS

| Model                                   | S-4            | S-8            | SM-8 | S-16            | SM-16 | S-27            | SM-27 | S-32            | SM-32 |
|---|----------------|----------------|------|-----------------|-------|-----------------|-------|-----------------|-------|
| <b>Workspace Dimensions — W x D x H</b> |                |                |      |                 |       |                 |       |                 |       |
| Inches                                  | 20 x 20 x 20   | 24 x 24 x 24   |      | 30 x 30 x 30    |       | 36 x 36 x 36    |       | 38 x 38 x 38    |       |
| Centimeters                             | 51 x 51 x 51   | 61 x 61 x 61   |      | 76 x 76 x 76    |       | 91 x 91 x 91    |       | 97 x 97 x 97    |       |
| <b>Exterior Dimensions — W x D x H</b>  |                |                |      |                 |       |                 |       |                 |       |
| Inches                                  | 31 x 42 x 68   | 35 x 49 x 73   |      | 45 x 59 x 81    |       | 51 x 65 x 88    |       | 53 x 68 x 90    |       |
| Centimeters                             | 79 x 107 x 173 | 89 x 124 x 185 |      | 114 x 150 x 206 |       | 130 x 165 x 224 |       | 135 x 173 x 229 |       |
| <b>Volume</b>                           |                |                |      |                 |       |                 |       |                 |       |
| Cubic Feet                              | 4              | 8              |      | 16              |       | 27              |       | 32              |       |
| Liters                                  | 113            | 227            |      | 453             |       | 764             |       | 906             |       |

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# SPECIFICATIONS

## The Testing Standard

As the testing lab essential, the S-Series chambers provide robust temperature change rates in a trusted design. No matter what you're testing, the S-Series is there for you.

| Temperature Range   | Temperature Only (S Models)           |                                       |                                       |                                       |                                       | Temperature and Humidity* (SM Models) |                                       |                                       |                                     |                                       |                                     |
|---|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|-------------------------------------|---------------------------------------|-------------------------------------|
|   | -70°C to 180°C (-94°F to 356°F)       |                                       |                                       |                                       |                                       | -68°C to 180°C (-90°F to 356°F)       |                                       |                                       |                                     |                                       |                                     |
| Model   | S-4                                   | S-8                                   | SM-8                                  | S-16                                  | SM-16                                 | S-27                                  | SM-27                                 | S-32                                  | SM-32                               |                                       |                                     |
| Compressor Sizes  | 1-1                                   |                                       |                                       | 2-2                                   |                                       |                                       |                                       | 2-3                                   | 2-2                                 | 2-3                                   |                                     |
| Temperature Control Tolerance   | ±0.3°C (±0.5°F)                       |                                       |                                       |                                       |                                       |                                       |                                       |                                       |                                     |                                       |                                     |
| Temperature Uniformity**  | ±0.7°C (±1.3°F)                       |                                       |                                       |                                       |                                       |                                       |                                       |                                       |                                     |                                       |                                     |
| Shipping Weight (Approx.)<br>Pounds<br>Kilograms  | 700<br>318                            | 800<br>363                            | 875<br>397                            | 1,320<br>599                          | 1,395<br>633                          | 1,800<br>816                          | 1,875<br>851                          | 1,975<br>896                          | 2,050<br>930                        |                                       |                                     |
| Cooling Change Rates — Minutes<br>180°C to -65°C (356°F to -85°F)<br>71°C to -65°C (160°F to -85°F)<br>85°C to -40°C (185°F to -40°F) | 50<br>30<br>14                        | 66<br>44<br>26                        | 72<br>54<br>32                        | 68<br>50<br>28                        | 80<br>54<br>31                        | 85<br>58<br>39                        | 98<br>64<br>42                        | 93<br>65<br>45                        | 68<br>48<br>21                      | 106<br>71<br>48                       | 74<br>51<br>23                      |
| Heating Change Rates — Minutes<br>-65°C to 180°C (-85°F to 356°F)<br>-65°C to 71°C (-85°F to 160°F)<br>-40°C to 85°C (-40°F to 185°F) | 27<br>11<br>10                        | 42<br>16<br>15                        | 43<br>17<br>16                        | 52<br>22<br>20                        | 54<br>22<br>21                        | 66<br>27<br>25                        | 68<br>28<br>26                        | 71<br>30<br>28                        | 38<br>12<br>10                      | 73<br>31<br>29                        | 40<br>13<br>11                      |
| Electrical Service — Full Load Amps<br>208/1/60<br>208/3/60<br>230/1/60<br>230/3/60<br>460/3/60<br>220/1/50<br>400/3/50               | 30<br>22<br>30<br>23<br>—<br>25<br>12 | 29<br>22<br>30<br>23<br>—<br>24<br>11 | 29<br>22<br>30<br>23<br>—<br>27<br>11 | 50<br>35<br>49<br>35<br>15<br>—<br>17 | 50<br>35<br>49<br>35<br>17<br>—<br>21 | 50<br>35<br>49<br>35<br>15<br>—<br>17 | 50<br>35<br>49<br>35<br>17<br>—<br>21 | 50<br>35<br>49<br>35<br>15<br>—<br>17 | —<br>47<br>—<br>47<br>24<br>—<br>24 | 50<br>35<br>49<br>35<br>17<br>—<br>21 | —<br>53<br>—<br>53<br>27<br>—<br>24 |
| Live Load Capacity — Watts<br>-18°C (0°F)<br>-40°C (-40°F)<br>-54°C (-65°F)   | 600<br>400<br>300                     | 550<br>350<br>200                     | 1,000<br>700<br>400                   |                                       |                                       |                                       |                                       |                                       | 1,500<br>1,050<br>600               | 1,000<br>700<br>400                   | 1,500<br>1,050<br>600               |
| Noise Level† — dBA<br>Heating<br>Cooling  | 60<br>68                              |                                       |                                       | 60<br>70                              |                                       |                                       |                                       |                                       |                                     |                                       |                                     |

<sup>1</sup> Limited by a 7°C (45°F) minimum dewpoint temperature and a maximum dry bulb temperature of 88°C (190°F).

<sup>2</sup> At a dry bulb temperature above 20°C (68°F).

\*Relative humidity indication at or near the physical limits may be affected by sensor accuracy and control tolerance. An optional humidity package can be added for applications requiring humidity levels lower than those covered by the full-range humidity system.

\*\*Standard deviation from mean, measured at -25°C (-13°F) or at +100°C (212°F).

<sup>†</sup>Noise Level: A-weighted sound pressure level measured at a distance of 1.0 meter (39.4 inches) from the surface of the equipment at a height of 1.6 meters (63 inches) from the floor in free-field conditions using a calibrated instrument.

Performance is based on 60Hz and 23.9°C (75°F) ambient air, and may vary slightly at other ambient temperatures. Chambers are designed for use under normal laboratory conditions. For other applications, please consult Thermotron.

Specifications subject to change without notice.

# THERMOTRON



*Worn with a badge of honor, Thermotron's High Performance Series of environmental test chambers are equipped to exceed the industry standard. Faster tests mean quicker results and improved reliability for your products.*



## Key Benefits

- 1

**Larger Compressors.** When normal change rates just won't do, the Performance Series will push your products to the limit with 5°C/min change rates
- 2

**Similar Styling, Superior Performance.** The Performance Series does not cut corners. Larger compressors in the standard design means no extra space needed for superior results.
- 3

**Quicker Results.** Larger compressors mean more testing can be done in less time. Increase your throughput with more tests in your day.
- 4

**Increased Performance & Reliability.** The Performance Series is ready to handle the toughest testing you can perform again, again, and again.

## DIMENSIONS

| Model                                   | S-8            | SM-8 | S-16            | SM-16 | S-27            | SM-27 | S-32            | SM-32 |
|---|----------------|------|-----------------|-------|-----------------|-------|-----------------|-------|
| <b>Workspace Dimensions - W x D x H</b> |                |      |                 |       |                 |       |                 |       |
| Inches                                  | 24 x 24 x 24   |      | 30 x 30 x 30    |       | 36 x 36 x 36    |       | 38 x 38 x 38    |       |
| Centimeters                             | 61 x 61 x 61   |      | 76 x 76 x 76    |       | 91 x 91 x 91    |       | 97 x 97 x 97    |       |
| <b>Exterior Dimensions - W x D x H</b>  |                |      |                 |       |                 |       |                 |       |
| Inches                                  | 35 x 49 x 73   |      | 45 x 59 x 81    |       | 51 x 65 x 88    |       | 53 x 68 x 90    |       |
| Centimeters                             | 89 x 124 x 185 |      | 114 x 150 x 206 |       | 130 x 165 x 224 |       | 135 x 173 x 229 |       |
| <b>Volume</b>                           |                |      |                 |       |                 |       |                 |       |
| Cubic Feet                              | 8              |      | 16              |       | 27              |       | 32              |       |
| Liters                                  | 227            |      | 453             |       | 764             |       | 906             |       |

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# SPECIFICATIONS

## Change Rates in Excess of 5°C/min down to -40°C

Push your products to be tougher and stronger. Thermotron's Performance Series is ready to bring your product testing to a whole new level.

| Temperature Range                   | Temperature Only (S Models)     |       |       |       | Temperature and Humidity* (SM Models) |       |       |       |
|-------------------------------------|---------------------------------|-------|-------|-------|---------------------------------------|-------|-------|-------|
|                                     | -70°C to 180°C (-94°F to 356°F) |       |       |       | -68°C to 180°C (-90°F to 356°F)       |       |       |       |
| Model                               | S-8                             | SM-8  | S-16  | SM-16 | S-27                                  | SM-27 | S-32  | SM-32 |
| Compressor Sizes                    | 2-2                             |       | 2-3   |       |                                       |       |       |       |
| Temperature Control Tolerance       | ±0.3°C (±0.5°F)                 |       |       |       |                                       |       |       |       |
| Temperature Uniformity*             | ±0.7°C (±1.3°F)                 |       |       |       |                                       |       |       |       |
| Shipping Weight (Approx.)           |                                 |       |       |       |                                       |       |       |       |
| Pounds                              | 958                             | 1000  | 1320  | 1395  | 1,800                                 | 1,875 | 1,975 | 2,050 |
| Kilograms                           | 431                             | 550   | 599   | 633   | 816                                   | 851   | 896   | 930   |
| Cooling Change Rates — Minutes      |                                 |       |       |       |                                       |       |       |       |
| 180°C to -65°C (356°F to -85°F)     | 43                              | 45    | 49    | 53    | 63                                    | 68    | 68    | 74    |
| 71°C to -65°C (160°F to -85°F)      | 25                              | 26    | 34    | 36    | 43                                    | 46    | 48    | 51    |
| 85°C to -40°C (185°F to -40°F)      | 16                              | 17    | 16    | 17    | 19                                    | 20    | 21    | 23    |
| Heating Change Rates — Minutes      |                                 |       |       |       |                                       |       |       |       |
| -65°C to 180°C (-85°F to 356°F)     | 21                              | 22    | 27    | 29    | 35                                    | 37    | 38    | 40    |
| -65°C to 71°C (-85°F to 160°F)      | 8                               | 9     | 9     | 10    | 11                                    | 12    | 12    | 13    |
| -40°C to 85°C (-40°F to 185°F)      | 7                               | 8     | 8     | 9     | 9                                     | 10    | 10    | 11    |
| Electrical Service — Full Load Amps |                                 |       |       |       |                                       |       |       |       |
| 208/1/60                            | N/A                             | N/A   | N/A   | N/A   | N/A                                   | N/A   | N/A   | N/A   |
| 208/3/60                            | N/A                             | N/A   | 47    | 53    | 47                                    | 53    | 47    | 53    |
| 230/1/60                            | 34                              | 34    | N/A   | N/A   | N/A                                   | N/A   | N/A   | N/A   |
| 230/3/60                            | 24                              | 24    | 47    | 53    | 47                                    | 53    | 47    | 53    |
| 460/3/60                            | N/A                             | N/A   | 24    | 27    | 24                                    | 27    | 24    | 27    |
| 220/1/50                            | 34                              | 34    | N/A   | N/A   | N/A                                   | N/A   | N/A   | N/A   |
| 400/3/50                            | N/A                             | N/A   | 24    | 24    | 24                                    | 24    | 24    | 24    |
| Live Load Capacity — Watts          |                                 |       |       |       |                                       |       |       |       |
| -18°C (0°F)                         | 1,000                           | 1,000 | 1,000 | 1,000 | 1,000                                 | 1,000 | 1,500 | 1,500 |
| -40°C (-40°F)                       | 700                             | 700   | 700   | 700   | 700                                   | 700   | 1,050 | 1,050 |
| -54°C (-65°F)                       | 400                             | 400   | 400   | 400   | 400                                   | 400   | 600   | 600   |
| Noise Level† — dBA                  |                                 |       |       |       |                                       |       |       |       |
| Heating                             | 60                              |       |       |       |                                       |       |       |       |
| Cooling                             | 70                              |       |       |       |                                       |       |       |       |

Humidity range in SM Series Humidity Chambers is limited by a +7°C (+45°F) minimum dew point temperature and a maximum dry bulb temperature of +88°C (+190°F). Relative humidity indication at or near the physical limits may be affected by sensor accuracy and control tolerance.

Noise Level: A-weighted sound pressure level measured at a distance of 1.0 meter (39.4 inches) from the surface of the equipment at a height of 1.6 meters (63 inches) from the floor in free-field conditions, using a calibrated instrument.

Humidity Control Tolerance is measured at a dry bulb temperature above +20°C (+68 °F).

Performance is based upon 60Hz and 23.9°C (75°F) ambient air, and may vary slightly at other ambient temperatures. S-Series Environmental Chambers are designed for use under normal laboratory operating conditions. For other applications, please consult Thermotron.

Specifications subject to change without notice.





*Created as engineered solutions,  
Thermotron's XS Series chambers  
put power where you need it most.  
Test the limits of your products in  
record time today.*



## Key Benefits

- 1

**Increased Stress Capabilities**  
Designed to withstand the toughest temperature change rates, the XS-Series chambers are ready to exceed your expectations.
- 2

**Decreased Testing Time**  
Less time testing means more products and data completed. Don't let your work and productivity suffer.
- 3

**Range of Sizes: 1.5 to 32 ft<sup>3</sup> (42.5 to 906 Liters)**  
Size is no issue for the XS Series. Our wide range of chambers are ready to suit your needs.
- 4

**Full Range Humidity System**  
Whether you're looking for rainforest-like humidity, arctic cold, or desert heat, the XS-Series chambers are here to help.

## DIMENSIONS

| Model                                   | XS-1.5          | XS-4           | XSM-4 | XS-8            | XS-16-6-6       | XSM 16 | XS-32-6-6       | XSM-32 |
|---|-----------------|----------------|-------|-----------------|-----------------|--------|-----------------|--------|
| <b>Workspace Dimensions — W x D x H</b> |                 |                |       |                 |                 |        |                 |        |
| Inches                                  | 20 x 11 x 12 /  | 20 x 20 x 20 / |       | 24 x 24 x 24 /  | 30 x 30 x 30 /  |        | 38 x 38 x 38    |        |
| Centimeters                             | 51 x 28 x 31    | 51 x 51 x 51   |       | 61 x 61 x 61    | 76 x 76 x 76    |        | 97 x 97 x 97    |        |
| <b>Exterior Dimensions — W x D x H</b>  |                 |                |       |                 |                 |        |                 |        |
| Inches                                  | 34 x 22 x 43.5/ | 31 x 42 x 47 / |       | 45 x 49 x 73/   | 45 x 59 x 81 /  |        | 53 x 68 x 90    |        |
| Centimeters                             | 86 x 56 x 104   | 79 x 107 x 119 |       | 114 x 124 x 185 | 114 x 150 x 206 |        | 135 x 173 x 229 |        |
| <b>Volume</b>                           |                 |                |       |                 |                 |        |                 |        |
| Cubic Feet                              | 1.5             | 4              |       | 8               | 16              |        | 32              |        |
| Liters                                  | 42              | 113            |       | 227             | 453             |        | 906             |        |

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# SPECIFICATIONS

## Engineered Solutions For Your Testing Needs

Thermotron's high performance XS-Series Environmental Test Chambers provide superior results, streamlined engineering, increased power, and less time spent testing. XS-Series chambers offer multiple sizes, reliability, and control accuracy required for rapid temperature and change rates up to 10°C/min (18°F/min).

| Temperature-Only Model                     | XS-1.5-.75-.75                  | XS-4-.75-.75      | XS-8-4-4          | XS-16-6-6         | XS-32-6-6         |
|--|---------------------------------|-------------------|-------------------|-------------------|-------------------|
| Compressor Size                            | (2) 3/4 HP                      |                   | (2) 4 HP          | (2) 6 HP          |                   |
| Temperature Range                          | -70°C to 180°C (-94°F to 356°F) |                   |                   |                   |                   |
| Controller Screen Size — Inches            | 5                               |                   |                   |                   |                   |
| Window Size — WxH — in / cm                | 6 x 8 / 15 x 20                 | 12 x 12 / 30 x 30 | 13 x 19 / 33 x 48 | 17 x 23 / 43 x 58 | 17 x 23 / 43 x 58 |
| Shipping Weight (approx.) — Pounds / Kg    | 400 / 181                       | 700 / 317         | 1000 / 454        | 1380 / 626        | 2035 / 923        |
| Cooling Performance <sup>1</sup> — Minutes |                                 |                   |                   |                   |                   |
| 71°C to -65°C (160°F to -85°F)             | 30                              | 70                | 20                | 19                | 30                |
| 85°C to -40°C (185°F to -40°F)             | 19                              | 40                | 12.5              | 12                | 17                |
| 180°C to -65°C (365°F to -85°F)            | 45                              | 100               | 30                | 35                | 48                |
| Heating Performance <sup>1</sup> — Minutes |                                 |                   |                   |                   |                   |
| -40°C to 85°C (-40°F to 185°F)             | 14                              | 28                | 10                | 6                 | 9                 |
| -65°C to 71°C (-85°F to 160°F)             | 16                              | 31                | 11                | 7                 | 11                |
| -65°C to 180°C (-85°F to 356°F)            | 35                              | 65                | 22                | 18                | 28                |
| Live Load Capacity — Watts, Temp. Mode     |                                 |                   |                   |                   |                   |
| 0°C (32°F)                                 | 250                             | -                 | 750               | 1500              | 2250              |
| -40°C (-40°F)                              | 175                             | 175               | 600               | 1250              | 1800              |
| -54°C (-65°F)                              | 150                             | 150               | 500               | 1000              | 1500              |
| Electrical Service — Full Load Amps        |                                 |                   |                   |                   |                   |
| 208/3/60                                   | 17                              | 16                | 47                | 69                | 69                |
| 460/3/60                                   | 16                              | -                 | 24                | 31                | 31                |
| 400/3/50                                   | -                               | 16                | 25                | 36                | 36                |

| Temperature-Humidity Model                 | XSM-4-.75-.75                   | XSM-16-6-6        | XSM-32-6-6    |
|--|---------------------------------|-------------------|---------------|
| Compressor Size                            | (2) 3/4 HP                      | (2) 6 HP          | (2) 6 HP      |
| Temperature Range                          | -68°C to 180°C (-90°F to 356°F) |                   |               |
| Humidity Range <sup>2</sup>                | 20% to 95% RH                   | 10% to 98% RH     | 10% to 98% RH |
| Humidity Control Tolerance <sup>3</sup>    | ±2.5% RH                        | ±2.5% RH          | ±2.5% RH      |
| Controller Screen Size — Inches            | 5                               |                   |               |
| Window Size — WxH — in / cm                | 12 x 12 / 30 x 30               | 17 x 23 / 43 x 58 |               |
| Shipping Weight (approx.) — Pounds / Kg    | 700 / 317                       | 1455 / 660        | 2110 / 957    |
| Cooling Performance <sup>1</sup> — Minutes |                                 |                   |               |
| 71°C to -65°C (160°F to -85°F)             | 70                              | 20                | 31            |
| 85°C to -40°C (185°F to -40°F)             | 40                              | 13                | 18            |
| 180°C to -65°C (356°F to -85°F)            | 100                             | 37                | 50            |
| Heating Performance <sup>1</sup> — Minutes |                                 |                   |               |
| -40°C to 85°C (-40°F to 185°F)             | 28                              | 7                 | 10            |
| -65°C to 71°C (-85°F to 160°F)             | 31                              | 8                 | 12            |
| -65°C to 180°C (-85°F to 356°F)            | 65                              | 20                | 30            |
| Live Load Capacity — Watts, Temp. Mode     |                                 |                   |               |
| 0°C (32°F)                                 | -                               | 1500              | 2250          |
| -40°C (-40°F)                              | 175                             | 1250              | 1800          |
| -54°C (-65°F)                              | 150                             | 1000              | 1500          |
| Electrical Service — Full Load Amps        |                                 |                   |               |
| 208/3/60                                   | 16                              | 69                | 69            |
| 208/3/60                                   | 16                              | 66                | 66            |

<sup>1</sup> Average

<sup>2</sup> Limited by a 7°C (45°F) minimum dewpoint and a max dry bulb of 85°C (185°F). SM-10-8200 and SM-3.5-8200 are limited by 15°C (59°F) minimum dewpoint. SM-1.5-8200 is limited by a 6°C (43°F) minimum dewpoint and max dry bulb of 88°C (190°F).

<sup>3</sup> At a dry bulb temperature above 20°C (68°F).

<sup>20</sup> 20 Amp minimum service/20 Amp plug on a 6 ft cord.  
Temperature Control Tolerance is ±1.1°C (2°F)

The addition of accessories may impact performance or increase exterior dimensions.

Performance is based upon 60 Hz and 23.9°C (75°F) ambient air. Chambers are designed for normal, non-hazardous laboratory operating conditions. If hazardous materials are involved, please consult the factory.

Specifications subject to change without notice. Custom options are available.





## Stock Express

Time is of the essence. If you need a chamber in a short timeframe, ask your sales rep about our Stock Express options. There's a possibility the right chamber could be ready and waiting for you.



## Worldwide Service & Support

Thermotron's comprehensive service department supports your equipment purchase for years after the sale. Our worldwide service professionals are available and ready to help over the phone or in person.

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Factory-trained Field Service Engineers are located across the United States and throughout the world to assist with equipment start-up, after-delivery service, preventive maintenance, and calibration contracts. From phone support to overnight parts delivery, Thermotron can support you for the life of your equipment.



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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.

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