SE-Series Single Stage Environmental Chambers

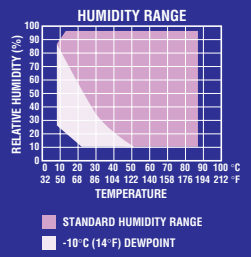
	SE-300	SE-600		SE-1000		SE-1200	
INTERIOR DIMENSIONS	24"w x 26.25"d x 28"h (61cm x 67cm x 71cm)	40"w x 26.25"d x 34"h (102cm x 67cm x 86cm)		40"w x 39.25"d x 38.25"h (102cm x 100cm x 97cm)		40"w x 39.25"d x 46"h (102cm x 100cm x 117cm)	
VOLUME	10.2 cu ft (289 liters)	20.7 cu ft (586 liters)		34.8 cu ft (986 liters)		41.8 cu ft (1,184 liters)	
EXTERIOR DIMENSIONS	35"w x 70"d x 78"h (89cm x 178cm x 199cm)	49"w x 70"d x 83"h (125cm x 178cm x 211cm)		49"w x 83"d x 87"h (125cm x 211cm x 221cm)		49"w x 83"d x 95"h (125cm x 211cm x 242cm)	
TEMPERATURE RANGE	180°C to -40°C (356°F to -40°F)	180°C to -40°C (356°F to -40°F)		180°C to -40°C (356°F to -40°F)		180°C to -40°C (356°F to -40°F)	
TEMPERATURE CONTROL	±0.3°C (±0.5°F)	±0.3°C (±0.5°F)		±0.3°C (±0.5°F)		±0.3°C (±0.5°F)	
TEMPERATURE UNIFORMITY*	±0.5°C (±0.9°F)	±0.5°C (±0.9°F)		±0.5°C (±0.9°F)		±0.5°C (±0.9°F)	
AIRFLOW	500 CFM	1,000 CFM		1,000 CFM		1,000 CFM	
WINDOW SIZE	15"w x 19"h 38cm x 48cm	15"w x 19"h 38cm x 48cm		15"w x 19"h 38cm x 48cm		15"w x 19"h 38cm x 48cm	
COMPRESSOR SIZE	2.5Hp	3.5Hp	5Hp	3.5Hp	5Hp	3.5Hp	5Hp
NOISE LEVEL**/HEATING/COOLING	60 dBA /68 dBA	60 dBA/74 dBA	60 dBA/76 dBA	60 dBA/74 dBA	60 dBA/76 dBA	60 dBA/74 dBA	60 dBA/76 dBA
PERFORMANCE CAPACITY							
COOLING AIR TEMPERATURE W/EMPTY CHAMBER							
180°C to -35°C (356°F to -31°F)	54 minutes	54 minutes	43 minutes	74 minutes	52 minutes	83 minutes	60 minutes
71°C to -35°C (160°F to -31°F)	33 minutes	35 minutes	26 minutes	46 minutes	33 minutes	53 minutes	39 minutes
85°C to -20°C (185°F to -4°F)	22 minutes	23 minutes	18 minutes	32 minutes	22 minutes	39 minutes	26 minutes
PRODUCT TEMPERATURE W/ 50 LBS (23Kg) ALUMINUM***							
71°C to -35°C (160°F to -31°F)	60 minutes	56 minutes	44 minutes	66 minutes	49 minutes	72 minutes	55 minutes
85°C to -20°C (185°F to -4°F)	46 minutes	39 minutes	33 minutes	48 minutes	39 minutes	55 minutes	44 minutes
HEATING AIR TEMPERATURE W/EMPTY CHAMBER							
-35°C to 180°C (-31°F to 356°F)	32 minutes	31 minutes	31 minutes	36 minutes	36 minutes	40 minutes	40 minutes
-20°C to 85°C (-4°F to 185°F)	13 minutes	13 minutes	13 minutes	15 minutes	15 minutes	17 minutes	17 minutes
-35°C to 71°C (-31°F to 160°F)	13 minutes	13 minutes	13 minutes	15 minutes	15 minutes	17 minutes	17 minutes
PRODUCT TEMPERATURE W/ 50 LBS (23Kg) ALUMINUM***							
-20°C to 85°C (-4°F to 185°F)	30 minutes	31 minutes	31 minutes	33 minutes	33 minutes	36 minutes	36 minutes
-35°C to 71°C (-31°F to 160°F)	30 minutes	31 minutes	31 minutes	33 minutes	33 minutes	36 minutes	36 minutes
LIVE LOAD CAPACITY							
0°C (32°F)	1250 watts	2500 watts	3000 watts	2500 watts	3000 watts	2500 watts	3000 watts
-20°C (-4°F)	500 watts	1500 watts	2000 watts	1500 watts	2000 watts	1500 watts	2000 watts
APPROXIMATE SHIPPING WEIGHT	1,360 lbs (617 kg)	1,500 lbs (680 kg)	1,700 lbs (771 kg)	1,660 lbs (753 kg)	1,860 lbs (844 kg)	1, 750 lbs (794 kg)	1,950 lbs (884 kg)
ELECTRICAL VOLTAGE (FULL LOAD AMPS WITH HUMIDITY/WITHOUT HUMIDITY							
208V/3PH/60	44/44	55/39	61/45	55/39	61/45	55/39	61/45
230V/3PH/60	40/40	55/37	60/42	55/37	60/42	55/37	60/42
460V/3PH/60	24/16	28/19	30/21	28/19	30/21	28/19	30/21
400V/3PH/50	20/14	28/19	32/24	28/19	32/24	28/19	32/24

A full range, modular humidity system can be added to any of the SE-Series Test Chambers either at the time of purchase or as a field retrofit. Performance specifications for the humidity module are characterized by a wide range, a precise uniformity, and tight control.

FULL RANGE HUMIDITY SPECIFICATIONS	
HUMIDITY RANGE	10% RH 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)
EXTENDED DEWPOINT CONDITION	-10°C (14°F)
HUMIDITY CONTROL	±2.5% RH
HUMIDITY UNIFORMITY†	±1.0% RH

† Humidity Uniformity: Standard Deviation from the mean, measured at either 85°C (185°F) @ 85%RH or 50°C (122°F) @ 20%RH.

An optional low humidity package can be added for applications requiring humidity levels lower than those covered by the full range humidity system.



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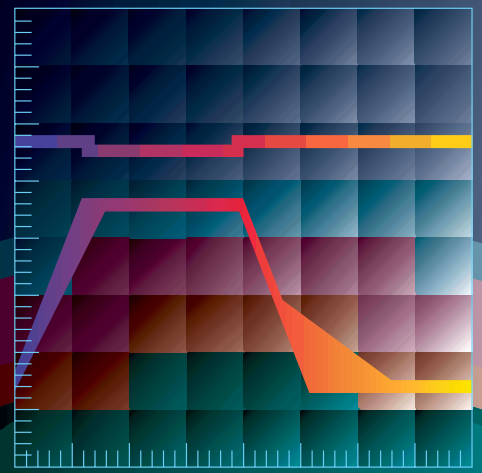

SE-Series Selection Guide

A Wise Choice

This guide is designed to provide you with the details necessary to make an intelligent buying decision. Specifications ranging from size and performance to utilities and accessories are supplied for each chamber.

Providing Value Through Leadership

The next generation in environmental testing chambers, the SE-Series paves the way for future expandability and enhanced performance. Flexibility and modularity that will accommodate increasingly demanding test results and support new product introductions. Experience and performance that will lead you into a more competitive global marketplace. These chambers truly represent tomorrow's best value, today.

Setting the Industry Standard

Raising the bar once again in environmental simulation and testing equipment, Thermotron's SE-Series chambers are available in expanded size configurations with unmatched performance characteristics. SE-Series environmental test chambers incorporate more features and benefits than any other chamber on the market. Most SE-Series chambers have earned the UL listing mark for the United States and Canada; a worldwide symbol of safety and confidence.

A New Level of Performance

Based on individual testing requirements, SE-Series chambers can be built from a large selection of compressor sizes in order to maximize performance. The end result is equipment capable of achieving very rapid temperature change rates as well as quickly reaching and controlling humidity conditions. Our airflow has been increased and optimized to provide conditioning in the center of the work-space; right in the spot where your product needs it the most. This enhanced airflow system provides better gradient control and tighter uniformity, giving you more realistic test results.

SE–SERIES SELECTION GUIDE

Capable of Performing Many Typical International Test Specs

- IEC 68-2-1, Test A
- IEC 68-2-2, Test B
- IEC 68-2-14, NB
- IEC 68-2-3, Test Ca
- IEC 68-2-30, Test Db
- IEC 68-2-38, Test Z/AD
- Mil Std 202F, Method 106E
- Mil Std 810E, Method 507.3, Procedure 1, Cycle 1
- Mil Std 810E, Method 507.3, Procedure 1, Cycle 3
- Mil Std 810E, Method 507.3, Procedure 3
- DIN and BS standards for low temp, high temp, combined low and high temp, constant atmosphere, and climatic cycling
- Various ASTM test specs for temperature and humidity
- A range of Society of Automotive Engineers (SAE) specs
- Commercial electronics test specs

Standard Accessories Included on SE-Series Test Chambers

- UL Listed to U.S. and Canadian Safety Standards (Most Models)
- Light
- Window
- Heads-up Display
- Adjustable Shelf
- Two Access Ports, One Each Side
- Electronic Refrigeration Gauges
- Swivel Casters
- Main Power Disconnect Switch
- Thermotron's Top-of-the-line 7800 Programmer/Controller
- Disk Drive
- Product Temperature Control Software
- Instrument Mounted on Door in Ergonomically Advantageous Position
- Pre-programmed Test Profiles
- Therm-Alarm™
- System Monitor
- Humidity Water Recirculation and Filtering Systems (Humidity Chambers)
- Electronic Humidity Sensor (Humidity Chambers)
- Heated Window
- Computer Interface

Optional Equipment

- Patented Modular Humidity System
- Strip Chart or Circular Chart Recorder
- ThermoTrak Software
- Dry Air Purge
- Low Humidity Packages
- Additional Access Ports
- Water-cooled Condenser
- LN2 or CO2 Boost/Back-up Cooling
- Additional Heat
- CE Compliant Models Available

FEATURE	BENEFIT
UL Listing Mark for U.S. and Canada	*Meets critical safety standards. Eliminates the need for third-party inspection and certification required in many areas.*
Patented Modular Humidity System	*Can be quickly and easily added in the future. Adapts to evolving test needs.*
Electronic Humidity Sensor	*Reduces maintenance typical of wet bulb sensors. Eliminates bothersome plumbing. Increases accuracy.*
Contemporary Styling	*Appealing high-tech appearance. Promotes efficient movement into and through the lab. Gives a showcase look to any lab.*
Utilizes Top-of-the-Line 7800 Programmer/Controller	*The latest in technology, enhances chamber control and capabilities. Easy to use and powerful.*
3 1/2" Disk Drive	*Easy and flexible means for storing and transporting data and test profiles. Can replace a traditional chart recorder.*
Sizes Ranging From 300 liters to 1,200 liters (10 cu. ft. to 42 cu. ft.)	*Conform to a broad scope of product sizes, configurations and test requirements.*
Temperature From -70°C to +180°C (-94°F to +356°F)	*Covers a wide range of temperature conditions. Provides flexibility and versatility to perform many different tests.*
Humidity From 10% RH to 98% RH	*Close control of very humid and very arid conditions as well as any level in between.*
High Performance	*Meets stringent international testing standards. Optimizes test conditions and stress on the product.*
Larger Compressors	*Choose between various compressors on larger SE-Series chambers to conform to individual demands. Rapid temperature change rates maximize environmental stress effectiveness.*
HFC Refrigerants	*HFCs provide the ultimate solution. No HCFC's used. No pending plans for regulation or phase-out. Performance has been tested and refined.*
Increased/Enhanced Airflow	*Improved accuracy and stability. Optimized for control and conditioning in the center of the workspace.*
Exhaust Air Directed Up and Out the Back	*Efficient use of floor space. Exhaust air can be conveniently vented out of the room to reduce load on lab air conditioning system.*
Convenient Service Access	*Machinery is designed to be easily accessed for service. Compartment doors and panels lift-off for full access.*
Innovation	*Electronic enhancements simplify operation. Modular design for expeditious delivery and flexibility.*
Quality	*Craftsmanship built into each element of the chamber. Attention to detail. Final test prior to shipment proves operation and performance.*
Service and Support	*Local sales and service people are factory trained. Preventive maintenance contracts and service seminars are available. Technical assistance over the telephone. All designed to provide the best support in the industry.*

SE-Series Cascade Environmental Chambers

	SE-300	SE-600		SE-1000		SE-1200	
INTERIOR DIMENSIONS	24"w x 26.25"d x 28"h (61cm x 67cm x 71cm)	40"w x 26.25"d x 34"h (102cm x 67cm x 86cm)		40"w x 39.25"d x 38.25"h (102cm x 100cm x 97cm)		40"w x 39.25"d x 46"h (102cm x 100cm x 117cm)	
VOLUME	10.2 cu ft (289 liters)	20.7 cu ft (586 liters)		34.8 cu ft (986 liters)		41.8 cu ft (1,184 liters)	
EXTERIOR DIMENSIONS	35"w x 70"d x 78"h (89cm x 178cm x 199cm)	49"w x 70"d x 83"h (125cm x 178cm x 211cm)		49"w x 83"d x 87"h (125cm x 211cm x 221cm)		49"w x 83"d x 95"h (125cm x 211cm x 242cm)	
TEMPERATURE RANGE	180°C to -70°C (356°F to -94°F)	180°C to -70°C (356°F to -94°F)		180°C to -70°C (356°F to -94°F)		180°C to -70°C (356°F to -94°F)	
TEMPERATURE CONTROL	±0.3°C (±0.5°F)	±0.3°C (±0.5°F)		±0.3°C (±0.5°F)		±0.3°C (±0.5°F)	
TEMPERATURE UNIFORMITY*	±0.5°C (±0.9°F)	±0.5°C (±0.9°F)		±0.5°C (±0.9°F)		±0.5°C (±0.9°F)	
AIRFLOW	500 CFM	1,000 CFM		1,000 CFM		1,000 CFM	
WINDOW SIZE	15"w x 19"h (38cm x 48cm)	15"w x 19"h (38cm x 48cm)		15"w x 19"h (38cm x 48cm)		15"w x 19"h (38cm x 48cm)	
COMPRESSOR SIZE	2.5 - 2.5Hp	3.5 - 3.5Hp	6 - 6Hp	3.5 - 3.5Hp	6 - 6Hp	3.5 - 3.5Hp	6 - 6Hp
NOISE LEVEL** HEATING/COOLING	60 dBA/68 dBA	60 dBA/74 dBA	60 dBA/76 dBA	60 dBA/74 dBA	60 dBA/76 dBA	60 dBA/74 dBA	60 dBA/76 dBA
PERFORMANCE CAPACITY							
COOLING AIR TEMPERATURE W/EMPTY CHAMBER							
180°C to -65°C (356°F to -85°F)	75 minutes	66 minutes	50 minutes	76 minutes	56 minutes	82 minutes	62 minutes
71°C to -65°C (160°F to -85°F)	48 minutes	36 minutes	30 minutes	41 minutes	36 minutes	46 minutes	40 minutes
85°C to -40°C (185°F to -40°F)	35 minutes	25 minutes	22 minutes	32 minutes	26 minutes	37 minutes	30 minutes
PRODUCT TEMPERATURE W/50 LBS (23Kg) ALUMINUM ***							
71°C TO -65°C (160°F TO -85°F)	90 minutes	56 minutes	48 minutes	60 minutes	53 minutes	62 minutes	56 minutes
85°C TO -40°C (185°F to -40°F)	72 minutes	48 minutes	40 minutes	53 minutes	46 minutes	55 minutes	49 minutes
HEATING AIR TEMPERATURE W/EMPTY CHAMBER							
-65°C to 180°C (-85°F to 356°F)	36 minutes	37 minutes	37 minutes	43 minutes	43 minutes	47 minutes	47 minutes
-40°C to 85°C (-40°F to 185°F)	16 minutes	16 minutes	16 minutes	19 minutes	19 minutes	21 minutes	21 minutes
-65°C to 71°C (-85°F to 160°F)	17 minutes	17 minutes	17 minutes	20 minutes	20 minutes	22 minutes	22 minutes
PRODUCT TEMPERATURE W/50 LBS (23Kg) ALUMINUM ***							
-40°C to 85°C (-40°F to 185°F)	38 minutes	38 minutes	38 minutes	41 minutes	41 minutes	44 minutes	44 minutes
-65°C to 71°C (-85°F to 160°F)	40 minutes	40 minutes	40 minutes	44 minutes	44 minutes	48 minutes	48 minutes
LIVE LOAD CAPACITY							
0°C (32°F)	1250 watts	2500 watts	3000 watts	2500 watts	3000 watts	2500 watts	3000 watts
-54°C (-65°F)	750 watts	1500 watts	2000 watts	1500 watts	2000 watts	1500 watts	2000 watts
APPROXIMATE SHIPPING WEIGHT	1,330 lbs (603 kg)	1,680 lbs (762 kg)	1,740 lbs (789 kg)	1,840 lbs (834 kg)	1,900 lbs (862 kg)	1,930 lbs (875 kg)	1,990 lbs (902 kg)
ELECTRICAL VOLTAGE (FULL LOAD AMPS WITH HUMIDITY/WITHOUT HUMIDITY)							
208V/3PH/60HZ	45/45	58/54	63/63	58/54	63/63	58/54	63/63
230V/3PH/60HZ	41/41	57/51	58/60	57/51	58/60	57/51	58/60
460V/3PH/60HZ	28/19	29/26	29/30	29/26	29/30	29/26	29/30
400V/3PH/50HZ	22/18	27/24	44/35	27/24	44/35	27/24	44/35

* **Temperature Uniformity: Standard Deviation from the mean, measured at either -25°C (-13°F) or 100°C (212°F).**

** **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.**

*** **Description of Standard Test Load: 50 lbs (23 Kg) comprised of ten 1/8 inch aluminum sheets, 20½"w x 20½"h (52cm x 52cm), in a vertical orientation, spaced 2" (5cm) apart, with the Product Temperature Control thermocouple on the center sheet.**

Specifications subject to change. (The addition of optional accessories may impact performance.)

Performance is based upon operation at 24°C (75°F) ambient air and may vary slightly at other ambient temperatures. Voltages below those specified may affect performance. Chambers are designed for use under normal laboratory conditions. For other applications, please consult factory.