

TEMPERATURE+HUMIDITY

## S/SM-SERIES ENVIRONMENTAL TEST CHAMBERS

**Note: Data Sheet For Reference Only - Actual Chamber May Vary Depending on Model Year, Options, Controllers, and Individual Configuration**



Thermotron's S-Series Environmental Test Chambers deliver 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 chamber sizes and performance configurations, Thermotron's S-Series Environmental Test Chamber is the ideal choice for quality and customizable simulated environmental testing.

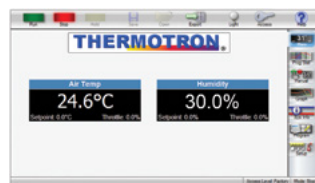
S-Series Environmental Test Chambers are designed in multiple sizes, ranging from 4-32 cubic feet, and performance configurations. Both temperature only (S models) and temperature humidity (SM models) chambers utilize hermetically sealed compressors that provide moderate temperature change rates while consuming less power than comparable test chambers. Advanced features, such as an Electronic Humidity Sensor and Product Temperature Control, add value, increase efficiency, and reduce test chamber maintenance.

# FEATURES



## 8200+ Controller

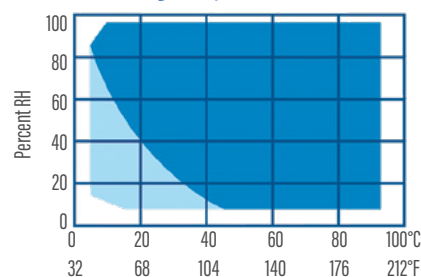
S-Series Environmental Test Chambers feature the robust and intuitive 8200+ Controller. The controller's software and hardware are designed by Thermotron engineers, specifically for programming and controlling environmental chambers. Operation and data collection are easy with a 7-inch color touchscreen 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.



# GENERAL SPECIFICATION S/SM Cascade Systems

Temperature Range	Temperature Only (S Models)					-70°C to 180°C (-94°F to 356°F)						
	Temperature and Humidity* (SM Models)					-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		
Workspace Dimensions — W x D x H												
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			
Exterior Dimensions — W x D x H												
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			
Volume												
Cubic Feet	4		8		16		27		32			
Liters	113		227		453		764		906			
Temperature Control Tolerance	±0.3°C (±0.5°F)											
Temperature Uniformity**	±0.7°C (±1.3°F)											
Shipping Weight (Approx.)												
Pounds	700	800	875	1,320	1,395	1,800	1,875	1,975	2,050			
Kilograms	318	363	397	599	633	816	851	896	930			
Cooling Change Rates — Minutes												
180°C to -65°C (356°F to -85°F)	50	66	72	68	80	85	98	93	68	106	74	
71°C to -65°C (160°F to -85°F)	30	44	54	50	54	58	64	65	48	71	51	
85°C to -40°C (185°F to -40°F)	14	26	32	28	31	39	42	45	21	48	23	
Heating Change Rates — Minutes												
-65°C to 180°C (-85°F to 356°F)	27	42	43	52	54	66	68	71	38	73	40	
-65°C to 71°C (-85°F to 160°F)	11	16	17	22	22	27	28	30	12	31	13	
-40°C to 85°C (-40°F to 185°F)	10	15	16	20	21	25	26	28	10	29	11	
Electrical Service — Full Load Amps												
208/1/60	30	29	29	50	50	50	50	50	—	50	—	
208/3/60	22	22	22	35	35	35	35	35	47	35	53	
230/1/60	30	30	30	49	49	49	49	49	—	49	—	
230/3/60	23	23	23	35	35	35	35	35	47	35	53	
460/3/60	—	—	—	15	17	15	17	15	24	17	27	
220/1/50	25	24	27	—	—	—	—	—	—	—	—	
400/3/50	12	11	11	17	21	17	21	17	24	21	24	
Live Load Capacity — Watts												
-18°C (0°F)	600		550		1,000				1,500		1,000	1,500
-40°C (-40°F)	400		350		700				1,050		700	1,050
-54°C (-65°F)	300		200		400				600		400	600
Noise Level <sup>1</sup> — dBA												
Heating	60			60								
Cooling	68			70								

## 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.

■ Standard Humidity Range

■ Optional Low Humidity Package

# GENERAL SPECIFICATION

## S/SM Single-Stage Systems

Temperature Range	Temperature Only (S Models)		-40°C to 180°C (-40°F to 356°F)	
	Temperature and Humidity* (SM Models)		-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.

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

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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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.