

THERMOTRON®

SE-3300 TEST CHAMBERS

Engineered to provide the most reliable test results in the solar marketplace, the SE-3300 Chambers accommodate PV panels in excess of six feet long.

■ High Performance Product Testing

Thermotron's SE-3300 Environmental Test Chambers incorporate a wide range of application-specific compressor selections ranging from 6 to 20 Hp and are capable of providing very rapid product temperature change rates. Faster product temperature transitions reduce test cycle times and boost lab productivity. Whether testing needs are driven by design qualification, accelerated life testing, or certification and type approval, Thermotron Solar Panel Test Chambers provide the exact environment to help solar panel manufacturers to prove and improve reliability.

■ 8800 Programmer Controller

With a brilliant 12" color touch screen display, the easy-to-use 8800

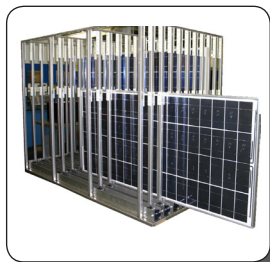


Programmer Controller has the most common solar test specifications pre-programmed into memory. The 8800 is also equipped with a 2nd humidity sensor input to allow the use of a redundant sensor. If the primary sensor drifts, the redundant sensor can take over, preventing the loss of valuable test time during critical long term Damp Heat and Humidity Freeze test profiles.

■ Synchronized Power Supply Control

The 8800 can fully control and record up to 20 power supplies for biasing modules during temperature and humidity testing. It can also automatically turn power supplies on and off at desired temperature humidity conditions as required by IEC test specifications. The voltage and current of each power supply is recorded in the 8800 Paperless Recorder along with air temp, product temp, and relative humidity.

■ Solar Panel Test Fixtures



Chambers can be outfitted with fixturing solutions specifically developed for easy loading and unloading a chamber full of solar panels. These racks are constructed of durable, long-lasting, lightweight materials that stand up to the rigors of scorching heat and sub-zero cold temperatures as well as high humidity conditions. Fixturing can adjust to safely support panels of different configurations, optimizing

airflow and environmental consistency throughout the entire workspace.



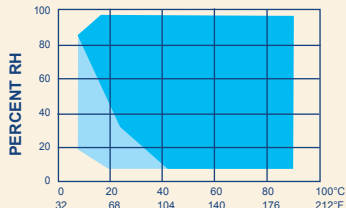
Standard Features for all Models

- 48" wide x 80" deep x 52" high (1.2m x 2m x 1.3m)
- 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.
- Adjustable Stainless Steel Shelf Increases Product Loading Capacity.

Optional Features

- Modular Humidity System.
- Low Humidity System.
- Humidity Water Recirculation System (Humidity Models Only).
- Humidity Water Purification System (Humidity Models Only).
- Remote Conditioning Blower.
- Universal Port.
- Product Loading Carts.
- Dry Air Purge System.
- Liquid Nitrogen Boost and Extra Heat.
- Air or Water-Cooled Condenser.
- Additional Access Ports.
- All features subject to change without notice. CE compliant

SE-3300 HUMIDITY RANGE



■ STANDARD HUMIDITY RANGE

■ -10°C (14°F) DEWPOINT

FULL RANGE HUMIDITY SPECIFICATIONS*

Humidity Range ³	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)
Extended Dewpoint Condition	-10°C (14°F)
Humidity Control ⁴	±2.5% RH
Humidity Uniformity ⁵	±1.5% RH

* Except 15hp Cascade Chamber models

A full range, modular humidity system can be added to 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, precise uniformity and tight control.

- 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.
- Limited by a +7°C (+45°F) minimum dew point temperature and a maximum dry bulb temperature of +88°C (+190°F).
- At a dry bulb temperature above +20°C (+68°F).
- Based upon temperature uniformity specifications.

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.

SE-3300 SPECIFICATIONS

CASCADE CHAMBERS

Model	SE-3300-6-6	SE-3300-10-10	SE-3300-15-15	SE-3300-20-20
Interior Dimensions — W x D x H Inches / Centimeters	All Models 48 x 80 x 52 / 122 x 203 x 132			
Volume — Cubic Ft / Liters	All Models 116 / 3,272			
Exterior Dimensions — W x D x H Inches / Centimeters	All Models 56 x 124 x 95 / 142 x 315 x 241			
Temperature Range	All Models 180°C to -70°C (356°F to -94°F)			
Temperature Control	All Models ±0.3°C (±0.5°F)			
Temperature Uniformity ¹	All Models ±0.7°C (±1.3°F)			
Airflow	All Models 2,000 cfm			
Window Size — W x H Inches / Centimeters	All Models 15 x 19 / 38 x 48			
Compressor Size — Hp	Two 6	Two 10	Two 15	Two 20
Noise Level ² — dBA Heating / Cooling	60 / 76	60 / 76	60 / 76	60/76
Approximate Shipping Weight — Lbs / Kg	3,065 / 1,390	3,325 / 1,508	3,400 / 1,542	4,170 / 1,891
Cooling Performance Capacity — Minutes Air Temperature (Empty Chamber)				
180°C to -65°C (356°F to -85°F)	90	53	40	30
71°C to -65°C (160°F to -85°F)	57	32	27	17
85°C to -40°C (185°F to -40°F)	45	23	17	11
Cooling Product Temperature — Minutes 50Lb / 23Kg Aluminum				
71°C to -65°C (160°F to -85°F)	73	44	36	33
85°C to -40°C (185°F to -40°F)	64	37	32	29
Heating Performance Capacity — Minutes Air Temperature (Empty Chamber)				
-65°C to 180°C (-85°F to 356°F)	68	32	18	20
-65°C to 71°C (-85°F to 160°F)	33	15	10	10
-40°C to 85°C (-40°F to 185°F)	31	14	9	9
Heating Product Temperature — Minutes 50Lb / 23Kg Aluminum				
-65°C to 71°C (-85°F to 160°F)	61	36	32	32
-40°C to 85°C (-40°F to 185°F)	57	34	31	31
Live Load Capacity — Watts, Temp. Mode				
0°C (32°F)	4500	6000	6000	6000
-54°C (-65.2°F)	3000	4000	4000	4000
Electrical Service — No Humidity / Humidity				
208 / 3 / 60 (Full Load Amps)	71 / 71	89 / 89	123 / 123	180 / 180
230 / 3 / 60 (Full Load Amps)	67 / 67	86 / 86	119 / 119	171 / 171
460 / 3 / 60 (Full Load Amps)	33 / 33	43 / 43	59 / 59	86 / 86
400 / 3 / 50 (Running Load Amps)	34 / 34	46 / 46	62 / 62	90 / 90
Inlet Water — Gal / Liters per Minute				
29°C / 85°F	Air-Cooled	16 / 60	24 / 91	40 / 151
18°C / 65°F	Air-Cooled	9 / 24	14 / 53	22 / 83
	Air-Cooled	7.5 / 28	11 / 42	18 / 68
	Air-Cooled	6 / 23	8 / 31	14 / 53

Performance is based upon laboratory ambient conditions of 23.9°C (75°F), and may vary slightly at other temperature and humidity levels

Chambers are designed for use under normal laboratory operating conditions. For other applications, please consult Thermotron.

It is Thermotron's understanding that the unit will be used in a non-hazardous environment. The unit is not designed for use with or for the purpose of processing hazardous materials. If hazardous materials are involved, please consult the factory for an alternative quote for a properly designed unit.

The addition of accessories may impact performance.

Specifications subject to change without notice.

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