THERMOTRON
S-SERIES TEMPERATURE TEST CHAMBERS

For Quality Refurbished -Warranteed
Test Equipment Contact Us At:
323-770-0634 800-574-2748
sales@LRE.com www.LRE.com

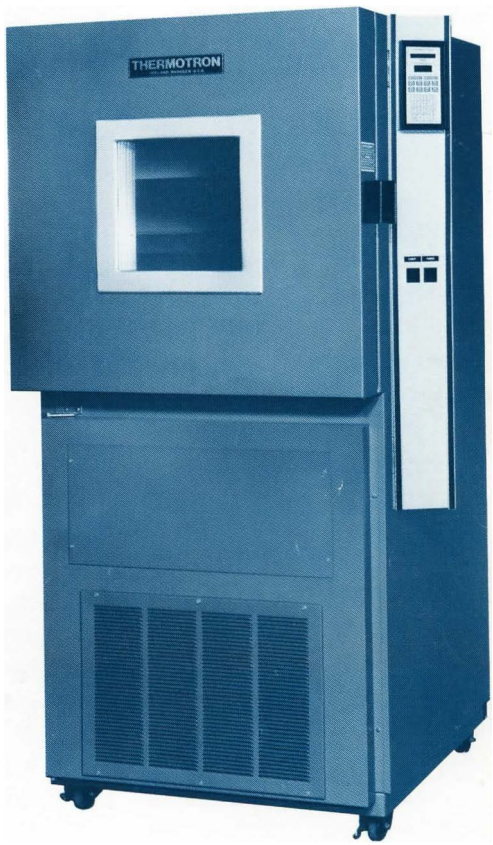
LR
ENVIRONMENTAL
EQUIPMENT & TEST LAB

Note: Data Sheet for Reference Only – Actual Chamber will vary depending on Model Year and Individual Configuration

- **Standard models available in 4, 8, 16 and 32 ft.³**
- **Standard temperature ranges from –100°F to +350°F (–73°C to +177°C)**

- **Immediate operation with suitable power connection**

- **Many standard features include:**
- **Programmable temperature controller with digital displays.**
- **Six-pane thermal window**
- **Interior light**
- **Cascade refrigeration system**
- **Stainless steel access port with thermal plug**
- **High-volume air circulation fan**
- **Casters**



Cabinet

- The entire chamber is built of high-quality steel. No wood, fiberboard, plastic, or similar materials are used in the construction.
- The interior is constructed of 304 Series, high nickel content, nonmagnetic stainless steel with 2B finish. The liner is heliarc welded for hermetic sealing to prevent moisture migration to insulation space.
- A floating liner allows minimum thermal contact between the interior and the exterior of the chamber.
- Breaker strips are all stainless steel.
- The exterior shell is constructed of die-formed, 16-gauge galvaneal, then finished in "Thermotron Blue" lacquer, Federal Standard #595-25184, sprayed over a cleaned and primed surface.
- Nonsettling insulation has a low "K" factor of .26. It is capable of being exposed to temperatures in excess of +350°F (+177°C).
- Gaskets are extruded, designed to be used with seamless corners. Two separate gaskets are installed to insure minimum heat loss from the chamber—a silicone inner gasket and a vinyl outer gasket.
- The circulator motor is located outside the chamber. It has a solid stainless steel shaft; no extensions are used. Ball bearings are lubricated for life and

located out of the conditioned area.
- A hinged instrument panel makes service and calibration easier.
- All hardware is adjustable.

Instrumentation

- Fully programmable single mode controller with proportional-integral algorithm for time proportioned output.
- Chamber operation via manual setpoint mode or previously entered program.
- Input and indication of temperature in °C or °F.
- 10 character alphanumeric display, 4 digit numeric display, and 10 chamber status indicators.
- Internal RAM storage for up to 10 programs with full program review, edit, expand, and delete capabilities
- Program entry by response to English language prompts via 23 character keypad.
- Setpoint and display resolution of 1° C or 1° F, typical measuring accuracy of 0.25% of span.
- Other features include software calibration, alarm and event outputs, lithium battery back-up, keyboard lockout and timed soak.

Electrical System

- The chamber has a solid state, photo-isolated, zero-voltage-switching, heat-power relay.
- All wires are identified.
- The chamber has a fusible link for heater cut out which trips at 460°F (+238°C). Product safety devices are also available as options.
- All motor electrical components, switches, and fuses are located in a self-contained panel.
- Channel wiring is contained in "panel channel" and is accessible without completely unlacing or unthreading any wires.
- Master heat contactor is provided.
- A step-down transformer provides 115 volts for the control circuit.
- Identification tabs are provided on pilot lights and switches for all major circuits.
- Wiring meets the National Electrical Code.

Refrigeration

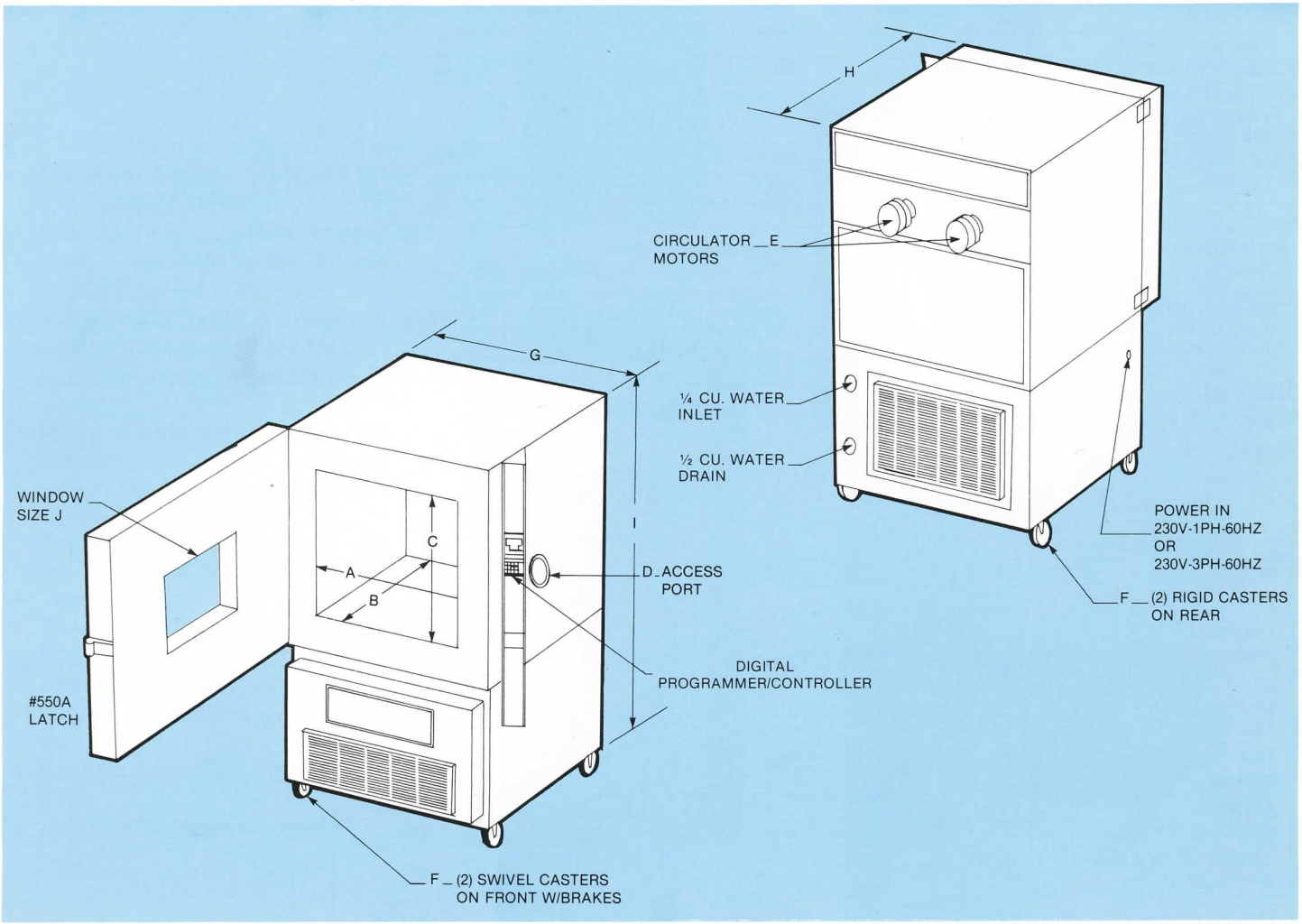
- Our cascade system has all silphosed or silver soldered joints—no soft solder is used.
- The system is air cooled and capable of starting under various ambient conditions.
- The cascade condensers are manufactured by us to insure that they will meet our exacting standards.
- Cooling coils are heavy-duty copper tubing with specially designed aluminum fins.
- The condenser and vapor tank are ASME certified.
- The system is sealed and balanced to achieve the ultimate in performance and reliability.
- Standard Refrigerants 13 and 502 are used. They are available at any refrigeration supply house.
- A liquid-injection circuit cools the compressor to insure long compressor life.

Safety Features

- Overload protection is inherent, preventing the compressors from exceeding specification limits.
- Over temperature runaway protection provided by way of a fusible link which trips at +460°F (+238°C).
- All machinery is enclosed for personnel safety.
- A fan guard prevents contact with the circulator fan.

Specifications subject to change.

Thermotron S Series
Temperature Test Chamber
Chamber Dimensions



THERMOTRON MODEL NUMBER	WORKSPACE DIMENSIONS			PORT*	QTY FANS	CASTERS SIZE	OVERALL CHAMBER MOVE-IN DIMENSIONS			WINDOW GLASS DIMENSIONS J IN/CM
	(A) WIDE IN/CM	(B) DEEP IN/CM	(C) HIGH IN/CM	D	MOTORS E	F	(G) WIDE IN/CM	(H) DEEP IN/CM	(I) HIGH** IN/CM	
S-4	20 / 51	20 / 51	20 / 51	2"	1	3"	32 / 81	40½ / 103	66 / 168	12x12 / 30x30
S-8	24 / 61	24 / 61	24 / 61	2"	1	3"	33 / 84	44½ / 113	71 / 178	12x12 / 30x30
S-16	30 / 76	30 / 76	30 / 76	4"	2	Optional	43 / 109	35¾ / 142	75 / 191	20x20 / 51x51
S-32	38 / 96	38 / 96	38 / 96	6"	2	Optional	51 / 130	63¾ / 162	83 / 211	20x20 / 51x51

*All standard ports are located center workspace, right side.

**Add 3" to height for casters (S-16 & 32 only)

Thermotron S Series Temperature Test Chamber Performance

THERMOTRON MODEL NUMBER	S-4	S-8	S-16	S-32
TEMP PULL DOWN FROM +75°F (+23°C) AMBIENT WITHOUT LOAD	MINUTES	MINUTES	MINUTES	MINUTES
−40°F (−40°C)	25	25	15	20
−65°F (−53.9°C)	30	40	30	45
−90°F (−67.8°C)	—	60	—	90
−100°F (−73.3°C)	50	—	60	—
TEMP HEAT-UP FROM 75°F AMBIENT WITHOUT LOAD				
+240°F (+116°C)	15	20	25	30
+350°F (+177°C)	25	30	55	60
CAPACITY FOR HOLDING WATTS LIVE LOAD				
0°F (−17.8°C)	600	550	1000	1000
−40°F (−40°C)	**400**	**350**	**700**	**700**
−65°F (−53.9°C)	300	200	400	400

Performance:
Performance is based on 60 Hz. operation and +75°F (23.9°C) ambient air.
Performance may vary slightly; it depends on your ambient conditions.

Temperature Control:
The chamber conditioning and circulating equipment will enable a temperature stability within ±2°F dry bulb temperatures from control point after stabilization at the control sensor.

Thermotron S Series Temperature Test Chamber Specifications

THERMOTRON MODEL NUMBER		S-4	S-8	S-16	S-32
WORKSPACE VOLUME	LITERS	113	226	453	906
	CU. FT.	4	8	16	32
VOLTAGE (Please Specify)		230/1/60 OR 230/3/60	230/1/60 OR 230/3/60	230/1/60 OR 230/3/60	230/1/60 OR 230/3/60
RECOMMENDED MINIMUM SERVICE AMPS AT 230 & 106	1PH	40	40	50	50
	3PH	30	30	40	40
TEMPERATURE RANGE	°F	−100 to +350	−90 to +350	−100 to +350	−90 to +350
	°C	−73.3 to +177	−67.8 to +177	−73.3 to +177	−67.8 to +177
APPROX. SHIPPING WEIGHT	LB	700	800	1320	1800
	KG	317	363	599	816
CHAMBER HEATER WATTAGE (KW)		2	2	3.5	3.5
COMPRESSOR SIZE		(2) 1 HP CASCADE SYSTEM	(2) 1 HP CASCADE SYSTEM	(2) 2 HP CASCADE SYSTEM	(2) 2 HP CASCADE SYSTEM
CIRCULATOR MOTOR		(1) 1/15 HP 3000 RPM	(1) 1/15 HP 3000 RPM	(2) 1/15 HP 3000 RPM	(2) 1/15 HP 3000 RPM
CASTERS		(2) 3" RIGID (2) 3" W/BRACE	(2) 3" RIGID (2) 3" W/BRACE	OPTIONAL	OPTIONAL
WINDOW	IN	12x12	12x12	20x20	20x20
	CM	30x30	30x30	51x51	51x51
ACCESS PORT		(1) 2" RIGHT SIDE CENTER WORKSPACE	(1) 2" RIGHT SIDE CENTER WORKSPACE	(1) 4" RIGHT SIDE CENTER WORKSPACE	(1) 6" RIGHT SIDE CENTER WORKSPACE

Chamber Options

1. Access ports w/plugs (additional to standard)
2. Boost System (CO_2)
3. Boost System (LN_2)
4. Casters (Standard on S-4 & S-8)
5. Electrical Disconnect Switch
6. Glove Ports, 6" dia.
7. Refrigeration Gauges
8. Shelves, Stainless Steel
9. Transformers (for other than 230 volt power)

Controller Options

1. Real Time Clock
2. Printer Output
3. Analog output for chart recording
4. GPIB or RS-232 computer interface

Used Refurbished - Warranteed Test Chambers Available at LR Environmental 323-770-0634 800-574-2748
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