

TE-140 Temperature Chamber Specifications

Temperature Range

-73°C to +175°C

Control Tolerance

±0.5°C (±0.2°C Typical) (Short-term variations measured at the control sensor after stabilization)

Uniformity

±0.5°C (Variations throughout the chamber after stabilization)

| Cool Down Transition Time* | | | | | | |
|----------------------------|----------|---------|--------|--------|--------|----------|
| Start Temp | End Temp | | | | | |
| | +23°C | 0°C | -40°C | -55°C | -65°C | -73°C |
| +23°C | ----- | 4 min | 18 min | 25 min | 33 min | Ultimate |
| +50°C | 5 min | 10 min | 25 min | 34 min | 42 min | Ultimate |
| +85°C | 12 min | 18 min | 31 min | 38 min | 45 min | Ultimate |
| +150°C | 25 min | 32 min | 45 min | 51 min | 58 min | Ultimate |
| Heat Up Transition Time* | | | | | | |
| Start Temp | End Temp | | | | | |
| | +23°C | +50°C | +85°C | +125°C | +150°C | +175°C |
| +23°C | ----- | 1.5 min | 7 min | 14 min | 20 min | Ultimate |
| 0°C | 1.5 min | 3.5 min | 13 min | 20 min | 23 min | Ultimate |

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|-------|--------|--------|--------|--------|--------|----------|
| -40°C | 6 min | 11 min | 17 min | 24 min | 30 min | Ultimate |
| -55°C | 8 min | 13 min | 19 min | 26 min | 32 min | Ultimate |
| -65°C | 10 min | 14 min | 21 min | 28 min | 34 min | Ultimate |

Rate Of Change

To calculate rate of change for a particular condition, take the difference between the Start Temp and End Temp and divide by the Transition Time.

Cool Down Example: From +85°C to -40°C = 125°C / 31 min = 4.03°C/min.

Heat Up Example: From -40°C to +85°C = 125°C / 17 min = 7.35°C/min.

***Note:** Transition times are measured after a 2 hour soak at the respective start temperature with an empty chamber, as indicated on the temperature controller, 23°C ambient. Measured with setpoint beyond the start and end temperatures. Does not include the effect of proportional band when approaching setpoint. Performance is reduced by 17% with 50 Hz input power.

Live Load Capacity

| +23°C | 0°C | -40°C | -55°C | -65°C |
|-------------|-----------|-----------|-----------|-----------|
| 1,000 Watts | 800 Watts | 500 Watts | 400 Watts | 300 Watts |

Refrigeration and Heating System

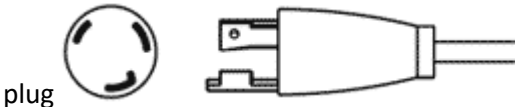
| | |
|-------------------------------|---|
| High Stage Refrigerant | R-404A (Dupont HP-62) |
| Low Stage Refrigerant | R-508B (Dupont SUVA-95) |
| Compressors | 1.5 HP x 1.5 HP Tecumseh hermetic compressors in a cascade configuration. |
| Condenser | Air Cooled |

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| Heat of Rejection | 14,800 BTUH (maximum rated chamber load at maximum cooling rate from high temperature soak) |
| Heater Power | 1,500 Watts (at 208 V input) |
| Air Flow | 450 cfm |

Instrumentation

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| Temperature Controller | Watlow F4T Touch Screen Controller with RS-232, Ethernet interface, 4.3" color graphic touch screen, OR... Watlow F4 Controller with RS-232 interface, LED readout of temperature, LCD display of other parameters. |
| Limit Controller | Independent high and low temperature limits. Triggers an audible alarm and shuts down the chamber. Relay contacts provide a safety power interlock for test sample. |

Input Power Requirements

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|---|---|
| Input Voltage | 208 V -5/+10%, 1 PH, or 230 V \pm 10%, Single Phase, 60 Hz Max Current Draw 25 A; Required Service 30 A |
| Power Cord and Plug | Power cord, 14-feet, with a molded NEMA L6-30P  plug |
| Operation at 50 Hz requires internal transformer option TE-0725. Cooling performance is reduced 17% at 50 Hz. | |

Physical Characteristics and Safety

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|------------------------------------|--|
| Inside Dimensions | 22"W x 18"H x 18"D (4 cubic feet) |
| Outside Dimensions | 30"W x 64"H x 42"D (nominal) Door latch adds 3" to width on right side. |
| Minimum Installed Clearance | 18" from the left and right side 24" from the rear |

| | |
|----------------------------|--|
| Window Viewing Area | 13.5"W x 11.5"H |
| Access Ports | 4" Port on left and right side (two total) Supplied with silicone foam plugs |
| Weight | Chamber Weight: 700 pounds Shipping Weight: 809 pounds |
| Sound Level | 62 dBA in cooling mode (A-weighted, measured 36" from the front surface, 63" from the floor, in a free-standing environment) |

NOTE: Performance is typical and based on operation at 23°C (73°F) ambient and nominal input voltage. Designed for use in a normal conditioned laboratory. Operation at higher ambient temperatures may result in decreased cooling performance. Additional ports and shelves will also affect performance. Operation above 30°C (85°F) or below 16°C (60°F) ambient is not recommended. Performance is reduced by 17% at 50 Hz input power.

Due to continuous product development, specifications are subject to change without notice.