

Model 1016H-2 Temperature/Humidity 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

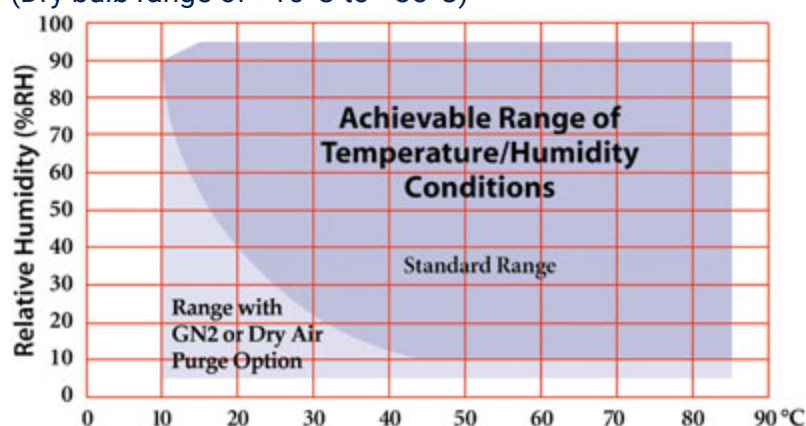
±1.0°C (Variations throughout the chamber after stabilization)

Humidity Range

Standard Range: 10% to 95% (Limited by a 6°C dew point and maximum dry bulb of +85°C)

With optional GN2 Purge or Dry Air Purge: 5% to 95%

(Dry bulb range of +10°C to +85°C)



NOTE: Ability to reach RH extremes may be limited by the humidity sensor accuracy. Low Dew Point conditions can only be achieved when starting with a clean, dry chamber.

Control Tolerance

±3% RH max., ±1% RH typical at 85% RH (Short-term variations measured at the control sensor after stabilization)

Display Resolution

0.1% RH

Humidity Sensor

Dynamic capacitive type (no wet wicks required)

Cool Down Transition Time (empty, uncontrolled humidity mode)*

	End Temperature					
	+23°C	0°C	-20°C	-40°C	-55°C	-65°C
Time from +23°C: °C/minute:	—	4 min 5.8 °C/min	10 min 4.3°C/min	18 min 3.5°C/min	27 min 2.9°C/min	35 min 2.7°C/min
Time from +85°C: °C/minute:	13 min 4.8°C/min	18 min 4.3°C/min	28 min 3.4°C/min	38 min 3.3°C/min	48 min 2.9°C/min	60 min 2.5°C/min
Time from +150°C: °C/minute:	27 min 4.7°C/min	34 min 4.4°C/min	44 min 3.9°C/min	54 min 3.5°C/min	63 min 3.3°C/min	73 min 2.9°C/min

Heat Up Transition Time (empty, uncontrolled humidity mode)*

-40°C to +85 °C @ 208V input	28 minutes (4.5°C/minute)
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***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 end temperatures with an instantaneous step change in Set Point without a controlled

ramp-rate. Does not include the effect of proportional band when approaching setpoint. Performance is reduced by 17% with 50Hz input power.


Live Load Capacity (uncontrolled humidity mode)

+23°C	0°C	-20°C	-40°C	-55°C	-65°C
2,250 Watts	1,890 Watts	1,475 Watts	1,100 Watts	800 Watts	540 Watts

Refrigeration and Heating System

High Stage Refrigerant	R-404A (Dupont HP-62)
Low Stage Refrigerant	R-508B (Dupont SUVA-95)
Compressors	2 HP x 2 HP Tecumseh compressors in a cascade configuration
Condenser	Air Cooled
Heat of Rejection	17,485 BTUH (maximum rated chamber load at maximum cooling rate from high temperature soak)
Heater Power	2,820 Watts @ 208 V input; 3750 Watts @ 240 V input
Air Flow	830 cfm

Instrumentation

Temp/Humidity 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.	
Chart Recorder	(Optional) Honeywell DR4300 Series. Two pen, 10" circular chart. Mounts in lower front door.	

Input Power Requirements

	Phase	Maximum Current Draw	Minimum Service
230 V ±10%, 60 Hz	1 PH	36 A	45 A
	3 PH	24 A	30 A
208 V -5/+10%, 60 Hz	1 PH	33 A	45 A
	3 PH	22 A	30 A

Input may be configured for single or three phase in the field by changing jumpers. Three phase load is semi-balanced. Call for other voltages or 50 Hz operation. Performance is reduced by 17% at 50 Hz.

Customer power source must be hard-wired to the chamber by a qualified electrician. Power cord and plug is not included.

Physical Characteristics and Safety

Inside Dimensions	30" W x 30" H x 30" D (15.6 cubic feet) 762 mm W x 762 mm H x 762 mm D (442 liters)
Outside Dimensions	38" W x 78.5" H x 56" D (nominal) 914 mm W x 1994 mm H x 1422 mm D 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	18" W x 12" H
Access Ports	4" Port on left and right side (two total). Supplied with foam plugs.
Weight	Chamber Weight: 1,130 pounds Shipping Weight: 1,280 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.

Due to continuous product improvements, specifications subject to change without notice.