

Model 123H Temperature/Humidity Chamber - Specifications

Temperature Range

-68°C to +175°C

Control Tolerance

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

Uniformity

±1°C (Variations throughout the chamber after stabilization)

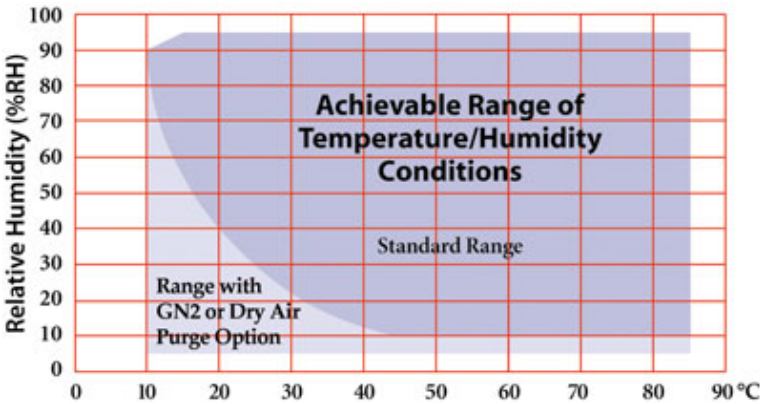
Humidity Range

Standard Range: 10% to 95%

(Limited by a 6°C dewpoint and maximum dry bulb of +85°C)

With GN2 Purge or optional 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 (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* (uncontrolled humidity mode)

Start Temp	End Temp					
	+23°C	0°C	-40°C	-55°C	-65°C	-68°C
+23°C	-----	6 min	31 min	51 min	68 min	Ultimate
+50°C	7 min	16 min	44 min	62 min	82 min	Ultimate
+85°C	18 min	28 min	54 min	82 min	101 min	Ultimate
+150°C	43 min	54 min	87 min	108 min	129 min	Ultimate

Heat Up Transition Time* (uncontrolled humidity mode)

Start Temp	End Temp					
	+23°C	+50°C	+85°C	+125°C	+150°C	+175°C
+23°C	-----	2 min	12 min	24 min	33 min	Ultimate

0°C	3 min	9 min	18 min	32 min	41 min	Ultimate
-40°C	9 min	16 min	25 min	39 min	48 min	Ultimate
-55°C	14 min	18 min	31 min	44 min	53 min	Ultimate
-65°C	15 min	21 min	32 min	45 min	54 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 / 54 min = 2.3°C/min.

Heat Up Example: From -40°C to +85°C = 125°C / 25 min = 5.0°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. Measured at nominal line voltage of 120V, 60 Hz. Performance is reduced on 123H-EX 50 Hz export versions by 17%.

Live Load Capacity (uncontrolled humidity mode)

+23°C	0°C	-40°C	-55°C	-65°C
500 Watts	400 Watts	225 Watts	175 Watts	100 Watts

Refrigeration and Heating System

High Stage Refrigerant	R-404A (Dupont HP-62)
Low Stage Refrigerant	R-508B (Dupont SUVA-95)
Compressors	1/2 HP x 1/3 HP Tecumseh hermetic compressors in a cascade configuration.
Condenser	Air Cooled
Heat of Rejection	5,000 BTUH (maximum rated chamber load at maximum cooling rate from high temperature soak)
Air Heater Power	1,000 Watts (500 Watts when compressors are running)
Humidifier Heater Power	750 Watts

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. 24-hour rotation.	

Input Power Requirements

Input Voltage	123H North America Version: 120 V nominal (110 to 126 VAC), 60 Hz, 1 PH Max Current Draw 18 A, Recommended Minimum Service 20 A 123H-EX Export Version: 230V nominal (220 to 240 VAC), 50 Hz, 1 PH Max. Current Draw 9 A, Recommended Minimum Service 13 A Performance is reduced by 17% with 50 Hz input power.	
Power Cord and Plug	6' Power cord supplied with a molded NEMA 5-20P plug. Plugs into a standard NEMA 5-20R receptacle. Use of an extension cord is not recommended. Model 123H-EX export version is supplied with power cord for the destination country.	

Humidity Water Requirements

Supply and Drain	Must be provided with a water line and floor drain. Negligible consumption.
Water Recirculation System (optional)	Provides a reliable supply of filtered water for the humidity system. Perfect for installations where a water line and drain are not available.

Physical Characteristics

Inside Dimensions	18" W x 16.5" H x 13.5" D (2.3 cubic feet)
Outside Dimensions	26" W x 63" H x 36.5 " D (nominal) Vent tube adds 3" to height.
Minimum Installed Clearance	6 " from the left and right side 12" from the rear
Window Viewing Area	7" W x 12 " H
Access Ports	4" Port on left and right side (two total) Supplied with foam plugs
Weight	Chamber Weight: 520 pounds Shipping Weight: 635 pounds (North America only, contact us for export shipment)
Sound Level	62 dBA (A-weighted, measured 36" from the front)

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 development, specifications are subject to change without notice.