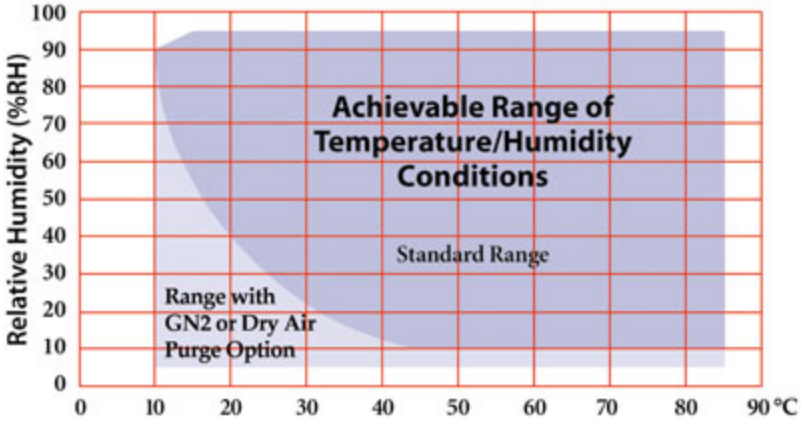
Model 123HS Temperature/Humidity Chamber - Specifications

**Temperature Range**
-35°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 (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*** (uncontrolled humidity mode) | | | | | | |
|---|---|---|---|---|---|---|
| Start Temp | **End Temp** | | | | | |
| | **+23°C** | **0°C** | **-10°C** | **-20°C** | **-30°C** | **-35°C** |
| +23°C | ----- | 4 min | 8 min | 15 min | 25 min | Ultimate |
| +50°C | 5 min | 10 min | 16 min | 24 min | 36 min | Ultimate |
| +85°C | 10 min | 19 min | 25 min | 33 min | 45 min | Ultimate |
| +150°C | 22 min | 33 min | 40 min | 48 min | 63 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 |
| -30°C | 8 min | 14 min | 23 min | 27 min | 45 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 -20°C = 105°C / 33 min = 3.18°C/min.
**Heat Up Example:** From 0°C to +85°C = 85°C / 18 min = 4.72°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 on 123HS-EX 50 Hz export versions by 17%.

| Live Load Capacity (uncontrolled humidity mode) | | | | |
|---|---|---|---|---|
| **+23°C** | **0°C** | **-10°C** | **-20°C** | **-30°C** |
| 500 Watts | 400 Watts | 300 Watts | 200 Watts | 100 Watts |

| Refrigeration and Heating System | |
|---|---|
| **Refrigerant** | R-404A (Dupont HP-62) |
| **Compressor** | 1/2 HP Tecumseh hermetic compressor |
| **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 |
| **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...<br>**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** | **123HS North America Version:**<br>120 V nominal (110 to 126 VAC), 60 Hz, 1 PH<br>Max Current Draw 18 A, Recommended Minimum Service 20 A<br>**123HS-EX Export Version:**<br>230V nominal (220 to 240 VAC), 50 Hz, 1 PH |

| | |
|---|---|
| | Max. Current Draw 9 A, Recommended Minimum Service 13 A<br>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.  <br><br>Plugs into a standard NEMA 5-20R receptacle.<br>Use of an extension cord is not recommended.  <br>Model 123HS-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)<br>Vent tube adds 3" to height. |
| **Minimum Installed Clearance** | 6 " from the left and right side<br>12" from the rear |
| **Window Viewing Area** | 7" W x 12 " H |
| **Access Ports** | 4" Port on left and right side (two total)<br>Supplied with foam plugs |
| **Weight** | Chamber Weight: 520 pounds<br>Shipping Weight: 635 pounds |
| **Sound Level** | 58 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.**