

## Model 1007H 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°C (Variations throughout the chamber after stabilization)

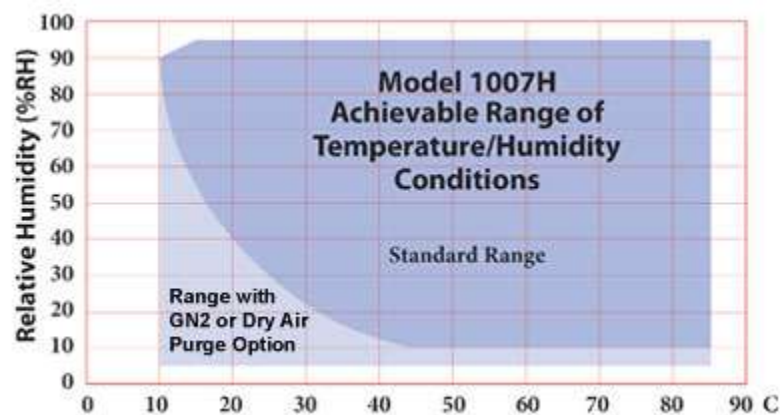
### Humidity Range

Standard Range: 10% to 95%

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

With 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 (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     | -40°C  | -55°C  | -65°C  | -73°C    |
| +23°C                                                   | -----    | 4 min   | 18 min | 25 min | 33 min | Ultimate |
| +50°C                                                   | 5 min    | 11 min  | 27 min | 36 min | 45 min | Ultimate |
| +85°C                                                   | 13 min   | 20 min  | 37 min | 47 min | 55 min | Ultimate |
| +150°C                                                  | 32 min   | 39 min  | 58 min | 65 min | 76 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                                                   | -----    | 1.5 min | 7 min  | 14 min | 20 min | 25 min   |
| 0°C                                                     | 1.5 min  | 3.5 min | 13 min | 20 min | 23 min | 31 min   |
| -40°C                                                   | 6 min    | 11 min  | 17 min | 24 min | 30 min | 35 min   |

|       |        |        |        |        |        |        |
|-------|--------|--------|--------|--------|--------|--------|
| -55°C | 8 min  | 13 min | 19 min | 26 min | 32 min | 37 min |
| -65°C | 10 min | 14 min | 21 min | 28 min | 34 min | 39 min |

#### 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 +50°C to -40°C = 90°C / 27 min = 3.33°C/min.

**Heat Up Example:** From -40°C to +50°C = 90°C / 11 min = 8.18°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 (uncontrolled humidity mode) |           |           |           |           |
|-------------------------------------------------|-----------|-----------|-----------|-----------|
| +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                                                                                  |
| Heat of Rejection                | 14,800 BTUH (maximum rated chamber load at maximum cooling rate from high temperature soak) |
| Air Heater Power                 | 2,000 Watts                                                                                 |
| Humidifier Heater Power          | 1,500 Watts (rating at 240V)                                                                |
| Air Flow                         | 450 cfm                                                                                     |

| Instrumentation               |                                                                                                                                                                                                                                      |                                                                                     |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>Temperature Controller</b> | <b>Watlow F4T Touch Screen Controller</b> with RS-232, Ethernet interface, 4.3" color graphic touch screen. OR...<br><b>Watlow F4 Controller</b> with RS-232 interface, LED readout of temperature, LCD display of other parameters. |                                                                                     |
| <b>Limit Controller</b>       | 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.                                                                  |                                                                                     |
| <b>Chart Recorder</b>         | (Optional) Honeywell DR4300 Series. One pen, 10" circular chart. Mounts in lower front door.                                                                                                                                         |  |

| Input Power Requirements                |       |              |                 |
|-----------------------------------------|-------|--------------|-----------------|
|                                         | Phase | Current Draw | Minimum Service |
| <b>230 V <math>\pm</math>10%, 60 Hz</b> | 1 PH  | 25 A         | 30 A            |
|                                         | 3 PH  | 19 A         | 25 A            |
| <b>208 V -5/+10%, 60 Hz</b>             | 1 PH  | 28 A         | 35 A            |
|                                         | 3 PH  | 21 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.

| Humidity Water Requirements |                                                                             |
|-----------------------------|-----------------------------------------------------------------------------|
| <b>Supply and Drain</b>     | Must be provided with a water line and floor drain. Negligible consumption. |

|                                              |                                                                                                                                                 |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Water Recirculation System</b> (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 and Safety                                                                                                                 |                                                                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <b>Inside Dimensions</b>                                                                                                                            | 24" W x 21" H x 24" D (7 cubic feet)<br>609 mm W x 533 mm H x 609 mm D (198 liters)                                                  |
| <b>Outside Dimensions</b>                                                                                                                           | 33" W x 68.75" H x 54" D (nominal)<br>838 mm W x 1746 mm H x 1372 mm D                                                               |
| Door latch adds 3" to width on right side (may be removed to permit move-in through a 36" doorway). Circulator motor and housing adds 6" to height. |                                                                                                                                      |
| <b>Minimum Installed Clearance</b>                                                                                                                  | 18" from the left and right side<br>24" from the rear                                                                                |
| <b>Window Viewing Area</b>                                                                                                                          | 13.375" W x 9" H                                                                                                                     |
| <b>Access Ports</b>                                                                                                                                 | 4" Port on left and right side (two total)<br>Supplied with foam plugs                                                               |
| <b>Weight</b>                                                                                                                                       | Chamber Weight: 890 pounds<br>Shipping Weight: 1,058 pounds                                                                          |
| <b>Sound Level</b>                                                                                                                                  | 62 dBA in cooling mode (A-weighted, measured 36" from the front or side 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.