

PH030 STABILITY CHAMBER

PH Series Overview

The PH series chambers are designed for performance specifications exceeding FDA and ICH requirements. For GMP studies, ultrasonic humidification provides excellent humidity control and avoids hot spots during mapping. Thermoelectric cooling provides more stable temperature control than equivalent refrigeration systems. All PH series chambers incorporate inherent cooling redundancy, quiet operation, simple serviceability and excellent reliability.

PH09

The PH09 is a bench top stability chamber designed to fit on 24" benchtops or stacked with optional racking.

PH030

The PH030 is a single-door stability chamber.

PH034

The PH034 is a single-door stability chamber.

PH055

The PH055 is a 2-door stability chamber.

PH084

The PH084 is



Featured photo is the PH030 single-door stability chamber, open door view to show adjustable internal racks.



Featured photo is the PH030 single-door stability chamber, closed door view.



PH SERIES: STABILITY CHAMBERS

The PH series was introduced in 2003 as the first commercially manufactured large capacity Peltier-cooled pharmaceutical stability testing chamber. Over a thousand PH series stability chambers are presently in use by pharmaceutical, cosmetic, nutraceutical, medical device, and research companies around the world. The advantages of these chambers for stability testing include:

Reliable Cooling Redundancy

Each PH series chamber includes multiple, independent thermoelectric cooling units. The 7 year warranty on cooling components and the ability of our chambers to maintain temperature even if the chamber suffers multiple failures is unmatched by any other refrigeration-based chamber.

Quiet Operation

The PH chambers utilize quiet and highly efficient DC fans. Locating these chambers in laboratory workspaces is a viable option.

Simple Serviceability

Due to the omission of all refrigeration equipment on these models, refrigeration technicians are not required during chamber servicing. Refrigerated stability chambers are not only costly to service, but can require days to service properly. Nearly every component of thermoelectric-based chambers can be serviced within minutes with basic tools. For instance, the ultrasonic humidifier is capable of being removed and reinstalled in less than five minutes and operates on non-hazardous 24 volts.

Options Available

Chart Recorders
Dryers
Data Loggers

Superior Control and Uniformity

The PH series chambers control well within the specifications required by the FDA and ICH for GMP studies. The ultrasonic humidification system provides excellent humidity control and avoids hot spots seen during chamber mapping of steam boiler equipped chambers. Thermoelectric cooling and automatic switching system from cooling to heating control provide consistent results throughout the available temperature range. Standard control at the sensor in these chambers is $\pm 0.2^{\circ}\text{C}$ and $\pm 0.3\% \text{RH}$.

Greatly Reduced Direct and Indirect Energy Loads

The PH Series chambers utilize less energy than comparable stability chambers and introduce less impact upon building cooling systems. This efficiency "dual benefit" allows our chambers to be located in spaces unsuitable for other chambers. Electrical energy savings by the PH series vs. steam boiler equipped chambers can easily amount to hundreds or even thousands of dollars saved per year.

Widely Proven, Non-Proprietary Controllers

Standard controllers for the PH series are manufactured by Fuji Electric and are ideal for stability testing chambers. Unlike many proprietary controllers, this controller is commercially available and proven in tens of thousands of installations. Standard functions include: autotuning, fuzzy logic, PID control, programmable alarms, calibration capability, ramp/soak, offset capability, etc. A touchscreen control interface & Virtual control (VTS) option is available. Other controller manufacturers are also supported (Watlow, Allen Bradley etc.)

Services and Warranties

We offer 24 hour technical support throughout the lifetime of your chamber. In addition to our standard warranties, we also offer extended warranties for cooling components, parts and labor. We also provide qualifications, validations and preventive maintenance services at an additional cost. Please ask for a quote.

PH030 Stability Chamber Specifications (ambient 21° C)

| Performance | Standard | Customized Option |
|------------------------|-----------------------------------|--|
| Temperature Range | 18° C to 50° C | Up to 70° C |
| Ambient Temperature | 18° C to 27° C | Available |
| Temperature Control | ± 0.2° C | Available |
| Temperature Uniformity | ± 0.7° C | Available |
| Control Resolution | 0.1° C | Available |
| Temperature Sensor | NIST Traceable PT 100 RTD Class A | Available |
| Humidity Range | Ambient to 90% @ 21° C | 10% to 95% @ Dewpoint Range of -15° C to 40° C |
| Humidity Control | ± 0.3% RH | Available |
| Humidity Uniformity | ± 2% | Available |
| Control Resolution | 0.1% | Available |
| Humidity Sensor | NIST Traceable Rotronics HC2A-S | Available |

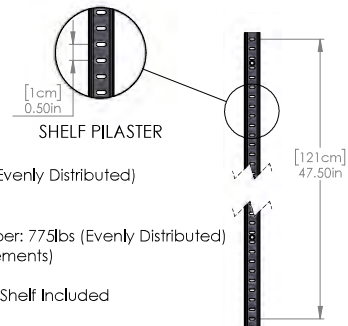
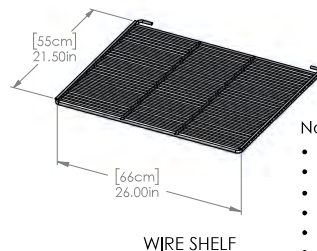
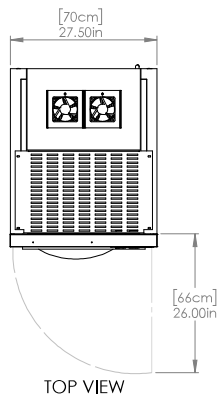
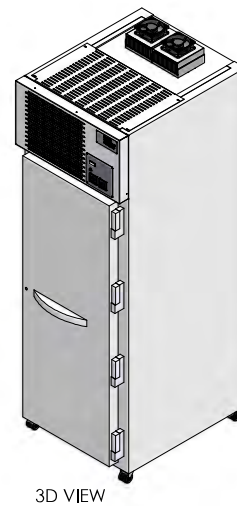
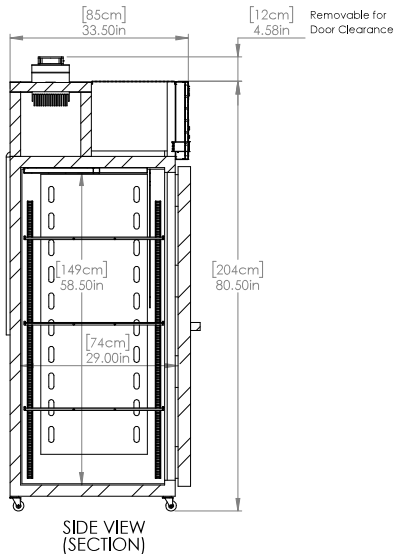
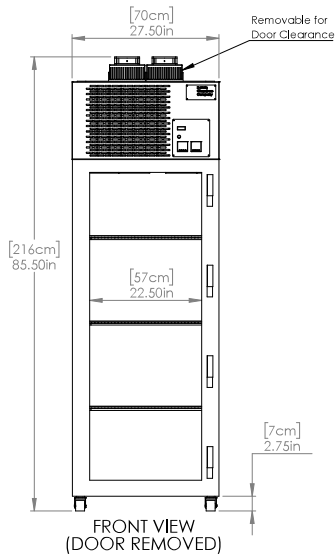
| Control System | Standard | Customized Option |
|---|--|--|
| Controller | Fuji PXF4 (PID - Fuzzy Logic) | West EC-44, Future Design Touchscreen, Watlow, Allen Bradley |
| Control Readout | Actual and Set-Point Values | Trending, Duty Cycle |
| Calibration Correction Capability | Standard 0.1 Resolution | Available |
| Uniformity Off Set | Standard 0.1 Resolution | Available |
| Alarm | Audible and Visual | Text, Email, Web Server, Remote Access |
| Alarm Type | Deviation in 0.1° C or 0.1% RH with Delay | Absolute 0.1 Resolution with Delay |
| Remote Monitoring | Dry Alarm Contact, RS 485, & Analog Output | Ethernet |
| Password Protection | Numeric | Numeric, Alpha Numeric |
| Audit Trail | N/A | Available with Future Design model, VTS |
| Uninterrupted Power Supply (Monitoring) | N/A | Available |

| Construction | Standard | Customized Option |
|--------------|--|---|
| Exterior | Stainless Steel Door & Front, Aluminum Sides | Stainless Steel Door, Front & Sides |
| Interior | Aluminum Side Walls & Back, Stainless Steel Floor & Ceiling | Stainless Steel Side Walls, Back, Floor, Door Liner & Ceiling |
| Shelving | 3 Gray PVC Coated, Adjustable 1/2" Increments, Supports Up to 150 lbs of Evenly Distributed Weight | Stainless Steel, Chrome Plate or Custom |
| Casters | 2.75" H, Total | 5" Casters or Seismic Legs |
| Access Port | 2in O.D Access Port with Cover Plate and Insulation Plug. See Drawing for Location | Customized Access Port Location and Size Available |

| Capacity & Dimensions | US Standard | Metric |
|-----------------------|------------------------|------------------------|
| Interior Capacity | 22.5ft ³ | 637.13 liters |
| External Dimensions | Refer to Drawing Below | Refer to Drawing Below |
| Internal Dimensions | Refer to Drawing Below | Refer to Drawing Below |
| Shelf Dimensions | Refer to Drawing Below | Refer to Drawing Below |
| Crated Weight | 580 lbs | 263.08 kg |

| Utilities | US Standard | International |
|--------------------------------------|---|--|
| Voltage (dedicated circuit required) | 120v / 60 hz/ 1ph | 230V Step Down Transformer Available |
| RLA | 4.5A | ~2.25A |
| Cord Length | 9 ft cord with NEMA 5-15P Type Plug | 2.74m (specify plug) |
| Drain Line | Chambers are Equipped with 1/2" I.D. Polytube. Floor Drain or Sink Required Adjacent to Chamber | Condensate Pump Option Available, if Floor Drain is Not Available Nearby |





Notes:

- Shelf Finish: Gray PVC Coated
- Max Weight per Shelf: 150lbs (Evenly Distributed)
- Chamber Volume: 22.5ft³
- Crated Weight: 580lbs
- Max Load Capacity of Chamber: 775lbs (Evenly Distributed)
- Pilaster Height: 47.5" (1/2" Increments)
- Minimum Spacing: 2"
- 4 Stainless Steel Shelf Clips per Shelf Included
- 2" I.D. Access Port Included
- Door Opening: 21" W x 58" H

Note: Tolerances are 0.25" unless otherwise stated
 *Dimensions and components are subject to change without notice.