

## PH034 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.

### PH011

The PH011 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 a 3-door stability chamber.



Featured photo is the PH034 single-door stability chamber, open door view to show adjustable internal racks.



Featured photo is the PH034 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 minute and operates on non-hazardous 24 volts.

### Options Available

Chart Recorders

Dryers

Data Loggers

Full swinging interior glass door

Magnetic latch door handle with lock and two keys

### 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.

## PH034 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-SS	Available

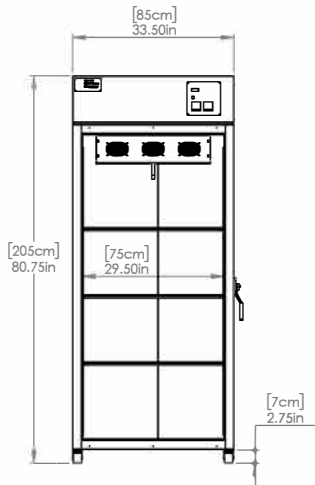
Control System	Standard	Customized Option
Controller	Fuji PXF4 (PID - Fuzzy Logic)	West EC-44, Future Design Touchpad, Watlow, Allen Bradley
Control Readout	Actual and Set-Point Values	Trending, Duty Cycle
Calibration Correction Capability	Standard 0.1 Resolution	Available
Uniformity Off Set	Standard 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 Modbus	Ethernet & Analog Output
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	18-Gauge Galvanized Steel, Powder Coated	304, 316 Stainless Steel Door, Front & Sides
Interior	20-Gauge 304 Grade - #4 Finish Stainless Steel	316 Grade Stainless Steel
Shelving	3 Stainless Steel, Adjustable 1/2" Increments, Supports Up to 150 lbs of Evenly Distributed Weight	Additional Shelves Available
Casters	2.75" H - Qty 4 Caster Wheels	Available
Panel Insulation	2" Thick Polyurethane Insulation.	Available
Doors	0.060 powder Coated Aluminum. Door is Installed with 2 Left Hinges. *Refer to Drawing for Standard Door Location.	Door can be reversible. 304, 316 Grade Stainless Steel Option. 14" x 14" View Window With 1" Insulated, Tempered Glass
Access Port	Chamber Comes with 2" O.D Access Port, Cover and Installed Plug. See Drawing for Location.	Customized Access Port Location and Size Available

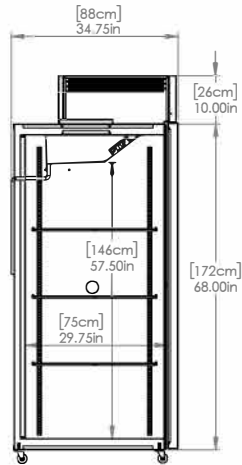
Capacity & Dimensions	US Standard	Metric
Interior Capacity	30.85ft³	873.57 liters
External Dimensions	Refer to Drawing Below	Refer to Drawing Below
Internal Dimensions	Refer to Drawing Below	Refer to Drawing Below
Shelf Dimensions	Refer to Drawing Below	Refer to Drawing Below
Crated Weight	765 lbs	347 kg

Utilities	US Standard	International
Voltage (dedicated circuit required)	120v / 60hz / 1ph	230V Step Down Transformer Available
RLA	4.5A	~2.25A
Cord Length	9 ft Long Cord with NEMA 5-15P 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

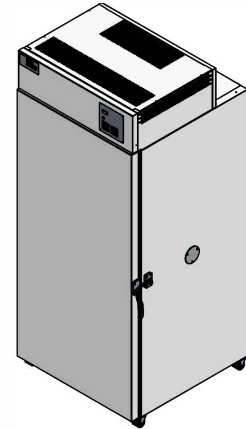




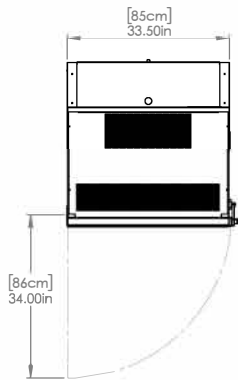
FRONT VIEW  
(DOOR REMOVED)



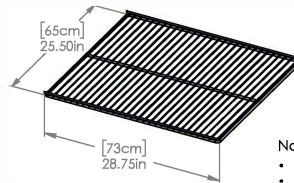
SIDE VIEW  
(SECTION)



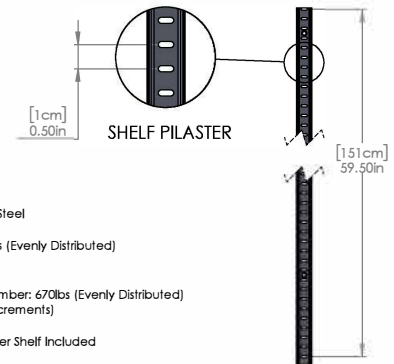
3D VIEW



TOP VIEW



WIRE SHELF



SHELF PILASTER

Notes:

- Shelf Material: 304 Stainless Steel
- Shelf Finish: Polished Steel
- Max Weight per Shelf: 150lbs (Evenly Distributed)
- Chamber Volume: 30.85ft<sup>3</sup>
- Crated Weight: 765lbs
- Max Load Capacity of Chamber: 670lbs (Evenly Distributed)
- Pilaster Height: 59.5" (1/2" Increments)
- Minimum Spacing: 2"
- 4 Stainless Steel Shelf Clips per Shelf Included
- 2" I.D. Access Port Included

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