

IN03 INSECT REARING CHAMBER

IN Series Overview

The IN series chambers are designed with insect rearing as the primary application, but can be used for other research studies as well. Our IN series chambers are widely used among *Drosophila* and Mosquito researchers and offer state of the art technology for pursuing various research studies.

IN03

The IN03 is a under counter/bench top insect rearing chamber designed to fit on 24" benchtops or stacked with optional racking.

IN09

The IN09 is a bench top insect rearing chamber designed to fit on 24" benchtops or stacked with optional racking.

IN030

The IN030 is a single-door insect rearing chamber.

IN034

The IN034 is an extra wide single-door insect rearing chamber.

IN055

The IN055 is a 2-door insect rearing chamber.

IN084

The IN084 is a 3-door insect rearing chamber.



Featured photo is the IN03 under counter/bench top insect rearing chamber, shown with Fuji controllers and open door view to show internal adjustable racks.



Featured photo is the IN03 under counter/bench top insect rearing chamber, shown with Fuji controller and closed door view.

IN SERIES: INSECT REARING CHAMBERS

The IN series was introduced in 2003 as the first commercially manufactured Peltier-cooled insect rearing chamber. Thousands of IN series insect rearing chambers are presently in use by research companies around the world. The advantages of these chambers for insect rearing include:

Reliable Cooling Redundancy

Each IN 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 IN 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 insect rearing 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 a minute and operates on non-hazardous 24 volts.

Options Available

Ultrasonic Humidification
Timed Lighting
CO₂
Data Loggers
Bench-Top Chamber Capable of Being Stacked
Under Counter Storage Capability

Superior Control and Uniformity

The optional 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 IN Series chambers utilize less energy than comparable insect rearing 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 IN 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 IN Series are manufactured by Fuji Electric and are ideal for insect rearing 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, offset capability, etc. A touchscreen control interface is optional. 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 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.

IN03 Insect Rearing Chamber Specifications (ambient 21° C)

| Performance | Standard | Customized Option |
|------------------------|----------------------------------|---------------------------------|
| Temperature Range | 12° C to 50° C | 12° C to 70° C |
| Ambient Temperature | 21° C ± 3° C | Available |
| Temperature Control | ± 0.2° C | Available |
| Temperature Uniformity | ± 0.7° C | Available |
| Control Resolution | 0.1° C | Available |
| Temperature Sensor | NIST Traceable PT100 Class A RTD | Available |
| Humidity Range | N/A | Ambient to 90% @ 40° C Dewpoint |
| Humidity Control | N/A | ± 0.3° C |
| Humidity Uniformity | N/A | ± 2% |
| Control Resolution | N/A | ± 0.1% |
| Humidity Sensor | N/A | NIST Traceable Rotronic HC2A-S |

| Control System | Standard | Customized Option |
|---|---|---|
| Controller | Fuji PXG4 (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 |
| Uninterrupted Power Supply (Monitoring) | N/A | Available |

| Construction | Standard | Customized Option |
|--------------|--|--|
| Exterior | Powder Coated Aluminum | Stainless Steel |
| Interior | Stainless Steel | Stainless Steel, or Powder Coated |
| Shelving | Stainless Steel, Perforated Shelf Adjustable 1" Increments | Stainless Steel, Perforated Shelf Adjustable 1" Increments |
| Casters | None | Casters, Legs, or Seismic Legs |

| Capacity & Dimensions | US Standard | Metric |
|-----------------------|-----------------------------|-------------------------------------|
| Interior Capacity | 3 ft ³ | 85 liters |
| External Dimensions | 20.25" W x 25.25" D x 27" H | 51.43 cm W x 64.13 cm D x 68.5 cm H |
| Internal Dimensions | 16" W x 16" D x 20" H | 40.64 cm W x 40.64 cm D x 50.8 cm H |
| Shelf Dimensions | 15.5" W, 13" D | 39.37 cm W x 33.02 cm D |
| Crated Weight | 150 lbs | 68 kg |

| Electrical | US Standard | International |
|-------------|--------------|--------------------------------|
| Voltage | 115 / 60 / 1 | 230 / 50 / 1 |
| RLA | 4.5 | 2.6 With Step Down Transformer |
| Cord Length | 9 ft | 9 ft |



Model 003

