

Insect Rearing Chambers

BioCold Environmental, producer of environmental rooms and chambers for over 25 years, has developed an insect environment chamber designed specifically for the needs of Drosophila and related insect rearing and incubation.

We believe these BioCold chambers are superior to any other insect rearing chambers on the market. Our stainless steel “Cool Wall” uses a finless, seamless, corrosion-proof evaporator coil, providing a unique solution to corrosion concerns, while our microprocessor-based controls and ultrasonic humidification allow for confident temperature control from 15° to 32°C at humidity levels from ambient up to 90% RH. BioCold chambers control temperature within ±0.3°C or better.

Thank you for your interest in BioCold insect chambers. Please review the information below to see if we can assist with your insect rearing needs. In addition to our insect chamber series, we also offer chambers for cold storage, incubation, and ICH/FDA stability testing, as well as a complete line of prefab walk-in environmental rooms. If your application requires features not listed below, please call to learn about our other product lines.



Model BC26-IN

John Herdlein
President

BioCold Insect Chamber Series

	Model	Cu. Ft.	Doors (Glass)	Shelves	Ship Weight	Electrical	Dimensions L x D x H
STANDARD MODELS	BC26-IN	26	1, swing	4	325 lb.	115/1/60 hz, 15amp	30 x 29½ x 78¼
	BC35-IN	35	2, swing	8	410 lb.	115/1/60 hz, 15amp	39½ x 29½ x 78¼
	BC49-IN	49	2, swing	8	490 lb.	115/1/60 hz, 15amp	54 x 29½ x 78¼
	BC72-IN	72	3, swing	12	680 lb.	115/1/60 hz, 15amp	78¾ x 29½ x 79¼
CUSTOM MODELS	BC23-IN	23	1, swing	4	315 lb.	115/1/60 hz, 15amp	27 x 29½ x 78¼
	BC33-IN	33	2, slide	8	410 lb.	115/1/60 hz, 15amp	39½ x 29½ x 78¼
	BC61-IN	61	2, slide	8	585 lb.	115/1/60 hz, 15amp	70 x 29½ x 79¼
	BC69-IN	69	3, slide	12	665 lb.	115/1/60 hz, 15amp	78¼ x 29½ x 79¼

Standard Features

- **“Cool Wall” Technology.** Finless, seamless, corrosion-proof stainless steel coil coupled with rear wall plenum avoids corrosive leaks while ensuring positive airflow throughout the chamber for superior temperature and humidity uniformity.
- **Ultrasonic Humidification.** Ultrasonic humidification permits precise humidity control without adding heat to the system. No steam boilers. Controlled with rotary set point humidistat.
- **Microprocessor-Based Controls.** BioCold insect chambers come standard with a microprocessor-based temperature control with dual digital displays (actual value and set value). Features PID with Fuzzy Logic and Autotune to ensure straight-line temperature control.
- **Slotted Aluminum Shelving Racks.** Each unit comes standard with four slotted aluminum shelves per door. Single door models have 4 shelves; two-door models have 8 shelves; and three-door models come standard with 12 shelves. Additional shelving or stainless steel wire upgrade available upon request.
- **High Efficiency, Self-Closing Glass Door.**
- **White Anodized Aluminum Interior with Stainless Steel Floor.**
- **White Vinyl Coated Steel Exterior.**
- **7' Power Cord.** For 115/1/60hz connections on a 15-amp dedicated circuit.

Additional Options

- Digitally-controlled ultrasonic humidification
- Honeywell 7-day, 10" circular chart recorder for charting temperature and/or humidity
- Paperless data logging system
- 24-hour light timer with light-tight aluminum door cover for diurnal light studies.
- Elevated temperature option for temperatures above 32°C
- Interior GFI duplex or quadruplex outlets
- Digitally-controlled cycling interior quadruplex outlets (for lights and equipment)
- High temperature (up to 80°C) decontamination feature. User-set, digital control of temporarily elevated temperatures to kill mites and other parasites.
- 1½" access ports
- Additional shelving
- Stainless steel wire shelving

Principles of Operation

Temperature Control

Temperatures are maintained using a Hot Gas Bypass Refrigeration System controlled by a dual digital display (set point and actual temperature) microprocessor. This system eliminates the large air temperature over/under-shoot present in competitors' systems that may simply turn the compressor off and on to control temperature. Our temperature sensor reads real time air temperature – not the temperature inside a heatsink (a bottle of glycol, for instance). The BioCold system also eliminates any problematic heaters.

Ultrasonic Humidification

Chamber humidification is accomplished through the use of an internally mounted Ultrasonic Humidifier. Absolutely no "Drain Pan Heaters" are used. Generating water vapor ultrasonically offers many benefits over electric steam generators or boilers, including electrode steam generators. Those who work with humidity controlled chambers know the problems associated with steam. Vapor generated ultrasonically is adiabatically changed from the liquid state to a fine mist without any change of energy and without adding any heat to the system. Ultrasonic humidification also avoids the challenges of corrosion, high power consumption, and expensive burnt out heaters, float switches, and electrodes.

Elevated humidity is easily controlled by an adjustable rotary set point humidistat – not by simply setting an On/Off time clock (which does not truly control humidity) like others.

Stainless Steel Evaporator Coil

BioCold has developed a chamber that does not use a conventional evaporator to control temperature. Conventional evaporator coils typically have numerous solder joints, very thin copper tubes, and tightly spaced aluminum fins. Epoxy coating is only a partial solution – all connections, capillary tubes, expansion valves, etc., cannot be dipped and will be the first points of failure. Often, some of the acids present in the chamber will mix with high humidity to cause failure in the best coated coils.

We incorporate a thick, seamless, stainless steel tubing construction which entirely eliminates the possibility of evaporator coil corrosion. We developed this feature in response to researchers' complaints of incubators that would develop small leaks in a very short amount of time (epoxy coated or not) due to whatever corrosive elements might be inside. A leak in a newer refrigeration system will almost assuredly cause harm to the entire refrigeration system (compressor included) as moisture will be drawn into the hygroscopic oils used with modern refrigerants. As evidence of this problem, numerous drosophila researchers can attest to quick and expensive failures of the "best" (most expensive) chambers due to corrosion. With our system, there is realistically no chance of failure due to corrosion, and the entire surface is readily cleaned (conventional coils have hundreds of deep fins that are impossible to clean entirely).

We offer a lifetime warranty on the BioCold "Cool Wall" – simply ask other companies if they will warranty their evaporators under this type of condition for this long.