

MiniRoom™

ISOLATION CUBICLES - Flexibility with Containment

KEY FEATURES

- Custom built to your requirements
- Horizontal laminar flow of air for greater protection positive or negative
- Electro-magnetic door lock for greater security
- Counter-balanced doors for easier opening and closing
- Designed to be easy to clean



ENVIRONMENTAL CONTROL UNIT - SERIES ECU-80

The ECU-80 Series Units are designed to be used in conjunction with the BioZone MR-2001 Series Vertical Sliding Door Units for a complete Animal MiniRoom providing environmental control and containment in animal research facilities by:

- Maintaining a positive, or a negative, differential pressure between the animal environment (the MiniRoom) and the adjacent rooms;
- Controlling the number of fresh air changes per hour in the MiniRoom;
- Controlling the temperature/humidity of the animal environment; and
- Filtration of the supply and/or the exhaust air.

The units operate independently of the central air handling system and do not affect the balance of the central system. A unit can be installed to obtain supply air from, and extract air to, the central part of the room, or directly from and to the supply and exhaust air ducts. HEPA filters can be installed to provide filtration of the supply air to, and/or the exhaust air from, the MiniRoom. The unit controls can be quickly and easily adjusted to maintain a positive, or a negative, differential pressure between the animal environment and the adjacent room. The controls can also be adjusted to regulate the volume of air flow through the MiniRoom. Reheat coils and regulating thermostats can be provided to allow individual temperature control within each MiniRoom. Humidity control can also be provided. Computer design and construction enable the MR-2001 Animal MiniRoom and the ECU-80 Series Units to be economically built to special requirements of the client and to meet the needs of the research and animal care operations. The Units are installed in the ceiling space of the MiniRoom behind the transom assembly against which the vertically telescoping doors are stored when in the open position, or in the interstitial space above the ceiling. In most installations, MiniRooms with MR-2001 Door Units can be later fitted with ECU-80 Environmental Control Units.

SPECIFICATIONS

Components of the ECU-80 Series Units are manufactured of type 304 stainless steel, 6000 series aluminium alloys, brass, high density polyethylene, PVC & other highly corrosion resistant materials. The electric motor bearings are prelubricated for a minimum of 10,000 hours of maintenance free use. The fan impellers are manufactured of aluminium to BioZone design specifications. All removable panels are fabricated of stainless steel sheet & secured with stainless steel hardware. Electronic components are used with few mechanical parts..

All controls, with the exception of the light switch and door lock, are located in the transom recess above the windows where they are easily accessible for operational set-up. The light switch, door lock and the operating indicator lights are contained in a "back lighted" membrane-type water-proof control display located on the front panel of the MiniRoom door jamb for easy access. Lights are provided for indicating "FAN ON", "NEGATIVE", or "POSITIVE" differential pressure, and the condition of the intake and exhaust HEPA filters.

FEATURES

- The ECU-80 Series Units allow control over the number of air changes in the MR-2001 MiniRooms. The Units are available in various sizes and can provide up to twenty-five (25) air changes per hour in a MiniRoom of up to 15 cubic metres. Components will be selected for each installation by BioZone engineers to most economically provide the required capacity. An Air Flow Meter is provided to show the amount of air flow in the MiniRoom in terms of the number of air changes per hour.
- A differential pressure gauge is provided to show the amount of positive, or negative, differential pressure between the MiniRoom and the room environment. This gauge also controls the indicator lights located on the front column of the MiniRoom and can also be used to control remote audible or visual alarms.
- The differential pressure can be easily and quickly changed by a keyed switch to provide either a "POSITIVE" or a "NEGATIVE" differential pressure between the MiniRoom and the room environment.
- When the Series ECU-80 Environmental Control Units are installed, a door seal is provided for the bottom edge of the vertical door which meets the floor. When the bottom door is electromagnetically locked at both sides the MiniRoom is then sealed to the floor.
- Heat levels generated by the Units are minimal. A temperature rise of 2 to 3°C will normally be experienced in the fresh supply air.
- Concealed spaces are sealed, or easily accessible through removable panels, for pest control and maintenance. All removable panels are made of stainless steel and are secured with plastic sealing strips.
- Supply and extract air diffusers are installed to provide a front to back air flow. This uniform directional air flow gives equal ventilation over each cage and the front to back movement minimises allergen contact with staff when the doors are opened.
- Designed specifically for use with MR-2001 Animal MiniRoom Vertical Sliding Door Units.

OPTIONAL FEATURES

- Optional air filtration is accomplished with roughfilters, HEPA filters, or both. The filters can be installed in the Units for the supply air, the exhaust air, or both. Roughfilters can be removed and cleaned, or replaced, as a routine maintenance procedure by animal care personnel. HEPA filter condition is monitored by indicating/warning lights. HEPA filter replacement is easily accomplished by maintenance personnel by lowering the ECU-80.
- Optional supply air re-heat coil and thermostatic control can be provided to each individual MiniRoom. (If this option is selected, the supply air should be provided to the Air Handling Unit from the central building system at approximately 15°C)
- Optional humidity control units can be provided for installations of four MiniRooms or more.
- Optional Containment Category 3 design features can be provided on the ECU-80 Series Units. These features consist of a recirculating by-pass duct and electrically actuated diversion valves for paraformaldehyde decontamination, and an air cock to sample air around the HEPA filter gaskets for testing filter.

Supply Requirements

Electrical:	220/240 volts -13 amps for standard units. 110/120 volts alternative.
Supply Air Duct:	110mm diameter
Exhaust Air Duct:	110mm diameter

Replacement Filters Catalogue Number

Rough Filter:	FL-R80
HEPA Filters:	99% - FL-H99 95% - FL-H95

All necessary electrical components meet British and International Standards.

VERTICAL SLIDING DOOR UNIT - SERIES MR-2001

The housing of animals in MiniRooms for quarantine and containment has proven to be effective, flexible, economical, and efficient. The easy-to-lift, MR-2001 vertically sliding door units provide a combination of protection, durability, and ease of access to the MiniRoom. Each installation is specially designed and manufactured to allow maximum width and height of the door opening and interior research space. The NEW BioZone EXCLUSIVE "door jamb assembly" with glide tracks of high density polyethylene (HDPE) provides smooth operation, while forming air barriers at the door edges and is easily cleanable. Optional environmental control units allow total control of air flow through the MiniRoom, the maintenance of positive or negative differential pressure, HEPA filtration of supply and/or exhaust air, directional air flow control and temperature/humidity control. Optional integral light fixtures provide control of interior MiniRoom light intensity and timing.

FEATURES

- Glazing with highly scratch and abrasion resistant acrylic for long life.
- No special construction required; door units fasten to existing room floors, walls and ceilings.
- Glazing easily replaced.
- Door jamb cover panels are stainless steel and easily removable for quick maintenance of column interiors.
- 100% corrosion resistant materials allow easy cleaning and long life.

OPTIONAL FEATURES

- Light Fixtures, mounted vertically behind each door jamb, provide reflected light of an even intensity over the entire cage front. Lights can be equipped with individual interval timers, 24hr. timers and intensity controls.
- Environmental Control Units, operate independently of the central HVAC system and allow easy control of air changes (up to 25 per hour) and positive or negative differential pressure in the MiniRoom. HEPA filters are available for intake and/or exhaust.
- Divider Panels, fabricated of stainless steel frames with solid HPDE infill, are available to construct MiniRooms in lieu of concrete block divider walls.

GENERAL SPECIFICATIONS

- Door units are manufactured entirely of Type 304 stainless steel, series 6000 aluminium alloy, abrasion resistant acrylic, high density polyethylene and rubber for long life and minimal maintenance. Glazing is easily replaceable, abrasion resistant, clear acrylic.
- Structural frames are constructed of BioZone exclusive FinTube which has a 45° bevelled surface and mitred, seal welded corners for ease of cleaning. Each door is attached to a counterweight by a stainless steel cable which passes over pulleys with stainless steel ball bearings in the top of the jamb assembly.
- Glide assemblies are machined from high density polyethylene (HDPE) and are designed to machine tolerance which assures a smooth door operation. Door seals are of long lasting rubber and HDPE. The counterweights are designed so that each door requires 2kg or less force to move up and down.
- In the open position, the doors are housed overhead flush with the transom. In the closed position, doors are electromagnetically locked and can be unlocked by switches located both outside and inside the MiniRoom. All exterior panels are easily removed for hygiene and maintenance.

Quotations based on detailed specifications are available upon request.

DigiFlow II with Labcomp

- Windows CE Operating System
- Ethernet or Wifi Connection to Facility Network and Internet
- Wireless Mouse & Keyboard
- Environmental Monitoring
 - CO₂ – Carbon Dioxide
 - NH₃ – Ammonia
 - °C or °F – Temperature
 - RH % – Relative Humidity
- Audio, Video for Presentations and Training in the Animal Room on the LabComp Screen with Built in Speakers. Source of Videos can be by USB or Network Connection.
- Large Colour Monitor
- Decreased Power Requirements
- Licensed Spreadsheet, Document Writing and Presentation Software Available
- 4 USB Ports for Bar-Code Readers, Printers, Sensors etc.
- Air Handler Constructed of Light-Weight PVC Foam Sheet
- Certified Leak-Free, Sealed HEPA Installation

STANDARD AIR HANDLERS AHXII - DigiFlow II Air Handler

Air Handler	Model No. Note (3)	No. of Racks	Supply/Exhaust Duct Sizes (inch) Note (4)	Size (cm)			Air Handler Orientation	Air Handler Mounting
				Width	Depth	Height		
MiniRack Air Handler	AHXIIMVAF-MR-D	1	2 inch	104	49	22	Horizontal	Table Top
Integral Air Handler	AHXIIMVAF-SI-D	1	3 or 4 inches	104	49	32	Horizontal	Floor
External Air Handler, Fixed	AHXIIMVAF-EW-D	1	3 or 4 inches	104	32	49	Vertical or Horizontal	Wall
External Air Handler, Mobile	AHXIIMVAF-EF-D	1	3 or 4 inches	49	32	156	Vertical	Castors on Floor
Shared Ext. Air Handler, Fixed	AHXIIMVAF-EW-n x D	2 - 4	Multiple 3 & 4 in	104	32	49	Vertical or Horizontal	Wall
Shared Ext. Air Handler, Mobile	AHXIIMVAF-EF-n x D	2 - 4	Multiple 3 & 4 in	49	32	156	Vertical	Castors on Floor

Note 4: Duct Diameter Varies with Volume of Cages Served on Each Rack

Note 3: Air Handler Model No. Nomenclature	AHXII - DigiFlow II Air Handler	M = Cage Differential MODE, "P" - Positive "N" Negative or "B" - Both (User Selectable)	VAF - M ³ / H of Air Flow at 80 ACH	"MR" - Table Top MiniRack, "SI" - Integral Under Rack, "EW" External Wall Mount, "EF" External floor Mount	"n x" = No of Racks, "D" = Dia (inch) of Air Flow Ducts
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Air Handler - DigiFlow II with LabComp

Material Specifications

- All materials Compatible with Fumigation & H₂O₂ Sterilization
- Structure & Air Flow Plenums are Light-Weight, Sealed PVC Foam Sheet
- Certified HEPA Filter, 99.99% DOP Test (μ 0.3) in Aluminum Frame, Minimum Face Area of 1130 cm² (710 cm² for MiniRack) Speed Controllable DC 24 Volt Fans, Low Energy Consumption, only 20 watt power requirement.
- Electronic Environmental Sensors for Air Flow, Cage Pressure, Temperature, Humidity, Ammonia and Carbon Dioxide.
- Windows CE based On-Board Computer Monitors and Controls Animal
- Environment and can be Accessed Locally or Remotely by Wifi or Ethernet.

Design Specifications

- Design is Compatible with Fumigation and H₂O₂ Sterilization
- Design Allows for Completely Sealing Air Flow Ducts and Access Plugs are Provided to Certify "In-Situ" Leak-Free HEPA Installation.
- Secure Access to On-Board Computer by User's PIN. Computer Controlled by
 - 1) Touch Screen,
 - 2) Wireless Mouse & KeyBoard and
 - 3) Network or Internet Access by Wifi or Ethernet.
- Computer Software Available for Spread Sheets, Documents & Presentations.
- Four USB Ports Provided for Peripherals (i.e. Printers, BarCode Readers etc) and Files Transfers.



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BZ Sales & Support
 LLC

BZ Sales & Support - Licensed Agent, USA
www.bzsalesandsupport.com | sjbridgesbzss@gmail.com