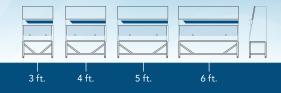
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Class II, Type A2 Biological Safety Cabinets

- Creating Safe Solutions for Life Science Laboratories
- Engineered for Simplicity and Efficiency
- Certified for Safety and Performance



230 watt¹ Purair BIO model AS-AHA-133-CA-A



220-490 watt1

The single EC blower motor assures lower cost of ownership in one of the world's most energy efficient biological safety cabinets.



"The World's Most Extensive Selection of Containment Solutions."



NSF Certification applies to the biological safety cabinet models AHA-133-AB-B (Air Science Model AS-AHA-133-AB-B), AHA-133-AB-B (Air Science Model AS-AHA-133-AB-B) and AHA-133-CB-B (Air Science Model AS-AHA-133-CB-B) as well as AHA-133-AB-B (Air Science Model AS-AHA-133-CA-B) and AHA-133-AB-B) and AHA-133-AB-B (Air Science Model AS-AHA-133-CA-B) amanufactured by Chung Fu Technical Development Co. Ltd., Taipei, Taiwan and marketed by Air Science, LLC, USA.



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INTRODUCTION

The Purair® BIO biological safety cabinet (BSC) is designed for safety and performance in accordance with US and International Standards such as NSF/ANSI 49 which certify that Class II, Type A2 laminar flow cabinets are suitable for working with biosafety agents at levels 1, 2 and 3. Air Science 4-foot models are certified by NSF.

HEPA filtration of downflow and exhaust paths provides a primary containment work area for life science research, cell culture processing and other applications where protection of the user, the work product, and the environment and mitigation of cross-contamination on the work surface are needed.



APPLICATIONS

Purair BIO is designed to protect individuals, the environment and products from a variety of biological particulates. Specific applications include, but are not limited to:

Life Science Research \ Sterile Product
Preparation \ Biological Protocols





KEY FEATURES

- The Purair BIO does not use a costly and overcomplicated microprocessor-based controller. Our basic electronic control system provides simple and reliable oversight of all cabinet systems.
- Our design is based on a single, energy-efficient EC Brushless DC Motor and air circulation system which manages airflow at all critical points including inflow, downflow and exhaust. There is no need for dual motor synchronization, balancing and expense.
- Front access to both HEPA supply and exhaust filters encourages quick, safe filter removal and replacement by an authorized technician.

ENHANCED PROTECTION, EASE OF USE

The Purair BIO maintains negative pressure inside the cabinet during operation to prevent contaminants from escaping the work area. HEPA filtration scours 70% of the incoming room air to protect the products, while the remaining 30% of the exhausted air is filtered by a second HEPA filter. Purair BIO cabinets provide ample workspace with environmentally sound operation, low energy consumption and user-friendly operation.

Single EC Blower Motor Design. The Purair BIO is designed with a single EC blower motor for ease of use, reliability and to promote low cost of ownership. Dual motor designs can introduce a number of problems, including unbalanced airflow, higher maintenance costs, longer certification processes and uneven filter loading. Airflow adjustments are simpler, operational costs lower and maintenance easier for BSCs equipped with single EC blower motors.

Flexibility. The Purair BIO includes multiple service connections for maximum flexibility. It includes duplex electrical outlets with splash-proof, UL listed covers. CSA certified service valves for gas, air and vacuum are also available. Maximum working pressure of 75PSI.

Operator Safety. The anti-ultraviolet, 6 mm tempered glass ensures maximum protection for the operator.

Ergonomic Design. The user interface combines ergonomics, safety and aesthetics with a 10° angled window design that reduces operator head and elbow discomfort, as well as eye strain and fatigue.



The slim profile design passes easily through a standard 38" wide doorway to accommodate a variety of new or replacement installations.



Specifications are subject to change without notice or obligation on the part of Air Science. For questions contact Air Science.

1) Energy consumption disclosure is based on internal testing with the blower running and lights on.

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DESIGN FEATURES

- A. Energy Efficient: The quiet, internal EC Brushless
 DC Motor ensures sufficient airflow across the work
 surface at all times while saving up to 86% over
 traditional PSC motors (based on internal testino).
- B. Standard Control System: Includes simple, reliable membrane-style switches and an easy-to-read gauge for safety and durability.
- **C.** HEPA Filtration Lock: The patented Quick Access HEPA Filtration System allows filter changes to be performed from the front of the cabinet by a single person without tools.
- D. Paper Catch: Protective screen located at the bottom of the rear air return plenum prevents wipes and other paper products from being drawn into the blower system.
- **E.** Double-Wall Plenum Design: Double-wall design creates a unique plenum which surrounds contaminated areas with negative pressure, preventing the possibility of contamination from leaks in filter seal, gasket, or cabinet structure
- **F.** Air Velocity: The air velocity and associated correction factors are preset at the factory to meet regulatory requirements and ensure operator safety
- **G.** Surround Air Intake Grille: All contaminated air is enclosed in the work area. No safety dead zone.
- **H.** Outlet: Outlets are installed in the work area to guard against electrical shock.
- Durable Interior: The Purair BIO utilizes a heavygauge, one-piece liner with coved corners for enhanced durability

- J. Ergonomic Fit: The angled front, narrow-front grille and frameless sash create an ergonomic work environment. The #304 stainless steel elbow/arm rest provides ergonomic forearm support to prevent grille blockages and improve posture.
- K. Safe: Includes HEPA filters (Class H14) tested to a typical efficiency of 99.97% for 0.3 micron particles

ADDITIONAL FEATURES

Robust Cabinet Construction: Key components, including fluorescent lamps, motor capacitor, electrical harness, electronic ballast and switch control are mounted outside the airstream and away from contaminated air to permit service without decontamination.

NSF 49 & EN12469 Listed: NSF 49 (4-foot models only) and EN12469 certified to meet international and industry standards of performance and protection.

Safety Interlock Feature: Activates the fan and fluorescent light in the cabinet automatically when the sash window is opened. The UV light is also automatically switched off during this time. When the window is fully closed, the UV light is switched on and the fluorescent lamp and fan are turned off automatically.

Full Product Support: The best value Class II Biological Safety Cabinet on the North American market supported by nationwide sales and service representatives.

220 watt¹ Purair Bio model AS-AHA-103-CA-B.

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1) Energy consumption disclosure is based on internal testing with the blower running and lights on.

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The Purair BIO includes industry-leading innovations and technology. It is easy to install, energy efficient, cost effective, and safe.

PERFORMANCE

The supply/exhaust HEPA filters provide 99.97% efficiency at 0.3 microns (Class H14).

DESIGN

The Purair BIO is self-contained and does not require venting to the outside. Because filtered air is returned to the room, there is no increased load requirement for facility HVAC make-up air. This eliminates the cost of additional facility ductwork construction as well as HVAC maintenance and overhead.



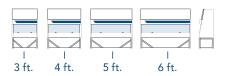
VIRO-CUT™ Antibacterial Stainless Steel:

The cabinet interior steel includes an anti-growth chemical embedded throughout. This ensures that regular cleaning and disinfecting activities will not degrade the antibacterial properties.

RFI IABII ITY

An innovative surrounded air intake grille keeps all contaminated air contained within the cabinet and isolated thanks to a double-wall design and negative internal pressure.





SELECTION

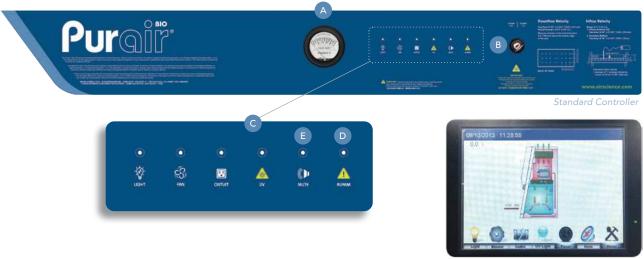
Purair BIO biological safety cabinets are available in 4 standard sizes. The slim profile hood design is the thinnest on the market and allows multiple laboratory configurations. Units are portable and may be moved from one location to the next with minimal downtime and without filter changes. Set-up, operation and filter maintenance are straightforward.

CONTROL

Because all Class II, Type A2 cabinets must meet NSF standards for airflow, face velocity and other performance attributes, eliminating superfluous control and indicating devices simplifies operation and user interface while essential functions are maintained. As a result, the Purair BIO Series offers a cost-effective, efficient and compliant solution to biological safety cabinet applications in life science and associated uses. An optional multilingual microprocessor controller with graphic user interface is available: see Options & Accessories.

All Purair BIO EN models are equipped with membranestyle switches.

- A. An analog Minihelic[™] gauge verifies airflow.
- B. On/Off key-switch controls main power.
- C. Soft key switches control interior lighting, UV lamp, interior outlet activation and fan.
- **D.** Sash alarm indicator activates an audible and visual warning of unsafe sash position (10 inches or 25 cm from the bottom of cabinet).
- **E.** Mute button silences the alarm for a specified time.



Optional Microprocessor Controller

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CONTAINMENT AND PROTECTION

The Purair BIO maintains an airflow ratio of 70% recirculation to 30% exhaust to ensure operator protection. The inflow and downflow balance is precisely established, with no room air entering the work zone to prevent product contamination. Airflow patterns are precisely tuned and tested to create an optimum air curtain on the front aperture, maintaining personnel and product protection even during the unlikely event of severe inflow or downflow imbalances.

The integrated HEPA filtration system provides clean air to the work surface in a gentle vertical laminar flow pattern, allowing the exhaust HEPA filter to trap biohazardous particles prior to the air being exhausted into the room.



What We Avoid

- Costly microprocessor controllers
- Dual blower motors with twice the energy consumption



HFPA FILTRATION

The Purair BIO uses HEPA filters to provide a range of high performance protection.

These self-contained filters are designed to physically capture particles larger than 0.3 microns with 99.97% efficiency.

The filters feature an integral groove filled with gel at the air inlet side, ensuring a perfect seal to the housing system. The aluminum frame guards against swelling typical of wooden framed filters.

For unobstructed airflow and superior filtration, filters do not contain aluminum separators.

A patented HEPA filtration lock maintains filter efficiency, minimizes the chance of leakage and prolongs filter life. The filters can also be changed from the front side of the cabinet quickly and easily.

ENERGY EFFICIENCY

The Purair BIO maintains one of the world's highest performance ratings for a brushless DC motor. Additional benefits include:

Better Apportioned Power. Over 80% of the EC motor output power is converted to kinetic energy to ensure sustainable energy savings over the life of the motor.

Extended Filter Life. Balanced airflow and even distribution of downflow and exhaust paths promotes uniform filter loading to prolong filter life.

Constant Feedback Motor Speed. The EC motor automatically adjusts speed to maintain compliant airflow at all critical points while compensating for filter loading and facility voltage fluctuations.

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BIO

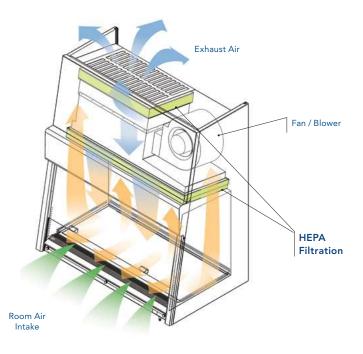
The Purair BIO is configured to comply with either NSF 49 or EN12469 criteria for airflow within critical points of the cabinet. In either model, the combination of HEPA supply and exhaust filters yields a fully integrated performance envelope for product, personnel and environmental protection from particulates.

CONTAINMENT & FILTRATION

Biological Safety Cabinets 3 ft. • 4 ft. • 5 ft. • 6 ft.

Face Velocity (Cabinet Intake)	NSF 49	EN12469
Note: 105 fpm is the midpoint	~100 fpm	~80 fpm
for the approved range.	~0.5 m/s	~0.4 m/s

An optional exhaust collar may be added which allows the Purair BIO to be connected to a facility exhaust ventilation system.



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¹⁾ Energy consumption disclosure is based on internal testing with the blower running and lights on

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BIO
Biological Safety Cabinets 3 ft. • 4 ft. • 5 ft. • 6 ft.

SPECIFICATIONS

AS-AHA-103 AS-AHA-133 AS-AHA-193 AS-AHA-163 3 ft. 4 ft. 5 ft. 6 ft. O000000 • O000000 • O 000000 • O00000 • MODEL **VOLTAGE CERTIFICATIONS PROTECTION DIMENSIONS** WEIGHT (LBS/KG) NSF 49 EN12469 IEC61010-1 Particulates* Vapors Internal (W \times D \times H) External (W \times D \times H) Shipping (W \times D \times H) Net Ship (Personnel, (Personnel, Work Surface, Work Surface) Environment) **Purair BIO Models** 3 ft. | AS-AHA-103-CA-B 115V, AC, 60Hz When ducted 36.2" × 24.6" × 28" 40.7" × 31.1" × 60.5" 43.3" × 33.5" × 77.8" 463 / 210 No Yes Yes 529 / 240 Yes 920 × 626 × 709 mm 1034 × 789 × 1537 mm 1100 × 850 × 1950 mm to outside 3 ft. | AS-AHA-103-CB-B 230V, AC, 50Hz

When ducted

to outside

When ducted

to outside

When ducted

to outside

When ducted

to outside

Yes

Yes

Yes

Yes

4 ft. | AS-AHA-133-CA-A

4 ft. | AS-AHA-133-CB-A

4 ft. | AS-AHA-133-CA-B

4 ft. | AS-AHA-133-CB-B

5 ft. | AS-AHA-163-CA-B

5 ft. | AS-AHA-163-CB-B

6 ft. | AS-AHA-193-CA-B

6 ft. | AS-AHA-193-CB-B

Yes**

Yes

Yes

Yes

Yes

Yes

Yes

Yes

No

Yes

No

No

115V, AC, 60Hz

230V, AC, 50Hz

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48" × 24.6" × 28"

1220 × 626 × 709 mm

48" × 24.6" × 28"

1220 × 626 × 709 mm

59.8" × 24.6" × 28"

1520 × 626 × 709 mm

71.6" × 24.6" × 28"

1820 × 626 × 709 mm

52.5" × 31.1" × 60.5"

1334 × 789 × 1537 mm

52.5" × 31.1" × 60.5"

1334 × 789 × 1537 mm

64.3"x 31.1" × 60.5"

1634 × 789 × 1537 mm

76.1" × 31.1" × 60.5"

1934 × 789 × 1537 mm

55.1" × 33.5" × 77.8"

1400 × 850 × 1950 mm

55.1" × 33.5" × 77.8"

1400 × 850 × 1950 mm

67" × 33.5" × 77.8"

1700 × 850 × 1950 mm

78.7" × 33.5" × 77.8"

2000 × 850 × 1950 mm

529 / 240

529 / 240

617 / 280

705 / 320

617 / 280

617 / 280

705 / 320

816 / 370

^{* 99.99% @ 0.3} microns

^{** 4} ft. EN versions have a 20 cm window position, all other models have a 25 cm window position.

¹⁾ Energy consumption disclosure is based on internal testing with the blower running and lights on.

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PRODUCT SPECIFICATIONS

Filtration	AS-AHA-103-CA-B AS-AHA-103-CB-B	AS-AHA-133-CA-B AS-AHA-133-CB-B	AS-AHA-133-CA-A AS-AHA-133-CB-A	AS-AHA-163-CA-B AS-AHA-163-CB-B	AS-AHA-193-CA-B AS-AHA-193-CB-B
Airflow	< 70% recirculated / 30% exhausted>				
Average Inflow Velocity	< 100 fpm (0.51 m/s)>				
Average Downflow Velocity	64 fpm (0.325 m/s)	60 fpm (0.30 m/s)	60 fpm (0.30 m/s)	60 fpm (0.30 m/s)	60 fpm (0.30 m/s)
Exhaust Air Volume with Exhaust Canopy	353 cfm (10 m³)	459 cfm (13 m³)	388 cfm (11 m³)	565 cfm (16 m³)	671 cfm (19 m³)
Supply HEPA Filter	< (1) 99.97% @0.3 microns (Class H14)>				
Exhaust HEPA Filter	< (1) 99.97% @0.3 microns (Class H14)>				
Construction	AS-AHA-103-CA-B AS-AHA-103-CB-B	AS-AHA-133-CA-B AS-AHA-133-CB-B	AS-AHA-133-CA-A AS-AHA-133-CB-A	AS-AHA-163-CA-B AS-AHA-163-CB-B	AS-AHA-193-CA-B AS-AHA-193-CB-B
Room Height	89.4" / 227 cm	89.4" / 227 cm	89.4" / 227 cm	89.4" / 227 cm	89.4" / 227 cm
Construction	< SUS#304; 6 mm tempered window glass>				
Window Operation	9.8" / 25 cm	9.8" / 25 cm	7.9" / 20 cm	9.8" / 25 cm	9.8" / 25 cm
Blower	< EC brushless DC Motor>				
Electrical Switches	< Membrane push switches; On/Off>				
Electrical Outlets	(2) Electrical outlets (CE certified)	(2) Duplex electrical outlets with splash-proof cover (UL listed)	(2) Electrical outlets (CE certified)	(2) Electrical outlets (CE certified)	(2) Electrical outlets (CE certified)
Electrical	< 115V, 60Hz, 15A or 230V, 50Hz, 10A>				
Efficiency	AS-AHA-103-CA-B AS-AHA-103-CB-B	AS-AHA-133-CA-B AS-AHA-133-CB-B	AS-AHA-133-CA-A AS-AHA-133-CB-A	AS-AHA-163-CA-B AS-AHA-163-CB-B	AS-AHA-193-CA-B AS-AHA-193-CB-B
Power Consumption	220 watt	300 watt	230 watt	400 watt	490 watt
Fluorescent Intensity lux	< > 1,000>				
Fluorescent Lamp	(2) T5, 21 watt	(2) T5, 28 watt	(2) T5, 28 watt	(2) T5, 35 watt	(4) T5, 21 watt
UV Lamp	(1) FL 20 watt	(1) FL 30 watt, 254 nm	(1) FL 30 watt, 254 nm	(1) FL 40 watt, 254 nm	(2) FL 20 watt, 254 nm
Noise, dBA	< 58	< 63	< 57	< 60	< 62

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¹⁾ Energy consumption disclosure is based on internal testing with the blower running and lights on.

OPTIONS & ACCESSORIES

Purair BIO Models		AS-AHA-103-CA-B AS-AHA-103-CB-B	AS-AHA-133-CA-B AS-AHA-133-CB-B AS-AHA-133-CA-A AS-AHA-133-CB-A	AS-AHA-163-CA-B AS-AHA-163-CB-B	AS-AHA-193-CA-B AS-AHA-193-CB-B
Exhaust Collar	For connecting the biosafety cabinet to building exhaust or remote blower for outside ducting.	HBE-103-AA-A	HBE-133-AA-A	HBE-163-AA-A	HBE-193-AA-A
Service Fixture Kit	Additional connections available for Air/Gas/Vacuum. CSA certified.	BA-L4100-158-B	BA-L4100-158-B	BA-L4100-158-B	BA-L4100-158-B
IV Bar Kit	Includes 6 hooks. Specify when ordering. Field installed.	BC-1934-A	BC-1671-A	BC-1673-A	BC-1674-A
Moveable Elbow / Arm Rest	Made of stainless steel #304 and provides ergonomic forearm support to prevent grill blockages and improve posture.	BC-1933-A	BC-1933-A	BC-1933-A	BC-1933-A
Microprocessor Control	Full-color microcomputer touch panel with easy to use graphical user interface. Real time digital display of inflow velocity, downflow velocity, HEPA filter pressure and usage time for HEPA filters and UV lamps.	AS-AHA-103-AA-B AS-AHA-103-AB-B	AS-AHA-133-AA-B AS-AHA-133-AB-B AS-AHA-133-AA-A AS-AHA-133-AB-A	AS-AHA-163-AA-B AS-AHA-163-AB-B	AS-AHA-193-AA-B AS-AHA-193-AB-B

ELECTRICAL SAFETY AND CERTIFICATION

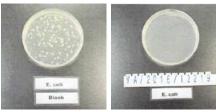
- All components meet or exceed applicable safety requirements.
- Each cabinet is individually tested for electrical safety at the factory and documentation specific to each tested cabinet is maintained on file.
- IEC Certified for USA and Canada
- Models available with NSF 49 and EN12469 certifications.

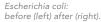
Contact Air Science or your sales rep for preparation information.



VIRO-CUT ANTIBACTERIAL STAINLESS STEEL

The antibacterial effectiveness of VIRO-CUT stainless steel is validated by the JIS Z 2801 testing standard, one of the most commonly used testing methods in the world. The JIS Z 2801 testing method measures the growth of Escherichia coli and Staphylococcus aureus over a 24-hr period.







Staphylococcus aureus: before (left) after (right).



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WARRANTY

This product is protected by the Air Science Legacy Limited Lifetime Warranty $^{\text{TM}}$.



STANDARDS AND COMPLIANCE		
Quality Management Systems	ISO 9001:2015	
Cabinet Performance	EN12469 NSF 49 [NSF Certification applies to the biological safety cabinet models AHA-133-AA-B (Air Science Model AS-AHA-133-AA-B), AHA-133-AB-B (Air Science Model AS-AHA-133-AB-B) and AHA-133-CB-B (Air Science Model AS-AHA-133-CB-B), as well as AHA-133-AC-B (Air Science Model AS-AHA-133-AC-B) and AHA-133-CA-B (Air Science Model AS-AHA-133-CA-B) manufactured by Chung Fu Technical Development Co. Ltd., Taipei, Taiwan and marketed by Air Science, LLC, USA.]	
Electrical Safety	UL-C-61010-1 CAN/CSA C22.2 61010-1-12 EN 61010-1:2010 CE Mark	



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