



# Airstream®

## Horizontal Laminar Flow Clean Benches

### Introduction

Esco is the world leader in premium laminar flow clean benches for the global life sciences market. Since 1978, Esco has installed tens of thousands of laminar flow cabinets providing reliable protection for samples and work processes for a multitude of applications.

Esco laminar flow clean benches are the premium selection for the discerning researcher. Offering a combination of value, high quality construction, low operating noise levels in a wide product range to suit all budgets, from the industry leader.

### Designed and Built for Enhanced Usability

Esco laminar flow clean benches incorporate a number of features to ensure operator comfort and enhanced productivity.

- The clean bench work surface is constructed of stainless steel, making the work zone easy to clean. The interior surface will not chip, rust or generate particles.
- The spillage-retention work top design with a recessed central area ensures that all liquid spills are contained.
- The ergonomically designed work surface with a curved front edge is designed for maximum operator comfort. A raised edge at the back of the work zone prevents spills from damaging the filter.
- The instant-start 5000k warm white lighting operates on an electronic ballast to reduce heat, improve comfort and conserve energy.

### User-Friendly Control System

- Built-in solid state variable speed controller is superior to conventional "step" controllers and offer infinite adjustment from zero to maximum setting.

- Standard cabinet control system consists of separate switches for blower, lights, UV light (UV light switch is interlocked with the light and blower switch for enhanced safety), and socket plus a pressure gauge for filter monitoring.

### Enhanced Filtration System

The enhanced filtration system on the AHC-B series is designed to provide the highest level of air quality within the work zone, meeting all relevant standards (see technical specifications for details).

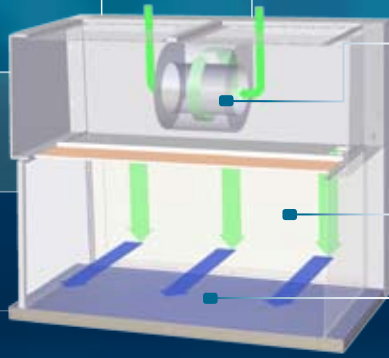
- All Esco laminar flow clean benches provide ISO Class 3 air cleanliness within the work zone as per ISO 14644.1, significantly cleaner than the usual Class 5 classification on cabinets offered by the competition.
- High quality ULPA filters, utilizing an improved mini-pleat separation technique to maximize surface area improving efficiency and extending the life of the filter. ULPA filters operate at a typical efficiency of >99.999% on 0.1 to 0.3 micron sizes, providing superior protection over conventional HEPA filters.
- An additional disposable pre-filter on all models traps large particles in the inflow air prior to reaching the main filter, protecting it against damage and prolonging its life.
- Integral filter metal guard on the ULPA filter prevents accidental damage to the filter media; seamless filter gasket is permanently molded on the filter frame and will not deteriorate over time; aerosol (DOP/PAO) challenge test port included.

### The Highest Quality Cabinet Construction

All Esco products are manufactured for the most demanding laboratory applications.



*Airstream Horizontal Flow Clean Bench  
Model AHC-4B2.*



### Horizontal Laminar Flow Clean Bench

- Blower
- Supply ULPA Filter
- Horizontal Laminar Flow of Clean Air

- ULPA-filtered air
- Room air / Inflow air

- Room air is taken in from the top of the cabinet through a disposable pre-filter; this serves to trap larger particles and increase the life of the main filter.
- Air is forced evenly across the ULPA filter(s); the resultant clean laminar air flushes all airborne contaminants from the work zone.
- A nominal filter face velocity of 0.45 m/s or 90 fpm ensures that there are a sufficient number of air changes within the enclosed area of the cabinet to maintain a contamination free work area.
- The purified air travels across the internal work zone of the cabinet in a horizontal, unidirectional stream and leaves the main work chamber.

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- All components are designed for maximum chemical resistance and enhanced durability for a long service life.
- The main body of the clean bench is constructed of industrial-grade electro-galvanized steel.
- All cabinet components are clean room compatible.
- Isocide eliminates 99.9% of surface bacteria within 24 hours of exposure.
- Transparent tempered glass side panels enhance visibility and create a more comfortable work environment for the operator as opposed to conventional stainless steel or painted steel sides.
- Tempered glass is scratch and abrasion resistant, does not create particulates, and is easy to clean.

#### Blower Efficiency

- Esco laminar flow clean benches incorporate permanently lubricated direct drive centrifugal blowers.
- The energy efficient external rotor motor design reduces operating costs and has extremely low noise and vibration.
- The intelligent blower system compensates airflow as the filter becomes loaded, ensuring optimum efficiency and product protection.

#### Designed and Built to Exceed Safety Criteria

All components used in Esco products meet or exceed all applicable safety requirements.

- Each cabinet is individually factory tested for safety and performance in accordance with international standards.
- UL listed or UL recognized, electrical components ensures superior electrical safety for the operator.
- All Esco laminar flow clean benches meet general safety requirements set by independent testing laboratories (see technical specifications for details).
- Esco AHC models have been type-tested to the EN 12469:2000 for cross-contamination and product protection using microbiological testing methods.

#### Warranty

All Esco Airstream laminar flow clean benches come with an extended 3 year warranty, excluding consumable parts. Contact your local representative for specific warranty details.

#### Accessories and Options

Esco offers a variety of options and accessories to meet local applications. Contact Esco or your local Sales Representative for ordering information.

- Support stands
- Electrical outlet, ground fault
- Petcock (air, gas, vacuum)
- Germicidal UV lamp
- Transparent front cover for UV protection
- PVC armrest
- Height-adjustable lab chair
- Ergonomic foot rest
- IV Bar, with hooks



Standards Compliance	Cabinet Performance	Air Quality	Filtration	Electrical Safety
	AS 1386.5, Australia IEST-RP-CC002.2, Worldwide	ISO 14644.1, Class 3, Worldwide IEST-G-CC1001, Worldwide IEST-G-CC1002, Worldwide	EN-1822 (H14), Europe IEST-RP-CC001.3, Worldwide IEST-RP-CC007.1, Worldwide IEST-RP-CC034.1, Worldwide	UL-61010-1, USA CAN/CSA -22.2, No.61010-1 EN 61010-1, Europe IEC 61010-1, Worldwide

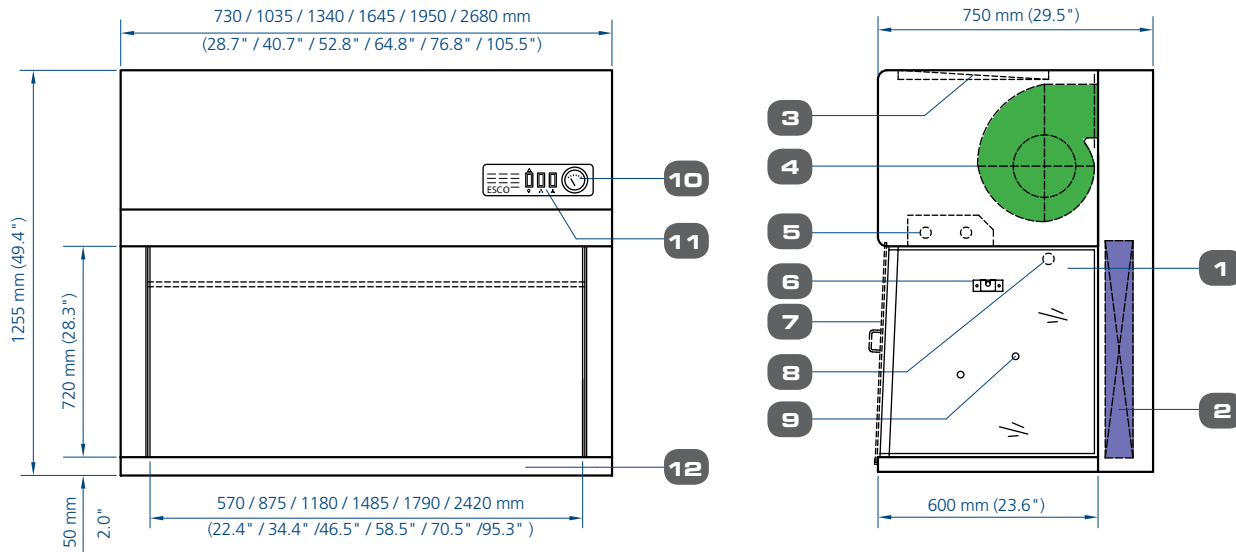
\*Type-tested for cross-contamination and product protection using the microbiological testing methods adapted from this biological safety cabinet standard.

## General Specifications, Airstream Horizontal Laminar Flow Clean Benches

Model	AHC-2B2	AHC-3B2	AHC-4B2	AHC-5B2	AHC-6B2
Nominal Size	0.6 meters (2')	0.9 meters (3')	1.2 meters (4')	1.5 meters (5')	1.8 meters (6')
External Dimensions (W x D x H)	730 x 750 x 1255 mm 28.7" x 29.5" x 49.4"	1035 x 750 x 1255 mm 40.7" x 29.5" x 49.4"	1340 x 750 x 1255 mm 52.8" x 29.5" x 49.4"	1645 x 750 x 1255 mm 64.8" x 29.5" x 49.4"	1950 x 750 x 1255 mm 76.8" x 29.5" x 49.4"
Internal Work Area, Dimensions (W x D x H)	570 x 600 x 720 mm 22.5" x 23.6" x 28.3"	875 x 600 x 720 mm 34.5" x 23.6" x 28.3"	1180 x 600 x 720 mm 46.5" x 23.6" x 28.3"	1485 x 600 x 720 mm 58.5" x 23.6" x 28.3"	1790 x 600 x 720 mm 70.5" x 23.6" x 28.3"
Usable Work Zone	0.3 m <sup>2</sup> (3.2 sq.ft)	0.43 m <sup>2</sup> (4.6 sq.ft)	0.59 m <sup>2</sup> (6.4 sq.ft)	0.75 m <sup>2</sup> (8.1 sq.ft)	0.91 m <sup>2</sup> (9.8 sq.ft)
Initial Airflow Velocity	0.45 m/s (90 fpm)				
Air Volume	665 m <sup>3</sup> /h (390 cfm)	1021 m <sup>3</sup> /h (598 cfm)	1376 m <sup>3</sup> /h (806 cfm)	1732 m <sup>3</sup> /h (1015 cfm)	2088 m <sup>3</sup> /h (1224 cfm)
ULPA Filter Typical Efficiency	>99.999% at particle size between 0.1 to 0.3µm				
Sound Emission Per IEST- RP-CC002.2	<60 dBA	<61 dBA	<62 dBA	<63 dBA	<64 dBA
Fluorescent Lamp Intensity At Zero Ambient	> 1800 Lux (>167 foot candles)				
Cabinet Construction	Main Body	1.2 mm / 0.05" / 18 gauge electro-galvanised steel with white oven-baked epoxy powder-coated finish.			
	Work Zone	1.5 mm (0.06") 18 gauge stainless steel, grade 304			
	Side Walls	UV absorbing tempered glass, 5 mm (0.2"), colorless and transparent			
Net Weight**	140 kg (309 lbs)	170 kg (375 lbs)	200 kg (441 lbs)	230 kg (507 lbs)	260 kg (573 lbs)
Shipping Weight**	170 kg (375 lbs)	205 kg (452 lbs)	245 kg (540 lbs)	280 kg (617 lbs)	320 kg (705 lbs)
Shipping Dimensions, Maximum (W x D x H)**	1080 x 840 x 1630 mm 42.5" x 33" x 64.2"	1385 x 840 x 1630 mm 54.5" x 33" x 64.2"	1690 x 840 x 1630 mm 66.5" x 33" x 64.2"	1995 x 840 x 1630 mm 78.5" x 33" x 64.2"	2300 x 840 x 1630 mm 90.6" x 33" x 64.2"
Shipping Volume, Maximum**	1.48 m <sup>3</sup> (52.2 cu.ft)	1.90 m <sup>3</sup> (67 cu.ft)	2.31 m <sup>3</sup> (81.6 cu.ft)	2.73 m <sup>3</sup> (96.4 cu.ft)	3.0 m <sup>3</sup> (105.9 cu.ft)
Electrical* (110-130V, AC, 60Hz, 1 Ø)	Cabinet Power/ Amps	305 W/ 2 A	340 W/ 2 A	390 W/ 2 A	790 W/ 4.5 A
	Outlet Amp Fuse	5 A	5 A	5 A	5 A
	Total Amps (FLA)	7 A	7 A	7 A	9.5 A
	BTU/ Hr	622	694	796	1612

\* Additional voltages may be available; contact Esco for ordering information.  
 \*\* Cabinet only; excludes optional stand.

### Model AHC (B-Series) Airstream Horizontal Laminar Flow Clean Bench Technical Specifications



- 1. Tempered glass side panel
- 2. ULPA filter
- 3. Pre-filter
- 4. Blower
- 5. Fluorescent lamps

- 6. Standard IV bar Retrofit Kit provision
- 7. Optional front cover for UV protection
- 8. Standard UV light Retrofit Kit provision
- 9. Service fixture Retrofit Kit provision (2 holes on each side)

- 10. Pressure gauge
- 11. Operating switches
- 12. Stainless steel work top



### Esco Containment, Clean Air and Laboratory Equipment Products

- Biological Safety Cabinets, Class II, III
- Fume Hoods, Conventional, High Performance, Ductless Carbon Filtered
- Laminar Flow Cabinets, Horizontal, Vertical, PCR
- Animal Containment Workstations
- Hospital Pharmacy Isolators, Cytotoxic Safety Cabinets
- Specialty Workstations: *In-Vitro* Fertilization, Powder Weighing
- PCR Thermal Cyclers, Conventional, Real-Time
- Cleanroom Fan Filter Units, Modular Rooms, Air Showers, Pass Thrus

*Since 1978, Esco has emerged as a leader in the development of controlled environment, laboratory and cleanroom equipment solutions. Products sold in more than 100 countries include biological safety cabinets, fume hoods, ductless fume hoods, laminar flow clean benches, animal containment workstations, cytotoxic cabinets, hospital pharmacy isolators, and PCR cabinets and instrumentation. With the most extensive product line in the industry, Esco has passed more tests, in more languages, for more certifications, throughout more countries than any biosafety cabinet manufacturer in the world. Esco remains dedicated to delivering innovative solutions for the clinical, life science, research and industrial laboratory community. [www.escoglobal.com](http://www.escoglobal.com).*

NSF / ANSI 49 Biological Safety Cabinets • Animal Containment Workstations • Fume Hoods • Clean Benches



# ESCO

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