

Airstream®



*Esco Airstream Laminar Flow Clean Bench
Model AHC-40*

Laminar Flow Clean Benches, Horizontal and Vertical
The Leading Solution for Research Laboratories



ESCO

WORLD CLASS. WORLDWIDE.



Esco Experience

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 clean benches 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, and a wide product range to suit all budgets, from the industry leader.

Airstream Horizontal Laminar Flow Clean Bench, Model AHC-4D, Shown with optional caster wheels stand, ergonomic lab chair and footrest.

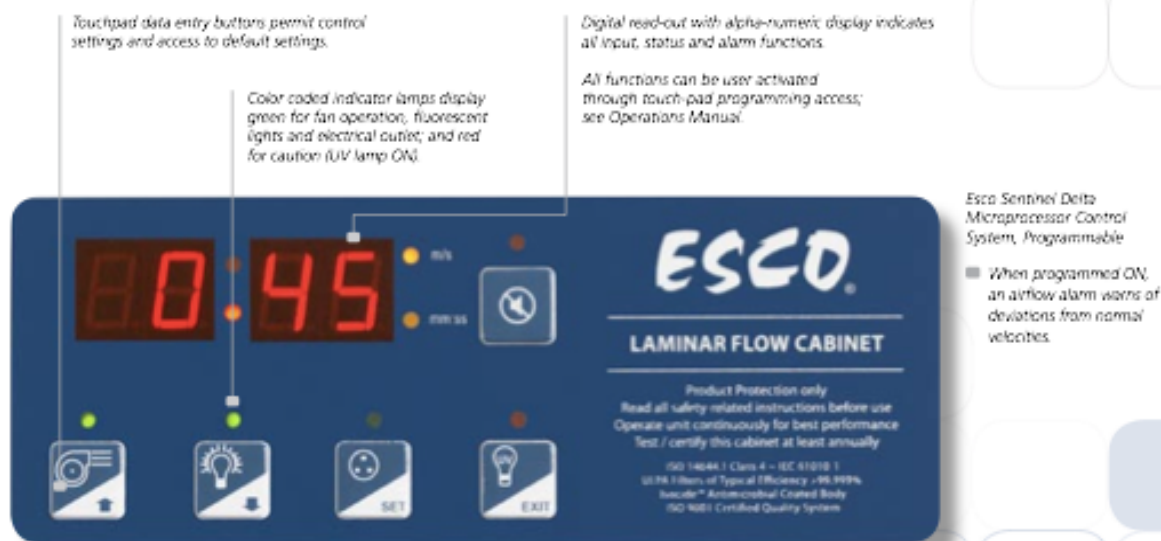
Standards Compliance	Cabinet Performance	Air Quality	Filtration	Electrical Safety
	EN 12469* IEST-RP-CC002.2, Worldwide	ISO 14644.1 Class 3, Worldwide AS 1386 Class 1.5, Australia JIS B9920 Class 3, Japan	EN-1822 (H14), Europe IEST-RP-CC001.3, Worldwide IEST-RP-CC007.1, Worldwide IEST-RP-CC034.1, Worldwide	IEC 61010-1, Worldwide EN 61010-1, Europe UL 61010-1, USA CAN/CSA-22.2, No.61010-1

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

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Laminar Flow Clean Benches • Laminar Flow Clean Benches, Horizontal and Vertical (D-Series)

Save Time and Money, Sentinel™ Delta Microprocessor Monitors Airflow in Real Time to Prevent Sample Contamination



Horizontal and Vertical Laminar Flow Clean Benches

Esco Airstream Laminar Flow Clean Benches are available in both horizontal and vertical flow models. In both models, air is taken in from above the cabinet and passed through a ULPA filter.

- In horizontal flow models filtered air is then passed through the main chamber of the clean bench in a horizontal laminar (unidirectional) air stream and is exhausted through the front opening of the cabinet.
- In vertical flow models, filtered air is passed through the main chamber of the clean bench in a vertical laminar (unidirectional) air stream before being exhausted through the front opening of the clean bench.

In horizontal laminar flow clean benches (AHC) there is a slightly reduced level of turbulence compared to vertical flow clean benches (AVC) due to the airflow not striking the work surface. However vertical laminar flow clean benches generate less turbulence around large pieces of equipment as compared to horizontal laminar flow clean benches.



Airstream Horizontal Laminar Flow Clean Bench, Model AHC-4D. Shown with optional caster wheels stand. Available in 0.6, 0.9, 1.2, 1.5 and 1.8m widths (2', 3', 4', 5' and 6').

Airstream Vertical Laminar Flow Clean Bench, Model AVC-4D. Shown with optional caster wheels stand. Available in 0.6, 0.9, 1.2, 1.5 and 1.8m widths (2', 3', 4', 5' and 6').

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Airstream® Horizontal Laminar Flow Clean Benches

Provide Product Protection

High Performance Blower System

German made ebm-papst®, permanently lubricated, centrifugal motor/blowers with external rotor designs.

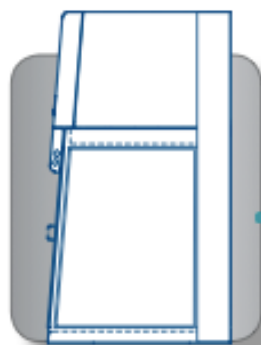
Motors selected for energy efficiency, compact design, and flat profile. Completely integrated assembly optimizes motor cooling.

All rotating parts balanced for smooth, quiet, vibration-free operation.



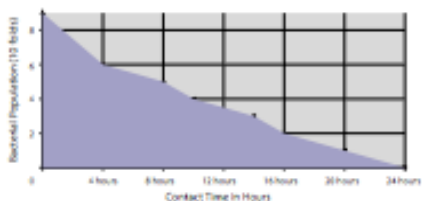
ULPA Filtration System

Swedish Camfil Farr® ULPA filters operate at a typical efficiency of >99.999% at 0.1 to 0.3 micron sizes, providing superior product protection over conventional HEPA filters.



User Interface

An angled front, curved work surface front edge, and glass sides promote ergonomics.

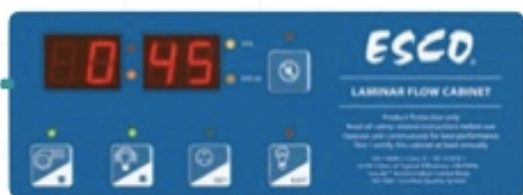


Built-In Protection

External surfaces are powder coated with Esco **ISOCIDE**™ to eliminate 99.9% of surface bacteria within 24 hours of exposure.



Airstream Horizontal Flow Clean Bench,
Model AHIC-40



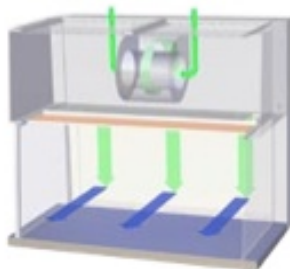
Sentinel™ Delta Microprocessor Control System

Soft touch controls for blower, light, outlet and UV are easy to clean. A temperature-compensated air velocity sensor and real-time display allows airflow to be monitored more accurately compared with conventional pressure gauges.



Work Top

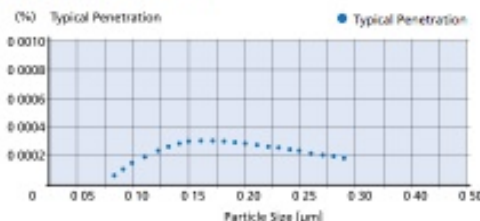
The spill-retaining work top design with a recessed central area contains accidental liquid spills.



Proven Product Protection

Horizontal laminar air flow with ULPA filtration, >99.999% at 0.1 to 0.3 microns, provides superior product protection.

Esco Filter Efficiency



Esco clean benches use ULPA filters (per IEST-RP-CC001.3) instead of conventional HEPA filters commonly found in laminar flow clean benches. While HEPA filters offer 99.99% typical efficiency at 0.3 micron level, ULPA filters provide 99.999% typical efficiency for particle sizes of 0.1 to 0.3 micron level.

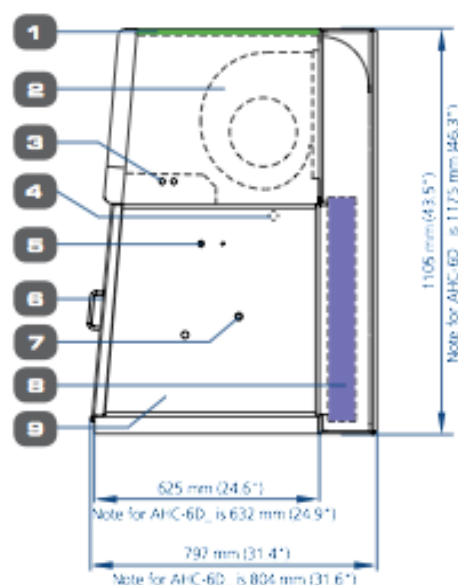
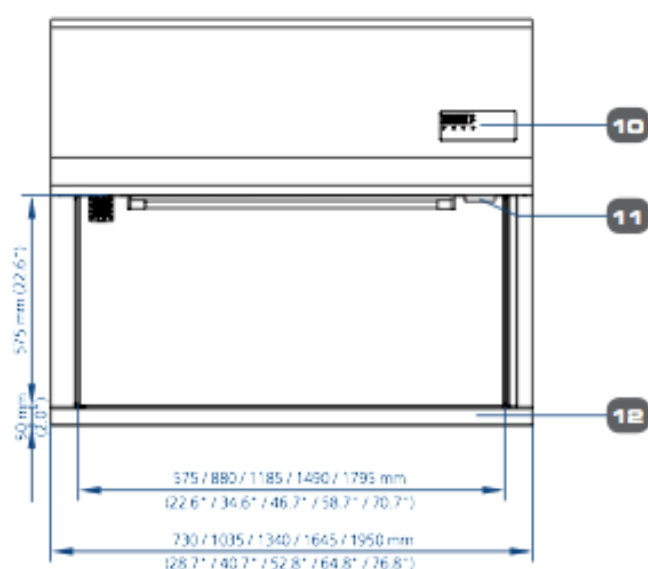
Key Features

- ULPA filters (per IEST-RP-CC-001.3) tested to a typical efficiency of >99.999% for 0.1 to 0.3 micron particles are superior to HEPA filters. ULPA filters last as long as conventional HEPA filters and have similar replacement costs.
- 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 clean benches offered by the competition.
- The intelligent blower system maintains airflow as the filter becomes loaded, ensuring optimum efficiency and product protection.
- An additional disposable pre-filter traps large particles in the inflow air prior to reaching the main filter, protecting against damage and prolonging filter life.
- All Esco products are manufactured for the most demanding laboratory applications. 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.
- One piece formed stainless steel work surface with a curved front edge is designed for maximum operator comfort.
- Built-in warm white, electronically ballasted, 5000k lighting provides excellent illumination of the work zone and reduces operator fatigue. The reliable lighting system is zero-flicker and instant start.
- Esco Laminar Flow Clean Benches have been tested for cross-contamination and product protection using microbiological test methods specified in EN12469.
- Each clean bench is individually factory tested for safety and performance in accordance with international standards.
- All electrical components are UL listed or UL recognized, ensuring superior electrical safety for the operator.
- Esco **ISOCIDE™** antimicrobial coating on all painted surfaces.

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Model AHC (D-Series), Airstream Horizontal Laminar Flow Clean Bench Technical Specifications



1. Pre-filter
2. Blower
3. Fluorescent lamp
4. UV light Retrofit Kit provision
5. IV bar Retrofit Kit provision

6. Optional front cover
7. Service fixture Retrofit Kit provision (2 penetrations on each side)
8. UFA filter
9. Tempered glass side panels

10. Esco Sentinel™ Delta microprocessor control system
11. Standard electrical outlet Retrofit Kit provision
12. Stainless steel work top

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Warranty

All Esco Airstream, vertical and horizontal flow clean benches are covered by an extended 3 year warranty, excluding consumable parts and accessories. Contact your local Sales Representative for 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

- Fixed height, available 711 mm (28") or 860 mm (34")
 - With leveling feet (SPL)
 - With casters (SPC)
- Adjustable height, hydraulic range 711 mm (28") to 860 mm (34")
 - Manual or electrical lift (SPM)
 - With casters

Electrical Outlets and Utility Fixtures

- Electrical outlet, ground fault, North America
- Electrical outlet, Euro/Worldwide
- Petcock (air, gas, vacuum)
 - North America (American) style
 - Euro/Worldwide style DIN 12898, DIN 12919, DIN 3537

Cabinet Accessories

- Germicidal UV lamp
- Transparent front cover (recommended when UV lamp is used)
- PVC armrest
- Height-adjustable lab chair
- Ergonomic foot rest
- IV bar, with hooks



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Laminar Flow Clean Benches • Laminar Flow Clean Benches, Horizontal and Vertical (D-Series)

General Specifications, Airstream Horizontal Laminar Flow Clean Benches

Note to customer: Insert electrical voltage number into last model number digit _ when ordering.

Model		AHC-2D_	AHC-3D_	AHC-4D_	AHC-5D_	AHC-6D_
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)	Without Base Stand	730 x 797 x 1105 mm 28.7" x 31.4" x 43.5"	1035 x 797 x 1105 mm 40.7" x 31.4" x 43.5"	1340 x 797 x 1105 mm 52.8" x 31.4" x 43.5"	1645 x 797 x 1105 mm 64.8" x 31.4" x 43.5"	1950 x 804 x 1175 mm 76.8" x 31.6" x 46.3"
	With Optional Base Stand, 711 mm (28") type	730 x 797 x 1816 mm 28.7" x 31.4" x 71.5"	1035 x 797 x 1816 mm 40.7" x 31.4" x 71.5"	1340 x 797 x 1816 mm 52.8" x 31.4" x 71.5"	1645 x 797 x 1816 mm 64.8" x 31.4" x 71.5"	1950 x 804 x 1886 mm 76.8" x 31.6" x 74.2"
Internal Work Area, Dimensions (W x D x H)*		575 x 625 x 575 mm 22.6" x 24.6" x 22.6"	880 x 625 x 575 mm 34.6" x 24.6" x 22.6"	1185 x 625 x 575 mm 46.7" x 24.6" x 22.6"	1490 x 625 x 575 mm 58.7" x 24.6" x 22.6"	1795 x 632 x 575 mm 70.7" x 24.9" x 22.6"
Internal Work Area, Space		0.36 m ² (3.87 sq.ft)	0.55 m ² (5.92 sq.ft)	0.74 m ² (7.96 sq.ft)	0.94 m ² (10.11 sq.ft)	1.13 m ² (12.16 sq.ft)
Average Airflow Velocity		0.45 m/s (90 fpm) at initial setpoint				
Air Volume		531 m ³ /h (313 cfm)	815 m ³ /h (480 cfm)	1099 m ³ /h (647 cfm)	1383 m ³ /h (814 cfm)	1667 m ³ /h (981 cfm)
ULPA Filter Typical Efficiency		>99.999% at particle size between 0.1 to 0.3µm				
Sound Emission Per IEST-PP-CC002.2*		54 dBA	55 dBA	57 dBA	59 dBA	60 dBA
Fluorescent Lamp Intensity At Zero Ambient		1530 Lux (142 foot candles)	1490 Lux (138 foot candles)	1680 Lux (156 foot candles)	1390 Lux (129 foot candles)	1510 Lux (140 foot candles)
Cabinet Construction	Main Body	1.2 mm (0.05") 18 gauge electro-galvanized steel with white oven-baked epoxy-polyester powder-coated finish.				
	Work Zone	1.2 mm (0.05") 18 gauge stainless steel, grade 304, with 4B finish				
	Side Walls	UV absorbing tempered glass, 5 mm (0.2"), colorless and transparent				
Electrical**	220-240V, AC, 50Hz, 1Ø	AHC-2D1	AHC-3D1	AHC-4D1	AHC-5D1	AHC-6D1
	Cabinet Full Load Amps (FLA)	2A	2A	2A	2A	5A
	Optional Outlets FLA	5A	5A	5A	5A	5A
	Cabinet Nominal Power	203	228	390	515	636
	Cabinet BTU	693	778	1331	1757	2170
	110-120V, AC, 60Hz, 1Ø	AHC-2D2	AHC-3D2	AHC-4D2	AHC-5D2	AHC-6D2
	Cabinet Full Load Amps (FLA)	6.5A	6.5A	6.5A	6.5A	10.5A
	Optional Outlets FLA	5A	5A	5A	5A	5A
	Cabinet Nominal Power	550	600	650	750	868
	Cabinet BTU	1877	2047	2218	2559	2962
	220-240V, AC, 60Hz, 1Ø	AHC-2D3	AHC-3D3	AHC-4D3	AHC-5D3	AHC-6D3
	Cabinet Full Load Amps (FLA)	2A	2A	2A	2A	5A
	Optional Outlets FLA	5A	5A	5A	5A	5A
	Cabinet Nominal Power	203	228	390	515	636
	Cabinet BTU	693	778	1331	1757	2170
Net Weight***		101 kg (223 lbs)	124 kg (273 lbs)	150 kg (331 lbs)	157 kg (346 lbs)	198 kg (436 lbs)
Shipping Weight***		136.5 kg (301 lbs)	163.6 kg (361 lbs)	190.1 kg (419 lbs)	201.0 kg (443 lbs)	267.3 kg (589 lbs)
Shipping Dimensions, Maximum (W x D x H)***		860 x 820 x 1610 mm 33.8" x 32.3" x 63.4"	1120 x 820 x 1610 mm 44" x 32.3" x 63.4"	1430 x 820 x 1610 mm 56.3" x 32.3" x 63.4"	1720 x 820 x 1610 mm 67.7" x 32.3" x 63.4"	2040 x 820 x 1610 mm 80.3" x 32.3" x 63.4"
Shipping Volume, Maximum***		1.14 m ³ (40.3 cu.ft)	1.48 m ³ (52.3 cu.ft)	1.89 m ³ (66.7 cu.ft)	2.27 m ³ (80.2 cu.ft)	2.69 m ³ (95.0 cu.ft)

* Noise reading in open field condition/ anechoic chamber.

** Additional voltages may be available; contact Esco for ordering information.

*** Clean bench only; excludes optional stand.

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