

# ESCO

WORLD CLASS. WORLDWIDE.

## Opti•MAIR®

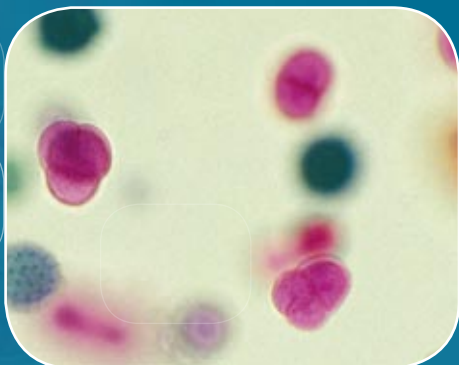
### Vertical Laminar Flow Clean Benches

#### *The Leading Solution for Research Laboratories*

Esco is an industry leader in the development of professional quality laminar flow clean benches. With tens of thousands sold throughout the life sciences market worldwide, Esco continues to reinforce its reputation for dependability by providing reliable protection for samples and work processes in a multitude of applications.



*OptiMair Vertical Laminar Flow Clean Bench,  
Available in 1.2 and 1.8 meter models (4' and 6').  
Shown with optional stand.*



# OptiMair™ Vertical Laminar Flow Clean Benches

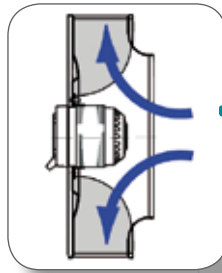
Provide Product Protection

## High Performance Fan System

German made ebm-papst® permanently lubricated, centrifugal motor/fans 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.

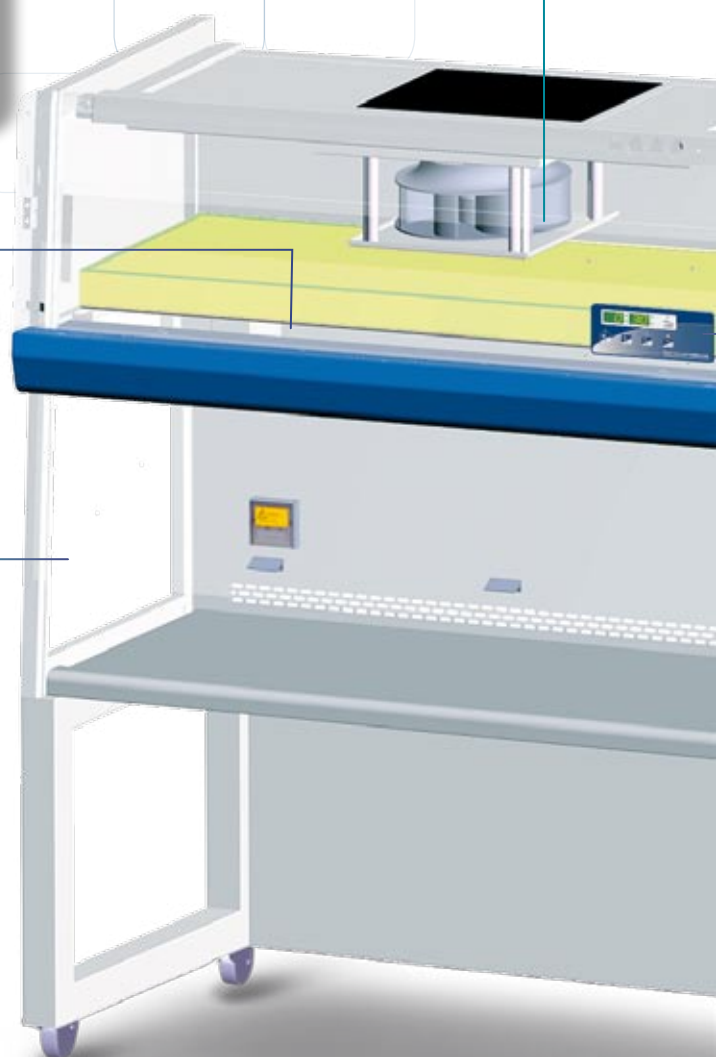
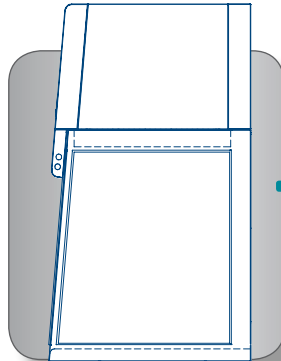


## HEPA Filtration System

HEPA filters operate at a typical efficiency of >99.99% at 0.1 micron particulate size, providing superior product protection.

## User Interface

An angled front, curved work surface front edge, and glass sides promote ergonomics. The powder coated work zone rear wall eliminates harsh reflections which may be associated with conventional stainless steel interiors. The vertical air flow design minimizes direct airflow which may lead to dry eyes and fatigue on horizontal flow models.



2

Air Cleanliness Standards (ISO 14644-1, Air Cleanliness Particle Limits (No. of Particles / m <sup>3</sup> ))						
Particle Size (µm)	Cleanliness Class					
	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
0.1	10	100	1000	10000	100000	1000000
0.2	2	24	237	2370	23700	237000
0.3	-	10	102	1020	10200	102000
0.5	-	4	35	352	3520	35200
1.0	-	-	8	83	835	8320
5.0	-	-	-	-	29	293

OptiMair Vertical Laminar Flow Clean Bench, Model ACB-4A1.

## Superior Air Cleanliness

All Esco vertical laminar flow clean benches provide ISO Class 4 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.



### Sentinel™ 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 allow airflow to be monitored more accurately compared with conventional pressure gauges.



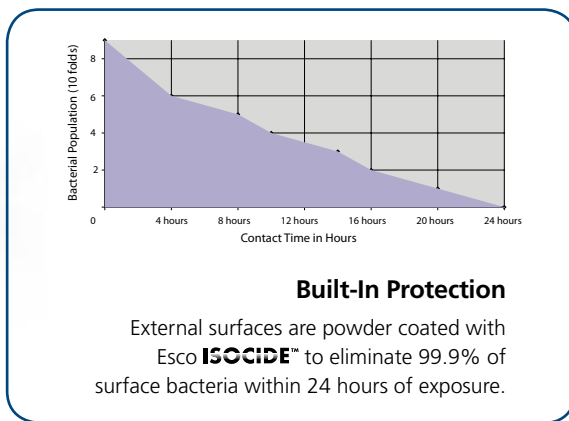
### Vertical Laminar Flow

Compared with horizontal flow models, vertical flow clean benches generate less turbulence when large instruments or items are placed in the work zone. Auto-Purge™ slots minimize airflow turbulence in the rear of the work space.



### Work Top

The raised front edge contains accidental liquid spills.



### Built-In Protection

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

## Key Features

- OptiMair Series Clean Benches are useful for mycology, food microbiology, plant and mammalian cell culture, clinical pharmacy and hospital protocols, cleanrooms, semiconductor assembly, pharmaceutical, aerospace and medical devices industries, where product protection is required.
- The backward curved wheel with external rotor motor delivers class-leading energy efficiency for lower operating costs.
- 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 electrogalvanized 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.
- Esco Laminar Flow Clean Benches are covered by a 3 year warranty, excluding consumable parts and accessories. Contact your local sales representative for specific warranty details.

Standards Compliance	Cabinet Performance	Air Quality	Filtration	Electrical Safety
	AS 1386.5, Australia IEST-RP-CC002.2, Worldwide	ISO 14644.1, Class 4, Worldwide IEST-G-CC1001, Worldwide IEST-G-CC1002, Worldwide	EN-1822 (H13), 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

## General Specifications, OptiMair Vertical Laminar Flow Clean Benches

Note to customer: Insert electrical voltage into last model number digits \_ when ordering

Model		ACB-4A_	ACB-6A_
Nominal Size		1.2 meters (4')	1.8 meters (6')
External Dimensions (W x D x H)	Without Base Stand	1340 x 629.5 x 983 mm (52.8" x 24.8" x 38.7")	1950 x 629.5 x 983 mm (76.8" x 24.8" x 38.7")
	Without Optional Base Stand, 711 mm (28") type	1340 x 629.5 x 1694 mm (52.8" x 24.8" x 66.7")	1950 x 629.5 x 1694 mm (76.8" x 24.8" x 66.7")
Internal Work Area, Dimensions (W x D x H)		1270 x 544 X 570 mm (50.0" x 21.4" x 22.4")	1880 x 544 x 570 mm (74.0" x 21.4" x 22.4")
Usable Work Zone		0.69 m <sup>2</sup> (7.43 sq.ft.)	1.02 m <sup>2</sup> (11 sq.ft.)
Initial Airflow Velocity		0.30 m/s (60 fpm)	
Air Volume		678 m <sup>3</sup> /h (399 cfm)	1004 m <sup>3</sup> /h (590 cfm)
HEPA Filter Typical Efficiency		99.99% for particles size at 0.3 microns	
Sound Emission Per IEST-RP-CC002.2*		<61 dBA	<63 dBA
Fluorescent Lamp Intensity At Zero Ambient		>800 Lux (74 foot candles)	
Cabinet Construction	Main Body	1.2 mm / 0.05"/ 18 gauge electro-galvanized steel with white oven-baked epoxy powder-coated finish.	
	Work Zone	1.2 mm (0.05") 18 gauge stainless steel, grade 304, 4B finish	
	Side Walls	Tempered glass	
Electrical	220-240V, AC, 50Hz, 1Ø	ACB-4A1	ACB-6A1
	Cabinet Full Load Amps (FLA)	5.8 A	6.5 A
	Optional Outlets FLA	5 A	5 A
	Cabinet Nominal Power	165 W	280 W
	Cabinet BTU	563	955
	220-240V, AC, 60Hz, 1Ø	ACB-4A3	ACB-6A3
	Cabinet Full Load Amps (FLA)	5.8 A	6.5 A
	Optional Outlets FLA	5 A	5 A
	Cabinet Nominal Power	198 W	297 W
	Cabinet BTU	676	1013
Net Weight**		140 kg (308 lbs)	182 kg (400 lbs)
Shipping Weight**		178 kg (392 lbs)	236 kg / 520 lbs
Shipping Dimensions, Maximum (W x D x H)**		1450 x 750 x 1150 mm (57.1" x 29.5" x 45.2")	2050 x 750 x 1150 mm (80.7" x 29.5" x 45.2")
Shipping Volume, Maximum**		1.25 m <sup>3</sup> (44 cu.ft.)	1.77 m <sup>3</sup> (63 cu.ft.)

\* Noise reading in open field condition/ anechoic chamber.

\*\* Cabinet only; excludes optional stand.

## Accessories for OptiMair Vertical Laminar Flow Clean Benches

Model	Description
SPC-4A	Fixed Height Stand 711 mm (28") with Casters, Shipped Flat
SPC-6A	Fixed Height Stand 711 mm (28") with Casters, Shipped Flat
SF-2U	Universal Service Fixture Kit, Suitable for Air / Gas / Vac, Field Installed
IV-XXX-XXX	IV Bar Kit, Includes 6 Hooks, Specify Model When Ordering, Field Installed

Note: 2 Universal (European/ American/ Japanese/ Asia-Pacific) electrical outlets are standard on all OptiMair clean benches.



**ESCO**  
WORLD CLASS. WORLDWIDE.

Esco Technologies, Inc. • 2940 Turnpike Drive, Units 15-16 • Hatboro, PA 19040, USA  
Toll-Free USA and Canada 877-479-3726 • Tel 215-441-9661 • Fax 215-441-9660  
us.esco.global.com • usa@esco.global.com

Esco Micro Pte. Ltd. • 21 Changi South Street 1 • Singapore 486 777  
Tel +65 6542 0833 • Fax +65 6542 6920 • mail@esco.global.com  
www.esco.global.com

Esco Global Offices | Beijing, China | Kuala Lumpur, Malaysia | Manama, Bahrain | Guangzhou, China | Hanoi, Vietnam | Marietta, OH, USA | Melaka, Malaysia | Mumbai, India | Philadelphia, PA, USA | Salisbury, UK | Shanghai, China | Seoul, Korea | Delhi, India | Singapore