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NEW!

Airstream®

cen
EN12469
Airstream Class II, Biosafety Cabinet, Model AC2-4E_.

Class II Biological Safety Cabinets

The World's Most Energy Efficient, Quiet, and Compact Biosafety Cabinet

ESCO
WORLD CLASS. WORLDWIDE.

RS 232 Serial Interface Port

- *Send operational information to Building Management System (BMS)*
- *Optional zero volt exhaust and alarm contact*

Sentinel Gold Microprocessor Controller

- *Displays all safety information on one screen*
- *Centered and angled down for easy reach & viewing*
- *Selectable Quickstart mode for fast operation*

Curved Corner & Glass Side

- *Large corner radius for easy cleaning*
- *Easy to reach service fixture and outlets*
- *Stainless steel side wall is available (AC2-S and AC2-D variant)*

Divided Work Tray

- *Easy to lift and clean*
- *Single piece recessed tray is available (AC2-S and AC2-D variant)*

Raised Arm Rest

- *Helps prevent grille blocking*
- *Comfortable working posture*

Removable Paper Catch

- *Easy to clean*
- *Optional pre-filter can be fitted*

Available in 0.6, 0.9, 1.2, 1.5, and 1.8 meter width

EN12469

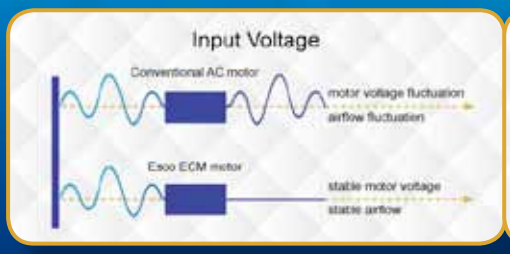
Esco Airstream Class II has been certified by PHE / Public Health England (formerly HPA) for compliance to EN 12469

Airflow Sensor

- *Monitors real-time airflow for safety*
- *Alert the user if airflow is insufficient*

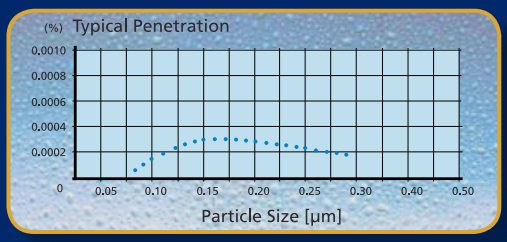
Energy Efficient ECM Motor

- *The most energy efficient Class II Biosafety Cabinet in the world*
- *70% Energy savings compared to AC motor*
- *Stable airflow, despite building voltage fluctuations & filter loading*
- *Night Setback mode to further reduce power consumption by 60%*



ULPA Filter

- *10x Filtration efficiency of HEPA filter*
- *Creates ISO Class 3 work zone instead of industry-standard ISO Class 5*

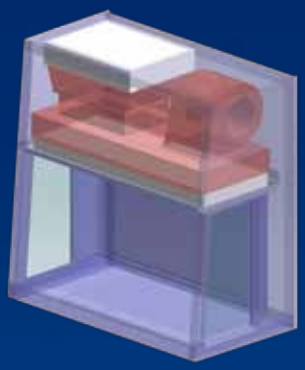


Esco cabinets use ULPA filters (per IEST-RP-CC001.3) / H14 per EN 1822 instead of H13 HEPA filters used on many BSCs in the market.

HEPA filters only offer 99.99% typical efficiency at 0.3 micron, while ULPA filters provide 99.999% typical efficiency for particle sizes of 0.1 to 0.3 micron.

Dynamic Chamber

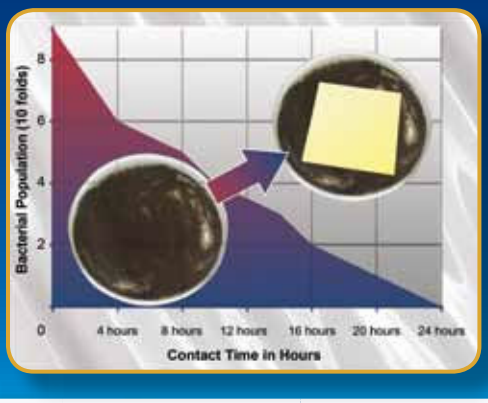
- *Blower plenum and side walls (AC2-S and AC2-D variant)*
- *Prevent contaminants from escaping outside*



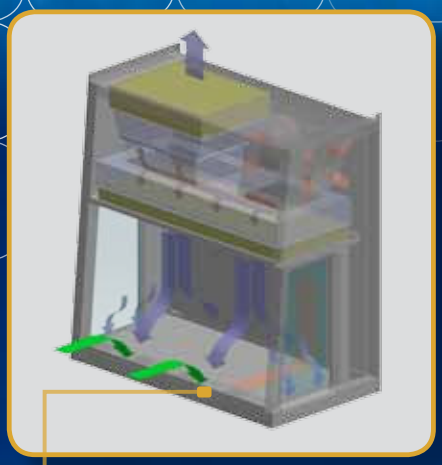
Positive pressure
Negative pressure

Isocide Powder Coat

- *Silver-ion impregnated powder coat*
- *Inhibit microbial growth to improve safety*



	Biosafety Cabinets	Air Quality	Filtration	Electrical Safety
Standards Compliance	EN 12469, Europe SANS12469, South Africa	ISO 14644.1, Class 3, Worldwide JIS B9920, Class 3, JapanJIS BS5295, Class 3, Japan	EN-1822 (H14), Europe IEST-RP-CC001.3, USA IEST-RP-CC007, USA IEST-RP-CC034.1, USA	IEC61010-1, Worldwide EN-61010-1, Europe UL-C-61010-1, USA CAN/ CSA22.2, No.61010-1



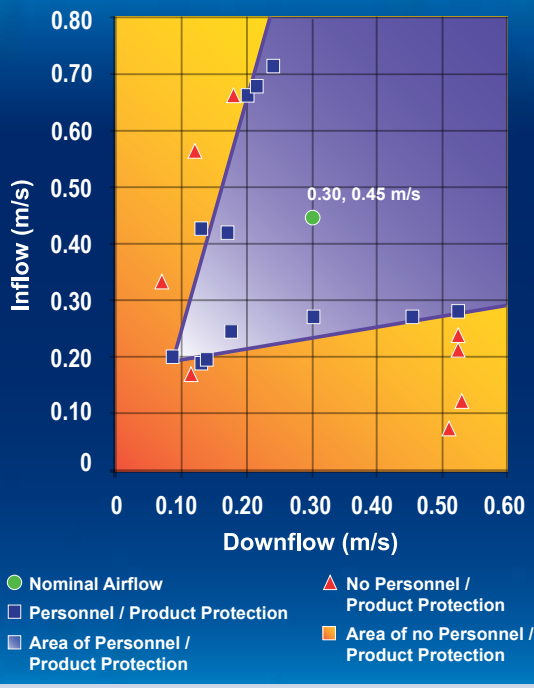
Dynamic air barrier, where inflow and forward-directed downflow air converge

- ULPA-filtered air
- Unfiltered / potentially contaminated air
- Room air / Inflow air

Cabinet Filtration System

- Ambient air is pulled through front grille to create inflow, without going into the work surface. Inflow is joined by half of the downflow, to create front air curtain that is fine-tuned to create a large performance envelope. The combined air stream travels through the back air column towards the blower.
- Approximately 1/3 of the air in the common plenum is exhausted through the ULPA filter to the room. The remaining 2/3 of the air is passed through the downflow ULPA filter and into the work area as a vertical laminar flow air to create ISO Class 3 work surface and prevents cross contamination.
- Near the work surface, the downflow splits. About Half goes to the front grille, and half goes to the rear grille. A small portion enters the the side capture zones to prevent dead air corners (small blue arrows).
- The design was optimized to give large performance envelope, that provides operator and product protection at wide Inflow and Downflow variation from the Nominal point.

Performance Envelope of AC2 G3



LCD simultaneously displays time, airflow & sash status,inflow and downflow velocities, and status remarks.

Multi Language: English, French, German, Spanish, Italian.

Diagnostics button, to easily check the cabinet operating parameters and assist servicing.

Large touchpad control buttons provides good tactile feedback.

Color coded LED: green for fan; blue for FL lights and outlets; and orange for UV lamp.

Programmable UV light timer extends UV lamp life.

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 864 mm (34"), with leveling feet or casters
- Telescoping height, with leveling feet, 660 mm to 960 mm (26" to 37.8"), 25 mm (1") increment
- Telescoping height, with casters, 660 mm to 880 mm (26" to 34.6"), 25 mm (1") increment
- Electric adjustable height, 711 mm to 864 mm (28" to 34"), with leveling feet or casters

Electrical Outlets

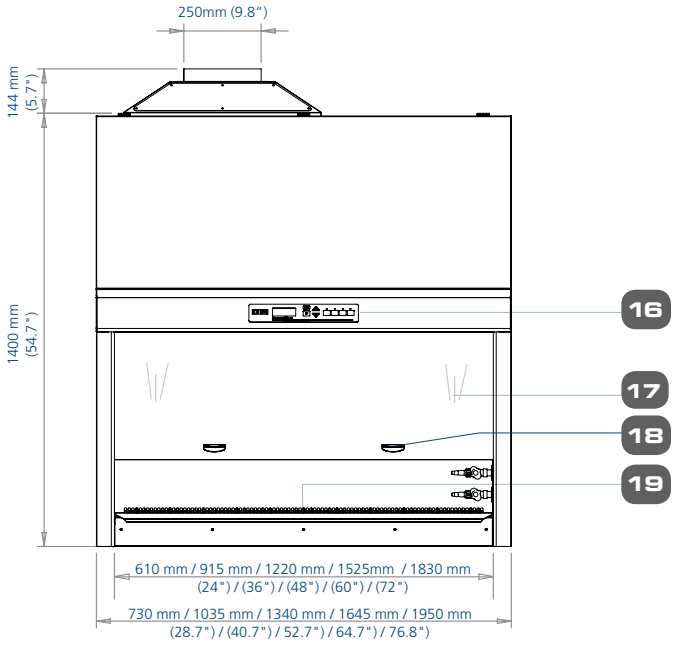
- European / Worldwide style
- Available in Type C, D, E, F, G, H, I
- North American style
- European / Worldwide style

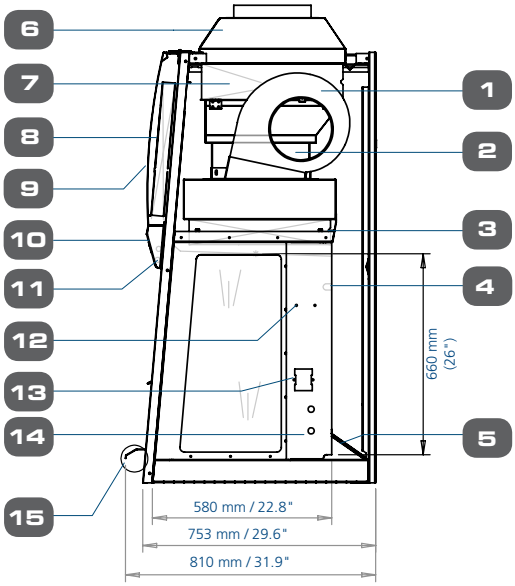
Cabinet Accessories

- Germicidal UV lamp, 253.7 nm wave, with timer to optimize lamp life and specific species exposure need
- PVC arm rest, for operator comfort, easy-to-clean. 712 mm (28") size.
- Ergonomic lab chair, laboratory grade, ISO Class 5 rated; alcohol resistant, 395 to 490 mm (15.6" to 19.3") height.
- Ergonomic foot rest, for proper posture, adjustable height, anti-skid coating, chemical resistant finish.
- Stainless steel IV bar with hooks, max load 6 Kg (13 lbs) total.

AC2-S variant, with stainless steel side wall and single piece recessed tray

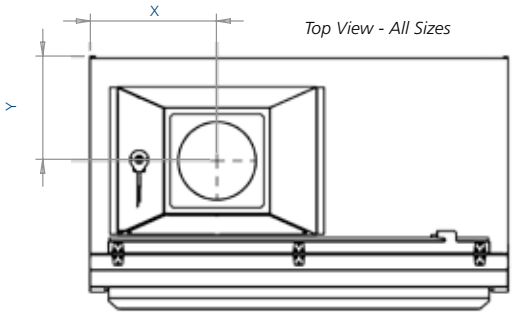
Model AC2 Biological Safety Cabinet Technical Specifications





1. *ECM Blower*
2. *Second blower, for exhaust (AC2-D & AC2-G)*
3. *Downflow ULPA / H14 Filter*
4. *UV Lamp (optional)*
5. *Removable paper catch (with optional pre-filter)*
6. *Exhaust Collar (optional)*
7. *Exhaust ULPA / H14 Filter*
8. *Electrical Panel*
9. *Curved Front Panel*
10. *Angled down LCD and control panel*
11. *T5 Fluorescent lamps*
12. *IV Bar Retrofit Kit provision*
13. *Electrical outlet Retrofit Kit provision (1 on each side)*
14. *Service Fixture Retrofit Kit Provision (2 on each side)*
15. *Ergonomic Dual Posture Stainless Steel Arm Rest*
16. *Esco Sentinel™ Gold microprocessor control system*
17. *Tempered Glass Sliding Sash Window*
18. *Ergonomic sash handle*
19. *Stainless Steel Work Tray (available in single and multi pieces)*

Optional Exhaust Collar Positions for Thimble-Ducting for AC2 Models



Top View - All Sizes

Size	2	3	4	5	6	ft
	0.6	0.9	1.2	1.5	1.8	m
X	233	331	408	560	560	mm
Y	334	334	334	334	326	
X	9.2	13	16	22	22	inches
Y	13.1	13.1	13.1	13.1	12.8	

Putting Your Needs First
Airstream® Offers the Most Complete Class II Cabinet Range

Airstream Product	E-Series	G-Series	S-Series	D-Series
Side Wall	Tempered Glass Increases Visibility and Prevents the Operator from Experiencing a "Boxed-In" Sensation		Single-Piece Stainless Steel with Coved Corners for Cleanability. Side Capture Zones and Negative Pressure Side Walls Optimize Containment.	
Work Tray	Multi-Piece, Autoclavable		Single-Piece Stainless Steel, Spill Retaining	
Fan System	Single blower for Inflow and Downflow. Energy Efficient and Cost Effective	Dual blowers for Inflow and downflow. Redundant System Provides Protection in Case of Fan Failure	Single blower for Inflow and Downflow. Energy Efficient and Cost Effective	Dual blowers for Inflow and downflow. Redundant System Provides Protection in Case of Fan Failure
Exhaust Filter	Single ULPA Filter >99.999% Efficient, Cost Effective	Dual ULPA Filters, >100.000x Better Protection than Single Filter System	Single ULPA Filter >99.999% Efficient, Cost Effective	Dual ULPA Filters, >100.000x Better Protection than Single Filter System
Size Available	0.6 m (2'), 0.9 m (3'), 1.2 m (4'), 1.5 m (5'), 1.8 m (6')	1.2 m (4'), 1.8m (6')	0.6 m (2'),0.9 m (3'), 1.2 m (4'), 1.5 m (5'), 1.8 m (6')	1.2 m (4'), 1.8 m (6')

Comprehensive Performance Testing At Esco

Every Airstream AC2 model manufactured by Esco is individually tested, documented by serial number and validated with the following test methods.

- *Inflow and downflow velocity*
- *PAO aerosol challenge for filter integrity*
- *Airflow pattern visualization*
- *Electrical safety to IEC61010-1*
- *Additional KI-Discus containment and microbiological testing are performed on statistical sampling basis.*

ESCO
WORLD CLASS. WORLDWIDE.

TECHNICAL SPECIFICATIONS

Glass Side: 230 V, 50/60 Hz		AC2-2E8	AC2-3E8	AC2-4E8	AC2-5E8	AC2-6E8
Glass Side: 115 V, 50/60 Hz		AC2-2E9	AC2-3E9	AC2-4E9	AC2-5E9	AC2-6E9
Stainless Steel Side: 230 V, 50/60 Hz		AC2-2S8	AC2-3S8	AC2-4S8	AC2-5S8	AC2-6S8
Stainless Steel Side: 115 V, 50/60 Hz		AC2-2S9	AC2-3S9	AC2-4S9	AC2-5S9	AC2-6S9
Nominal Size		2 ft / 0.6m	3 ft / 0.9 m	4 ft / 1.2 m	5 ft / 1.5 m	6 ft / 1.8 m
External Dimensions (W x D x H)	Width	730 mm (28 ¾")	1035 mm (40 ¾")	1340 mm (52 ¾")	1645 mm (64 ¾")	1950 mm (76 ¾")
	Depth without arm rest	753 mm (29 ½")				
	Depth with arm rest	810 mm (32")				
	Height	1400 mm (54 ¾")				
Gross Internal Dimensions (W x D x H)	Width	610 mm (24")	915 mm (36")	1220 mm (48")	1525 mm (60")	1830 mm (72")
	Depth	580 mm (22 ¾")				
	Height	660 mm (26")				
Usable Work Area		0.27 m^2 (2.9 ft2)	0.42 m^2 (4.5 sq.ft.)	0.56 m^2 (6.1 sq.ft.)	0.71 m^2 (7.63 sq.ft.)	0.86 m^2 (9.2 sq.ft.)
Tested Opening		175 mm (7")				
Working Opening		190 mm (7 ½")				
Average Airflow Velocity	Inflow	0.45 m/s (90 fpm)				
	Downflow	0.30 m/s (60 fpm)				
Airflow Volume	Inflow	173 cmh (102 cfm)	259 cmh (152 cfm)	346 cmh (204 cfm)	432 cmh (254 cfm)	519cmh (305 cfm)
	Downflow	369 cmh (217 cfm)	553 cmh (325 cfm)	738 cmh (434 cfm)	922 cmh (543 cfm)	1107 cmh (657 cfm)
	Exhaust	173 cmh (102 cfm)	259 cmh (152 cfm)	346 cmh (204 cfm)	432 cmh (254 cfm)	519cmh (305 cfm)
	Required Exhaust With Optional Thimble Exhaust Collar	260 m^3 /h (153 cfm)	320 m^3 /h (189 cfm)	538 m^3 /h (317 cfm)	615 m^3 /h (362 cfm)	823 m^3 /h (485 cfm)
	Static Pressure For Optional Thimble Exhaust Collar	28 Pa / 0.11 in H_2O	29 Pa / 0.11 in H_2O	31 Pa / 0.12 in H_2O	35 Pa / 0.14 in H_2O	47 Pa / 0.18 in H_2O
ULPA Filter Typical Efficiency		>99.999% at 0.1 to 0.3 micron, ULPA as per IEST-RP-CC001.3 USA				
		>99.999% at MPPS, H14 as per EN 1822 EU				
Sound Emission*	NSF / ANSI 49	56.3	56.6	58.7	58.2	59.4
	EN 12469	51.0	52.0	53.5	53.6	55.7
Fluorescent Lamp Intensity (lux)		859	1279	1404	1227	1384
Fluorescent Lamp Intensity (ft-cd)		80	119	130	114	129
Cabinet Construction	Main body	1.2 mm (0.05") 18 gauge electro-galvanized steel with white oven-baked epoxy-polyester Isocide antimicrobial powder-coated finish				
	Work Zone	1.5 mm (0.06") 16 gauge stainless steel, type 304, with 4B finish				
	Side Walls (E and G Series)	UV absorbing tempered glass, 5 mm (0.2"), colorless and transparent				
	Side Walls (S and D Series)	0.9 mm (0.035") 20 gauge stainless steel, type 304 and 1.2 mm (0.05") 18 gauge electro-galvanized steel				
Electrical	Cabinet Full Load Amps (FLA)	1.8	3.5	3.7	4.3	5.5
	Heat Load (BTU / Hr)	324	447	580	717	966
Nominal Power Consumption (W)		95	131	160	210	283
Net Weight **		116 Kg (256 lbs)	173 Kg (381 lbs)	230 Kg (507 lbs)	288 Kg (635 lbs)	346 Kg (763 lbs)
Shipping Weight **		143 Kg (315 lbs)	214 Kg (472 lbs)	285 Kg (628 lbs)	356 Kg (785 lbs)	428 Kg (944 lbs)
Shipping Dimensions, Maximum (W x D x H) mm**		850 x 820 x 1760	1120 x 820 x 1760	1450 x 820 x 1760	1720 x 820 x 1760	2050 x 820 x 1760
Shipping Volume, Maximum **		1.23 m^3	1.62 m^3	2.09 m^3	2.48 m^3	2.96 m^3

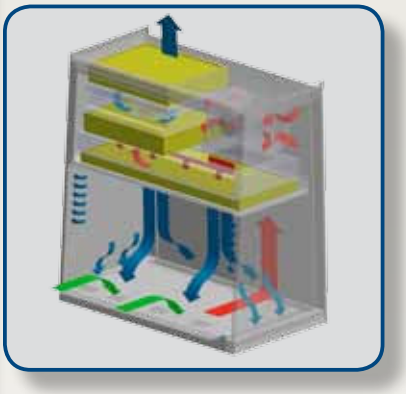
** Noise reading in open field condition / **anechoic** chamber. Noise reading in **normal room varies** by room size, layout, and background noise, but may reach roughly 3-4 dBA above these values.*
*** Cabinet only, excludes optional stand.*

TECHNICAL SPECIFICATIONS

Glass Side: 230 V, 50/60 Hz		AC2-4G8	AC2-6G8
Stainless Steel Side: 230 V, 50/60 Hz		**AC2-4D8**	**AC2-6D8**
Nominal Size		4ft / 1.2 m	6ft / 1.8 m
External Dimensions (W x D x H)	Width	1340 mm (52 ¾")	1950 mm (76 ¾")
	Depth without arm rest	753 mm (29 ½")	
	Depth with arm rest	810 mm (32")	
	Height	1400 mm (54 ¾")	
Gross Internal Dimensions (W x D x H)	Width	1220 mm (48")	1830 mm (72")
	Depth	580 mm (22 ¾")	
	Height	660 mm (26")	
Usable Work Area		0.56 m^2 (6.1 sq.ft.)	0.86 m^2 (9.0 sq.ft.)
Tested Opening		175mm (7")	
Working Opening		190 mm (7 ½")	
Average Airflow Velocity	Inflow	0.45 m/s (90 fpm)	
	Downflow	0.30 m/s (60 fpm)	
Airflow Volume	Inflow	346 cmh (588 cfm)	519cmh (881 cfm)
	Downflow	738 cmh (1254 cfm)	1107 cmh (1880 cfm)
	Exhaust	346 cmh (588 cfm)	519 cmh (881 cfm)
	Required Exhaust With Optional Thimble Exhaust Collar	538 m^3 /h (317 cfm)	823 m^3 /h (485 cfm)
	Static Pressure For Optional Thimble Exhaust Collar	31 Pa / 0.12 in H_2O	47 Pa / 0.18 in H_2O
ULPA Filter Typical Efficiency		>99.999% at 0.1 to 0.3 micron, ULPA as per IEST-RP-CC001.3 USA	
		>99.999% at MPPS, H14 as per EN 1822 EU	
Sound Emission*	NSF / ANSI 49	61.3 dBA	62.5 dBA
	EN 12469	58.3 dBA	59.5 dBA
Fluorescent Lamp Intensity (lux)		1400	
Fluorescent Lamp Intensity (ft-cd)		130	
Cabinet Construction	Main body	1.2 mm (0.05") 18 gauge electro-galvanized steel with white oven-baked epoxy-polyester Isocide antimicrobial powder-coated finish	
	Work Zone	1.5 mm (0.06") 16 gauge stainless steel, type 304, with 4B finish	
	Side Walls (E-Series)	UV absorbing tempered glass, 5 mm (0.2"), colorless and transparent	
	Side Walls (S-Series)	0.9 mm (0.035") 20 gauge stainless steel, type 304 and 1.2 mm (0.05") 18 gauge electro-galvanized steel	
Electrical	Cabinet Full Load Amps (FLA)	9.6 A	11.0 A
	Heat Load (BTU / Hr)	905	1230
Nominal Power Consumption		265 W	360 W
Net Weight **		240 Kg (529 lbs)	366 Kg (807 lbs)
Shipping Weight **		295 Kg (650 lbs)	448 Kg (988 lbs)
Shipping Dimensions, Maximum (W x D x H) mm**		1450 x 820 x 1760	2050 x 820 x 1760
Shipping Volume, Maximum **		2.09 m^3	2.96 m^3

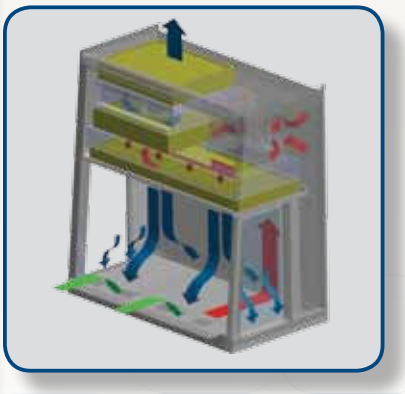
** Noise reading in open field condition / **anechoic** chamber. Noise reading in **normal room varies** by room size, layout, and background noise, but may reach roughly 3-4 dBA above these values.*
*** Cabinet only, excludes optional stand.*

AC2-D Airflow Diagram



- ULPA-filtered air
- Unfiltered / potentially contaminated air
- Room air / Inflow air

AC2-G Airflow Diagram



- ULPA-filtered air
- Unfiltered / potentially contaminated air
- Room air / Inflow air

ESCO GLOBAL NETWORK

ART Equipment
Biological Safety Cabinets
CO_2 Incubators
Compounding Pharmacy Equipment
Containment / Pharma Products
Ductless Fume Hoods
Freeze Dryer
Lab Animal Research Products
Laboratory Fume Hoods
Laboratory Ovens and Incubators
Laminar Flow Clean Benches
PCR Cabinets
PCR Thermal Cyclers
Powder Weighing Balance Enclosures
Ultra-low Freezers

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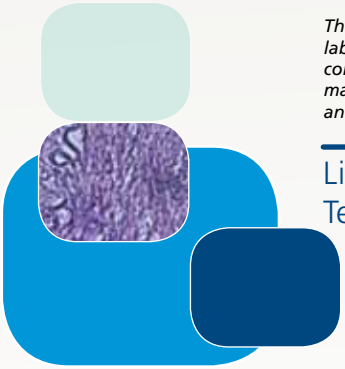

Life Science • Chemical Research • Assisted Reproductive Technology (ART) • Pharmaceutical Equipment • General Equipment

ESCO®

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