

ESCO
LIFESCIENCES



Airstream®

Class II Type B2 (Total Exhaust) Biological Safety Cabinets

The Safety Solution for Life Science Laboratories





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



Single piece wall

- Large radius for easy cleaning
- Side -mounted electrical outlets and staggered service fixtures, for easy reach



Single piece work tray

- Recessed to contain spillage
- Curved grille to prevent blockage



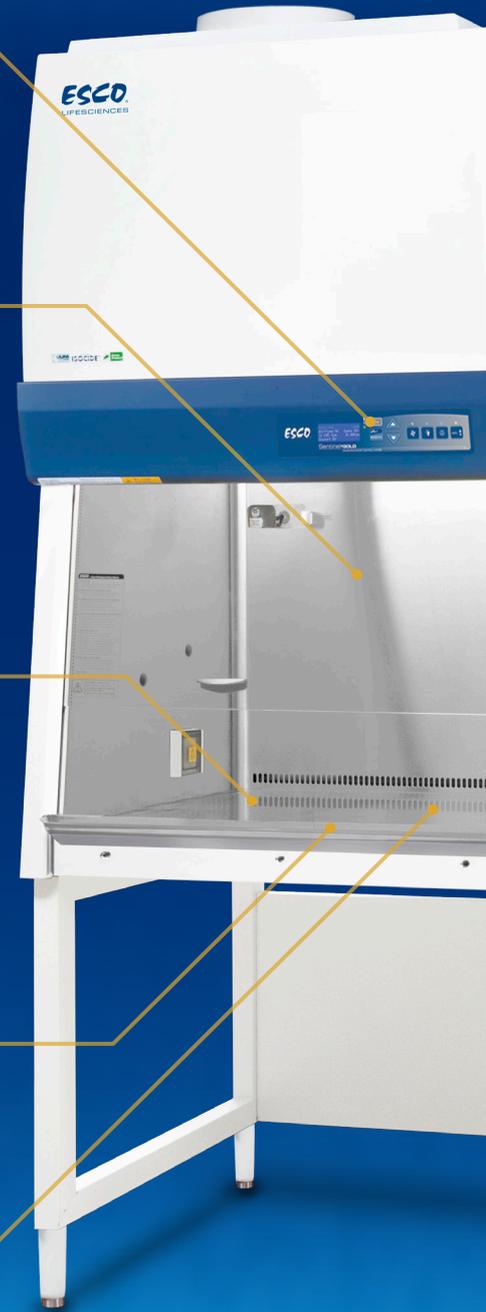
Raised Armrest

- Helps prevent grille blocking
- Comfortable working posture



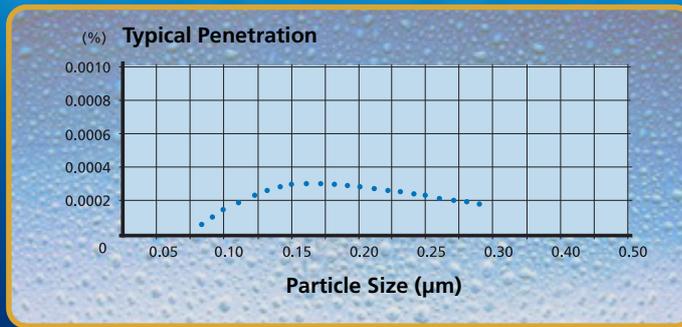
Angled drain pan

- Easy to clean
- Does not harbor contaminants



Available in 0.9, 1.2, 1.5, and 1.8 meter models (3', 4', 5', and 6').

AL EXHAUST) BIOLOGICAL SAFETY CABINET



Esco cabinets use supply ULPA filters (per IEST-RP-CC001.3) instead of conventional HEPA filters commonly found in biological safety cabinets. 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.



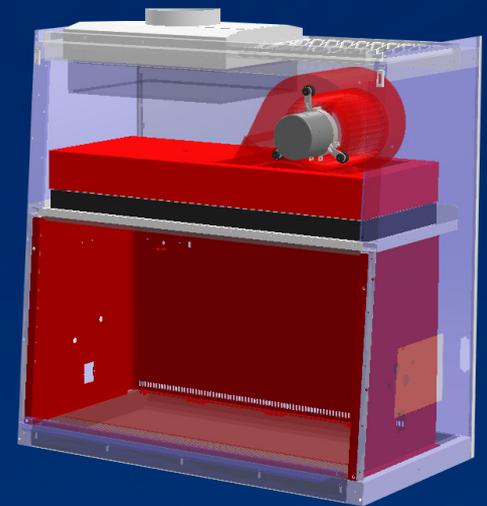
ULPA Filter

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

Dynamic chamber

- Prevent contaminants from escaping outside

- Positive pressure
- Negative pressure

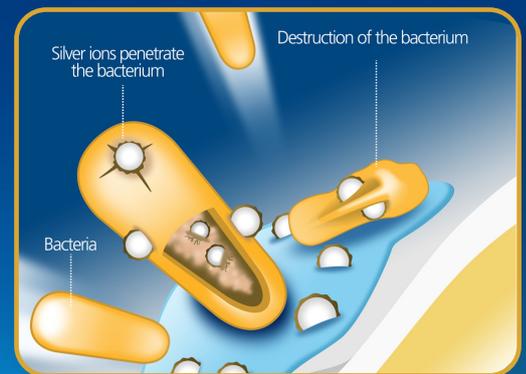


Angled sash

- Angled front to optimize user comfort, reduce glare and maximize reach into the work area

ISOCIDE™ Powder Coat

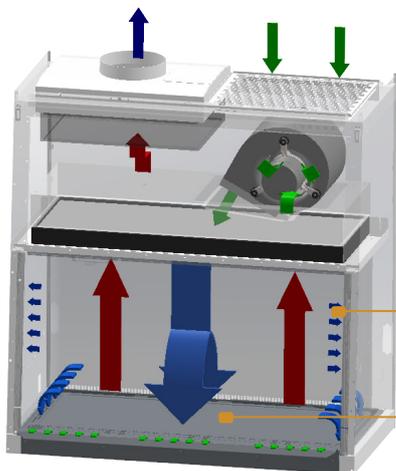
- Silver-ion impregnated powder coat
- Inhibits microbial growth to improve safety



	Biosafety Cabinet	Air Quality	Filtration	Electrical Safety
Standards Compliance	NSF/ ANSI 49, USA EN 12469, Europe	ISO 14644.1 Class 3, Worldwide JIS B9920 Class 3, Japan JIS BS 5295, Class 3, UK US Fed Std 209E, Class 1, USA	EN-1822 (H14), Europe IEST-RP-CC001.3, USA	IEC 61010-1, Worldwide EN 61010-1, Europe UL 61010-1, USA CAN / CSA-22.2, No.61010-1

*NMPA certification is exclusive to AB2 models sold in China.

Cabinet Filtration System



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

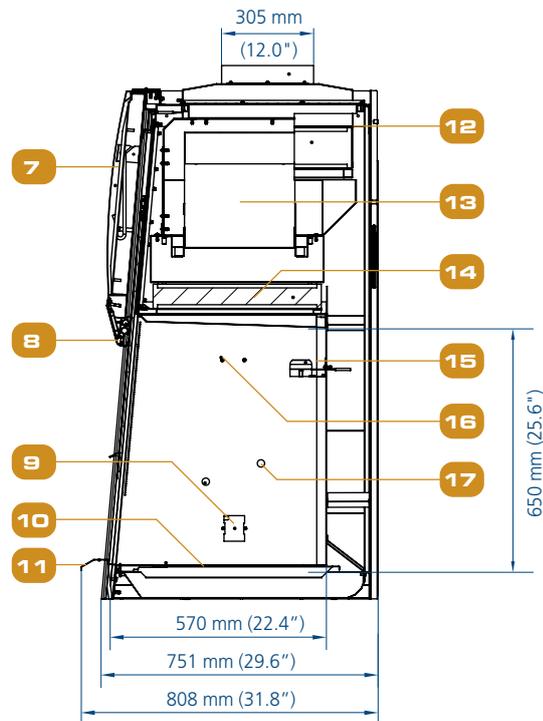
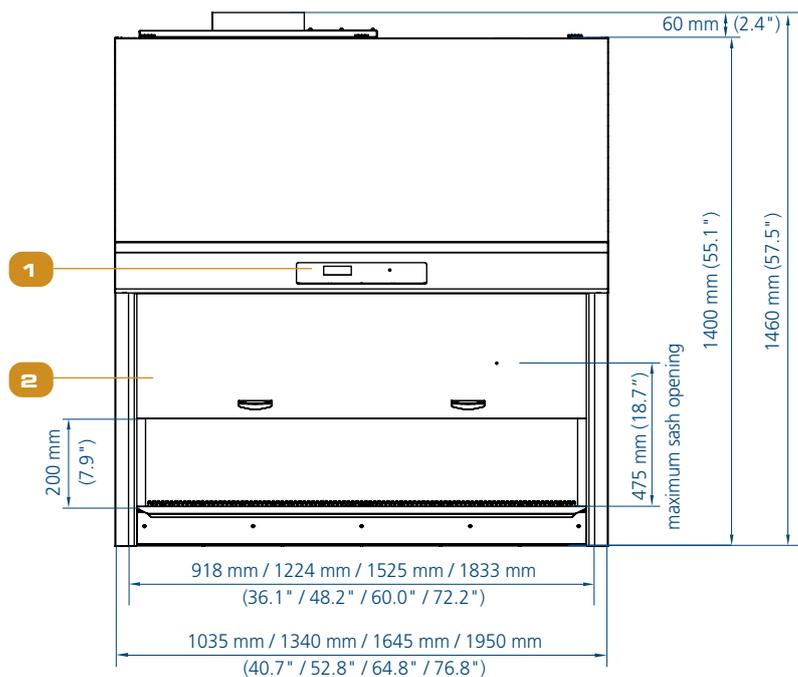
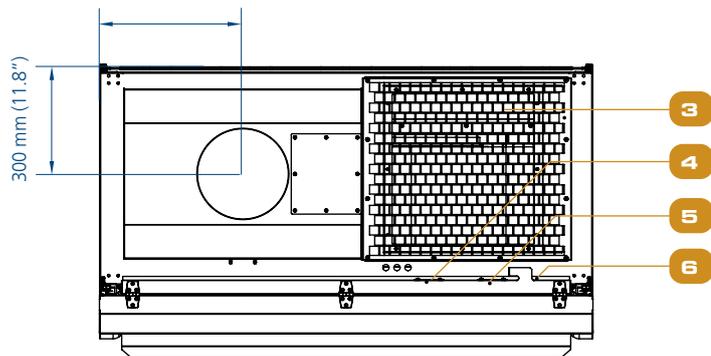
Side capture zones

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

- Ambient air is pulled through the frontgrille to prevent contamination of the work surface and work product. The inflow does not mix with the clean air within the cabinet work zone. Inflow air travels through a return path toward the common air plenum (blower plenum) at the top of the cabinet.
- Ambient air is taken in through a prefilter at the top of the cabinet, and passes through the downflow ULPA filter, entering the work zone as laminar flow. The uniform, non-turbulent air stream protects against cross contamination within and throughout the work area.
- Near the work surface, the downflow air stream splits with a portion moving toward the front air grille, and the remainder moving to the rear air grille. A small portion of the ULPA filtered downflow enters the intake perforations at the side capture zones (small blue arrows). The uniform, non-turbulent air stream protects against cross contamination within and throughout the work area.
- A combination of inflow and downflow air streams forms an air barrier that prevents contaminated room air from entering the work zone, and prevents work surface emissions from escaping the work zone. The downflow combined with the inflow air enters the common air plenum.
- All air in the common plenum is HEPA-filtered and exhausted via a dedicated ducting system to the external environment.

Model AB2, Class II Type B2 (Total Exhaust), Biological Safety Cabinet Technical Specifications

258 mm (10.1") AB2-3S_
 389 mm (15.3") AB2-4S_
 560 mm (22.0") AB2-5S_
 628 mm (24.7") AB2-6S_



- | | | |
|--|--|--|
| 1. Esco Sentinel™ Gold Microprocessor Control System | 7. Electrical/ Electronic panel | 13. DC-ECM Blower |
| 2. Tempered glass sash window | 8. LED Lamp | 14. Downflow filter |
| 3. Prefilter | 9. Electrical outlet retrofit kit™ provisions (one on each side) | 15. UV Light Retrofit Kit™ provision |
| 4. Zero Volt relay Contact | 10. Single-piece stainless steel work tray | 16. IV-Bar Retrofit Kit™ provision |
| 5. RS232 | 11. Stainless Steel Arm Rest | 17. Service fixture Retrofit Kit™ provisions (2 on each side wall) |
| 6. Power Inlet | 12. Exhaust filter | |

General Specifications, Airstream Class II Type B2 (Total Exhaust) Biological Safety Cabinets

Model		AB2-3S8 (2011443)	AB2-4S8 (2011448)	AB2-5S8 (2011449)	AB2-6S8 (2011450)
		AB2-3S9 (2011693)	AB2-4S9 (2011694)	AB2-5S9 (2011695)	AB2-6S9 (2011696)
Nominal Size		0.9 meter (3')	1.2 meter (4')	1.5 meter (5')	1.8 meter (6')
External Dimension (W x D x H)	Without Base Stand	1035 x 808 x 1460 mm (40.7" x 31.8" x 57.5")	1340 x 808 x 1460 mm (52.8" x 31.8" x 57.5")	1645 x 808 x 1460 mm (64.8" x 31.8" x 57.5")	1950 x 808 x 1460 mm (76.8" x 31.8" x 57.5")
Internal Work Area, Dimensions (W x D x H)		918 x 570 x 650 mm (36.1" x 22.4" x 25.6")	1224 x 570 x 650 mm (48.2" x 22.4" x 25.6")	1525 x 570 x 650 mm (60.0" x 22.4" x 25.6")	1833 x 570 x 650 mm (72.2" x 22.4" x 25.6")
Internal Work Area, Space		0.42 m ² (4.5 ft ²)	0.58 m ² (6.2 ft ²)	0.73 m ² (7.9 ft ²)	0.87 m ² (9.4 ft ²)
Tested and Working Opening		200 mm (7.9")			
Maximum Sash Opening		397 mm (15.6")			
Average Airflow Velocity	Inflow	0.53 m/s (105 fpm) at initial setpoint			
	Downflow	0.33 m/s (65 fpm) at initial setpoint with uniformity of better than +/- 20%			
Airflow Volume	Inflow	356 m ³ /h (210 cfm)	473 m ³ /h (278 cfm)	593 m ³ /h (349 cfm)	709 m ³ /h (417 cfm)
	Downflow	612 m ³ /h (360 cfm)	813 m ³ /h (479 cfm)	1018 m ³ /h (599 cfm)	1217 m ³ /h (716 cfm)
	Concurrent Balance Value Exhaust Volume at corresponding Static Pressure Note: Use this for HVAC sizing*	968 m ³ /h (670 cfm)	1285 m ³ /h (756 cfm)	1610 m ³ /h (948 cfm)	1926 m ³ /h (1133 cfm)
	Minimum exhaust static pressure for clean exhaust filter**	485 Pa / 1.94 in H ₂ O	400 Pa / 1.6 in H ₂ O	300 Pa / 1.2 in H ₂ O	410 Pa / 1.65 in H ₂ O
Downflow ULPA Filter Typical Efficiency		>99.999% for particle size between 0.1 to 0.3 microns			
Exhaust HEPA Filter Typical Efficiency		>99.99% at 0.3 microns			
Sound Emission***		<60 dBA	<58.8 dBA	<58.7 dBA	<60.7 dBA
LED Light Intensity At Zero Ambient		>800 lux (74 ft-cd)			
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	Stainless steel Type 304 with No.4 finish			
Electrical****	220-240 VAC, 50/60 Hz, 1 Phase	AB2-3S8	AB2-4S8	AB2-5S8	AB2-6S8
	Cabinet Full Load Amps (FLA)	4 A	4 A	4 A	4 A
	Optional Outlets (FLA)	5 A	5 A	5 A	5 A
	Cabinet Nominal Power	140 W	195 W	230 W	250 W
	Cabinet BTU	461	642	757	823
	110-130 VAC, 50/60 Hz, 1 Phase	AB2-3S9	AB2-4S9	AB2-5S9	AB2-6S9
	Cabinet Full Load Amps (FLA)	TBD	TBD	TBD	TBD
	Optional Outlets FLA	TBD	TBD	TBD	TBD
	Cabinet Nominal Power	TBD	TBD	TBD	TBD
	Cabinet BTU	TBD	TBD	TBD	TBD
Net Weight*****		200 kg (441 lbs)	275 kg (606 lbs)	330 kg (728 lbs)	370 kg (816 lbs)
Shipping Weight, Maximum*****		220 kg (485 lbs)	297 kg (655 lbs)	345 kg (761 lbs)	397 kg (875 lbs)
Shipping Dimensions, Maximum (W x D x H)*****		1120 x 850 x 1950 mm (44" x 33.4" x 74.4")	1450 x 820 x 1760 mm (57.1" x 33.4" x 74.4")	1720 x 850 x 1890 mm (67.7" x 33.4" x 74.4")	2020 x 850 x 1890 mm (79.5" x 33.4" x 74.4")
Shipping Volume, Maximum*****		1.86 m ³ (65.7 cu.ft)	2.17 m ³ (77 cu.ft.)	2.62 m ³ (93 cu.ft.)	3.07 m ³ (108 cu.ft.)

* This Concurrent Balance Value (CBV) Exhaust (per Pitot Duct Traverse) and Static Pressure must be used when sizing the HVAC exhaust & supply.
 ** This minimum exhaust static pressure for clean exhaust filter should not be used for exhaust fan sizing, and it is listed here for comparative purpose only.
 *** 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.
 **** Additional voltages may be available; contact Esco for ordering information.
 ***** Cabinet only, excludes optional stand.

Accessories, Airstream Class II Type B2 (Total Exhaust) Biological Safety Cabinets

Model	(Stainless Steel Side Wall)	AB2-3S8 (2011443)	AB2-4S8 (2011448)	AB2-5S8 (2011449)	AB2-6S8 (2011450)
		AB2-3S9 (2011693)	AB2-4S9 (2011694)	AB2-5S9 (2011695)	AB2-6S9 (2011696)
Exhaust Ducting	Anti-blowback Valve	ABBV-12P 5170353			
	Damper	B2-Damper 5170105			
Work Zone	UV Lamp	UV-15A 5170251	UV-30A 5170255		
	IV Bar	IV-955 5170276	IV-1260 5170277	IV-1565 5170278	IV-1870 5170279
Electrical Outlet	Direct Mounted	EO-HD 5170036			
Service Fixtures	EU SF-Gas-20 mm	SF-1G20 5170410			
	EU SF-Vacuum-20 mm	SF-1V20 5170457			
	EU SF-Nitrogen-20 mm	SF-1N20 5170503			
	EU SF-Air-20 mm	SF-1A20 5170502			
	EU SF-Water-20 mm	SF-1W20 5170458			
	EU SF-Universal-22 mm	SF-2U22 5170504			
	Cu Piping SF (Must be Factory Installed)	CU-Pipe 5170026			
Support Stands, Ships Flat	Support Stand with Caster Wheels (Height 28")	SPC-3A0 Gen 2 5130155	SPC-4A0 Gen 2 5130152	SPC-5A0 Gen 2 5130162	SPC-6A0 Gen 2 5130154
	Support Stand with Caster Wheels (Height 34")	SPC-3B0 Gen 2 5130165	SPC-4B0 Gen 2 5130166	SPC-5B0 Gen 2 5130167	SPC-6B0 Gen 2 5130168
	Support Stand with Leveling Feet (Height 28")	SAL-3A0 Gen 2 5130170	SAL-4A0 Gen 2 5130134	SAL-5A0 Gen 2 5130171	SAL-6A0 Gen 2 5130172
	Support Stand with Leveling Feet (Height 34")	SAL-3B0 Gen 2 5130174	SAL-4B0 Gen 2 513015	SAL-5B0 Gen 2 5130176	SAL-6B0 Gen 2 5130177



ABBV-12_



B2-DAMPER



IV_



UV_A-L



EO-H_



SF-1_



SPC_A0 Gen2



SAL_A0 Gen2



ME-LD-AR360



IQOQ

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MANUFACTURER**



- Animal Research Workstation
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- Ducted Fume Hood
- Ductless Fume Hood
- Filtered Storage Cabinet
- Laboratory Centrifuge
- Laboratory Oven and Incubator

- Laboratory Refrigerator and Freezer
- Laboratory Shaker
- Laminar Flow Cabinet
- PCR Cabinet
- PCR Thermal Cycler
- Powder Weighing Balance Enclosure
- Ultra-low Temperature Freezer

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- Airflow Containment
- Cross-Contamination Facility Integrated Barrier
- Isolation Containment
- Ventilation Containment
- Radiopharmacy

- Adherent Cell Bioreactors
- Adherent Automated Cell Harvesting System
- Cell Culture Monitoring Tools
- Single-use Consumables for Bioprocessing



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MEDICAL

- Time-Lapse Incubator
- Benchtop Incubator
- ART Workstation
- CO₂ Incubator
- Anti-Vibration Table
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