



MEGA LAB

Tel. 2310855844, 2106452848

Email. contact@megalab.gr

www.megalab.gr



Airstream®

Class II Type A2 Biological Safety Cabinets

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



ESCO
SCIENTIFIC



RS 232 SERIAL
INTERFACE PORT



RS 232 Serial Interface Port and Voltage Free Relay Contact

- Send operational information to Building Management System (BMS)
- Zero Volt Relay Contact to turn ON/OFF exhaust blower and signal the building alarm

ESCO

Esco AC2
Airflow: OK
I: 0.53 m/s
Socket: ON

15:34
Sash: OK
D: 0.30 m/s



MENU



VSET

DIAGNOSTICS



Sentinel[™]•GOLD

MICROPROCESSOR CONTROL SYSTEM

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

- Easy to reach service fixture and outlets
- Large radius for easy cleaning

Single-Piece Work Tray

- Recessed to contain spillage
- Sloped perimeter that's easy to wipe

Raised Arm Rest

- Helps prevent grille blocking
- Comfortable working posture

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



NSF 49



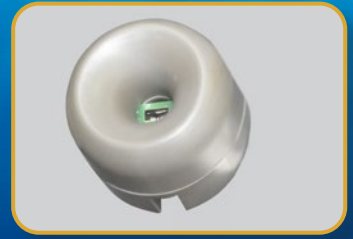
UL 61010

Airstream[®]

Class II Type A2 • Biological Safety Cabinets

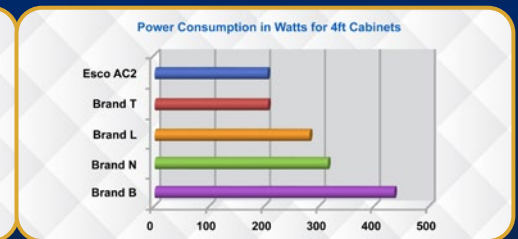
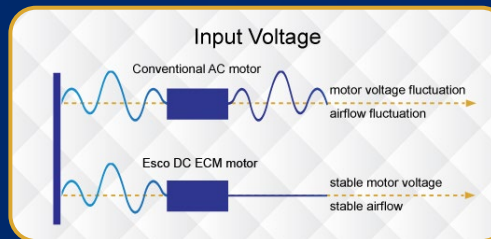
Airflow Sensor

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



Energy-Efficient DC ECM Motor

- The leading energy efficient Class II Type A2 Biosafety Cabinet in the world with 70% Energy savings compared to AC motor
- Stable airflow, despite building voltage fluctuations & filter loading
- Stand by mode to further reduce power consumption by 60%

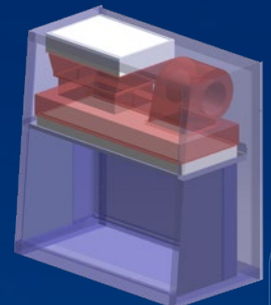


ULPA Filter

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

Dynamic Chamber™

- Blower plenum and side walls are surrounded by negative pressure
- Prevent contaminants from escaping outside



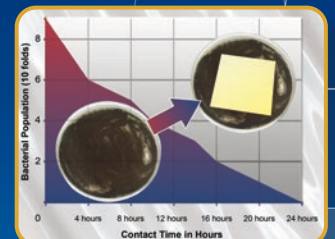
Angled Sash

- 5° angled front to optimize user comfort, reduce glare and maximize reach into the work area

Positive pressure
Negative pressure

ISOCIDE™ Powder Coat

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



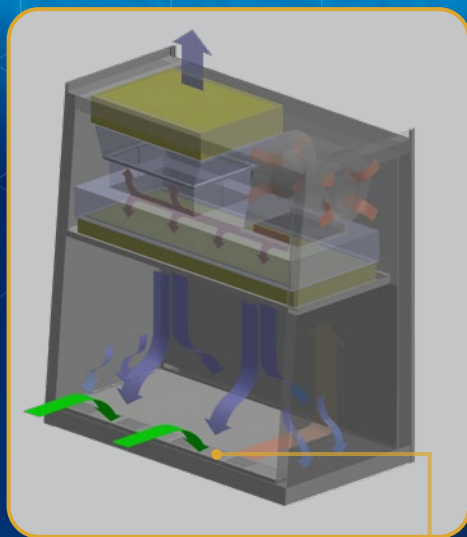
Removable Paper Catch

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



Certification

Standards Compliance	Biosafety Cabinets	Air Quality	Filtration	Electrical Safety
	NSF / ANSI 49 NSF*	ISO 14644.1, Class 3, Worldwide JIS B9920, Class 3, Japan BS5295, Class 3, UK US Fed Std 209E, Class 1 USA	EN-1822 (H14), Europe IEST-RP-CC001.3, USA IEST-RP-CC007, USA IEST-RP-CC034.1, USA	UL-61010A-1, USA CSA22.2, No.1010-192, Canada EN-61010-1, Europe IEC61010-1, Worldwide



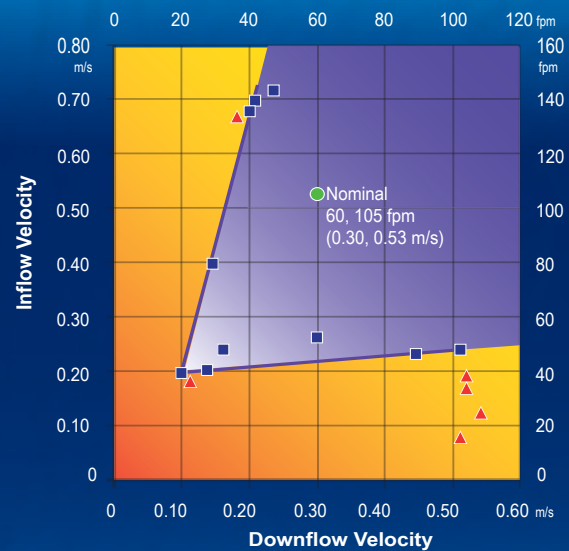
- ULPA-filtered air
- Unfiltered / potentially contaminated air
- Room air / Inflow air

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 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.

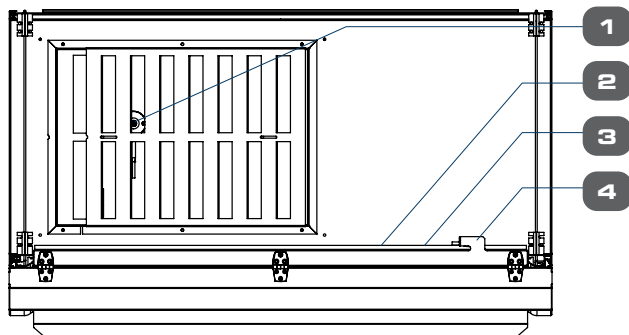
Dynamic air barrier, where inflow and forward-directed downflow air converge

Performance Envelope Test of AC2-NS

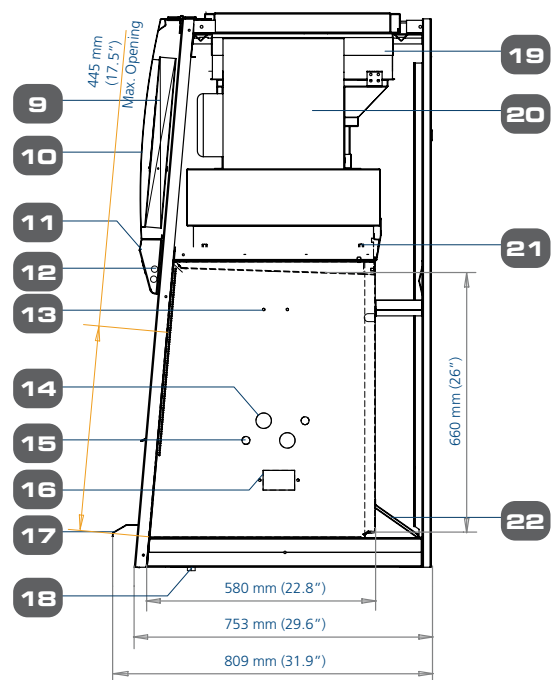
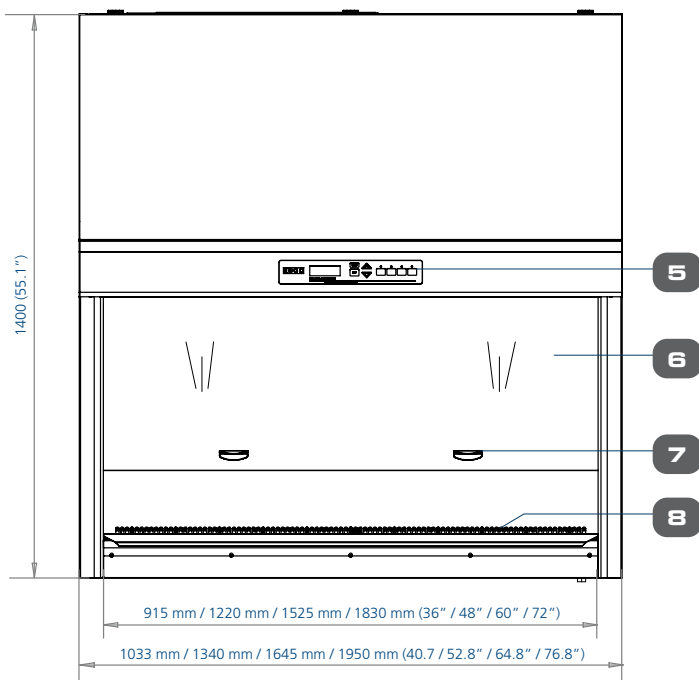


- Nominal Airflow
- Personnel / Product Protection
- Area of Personnel and Product Protection
- ▲ NO Personnel / Product Protection
- Area of NO Personnel and Product Protection

AC2-NS Engineering Drawing



1. Airflow Sensor
2. Voltage Free Relay Contact
3. RS232 Port
4. Power Inlet
5. Esco Sentinel™ Gold Microprocessor Control System
6. Tempered Glass Sliding Sash Window
7. Ergonomic Sash Handle
8. Single Piece Stainless Steel Work Tray
9. Electrical Panel
10. Curved Front Panel
11. Control Panel
12. Energy-efficient T5 Fluorescent Lamps
13. IV Bar Retrofit Kit Provision
14. Steris VHP / Bioquell HPV Provision (Optional)
15. Provision for Service Fixtures (2 on each side)
16. Duplex GFCI Electrical Outlets (1 on each side)
17. Stainless Steel Arm Rest
18. Drain Hole
19. Exhaust ULPA / H14 Filter
20. DC ECM Blower (Energy Efficient & Self-Compensating)
21. Downflow ULPA / H14 Filter
22. Paper Catch



Airstream®

Class II Type A2 • Biological Safety Cabinets

TECHNICAL SPECIFICATIONS					
Model	220-240 VAC, 50/60Hz	AC2-3S8-NS 2010946	AC2-4S8-NS 2010747	AC2-5S8-NS 2010978	AC2-6S8-NS 2010963
	110-130 VAC, 50/60 Hz	AC2-3S9-NS 2010945	AC2-4S9-NS 2010752	AC2-5S9-NS 2010977	AC2-6S9-NS 2010925
External Dimensions (W x D x H)		1035 x 753 x 1400 mm (40.7" x 29.6" x 55.1")	1340 x 753 x 1400 mm (52.8" x 29.6" x 55.1")	1645 x 753 x 1400 mm (64.8" x 29.6" x 55.1")	1950 x 753 x 1400 mm (76.8" x 29.6" x 55.1")
Gross Internal Dimensions (W x D x H)		915 x 580 x 660 mm (36.0" x 22.8" x 26.0")	1220 x 580 x 660 mm (48.0" x 22.8" x 26.0")	1525 x 580 x 660 mm (60.0" x 22.8" x 26.0")	1830 x 580 x 660 mm (72.0" x 22.8" x 26.0")
Usable Work Area		0.42 m ² (4.5 ft ²)	0.56 m ² (6.0 ft ²)	0.70 m ² (7.5 ft ²)	0.86 m ² (9.3 ft ²)
Tested Opening		203 mm (8")			
Average Inflow Velocity		0.53 m/s (105 fpm)			
Average Downflow Velocity		0.30 m/s (60 fpm)			
Airflow Volume	Inflow	354 cmh (208 cfm)	473 cmh (280 cfm)	591 cmh (348 cfm)	709 cmh (417 cfm)
	Downflow	553 cmh (325 cfm)	738 cmh (434 cfm)	922 cmh (543 cfm)	1107 cmh (652 cfm)
	Exhaust	354 cmh (208 cfm)	473 cmh (278 cfm)	591 cmh (348 cfm)	709 cmh (417 cfm)
	Required Exhaust with Optional Thimble Exhaust Collar	531 cmh (313 cfm)	710 cmh (418 cfm)	887 cmh (522 cfm)	1064 cmh (626 cfm)
	Static Pressure For Optional Thimble Exhaust Collar	32 Pa / 0.12 in H ₂ O	45 Pa / 0.18 in H ₂ O	57 Pa / 0.23 in H ₂ O	68 Pa / 0.27 in H ₂ O
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 >99.99% on 0.3 micron size particles by PAO test (filter leakage test according to NSF49)			
Sound Emission per NSF / ANSI 49*		57.5 dBA		58.5 dBA	60.5 dBA
Fluorescent Lamp Intensity		982 lux (91 foot candles)	1025 lux (95 foot candles)	880 lux (82 foot candles)	1035 lux (96 foot candles)
Cabinet Construction	Main body	1.2 mm (0.05") / 18 gauge EG Steel with Isocide™ Oven-Baked Epoxy-Polyester Powder Coating			
	Work Zone	1.5 mm (0.06") / 16 gauge, SS 304, 4B finish			
	Side Walls	1.5 mm (0.06") / 16 gauge, SS 304, 4B finish			
Electrical 220-240 VAC, 50/60 Hz	Cabinet Full Load Amps (FLA)	8.5	8.6	9.5	12
	Heat Load (BTU / Hr)	472	569	613	849
	Nominal Power Consumption (W)	150	181	195	270
Electrical 110-130 VAC, 50/60 Hz	Cabinet Full Load Amps (FLA)	11	11.5	12.5	15
	Heat Load (BTU / Hr)	503	628	698	999
	Nominal Power Consumption (W)	160	200	222	318
Net Weight**		188 Kg (414 lbs)	230 Kg (507 lbs)	288 Kg (634 lbs)	346 Kg (763 lbs)
Shipping Weight**		216 Kg (476 lbs)	285 Kg (628 lbs)	356 Kg (784 lbs)	428 Kg (944 lbs)
Shipping Dimensions, Maximum (W x D x H)**		1120 x 820 x 1760 mm (44.0" x 32.3" x 69.3")	1450 x 820 x 1760 mm (57.0" x 32.3" x 69.3")	1720 x 820 x 1760 mm (68.0" x 32.3" x 69.3")	2050 x 820 x 1760 mm (81.0" x 32.3" x 69.3")
Shipping Volume, Maximum**		1.62 m ³ (57 ft ³)	2.09 m ³ (74 ft ³)	2.48 m ³ (87 ft ³)	2.96 m ³ (105 ft ³)

Specifications are subject to change without notice.

*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 Cabinets Save Money and Environment



Description	AC2-4S9 with DC ECM blower	AC2-4S8 with DC ECM blower	Typical BSC with AC Blower	Savings		Units
				AC2-4S9	AC2-4S8	
Instantaneous Power	200	160	800	600	640	Watt
Hours of Operation in a year	2000					Hours
Energy	400	320	1600	1200	1280	kWh
Energy cost in USA at \$ 0.10 / kWh	40	32	160	120	128	USD
Energy cost in EU at € 0.20 / kWh	80	64	320	240	256	Euro
CO ₂ released in USA at 1 lbs / kWh	400	320	1600	1200	1280	lbs
CO ₂ emission in EU at 0.35 Kg / kWh	140	112	560	420	448	Kg

Accessories for AC2-NS Biological Safety Cabinets

Cabinet	Standard Unit	AC2-3S8-NS 2010946	AC2-4S8-NS 2010747	AC2-5S8-NS 2010978	AC2-6S8-NS 2010963
		AC2-3S9-NS 2010945	AC2-4S9-NS 2010752	AC2-5S9-NS 2010977	AC2-6S9-NS 2010925
	Unit with Cable Port	AC2-3S8-NS-PORT 2011010	AC2-4S8-NS-PORT 2011011	AC2-5S8-NS-PORT 2011012	AC2-6S8-NS-PORT 2011013
		AC2-3S9-NS-PORT 2011014	AC2-4S9-NS-PORT 2011015	AC2-5S9-NS-PORT 2011016	AC2-6S9-NS-PORT 2011017
Exhaust Ducting	Anti-blowback Valve 10 inches	ABBV-10P 5170352			
	Tri-safe Exhaust Collar with Alarm	TEM-4 2010606			
	Thimble Exhaust Collar with Alarm	ECO-A-AC23 5170618	ECO-A-AC24 5170619	ECO-A-AC25 5170620	ECO-A-AC26 5170621
	Exhaust Damper	B2-DAMPER 5170352			



ABBV-10P



TEM-4

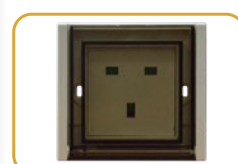
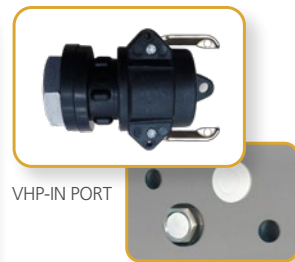


ECO-A-AC2_



B2-DAMPER

Hydrogen Peroxide Decontamination Kit	VHP In Port (Ø 1")	VHP-IN PORT 5170552			
	VHP Out Top Box for Cabinet WITH Exhaust Collar Installed (Ø 1")	VHP-ECO/OUT 5170554	VHP-ECO/OUT 5170615	VHP-ECO/OUT 5170616	VHP-ECO/OUT 5170617
	VHP Out Top Box for Cabinet WITHOUT Exhaust Collar Installed (Ø 1")	VHP OUT TOP BOX 3ft 5170553	VHP OUT TOP BOX 4ft 5170612	VHP OUT TOP BOX 5ft 5170613	VHP OUT TOP BOX 6ft 5170614
Work Zone	UV Lamp	UV-15A 5170251	UV-30A-L 5170255		
	IV Bar	IV-910 5170499	IV-1215 5170231	IV-1520 5170500	IV-1825 5170501
	Pre-filter	PF-41 5090061	PF-42 5090062	PF-43 5090063	PF-44 5090064
Electrical Outlet	Direct Mounted / GFCI	EO_-			
Service Fixtures	EU SF-Gas-20 mm	SF-1G20 5170410			
	EU SF-Vacuum-20 mm	SF-1V20 5170457			
	EU SF-Air-20 mm	SF-1A20 5170502			
	EU SF-Nitrogen-20 mm	SF-1N20 5170503			
	EU SF-Water-20 mm	SF-1W20 5170458			
	EU SF-Universal-22 mm	SF-2U22 5170504			
Support Stands, Ships Flat	Fixed Stand with Leveling Feet, 28" height	SAL-3A0 Gen 2 5130170	SAL-4A0 Gen 2 5130134	SAL-5A0 Gen 2 5130171	SAL-6A0 Gen 2 5130172
	Fixed Stand with Leveling Feet, 34" height	SAL-3B0 Gen 2 5130174	SAL-4B0 Gen 2 5130175	SAL-5B0 Gen 2 5130176	SAL-6B0 Gen 2 5130177
	Fixed Stand with Caster Wheels, 28" height	SPC-3A0 Gen 2 5130155	SPC-4A0 Gen 2 5130152	SPC-5A0 Gen 2 5130162	SPC-6A0 Gen 2 5130154
	Fixed Stand with Caster Wheels, 34" height	SPC-3B0 Gen 2 5130165	SPC-4B0 Gen 2 5130166	SPC-5B0 Gen 2 5130167	SPC-6B0 Gen 2 5130168
	Telescopic Stand with Leveling Feet, 1" adjustment	STL-3A0 5130050	STL-4A0 5130051	STL-5A0 5130052	STL-6A0 5130053
	Telescopic Stand with Caster Wheels, 1" adjustment	STC-3A0 5130055	STC-4A0 5130056	STC-5A0 5130057	STC-6A0 5130058
	Motorized height Stand with Caster Wheels, 39.5" height	SPM-3A2 5130093	SPM-4A2 5130047	SPM-5A2 5130100	SPM-6A2 5131141
Misc	IQ/OQ Protocol	9010179			



ESCO LIFESCIENCES GROUP

42 LOCATIONS IN 21 COUNTRIES ALL OVER THE WORLD



- Global Offices
- Licensee
- Distributors
- Factories
- R&D Centers
- Regional Distribution Centers

*Follow us on social media, download our apps,
and scan the QR code for more info.*



@EscoLifesciences



@EscoLifesciences



@EscoLifesci



@Esco



@EscoLifesciences



@EscoLifesciences



Esco Lifesciences



Esco Lifesciences

ESCO

LIFESCIENCES GROUP

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

Esco Technologies, Inc. • 903 Sheehy Drive, Suite F, Horsham, PA 19044, USA
Tel: +1 215-441-9661 • Fax 484-698-7757
eti.admin@escolifesciences.com

Esco Lifesciences Group Offices: Bangladesh | China | Denmark | Germany | Hong Kong | India | Indonesia | Italy | Japan | Lithuania | Malaysia | Myanmar | Philippines | Russia | Singapore | South Africa | South Korea | Taiwan | Thailand | UAE | UK | USA | Vietnam



Airstream® Class II, Biosafety Cabinet,
Model AC2-4E8-TU

Airstream® • PLUS

Class II Biological Safety Cabinets

The World's Leading Energy-efficient, Quiet, and Compact Biosafety Cabinet.

TÜV NORD Certified to EN 12469

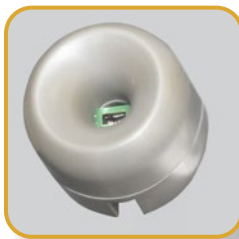


ESCO
SCIENTIFIC



Voltage Free Relay Contact

- Zero volt exhaust and alarm contact



Airflow Sensor

- Monitors real-time airflow for safety
- Alert the user if airflow is insufficient
- High-end Accusense sensor made by Degree C



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



Motorized Window

- Aerosol tight window seal
- Window automatically stops at safe operating height
- Conveniently move the window by fingertip

Unique Stainless Steel and Glass Hybrid Wall (E-Series)

- Large corner radius for easy cleaning
- Easy to reach service fixture and outlets
- Stainless steel side wall is available (S-Series)
- Hole-free side glass for increased safety



Divided Work Tray

- Easy to lift and clean
- Single-piece recessed tray is available (S-Series)



Raised Arm Rest

- Helps prevent grille blocking
- Comfortable working posture



Removable Paper Catch

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



Available in 1.2, 1.5 and 1.8 meter width (4' 5" and 6')

Airstream® PLUS

Class II Biological Safety Cabinets

cen
EN12469
Certified by TÜV NORD, Germany
for compliance to DIN EN 12469

TÜV NORD

RS 232 Serial Interface Port



RS 232 Serial Interface Port

- Send operational information to Building Management System (BMS)

DUAL Energy Efficient DC ECM Motor

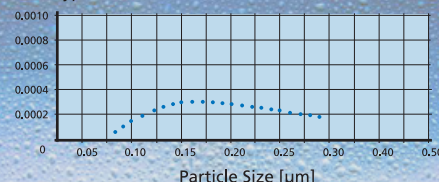
- The most energy-efficient Class II Biosafety Cabinet in the world
- 70% Energy savings compared to AC motor
- Stable airflow, despite building voltage fluctuations & filter loading
- Standby mode to further reduce power consumption by 60%



H14 / Optional U15 Filter

- H14 Filter with efficiency of 99.999%
- U 15 Filter with efficiency of 99.9999% (10x filtration efficiency of H14 filter)
- Creates ISO Class 3 work zone instead of industry-standard ISO Class 5
- Easy filter replacement procedure due to customized plenum design

(%) Typical Penetration



LED Lamp

- Energy efficient
- Last 4x longer than fluorescent lamp

ISOCIDE™ Powder Coat

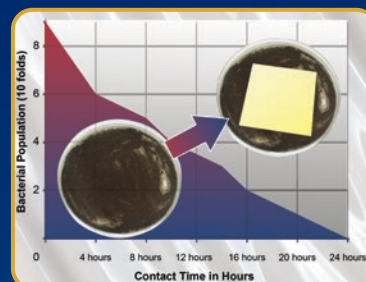
- Silver-ion impregnated powder coat
- Inhibit microbial growth to improve safety

Optional Hydrogen Peroxide Injection Port

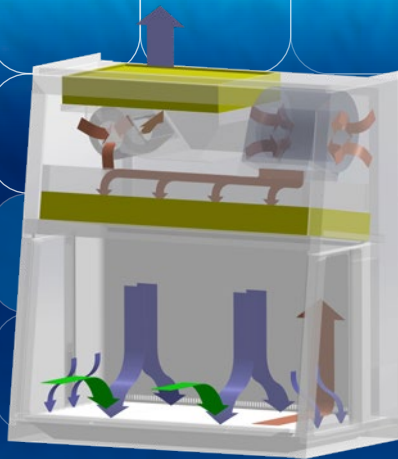
- Easily connect to VHP/HPV Generator
- Combined with sealed front window for easy decontamination

Angled Drain Pan

- Easy to clean
- Does not harbor contaminants



Standards Compliance	Biosafety Cabinet	Air Quality	Filtration	Electrical Safety
	DIN EN 12469, Europe SANS 12469, South Africa	ISO 14644.1 Class 3, Worldwide JIS B9920 Class 3, Japan BS5295, Class 3, UK	EN-1822 (H14), Europe IEST-RP-CC001.3, USA IEST-RP-CC007, USA IEST-RP-CC034.1, USA	IEC 61010-1, Worldwide EN 61010-1, Europe UL 61010-1, USA CAN / CSA-22.2, No.61010-1

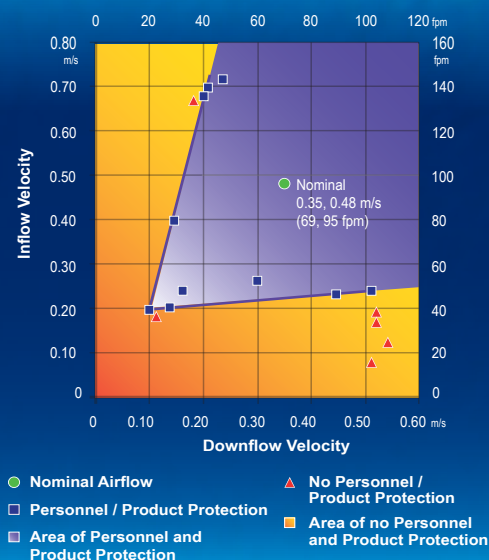


- H14-filtered air
- Unfiltered / potentially contaminated air
- Room air / Inflow air

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 $\frac{1}{3}$ of the air in the common plenum is exhausted through the ULPA filter to the room. The remaining $\frac{2}{3}$ 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 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 Test of AC2-TU



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

Multi Language: English, German

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

Large touchpad control buttons provide good tactile feedback.

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

Programmable UV light timer extends UV lamp life.



4

AC2 Cabinets Save Money and Environment



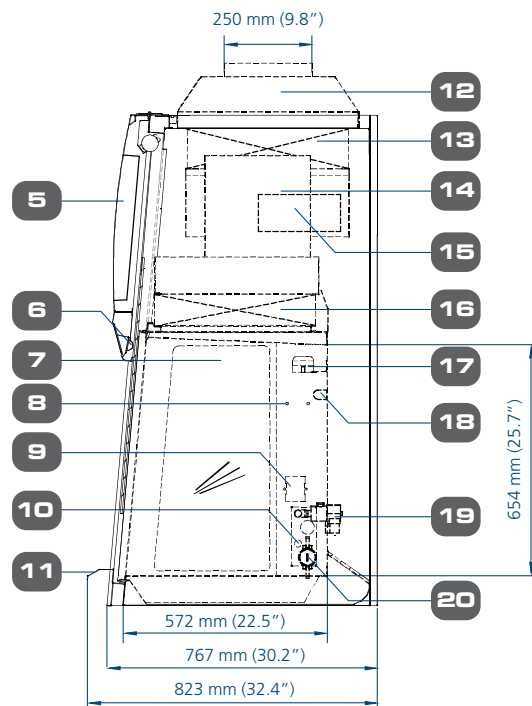
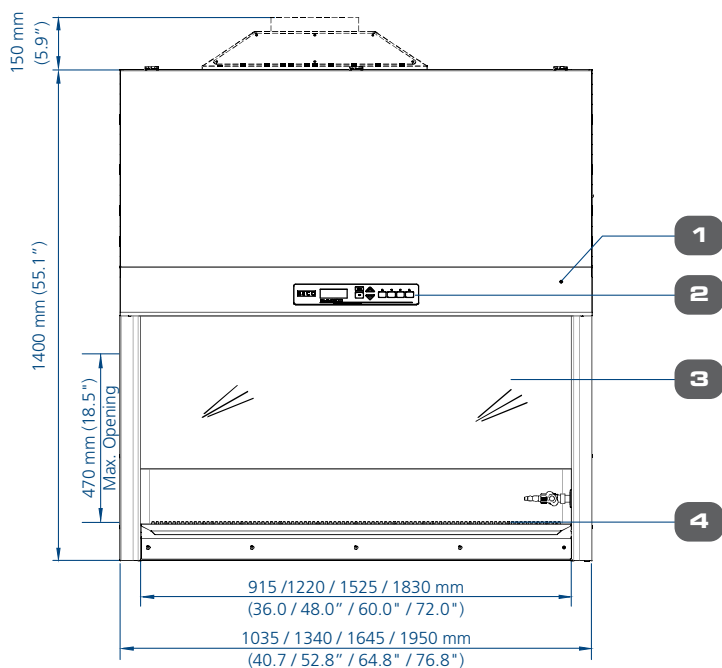
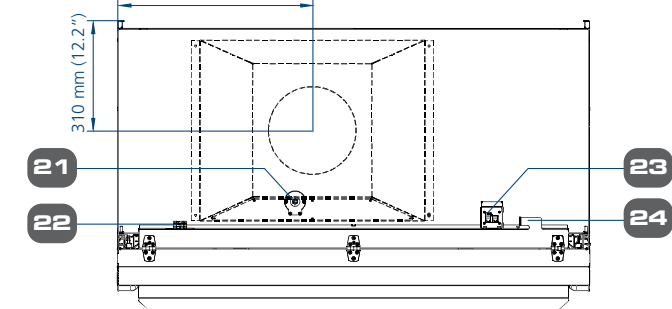
Description	AC2-4S_-TU with DC ECM blower	Typical BSC with AC Blower	Savings	Units
Instantaneous Power	200	800	600	Watt
Hours of Operation in a year	2000			Hours
Energy	400	1600	1200	kWh
Energy cost in USA at \$ 0.10 / kWh	40	160	120	USD
Energy cost in EU at € 0.20 / kWh	80	320	240	Euro
CO ₂ released in USA at 1 lbs / kWh	400	1600	1200	lbs
CO ₂ emission in EU at 0.35 Kg / kWh	140	560	420	Kg

Airstream® PLUS

Class II Biological Safety Cabinets

Model AC2-TU Biological Safety Cabinet Engineering Drawing

3 feet = 463 mm (18.2")
4 feet = 553 mm (21.8")
5 feet = 660 mm (26.0")
6 feet = 680 mm (27.0")



5

- | | |
|--|---|
| 1. Key Switch | 13. Exhaust H14 Filter (Optional U15) |
| 2. Esco Sentinel™ Gold Microprocessor Control System | 14. DC ECM Downflow Blower |
| 3. Laminated Glass Motorized Sliding Sash Window | 15. DC ECM Exhaust Blower |
| 4. Stainless Steel Multi-piece Work Tray | 16. Downflow H14 Filter (U15 is Optional) |
| 5. Electrical Panel | 17. Downflow Sensor |
| 6. Energy Efficient LED Lamps | 18. UV Lamp Provision |
| 7. Hole-free, Easy to Clean Side Tempered Glass | 19. Optional Solenoid Valve |
| 8. IV Bar Retrofit Kit Provision | 20. Optional Steris VHP / Bioquell HPV Port |
| 9. Standard Electrical Outlet Retrofit Kit Provision | 21. Exhaust Sensor |
| 10. Service Fixture Retrofit Kit Provision | 22. Voltage Free Relay Contact |
| 11. Stainless Steel Arm Rest | 23. RS 232 Serial Interface Port |
| 12. Exhaust Collar (Optional) | 24. Power Inlet |

Comprehensive Performance Testing At Esco



Every Airstream® Plus AC2-TU 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.



TECHNICAL SPECIFICATIONS					
Glass Side: 220-240 VAC, 50/60 Hz		AC2-3E8-TU 2011036	AC2-4E8-TU 2011005	AC2-5E8-TU 2010981	AC2-6E8-TU 2011007
Stainless Steel Side: 220-240 VAC, 50/60 Hz		AC2-3S8-TU 2011037	AC2-4S8-TU 2010749	AC2-5S8-TU 2010980	AC2-6S8-TU 2010943
Nominal Size		3 ft (0.9 meter)	4 ft (1.2 meter)	5 ft (1.5 meter)	6 ft (1.8 meter)
External Dimensions (W x D x H)	Width	1035 (40.7")	1340 mm (52.8")	1645 mm (64.8")	1950 mm (76.8")
	Depth without arm rest	767 mm (30.2")			
	Depth with arm rest	823 mm (32.4")			
	Height	1400 mm (55.1")			
Gross Internal Dimensions (W x D x H)	Width	915 (36.0)	1220 mm (48.0")	1525 mm (60.0")	1830 mm (72.0")
	Depth	580 mm (22.8")			
	Height	654 mm (25.7")			
Usable Work Area		0.42 m2 (4.5 sq.ft.)	0.56 m² (6.1 sq.ft.)	0.71 m² (7.6 sq.ft.)	0.86 m² (9.2 sq.ft.)
Tested Opening		175 mm (7")			
Average Airflow Velocity	Inflow	0.48 m/s (95 fpm)			
	Downflow	0.35 m/s (69 fpm)			
Airflow Volume	Inflow	278 cmh (164 cfm)	369 cmh (217 cfm)	463 cmh (273 cfm)	553 cmh (325 cfm)
	Downflow	661 cmh (389 cfm)	876 cmh (516 cfm)	1099 cmh (647 cfm)	1314 cmh (773 cfm)
	Exhaust	278 cmh (164 cfm)	369 cmh (217 cfm)	463 cmh (273 cfm)	553 cmh (325 cfm)
	Required Exhaust with Optional Thimble Exhaust Collar	320 m3/h (189 cfm)	554 cmh (326 cfm)	692 cmh (407 cfm)	830 cmh (488 cfm)
	Static Pressure for Optional Thimble Exhaust Collar	29 Pa / 0.11 in H ₂ O	38 Pa / 0.12 in H ₂ O	44 Pa / 0.14 in H ₂ O	50 Pa / 0.18 in H ₂ O
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 per EN 12469*		49.6 dBA	51.7 dBA	53.4 dBA	54.8 dBA
LED Lamp Intensity	E-Series	1027 lux	1157 lux	1024 lux	1249 lux
	S-Series	1028 lux	1193 lux	1467 lux	1298 lux
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, 6 mm (0.2"), colorless and transparent			
	Side Walls (S Series)	1.5 mm (0.06") 16 gauge stainless steel, type 304, with 4B finish			
Electrical	Cabinet Full Load Amps (FLA)	10			
	Heat Load (BTU/Hr)	597	682	785	938
Maximum Power Consumption (5A EOs included) (W)		1880			
Nominal Power Consumption (W)		175	200	245	287
Net Weight**		191 Kg (421 lbs)	236 Kg (520 lbs)	293 Kg (645 lbs)	351 Kg (773 lbs)
Shipping Weight**		220 Kg (485)	260 Kg (573 lbs)	331 Kg (729 lbs)	403 Kg (888 lbs)
Shipping Dimensions, Maximum (W x D x H)**		1100 x 880 x 1760 mm (43.3" x 34.6" x 69.3")	1450 x 880 x 1760 mm (57.1" x 34.6" x 69.3")	1720 x 880 x 1760 mm (67.7" x 34.6" x 69.3")	2050 x 880 x 1760 mm (80.7" x 34.6" x 69.3")
Shipping Volume, Maximum**		1.7 m³ (60.0 ft³)	2.25 m³ (79.5 ft³)	2.66 m³ (93.9 ft³)	3.17 m³ (111.9 ft³)

*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.

Accessories for AC2-TU Biological Safety Cabinets

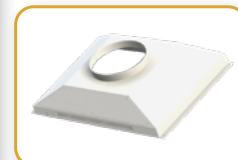
Cabinet	Glass Side Wall	AC2-3E8-TU 2011036	AC2-4E8-TU 2011005	AC2-5E8-TU 2010981	AC2-6E8-TU 2011007
	Stainless Steel Side Wall	AC2-3S8-TU 2011037	AC2-4S8-TU 2010749	AC2-5S8-TU 2010980	AC2-6S8-TU 2010943
Exhaust Ducting	Anti-blowback Valve 10"	ABBV-10P 5170352			
	Tri-safe Exhaust Collar with Alarm	TEM-4 2010606			
	Thimble Exhaust Collar	ECO-AC23-TU 5170683	ECO-AC24-TU 5170623	ECO-AC25-TU 5170624	ECO-AC26-TU 5170625
	Exhaust Damper	B2-DAMPER 5170352			
Hydrogen Peroxide Decontamination Kit	VHP In Port (Ø 1")	VHP-IN PORT 5170552			
	VHP Out Top Box for Cabinet WITH Exhaust Collar Installed (Ø 1")	VHP-ECO/OUT 3FT 5170684	VHP-ECO/OUT 4FT 5170615	VHP-ECO/OUT 5FT 5170616	VHP-ECO/OUT 6FT 5170617
	VHP Out Top Box for Cabinet WITHOUT Exhaust Collar Installed (Ø 1")	VHP OUT TOP BOX 3ft 5170685	VHP OUT TOP BOX 4ft 5170612	VHP OUT TOP BOX 5ft 5170613	VHP OUT TOP BOX 6ft 5170614
Work Zone	UV Lamp	UV-15A-L 5170251	UV-30A-L 5170255		
	IV Bar	IV-910 5170499	IV-1215 5170231	IV-1520 5170500	IV-1825 5170501
	Multiple Piece Tray Option (for AC2-S-TU)	SDT-AC2-3E-TU 5021057	SDT-AC2-4E-TU 5020830	SDT-AC2-5E-TU 5020976	SDT-AC2-6E-TU 5020828
	Single Piece Tray Option (for AC2-E-TU)	SGT-AC2-3S-TU 5021103	SGT-AC2-4S-TU 5020973	SGT-AC2-5S-TU 5020978	SGT-AC2-6S-TU 5020981
	Pre-filter on Paper Catch	PF-41 5090061	PF-42 5090062	PF-43 5090063	PF-44 5090064
Electrical Outlet	Direct Mounted	EO-H_			
Service Fixtures	EU SF-Gas-20 mm and Solenoid Valve	SF-1G20 5170410 and SL-VALVE 5070086			
	EU SF-Vacuum-20 mm	SF-1V20 5170457			
	EU SF-Air-20 mm	SF-1A20 5170502			
	EU SF-Nitrogen-20 mm	SF-1N20 5170503			
	EU SF-Water-20 mm	SF-1W20 5170458			
	EU SF-Universal-22 mm	SF-2U22 5170504			
Support Stands, Ships Flat	Fixed Stand with Leveling Feet, 28" height	SAL-3A0 Gen 2 5130170	SAL-4A0 Gen 2 5130134	SAL-5A0 Gen 2 5130171	SAL-6A0 Gen 2 5130172
	Fixed Stand with Leveling Feet, 34" height	SAL-3B0 Gen 2 5130174	SAL-4B0 Gen 2 5130175	SAL-5B0 Gen 2 5130176	SAL-6B0 Gen 2 5130177
	Fixed Stand with Caster Wheels, 28" height	SPC-3A0 Gen 2 5130155	SPC-4A0 Gen 2 5130152	SPC-5A0 Gen 2 5130162	SPC-6A0 Gen 2 5130154
	Fixed Stand with Caster Wheels, 34" height	SPC-3B0 Gen 2 5130165	SPC-4B0 Gen 2 5130166	SPC-5B0 Gen 2 5130167	SPC-6B0 Gen 2 5130168
	Telescopic Stand with Leveling Feet, 1" adjustment	STL-3A0 5130050	STL-4A0 5130051	STL-5A0 5130052	STL-6A0 5130053
	Telescopic Stand with Caster Wheels, 1" adjustment	STC-3A0 5130055	STC-4A0 5130056	STC-5A0 5130057	STC-6A0 5130058
	Motorized Height Stand with Caster Wheels, 39.5" height	SPM-3A_	SPM-4A_	SPM-5A_	SPM-6A_
Misc	IQ/OQ Protocol	9010179			



ABBV-10P



TEM-4



ECO-AC2-_TU



B2-DAMPER



VHP-IN PORT



VHP-ECO/OUT



VHP OUT TOP BOX



UV-_A-L



IV-_



IQ-OQ



SF-_



SF-2U22



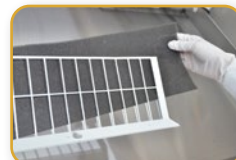
EO-H_



SDT-AC2-_E-TU



SGT-AC2-_S-TU



PF-_



SPC-_A0 Gen2



SAL-_A0 Gen2



STC-_A0



SPM-_A_

ESCO LIFESCIENCES GROUP

42 LOCATIONS IN 21 COUNTRIES ALL OVER THE WORLD



- Global Offices
- Licensee
- Distributors
- Factories
- R&D Centers
- Regional Distribution Centers

*Follow us on social media, download our apps,
and scan the QR code for more info.*



@EscoLifesciences



@EscoLifesciences



@EscoLifesci



@Esco



@EscoLifesciences



@EscoLifesciences



Esco Lifesciences



Esco Lifesciences

ESCO

LIFESCIENCES GROUP

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

Esco Technologies, Inc. • 903 Sheehy Drive, Suite F, Horsham, PA 19044, USA
Tel: +1 215-441-9661 • Fax 484-698-7757
eti.admin@escolifesciences.com

Esco Lifesciences Group Offices: Bangladesh | China | Denmark | Germany | Hong Kong | India | Indonesia | Italy | Japan | Lithuania | Malaysia | Myanmar | Philippines | Russia | Singapore | South Africa | South Korea | Taiwan | Thailand | UAE | UK | USA | Vietnam



Labculture®
Labculture® • **RELIANT**



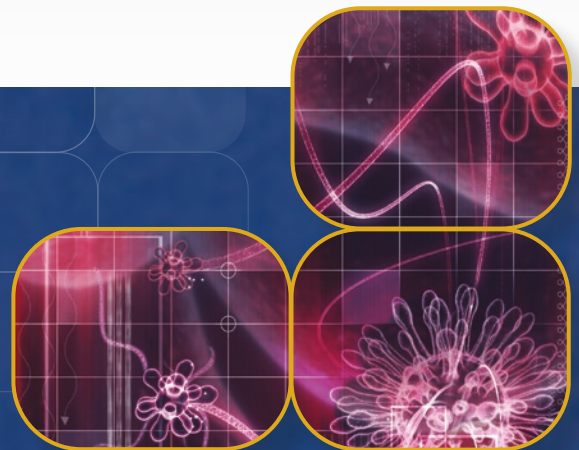
Model LA2-4A_-E.



NSF 49, UL 61010, JIS K3800, CFDA YY-0569, EN 12469

Class II, Type A2 and B2 Biological Safety Cabinets

The Most Energy-Efficient, Safe, and Ergonomic
Biosafety Cabinet in the World



ESCO
SCIENTIFIC

LABCULTURE® CLASS II TYPE A2 (LA2) and B2 (LB2) BIOSAFETY

RS 232 SERIAL
INTERFACE PORT

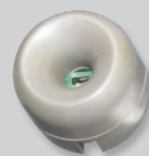


Zero voltage
relay contact



RS 232 Port and Zero Volt Relay Contact

- RS 232 Port to send operational information to Building Management System (BMS)
- Zero Volt Relay Contact to turn ON/OFF exhaust blower and signal the building alarm



Airflow Sensor

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

ESCO

Esco LA2 15:34
Exhaust: OK Sash: OK
I: 0.53 m/s D: 0.35 m/s
Socket: ON

Sentinel® GOLD

MICROPROCESSOR CONTROL SYSTEM



MENU

VSET

DIAGNOSTICS



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



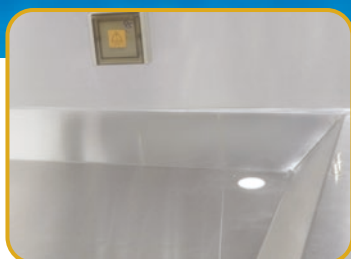
Single Piece Work Tray

- Recessed to contain spillage
- Curved grill to prevent blockage



Raised Arm Rest

- 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, 1.8 and 2.4 meter models (3', 4', 5', 6' and 8'). Shown with optional telescoping stand.



NSF 49



E248249



JIS K3800



CFDA YY-0569



EN 12469

Labculture® | Labculture® • RELIANT

LA2 & LR2 Class II Type A2 / LB2 Class II Type B2 Biological Safety Cabinets

CABINETS, FEATURING ADVANCED MICROPROCESSOR CONTROLLER

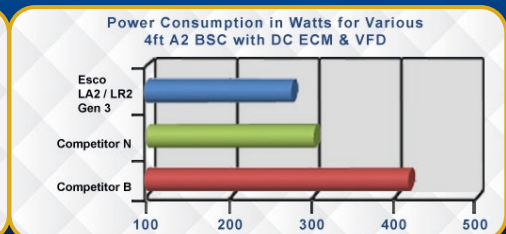
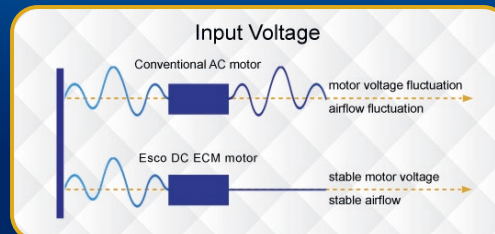


Pressure Switch (LB2 only)

- Temperature independent
- Fast response

Energy Efficient DC ECM Motor

- Powered by latest generation DC ECM motor, that is more efficient than legacy ECM and VFD motors
- 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%

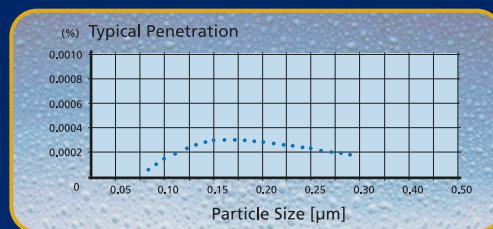


ULPA Filter

- 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.

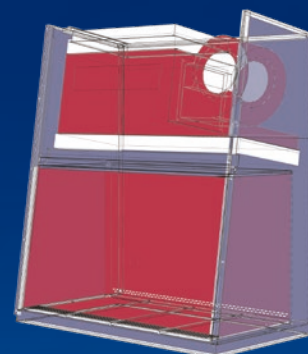
HEPA filters only offer 99.99% typical efficiency at 0.3 micron, while ULPA filters provide 99.999% typical efficiency for particle sizes of 0.1 to 0.3 micron.



Dynamic Chamber

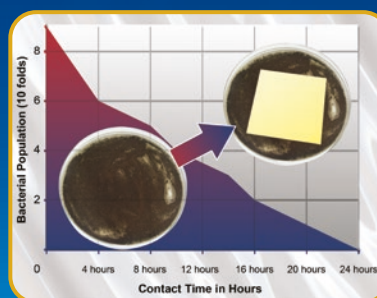
- Blower plenum and side walls are surrounded by negative pressure
- Prevent contaminants from escaping outside

■ Positive pressure
■ Negative pressure



ISOCIDE™ Powder Coat

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



Standards Compliance	Biosafety Cabinets	Air Quality	Filtration	Electrical Safety
	NSF / ANSI 49, USA EN 12469, Europe* JIS K 3800, Japan* CFDA YY-0569, China	ISO 14644.1, Class 3, Worldwide JIS B9920, Class 3, Japan BS5295, Class 3, UK US Fed Std 209E, Class 1 USA	EN-1822 (H14), Europe IEST-RP-CC001.3, USA IEST-RP-CC007, USA IEST-RP-CC034.1, USA	UL-C-61010A-1, USA CSA22.2, No.1010-192, Canada EN-61010-1, Europe IEC61010-1, Worldwide

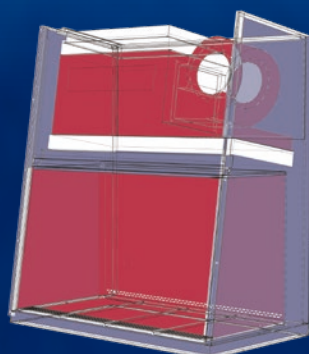
Note: LA2 cabinets are compliant to NSF, EN, JIS, and CFDA. LB2 cabinets are compliant to NSF and CFDA.

*EN 12469 and JIS K 3800 compliance are applicable in LA2 model only.



Rocker Switches and Pressure Gauge

- Easy to use switches
- Displays filter loading status
- Manually adjustable UV timer



Dynamic Chamber

- Blower plenum and side walls are surrounded by negative pressure
- Prevent contaminants from escaping outside

- Positive pressure
- Negative pressure



Single Piece Wall

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



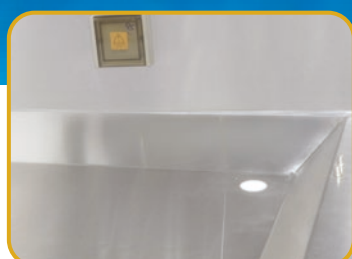
Single Piece Work Tray

- Recessed to contain spillage
- Curved grill to prevent blockage



Raised Arm Rest

- 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, 1.8 and 2.4 meter models (3', 4', 5', 6' and 8'). Shown with optional telescoping stand.

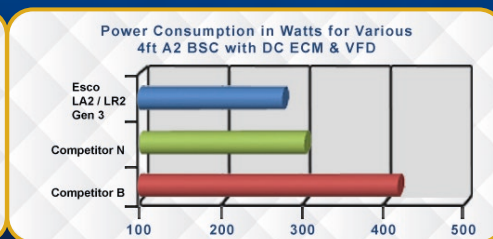
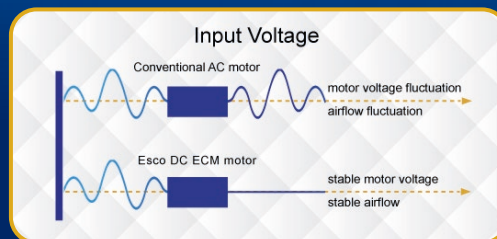


CABINETS, FEATURING ADVANCED MICROPROCESSOR CONTROLLER



Energy Efficient DC ECM Motor

- Powered by latest generation DC ECM motor, that is more efficient than legacy ECM and VFD motors
- 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%

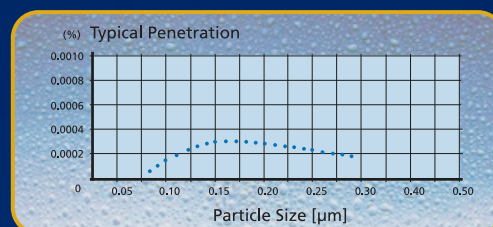


ULPA Filter

- 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.



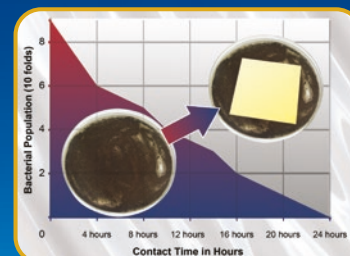
Adjustable UV Timer

- Easily adjustable to desired minutes or hours
- Prolongs UV lamp, for not turning it ON overnight



ISOCIDE™ Powder Coat

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



	Biosafety Cabinets	Air Quality	Filtration	Electrical Safety
Standards Compliance	NSF / ANSI 49 NSF	ISO 14644.1, Class 3, Worldwide JIS B9920, Class 3, Japan BS5295, Class 3, UK US Fed Std 209E, Class 1 USA	EN-1822 (H14), Europe IEST-RP-CC001.3, USA IEST-RP-CC007, USA IEST-RP-CC034.1, USA	UL-C-61010A-1, USA CSA22.2, No.1010-192, Canada EN-61010-1, Europe IEC61010-1, Worldwide

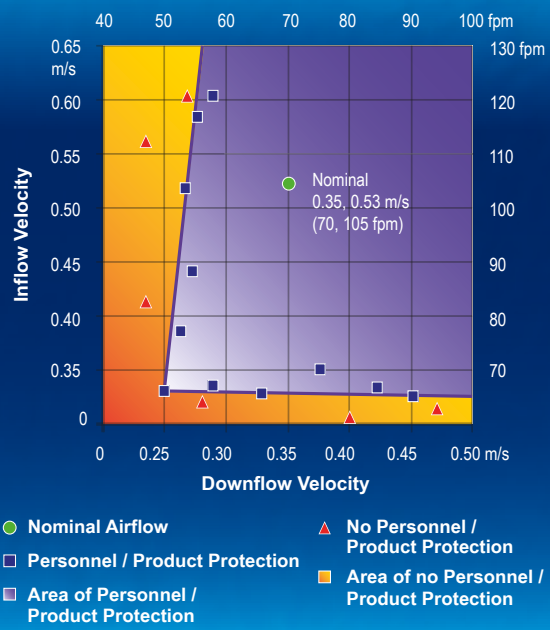


LA2 and LR2 CLASS II TYPE A2 BIOSAFETY CABINETS

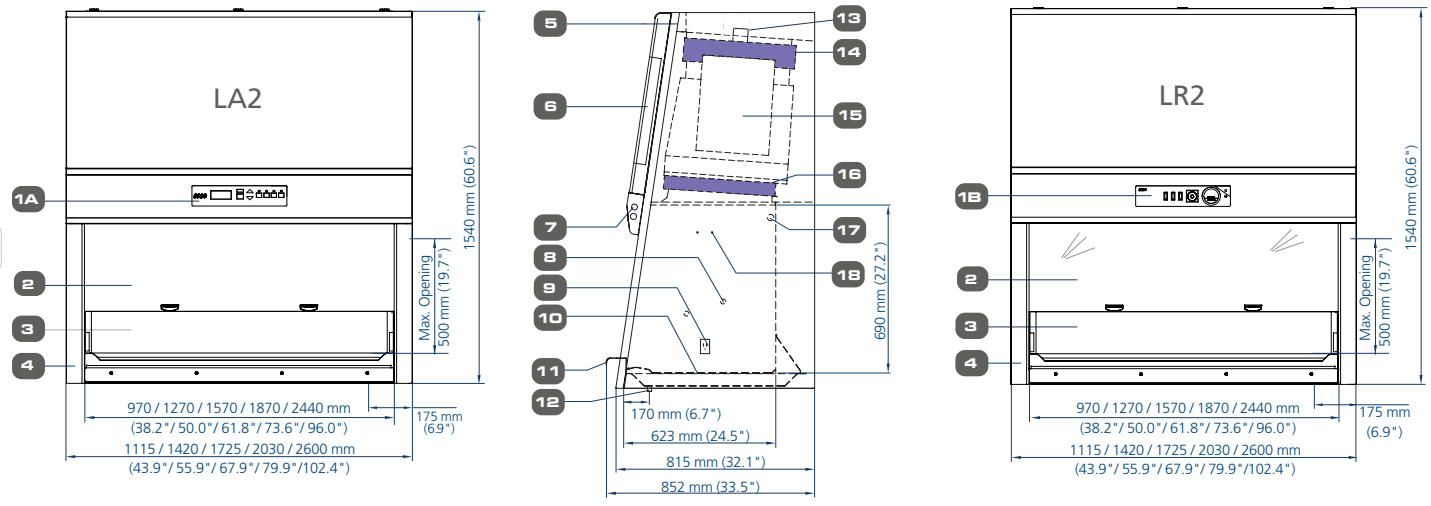
Cabinet Filtration System

- 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 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.

The Performance Envelope Concept

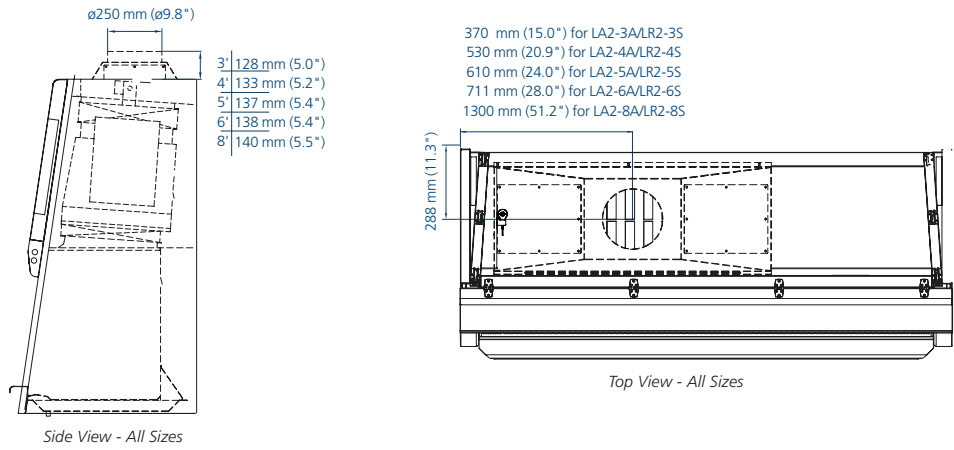


Model LA2 and LR2 Biological Safety Cabinet Engineering Drawing



- 1A. (LA2 and LB2) Sentinel™ Gold Microprocessor Controller
- 1B. (LR2) Simple Switches Controller
- 2. Tempered Glass Sash Window
- 3. Stainless Steel Back Wall
- 4. Side Panel
- 5. RS232 Port, Zero Volt Relay Contact
- 6. Electrical Panel
- 7. Fluorescent Lamp
- 8. Service Fixture Retrofit Kit Provision (2 on each side)
- 9. Electrical Outlet Retrofit Kit Provision
- 10. Stainless Steel Single Piece Work Tray
- 11. Arm Rest
- 12. Drain Valve
- 13. Airflow Sensor
- 14. Exhaust H14 Filter
- 15. Energy-efficient DC ECM Blower
- 16. Downflow H14 Filter
- 17. UV Light Retrofit Kit Provision
- 18. IV Bar Retrofit Kit Provision

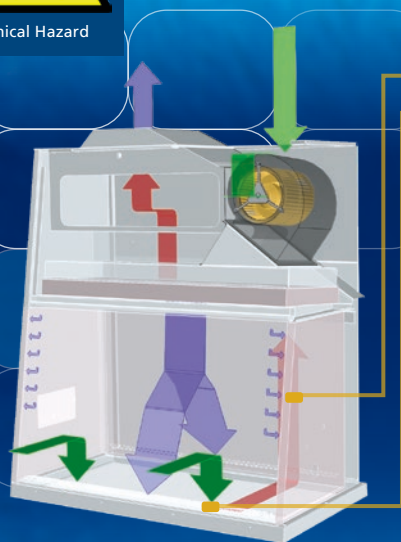
Optional Exhaust Collar Positions for Thimble-Ducting for LA2 and LR2 Models





For Biohazard and Chemical Hazard

LB2 CLASS II TYPE B2 BIOSAFETY CABINET



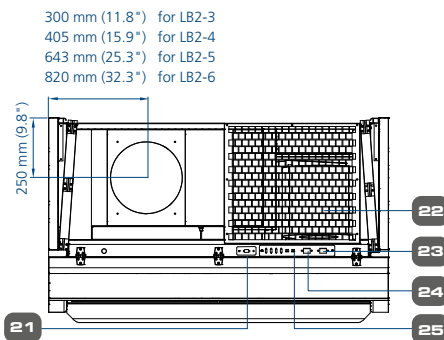
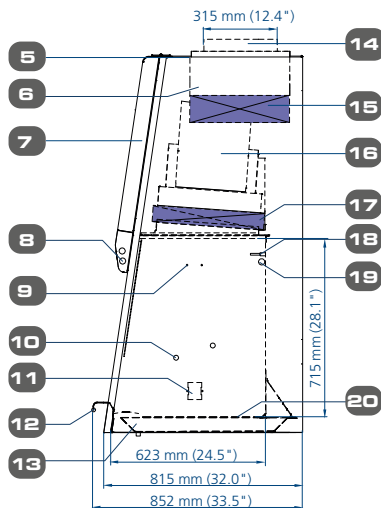
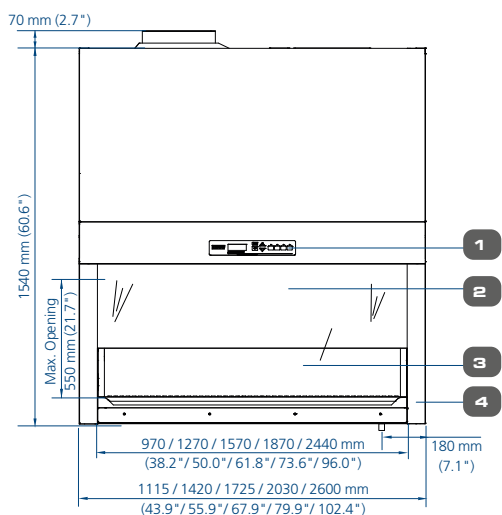
- ULPA-filtered air
- Unfiltered / potentially contaminated air
- Room air / Inflow air

Cabinet Filtration System

- Side capture zones
- Dynamic air barrier, inflow and forward-directed downflow air converge
- Ambient air is pulled through the front grille to prevent contamination of the work surface and work product. The inflow does not mix with the clean air within the cabinet work zone.
- Ambient air is taken in through a pre-filter 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 at a higher velocity (small blue arrows).

- 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.
- Fail-safe system ensures that in case of exhaust failure, the cabinet's main fan automatically shuts down to ensure safety to the user.

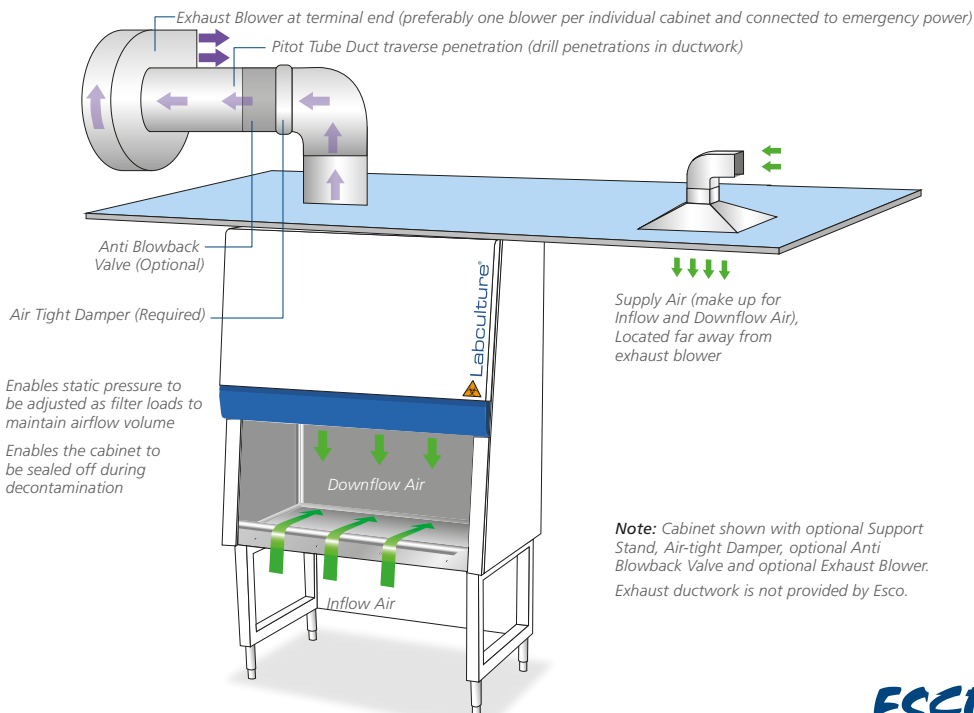
Model LB2 Biological Safety Cabinet Engineering Drawing



7

1. Sentinel™ Gold Microprocessor Controller
2. Tempered Glass Sash Window
3. Stainless Steel Back Wall
4. Side Panel
5. Pressure Switch Port
6. Exhaust Sensor
7. Electrical Panel
8. Fluorescent Lamp
9. IV Bar Retrofit Kit Provision
10. Service Fixture Retrofit Kit Provision
11. Electrical Outlet
12. Arm Rest
13. Drain Valve
14. Exhaust Ducting
15. Exhaust H13 Filter
16. Energy-efficient DC ECM Blower
17. Downflow H14 Filter
18. Downflow Sensor
19. UV Light Retrofit Kit Provision
20. Single Piece Stainless Steel Work Tray
21. RS232 Port
22. Pre-filter
23. Cabinet Power Inlet
24. Zero Voltage Relay Contact for Exhaust System
25. Zero Voltage Relay Contact for Remote Alarm

Recommended LB2 Cabinet Installation



Note: Cabinet shown with optional Support Stand, Air-tight Damper, optional Anti Blowback Valve and optional Exhaust Blower. Exhaust ductwork is not provided by Esco.

Accessories for LA2, LB2 and LR2 Biological Safety Cabinets

Cabinet	Stainless Steel Side Wall		LA2-3A1-E 2010705	LA2-4A1-E 2010670	LA2-5A1-E 2010671	LA2-6A1-E 2010672	LA2-8A1-E 2010928
			LA2-3A2-E 2010706	LA2-4A2-E 2010691	LA2-5A2-E 2010692	LA2-6A2-E 2010693	LA2-8A2-E 2011205
			LA2-3A3-E 2010707	LA2-4A3-E 2010685	LA2-5A3-E 2010686	LA2-6A3-E 2010687	LA2-8A3-E 2010921
			LB2-3B1-E 2010708	LB2-4B1-E 2010673	LB2-5B1-E 2010674	LB2-6B1-E 2010682	
			LB2-3B2-E 2010709	LB2-4B2-E 2010694	LB2-5B2-E 2010695	LB2-6B2-E 2010696	
			LB2-3B3-E 2010710	LB2-4B3-E 2010688	LB2-5B3-E 2010689	LB2-6B3-E 2010690	
				LR2-4S1-E 2010845	LR2-5S1-E 2010847	LR2-6S1-E 2010849	
			LR2-3S2-E 2010701	LR2-4S2-E 2010702	LR2-5S2-E 2010703	LR2-6S2-E 2010704	LR2-8S2-E 2011006
			LR2-3S3-E 2010913	LR2-4S3-E 2010851	LR2-5S3-E 2010853	LR2-6S3-E 2010855	
Exhaust Ducting	Anti-blowback Valve 10 inches (LA2 & LR2 only)	EG Powder Coated	ABBV-10P 5170352				
		304 Stainless Steel	ABBV-10S 5170354				
	Anti-blowback Valve 12 inches (LB2 only)	EG Powder Coated	ABBV-12P 5170353				
		304 Stainless Steel	ABBV-12S 5170355				
	Exhaust Damper		B2-DAMPER 5170104				
	Exhaust Collar (LA2 & LR2 only)		ECO-LA23-MK3-LH 5170097	ECO-LA24-MK3-LH 5170099	ECO-LA25-MK3-LH 5170101	ECO-LA26-MK3-LH 5170102	ECO-LA28-MK3-LH 5170536
	Inlet Collar (LB2 only)		ICO-LB23 5170320	ICO-LB24 5170263	ICO-LB25 5170316	ICO-LB26 5170322	
	Pre-filter (LB2 only)		PF-2 6090001				
	UV Lamp		UV-15A-L 5170251	UV-30A-L 5170255			UV-15A-L (x2) 5170251
	IV Bar		IV-955 5170276	IV-1260 5170277	IV-1265 5170278	IV-1870 5170279	



ABBV_



B2-DAMPER



ECO-L_2_-MK3-LH



ICO-LB2_



UV_-A-L



IV_-



EO-H



EO-GFCI



SF-1_

Labculture® | Labculture® • RELIANT

LA2 & LR2 Class II Type A2 / LB2 Class II Type B2 Biological Safety Cabinets

Electrical Outlet	Direct Mounted / GFCI	EO- __				
Service Fixtures	EU SF-Gas-40 mm	SF-1G40 5170002				
	EU SF-Vacuum-40 mm	SF-1V40 5170003				
	EU SF-Air-40 mm	SF-1A40 5170006				
	EU SF-Nitrogen-40 mm	SF-1N40 51700011				
	EU SF-Water-40 mm	SF-1W40 51700017				
	EU SF-Universal-40 mm	SF-2U40 51700018				
Support Stands, Ships Flat	Fixed Stand with Leveling Feet, 28" height	SPL-3A0 Gen 2 5130188	SPL-4A0 Gen 2 5130189	SPL-5A0 Gen 2 5130190	SPL-6A0 Gen 2 5130163	SPBL-8A0 5131286
	Fixed Stand with Leveling Feet, 34" height	SPL-3B0 Gen 2 5131092	SPL-4B0 Gen 2 5130151	SPL-5B0 Gen 2 5131093	SPL-6B0 Gen 2 5131094	SPBL-8B0 5131287
	Fixed Stand with Caster Wheels, 28" height	SPC-3A0 Gen 2 5130155	SPC-4A0 Gen 2 5130152	SPC-5A0 Gen 2 5130162	SPC-6A0 Gen 2 5130154	SPC-8A0 Gen 2 5131122
	Fixed Stand with Caster Wheels, 34" height	SPC-3B0 Gen 2 5130165	SPC-4B0 Gen 2 5130166	SPC-5B0 Gen 2 5130167	SPC-6B0 Gen 2 5130168	SPC-8B0 Gen 2 5131123
	Telescopic Stand with Leveling Feet, 1" adjustment	STL-3A0 5130050	STL-4A0 5130051	STL-5A0 5130052	STL-6A0 5130053	STL-8A0 5130054
	Telescopic Stand with Caster Wheels, 1" adjustment	STC-3A0 5130055	STC-4A0 5130056	STC-5A0 5130057	STC-6A0 5130058	STC-8A0 5130059
	Motorized Height Stand with Caster Wheels, 39.5" height	SPM-3A_ __	SPM-4A_ __	SPM-5A_ __	SPM-6A_ __	SPM-8A_ __
Misc	Arm Rest Padding	MEWREST 5170127				
	Foot Rest	FT-REST 5170492				
	Laboratory Chair	ME-LD-AR360 1150006				
	IQ OQ Protocol	9010179				

SF-2U_{_}SPL-_{_}A0 Gen 2SAL-_{_}B0 Gen 2SPC-_{_}A0 Gen 2SPC-_{_}B0 Gen 2STL-_{_}A0STC-_{_}A0SPM-_{_}A_{_}

IQ OQ

Class II Type A2 Biological Safety Cabinets

TECHNICAL SPECIFICATIONS						
Labculture® Class II A2		LA2-3A_-E	LA2-4A_-E	LA2-5A_-E	LA2-6A_-E	LA2-8A_-E
Labculture® Reliant Class II A2		LR2-3S_-E	LR2-4S_-E	LR2-5S_-E	LR2-6S_-E	LR2-8S_-E
Nominal Size		0.9 meter (3')	1.2 meter (4')	1.5 meter (5')	1.8 meter (6')	2.4 meters (8')
External Dimensions * (W x D x H)		1115 x 852 x 1540 mm (44.0" x 33.5" x 60.6")	1420 x 852 x 1540 mm (56.0" x 33.5" x 60.6")	1725 x 852 x 1540 mm (68.0" x 33.5" x 60.6")	2030 x 852 x 1540 mm (80.0" x 33.5" x 60.6")	2600 x 852 x 1540 mm (102.4" x 33.5" x 60.6")
Internal Dimensions (W x D x H)		970 x 623 x 670 mm (38.2" x 24.5" x 26.4")	1270 x 623 x 670 mm (50.0" x 24.5" x 26.4")	1570 x 623 x 670 mm (61.8" x 24.5" x 26.4")	1870 x 623 x 670 mm (73.6" x 24.5" x 26.4")	2440 x 623 x 670 mm (96.0" x 24.5" x 26.4")
Usable Work Area		0.45 m² (4.8 sq.ft.)	0.6 m² (6.5 sq.ft.)	0.75 m² (8.1 sq.ft.)	0.9 m² (9.7 sq.ft.)	1.2 m² (13 sq.ft.)
Tested Opening		229 mm (9")	229 mm (9")	229 mm (9")	203 mm (8")	203 mm (8")
Working Opening		274 mm (10.8")	274 mm (10.8")	274 mm (10.8")	248 mm (9.8")	248 mm (9.8")
Average Airflow Velocity	Inflow	0.53 m/s (105 fpm)				
	Downflow	0.35 m/s (70 fpm)	0.35 m/s (70 fpm)	0.35 m/s (70 fpm)	0.33 m/s (65 fpm)	0.33 m/s (65 fpm)
Airflow Volume	Inflow	424 m³/h (251 cfm)	555 m³/h (328 cfm)	686 m³/h (406 cfm)	724 m³/h (426 cfm)	945 m³/h (560 cfm)
	Downflow	628 m³/h (363 cfm)	822 m³/h (476 cfm)	1016 m³/h (588 cfm)	1210 m³/h (700 cfm)	1579 m³/h (914 cfm)
	Exhaust	424 m³/h (251 cfm)	555 m³/h (328 cfm)	686 m³/h (406 cfm)	724 m³/h (426 cfm)	945 m³/h (560 cfm)
	Required Exhaust with Optional Thimble Exhaust Collar	529 m³/h (311 cfm)	764 m³/h (450 cfm)	1116 m³/h (657 cfm)	1164 m³/h (685 cfm)	1540 m³/h (913 cfm)
	Static Pressure for Optional Thimble Exhaust Collar	32 Pa / 0.12 in H₂O	49 Pa / 0.19 in H₂O	62 Pa / 0.24 in H₂O	79 Pa / 0.31 in H₂O	100 Pa / 0.40 in H₂O
ULPA Filter Typical Efficiency		>99.999% for particle size between 0.1 to 0.3 microns per IEST-RP-CC001.3 / H14 per EN 1822				
Sound Emission**	NSF / ANSI 49	62.5 dBA	63 dBA	63.5 dBA	64 dBA	64.5 dBA
	EN 12469	59.5 dBA	60 dBA	60.5 dBA	61 dBA	61.5 dBA
Fluorescent Lamp Intensity		>1000lux (>93 foot-candles)				
Cabinet Construction	Main Body	Electro-galvanized steel with white oven-baked epoxy-polyester Isocide™ antimicrobial powder-coated finish, 1.5 mm (0.06") / 16 gauge thick				
	Work Zone	Stainless steel Type 304 with No.4 finish, 1.5 mm (0.06") / 16 gauge thick				
Electrical	Full Load Amps 230 V	10 A				10 A and 5 A
	Full Load Amps 115 V	13 A				13 A and 8 A
	Heat Load	853 BTU/Hr	972 BTU/Hr	1177 BTU/Hr	1297 BTU/Hr	1774 BTU/Hr
Nominal Power Consumption		250 W	285 W	345 W	380 W	520 W
Net Weight***		243 Kg (536 lbs)	283 Kg (624 lbs)	350 Kg (772 lbs)	426 Kg (939 lbs)	580 Kg (1279 lbs)
Shipping Weight***		292 Kg (644 lbs)	345 Kg (761 lbs)	410 Kg (904 lbs)	486 Kg (1072 lbs)	640 Kg (1411 lbs)
Shipping Dimensions, Maximum (W x D x H)***		1200 x 950 x 1900 mm (47.2" x 37.4" x 74.8")	1550 x 950 x 1900 mm (61.0" x 37.4" x 74.8")	1950 x 950 x 1900 mm (76.8" x 37.4" x 74.8")	2150 x 950 x 1900 mm (84.6" x 37.4" x 74.8")	2720 x 950 x 1900mm (84.6" x 37.4" x 74.8")
Shipping Volume, Maximum***		2.17 m³ (77 cu.ft.)	2.80 m³ (99 cu.ft.)	3.52 m³ (124 cu.ft.)	3.88 m³ (137 cu.ft.)	4.91 m³ (173 cu.ft.)

*Depth includes the remove-able arm rest and front cover.

When they are removed, depth is 790 mm (31.1").

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.

Class II Type A2 can be used to handle **minute** quantities of volatile toxic chemicals and **trace** amounts of radionucleotides when **thimble** ducted. Use this option if chemical vapor **re-circulation** into the work zone is permitted.

Power Rating	Voltage (VAC)	Frequency (Hz)	Example
1	230	50	LA2-4A1
2	115	60	LA2-4A2
3	230	60	LA2-4A3

Class II Type B2 Biological Safety Cabinets

TECHNICAL SPECIFICATIONS					
Labculture® Class II B2		LB2-3B_E	LB2-4B_E	LB2-5B_E	LB2-6B_E
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	1115 x 852 x 1610 mm (44.0" x 33.5" x 63.3")	1420 x 852 x 1610 mm (56.0" x 33.5" x 63.3")	1725 x 852 x 1610 mm (68.0" x 33.5" x 63.3")	2030 x 852 x 1610 mm (80.0" x 33.5" x 63.3")
	With Optional Base Stand, 711 mm (28") type	1115 x 852 x 2321 mm (44.0" x 33.5" x 91.4")	1420 x 852 x 2321 mm (56.0" x 33.5" x 91.4")	1725 x 852 x 2321 mm (68.0" x 33.5" x 91.4")	2030 x 852 x 2321 mm (80.0" x 33.5" x 91.4")
Internal Dimensions (W x D x H)		970 x 623 x 715 mm (38.2" x 24.5" x 28.1")	1270 x 623 x 715 mm (50.0" x 24.5" x 28.1")	1570 x 623 x 715 mm (61.8" x 24.5" x 28.1")	1870 x 623 x 715 mm (73.6" x 24.5" x 28.1")
Usable Work Area		0.45 m² (4.8 sq.ft.)	0.6 m² (6.5 sq.ft.)	0.75 m² (8.1 sq.ft.)	0.9 m² (9.7 sq.ft.)
Tested Opening		203 mm (8.0")	203 mm (8.0")	203 mm (8.0")	203 mm (8.0")
Working Opening		274 mm (10.8")	274 mm (10.8")	274 mm (10.8")	248 mm (9.8")
Average Airflow Velocity	Inflow	0.53 m/s (105 fpm)			
	Downflow	0.31 m/s (60 fpm)			
Airflow Volume	Inflow	376 m³/h (223 cfm)	492 m³/h (292 cfm)	608 m³/h (361 cfm)	724 m³/h (429 cfm)
	Downflow	628 m³/h (363 cfm)	822 m³/h (476 cfm)	1016 m³/h (588 cfm)	1210 m³/h (700 cfm)
	CBV Exhaust Air Volume**	1127 m³/h (658 cfm)	1476 m³/h (862 cfm)	1824 m³/h (1065 cfm)	2173 m³/h (1269 cfm)
	Min Exhaust Static Pressure	400 Pa / 1.6 in H ₂ O	375 Pa / 1.5 in H ₂ O	375 Pa / 1.5 in H ₂ O	400 Pa / 1.6 in H ₂ O
	CBV Exhaust Static Pressure**	575 Pa / 2.3 in H ₂ O	550 Pa / 2.2 in H ₂ O	550 Pa / 2.2 in H ₂ O	575 Pa / 2.3 in H ₂ O
Supply 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			
Maximum Sash Opening		508 mm (20")			
Sound Emission***	NSF / ANSI 49	57 dBA	58 dBA	59 dBA	60 dBA
	EN 12469	54 dBA	55 dBA	56 dBA	57 dBA
Fluorescent Lamp Intensity At Zero Ambient		>1000lux (>93 foot-candles)			
Cabinet Construction	Main Body	Electro-galvanized steel with white oven-baked epoxy-polyester Isocide™ antimicrobial powder-coated finish, 1.5 mm (0.06") / 16 gauge thick			
	Work Zone	Stainless steel Type 304 with No.4 finish, 1.5 mm (0.06") / 16 gauge thick			
Electrical	Full Load Amps 230 V	8 A			
	Full Load Amps 115 V	10 A			
	Heat Load	566 BTU/Hr	645 BTU/Hr	781 BTU/Hr	860 BTU/Hr
Nominal Power Consumption		166 W	189 W	229 W	252 W
Net Weight****		279 Kg (615 lbs)	317 Kg (699 lbs)	359 Kg (791 lbs)	438 Kg (966 lbs)
Shipping Weight****		318 Kg (703 lbs)	370 Kg (814 lbs)	402 Kg (886 lbs)	491 Kg (1083 lbs)
Shipping Dimensions, Maximum (W x D x H)****		1210 x 950 x 1950 mm (47.6" x 37.4" x 76.8")	1520 x 950 x 1950 mm (59.8" x 37.4" x 76.8")	1900 x 950 x 1950 mm (74.8" x 37.4" x 76.8")	2150 x 950 x 1950 mm (84.7" x 37.4" x 76.8")
Shipping Volume, Maximum****		2.24 m³ (79.1 cu.ft.)	2.82 m³ (99.6 cu.ft.)	3.52 m³ (124.3 cu.ft.)	3.98 m³ (140.6 cu.ft.)

*Height includes exhaust collar, and depth includes the remove-able arm rest and front cover. When they are removed, depth is 790 mm (31.1").

**This Concurrent Balance Value (CBV) Exhaust Volume (per Pitot Duct Traverse) and Static Pressure at cabinet exhaust connection should be used when sizing the HVAC exhaust and supply.

***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.

Power Rating	Voltage (VAC)	Frequency (Hz)	Example
1	230	50	LB2-4B1
2	115	60	LB2-4B2
3	230	60	LB2-4B3

Class II Type B2 can be used to handle volatile toxic chemicals and radionucleotides because by default it's hard ducted. Use this option if chemical vapor **re-circulation** into the work zone is **not** permitted.

ESCO LIFESCIENCES GROUP

42 LOCATIONS IN 21 COUNTRIES ALL OVER THE WORLD



- Global Offices
- Licensee
- Distributors
- Factories
- R&D Centers
- Regional Distribution Centers

*Follow us on social media, download our apps,
and scan the QR code for more info.*



@EscoLifesciences



@EscoLifesciences



@EscoLifesci



@Esco



@EscoLifesciences



@EscoLifesciences



Esco Lifesciences



Esco Lifesciences

ESCO

LIFESCIENCES GROUP

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

Esco Technologies, Inc. • 903 Sheehy Drive, Suite F, Horsham, PA 19044, USA
Tel: +1 215-441-9661 • eti.admin@escolifesciences.com

Esco Lifesciences Group Offices: Bangladesh | China | Denmark | Germany | Hong Kong | India | Indonesia | Italy | Japan | Lithuania | Malaysia | Myanmar | Philippines | Russia | Singapore | South Africa | South Korea | Taiwan | Thailand | UAE | UK | USA | Vietnam

INTRODUCTION

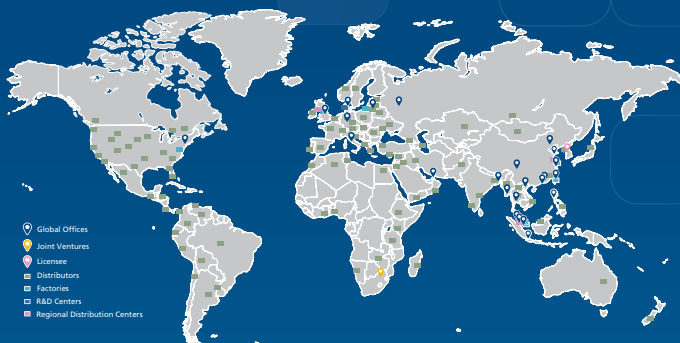
Esco Airstream® Class III Biological Safety Cabinet offers the highest level of operator, product and environmental protection from infectious/biohazardous aerosols and is suitable for microbiological work with agents assigned to biosafety levels 1, 2, 3, or 4. Designed for an absolute level of containment, it is frequently used for work involving the deadliest biohazards, bacteria, viruses, and microorganisms.

Esco Airstream® Class III BSC is manufactured to meet and exceed the latest Class III biological safety cabinet requirements of the EN 12469:2000.

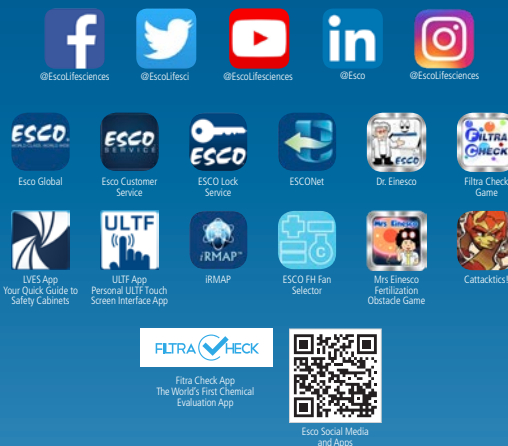
Application

- Microbiological practices dealing with very high risk biological agents.

ESCO LIFESCIENCES GROUP 42 LOCATIONS IN 21 COUNTRIES ALL OVER THE WORLD



Join us on Social Media and Download our Apps!



ESCO
SCIENTIFIC

Esco Class III Biological Safety Cabinet



www.escolifesciences.com

Esco Class III Biological Safety Cabinet



Model: AC3-4B1

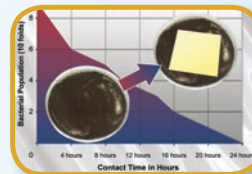
KEY FEATURES:

- Airtight Built
- Designed for BSL-4
- Safer Dual Exhaust ULPA Filter
- Provides highest level of operator, product, and environmental protection from infectious and biohazardous aerosols

Construction

ISOCIDE™ Powder Coat

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



Pass Box equipped with Interlocking Doors

- Permits material transfer without risk of environmental contamination



Glove Ports

- For easy and safe glove changing



Neoprene™ Synthetic Arm-length Gauntlets

- Single piece, leak-tested assembly guarantees maximum protection
- Flame and abrasion resistant



Magnehelic Pressure Gauge*

- Mounted at the rear of the work zone for at-a-glance monitoring of work zone negative pressure

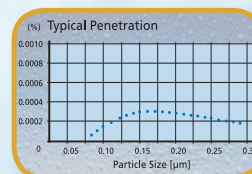
*Registered trademark of Dwyer Instruments, Inc



Filtration System

Dual Exhaust ULPA Filter

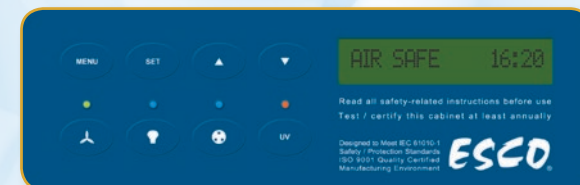
- Filter efficiency of 99.999% between 0.1 to 0.3 microns
- 10x Filtration efficiency of HEPA filter
- Creates ISO Class 3 work zone instead of industry-standard ISO Class 5



Control System

Sentinel™ Silver Microprocessor Controller

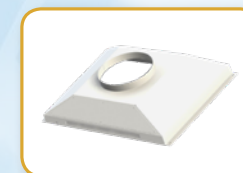
- Supervises all cabinet functions
- Easy-to-use soft keys for menu, blower, light, UV, and electrical outlet
- Large display which shows the operational parameters



OPTIONS AND ACCESSORIES



Anti-blowback Valve



Exhaust Collar
10 inches diameter



Airtight Damper



Direct Mounted
Electrical Outlet