

Australian Standard  
AS1386.5 Type-Tested\*  
Now available with  
a microprocessor control



\* Based on performance type-tests conducted on model LVC-4A1 by the Australian Institute of Medical and Veterinary Sciences

ESCO Labculture® Vertical Laminar Flow Cabinets offer proven protection for your samples and processes where operator protection is not required. Vertical laminar flow offers certain tangible advantages over horizontal flow cabinets (which may be the convention in some parts of the world), such as lower energy consumption (40% of conventional systems) levels through the use of exclusive motorized impeller technology and less airflow turbulence (especially when large objects are used in the work zone). The negative pressure filter mounting system employed on these models is widely recognised to be superior to that of conventional horizontal flow cabinets.

Because both horizontal and vertical cabinets are validated to the same standards, they do not differ in terms of actual performance. Like all ESCO cabinets these vertical models feature many key innovations for which ESCO is recognized for: the best product protection in the world, external rotor motors, superior filter mechanical construction aspects, secondary isolated negative pressure filter seals and many others. **Mini-pleat separatorless ULPA filter technology** used in ESCO cabinets provide far superior air cleanliness and product protection as compared to other cabinets that employ the conventional HEPA filters.

ESCO Labculture® Vertical Laminar Flow Cabinets are now equipped with a microprocessor-based control system that offers the user with numerous features.

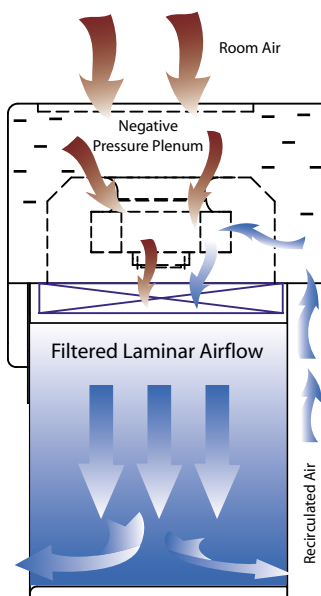
#### Cabinet Airflow Profile

Room air is taken in from the top of the cabinet through a disposable polyester pre-filter with 85% arrestance; this serves to trap larger particles and increase the life of the main filter

Air is forced evenly across the ULPA filter(s); the result is a stream of clean laminar air within the work zone of the cabinet; this dilutes and flushes all airborne contaminants from the interior

A nominal filter face velocity of 0.45 m/s or 90 fpm ensures that there is a sufficient number of air changes within the enclosed area of the cabinet in order to maintain cleanliness

The purified air travels across the working zone of the cabinet in a vertical, unidirectional stream and leaves the main work chamber across the entire open front of the cabinet



Industrial-grade main body constructed of electro-galvanised steel: with an abrasion-resistant white oven-baked powder-coated finish.

**Cabinet interior is constructed entirely of stainless steel.** Easy-to-clean stainless steel work zone is more durable than other materials and will never rust, chip, or generate particles.

Permanently lubricated direct drive centrifugal blower(s); **energy efficient external rotor motor** type design reduces operating costs; **extremely low noise and vibration levels** (less than 62dBA at working position) due to proprietary construction and mounting technology.

Industry-exclusive **secondary isolated negative pressure filter seals** and **AutoPurge™ design at back of work zone** deliver enhanced product and cross-contamination protection.

Built-in solid state variable speed controller(s) (infinitely adjustable from zero to the maximum setting) with built-in RFI and noise filters is superior to conventional "step" controllers.

**Esco Sentinel™ Microprocessor Control** with built-in visual / audible airflow alarms ensures superior product protection and alerts the user in case of any malfunction; Cabinet airflow velocity is constantly displayed on the control's LCD display. Admin PIN feature to restrict unauthorized access.

Built-in warm white, **electronically ballasted** lighting offers excellent illumination throughout the work zone in order to reduce operator fatigue and is comfortable to the eyes. Light tubes are mounted out of the air stream for better airflow uniformity.

**ISO Class 3 air cleanliness within work zone as per ISO 14644.1** (equivalent to Class 1 as per US Federal Standard 209E, **100 times "cleaner"** than the usual Class 100 classification on cabinets offered by the competition). All components are cleanroom compatible.

**Mini-pleat separatorless ULPA filter** technology reduces energy consumption and delivers increased laminar airflow uniformity for better product and cross contamination protection.

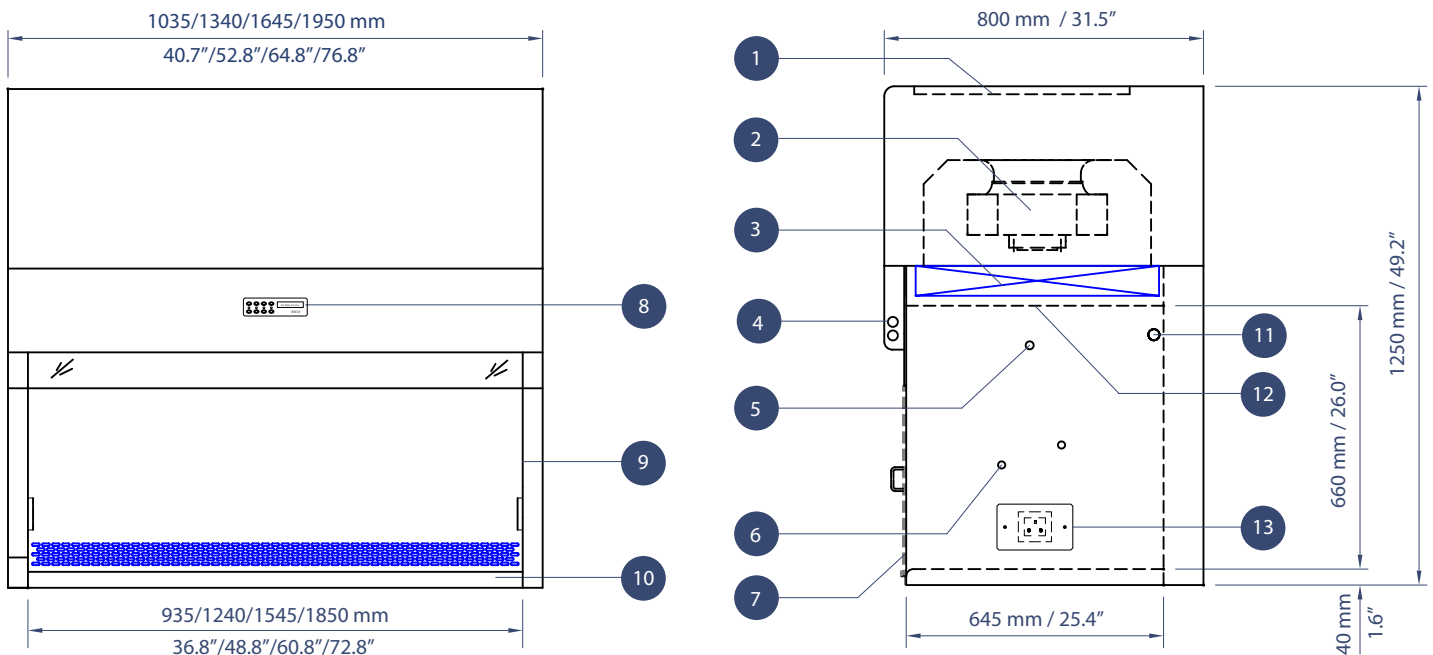
High-quality polyester pre-filter and **U15 ULPA filter(s) with a typical efficiency of 99.9997% at MPPS, 99.9998% at both 0.3 and 0.12 microns** provide the best product protection in the world; typical main ULPA filter lifespan is more than 3 years depending on operating conditions and the total number of hours in usage per day.

Integral filter metal guard on both sides prevents accidental damage to ULPA filter; endless filter gasket is permanently molded on the filter frame and will not deteriorate over time; aerosol (DOP/PAO) challenge test port included. Additional removable perforated stainless steel filter diffuser is easy to clean and also protects the filter against accidental damage.

Individually factory tested and commissioned after production; report included with every unit.

Designed to meet the safety requirements of IEC 61010-1 / EN 61010-1 / UL 3101-1 / CSA C22.2 No. 1010.1-92. Components are UL listed / recognised.

**Extended warranty period of 3 years** excluding consumable parts and accessories.



- 1. Pre-Filter 2. Blower 3. ULPA Filter 4. Fluorescent Lamp 5. IV Bar Retrofit Kit™ Provision.
- 6. Service Fixture Retrofit Kit™ Provisions (2 On Each Side) 7. Front Cover With UV Interlock (Optional)
- 8. Esco Sentinel™ Microprocessor Control 9. Internal Stainless Steel Side Panel
- 10. Stainless Steel Worktop With Curved Front Edge 11. UV Light Retrofit Kit™ Provision
- 12. Stainless Steel Downflow Diffuser 13. Electrical Outlet Retrofit Kit™ Provision (1 For 2ft & 3ft Models, 2 For 4ft And Above)

**Optional Retrofit Kits™:** UV lamp, front cover, support stand, IV bar with hooks, service fixtures, electrical socket outlets

General Specifications	LVC-3AX	LVC-4AX	LVC-5AX	LVC-6AX	
External Dimensions (Width x Depth x Height)	1035 x 740 x 1250 mm 40.7" x 29.1" x 49.2"	1340 x 740 x 1250 mm 52.8" x 29.5" x 49.2"	1645 x 740 x 1250 mm 64.8" x 29.1" X 49.2"	1950 x 740 x 1250 mm 76.8" x 29.1" X 49.2"	
Internal Work Zone (Width x Depth x Height)	935 x 645 x 660 mm 36.8" x 25.4" x 26.0"	1240 x 645 x 660 mm 48.8" x 25.4" x 26.0"	1545 x 645 x 660 mm 60.8" x 25.4" x 26.0"	1850 x 645 x 660 mm 72.8" x 25.4" x 26.0"	
Air Volume (At Initial Velocity)	977 cmh / 575 cfm	1295 cmh / 762 cfm	1614 cmh / 950 cfm	1930 cmh / 1136 cfm	
Laminar Airflow Velocity	Average of 0.45 m/s or 90 fpm measured 150mm / 6" from filter face for 40 air changes / minute (uniformity is +/-20%)				
Standards Compliance	Individually performance tested and certified at factory under controlled conditions for: General requirements: IEST-RP-CC002.2 and AS1386.5 Air cleanliness: ISO 14664.1 Class 3, IEST-G-CC1001, IEST-G-CC1002 and other equivalent air cleanliness requirements Filter performance: IEST-RP-CC034.1, IEST-RP-CC007.1, IEST-RP-CC001.3 and EN1822 Electrical safety: IEC 61010-1 / EN 61010-1 / UL 3101-1 / CSA C22.2 No. 1010.1-92				
Air Cleanliness Within Working Area	ISO 14644.1 Class 3, US Federal Standard 209E Class 1 / M1.5, AS 1386 Class 1.5, JIS B9920 Class 3, BS5295 Class C, Class M10,000 as per KS 27030.1 and other equivalent cleanliness classifications of the VDI 2083 and AFNOR X44101				
Main Filter Type	ULPA filter with integral metal guards and filter frame gaskets; fully compliant with EN1822 and IEST-RP-CC001.3 requirements				
Main Filter Efficiency Ratings	Minimum: 99.9991% at 0.3µm / 99.9985% at 0.12µm / 99.9982% at MPPS Typical: 99.9998% at 0.3µm / 99.9998% at 0.12µm / 99.9997%at MPPS				
Pre-Filter	Disposable and non-washable polyester fibers with 85% arrestance / EU3 rated				
Noise Level	Typically <62 dBA at initial blower speed setting measured as per IEST-RP-CC002.2, based on 4 feet cabinet, subject to acoustic properties of test environment				
Light Intensity	>1000 lux / >93 foot candles, measured at work surface level (zero background) as per IEST-RP-CC002.2				
Main Body Construction	1.5mmt / 0.06" / 16 gauge electro-galvanised steel with white oven-baked epoxy powder-coated finish				
Work Zone Construction	1.2mmt / 0.05" / 18 gauge stainless steel grade 304				
Maximum Power Consumption / Current	220-240VAC / 50Hz 1Ph	298W / 1.30A	312W / 1.35A	332W / 1.44A	576W / 2.50A
	110-130VAC / 60Hz 1Ph	398W / 3.32A	412W / 3.43A	432W / 3.60A	776W / 6.47A
Net Weight (Approximate)	123 kgs / 271 lbs	147 kgs / 324 lbs	183 kgs / 403 lbs	220 kgs / 485 lbs	
Max Shipping Weight	206 kgs / 454 lbs	257 kgs / 567 lbs	285 kgs / 628 lbs	330 kgs / 728 lbs	
Max Shipping Dimensions (W x D x H)	1200 x 950 x 1780 mm 42.2" x 37.4" x 70.0"	1500 x 950 x 1780 mm 59.0" x 37.4" x 70.0"	1800 x 950 x 1780 mm 70.9" x 37.4" x 70.1"	2100 x 950 x 1780 mm 82.7" x 37.4" x 70.1"	
Max Shipping Volume	2.03 cbm / 71.7 cbf	2.54 cbm / 89.7 cbf	3.04 cbm / 107.4 cbf	3.55cbm / 125.4 cbf	

**ESCO® Esco Biotechnology Equipment Division**

Esco Biotech is a highly focused manufacturer of laminar flow, biohazard safety and other HEPA-filtered cabinets for the laboratory with a history of quality cabinets since 1978. We are highly oriented towards the international marketplace, with sales in more than 60 countries and 90% of turnover exported. Our products have been independently tested to standards such as AS1807.5 and EN12469. Products are manufactured under an ISO 9001 registered quality system.

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