



* Based on performance and compliance type-tests conducted on model LHC-4A1 by the Australian Institute of Medical and Veterinary Sciences
Note: Model above is the standard 4ft version (LHC-4AX)

Esco Labculture® Horizontal Laminar Flow Cabinets offer a premium solution for customers with nothing less than the most stringent requirements in the world. Key enhancements include a **microprocessor-based cabinet control system** and a **complete stainless steel interior** which is easier to clean. A unique stainless steel diffuser also improves airflow uniformity for **better product protection**.

Like all Esco cabinets these 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 and many others. In addition, use of the latest minipleat separatorless ULPA filter technology, operating at the typical efficiency of **99.9998% at 0.12 microns**, means that this cabinet provides better product and operator protection than conventional HEPA filters.

The intelligent blower system automatically compensates to maintain airflow as the filter loads (additional manual adjustment can be carried out to further prolong filter life). This unique features eliminates the need for constant speed control adjustments, while ensuring optimum performance and product protection.

Ergonomically designed for maximum comfort for the user: **work surface with curved front edge, 5000k warm white lighting system** for excellent illumination.

At our state-of-the-art computer controlled sheet metal processing centre, all models manufactured are stringently and individually inspected after production with the most sophisticated instruments in accordance with many international standards.

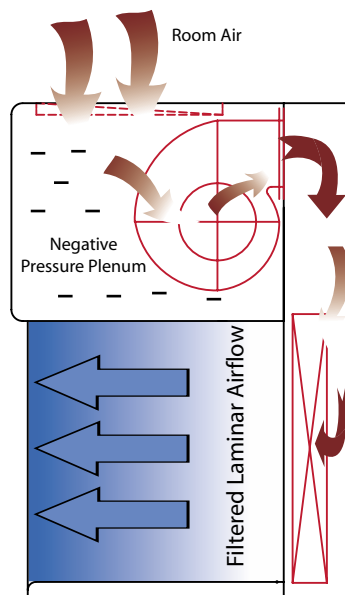
Cabinet Airflow Profile

Room air is taken in from the top of the cabinet through a disposable 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 internal work zone of the cabinet in a horizontal, 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.

- Durable and easy to clean stainless steel work surface and interior will never rust, chip, or generate particles; corners are expertly sealed for rounded edges; raised edge at back of work zone prevents spills from damaging the filter.

- Permanently lubricated direct drive centrifugal blower(s); **energy efficient external rotor motor** type design reduces operating costs and **compensates automatically for filter loading** over most of the filter's lifespan;

- Extremely low noise and vibration levels** (less than 59dBA at working position) due to proprietary construction and mounting technology.

- 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 visual / audible airflow alarms ensures superior product protection and alerts the user in case of any malfunction; Cabinet airflow velocity is displayed constantly on the LCD display. In addition, the control system allows for admin PIN settings to restrict access to the control menu.

- Built-in warm white, **electronically ballasted 5000k 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).

- 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 ambient operating conditions and the total number of hours in usage per day.

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

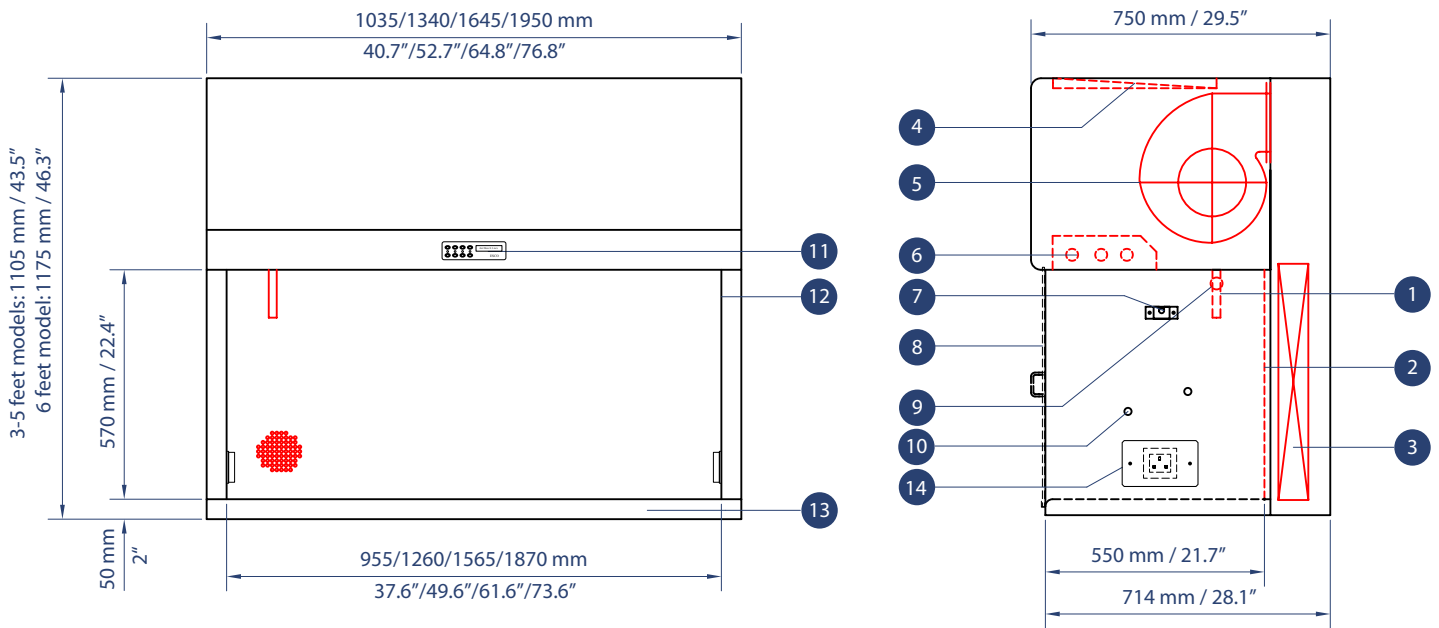
- Integral filter metal guard prevents accidental damage to ULPA filter; endless filter gasket is permanently molded on the filter frame and will not deteriorate over time; aerosol (DOP/PAO) challenge test port included.

- Additional removable perforated stainless steel filter diffuser is easy to clean and 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. Airflow Sensor 2. Removable Stainless Steel Diffuser 3. ULPA Filter 4. Pre-Filter 5. Blower 6. Fluorescent Lamp
- 7. IV Bar Retrofit Kit™ Provisions 8. Front Cover Retrofit Kit™ 9. UV Light Retrofit Kit™ Provision
- 10. Service Fixture Retrofit Kit™ Provisions (2 on Each Side) 11. Esco Sentinel™ Microprocessor Control
- 12. Internal Stainless Steel Side Panels 13. Stainless Steel Work Surface With Front Curved Edge
- 14. Electrical Outlet Retrofit Kit™ Provision (2&3ft Models: 1 single outlet; 4-6ft Models: 2 single outlets)

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

General Specifications	LHC-3AX	LHC-4AX	LHC-5AX	LHC-6AX
External Dimensions (Width x Depth)	1035 x 750 mm 40.7" x 29.5"	1340 x 750 mm 52.7" x 29.5"	1645 x 750 mm 64.8" x 29.5"	1950 x 750 mm 76.8" x 29.5"
Internal Work Zone (Width x Depth)	955 x 550 mm 37.6" x 21.7"	1260 x 550 mm 49.6" x 21.7"	1565 x 550 mm 61.6" x 21.7"	1870 x 550 mm 73.6" x 21.7"
Air Volume (At Initial Velocity)	880 cmh / 518 cfm	1160 cmh / 680 cfm	1445 cmh / 850 cfm	1727 cmh / 1016 cfm
Laminar Airflow Velocity	Initial setpoint: average of 0.45 m/s or 90 fpm measured 150mm / 6" from filter face for 45 air changes / minute in work zone			
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 <59 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 at work surface (zero background) as per IEST-RP-CC002.2			
Main Body Construction	1.5mm / 0.06" / 16 gauge electro-galvanised steel with white oven-baked epoxy powder-coated finish			
Work Zone Construction	1.2mm / 0.05" / 18 gauge stainless steel grade 304			
Maximum Power Consumption	220-240VAC / 50Hz 1Ph 600W / 2.61A	614W / 2.67A	634W / 2.76A	1631W / 7.09A
Consumption /Current	110-130VAC / 60Hz 1Ph 844W / 7.03A	858W / 7.15A	878W / 7.32A	1666W / 13.88A
Net Weight (Approximate)	112 kgs / 247 lbs	133 kgs / 293lbs	161 kgs / 355 lbs	208 kgs / 443 lbs
Max Shipping Weight	200 kgs / 440 lbs	223 kgs / 492 lbs	251 kgs / 553 lbs	297 kgs / 655 lbs
Max Shipping Dimensions (W x D x H)	1200 x 950 x 1630 mm 47.2" x 37.4" x 64.2"	1500 x 950 x 1630 mm 59.0" x 37.4" x 64.2"	1800 x 950 x 1630 mm 70.9" x 37.4" x 64.2"	2100 x 950 x 1930 mm 82.7" x 37.4" x 76.0"
Max Shipping Volume	1.86 cbm / 65.7 cbf	2.32 cbm / 81.9 cbf	2.79 cbm / 98.5 cbf	3.85 cbm / 136.0 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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