Laminar Flow Storage Cabinet

Introduction

Esco laminar flow cabinets are the premium selection for the discerning user. It offers a combination of value, high quality construction, low operating noise levels, and a wide product range to suit all budgets, from an industry leader.

Basic Principles

Esco laminar flow storage cabinets make a positive contribution to maintaining the cleanliness of a cleanroom environment.

- ULPA-filtered airflow keeps garments clean during storage and handling.

- High quality ULPA filters which utilizes an improved mini-pleated separation technique to maximize surface area improving efficiency and extending the filter life. Filters operate at a typical efficiency of >99.999% at 0.1 to 0.3 micron sizes, providing superior product protection over conventional HEPA filters.

- Enables garments to be stored in a visible and organized manner.

- Esco laminar flow cabinets provide ISO Class 3 air cleanliness within the work zone as per ISO 14644.1, 100 times cleaner than the usual Class 5 classification.

- An additional disposable pre-filter on all models traps large particles in the inflow air prior to reaching the main filter, protecting it against damage and prolonging its life.

Standard Features

- Reliable rocker switches control the fan and lights and a Minihelic™ pressure gauge monitors cabinet operation.

- Built-in warm white, electronically ballasted, 5000k lighting provides excellent illumination of the work zone and reduces operator fatigue. The reliable lighting system is zero-flicker and instant start.

- All components are designed for maximum chemical resistance and enhanced durability for a long service life.

- The main body of the cabinet is constructed with industrial-grade electrogalvanized steel.

- The cabinet can be designed as mobile with caster wheels or static via built-in leveling feet.

- All cabinet components are clean room compatible. Isocide eliminates 99.9% of surface bacteria within 24 hours of exposure.

Enhanced Filtration System

- Esco laminar flow cabinets provide ISO Class 3 air cleanliness within the work zone as per ISO 14644.1, 100 times cleaner than the usual Class 5 classification on cabinets offered by the competition.

- High quality ULPA filters utilizing an improved mini-pleated separation technique to maximizes surface area improves efficiency and extends the filter life. Filters operate at a typical efficiency of >99.999% at 0.1 to 0.3 micron sizes, providing superior product protection over conventional HEPA filters.

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Cabinet Filtration System
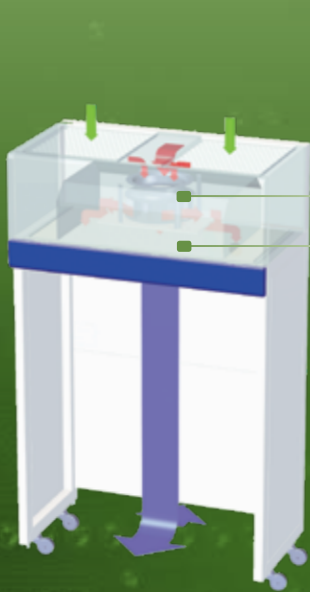
Blower

Supply ULPA Filter

- During operation, room air is drawn through the top of the cabinet via a non-washable polyurethane pre-filter with 85% arrestance, trapping larger particles and increasing the life of the main filter.

- The air is then forced evenly through the ULPA filter with >99.999% efficiency, resulting in a unidirectional stream of clean air projected vertically over the internal work zone. All airborne contaminants are flushed and diluted, resulting in a particulate-free work environment.

- The purified air then leaves the storage area across the entire open front of the cabinet.

- A nominal filter face velocity of 0.45 m/s (90 fpm) ensures that there is a sufficient amount of air changes with in the enclosed area of the cabinet in order to maintain cleanliness.

- Esco laminar flow storage cabinets incorporate permanently lubricated direct drive centrifugal blowers.

- The energy efficient external rotor motor design reduces operating costs, noise, and vibration levels.

- Built-in solid state variable speed controllers with integral noise filters offering flexible adjustment from zero to maximum setting.

- Each cabinet is individually factory tested for safety and performance in compliance with international standards.

- All electrical components are UL listed or UL recognized, ensuring superior electrical safety.

- All Esco laminar flow storage cabinets meet general safety requirements set by independent testing laboratories.

Standards Compliance	Cabinet Performance	Air Quality	Filtration	Electrical Safety
	EN 12469 IEST-RP-CC002.2, Worldwide	ISO 14644.1, Class 3, Worldwide AS 1386 Class 1.5, Australia JIS B9920 Class 3, Japan	EN-1822 (H14), Europe IEST-RP-CC001.3, Worldwide IEST-RP-CC007.1, Worldwide IEST-RP-CC034.1, Worldwide	IEC 61010-1, Worldwide EN 61010-1, Europe UL 61010-1, USA CAN/CSA-22.2, No.61010-1
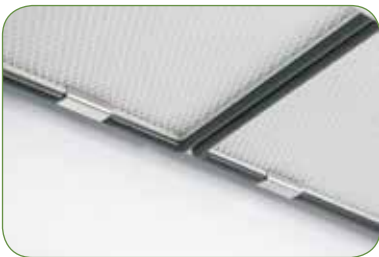
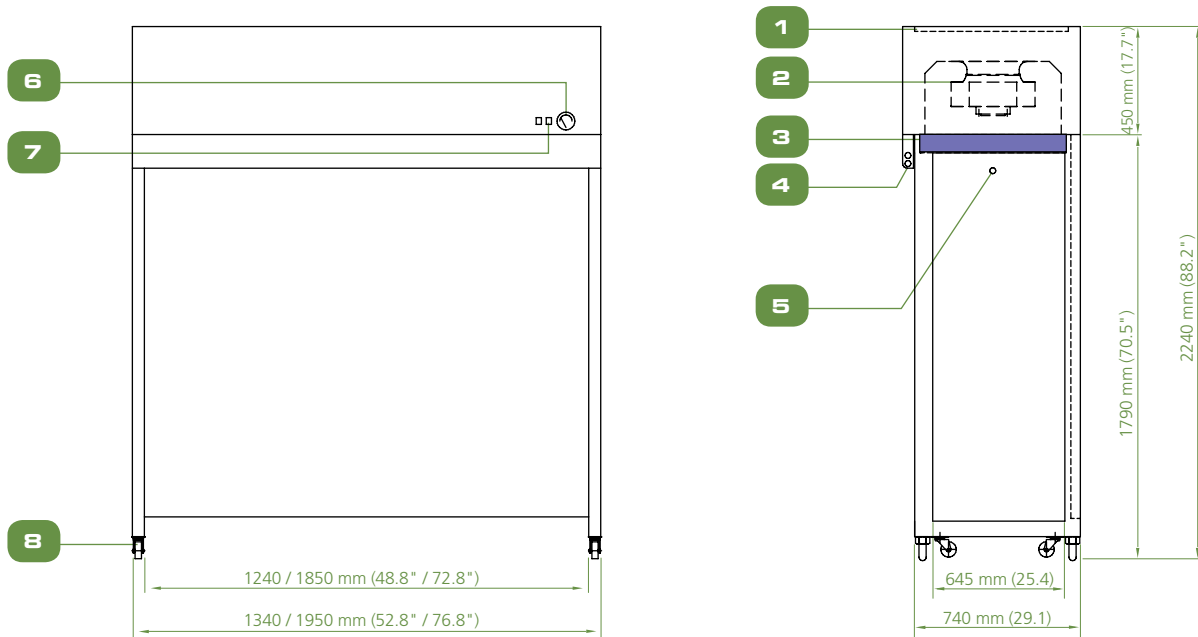*Mini-pleat Separatorless Filter (left) vs. Conventional Aluminium Separator Filter (right)*
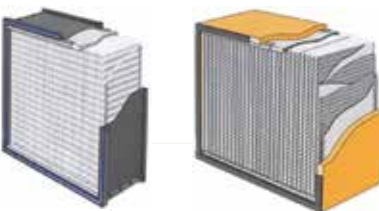
Esco cabinets use Swedish Camfil Farr® mini-pleat filters without aluminum separators to increase filter efficiency, minimize the chance of leakage, and to prolong filter life. Filters include a lightweight aluminum frame for structural stability and elimination of swelling common to conventional wood frames.
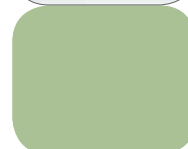
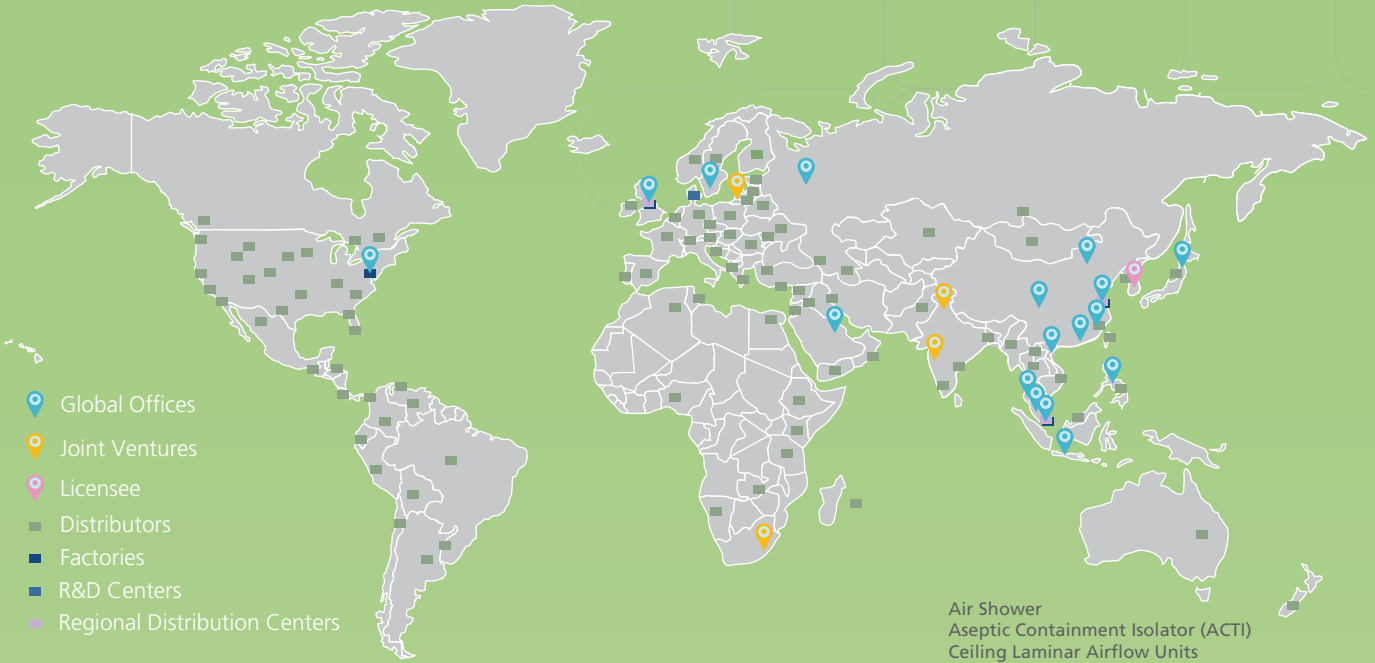## General Specifications, Laminar Flow Storage Cabinet

Model	EQU/04-LFSC	EQU/06 LFSC
Nominal Size	1.2 meters (4')	1.8 meters (6')
External Dimensions (W x D x H)	1340 x 740 x 2240 mm 52.8" x 29.1" x 88.2"	1950 X 740 X 2240 mm 76.8" x 29.1" x 88.2"
Internal Storage Area, Dimensions (W x D x H)	1240 x 645 x 1790 mm 48.8" x 25.4" x 70.5"	1850 x 645 x 1790 mm 72.8" x 25.4" x 70.5"
Storage Capacity	16 garments on hangers (4' model)	24 garments on hangers (6' model)
Average Airflow Velocity	0.45 m/s (90 fpm)	
Pre-Filter	Disposable and non-washable polyester fibers with 85% arrestance / EU3 rated	
ULPA Filter Typical Efficiency	99.999% for particles size at 0.3 microns	
Sound Emission Per IEST-RP-CC002.2	61 dBA	63 dBA
Fluorescent Lamp Intensity At Zero Ambient	>800 Lux (74 foot candles)	
Cabinet Construction — Main Body	1.2mm (0.05") 18 gauge electro-galvanised steel with white oven-baked epoxy powder-coated finish	
Electrical — 220-240V, AC, 50Hz, 1Ø	EQU/04-LFSC	EQU/06-LFSC
Electrical — Cabinet Nominal Power	378 W	628 W
Electrical — Cabinet Full Load Amps (FLA)	1.8 A	4 A
Electrical — Cabinet BTU	1290	2143
Net Weight	150 kg (331 lbs)	220 kg (484 lbs)
Gross Weight	229.5 kg (506 lbs)	311.6 kg (687 lbs)
Shipping Dimensions, Maximum (W x D x H)	2150 x 950 x 1610 mm 84.6" x 37.4" x 63.4"	2150 x 950 x 1610 mm 84.6" x 37.4" x 63.4"
Shipping Volume, Maximum	3.29 m³ (116 cu.ft.)	3.29 m³ (116 cu.ft.)

Model LFSC Esco Laminar Flow Storage Cabinet

1. Pre-filter
2. Blower
3. ULPA filter
4. Fluorescent lamps
5. Stainless steel rod
6. Pressure gauge
7. Operating switches
8. Castors

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Ceiling Laminar Airflow Units
Cleanroom Transfer Hatch
Containment Barrier Isolator (CBI)
Compounding Aseptic Isolator
Compounding Aseptic Containment Isolator
Downflow Booth (DFB)
Dynamic Floor Label Hatch
Dynamic Pass Box
Evidence Drying Cabinet
Laminar Flow Storage Cabinet
General Processing Platform Isolator (GPPI)
Healthcare Platform isolator
Laminar Flow Horizontal Trolley
Laminar Flow Straddle Units, Single and Double Laminar
Flow Vertical Trolley
Pass Box
Soft Wall Cleanroom
Sputum Booth
Ventilated Balance Enclosure (VBE)
Weighing and Dispensing Containment Isolator (WDCI)

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