Infinity®

Class II Biological Safety Cabinet

Introduction

The Esco Infinity® Class II Biological Safety Cabinet (BSC), model FC2, offers superior protection to the cabinet operator, product and the environment. With over 20 years of experience in safety cabinet technology, the Esco FC2 cabinet brings you the optimum combination of safety, performance and serviceability with an enhanced ergonomic design.

Class II cabinets provide product, operator and environmental protection making them suitable for general microbiological work with agents assigned to biosafety levels 1, 2, and 3. With their diverse range of applications, class II cabinets are the most cost-effective systems on the market. The Infinity Class II BSC is designed, built and tested to comply with Australian Standard AS 2252.2 performance requirements and European Standard EN12469.

Designed for Enhanced Usability and Efficiency

The FC2 is designed for a high level of usability and efficiency, utilizing a substantial number of ergonomic features to ensure operator comfort and enhanced productivity.

- A unique 10-degree sloped front ensures maximum operator comfort by reducing fatigue and allowing easier access to the work zone. The frameless, UV resistant, laminated and shatter proof sliding glass sash enhances visibility and reduces glare. It is also fully closable to protect the cabinet interior when not in use.
- The front air grille depth is minimized to bring the work zone closer and enhance accessibility.
- The large work access opening allows greater access to the work zone (see technical specifications for details).

- Offset and staggered service fixture provisions allow for easier access. Two optional electrical outlet provisions are available on the side walls for greater accessibility.
- The internal side and back walls are constructed of a single-piece stainless steel design making the cabinet easier to clean and, with no welded joints, prevents the build-up of contaminants. Its non-glaring surface increases operator comfort.
- Thoughtful design and construction enables easy cleaning of the cabinet's interior and exterior surfaces.
- A raised armrest above the work zone ensures operator comfort whilst preventing the front inflow perforations from becoming blocked. A curved grille design prevents objects from blocking air flow.
- A powerful 5000k zero-flicker, instant start fluorescent lighting system provides excellent work zone illumination and minimizes glare.

Enhanced Filtration System

The enhanced filtration system in the FC2 cabinet is designed to provide the highest level of air quality within the work zone meeting relevant standards (see technical specifications).

- An improved minipleat separation technique maximizes filter surface area, improves efficiency and extends the life of the filter.
- Two minipleat separatorless HEPA filters operate at a typical efficiency of >99.99% at 0.3 microns, providing a higher level of personnel, product and environmental protection (ULPA filter is available as an option.)

- Self-regulating cabinet airflow allows the blower system to automatically compensate and maintain airflow as the filter becomes loaded with particulates.

User-Friendly Control System

The Esco Sentinel™ microprocessor-based cabinet control system, fitted to the FC2 cabinet, supervises the operation of all cabinet functions. The controls are configurable to meet user requirements and the unit comes equipped with a number of enhanced features to promote cabinet usability.

- The Esco Sentinel™ accurate true airflow velocity sensing technology, measures all critical cabinet airflow parameters allowing superior monitoring. Temperature compensated sensors ensure increased accuracy.
- Password-protected administration can be set to restrict access to the main menu.
- Solid state variable speed controllers offer superior control over conventional "step" controllers. The built in RFI and noise filters eliminate interference with adjacent instrumentation.
- A bright, easy-to-read LCD display provides continuous monitoring of cabinet airflow.
- An additional UV-interlock ensures that the UV lamp is deactivated when the sash is not fully closed.
- Audible and visual alarms ensure product, operator and environmental protection by alerting the user in the event of low airflow or unsafe sash positions.
- When the cabinet is switched on its automatic warm-up cycle is activated, purging all contaminants from the work zone prior to use.
- An automatic post-purge cycle can be configured on shutdown, purging all residue contaminants before deactivation.

Highest Quality Construction

All Esco products are manufactured to the highest quality using the finest materials for the most demanding of laboratory applications.

- All components are designed for maximum chemical resistance for a long service life and durability.
- The laminated glass sliding front sash is shatter-proof, providing greater operator protection preventing cabinet and environmental contamination in the event of impact.
- The cabinet's main body is constructed of industrial-grade electrogalvanised steel.
- All cabinet components are cleanroom compatible.
- The cabinet's external structure is coated with Esco Isocide™ antimicrobial coating to protect against contamination and inhibit bacterial growth. Isocide eliminates 99.9% of surface bacteria within 24 hours of exposure.

Blower Efficiency

The FC2 cabinet's airflow is self-regulating. The motor / blower system is able to compensate automatically as the filter becomes loaded with particulates in order to maintain airflow.

- Esco FC2 cabinets incorporate permanently lubricated direct drive centrifugal blowers.
- The energy efficient external rotor motor design reduces operating costs and has extremely low noise and vibration levels.
- A horizontal blower mounting design guarantees better airflow uniformity.
- The Esco Accuflow™ system provides stable voltage to the blowers to ensure stable airflow performance, despite changes in building supply voltage.

Designed and Built to Exceed Safety Criteria

All components used in Esco products meet or exceed all the applicable safety requirements.

- Inherent design features ensure additional safety during cabinet use, installation and cleaning.
- All electrical components are UL listed or UL recognized, ensuring superior electrical safety for the operator.
- The FC2 cabinets meet general safety requirements set by independent testing laboratories (see technical specifications for details).
- Each unit is tested and validated for performance and safety prior to shipment.

Optional Extras

The Esco FC2 cabinet is available with a range of optional extras and accessories to customize the unit to fully meet user requirements.

- Exhaust collar for thimble ducting – to connect the unit to exterior ducting.
- Support stand – with either levelling feet for greater stability or caster wheels for enhanced mobility.
- Motorized or manually adjustable hydraulic support stand – available with either caster wheels or levelling feet.
- Electrical socket outlets – providing a convenient power source for equipment.
- Service Fixtures – for easy connection to gas / vacuum / air / water sources.

Warranty

Infinity Class II Biological Safety Cabinets come with a 3 year warranty, excluding consumable parts and accessories. Contact your local sales representative for specific warranty details.
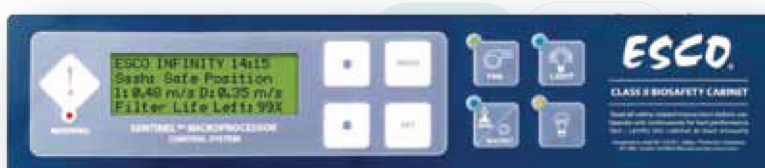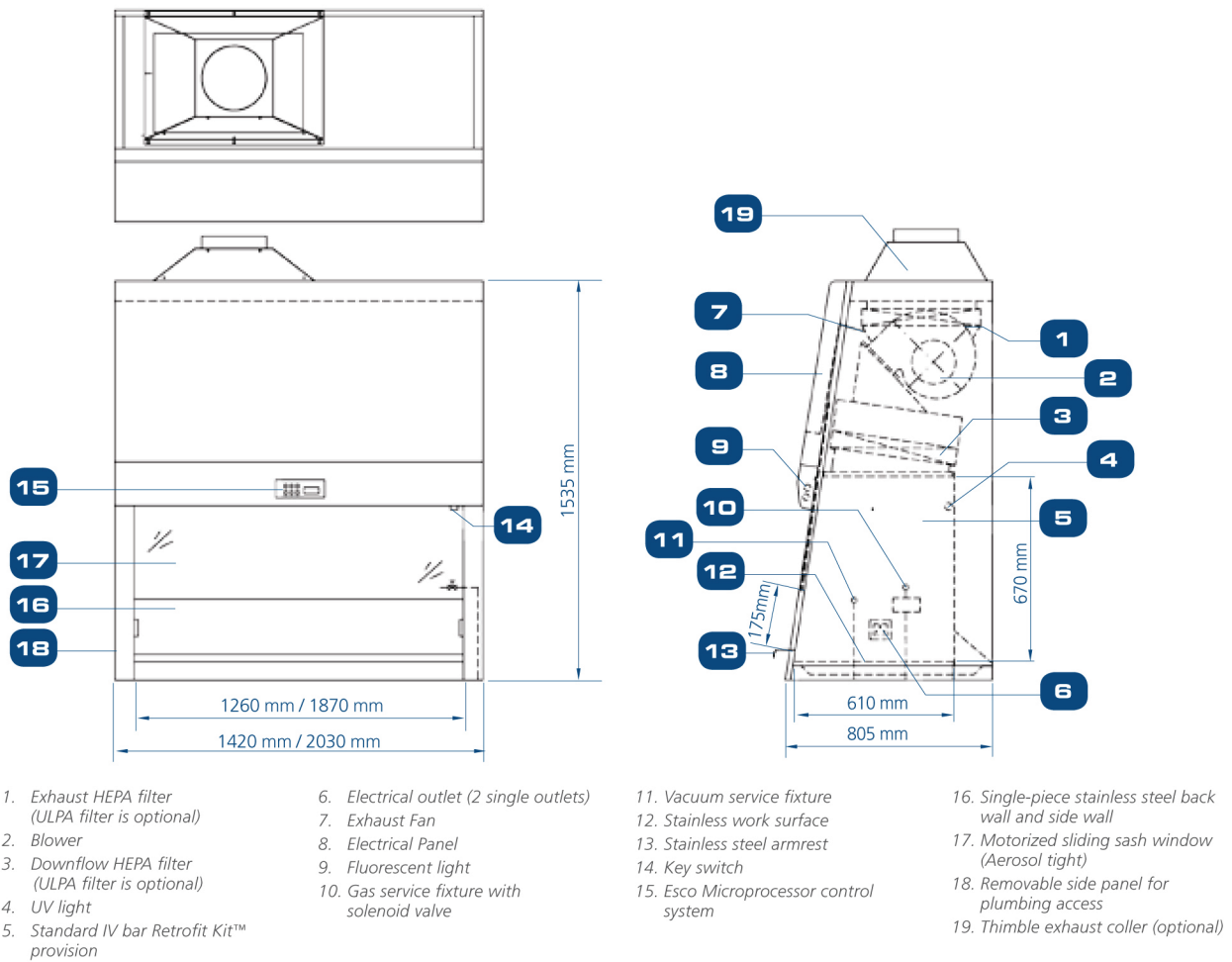

*Microprocessor Control System*

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Model FC2 Class II Biological Safety Cabinet Technical Specifications

1535 mm

670 mm

175mm

1260 mm / 1870 mm
1420 mm / 2030 mm

610 mm
805 mm

1. Exhaust HEPA filter (ULPA filter is optional)
2. Blower
3. Downflow HEPA filter (ULPA filter is optional)
4. UV light
5. Standard IV bar Retrofit Kit™ provision

6. Electrical outlet (2 single outlets)
7. Exhaust Fan
8. Electrical Panel
9. Fluorescent light
10. Gas service fixture with solenoid valve

11. Vacuum service fixture
12. Stainless work surface
13. Stainless steel armrest
14. Key switch
15. Esco Microprocessor control system

16. Single-piece stainless steel back wall and side wall
17. Motorized sliding sash window (Aerosol tight)
18. Removable side panel for plumbing access
19. Thimble exhaust coller (optional)

Inherently Safe Double Blower System

The Esco Infinity cabinet has a unique design feature where the supply and exhaust fans are in a shared plenum to ensure operator protection is maintained even in the unlikely event of one fan failure.
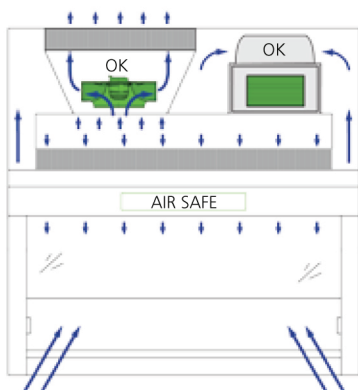
Under normal operation with both blowers operating (Figure 1a), the supply blower creates a negative pressure surrounding the contaminated positive pressure plenum and pushes air across the supply and exhaust ULPA filters. The exhaust blower boosts the air pressure through the ULPA exhaust filter to create better inflow and operator protection. Both supply and exhaust blower speeds automatically adjust to extend motor life.
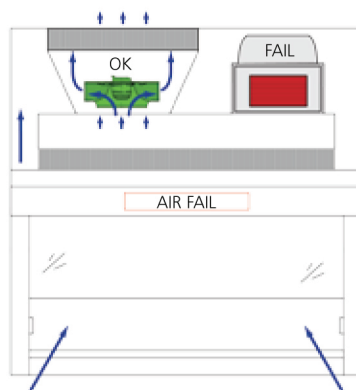
If the supply blower fails (Figure 1b) downflow to the work area is suspended. The exhaust blower continues to provide inflow to the cabinet to help maintain containment and operator protection. The control panel warns of airflow failure. Despite the reduced airflow, the cabinet can still provide operator protection by inflow maintaining above 0.40 m/s as per required by EN 12469.
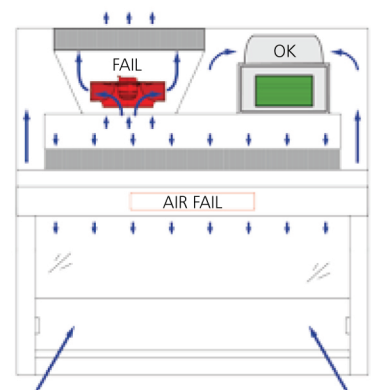
If the exhaust blower fails (Figure 1c) the supply blower continues to provide inflow to the cabinet and downflow to the work area to maintain containment and operatore protection. The control panel advises of airflow failure. Despite the reduced airflow, the cabinet can still provide operator protection by inflow maintaining above 0.40 m/s as per required by EN 12469.

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General Specifications		FC2-4K1	FC2-6K1
External Dimensions (L x W x H)		1420 x 805 x 1535 mm (56.0" x 31.7" x 60.4")	2030 x 805 x 1535 mm (80.0" x 31.7" x 60.4")
Internal Work Zone (L x W x H)		1260 x 610 x 670 mm (49.6" x 24.0" x 26.4")	1870 x 610 x 670 mm (73.6" x 24.0" x 26.4")
Tested Opening		175 mm	175 mm
Airflow Velocity	Inflow	Initial setpoint: 1.10 m/s	
	Downflow	Initial setpoint: 0.41 m/s	
HEPA Filter Efficiency		>99.99% at 0.3µm	
Sound	According to EN12469	<64 dBA	<65 dBA
Fluorescent Lighting		>1200 Lux, measured at work surface level (zero background) as per NSF49 test grid	
Main Body Construction		1.2mm thick gauge electro-galvanised steel with Isocide™ anti-microbial white oven-baked epoxy-polyester powder-coated finish	
Electrical		220-240V, AC, 50Hz, 1Ø 9.5 amps	
Net Weight		298 kg	405 kg
Shipping Weight		355 kg	476 kg
Shipping Dimension, Maximum (W x D x H)		1530 x 900 x 1870mm	2130 x 900 x 1900 mm
Shipping Volume, Maximum		2.58 m³	3.64 m³

Standard Compliance	Air Cleanliness	Filter Performance	Electrical Safety
Australian Standard AS 2252.2 European Standard EN 12469	ISO 14644.1, Class 4/5 IEST-G-CC1001 IEST-G-CC1002 and other equivalent requirements	IEST-RP-CC034.1 IEST-RP-CC007.1 IEST-RP-CC001.3	IEC 61010-1 EN 61010-1 UL 61010A-1 CSA C22.2 No. 1010.1-92

Biological Safety Products
Cleanroom Products
Containment / Pharma Products
Ductless Fume Hoods / Carbon Filtration
General Purpose Scientific Equipment
Industrial Lab Equipment
In-Vitro Fertilization Products
PCR Products
Pharmacy Products
Lab Animal Research Products
Lab Thermostatics Products
Lab Ventilation / Chemical Fume Products / Lab Furniture
Powder Handling Products

Esco products are sold and serviced in more than 70 countries. For the name of your local sales representative contact visit escoglobal.com/sales.

Your Authorized Distributor:

Biological Safety Cabinets and Laminar Flow Laboratory Fume Hoods • Laboratory Ovens Laboratory Incubators • PCR Thermal Cyclers Microplate Shaker/Incubators • Ultraflow Freezers

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