

Streamline®

Class II Biological Safety Cabinets



Streamline Class II Biological Safety Cabinet
Model SC2-4A_

Introduction

Esco SC2 Class II Biological Safety Cabinets provide optimum performance at an economical price. The cabinet performance is continuously monitored and controlled by our user-friendly Sentinel™ Delta control system, allowing you, the user, a safe and reliable working environment. The angled front and glass side windows provide an ergonomic work environment for the user. SC2 is the lowest cost EN certified Class II Biological Safety Cabinet on the world market.

Containment and Protection

- A combination of a supply HEPA filter and an exhaust HEPA filter create a fully integrated performance envelope for product, operator and environmental protection.
- Inflow of room air enters the front air grille to establish operator protection; room air does not enter the work zone, preventing product contamination.
- A raised armrest prevents the likelihood of inflow grille blocking by operator's arms.
- The inflow velocity, downflow velocity, and air flow path, and intake geometry are precision tuned and tested to create an optimum air curtain on the front aperture; this curtain maintains personal and product protection even in the unlikely event of a severe inflow or downflow imbalance that would compromise protection in a conventional cabinet.
- The SC2 series meets the requirements of the European Standard EN 12469 for microbiological safety cabinets.

Integrated Filtration System

Independent supply and exhaust filters provide 99.99% typical efficiency for particle sizes of 0.1 to 0.3 microns. Airstream filters meet the IEST-RP-CC001.3 recommended practice for HEPA performance (USA), and EN 1822 for H13 performance (EU).

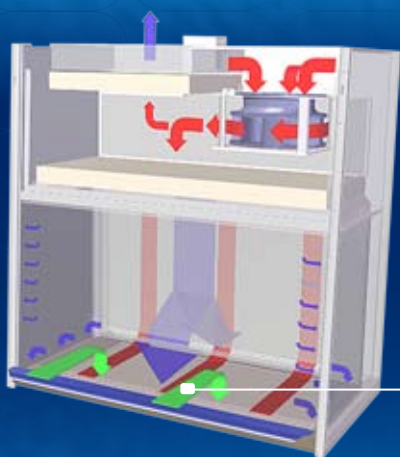
- HEPA filters (per IEST-RP-CC001.3), are tested to a typical efficiency of >99.99% for 0.1 to 0.3 micron particles.
- Modern separator-less mini-pleat filter construction maximizes the filter surface area to extend filter life and eliminate possible filter media damage by thin and sharp aluminum separators used in conventional HEPA filter construction.
- The filter assembly is constructed in accordance with EN 1822 requirements.
- The supply filter provides ISO Class 4 (per ISO 14644.1) clean air to the work surface in a gentle vertical laminar flow for product protection.
- The exhaust filter traps biohazard particles acquired from the work surface before air is exhausted to the room, offering personal and environmental protection.
- The exhaust filter media is protected from mechanical damage by an integrated metal screen guard, which is absent from conventional HEPA filters.

User-Friendly Control System

The user-friendly Esco Sentinel Delta™ microprocessor-based control system, fitted in the SC2 cabinet, supervises the operation of all cabinet functions. The controls are configurable to meet user requirements. Enhanced features promote cabinet usability.

- Accurate true airflow velocity sensing technology measures all critical cabinet airflow parameters allowing superior monitoring. Temperature compensated sensor ensure increased accuracy.
- Solid state variable speed controllers offer superior control over conventional "step" controllers.
- A bright, easy-to-read, LCD display provides continuous monitoring of cabinet airflow.
- An additional UV-interlock ensures that the optional UV lamp is deactivated when the sash is not fully closed.

Cabinet Filtration System



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

- Ambient air is pulled through the perforations located towards the work zone front to prevent contamination of the work surface and work product. The inflow does not mix with the clean air within the cabinet work zone. Inflow air travels through a return path toward the common air plenum (blower plenum) at the top of the cabinet.
- 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

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

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.
- Air returns to the common air plenum where the 35% exhaust and 65% recirculation process is continued.

- Audible and visual alarms ensure product, operator and environmental protection by alerting the user in the event of low airflow or unsafe sash positions.

The Highest Quality Cabinet Construction

Robust construction and enhanced safety features qualify the cabinet for the most demanding laboratory applications. The cabinet is fully assembled and ready to install and operate when shipped.

- All components are designed for maximum chemical resistance for a long service life and increased durability.
- Multi-piece stainless steel tray components lift and remove to provide easy access and to encourage surface decontamination.
- Tempered glass side windows maximize visibility.
- A drain pan contains spills and prevents liquids from entering the filtration and blower systems.
- There are no screws in on the front or sides to trap contaminants or complicate cleaning.
- External surfaces are coated with Esco Isocide antimicrobial coating to protect against surface contamination and inhibit bacterial growth. Isocide eliminates 99.9% of surface bacteria within 24 hours of exposure.

Blower Efficiency

The SC2 blower system is designed for high performance operation, maximum energy efficiency and minimal maintenance.

- Industry exclusive backward curved, motorized impeller design replaces conventional blowers.
- Improved energy efficiency lowers operating costs.
- Reduced noise and vibration levels over conventional blowers provide a comfortable working environment.
- Built-in RFI and electrical noise filters eliminate interference with adjacent instrumentation.
- The external rotor motor design allows for optimum cooling of the motor during extended operations and extends the motor bearing life.
- To prevent fan damage, a paper-catch grille traps papers or towels that may drop down on the drain pan, preventing them from being pulled into the column by fan suction.

Designed and Built to Exceed Safety Criteria

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

- Each cabinet is individually factory tested for electrical safety after production.

Warranty

Streamline SC2 cabinets are warranted for 1 year excluding consumable parts and accessories.

Safety and Certification

All components meet or exceed applicable safety requirements.

- Each cabinet is individually factory tested for electrical safety.
- Documentation specific to each cabinet serial number is maintained on file.
- Certified to EN 12469.

Accessories and Options

Esco offers a variety of options and accessories to meet local applications. Contact Esco or your local Sales Representative for ordering information.

- Support stands
- Electrical outlet, ground fault, North America
- Electrical outlet, Europe / Worldwide
- Service fixture (air, gas, vacuum)
- Germicidal UV lamp
- PVC armrest
- Ergonomic lab chair



Standards Compliance	Cabinet Performance	Air Quality	Filtration	Electrical Safety
	EN 12469:2000, Europe	ISO 14644.1 Class 4, Worldwide IEST-G-CC1001, USA IEST-G-CC1002, USA	EN-1822 (H13), Europe IEST-RP-CC001.3, Worldwide IEST-RP-CC007.1, Worldwide IEST-RP-CC034.1, Worldwide	UL 61010-1, USA CAN/CSA-22.2, No. 61010-1 EN 61010-1, Europe IEC 61010-1, Worldwide

Streamline®

Biological Safety Cabinets • Class II Biological Safety Cabinets

General Specifications, Streamline Class II Biological Safety Cabinet

Note to customer: Insert electrical voltage number into last model number digit _ when ordering.

Model		SC2-4A_	SC2-6A_
Nominal Size		1.2 meters (4')	1.8 meters (6')
External Dimensions (W x D x H)	Without Base Stand	1220 x 728 x 1270 mm 48.0" x 28.7" x 50.0"	1830 x 728 x 1270 mm 72.0" x 28.7" x 50.0"
	With Base Stand 711 mm (28") Type	1220 x 728 x 1981 mm 48.0" x 28.7" x 78.0"	1830 x 728 x 1981 mm 72.0" x 28.7" x 78.0"
Internal Work Area, Dimensions (W x D x H)		1150 x 520 x 600 mm 45.3" x 20.5" x 23.7"	1760 x 520 x 600 mm 69.3" x 20.5" x 23.7"
Average Airflow Velocity	Inflow	0.45 m/s (90 fpm)	
	Downflow	0.31 m/s (61 fpm)	
HEPA Filter Typical Efficiency		99.99% for particles size between 0.1 to 0.3 microns	
Sound Emission Per IEST-RP-CC002.2*		NSF: 60 dBA / EN: 57 dBA	NSF: 62 dBA / EN: 59 dBA
Fluorescent Lamp Intensity At Zero Ambient		1240 Lux (115 ft.candles)	1340 Lux (124 foot candles)
Cabinet Construction	Main Body	1.2mm (0.05") 18 gauge electro-galvanised steel with white oven-baked epoxy powder-coated finish	
	Work Zone	1.2mm (0.05") 18 gauge stainless steel grade 304	
Electrical**	220-240V, AC, 50Hz, 1Ø	SC2-4A1	SC2-6A1
	Cabinet Power/ Amp	360W / 2A	650W / 4A
	Outlet Max. Amp	5A	5A
	Total Max. Amp	7A	9A
	BTU/ Hr	734	1326
	110-120V, AC, 60Hz, 1Ø	SC2-4A2	SC2-6A2
	Cabinet Power/ Amp	385W / 3.5A	750W / 6.5A
	Outlet Max. Amp	5A	5A
	Total Max. Amp	8.5A	11.5A
	BTU/ Hr	785	1530
Net Weight***		162 kg (356 lbs)	219 kg (482 lbs)
Shipping Weight***		201 kg (442 lbs)	271 kg (596 lbs)
Shipping Dimensions, Maximum (W x D x H)***		1330 x 860 x 1650 mm 52.4" x 33.9" x 65.0"	2060 x 860 x 1650 mm 81.1" x 33.9" x 65.0"
Shipping Volume, Maximum***		1.89 m ³ (66.7 cu.ft)	2.92 m ³ (103 cu.ft.)

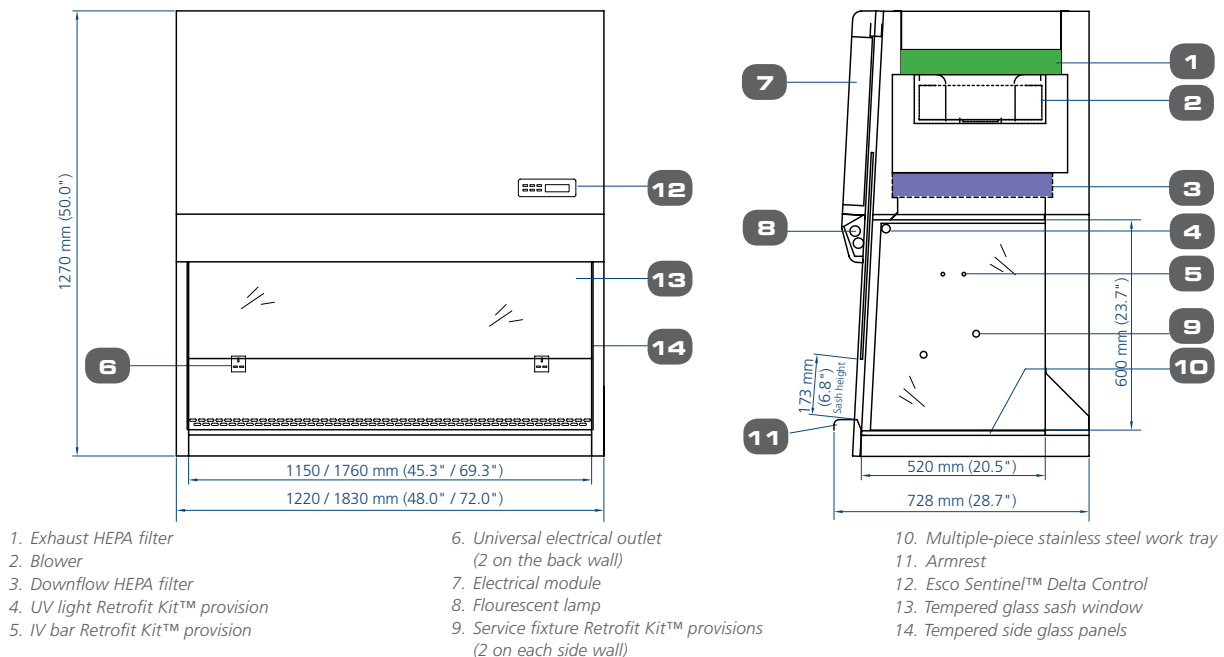
* Noise reading in open field condition/ anechoic chamber.

** Additional voltages may be available; contact Esco for ordering information.

*** Cabinet only; excludes optional stand.

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Model SC2 (A-Series) Streamline Biological Safety Cabinet Technical Specifications



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Esco Containment, Clean Air and Laboratory Equipment Products

- Biological Safety Cabinets, Class II, III
- Fume Hoods, Conventional, High Performance, Ductless Carbon Filtered
- Laminar Flow Cabinets, Horizontal, Vertical, PCR
- Animal Containment Workstations
- Hospital Pharmacy Isolators, Cytotoxic Safety Cabinets
- Specialty Workstations: *In-Vitro* Fertilization, Powder Weighing
- PCR Thermal Cyclers, Conventional, Real-Time
- Cleanroom Fan Filter Units, Modular Rooms, Air Showers, Pass Thrus

Since 1978, Esco has emerged as a leader in the development of controlled environment, laboratory and cleanroom equipment solutions. Products sold in more than 100 countries include biological safety cabinets, fume hoods, ductless fume hoods, laminar flow clean benches, animal containment workstations, cytotoxic cabinets, hospital pharmacy isolators, and PCR cabinets and instrumentation. With the most extensive product line in the industry, Esco has passed more tests, in more languages, for more certifications, throughout more countries than any biosafety cabinet manufacturer in the world. Esco remains dedicated to delivering innovative solutions for the clinical, life science, research and industrial laboratory community. www.escoglobal.com.

Microbiological Safety Cabinets • Animal Containment Workstations • Fume Hoods • Clean Benches



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