

ENVAIR LAB

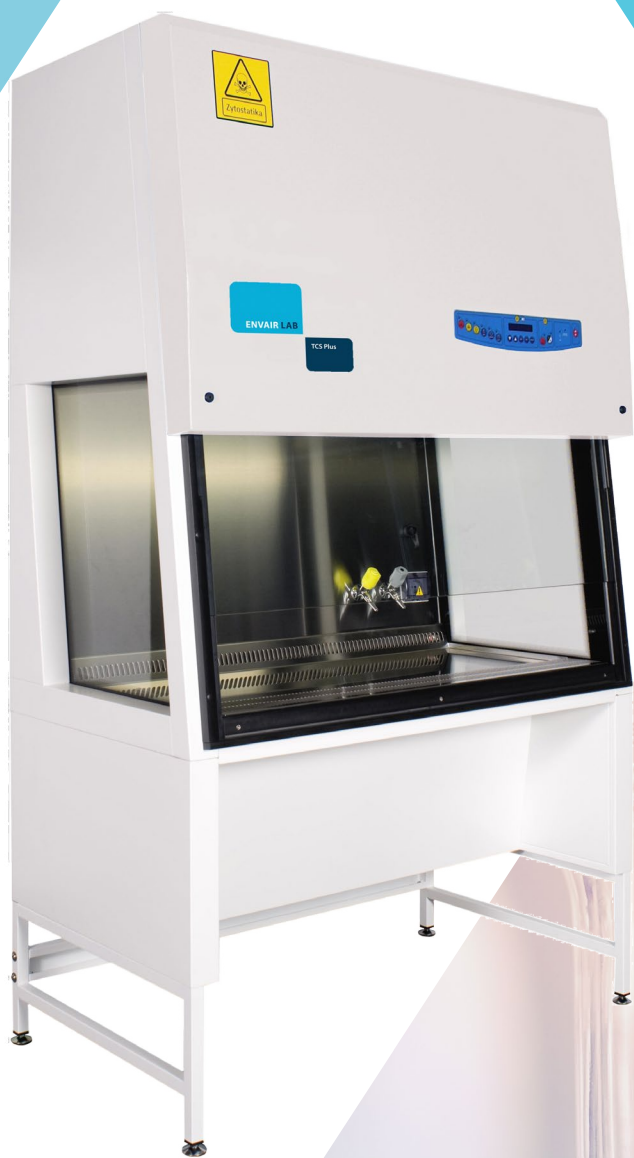


Envair Lab TCS Plus

Cytotoxic Class II Microbiological Safety Cabinets



Envair Lab TCS Plus Cytotoxic Class II Microbiological Safety Cabinets herald the next generation of laminar air flow systems, where the highest quality materials and manufacturing workmanship guarantee market-leading performance and conformity to the strictest safety standards.



Specifically, these Cytotoxic Drug and Microbiological Safety Cabinets are designed and built to the performance requirements of the EN 12469:2000 European Standard and DIN 12980:2005 Standard.

The cabinets feature triple filter 'safe change' technology: 100% of the air is filtered via the main H14 HEPA filter directly below the work surface, with 70% of the air re-circulated via the H14 HEPA filter within the cabinet, and the remaining 30% discharged through an exhaust H14 HEPA filter.

These cabinets also include automatic regulation by microprocessor based monitoring systems.



Applications

Envair TCS cabinets are suitable for handling cytotoxic drugs, CMR products and pathogens as defined by the appropriate European and other International Standards, as well as current guidelines and legislation aimed at safeguarding the health and safety of operators at work.

The Envair TCS cabinet is especially suitable for applications such as the preparation and handling of cytotoxic drugs, the preparation and manipulation of antineoplastic chemotherapeutics, and the preparation and manipulation of CMR.

Since Envair TCS cabinets also meet the EN-12469 Standard for Class II Biohazard cabinets, they can be used also for microbiology, virology, haematology, cell culture, genetics and the handling of agents to hazardous to human beings or animals, as defined by the appropriate safety legislation.

Operational Principles

The ambient air is drawn in from the slots at the stainless steel base of the front opening, after which it passes through the H14 HEPA filter bank below the work surface, from where it is drawn up and blown into the plenum of the recirculating and exhaust fan system.

The “bio-dynamic sealing system” of the negative pressure plenum ensures that all contaminated particles are kept inside the system and are automatically drawn to the plenum or pressure chamber to be captured by the main recirculating and exhaust H14 HEPA filters.

The fan system ensures that no part of the cabinet comes under positive contaminated pressure relative to the laboratory, thus protecting the environment and operating personnel from exposure to cytotoxic drug, CMR compounds and agents of bio-contamination.

70% of the filtered air is recirculated (after passing through double banks of H14 HEPA filters) in an ISO 3 laminar flow pattern downwards into the work chamber, with the remaining 30% being exhausted to the atmosphere through another H14 HEPA filter.

EASY CLEANING/MAINTENANCE

The electrically operated, vertically sliding safety-glass sash window is hinged and can be opened during cleaning and routine maintenance.

SASH-HEIGHT OPENING

The standard height of the sash is 200 mm.. Alternative sash-height settings (250-160 mm) can be produced by the factory upon request.

REMOVABLE WORK SURFACE

The stainless steel AISI 316L work surface is easily removable for routine cleaning and disinfection procedures. It is supplied as standard with a spill-retaining solid work surface; alternatively, the surface can be perforated in one piece or in sections, again available upon request.

MOBILE UV STERILISING LAMP

The mobile UV sterilising lamp (optional) can be placed anywhere in the back panel. It comes complete with three countdown timers – one fully programmable by the operator, one variable on a 0:3 hours scale (one minute steps), and one set to three fixed hours.

CYTOTOXIC GLOVE BOX

The glove box features one or two HEPA H14 filtered transfer hatches, meaning that, according to the application, it always performs above minimum safety standards



HIGH LEVEL LIGHTING

The positioning of the safety glass side-windows and the sizing of the light-system provide the highest level of luminosity in the work area.

Envair TCS cabinets are also available in isolator versions to conform to GMP requirements.

Envair TCS cabinets' glove box isolators are classified in Class III conforming to ISO 14644-7 with a leakage rate of less than 16Pa per minute.

Envair TCS isolators are not required in laboratories classified in grade B for EU GMP.

EASY INSTALLATION

The safety cabinet can pass through 800 mm wide door openings. In fact, the overall depth of the cabinet can be reduced to approx. 790 mm by the removal of the rear panel. It can pass through 2000 mm height doors, with a total height (removable stand excluded) of 1995 mm..

CABINET FITTINGS

The cabinets feature two electrical sockets fitted as standard in each size model.

V-SHAPE PROFILE

The special sloping profile below the work surface facilitates the replacement of H14 HEPA filters and the collection of spilled liquids.

BAG-OUT SYSTEM

H14 HEPA filter replacement is safe and easy, featuring environmental protection according to DIN 12980: 2005 Standard.

SILENT OPERATION

The bag plenum, the fan's electric motor with its anti-vibration mounts, and the software (which delivers optimum air handling characteristics) all guarantee the silent operation of this safety cabinet. Its sound-pressure levels are recorded significantly below those specified in the current EN 12469:2000

European Standard for Microbiological Safety Cabinets and DIN 12980:2005 Standard for Cytotoxic Safety Cabinets.

ERGONOMIC DESIGN

The sloping front safety-glass sash and high lighting level provide optimised visibility of everything in the interior workspace. The sash is electrically operated: pressing the appropriate touch-sensitive key will completely open or close the sash.

LOWER FILTER BANK

The cabinets' special third filter bank H14 HEPA is designed to maximise operator legroom (350 mm available).



The User Friendly Practical Keyboard

The rear-lit LCD will continuously display all required data, keeping the user constantly informed of the cabinet conditions, in particular:

- Laminar airflow velocity and frontal air barrier velocity
- Internal and external temperatures
- Residual lifetime of HEPA filters, UV Lamp (if fitted)
- Total number of hours of operation
- Saturation level of HEPA filters

Audio-visual alarms are fitted for:

- Out of range or incorrect laminar airflow velocity and frontal air barrier velocity
- Incorrect position of front sash-window
- Saturation of the filters
- End of life-cycle of UV lamp (if fitted)
- Blockage in the exhaust duct
- Fan-motor malfunction
- Power failure

Safety

Manufacturing truly “safe” cabinets depends entirely on the quality of their design and their components. Safety does not tolerate compromise, and therefore our company has created its internal QUALITY AND SAFETY PROGRAM, consisting of a new set of standard operational procedures and manufacturing methods, which are applied to each and every step of the production processes, fulfilling all of the requirements of these high standards.

Hardware

ANTI-BACTERIAL COATING

Each cabinet is coated with exclusive Dupont™ ALESTA® anti-bacterial “Ag+cations-based solution”, capable of preventing the microbial contamination of surfaces thereby inhibiting long term surface growth.

LOW NOISE LEVEL

The unique design and construction of the plenum and filter-housing ensure quiet operation.

STAINLESS STEEL AISI 316L

Each cabinet is fitted with standard AISI 316L Stainless Steel work-surface.

REAL LAMINAR FLOW

The internal aerodynamic design of the chamber provides ideal laminar air-flow patterns, satisfying the performance requirements of EN:12469:2000 European Standard and DIN12980:2005 Standard.



Technical Data

- AISI-304L working area with customised angles and corners, and AISI 316L stainless steel work surface, featuring corrosion resistant epoxy powder coated steel
- Two centrifugal fans, direct driven motors
- IP-55 protection factor
- Three absolute H14 HEPA filters; the HEPA H14 filter under the work surface is a multi-dihedral type
- ECS® Eco Controlling System: the unique micro processor monitoring system displays all relevant data, including operating functions, alarms and error messages
- DOP/DEHS test inlet and IP-44 electric power point. Manual taps for gas or vacuum are available.
- Safe and easy replacement of HEPA filters according to DIN-12980 standard

Software

- Instant management and monitoring of operational parameters and automatic compensation system control by the new ECS® microprocessor.
- Software features easily programmable replacement of spare parts and filters
- Countdown timer integrated within the control board.
- Permanent record of all alarms and anomalies memorised by the control-board for the lifetime of the cabinet.
- One Push Restore menu, to reset the original factory calibration data.



Our Commitments:

New technology for low environmental impact

Fully aware that today's choices will determine tomorrow's world, we are convinced that technology must protect the environment to ensure continuing sustainable progress.

Respect for the environment motivates us to manufacture with ultralow environmental impact, by utilising:

- Electronically controlled motor-blower with automatic pressure-drop compensation
- 99% recyclable components
- Innovative technologies such as the new ECS® microprocessor



ECS® MICROPROCESSOR BASED MONITORING SYSTEM

Each cabinet is tested to ensure conformity to EN12469:2000, DIN 12980:2005 EN61010:2001, and is released with FAT certificate of the tests performed.



CERTIFICATIONS ISO 9001 Certification



TAILOR-MADE CABINETS Custom cabinets manufactured on request



CUSTOMER CARE Prompt technical assistance by phone and mail – within 24 hours of the call Hot-line for immediate technical assistance and feasibility study

Technical Specification



Description	Unit	TCS 3	TCS 4	TCS 5	TCS 6
Part Number		O000211A0100	O000214A0100	O000217A0100	O000220A0100
External Dimensions (W x H x D)	mm	1045x2345x860	1350x2345x860	1350x2345x860	1960x2345x860
Internal Dimensions (W x H x D)	mm	899x740x580	1194x740x580	1499x740x580	1804x740x580
Maximum front aperture	mm	440			
Working aperture	mm	200			
Weight	Kg	215	245	285	325
Noise level	dB (A)	<56	<57	<58	<59
Lighting level	Lux	>1000			
Nitrogen, CO2, compressed air - maximum pressure	bar	4			
Fuel gas- maximum pressure	mbar	20			
Main voltage	V	230V AC 2P+T			
Frequency	Hz	50			
Current	A	7,82	8,63	9,18	9,8
Fluorescent lamps	W	2x30	2x36	2x58	2x58
Protection level		IP20			
Internal outlet (maximum current for all the sockets: 4A)		2P+T 230V 4A			



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