TECHNICAL SHEET

PRODUCT LINE

- **CLASS III MICROBIOLOGICAL SAFETY CABINET**

MODEL

- **SCS**

Introduction

SCS class III are microbiological safety cabinets designed to provide operator, product and environmental protection from the dangerous effects of uncontrolled diffusion of air-transported contaminants and, at the same time, to avoid any biological interference from the environmental to the product during its handling.

Applications

Microbiological safety cabinets in Class III are commonly used in laboratory to handle all type of pathogenic agents, classified from class I to class IV according to World Health Organization classification. For a correct use and application of the cabinet here described, it is necessary to refer to the appropriate standard norm and rules in force in the country where the cabinet is installed.

Air flow pattern

SCS Class III manufactured are glove boxes designed with a frontal screen equipped with gloves, in order to isolate the applications from the operators. The unit works in negative pressure, delivering **vertical laminar air flow** inside the main chamber providing product protection. The air inlet is from the transfer hatch side with a quote rate of 30% about exhausted into the environment.
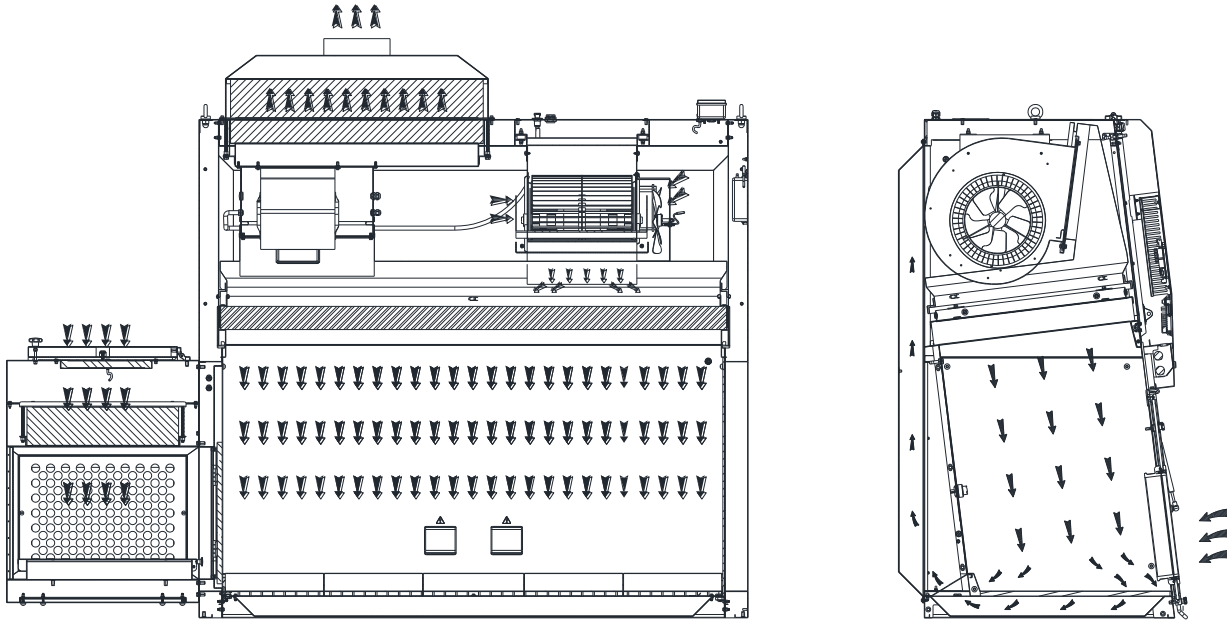
Standards and Certifications

SCS class III are designed to fulfil and satisfy the European Norm EN 12469:2000. As far as electrical safety is concerned, the cabinet is manufactured according to EN 61010 norm and in particular:

EN 292-1	EN 292-2	EN 61010-1	EN 50081-1	EN 50082-1	EN 50081-2
EN 50082-2	IEC 801-2	IEC 801-4	ENV 50140	ENV 50141	

Furthermore, it has been designed to fulfil the European Directives like:

- Machinery Directive 89/392/EEC, 91/368/EEC, 93/44/EEC, 93/68 EEC
- Electromagnetic Compatibility Directive 89/336/EEC, 92/31/EEC, 93/68/EEC
- Low Voltage Directive 72/23/EEC, 93/68/EEC

Construction materials

- **The body structure** is made in epoxy painted steel coated with anti-microbial coating.
- **The work surface** is divided in perforated segments removable made in AISI 316L stainless steel scotch brite finishing.

- **Internal working volume and spillage tray** are made in AISI 304 stainless steel scotch finishing.
- **Frontal and side screens** made in safety glass
- **External and internal transfer hatch doors** made in safety glass

Filtration

SCS Class III cabinets are equipped with triple level of filtration including no. 05 absolute filters:

- **LAF filtration**: H14 HEPA/ULPA filter delivering laminar flow inside the working chamber, filter efficiency 99.995% MPPS according to EN 1822 (EU14) / filter efficiency 99.999% 0,1-0,3 microns according to IEST-RP-CC001.3
- **EXHAUST filtration**: double in-line H14 HEPA/ULPA filter delivering laminar flow inside the working chamber, filter efficiency 99.995% MPPS according to EN 1822 (EU14) / filter efficiency 99.999% 0,1-0,3 microns according to IEST-RP-CC001.3
- **INLET filtration**: double inlet H14 HEPA/ULPA filter delivering laminar flow inside the working chamber, filter efficiency 99.995% MPPS according to EN 1822 (EU14) / filter efficiency 99.999% 0,1-0,3 microns according to IEST-RP-CC001.3

All filters maintenance is available from the front of the cabinet.

Ventilation

Ventilation system is provided by means of two DC motor-blowers, direct driven centrifugal type with double aspiration and protection factor IP55. Motor-blowers maintenance is available from the front of the cabinet.

Controls
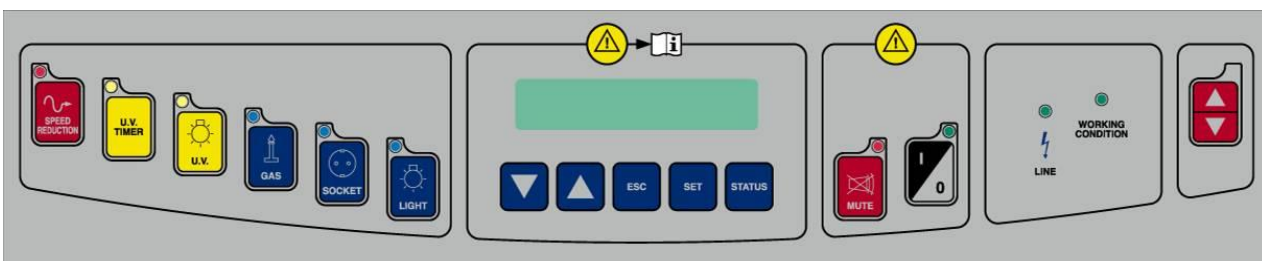
Air ventilation control is obtained by means of automatic regulation of the revolution speed of the motor blower. One high-resolution flow rate volumetric device and one pressure transmitter directly interfaced to the microprocessor, achieve the automatic regulation. The microprocessor guarantees the activity of the motor blowers and keeps constant the optimal functions even in presence of progressive

clogging of the HEPA filters.

Alarm device optical (red signal light visible from working position and display message) and acoustic (buzzer) type, activate on real time error messages on a wide alpha numeric display.

**Monitoring with alarms** of the following parameters:

- Internal pressure rate out of the pre-set range,
- Laminar air flow velocity out of the pre-set range,
- Front window open,
- Filters lifetime over,
- Lamps lifetime over;

Alpha numeric display showing:

- Laminar air flow speed in m/s,
- Internal pressure flow rate in Pa,
- Date and time,
- Hours counters for cabinet life,
- UV lamp run hours,
- HEPA filters run hours,
- Date of last HEPA filters change,
- Date of last service,
- Date of last power failure,
- Change language,
- Change password,
- Setting UV timer program,
- Setting MSC decontamination program;

Transfer Hatch

SCS class III transfer hatch is equipped with double in-line H14 HEPA filters Transfer hatch external and internal body structure is made in epoxy painted steel and equipped with sliding tray made in AISI316L stainless steel. Rails are made in polyethylene.
Internal and external doors are electromagnetically interlocked with a
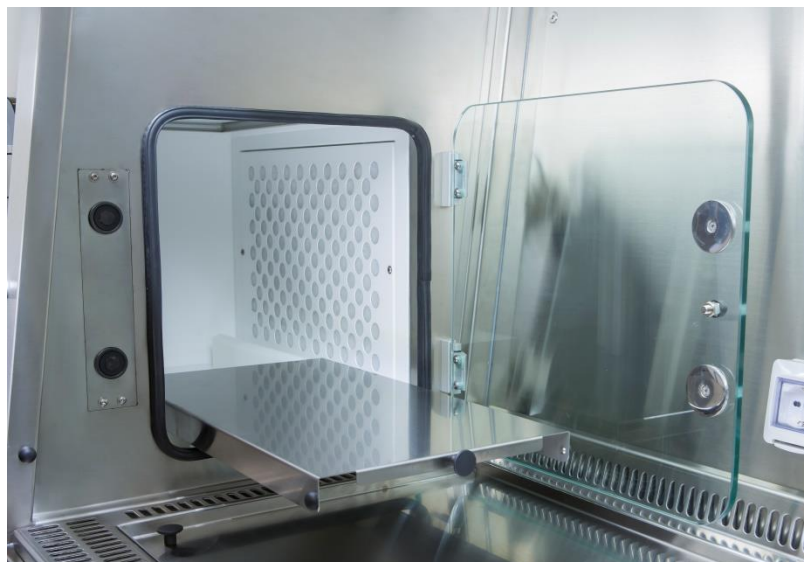
timed ventilation cycle pre-set on 10sec, which can anyway be adjusted during the installation.

The opening of the external door is enabled by pressing the a button positioned on the front panel of the unit. Internal door opening is enabled by foot switch.

Glove system

Unmatched abrasion resistance textile sleeves clamped with PVC flanges by means of strong rubber bands.

Gloves are made in neoprene material with a shelf life of three years about.

Flanges are rounded with 300mm diameter in order to have extra moving possibilities inside the working chamber to reach each point of the internal working chamber for effective clean in place daily procedures.

Testing ports

The unit is equipped with individual testing ports positioned on the main chamber and the transfer hatch, in order to connect external devices for various testing such as air flow speed test and air cleanliness test without breaching the integrity of the system opening the frontal screen.

Standard features

- Dimmable LED lights
- Power socket 4A IP55 (internal back panel right-hand side)
- DEHS 100% test inlet hose-barb port (internal under worktop – left side)

Optional features

- UV lamp
- Hard duct
- Unit fully made in AISI 304 or 316 is available as option
- Support stand, either in epoxy painted steel or stainless steel
- Additional electrical sockets, French, UK or Swiss type are available right or left internal side
- Compressed air line with manual tap
- Nitrogen line with manual tap
- Fuel gas tap with automatic safety solenoid valve activated by additional foot switch
- Special stand with automatic lifting system, maximum height 400mm

Technical Specifications

|	SCS 4 Class III	SCS 5 Class III	SCS 6 Class III
Overall dimensions (W x D x H) :	1930x870x2300mm	2235x870x2300mm	2540x870x2300mm
Work surface dimensions (W x D x H)	1192x580x740mm	1497x580x740mm	1802x580x740mm
Transfer hatch overall dimensions (W x D x H)	580x709x778mm	580x709x778mm	580x709x778mm
Construction :	▪ Body	Painted steel external, internal AISI 304L stainless steel SB finishing 1.2 mm thickness (0.05'') & 1.5 mm(0.06'')	
	▪ Transfer hatch (D2 type transfer hatch according to ISO-FDIS 14644-7)	AISI 304L stainless steel, 2B finishing 1.2 mm thickness (0.05'') & 1.5 mm(0.06'')	
	▪ Work surface	AISI 316L stainless steel, SB finishing 1.2 mm thickness (0.05'') & 1.5 mm(0.06'')	
Filtration :	▪ Transfer hatch	▪ Inlet low pressure drop certified HEPA H14 filters with typical efficiency of 99,995% MPPS CEN EN 1822 ▪ Recirculating low pressure drop certified HEPA H14 filters with typical efficiency of 99,995% MPPS CEN EN 1822	
	▪ Working volume	▪ Downflow low pressure drop certified HEPA H14 filters with typical efficiency of 99,995% MPPS CEN EN 1822 ▪ Exhaust low pressure drop certified HEPA H14 filters with typical efficiency of 99,995% MPPS CEN EN 1822	
Glass	8mm Frontal safety glass in an aluminium frame 10mm safety glass for hatch outer and inner doors		
Gloves and sleeves	▪ Polyethylene 300mm supporting ring for the sleeves with O-Ring system for gloves and sleeves replacement. Neoprene gloves, PVC sleeves 640mm length		

Standard control panel is a soft touch keyboard displaying all unit parameters (air speed, pressure, alarms ect)

Internal

working volume

300mm glove ports

Inlet closing lid made of safety glass
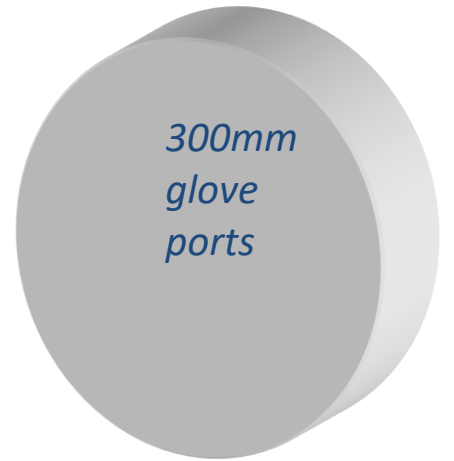
External hatch door made of safety glass

Internal hatch door made of safety glass

Back wall LED lights for safe opening of the internal door

COMPLIANCE

FILTRATION	AIR CLEANLINESS	ISOLATOR	ELECTRICAL SAFETY
EN 1822-1	ISO 14644-1	• ISO 14644-7:2004 • ISO 10648-2 : 1994 • Guidelines "Isolator for Pharmaceutical Application" 2004 • Guidelines "Pharmaceutical Isolators" Pharmaceutical Press 2004	• EN 61010-1 Europe • IEC 61010-1 Worldwide

Instruments de laboratoire
www.templab.eu