Telstar® EuroFlow Series

Class II Biological Safety Cabinet

- Superior quality
- Proven reliability
- Solid construction
- Easy to clean
- Easy to operate

From standard till custom made

Operator, product and environmental protection

Telstar EuroFlow Series

Telstar EuroFlow Series, our top range of high quality Class II Biological Safety Cabinets ensures the highest level of protection for operator, product and environment, minimizing hazards inherent to working with agents assigned to biosafety levels 1, 2 and 3.

This series has been designed according to the highest standards of quality, biological safety, reliability, ergonomics and usability.

- *Superior quality*
- *Proven reliability*
- *Suitable for customising*
- *Solid & ergonomic design*
- *Easy to operate*
- *Easy to clean*
- *Easy to decontaminate*
- *Easy maintenance*
- *According highest standards*
- *Microprocessor safety control*
- *Enhanced safety features*

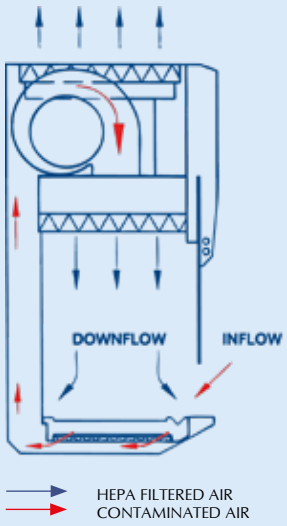
International safety standards

EuroFlow Series is designed and manufactured according to international biosafety standards EN12469 (Class II), NSF49 (Class II Type A2) and JIS K 3800 (Class II Type A2). EuroFlow Series is fully certified by TüV Nord in accordance with EN 12469. The working area is classified as ISO 14644-1 (Class 5) and GMP Annex 1 (Class A).

Additionally, Type EF/B cabinets are designed and manufactured according to DIN 12980 (Class II) and fully certified by TüV Nord in accordance with DIN 12980.

EN12469
DIN12980
Certified

Type EF *('Class II A')*



(EN12469: Class II) (NSF49: Class II Type A2)

Basic principle

Type EF provides operator protection by inflow, product protection by HEPA-filtered laminar downflow in the working area (30% exhaust; 70% recirculation) and environmental protection by HEPA-filtered exhaust air.

Applications

Type EF is designed for microbiological research with biological agents (e.g. bacteria, viruses, etc) and allergens.

Available sizes

Type EF is standard available in 4, 5 and 6 ft (120, 150 and 180 cm) width.

Features & benefits

Superior quality. Proven reliability

EuroFlow Series is a range of Class II Biological Safety Cabinets worldwide appreciated for its superior quality and reliable performance. The high quality materials and components and solid construction ensure a long and reliable lifetime.

3 year warranty

Exceptionally suitable for customization

The reliable and solid EuroFlow Series is exceptionally suitable to adapt to many customer specific applications, for example incorporating weighing systems, microscopes etc. Together with the flexibility and expertise of our Engineering department, this cabinet is also a solid starting point for the design of custom made solutions such as isolators for pharmaceutical, biotechnical and food industry etc.

Class II Isle cabinet

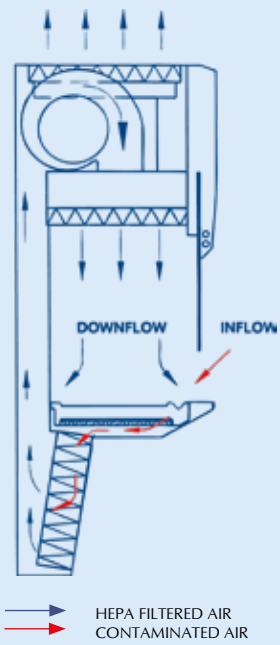
Class II microscope cabinet

Class II animal cage changing station

Many options & accessories

For standard cabinets of this series, a numerous amount of options and accessories are standard available. This ensures a standard cabinet can be adapted easily to various common applications.

Type EF/B *('Class II B')*



(EN12469: Class II) (NSF49: Class II Type A2)

Basic principle

Type EF/B is equipped with additional V-shaped HEPA filters underneath the work surface, which filter the inflow air and keep the internal construction of the cabinet free of contamination and therefore ensures the topmost safety for high risk applications.

Applications

Type EF/B is designed for high risk microbiological and high toxic applications, such as the production of cytotoxic medicines.

Available sizes

Type EF/B is standard available in 4 and 6 ft (120 and 180 cm) width.

Solid & Ergonomic design

- Solid 1,5 - 2 mm epoxy coated steel exterior (optional available in Stainless Steel).
- Ergonomic design of the cabinet enables ergonomic work position of the operator.
- Ergonomic epoxy coated aluminium arm rest contributes to the comfortable working position of the operator.
- Lighting positioned outside the work area. This does not disturb the downflow, nor create inconvenient shades, nor create obstructions during cleaning.
- User-friendly LCD control panel shows the operator all relevant functions and alarms at a glance.
- Optional available support frame has an integrated ergonomic foot rest and provides plenty of leg room.

Easy to clean

- Advanced sliding/hinged window: The front window can be lifted completely, opening the entire work area for easy cleaning and/or (un)loading large items.
- Standard equipped with seamless one piece Stainless Steel worktop. Easy to clean and able to collect another 2-3 Litres of spilled liquids.
- Standard equipped with one piece Stainless Steel work area with rounded corners, allowing easy cleaning.
- The drip tray (standard for Type EF/B, optional for Type EF) underneath the worktop collects spilled liquids up to 1,5 Litres, preventing these liquids entering parts of the cabinet that are difficult to clean.
- Window grips are glued on the outside of the front window, creating a smooth inner surface which is easy to clean.

Easy to decontaminate

The rubber sealing between the work area and front window and the optional available decontamination kit make the cabinet gas- and airtight for gaseous decontamination. Optional available connections can be installed on the cabinet for easy decontamination.

Advanced safety features

- Exceeds EN12469 standard; because of the multi-shell construction all contaminated areas are under or surrounded by negative pressure.
- Worktop with V-shaped air slits provides superior safety by preventing blocking the inflow and contamination from the operator's sleeves.
- Pre-filter (standard for Type EF/B, optional for Type EF) prevents dust, dirt and particles to gather in the interior of the cabinet, ensuring maximum effect of decontamination. *
- Laminated safety glass front window (8 mm, 2 layers).
- Arm rest operates like an aerofoil, improving air inflow and thus operator protection.

** Without pre-filter, dust within the cabinet will create a layer and becomes a barrier between the disinfectants and the microbiological contamination, influencing the effect of decontamination negatively. This causes a risk of contamination for the service technician and the laboratory.*

Microprocessor safety features

- Separate alarms for downflow (high/low) and inflow (high/low); action can be taken accordingly. **
- Automatic filter clogging compensation: The microprocessor will automatically increase the fan speed to compensate filter clogging etc, ensuring flow at set point, providing maximum level of product and operator protection.
- Gas valve safety control: Gas can only be switched on when the cabinet indicates safe work mode. If the cabinet is switched off or shows an alarm, the gas will automatically be switched off.
- UV light safety control: FL light will be switched off when UV light is switched on.
- Two redundant microprocessors (fail-safe synchronization).

*** Example: A downflow alarm means that the product is not protected, but the operator still is. In this case, the operator can safely start his procedure to stop working, clean the working area, switch off the cabinet and start investigate the cause of the downflow alarm.*

Control panel with alarms and parameters

- Green light indicates safe work mode
- Red light indicates alarm (visual and audible) for:
  - Downflow (high/low)
  - Inflow (high/low)
  - Window (out of working position)
- Filter clogging in Pascal
- Switch for work mode (on/off) *
- Switch for stand-by mode (on/off)
- Switch for UV light (on/off) *
- Switch for FL light (on/off)
- Switch for power socket (on/off) *
- Switch for gas valve (on/off)
- English, Spanish, French, German and Dutch language
- Real-time clock
- Total running hours for fan, FL, UV
- Pin code to prevent unauthorised usage
- RS 232 and RS 485 connection
- Volt free contact for forwarding alarms to building management systems
- Volt free contact(s) which can be used to switch on/off an external system such as additional exhaust system/fan
- Prepared for control of disinfection options

** Also controllable by programmable clock (on/off) or timer (off)*

Easy maintenance

- All technical parts are easy accessible from the front of the cabinet.
- Pre-filter (standard for Type EF/B, optional for Type EF) prevents dust, dirt and particles entering the HEPA filters, tremendously increasing HEPA filter lifetime.
- The 1st HEPA filters of Type EF/B can be replaced without risk of contamination.
- Smart positioned, easy replaceable air velocity sensors.
- Easy to connect to a duct: Exhaust filter is standard positioned at the right hand side on top of cabinet (except for Type EF/B 6: exhaust positioned at the center).

Optional: GMP and PIC's compliant

- Downflow velocity can be set according to GMP Annex 1 and PIC's regulations (0,45 m/s) with only a minor hardware modification.
- Two analogue 4–20mA connections are available for e.g. particle count sensor, pressure sensor, temperature and relative humidity sensor. Also limits/alarms (high/low) can be set. Data from these sensors is visible on the display.
- GMP compliant support frame optional available.

Configurations

Standard configuration

Type EF is standard equipped with:

- Epoxy coated exterior
- Stainless Steel interior
- Stainless Steel one piece worktop

Type EF/B is additionaly equipped with:

- 1st HEPA filter section (H14)
- Pre-filter & drip tray

1st HEPA filter section

More options and accessories

A wide range of options and accessories is available for EuroFlow Series (see last page of this brochure).

Technical Specifications

EF

TYPE	EF 4	EF 5	EF 6
PART NUMBERS			
Epoxy coated exterior	P0301104ARN	P0301105ARN	P0301106ARN
Stainless steel exterior	P0301204AN	P0301205AN	P0301206AN
DIMENSIONS			
Exterior dimensions WxDxH (mm)	1333 x 844 x 1552	1638 x 844 x 1552	1943 x 844 x 1552
Interior dimensions WxDxH (mm)	1190 x 605 x 725	1495 x 605 x 725	1800 x 605 x 725
Height with support frame (mm) [1]	2197 / 2297	2197 / 2297	2197 / 2297
Aperture H (mm) [2]	165 / 350	165 / 350	165 / 350
Weight (kg)	255	275	315
Exhaust connection Ø (mm)	250	250	250
PERFORMANCES			
Downflow velocity (m/s)	0,36	0,36	0,36
Power consumption (stand-by mode) (W) [3]	203	374	519
Power consumption (work mode) (W) [4]	407	512	618
Light intensity (lux)	1000	1100	1550
ELECTRICS			
Electrical connection (V)/(Hz)	230 / 50	230 / 50	230 / 50
FILTERS			
Pre-filter (EN 779)	G3	G3	G3
Downflow HEPA filter (EN 1822)	H14	H14	H14
Exhaust HEPA filter (EN 1822)	H14	H14	H14

EF/B

TYPE	EF/B 4	EF/B 6
PART NUMBERS		
Epoxy coated exterior	P0302104RN	P0301206RN
Stainless steel exterior	P0302204N	P0302206N
DIMENSIONS		
Exterior dimensions WxDxH (mm) [5]	1333 x 844 x 2202	1943 x 844 x 2202
Interior dimensions WxDxH (mm)	1190 x 605 x 725	1800 x 605 x 725
Height with support frame (mm) [1]	2197 / 2297	2197 / 2297
Aperture H (mm) [2]	165 / 350	165 / 350
Weight (kg)	300	380
Exhaust connection Ø (mm)	250	250
PERFORMANCES		
Downflow velocity (m/s)	0,36	0,36
Power consumption (stand-by mode) (W) [3]	520	599
Power consumption (work mode) (W) [4]	619	715
Light intensity (lux)	1000	1550
ELECTRICS		
Electrical connection (V)/(Hz)	230 / 50	230 / 50
FILTERS		
Pre-filter (EN 779)	G3	G3
Downflow HEPA filter (EN 1822)	H14	H14
Exhaust HEPA filter (EN 1822)	H14	H14
1st HEPA filter (EN 1822)	H14	H14

[1] Support frame with fixed working height 800 mm / 900 mm
[2] Predefined work mode / maximum mode
[3] Cabinet on, light off, downflow 0,15 m/s
[4] Cabinet on, light on, downflow 0,36 m/s (according EN 12469)
[5] Height including 1st HEPA filter section (650 mm)

Options & Accessories

The available options and accessories make this cabinet adaptable to many applications. Together with the flexibility and expertise of our engineering department, this series is suitable to customize to customer specific requirements.

Options

- Electrical sockets
- Taps (natural gas, vacuum, O_2, N_2, etc)
- UV light
- Decontamination connection
- Exhaust transition
- Double exhaust HEPA filter
- Data connection box (USB, etc)
- Flush mounted monitor
- FAT / SAT / IQ / OQ
- Etc.

Exhaust transition

Exhaust transition + thimble

Decontamination connection

Accessories

- Support frame (fixed / electrical adjustable / GMP compliant)
- Segmented worktop
- Decontamination kit
- Thimble
- Anti-blowback valve
- Etc.

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ISO 9001: Certified Company

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