Spetec

Laminar Flow Systems

Operating Instructions

SPETEC®

Spetec Laminar Flow Systems

Operating Instructions

Thank you for your trust in the Spetec clean room systems! Your chosen system is ideally suited for use in industry and research.

The following pages contain instructions on the proper use and care of your system as well as information on servicing, maintaining, and repair.

Contents

Safety

IMPORTANT! **Be sure to read this!**

Please read this entire manual carefully before using the clean room system for the first time. It explains how to use the system and indicates possible dangers.

CAUTION! **Follow the safety instructions!**

- Before commissioning, please ensure that the supply voltage matches the voltage designation on the rating plate.
- The device may only be connected to an outlet equipped with an earth conductor terminal.
- Never reach into moving parts.
- Pull the mains plug before replacing the fuse. Only use the fuse types listed here.
- Any extensions or conversions to the cell are permitted **only after approval** by Spetec.
- Do not walk or stand on the ceiling of the clean room cell

- Do not stand underneath the filter when performing a filter change.
- If assembling the equipment yourself, do not stand under suspended loads.

No warranty claims will be accepted in respect of damage resulting from failure to observe the Operating Instructions We therefore accept no liability in this regard!

WARNING!
Disconnect the power cord before opening the device!

General Information and Use

General

Your clean room system does not constitute any kind of health hazard as long as it is used properly. As an electro-mechanical unit, it must be handled with the corresponding care and diligence.

In commercial settings, the accident prevention regulations of the association of commercial accident prevention and insurance associations for electrical systems and operating materials must be observed.

Failure to observe the provided information or use for anything other than the intended purpose can lead to damage or destruction. The safety of the operator can also be compromised as a result. The plug-in connection serves as the cut-off device.

Please use only the supplied power cable. In the unlikely event of a speed control error, Spetec does not assume liability for equipment which is connected either in the clean room or connected to it.

Environmental Conditions

Do not exceed the maximum input values as stated in the technical specifications.

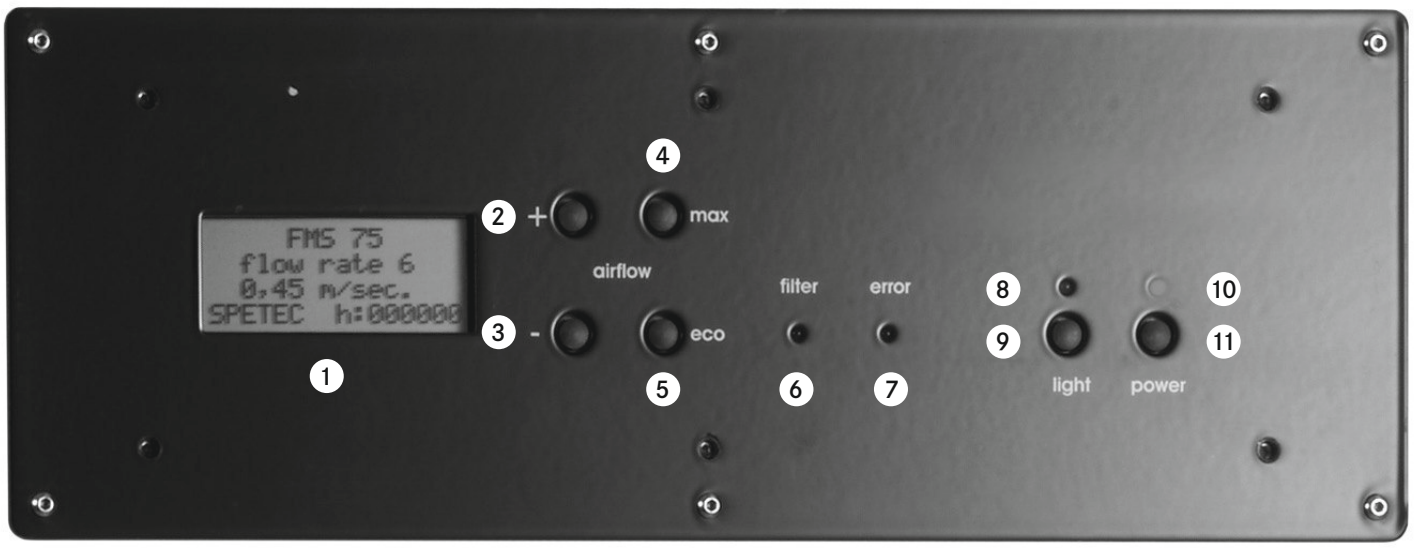
Lightning Protection

Direct or nearby lightning strikes may lead to the destruction or malfunction of electrical/electronic devices. We don‘t assume any liability for lightning damage!

Operation

All series (excluding FMS Basic, EBS and PBS)

Front control panel

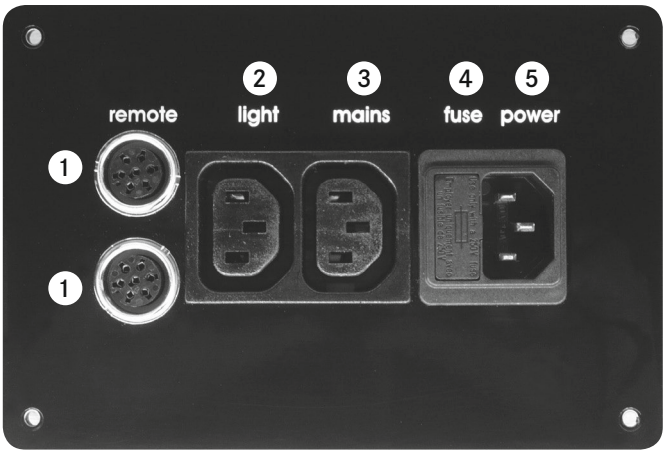


1. 4-digit LCD display
   - Type designation
   - Speed level
   - Max. flow rate
   - Operating hour display/call service
2. Flow rate up
3. Flow rate down
4. Max. flow rate
5. Min. flow rate
6. LED on: Replace the main filter
7. LED on: Fault (error)
8. LED on: Lights on
9. Lights on/off button
10. LED on: Mains power on
11. Mains power on/off button

CAUTION! **Follow the safety instructions!**

WARNING!
Disconnect the power cord before opening the device!

Rear of the device



1. Control input*
2. Light output switched on
3. Mains output connected
4. Device fuse
5. Power supply

*Connection for external controller (remote control) and slave module. Both connectors have the same pin assignments.

**The appliance connectors 2&3 are protected via the device fuse 4 max. additional power draw at 2&3 200W

FMS Series

The Spetec Laminar Flow Module can be suspended from the ceiling over a table or workstation, or used directly on a machine. The device is a clean air shower equipped with an H14 filter which creates an ISO class 5 clean room atmosphere.

FMS series modules have the following dimensions:

Name	Filter dim. in mm	Kg
*Laminar Flow Module FMS 24	610 x 400	20
Laminar Flow Module FMS 37	610 x 610	28
Laminar Flow Module FMS 56	915 x 610	31
Laminar Flow Module FMS 75	1220 x 610	49
Laminar Flow Module FMS 93	1525 x 610	56
Laminar Flow Module FMS 112	1830 x 610	63

*See page 26 for dimensions of special device versions.

Technical Data

Power supply:	230V AC
Frequency:	50/60 Hz
Power draw:	
FMS 24 – FMS 56:	ø 70W, max.: 260W
FMS 75 – FMS 112:	ø 140W, max.: 495W
Fuse:	
FMS 24 – FMS 112:	Si: M 3.15A

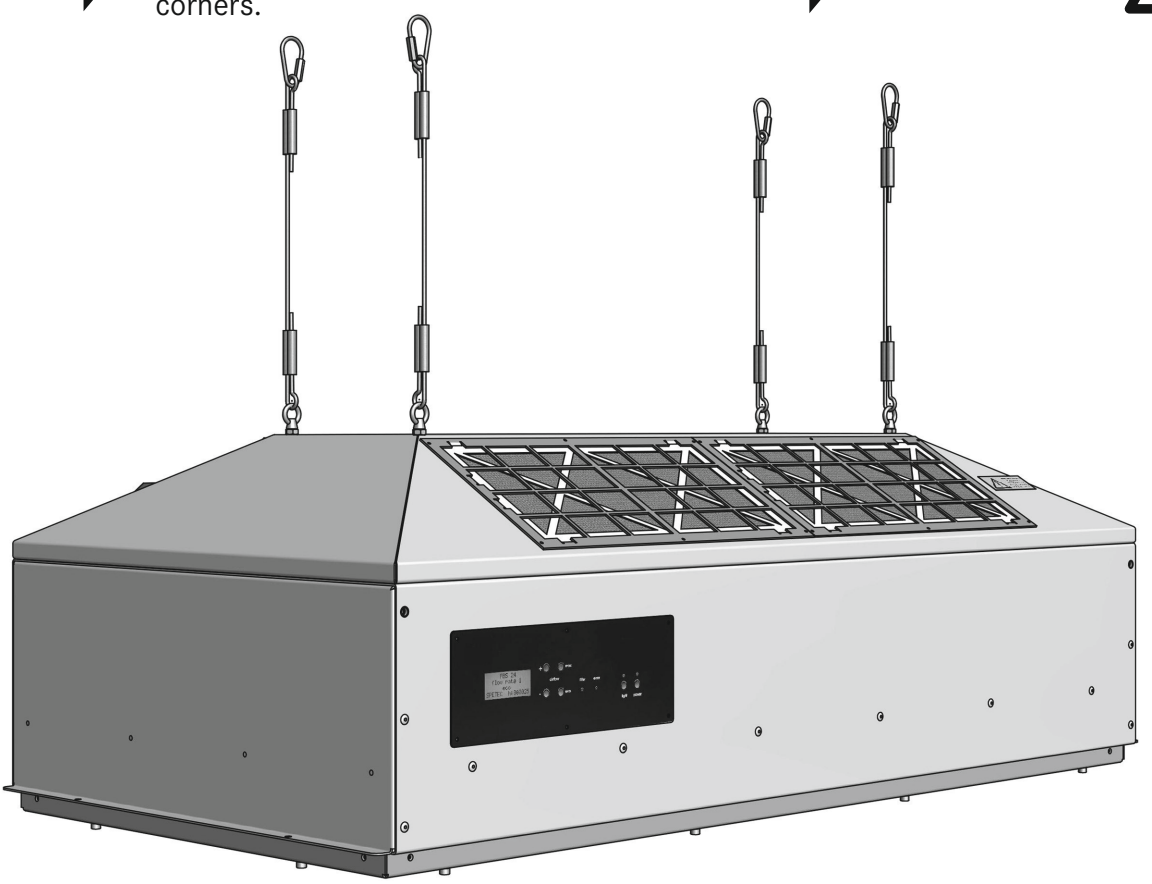
Accessories are fused via the module.
Maximum additional load of 200W.

Temperature range:	+10 to +50 degrees Celsius
Humidity:	20 to 80 %, non-condensing
Warranty period:	2 years, with the exception of filters and wear parts

Please contact Spetec in the event of controller or electronics malfunctions.

CAUTION! For bearing load, please refer to the weight table.
4 suspension points at the corners.

CAUTION! **Follow the safety instructions!**

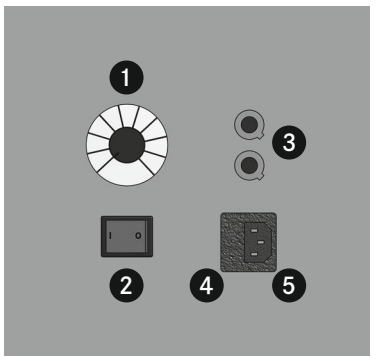


FMS Basic

The Laminar Flow Module can be used as a separate filter unit on a machine, or in combination with a clean room booth.

The device features a robust aluminium sheet metal design and is equipped with an efficient, continuously variable EC motor.

Operation



1. Adjusting the flow rate
2. Mains power on/off switch
3. Remote interface*
4. Device fuse
5. Power supply

*Connection for external controller (remote control) and slave module. Both connectors have the same pin assignments.

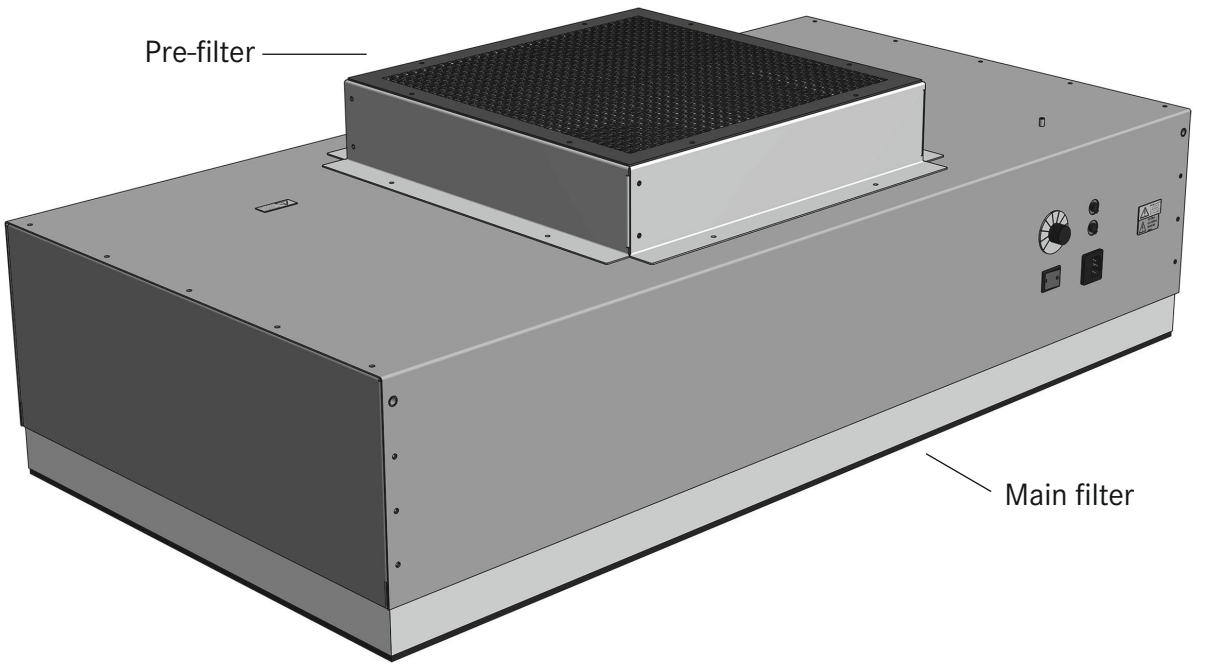
Technical Data

Power supply:	230V AC
Frequency:	50/60 Hz
Power draw:	ø 70W, max.: 260W
Fuse:	Si: 3.15AT
Temperature range:	+10 to +50 degrees Celsius
Humidity:	20 to 80 % non-condensing
Filter dimensions:	1220x610mm
Weight:	30kg
Warranty period:	2 years, with the exception of filters and wear parts

Please contact Spetec in the event of controller or electronics malfunctions.

CAUTION! **Follow the safety instructions!**

WARNING!
Disconnect the power cord before opening the device!



FBS Series

The FBS series Spetec Laminar Flow Box is used to store items under clean room conditions. Work can also be performed in the Laminar Flow Box under clean room conditions. The laminar (non-turbulent) flow of air creates an imaginary wall which separates the clean room conditions within the box from the outside air. Thus work can be performed under clean room conditions even if the door is open.

FBS series modules have the following dimensions:

Name	Filter dim. in mm	Kg
*Laminar Flow Box FBS 24	610 x 400	46
Laminar Flow Box FBS 37	610 x 610	78
Laminar Flow Box FBS 56	915 x 610	89
Laminar Flow Box FBS 75	1220 x 610	93
Laminar Flow Box FBS 93	1525 x 610	130
Laminar Flow Box FBS 112	1830 x 610	145

*See page 25 for dimensions of special device versions

Technical Data

Power supply:	230V AC
Frequency:	50/60 Hz
Power draw:	
FBS 24 – FBS 56:	ø 70W, max.: 260W
FBS 75 – FBS 112:	ø 140W, max.: 495W
Fuse:	
FBS 24 – FBS 112:	Si: M 3.15A

Accessories are fused via the module.
Maximum additional load of 200W.

Temperature range:	+10 to +50 degrees Celsius
Humidity:	20 to 80 %, non-condensing
Warranty period:	2 years, with the exception of filters and wear parts

Please contact Spetec in the event of controller or electronics malfunctions.

CAUTION! **Follow the safety instructions!**

FBS Series Standard

As an alternative to the FBS series SuSi Laminar Flow Box, this version is available without sliding door and perforated metal floor. As a result, work operations can be performed directly on the existing table.

FBS series modules have the following dimensions:

Name	Filter dim. in mm	Kg
Laminar Flow Box FBS 37-Standard	610 x 610	57
Laminar Flow Box FBS 56-Standard	915 x 610	64
Laminar Flow Box FBS 75-Standard	1220 x 610	86
Laminar Flow Box FBS 93-Standard	1525 x 610	97
Laminar Flow Box FBS 112-Standard	1830 x 610	108

Technical Data

Power Supply: : 230V AC
Frequency: 50/60 Hz

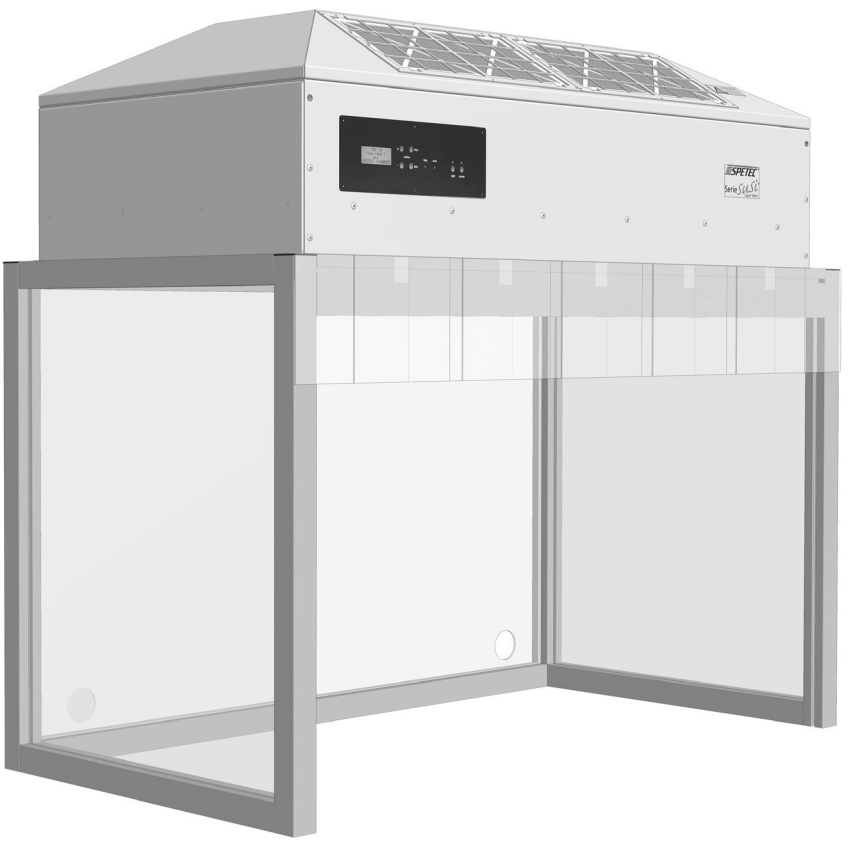
Power draw FBS-Standard series:
FBS 37 – FBS 56: ø 70W, max.: 260W
FBS 75 – FBS 112: ø 140W, max.: 495W

Fuse FBS Standard series:
FBS 37 – FBS 112: Si: M 3.15A
Accessories are fused via the module.
Maximum additional load of 200W.
Temperature range: +10 to +50 degrees Celsius
Humidity: 20 to 80 %
non-condensing

Warranty: 2 years,
excluding filters and
wear parts

Please contact Spetec in the event of controller or electronics malfunctions.

CAUTION! **Follow the safety instructions!**



FBS-V Series

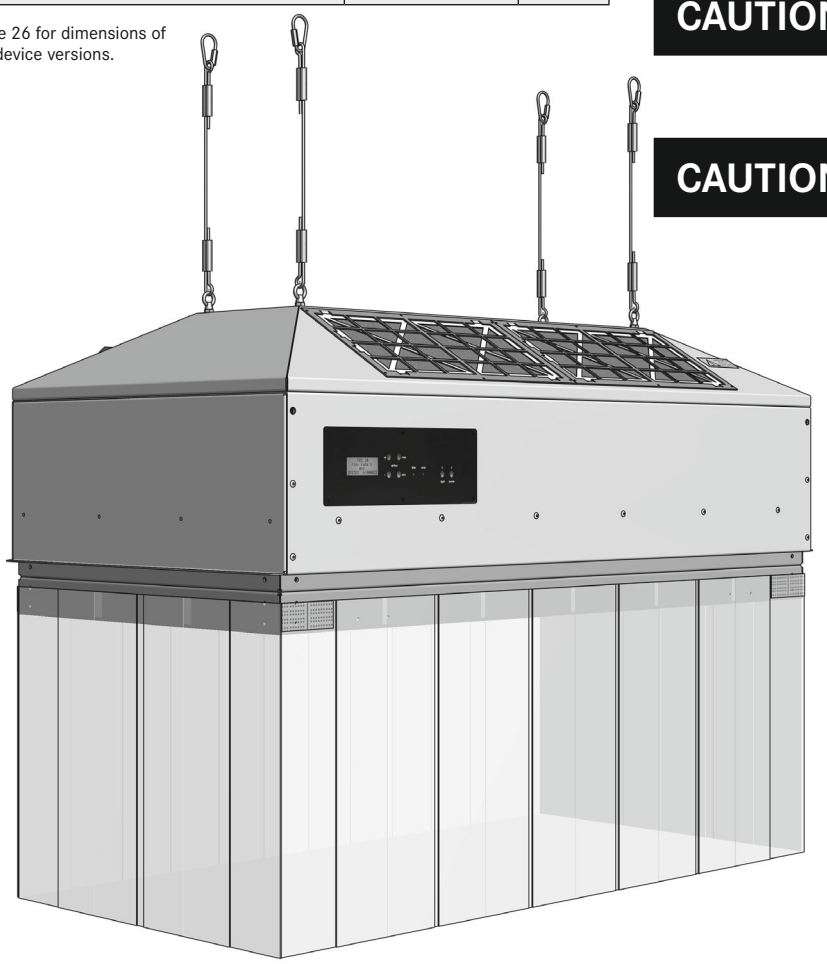
The FBS-V series Spetec Laminar Flow System is a version of the FBS series. The acrylic glass panes of the box are replaced with a PVC strip curtain. This curtain is designed with a double overlap and prevents the entry of outside air into the clean room area when persons walk by or due to other air movement.

The curtain length is designed according to customer requirements. The standard length is 2000 mm, and the curtain is easy to install by following the markings.

FBS-V series modules have the following dimensions:

Name	Filter dim. in mm	Kg
*Laminar Flow Box FBS-V 24	610 x 400	29
Laminar Flow Box FBS-V 37	610 x 610	42
Laminar Flow Box FBS-V 56	915 x 610	47
Laminar Flow Box FBS-V 75	1220 x 610	69
Laminar Flow Box FBS-V 93	1525 x 610	78
Laminar Flow Box FBS-V 112	1830 x 610	89

*See page 26 for dimensions of special device versions.



Technical Data

Power supply:	230V AC
Frequency:	50/60 Hz
Power draw:	
FBS-V 24 – FBS-V 56:	ø 70W, max.: 260W
FBS-V 75 – FBS-V 112:	ø 140W, max.: 495W
Fuse:	
FBS-V 24 – FBS-V 112:	Si: M 3.15A

Accessories are fused via the module.
Maximum additional load of 200W.

Temperature range:	+10 to +50 degrees Celsius
Humidity:	20 to 80 %, non-condensing
Warranty period:	2 years, with the exception of filters and wear parts

Please contact Spetec in the event of controller or electronics malfunctions.

CAUTION! **Follow the safety instructions!**

CAUTION! For bearing load, please refer to the weight table.
4 suspension points at the corners.

EFBS Series

The EFBS series Spetec Laminar Flow Boxes provide clean room conditions for items and devices which themselves generate contamination. The laterally mounted vacuum system is connected to a telescoping arm (optional). This telescoping arm is positioned precisely over the spot at which contamination is generated. The vacuum system is acid resistant. This allows for the extraction of aggressive vapours without a problem. The vacuum system itself is connected to a central exhaust air system with ducting.

EFBS series modules have the following dimensions:

Name	Filter dim. in mm	Kg
*Laminar Flow Box EFBS 24	610 x 400	53
Laminar Flow Box EFBS 37	610 x 610	85
Laminar Flow Box EFBS 56	915 x 610	96
Laminar Flow Box EFBS 75	1220 x 610	100
Laminar Flow Box EFBS 93	1525 x 610	137
Laminar Flow Box EFBS 112	1830 x 610	152

*See page 25 for dimensions of special device versions.

Technical Data

Vacuum system:
Brushless EC motor

Power supply:	230V AC
Frequency:	50/60 Hz
Power draw:	20W
Fuse:	Si: 1.60 AT
Extraction capacity:	60 m^3/h max.
Exhaust port, diameter:	100 mm
Temperature range:	+10 to +50 degrees Celsius
Humidity:	20 to 80 %, non-condensing
Warranty period:	2 years, with the exception of wear parts

System:

Power supply:	230V AC
Frequency:	50/60 Hz

Power draw:

EFBS 24 – EFBS 56:	ø 70W, max.: 260W
EFBS 75 – EFBS 112:	ø 140W, max.: 495W

Fuse:

EFBS 24 – EFBS 112:	Si: M 3.15A

Accessories are fused via the module.
Maximum additional load of 200W.

Temperature range:	+10 to +50 degrees Celsius
Humidity:	20 to 80 %, non-condensing
Warranty period:	2 years, with the exception of filters and wear parts

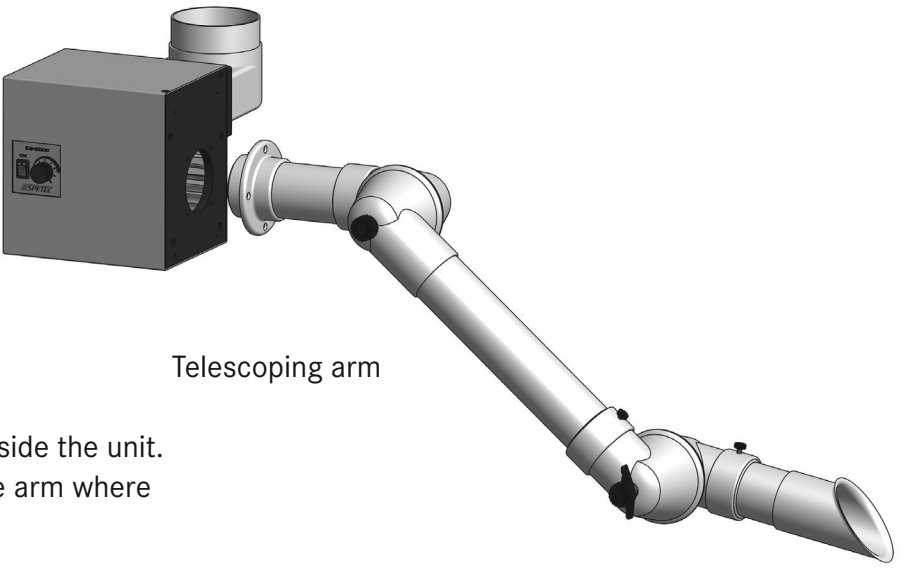
Please contact Spetec in the event of controller or electronics malfunctions.

Operation:

1. Mains switch
2. Continuous suction rate adjustment

CAUTION! **Follow the safety instructions!**

CAUTION! The legal regulations must be observed for connecting the acid-proof vacuum system to a central exhaust air system.



Telescoping arm

A suction arm with 2 joints is located inside the unit. This allows for precise positioning of the arm where suction is required.

EFBS-V Series

The EFBS-V series Spetec Laminar Flow System is a version of the EFBS series. The acrylic glass panes of the box are replaced with a PVC strip curtain. This curtain is designed with a double overlap and prevents the entry of outside air into the clean room area when persons walk by or due to other air movement.

The curtain length is designed according to customer requirements. The standard length is 2000 mm.

EFBS-V series modules have the following dimensions:

Name	Filter dim. in mm	Kg
*Laminar Flow Box EFBS-V 24	610 x 400	42
Laminar Flow Box EFBS-V 37	610 x 610	49
Laminar Flow Box EFBS-V 56	915 x 610	54
Laminar Flow Box EFBS-V 75	1220 x 610	76
Laminar Flow Box EFBS-V 93	1525 x 610	85
Laminar Flow Box EFBS-V 112	1830 x 610	96

*See page 25 for dimensions of special device versions.

Technical Data

Vacuum system:

Brushless EC motor

Power supply:	230V AC
Frequency:	50/60 Hz
Power draw:	20W
Fuse:	Si: 1.60 AT
Extraction capacity:	60 m^3/h max.
Exhaust port, diameter:	100 mm
Temperature range:	+10 to +50 degrees Celsius
Humidity:	20 to 80 % non-condensing
Warranty period:	2 years, with the exception of wear parts

System:

Power supply:	230V AC
Frequency:	50/60 Hz

Power draw:

EFBS-V 24 – EFBS-V 56:	ø 70W, max.: 260W
EFBS-V 75 – EFBS-V 112:	ø 140W, max.: 495W

Fuse

EFBS-V 24 – EFBS-V 112:	Si: M 3.15A

Accessories are fused via the module.
Maximum additional load of 200W.

Temperature range:	+10 to +50 degrees Celsius
Humidity:	20 to 80 % non-condensing
Warranty period:	2 years, with the exception of filters and wear parts

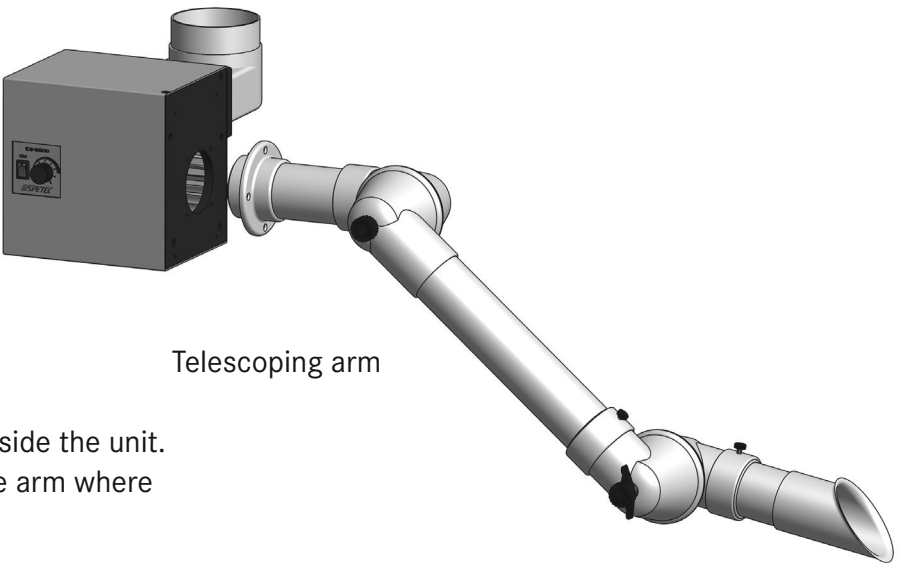
Please contact Spetec in the event of controller or electronics malfunctions.

Operation

1. Mains switch
2. Continuous suction rate adjustment

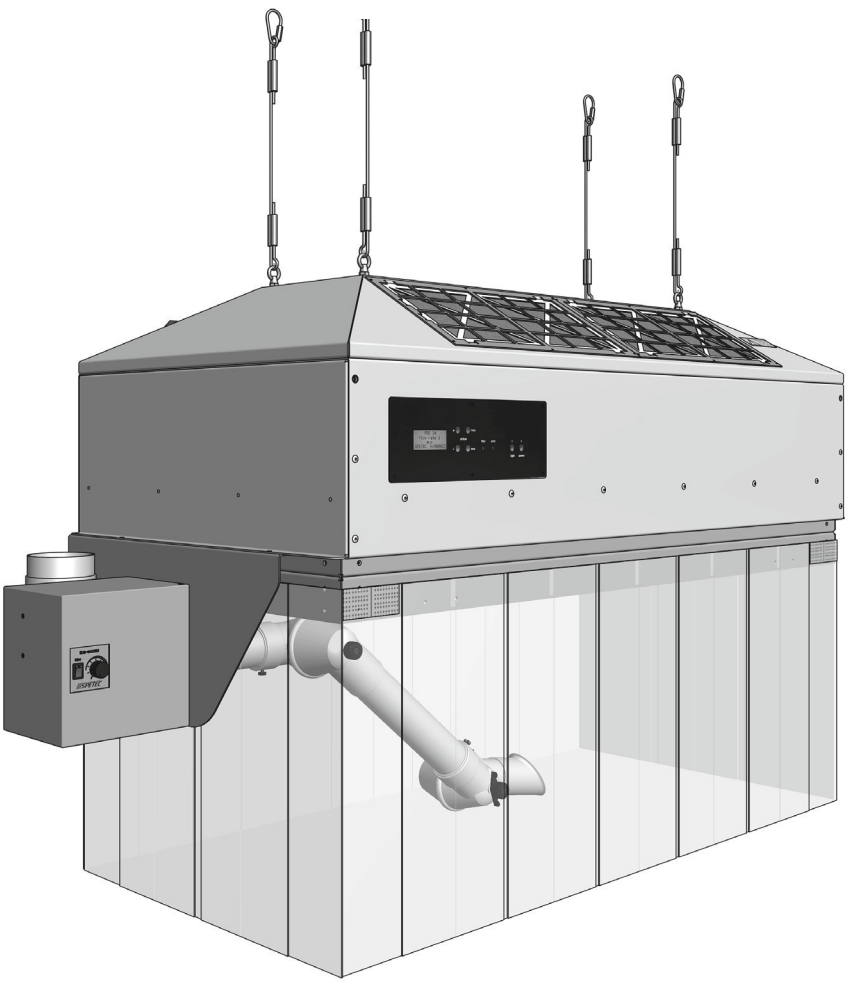
CAUTION! **Follow the safety instructions!**

CAUTION! The legal regulations must be observed for connecting the acid-proof vacuum system to a central exhaust air system.



Telescoping arm

A suction arm with 2 joints is located inside the unit. This allows for precise positioning of the arm where suction is required.



Install the curtain according to the markings

EBS Series

The EBS series devices are strictly table top fume hoods. An extraction system mounted on the side of the box continuously draws air out of the EBS box. The extraction system is made entirely out of plastic parts. The motor is encapsulated so that even aggressive vapours (acids) can be extracted without a problem.

Dimensions:

Name	Device dimensions
Fume hood EBS 24	see page 25
Fume hood EBS 37	
Fume hood EBS 56	
Fume hood EBS 75	
Fume hood EBS 93	
Fume hood EBS 112	

Technical Data

Vacuum system:
Brushless EC motor

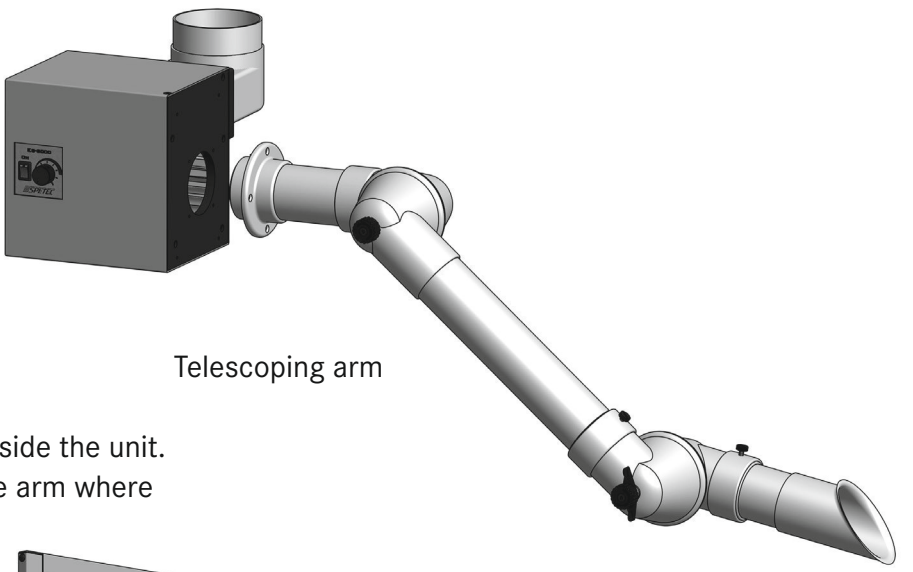
Power supply:	230V AC
Frequency:	50/60 Hz
Power draw:	20W
Fuse:	Si: 1.60 AT
Extraction capacity:	60 m^3/h max.
Exhaust port, diameter	100 mm
Temperature range:	+10to +50 degrees Celsius
Humidity:	20 to 80 %, non-condensing
Warranty period:	2 years, with the exception of wear parts

Operation:

1. Mains switch
2. Continuous suction rate adjustment

CAUTION! **Follow the safety instructions!**

CAUTION! The legal regulations must be observed for connecting the acid-proof vacuum system to a central exhaust air system.



Telescoping arm

A suction arm with 2 joints is located inside the unit. This allows for precise positioning of the arm where suction is required.

PBS Series

The Spetec Protective Box is used to store items and protect them from dust. It is made from acrylic glass panels and anodized aluminium parts. With the optional plastic coating, the protective box is also resistant to acid vapours.

A counterweight in the side wall of the box ensures that the front sliding door stays open in any position.

PBS series modules have the following dimensions:

Name	Device dimensions
Protective box PBS 24	see page 25
Protective box PBS 37	
Protective box PBS 56	
Protective box PBS 75	
Protective box PBS 93	
Protective box PBS 112	

Clean Room Booth

Assembly sequence

1. **Assemble the supporting frame**
   Assemble the supporting frame on a flat surface (floor).
   The profiles are marked consecutively in the assembly sequence. The service documents include a drawing which will help you assign the profiles.

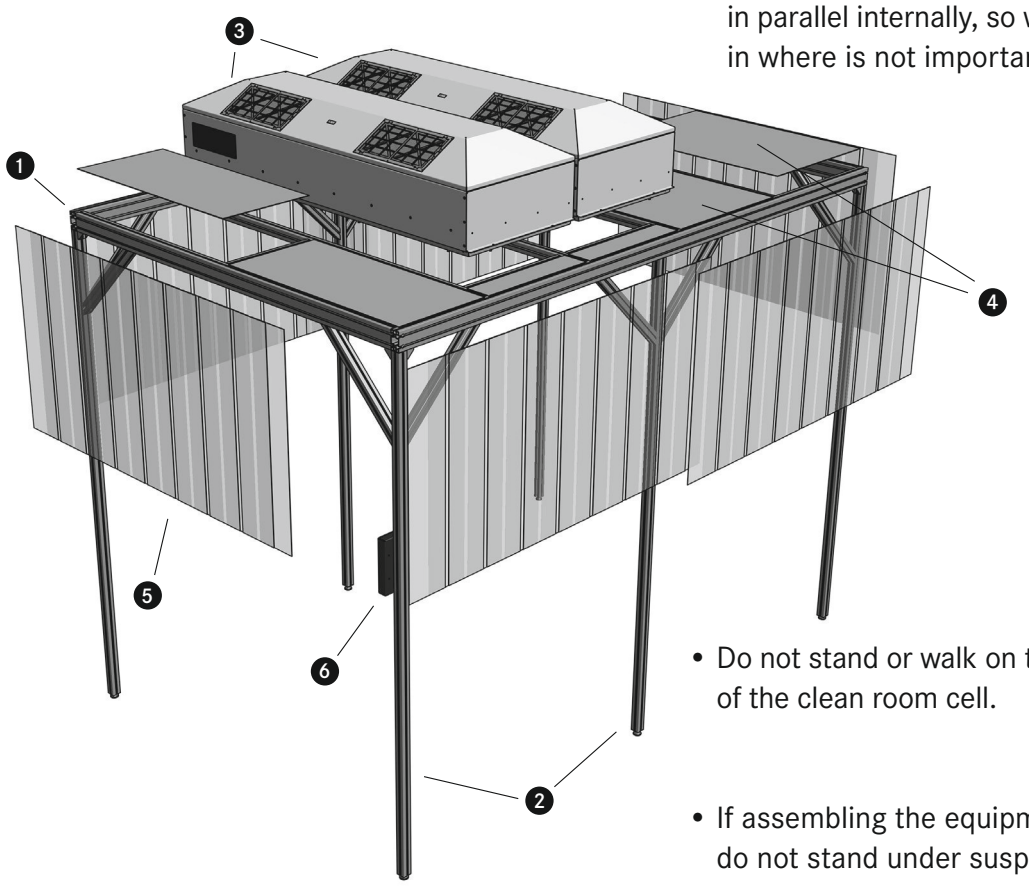
2. **Installing the feet**
   To install the feet, please lift the supporting frame up to the height of the feet on one side and brace it. Install the feet on this side according to the markings.
   Lift the opposite side to the same height and brace it. Install the remaining feet.

3. **Installing the module**
   Set the module onto the booth and screw it to the profiles with the included screws. The modules are sealed with clean room silicon.

4. **Installing the covers**
   The covers (sheet metal, acrylic glass) are marked consecutively according to the assembly sequence. They overlap the frame by 15 mm around the perimeter.
   Then tape the ceiling elements with masking tape around the perimeter, or glue with the included assembly adhesive.

5. **Installing the curtains**
   Also install the curtains according to the consecutive assembly sequence, and secure them with the included washers and nuts.

6. **Remote control**
   Install the remote control at the desired location on one of the feet and connect the cable to one of the modules. Connect the module with the 7-pin connector cable (remote).
   The two 7-pin connectors on the rear are connected in parallel internally, so which connector is plugged in where is not important.



- Do not stand or walk on the ceiling of the clean room cell.

- If assembling the equipment yourself, do not stand under suspended loads.

CAUTION! **Follow the safety instructions!**

- When commissioning the electrical components, observe all relevant statutory requirements.

CleanBoy

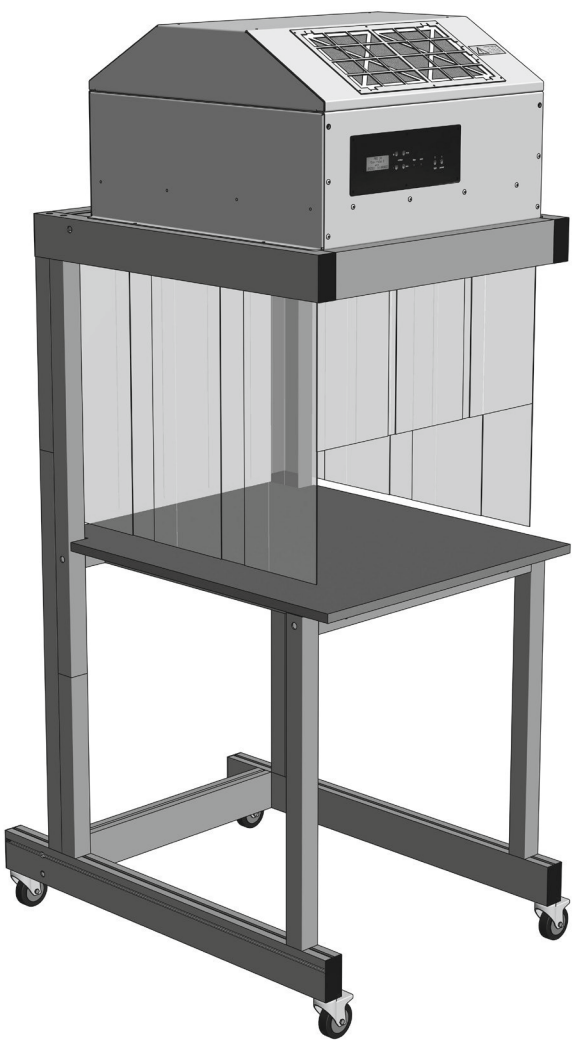
The CleanBoy consists of a Laminar Flow Module FMS 37 and a supporting frame made from anodized aluminium profiles.

Work can be performed on the table top under class 5 clean room conditions.

This applies equally to the CleanBoy Mini (tabletop device) and the CleanBoy Maxi (floor device).

Name	Filter dim. in mm
CleanBoy 37	610 x 610
CleanBoy 56	915 x 610
CleanBoy 75	1220 x 610
CleanBoy 93	1525 x 610
CleanBoy 112	1830 x 610

CleanBoy Maxi



Technical Data

Power supply:	230V AC
Frequency:	50/60 Hz

Power draw:
CleanBoy 37 – CleanBoy 56: ø 70W, max.: 260W
CleanBoy 75 – CleanBoy 112: ø 140W, max.: 495W

Fuse:	Si: M 3.15A

Accessories are fused via the module.
Maximum additional load of 200W.

Temperature range:	+10 to +50 degrees Celsius
Humidity:	20 to 80 %, non-condensing
Warranty period:	2 years, with the exception of filters and wear parts

Please contact Spetec in the event of controller or electronics malfunctions.

CAUTION! **Follow the safety instructions!**

WARNING!
Disconnect the power cord before opening the device!

CleanBoy Mini

Replacement Parts

Name	Item no.
Microfuse 1.6 AT	40-0040 Acid extractor
Microfuse 3.15 AT	40-0070 (sizes 24 through 112)
Device cable	42-0025
Radial fan	22-0203
Front module	06-0053
Rear module	06-0050
Pre-filter 200 x 400mm without filter screen	11-0623
H14 Filter FMS 24	11-0302
H14 Filter FMS 37	11-0303
H14 Filter FMS 56	11-0304
H14 Filter FMS 75	11-0305
H14 Filter FMS 93	11-0306
H14 Filter FMS 112	11-0307

Environmental Compatibility

Spetec clean room systems comply with the currently applicable RoHS guidelines (RoHS = Restriction of Hazardous Substances).

Disposal number:

DE 66147005

Gesellschaft für Labor- und
Reinraumtechnik mbH

CE-Declaration of conformity

According to the **Low Voltage Directive no. 2014/35/EU**
and the **Machinery Directive no. 2006/42/EC**
and the **Electromagnetic compatibility directive no. 2014/30/EU**

Hereby we declare, that the product listed below, in the version distributed by us, meets the basic requirements of the EU directive with regards to its design and construction.

Product name:	FMS 24-112/2012
Product description:	Flowmodul

Specific applied standards:

Safety:	EN 292
	EN 294
	EN 60024-1
	EN 954-1
	EN 61310-1

Elektro magnetic compatibility (EMC):	EN 55011:2009, group 1, class B
	EN 61000-3-2:2006+A1:2009+A2:2009, class A
	EN 61000-6-2:2005

This declaration will loose its validity at any changes not permitted by the manufacturer.

This declaration is issued on behalf of the manufacture.

Spetec GmbH
Berghamer Str. 2
D-85435 Erding

Erding, 29.09.2016

Made by: Karl Mairoth
Position in organisation: Product Manager

Spetec

Laminar Flow Systems

Maintenance and Service

Maintenance and Service

Regular maintenance is essential to ensure the proper functioning and the lasting quality of your Spetec clean room system.

We recommend having a Spetec Service technician service your system 3 years after you have started using it. But at the latest when "**call service**" is shown on the display. Then the maintenance service should be repeated every 2 years.

The following work is performed as part of this maintenance service:

- Particle counts according to DIN ISO 14644-1
- Replacing the pre-filter
- Replacing the main filter, if required
- Inspection and, if necessary, repair of the mechanical systems
- Certification including confirmation of the clean room class and a record of the particle counts inside and outside the Spetec clean room systems

Care

We recommend cleaning the plastic-coated parts with special cleaning wipes and special cleaning agents.

The acrylic glass panes and the PVC strip curtains must not be cleaned with household cleaning wipes under any circumstances, since these will scratch the surfaces.

Service Indicator on the Display

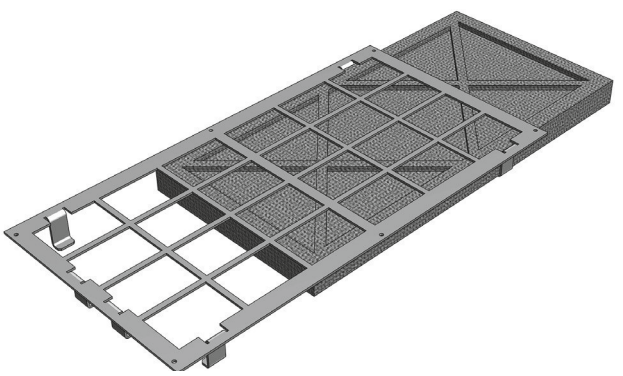
If "**call service**" is shown on the display, please contact our customer service.

Phone: **+49-8122/99533**
Email: spetec@spetec.de

Replacing the Filter

Replacing the pre-filter
You should check the degree of pre-filter fouling on a regular basis through a visual inspection. The pre-filter should be replaced according to the degree of fouling, but at least once per year. This can be performed as part of a maintenance service by the Spetec service technician.

The pre-filter is located in the slanted sections of the Laminar Flow Module. Please remove the six screws and take the entire unit out. You can easily slide the paper cartridge out of the pre-filter screen and insert the new cartridge. Then you can re-install the new filter in the same manner.



Replacing the main filter
The main filter is a class H14 high efficiency particulate air (HEPA) filter.

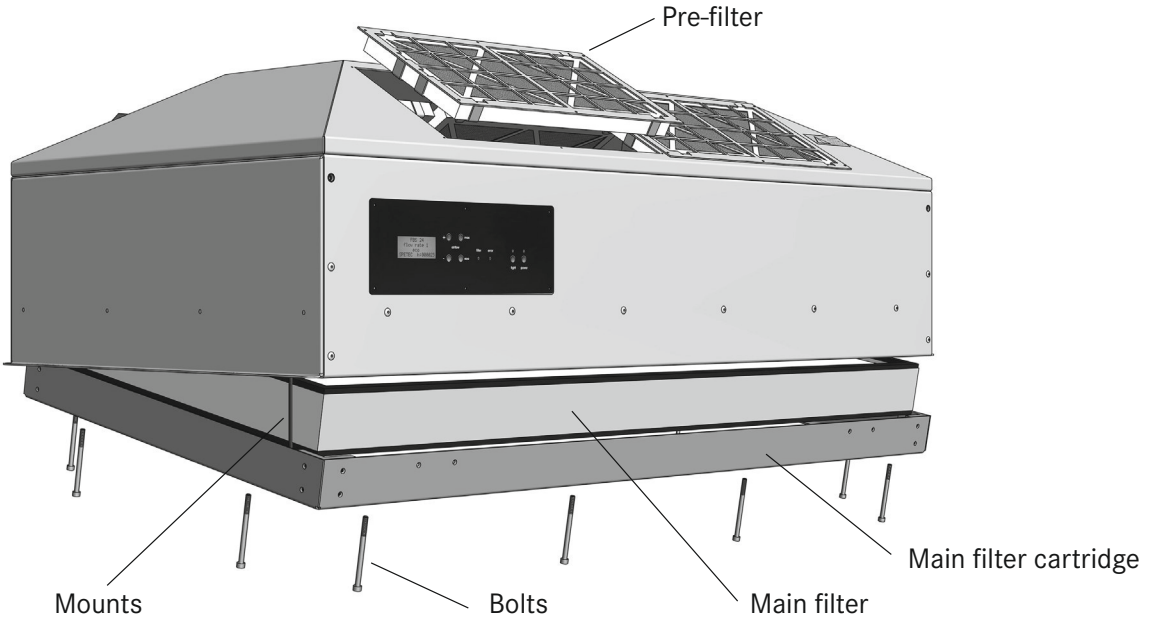
Proceed as follows to replace it:
1. Remove all screws from the main filter cartridge
2. The main filter cartridge engages with a mounting clip at the back. You have to support the front of the cartridge and flip it down.
3. Then you can remove the main filter and install the new filter
4. Flip the cartridge up again and screw it back onto the module
5. Ensure that the seals are seated properly

CAUTION! **Follow the safety instructions!**

- Disconnect the power supply from the module when changing the filter (pre-filter and main filter). (Risk of injury due to possible rotation of the fan)

- Do not stand underneath the filter when performing a filter change.

WARNING!
Disconnect the power cord before opening the device!



Accessories

To further improve your product quality, we offer a range of clean room accessories:

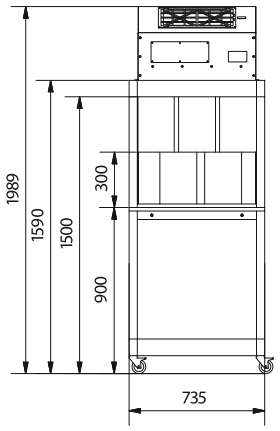
- Washable clean room clothing, overalls, lab coats, caps
- Disposable clothing, overalls, lab coats
- Disposable overshoes
- Face mask, hair net
- Latex and c gloves
- Polyamide stretch gloves
- Dust-trapping mats, reusable and as removable adhesive mats
- Clean room wipes for various applications

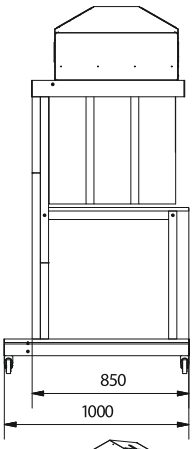
www.spetec.de

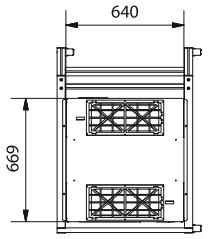
Please contact us directly for further information. We are happy to provide you with a non-binding quotation.

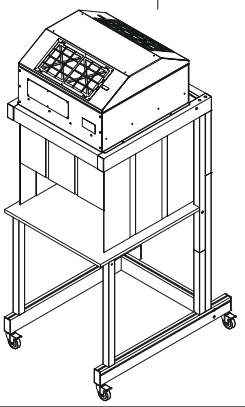
Technical Drawings

CleanBoy Maxi

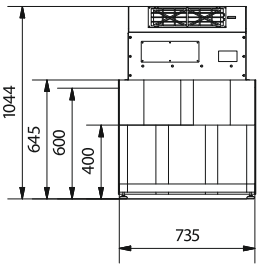


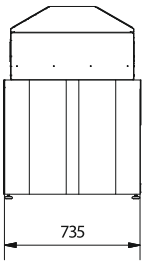


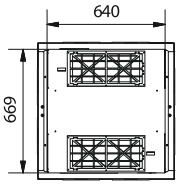


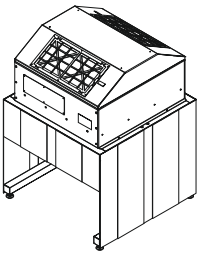


CleanBoy Mini

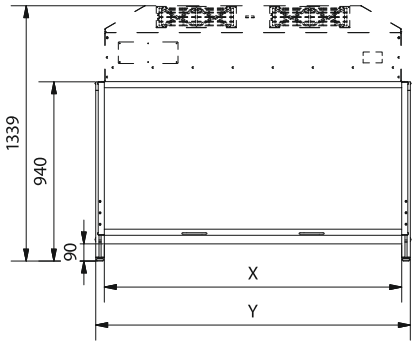


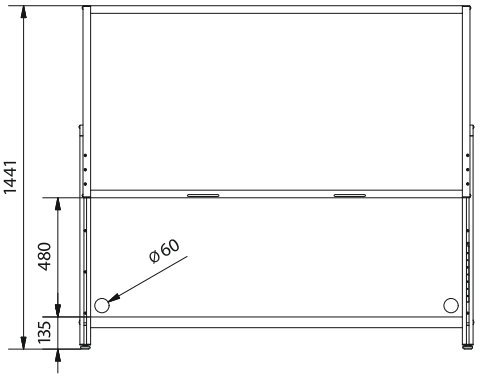


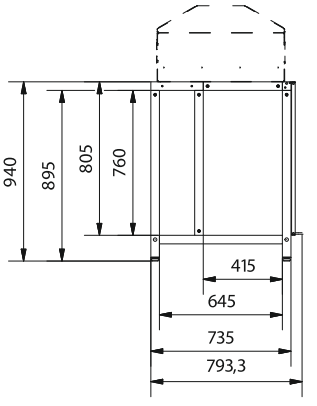


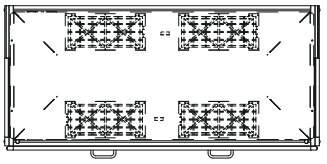


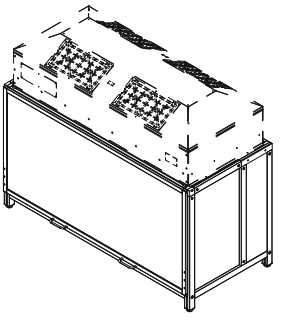
FBS, EFBS, PBS, EBS series







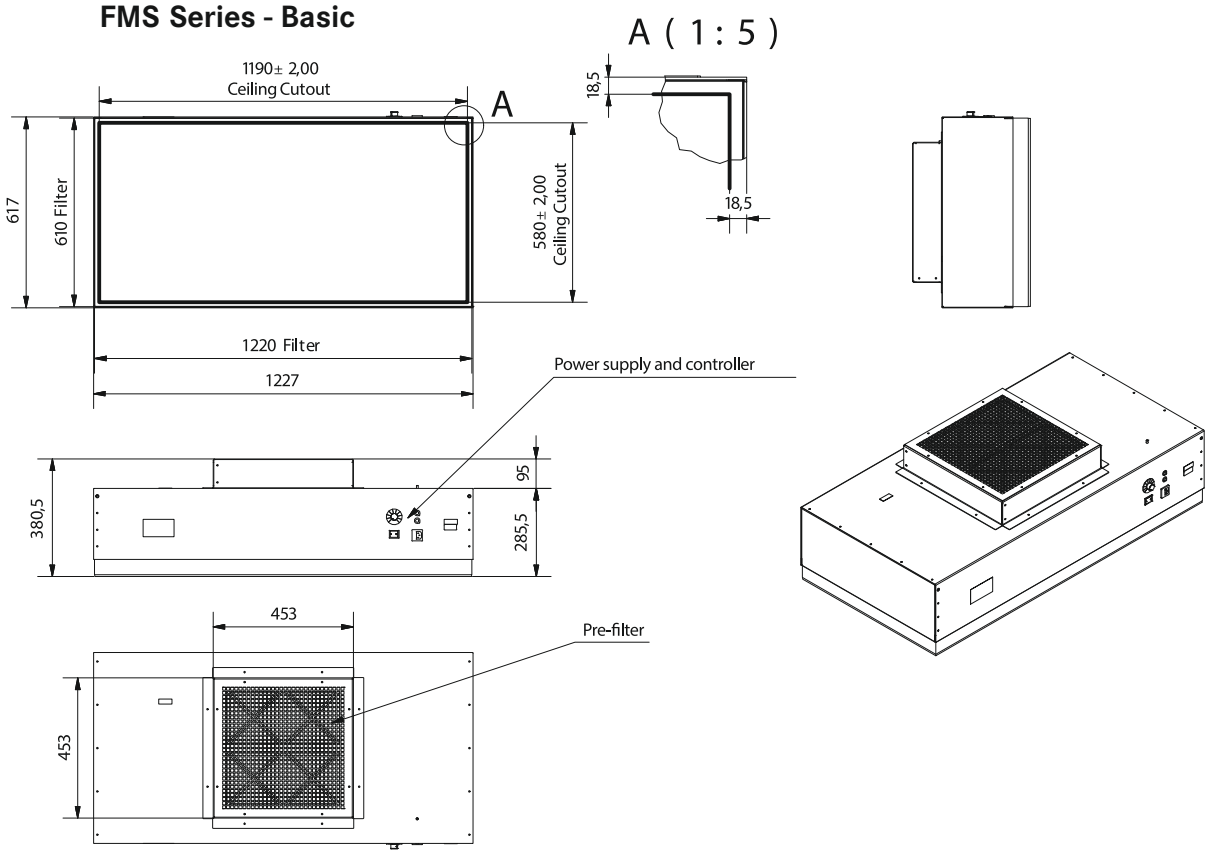




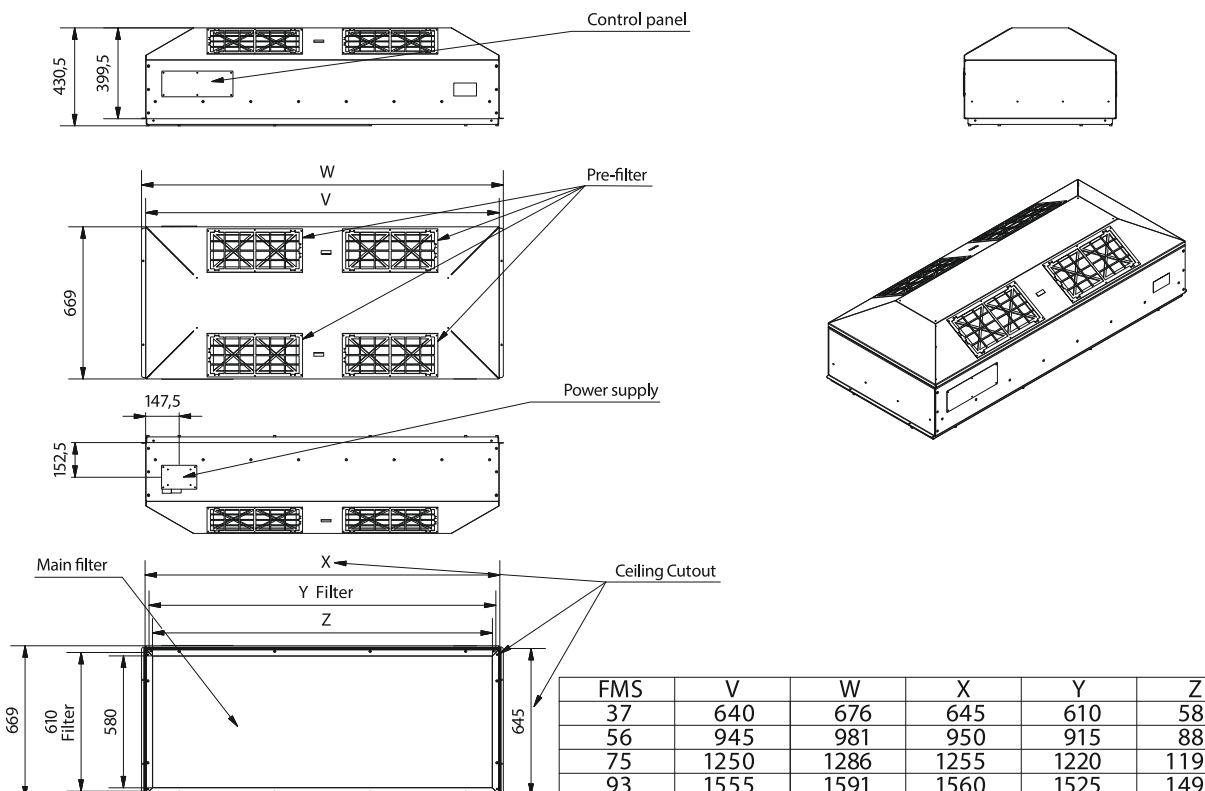
FBS	X	Y
37	645	735
56	950	1040
75	1255	1345
93	1560	1650
112	1865	1955

Technical Drawings

FMS Series - Basic



FMS Series “SuSi”



FMS	V	W	X	Y	Z
37	640	676	645	610	580
56	945	981	950	915	885
75	1250	1286	1255	1220	1190
93	1555	1591	1560	1525	1495
112	1860	1896	1865	1830	1800

Maintenance Book

Model: ______________________ **Serial no.:** ______________________

yes no
- ☐ ☐ Pre-filter replacement
- ☐ ☐ H 14 filter replacement
- ☐ ☐ Particle measurement
- ☐ ☐ Functional inspection
- ☐ ☐ Other

Service report no.

Operating hours

Date, stamp, signature

yes no
- ☐ ☐ Pre-filter replacement
- ☐ ☐ H 14 filter replacement
- ☐ ☐ Particle measurement
- ☐ ☐ Functional inspection
- ☐ ☐ Other

Service report no.

Operating hours

Date, stamp, signature

yes no
- ☐ ☐ Pre-filter replacement
- ☐ ☐ H 14 filter replacement
- ☐ ☐ Particle measurement
- ☐ ☐ Functional inspection
- ☐ ☐ Other

Service report no.

Operating hours

Date, stamp, signature

yes no
- ☐ ☐ Pre-filter replacement
- ☐ ☐ H 14 filter replacement
- ☐ ☐ Particle measurement
- ☐ ☐ Functional inspection
- ☐ ☐ Other

Service report no.

Operating hours

Date, stamp, signature

yes no
- ☐ ☐ Pre-filter replacement
- ☐ ☐ H 14 filter replacement
- ☐ ☐ Particle measurement
- ☐ ☐ Functional inspection
- ☐ ☐ Other

Service report no.

Operating hours

Date, stamp, signature

yes no
- ☐ ☐ Pre-filter replacement
- ☐ ☐ H 14 filter replacement
- ☐ ☐ Particle measurement
- ☐ ☐ Functional inspection
- ☐ ☐ Other

Service report no.

Operating hours

Date, stamp, signature

SPETEC® GmbH
Berghamer Str. 2
85435 Erding
Germany

Phone: +49-8122/99533
Fax: +49-8122/10397

Email: spetec@spetec.de
Internet: www.spetec.de