Spetec

Laminar Flow Systems

Operating Instructions

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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, maintenance, 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.
- Disconnect the power cord before opening the device!
- 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. Danger of falling objects.

- 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!

General Information and Use

General

Your clean room system represents no hazard to health provided that it is used correctly. As an electro-mechanical unit, it must be handled with the corresponding care and diligence.

When the unit is used for commercial purposes, 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 assumes no liability for equipment which is connected either in or to the clean room.

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 malfunctioning of electrical/electronic devices. We assume no any liability for lightning damage!

Environmental Compatibility

Spetec clean room systems are constructed in accordance with the currently applicable regulations for the prevention of hazardous substances (RoHS).

The disposal number is

DE 66147005

Operation

All series (excluding FMS Basic, EBS and PBS)

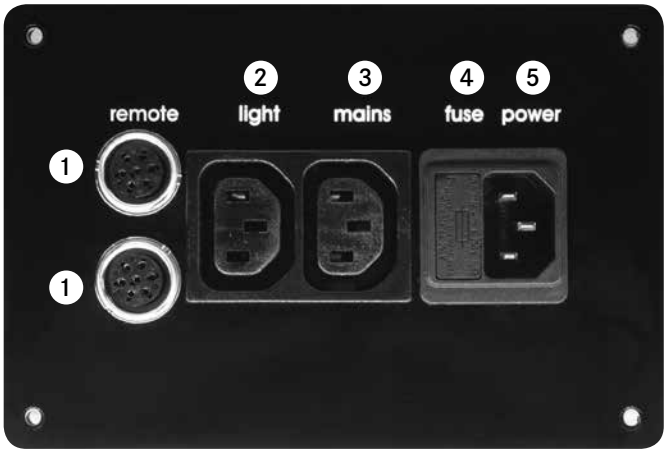
Front control panel

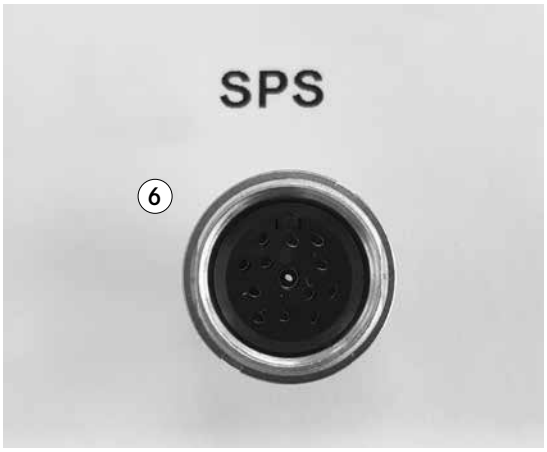
1. 4-digit LCD display
   - Type designation
   - Speed level
   - Max. flow rate
   - Operating hour display/call service
2. Flow rate up
3. Flow rate down
4. Max. flow rate
5. Min. flow rate
6. LED on: Replace the main filter
7. LED on: Fault (error)
8. LED on: Lights on
9. Lights on/off button
10.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

*Connection for external controller (remote control) and slave module. Both connectors have the same pin assignments. This connection is only connected internally and no signals can be processed.

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

*** Programmable controller connector can be installed as an option on purchase. Please note the supplementary instructions

FMS Series SuSi

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.

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	30
Laminar Flow Module FMS 56	915 x 610	37
Laminar Flow Module FMS 75	1220 x 610	52
Laminar Flow Module FMS 93	1525 x 610	61
Laminar Flow Module FMS 112	1830 x 610	69

*See page 28 for dimensions of special device versions.

Technical Data

Power supply:	230V AC
Frequency:	50/60 Hz
Power draw:	
FMS 24 – FMS 56:	ø 60W, max.: 285W
FMS 75 – FMS 112:	ø 135W, max.: 510W
Fuse:	
FMS 24 – FMS 112:	Si: M 3.15A

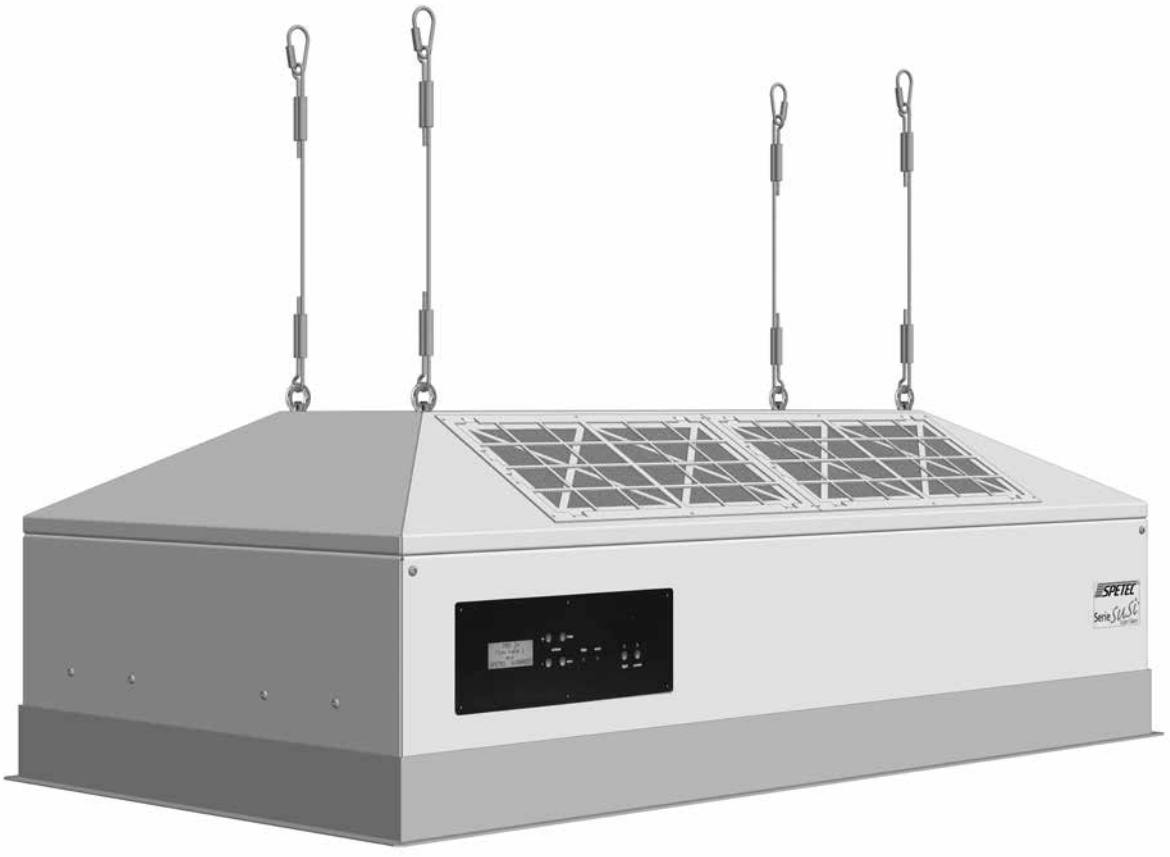
Accessories are fused via the module.
Maximum additional load of 200W.

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!**

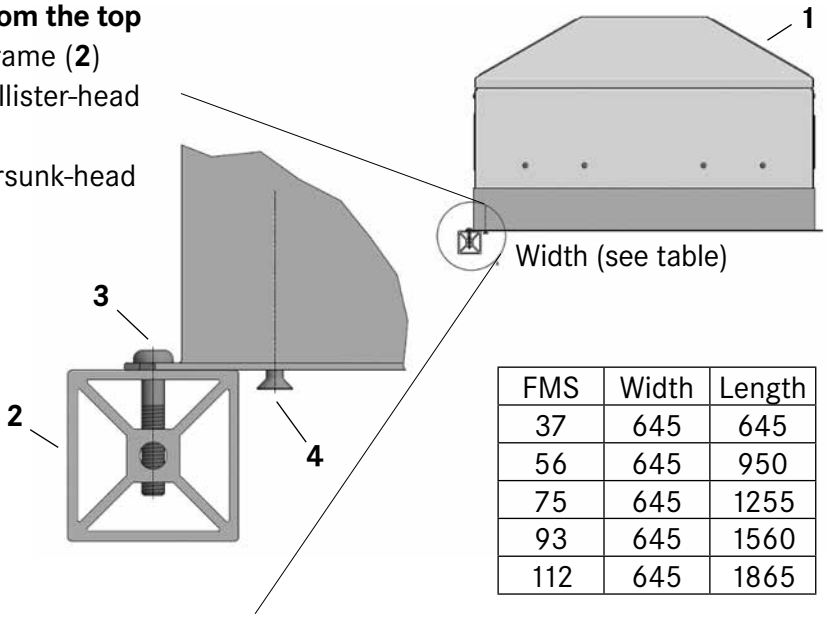


FMS Series SuSi

There are two variants for the installation of the FMS modules:

1. Installation of an Laminar Flow Module from the top

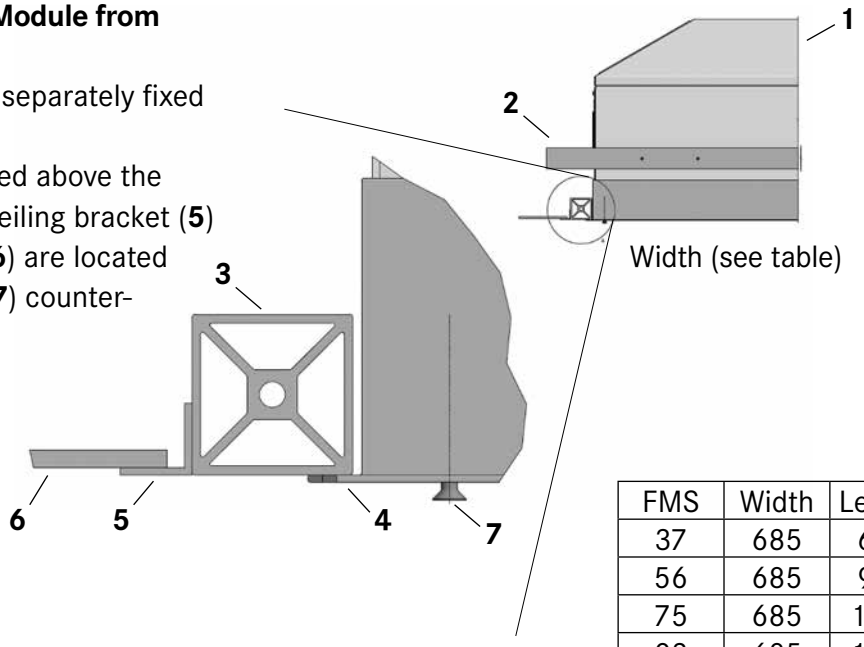
a) Mount the FMS module (**1**) on the profile frame (**2**)
b) Screw the module to the frame using M6 fillister-head screws (**3**)
c) To change the filter, remove the (**4**) countersunk-head screws



FMS	Width	Length
37	645	645
56	645	950
75	645	1255
93	645	1560
112	645	1865

2. Installation of an Laminar Flow Module from the bottom

a) Screw the FMS module (**1**) to the separately fixed profile (**2**)
b) The profile frame (**3**) is thus located above the module frame (**4**) and holds the ceiling bracket (**5**) against which the ceiling plates (**6**) are located
c) To change the filter, remove the (**7**) counter-sunk-head screws



FMS	Width	Length
37	685	685
56	685	990
75	685	1295
93	685	1600
112	685	1905

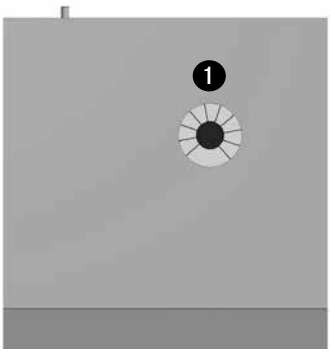
FMS Basic

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 on rear side

Front side



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. This connection is only connected internally and no signals can be processed.

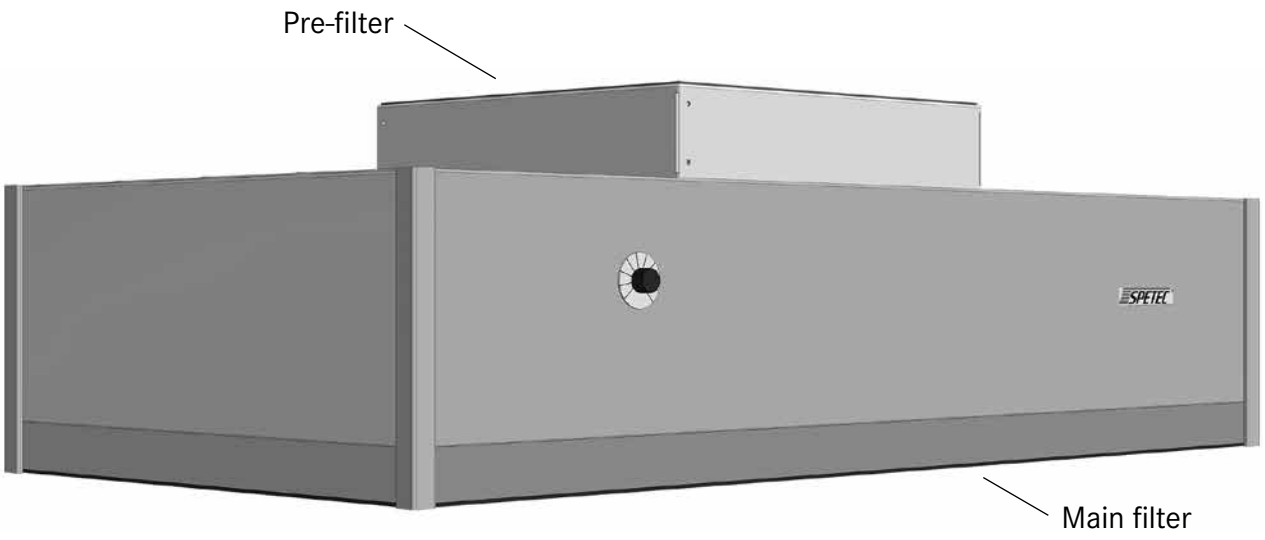
Technical Data

Power supply:	230V AC
Frequency:	50/60 Hz
Power draw:	ø 114W, max.: 265W
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!

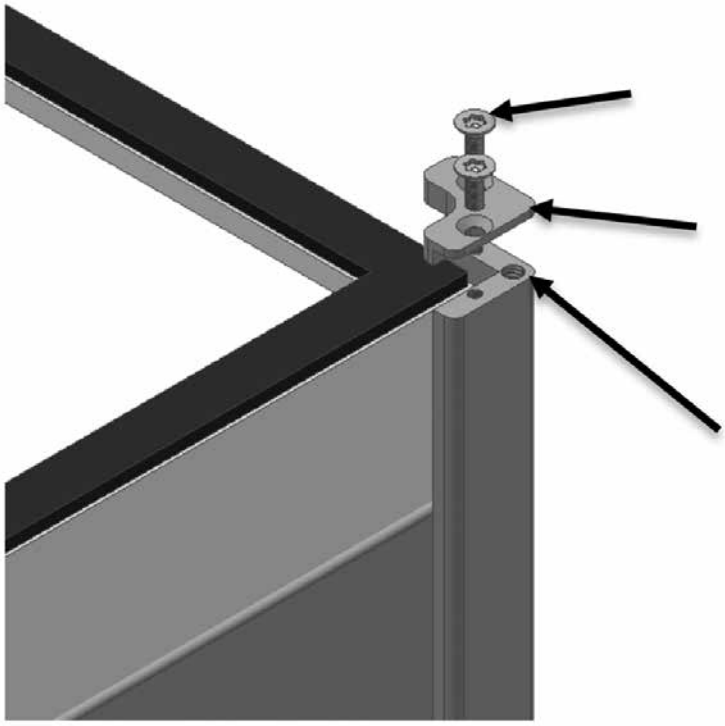


CAUTION!

Before mounting on a supporting frame

If the Laminar Flow Module is mounted on a supporting frame then the filter fixing must be released.

After disassembly of the filter fixing, the filter is no longer secured against falling out.
Caution: Danger of injury!



Release the screws with a size 2.5 Allen key or Torx T20 screwdriver

The filter fixing can now be dismounted

The M6 thread can be used for screw connections at the supporting frame.

Dimensions see page 29

FBS Series SuSi

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 37	610 x 610	76
Laminar Flow Box FBS 56	915 x 610	92
Laminar Flow Box FBS 75	1220 x 610	115
Laminar Flow Box FBS 93	1525 x 610	132
Laminar Flow Box FBS 112	1830 x 610	150

Technical Data

Power supply:	230V AC
Frequency:	50/60 Hz
Power draw:	
FBS 37 – FBS 56:	ø 60W, max.: 285W
FBS 75 – FBS 112:	ø 135W, max.: 510W
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	56
Laminar Flow Box FBS 56-Standard	915 x 610	67
Laminar Flow Box FBS 75-Standard	1220 x 610	85
Laminar Flow Box FBS 93-Standard	1525 x 610	98
Laminar Flow Box FBS 112-Standard	1830 x 610	110

Technical Data

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

Power draw FBS-Standard series:

FBS 37 – FBS 56:	ø 60W, max.: 285W
FBS 75 – FBS 112:	ø 135W, max.: 510W

Fuse FBS Standard series:

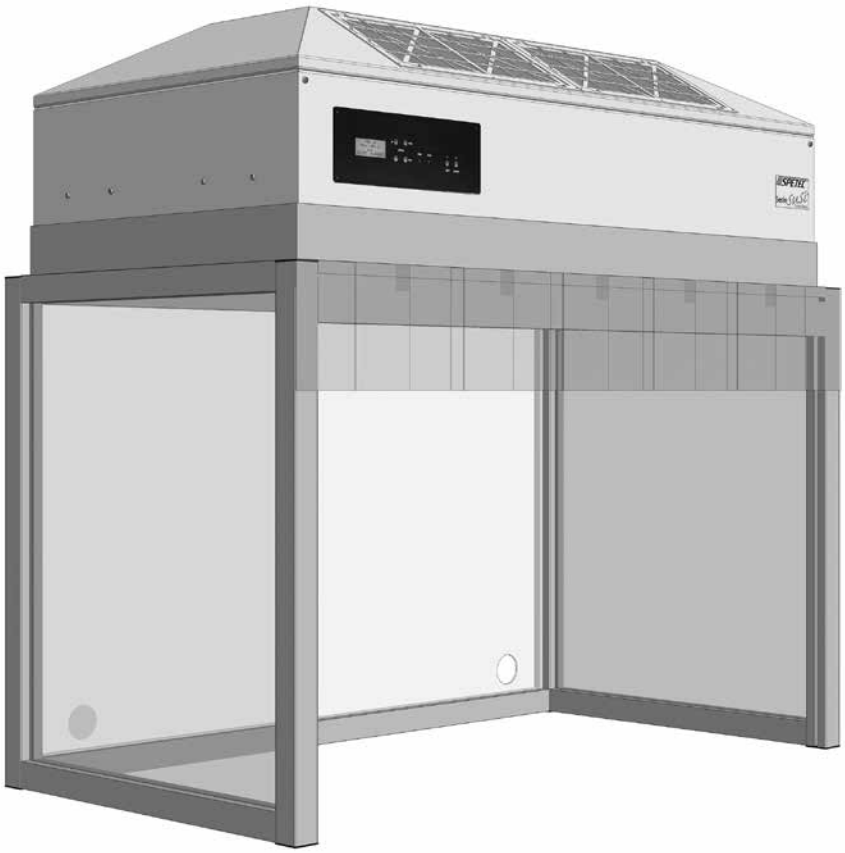
FBS 37 – FBS 112:	Si: M 3.15A

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!**



EFBS Series SuSi

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 point at which contamination is generated. The vacuum system is acid-resistant. This allows for the unproblematic extraction of aggressive vapors. The vacuum system itself is connected to a central exhaust air system via ducting.

EFBS series modules have the following dimensions:

Name	Filter dim. in mm	Kg
Laminar Flow Box EFBS 37	610 x 610	83
Laminar Flow Box EFBS 56	915 x 610	99
Laminar Flow Box EFBS 75	1220 x 610	122
Laminar Flow Box EFBS 93	1525 x 610	139
Laminar Flow Box EFBS 112	1830 x 610	157

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 37 – EFBS 56:	ø 60W, max.: 285W
EFBS 75 – EFBS 112:	ø 135W, max.: 510W

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

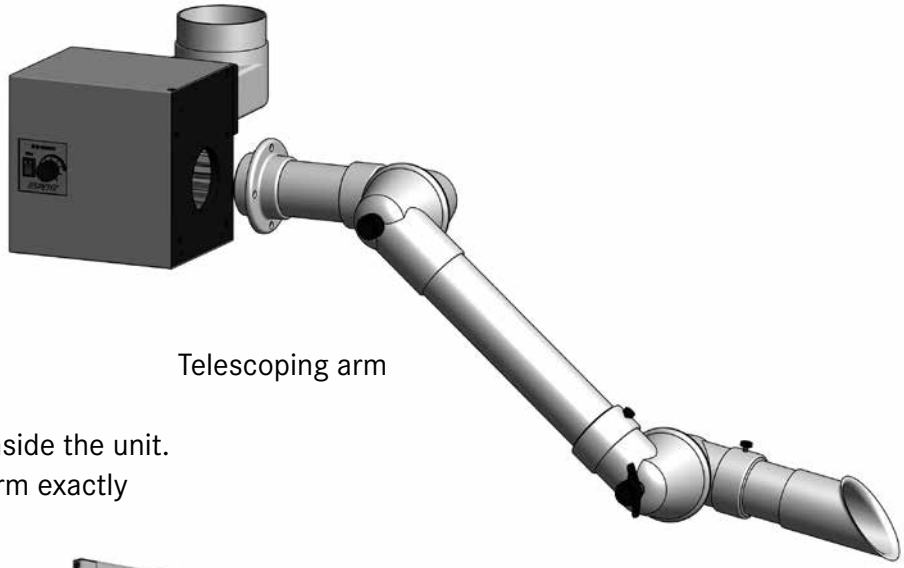
Please contact Spetec in the event of controller or electronics malfunctions.

Operation:

1. Mains switch
2. Continuous suction rate adjustment

CAUTION! **Follow the safety instructions!**

CAUTION! The legal regulations must be observed when 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 makes it possible to position the arm exactly where suction is required.

EFBS-V Series SuSi

The EFBS-V series Spetec Laminar Flow System is a version of the EFBS series. The acrylic glass panes of the box are replaced by 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 37	610 x 610	98
Laminar Flow Box EFBS-V 56	915 x 610	114
Laminar Flow Box EFBS-V 75	1220 x 610	137
Laminar Flow Box EFBS-V 93	1525 x 610	154
Laminar Flow Box EFBS-V 112	1830 x 610	172

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 37 – EFBS-V 56:	ø 60W, max.: 285W
EFBS-V 75 – EFBS-V 112:	ø 135W, max.: 510W

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

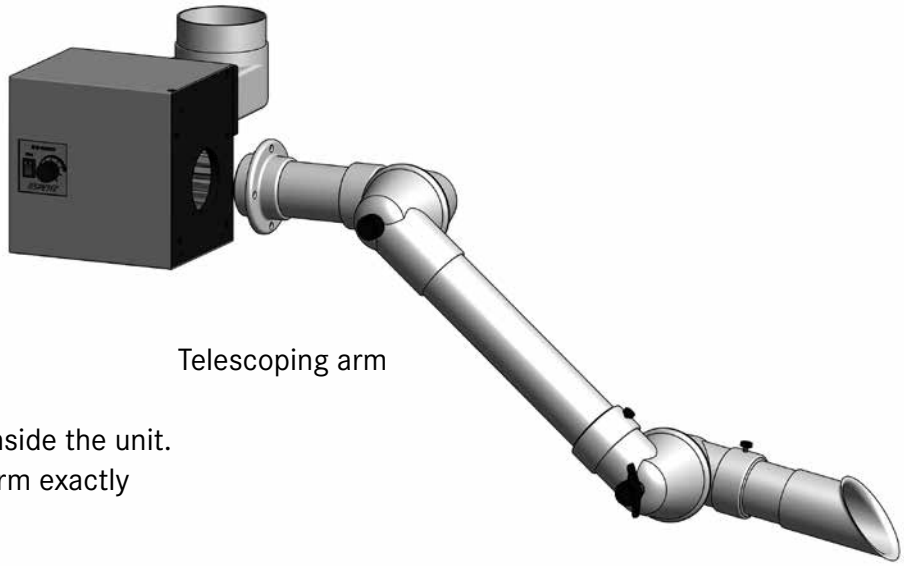
Please contact Spetec in the event of controller or electronics malfunctions.

Operation

1. Mains switch
2. Continuous suction rate adjustment

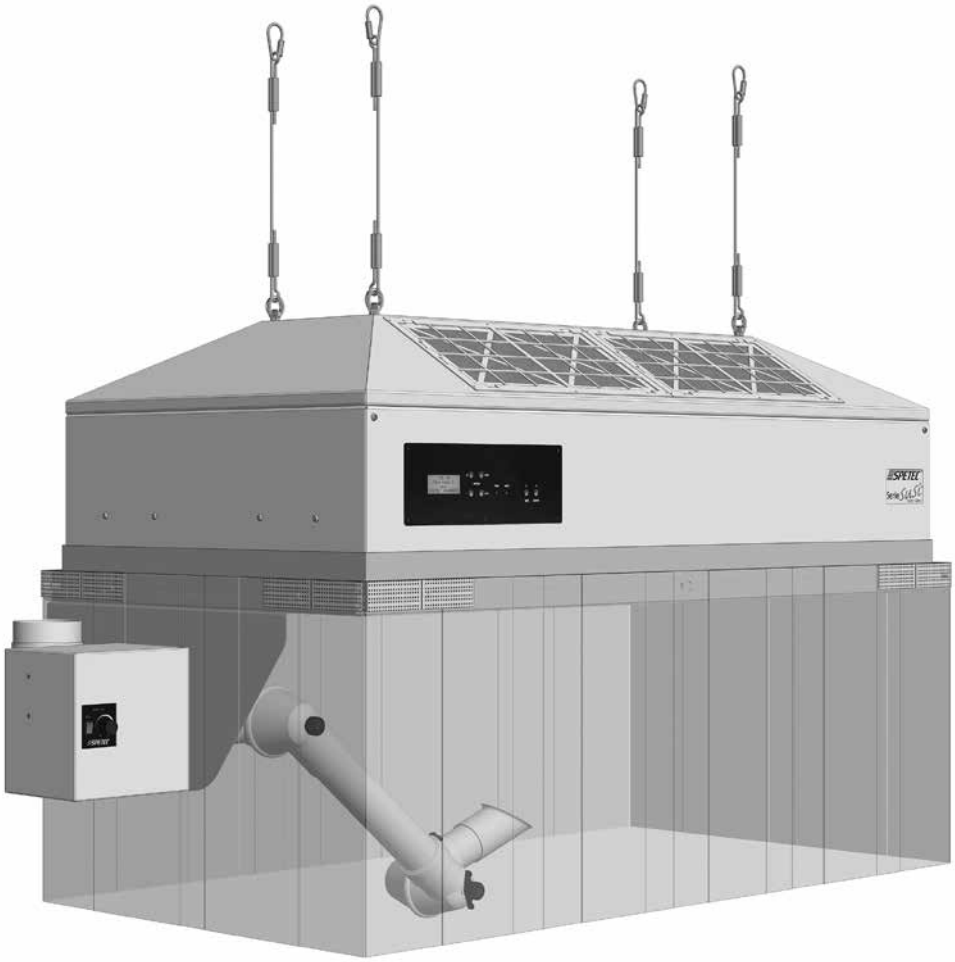
CAUTION! **Follow the safety instructions!**

CAUTION! The legal regulations must be observed when 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 makes it possible to position the arm exactly where suction is required.



Install the curtain according to the markings

EBS Series SuSi

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 vapors (acids) can be extracted without difficulty.

Dimensions:

Name	Device dimensions
Fume hood EBS 37	see page 30
Fume hood EBS 56	
Fume hood EBS 75	
Fume hood EBS 93	
Fume hood EBS 112	

Technical Data

Vacuum system:
Brushless EC motor

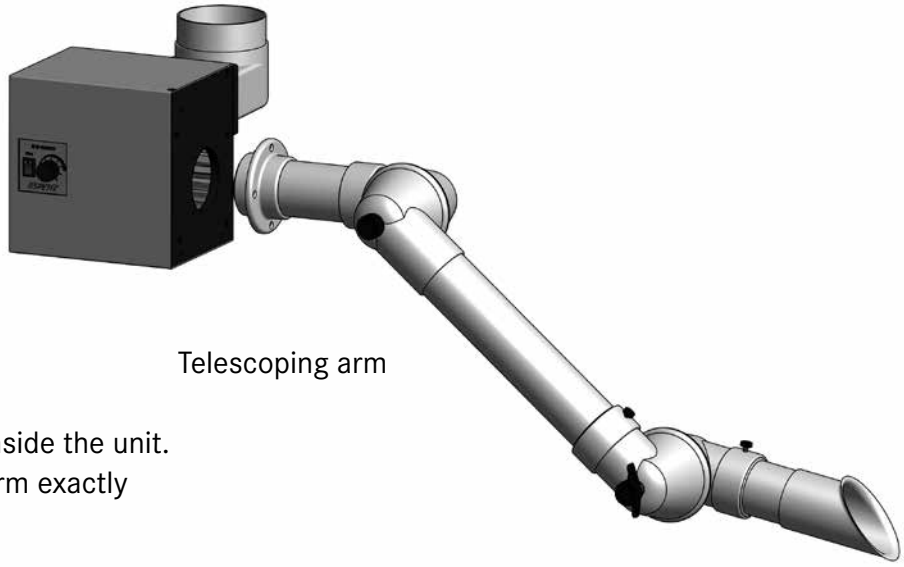
Power supply:	230V AC
Frequency:	50/60 Hz
Power draw:	20W
Fuse:	Si: 1.60 AT
Extraction capacity:	60 m^3/h max.
Exhaust port, diameter	100 mm
Temperature range:	+10to +50 degrees Celsius
Humidity:	20 to 80 %, non-condensing
Warranty period:	2 years, with the exception of wear parts

Operation:

1. Mains switch
2. Continuous suction rate adjustment

CAUTION! **Follow the safety instructions!**

CAUTION! The legal regulations must be observed when 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 makes it possible to position the arm exactly 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 vapors.

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 37	see page 30
Protective box PBS 56	
Protective box PBS 75	
Protective box PBS 93	
Protective box PBS 112	

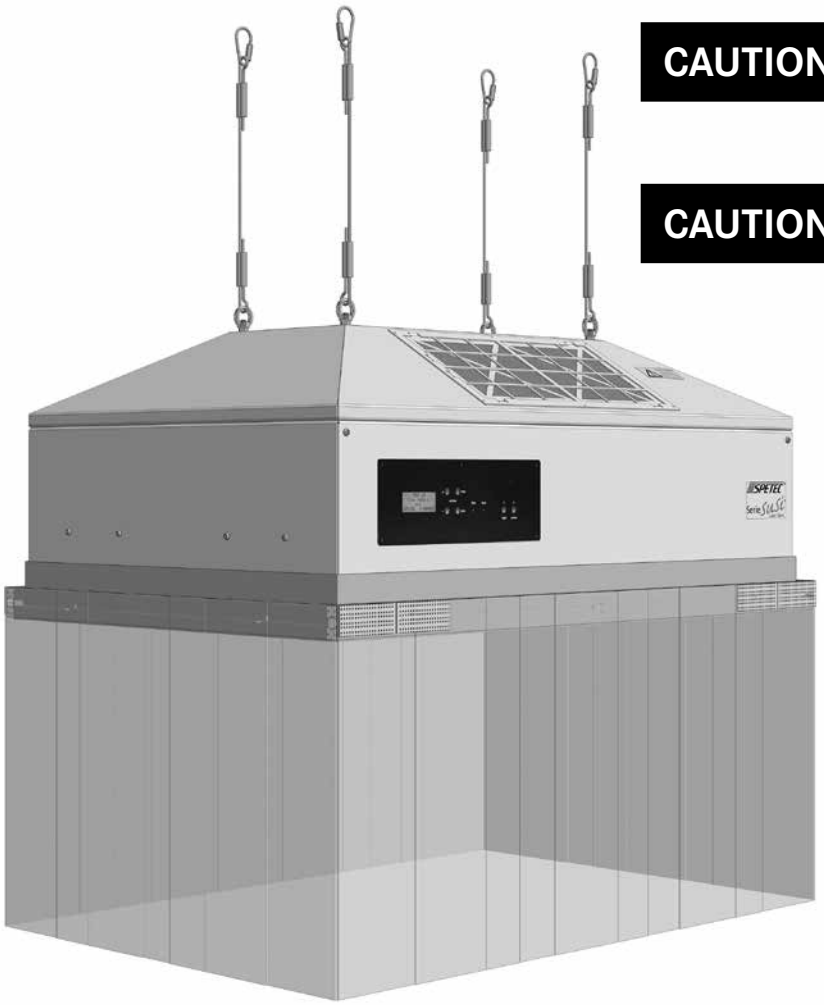
FBS-V Series SuSi

The FBS-V series Spetec Laminar Flow System is a version of the FBS series. The acrylic glass panes of the box are replaced by 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 37	610 x 610	91
Laminar Flow Box FBS-V 56	915 x 610	107
Laminar Flow Box FBS-V 75	1220 x 610	130
Laminar Flow Box FBS-V 93	1525 x 610	147
Laminar Flow Box FBS-V 112	1830 x 610	165



Technical Data

Power supply:	230V AC
Frequency:	50/60 Hz
Power draw:	
FBS-V 37 – FBS-V 56:	ø 60W, max.: 285W
FBS-V 75 – FBS-V 112:	ø 135W, max.: 510W
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.

CleanBoy Maxi, CleanBoy Mini

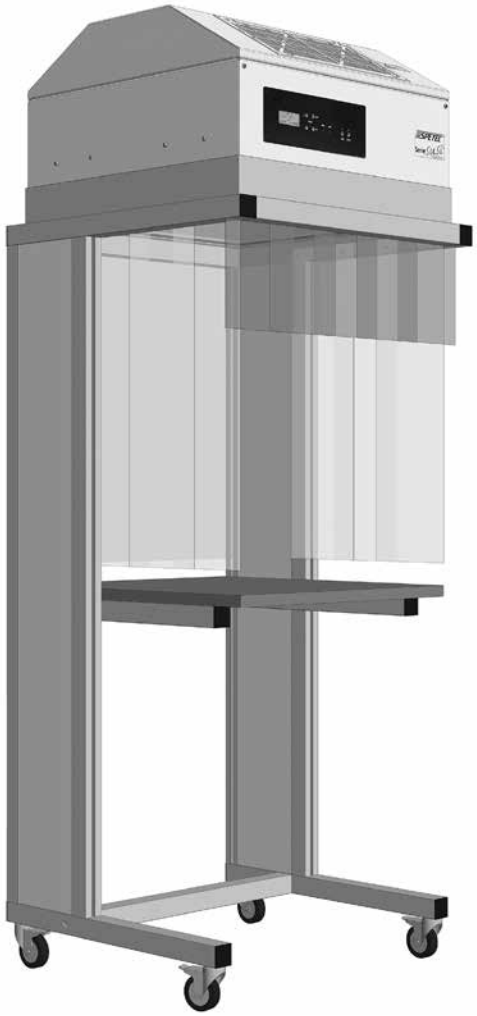
The CleanBoy consists of a Laminar Flow Module FMS 37 and a supporting frame made from anodized aluminium profiles.

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 60W, max.: 285W
CleanBoy 75 – CleanBoy 112: ø 135W, max.: 510W

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

Clean Room Booth

Assembly sequence

1. **Assembling 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 identify the position of the individual profiles.

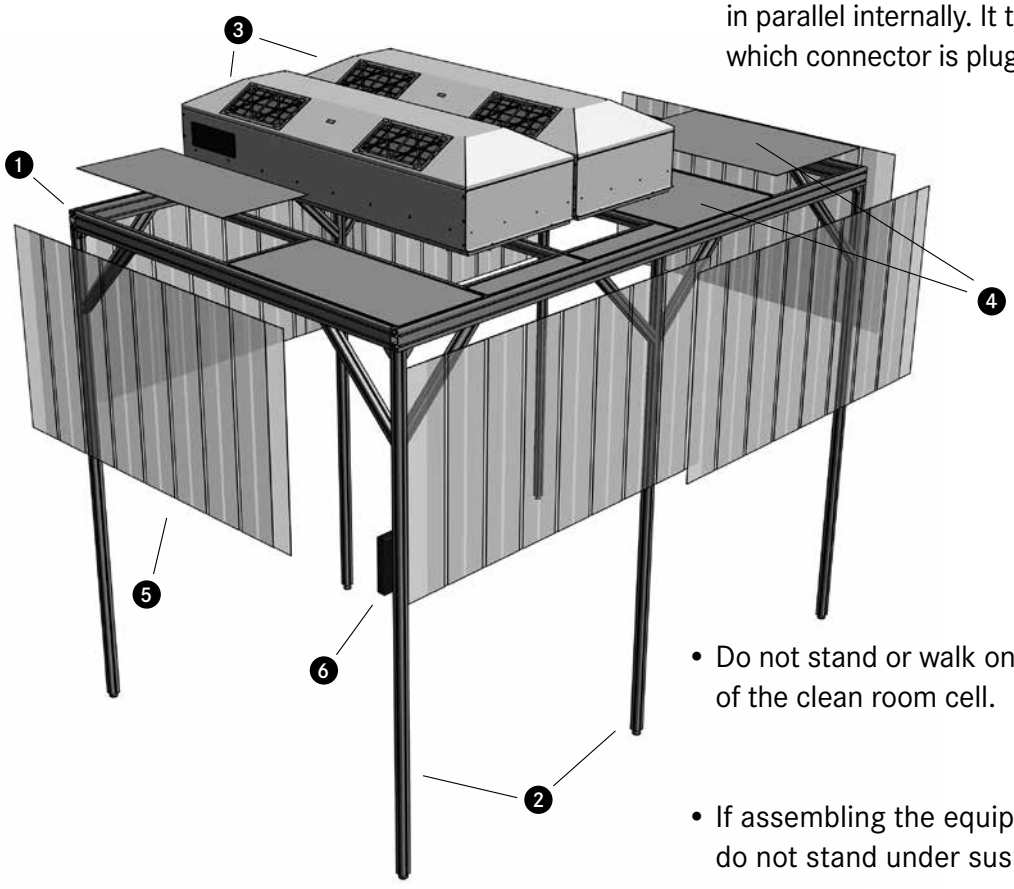
2. **Installing the feet**
   To install the feet, please lift the supporting frame up to the height of the feet on one side and brace it. Install the feet on this side according to the markings.
   Lift the opposite side to the same height and brace it. Install the remaining feet.

3. **Installing the module**
   Place the module on the booth and screw it to the profiles with the screws supplied. The modules must be 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 edge.
   Next, use masking tape to tape the ceiling elements around the edge, or glue with the assembly adhesive supplied.

5. **Installing the curtains**
   Now install the curtains as indicated in the assembly sequence, and secure them using the washers and nuts supplied.

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 using the 7-pin connector cable (remote).
   The two 7-pin connectors on the rear are connected in parallel internally. It therefore does not matter which connector is plugged in where.



- 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.

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**

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

Product name:	**FMS 24 – 112/2017**
Product description:	**Laminar Flow Module**

Specific applied standards:

Safety:	EN292 EN294 EN 60024-1 EN 954-1 EN61310-1

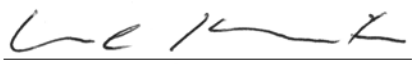
Electro magnetic compatibility (EMC):	EN 55011:2009, group 1, class B EN61000-3-2:2006+A1:2009+A2:2009, class A EN61000-6-2:2005

This declaration will cease to be valid in the event of any changes not permitted by the manufacturer.

This declaration is issued on behalf of the manufacturer

Spetec GmbH
Berghamer Str. 2
D-85435 Erding

Issued by: Karl Mairoth
Position in organization: Product Manager

Erding (Location) 26.03.2018 (Date)  Legally valid signature

Spetec

Laminar Flow Systems

Maintenance and Service

Replacing the Filter

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. Danger of falling objects.

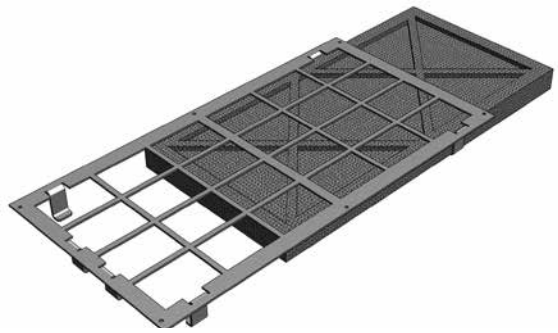
- Do not walk or stand on the ceiling of the clean room cell.

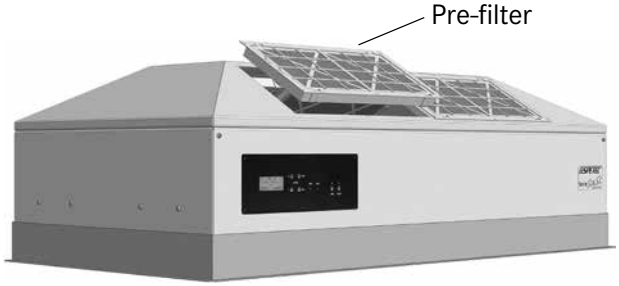
- **Disconnect power plug when opening the device.**
- Two persons are always required to replace the main filter.
- Only trained specialist personnel with the corresponding safety equipment may enter the clean room cell in order to replace the filter.

Replacing the pre-filter

You should perform regular visual inspections to check the degree of pre-filter fouling. The pre-filter should be replaced if so required by the degree of fouling and 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. You can then install the new filter in the same way.

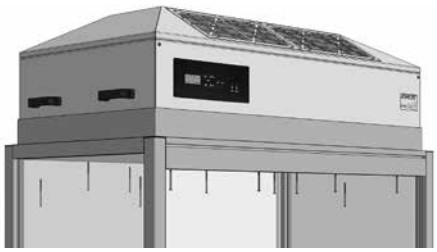




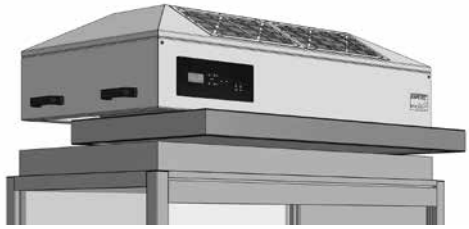
Replacing the filter at standalone units

The main filter of standalone filters is not replaced from below. The fan unit is lifted out upwards.

1. Release the internal screws



2. Lift the fan unit upwards. To help in this operation, it is possible to order handgrips from Spetec. For larger series units, a suitable lifting device can also be used if required.



3. Remove the main filter and insert the new filter. Caution! To prevent any damage to the high-performance filter, the inside of the filter must not be subjected to intermittent loads!
4. Mount the fan unit again and screw in place from the inside.
5. Once the filter has been replaced, the Laminar Flow Module can resume operation. A filter leakage test should be performed in accordance with DIN 14644.

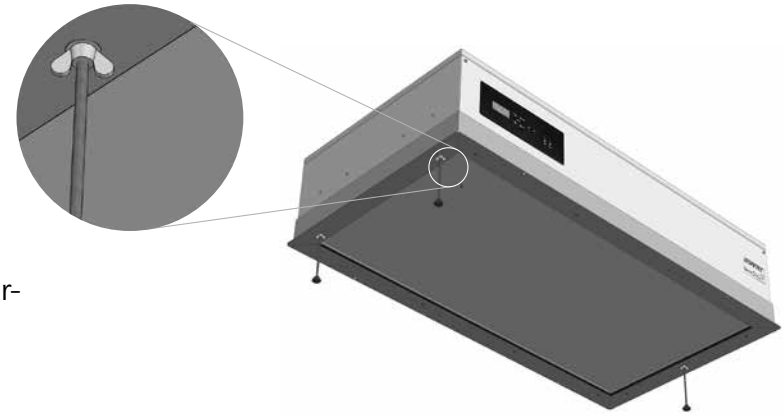
Replacing the Filter

Replacing the main filter in clean room cells and suspended Laminar Flow Modules
The main filter of clean room cells and suspended Laminar Flow Modules is replaced from below. To do this, the profile frame can be lowered using a main filter replacement tool and the filter can be replaced.

CAUTION! Two persons are always required to replace the main filter from below!

1. Release the three screws indicated

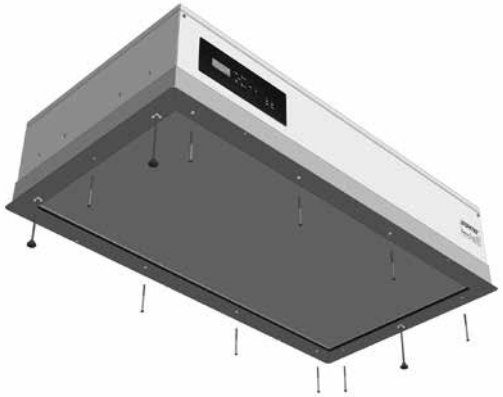
2. Screw in the replacement tool
   CAUTION! The red marking must be fully inserted within the frame. Only in this way is secure seating guaranteed!



3. After checking that the replacement tool is securely seated, remove the remaining counter-sunk-head screws.

4. Screw down the wing nuts on the left and right in alternation in steps of approx. 50-80 mm until it is possible to remove the main filter.

   CAUTION! When the wing nuts are turned, the threaded rods must not turn with them. The star grip can be used to hold the threaded rod in position.



5. Insert the new filter and proceed in the reverse sequence of operations for reassembly.

   CAUTION! Make sure that the filter is seated correctly!

6. Once the filter has been replaced, the Laminar Flow Module can resume operation. A filter leakage test should be performed in accordance with DIN 14644.

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 your system serviced by a Spetec Service Technician after 3 years of use. However, it must be serviced at the latest when "**call service**" is shown on the display. The maintenance service should then be repeated every 2 years.

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

- Particle counts according to DIN ISO 14644-1
- Replacement of the pre-filter
- Replacement of 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

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
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
Replacement pre-filter incl. filter screen	11-0622
Pre-filter without filter screen	11-0623
Pre-filter fleece for stainless steel pre-filter screen	11-0635
Tool for main filter replacement	11-0106

Accessories

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

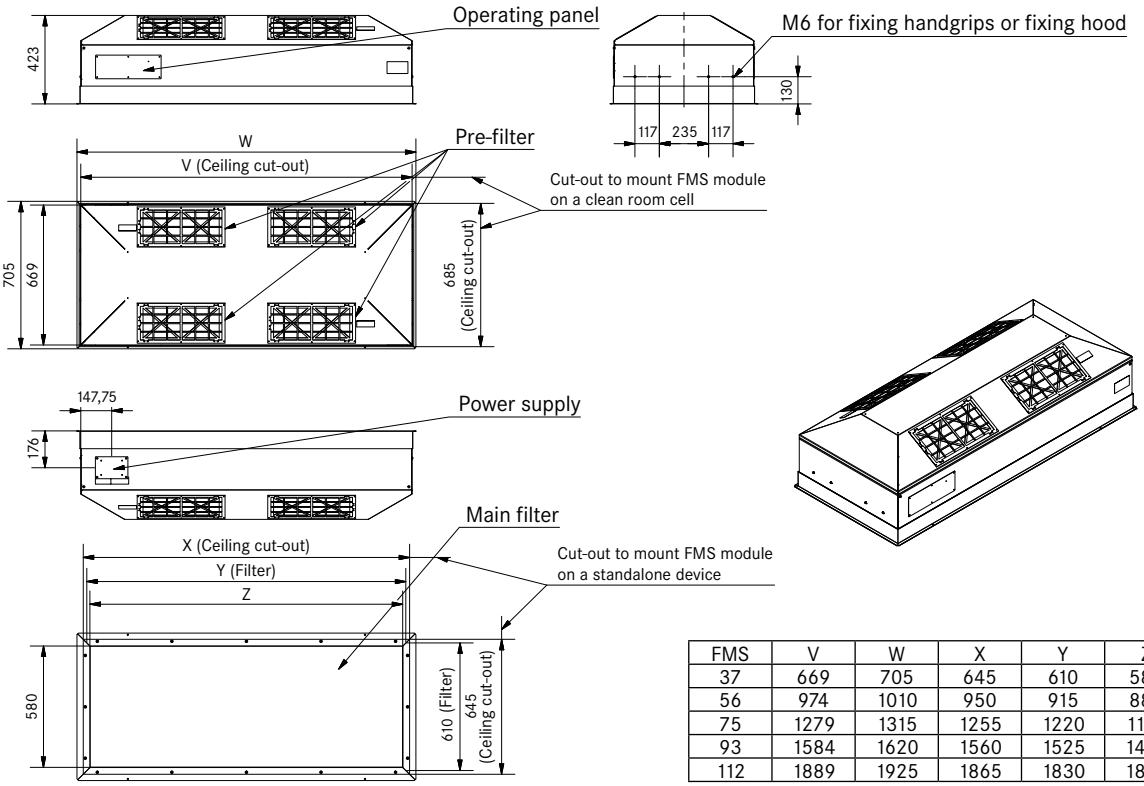
- Washable clean room clothing, overalls, lab coats, caps
- Disposable clothing, overalls, lab coats
- Disposable overshoes
- Face mask, hair net
- Latex and c gloves
- Polyamide stretch gloves
- Clean room wipes for various applications

www.spetec.de

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

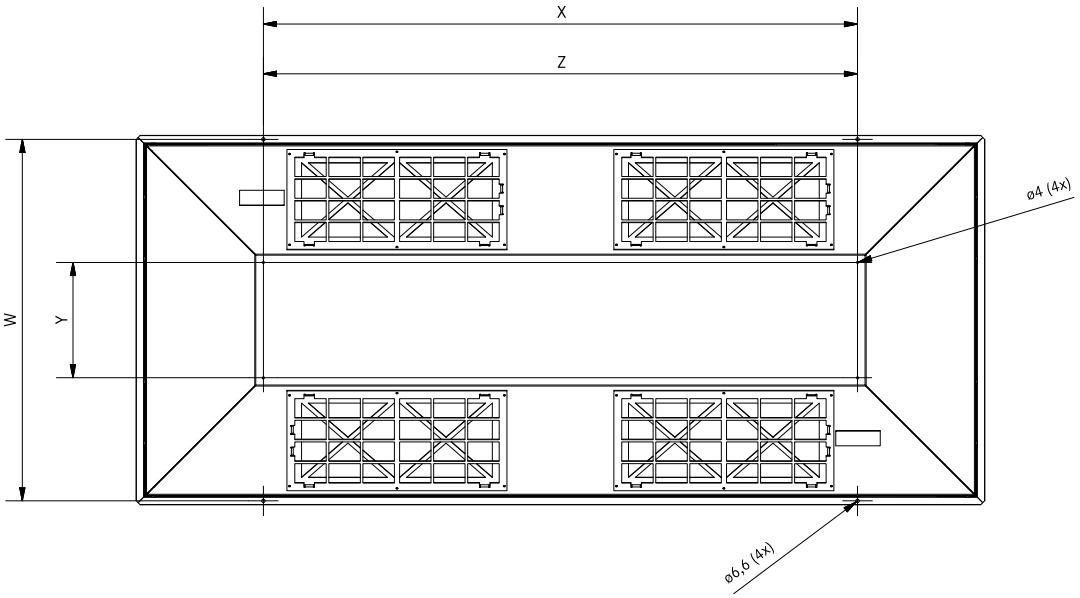
Technical Drawings

FMS Series SuSi



FMS	V	W	X	Y	Z
37	669	705	645	610	580
56	974	1010	950	915	885
75	1279	1315	1255	1220	1190
93	1584	1620	1560	1525	1495
112	1889	1925	1865	1830	1800

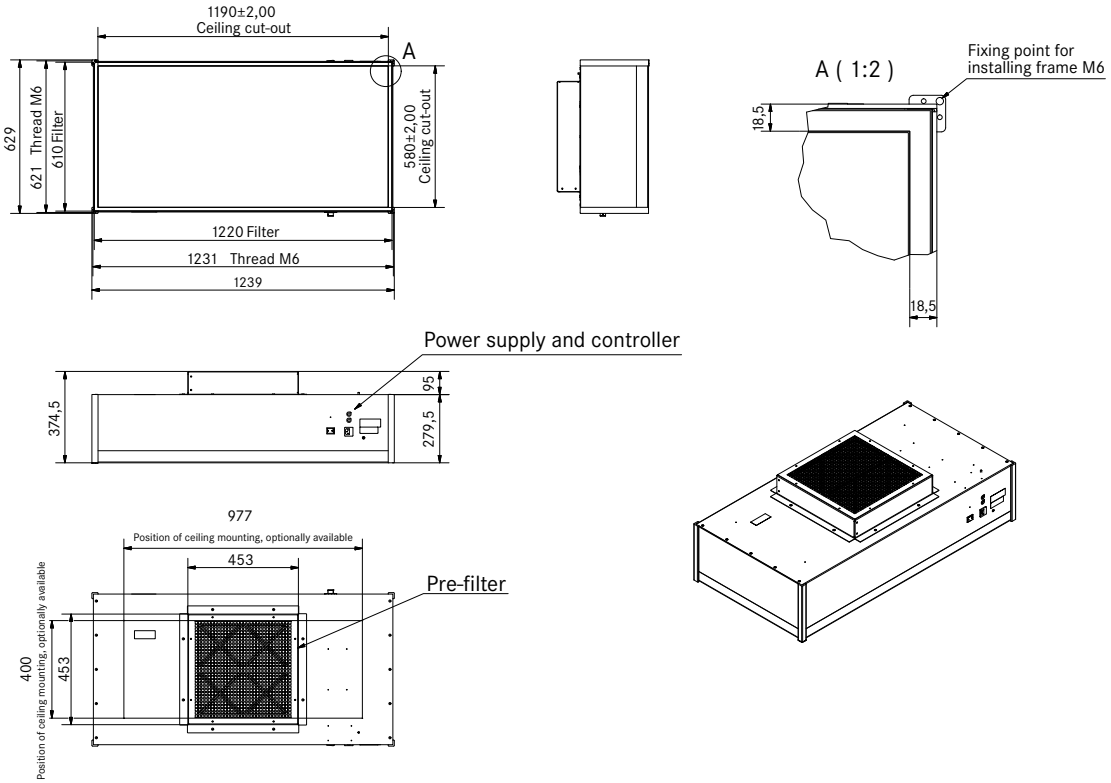
FMS Series SuSi Suspension points



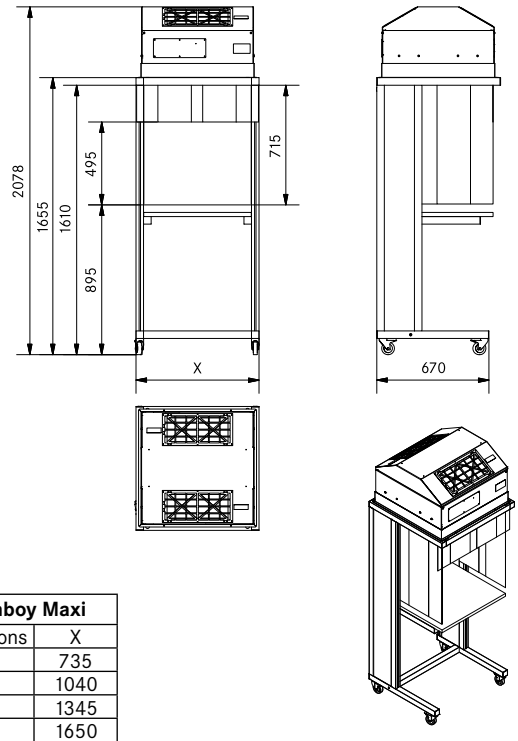
FMS	W	X	Y	Z
37	690	400	220	579
56	690	524	220	524
75	690	829	220	829
93	690	1134	220	1134
112	691	1439	220	1439

Technical Drawings

FMS Series – Basic

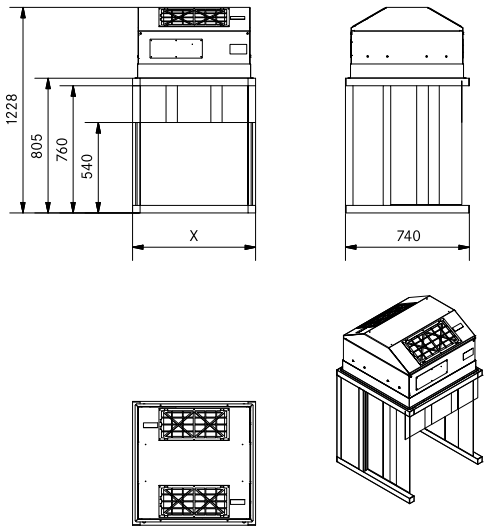


CleanBoy Maxi



Cleanboy Maxi	
Dimensions	X
37	735
56	1040
75	1345
93	1650
112	1955

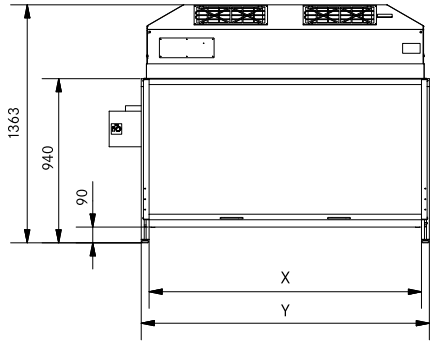
CleanBoy Mini

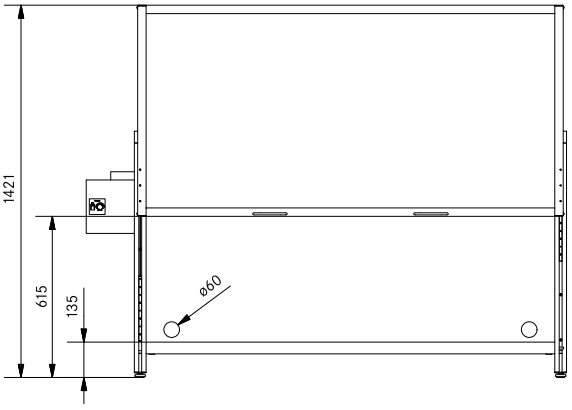


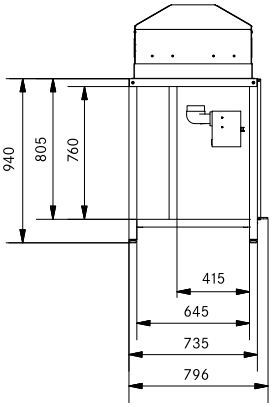
Cleanboy Mini	
Dimensions	X
37	735
56	1040
75	1345
93	1650
112	1955

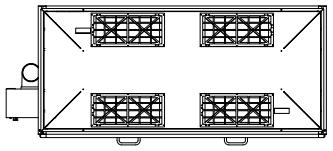
Technical Drawings

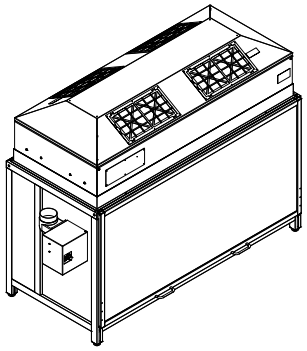
FBS, EFBS, PBS, EBS Series





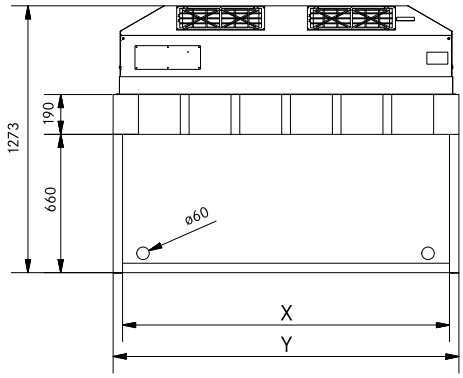


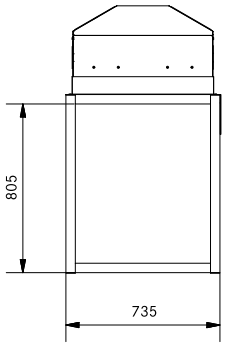


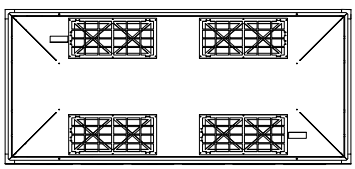


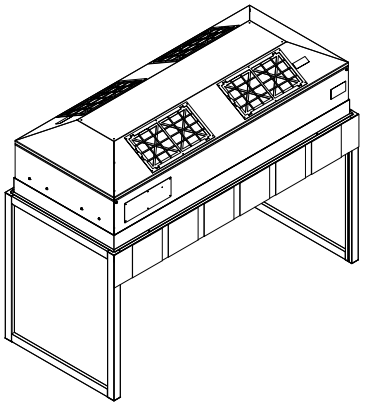
FBS	X	Y
37	645	735
56	950	1040
75	1255	1345
93	1560	1650
112	1865	1955

FBS Series Standard









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

Maintenance Log

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

yes no
- ☐ ☐ Pre-filter replacement
- ☐ ☐ H14 filter replacement
- ☐ ☐ Particle measurement
- ☐ ☐ Functional inspection
- ☐ ☐ Other

Service report no.

Operating hours

Date, stamp, signature

yes no
- ☐ ☐ Pre-filter replacement
- ☐ ☐ H14 filter replacement
- ☐ ☐ Particle measurement
- ☐ ☐ Functional inspection
- ☐ ☐ Other

Service report no.

Operating hours

Date, stamp, signature

yes no
- ☐ ☐ Pre-filter replacement
- ☐ ☐ H14 filter replacement
- ☐ ☐ Particle measurement
- ☐ ☐ Functional inspection
- ☐ ☐ Other

Service report no.

Operating hours

Date, stamp, signature

yes no
- ☐ ☐ Pre-filter replacement
- ☐ ☐ H14 filter replacement
- ☐ ☐ Particle measurement
- ☐ ☐ Functional inspection
- ☐ ☐ Other

Service report no.

Operating hours

Date, stamp, signature

yes no
- ☐ ☐ Pre-filter replacement
- ☐ ☐ H14 filter replacement
- ☐ ☐ Particle measurement
- ☐ ☐ Functional inspection
- ☐ ☐ Other

Service report no.

Operating hours

Date, stamp, signature

yes no
- ☐ ☐ Pre-filter replacement
- ☐ ☐ H14 filter replacement
- ☐ ☐ Particle measurement
- ☐ ☐ Functional inspection
- ☐ ☐ Other

Service report no.

Operating hours

Date, stamp, signature

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