

HS-Mikro R, HS-Mikro S (HEPA Filter)



Class
EN 1822



HS-Mikro R and HS-Mikro S

HS-Mikro R and HS-Mikro S are highly efficient HEPA-filter for filtering airborne particles such as viruses, germs, toxic dust, or aerosols. They are suitable to any system that needs to clean the air off any germs or dust.

Spacers made from aluminum or stainless steel allow the filter's to work efficiently up to 120°C or optionally 250 °C. Upon request we offer customized specifications such as electrostatic grounding, cleanable media or FDA-Conformity.

■ Frames:

- MDF (standard)
- plywood
- galvanized steel
- stainless steel
- aluminum

■ Operating Environment:

- max. rel. humidity 100 %
- temperature resistance 120°C with silicone selant 250°C (not available for cleanable filters)

■ Separator:

- corrugated aluminum or stainless steel

■ Media:

- fiberglass paper (water-resistant, damp-proof)
- **PTFE Membrane** (-40% ΔP, ultrarigid, max temp: 80°C)

■ Incinerable:

- yes - with MDF or plywood frame

■ Filter Class EN 1822 (DIN 24184):

- E11 (R), H13 (S), H14 (S)

■ Options:

- protective grid (single-/double-sided)
- increased filtersurface for high air flow
- handles
- **CLEANABLE** filtermedia (laminated), for dedusting processes, > 40,000 cleaning cycles
- gasket on both sides
- stainless steel separators (1.4301)
- EX-protection i.e. : Zone II 2 GD
- customized specifications

■ Gaskets:

- Foamed endless gasket, polyurethane (standard)
size: 6,0 or 8,0 [mm]
form:
- Flat gasket, neoprene, silicone, etc.
size: 6,0 or 8,0 [mm]
form:
- Leak-test gasket
size: 7,5 [mm]
form:

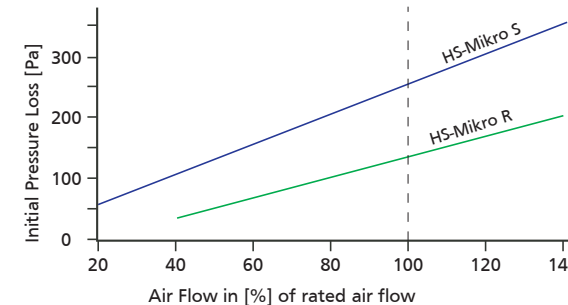
Our production staff will be able to assemble the units upon your request. Please ask for **further dimensions and configurations**.

Dimensions [mm]			Weight	Nominal airflow	Nominal airflow
Width	Height	Depth	[kg]	[m³/h]	[m³/h]
HS-Mikro S - Depth 78 [mm] (special product)				- standard-	- high airflow -
305	305	78	2,1	140	-
305	610	78	3,5	300	-
457	457	78	4,8	340	-
575	575	78	5,4	560	-
610	610	78	6,0	650	-
762	610	78	7,2	750	-
HS-Mikro SF - Depth 150 [mm]				- standard-	- high airflow -
305	305	150	4,0	250	330
305	610	150	6,0	540	700
457	457	150	7,0	600	810
575	575	150	9,0	970	1330
610	610	150	10,0	1150	1500
762	610	150	11,0	1450	1900
915	610	150	13,0	1750	2300
1220	610	150	17,0	2300	3100
1525	610	150	22,0	2900	3850
1830	610	150	26,0	3500	4650
HS-Mikro SF - Depth 292 [mm]				- standard-	- high airflow -
305	305	292	7,0	520	750
305	610	292	10,0	1050	1500
457	457	292	11,0	1180	1700
575	575	292	13,2	1970	2500
610	610	292	18,0	2100	3000
762	610	292	21,0	2630	3500

Type HS-Mikro	R	S	S
Class EN 1822	E11	H13	H14
efficiency at MPPS >[%]	95	99,95	99,995

Δ P with nominal airflow [Pa]

125 250 260

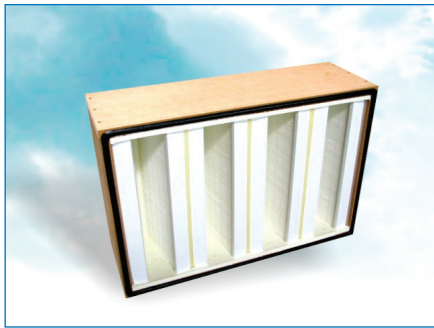


- high air flow -

Filters with this option offer more than +30 % filtersurface than equivalent standard variants and thus offer following benefits:

- compareable higher nominal air flow of +30%
- or
- compareable lower pressure loss of - 30%
- increased service lifetime of up to +60 %





HS-Mikro SFV

HS-Mikro SFV is a highly efficient HEPA filter that adsorbs airborne particles such as viruses, germs, toxic dust, or aerosols. They are suitable for any systems that need to clean germs or dust out of the air.

The filter can be installed on both the clean air side as well as the dust side.

■ Frames:

- MDF (standard)
- plywood
- galvanized steel plate
- stainless steel
- aluminum

■ Operating Environment:

- max. rel. humidity 100 percent
- temperature-resistant up to 65 degrees

■ Separator:

- thermo-plastic

■ Media:

- fiberglass paper (water-resistant, damp-proof)

■ Incinerable:

- yes - with MDF, plywood frame




■ Filter Class EN 1822 (DIN 24184):

- E11 (RFV), H13 (SFV), H14 (SFV)

■ Options:

- protective grid (single-/double-sided)
- handles
- gasket on both sides
- special gasket (customer specification)
- customized specifications such as groove, ledge, fox-filter-unit

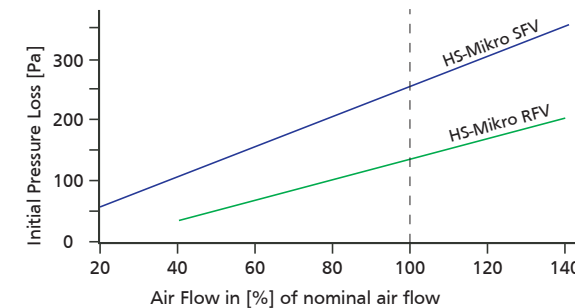
■ Gaskets:

- Foamed endless gasket, polyurethane (standard)
size: 6,0 or 8,0 [mm]
form: 
- Flat gasket, neoprene
size: 6,0 or 8,0 [mm]
form: 
- Leak-tested gasket
size: 7,5 [mm]
form: 

Type HS-Mikro	Class EN 1822	Arrestance at MPPS >[%]	Δ P with nominal airflow [Pa]
RFV	E11	95	125
SFV	H13	99,95	250
SFV	H14	99,995	260

Width [mm]	Height [mm]	Depth [mm]	Nominal airflow V [m³/h]	# of filters
305	305	292	700	4
305	610	292	1500	4
457	457	292	1370	6
575	575	292	2460	7
610	610	292	3000	8
610	610	292	4000	10(1)
762	610	292	3750	10

(1) Option: high air flow

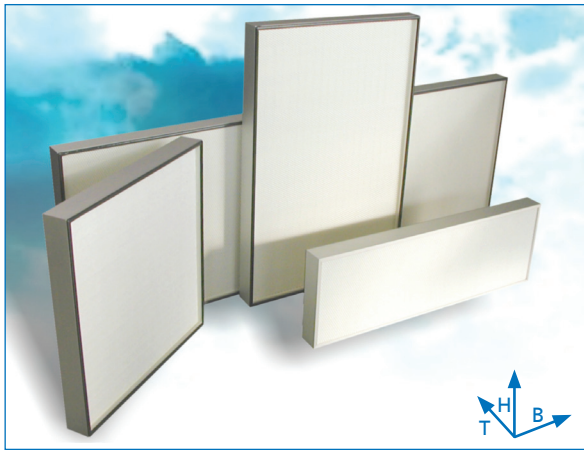


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HS-Mikro-SF AL

Class
EN 1822



powder coated aluminum grid on one side. Options with a double-sided grid are available.

Quality Control

Each single HEPA filter is taken into an intensive quality- and efficiency test according to EN 1822. HS-Luftfilterbau operates a test rig of the latest kind. The examination is done with an aerosol called di-ethyl-hexyl-sebacat (DEHS), generating same particle sizes as with DOP, but having the advantage that DEHS does not cause cancer if inhaled. Laser particle counters determine the local and integral retention efficiency, which will be given in MPPS (most penetrating particle size) – ordinarily this size is 0,1- 0,3 µm. If required, we also issue a detailed scan-test-report.

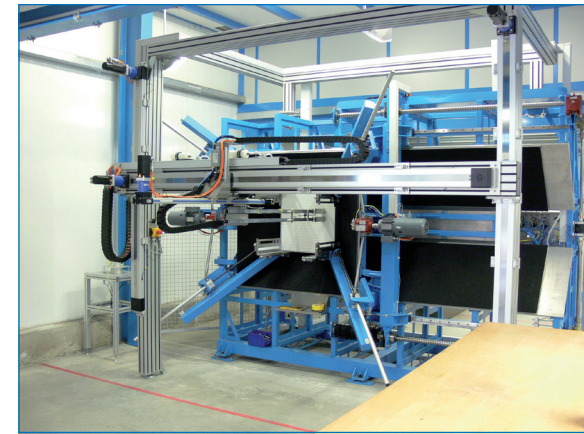
If required we issue most detailed scantest reports for each tested filter.

Our highly advanced test methods allow us to perform the MPPS-scantest for nearly any filter size. All filters can be scan tested without noticeable rigging time starting with min. size of 305x305 mm (by demand even smaller) up to the maximum size of 1830x1220 mm. Therefore the test costs remain moderate even with small quantities of odd sized filters. According to the demand of our customers we can tighten single test parameters like the leak detection value far stricter than the tolerances allowed by EN1822.

Upon request we can issue the resulting test report completely neutral (no company logo) or with your companies brand (OEM).

The surface scantest results are accurately recorded and will be displayed to scale in a easy to understand 2-D diagram. Also, a diagram with the complete measuring data will be present on the product label as a proof for a successful test and individual watermark.

This allows a much better traceability of the test results by the end user if compared to usual test reports of other brands.



HS-Mikro-SF AL

These HEPA/ULPA filters are equipped to filter airborne particles > 0,05 micrometer (µm) in size. They are outfitted with sturdy extruded aluminum profile frames, which make them light and easy to handle.

The filter works most efficiently in environments that require the highest cleanliness, such as in pharmaceutical, medical, electric, or nanotechnology industries.

Clean room technologies aim to control the air inside facilities by removing dust and micro-organisms and leading it to selected work places or operation rooms.

HS-Mikro SF-AL may also serve as a final stage for ceiling- and wall-filters, clean benches, as well as cabins or air pipes, which require the highest cleanliness and controlled turbulence-free airflows (laminar flow).

The filter media pleats are designed to create laminar air-flow at the air leaving side, without laminators being part of the assembly. The filter is therefore suited to meet environments with high volumes of airflow and a low initial pressure drop as well as a high mechanical stability.

As a standard the filter is equipped with a protective,

LUFTFILTERBAU
GmbH

Prüfbericht gemäß EN 1822-4
Test report according to EN 1822-4
Rapport de test selon EN 1822-4

Filterdaten / Filter data / Fiches techniques					
Artikelnummer Part No.	Bezeichnung Part Name	Geräte-Nummer Serial No.	Protokoll-Nr. Number of protocol	Protokoll-Datum Date of test	Prüfer Operator
40-09150762-M090S885	HS Mikro SF-AL	S-83		2008-06-05	SHE
Filterabmessung (B x H x T) Filter dimensions (W x H x D)	Nennkonzentration Nominal conc.	Abgabegeschwindigkeit Flow rate	Abgabedruck Outlet pressure	Abgabetemperatur Outlet temperature	Abgabeumgebung Outlet environment
762 x 916 x 50mm	147000 /m³	1,2 l/min	1,2 bar	20°C	20°C
Prüfmethode Test method	Prüfmittel Test medium	Prüfgeschwindigkeit Flow rate	Prüfdruck Test pressure	Prüftemperatur Test temperature	Prüfumgebung Test environment
HEPA H14	DEHS	0,1 - 0,3 µm	1,2 bar	20°C	20°C
Prüfbedingungen / Test Conditions / Conditions de test	Prüfdruck Test pressure	Prüftemperatur Test temperature	Prüfgeschwindigkeit Flow rate	Prüfumgebung Test environment	Prüfmittel Test medium
	1,2 bar	20°C	1,2 l/min	20°C	DEHS
Prüfergebnisse / Test results / Résultats de test	Prüfdruck Test pressure	Prüftemperatur Test temperature	Prüfgeschwindigkeit Flow rate	Prüfumgebung Test environment	Prüfmittel Test medium
	1,2 bar	20°C	1,2 l/min	20°C	DEHS
Prüfdruck Test pressure	Prüftemperatur Test temperature	Prüfgeschwindigkeit Flow rate	Prüfumgebung Test environment	Prüfmittel Test medium	Prüfmittel Test medium
1,2 bar	20°C	1,2 l/min	20°C	DEHS	DEHS





Filtermedia

You can choose from several high quality filtermedia which offer advantages for the individual task.

We use high-quality micro fiberglass that possess various retention efficiencies. Design and assembly meet all necessary requirements according to temperature and humidity. The media is folded into narrow pleats. Thermo-plastic spacers ensure a high stability as well as even spacing.

Optionally the filter can be fitted with ePTFE membrane media. This offers a much higher rigidity of the filter media and approx. 40% less pressure drop in favor to classical glass fiber media. PTFE is inert against moisture, condensing humidity and splashing liquids. PTFE is not emitting off gassings like i.e. boron and therefore qualifies for clean rooms at semiconductor production facilities.

Beside of that we also offer membranes from polyester and also nano-web meltblowns from polypropylene. The latter can be used for industrial or offshore-applications where lowest pressure drop and high moisture resistance is required.

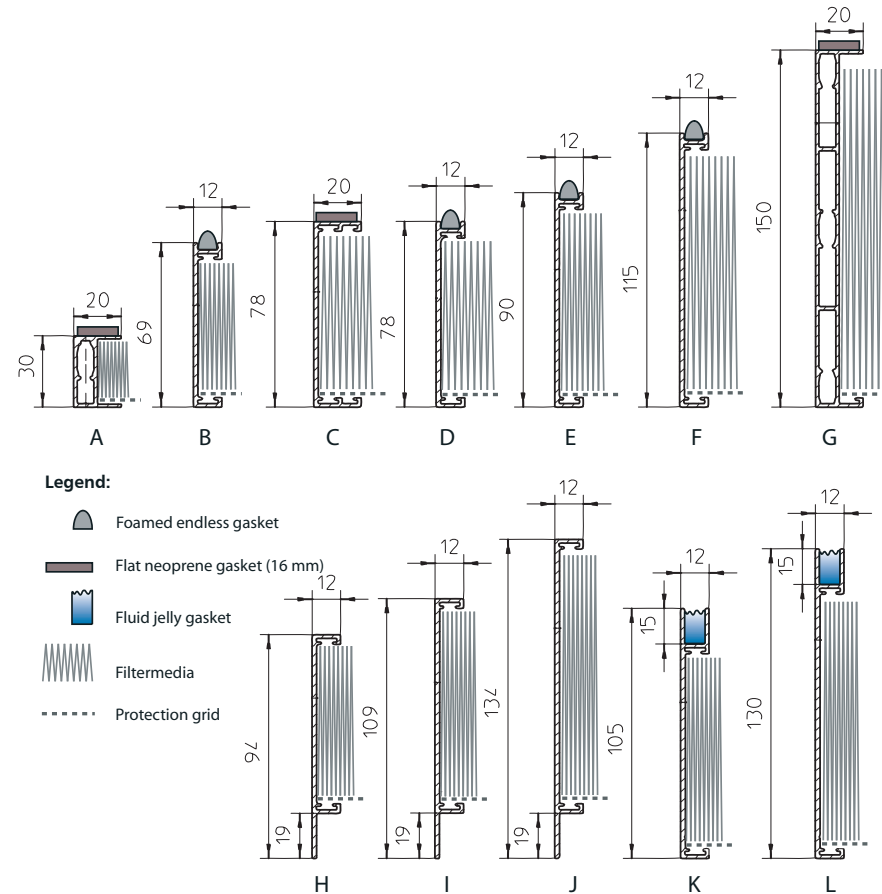
Gaskets

By standard HS-Mikro SF-AL are fitted with an endless foamed gasket made from non-porous polyurethane foam. The gasket is placed on the raw air side by standard. Despite of that we can also offer a double side gasket or no gasket if required.

For special applications we offer liquid-jelly seals or any other type of gasket that may be required by the customers process (i.e. silicone, FDA-approved, viton, EPDM).

Filter Frames

The filter frames are made from extruded anodized aluminum profiles. The frame depth in accordance to the type is 69, 78 or 90 mm. Beside our rapid deliverable standard frames (Type B, C, D & E) we offer diverse other frame profiles to satisfy all customer requirements. The performance parameters of the filter can be extensively set by the customer or process requirements.



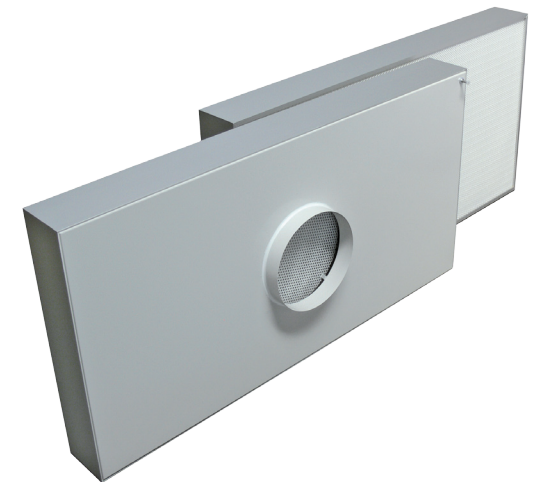
Terminal Filter / Hooded Filter

We offer HS-Mikro SF-AL also as terminal filter. The design allows the connection of the filter to supply lines, ducting and hoses.

For this the HS-Mikro SF-AL is mounted by a hood made from steel (either painted or stainless) on the filter frame. The hood is applied to the filter by special adhering sealing compounds. The tightness of the hood is approved during the EN1822-4 testing.

Optionally the hood can be fitted with damper flaps to allow a precise setting of the air speed through the filter. Also we can fit connections pins for measuring the pressure drop or to apply aerosols for in-situ testing of the filter efficiency.

The dimension of the hood and the spigot are manufactured according to the process- or customer requirements.



HS-Mikro-SF AL

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EN 1822



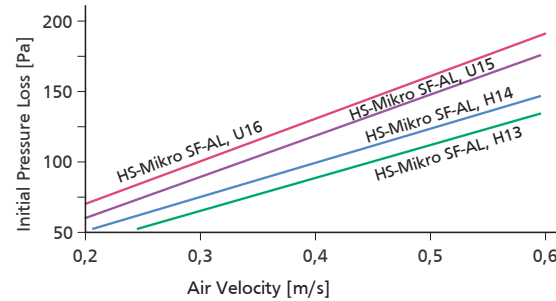
Options:

- diverse extruded anodized aluminum frames (d= 30, 69, 78, 115, 150 ... mm)
- construction as "Terminal Hood" or terminal filter for direct connection to the ducting
- double side, powder coated protection grid made from aluminum for maximized corrosion protection
- double sided gasket
- fluid jelly gasket (frame K and L) or with 20 mm circulating U-Profiled flange
- highly detail test report
- filtermedia: Low Boron, filtermedium with reduced boron emission
- filtermedia: **ePTFE Membrane** with following advantages:
 - reduced initial- ΔP to 50%
 - completely glass fibre free
 - no boron emission
 - moisture- & germicide resistance
 - high mechanical rigidity

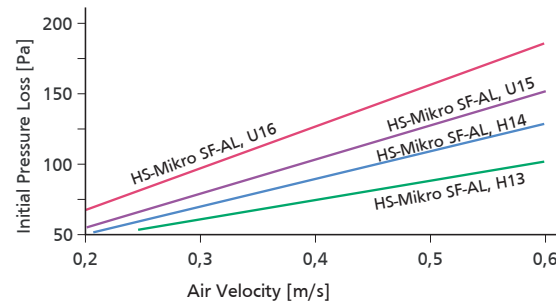
Operational conditions:

- max. rel. humidity 100 [%]
- temperature resistance max. 65 [°C]
peak temp. up to 85 [°C]
- high humidity levels can lead to a temporary rise of the pressure drop.

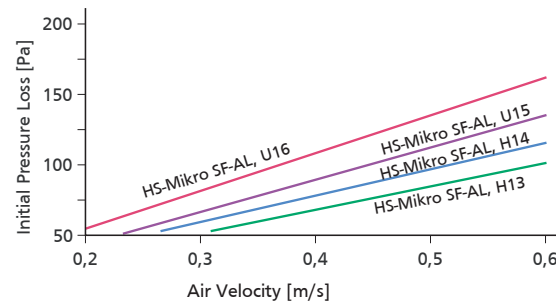
Framedepth: 69 mm



Framedepth: 78 mm



Framedepth: 90 mm



Dimensions [mm]		Nominal airflow [m³/h]	Depth=69 [mm]	Depth=78 [mm]	Depth=90 [mm]
Width	Height		Weight [kg]	Weight [kg]	Weight [kg]
305	305	150	1,5	1,7	1,9
457	457	340	2,3	2,6	3,1
305	610	300	2,4	2,7	3,1
610	610	605	3,5	3,9	4,6
762	610	755	4	4,6	5,4
915	610	905	4,7	5,3	6,2
1220	610	1205	5,9	6,7	7,8
1525	610	1505	7,8	8,8	10,3
1830	610	1810	9	10,2	11,9
762	762	940	4,8	5,4	6,3
915	762	1130	5,4	6,2	7,2
1220	762	1505	6,8	7,8	9,1
1525	762	1880	9,1	10,3	12
1830	762	2260	10,4	11,9	13,9
915	915	1355	6,2	7,1	8,3
1220	915	1805	7,8	8,8	10,4
1525	915	2260	10,4	11,8	13,8
1830	915	2710	11,9	13,5	15,9

Our flexible production will be able to assemble the units upon your request. Please ask for **further dimensions and configurations..**

Class EN 1822		E11	H13	H14	U15	U16
Efficiency acc. to EN 1822 (mpps 0,1 - 03 µm)	[%]	> 98	> 99,95	>99,995	>99,9995	>99,99995
Nominal velocity	[m/s]	0,45	0,45	0,45	0,45	0,45
Initial- ΔP D=69 mm	[Pa]	55	100	110	130	145
Initial- ΔP D=78 mm	[Pa]	40	80	95	115	140
Initial- ΔP D=90 mm	[Pa]	35	75	85	100	120

