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 airflow 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, 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-Luftfilterbau GmbH
Bunenstraße 31
D-24145 Kiel
Germany
Tel: +49-(0)431-71953-0
Fax: +49-(0)431-71953-30
www.luftfilterbau.de
info@luftfilterbau.de
documents might be subject to change / issue April 2009
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 meltblows 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.
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.

Technical Data

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

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