

UNIDIRECTIONAL HEPA FILTERS

APPLICATION

Filta-Matix unidirectional HEPA filters are produced with absolutely no compromise to quality. Any other approach would be unthinkable given the fact that this product protects people and is responsible for protecting processes where dangerous particles cannot be permitted to enter the air.

Used in the most demanding environments such as Cleanrooms, Laminar Flow Benches and Biological Safety Cabinets and in industries such as Pharmaceutical, Nuclear, Microelectronics, Healthcare and Biotechnology for instance.

FILTER DESIGN

Unidirectional HEPA filters are the most efficient, energy saving HEPA and ULPA filter panels.

Unidirectional HEPA filters are available from class H13 to U17, with an MPPS of 99.5% to 99.999995%.

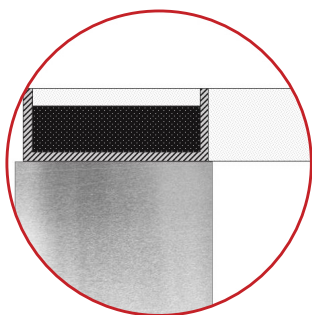
The media is pleated using PLC controlled media spacing technology for optimal airflow and best media performance. This proprietary technology ensures low resistance when considering static and dynamic differential pressure.

Intermediate hot melt separators ensure uniform pleat spacing and the ability to form a rigid self-supported media pack. The media pack is permanently sealed to the filter frame using a solid polyurethane sealant and protection grids are fitted to both sides of the filter.

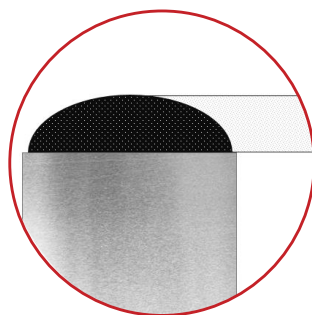
The frame is made from heavy-duty, lightweight anodized aluminium with corner support for filter durability and long-term integrity.

FILTER GASKETS

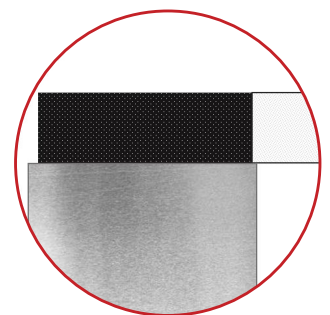
Several filter gasket options are available including seamless polyurethane, poron, neoprene, EDPM and silicone. Gel seal construction is used where holding frame designs rely on knife edge sealing technology.



Gel seal



Continuous seal



Flat section seal

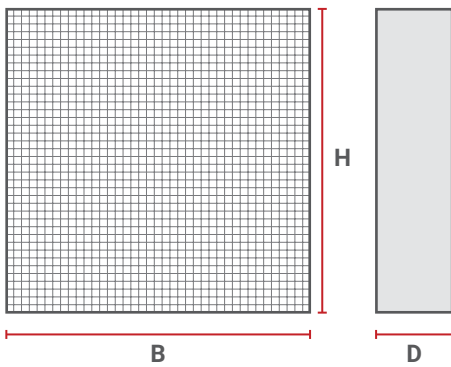
SUSTAINABILITY & DISPOSAL

From a sustainability point of view Filta-Matix unidirectional HEPA filters are an excellent choice because they are designed to last a long time.

When it is finally time to change the filter one must consider the disposal costs. Decontamination using

Hydrogen Peroxide Vapour allows one to use standard instead of medical or hazardous waste disposal methods which save costs. A service offered by Filta-Matix which is concluded by the issuing of a safe disposal certificate.

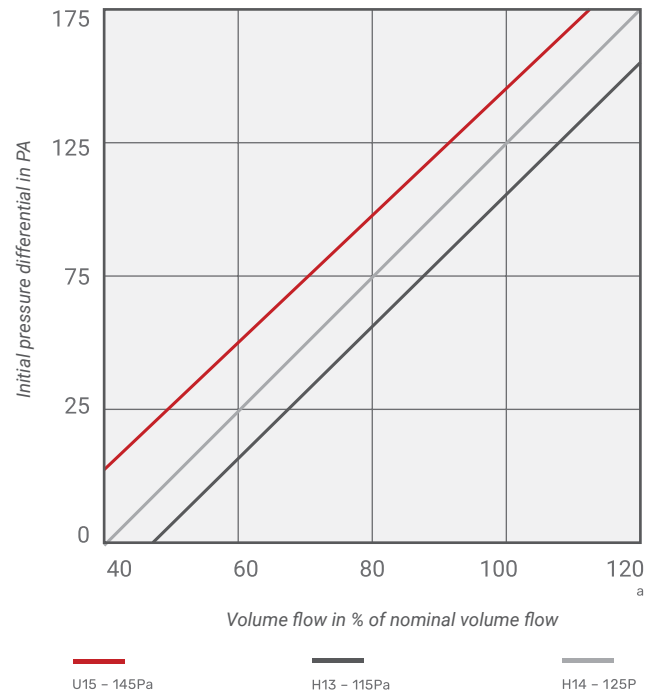
AIR FLOW CALCULATION



The nominal air flow rate for any unidirectional HEPA filter can be calculated by using the following equation:
 $B \times H \times \text{Rated velocity (0.45m/s)} = \text{airflow}$

EXAMPLE: 610 x 610 x 69 filter size
 $0,61 \times 0,61 \times 0,45 = 0,167\text{m}^3/\text{s} \times 3600 = 602\text{m}^3/\text{s}$
 The initial differential pressure at the rated air flow will remain constant irrespective of the filter size.

INITIAL DIFFERENTIAL PRESSURE CURVE



Filter class according to EN 1822	H13	H14	U15
Efficiency according to EN 1822	>99.95%	>99.995%	>99.9995%
Initial differential pressure at nominal volume flow rate	115 Pa	125 Pa	145 Pa
Recommended final differential pressure	600 Pa	600 Pa	600 Pa
Maximum operating temperature	80°C	80°C	80°C
Maximum relative humidity	100%	100%	100%

EN 1822:2009 FACTORY TESTS

Each and every HEPA filter is factory tested to EN 1822:2009 and ISO 29463 standards without exception. The entire filter is scanned using a traversing CNC probe across the filter face to search for leaks and to measure filter efficiency in accordance with global standards.



The standard dictates that a mandatory test report has to be issued which depicts the following minimum information:-

- Date of test
- Filter size
- Test airflow rate
- Differential pressure at test airflow rate
- Local and overall efficiency at most penetrating particle size (mpps)
- Filter serial number

WORLD CLASS PLEATING TECHNOLOGY

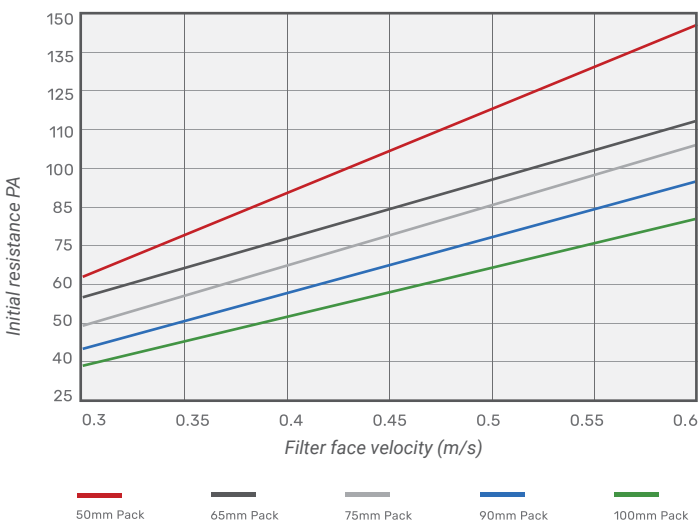


The most technologically advanced 5 axis servo driven minipleat machine with 2500 sets of program automatically compensates for different filter media.

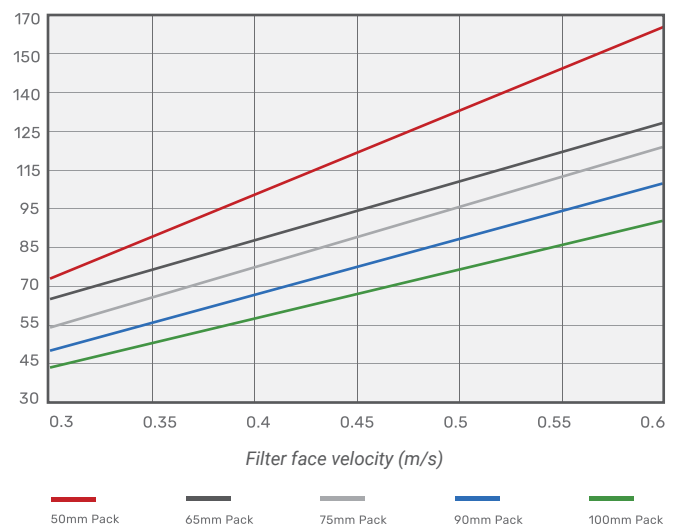
Variable pleat depth adjusted by touch screen PLC system. Client and raw material software input for 100% traceability.

PERFORMANCE DATA FOR LARGER PLEAT DEPTH

AIRFLOW VS DIFFERENTIAL PRESSURE - H13



AIRFLOW VS DIFFERENTIAL PRESSURE - H14



TECHNICAL DATA, DIMENSIONS AND WEIGHT

High capacity HEPA filters are produced to customer specification.
The filter size and efficiency can be changed to suit the application.

Nominal Size (mm)			Pleat Depth	Filter Class	Rated Air Flow	(mm)	(mm)	(mm)
B	H	D			m ³ /h	Pa	m ²	~kg
610	305	69/78	50	H13	301	115	4.8	2.75
610	610	69/78	50	H13	602	115	9.6	5.4
610	1220	69/78	50	H13	1205	115	19.2	10.77
762	1220	69/78	50	H13	1506	115	23.9	13.45
610	1525	69/78	50	H13	1507	115	24	13.46
610	1830	69/78	50	H13	1808	115	28.8	16.15
915	1220	69/78	50	H13	1808	115	28.8	13.2
762	1830	69/78	50	H13	2259	115	35.97	20.18
915	1830	69/78	50	H13	2712	115	43.2	24.23
610	305	69/78	50	H14	301	125	4.8	2.75
610	610	69/78	50	H14	602	125	9.6	5.4
610	1220	69/78	50	H14	1205	125	19.2	10.77
762	1220	69/78	50	H14	1506	125	23.9	13.45
610	1525	69/78	50	H14	1507	125	24	13.46
610	1830	69/78	50	H14	1808	125	28.8	16.15
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610	610	69/78	50	U15	602	145	9.6	5.4
610	1220	69/78	50	U15	1205	145	19.2	10.77
762	1220	69/78	50	U15	1506	145	23.9	13.45
610	1525	69/78	50	U15	1507	145	24	13.46
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915	1220	69/78	50	U15	1808	145	28.8	13.2
762	1830	69/78	50	U15	2259	145	35.97	20.18
915	1830	69/78	50	U15	2712	145	43.2	24.23

View video here:
[HEPA Filters](#)

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