



High Flow Series Filter Cartridges

Large Geometry Pleated Filters for High Flow

Graver High Flow Series filters feature a larger geometry to handle higher flows with fewer filter elements. The result is much faster, easier filter changeouts. In addition, the inside to outside flow allows for excellent dirt holding capacity, extending the time between filter changeouts. Filter housings are also available and because of the filters high flow and dirt holding capacity, smaller systems are possible, reducing upfront capital costs.

Features - Benefits

- 6" diameter, large geometry for high flow rates
- Absolute retention ratings from 1 to 100 microns
- Capable of flow rates up to 500 GPM in a single 60" element
- Inside-out flow retains contaminant even during changeout
- Multi layer pleated construction with optimized surface area
- Outer cage prevents media extrusion problem experienced with some competitive offerings
- Unique Quad Seal gasket provides maximum seal integrity
- Retrofits competitive high flow filter housings
- Thermally bonded construction

Product Specifications

Media/Support/Cage:	Polypropylene
End caps:	Polypropylene
O-Rings:	EPDM, Silicone, Buna-N, Viton
Micron ratings:	1, 3, 5, 10, 20, 40, 60, 100 μ m

Dimensions

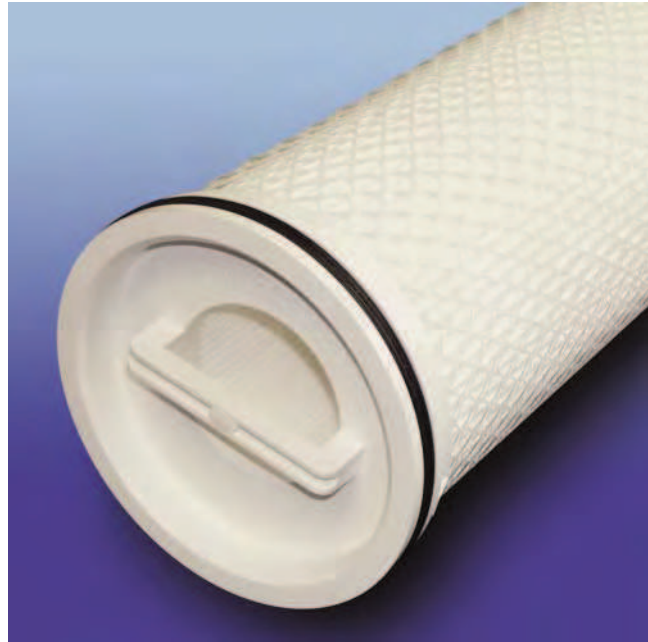
Nominal lengths:	20", 40", 60" (50.8, 101.6, 152.4 cm)
Outside diameter:	6.0" (15.2 cm)
Surface area:	24 ft ² . (2.2 m ²) per 20" element 49 ft ² . (4.6 m ²) per 40" element 73 ft ² . (6.8 m ²) per 60" element

Operating Parameters

Maximum operating temperature:	180°F @ 20 psid (82°C @ 1.4 bar) 160°F @ 30 psid (71°C @ 2.1 bar) 77°F @ 50 psid (25°C @ 3.4 bar)
Recommended changeout differential pressure:	35 psid (2.4 bar)
Maximum flow rates*:	60" element up to 500 GPM (1892 lpm) 40" element up to 350 GPM (1325 lpm) 20" element up to 175 GPM (662 lpm)

* Consult factory for sizing assistance based on particle loads.

** O-ring should be replaced after 5 cycles or when a loosening of the seal is detected.



Certifications

FDA Listed Materials - All Materials comply with FDA Title 21 of the Code of Federal Regulations Sections 174.5, and 177.1520, as applicable for food and beverage contact.

NSF 61 - Certified to NSF/ANSI STD 61 for materials requirements only - Component.

Typical Applications

- Water Systems
- Chemicals
- Food and Beverage
- Pre RO



Certified to NSF/ANSI Standard 61 for materials requirements only.

COMPONENT

Performance Specifications

Cleaning/Sanitization

Compatible with most common chemical cleaning, sanitizing and sterilizing agents and with pH range from 1–14. Consult factory for specific compatibility information. Cartridge will withstand up to ten 30 minute hot water cycles** at 181°F (83°C) at 5 psid (0.35 bar).

Steam/Autoclave

Cartridges may be steamed for at least twenty 15 minute cycles** @ 230°F (110°C) not to exceed 3 psid (0.21 bar).



High Flow Nomenclature Information				
High Flow Filter Type High Flow Series Filters	5		-60	E
	Retention Rating (microns)		Length (inches)	O-Ring
	1	20	-20	S Silicone
	3	40	-40	B Buna-N
	5	60	-60	E EPDM
	10	100		V Viton

Example: HF 5-60E

High Flow Pressure Drop						
Micron	Element Pressure Drop psid/gpm			Element Pressure Drop Mbar/M ³ /Hr		
	20"	40"	60"	20"	40"	60"
1	0.0200	0.0097	0.0065	6.0845	2.9395	1.9820
3	0.0167	0.0081	0.0054	5.0705	2.4495	1.6516
5	0.0076	0.0037	0.0025	2.3179	1.1198	0.7550
10	0.0046	0.0022	0.0015	1.3908	0.6719	0.4530
20	0.0021	0.0010	0.0007	0.6374	0.3079	0.2076
40	0.0017	0.0008	0.0006	0.5215	0.2520	0.1699
60	0.0015	0.0007	0.0005	0.4552	0.2199	0.1483
100	0.0010	0.0005	0.0003	0.3035	0.1466	0.0989

Note: For chemical compatibility, flow rates, and temperature requirements please consult the factory or your local Graver distributor.

Removal Efficiency

Micron Rating Beta Ratio	99.9% Beta 1000	99% Beta 100	90% Beta 10
1 micron	1	0.6	0.2
3 micron	3	2	1.5
5 micron	5	4	3
10 micron	10	8.5	6.5
20 micron	22	19	14
40 micron	38	18	15
60 micron	60	35	20
100 micron	100	75	45

$$\text{Beta Ratio} = \frac{\text{Upstream particle counts}}{\text{Downstream particle counts}}$$

The micron ratings shown at various efficiency and beta ratio value levels were determined through laboratory testing, and can be used as a guide for selecting cartridges and estimating their performance. Under actual field conditions, results may vary somewhat from the values shown due to the variability of filtration parameters.

Testing was conducted using the single-pass test method, water at 3 gpm/10" cartridge. Contaminant's included latex beads, coarse and fine test dust. Removal efficiencies were determined using dual laser source particle counters.