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## Varafine™ VFSE Series Filters



### Description

Varafine filters are well suited for ultra high purity DI water applications where very fine removal ratings and extremely high flow rates are required for economical installations. These filters contain a highly asymmetric polysulfone membrane that results in exceptionally low pressure drop values.

- Available in removal ratings from 0.02 µm to 0.45 µm
- Double layer, patented highly asymmetric polysulfone membrane
- Rapid rinse-up • Integrity testable • Manufactured in cleanroom environment

### Specifications

#### Materials

- Medium: hydrophilic asymmetric polysulfone
- Core, cage and endcaps: polypropylene
- Support and drainage: polypropylene
- Sealing method: thermal bond • O-ring/gasket: silicone elastomer (standard)

#### Removal Ratings

- 0.02 µm, 0.1 µm, 0.2 µm, 0.45 µm

#### Configurations

- Nominal length: 102 mm/4 in, 254 mm/10 in, 508 mm/20 in, 762 mm/30 in, and 1016 mm/40 in
- Diameter: 66 mm/2.6 in
- O-ring size/end caps: Code M3 (222 double O-rings/flat end) Code M8 (222 double O-rings/finned end) Code M7 (226 double O-ring/bayonet lock/finned end)

#### Operating Conditions

- Maximum operating temperature: 30°C / 86°F (70°C / 158°F)<sup>1</sup>
- Maximum forward differential pressure: 0.5 MPa @ 20°C / 80 psid @ 68°F 0.14 MPa @ 70°C / 20 psid @ 158°F

#### Integrity Test Values<sup>2</sup>

Per 254 mm / 10 in segment

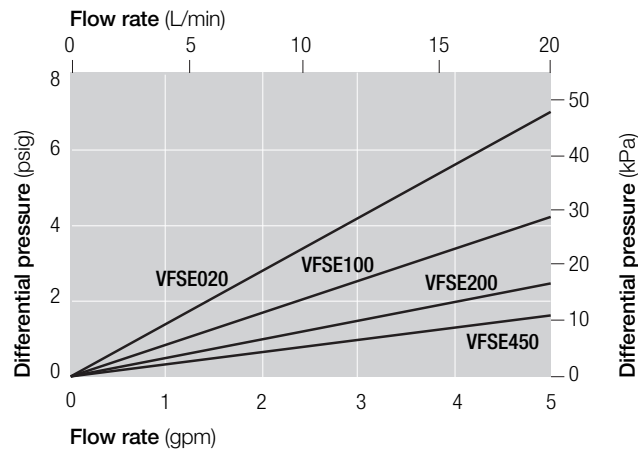
- 0.02 µm <30 cm<sup>3</sup>/min @ 50 psig / 0.34 MPa
- 0.1 µm <24 cm<sup>3</sup>/min @ 25 psig / 0.17 MPa
- 0.2 µm <20 cm<sup>3</sup>/min @ 20 psig / 0.14 MPa bar
- 0.45 µm <15 cm<sup>3</sup>/min @ 15 psig / 0.1 MPa

<sup>1</sup> Only in deoxygenated water systems; otherwise use Varafine T filters.

<sup>2</sup> Test fluid used is 100% H<sub>2</sub>O.

## Pressure Drop vs. Liquid Flow Rate

### Varafine VFSE Filter Cartridges



## Part Numbers/Ordering Information

VFSE ■ ◆ ● ▲

Code ■	Removal Rating ( $\mu\text{m}$ )	Code ◆	Nominal Length (mm/in)	Code ●	Cartridge End Configuration	Code ▲	O-ring Material
020	0.02	4	102/4	M3	SOE flat closed end, 222 O-rings	S	Silicone
100	0.1	10	254/10	M7	SOE fin end, 226 O-rings	E	EPDM
200	0.2	20	508/20	M8	SOE fin end, 222 O-rings	V	Viton <sup>3</sup> A
450	0.45	30	762/30	DOE	Double open end	T	Teflon <sup>3</sup> encapsulated silicone
		40	1016/40			F	Teflon encapsulated Viton A

<sup>3</sup> Viton and Teflon are trademarks of E. I. du Pont de Nemours and Company.

Unit conversion: 1 bar = 100 kilopascals

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