Graver Technologies

FILTRATION | SEPARATION | PURIFICATION

ZTEC™ E Series Filter Cartridges

Pleated Polyethersulfone (PES) Membrane for Final Filtration of Ultrapure Water

Product Specifications

Media: Asymmetric Polyethersulfone Membrane

Inner core, end caps, cage: Polypropylene

Support layers: Spunbonded Polypropylene

Gaskets/O-Rings: Buna-N, EPDM, Silicone, Teflon Encapsulated Viton O-Rings, Viton

Micron ratings: 0.03, 0.1, 0.2, 0.45 µm

Dimensions

Nominal lengths:

9.75"	10"	20"	30"	40"
24.8	*25.4*	*50.8*	*76.2*	*101.6 cm*

Outside diameter: 2.7" (6.9 cm)

Inside diameter: 1.0" (2.54 cm)

Surface area: 7.6 ft^2 (0.7 m^2) per 10" element

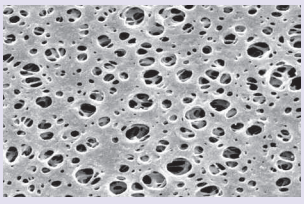
Operating Parameters

Maximum sustained operating temperature: 176°F (80°C) at 20 psid (1.38 bar)

Maximum differential pressure: 80 psid @ 70°F (4.14 bar @ 21°C) 40 psid @ 160°F (2.8 bar @ 71°C)

Maximum reverse differential pressure: 40 psid @ 70°F (2.8 bar @ 21°C)

Recommended change-out pressure: 35 psid (2.4 bar)



ZTEC E microelectronics grade cartridges represent Graver's latest development in ultrapure water filtration technology. The filters are inherently hydrophilic and contain no added surfactants or wetting agents that could contaminate pure and ultrapure water streams. The PES membrane offers superior flow characteristics, high contaminant capacity and consistent removal of submicron particles. The cartridges exhibit rapid rinse-up to 18 MΩ-cm resistivity and single digit ppb levels of TOC.

FEATURES & BENEFITS

- Manufactured, flushed, tested and packaged, in an ISO Class 7 Cleanroom Environment.
- Filters are 100% flushed with 18 MΩ-cm DI water and integrity tested.
- Resistivity rinse-up to 18 MΩ-cm and single digit ppb TOC levels with minimal throughput.
- Available in a variety of end cap/adapter configurations to fit all industry-standard housings.
- Pore size, lot and serial number are stamped on each filter elementfor identification and traceability.
- Complete qualification guide available.

CERTIFICATIONS

ZTEC E filters were tested by outside laboratory, CT Associates in November, 2011 for the following:

- TOC Rinse-up to 0.5 ppb
- Resistivity Rinse-up to 18 MΩ-cm
- Non-Volatile Residue
- Particle Rinse-up
- Trace Metal Extractables
- Anion and Cation Extractables

Please request Graver ZTEC E Qualification Guide for details and complete test reports.

TYPICAL APPLICATIONS

- DI water
- High purity chemicals

PERFORMANCE SPECIFICATIONS

- Hot DI Water: Filter cartridge will withstand temperatures of 185°F (85°C) for up to 30 consecutive minutes.
- 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.
- Rinse-Up Volumes: Resistivity rinse-up to 18 MΩ-cm: <30 minutes at a flow of 3 gpm per 10" element.
  Rinse-up to single digit ppb TOC in <120 minutes at a flow of 3 gpm per 10" element.

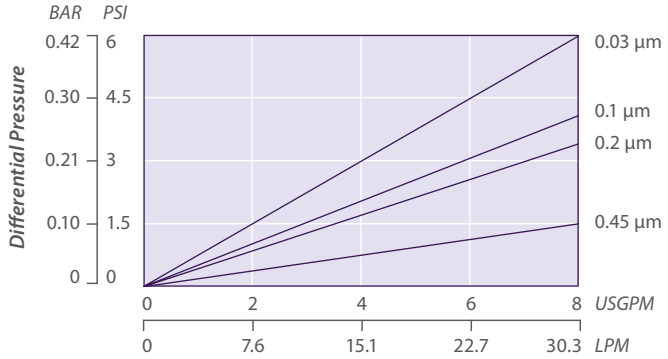
ZTEC E NOMENCLATURE INFORMATION

Filter Type	Retention Rating (microns)		Nominal Length (inches)		End Configuration		Gasket or O-Ring	
ZTEC E Series	0.03	0.2	–5	–20	P	Double Open End	B	Buna-N
	0.1	0.45	–9.75*	–30	P2	226/Flat Single Open End	E	EPDM
			–10	–40	P3	222/Flat Single Open End	S	Silicone
					P7	226/Fin Single Open End	T	Teflon encap. Viton (O-Rings only)
					P8	222/Fin Single Open End		
					AM	Single Open End, Internal O-Ring	V	Viton
					NPC	Double Open End, Internal O-Ring		
Example: ZTEC E 0.45–30P8T								
ZTEC E	0.45		–30		P8		T	

*Available only for DOE (P) configuration

ZTEC E FLOW RATE

Typical Flow Rate Clean Water at Ambient Temperature
(per 10" cartridge)



For liquids other than water, multiply pressure drop by the fluid viscosity in centipoise

INTEGRITY TEST SPECIFICATIONS

Minimum Bubble Point values and maximum Diffusive Air Flow (per 10-inch cartridge) values for ZTEC E filters wet with water:

Pore Size	Diffusive Air Flow
0.03 µm	≤ 50 cc/min @ 50 psig (3.1 bar)
0.1 µm	≤ 50 cc/min @ 40 psig (2.8 bar)
0.2 µm	≤ 35 cc/min @ 30 psig (2.1 bar)
0.45 µm	≤ 35 cc/min @ 20 psig (1.4 bar)

FOR MORE INFORMATION **GTX-302 10-16**

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