



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, Teflon (gaskets), 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 ft² (0.7 m²) per 10" element

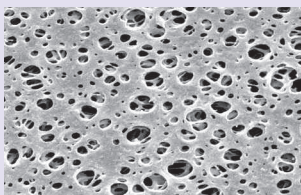
Operating Parameters

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

Maximum differential pressure:
80 psid @ 70°F (5.5 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/adaptor configurations to fit all industry-standard housings.
- Pore size, lot and serial number are stamped on each filter element for 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
- Particle Rinse-up
- Resistivity Rinse-up to 18 MΩ-cm
- Trace Metal Extractables
- Non-Volatile Residue
- 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 (11.3 lpm) per 10" element.
Rinse-up to single digit ppb TOC in <120 minutes at a flow of 3 gpm (11.3 lpm) per 10" element.

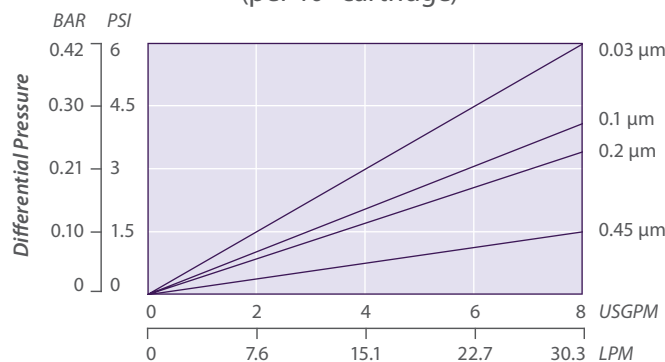
ZTEC E NOMENCLATURE INFORMATION

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	T	Teflon (gaskets)
					AM	Single Open End, Internal O-Ring	V	Viton
Example: ZTEC E 0.45–30P8T						NPC	Double Open End, Internal O-Ring	
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)



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

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