TurboClean® High Purity UF Elements

TRISEP

TurboClean® High Purity UF elements are ideal for applications which demand ultrapure water such as dialysis, pharmaceutical, and semiconductor rinse water. MICRODYN-NADIR's polyethersulfone (PES) membrane, packaged in a unique, sanitary, hard-shell construction offers better value than other sanitary elements. TurboClean elements feature about 60% less bypass flow than net-wrapped elements resulting in:

- Strongest Sanitary Element
- Most Effective Cleaning and Sanitizing
- Lower Effective Recovery
- Energy Savings
- Less Scaling
- Ease of Installation

MEMBRANE CHARACTERISTICS

Membrane	UF10
Membrane Type	Polyethersulfone (PES)
Nominal M.W.C.O. (Da)	10,000

DESIGN INFORMATION

Model	Part Number	Permeate Flow m^3/day (GPD)[a]	Membrane Area m^2 (ft^2)	Feed Spacer Thickness (mil)[b]
TurboClean® HP 4040-UF-M	167071441	11.4 (3,000)	7.0 (75)	31
TurboClean® HP 4040-UF10-F	167075441	11.7 (3,100)	7.2 (78)	31
TurboClean® HP 4040-UF-HS-F*	167041441	10.6 (2,800)	7.2 (78)	31

a Test conditions: Clean water, 2.1 bar (30 psi), 25°C (77°F), 15% recovery, pH 8.0, 30 minutes operation. Flow rates will be no more than 15% below the values shown. Product specifications may change without notice as design revisions occur.
b All models on this sheet have TurboClean sanitary outer wrap and diamond shaped feed spacers. All models on this sheet include anti-telescoping devices (ATDs) attached to the ends of the element and one interconnector. A brine seal is not included and is not required.
* The TurboClean® HP 4040-UF-HS-F model is heat sanitizable up to 85°C (185°F) at a maximum pressure of 1.7 bar (25 psi).

OPERATING PARAMETERS

Maximum Operating Pressure	21 bar (300 psi)
Maximum Operating Temperature	50°C (122°F)
Cleaning pH Range[1]	1.0 – 12.0
Cleaning Chlorine Tolerance	200 ppm for sanitization at pH ≥ 10.5
Maximum Pressure Drop	1.4 bar (20 psi) per element; 6 bar (80 psi) per housing
Maximum SDI_{15}	5.0
Maximum Turbidity	1 NTU

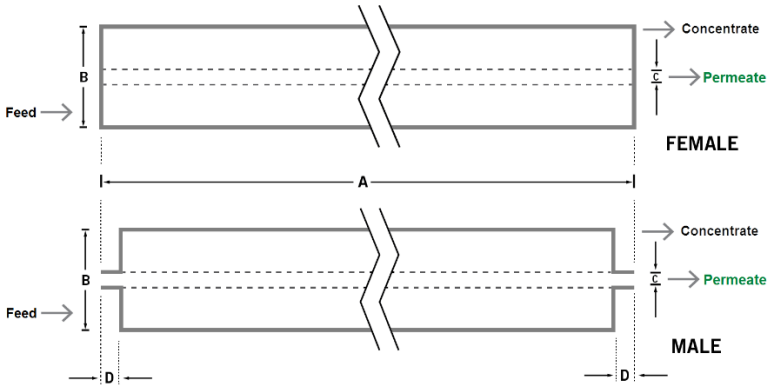
1 Refer to temperature and pH limits in Membrane Cleaning Guide - Water Application Elements (TSG-C-001).

MANN+HUMMEL

PHYSICAL DIMENSIONS

Model	Element Weight kg (lb)[c]	Dim. A mm (inches)	Dim. B mm (inches)	Dim. C[d] mm (inches)	Permeate Tube[e]
TurboClean® HP 4040-UF-M	4 (9)	1,016 (40.0)	99 (3.9)	19.1 (0.75)	Male
TurboClean® HP 4040-UF10-F	4 (9)	1,016 (40.0)	99 (3.9)	15.9 (0.625)	Female
TurboClean® HP 4040-UF-HS-F	4 (9)	1,016 (40.0)	99 (3.9)	15.9 (0.625)	Female

c Shipping weight is dependent on packaging material and quantity shipped.
d Diameters for Dimension "C" are as follows. For Female elements, "C" is the Inner Diameter. For Male elements, "C" is the Outer Diameter.
e Male elements have a protruding permeate tube, indicated as "D" in the diagram. Dimension "D" is 25.4 mm (1.0 in).



IMPORTANT INFORMATION

Start-up: MANN+HUMMEL Water & Fluid Solutions recommends flushing elements for 30 minutes at low pressure and discarding permeate during the flush prior to operation. For a more detailed start-up procedure, please see Element Start-Up Guide – System Start-Up (TSG-O-005).

Cleaning: TurboClean® membrane elements must be cleaned periodically to ensure proper operation and to prevent membrane damage. Please see Membrane Cleaning Guide – Water Application Elements (TSG-C-001).

Storage: TurboClean membrane elements must be stored appropriately to ensure proper operation and to prevent membrane damage. Please see Element Storage Guides (TSG-O-009 & TSG-O-010).

Regulatory: All models on this sheet use FDA (CFR Title 21) compliant materials.

CUSTOMIZABLE SPECIALTY ELEMENTS

MANN+HUMMEL Water & Fluid Solutions offers a full range of membranes and element designs for challenging water and process applications. Technologies include low-fouling RO, submerged UF, continuous high temperature, ultra-high pressure, unique sanitary designs and more. Contact us to customize a product that satisfies your specific requirements.

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