



TurboClean® Beverage

Thin-Film Composite

RO Elements

TurboClean® Beverage RO elements deliver high purity, low TDS water for soft drinks, energy drinks and bottled water. The patented TurboClean hard shell offers a safe and sanitary operating system with none of the stagnant areas created by the brine seals of fibreglassed membrane elements where bacterial growth is often found. TurboClean Beverage RO Elements are available in several membrane chemistries: standard high rejection ACM2 RO, low-fouling RO-X20, and low-energy RO-LE. With 60% less bypass flow than net-wrapped elements, TurboClean elements deliver energy savings, the most effective cleaning and sanitizing and the best performance.

MEMBRANE CHARACTERISTICS

Membrane	Stabilized Salt Rejection (%)	Minimum Salt Rejection (%)
ACM2 High Rejection RO	99.5	99.0
X-20® Low Fouling RO	99.5	99.0
RO-LE Low Energy RO	98.5	98.0

DESIGN INFORMATION

Model	Permeate Flow m ³ /day (GPD) ^a	Membrane Area m ² (ft ²)	Feed Spacer Thickness (mil) ^b
TurboClean® Bev 8040-RO	35.6 (9,400)	33.0 (355)	31
TurboClean® Bev 8040-RO-O	35.6 (9,400)	33.0 (355)	31
TurboClean® Bev 8040-RO-X20	35.6 (9,400)	33.0 (355)	31
TurboClean® Bev 8040-RO-LE	41.6 (11,000)	33.0 (355)	31

a RO & RO-X20 Test conditions: 2,000 ppm NaCl, 15.5 bar (225 psi), 25°C (77°F), 15% recovery, pH 8.0, 30 minutes operation.

RO-LE Test Conditions: 2,000 ppm NaCl, 10.3 bar (150 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.

OPERATING PARAMETERS

Maximum Operating Pressure	41 bar (600 psi)
Maximum Operating Temperature	50°C (122°F)
Cleaning pH Range ¹	1.0 - 12.0
Chlorine Tolerance	< 0.1 ppm
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

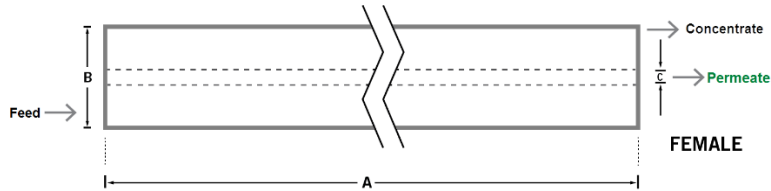
¹ Refer to temperature and pH limits in Membrane Cleaning Guide - Water Application Elements (TSG-C-001).

² Pretreatment is recommended for the removal of free chlorine and other oxidizing agents to prevent damage to membranes. Oxidizing agents, such as free chlorine, in contact with polyamide membranes may result in shortened operating life or membrane failure. Such oxidation damage is excluded from warranty. Refer to Membrane Operating Guide - Recommendations for Water Purification (TSG-O-012).

PHYSICAL DIMENSIONS

Model	Element Weight kg (lb) ^c	Dim. A mm (inches)	Dim. B mm (inches)	Dim. C ^d mm (inches)	Permeate Tube
TurboClean® Bev 8040-RO	16 (36)	1,016 (40.0)	201 (7.9)	28.6 (1.125)	Female
TurboClean® Bev 8040-RO-O	16 (36)	1,016 (40.0)	201 (7.9)	28.9 (1.138)	Female
TurboClean® Bev 8040-RO-X20	16 (36)	1,016 (40.0)	201 (7.9)	28.9 (1.138)	Female
TurboClean® Bev 8040-RO-LE	18 (40)	1,016 (40.0)	211 (8.3)	28.9 (1.138)	Female

^c Shipping weight is dependent on packaging material and quantity shipped.
^d Dimension "C" is the Inner Diameter.



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.

Contact

Europe
 Germany: +49 611 962 6001
 Italy: +39 0721 1796201
 info@microdyn-nadir.com

Americas
 USA: +1 805 964 8003
 sales.mnus@microdyn-nadir.com

Asia
 Singapore: +65 6457 7533
 China: +86 10 8413 9860
 waterchina@mann-hummel.com