

TurboClean Food & Dairy

RO Series

TurboClean elements feature a patented sanitary hard-shell design that delivers better system performance due to about 60% less bypass flow than other sanitary elements. Lower bypass flow results in energy savings and/or higher flux rates as more of the feed flows across the membrane surface instead of around the outside of the element. Higher crossflow velocity also results in the most effective membrane cleaning. TurboClean elements are stronger than net-wrapped sanitary elements and can withstand higher pressure drops. And with the tightest OD tolerance and optimal circularity, TurboClean elements are the easiest elements to load and unload.

MEMBRANE CHARACTERISTICS

Membrane	ACM2	ACM4
Membrane Chemistry	Polyamide	Polyamide
Stabilized Salt Rejection (%)	99.5	99.3
Minimum Salt Rejection (%)	99.0	98.8

MODULE SPECIFICATIONS

Model	Membrane Area m ² (ft ²)	Feed Spacer Thickness (mil) ^a
TurboClean RO 3838-ACM2-31	6.5 (70)	31
TurboClean RO 3838-ACM2-46	4.9 (53)	46
TurboClean RO 3840-ACM2-31	6.5 (70)	31
TurboClean RO 3840-ACM2-46	4.9 (53)	46
TurboClean RO 6338-ACM2-31	20.9 (225)	31
TurboClean RO 6338-ACM2-46	16.3 (175)	46
TurboClean RO 8038-ACM2-31	33.0 (355)	31
TurboClean RO 8038-ACM2-46	26.9 (290)	46
TurboClean RO 8038-ACM2-65	21.0 (225)	65
TurboClean RO 8038-ACM2-80P	16.7 (180)	80P
TurboClean RO 8038-ACM4-31	33.0 (355)	31
TurboClean RO 8338-ACM2-31	118.0 (386)	31
TurboClean RO 8338-ACM2-46	93.0 (305)	46

TurboClean RO 8338-ACM2-65

73.0 (239)

65

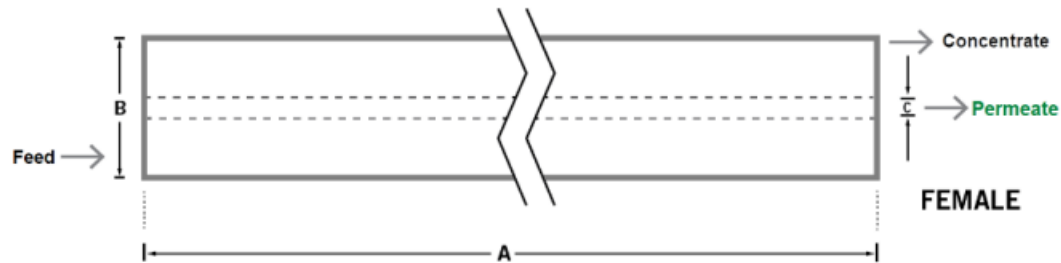
TurboClean RO 8338-ACM2-80P

62.0 (203)

80P

a All models on this sheet have TurboClean sanitary outer wrap. Models ending in "P" have parallel feed spacers; all other models have diamond shaped feed spacers.

PHYSICAL DIMENSIONS



PHYSICAL DIMENSIONS

Model	Element Weight Kg (lb) ^b	Dim. A mm (inches)	Dim. B mm (inches)	Dim. C mm (inches) ^c	Permeate Tube
TurboClean RO 3838-ACM2-31	4 (9)	965 (38.0)	96 (3.8)	21.2 (0.83)	Female
TurboClean RO 3838-ACM2-46	4 (9)	965 (38.0)	96 (3.8)	21.2 (0.83)	Female
TurboClean RO 3840-ACM2-31	4 (9)	984 (38.75)	96 (3.8)	21.2 (0.83)	Female
TurboClean RO 3840-ACM2-46	4 (9)	984 (38.75)	93 (3.8)	21.2 (0.83)	Female
TurboClean RO 6338-ACM2-31	11 (24)	965 (38.0)	160 (6.3)	28.9 (1.138)	Female
TurboClean RO 6338-ACM2-46	11 (24)	965 (38.0)	160 (6.3)	28.9 (1.138)	Female
TurboClean RO 8038-ACM2-31	16 (36)	965 (38.0)	201 (7.9)	28.6 (1.125)	Female
TurboClean RO 8038-ACM2-46	16 (36)	965 (38.0)	201 (7.9)	28.6 (1.125)	Female
TurboClean RO 8038-ACM2-65	16 (36)	965 (38.0)	201 (7.9)	28.6 (1.125)	Female
TurboClean RO 8038-ACM2-80P	16 (36)	965 (38.0)	201 (7.9)	28.6 (1.125)	Female
TurboClean RO 8038-ACM4-31	16 (36)	965 (38.0)	201 (7.9)	28.6 (1.125)	Female
TurboClean RO 8338-ACM2-31	18 (40)	965 (38.0)	211 (8.3)	28.6 (1.125)	Female
TurboClean RO 8338-ACM2-46	18 (40)	965 (38.0)	211 (8.3)	28.6 (1.125)	Female
TurboClean RO 8338-ACM2-65	18 (40)	965 (38.0)	211 (8.3)	28.6 (1.125)	Female
TurboClean RO 8338-ACM2-80P	18 (40)	965 (38.0)	211 (8.3)	28.6 (1.125)	Female

^b Shipping weight is dependent on packaging material and quantity shipped.

^c Dimension "C" is the inner diameter.

OPERATING PARAMETERS

Maximum Operating Pressure	55 bar (800 psi)
Maximum Operating Temperature	50°C (122°F)
Cleaning pH Range ¹	1.0 – 12.0
Chlorine Tolerance ²	<0.1 ppm
Maximum Pressure Drop	1.4 bar (20 psi) per element; 6 bar (80 psi) per housing
Hydrogen Peroxide Usage Limit ³	20 ppm continuous; 1000 ppm for short-term cleaning

¹ Refer to temperature and pH limits in Membrane Cleaning Guide – Food & Dairy: RO & NF Elements (TSG-C-003).

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 our Membrane Operating Guide (TSG-O-012).

³ Hydrogen peroxide short term cleaning at 1000 ppm performed at 25°C (77°F) max. Refer to hydrogen peroxide limits in Membrane Cleaning Guide – Hydrogen Peroxide/Peracetic Acid Mixtures (TSG-C-006).

IMPORTANT INFORMATION

- Start-up:** MANN+HUMMEL Water & Membrane 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 – Food & Dairy: RO & NF Elements (TSG-C-003).
- 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 conform to USDA 3A sanitary standard 45-03, use FDA (CFR Title 21) compliant materials, comply with EU regulation (EC) No. 1935/2004 and No. 10/2011, and have Halal and Kosher certifications.

CUSTOMIZABLE SPECIALTY ELEMENTS

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

Contact

Americas

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

Asia

APAC: +65 6457 7533
info.wfs@mann-hummel.com
China: +86 10 8413 9860
waterchina@mann-hummel.com

Europe

Germany: +49 611 7118 7480
Italy: +39 0721 1796201
info.wfs@mann-hummel.com