



TRISEP® X-20™

Low Fouling Brackish Water RO Elements

TRISEP® X-20™ is a fouling-resistant membrane with a unique, proprietary formulation that results in low fouling characteristics. The unique barrier layer chemistry does not degrade over time like some competitive “fouling resistant” membranes that are simply “modified” or “coated” standard membranes. Excellent for wastewater and other high fouling applications, X-20 membrane elements are extremely durable and offer consistent high salt rejection while lowering cleaning frequency and extending membrane life.

MEMBRANE CHARACTERISTICS

Membrane	X-20™
Membrane Type	Low-Fouling Polyamide
Stabilized Salt Rejection (%)	99.5
Minimum Salt Rejection (%)	99.0

DESIGN INFORMATION

Model	Permeate Flow m ³ /day (GPD) ^a	Membrane Area m ² (ft ²)	Feed Spacer Thickness (mil) ^b
TRISEP® PLT 2540-X20-31	2.5 (650)	2.4 (26)	31
TRISEP® PLT 4040-X20-31	9.1 (2,400)	7.9 (85)	31
TRISEP® 4040-X20-TTA	7.2 (1,900)	6.2 (67)	46
TRISEP® 4040-X20-TSA	9.3 (2,450)	8.2 (88)	31
TRISEP® 8040-X20-TTA	27.0 (7,200)	25.3 (275)	46
TRISEP® 8040-X20-TTFA	27.0 (7,200)	25.3 (275)	46
TRISEP® 8040-X20-TSA	36.7 (9,700)	33.9 (365)	34
TRISEP® 8040-X20-TSFA	36.7 (9,700)	33.9 (365)	34
TRISEP® 8040-X20-UWA	39.4 (10,400)	37.2 (400)	28
TRISEP® 8040-X20-UWFA	39.4 (10,400)	37.2 (400)	31

a Test conditions: 2,000 ppm NaCl, 15.5 bar (225 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 fiberglass 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 brine seal. All 4040 and 8040 models on this sheet include one interconnector.

OPERATING PARAMETERS

Maximum Operating Pressure	41 bar (600 psi)
Maximum Operating Temperature	45°C (113°F)
Cleaning pH Range¹	1.0 - 12.0
Chlorine Tolerance²	< 0.1 ppm
Maximum Pressure Drop	1 bar (15 psi) per element; 4 bar (60 psi) per housing
Maximum SDI₁₅	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).

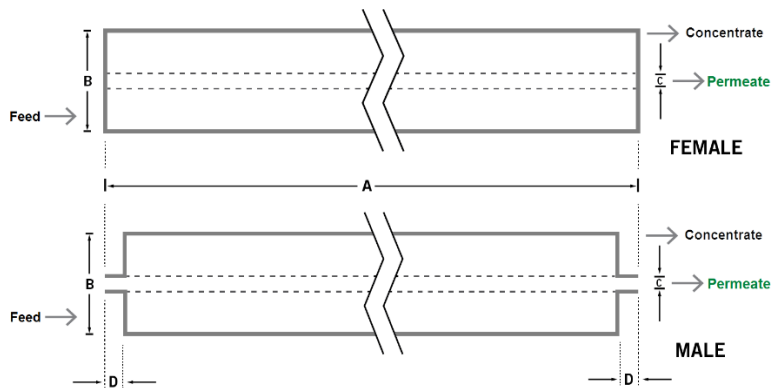
PHYSICAL DIMENSIONS

Model	Element Weight kg (lb) ^c	Dim. A mm (inches)	Dim. B mm (inches)	Dim. C ^d mm (inches)	Permeate Tube ^e
TRISEP® PLT 2540-X20-31	3 (7)	1,016 (40.0)	64 (2.5)	19.1 (0.75)	Male
TRISEP® PLT 4040-X20-31	4 (9)	1,016 (40.0)	99 (3.9)	19.1 (0.75)	Male
TRISEP® 4040-X20-TTA	4 (9)	1,016 (40.0)	99 (3.9)	19.1 (0.75)	Female
TRISEP® 4040-X20-TSA	4 (9)	1,016 (40.0)	99 (3.9)	19.1 (0.75)	Female
TRISEP® 8040-X20-TTA	16 (36)	1,016 (40.0)	201 (7.9)	38.1 (1.50)	Female
TRISEP® 8040-X20-TTFA	16 (36)	1,016 (40.0)	201 (7.9)	28.6 (1.125)	Female
TRISEP® 8040-X20-TSA	16 (36)	1,016 (40.0)	201 (7.9)	38.1 (1.50)	Female
TRISEP® 8040-X20-TSFA	16 (36)	1,016 (40.0)	201 (7.9)	28.6 (1.125)	Female
TRISEP® 8040-X20-UWA	16 (36)	1,016 (40.0)	201 (7.9)	38.1 (1.50)	Female
TRISEP® 8040-X20-UWFA	16 (36)	1,016 (40.0)	201 (7.9)	28.6 (1.125)	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: TRISEP® 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: TRISEP 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).

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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