

# 411-HR (CA)

## Brackish Water Desalination FRP Membrane Element Reverse Osmosis

### ELEMENT SPECIFICATIONS

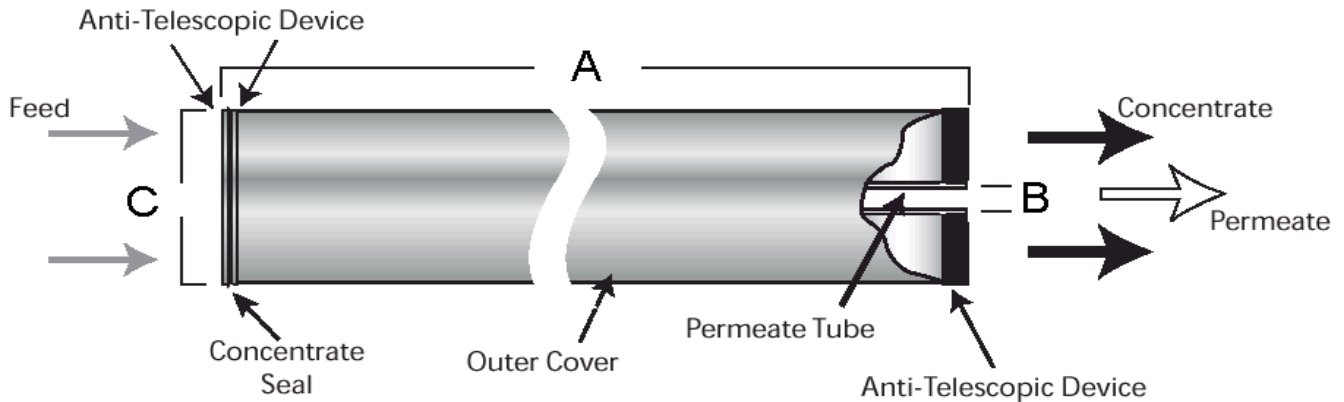
Model	Flow		Active Area		Rejection		Part Number
	GPD	(m3/d)	ft2	m2	Average	Minimum	
411-HR (CA)	1,600	6.1	75	7.0	97.5%	96.0%	1117404

Specifications are based on a 2000 mg/L NaCl solution at 420 psig operating pressure (2930kPa), 77deg.F.(25deg.C), 10% recovery, pH 6-7. Individual flux may vary +15%/ -15%. Average salt rejection after a minimum of 24 hours in continuous operation.

### OPERATING AND DESIGN PARAMETERS

<p><b>Membrane:</b> Cellulose Acetate</p> <p><b>Typical Operating Pressure:</b> 140-400psig (965-2760 kPa)</p> <p><b>Maximum Pressure:</b> 450psig (3143 kPa)</p> <p><b>Maximum Pressure Drop:</b> 10 psig (69 kPa) per element 50 psig (345 kPa) per vessel</p> <p><b>Chlorine Tolerance:</b> 1 ppm maximum, continuous 30 ppm for 30 min. during sanitization</p> <p><b>Typical Operating Flux:</b> 10-20 GFD (15-35 L.H-1.M-2)</p>	<p><b>Optimum rejection pH:</b> 5.0- 6.5</p> <p><b>Operating pH range:</b> 5.0-6.5</p> <p><b>Cleaning pH range:</b> 3.0-8.0</p> <p><b>Maximum Temperature:</b> 86°F (30°C)</p> <p><b>Feed NTU:</b> &lt;1</p> <p><b>Feed SDI:</b> &lt;5</p>
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### ELEMENT DIMENSIONS AND WEIGHT



Model	A inches (mm)	B inches (mm)	C* inches (mm)	Weight lbs (kg)
411-HR (CA)	40.125 (1019)	0.775 (20)	3.94 (100)	11 (5)

\* The element diameter (dimension C) is designed for optimum performance in Osmonics pressure vessels. Other pressure vessel dimension and tolerance may result in excessive bypass and

**Notes:**

The Langelier Saturation Index (LSI) of the concentrate must be negative to minimize the possibility of calcium scale formation on the membrane surface.

At start-up the first two hours of permeate should be discarded because of element preservative.

**Storage conditions** should be less than: <100F, dry, in original carton and not in direct sunlight.



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