

# OSMO HR(CA) series

## brackish water desalination RO elements

The OSMO HR(CA) membranes are used for brackish water desalination in applications where chlorine tolerance of the membrane is required. The cellulose acetate membranes can be sanitized using chlorine.

**Table 1: Element Specification**

Membrane	Cellulose Acetate
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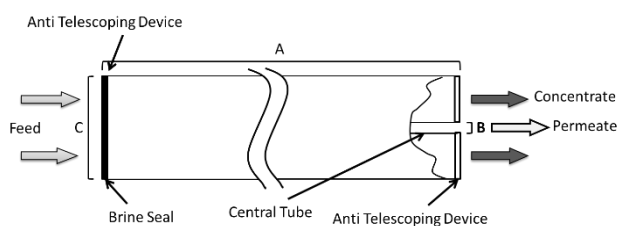
Model	Average permeate flow gpd (m <sup>3</sup> /day) <sup>1,2</sup>	Average NaCl rejection <sup>1,2</sup>	Minimum NaCl rejection <sup>1,2</sup>
OSMO 411-HR(CA)	1,700 (6.4)	97.5%	95.0%
OSMO 416-HR(CA)	1,750 (6.6)	97.5%	95.0%
OSMO 811-HR(CA)	7,300 (27.6)	97.5%	95.0%
OSMO 813-HR(CA)	7,800 (29.5)	97.5%	95.0%
OSMO 815-HR(CA)	6,800 (25.7)	97.5%	95.0%
OSMO 817-HR(CA)	7,200 (27.3)	97.5%	95.0%

<sup>1</sup> Average salt rejection after 24 hours of operation.

Individual flow rate may vary ±20%.

<sup>2</sup> Testing conditions: 2,000 ppm NaCl solution at 425 psi (2,930 kPa) operating pressure, 77°F (25°C), pH 7.5 and 15% recovery.

Model	Membrane area ft <sup>2</sup> (m <sup>2</sup> )	Outer wrap	Part Number
OSMO 411-HR(CA)	75 (7.0)	Fiberglass	1117404
OSMO 416-HR(CA)	80 (7.4)	Net	1143484
OSMO 811-HR(CA)	380 (35.3)	Fiberglass	1117440
OSMO 813-HR(CA)	400 (37.1)	Net	1118224
OSMO 815-HR(CA)	330 (30.6)	Fiberglass	1117443
OSMO 817-HR(CA)	350 (32.5)	Net	1118806



**Figure 1: Element Dimensions Diagram – Female.**  
416, 813, & 817 do not include brine seals.

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**Table 2: Dimensions and Weight**

Model	Type	Dimensions, inches (cm)			Boxed
		A	B	C	Weight lbs. (kg)
OSMO 411-HR(CA)	Female	40.0 (101.6)	0.775 (2.0)	3.94 (10.0)	11 (5)
OSMO 416-HR(CA)	Female	40.0 (101.6)	0.775 (2.0)	3.94 (10.0)	11 (5)
OSMO 811-HR(CA)	Female	40.0 (101.6)	1.139 (29)	8.3 (21.1)	42 (19.1)
OSMO 813-HR(CA)	Female	40.0 (101.6)	1.139 (29)	8.3 (21.1)	42 (19.1)
OSMO 815-HR(CA)	Female	40.0 (101.6)	1.139 (29)	7.9 (20.1)	40 (18.2)
OSMO 817-HR(CA)	Female	40.0 (101.6)	1.139 (29)	7.9 (20.1)	37.5 (17)

**Table 3: Operating and CIP parameters**

<b>Typical Operating Pressure</b>	140-400 psi (965-2,760 kPa)
<b>Typical Operating Flux</b>	10-20GFD (15-35LMH)
<b>Maximum Operating Pressure</b>	450 psi (3,103 kPa)
<b>Maximum Temperature</b>	86°F (30°C)
<b>pH Range</b>	Optimum rejection: 5.0-6.5, Continuous operation: 5.0-6.5, Clean-In-Place (CIP): 3.0-8.0 <sup>1</sup>
<b>Maximum Pressure Drop</b>	Over an element: 10 psi (69 kPa) Per housing: 50 psi (345 kPa)
<b>Chlorine Tolerance</b>	1ppm maximum, continuous 30ppm for 30min during sanitization
<b>Feedwater <sup>2</sup></b>	NTU < 1 SDI < 3

<sup>1</sup>Please refer to Cleaning Guidelines Technical Bulletin TB1194

<sup>2</sup>SDI is measured on a non-linear scale using a 0.45-micron filter paper. Additionally, finer colloids, particulates and microorganisms that pass through the filter paper and not measured in the SDI test, will potentially foul the RO element. For performance consistency and project warranty, please use Winflows projection software and consult your SUEZ representative.