

# OSMO HR(PA) Series

Fact Sheet

## High Rejection Brackish Water Desalination RO Elements

The OSMO HR(PA) are polyamide TFM used for desalination of brackish water sources.

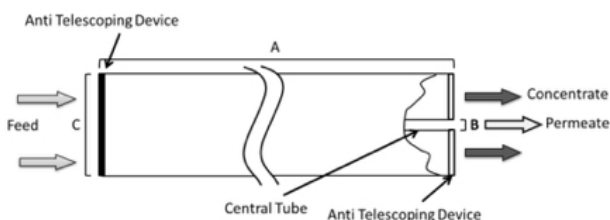
**Table 1: Element Specification**

Membrane	Thin-Film Membrane (TFM*)		
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(PA)	1,600 (6.0)	99.5%	99.0%
OSMO 416-HR(PA)	2,200 (8.3)	99.0%	98.0%
OSMO 811-HR(PA)	9,600 (36.3)	99.5%	99.0%
OSMO 813-HR(PA)	10,200 (38.6)	99.0%	98.0%
OSMO 815-HR(PA)	9,000 (34.1)	99.5%	99.0%
OSMO 817-HR(PA)	9,600 (36.3)	99.0%	98.0%

<sup>1</sup> Average salt rejection after 24 hours operation. Individual flow rate may vary +/- 25%.

<sup>2</sup> Testing conditions: 2,000 ppm NaCl solution at 225 psi (1,551 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(PA)	75 (7.0)	Fiberglass	1119067
OSMO 416-HR(PA)	80 (7.4)	Net	1158140
OSMO 811-HR(PA)	350 (32.5)	Fiberglass	1140921
OSMO 813-HR(PA)	375 (34.8)	Net	1158142
OSMO 815-HR(PA)	330 (33.0)	Fiberglass	1140920
OSMO 817-HR(PA)	350 (32.5)	Net	1158141



**Figure 1: Element Dimensions Diagram - Female**

**Table 2: Dimensions and Weight**

Model <sup>1</sup>	Dimensions, inches (cm)			Boxed Weight lbs (kg)
	A	B <sup>2</sup>	C	
OSMO 411-HR(PA)	40.0 (101.6)	0.775 (2.0)	3.94 (10.0)	11 (5)
OSMO 416-HR(PA)	40.0 (101.6)	0.775 (2.0)	3.94 (10.0)	11 (5)
OSMO 811-HR(PA)	40.0 (101.6)	1.139 (29)	8.3 (211)	42 (19.1)
OSMO 813-HR(PA)	40.0 (101.6)	1.139 (29)	8.3 (211)	40 (18.1)
OSMO 815-HR(PA)	40.0 (101.6)	1.139 (29)	7.9 (20.1)	39.5 (18)
OSMO 817-HR(PA)	40.0 (101.6)	1.139 (29)	7.9 (20.1)	37.5 (17)

<sup>1</sup> These elements are bagged dried.

<sup>2</sup> Internal diameter.

**Table 3: Operating and CIP parameters**

Typical Operating Pressure	200 psi (1,379 kPa)
Typical Operating Flux	10 – 20 GFD (15 – 35 LMH)
Maximum Operating Pressure	600 psi (4,137 kPa)
Maximum Temperature	Continuous operation: 122°F (50°C) Clean-In-Place (CIP): 122°F (50°C)
pH Range	Optimum rejection: 7.0-7.5, Continuous operation: 4.0-11.0, Clean-In-Place (CIP): 2.0-11.5
Maximum Pressure Drop	Over an element: 10 psi (69 kPa) Per housing: 50 psi (345 kPa)
Chlorine Tolerance	1,000+ ppm-hours, Dechlorination recommended
Feedwater <sup>4</sup>	NTU < 1 SDI < 3

<sup>4</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 GE representative.



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