

OSMO HR(PA) Series

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 Model | Thin-Film Membrane (TFM*) | | |
|-----------------|--|---------------------------------------|---------------------------------------|
| | Average permeate flow gpd (m ³ /day) ^{1,2} | Average NaCl rejection ^{1,2} | Minimum NaCl rejection ^{1,2} |
| 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% |

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

² 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 ² (m ²) | 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 |

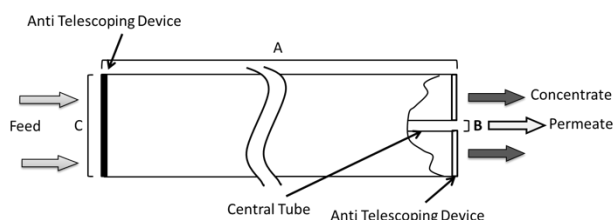


Figure 1: Element Dimensions Diagram – Female

Table 2: Dimensions and Weight

| Model ¹ | Dimensions, inches (cm) | | | Boxed Weight lbs (kg) |
|--------------------|-------------------------|----------------|-------------|-----------------------|
| | A | B ² | 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) |

¹ These elements are bagged dried.

² 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 [*] | NTU < 1 SDI < 3 |

^{*}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.