

# Clariphex

## MARIS HR series – High Rejection Sea Water RO Membranes

### Product description:

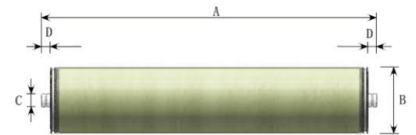
The MARIS-HR membranes stand as our flagship seawater reverse osmosis (SWRO) membrane solution, purpose-engineered for high-rejection applications. These membrane elements are designed to sustain exceptional salt rejection rates over prolonged operational cycles while delivering consistent, design-rated permeate flux. Its advanced thin-film composite (TC) structure ensures superior separation efficiency and outstanding stability even under the harsh operating conditions commonly encountered in seawater desalination processes.

### Product Highlights:

- \* Exceptional boron rejection efficiency, paired with superior overall salt rejection performance
- \* Increased membrane sheet thickness and optimized cross-linking density, which significantly enhance chemical resistance and extend service life
- \* Shortened membrane leaves reduces concentration polarization, improves flow field distribution, and minimizes localized fouling
- \* Robust structural design, ensuring consistent performance even with fluctuations in feedwater quality

### Product Dimensions:

Membrane Code	Dim. A		Dim. B		Dim. C		Dim. D	
	mm	inch	mm	inch	mm	inch	mm	inch
MARIS-HR-8x40-400	1016	40	201	7.9	29	1.125		
MARIS-HR-4x40-82	963	37.9	99	3.9	19	0.75	26.7	1.05



### Product Specifications:

Membrane Code	Effective Area		Permeate flowrate		Min Rejection (%)	Stable Rejection (%)	Boron rejection (%)	Material
	(m <sup>2</sup> )	(ft <sup>2</sup> )	(m <sup>3</sup> /d)	(gpd)				
MARIS-HR-8x40-400	37.2	400	24.5	6500	99.65	99.80	99.75	
MARIS-HR-4x40-82	7.6	82	5	1320	99.60	99.75	-	

Note: Flux and rejection rate is based on the following standard test conditions: 5.5 MPa (800 psi) pressure, 25°C (77°F), 32000 ppm NaCl solution and pH 8 for feedwater, and 8% recovery.

### Operation & Cleaning Limits:

- \* Maximum Operating Pressure: 83 bar (1200 psi)
- \* Maximum Operating Temperature: 45°C (113°F)
- \* Maximum Element Pressure Drop: 1.0 bar (15psi)
- \* pH Range Continuous Operation: 2-11
- \* pH Range Short-Term (Cleaning): 1-13
- \* Maximum Feed SDI (SDI<sub>15</sub>): 5.0
- \* Free Chlorine Tolerance: < 0.1 ppm

### Notes:

- \* Permeate flow for individual elements may vary ±15 percent from the value specified.
- \* Active membrane area guaranteed ±4%.
- \* Stabilized salt rejection is generally achieved within 24-48 hours of continuous use; depending upon feedwater characteristics and operating conditions.