



Solutions You Need. Technologies You Trust.

## Brackish Water Reverse Osmosis Membrane Elements



### CPA

#### High Rejection Membrane

CPA (Composite Polyamide) elements set the standard for RO membrane elements – over 600 million gallons per day of pure water are produced by CPA elements for global municipalities and industries. 4” and 8” configurations available.

##### Advantages

- 99.7% nominal rejection
- High TOC, silica and hardness rejection

##### Applications

- Desalting of well waters – municipal drinking water
- Reducing TDS prior to ion exchange
- Boiler make-up water
- Ultrapure water for semi-conductor manufacture

##### Product Offering\*

CPA2-4040, CPA3, CPA3-LD, CPA5-LD

### ESPA®

#### Ultra Low Pressure Membrane

ESPA® (Energy Saving Polyamide) elements achieve high flux/lower pressure without compromising standards for high rejection. Since its introduction in the late 1990s, the ESPA® membrane has gained wide acceptance in the water treatment industry due to the significant operational cost savings associated with their use. 4” and 8” configurations available.

##### Advantages

- Up to 99.6% nominal rejection
- Lower pressure for lower CAPEX/OPEX

##### Applications

- Municipal potable and wastewater plants
- Bottling operations
- Light industrial

##### Product Offering\*

ESPAB (high boron rejection), ESPAB+, ESPA1, ESPA2 (8” and 16”), ESPA2-LD, ESPA2+, ESPA4

### LFC®

#### Low Fouling Membranes

LFC® (Low Fouling Composite) elements combine neutral surface charge and hydrophilicity, providing significant reduction in fouling rates and increasing membrane efficiency by restoring nominal performance after cleaning.

##### Advantages

- 99.7% nominal rejection
- Low fouling membrane chemistry reduces or eliminates pre-treatment
- LD technology increases brine spacer thickness for reduced differential pressures
- Lower cleaning frequency and costs

##### Applications

- Municipal/Industrial surface and wastewaters
- Difficult feedwaters requiring significant pretreatment

##### Product Offering\*

LFC3-LD (Low Differential)

# Brackish Water Nanofiltration Membrane Elements

**ESNA®**

## Energy Saving Nanofiltration Membrane

ESNA® (Energy Saving Nanofiltration) elements provide 50% - 91% salt rejection with ultra-low operating pressures (below 100psi), and are ideal for softening applications and the removal of pesticides, bacteria or viruses.

### Advantages

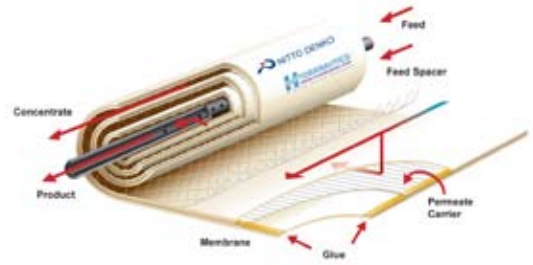
- Up to 91% nominal rejection
- Optimum hardness rejection
- Effectively removes organics
- Ultra-low pressure, energy saving, lower OPEX

### Applications

- Municipal water treatment

### Product Offering\*

ESNA1-LF, ESNA1-LF2



# Seawater Reverse Osmosis Membrane Elements

**SWC®**

## Seawater Membranes

SWC® seawater desalination elements offer the highest levels of salt rejection and a consistently pure end product. Membrane formulations are designed to accommodate varying levels of seawater salinities worldwide with reliable field-proven performance. 4" and 8" configurations available.

### Advantages

- 99.8% nominal rejection
- Up to 9,900 gpd
- Highest combination flow, rejection and boron rejection (SWC5+ Max)
- Up to 440ft<sup>2</sup> active membrane area

### Applications

- Seawater desalting
- Broad offering of membrane formulations designed to accommodate varying levels of seawater salinities worldwide

### Product Offering\*

SWC4 (8" and 16"), SWC4+, SWC4+B (high boron rejection), SWC4+Max (high flow, rejection and boron rejection), SWC4+B Max, SWC5 (8" and 16"), , SWC5-LD, SWC5 Max (high flow, rejection and boron rejection), SWC6



Fujairah, U.A.E. SWC Installation 45 MGD (170,000 m<sup>3</sup>/d.)

## Integrated Membrane Solutions® Design

IMSDesign is a powerful software tool for designing an integrated membrane system. IMSDesign is available as a complimentary download at [www.membranes.com](http://www.membranes.com) and a complimentary CD may be requested by sending an e-mail to [info@hydranautics.com](mailto:info@hydranautics.com) or calling 800-CPA-PURE.

**\*Technical Specification Sheets and Application Bulletins are available at [www.membranes.com](http://www.membranes.com). Installation references available upon request.**

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