

# MICRODYN RO

## High Productivity

## Seawater RO Elements

The MICRODYN RO SWL series of seawater RO membranes is ideal for high salinity water purification applications. These elements feature our best membrane for upgrading an RO system and offer very high productivity. MICRODYN RO elements are available in standard 4" and 8" spiral-wound designs to meet all of your new equipment and direct replacement needs.

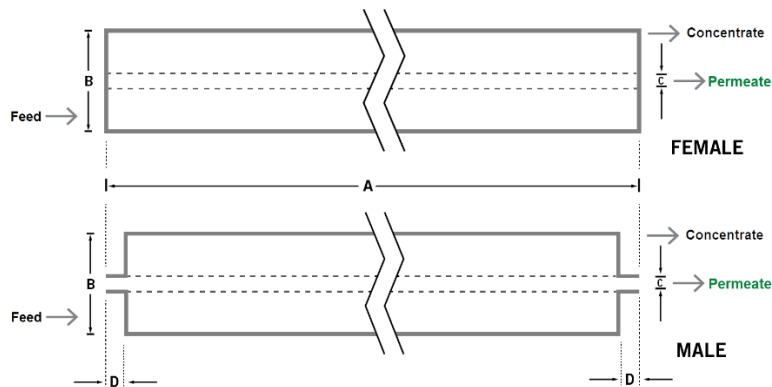
### MEMBRANE CHARACTERISTICS

|                                      |   |
|--------------------------------------|---|
| <b>Membrane Chemistry</b>            | Thin-Film Composite Polyamide                           |
| <b>Construction</b>                  | Spiral-Wound Membrane Element with Fiberglass Outerwrap |
| <b>Stabilized Salt Rejection (%)</b> | 4040 model: 99.4, 8040 models: 99.8                     |
| <b>Minimum Salt Rejection (%)</b>    | 4040 model: 99.2, 8040 models: 99.6                     |

### ELEMENT SPECIFICATIONS

| Model   | 4040-SWL    | 8040-SWL-400 | 8040-SWL-440 |
|---|-------------|--------------|--------------|
| <b>Permeate Flow - m<sup>3</sup>/day (GPD)<sup>a</sup></b>        | 7.4 (1,950) | 34.1 (9,000) | 37.5 (9,900) |
| <b>Membrane Area - m<sup>2</sup> (ft<sup>2</sup>)<sup>b</sup></b> | 7.9 (85)    | 37.2 (400)   | 40.9 (440)   |

### PHYSICAL DIMENSIONS



| Model                                       | 4040-SWL     | 8040-SWL-400 | 8040-SWL-440 |
|---|--------------|--------------|--------------|
| <b>Dim. A - mm (inches)</b>                 | 1,016 (40.0) | 1,016 (40.0) | 1,016 (40.0) |
| <b>Dim. B - mm (inches)</b>                 | 99 (3.9)     | 201 (7.9)    | 201 (7.9)    |
| <b>Dim. C - mm (inches)<sup>c</sup></b>     | 19.1 (0.75)  | 28.6 (1.125) | 28.6 (1.125) |
| <b>Permeate Tube<sup>d</sup></b>            | Male         | Female       | Female       |
| <b>Element Weight - kg (lb)<sup>e</sup></b> | 4 (9)        | 16 (36)      | 17 (37)      |

<sup>a</sup> Test conditions: 32,000 ppm NaCl, 55 bar (800 psi), 25°C (77°F), pH 8.0, 30 minutes operation. Test condition recovery is 10% for 4" models and 8% for 8" models.

<sup>b</sup> Flow rates will be no more than 15% below the values shown. Product specifications may change without notice as design revisions occur.

<sup>c</sup> All models on this sheet have fiberglass outer wrap and diamond shaped feed spacers.

<sup>d</sup> Diameters for Dimension "C" are as follows. For Female elements, "C" is the Inner Diameter. For Male elements, "C" is the Outer Diameter.

<sup>e</sup> Male elements have a protruding permeate tube, indicated as "D" in the diagram. Dimension "D" is 1.05 in (26.7 mm).

<sup>f</sup> Shipping weight is dependent on packaging material and quantity shipped.

**OPERATING PARAMETERS**

|                                       |   |
|---------------------------------------|---|
| <b>Maximum Operating Pressure</b>     | 4040 model: 69 bar (1,000 psi); 8040 models: 83 bar (1,200 psi) |
| <b>Maximum Operating Temperature</b>  | 45°C (113°F)  |
| <b>Cleaning pH Range<sup>1</sup></b>  | 1.0 – 12.0  |
| <b>Chlorine Tolerance<sup>2</sup></b> | < 0.1 ppm   |
| <b>Maximum Pressure Drop</b>          | 1 bar (15 psi) per element; 4 bar (60 psi) per housing          |
| <b>Maximum SDI<sub>15</sub></b>       | 5.0   |
| <b>Maximum Turbidity</b>              | 1 NTU   |

<sup>1</sup> Refer to temperature and pH limits in Membrane Cleaning Guide - Water Application Elements (TSG-C-001).

<sup>2</sup> Pretreatment is recommended for the removal of free chlorine and other oxidizing agents to prevent damage to membranes. Oxidizing agents, such as free chlorine, in contact with polyamide membranes may result in shortened operating life or membrane failure. Such oxidation damage is excluded from warranty. Refer to Membrane Operating Guide - Recommendations for Water Purification (TSG-O-012).

**IMPORTANT INFORMATION**

**Start-up:** MANN+HUMMEL Water & Fluid Solutions recommends flushing elements for 30 minutes at low pressure and discarding permeate during the flush prior to operation. For a more detailed start-up procedure, please see Element Start-Up Guide – System Start-Up (TSG-O-005).

**Cleaning:** MICRODYN RO membrane elements must be cleaned periodically to ensure proper operation and to prevent membrane damage. Please see Membrane Cleaning Guide – Water Application Elements (TSG-C-001).

**Storage:** MICRODYN RO membrane elements must be stored appropriately to ensure proper operation and to prevent membrane damage. Please see Element Storage Guides (TSG-O-009 & TSG-O-010).

**CUSTOMIZABLE SPECIALTY ELEMENTS**

MANN+HUMMEL Water & Fluid Solutions offers a full range of membranes and element designs for challenging water and process applications. Technologies include low-fouling RO, submerged UF, continuous high temperature, ultra-high pressure, unique sanitary designs and more. Contact us to customize a product that satisfies your specific requirements.

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