

# AD LE Series

## High rejection, Low Energy Seawater RO Elements

The AD LE Series, family of proprietary thin film reverse osmosis membrane elements, is characterized by an excellent sodium chloride rejection. AD LE series is selected when high quality permeate is demanded from seawater that is relatively high in TDS.

AD LE Series new membrane chemistry provides excellent rejection characteristics when operated at seawater operating conditions (pressures exceeding 800psi (5,516kPa) and elevated seawater temperatures.

**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> | Minimum Boron rejection <sup>2</sup> |
|-----------|--|---------------------------------------|---------------------------------------|--------------------------------------|
| AD-400 LE | 7500 (28.4)  | 99.75%                                | 99.3%                                 | 91.0%                                |
| AD-440 LE | 8200 (31.0)  | 99.75%                                | 99.3%                                 | 91.0%                                |

<sup>1</sup> Average salt rejection after 24 hours operation. Individual flow rate may vary +25%/-15%.

<sup>2</sup> Testing conditions: 32,000mg/l NaCl & 5mg/l Boron solution at 800psi (5,516kPa) operating pressure, 77°F (25°C), pH 8.0 and 7% recovery.

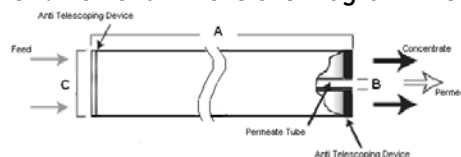
| Model     | Active area ft <sup>2</sup> (m <sup>2</sup> ) | Outer wrap | Part number |
|-----------|---|------------|-------------|
| AD-400 LE | 400 (37.2)                                    | Fiberglass | 3056658     |
| AD-440 LE | 440 (40.9)                                    | Fiberglass | 3056659     |

**Table 2: Operating and CIP parameters**

|                                   |   |
|-----------------------------------|---|
| <b>Typical Operating Pressure</b> | 800psi (5,516kPa)   |
| <b>Typical Operating Flux</b>     | 7-11GFD (12-19LMH)  |
| <b>Maximum Operating Pressure</b> | 1,200psi (8,274kPa)   |
| <b>Maximum Temperature</b>        | Continuous operation: 122°F (50°C)<br>Clean-In-Place (CIP): 122°F (50°C)                        |
| <b>pH range</b>                   | Optimum rejection: 7.0-7.5,<br>Continuous operation 4.0-11.0,<br>Clean-In-Place (CIP): 2.0-11.5 |
| <b>Maximum Pressure Drop</b>      | Over an element: 12 psi (83 kPa)<br>Per housing: 50 psi (345 kPa)                               |
| <b>Chlorine Tolerance</b>         | 1,000+ ppm-hours,<br>dechlorination recommended   |
| <b>Feedwater<sup>3</sup></b>      | NTU < 1<br>SDI < 5  |

<sup>3</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 Filters with Membranes representative.

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



**Table 3: Dimensions and Weights**

| Model <sup>1</sup> | Type   | Dimensions, inches (cm) |                |            | Boxed Weight lbs (kg) |
|--------------------|--------|-------------------------|----------------|------------|-----------------------|
|                    |        | A                       | B <sup>2</sup> | C          |                       |
| AD-400 LE          | Female | 40.0 (101.6)            | 1.125 (2.86)   | 7.9 (20.1) | 35 (16)               |
| AD-440 LE          | Female | 40.0 (101.6)            | 1.125 (2.86)   | 7.9 (20.1) | 35 (16)               |



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