411-HR (CA)
Brakish Water Desalination FRP Membrane Element
Reverse Osmosis

ELEMENT SPECIFICATIONS

<table>
<thead>
<tr>
<th>Model</th>
<th>GPD</th>
<th>Flow (m3/d)</th>
<th>Active Area (ft²)</th>
<th>Rejection Average</th>
<th>Rejection Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>411-HR (CA)</td>
<td>1,600</td>
<td>6.1</td>
<td>75</td>
<td>97.5%</td>
<td>96.0%</td>
</tr>
</tbody>
</table>

Specifications are based on a 2000 mg/L NaCl solution at 420 psig operating pressure (2930 kPa), 77°F (25°C), 10% recovery, pH 6-7. Individual flux may vary +15% / -15%. Average salt rejection after a minimum of 24 hours in continuous operation.

OPERATING AND DESIGN PARAMETERS

- **Membrane**: Cellulose Acetate
- **Typical Operating Pressure**: 140-400 psig (965-2760 kPa)
- **Maximum Pressure**: 450 psig (3143 kPa)
- **Maximum Pressure Drop**: 10 psig (69 kPa) per element, 50 psig (345 kPa) per vessel
- **Chlorine Tolerance**: 1 ppm maximum, continuous 30 ppm for 30 min. during sanitization
- **Typical Operating Flux**: 10-20 GFD (15-35 L/H/M²)

- **Optimum rejection pH**: 5.0-6.5
- **Operating pH range**: 5.0-6.5
- **Cleaning pH range**: 3.0-8.0
- **Maximum Temperature**: 86°F (30°C)
- **Feed NTU**: <1
- **Feed SDI**: <5

ELEMENT DIMENSIONS AND WEIGHT

<table>
<thead>
<tr>
<th>Model</th>
<th>A inches (mm)</th>
<th>B inches (mm)</th>
<th>C* inches (mm)</th>
<th>Weight lbs (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>411-HR (CA)</td>
<td>40.125 (1019)</td>
<td>0.775 (20)</td>
<td>3.94 (100)</td>
<td>11 (5)</td>
</tr>
</tbody>
</table>

* The element diameter (dimension C) is designed for optimum performance in Osmonics pressure vessels. Other pressure vessel dimension and tolerance may result in excessive bypass and****

Notes:
The Langelier Saturation Index (LSI) of the concentrate must be negative to minimize the possibility of calcium scale formation on the membrane surface.
At start-up the first two hours of permeate should be discarded because of element preservative.
Storage conditions should be less than: <100°F, dry, in original carton and not in direct sunlight.