

## HYDRACoRe10 and 50 LD Series

Chlorine Tolerant Nanofiltration Membranes

Hydranautics' HYDRACoRe products are chemical and oxidant-resistant, sulfonated polyethersulfone nanofiltration elements. Potential applications include removal of color and large molecular weight organics from industrial, food and beverage, and municipal feedwaters.

### Products & Guidelines:

| Model          | Feed Spacer with biostatic agent inch (cm) | Area, ft2 (m2) | Permeate Flow | NaCl Rejection |     |     | Test Pressure |
|----------------|--|----------------|---------------|----------------|-----|-----|---------------|
|                |  |                |               | Average        | Min | Max |               |
| HYDRACoRe10-LD | 0.034 (0.086)                              | 400 (37)       | 16,200 (59.1) | 20%            | 5%  | 25% | 50 (0.34)     |
| HYDRACoRe50-LD | 0.034 (0.086)                              | 400 (37)       | 17,200 (62.8) | 50%            | 40% | 60% | 140 (0.97)    |

|             |                                       |                                  |
|-------------|---------------------------------------|----------------------------------|
| <b>Type</b> | Configuration:                        | Spiral wound with FRP hard shell |
|             | Membrane Polymer:                     | Sulfonated Polyethersulfone      |
|             | Molecular Weight Cut-off Hydracore10: | 3000 Dalton                      |
|             | Molecular Weight Cut-off Hydracore50: | 1000 Dalton                      |

|                                    |  |                     |
|------------------------------------|--|---------------------|
| <b>Application Data</b>            | Maximum Applied Pressure:                                  | 600 psig (4.16 MPa) |
|                                    | Maximum Continuous Chlorine Concentration <sup>1</sup> :   | 10 PPM              |
|                                    | Maximum Chlorine Concentration for Cleaning <sup>1</sup> : | 100 PPM             |
|                                    | Maximum Operating Temperature:                             | 113 °F (45°C)       |
|                                    | Operating pH Range:  | 2-11*               |
|                                    | Cleaning pH Range:   | 1-12                |
|                                    | (For cleaning temperatures <35C)                           |                     |
|                                    | Maximum Feedwater Turbidity:                               | 1.0 NTU             |
| Maximum Feedwater SDI (15 mins):   | 5.0  |                     |
| Maximum Pressure Drop per element: | 10 psi   |                     |

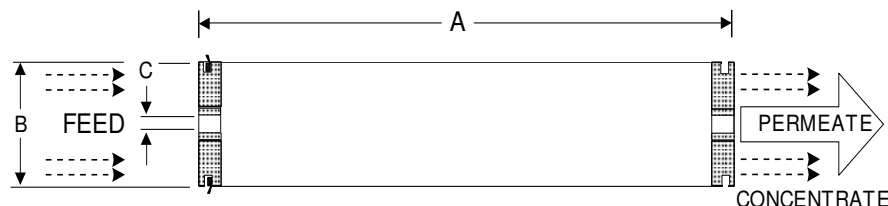
<sup>1</sup> Transition metals (Fe, Mn) should not be present in the water or on the membrane as these can accelerate detrimental reactions between the membrane and the oxidant.

\* The limitations shown here are for general use. For specific projects, operating at more conservative values may ensure the best performance and longest life of the membrane. See Hydranautics Technical Bulletins for more detail on operation limits, cleaning pH, and cleaning temperatures.

### Test Conditions

The stated performance is initial (data taken after 30 minutes of operation), based on the following conditions:

- 2000 ppm NaCl solution
- 20% Permeate Recovery
- 6.5 +/- 0.5 pH Range
- 77 °F (25 °C) Operating Temperature



| A, inches (mm) | B, inches (mm) | C, inches (mm) | Weight, lbs. (kg) |
|----------------|----------------|----------------|-------------------|
| 40.0 (1016)    | 7.89 (200)     | 1.125 (28.6)   | 36 (16.4)         |

**Notice:** Due to the nature of this element, there can be large variation in flow. Allowable permeate flows for individual elements may vary from the stated value with a range of -25% to "no upper limit". Elements may be tested at conditions different from those shown. Individual element performance is provided upon request in order to balance vessel permeate flows for optimum system performance. All membrane elements are supplied with a brine seal, interconnector, and o-rings. Elements are vacuum sealed in a polyethylene bag containing less than 1.0% sodium meta-bisulfite solution, and then packaged in a cardboard box. Hydranautics believes the information and data contained herein to be accurate and useful. The information and data are offered in good faith, but without guarantee, as conditions and methods of use of our products are beyond our control. Hydranautics assumes no liability for results obtained or damages incurred through the application of the presented information and data. It is the user's responsibility to determine the appropriateness of Hydranautics' products for the user's specific end uses.

11/06/2014