

# ESNA

## Energy Saving Nanofiltration Membrane Elements

High performance energy saving ESNA nanofiltration membrane elements are ideal for softening applications and the removal of pesticides, pathogens, bacteria or viruses. They provide 50% - 90% salt rejection with ultra-low-pressure operations, increased energy savings, and significantly lower installation and operating costs. They can effectively remove organics which can form disinfection by-products in municipal water distribution lines.

Hydranautics also offers Integrated Membrane Solutions (IMS) combining a range of RO, NF, UF and MF membrane technologies to achieve the most comprehensive, effective, low-cost solutions for the industry.

### ESNA Product Offerings:

- **ESNA1-LF-LD:** This membrane is globally acclaimed for high hardness rejection characteristics in softening applications. It significantly reduces operating costs and provides optimum hardness rejection in softening applications.
- **ESNA1-LF2-LD:** This is a high flow nanofiltration membrane that provides superior Natural Organic Matter (NOM) rejection and moderate hardness rejection, operating at less than 100 psi pressures. Thus, the membrane offers savings in costs and energy.

The ESNA membranes are available in the LD variant wherein low differential LD Technology® is used to minimize colloidal fouling when used with conventional pre-treatment equipment. These membranes offer consistently low feed pressures and longer intervals between cleanings. These membranes are available in 4-inch and 8-inch diameters.

| Membrane Product | Model             | Permeate flow<br>gpd (m <sup>3</sup> /d) | CaCl <sub>2</sub><br>Rejection | Membrane Active Area<br>ft <sup>2</sup> (m <sup>2</sup> ) |
|------------------|-------------------|------------------------------------------|--------------------------------|-----------------------------------------------------------|
| ESNA1            | ESNA1-LF-LD-4040  | 1600 (6.1)                               | 92%                            | 80 (7.4)                                                  |
|                  | ESNA1-LF-LD       | 8400 (31.8)                              | 92%                            | 400 (37.1)                                                |
|                  | ESNA1-LF2-LD-4040 | 2000 (7.6)                               | 90%                            | 80 (7.4)                                                  |
|                  | ESNA1-LF2-LD      | 10500 (39.7)                             | 90%                            | 400 (37.1)                                                |

### Ordering

| Hydranautics Model | Culligan Part Number | Standard Lead Time |
|--------------------|----------------------|--------------------|
| ESNA1-LF-LD-4040   | D1032614             | 10 business days   |
| ESNA1-LF2-LD-4040  | D1032615             | 10 business days   |
| ESNA1-LF-LD        | D1032616             | 10 business days   |
| ESNA1-LF2-LD       | D1032617             | 10 business days   |