Nitto
Innovation for Customers

HYDRANAUTICS

ESPA4-LD HP

Hydranautics membrane elements are favorite elements for maple sap concentration, balancing high sucrose rejection with high flux. This composite polyamide membrane provides better than 99% sucrose rejection, making it ideal for removing water from maple sap before further concentration in the evaporator step. It is provided in 8040 sizes with 34 mil feed spacer and high-pressure construction.

Specified Performance*

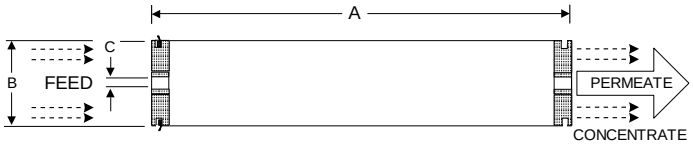
Permeate Flow (Nominal):	11,000 gpd (41.6 m^3/h)
Salt Rejection:	99.2% (99.0% minimum)
Test Conditions:	500 ppm NaCl Solution 100 psig (0.69 MPa) Applied Pressure 77 °F (25 °C) Operating Temperature 15% Permeate Recovery 6.5 - 7.0 Feed pH

* The Specified Performance is based on data taken after a minimum of 10 minutes of operation. Actual testing of elements may be done at conditions which vary from these exact values; in which case, the performance is normalized back to these standard conditions. Permeate flow for individual elements may vary ±15 percent from the value specified.

General Product Description**

Configuration:	Spiral Wound with FRP wrapping (high pressure construction)
Membrane Polymer:	Composite Polyamide
Membrane Active Area**:	400 ft^2 (37.2 m^2)
Feed Spacer:	34 mil (0.86 mm)

Packaging: All membrane elements are supplied with a brine seal, interconnector, and O-rings. Elements are enclosed in a sealed polyethylene bag containing less than 1.0% sodium meta-bisulfite solution, and then packaged in a cardboard box.



Element Details**

A, inches (mm)	B, inches (mm)	C, inches (mm)
40.0 (1016)	7.89 (200)	1.125 (28.6)

**Values listed are indicative, not specified. For more detailed specifications, see our Technical Service Bulletin documents or contact Hydranautics Technical Department.

Product Use and Restrictions^

Maximum Applied Pressure:	1200 psig (8.27 MPa)
Maximum Chlorine Concentration:	< 0.1 ppm
Maximum Operating Temperature:	113 °F (45 °C)
pH Range, Continuous (Cleaning):	2-10 (1-12)
Maximum Feedwater Turbidity:	1.0 NTU
Maximum Feedwater SDI (15 mins):	5.0
Maximum Feed Flow:	85 gpm (19.3 m^3/h)
Minimum Brine Flow:	12 gpm (2.7 m^3/h)
Maximum Pressure Drop for Each Element:	15 psi (0.10 MPa)

^ 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.

Disclaimer: The information and data are presented in good faith and in lieu of all warranties. All express or implied warranties, including the warranties of merchantability and fitness for a particular purpose, are hereby disclaimed and excluded. 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. 9/14/2022