Nitto
Innovation for Customers

HYDRANAUTICS

# DairyNF™ Series

## High Flux, High Protein Rejection 150-250 Dalton Nanofiltration Membrane Elements

**Hydranautics' membrane technology experience and innovation are at the core of every DairyNF™ series membrane. Specifically designed for the separation of divalent anions and/or organic molecules greater than 200 Daltons from monovalent salts and lower molecular weight organics, DairyNF™ membranes deliver exceptional performance and value.**

Superior membrane technology is the key to Hydranautics' innovative DairyNF™ (Process Nanofiltration) elements. All DairyNF™ membranes are manufactured using highly controlled, ISO 9001-compliant processes, ensuring the highest quality and most consistent, reliable performance available. Hydranautics has set a new industry-standard for the rolling of full-fit membrane modules – hand-rolling of elements has been eliminated by the use of proprietary, robot-based automatic rolling machines, specifically designed by Hydranautics for fabricating membrane modules of the highest quality. The result is a higher level of filtration and separations performance for our customers.

## Key Benefits:

- Superior glue-line adhesion and strength
- Tighter rolling and caging
- Greater structural reliability
- Greater flow rates due to maximum effective membrane area
- Ships dry for enhanced storage stabiity

## Applications:

- Whey and milk concentration
- De-salting (de-mineralization) of whey and other streams
- DP1/DP2 sugar fractionation
- Recovery of hydrolyzed proteins and enzymes



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## Type:

| | |
|---|---|
| Configuration | Sanitary (full-fit) spiral wound |
| Outerwrap | Polypropylene net wrap |
| Membrane polymer | Composite polyamide |
| Molecular weight cut-off | 150 – 250 Daltons |

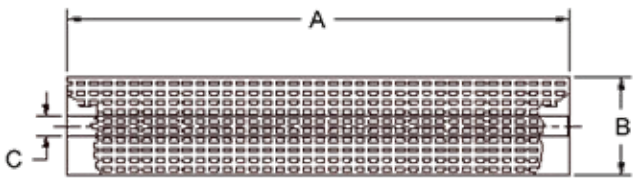
## Application Data:

| | |
|---|---|
| Maximum applied pressure | 600 psig (4.1 MPa) |
| Maximum chlorine concentration | < 0.1 ppm |
| Maximum operating temperature | 122 °F (50 °C) |
| Operating pH range | 3 – 9 |
| Cleaning pH Range (ambient temperature) | 1.8 – 11.0 |
| Cleaning pH range (max. temp. 122 °F / 50 °C) | 1.8 – 10.5 |
| Maximum pressure drop for a vessel | 60 psi (0.41 MPa) |

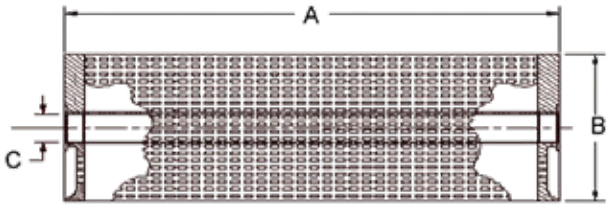
To properly condition the membrane, a RO water flush and caustic clean in place must be performed prior to first use of new elements. Refer to Technical Service Bulletin 218.

## Products and Guidelines:

| Sizes | Feed spacer, inches (cm) | Area, $ft^2$ ($m^2$) | Dimensions, inches (cm) | | | Max. feed flow, gpm ($m^3$/hr) | Max. pressure drop per element, psi (MPa) |
|---|---|---|---|---|---|---|---|
| | | | A | B | C | | |
| **DairyNF 3838-30** | 0.030 (0.076) | 80 (7.4) | 38.0 (96.5) | 3.78 (9.6) | 0.83 (2.11) | 30 (6.8) | 15 (0.1) |
| **DairyNF 3838-46** | 0.046 (0.117) | 63 (5.9) | 38.0 (96.5) | 3.78 (9.6) | 0.83 (2.11) | 30 (6.8) | 15 (0.1) |
| **DairyNF 3840-30** | 0.030 (0.076) | 80 (7.4) | 38.75 (98.4) | 3.78 (9.6) | 0.83 (2.11) | 30 (6.8) | 15 (0.1) |
| **DairyNF 3840-46** | 0.046 (0.117) | 63 (5.9) | 38.75 (98.4) | 3.78 (9.6) | 0.83 (2.11) | 30 (6.8) | 15 (0.1) |
| **DairyNF 8038-30** | 0.030 (0.076) | 385 (36) | 38.0 (96.5) | 7.90 (20.1) | 1.125 (2.86) | 80 (18.2) | 13 (0.09) |
| **DairyNF 8038-46** | 0.046 (0.117) | 300 (28) | 38.0 (96.5) | 7.90 (20.1) | 1.125 (2.86) | 80 (18.2) | 13 (0.09) |
| **DairyNF 8040-30** | 0.030 (0.076) | 385 (36) | 40.0 (101.6) | 7.90 (20.1) | 1.125 (2.86) | 80 (18.2) | 13 (0.09) |
| **DairyNF 8040-46** | 0.046 (0.117) | 300 (28) | 40.0 (101.6) | 7.90 (20.1) | 1.125 (2.86) | 80 (18.2) | 13 (0.09) |




**3838, 3840, 8038 Style**




**8040 Style with ATDs**

Nomenclature = DairyNF + Size + Feed Spacer

## Solutions You Need.

## Technologies You Trust!

**For regulatory compliance details, please contact us at hy-marketing@nitto.com or reach out to your regional Hydranautics representative.**

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