Nitto

Innovation for Customers

HYDRANAUTICS

DairyRO®

High performance Reverse Osmosis Membranes for the Dairy Industry

Hydranautics – A Nitto Group Company has 40+ years of reverse osmosis membrane manufacturing experience which is incorporated into every DairyRO® membrane and element. Automation employed for all our DairyRO® elements ensures straight and minimally sized glue lines, maximum membrane area and the highest possible glue line adhesion.

DairyRO® composite polyamide reverse osmosis elements are of the net-wrapped, high flow full-fit design and hot water sanitizable type. All membranes and elements are manufactured using highly controlled, ISO 9001-compliant processes, ensuring the highest quality, most consistent and reliable performance available. Hydranautics has set a new industry-standard using robot-based automatic rolling machine, specifically designed by Hydranautics, for fabricating membrane modules of the highest quality. The result is a higher level of filtration and separation performance for our customers.

Key Features:

- 100% testing of membranes with 1500 ppm NaCl for flux and rejection compliance
- DairyRO-HF is a high-flow version using Hydranautics' patented technology which provides 20% more water flow
- DairyRO-HT is a high temperature version using Hydranautics' patented technology which allows heat sanitization at 85 °C or continuous operation at 70 °C

Key Benefits:

- Superior glue-line adhesion and strength
- Tighter rolling and caging
- Greater structural reliability
- All elements provide the highest rejection using Hydranautics' RO technology
- Greater flow rates due to maximum effective membrane area
- Hot water sanitizable membranes for efficient sanitization and cleaning operations

Applications:

- Pre-concentration of milk or whey for reducing product transportation costs
- Lactose production
- Sweet/acid whey concentration
- Concentration of UF permeate
- Milk and juice concentration



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Type:

Configuration	Sanitary (full-fit) spiral wound
Membrane polymer	Composite polyamide

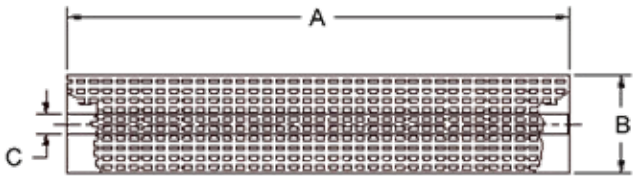
Application Data:

Maximum applied pressure	800 psig (55.0 bar)
Maximum chlorine concentration	< 0.1 ppm
Maximum operating temperature	122 °F (50 °C)
Operating pH range	2 – 11
Cleaning pH range (ambient temperature)	1.5 – 11.5
Cleaning pH range (max. temp. 122 °F / 50 °C)	1.8 – 11.0
Maximum pressure drop for a vessel	60 psi (4 bar)

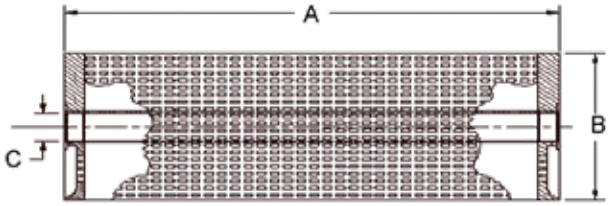
Products and Guidelines:

Model	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 (bar)
			A	B	C		
DairyRO®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 (1.0)
DairyRO®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 (1.0)
DairyRO®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 (1.0)
DairyRO®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 (1.0)
DairyRO®6338-30	0.030 (0.076)	240 (22)	38.0 (96.5)	6.36 (16.2)	1.138 (2.89)	70 (15.9)	15 (1.0)
DairyRO®8038-30	0.030 (0.076)	385 (36)	38.0 (96.5)	7.90 (20.1)	1.125 (2.86)	80 (18.2)	13 (0.9)
DairyRO®8038-46	0.046 (0.117)	300 (28)	38.0 (96.5)	7.90 (20.1)	1.125 (2.86)	80 (18.2)	13 (0.9)
DairyRO®8040-30	0.030 (0.076)	385 (36)	40.0 (101.6)	7.90 (20.1)	1.125 (2.86)	80 (18.2)	13 (0.9)
HYDRApolish 8*	0.030 (0.076)	350 (33)	40.0 (101.6)	7.90 (20.1)	1.125 (2.86)	80 (18.2)	13 (0.9)

* HF-HT elements are available in any of the above sizes excluding HYDRApolish.
HYDRApolish 8 is provided with one interconnector assembly, two anti-telescoping devices, and one brine seal.



3838, 3840, 8038 Style



8040 Style with ATDs

Nomenclature = DairyRO® + 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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