Dairy AF Series

FACT SHEET

Dairy processing – lactose concentration

The A-Series family of proprietary thin film reverse osmosis membrane elements is characterized by high flux and excellent sodium chloride rejection. The A-Series membrane has an average rejection of 99.5% on 2,000 ppm NaCl at 25°C (77°F) and 225 psi operating pressure.

The Dairy AF elements provide high rejection of dissolved solids and low molecular weight organic constituents at operating pressures up to 600 psi. These elements are designed for processing streams previously treated by ultrafiltration and are typically used in applications where the concentrate is used for animal feed. Applications include whey and milk protein concentration and lactose recovery.

The Dairy AF elements feature a Durasan* Cage patented outer wrap, standard feed spacers and polysulfone parts. These elements comply with the USDA guidelines for the sanitary design and fabrication of dairy processing equipment or applicable 3-A sanitary standards.

The Dairy AF elements comply with:

- FDA Regulations relevant sections of 21CFR
- EU Framework 1935/2004/EC
- Kosher and Halal certification available for selected elements

Table 1: Element Specification (1)

Model	Spacer Mil (mm)	Active Area ft^2 (m^2)	Part Number
Dairy AF3838C30	30 (0.76)	75 (7.0)	1206647
Dairy AF3838C50	50 (1.27)	60 (5.6)	1255669
Dairy AF3840C30	30 (0.76)	80 (7.4)	1206648
Dairy AF3840C50	50 (1.27)	60 (5.6)	1255063
Dairy AF8038C30	30 (0.76)	375 (34.8)	1221893
Dairy AF8038C50	50 (1.27)	285 (26.5)	1227202

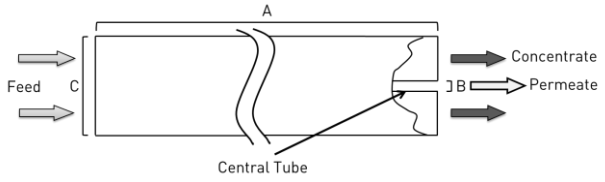

Figure 1: Element Dimensions Diagram 3838, 3840, & 8038

Table 2: Dimensions and Weight (1)

Model	Figure	Dimensions, Inches (cm)			Boxed Weight Lbs (kg)
		A	B	C	
AF3838C	1	38.00 (96.5)	0.833 (2.12)	3.8 (9.6)	9 (4.1)
AF3840C	1	38.75 (98.4)	0.833 (2.12)	3.8 (9.6)	9 (4.1)
AF8038C	1	38.00 (96.5)	1.125 (2.86)	7.91 (20.1)	35 (16)

Table 3: Operating Parameters (1)

Typical Operating Pressure	200-500 psi (1,379-3,447 kPa)
Typical Operating Flux	5-20 GFD (8-34 LMH)
Clean Water Flux (CWF) (2)	14 GFD (24 LMH) @ 225 psi
Maximum Operating Pressure	800 psi (5,516 kPa)
Maximum Permeate Pressure (3)	60 psi (413 kPa)
Maximum Temperature	122°F (50°C)
pH Range	2.0-11.0
Recommended Pressure Drop	Over an element: 12 psi (83 kPa)
Maximum Pressure Drop	Over an element: 15 psi (103 kPa) Per housing: 60 psi (414 kPa)
Chlorine Tolerance	1000 ppm-hours dechlorination recommended

(1) Element properties & parameters are indicative numbers. Values by element may vary within normal element manufacturing tolerances.

(2) Clean water flux (CWF) is the rate of water permeability through the membrane after cleaning (CIP) at reproducible temperature and pressure. It is important to monitor CWF after each cleaning cycle to determine if the system is being cleaned effectively. CWF can vary ±25%.

(3) Permeate pressure should never exceed the concentrate pressure.

Table 4: CIP Limits for RO Elements

Temperature	pH Minimum	pH Maximum
50°C (122°F)	2.0	11.5
45°C (113°F)	1.5	11.5
35°C (95°F)	1.5	11.5
25°C (77°F)	1.0	12.0

Veolia Water Technologies
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