

Dairy AF Series

FACT SHEET

LENNTECH
WATER TREATMENT Solutions

WATER TECHNOLOGIES



Sanitary Food & Beverage and Dairy Processing – Reverse Osmosis

Veolia's Dairy AF Series utilizes a high performance reverse osmosis membrane to maximize the concentration and dewatering process with superior rejection of dissolved solids and low molecular weight organic constituents, such as lactose, at operating pressures up to 800 psi. The A-Series membrane has an average stabilized rejection of 99.5% on 2,000 ppm NaCl at 25°C (77°F) and 225 psi operating pressure.

The Dairy AF Series is specifically designed for sanitary applications within the Food & Beverage and Dairy Industry. Applications include lactose concentration, whey and milk protein concentration, sugar and juice concentration, and polishing of permeates for enhanced water recovery and biological oxygen demand/chemical oxygen demand (BOD/COD) reduction for water reuse.

The Dairy AF elements feature a Durasan Cage 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 and applicable 3-A sanitary standards.

Veolia's Dairy AF Series of elements comply with:

- US FDA 21 CFR (Subchapter B, Parts 175, 176, 177, 178, and 182)
- EU Framework 1935/2004/EC and 10/2011
- Kosher and Halal certifications
- BSE/TSE guidance EMEA/410/1 - Rev 2; Section 3.1

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
Dairy AF8038C65	65 (1.65)	220 (20.4)	3180562

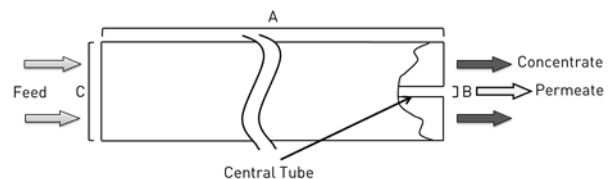


Figure 1: Element Dimensions Diagram 3838, 3840, & 8038



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 4: CIP Limits for RO Elements

Temperature	pH Minimum	pH Maximum
95°F to 122°F (35°C to 50°C)	1.8	11.0
Less than 95°F (35°C)	1.8	11.5

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 (4)	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 $\pm 25\%$.

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

(4) Range of pH during continuous operation.