

Dairy AF Series

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 2,000ppm NaCl at 25°C (77°F) and 225psi operating pressure.

The Dairy AF elements provide high rejection of dissolved solids and low molecular weight organic constituents at operating pressures up to 600psi. 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

model	spacer mil (mm)	active area ft ² (m ²)	part number
Dairy AF2540C30 (1)	30 (0.76)	25 (2.3)	3155861
Dairy AF2540C50 (1)	50 (1.27)	18 (1.7)	3155860
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 AF7838C30	30 (0.76)	360 (33.4)	3159912
Dairy AF7838C35	35 (0.89)	340 (31.6)	3159913
Dairy AF7838C50	50 (1.27)	270 (25.1)	3159914
Dairy AF8038C30	30 (0.76)	375 (34.8)	1221893
Dairy AF8038C50	50 (1.27)	285 (26.5)	1227202
Dairy AF8040C65 (1)	65 (1.65)	225 (20.9)	3165414

(1) Pending Kosher and Halal certification

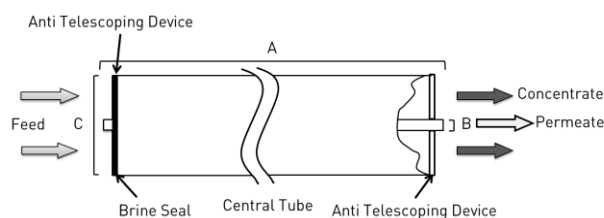


figure 1a: element dimensions diagram 2540

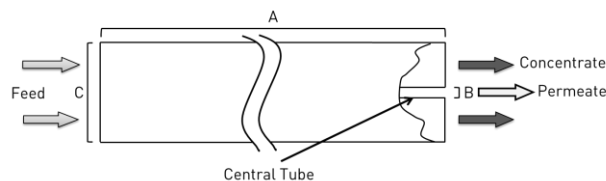


figure 1b: element dimensions diagram 3838, 3840, 7838 & 8038

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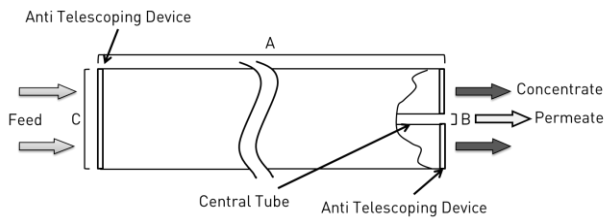


figure 1c: element dimensions diagram 8040

table 2: dimensions and weight

Model	Figure	dimensions, inches (cm)			boxed weight lbs (kg)
		A	B	C	
AF2540C	1a	40.0 (101.6)	0.75 (1.90) OD	2.4 (6.1)	4 (1.8)
AF3838C	1b	38.00 (96.5)	0.833 (2.12)	3.8 (9.6)	9 (4.1)
AF3840C	1b	38.75 (98.4)	0.833 (2.12)	3.8 (9.6)	9 (4.1)
AF7838C	1b	38.00 (96.5)	0.833 (2.12)	7.8 (19.8)	35 (16)
AF8038C	1b	38.00 (96.5)	1.125 (2.86)	7.91 (20.1)	35 (16)
AF8040C	1c	40.00 (101.6)	1.125 (2.86)	7.91 (20.1)	35 (16)

table 3: operating parameters

Typical Operating Pressure	200-500psi (1,379-3,447kPa)
Typical Operating Flux	5-20 GFD (8-34 LMH)
Clean Water Flux (CWF)⁽¹⁾	14 GFD (24 LMH) @ 225psi
Maximum Operating Pressure	600psi (4,137kPa)
Maximum Permeate Pressure ⁽²⁾	60 psi (413 kPa)
Maximum Temperature	122°F (50°C)
pH Range	2.0-11.0
Recommended Pressure Drop	Over an element: 12psi (83kPa)
Maximum Pressure Drop	Over an element: 15psi (103kPa) Per housing: 60psi (414kPa)
Chlorine Tolerance	1000ppm-hours dechlorination recommended

(1) 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%.

(2) 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