GE Power & Water
Water & Process Technologies

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AK Series

Low Energy Brackish Water RO Elements

The A-Series, family of proprietary thin-film reverse osmosis membrane elements are characterized by high flux and high sodium chloride rejection. AK Low Pressure Brackish Water Elements are selected when high rejection and low operating pressures are desired. These elements allow significant energy savings since good rejection is achieved at operating pressures as low as 100 psi (689 kPa).

Table 1: Element Specification

Membrane	A-series, thin-film membrane (TFM*)

Model	Average permeate flow gpd (m3/day)[1,2]	Average NaCl rejection[1,2]	Minimum NaCl rejection[1,2]
AK2540FM	710 (2.7)	99.0%	98.0%
AK2540TM	710 (2.7)	99.0%	98.0%
AK4040C	2,500 (9.5)	99.0%	98.0%
AK4040CM	2,400 (9.1)	99.0%	98.0%
AK4040FM	2,200 (8.3)	99.0%	98.0%
AK4040FM, WET	2,200 (8.3)	99.0%	98.0%
AK4040NM	2,200 (8.3)	98.5%	98.0%
AK4040TM	2,200 (8.3)	99.0%	98.0%
AK8040C	9,900 (37.5)	99.0%	98.0%
AK8040F	9,600 (36.3)	99.0%	98.0%
AK8040F, WET	9,600 (36.3)	99.0%	98.0%
AK8040F 400	10,500 (37.9)	99.0%	98.0%
AK8040F 400 WET	10,500 (39.7)	99.0%	98.0%
AK8040N	9,600 (36.3)	98.5%	98.0%
AK8040N 400	10,500 (39.7)	98.5%	98.0%

[1] Average salt rejection after 24 hours operation. Individual flow rate may vary +25%/-15%.
[2] Testing conditions: 500ppm NaCl solution at 115psi (793kPa) operating pressure, 77°F (25°C), pH7.5 and 15% recovery.

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Model	Membrane area ft² (m²)	Outer wrap	Part number US[1]	Part number Other plants[2]
AK2540FM	29 (2.7)	Fiberglass	1206800	N/A
AK2540TM	27 (2.5)	Tape	1206802	N/A
AK4040C	95 (8.8)	Cage*	1223696	N/A
AK4040CM	90 (8.4)	Cage*	1227885	N/A
AK4040FM	85 (7.9)	Fiberglass	1206813	3039082
AK4040FM, WET	85 (7.9)	Fiberglass	3052307	3044157
AK4040NM	85 (7.9)	Net*	1231787	N/A
AK4040TM	85 (7.9)	Tape	1206816	N/A
AK8040C	380 (35.3)	Cage*	1206819	N/A
AK8040F	365 (33.9)	Fiberglass	1206820	3039160
AK8040F, WET	365 (33.9)	Fiberglass	N/A	3044153
AK8040F 400	400 (37.2)	Fiberglass	1206821	3039161
AK8040F 400 WET	400 (37.2)	Fiberglass	1239766	3039162
AK8040N	365 (33.9)	Net*	1231788	N/A
AK8040N 400	400 (37.2)	Net*	1231789	N/A

[1]These elements are rolled in US.
[2]These elements are rolled in China and Hungary.

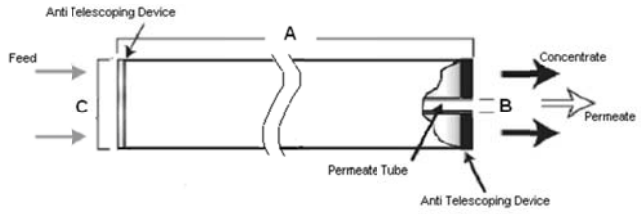

Figure 1: Element Dimensions Diagram - Female

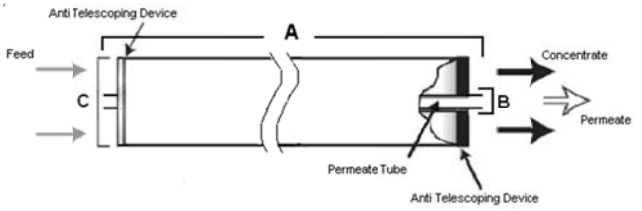

Figure 2: Element Dimensions Diagram - Male

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Table 2: Dimensions and Weight

Model[2]	Dimensions, inches (cm)			Boxed
	A	B[1]	C[3]	Weight lbs (kg)
AK2540*M	40.0 (101.6)	0.75 (1.9) OD	2.4 (6.1)	5 (2.3)
AK4040C	40.0 (101.6)	0.625 (1.59)	3.9 (9.9)	8 (3.5)
AK4040*M	40.0 (101.6)	0.75 (1.9) OD	3.9 (9.9)	8 (3.5)
AK4040*M WET	40.0 (101.6)	0.75 (1.9) OD	3.9 (9.9)	8 (3.5)
AK8040*, AK8040* 400	40.0 (101.6)	1.125 (2.86)	7.9 (20.1)	32 (14.5)
AK8040*, AK8040* 400 WET	40.0 (101.6)	1.125 (2.86)	7.9 (20.1)	35 (16)

[1] Internal diameter unless specified OD (outside diameter).
[2] These elements are bagged dried, unless specified WET, before shipping.
[3] The element diameter (dimension C) is designed for optimum performance in GE pressure vessels. Others pressure vessel dimension and tolerance may result in excessive bypass and loss of capacity.

Table 3: Operating and CIP parameters

Typical Operating Pressure	100 psi (689 kPa)
Typical Operating Flux	10-20 GFD (15-35LMH)
Maximum Operating Pressure	400 psi (2,756 kPa)
Maximum Temperature	Continuous operation: 122°F (50°C), Clean In Place (CIP): 122°F (50°C)
pH Range	Optimum rejection: 7.0-7.5, Continuous operation: 4.0-11.0, Clean In Place (CIP): 2.0-11.5
Maximum Pressure Drop	Over an element: 12 psi (83 kPa) Per housing: 50 psi (345 kPa)
Chlorine Tolerance	1,000+ ppm-hours, dechlorination recommended
Feedwater	NTU < 1 SDI < 5