AK HR Series

FACT SHEET

High rejection low energy brackish water RO elements

The A-Series proprietary thin-film reverse osmosis membrane elements are characterized by high flux and high sodium chloride rejection. AK HR low pressure brackish 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 psig (689 kPa).

These elements are recommended for low brackish water with salt concentration (TDS) levels up to 5,000mg/l. In turn, AK HR elements produce a permeate quality close to a standard brackish membrane element at a much lower pressure.

AK HR Series is certified to NSF/ANSI 61.

Table 1: Element Specification

Membrane	Thin-film membrane (TFM)

Model	Average permeate flow gpd (m^3/day) (1)(3)	Average rejection (2)(3)	Minimum rejection (2)(3)
AK-400	11,000 (41.6)	99.5%	99.0%
AK-440	12,000 (45.4)	99.5%	99.0%

(1) Individual flow rate may vary ±20%.
(2) Stabilized salt rejection after 24 hours of operation.
(3) Testing conditions: 500ppm NaCl solution at 115psi (793kPa) operating pressure, 77°F (25°C), pH 7.5 and 15% recovery.

Table 2: Element Properties (4)

Model	Active area ft^2 (m^2)	Outer wrap	Feed Spacer (mil)	Part number
AK-400	400 (37.2)	Fiberglass	34	3056680
AK-440	440 (40.9)	Fiberglass	28	3056681

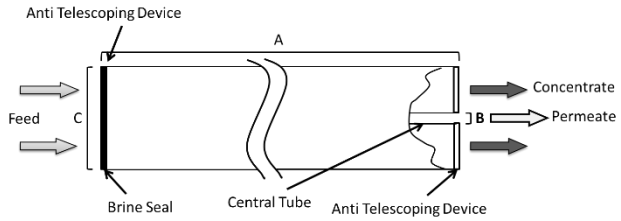

Figure 1a: Element Dimensions Diagram – Female

Table 3: Dimensions and Weights (4)

Model	Type	Dimensions, inches (cm)			Boxed Weight lbs (kg)
		A	B	C	
AK-400	Female	40.0 (101.6)	1.125 (2.86)	7.9 (20.1)	35 (16)
AK-440	Female	40.0 (101.6)	1.125 (2.86)	7.9 (20.1)	35 (16)

Table 4: Operating and CIP Parameters (4)

Typical Operating Pressure	120 psi (830 kPa)
Typical Operating Flux	10-20 GFD (15-35 LMH)
Maximum Operating Pressure	600 psi (4,136 kPa)
Maximum Temperature	Continuous operation: 122°F (50°C) Clean-In-Place (CIP): 122°F (50°C)
pH Range	Optimum rejection pH: 7.0-7.5, Continuous operation: 2.0-11.0, Clean-In-Place (CIP): 1.0-13.0 (5)
Maximum Pressure Drop	Over an element: 15 psi (103 kPa) Per housing: 50 psi (345 kPa)
Chlorine Tolerance	1,000+ ppm-hours, dechlorination recommended
Feedwater	NTU < 1 SDI_{15} < 5

(4) Element properties and parameters are indicative numbers. Specific values by element may vary within normal element manufacturing tolerances

(5) Refer to Cleaning Guidelines Technical Bulletin TB1194

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