

AK P Series

High Performance Ultra-Low Energy Brackish Water RO Elements (Replaces B085 ULP 4040, B400 ULP ASD, and B440 ULP)

The AK P-Series thin-film reverse osmosis (RO) membrane is characterized by high water permeability and high rejection to couple high performance and ultra-low energy demand. The AK P family of brackish water elements also offers very high rejection of uncharged and lightly charged species including silica and many micropollutants. These high performance features are the result of SUEZ's highly cross-linked polyamide thin film layer with low surface zeta potential that can also withstand multiple cleanings and maintain differentiated performance for the life of the element.

The ASD (alternating strand design) feed spacer technology offers an improvement in RO lifetime cost performance by lower pressure drop and reduced fouling tendency.

AK P series is certified to NSF 61.

Table 1a: Element Specification

Membrane	AK P-series, thin-film membrane (TFM*)
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Model	Average permeate flow gpd (m ³ /day) (1)(2)	Average NaCl rejection (1)(2)	Minimum NaCl rejection (1)(2)
AK-85 P	2,150 (8.2)	99.5%	99.0%
AK-400 P, 34 (ASD)	10,200 (38.6)	99.5%	99.0%
AK-440 P	11,300 (42.6)	99.5%	99.0%

(1) Average salt rejection after 24 hours of operation. Individual flow rate may vary with a minimum of 1,750 gpd (6.6 m³/d) for the AK-85 P, 8,200 gpd (31.1 m³/d) for the AK-400 P,34 (ASD), and 9,000 gpd (34.1 m³/d) for the AK-440 P.

(2) Testing conditions: 500ppm NaCl solution at 110psi (758kPa) operating pressure, 77°F (25°C), pH7 and 15% recovery.

Model	Active area ft ² (m ²)	Outer wrap	Feed spacer mil	Part number
AK-85 P	85 (7.9)	Fiberglass	34	3185602
AK-400 P, 34 (ASD)	400 (37.2)	Fiberglass	34 (ASD)	3185598
AK-440 P	440 (40.9)	Fiberglass	28	3185597

Table 2: Dimensions and Weights

Model	Type	Dimensions, inches (cm)			Boxed Weight lbs (kg)
		A	B	C	
AK-85 P	Male	40.0 (101.6)	0.75 (1.90)	3.9 (10.0)	12 (5.5)
AK-400 P, 34 (ASD)	Female	40.0 (101.6)	1.125 (2.86)	7.9 (20.1)	40 (18)
AK-440 P	Female	40.0 (101.6)	1.125 (2.86)	7.9 (20.1)	42 (19)

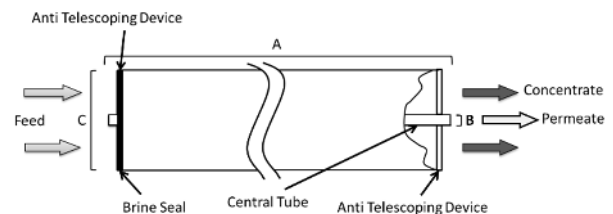


Figure 1a: Element Dimensions Diagram - Male

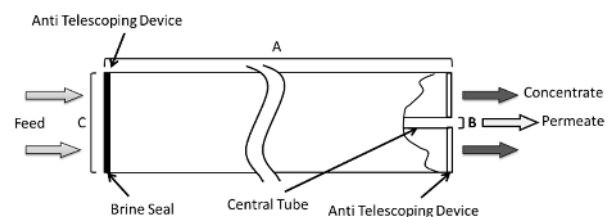


Figure 1b: Element Dimensions Diagram - Female

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Table 3: Operating and CIP parameters

Typical Operating Pressure	110 psi (830 kPa)
Typical Operating Flux	10-20GFD (15-35LMH)
Maximum Operating Pressure	600 psi (4,137 kPa)
Maximum Temperature	Operation: 113°F (45°C)
pH range	Continuous operation 2.0 – 11.0 Clean-In-Place (CIP): 1.0-12.0
Maximum Pressure Drop	Over an element: 15 psi (103 kPa) Per housing: 50 psi (345 kPa)
Chlorine Tolerance	0.1 ppm maximum
Feedwater	NTU < 1 SDI ₁₅ < 5

Additional Information

- As with any product, use of the products mentioned in this publication in a given application must be tested (including field testing, etc.) by the user in advance to determine suitability.
- Treat RO elements with care; do not drop the element.
- Each RO element is wet tested, preserved in a 1% weight sodium bisulfite solution, and vacuum packed in oxygen barrier bags.
- During storage, avoid freezing and direct sunlight. The temperature should be below 35°C (95°F).

After Installation

- Keep the RO elements wet and use a compatible preservative for storage duration longer than 7 days.
- During the initial start-up, discharge the first permeate to drain for 30 minutes.
- Permeate back pressure should not exceed feed pressure at any time.
- The RO elements shall be maintained in a clean condition, unfouled by particulate matter or precipitates or biological growth.
- Consider cleaning, if the pressure drop increases by 20% or water permeability decreases by 10%. Use only chemicals which are compatible with the membrane.