

Water Technologies & Solutions fact sheet

DK 400 series

industrial high rejection nanofiltration elements

The D-Series family of proprietary thin-film nanofiltration membrane elements is characterized by an approximate molecular weight cut-off of 150-300 Dalton for uncharged organic molecules. Divalent and multivalent anions are preferentially rejected by the membrane while monovalent ion rejection is dependent upon feed concentration and composition. Since monovalent ions pass through the membrane, they do not contribute to the osmotic pressure, thus enabling D-Series nanofiltration membrane systems to operate at feed pressures below those of RO systems.

Among other applications DK High Rejection NF Elements are used for dye brine purification, demineralization / concentration of organic solutions and metals recovery.

Table 1: Element Specification

Membrane	D-Series, Thin-film membrane (TFM*)	
Model	Average permeate flow gpd (m ³ /day) ^{1,2}	Minimum MgSO ₄ rejection ^{1,2}
DK-400	9,500 (36.0)	98%
DK-440	10,500 (39.7)	98%

¹ Average salt rejection after 24 hours operation.

Individual flow rate may vary ±25%

² Testing conditions: 2,000ppm MgSO₄ solution at 110psi (760kPa) operating pressure, 77 °F (25°C), 15 % recovery.

Model	Spacer mil (mm)	Active area ft ² (m ²)	Outer wrap	Part number
DK-400	34 (0.86)	400 (37.2)	Fiberglass	3154589
DK-440	28 (0.71)	440 (40.9)	Fiberglass	3154650

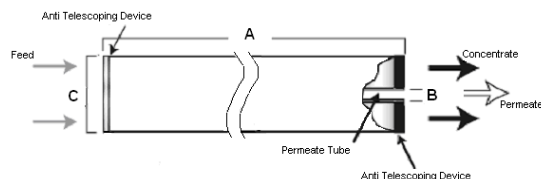


Figure 1: Element Dimensions Diagram – Female

Table 2: Dimensions and Weight

Model ¹	Dimensions, inches (cm)			Boxed Weight lbs (kg)
	A	B ¹	C ²	
DK-400	40.0 (101.6)	1.125 (2.86)	7.9 (20.1)	29 (13.2)
DK-440	40.0 (101.6)	1.125 (2.86)	7.9 (20.1)	29 (13.2)

¹Internal diameter unless specified OD (outside diameter).

²The element diameter (dimension C) is designed for optimum performance in SUEZ pressure vessels. Other pressure vessel dimension and tolerance may result in excessive bypass and loss of capacity.

Table 3: Operating and CIP parameters

Typical Operating Flux	5 - 20 GFD (8 - 34 LMH)
Maximum Operating Pressure	600psi (4,137kPa) if T<95°F (35°C) 435psi (3,000kPa) if T>95°F (35°C)
Maximum Temperature	Continuous operation: 122°F (50°C) Clean-In-Place (CIP): 122°F (50°C)
pH Range	Continuous operation: 3-9 Clean-In-Place (CIP): 2-10.5
Maximum Pressure Drop	Over an element: 15psi (103kPa) Per housing: 60psi (414kPa)
Chlorine Tolerance	500 ppm hours, dechlorination recommended



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