

DK 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 removal/concentration, sodium chloride diafiltration 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}
DK2540C30	560 [2.1]	98%
DK2540C50	350 [2.3]	98%
DK2540F30	540 [2.0]	98%
DK2540F50	340 [1.3]	98%
DK4040C30	1,900 [7.2]	98%
DK4040C50	1,400 [5.3]	98%
DK4040F30	1,900 [7.2]	98%
DK4040F50	1,400 [5.3]	98%
DK8040C30	8,100 [30.7]	98%
DK8040C50	6,500 [24.6]	98%
DK8040F30	8,100 [30.7]	98%
DK8040F50	6,500 [24.6]	98%

¹ Average salt rejection after 24 hours operation. Individual flow rate may vary ±25%

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

Model	Spacer mil (mm)	Active area ft ² (m ²)	Outer wrap	Part number
DK2540C30	30 (0.76)	24 (2.2)	Cage	1206918
DK2540C50	50 (1.27)	18 (1.6)	Cage	1206919
DK2540F30	30 (0.76)	28 (2.6)	Fiberglass	1206925
DK2540F50	50 (1.27)	22 (2.0)	Fiberglass	1206926
DK4040C30	30 (0.76)	89 (8.2)	Cage	1206947
DK4040C50	50 (1.27)	67 (6.2)	Cage	1206946
DK4040F30	30 (0.76)	85 (7.9)	Fiberglass	3050075
DK4040F50	50 (1.27)	65 (6.1)	Fiberglass	3050073
DK8040C30	30 (0.76)	374 (34.7)	Cage	1206978
DK8040C50	50 (1.27)	300 (27.9)	Cage	1206979
DK8040F30	30 (0.76)	364 (33.8)	Fiberglass	1206993
DK8040F50	50 (1.27)	284 (26.4)	Fiberglass	1206994

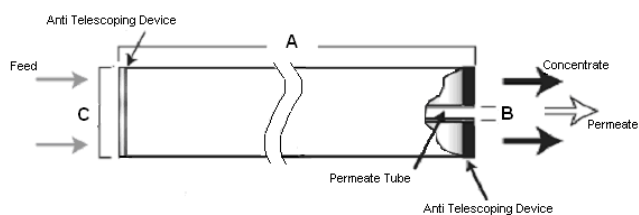


Figure 1: Element Dimensions Diagram - Female

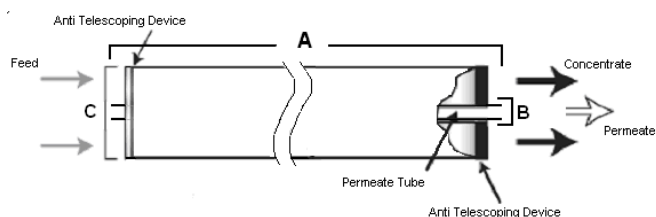


Figure 2: Element Dimensions Diagram - Male

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Table 2: Dimensions and Weight

Model ¹	Dimensions, inches (cm)			Boxed Weight lbs (kg)
	A	B ²	C ³	
DK2540C30	40.0 (101.6)	0.75 (1.90) OD	2.4 (6.1)	4 (1.8)
DK2540C50	40.0 (101.6)	0.75 (1.90) OD	2.4 (6.1)	4 (1.8)
DK2540F30	40.0 (101.6)	0.75 (1.90) OD	2.4 (6.1)	4 (1.8)
DK2540F50	40.0 (101.6)	0.75 (1.90) OD	2.4 (6.1)	4 (1.8)
DK4040C30	40.0 (101.6)	0.625 (1.59)	3.9 (9.9)	9 (4.1)
DK4040C50	40.0 (101.6)	0.625 (1.59)	3.9 (9.9)	9 (4.1)
DK4040F30	40.0 (101.6)	0.75 (1.90) OD	3.9 (9.9)	9 (4.1)
DK4040F50	40.0 (101.6)	0.75 (1.90) OD	3.9 (9.9)	9 (4.1)
DK8040C30	40.0 (101.6)	1.125 (2.86)	7.9 (20.1)	29 (13.2)
DK8040C50	40.0 (101.6)	1.125 (2.86)	7.9 (20.1)	29 (13.2)
DK8040F30	40.0 (101.6)	1.125 (2.86)	7.9 (20.1)	29 (13.2)
DK8040F50	40.0 (101.6)	1.125 (2.86)	7.9 (20.1)	29 (13.2)

¹ These elements are dried then bagged before shipping.

² Internal diameter unless specified OD (outside diameter).

³ The 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 (103 kPa) Per housing: 60psi (414kPa)
Chlorine Tolerance	500 ppm hours, dechlorination recommended