VEOLIA

LENNTECH
WATER TREATMENT SOLUTIONS

HL Series

FACT SHEET

Water Softening NF Elements

The H-Series proprietary thin-film nanofiltration membrane elements are characterized by an approximate molecular weight cut-off of 200-400 daltons for uncharged organic molecules. Divalent and multivalent ion rejection is dependent upon feed concentration and composition.

HL Nanofiltration Elements are used for water softening, color removal, and reduction of THM formation potential.

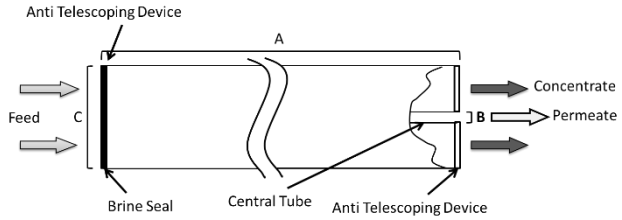

Figure 1: Element Dimensions Diagram (Female)

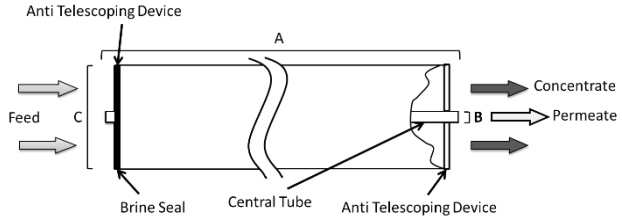

Figure 2: Element Dimensions Diagram (Male)

Table 1: Element Specification

Membrane	H-Series, Thin-film membrane (TFM)

Model	Average Permeate Flow gpd (m^3/day) (1)(2)	Average $MgSO_4$ Rejection (1)(2)	Minimum $MgSO_4$ Rejection (1)(2)
HL2540FM	840 (3.2)	99.5%	98.0%
HL4040FM	2,700 (10.2)	99.5%	98.0%
HL8040F-400	13,000 (49.2)	99.5%	98.0%

(1) Average salt rejection after 24 hours of operation. Individual flow rate may vary ±20%.

(2) Testing conditions: 2,000ppm $MgSO_4$ solution at 110psi (760kPa) operating pressure, 77°F, pH7.5 and 15% recovery.

Table 2: Element Properties (3)

Model	Active Area ft^2 (m^2)	Outer Wrap	Part Number
HL2540FM	27 (2.5)	Fiberglass	1207230
HL4040FM	90 (8.4)	Fiberglass	1207236
HL8040F-400	400 (37.2)	Fiberglass	1207240

Table 3: Dimensions and Weight (3)

Model		Dimensions, Inches (cm)			Boxed
	Type	A	B	C	Weight lbs. (kg)
HL2540	Male	40.0 (101.6)	0.75 (1.90)	2.4 (6.1)	5 (2.3)
HL4040	Male	40.0 (101.6)	0.75 (1.90)	3.9 (9.9)	8 (3.5)
HL8040	Female	40.0 (101.6)	1.125 (2.86)	7.9 (20.1)	32 (14.5)

Table 4: Operating and CIP Parameters (3)

Typical Operating Pressure	60-300psi (483-2,069kPa)
Typical Operating Flux	10-20GFD (15-35LMH)
Maximum Operating Pressure	600psi (4,140kPa)
Maximum Temperature	Continuous operation: 122°F (50°C) Clean In Place (CIP): 104°F (40°C)
pH Range	Optimum rejection: 6.0-7.0 Continuous operation: 3.0-9.0, Clean In Place (CIP): 2.0-11.0 (4)
Maximum Pressure Drop	Over an element: 12psi (83kPa) Per housing: 50psi (345kPa)
Chlorine Tolerance	1,000+ ppm x hours, dechlorination recommended
Feedwater	NTU < 1 SDI_{15} < 5

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

(4) Please refer to Cleaning Guidelines Technical Bulletin TB1194.

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