

# HL Series

## Water Softening NF Elements



The H-Series proprietary thin-film nanofiltration membrane elements are characterized by an approximate molecular weight cut-off of 150-300 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 potential.

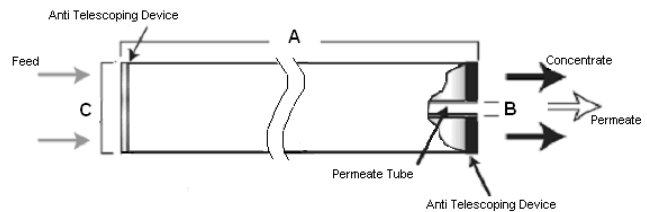
**Table 1: Element Specification**

Membrane	H-Series, Thin-film membrane (TFM*)		
Model	Flow average gpd (m3/day)	Salt rejection average (MgSO4) <sup>1,2</sup>	Salt rejection minimum (MgSO4) <sup>1,2</sup>
HL2540FM	780 (3.0)	98.0%	96.0%
HL2540TM	780 (3.0)	98.0%	96.0%
HL4040FM	2,400 (9.1)	98.0%	96.0%
HL4040TM	2,400 (9.1)	98.0%	96.0%
HL8040F 365	10,800 (40.9)	98.0%	96.0%
HL8040F	11,500 (43.5)	98.0%	96.0%
HL8040N	10,100 (38.2)	97.5%	96.0%

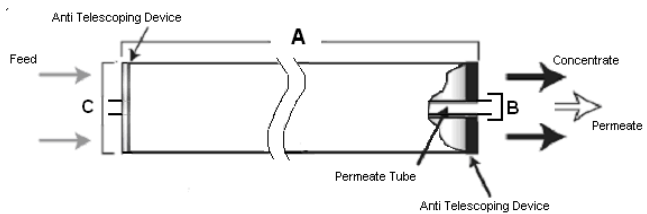
<sup>1</sup> Average salt rejection after 24 hours operation. Individual flow rate may vary +25%/-15%.

<sup>2</sup> Testing conditions: 2,000ppm MgSO4 solution at 100psig (690 kPa) operating pressure, 77°F, pH7.5 and 15% recovery.

Model	Active Area ft <sup>2</sup> (m <sup>2</sup> )	Outer wrap	Part Number
HL2540FM	27 (2.5)	Fiberglass	1207230
HL2540TM	27 (2.5)	Tape	1207231
HL4040FM	89 (8.2)	Fiberglass	1207236
HL4040TM	89 (8.2)	Tape	1220990
HL8040F 365	365 (33.9)	Fiberglass	1266702
HL8040F	400 (37.2)	Fiberglass	1207240
HL8040N	350 (32.5)	Net	1231793



**Figure 1: Element Dimensions Diagram (Female)**



**Figure 2: Element Dimensions Diagram (Male)**

**Table 2: Dimensions and Weight**

Model <sup>1</sup>	Dimensions, inches (cm)			Boxed Weight lbs (kg)
	A	B <sup>2</sup>	C <sup>3</sup>	
HL2540FM	40.0 (101.6)	0.75 (1.90) OD	2.4 (6.1)	5 (2.3)
HL2540TM	40.0 (101.6)	0.75 (1.90) OD	2.4 (6.1)	5 (2.3)
HL4040FM	40.0 (101.6)	0.75 (1.90) OD	3.9 (9.9)	8 (3.5)
HL4040TM	40.0 (101.6)	0.75 (1.90) OD	3.9 (9.9)	8 (3.5)
HL8040F 365	40.0 (101.6)	1.125 (2.86)	7.9 (20.1)	32 (14.5)
HL8040F	40.0 (101.6)	1.125 (2.86)	7.9 (20.1)	32 (14.5)
HL8040N	40.0 (101.6)	1.125 (2.86)	7.9 (20.1)	32 (14.5)

<sup>1</sup>This product ships dry.

<sup>2</sup>Internal diameter unless specified OD (outside diameter).

<sup>3</sup>The element diameter (dimension C) is designed for optimum performance in GE Water & Process Technologies pressure vessels. Other pressure vessel dimension and tolerance may result in excessive bypass and loss of capacity



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**Global Headquarters**  
Trevose, PA  
+1-215-355-3300

**Americas**  
Watertown, MA  
+1-617-926-2500

**Europe/Middle East/Africa**  
Heverlee, Belgium  
+32-16-40-20-00

**Asia/Pacific**  
Shanghai, China  
+86 (0) 411-8366-6489

**Table 3: Operating and CIP parameters**

Typical Operating Pressure	70-300psig (483-2,069kPa)
Typical Operating Flux	10-20GFD (15-35LMH)
Maximum Pressure	Tape elements: 450 psig (3,103 kPa) Other outerwrap: 600psig (4,140kPa)
Maximum Temperature	Operating: 122°F (50°C) Cleaning: 104°F (40°C)
Recommended pH	Optimum rejection pH: 6.0-7.0, Operating Range pH: 3.0-9.0, Cleaning Range pH: 2.0-10.5
Recommended Pressure Drop	Over an element: 12 psig (83 kPa) Per housing: 50 psig (345 kPa)
Chlorine Tolerance	1,000+ ppm-hours, dechlorination recommended
Feedwater	NTU < 1 SDI < 5