

# GE Power & Water

## Water & Process Technologies

# 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 formation potential.

Table 1: Element Specification

Membrane	H-Series, Thin-film membrane (TFM*)		
Model	Average permeate flow gpd (m3/day) <sup>1,2</sup>	Average MgSO <sub>4</sub> rejection <sup>1,2</sup>	Minimum MgSO <sub>4</sub> rejection <sup>1,2</sup>
HL2540FM	780 (3.0)	98.0%	95.0%
HL4040FM	2,500 (9.5)	98.0%	95.0%
HL8040F 365	11,000 (41.6)	98.0%	95.0%
HL8040F-400	12,000 (45.4)	98.0%	95.0%

<sup>1</sup> Average salt rejection after 24 hours of operation. Individual flow rate may vary ±20%.

<sup>2</sup> Testing conditions: 2,000ppm MgSO<sub>4</sub> solution at 110psi (760kPa) 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
HL4040FM	89 (8.2)	Fiberglass	1207236
HL8040F 365	365 (33.9)	Fiberglass	1266702
HL8040F 400	400 (37.2)	Fiberglass	1207240

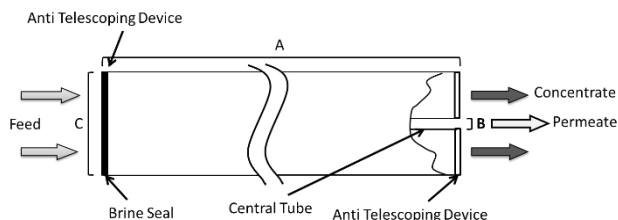


Figure 1: Element Dimensions Diagram (Female)

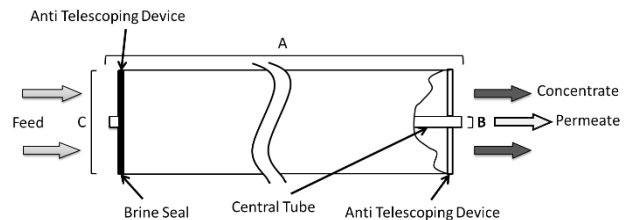


Figure 2: Element Dimensions Diagram (Male)

Table 2: Dimensions and Weight

Model	Type	Dimensions, inches (cm)			Boxed Weight lbs (kg)
		A	B	C <sup>3</sup>	
HL2540FM	Male	40.0 (101.6)	0.75 (1.90)	2.4 (6.1)	5 (2.3)
HL4040FM	Female	40.0 (101.6)	0.75 (1.90)	3.9 (9.9)	8 (3.5)
HL8040F 365	Female	40.0 (101.6)	1.125 (2.86)	7.9 (20.1)	32 (14.5)
HL8040F 400	Female	40.0 (101.6)	1.125 (2.86)	7.9 (20.1)	32 (14.5)

Table 3: Operating and CIP parameters

Typical Operating Pressure	70-300psi (483-2,069kPa)
Typical Operating Flux	10-20GFD (15-35LMH)
Maximum Operating Pressure	Tape elements: 450psi (3,103kPa) Other outer wrap: 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 <sup>1</sup>
Maximum Pressure Drop	Over an element: 12psi (83kPa) Per housing: 50psi (345kPa)
Chlorine Tolerance	1,000+ ppm-hours, dechlorination recommended
Feedwater <sup>2</sup>	NTU < 1 SDI < 5

<sup>1</sup> Please refer to Cleaning Guidelines Technical Bulletin TB1194

<sup>2</sup> SDI is measured on a non-linear scale using a 0.45-micron filter paper. Additionally, finer colloids, particulates and microorganisms that pass through the filter paper and not measured in the SDI test, will potentially foul the RO element. For performance consistency and project warranty, please use Winflows projection software and consult your GE representative

