# Certified Elements

DESAL® MEMBRANE PRODUCTS

## NSF 61 Certified Drinking Water RO and NF Elements

The National Sanitation Foundation (NSF) provides conformity assessment services in the area of public health for the food preparation and plumbing water industries. NSF is an organization accredited by the American National Standard Institute (ANSI) to certify products against several NSF/ANSI Standards, including NSF Standard 61. NSF/ANSI Standard 61 is a testing protocol that assures customers and regulators that products do not contribute to unsafe levels of contaminants in drinking water.

AG, AK and HL certified elements are selected when incomparable confidence is requested from drinking water system components.

AG, AK and HL certified elements feature a fiberglass outer wrap and standard feed spacers.

**Table 1: Element Specification**

| | |
|---|---|
| Membrane | Thin-Film Membrane (TFM*) |

### AG Series - RO High Rejection Elements

| Model | Average permeate flow gpd (m3/day) [1,2] | Average NaCl rejection [1,2] | Minimum NaCl rejection [1,2] |
|---|---|---|---|
| AG4040FM CERT | 2,200 (8.3) | 99.5 % | 99.0 % |
| AG8040F CERT | 9,200 (34.8) | 99.5 % | 99.0 % |
| AG8040F 400 CERT | 10,500 (39.8) | 99.5 % | 99.0 % |

[1] Average salt rejection after 24 hours operation. Individual flow rate may vary +25%/-15%.
[2] Testing conditions: 2,000ppm NaCl solution at 225psi (1,551kPa) operating pressure, 77 °F, pH 7.5 and 15% recovery.

### AK Series - RO Low Energy Elements

| Model | Average permeate flow gpd (m3/day) [1,2] | Average NaCl rejection [1,2] | Minimum NaCl rejection [1,2] |
|---|---|---|---|
| AK4040FM CERT | 2,200 (8.3) | 99.0 % | 98.0 % |
| AK8040F 400 CERT | 10,500 (39.8) | 99.0 % | 98.0 % |

[1] Average salt rejection after 24 hours operation. Individual flow rate may vary +25%/-15%.
[2] Testing conditions: 500ppm NaCl solution at 115 psi (790kPa) operating pressure, 77 °F, pH 7.5 and 15% recovery.

### HL Series - Nanofiltration Elements

| Model | Average permeate flow gpd (m3/day) [1,2] | Average $MgSO_4$ rejection [1,2] |
|---|---|---|
| HL4040FM CERT | 2,400 (9.1) | 98.0 % [1,2] |

[1] Average salt rejection after 24 hours operation. Individual flow rate may vary +25%/-15%.
[2] Testing conditions: 2,000 ppm$MgSO_4$ solution at 110psi (760kPa) operating pressure, 77 °F, pH 7.5 and 15% recovery.

| Model | Active area $ft^2$ ($m^2$) | Outer wrap | Part number |
|---|---|---|---|
| AG4040FM CERT | 85 (7.9) | Fiberglass | 1231652 |
| AG8040F CERT | 350 (32.5) | Fiberglass | 1231653 |
| AG8040F 400 CERT | 400 (37.2) | Fiberglass | 1231654 |
| AK4040FM CERT | 85 (7.9) | Fiberglass | 1231655 |
| AK8040F 400 CERT | 400 (37.2) | Fiberglass | 1231656 |
| HL4040FM CERT | 89 (8.2) | Fiberglass | 1233081 |

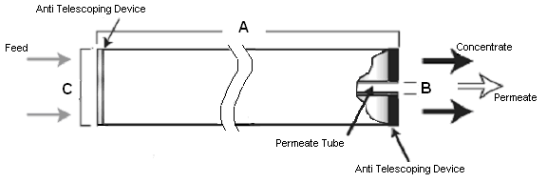


**Figure 1: Element Dimensions Diagram – Female**

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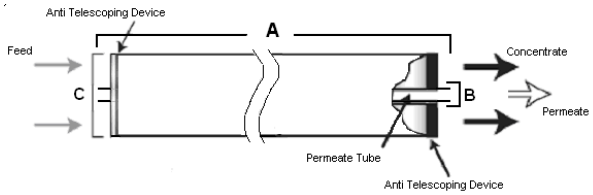


**Figure 2: Element Dimensions Diagram – Male**

## Table 2: Dimensions and Weight

| Model[1] | Dimensions, inches (cm) | | | Boxed |
|---|---|---|---|---|
| | A | B[2] | C[3] | Weight lbs (kg) |
| AG4040FM CERT | 40.0 (101.6) | 0.75 (1.90) OD | 3.9 (9.9) | 8 (3.5) |
| AG8040F CERT | 40.0 (101.6) | 1.125 (2.86) | 7.9 (20.1) | 32 (14.5) |
| AG8040F 400 CERT | 40.0 (101.6) | 1.125 (2.86) | 7.9 (20.1) | 32 (14.5) |
| AK4040FM CERT | 40.0 (101.6) | 0.75 (1.90) OD | 3.9 (9.9) | 8 (3.5) |
| AK8040F 400 CERT | 40.0 (101.6) | 1.125 (2.86) | 7.9 (20.1) | 32 (14.5) |
| HL4040FM CERT | 40.0 (101.6) | 0.75 (1.90) OD | 3.9 (9.9) | 8 (3.5) |

[1]These elements are bagged dried before shipping.
[2]Internal diameter unless specified OD (outside diameter).
[3]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.

## Table 3: Operating and CIP parameters

| | |
|---|---|
| Typical Operating Pressure | AG Series: 200 psi (1,379 kPa)<br>AK Series: 100 psi (689 kPa)<br>HL Series: 70-300 psi (483-2,069 kPa) |
| Typical Operating Flux | 10-20GFD (15-35LMH) |
| Maximum Operating Pressure | AG Serie: 600 psi (4,137 kPa),<br>AK Serie: 400 psi (3,758 kPa)<br>HL Serie: 600 psi (4,137 kPa) |
| Maximum Temperature | All: Continuous operation: 122°F (50°C)<br>AG-AK Series Clean-In-Place (CIP): 122°F (50°C)<br>HL Series Clean-In-Place (CIP): 104°F (40°C°) |
| pH Range | AG-AK Series:<br>Optimum rejection pH: 7.0-7.5<br>Continuous operation: 4.0-11.0<br>Clean-In-Place (CIP): 2.0-11.5<br>HL Series:<br>Optimum rejection: pH: 6.0-7.0<br>Continuous operation: 3.0-9.0<br>Clean-In-Place (CIP): 2.0-10.5 |
| Maximum Pressure Drop | Over an element: 12psi (83kPa)<br>Per housing: 50psi (345kPa) |
| Chlorine Tolerance | 1,000+ ppm-hours,<br>dechlorination recommended |
| Feedwater | NTU < 1<br>SDI < 5 |