



PRODUCT SPECIFICATION

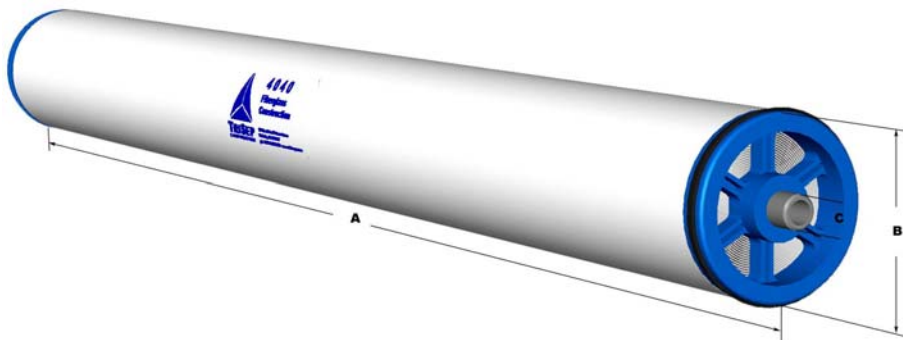
4" ACM-LP RO Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
4040-ACM4-TWF	3,500 (13.0)	99.00	98.00

Performance is based on the following test conditions: 2,000.0 ppm NaCl, 225.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ACM-LP Fully Aromatic Polyamide Low Pressure Advanced Composite
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	88 ft ² (8.2 m ²)
Recommended Applied Pressure.....	40 - 300 psi (3 - 21 bar)
Maximum Applied Pressure.....	350 psi (24 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	20 GPM (4.5 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 15 (7)
 Length (A) : 40.0 (1,016) Diameter (B) : 4.0 (101) Permeate Tube (C) : 0.75 (19.1)
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.
 Mechanical Configuration: Filmtec Style Core Tube
 Feed Spacer: 0.028" thick diamond spacer

* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



Engineered Membrane
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PRODUCT SPECIFICATION

8" ACM-LP Low Pressure RO Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8040-ACM4-TSA	14,600 (55.0)	99.00	98.00

Performance is based on the following test conditions: 2,000.0 ppm NaCl, 225.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ACM-LP Fully Aromatic Polyamide Low Pressure Advanced Composite
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	365 ft ² (33.5 m ²)
Recommended Applied Pressure.....	50 - 300 psi (3 - 21 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	80 GPM (18 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 45 (20)
 Length (A) : 40.0 (1,016) Diameter (B) : 7.9 (200) Permeate Tube (C) : 1.50 (38.1)
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.
 Mechanical Configuration: TriSep Style Core Tube
 Feed Spacer: 0.031" thick diamond spacer

* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



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PRODUCT SPECIFICATION

8" ACM-LP Low Pressure RO Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8040-ACM4-TSAN	14,600 (55.0)	99.00	98.00

Performance is based on the following test conditions: 2,000.0 ppm NaCl, 225.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ACM-LP Fully Aromatic Polyamide Low Pressure Advanced Composite
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	365 ft ² (33.5 m ²)
Recommended Applied Pressure.....	50 - 300 psi (3 - 21 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	80 GPM (18 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 45 (20)
 Length (A) : 40.0 (1,016) Diameter (B) : 7.9 (200) Permeate Tube (C) : 1.50 (38.1)
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.
 Mechanical Configuration: TriSep Style Core Tube
 Feed Spacer: 0.031" thick diamond spacer

* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



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PRODUCT SPECIFICATION

8" ACM-LP Low Pressure RO Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8040-ACM4-TSFA	14,600 (55.0)	99.00	98.00

Performance is based on the following test conditions: 2,000.0 ppm NaCl, 225.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ACM-LP Fully Aromatic Polyamide Low Pressure Advanced Composite
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	365 ft ² (33.5 m ²)
Recommended Applied Pressure.....	50 - 300 psi (3 - 21 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	80 GPM (18 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 45 (20)
 Length (A) : 40.0 (1,016) Diameter (B) : 7.9 (200) Permeate Tube (C) : 1.12 (28.6)
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.
 Mechanical Configuration: Filmtec Style Core Tube
 Feed Spacer: 0.031" thick diamond spacer

* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



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PRODUCT SPECIFICATION

8" ACM-LP Low Pressure RO Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8040-ACM4-UWA	16,000 (60.0)	99.00	98.00

Performance is based on the following test conditions: 2,000.0 ppm NaCl, 225.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ACM-LP Fully Aromatic Polyamide Low Pressure Advanced Composite
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	400 ft ² (37.2 m ²)
Recommended Applied Pressure.....	50 - 300 psi (3 - 21 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	80 GPM (18 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	4.0
Maximum Turbidity.....	1 NTU



Element Weight : 50 (23)
 Length (A) : 40.0 (1,016) Diameter (B) : 7.9 (200) Permeate Tube (C) : 1.50 (38.1)
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.
 Mechanical Configuration: TriSep Style Core Tube
 Feed Spacer: 0.028" thick diamond spacer

* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



Engineered Membrane
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PRODUCT SPECIFICATION

8" ACM-LP Low Pressure RO Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8040-ACM4-UWAN	16,000 (60.0)	99.00	98.00

Performance is based on the following test conditions: 2,000.0 ppm NaCl, 225.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ACM-LP Fully Aromatic Polyamide Low Pressure Advanced Composite
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	400 ft ² (37.2 m ²)
Recommended Applied Pressure.....	50 - 300 psi (3 - 21 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	80 GPM (18 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	4.0
Maximum Turbidity.....	1 NTU



Element Weight : 50 (23)
 Length (A) : 40.0 (1,016) Diameter (B) : 7.9 (200) Permeate Tube (C) : 1.50 (38.1)
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.
 Mechanical Configuration: TriSep Style Core Tube
 Feed Spacer: 0.028" thick diamond spacer

* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



Engineered Membrane
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PRODUCT SPECIFICATION

8.5" ACM-LP Low Pressure RO Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8540-ACM4-TSFA	17,500 (66.0)	99.00	98.00

Performance is based on the following test conditions: 2,000.0 ppm NaCl, 225.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ACM-LP Fully Aromatic Polyamide Low Pressure Advanced Composite
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	440 ft ² (40.4 m ²)
Recommended Applied Pressure.....	50 - 300 psi (3 - 21 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	80 GPM (18 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 45 (20)
 Length (A) : 40.0 (1,016) Diameter (B) : 8.5 (215) Permeate Tube (C) : 1.12 (28.6)
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.
 Mechanical Configuration: Filmtec Style Core Tube
 Feed Spacer: 0.031" thick diamond spacer

* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



Engineered Membrane
SOLUTIONS



TriSep ACM5 Composite RO Membrane Elements

The ACM5 membrane offers the highest flux in the ACM family allowing operation at ultra low pressures. The ACM5 will typically operate at feed pressure of 75 - 125 psi (5 - 9 bar). Even at these high flux rates, the ACM5 still averages 98.5% salt rejection.

Due to the high specific flux, these membranes are best suited to applications with relatively low TDS (<3,000 ppm) to achieve balanced flux rates within the system.

2540-ACM5-TSF	2.5" diameter by 40" long, 0.75" O.D. male permeate tube, protruding permeate tube
4040-ACM5-TWF	4" dia. by 40" long, 0.75" O.D. male permeate tube, protruding permeate tube, 88 ft ²
8040-ACM5-TSA	8" diameter by 40" long, 1.50" I.D. female permeate tube, flush cut
8040-ACM5-TSAN	Same as 8040-ACM5-TSA but NSF approved.
8040-ACM5-TSFA	8" diameter by 40" long, 1.12" I.D. female permeate tube, flush cut, Filmtec replacement
8040-ACM5-UWA	8" diameter by 40" long, 1.50" I.D. female permeate tube, flush cut, 400 ft ²
8040-ACM5-UWAN	Same as 8040-ACM5-UWA but NSF approved.



PRODUCT SPECIFICATION

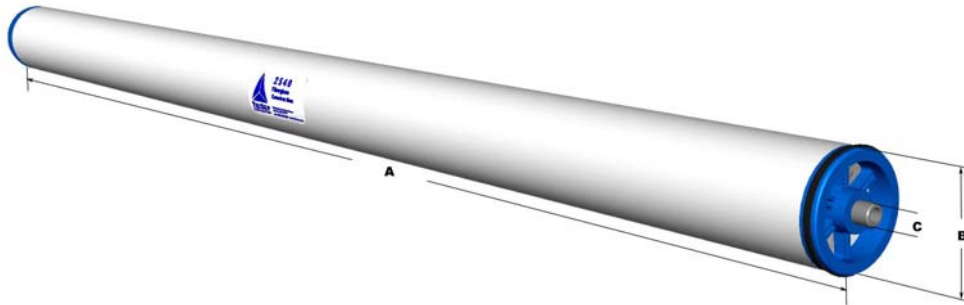
2.5" ACM-LP RO Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
2540-ACM5-TSF	800 (3.0)	98.50	97.50

Performance is based on the following test conditions: 2,000.0 ppm NaCl, 150.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ACM Fully Aromatic Polyamide Advanced Composite Membrane
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	26 ft ² (2.4 m ²)
Recommended Applied Pressure.....	100 - 300 psi (7 - 21 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	6 GPM (1.4 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 7 (3.2)
 Length (A) : 40.0 (1,016) Diameter (B) : 2.5 (63) Permeate Tube (C) : 0.75 (19.1)
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.
 Mechanical Configuration: Filmtec Style Core Tube
 Feed Spacer: 0.031" thick diamond spacer

* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



Engineered Membrane
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PRODUCT SPECIFICATION

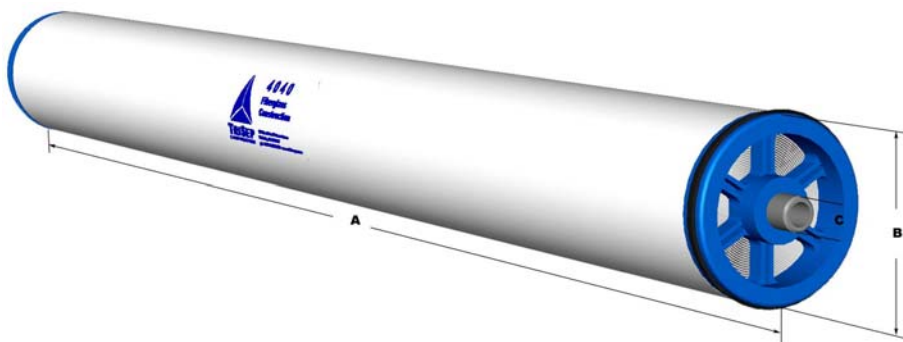
4" ACM-LP Low Pressure RO Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
4040-ACM5-TWF	2,500 (9.0)	98.50	97.50

Performance is based on the following test conditions: 2,000.0 ppm NaCl, 150.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ACM-LP Fully Aromatic Polyamide Low Pressure Advanced Composite
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	88 ft ² (8.2 m ²)
Recommended Applied Pressure.....	40 - 300 psi (3 - 21 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	20 GPM (4.5 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 15 (7)
 Length (A) : 40.0 (1,016) Diameter (B) : 4.0 (101) Permeate Tube (C) : 0.75 (19.1)
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.
 Mechanical Configuration: Filmtec Style Core Tube
 Feed Spacer: 0.031" thick diamond spacer

* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



Engineered Membrane
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PRODUCT SPECIFICATION

8" ACM-LP Low Pressure RO Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8040-ACM5-TSA	11,900 (45.0)	98.50	97.50

Performance is based on the following test conditions: 2,000.0 ppm NaCl, 150.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ACM-LP Fully Aromatic Polyamide Low Pressure Advanced Composite
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	365 ft ² (33.5 m ²)
Recommended Applied Pressure.....	50 - 300 psi (3 - 21 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	80 GPM (18 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 45 (20)
 Length (A) : 40.0 (1,016) Diameter (B) : 7.9 (200) Permeate Tube (C) : 1.50 (38.1)
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.
 Mechanical Configuration: TriSep Style Core Tube
 Feed Spacer: 0.031" thick diamond spacer

* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



Engineered Membrane
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PRODUCT SPECIFICATION

8" ACM-LP Low Pressure RO Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8040-ACM5-TSAN	11,900 (45.0)	98.50	97.50

Performance is based on the following test conditions: 2,000.0 ppm NaCl, 150.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ACM-LP Fully Aromatic Polyamide Low Pressure Advanced Composite
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	365 ft ² (33.5 m ²)
Recommended Applied Pressure.....	50 - 300 psi (3 - 21 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	80 GPM (18 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 45 (20)
 Length (A) : 40.0 (1,016) Diameter (B) : 7.9 (200) Permeate Tube (C) : 1.50 (38.1)
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.
 Mechanical Configuration: TriSep Style Core Tube
 Feed Spacer: 0.031" thick diamond spacer

* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



Engineered Membrane
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PRODUCT SPECIFICATION

8" ACM-LP Low Pressure RO Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8040-ACM5-TSFA	11,900 (45.0)	98.50	97.50

Performance is based on the following test conditions: 2,000.00 ppm NaCl, 150.00 psi, 25°C, 15% recovery, pH 8.00, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ACM-LP Fully Aromatic Polyamide Low Pressure Advanced Composite
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	365 ft ² (33.5 m ²)
Recommended Applied Pressure.....	40 - 300 psi (3 - 21 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	80 GPM (18 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 45 (20)
 Length (A) : 40.00 (1,016) Diameter (B) : 7.9 (200) Permeate Tube (C) : 1.12 (28.6)
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.
 Mechanical Configuration: Filmtec Style Core Tube
 Feed Spacer: 0.031" thick diamond spacer

* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



Engineered Membrane
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PRODUCT SPECIFICATION

8" ACM-LP Low Pressure RO Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8040-ACM5-UWA	12,500 (47.0)	98.50	97.50

Performance is based on the following test conditions: 2,000.0 ppm NaCl, 150.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ACM-LP Fully Aromatic Polyamide Low Pressure Advanced Composite
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	400 ft ² (37.2 m ²)
Recommended Applied Pressure.....	50 - 300 psi (3 - 21 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	80 GPM (18 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	4.0
Maximum Turbidity.....	1 NTU



Element Weight : 50 (23)
 Length (A) : 40.0 (1,016) Diameter (B) : 7.9 (200) Permeate Tube (C) : 1.50 (38.1)
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.
 Mechanical Configuration: TriSep Style Core Tube
 Feed Spacer: 0.028" thick diamond spacer

* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



Engineered Membrane
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PRODUCT SPECIFICATION

8" ACM-LP Low Pressure RO Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8040-ACM5-UWAN	12,500 (47.0)	98.50	97.50

Performance is based on the following test conditions: 2,000.00 ppm NaCl, 150.00 psi, 25°C, 15% recovery, pH 8.00, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ACM-LP Fully Aromatic Polyamide Low Pressure Advanced Composite
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	400 ft ² (37.2 m ²)
Recommended Applied Pressure.....	50 - 300 psi (3 - 21 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	80 GPM (18 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	4.0
Maximum Turbidity.....	1 NTU



Element Weight : 50 (23)
 Length (A) : 40.00 (1,016) Diameter (B) : 7.9 (200) Permeate Tube (C) : 1.50 (38.1)
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.
 Mechanical Configuration: TriSep Style Core Tube
 Feed Spacer: 0.028" thick diamond spacer

* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



Engineered Membrane
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TriSep TS80, TS83 and XN45 Low Fouling Nanofiltration Elements

TriSep offers two different nanofiltration (NF) membrane chemistries, the TS80 and the XN45. Both are based on proprietary and patented technology developed by DuPont. The unique chemistries of these membranes allow them to have lower organic fouling than standard '344 type NF membranes. The TS80 is typically used in municipal membrane softening applications. It has a higher relative sodium chloride rejection (~90%) than the XN45 (~30%). The TS80, or its higher flow cousin, are excellent choices to remove THM precursors, color, iron, and hardness from surface and well waters. The XN45 is typically used in process application where there is a desire to allow monovalent ions to pass through the membrane while rejecting divalent ions or low molecular weight organic molecules such as sugars. NF is a membrane process which can be applied to the treatment of a variety of water supplies with many economic and process advantages.

NF membranes typically have lower salt (NaCl) rejection than reverse osmosis membranes, but have higher specific flux rates and can, therefore, operate at lower feed pressures. NF membranes have the inherent ability to reject or separate different feed species, specifically: particulates, colloidal and microbiological species, hardness, sulfate and other multivalent ions, and soluble low molecular weight (> 200 Daltons) neutral and charged organic compounds.

These species typically contribute little to osmotic pressures even at high system recoveries. This is a property consistent with large molecular weight molecules, as is the case for THM's (trihalomethane precursors), or highly hydrated multivalent ions such as sulphate, magnesium and iron. At the same time, common monovalent (nonhydrated) ions, such as sodium and chloride, which are prevalent in feedwaters, are poorly rejected by most NF membranes, which also leads to lower osmotic pressures, therefore, permitting lower net driving pressures (NDP).

This in turn permits designs of nanofiltration systems capable of operation at relatively high specific flux rates and recoveries, with low feed pressures and low power requirements.

In the last five years, the range of applications has expanded widely. Starting with systems designed primarily for removal of THM precursors, color, and hardness from low TDS potable and brackish feed waters, many innovative combinations are now being offered. They are often described by such terms as "Integrated Membrane Systems" or "Hybrid Systems".

This trend has been greatly accelerated in the potable water field by increasingly stringent regulatory requirements. These requirements now require Turbidity (NTU) and particulate limits that are almost too low to measure, as well as lower disinfection byproduct (THM) and TOC limits.

NF can make major contributions to waste water recovery and re-use in both municipal and industrial applications. Increasingly, the quality of the reclaimed (generally low TDS) waters needs to be improved whether for re-injection, percolation, irrigation, boilers, and other industrial processes.

The needs to meet increasingly higher standards include 3-6 log reduction of pathogens, limits on Turbidity, TDS, TOC and chlorine demand.



TriSep TS80, TS83 and XN45 Low Fouling Nanofiltration Elements

At the other end of the applications scale, NF is capable of providing many benefits for Sea Water (Very High TDS) desalination, by both membrane and thermal (distillation) processes. Sea Water contains significant concentrations of bicarbonate alkalinity and divalent ions, including magnesium, sulfate, and calcium.

For both membrane and thermal systems to achieve higher recoveries, one must add acid and/or antiscalant. The use of these chemicals, and controlling their dosage, can often present major problems in operation, such as brine disposal and biogrowth problems.

The use of NF as a first stage of a two stage Seawater Membrane System, or a NF-Distillation Hybrid system means that the second stage, be it reverse osmosis or distillation, can operate at maximum recovery, generally significantly above those ordinarily attainable, but with little or no chemical dosing or other pretreatment. In addition, there is some reduction in the TDS of the feedwater and less fouling of the downstage process.



TriSep TS80 and TS83 Composite Nanofiltration Membrane Elements

The TS80 and TS83 nanofiltration (NF) membranes are based on proprietary and patented technology developed by DuPont. The unique chemistry of these membranes allow them to have lower organic fouling than standard '344 type NF membranes. These membranes are not hydrolyzed or oxidized standard ACM type RO membranes, but rather are formulated to naturally have the flow and rejection properties of a NF membrane. This makes the TS80 more robust and have better chemical resistance than a NF membrane that is made by degrading a RO membrane. All TS80 elements are factory tested on MgSO₄ and water solutions.

The TS80 is typically used in municipal membrane softening applications. It has a higher relative sodium chloride rejection (~90%) than the XN45 (~30%). The TS80, or its higher flow cousin, the TS83, are excellent choices to remove THM precursors, color, iron, and hardness from surface and well waters.

2540-TS80-TSF	2.5" diameter by 40" long, 0.75" O.D. male permeate tube, protruding permeate tube
4040-TS80-TSA	4" diameter by 40" long, 0.75" O.D. female permeate tube, flush cut
4040-TS80-TSF	4" diameter by 40" long, 0.75" O.D. male permeate tube, protruding permeate tube
4040-TS83-TSF	4" diameter by 40" long, 0.75" O.D. male tube, protruding tube, higher flow
8040-TS80-TSA	8" diameter by 40" long, 1.50" I.D. female permeate tube, flush cut
8040-TS80-TSAN	Same as 8040-TS80-TSA but NSF approved
8040-TS80-TSFA	8" dia. by 40" long, 1.12" I.D. female perm. tube, flush cut, Filmtec replacement.
8040-TS80-UWA	8" diameter by 40" long, 1.50" I.D. female permeate tube, flush cut, 400 ft ²
8040-TS80-UWAN	Same as 8040-TS80-UWA but NSF approved
8040-TS83-TSA	8" diameter by 40" long, 1.50" I.D. female permeate tube, flush cut
8040-TS83-TSAN	Same as 8040-TS83-TSA but NSF approved
8040-TS83-UWA	8" diameter by 40" long, 1.50" I.D. female permeate tube, flush cut, 400 ft ²
8040-TS83-UWAN	Same as 8040-TS83-UWA but NSF approved
8540-TS83-TSFA	8.5" diameter by 40" long, 1.12" I.D. female permeate tube, flush cut



PRODUCT SPECIFICATION

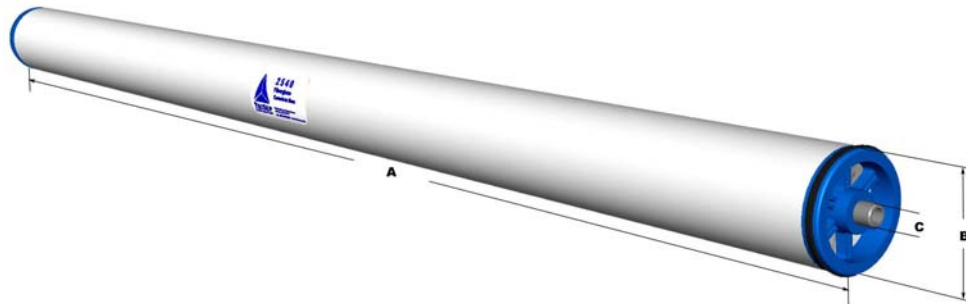
2.5" TS80 Nanofiltration Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
2540-TS80-TSF	650 (2.0)	99.00	97.00

Performance is based on the following test conditions: 2,000.0 ppm MgSO4, 110.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ANM Aromatic Polyamide Advanced Nanofiltration Membrane
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	26 ft ² (2.4 m ²)
Recommended Applied Pressure.....	40 - 200 psi (3 - 14 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	6 GPM (1.4 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 7 (3.2)
 Length (A) : 40.0 (1,016) Diameter (B) : 2.5 (63) Permeate Tube (C) : 0.75 (19.1)
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.
 Mechanical Configuration: Filmtec Style Core Tube
 Feed Spacer: 0.031" thick diamond spacer

* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



Engineered Membrane
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PRODUCT SPECIFICATION

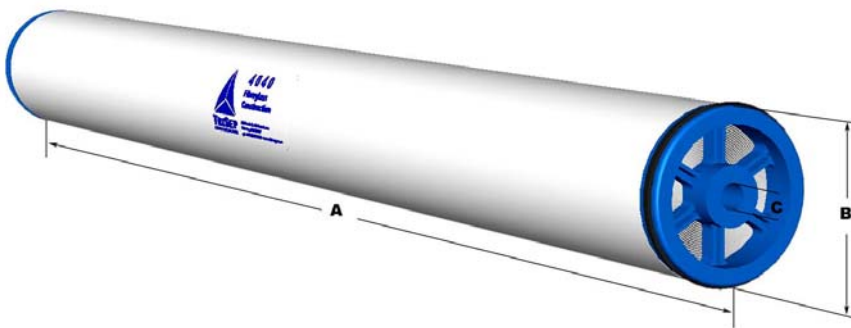
4" TS80 Nanofiltration Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
4040-TS80-TSA	2,000 (7.0)	99.00	97.00

Performance is based on the following test conditions: 2,000.0 ppm MgSO₄, 110.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ANM Aromatic Polyamide Advanced Nanofiltration Membrane
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	88 ft ² (8.1 m ²)
Recommended Applied Pressure.....	40 - 200 psi (3 - 14 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	20 GPM (4.5 m ³ /hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 15 (7)
 Length (A) : 40.0 (1,016) Diameter (B) : 4.0 (101) Permeate Tube (C) : 0.75 (19.1)
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.
 Mechanical Configuration: TriSep Style Core Tube
 Feed Spacer: 0.031" thick diamond spacer

* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



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PRODUCT SPECIFICATION

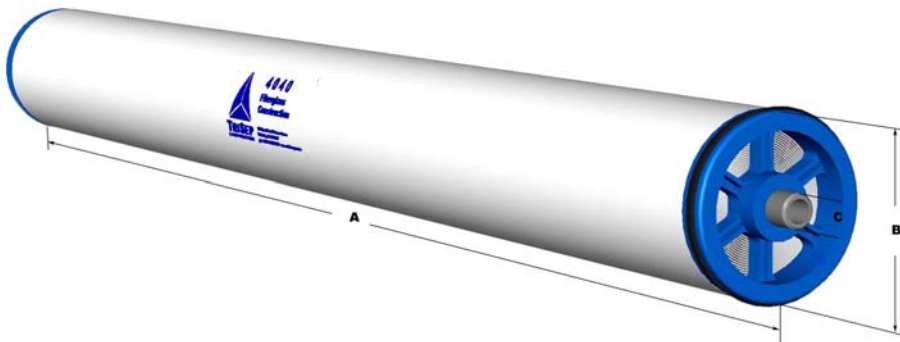
4" TS80 Nanofiltration Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
4040-TS80-TSF	2,000 (7.0)	99.00	97.00

Performance is based on the following test conditions: 2,000.0 ppm MgSO₄, 110.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ANM Aromatic Polyamide Advanced Nanofiltration Membrane
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	85 ft ² (7.9 m ²)
Recommended Applied Pressure.....	40 - 200 psi (3 - 14 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	20 GPM (4.5 m ³ /hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 15 (7)
 Length (A) : 40.0 (1,016) Diameter (B) : 4.0 (101) Permeate Tube (C) : 0.75 (19.1)
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.
 Mechanical Configuration: Filmtec Style Core Tube
 Feed Spacer: 0.031" thick diamond spacer

* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



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PRODUCT SPECIFICATION

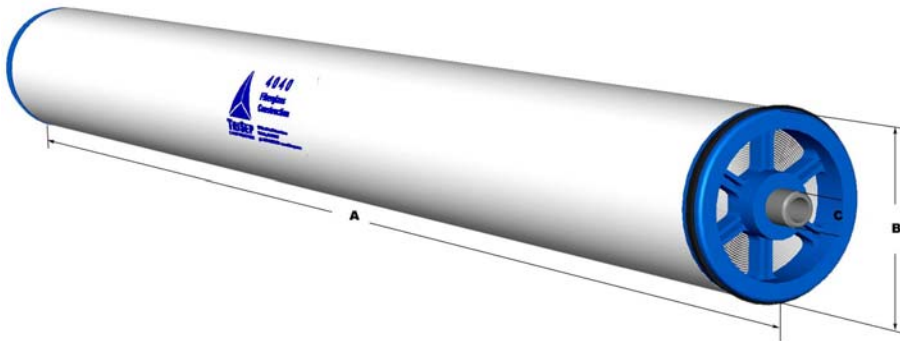
4" TS80 Nanofiltration Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
4040-TS83-TSF	2,300 (8.0)	98.00	96.00

Performance is based on the following test conditions: 2,000.0 ppm MgSO₄, 110.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ANM Aromatic Polyamide Advanced Nanofiltration Membrane
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	85 ft ² (7.9 m ²)
Recommended Applied Pressure.....	40 - 200 psi (3 - 14 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	20 GPM (4.5 m ³ /hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 15 (7)
 Length (A) : 40.0 (1,016) Diameter (B) : 4.0 (101) Permeate Tube (C) : 0.75 (19.1)
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.
 Mechanical Configuration: Filmtec Style Core Tube
 Feed Spacer: 0.031" thick diamond spacer

* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



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PRODUCT SPECIFICATION

8" TS80 Nanofiltration Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8040-TS80-TSA	9,000 (34.0)	99.00	97.00

Performance is based on the following test conditions: 2,000.0 ppm MgSO4, 110.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ANM Aromatic Polyamide Advanced Nanofiltration Membrane
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	365 ft ² (33.5 m ²)
Recommended Applied Pressure.....	40 - 200 psi (3 - 14 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	80 GPM (18 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 45 (20)
 Length (A) : 40.0 (1,016) Diameter (B) : 7.9 (200) Permeate Tube (C) : 1.50 (38.1)
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.
 Mechanical Configuration: TriSep Style Core Tube
 Feed Spacer: 0.031" thick diamond spacer

* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



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PRODUCT SPECIFICATION

8" TS80 Nanofiltration Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8040-TS80-TSAN	9,000 (34.0)	99.00	97.00

Performance is based on the following test conditions: 2,000.0 ppm MgSO4, 110.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ANM Aromatic Polyamide Advanced Nanofiltration Membrane
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	365 ft ² (33.5 m ²)
Recommended Applied Pressure.....	40 - 200 psi (3 - 14 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	80 GPM (18 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 45 (20)
 Length (A) : 40.0 (1,016) Diameter (B) : 7.9 (200) Permeate Tube (C) : 1.50 (38.1)
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.
 Mechanical Configuration: TriSep Style Core Tube
 Feed Spacer: 0.031" thick diamond spacer

* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



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PRODUCT SPECIFICATION

8" TS80 Nanofiltration Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8040-TS80-TSFA	9,000 (34.0)	99.00	97.00

Performance is based on the following test conditions: 2,000.0 ppm MgSO₄, 110.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ANM Aromatic Polyamide Advanced Nanofiltration Membrane
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	365 ft ² (33.5 m ²)
Recommended Applied Pressure.....	40 - 200 psi (3 - 14 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	80 GPM (18 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 45 (20)
 Length (A) : 40.0 (1,016) Diameter (B) : 7.9 (200) Permeate Tube (C) : 1.12 (28.6)
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.
 Mechanical Configuration: Filmtec Style Core Tube
 Feed Spacer: 0.031" thick diamond spacer

* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



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PRODUCT SPECIFICATION

8" TS80 Nanofiltration Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8040-TS80-UWA	10,000 (37.0)	99.00	97.00

Performance is based on the following test conditions: 2,000.0 ppm MgSO₄, 110.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ANM Aromatic Polyamide Advanced Nanofiltration Membrane
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	400 ft ² (37.2 m ²)
Recommended Applied Pressure.....	40 - 200 psi (3 - 14 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	80 GPM (18 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	4.0
Maximum Turbidity.....	1 NTU



Element Weight : 50 (23)
 Length (A) : 40.0 (1,016) Diameter (B) : 7.9 (200) Permeate Tube (C) : 1.50 (38.1)
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.
 Mechanical Configuration: TriSep Style Core Tube
 Feed Spacer: 0.028" thick diamond spacer

* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.





PRODUCT SPECIFICATION

8" TS80 Nanofiltration Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8040-TS80-UWAN	10,000 (37.0)	99.00	97.00

Performance is based on the following test conditions: 2,000.0 ppm MgSO4, 110.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ANM Aromatic Polyamide Advanced Nanofiltration Membrane
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	400 ft ² (37.2 m ²)
Recommended Applied Pressure.....	40 - 200 psi (3 - 14 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	80 GPM (18 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	4.0
Maximum Turbidity.....	1 NTU



Element Weight : 50 (23)
 Length (A) : 40.0 (1,016) Diameter (B) : 7.9 (200) Permeate Tube (C) : 1.50 (38.1)
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.
 Mechanical Configuration: TriSep Style Core Tube
 Feed Spacer: 0.028" thick diamond spacer

* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



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PRODUCT SPECIFICATION

8" TS80 Nanofiltration Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8040-TS83-TSA	10,000 (37.0)	98.50	97.00

Performance is based on the following test conditions: 2,000.0 ppm MgSO₄, 110.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ANM Aromatic Polyamide Advanced Nanofiltration Membrane
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	365 ft ² (33.5 m ²)
Recommended Applied Pressure.....	40 - 200 psi (3 - 14 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	80 GPM (18 m ³ /hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 45 (20)
 Length (A) : 40.0 (1,016) Diameter (B) : 7.9 (200) Permeate Tube (C) : 1.50 (38.1)
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.
 Mechanical Configuration: TriSep Style Core Tube
 Feed Spacer: 0.031" thick diamond spacer

* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



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PRODUCT SPECIFICATION

8" TS80 Nanofiltration Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8040-TS83-TSAN	10,000 (37.0)	98.50	97.00

Performance is based on the following test conditions: 2,000.0 ppm MgSO₄, 110.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ANM Aromatic Polyamide Advanced Nanofiltration Membrane
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	365 ft ² (33.5 m ²)
Recommended Applied Pressure.....	40 - 200 psi (3 - 14 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	80 GPM (18 m ³ /hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 45 (20)
 Length (A) : 40.0 (1,016) Diameter (B) : 7.9 (200) Permeate Tube (C) : 1.50 (38.1)
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.
 Mechanical Configuration: TriSep Style Core Tube
 Feed Spacer: 0.031" thick diamond spacer

* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



Engineered Membrane
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PRODUCT SPECIFICATION

8" TS80 Nanofiltration Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8040-TS83-UWA	11,000 (41.0)	98.50	97.00

Performance is based on the following test conditions: 2,000.0 ppm MgSO₄, 110.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ANM Aromatic Polyamide Advanced Nanofiltration Membrane
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	400 ft ² (37.2 m ²)
Recommended Applied Pressure.....	40 - 200 psi (3 - 14 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	80 GPM (18 m ³ /hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	4.0
Maximum Turbidity.....	1 NTU



Element Weight : 50 (23)
 Length (A) : 40.0 (1,016) Diameter (B) : 7.9 (200) Permeate Tube (C) : 1.50 (38.1)
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.
 Mechanical Configuration: TriSep Style Core Tube
 Feed Spacer: 0.028" thick diamond spacer

* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



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