PRODUCT SPECIFICATION

3.8" AUM High Temperature UF Turboclean Element

Model	M.W.C.O.
3840-N6D4V7	10,000

OPERATIONAL AND DESIGN DATA

Membrane Type.....	AUM Advanced Ultrafiltration Membrane
Configuration.....	Spiral Wound,Turboclean Shell
Active Membrane Area.....	41 ft² (3.8 m²)
Recommended Applied Pressure.....	Not applicable
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 140°F (2 - 60°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	10.0 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
Application.....	Milk Fractionation

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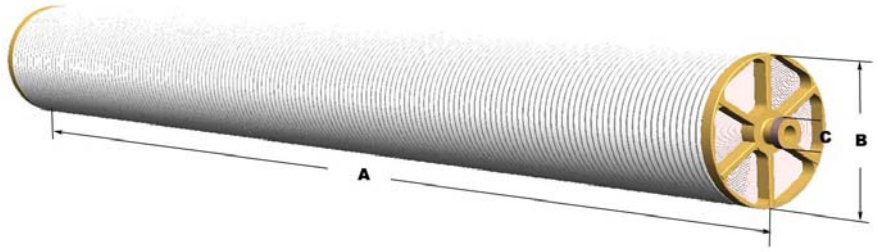

Element Weight : 12 (5.4)

Length (**A**) : 39 (984) Diameter (**B**) : 3.8 (96) Permeate Tube **(C) :** 0.83 (21.2)

Units in pounds and inches, units in paranthesis in kilograms and millimetes. Dim "A" does not include ATD.

Mechanical Configuration: Sanitary Style Core Tube ATD not included with element

Feed Spacer: 0.065" thick diamond spacer

Engineered Membrane SOLUTIONS

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PRODUCT SPECIFICATION

3.8" AUM High Temperature UF Turboclean Element

Model	M.W.C.O.
3840-N6D9V7	10,000

OPERATIONAL AND DESIGN DATA

Membrane Type.....	AUM Advanced Ultrafiltration Membrane
Configuration.....	Spiral Wound,Turboclean Shell
Active Membrane Area.....	41 ft² (3.8 m²)
Recommended Applied Pressure.....	Not applicable
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 140°F (2 - 60°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	10.0 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
Application.....	Whey Fractionation

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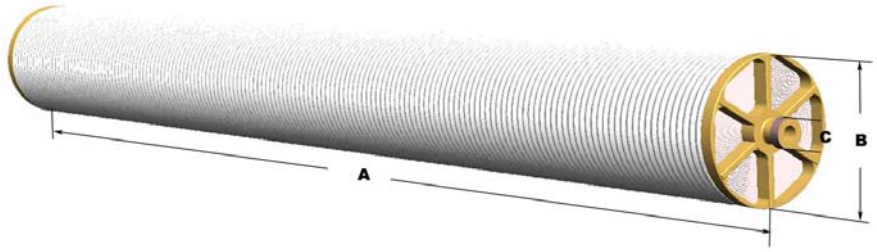

Element Weight : 12 (5.4)

Length (**A**) : 39 (984) Diameter (**B**) : 3.8 (96) Permeate Tube **(C) :** 0.83 (21.2)

Units in pounds and inches, units in paranthesis in kilograms and millimetes. Dim "A" does not include ATD.

Mechanical Configuration: Sanitary Style Core Tube ATD not included with element

Feed Spacer: 0.065" thick diamond spacer

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PRODUCT SPECIFICATION

3.8" TS50 High Temperature Turboclean Element

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
3840-O8D1U8	1,600 (6.0)	99.00	98.00

Performance is based on the following test conditions: 2,000.00 ppm MgSO4, 110.00 psi, 25°C, 15% recovery, pH 8.00, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	TS50 Polyamide Advanced Nanofiltration Membrane
Configuration.....	Spiral Wound, High Temperature Turboclean Shell
Active Membrane Area.....	70 ft² (6.4 m²)
Recommended Applied Pressure.....	Not applicable
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 140°F (2 - 60°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
Application.....	Lactose Demineralization

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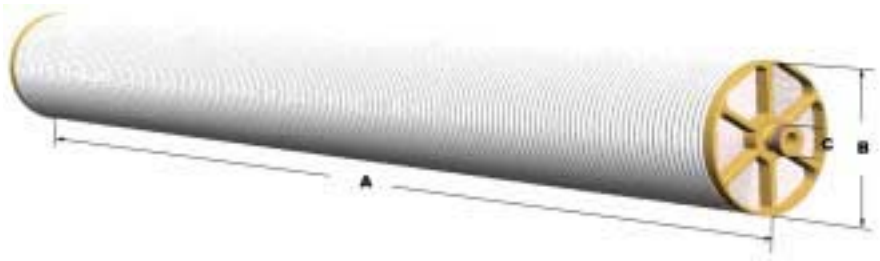

Element Weight : 15 (7)

Length (**A**) : 38.75 (984) Diameter (**B**) : 3.8 (96) Permeate Tube **(C) :** 0.83 (21.2)

Units in pounds and inches, units in paranthesis in kilograms and millimetes. Dim "A" does not include ATD.

Mechanical Configuration: Sanitary Style Core Tube ATD not included with element

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

3.9" TS50 High Temperature Turboclean Element

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
3938-O8D1U8	1,600 (6.0)	99.00	98.00

Performance is based on the following test conditions: 2,000.00 ppm MgSO4, 110.00 psi, 25°C, 15% recovery, pH 8.00, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	TS50 Polyamide Advanced Nanofiltration Membrane
Configuration.....	Spiral Wound, High Temperature Turboclean Shell
Active Membrane Area.....	70 ft² (6.4 m²)
Recommended Applied Pressure.....	Not applicable
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 140°F (2 - 60°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
Application.....	Lactose Demineralization

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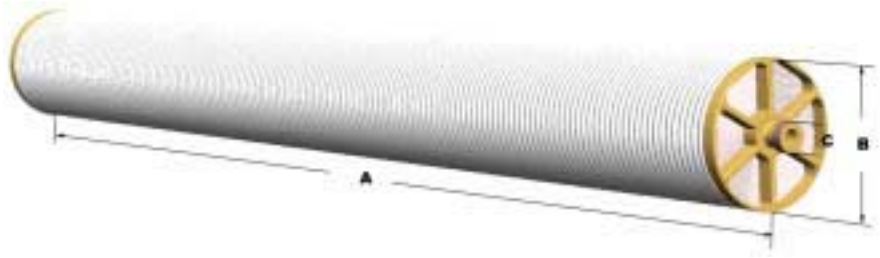

Element Weight : 15 (7)

Length (**A**) : 38.00 (965) Diameter (**B**) : 3.9 (99) Permeate Tube **(C) :** 0.83 (21.2)

Units in pounds and inches, units in paranthesis in kilograms and millimetes.

Mechanical Configuration: Sanitary 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

3.9" ACM High Temperature Turboclean RO Element

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
3940-M2D7U8	1,750 (6.0)	99.50	98.50

Performance is based on the following test conditions: 2,000.00 ppm NaCl, 225.00 psi, 25°C, 15% recovery, pH 8.00, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ACM Fully Aromatic Polyamide Advanced Composite Membrane
Configuration.....	Spiral Wound, High Temperature Turboclean Shell
Active Membrane Area.....	70 ft² (6.4 m²)
Recommended Applied Pressure.....	Not applicable
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 140°F (2 - 60°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
Application.....	Whey Concentration

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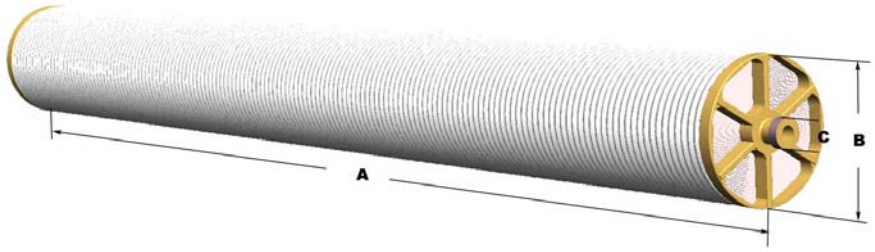

Element Weight : 12 (5.4)

Length (**A**) : 38.75 (984) Diameter (**B**) : 3.9 (99) Permeate Tube **(C) :** 0.83 (21.2)

Units in pounds and inches, units in paranthesis in kilograms and millimetes.

Mechanical Configuration: Sanitary 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

3.9" TS50 High Temperature Turboclean Element

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
3940-O8D1U8	1,600 (6.0)	99.00	98.00

Performance is based on the following test conditions: 2,000.00 ppm MgSO4, 110.00 psi, 25°C, 15% recovery, pH 8.00, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	TS50 Polyamide Advanced Nanofiltration Membrane
Configuration.....	Spiral Wound, High Temperature Turboclean Shell
Active Membrane Area.....	70 ft² (6.4 m²)
Recommended Applied Pressure.....	Not applicable
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 140°F (2 - 60°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
Application.....	Lactose Demineralization

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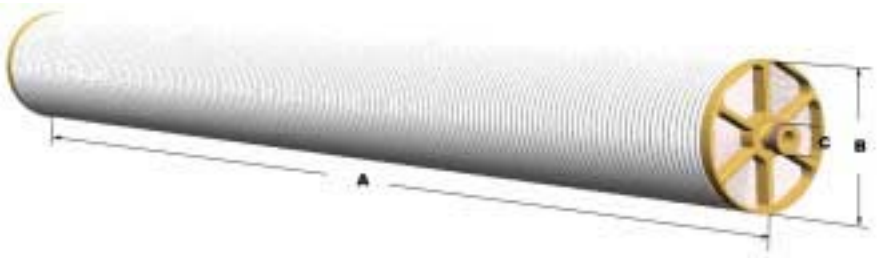

Element Weight : 15 (7)

Length (**A**) : 38.75 (984) Diameter (**B**) : 3.9 (99) Permeate Tube **(C) :** 0.83 (21.2)

Units in pounds and inches, units in paranthesis in kilograms and millimetes.

Mechanical Configuration: Sanitary 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

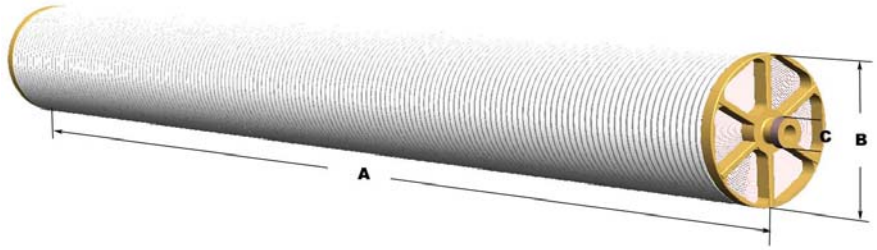
4.2" XN45 High Temperature Turboclean Element

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
4233-N2D8U8	1,700 (6.0)	95.00	92.00

Performance is based on the following test conditions: 2,000.00 ppm MgSO4, 110.00 psi, 25°C, 15% recovery, pH 8.00, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	XN45 Polyamide Advanced Nanofiltration Membrane
Configuration.....	Spiral Wound, High Temperature Turboclean Shell
Active Membrane Area.....	70 ft² (6.4 m²)
Recommended Applied Pressure.....	Not applicable
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 140°F (2 - 60°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	0.5 ppm nominal, 1.0 ppm max
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
Application.....	Whey Demineralization



Element Weight : 15 (7)

Length (**A**) : 33.00 (838) Diameter (**B**) : 4.2 (106) Permeate Tube **(C) :** 0.83 (21.2)

Units in pounds and inches, units in paranthesis in kilograms and millimetes.

Mechanical Configuration: Sanitary 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

6.3" AMM High Temperature MF Turboclean Element

Model	Pore Size
6338-N5D9V9	0.2 microns

Permeate flow is based on the clean water flux at the following test conditions: 10 psi, 25°C, pH 8, 15% recovery, 15 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	AMM Advanced Microfiltration Membrane
Configuration.....	Spiral Wound,Turboclean Shell
Active Membrane Area.....	157 ft² (14.7 m²)
Recommended Applied Pressure.....	Not applicable
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 140°F (2 - 60°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	10.0 ppm
Maximum Feed Flow.....	70 GPM (15.8 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU
Application.....	Whey Fractionation

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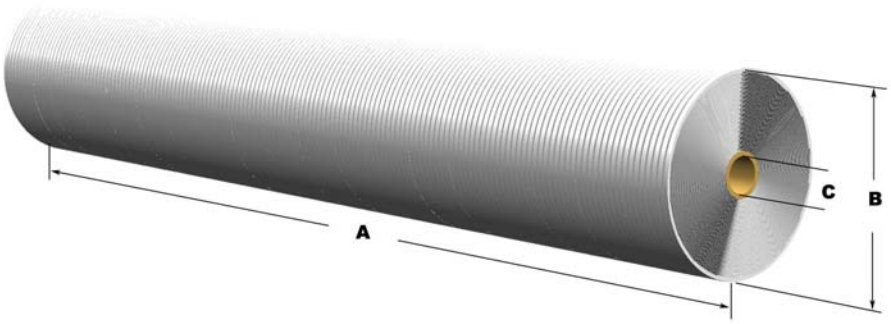

Element Weight : 33 (15)

Length (**A**) : 38 (965) Diameter (**B**) : 6.3 (160) Permeate Tube **(C) :** 1.14 (28.9)

Units in pounds and inches, units in paranthesis in kilograms and millimetes. Dim "A" does not include ATD.

Mechanical Configuration: Sanitary Style Core Tube ATD not included with element

Feed Spacer: 0.046" thick diamond spacer

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PRODUCT SPECIFICATION

6.3" AUM High Temperature UF Turboclean Element

Model	M.W.C.O.
6338-N6D4V7	10,000

OPERATIONAL AND DESIGN DATA

Membrane Type.....	AUM Advanced Ultrafiltration Membrane
Configuration.....	Spiral Wound,Turboclean Shell
Active Membrane Area.....	138 ft² (12.8 m²)
Recommended Applied Pressure.....	Not applicable
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 140°F (2 - 60°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	10.0 ppm
Maximum Feed Flow.....	70 GPM (15.8 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU
Application.....	Milk Fractionation

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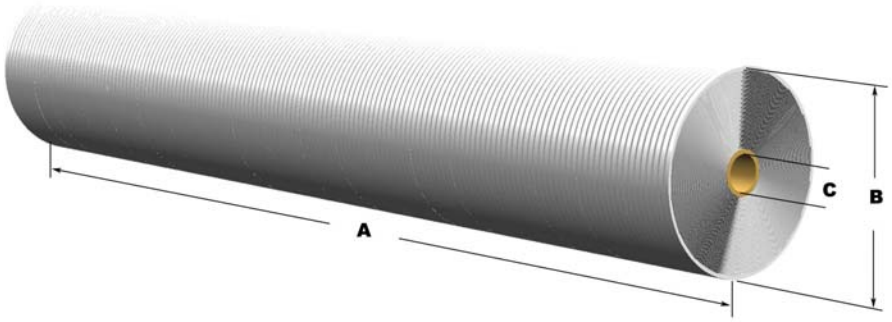

Element Weight : 28 (12.7)

Length (**A**) : 38 (965) Diameter (**B**) : 6.3 (160) Permeate Tube **(C) :** 1.14 (28.9)

Units in pounds and inches, units in paranthesis in kilograms and millimetes. Dim "A" does not include ATD.

Mechanical Configuration: Sanitary Style Core Tube ATD not included with element

Feed Spacer: 0.065" thick diamond spacer

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PRODUCT SPECIFICATION

6.3" AUM High Temperature UF Turboclean Element

Model	M.W.C.O.
6338-N6D4V8	10,000

OPERATIONAL AND DESIGN DATA

Membrane Type.....	AUM Advanced Ultrafiltration Membrane
Configuration.....	Spiral Wound,Turboclean Shell
Active Membrane Area.....	225 ft² (20.9 m²)
Recommended Applied Pressure.....	Not applicable
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 140°F (2 - 60°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	10.0 ppm
Maximum Feed Flow.....	70 GPM (15.8 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU
Application.....	Milk Fractionation

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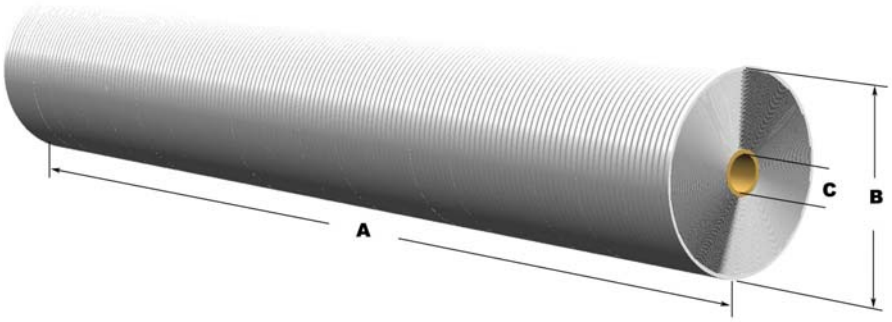

Element Weight : 33 (15)

Length (**A**) : 38 (965) Diameter (**B**) : 6.3 (160) Permeate Tube **(C) :** 1.14 (28.9)

Units in pounds and inches, units in paranthesis in kilograms and millimetes. Dim "A" does not include ATD.

Mechanical Configuration: Sanitary Style Core Tube ATD not included with element

Feed Spacer: 0.031" thick diamond spacer

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PRODUCT SPECIFICATION

6.3" AUM High Temperature UF Turboclean Element

Model	M.W.C.O.
6338-N6D4V9	10,000

OPERATIONAL AND DESIGN DATA

Membrane Type.....	AUM Advanced Ultrafiltration Membrane
Configuration.....	Spiral Wound,Turboclean Shell
Active Membrane Area.....	175 ft² (16.3 m²)
Recommended Applied Pressure.....	Not applicable
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 140°F (2 - 60°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	10.0 ppm
Maximum Feed Flow.....	70 GPM (15.8 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU
Application.....	Milk Fractionation

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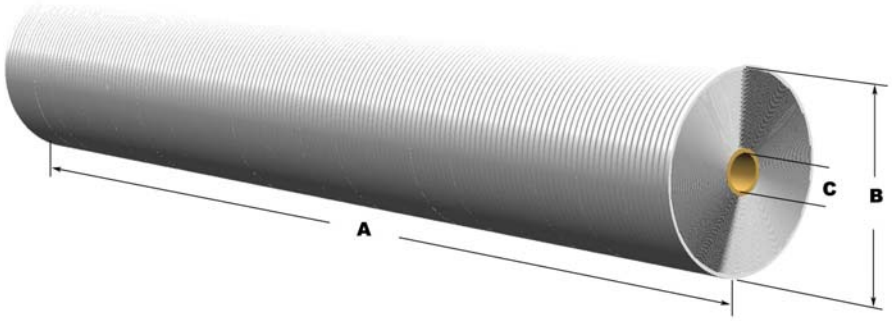

Element Weight : 30 (14)

Length (**A**) : 38 (965) Diameter (**B**) : 6.3 (160) Permeate Tube **(C) :** 1.14 (28.9)

Units in pounds and inches, units in paranthesis in kilograms and millimetes. Dim "A" does not include ATD.

Mechanical Configuration: Sanitary Style Core Tube ATD not included with element

Feed Spacer: 0.047" thick diamond spacer

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PRODUCT SPECIFICATION

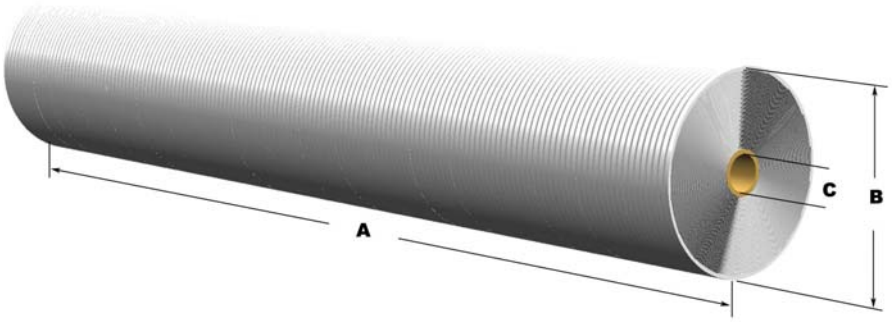
6.3" AUM High Temperature UF Turboclean Element

Model	M.W.C.O.
6338-N6D9V7	10,000

OPERATIONAL AND DESIGN DATA

Membrane Type.....	AUM Advanced Ultrafiltration Membrane
Configuration.....	Spiral Wound,Turboclean Shell
Active Membrane Area.....	138 ft² (12.8 m²)
Recommended Applied Pressure.....	Not applicable
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 140°F (2 - 60°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	10.0 ppm
Maximum Feed Flow.....	70 GPM (15.8 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU
Application.....	Whey Fractionation

U.S.D.A. APPROVED



Element Weight : 28 (12.7)

Length (**A**) : 38 (965) Diameter (**B**) : 6.3 (160) Permeate Tube **(C) :** 1.14 (28.9)

Units in pounds and inches, units in paranthesis in kilograms and millimetes. Dim "A" does not include ATD.

Mechanical Configuration: Sanitary Style Core Tube ATD not included with element

Feed Spacer: 0.065" thick diamond spacer

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PRODUCT SPECIFICATION

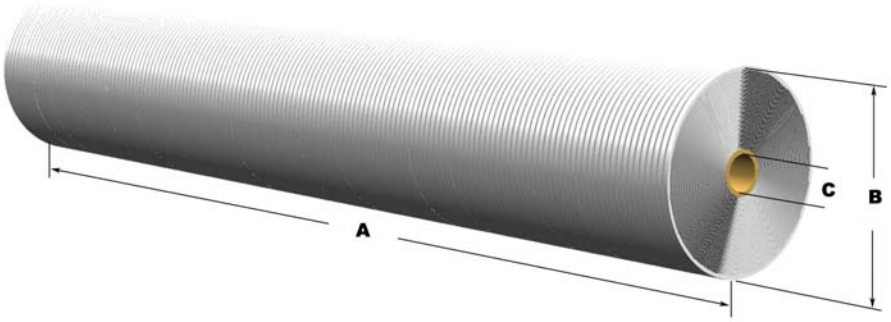
6.3" AUM High Temperature UF Turboclean Element

Model	M.W.C.O.
6338-N6D9V8	10,000

OPERATIONAL AND DESIGN DATA

Membrane Type.....	AUM Advanced Ultrafiltration Membrane
Configuration.....	Spiral Wound,Turboclean Shell
Active Membrane Area.....	225 ft² (20.9 m²)
Recommended Applied Pressure.....	Not applicable
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 140°F (2 - 60°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	10.0 ppm
Maximum Feed Flow.....	70 GPM (15.8 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU
Application.....	Whey Fractionation

U.S.D.A. APPROVED



Element Weight : 33 (15)

Length (**A**) : 38 (965) Diameter (**B**) : 6.3 (160) Permeate Tube **(C) :** 1.14 (28.9)

Units in pounds and inches, units in paranthesis in kilograms and millimetes. Dim "A" does not include ATD.

Mechanical Configuration: Sanitary Style Core Tube ATD not included with element

Feed Spacer: 0.031" thick diamond spacer

Engineered Membrane SOLUTIONS

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PRODUCT SPECIFICATION

6.4" PE High Temperature UF Turboclean Element

Model	M.W.C.O.
6438-N9D4V8	10,000

OPERATIONAL AND DESIGN DATA

Membrane Type.....	PerSep Advanced Ultrafiltration Membrane
Configuration.....	Spiral Wound, High Temperature Turboclean Shell
Active Membrane Area.....	210 ft² (19.5 m²)
Recommended Applied Pressure.....	Not applicable
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 140°F (2 - 60°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	10.0 ppm
Maximum Feed Flow.....	70 GPM (15.8 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU
Application.....	Milk Fractionation

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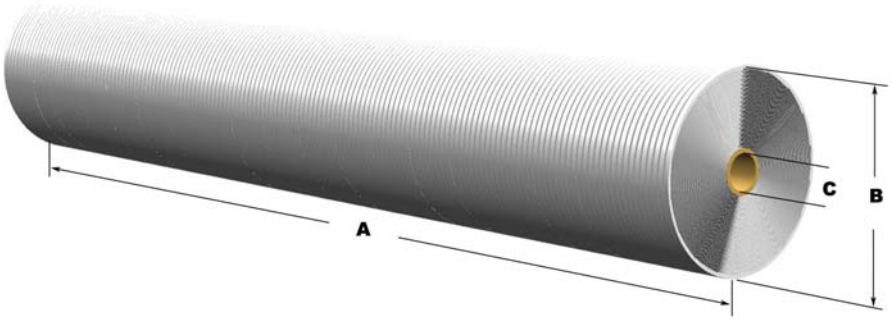

Element Weight : 30 (14)

Length (**A**) : 38.00 (965) Diameter (**B**) : 6.4 (162) Permeate Tube **(C) :** 1.14 (29.0)

Units in pounds and inches, units in paranthesis in kilograms and millimetes.

Mechanical Configuration: Sanitary Style Core Tube

Feed Spacer: 0.031" thick diamond spacer

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PRODUCT SPECIFICATION

6.4" PE High Temperature UF Turboclean Element

Model	M.W.C.O.
6438-N9D4V9	10,000

OPERATIONAL AND DESIGN DATA

Membrane Type.....	PerSep Advanced Ultrafiltration Membrane
Configuration.....	Spiral Wound, High Temperature Turboclean Shell
Active Membrane Area.....	153 ft² (14.2 m²)
Recommended Applied Pressure.....	Not applicable
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 140°F (2 - 60°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	10.0 ppm
Maximum Feed Flow.....	70 GPM (15.8 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU
Application.....	Milk Fractionation

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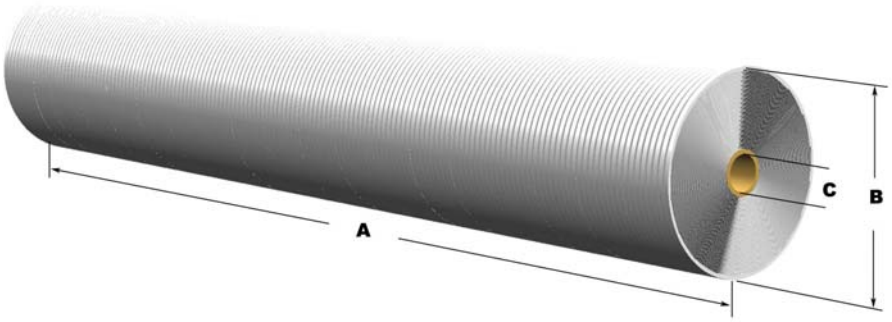

Element Weight : 30 (14)

Length (**A**) : 38.00 (965) Diameter (**B**) : 6.4 (162) Permeate Tube **(C) :** 1.14 (29.0)

Units in pounds and inches, units in paranthesis in kilograms and millimetes.

Mechanical Configuration: Sanitary Style Core Tube

Feed Spacer: 0.045" thick diamond spacer

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PRODUCT SPECIFICATION

6.4" PE High Temperature UF Turboclean Element

Model	M.W.C.O.
6438-N9D4Z9	10,000

OPERATIONAL AND DESIGN DATA

Membrane Type.....	PerSep Advanced Ultrafiltration Membrane
Configuration.....	Spiral Wound, High Temperature Turboclean Shell
Active Membrane Area.....	116 ft² (10.8 m²)
Recommended Applied Pressure.....	Not applicable
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 140°F (2 - 60°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	10.0 ppm
Maximum Feed Flow.....	70 GPM (15.8 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU
Application.....	Milk Fractionation

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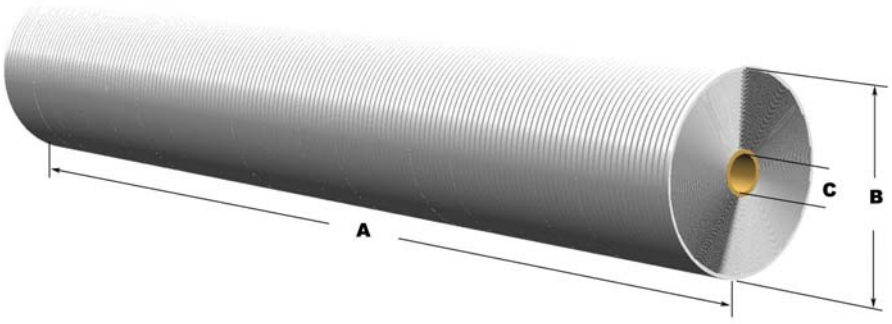

Element Weight : 30 (14)

Length (**A**) : 38.00 (965) Diameter (**B**) : 6.4 (162) Permeate Tube **(C) :** 1.14 (29.0)

Units in pounds and inches, units in paranthesis in kilograms and millimetes.

Mechanical Configuration: Sanitary Style Core Tube

Feed Spacer: 0.080" thick diamond spacer

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PRODUCT SPECIFICATION

8" ACM RO High Temperature Turboclean Element

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8038-M2C9U8	9400 (35.0)	99.50	98.50

Performance is based on the following test conditions: 2000 ppm NaCl, 225 psi, 25°C, 15% recovery, pH 8, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ACM Fully Aromatic Polyamide Advanced Composite Membrane
Configuration.....	Spiral Wound,High Temperature Turboclean Shell
Active Membrane Area.....	355 ft² (32.6 m²)
Recommended Applied Pressure.....	Not applicable
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 140°F (2 - 60°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
Application.....	Lactose Concentration

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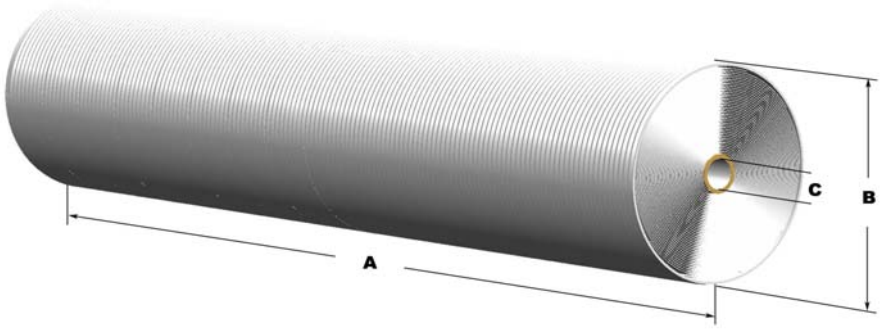

Element Weight : 45 (20)

Length (**A**) : 38 (965) Diameter (**B**) : 7.9 (200) Permeate Tube **(C) :** 1.12 (28.6)

Units in pounds and inches, units in paranthesis in kilograms and millimetes. Dim "A" does not include ATD.

Mechanical Configuration: Filmtec Style Core Tube ATD not included with element

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 RO High Temperature Turboclean Element

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8038-M2C9V6	7500 (28.0)	99.00	98.00

Performance is based on the following test conditions: 2000 ppm NaCl, 225 psi, 25°C, 15% recovery, pH 8, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ACM Fully Aromatic Polyamide Advanced Composite Membrane
Configuration.....	Spiral Wound,High Temperature Turboclean Shell
Active Membrane Area.....	288 ft² (26.8 m²)
Recommended Applied Pressure.....	Not applicable
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 140°F (2 - 60°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	95 GPM (22 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU
Application.....	Lactose Concentration

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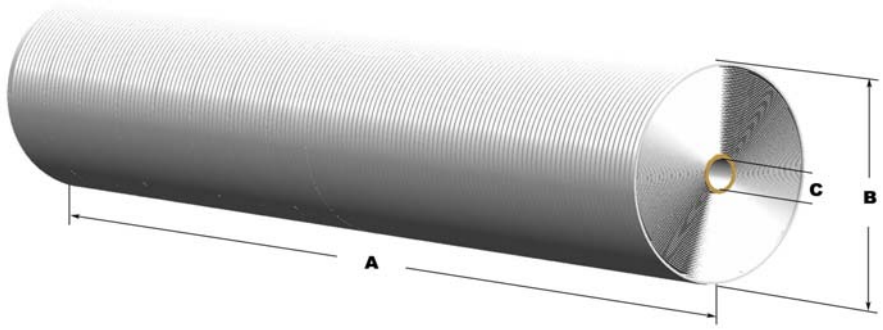

Element Weight : 40 (18)

Length (**A**) : 38 (965) Diameter (**B**) : 7.9 (200) Permeate Tube **(C) :** 1.12 (28.6)

Units in pounds and inches, units in paranthesis in kilograms and millimetes. Dim "A" does not include ATD.

Mechanical Configuration: Filmtec Style Core Tube ATD not included with element

Feed Spacer: 0.046" 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 RO High Temperature Turboclean Element

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8038-M2C9X3	5800 (21.0)	99.00	98.00

Performance is based on the following test conditions: 2000 ppm NaCl, 225 psi, 25°C, 15% recovery, pH 8, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ACM Fully Aromatic Polyamide Advanced Composite Membrane
Configuration.....	Spiral Wound,High Temperature Turboclean Shell
Active Membrane Area.....	225 ft² (20.9 m²)
Recommended Applied Pressure.....	Not applicable
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 140°F (2 - 60°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	100 GPM (22.7 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU
Application.....	Lactose Concentration

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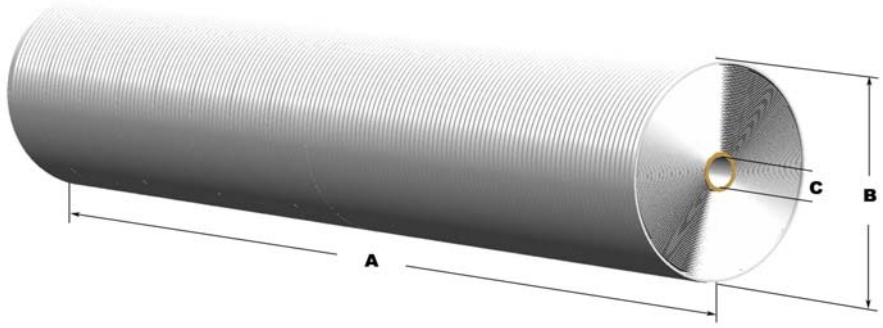

Element Weight : 30 (14)

Length (**A**) : 38 (965) Diameter (**B**) : 7.9 (200) Permeate Tube **(C) :** 1.12 (28.6)

Units in pounds and inches, units in paranthesis in kilograms and millimetes. Dim "A" does not include ATD.

Mechanical Configuration: Filmtec Style Core Tube ATD not included with element

Feed Spacer: 0.065" 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 RO High Temperature Turboclean Element

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8038-M2D7V6	7500 (28.0)	99.00	98.00

Performance is based on the following test conditions: 2000 ppm NaCl, 225 psi, 25°C, 15% recovery, pH 8, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type	ACM Fully Aromatic Polyamide Advanced Composite Membrane
Configuration	Spiral Wound,High Temperature Turboclean Shell
Active Membrane Area	288 ft² (26.8 m²)
Recommended Applied Pressure	Not applicable
Maximum Applied Pressure	600 psi (41 bar)
Recommended Operating Temperature	35 - 140°F (2 - 60°C)
Feedwater pH Range	2 - 11 continuous
Chlorine Tolerance	<0.1 ppm
Maximum Feed Flow	95 GPM (22 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity	1 NTU
Application	Whey Concentration

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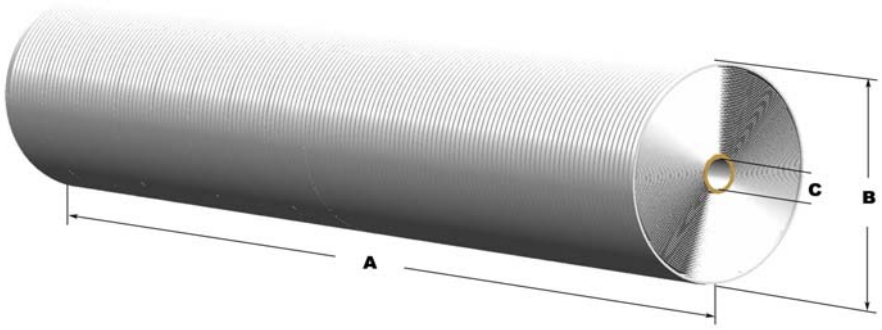

Element Weight : 40 (18)

Length (**A**) : 38 (965) Diameter (**B**) : 7.9 (200) Permeate Tube **(C) :** 1.12 (28.6)

Units in pounds and inches, units in paranthesis in kilograms and millimetes. Dim "A" does not include ATD.

Mechanical Configuration: Filmtec Style Core Tube ATD not included with element

Feed Spacer: 0.046" 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

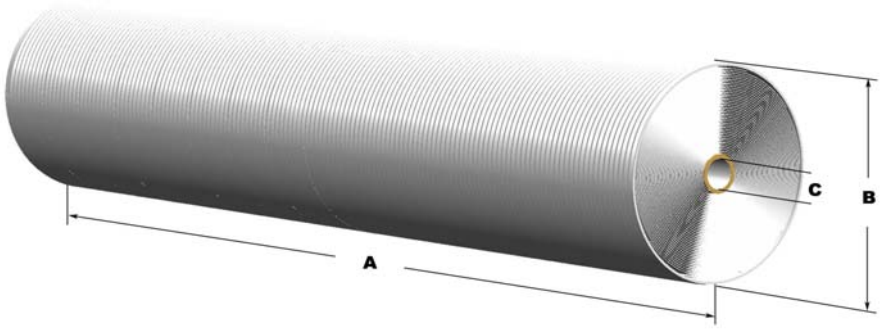
8" ACM RO High Temperature Turboclean Element

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8038-M2G4U8	9400 (35.0)	99.50	98.50

Performance is based on the following test conditions: 2000 ppm NaCl, 225 psi, 25°C, 15% recovery, pH 8, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type	ACM Fully Aromatic Polyamide Advanced Composite Membrane
Configuration	Spiral Wound,High Temperature Turboclean Shell
Active Membrane Area	355 ft² (32.6 m²)
Recommended Applied Pressure	Not applicable
Maximum Applied Pressure	600 psi (41 bar)
Recommended Operating Temperature	35 - 140°F (2 - 60°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
Application	RO Permeate Polisher



Element Weight : 45 (20)

Length (**A**) : 38 (965) Diameter (**B**) : 7.9 (200) Permeate Tube **(C) :** 1.12 (28.6)

Units in pounds and inches, units in paranthesis in kilograms and millimetes. Dim "A" does not include ATD.

Mechanical Configuration: Filmtec Style Core Tube ATD not included with element

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" XN45 NF High Temperature Turboclean Element

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8038-N2D1U8	9,000 (34.0)	95.00	92.00

Performance is based on the following test conditions: 2,000.00 ppm MgSO4, 110.00 psi, 25°C, 15% recovery, pH 8.00, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	XN45 Polyamide Advanced Nanofiltration Membrane
Configuration.....	Spiral Wound, High Temperature Turboclean Shell
Active Membrane Area.....	355 ft² (32.6 m²)
Recommended Applied Pressure.....	Not applicable
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 140°F (2 - 60°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	0.5 ppm nominal, 1.0 ppm max
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
Application.....	Lactose Demineralization

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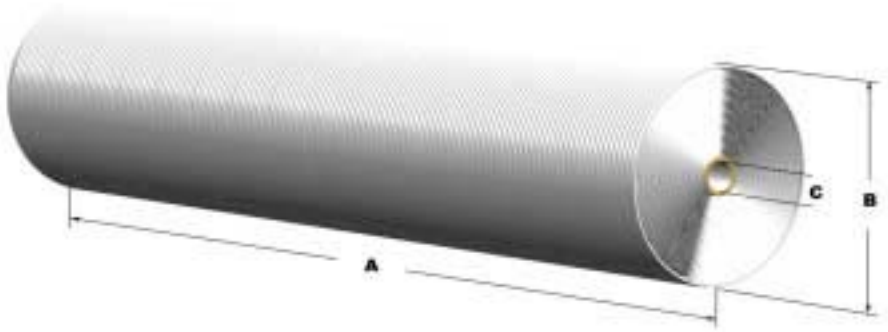

Element Weight : 45 (20)

Length (**A**) : 38.00 (965) Diameter (**B**) : 7.9 (200) Permeate Tube **(C) :** 1.12 (28.6)

Units in pounds and inches, units in paranthesis in kilograms and millimetes. Dim "A" does not include ATD.

Mechanical Configuration: Filmtec Style Core Tube ATD not included with element

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" XN45 NF High Temperature Turboclean Element

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8038-N2D1U9	7,100 (26.0)	95.00	92.00

Performance is based on the following test conditions: 2,000.00 ppm MgSO4, 110.00 psi, 25°C, 15% recovery, pH 8.00, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	XN45 Polyamide Advanced Nanofiltration Membrane
Configuration.....	Spiral Wound, High Temperature Turboclean Shell
Active Membrane Area.....	270 ft² (24.8 m²)
Recommended Applied Pressure.....	40 - 200 psi (3 - 14 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 140°F (2 - 60°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	0.5 ppm nominal, 1.0 ppm max
Maximum Feed Flow.....	95 GPM (22 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	2 NTU
Application.....	Lactose Demineralization

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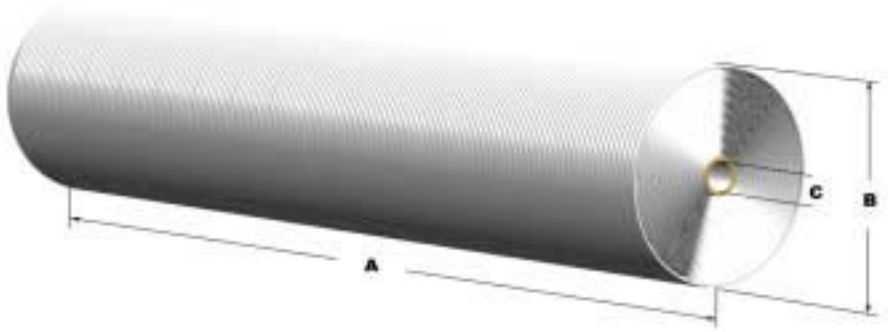

Element Weight : 40 (18)

Length (**A**) : 38.00 (965) Diameter (**B**) : 7.9 (200) Permeate Tube **(C) :** 1.12 (28.6)

Units in pounds and inches, units in paranthesis in kilograms and millimetes. Dim "A" does not include ATD.

Mechanical Configuration: Filmtec Style Core Tube ATD not included with element

Feed Spacer: 0.047" thick parallel 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" AUM Ultrafiltration Turboclean Element Series

Model	M.W.C.O.
8038-N6D4V7	10,000

OPERATIONAL AND DESIGN DATA

Membrane Type.....	AUM Advanced Ultrafiltration Membrane
Configuration.....	Spiral Wound,High Temperature Turboclean Shell
Active Membrane Area.....	225 ft² (20.9 m²)
Recommended Applied Pressure.....	Not applicable
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	10.0 ppm
Maximum Feed Flow.....	100 GPM (22.7 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU
Application.....	Milk Fractionation

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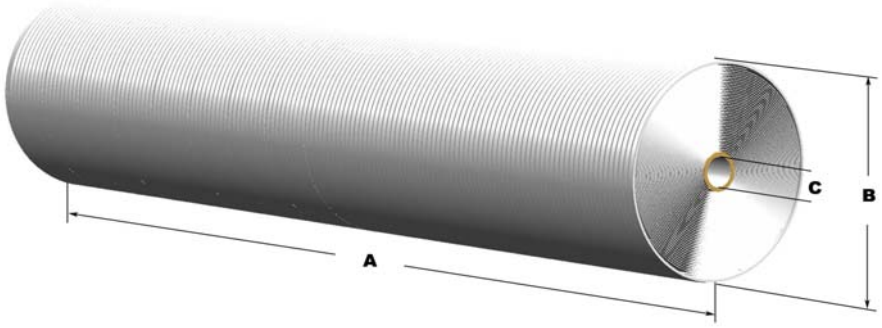

Element Weight : 30 (14)

Length (**A**) : 38 (965) Diameter (**B**) : 7.9 (200) Permeate Tube **(C) :** 1.14 (29.0)

Units in pounds and inches, units in paranthesis in kilograms and millimetes. Dim "A" does not include ATD.

Mechanical Configuration: Filmtec Style Core Tube ATD not included with element

Feed Spacer: 0.065" thick diamond spacer

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PRODUCT SPECIFICATION

8" AUM Ultrafiltration Turboclean Element Series

Model	M.W.C.O.
8038-N6D4V8	10,000

OPERATIONAL AND DESIGN DATA

Membrane Type.....	AUM Advanced Ultrafiltration Membrane
Configuration.....	Spiral Wound,High Temperature Turboclean Shell
Active Membrane Area.....	355 ft² (33.0 m²)
Recommended Applied Pressure.....	Not applicable
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	10.0 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
Application.....	Milk Fractionation

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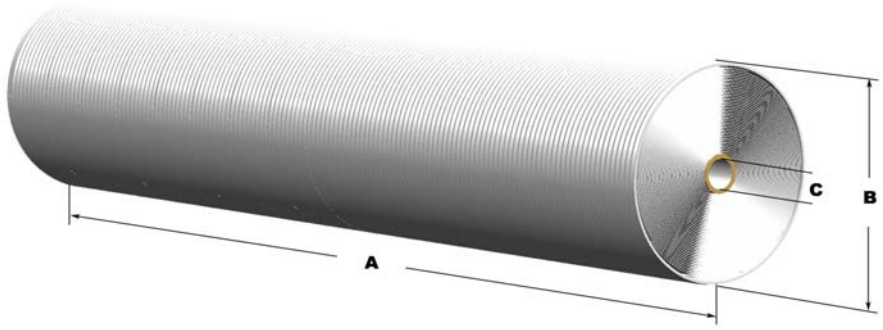

Element Weight : 50 (23)

Length (**A**) : 38 (965) Diameter (**B**) : 7.9 (200) Permeate Tube **(C) :** 1.14 (29.0)

Units in pounds and inches, units in paranthesis in kilograms and millimetes. Dim "A" does not include ATD.

Mechanical Configuration: Filmtec Style Core Tube ATD not included with element

Feed Spacer: 0.031" thick diamond spacer

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PRODUCT SPECIFICATION

8" AUM Ultrafiltration Turboclean Element Series

Model	M.W.C.O.
8038-N6D4V9	10,000

OPERATIONAL AND DESIGN DATA

Membrane Type.....	AUM Advanced Ultrafiltration Membrane
Configuration.....	Spiral Wound,High Temperature Turboclean Shell
Active Membrane Area.....	288 ft² (26.8 m²)
Recommended Applied Pressure.....	Not applicable
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	10.0 ppm
Maximum Feed Flow.....	95 GPM (22 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU
Application.....	Milk Fractionation

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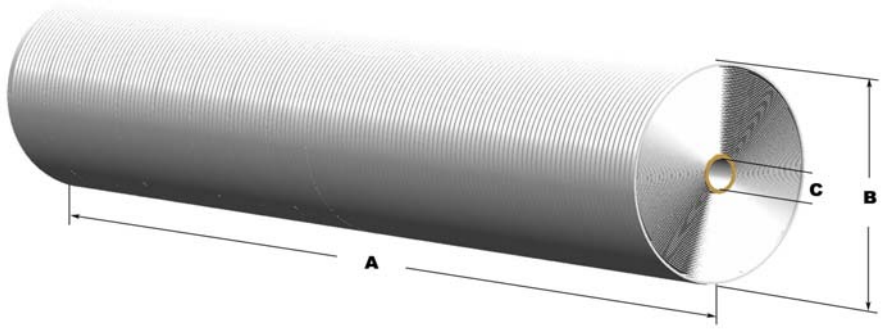

Element Weight : 40 (18)

Length (**A**) : 38 (965) Diameter (**B**) : 7.9 (200) Permeate Tube **(C) :** 1.14 (29.0)

Units in pounds and inches, units in paranthesis in kilograms and millimetes. Dim "A" does not include ATD.

Mechanical Configuration: Filmtec Style Core Tube ATD not included with element

Feed Spacer: 0.046" thick diamond spacer

Engineered Membrane SOLUTIONS

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PRODUCT SPECIFICATION

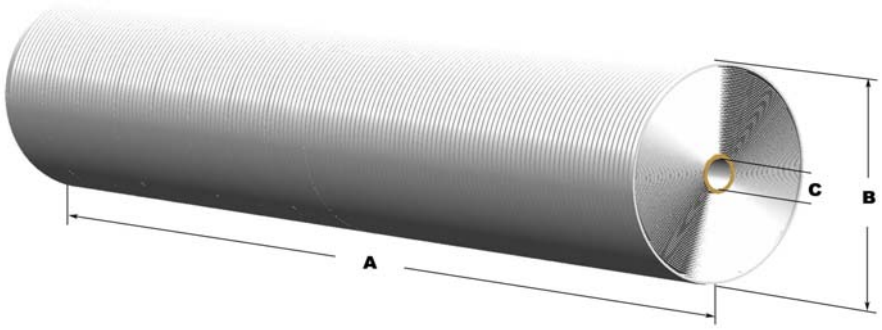
8" AUM Ultrafiltration Turboclean Element Series

Model	M.W.C.O.
8038-N6D9V8	10,000

OPERATIONAL AND DESIGN DATA

Membrane Type.....	AUM Advanced Ultrafiltration Membrane
Configuration.....	Spiral Wound,High Temperature Turboclean Shell
Active Membrane Area.....	355 ft² (33.0 m²)
Recommended Applied Pressure.....	Not applicable
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	10.0 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
Application.....	Whey Fractionation

U.S.D.A. APPROVED



Element Weight : 50 (23)

Length (**A**) : 38 (965) Diameter (**B**) : 7.9 (200) Permeate Tube **(C) :** 1.14 (29.0)

Units in pounds and inches, units in paranthesis in kilograms and millimetes. Dim "A" does not include ATD.

Mechanical Configuration: Filmtec Style Core Tube ATD not included with element

Feed Spacer: 0.031" thick diamond spacer

Engineered Membrane SOLUTIONS

TriSep Corporation • 93 South La Patera Lane • Goleta, California 93117, U.S.A.
Phone: (805) 964-8003 • Fax: (805) 964-1235 • www.trisep.com

PRODUCT SPECIFICATION

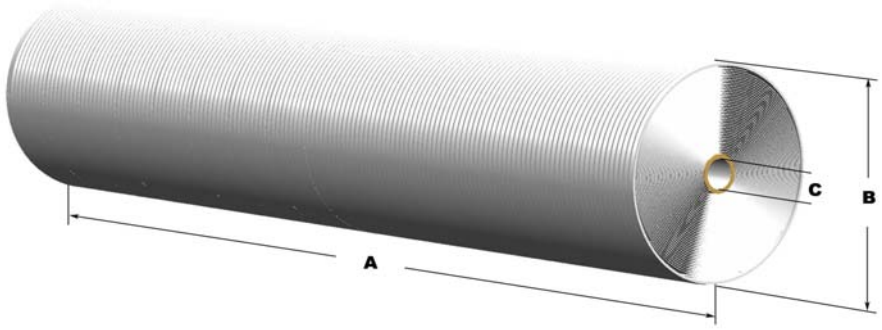
8" AUM Ultrafiltration Turboclean Element Series

Model	M.W.C.O.
8038-N6D9V9	10,000

OPERATIONAL AND DESIGN DATA

Membrane Type.....	AUM Advanced Ultrafiltration Membrane
Configuration.....	Spiral Wound,High Temperature Turboclean Shell
Active Membrane Area.....	288 ft² (26.8 m²)
Recommended Applied Pressure.....	Not applicable
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	10.0 ppm
Maximum Feed Flow.....	95 GPM (22 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI (15 minutes)	5.0
Maximum Turbidity.....	1 NTU
Application.....	Whey Fractionation

U.S.D.A. APPROVED



Element Weight : 40 (18)

Length (**A**) : 38 (965) Diameter (**B**) : 7.9 (200) Permeate Tube **(C) :** 1.14 (29.0)

Units in pounds and inches, units in paranthesis in kilograms and millimetes. Dim "A" does not include ATD.

Mechanical Configuration: Filmtec Style Core Tube ATD not included with element

Feed Spacer: 0.046" thick diamond spacer

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PRODUCT SPECIFICATION

8" ACM RO High Temperature Turboclean Element

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8040-M2C9Q1	9,400 (35.0)	99.00	98.00

Performance is based on the following test conditions: 2,000.00 ppm NaCl, 225.00 psi, 25°C, 15% recovery, pH 8.00, 30 minutes operation.

OPERATIONAL AND DESIGN DATA

Membrane Type.....	ACM Fully Aromatic Polyamide Advanced Composite Membrane
Configuration.....	Spiral Wound, High Temperature Turboclean Shell
Active Membrane Area.....	355 ft² (32.6 m²)
Recommended Applied Pressure.....	100 - 300 psi (7 - 21 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 140°F (2 - 60°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
Application.....	Lactose Concentration

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 millimetes.

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

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PRODUCT SPECIFICATION

8" ACM RO High Temperature Turboclean Element

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8040-M2D7T9	9,400 (35.0)	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 Fully Aromatic Polyamide Advanced Composite Membrane
Configuration.....	Spiral Wound,Turboclean Shell
Active Membrane Area.....	355 ft² (32.6 m²)
Recommended Applied Pressure.....	100 - 300 psi (7 - 21 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 140°F (2 - 60°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
Application.....	Whey Concentration

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 millimetes.

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

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