



Membrane Element

CPA5-LD-4040

(Low Fouling Technology)

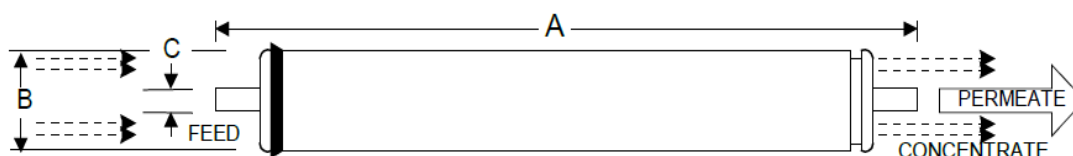
Performance:	Permeate Flow:	2,100 gpd (7.95 m ³ /d)
	Salt Rejection:	99.7% (99.5% minimum)
Type	Configuration:	Low Fouling Spiral Wound
	Membrane Polymer:	Composite Polyamide
	Membrane Active Area:	80 ft ² (7.43 m ²)
	Feed Spacer:	34 mil (0.864 mm) with biostatic agent
Application Data*	Maximum Applied Pressure:	600 psig (4.14 MPa)
	Maximum Chlorine Concentration:	< 0.1 PPM
	Maximum Operating Temperature:	113 °F (45 °C)
	pH Range, Continuous (Cleaning):	2-11 (1-13)*
	Maximum Feedwater Turbidity:	1.0 NTU
	Maximum Feedwater SDI (15 mins):	5.0
	Maximum Feed Flow:	16 GPM (3.6 m ³ /h)
	Minimum Ratio of Concentrate to Permeate Flow for any Element:	5:1
	Maximum Pressure Drop for Each Element:	10 psi

* The limitations shown here are for general use. For specific projects, operating at more conservative values may ensure the best performance and longest life of the membrane. See Hydranautics Technical Bulletins for more detail on operation limits, cleaning pH, and cleaning temperatures.

Test Conditions

The stated performance is initial (data taken after 30 minutes of operation), based on the following conditions:

1500 PPM NaCl solution
225 psi (1.55 MPa) Applied Pressure
77 °F (25 °C) Operating Temperature
15% Permeate Recovery
6.5 - 7.0 pH Range



A, inches (mm)	B, inches (mm)	C, inches (mm)	Weight, lbs. (kg)
40.00 (1016)	3.95 (100.3)	0.75 (19.1)	8 (3.6)

Core tube extension = 1.05" (26.7 mm)

Notice: Permeate flow for individual elements may vary + 25 or - 15 percent. All membrane elements are supplied with a brine seal, interconnector, and o-rings. Elements are enclosed in a sealed polyethylene bag containing less than 1.0% sodium meta-bisulfite solution, and then packaged in a cardboard box.

Hydranautics believes the information and data contained herein to be accurate and useful. The information and data are offered in good faith, but without guarantee, as conditions and methods of use of our products are beyond our control. Hydranautics assumes no liability for results obtained or damages incurred through the application of the presented information and data. It is the user's responsibility to determine the appropriateness of Hydranautics' products for the user's specific end uses.

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Membrane Element CPA-4040E (Patented Low Fouling Technology)

Performance:	Permeate Flow:	2,250 gpd (8.5 m ³ /d)
	Salt Rejection :	99.5% (99.2% minimum)
	Feed Spacer:	34 mil (0.864 mm) with biostatic agent

Type	Configuration:	Spiral Wound
	Membrane Polymer:	Composite Polyamide
	Membrane Active Area:	65 ft ² (6.04 m ²)

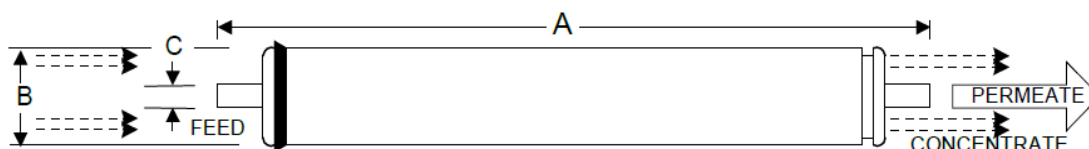
Application Data*	Maximum Applied Pressure:	600 psig (4.14 MPa)
	Maximum Chlorine Concentration:	< 0.1 PPM
	Maximum Operating Temperature:	113 °F (45 °C)
	pH Range, Continuous (Cleaning):	2-10 (1-12)*
	Maximum Feedwater Turbidity:	1.0 NTU
	Maximum Feedwater SDI (15 mins):	5.0
	Maximum Feed Flow:	16 GPM (3.6 m ³ /h)
	Minimum Ratio of Concentrate to Permeate Flow for any Element:	5:1
	Maximum Pressure Drop for Each Element:	10 psi
	Dry Element Temperature Storage	-40 °C to 40 °C (-40°F to 104°F)
	Wet Element Temperature Storage	1 °C to 35 °C (33°F to 95°F)

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Test Conditions

The stated performance is based on the conditions below, after 30 minutes of stabilized operation. Hydranautics does not test every element, but randomly samples some elements to statistically ensure the product meets our stated specifications. Untested elements are shipped in a dry condition. Tested elements are preserved and shipped in 0.99% sodium meta-bisulfite. Shipment of product could include both types of elements.

1500 PPM NaCl solution
225 psi (1.55 MPa) Applied Pressure
77 °F (25 °C) Operating Temperature
15% Permeate Recovery
6.5 - 7.0 pH Range



A, inches (mm)	B, inches (mm)	C, inches (mm)	Weight, lbs. (kg)
40.00 (1016)	3.95 (100.3)	0.75 (19.1)	7 (3.2)

Core tube extension = 1.05" (26.7 mm)

Notice: Permeate flow for individual elements may vary + 33 or - 15 percent. All membrane elements are supplied with a brine seal, interconnector, and o-rings. Elements are enclosed in a sealed polyethylene bag in a dry condition (no aqueous preservative), and then packaged in a cardboard box.

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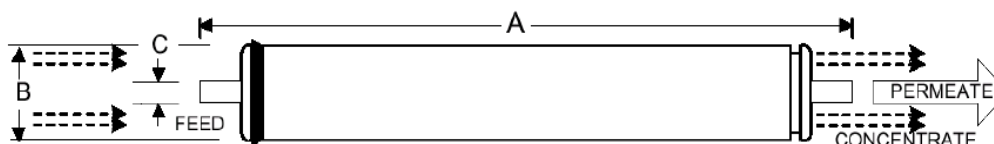
Membrane Element		ESPA - 4021
Performance	Permeate Flow:	1,000 gpd (3.8 m ³ /d)
	Salt Rejection:	99.4 % (98.0% minimum)
Type	Configuration:	Spiral Wound
	Membrane Polymer:	Composite Polyamide
	Membrane Active Area:	28.6 ft ²
Application Data*	Maximum Applied Pressure:	300 psig (2.1 MPa)
	Maximum Chlorine Concentration:	< 0.1 PPM
	Maximum Operating Temperature:	113° F (45°C)
	pH Range: Continuous (Cleaning):	3.0 –10.0*
	Maximum Feedwater Turbidity:	1.0 NTU
	Maximum Feedwater SDI (15 mins):	4.0
	Maximum Feed Flow:	12 GPM (45.4 l/m)
	Minimum Ratio of Concentrate to Permeate Flow for any element:	5:1
	Maximum Pressure Drop for Each Element:	10 psi

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Test Conditions

Elements are wet tested for quality assurance using the following conditions:

1500 PPM NaCl solution
150 psi (1.03 MPa) Applied Pressure
77 °F (25 °C) Operating Temperature
10% Permeate Recovery
6.5 – 7.0 pH Range
(Data taken after 30 minutes of operation)



A, inches (mm)	B, inches (mm)	C, inches (mm)	Weight, lbs. (Kg)
21.0 (533.4)	3.95 (100.3)	0.75 (19.1)	4 (1.8)

Core tube extension = 1.10" (27.9 mm)

Notice: Minimum permeate flow for individual elements is 15 percent below listed flow. All membrane elements are supplied with a brine seal and o-rings. Most elements are packaged dry, sealed in polyethylene bags, and shipped in a cardboard box. Some elements are sealed in polyethylene bags containing less than 1.0% sodium meta-bisulfite solution and shipped in a cardboard box.

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Membrane Element

ESPA1-LD-4040

(Low Fouling Technology)

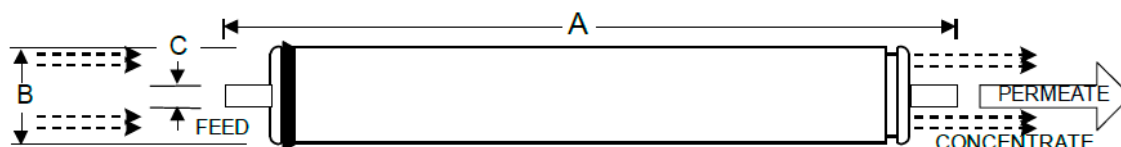
Performance:	Permeate Flow:	2,450 gpd (9.27 m ³ /d)
	Salt Rejection:	99.3% (99.0% Minimum)
Type	Configuration:	Spiral Wound
	Membrane Polymer:	Composite Polyamide
	Membrane Active Area:	80 ft ² (7.4 m ²)
	Feed Spacer:	34 mil (0.864 mm) with biostatic agent
Application Data*	Maximum Applied Pressure:	600 psig (4.14 MPa)
	Maximum Chlorine Concentration:	< 0.1 PPM
	Maximum Operating Temperature:	113 °F (45 °C)
	pH Range, Continuous (Cleaning):	2-10 (1-12)*
	Maximum Feedwater Turbidity:	1.0 NTU
	Maximum Feedwater SDI (15 mins):	5.0
	Maximum Feed Flow:	16 GPM (3.6 m ³ /h)
	Minimum Ratio of Concentrate to Permeate Flow for any Element:	5:1
	Maximum Pressure Drop for Each Element:	10 psi

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Test Conditions

The stated performance is initial (data taken after 30 minutes of operation), based on the following conditions:

1500 ppm NaCl solution
 150 psi (1.05 MPa) Applied Pressure
 77 °F (25 °C) Operating Temperature
 15% Permeate Recovery
 6.5 - 7.0 pH Range
 (Data taken after 30 minutes of operation)



A, inches (mm)	B, inches (mm)	C, inches (mm)	Weight, lbs. (kg)
40.0 (1016)	3.95 (100.3)	0.75 (19.1)	8 (3.6)

Core tube extension = 1.05" (26.7 mm)

Notice: Permeate flow for individual elements may vary + or - 15 percent. All membrane elements are supplied with a brine seal, interconnector, and o-rings. Elements are enclosed in a sealed polyethylene bag containing less than 1% sodium meta-bisulfite solution and 10% propylene glycol, and then packaged in a cardboard box.

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Membrane Element

ESPA2-LD-4040 (Low Fouling Technology)

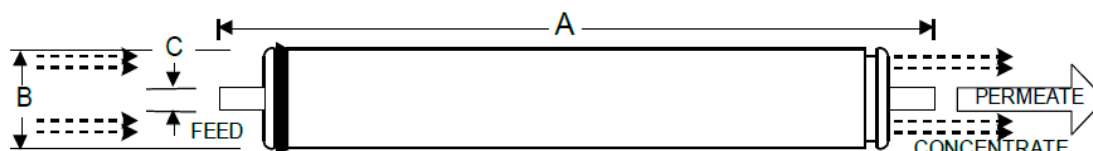
Performance:	Permeate Flow:	2,000 gpd (7.57 m ³ /d)
	Salt Rejection:	99.6% (99.4% minimum)
Type	Configuration:	Low Fouling Spiral Wound
	Membrane Polymer:	Composite Polyamide
	Membrane Active Area:	80 ft ² (7.43 m ²)
	Feed Spacer:	34 mil (0.864 mm) with biostatic agent
Application Data*	Maximum Applied Pressure:	600 psig (4.14MPa)
	Maximum Chlorine Concentration:	< 0.1 PPM
	Maximum Operating Temperature:	113 °F (45 °C)
	pH Range, Continuous (Cleaning):	2-10.6 (1-12)*
	Maximum Feedwater Turbidity:	1.0 NTU
	Maximum Feedwater SDI (15 mins):	5.0
	Maximum Feed Flow:	16 GPM (3.6 m ³ /h)
	Minimum Ratio of Concentrate to Permeate Flow for any Element:	5:1
	Maximum Pressure Drop for Each Element:	10 psi

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Test Conditions

The stated performance is initial (data taken after 30 minutes of operation), based on the following conditions:

1500 PPM NaCl solution
150 psi (1.05 MPa) Applied Pressure
77 °F (25 °C) Operating Temperature
15% Permeate Recovery
6.5 - 7.0 pH Range



A, inches (mm)	B, inches (mm)	C, inches (mm)	Weight, lbs. (kg)
40.0 (1016)	3.95 (100.3)	0.75 (19.1)	8 (3.6)

Core tube extension = 1.05" (26.7 mm)

Notice: Permeate flow for individual elements may vary + or - 20 percent. All membrane elements are supplied with a brine seal, interconnector, and o-rings. Elements are enclosed in a sealed polyethylene bag containing less than 1.0% sodium meta-bisulfite solution, and then packaged in a cardboard box.

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Membrane Element

LFC3-LD-4040 (Low Fouling Technology)

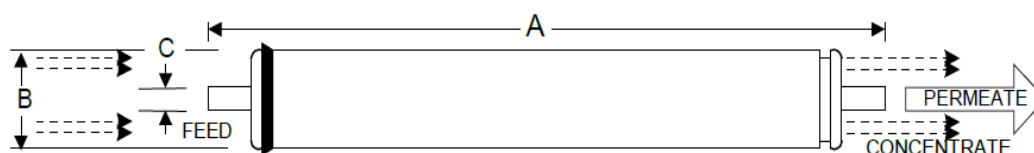
Performance:	Permeate Flow:	2,100 gpd (7.95 m ³ /d)
	Salt Rejection:	99.7% (99.5% minimum)
Type	Configuration:	Low Fouling Spiral Wound
	Membrane Polymer:	Composite Polyamide
	Membrane Active Area:	80 ft ² (7.43 m ²)
	Feed Spacer:	34 mil (0.864 mm) with biostatic agent
Application Data*	Maximum Applied Pressure:	600 psig (4.14 MPa)
	Maximum Chlorine Concentration:	< 0.1 PPM
	Maximum Operating Temperature:	113 °F (45 °C)
	pH Range, Continuous (Cleaning):	2-10 (1-12)*
	Maximum Feedwater Turbidity:	1.0 NTU
	Maximum Feedwater SDI (15 mins):	5.0
	Maximum Feed Flow:	16 GPM (3.6 m ³ /h)
	Minimum Ratio of Concentrate to Permeate Flow for any Element:	5:1
	Maximum Pressure Drop for Each Element:	10 psi

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Test Conditions

The stated performance is initial (data taken after 30 minutes of operation), based on the following conditions:

1500 PPM NaCl solution
225 psi (1.55 MPa) Applied Pressure
77 °F (25 °C) Operating Temperature
15% Permeate Recovery
6.5 - 7.0 pH Range



A, inches (mm)	B, inches (mm)	C, inches (mm)	Weight, lbs. (kg)
40.0 (1016)	3.95 (100.3)	0.75 (19.1)	8 (3.6)

Core tube extension = 1.05" (26.7 mm)

Notice: Permeate flow for individual elements may vary +25/-15 percent. All membrane elements are supplied with a brine seal, interconnector, and o-rings. Elements are enclosed in a sealed polyethylene bag containing less than 1.0% sodium meta-bisulfite solution, and then packaged in a cardboard box.

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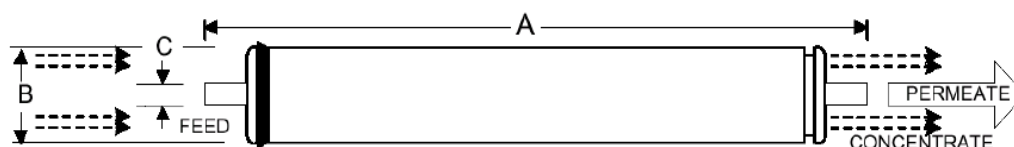
Membrane Element		SWC - 4021
Performance	Permeate Flow:	640gpd (2.4 m ³ /d)
	Salt Rejection:	99.4 % (99.0% minimum)
Type	Configuration:	Spiral Wound
	Membrane Polymer:	Composite Polyamide
	Membrane Active Area:	28.6 ft ²
Application Data*	Maximum Applied Pressure:	1,000 psig (6.9 MPa)
	Maximum Chlorine Concentration:	< 0.1 PPM
	Maximum Operating Temperature:	113° F (45°C)
	pH Range; Continuous (Cleaning):	3.0 –10.0*
	Maximum Feedwater Turbidity:	1.0 NTU
	Maximum Feedwater SDI (15 mins):	4.0
	Maximum Feed Flow:	12 GPM (45.4 l/m)
	Minimum Ratio of Concentrate to Permeate Flow for any element:	5:1
	Maximum Pressure Drop for Each Element:	10 psi

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Test Conditions

Elements are wet tested for quality assurance using the following conditions:

32000 PPM NaCl solution
 800 psi (5.5 MPa) Applied Pressure
 77 °F (25 °C) Operating Temperature
 10% Permeate Recovery
 6.5 – 7.0 pH Range
 (Data taken after 30 minutes of operation)



A, inches (mm)	B, inches (mm)	C, inches (mm)	Weight, lbs. (Kg)
21.0 (533.4)	3.95 (100.3)	0.75 (19.1)	4 (1.8)

Core tube extension = 1.10" (27.9 mm)

Notice: Minimum permeate flow for individual elements is 15 percent below listed flow. All membrane elements are supplied with a brine seal and o-rings. Most elements are packaged dry, sealed in a polyethylene bags, and shipped in a cardboard box. Some elements are sealed in polyethylene bags containing less than 1.0% sodium meta-bisulfite solution and shipped in a cardboard box.

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10/18/13



Membrane Element

SWC5-LD-4040 (Low Fouling Technology)

Performance:	Permeate Flow:	1,750 gpd (6.62 m ³ /d)
	Salt Rejection:	99.7% (99.5% minimum)
Type	Configuration:	Low Fouling Spiral Wound
	Membrane Polymer:	Composite Polyamide
	Membrane Active Area:	80 ft ² (7.43m ²)
	Feed Spacer:	34 mil (0.864mm) with biostatic agent

Application Data*

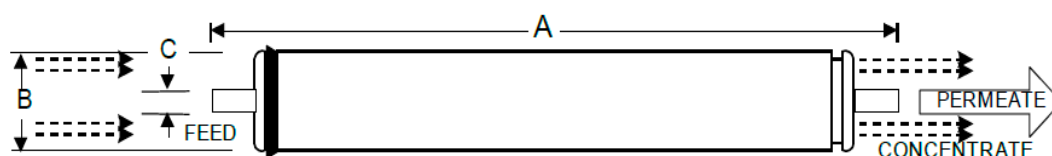
Maximum Applied Pressure:	1200 psig* (8.27 MPa)
Maximum Chlorine Concentration:	< 0.1 PPM
Maximum Operating Temperature:	113 °F (45 °C)
pH Range, Continuous (Cleaning):	2-11 (1-13)*
Maximum Feedwater Turbidity:	1.0 NTU
Maximum Feedwater SDI (15 mins):	5.0
Maximum Feed Flow:	16 GPM (3.6 m ³ /h)
Minimum Recovery for any Element:	10 %
Maximum Pressure Drop for Each Element:	10 psi

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Test Conditions

The stated performance is initial (data taken after 30 minutes of operation), based on the following conditions:

32,000 ppm NaCl
800 psi (5.5 MPa) Applied Pressure
77 °F (25 °C) Operating Temperature
10% Permeate Recovery
6.5 - 7.0 pH Range



A, inches (mm)	B, inches (mm)	C, inches (mm)	Weight, lbs. (kg)
40.00 (1016)	3.95 (100.3)	0.75 (19.1)	8 (3.6)

Core tube extension = 1.05" (26.7 mm)

Notice: Permeate flow for individual elements may vary + 25 or - 15 percent. All membrane elements are supplied with a brine seal, interconnector, and o-rings. Elements are enclosed in a sealed polyethylene bag containing less than 1.0% sodium meta-bisulfite solution, and then packaged in a cardboard box.

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