ADH2OC industrial

Product Information

MEMBRANE LC LE PRO-4040

FilmTec™ LC LE PRO-4040

Reverse Osmosis Elements

Key Features

- LC LE PRO-4040 delivers high quality water at low pressure at harsh water conditions, using DuPont's innovative, proprietary technology for low energy applications.
- Industry leading active area (94 sqft) which provides less fouling due to lower operating flux while still achieving higher flow.
- Offers high salt rejection at low pressure in harsh water conditions.
- Provides most effective cleaning performance, robustness and durability due to its widest cleaning pH range (1 – 13) and chemical tolerance.

Key Applications

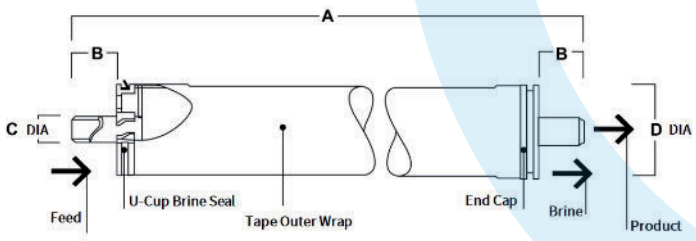
- Light industrial applications requiring good permeate quality.
- Harsh feed water condition.
- Drinking water – Refilling stations, Bottling plants, Hotels, Schools, Institutions etc.

Typical Properties

Product	Part Number Dry	Permeate Flow Rate gpd (m^3/d)	Min. Salt Rejection (%)	Stabilized Salt Rejection (%)
LC LE PRO-4040	12081512	2600 (9.8)	99.0	99.5

1. Permeate flow and salt rejection based on the following test conditions: 2000 ppm NaCl, 77°F (25°C), 15% recovery, pH 8, and applied pressure 150 psig.
2. Permeate flows for individual elements may vary +/-20%.
3. For the purpose of improvement, specifications may be updated periodically.

Element Dimensions



FilmTec™ coupler part number 89055 is ordered separately for each element. Each coupler includes two 2-210 EPR O-rings (part number 89065).

Product	Dimensions – inches (mm) 1 inch = 25.4 mm A	B	C	D
LC LE PRO-4040	40.00 (1016)	1.05 (26.7)	0.75 (19)	3.9 (99)

1. Refer to FilmTec™ Design Guidelines for multiple-element systems of midsize elements (Form No. 45-D01588-en).
2. LC LE PRO-4040 Elements fit nominal 4-inch I.D. pressure vessel.

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Operating and Cleaning Limits

Membrane type	Polyamide Thin-Film Composite
Maximum operating temperature	113°F (45°C)
Maximum operating pressure	600 psig (41 bar)
Maximum pressure drop	15 psig (1.0 bar)
Maximum feed flow rate, gpm (m^3/h)	16 gpm (3.6 (m^3/h))
pH range	
Continuous operation[a]	2 - 11
Short-term cleaning[b]	1 – 13
Maximum Feed Silt Density Index	SDI 5
Free chlorine concentration[c]	< 0.1 ppm

a. Maximum temperature for continuous operation above pH 10 is 95°F (35°C).
b. Refer to FilmTec™ Cleaning Guidelines (Form No. 45-D01696-en).
c. Under certain conditions, the presence of free chlorine and other oxidizing agents will cause premature membrane failure. Since oxidation damage is not covered under warranty, DuPont recommends removing residual free chlorine and other oxidants by pretreatment prior to membrane exposure. Please refer to Dechlorinating Feedwater (Form No. 45-D01569-en) for more information.

General Information

- Keep elements moist at all times after initial wetting
- For successful operation of Reverse Osmosis (RO) and Nanofiltration (NF) membrane systems, the operation must follow the guidelines provided in the FilmTec™ Reverse Osmosis / Nanofiltration Elements Operation Excellence and Limiting Conditions Tech Fact (Form No. 45-D04388-en).
- To prevent biological growth during prolonged system shutdowns, it is recommended that membrane elements be immersed in a preservative solution
- The customer is fully responsible for the effects of incompatible chemicals and lubricants on elements
- Maximum pressure drop across an entire pressure vessel (housing) is 50 psi (3.4 bar)
- Avoid static permeate-side backpressure at all times
- Permeate obtained from the first hour of operation should be discarded.
- Avoid any abrupt pressure or cross-flow variations on the spiral elements during start-up, shutdown, cleaning or other sequences to prevent possible membrane damage. During start-up, a gradual change from a standstill to operating state is recommended as follows:
  - Feed pressure should be increased gradually over a 30-60 second time frame.
  - Cross-flow velocity at set operating point should be achieved gradually over 15-20 seconds.
- The use of this product in and of itself does not necessarily guarantee the removal of cysts and pathogens from water. Effective cyst and pathogen reduction is dependent on the complete system design and on the operation and maintenance of the system.
- Permeate obtained from the first hour of operation should be discarded.

Important Information

- Proper start-up of reverse osmosis water treatment systems is essential to prepare the membranes for operating service and to prevent membrane damage due to overfeeding or hydraulic shock. Following the proper start-up sequence also helps ensure that system operating parameters conform to design specifications so that system water quality and productivity goals can be achieved.
- Before initiating system start-up procedures, membrane pretreatment, loading of the membrane elements, instrument calibration and other system checks should be completed.
- Please refer to the application information literature entitled Start-Up Sequence (Form No. 45-D01609-en) for more information.
- Please refer to the FilmTec™ Reverse Osmosis Membranes Technical Manual (Form No. 45-D01504-en).
- Please refer to Storage and Shipping of New FilmTec™ Elements (Form No. 45-D01633-en) for further information.

Regulatory Note

This product may be subject to drinking water application restrictions in some countries; please check the application status before use and sale.