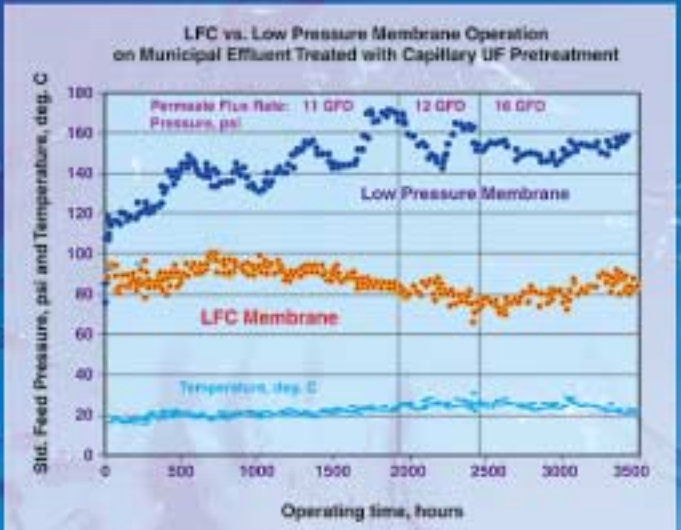
LFC

A new generation of low fouling elements



- **LFC1 - High rejection and productivity with high flux stability**

- **LFC3 - Hydranautics' unique hydrophilic chemistry makes this the only true low-fouling membrane in the industry for applications which demand high-efficiency flow and the highest salt rejection**

True hydrophilic membrane chemistry

Superior membrane technology is the key to Hydranautics' innovative LFC (Low Fouling Composite) membrane. LFC membranes offer breakthrough technology in the treatment of difficult feedwaters, municipal wastewater and other challenging feedwaters. Until now, these applications have required significant pretreatment prior to subjecting them to a composite polyamide membrane

Combining the attributes of a neutral surface charge and hydrophilicity, LFC provides significant reduction in fouling rates, increasing membrane efficiency by restoring nominal performance after cleaning. The high performance LFC1 is ideal for municipal and industrial surface and wastewater applications where high rejection is required. New LFC3, ideal for municipal wastewater applications, is the only membrane in the industry that offers low fouling membrane chemistry with high efficiency flow and rejection characteristics. LFC3 offers 50% lower salt passage than the competition.

HYDRANAUTICS
A Nitto Denko Company
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LFC

Specifications

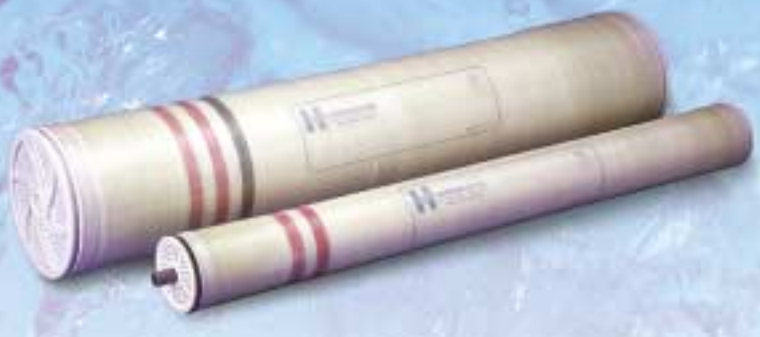
Test Conditions

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

Application Data

Maximum Applied Pressure, psig (MPa)	600 (4.14)
Maximum Feed Flow, GPM (m^3/h)	4040-16(3.6), 8-inch -75(17.0)
Maximum Operating Temperature, °F (°C)	113° (45°)
Feedwater pH Range*	3.0 - 10.0
Maximum Feedwater Turbidity, NTU	1.0
Maximum Feedwater SDI (15 mins)	5.0
Maximum Chlorine Concentration, PPM	<0.1
Maximum Ratio of Concentrate to Permeate Flow for Any Element	5:1
Maximum Pressure Drop for Each Element, psig	10

*See technical literature for extended pH limits



Element Performance

Element Type	Min. Salt Rej., %	Nom. Salt Rej., %	Permeate Flow, GPD	(m^3/d)
LFC1	99.2	99.5	11,000	(41.6)
LFC1-4040	99.0	99.4	2,300	(8.7)
LFC3	99.5	99.6	9,500	(35.96)
LFC3-4040	99.0	99.6	1,980	(7.49)

LFC installation, 11.0 MGD, in Bedok, Singapore

Selected Project References for Hydranautics' LFC Membrane Elements

Kranji, Singapore	10.5 MGD (40,000 m^3/d) of industrial water from a wastewater source
Bedok, Singapore	11.0 MGD (42,000 m^3/d) of industrial water from a wastewater source
La Solana, Spain	1.3 MGD (4800 m^3/d) of industrial water from a surface water source
Shanghai SVW Factory, China	800,000 GPD (3000 m^3/d) of industrial water from a surface water source

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