NITTO DENKO

HYDRANAUTICS
A Nitto Denko Company

LFC3-LD

True Hydrophilic Membrane Chemistry with LD Technology™

LFC3-LD from the LD Technology™ innovative low fouling membranes, combines the attributes of a neutrally charged surface with hydrophilicity to achieve the lowest organic and colloidal fouling in the most demanding feed water conditions

Superior membrane technology is the key to Hydranautics' innovative LFC (Low Fouling Composite) membranes. LFC3-LD membranes offer breakthrough technology in the treatment of difficult feedwaters and municipal wastewaters. Until now, these applications required significant pretreatment prior to being subjected to a composite polyamide membrane, which is eliminated with the use of the LFC3-LD membrane.

Combining the attributes of a neutral surface charge and hydrophilicity, LFC3-LD provides significant reduction in fouling rates increasing the membrane's efficiency by restoring nominal performance after cleaning.

The low fouling composite LFC3-LD (Low Differential Pressure) provides a neutral surface charge that reduces fouling when treating wastewater and surface water with high fouling potential. With the low fouling LD Technology™, the differential pressure gets reduced lowering the biological and colloidal fouling inside the membrane, and successfully reducing the number of cleanings required!

Key benefits

- **High permeate flow - 11,000 gpd (41.6 m^3/d)**
- **High salt rejection - 99.7% (99.5% minimum)**
- **Lower colloidal fouling**
- **Reduced biofouling**
- **Increased membrane durability**
- **Lower dP (differential pressure)**
- **Greater tolerance to high pH cleanings**
- **Improved flux distribution**

Applications:

- Municipal wastewater treatment
- Industrial wastewater treatment
- Wastewater with high biological and organic fouling potential

Performance:

Permeate Flow	11,000 gpd (41.6 m^3/d)
Salt Rejection	99.7% (99.5 % minimum)

Applications Data:

pH Range, Continuous (Cleaning)	2-10 (1-12)*
Maximum Feedwater SDI (15 min)	5.0
Maximum Feed Flow	75 GPM (17.0 m^3/h)

* 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

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Features:

- **Enhanced membrane chemistry** for increased chemical resistance
- **Innovative spacer design** to minimize trapping of small colloidal particles
- **HYDRAblock™ technology** providing biostatic properties to minimize proliferation of biological fouling
- **Proprietary vented seal carrier** to eliminate pressure-shock damage during system startup.

LFC3-LD, Low Fouling Composite RO Membranes, For Your Water Treatment Needs!

Nitto Denko-Hydranautics is a global leader in research, including reverse osmosis, nanofiltration, ultrafiltration, and microfiltration. Our membrane products (SWC, CPA, ESPA, LFC, ESNA, HYDRAcap, and HYDRAsub) are used extensively in municipal & industrial water and wastewater treatment.

Nitto Denko and Hydranautics have over 40 years experience in the membrane technology arena and are committed to creating innovative membrane technologies which provide clean water to a thirsty world.

Our global membrane division is headquartered in Oceanside, CA, USA. With three state-of-the-art manufacturing sites located in Oceanside - CA - USA, Shiga - Japan and Shanghai – China, Hydranautics has a combined manufacturing area in excess of 131,000 m2 (1,400,000 ft2). Our world-wide sales and customer service offices are located throughout Europe, Asia, the Middle East, North America and South America.

Solutions You Need.

Technologies You Trust!

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