

ESPA2-LD MAX

Highest membrane area RO product with 34 mil spacer

Designers will no longer have to sacrifice membrane area to have thicker feed spacers for high fouling applications. Innovations have enabled us to offer the ESPA2-LD MAX membranes which have a membrane area of 440 ft² (40.9 m²) and use a 34 mil feed spacer. Increasing the membrane area of a standard 400 ft² (37.2 m²) by 10%, to 440 ft² (40.9 m²) offers the following benefits:

- CAPEX benefits like reducing the total number of elements, pressure vessels etc. and equipment with smaller footprint
- OPEX benefits like reduced energy consumption and lower differential pressure

The energy saving properties of the ESPA membranes along with lower colloidal fouling properties of the LD Technology[®], ensure that this element provides optimum performance with greater cost savings.

Features and benefits

- **Enhanced membrane chemistry** for best permeate quality at lower feed pressure
- **Improved chemical resistance** for increased membrane life
- **Innovative feed spacer design** to reduce cleaning frequency and costs
- **Proprietary vented seal carrier** to eliminate pressure-shock damage during system startup

Applications:

- Municipal drinking water treatment
- Wastewater treatment
- Treated Sewage Effluent (TSE) applications
- Second pass RO
- Water treatment for irrigation
- Bottled water and food and beverages industry
- Light industrial use for treating water low in biodegradable organics

Key features:

- High permeate flow – 12,000 gpd (45.4 m³/d)
- High salt rejection – 99.6% (99.5% minimum)
- High rejection of TOC, boron, silica and nitrate
- Lower energy consumption
- Lower operating pressure, differential pressure
- Reduced colloidal fouling



Performance:

Permeate Flow	12,000 gpd (45.4 m ³ /d)
Salt Rejection	99.6% (99.5% minimum)

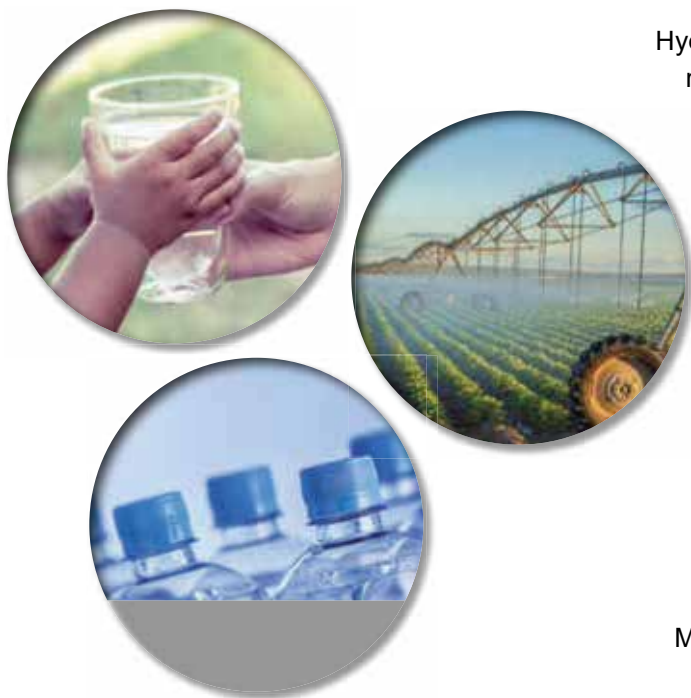
Applications Data:

pH Range, Continuous (Cleaning)	2 – 10.6 (1 – 12)
Maximum Feedwater SDI (15 mins)	5.0
Maximum Feed Flow	85 gpm (19.3 m ³ /h)

Test Conditions:

- 1500 ppm NaCl solution
- 150 psi (1.03 MPa) Applied Pressure
- 77 °F (25 °C) Operating Temperature
- 15% Permeate Recovery
- 6.5 – 7.0 pH Range

ESPA2-LD MAX, Energy Saving Polyamide RO Membranes, for Your Water Treatment Needs!



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

Hydranautics has over 50 years' experience in the membrane technology arena, and we are committed to creating innovative membrane technologies that provide clean water to a thirsty world.

Our Global Membrane Division is headquartered in Oceanside, CA, USA, and two state-of-the-art manufacturing sites are located in Oceanside, CA, USA, and Shiga, Japan. 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!

Hydranautics Corporate office

401 Jones Road, Oceanside, CA 92058, USA Toll Free: +1-800-CPA-PURE Tel: +1 760 901 2500 Fax: +1 760 901 2578
Web: www.membranes.com Email: hy-marketing@nitto.com

Americas

401 Jones Road,
Oceanside,
CA 92058, USA
Tel: +1 760 901 2500

Europe and Africa

Calle Constitucion 3,
3° 5° Sant Just
Desvern,
08960 Barcelona,
Spain
Tel: +34 934 731 722

Middle East

UAE
Tel: +971 54236 7224

Saudi Arabia
Tel: +966 50344 8539

Indian Subcontinent

516 'C' Wing - 215
Atrium, Andheri Kurla
Road, Andheri (East),
Mumbai 400059, India
Tel: +91 22 4003 0500

China

15-16F, The Place Tower
C, 150 Zunyi Road,
Changning District,
Shanghai 200051,
P.R. China
Tel: +86 21 5208 2255

SEA & Oceania

438 Alexandra Road
#19-01/04,
Alexandra Point,
Singapore 119958
Tel: +65 6879 3820

Japan

26F, Shinagawa
Season Terrace,
1-2-70, Konan,
Minato-ku, 108-0075,
Tokyo, Japan
Tel: +81 3 6632 2044