

Forward Osmosis System by Liquinex

Featuring Aquaporin Inside®
HFFO2 membrane



IMPROVED WASTEWATER TREATMENT AND PROCESSING USING FORWARD OSMOSIS



High levels of
valuables retention
& contaminants
rejection



Gentle on valuables
resulting in high
quality concentrates



Low fouling
propensity resulting
in superior
operational stability



Osmotically driven
process



Low footprint
systems

FORWARD OSMOSIS COMPACT-KASE

Hand-carry forward osmosis field test (FOFT) system

KEY FEATURES

- ✓ Suitable for live FO demonstration
- ✓ Light, compact & portable briefcase design
- ✓ Plug and play system - simply connect to feed and draw solutions on site



TECHNICAL SPECIFICATIONS

- 1.3 m³/day throughput
- Heavy duty pelican case
- 1 x Aquaporin Inside® HFFO2 module (2.3 m²), single pass (sold separately)
- Rotameter (19-100LPH or equivalent)
- Full SS304 pressure gauge
- 2 Nos. diaphragm pumps Flojet-Compact LC series 3.8 LPM
- 4 Nos. flowmeters – 0-4 LPM
- 2 Nos. pressure gauges – 0-10 bar
- Pump variable speed controller
- Push-fit valves & fittings
- Maximum recommended feed TDS: 20,000 ppm (for a 1M standard NaCl draw solution)
- Up to 95% depending on feed stream input TDS & fouling propensity / 1M standard NaCl draw solution
- Feed side: 1-4 bar, 50-60 LPH
- Draw side: 22-25 LPH
- Manual peristaltic feed & draw pump control
- Feed & draw: peristaltic pump (0.27- 1740 mL/min @ 2.1 bar)

AQUAPORIN INSIDE® HFFO MODULE

The Aquaporin Inside® Hollow Fiber FO module with its 2.3 m² membrane area is perfect for industrial lab and pilot of applications. The module has impressive high rejection rates and low back diffusion due to the aquaporin proteins coated on the lumen side of the fibers.

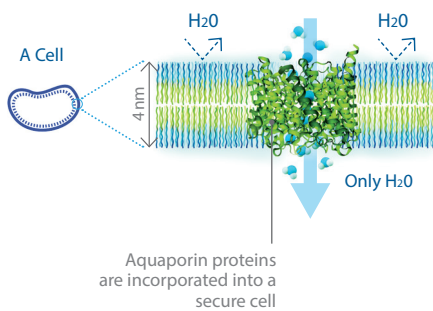


AQUAPORIN INSIDE® TECHNOLOGY

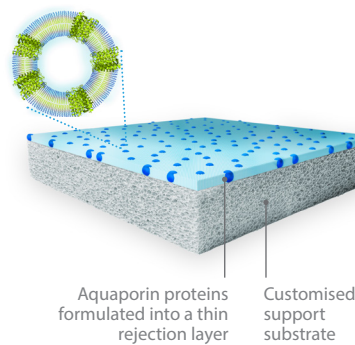
An essential building block in the Aquaporin Inside® Technology is the aquaporin protein which is a natural water channel. Aquaporin proteins are ubiquitous in nature and facilitate water transport in all living organisms. The channel is highly efficient to the degree where 1 gram of aquaporin is capable of transporting 2900 liters of water per second.

Since 2005, Aquaporin has developed proprietary methods of incorporating aquaporin proteins into highly stable formulations which allow the aquaporin proteins to function under the harsh operating conditions faced by industrial membranes. By using this technology, Aquaporin can manufacture biomimetic membranes with a game-changing performance.

THE NATURE BEHIND THE
AQUAPORIN PROTEIN



THE AQUAPORIN INSIDE®
MEMBRANE

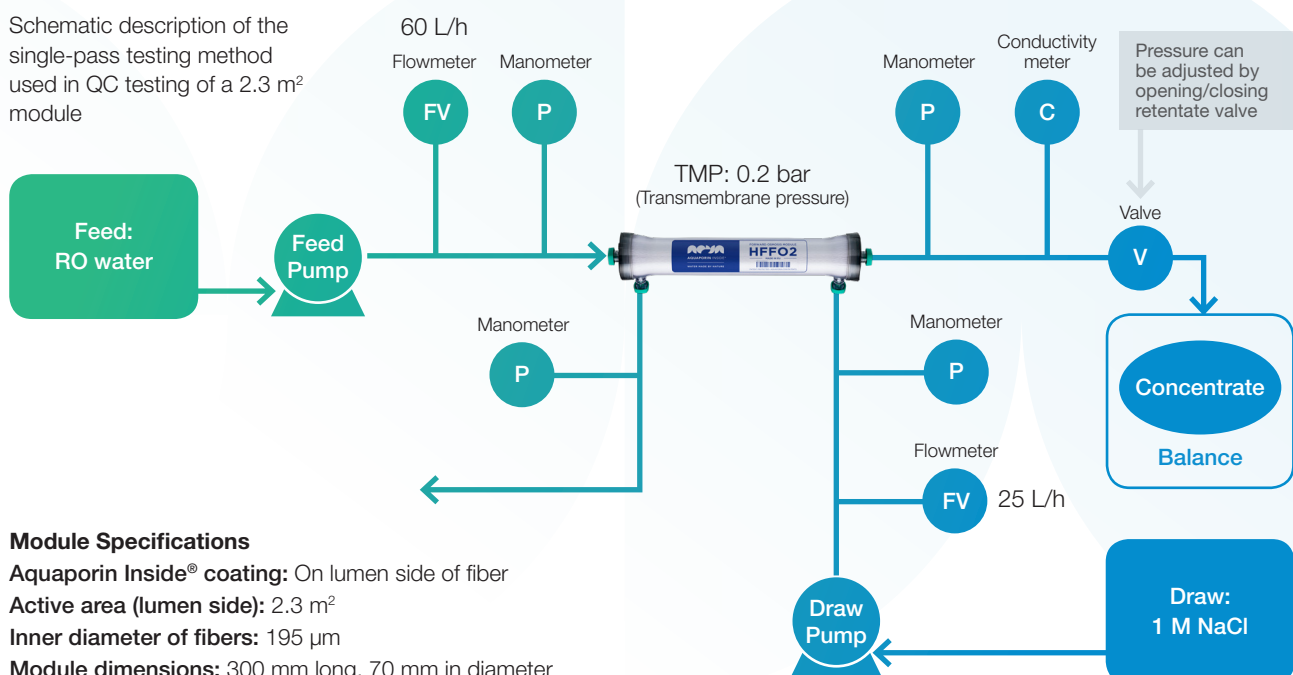


THE AQUAPORIN INSIDE®
FO MODULE



HFFO2 STANDARD TEST SETUP

Schematic description of the single-pass testing method used in QC testing of a 2.3 m² module



Module Specifications

Aquaporin Inside® coating: On lumen side of fiber

Active area (lumen side): 2.3 m²

Inner diameter of fibers: 195 µm

Module dimensions: 300 mm long, 70 mm in diameter



About Liquinex

Liquinex is a design and engineering company specializing in environmental engineering, services and technology for the treatment and recycling of industrial and municipal wastewater. In particular, Liquinex specializes in manufacturing water treatment systems for industry using next generation ceramic membrane and proprietary membrane cleaning regime with a registered patent for industrial cooling tower/chilled water treatment system.



About Aquaporin

Aquaporin A/S is a global water technology company located in Denmark.

Aquaporin is dedicated to revolutionizing water purification with its' novel membrane technology.

The main goal of Aquaporin is to develop the Aquaporin Inside® technology which is capable of separating and purifying water from all other compounds.

The Aquaporin Inside® platform uses biotechnological principles in a technological context which is a novel upcoming field with large commercial perspectives. This is a field where Denmark has taken an early global lead.

Liquinex Group Private Limited

5 Soon Lee Street
#03-39 Pioneer Point
Singapore 627607

Phone: +65 9741 6479
lqxgroup@liquinex.com
www.liquinex.com

Aquaporin A/S

Nymøllevej 78
2800 Kongens Lyngby
Denmark

Phone: +45 8230 3082
sales@aquaporin.com
www.aquaporin.com