
Pisces-77

ULTRAFILTRATION MEMBRANE

MEMBRANE MODULE DATASHEET

GENERAL INFORMATION

Litree Pisces-77 is an outside-in ultrafiltration membrane module. Mode of operation is crossflow or dead-end mode with water (permeate only)/air backwash and chemical enhanced backwash. Typical applications are municipal water and wastewater, industrial wastewater treatment, as well as pretreatment for nanofiltration and reverse osmosis.

CLEANING CHEMICAL RESISTANCE

Sodium Hypochlorite

- Typical 500-1,500 ppm, $\leq 40^{\circ}\text{C}$
- Maximum 5,000 ppm
- 288,000 ppm hours cumulative at 30°C

Hydrochloric Acid

- Typical 0.5%, $\leq 40^{\circ}\text{C}$
- Maximum 3%
- 1,440,000 ppm hours cumulative at 30°C

Citric Acid

- Typical 0.5%, $\leq 40^{\circ}\text{C}$
- Maximum 3%
- 1,440,000 ppm hours cumulative at 30°C

Note:

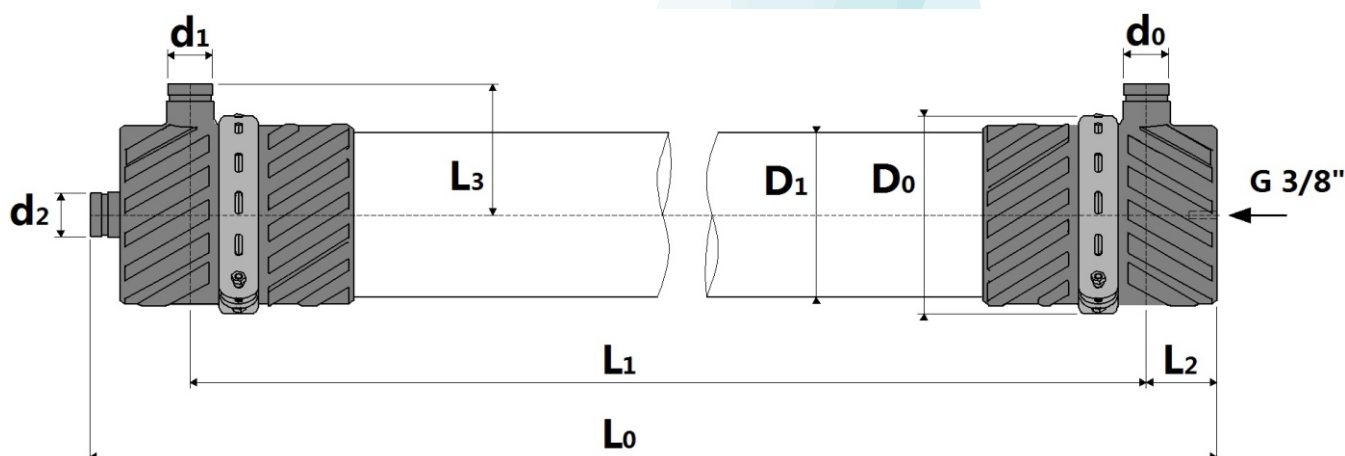
During cleaning and/or disinfection, it is recommended to keep the pH between 1 and 11 with temperature lower than 40°C . If these standard cleaning methods can not remove the foulants, a higher concentration of cleaning solutions can be tried. Please contact Litree for technical support. It has to be stressed, however, that no warranty can be given on the efficiency of any cleaning nor on the membrane performance after such cleaning attempts.

MEMBRANE CHARACTERISTICS

- Hydrophilic polyvinylidene fluoride membrane with a polyester support
- Membrane inner/outer diameter 1.0 mm / 2.0 mm
- Nominal pore size $0.02\text{ }\mu\text{m}$
- Asymmetric cross-section structure
- Outstanding anti-fouling property
- Very high mechanical strength
- Typical permeate quality $\text{SDI}_{15} < 3$, turbidity $< 0.1\text{ NTU}$

MODULE SPECIFICATIONS

Membrane area [m ²]	Module length L ₀ [mm]	Connection distance L ₁ [mm]	Feed position L ₂ [mm]	Connection position L ₃ [mm]
77	2,360	2,130	95	180
Feed connection d ₀ [mm]	Permeate connection d ₁ [mm]	Concentrate connection d ₂ [mm]	Coupling diameter D ₀ [mm]	Module diameter D ₁ [mm]
60.3	60.3	60.3	271	225



OPERATING SPECIFICATIONS

Max. feed pressure [kPa]	Max. TMP [kPa]	Max. backwash pressure [kPa]	Flux (25 °C) * [L/m ² /h]	Flow rate * [m ³ /h]	Temp. range [°C]
300	120	250	40-200	2.2-11.0	0-40

* The appropriate flux and flow rate should be determined by the actual circumstances

- Backwash water should be free of particulates and should be of UF permeate quality or better
- Backwash pumps should preferably be made of non-corroding materials, e.g., plastic or stainless steel
- To avoid mechanical damage, do not subject the membrane module to sudden temperature changes, particularly decreasing. Bring the module back to ambient operating temperature slowly (max. value 3 °C/min). Failure to adhere to this guideline can result in irreparable damage
- Operation of membrane modules at any combination of maximum limits of pH, concentration, pressure or temperature, during cleaning or filtration, will influence the membrane lifetime

TECHNICAL SPECIFICATIONS

Weight Specifications	
Dry weight of membrane module	ca. 60 kg [132 lbs]
Membrane module filled with water	ca. 110 kg [243 lbs]

Materials of Construction	
Housing	PVC
Potting	Epoxy resin
Membrane	- Material composed of polyvinylidene fluoride - Support is made of polyester

SHIPPING AND STORAGE

SHIPPING

To control bacterial growth and prevent damage caused by drying out, the Litree ultrafiltration modules are wetted and stored in preservation solution of glycerine (20 wt%) and sodium metabisulfite (1 wt%).

During transportation, the modules must be protected from moisture, exposure, heavy pressure, violent collisions and bumps. Inversion should be avoided. Temperature range of ambient environment should be 0 °C - 40 °C.

The sealed package should be without breakage during transportation. Please read the related data carefully before selecting transport vehicle and lifter.

STORAGE

Modules shall be stored in a dry, normally ventilated place, away from sources of heat, ignition and direct sunlight. Store between 0 °C and 40 °C. During outdoor transportation, the modules must be placed in the specific area with supporting cover to avoid wind and direct sunlight.

New membrane modules can be stored as supplied in the original packaging for one year.

During short-term shutdowns (less than 7 days), the membrane module must be completely cleaned first, in certain cases by chemical enhanced backwash, and filled with 1 wt% sodium metabisulfite solution before the feed valve and effluent valve are closed.

For long-term storage (more than 7 days), the membrane module must be completely cleaned by chemical, fed with 1 wt% sodium metabisulfite solution before the feed valve and effluent valve are closed.

In any situation, modules should be stored hydraulically filled.



Note: The information and data contained in this document are based on our general experience and are believed to be correct. They are given in good faith and are intended to provide a guideline for the selection and use of our products. Since the conditions under which our products may be used are beyond our control, this information does not imply any guarantee of final product performance and we cannot accept any liability with respect to the use of our products. The quality of our products is guaranteed under our conditions of sale. Existing industrial property rights must be observed.