



Water Maid™  
HydraLuxe



# Flat Sheet Membrane Filtration System

A self-cleaning technology with  
unmatched efficiency & durability

**watermaid**  
a MELLIFIQ brand

## Introducing HydraLuxe

### HydraLuxe – a Filtration Technology with Unmatched Efficiency and Durability

The HydraLuxe is a cutting-edge solid-liquid separation technology designed for superior water purification and delivers next-generation performance for water and wastewater treatment. With a high flux rate, it reduces footprint, energy use, and chemical consumption. Its chemically inert design resists degradation, maintaining long-term permeability. The negatively charged surface minimizes fouling from organics and oils, while its robust structure allows for effortless cleaning. Capable of handling high solids loading—from just a few ppm to several percent TSS—it combines filtration, sedimentation, flotation, and absorption in a single step. The result: a smaller footprint, lower operational costs, and exceptional efficiency.

### Versatile applications across industries

Engineered for reliability and efficiency, the HydraLuxe delivers high-performance filtration for industrial, municipal, and environmental applications. It handles a wide range of treatment needs—including drinking water, sand filter rehab, PFAS and micropollutant removal—and treats groundwater, surface water, seawater, and industrial effluents.

Trusted across industries like food & beverage, petrochemicals, mining, and municipal utilities, it also supports MBR sludge thickening, TSE polishing, and stormwater overflow control—making HydraLuxe a powerful, versatile solution for advanced water treatment.



### TECHNICAL OVERVIEW

This advanced membrane system effectively removes a wide range of contaminants, including:

#### **Suspended Solids & Turbidity**

Ensuring crystal-clear water

#### **Bacteria, Viruses & Algae**

Providing microbiological safety

#### **PFAS/PFOS & Micropollutants**

Excellent pre-treatment method for PFAS and PFOS

#### **Oil & Heavy Metals**

Enhancing industrial and environmental safety

#### **Suspended Substances**

Achieving ultra-pure results with integrated adsorption and coagulation

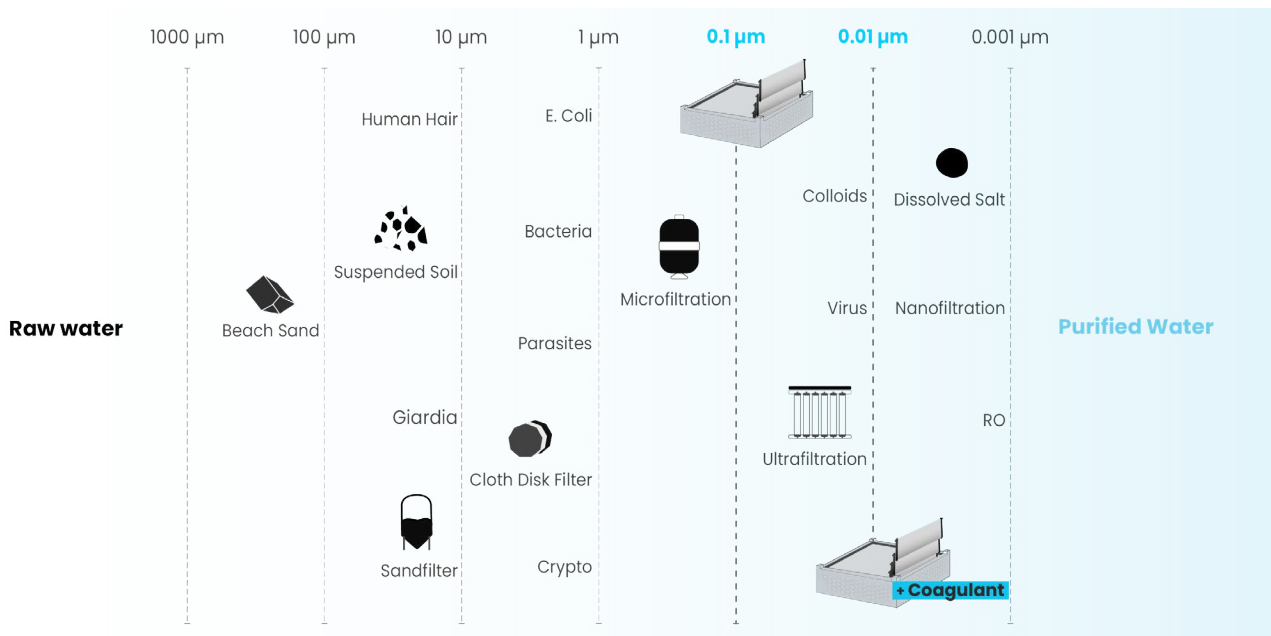


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## Operational capabilities

A HydraLuxe membrane and module are highly durable and hence able to effectively treat a wide range of water sources.

Solids loading tolerance (TSS)	1 ppm – 50.000 ppm
Temperature	2-60 °C
Abrasive media in feed water	No limitations
Chemical tolerance	pH 2-12
Fat, Oil & Grease tolerance	Up to 400 ppm
Intermittent operation & dry storage	Allowed
Operational flux rate	1-1000 LMH



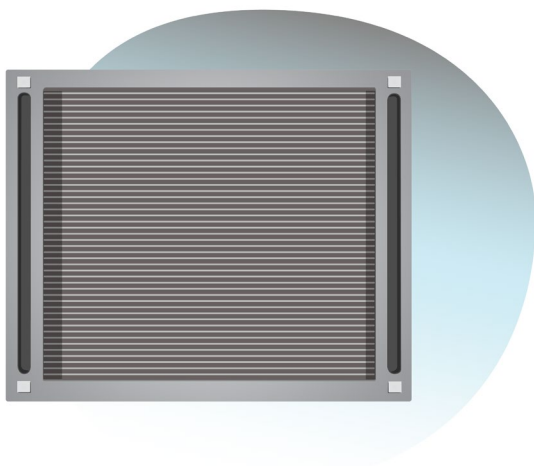
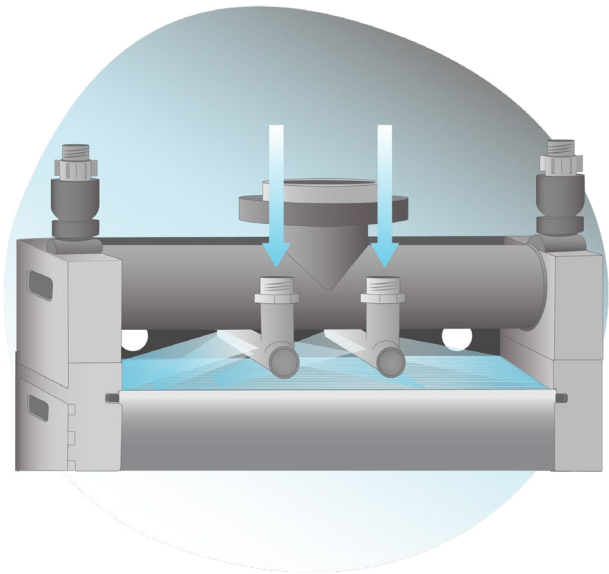
## Self-cleaning feature

The top permeate module comes with an integrated sprinkler system. Two pipes with an engineered hole pattern, provides an even water jet distribution over the membrane modules and serves two main purposes:

- 1.** After the membrane tank is drained, spray permeate-, tap- or service water to mechanically remove debris and sludge trapped between the membranes.
- 2.** Chemical spray cleaning over the membranes.  
The capillary forces of the membrane will absorb the chemical solution and clean the membranes where it is needed.

### This has the following advantages:

- a)** Replaces conventional CIP cleaning
- b)** Reduces chemical consumption by 95% compared to conventional CIP (Clean-in-place)
- c)** Keeps chemicals on the feeding side so it doesn't come into contact with permeate line

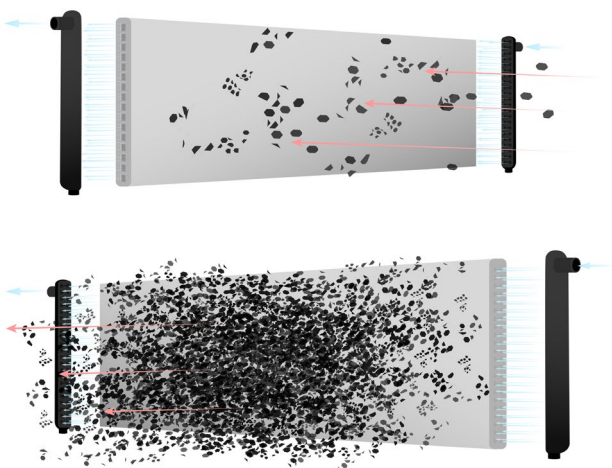
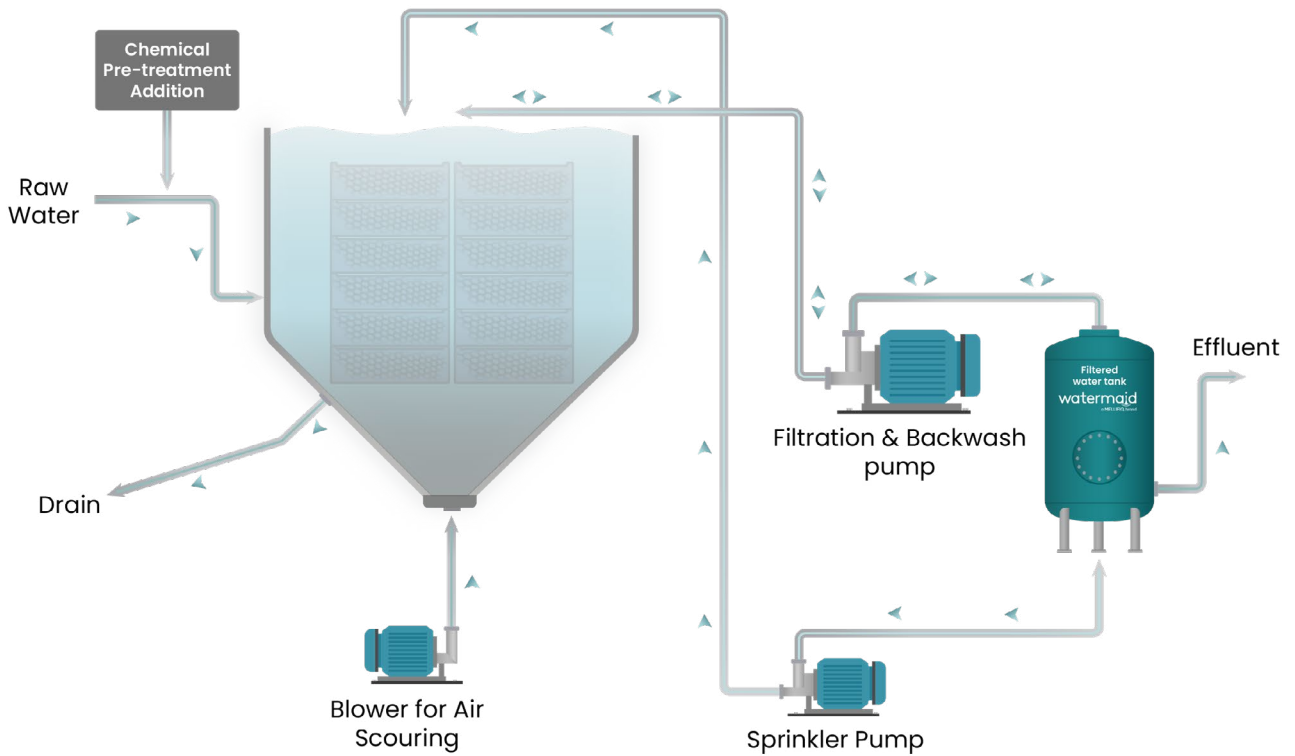


## Module towers and racks

The membrane sheets are fitted in a square module consisting of 42 membrane sheets that are individually interchangeable. The modules are submersible and can be stacked individually on top of each other up to 15 modules in total. The membrane surface area is the determining factor for the capacity of the installation, the more surface area the more flow through the plant. Filtered water from each single plate is collected inside the module housing and transported to the top header integrated in both module housing sides.



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## Filtration principles

The filtration principle is submerged outside in, where clean water is drawn through the membrane with suction pressure. Suspended solids & bacteria are rejected on the membrane surface forming a cake layer while clean water is passing through the membrane body and is collected at both end caps. The permeate water from each of the 42 membrane sheets is collected inside both ends of the membrane module permeate lines and finally runs through the top permeate module manifold. During backwash, the flow rate is reversed to push off the solids build up on the membrane surface.



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## Membrane specification table

### Classification

Item code	SICFS-00163-DO-T-145-561
Membrane type	Submerged Flat sheet
Operation mode	Out-to-in filtration
Pore size	0.1 µm
Clean water permeability	> 3.000 LMH/bar @20 °C
Certification	NSF61 HOT (60 °C)

### Material

Membrane material	Silicon Carbide (SiC) ceramic
End-cap material	PPS 40% Glass fill
O-ring	EPDM (Viton or NBR on demand)
Potting material	PU

### Dimensions

Membrane surface area	0.164 m <sup>2</sup>
Length	575 mm
Width	145/154 mm
Thickness	6/11 mm
Weight	0.9 kg



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## Module and tower specification table

Item code	SicBlox™ FX Series
Number of flat sheet membranes pr. module	42 pcs
Active membrane surface pr. module	6.9 m <sup>2</sup>
Module material	PPO/PS GF
Piping material	PP
Clean water permeability	> 3.000 LMH/bar
Maximum suction pressure	-0.7 bar
Maximum backwash pressure	1.2 bar
Certification	NSF61 HOT (60 °C)

### Dimensions and connections

Internal aeration pipe dimensions	OD32 / ID28 mm
Sprinkler pipe dimensions	OD40 mm
Top permeate module dimensions	L 700 x W 570 x H 250 mm
Permeate manifold dimensions	OD110 / ID90 mm
Membrane module dimensions	L 700 x W 570 x H 160 mm
Base module dimensions	L 700 x W 570 x H 260 mm
Allowable stacking height	1-15 modules
Air-scouring connection	2x R1 1/4" Thread
Sprinkler pipe connection	R1 1/4" Thread
Bottom permeate connection	1 1/2" thread BSP
Top permeate connection	Flange DN100 (ISO 7005 PN10)

### Dimensions

Dry weight Top-/Filter-/Base module	10/44/9 kg
Wet weight Top-/Filter-/Base module	11/56/9 kg
Displacement volume Top-/Filter-/Base module	8/16/7 l

# About Mellifiq

Mellifiq is a multi-awarded environmental service company group, that has since the early nineties evolved into a world leading system and solution provider with multiple groundbreaking applications for industrial, municipal, and real estate clients. We supply cutting-edge technologies to manage the most sophisticated air, water, and energy challenges.

Mellifiq offers a complete range of air and water treatment technologies and solutions across multiple industries such as processing industry, energy sector, food and beverage, pharmaceutical, wastewater treatment and commercial real estate.

Mellifiq offers strong and renowned brands, such as Ozonotech, Nodora Water Maid, Saniray, Axolot and world-class engineering services combined an excellent track record of more than 40 years of innovation. We help our clients achieve the most efficient and sustainable solutions while creating the maximum value for their businesses.

With several business units across Europe, Mellifiq is headquartered in Stockholm where research and development, production, QA and certification all take place. Our unique technology and our extensive expertise have made us the Center of Excellence for the world's most complex projects, and a global player with installations on all six continents.

Everyday millions of people rely on our solutions for ventilation, disinfection, sanitation, and odor control. We are committed to raising the bar for the concept of clean and the industry standard for engineering, technical services and general contracting.

For additional information, visit our website at [www.mellifiq.com](http://www.mellifiq.com)

