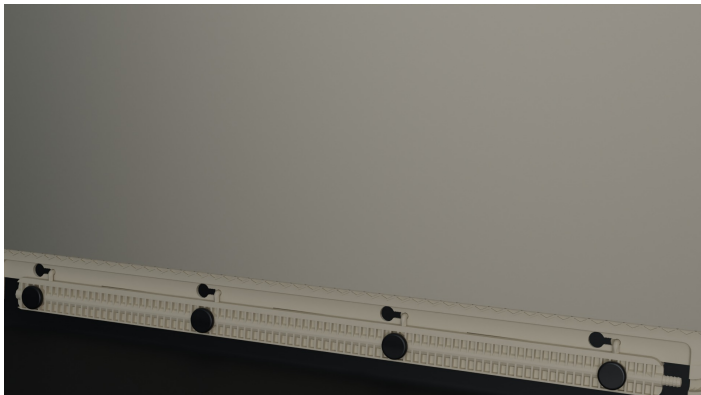


FLAT SHEET MBR MODULE · PATENT PENDING · AUGUST 2026

Zyramic On-Board Scour

Flat Sheet MBR Module datasheet

Every plate stays open. Uniform water velocity between each plate. Scour air is delivered at the root of every channel — dedicated orifices on the plate base, not a shared bottom plenum. The cassette is a module. Zyramic sells modules.



On-Board Scour plate. PES faces, manifold and orifices at the base. Rendering.

Geometry

Membrane panel height	1,047 mm / 41.2 in
Membrane panel width	502 mm / 19.8 in
Panel thickness	7.60 mm / 0.30 in
Channel gap (plate to plate)	6.40 mm / 0.25 in
Plates per module	130-plate module · 260-plate module
Membrane area per plate	≈1.05 m ² / 11.3 ft ² (both faces)
Membrane area per module	≈136.5 m ² / 1,469 ft ² (130-plate) · ≈273 m ² / 2,939 ft ² (260-plate)
Scour zone height	400 mm / 15.7 in
Permeate connection	2.5 in Sch 40 (DN65)
Scour air supply connection	2.5 in Sch 40 (DN65)
260-plate cassette envelope	≈7.0 × 3.1 × 10.0 ft (2.12 × 0.96 × 3.05 m)
Orifice	Ø1.25 mm / Ø0.049 in, dual-sided rows at the channel root
Scour intensity	0.35 SCFM per m ² (10 L/min per m ² of membrane)
Scour air per module	130-plate 48 SCFM · 260-plate 96 SCFM

Membrane

Material	Advanced polyethersulfone (PES)
Supplier	Thermo Fisher
Nominal pore size	0.04 μm (ultrafiltration)
Nonwoven support	Polyolefin, 80 μm / 3.1 mil
Laminating adhesive	Polyolefin
Wetting	Spontaneously wettable — no activating chemicals
Storage	Wet or dry. No glycol required or permitted.
Clean-water permeability	> 6,000 LMH/bar typical · $\geq$ 4,200 LMH/bar minimum (25 °C)
PFAS	None. No fluoropolymers in the flow path.
Chlorinated polymer	None in the membrane or support plate

Process basis — PRELIMINARY

The values below are preliminary design guidance for early module sizing. They are not plant data and not Zyramic-validated performance figures. Pilot data will supersede them.

Design operating flux	7.4–12.3 gfd (12.5–21 LMH) — PRELIMINARY
Permeate, 130-plate	7.5–12.6 gpm ($\approx$ 10,800–18,200 gpd) at design flux — PRELIMINARY
Permeate, 260-plate	15.0–25.2 gpm ($\approx$ 21,600–36,400 gpd) at design flux — PRELIMINARY
Operating TMP	$\leq$ 2.2 psi (15 kPa)
Permeate mode	Vacuum suction, typically 8 min on / 2 min relax
MLSS	3,000–12,000 mg/L — design guidance
Module spacing in rack	11.8–19.7 in (300–500 mm), level and equidistant

On-Board Scour

Arrangement	Direct per-channel injection at the plate base. No bottom plenum.
Scour valve	Integrated per-plate air scour manifold, patent pending
Orifice	Dual-sided orifice rows at the channel root. $\varnothing$ 1.25 mm.
Orifice exit velocity	86.9 ft/s (26.5 m/s) — geometry, not a channel setpoint
Scour air demand	130-plate 48 SCFM · 260-plate 96 SCFM
Specific scour demand	0.35 SCFM/m ² (10 L/min per m ²), membrane basis
Scour mode	Continuous standard; field adjustable to suit site conditions



Independent study — hydrodynamics

An independent study compared Zyramic On-Board Scour with a conventional bottom-plenum air scour on identical plate geometry. Channel-base liquid shear was about 4× the conventional bottom plenum on identical plates. That is the base, on identical plates. Hydrodynamics, not plant data.

Figures on How it works are predictions under the study’s modeling assumptions. They have not been validated against physical test data.

Materials and compliance

Support plate	Talc-filled polypropylene copolymer, injection molded
Scour manifold	Polypropylene
Wetted polymers	PES membrane, polyolefin nonwoven and adhesive, polypropylene plate and manifold, platinum-cured silicone tubing
Permeate tubing	Platinum-cured silicone
Headers	PVC Sch 80 or polypropylene
Cassette frame	304 stainless steel with polymer components (standard); 316 optional
Country of manufacture	United States, from US and imported parts
BABA	Compliant at the module level (Build America, Buy America)
Warranty	2 years municipal, module integrity — see Zyramic Membrane Module Warranty

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Specifications subject to change without notice. Permeate and flux figures are preliminary design guidance, not plant data. Independent-study figures are hydrodynamics. © 2026 Zyramic, Inc. All rights reserved. Rev 3 — public datasheet. Process numbers in US customary: permeate gpm, scour SCFM, TMP psi, line size inches. Plate area remains $\approx 1.05 \text{ m}^2$.