

TMR140 Series

Submerged Flat-sheet Membrane Bioreactor (MBR) for Biological Wastewater Treatment

Toray's PVDF membrane has numerous pores with uniform sizes evenly distributed across the membrane surface. The TMR140 series is an effective barrier against solids and bacteria to meet increasingly stringent water quality requirements and turn wastewater into a viable resource.



Pictured above: TMR140-100S

Flat Sheet Element	Units	Value
Model		TSP-50150
Nominal Pore Size	μm	0.08
Materials	Membrane	PVDF and PET non-woven fiber
	Supporting Panel	ABS
Effective Membrane Area	m ² (ft ²)	1.4 (15.1)
Dimensions (w x l x thk)	mm (in.)	515 x 1,608 x 13.5 (20.3 x 63.3 x 0.5)
Weight: dry / wet (reference)	kg (lbs.)	4.8 / 8.0 (11 / 18)

Module Characteristics

Model	No. of Elements	Element block (EBL) structure	Total Membrane Area m ² (ft ²)	Dimensions (w x l x h)*	
				Millimeters	Inches
TMR140-100S	100	1 EBL	140 (1,510)	810 x 1,620 x 2,100	31.9 x 63.8 x 82.7
TMR140-200D	200	Double deck + 2 EBL	280 (3,010)	810 x 1,620 x 4,160	31.9 x 63.8 x 163.8
TMR140-400DW	400	Double deck + 4 EBL	560 (6,030)	840 x 3,260 x 4,160	33.1 x 128.3 x 163.8

*Measurements exclude connection tube

Weight - kg (lbs.)	Aeration block (dry)	Cassette / Element block (dry)	Module (dry)
TMR140-100S	65 (143)	630 (1,389)	695 (1,532)
TMR140-200D	65 (143)	1,300 (2,866)	1,365 (3,009)
TMR140-400DW	150 (331)	2,560 (5,644)	2,710 (5,975)

Scouring Air Flow Rate ¹	NL/min/Module ²
TMR140-100S	1,000–2,000
TMR140-200D	1,300–2,000
TMR140-400DW	2,600–4,000

¹ The air supply equipment such as blower shall be designed based on the standard operating conditions.

² Air volume as being 0 degree C and 101.325 kPa (1 atm).

Applications

Sewage wastewater, Industrial wastewater, Food processing wastewater, Sludge thickening process

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Operating Range	
Temperature	5–40 °C (41–104 °F)
pH of Liquid* ¹	5–10
Mixed Liquor Suspended Solids	Not higher than 18,000 mg/L
Transmembrane Pressure	Not higher than 20 kPa (2.9 psi)
Cleaning Chemical Feed Pressure	Not higher than 10 kPa (1.45 psi)
Cleaning Chemicals and Concentrations	Sodium hypochlorite: 2,000–6,000 mg/L (10 < pH < 12) Oxalic acid: 0.5–1.0 wt% / Citric acid: 1.0–3.0 wt%
Materials	
Frame	304 stainless steel (316 SS optional)
Manifold	Polypropylene or ABS (SS optional)
Air Diffuser	Polypropylene (SS optional)
Connection ⁴	
Manifold	ANSI 2-inch (3-inch for TMR140-400DW)
Air Diffuser	ANSI 1 1/2-inch flange (2-inch for TMR140-400DW)

¹ Except when the chemical cleaning with the designated chemical agents

Toray accepts no responsibility for results obtained by the application of this information or the safety or suitability of Toray's products, either alone or in combination with other products. Users are advised to make their own tests to determine the safety and suitability of each product combination for their own purposes.

All data may change without prior notice, due to technical modifications or production changes. Please be sure to inquire about the latest product specifications.

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