

BIO-CEL® L-2 Stack

Submerged MBR Module for Wastewater Treatment

The BIO-CEL® MBR series is ideal for biological wastewater treatment in industrial and municipal applications. BIO-CEL MBR combines the benefits of traditional hollow fiber and plate and frame configurations without any of their inherent disadvantages. The module has an extremely high packing density due to the thin and self-supporting membrane sheets, and the laminate offers a self-healing mechanism.

MEMBRANE CHARACTERISTICS

Membrane	NADIR® UP150
Membrane Polymer	Polyethersulfone (PES) / Polyvinylidene fluoride (PVDF)
Nominal Pore Size	0.04 µm / 0.065 µm
Preservative	Glycerine 20 % / Sodium benzoate 3 %

MODULE SPECIFICATIONS

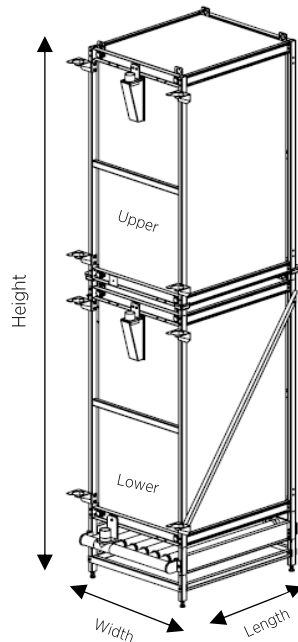
Housing Material Options	Stainless Steel 1.4301/304 (V2A) On request: SS 1.4571/316Ti (V4A)
Drainage Layer	Polyester (PET)
Diffusors Material Options	Membrane hose: Silicone (SI) Support tube: Polypropylene (PP)
Nominal Membrane Area	960 m ² (10334 ft ²)

OPERATING PARAMETERS

pH Range	2.0 - 11.0
Temperature Range	5 - 40°C (41 - 104°F)
Maximum TMP during Filtration	- 400 mbar (-5.8 psi)
Maximum TMP during Regular Backwash	+150 mbar (+2.2 psi)
Recommended Air Scour Rate^a	90 Nm ³ /h (53 SCFM)
Maximum Air Scour Rate^a	115 Nm ³ /h (67 SCFM)
Recommended MLSS in MBR Tank	8 - 12 g/L
Maximum MLSS in MBR Tank	15 g/l
Maximum Particle Size in MBR Tank	2 mm
Total Chlorine Resistance	1,000,000 ppm•hr

^a volumetric flow rate at standard conditions according to DIN ISO 2533:1979-12.

PHYSICAL DIMENSIONS



Dry Weight	693 kg (1528 lb)
Wet Weight without Solids	1273 kg (2806 lb)
Maximum Load for Lifting per lower and upper unit^b	1500 kg (3307 lb)
Length	1530 mm (5.0 ft)
Width	1285 mm (4.2 ft)
Height	4921 mm (16.1 ft)
Filtration Tank Minimal Water Level	5115 mm (16.8 ft)
Connection for Permeate	G 2 ½" BSPP inner thread, Stainless Steel
Connection for Aeration	DN80 (PN10) Pipe End, Polypropylène (DN80 Flange Adapter available)

b Sludge deposit must be removed before lifting unit, lower and upper unit must be lifted individually
 c adapters available

IMPORTANT INFORMATION

Scope of Supply, Accessories & Spare Parts:

Please see BIO-CEL L-2 – Scope of Supply, Accessories and Spare Parts (TDS-WW033).

Storage & Handling:

BIO-CEL MBR modules must be handled and stored appropriately to ensure proper operation and to prevent membrane damage. Please see BIO-CEL MBR – Storage Conditions (TB-WW002).

MANN-HUMMEL reserves the right to change specifications without prior notification.

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