

# 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)
Nominal Pore Size	0.04 µm
Preservative	Glycerine 20 % / Sodium benzoate 3 %

### MODULE SPECIFICATIONS

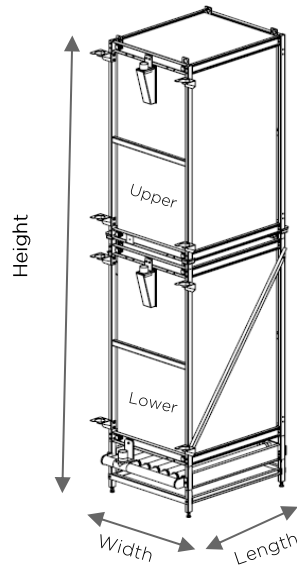
Housing Material Options	Stainless Steel 1.4301/304 (V2A) On request: SS 1.4571/316Ti (V4A)
Drainage Layer	Polyester (PET)
Diffusors Material Options	Membrane hose: Silicone (SI) Support tube: Polypropylene (PP)
Nominal Membrane Area	960 m <sup>2</sup> (10334 ft <sup>2</sup> )

### 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 <sup>a</sup>	90 Nm <sup>3</sup> /h (53 SCFM)
Maximum Air Scour Rate <sup>a</sup>	115 Nm <sup>3</sup> /h (67 SCFM)
Diffusors Pressure Loss at Recommended Air Scour Rate	80 mbar (1.16 psi)
Diffusor Total Pressure Loss at Min Water Level	552 mbar (8 psi)
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



<b>Dry Weight</b>	693 kg (1528 lb)
<b>Wet Weight without Solids</b>	1273 kg (2806 lb)
<b>Maximum Load for Lifting per lower and upper unit<sup>b</sup></b>	1500 kg (3307 lb)
<b>Length</b>	1529 mm (5.0 ft)
<b>Width</b>	1260 mm (4.1 ft)
<b>Height</b>	4921 mm (16.1 ft)
<b>Filtration Tank Minimal Water Level</b>	5115 mm (16.8 ft)
<b>Connection for Permeate</b>	G 2 ½" BSPP inner thread, Stainless Steel
<b>Connection for Aeration</b>	DN80 (PN10) Pipe End, Polypropylene

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.

## Contact

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