

# BIO-CEL M+200

## 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	UV400T
Membrane Polymer	Polyvinylidene fluoride (PVDF)
Nominal Pore Size	0.06 µm
Preservative	Glycerine 20 % / Sodium benzoate 3 %

### MODULE SPECIFICATIONS

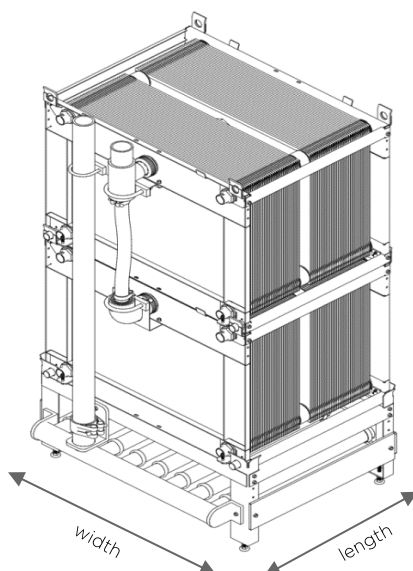
Housing Material Options	Stainless Steel 1.4301/304 (V2A) On request: SS 1.4571/316Ti (V4A)
Drainage Layer	Polyester (PET)
Diffusors Material	Membrane hose: Silicone (SI) Support tube: Polypropylene (PP)
Nominal Membrane Area	200 m <sup>2</sup> (2153 ft <sup>2</sup> )

### 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>	63 Nm <sup>3</sup> /h (37 SCFM)
Maximum Air Scour Rate <sup>a</sup>	80 Nm <sup>3</sup> /h (46 SCFM)
Diffusors Pressure Loss at Recommended Air Scour Rate	80 mbar (1.16 psi)
Diffusor Total Pressure Loss at Min Water Level	281 mbar (4.0 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>	250 kg (551 lbs)
<b>Wet Weight without Solids</b>	365 kg (805 lbs)
<b>Maximum Load for Lifting<sup>b</sup></b>	1000 kg (2205 lbs)
<b>Length</b>	1084 mm (3.6 ft)
<b>Width</b>	1221 mm (4.0 ft)
<b>Height</b>	2122 mm (7.0 ft)
<b>Filtration Tank Minimal Water Level</b>	2310 mm (7.8 ft)
<b>Connection for Permeate</b>	PVC-U grey pipe end 90mm diameter SDR13,6/PN16 (DN80 Flange Adapter available)
<b>Connection for Aeration</b>	Polypropylene pipe end 90mm diameter SDR11/PN10 (DN80 Flange Adapter available)

b) Sludge deposit must be removed before lifting unit

## IMPORTANT INFORMATION

**Scope of Supply, Accessories & Spare Parts:** Please see BIO-CEL M+200 – Scope of Supply, Accessories and Spare Parts (TDS-WW032).

**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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Rev. 2501

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