

# BIO-CEL® M+100

## 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

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

### MODULE SPECIFICATIONS

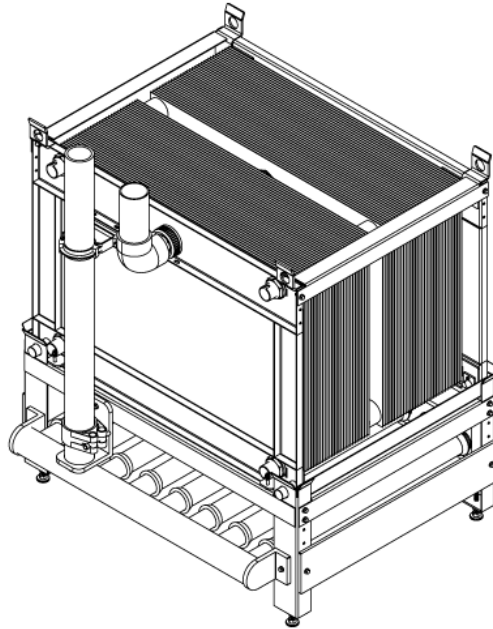
<b>Housing Material Options</b>	Stainless Steel 1.4301/304 (V2A) On request: SS 1.4571/316Ti (V4A)
<b>Drainage Layer</b>	Polyester (PET)
<b>Diffusors Material Options</b>	Membrane hose: Silicone (SI) Support tube: Polypropylene (PP)
<b>Nominal Membrane Area</b>	100 m <sup>2</sup> (1076 ft <sup>2</sup> )

### OPERATING PARAMETERS

<b>pH Range</b>	2.0 - 11.0
<b>Temperature Range</b>	5 - 40°C (41 - 104°F)
<b>Maximum TMP during Filtration</b>	- 400 mbar (-5.8 psi)
<b>Maximum TMP during Regular Backwash</b>	+150 mbar (+2.2 psi)
<b>Recommended Air Scour Rate<sup>a</sup></b>	63 Nm <sup>3</sup> /h (37 SCFM)
<b>Maximum Air Scour Rate<sup>a</sup></b>	80 Nm <sup>3</sup> /h (46 SCFM)
<b>Recommended MLSS in MBR Tank</b>	8 - 12 g/L
<b>Maximum MLSS in MBR Tank</b>	15 g/l
<b>Maximum Particle Size in MBR Tank</b>	2 mm
<b>Total Chlorine Resistance</b>	1,000,000 ppm•hr

<sup>a</sup> volumetric flow rate at standard conditions according to DIN ISO 2533:1979-12.

**PHYSICAL DIMENSIONS**



<b>Dry Weight</b>	150 kg (330 lb)
<b>Wet Weight without Solids</b>	200 kg (440 lb)
<b>Maximum Load for Lifting<sup>b</sup></b>	500 kg (1102 lb)
<b>Length</b>	1213 mm (3.98 ft)
<b>Width</b>	1072 mm (3.5 ft)
<b>Height</b>	1345 mm (4.5 ft)
<b>Filtration Tank Minimal Water Level</b>	1545 mm (5 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)

<sup>b</sup> Sludge deposit must be removed before lifting unit

**IMPORTANT INFORMATION**

**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 Water & Fluid Solutions reserves the right to change specifications without prior notification.

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