

# BIO-CEL L-2

## 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	Membrane hose: Silicone (SI) Support tube: Polypropylene (PP) Nominal Membrane
Nominal Membrane Area	480 m <sup>2</sup> (5167 ft <sup>2</sup> )

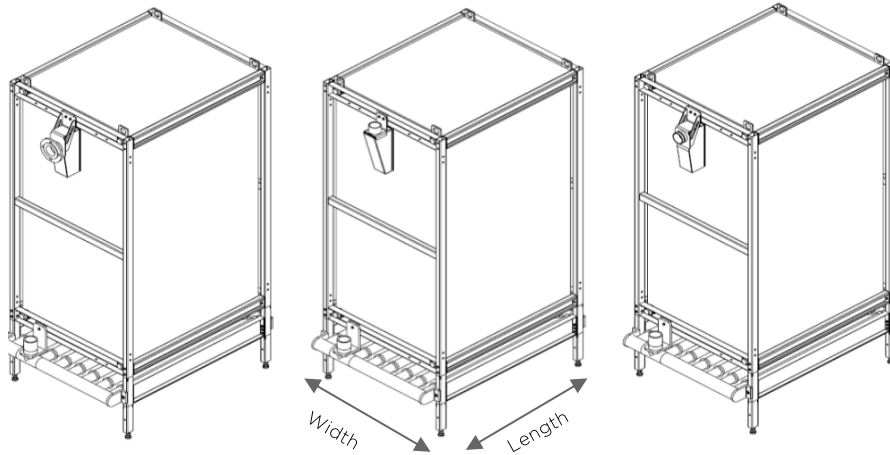
### OPERATING PARAMETERS

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	343 mbar (5 psi)
Recommended MLSS in MBR Tank	8 - 12 g/L
Maximum MLSS in MBR Tank <sup>b</sup>	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.

b) Is allowed for 5 % of operational time within a period of one month.

## PHYSICAL DIMENSIONS



Left BIO-CEL L-2 FLANGE, Center BIO-CEL L-2 (Standard), Right BIO-CEL L-2 Victaulic

Dry Weight	347 kg (765 lbs)	
Wet Weight without Solids	637 kg (1404lbs)	
Maximum Load for Lifting <sup>b</sup>	1500 kg (3307 lbs)	
Length	1529 mm (5.0 ft) (Standard & Victaulic) 1545 mm (5.1 ft) (Flange)	
Width	1080 mm (3.5 ft)	
Height	2731 mm (8.9 ft)	
Filtration Tank Minimal Water Level	3025 mm (9.9 ft)	
Connection for Permeate <sup>c</sup>	BIO-CEL L-2 (STANDARD):	G 2 ½" BSPP inner thread, Stainless Steel
	BIO-CEL L-2 VICTAULIC:	3" Victaulic, Stainless Steel
	BIO-CEL L-2 FLANGE:	DN80 (PN 6) Flange, Stainless Steel
Connection for Aeration <sup>c</sup>	DN80 (PN10) Pipe End, Polypropylene (DN80 Flange Adapter available)	

b) Sludge deposit must be removed before lifting unit

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-WW023).

### 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

### Americas

USA: +1 805 964 8003  
sales.mnus@microdyn-nadir.com

### Asia

APAC: +65 6457 7533  
info.wfs@mann-hummel.com  
China: +86 10 8413 9860  
waterchina@mann-hummel.com

### Europe

Germany: +49 611 7118 7480  
Italy: +39 0721 1796201  
info.wfs@mann-hummel.com