



Liqui-Cel™
Membrane Contactors

LENNTECH
WATER TREATMENT SOLUTIONS

3M™ Liqui-Cel™ EXF-2.5×8 Series Membrane Contactor

Typical Properties

Membrane Characteristics		
Cartridge Configuration	Extra-Flow with Center Baffle	
Liquid Flow Guidelines	0.1 – 0.7 m ³ /hr (0.5 – 3.0 gpm)	
Membrane Type	X50 Fiber	X40 Fiber
	Recommended for CO ₂ removal from liquid and other gas transfer applications	Recommended for O ₂ removal from liquid and other gas transfer applications
Membrane/Potting Material	Polypropylene / Polyethylene	
Priming Volume (approximate)		
Shellside	0.40 L (0.11 gal)	
Lumenside	0.15 L (0.04 gal)	

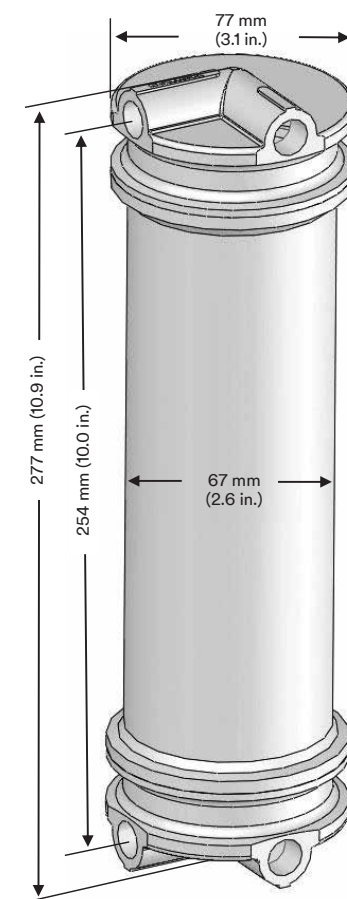
Pressure Guidelines*	X50 or X40 Fiber
Maximum Shellside <u>LIQUID</u> Working Temperature/ Pressure	5-40°C, 7.2 barg (41–104°F, 105 psig) 70°C, 2.1 barg (158°F, 30 psig)
If no vacuum is used, 1 barg (15 psig) can be added to pressures above.	
Maximum Applied Gas Pressure	4.8 barg at 25°C (70 psig at 77°F)
Maximum applied gas pressure is for integrity testing at ambient temperatures. Normal operating pressures are typically lower.	
Maximum Lumenside Liquid Temperature/Pressure of Semibody Contactor	5°C, 6.2 barg (41°F, 90 psig) 15–25°C, 4.8 barg (59–77°F, 70 psig) 70°C, 1.0 barg (158°F, 15 psig)
* See Operating Guide for complete temp/pressure limits for housings and membrane. Note: Liquid pressure should always exceed gas pressure, including during start-up and shut-down procedures.	

Housing Options and Characteristics	
Material	Polypropylene
Flange Connections	
Shellside (Liquid Inlet/Outlet)	¼ inch NPT female ⅜ inch Flaretek® (nut included) ½ inch Flaretek® (nut included)
Lumenside	¼ inch NPT female

Seal Material Options	Applications
K - UPW	Ultra Pure Water
Viton	General Purpose
K - EXT	Chemical Extraction (Clamped version only)

Weight (approximate)	
Dry	0.5 kg (1.1 lbs)
Water-filled (shellside)	0.9 kg (2.0 lbs)

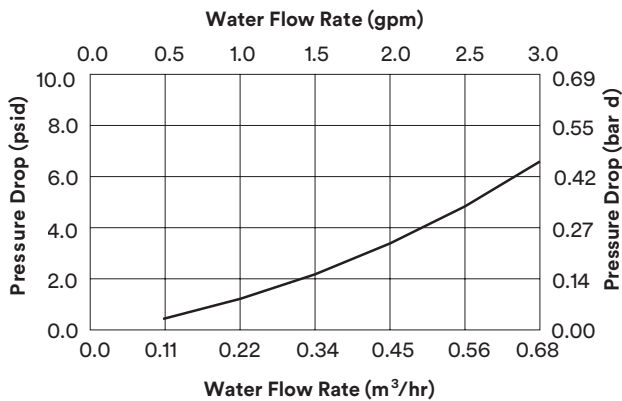
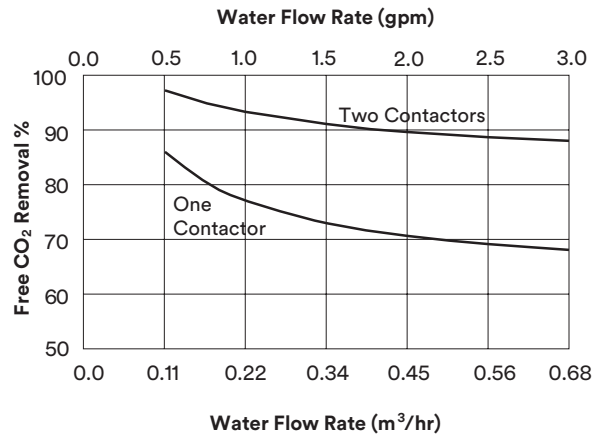
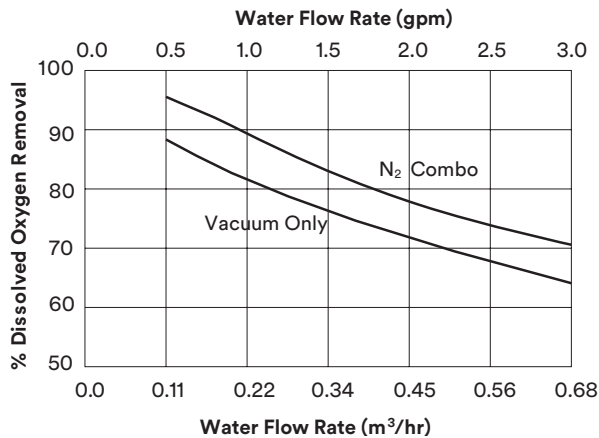
Regulatory
Complies with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC. Constructed of FDA CFR title 21 compliant materials for wetted parts only at ambient temperatures.



Clamp-free version with NPT connections

All dimensions are nominal values for contactors with NPT connections. Overall length with Flaretek® connections increases. See full housing drawing on 3M.com/Liqui-Cel for additional details.

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Curves represent nominal values. Characteristics may change under different operating conditions.

Test condition O₂ Removal with X40 membrane 20°C: N₂ vacuum combo mode, N₂ sweep flow rate: 0.05 scfm and 50 mm Hg vacuum Vacuum mode: 50 mm Hg

Test condition CO₂ Removal with X50 membranes 25°C: Air-combo, vacuum 150 mm Hg, air sweep G/L 0.5.

Pressure drop curves using NPT connection. Flaretek® connection will have lower pressure drop.

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