



**Liqui-Cel™**  
Membrane Contactors

# 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 <sup>3</sup> /hr (0.5 – 3.0 gpm)
Membrane Type	X50 Fiber
	Recommended for CO <sub>2</sub> removal from liquid and other gas transfer applications
Membrane/Potting Material	X40 Fiber
	Recommended for O <sub>2</sub> 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 LIQUID 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

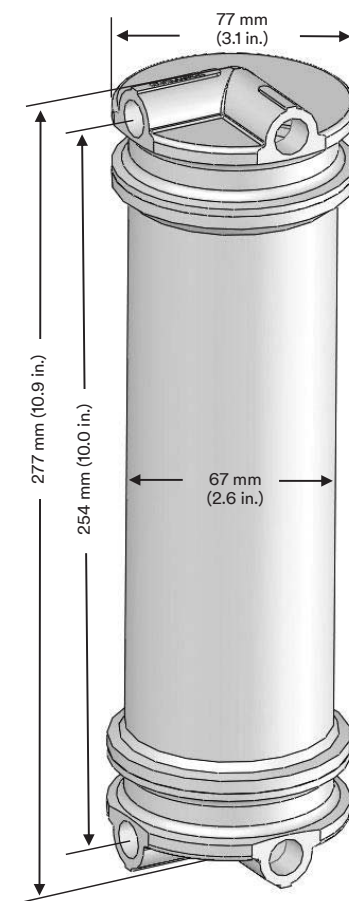
\*\* Only available with FKM seal option with welded end caps.

Seal Material Options	Applications
FKM	General Purpose
FFKM (K - UPW)***	Ultra Pure Water
FFKM (K - EXT)****	Chemical Extraction

\*\*\* Only available with welded end caps with NPT connections and X40 fiber.

\*\*\*\* Only available with clamped end caps and NPT connections.

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



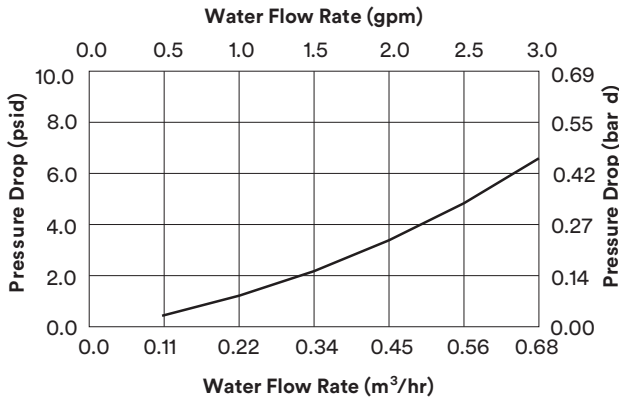
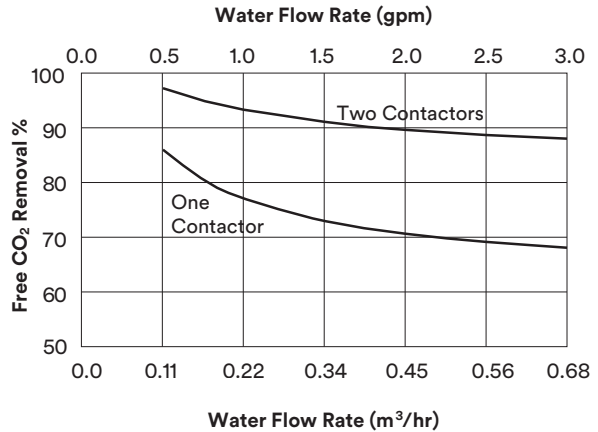
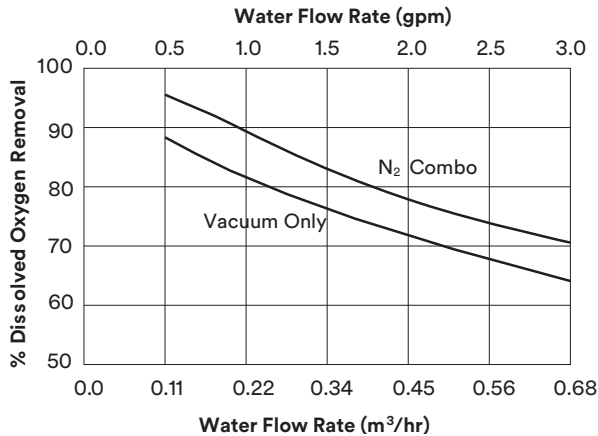
Welded end caps with NPT connections

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](http://3M.com/Liqui-Cel) for additional details.

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## Regulatory

Complies with the limits as set by RoHS Directive 2011/65/EU Annex II. 3M™ Liqui-Cel™ EXF-2.5×8 Series Membrane Contactors with FKM seals are constructed of FDA Title 21 CFR parts 177-190 compliant materials for wetted parts only at ambient temperatures. 3M™ Liqui-Cel™ EXF-2.5×8 Series Membrane Contactors with FFKM (K-UPW) or FFKM (K-EXT) seals **are not** constructed of FDA Title 21 CFR parts 177-190 compliant materials.



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

Test condition O<sub>2</sub> Removal with X40 membrane 20°C: N<sub>2</sub> vacuum combo mode, N<sub>2</sub> sweep flow rate: 0.05 scfm and 50 mm Hg vacuum  
Vacuum mode: 50 mm Hg

Test condition CO<sub>2</sub> 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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