



# 3M™ Liqui-Cel™ SP-4×13 Series Membrane Contactor

## Typical Properties

Membrane Characteristics	
Cartridge Configuration	Extra-Flow with Center Baffle
Liquid Flow Guidelines	0.2 – 3.4 m <sup>3</sup> /hr (1–15 gpm) Liquid must flow on the shellside
Membrane/Potting Material	Polyolefin / Polyethylene
Priming Volume (approximate)	
Shellside	1.3 L (0.3 gal)
Lumenside	0.5 L (0.1 gal)

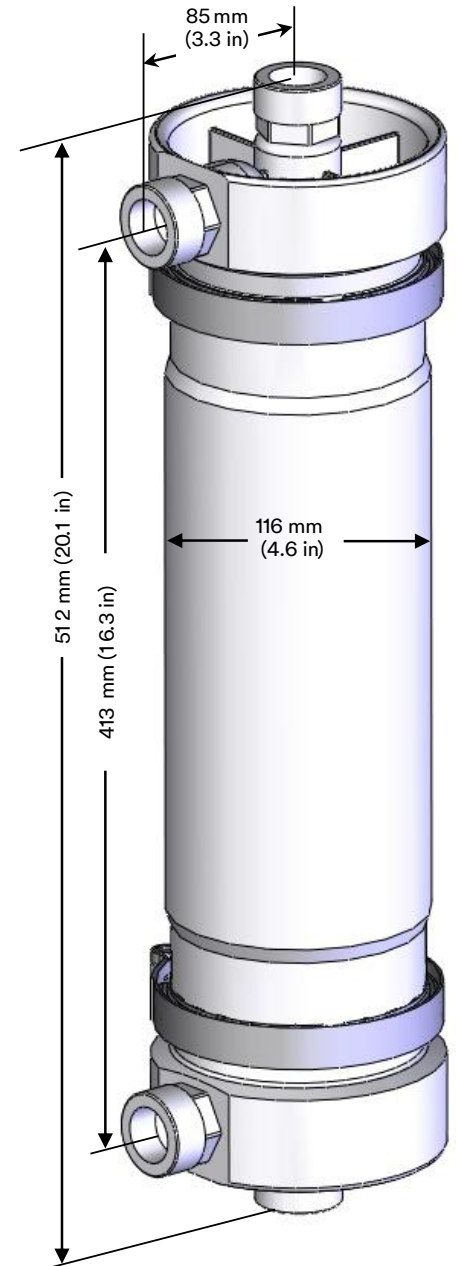
Pressure Guidelines*	
Maximum Shellside <b>LIQUID</b> Working Temperature/ Pressure	5-25°C, 4.1 barg (41-77°F, 60 psig) 50°C, 1.0 barg (122°F, 15 psig)
If no vacuum is used, 1.0 barg (15 psig) can be added to pressures above.	
Maximum Applied Gas Pressure	4.1 barg at 25°C (60 psig at 77°F)
* See Operating Guide for complete listing of temp/pressure limits for housings and membrane. <b>Note:</b> Liquid pressure should always exceed gas pressure.	

Housing Characteristics	
Material	Polypropylene
Flange Connections	
Shellside (Wetted surface)	1 inch Sanitary ¾ inch NPT Female 1 inch George Fisher Rc ¾ per JIS B0203
Lumenside (Gas/Vacuum)	1 inch 90° Sanitary ¾ inch 90° NPT Female

Seal Options	
Material	Applications
Fluoroelastomer	General Purpose
Perfluoroelastomer	Ultra Pure Water

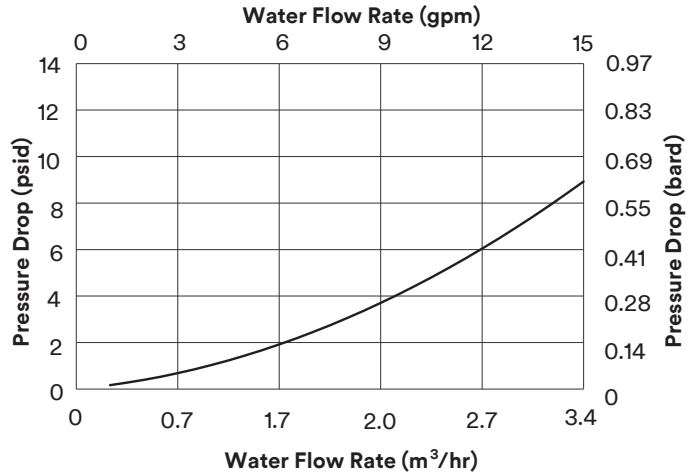
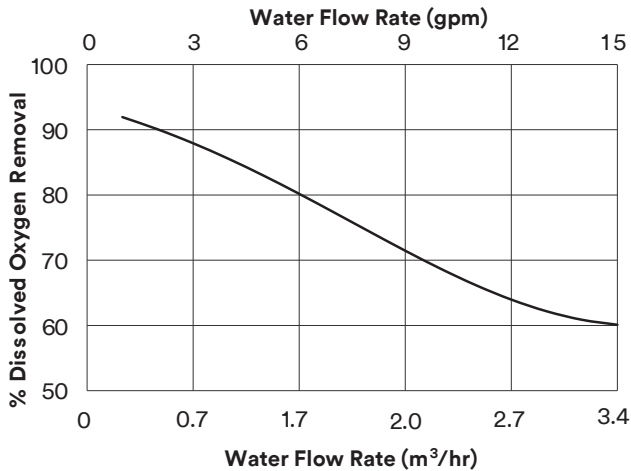
Weight (approximate)	
Dry	3 kg (6 lbs)
Water-Filled (shellside)	4 kg (9 lbs)

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.	



All dimensions are nominal values for the Polypropylene housing. See full housing drawing on [3M.com/Liqui-Cel](http://3M.com/Liqui-Cel) for additional details.

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Curves represent nominal values, generated using water at 25°C (77°F).

Test condition O<sub>2</sub> Removal with 50 torr abs vacuum.

Characteristics may change under different operating conditions.

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