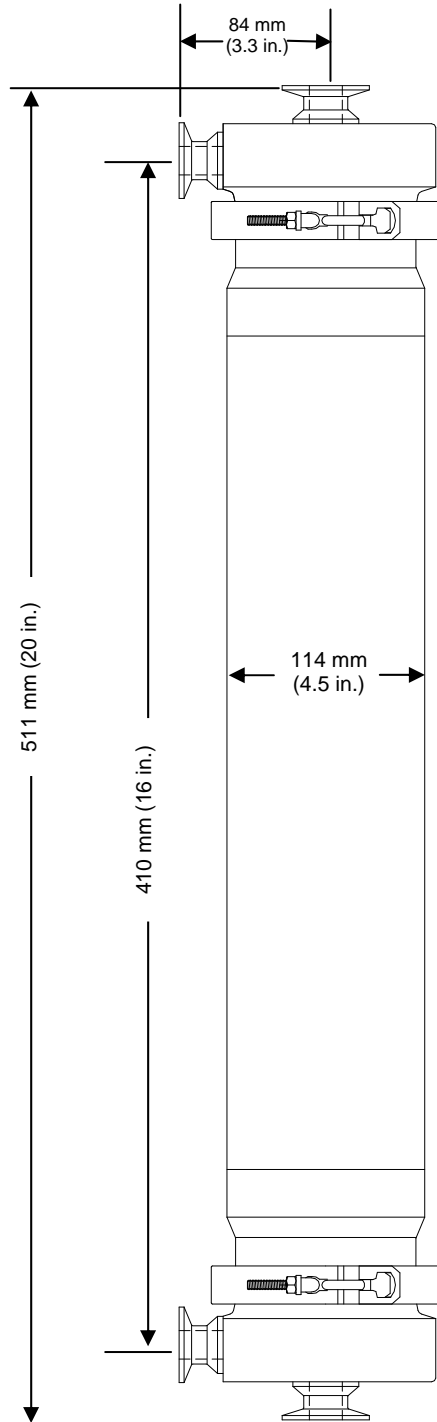


4 x 13 EXTRA-FLOW PRODUCT DATA SHEET

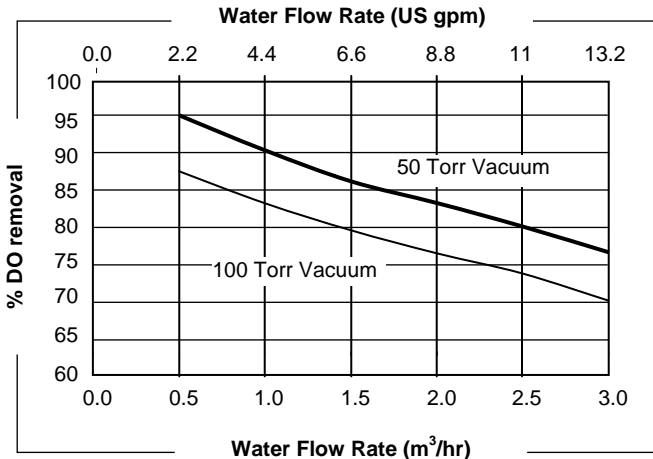


Cartridge Characteristics		
Cartridge Configuration	Extra-Flow with Center Baffle	
Liquid Flow Guidelines	0.7 – 3.41 m ³ /hr (3 – 15 gpm)	
Membrane	X50	X40
	Recommended for CO ₂ removal from water	Recommended for all other gas transfer applications
Porosity	~ 40%	~ 25%
OD / ID	300 / 220 micron	300 / 200 micron
Membrane/Potting Material	Polypropylene / Polyethylene	
Typical Membrane Surface Area	8.1 m ² (87 ft ²)	
Shellside Working Temperature/Pressure of Fiber	50°C, 7.4 kg/cm ² or 7.3 bar 70°C, 2.1 kg/cm ² or 2.0 bar (122°F, 105 psig) (158°F, 30 psig)	
[Using 50 mm vacuum on Lumenside. Add 1.05 kg/cm ² (15 psig) when vacuum is not used.]		
Maximum Lumenside Working Temperature/Pressure Conditions	25°C, 1.0 kg/cm ² or 0.9 bar (77°F, 15 psig)	
Priming Volume		
Shellside	1.26 liters (0.33 gal.)	
Lumenside	0.61 liters (0.16 gal.)	
Housing Characteristics		
Material	Polypropylene	316L SS
Flange Connections		
<ul style="list-style-type: none"> Shellside (Liquid Inlet/Outlet) 	<ul style="list-style-type: none"> 1 inch Sanitary ¾ inch NPT Female 1 inch GF Rc ¾ per JIS B0203 	<ul style="list-style-type: none"> 1 inch Sanitary (316L SS) ¾ inch NPT Female (304 SS)
Lumenside (Gas/Vacuum)	<ul style="list-style-type: none"> 1 inch 90° Sanitary ¾ inch 90° NPT Female Rc ¾ per JIS B0203 	<ul style="list-style-type: none"> 1 inch 90° Sanitary (316L SS) ¾ inch 90° NPT Female (304 SS)
Maximum Working Temperature/Pressure of Vessel	30°C, 7.4 kg/cm ² or 7.3 bar 40°C, 4.9 kg/cm ² or 4.8 bar (86°F, 105 psig) (104°F, 70 psig)	70°C, 10.5 kg/cm ² or 10.3 bar (158°F, 150 psig)
	Note: Refer to cartridge characteristics for maximum operating conditions.	
Weight	Polypropylene	316LSS
Dry weight	2.6 kg. (5.8 lbs.)	4.9 kg (10.7 lbs.)
Liquid full (shellside)	3.7 kg. (8.2 lbs.)	7.4 kg (16.4 lbs.)
Shipping Weight	3.3 kg. (7.3 lbs.)	6.4 kg (14.0 lbs.)

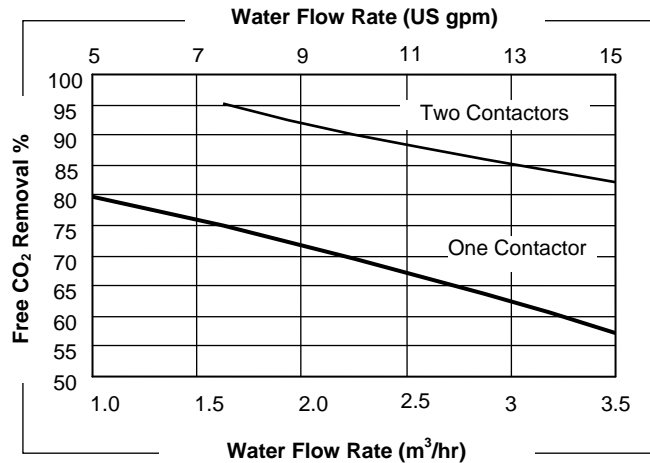
Note: All dimensions are nominal values.

This represents PP housing. Go to www.Liqui-Cel.com to view the full housing drawings for this and for our 316L SS housing option.

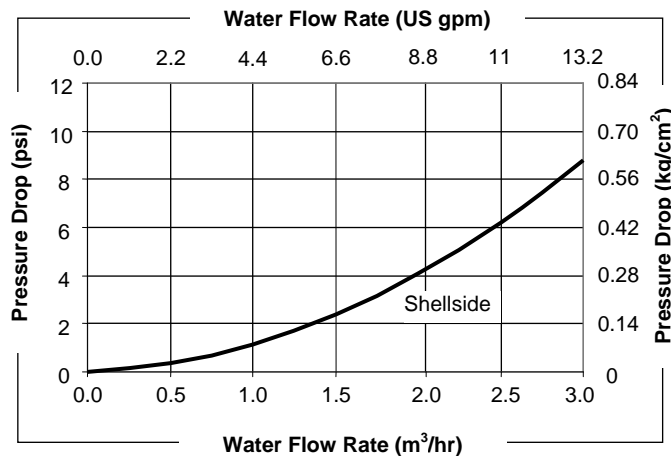
4 x 13 EXTRA-FLOW PRODUCT DATA SHEET



Test Conditions: Vacuum, X40 Membrane



Test Conditions: N2-combo, 100 torr, X50 Membrane



Cartridge Specifications		
Characteristics	Test Conditions	Specifications
Performance O ₂ Removal	Shellside water flow: 12 gpm 20°C (68°F) Lumenside N ₂ Flow: 1 ft ³ /min, 1.0 atm at 20°C	77% minimum
Pressure Drop	Shellside water flow: 12 gpm, 20°C (68°F)	8.5 psi maximum

Curves represent nominal values, generated using water at 20°C. Characteristics may change under different operating conditions.

All components of the Liqui-Cel® Extra-Flow Membrane Contactor, when used in accordance with recommendations given in our product literature for treatment or processing of water, alcoholic and non-alcoholic beverages, and aqueous, acid and non-acid food products at and below ambient temperatures, are in compliance with all relevant FDA regulations as specified in Title 21 of the Code of Federal Regulations.

This product is to be used only by persons familiar with its use. It must be maintained within the stated limitations. All sales are subject to Seller's terms and conditions. Purchaser assumes all responsibility for the suitability and fitness for use as well as for the protection of the environment and for health and safety involving this product. Seller reserves the right to modify this document without prior notice. Check with your representative to verify the latest update. To the best of our knowledge the information contained herein is accurate. However, neither Seller nor any of its affiliates assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of the suitability of any material and whether there is any infringement of patents, trademarks, or copyrights is the sole responsibility of the user. Users of any substance should satisfy themselves by independent investigation that the material can be used safely. We may have described certain hazards, but we cannot guarantee that these are the only hazards that exist.

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