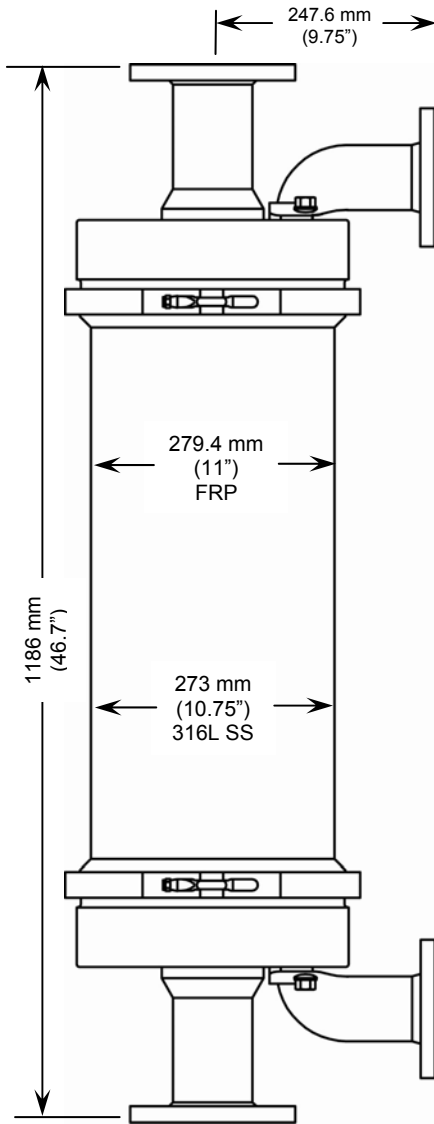
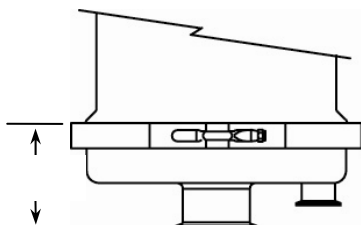


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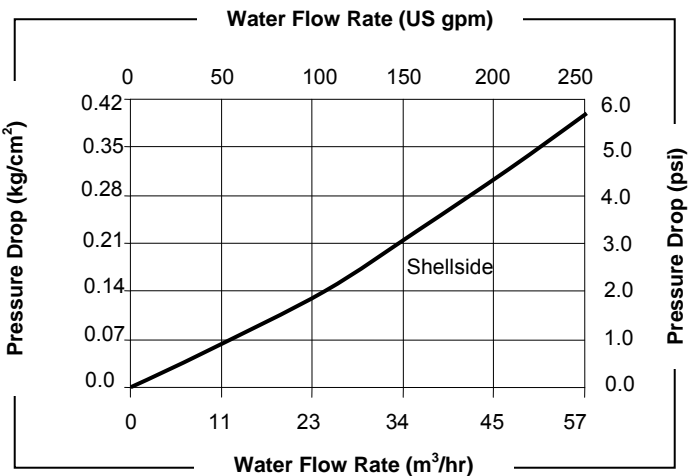
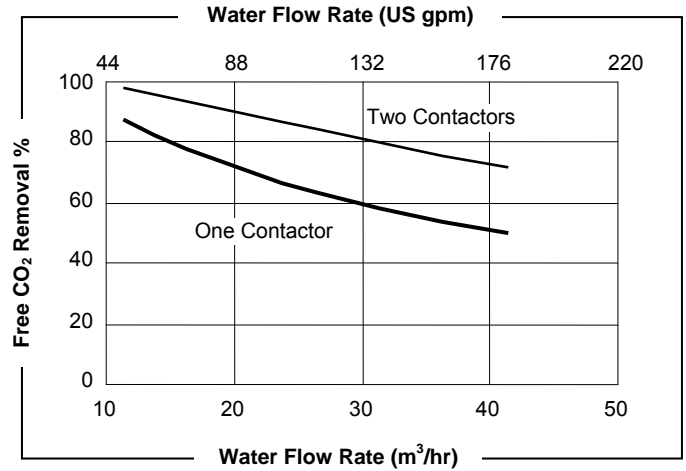
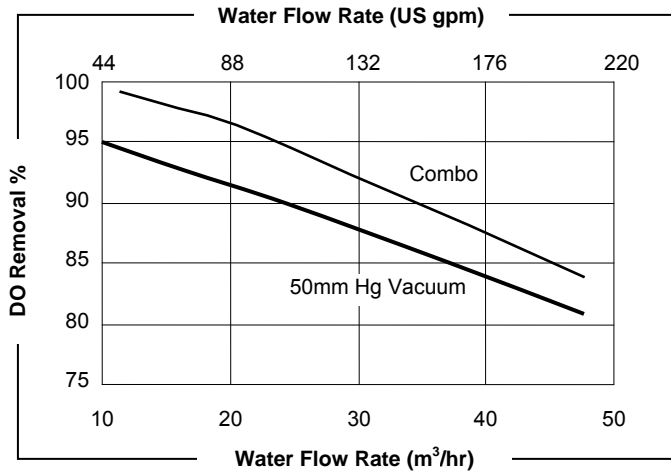


End cap with sanitary connections
(complete drawing available on web site)



Cartridge Characteristics			
Cartridge Configuration	Extra-Flow with Center Baffle		
Liquid Flow Guidelines	X50: 10 – 48 m ³ /hr (44 – 210 gpm) X40: 10 – 57 m ³ /hr (44 – 250 gpm)		
Membrane Type	X50 Fiber	X40 Fiber	
	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 / Epoxy		
Typical Membrane Surface Area	1400 ft ² (130m ²)		
Maximum Shellside Working Temperature/Pressure of Fiber* [Using 50 mm vacuum on Lumenside. Add 1.05 kg/cm ² (15 psig) when vacuum is not used.]	X50 Fiber	X40 Fiber	
	50°C, 7.4 kg/cm ² or 7.2 bar 70°C, 2.1 kg/cm ² or 2.0 bar (122°F, 105 psig) (158°F, 30 psig)	25°C, 10.6 kg/cm ² or 10.3 bar 50°C, 7.4 kg/cm ² or 7.2 bar 70°C, 2.1 kg/cm ² or 2.0 bar (77°F, 150 psig) (122°F, 105 psig) (158°F, 30 psig)	
Priming Volume (approximate)	FRP	FRP	316L SS
Shellside	26.1 L (6.9 gal)	23.4 L (6.2 gal)	19.3 L (5.1 gal)
Lumenside	10.6 L (2.8 gal)	9.0 L (2.4 gal)	4.9 L (1.3 gal)
Housing Options and Characteristics			
Material	Fiber Reinforced Plastic (FRP) with PVDF for all wetted surfaces and FRP flanges	316L SS Vessel/CF3M SS End Caps. ≤32RA on schedule 10S pipe per ASTM A312	
Flange Connections			
Shellside (Liquid Inlet/Outlet)	<ul style="list-style-type: none"> • 3 inch class 150 raised face flange per ANSI B16.5 • 80A at 10K flat face flange per JIS B2238 • 3 inch sanitary flange available on fine finish 		
Lumenside	<ul style="list-style-type: none"> • 1 inch class 150 raised face flange per ANSI B16.5 • 50A at 10K flat face flange per JIS B2238 • 1.5 inch sanitary flange available on fine finish 		
Max. Allowable Working Pressure of Vessel*	<ul style="list-style-type: none"> • 10.6 Kg/cm² (10.3 bar or 150 psi) Shellside (Liquid Only) • 9.1 Kg/cm² (9.0 bar or 130 psi) Lumenside 316 LSS • 6.3 Kg/cm² (6.2 bar or 90 psi) Lumenside FRP NOTE: Refer to Cartridge Characteristics for maximum operating conditions.		
Seal Options		Applications	
EPDM (ANSI / NSF 61, FDA CFR title 21 Compliant) [†]		General Purpose	
HP1 Viton		High Purity/Electronics	
Weights		FRP Housing	
	Stainless Steel Housing		ANSI /JIS
	ANSI/JIS	Sanitary	ANSI /JIS
Dry	93 kg. (204 lbs.)	81 kg. (177 lbs.)	33 kg. (73 lbs.)
Liquid Full (shellside)	115 kg. (253 lbs.)	107 kg. (235 lbs.)	57 kg. (126 lbs.)
Cartridge only – dry	10 kg. (23 lbs.)	10 kg. (23 lbs.)	10 kg. (23 lbs.)
Shipping weight (max)	150 kg. (330 lbs.)	138 kg. (303 lbs.)	44 kg. (98 lbs)
*Pressures are based on non-dangerous liquids and gasses per the European Union Pressure Equipment Directive /97/23/EC. See Operating Guide for pressure limits in the European Union with dangerous liquid and gasses.			

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Cartridge Specifications		
Characteristics	Test Conditions	Specifications
Performance O ₂ Removal	Shellside water flow: 160 gpm, 20°C (68°F)	X40 : 83.2% minimum
	Lumenside N ₂ Flow: 3.5 ft ³ /min, 1.0 atm at 20°C	X50 : 81.3% minimum
Pressure Drop	Shellside water flow: 160 gpm, 20°C (68°F)	X40: 6.0 psi maximum
		X50: 6.9 psi maximum

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

Test condition O₂ Removal: N₂-vacuum combo mode, vacuum: 50 mm Hg N₂ sweep: 0.25 SCFM. 20°C.

Test condition CO₂ Removal: Air vacuum combo mode, vacuum: 75 mm Hg, air sweep 1 scfm. 25°C.

NOTE: All dimensions on the front of this data sheet are nominal values.

†All wetted components of the Liqui-Cel® High Purity Extra Flow Membrane Contactor, when used in accordance with recommendations given in our product literature for treatment of processing 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. Limitations apply to the FRP PVDF lined vessel; 20,000 gallons of liquid should be flushed through the contactor prior to use.

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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