

## Submerged Microfiltration Membrane Bioreactor (MBR) Module

	HYDRAsub®- MBR	HSM1500-ES
<b>Module Specifications</b>	Configuration: Fiber Orientation: Filtrate Flow : Membrane Polymer: Pore Size (nominal): Number of Elements in Module: Nominal Membrane Area per Module: Permeate Connections: Air Connections: Guide Pipe Connections: Typical Module Dry Weight: Typical Module Wet Weight:	Submerged Membrane Vertical Bi-directional Polyvinylidene Flouride (PVDF) 0.4 µm 60 (25 m <sup>2</sup> each) 16140 ft <sup>2</sup> (1500 m <sup>2</sup> ) (4)- 3" MNPT (4)- 2" MNPT (2)- To fit 3" pipe 3542 lbs (1610 kg) 5634 lbs (2555 kg)
<b>Operating Specifications</b>	Maximum Transmembrane Pressure (Vacuum): Maximum Backwash Pressure : Maximum Instantaneous Chlorine Concentration: Maximum Chlorine Tolerance: MLSS Range: Operating Temperature Range: Feed Water pH Range: Cleaning pH Range: Operating Mode:	-6 psig (-0.41 bar) 2 psig (0.14 bar) 5,000 ppm <sup>a</sup> 742,000 ppm-hrs <sup>b</sup> 8,000 - 12,000 mg/L <sup>c</sup> 41 - 104°F (5 - 40° C) 6.0 - 8.0 1.0 - 11.0 Outside to Inside
<b>Typical Process Conditions</b>	Operating Filtrate Flux <sup>†</sup> : Peak Operating Flux <sup>†</sup> : Chemically Enhanced Backwash (CEB) Flux: CEB Chemicals: Clean In Place (CIP) Flux: CIP Chemicals:	4-20 gfd (7-34 l/mh) 30 gfd (51 l/mh) 2.4 gfd (4 l/mh) NaOCl <sup>d</sup> 2.4 gfd (4 l/mh) NaOCl or Citric Acid <sup>d</sup>

† -Depends on temperature and application

a -For a maximum of 2 hours

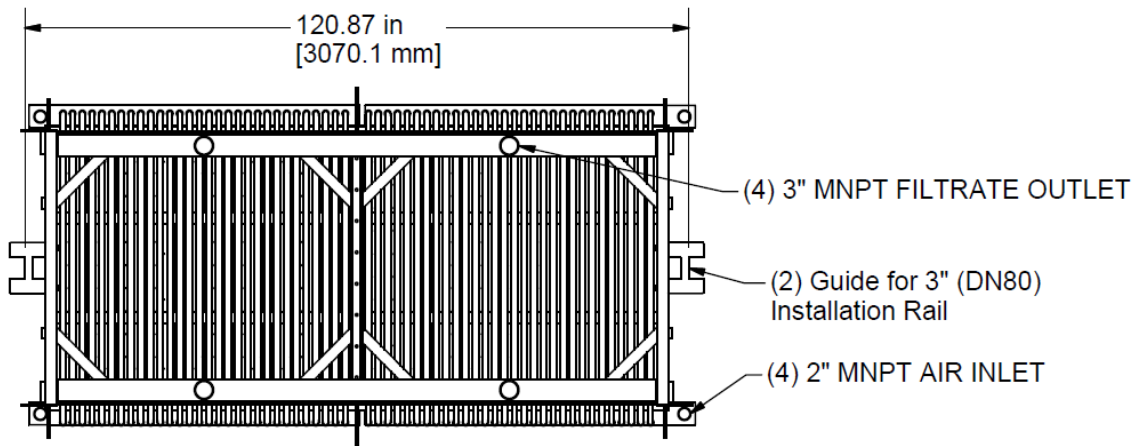
b- Maximum chemical tolerance for estimated life span of membrane

c -In membrane tank at steady state for municipal wastewater

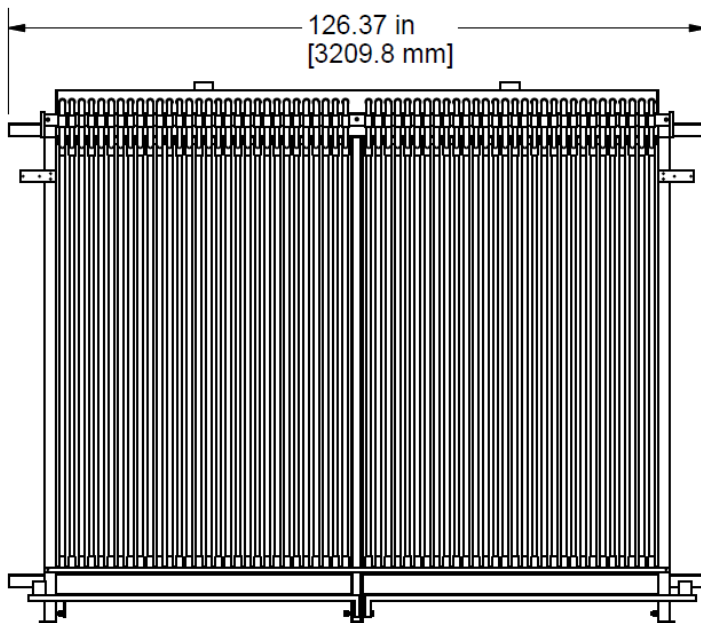
d- Refer to operating manual for chemical concentrations and cleaning frequencies

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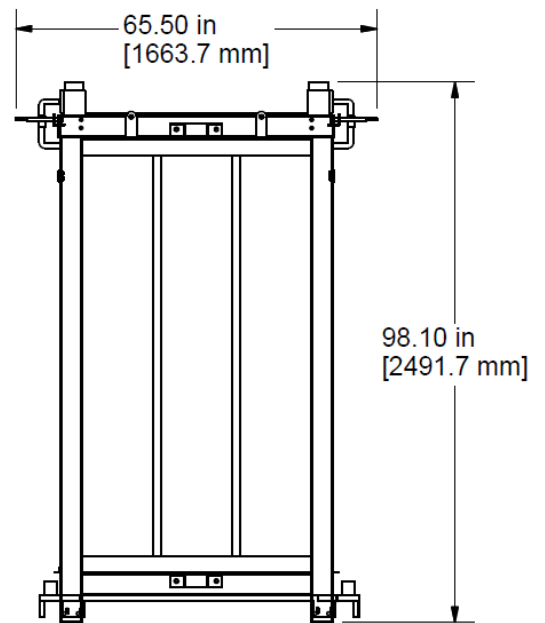
## HSM1500-ES



**Top View**



**Side View**



**Front View**

Note: Cage is made of stainless steel 304. Connections are in English units. For more detailed drawings, contact Hydranautics.

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