

## Submerged Microfiltration Membrane Module

### HYDRASub<sup>®</sup>- MBR

### HSM45 w/ HSE15

#### Module Specifications

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:	Submerged Membrane Vertical Bi-directional Polyvinylidene Flouride (PVDF) 0.4 µm 3 (15 m <sup>2</sup> each) 484 ft <sup>2</sup> (45 m <sup>2</sup> ) (2)- 2" MNPT (2)- 1 1/2" MNPT (2)- to fit 2.5" pipes
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	Typical Dry Weight	Typical Wet Weight
HSM45-ES-HSE15	228 lbs (104 kg)	326 lbs (148 kg)
HSM45-ES15-316	231 lbs (105 kg)	329 lbs (150 kg)

#### Operating Specifications

Maximum Trans Membrane Pressure (Vacuum): Maximum Backwash Trans Membrane 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
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#### Typical Process Conditions

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>
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† -Depends on temperature and application.

a -For a maximum of 2 hours.

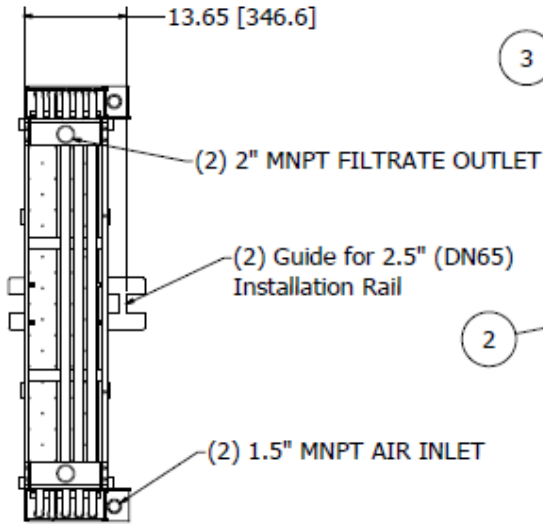
b- Maximum chemical tolerance for estimated life span of membrane.

c -In membrane tank at steady state for municipal wastewater.

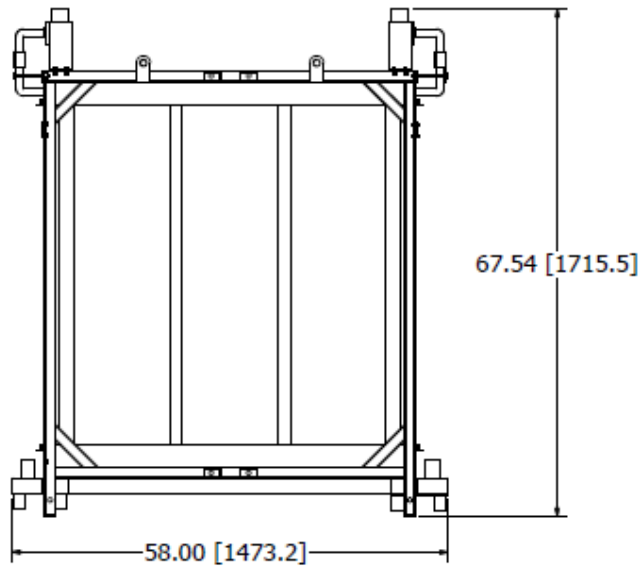
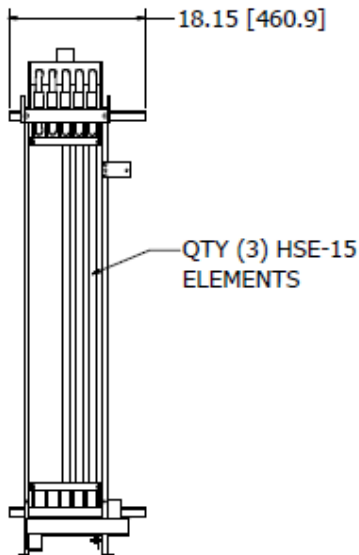
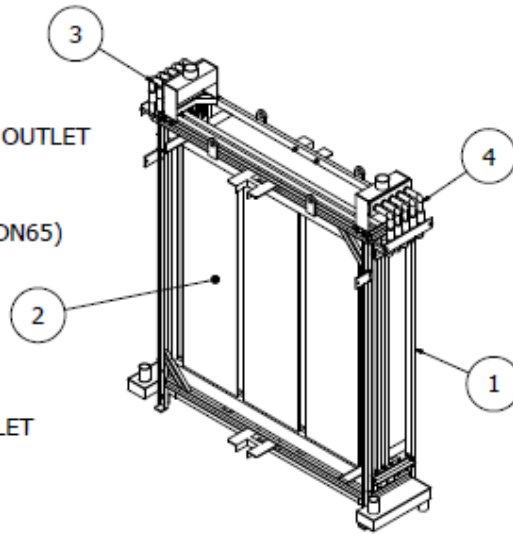
d- Refer to operating manual for chemical concentrations and cleaning frequencies.

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**Top View**



**Isometric View**



**Side View**

**Front View**

HYDRAsub-MBR Parts List to Order 45m <sup>2</sup> w/ HSE15			
Item #	Qty	Part Number	Description
1	1	HSC75-ES-HSE15*	HYDRAsub Cage SS304
2	3	HSE15	HYDRAsub Element
3	6	HSA25	HYDRAsub Filtrate Adapter
4	4	HSAB25	HYDRAsub Blank Adapter

Note: Cage is made of 304 or 316 stainless steel. Connections are in English units. For more detailed drawings, contact Hydranautics.

\*SS316 Cage part number – HSC75-ES15-316

10/18/2018