

Submerged Microfiltration Membrane Module

HYDRAsub®- MBR

HSM60 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 4 (15 m ² each) 645 ft ² (60 m ²) (2)- 2" MNPT (2)- 1 1/2" MNPT (2)- to fit 2.5" pipes
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	Typical Dry Weight	Typical Wet Weight
HSM60-ES-HSE15	256 lbs (116 kg)	356 lbs (162 kg)
HSM60-ES15-316	258 lbs (117 kg)	358 lbs (163 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 ^a 742,000 ppm-hrs ^b 8,000 - 12,000 mg/L ^c 41 - 104°F (5 - 40° C) 6.0 - 8.0 1.0 - 11.0 Outside to Inside
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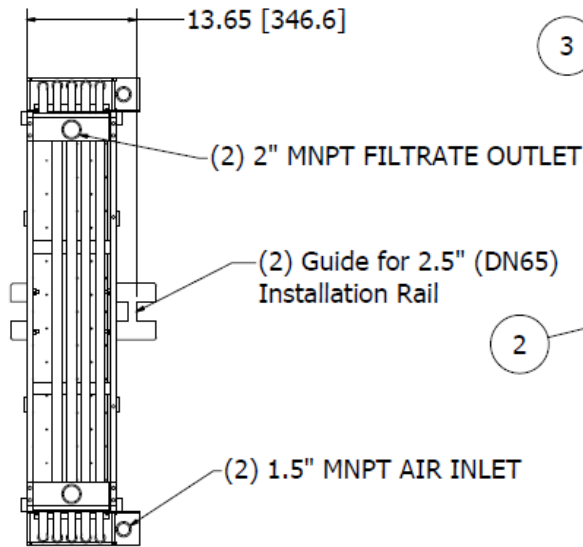
Typical Process Conditions

Operating Filtrate Flux [†] : Peak Operating Flux [†] : 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 ^d 2.4 gfd (4 l/mh) NaOCl or Citric Acid ^d
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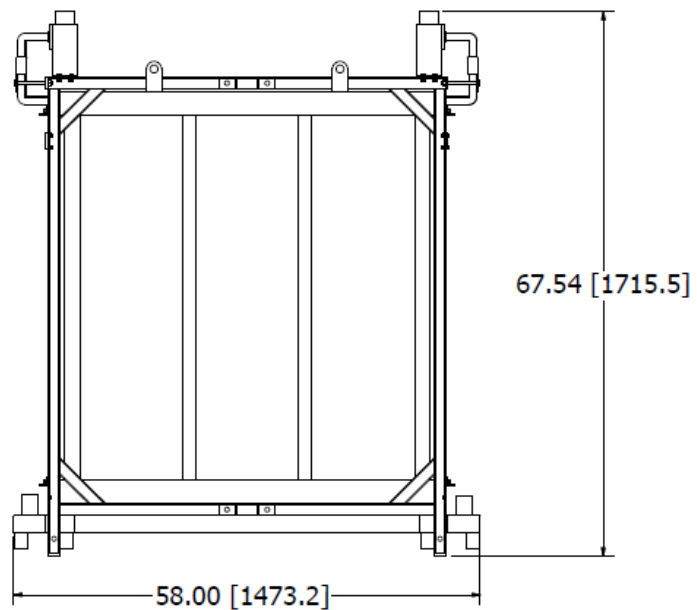
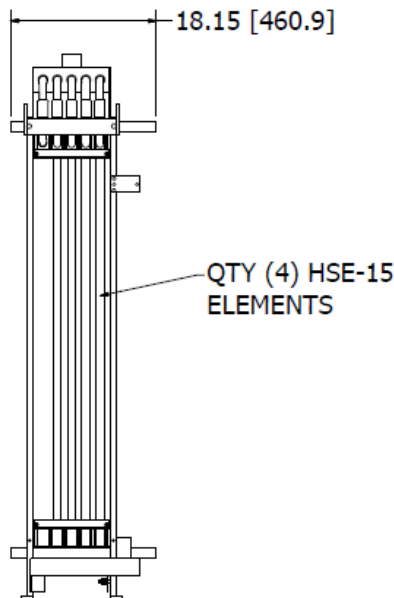
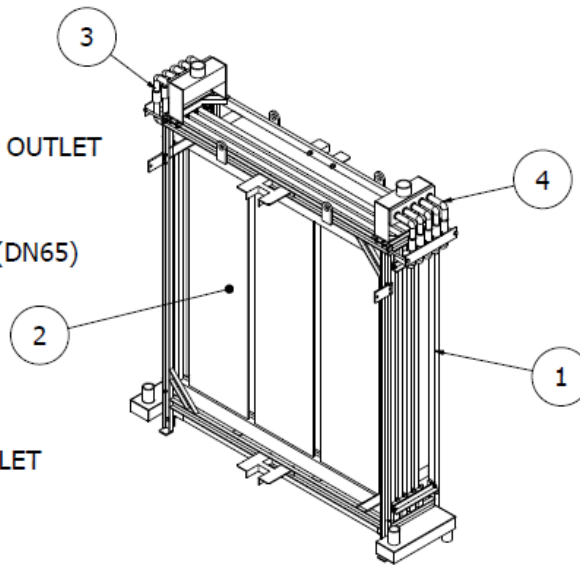
[†] -Depends on temperature and application.
^a -For a maximum of 2 hours.
^b -Maximum chemical tolerance for estimated life span of membrane.
^c -In membrane tank at steady state for municipal wastewater.
^d - Refer to operating manual for chemical concentrations and cleaning frequencies.

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Top View



Isometric View



Side View

Front View

HYDRAsub-MBR Parts List to Order 60m ² w/ HSE15			
Item #	Qty	Part Number	Description
1	1	HSC75-ES-HSE15*	HYDRAsub Cage SS304
2	4	HSE15	HYDRAsub Element
3	8	HSA25	HYDRAsub Filtrate Adapter
4	2	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