

Submerged Microfiltration Membrane Module

HYDRASub[®]- MBR

HSM45 w/ HSE15

Module Specifications

Configuration:	Submerged Membrane
Fiber Orientation:	Vertical
Filtrate Flow:	Bi-directional
Membrane Polymer:	Polyvinylidene Flouride (PVDF)
Pore Size (nominal):	0.4 µm
Number of Elements in Module:	3 (15 m ² each)
Nominal Membrane Area per Module:	484 ft ² (45 m ²)
Permeate Connections:	(2)- 2" MNPT
Air Connections:	(2)- 1 1/2" MNPT
Guide Pipe Connections:	(2)- to fit 2.5" pipes

	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):	-6 psig (-0.41 bar)
Maximum Backwash Trans Membrane Pressure:	2 psig (0.14 bar)
Maximum Instantaneous Chlorine Concentration:	5,000 ppm ^a
Maximum Chlorine Tolerance:	742,000 ppm-hrs ^b
MLSS Range:	8,000 - 12,000 mg/L ^c
Operating Temperature Range:	41 - 104°F (5 - 40° C)
Feed Water pH Range:	6.0 - 8.0
Cleaning pH Range:	1.0 - 11.0
Operating Mode:	Outside to Inside

Typical Process Conditions

Operating Filtrate Flux [†] :	4-20 gfd (7-34 l/mh)
Peak Operating Flux [†] :	30 gfd (51 l/mh)
Chemically Enhanced Backwash (CEB) Flux:	2.4 gfd (4 l/mh)
CEB Chemicals:	NaOCl ^d
Clean In Place (CIP) Flux:	2.4 gfd (4 l/mh)
CIP Chemicals:	NaOCl or Citric Acid ^d

† -Depends on temperature and application.

a -For a maximum of 2 hours.

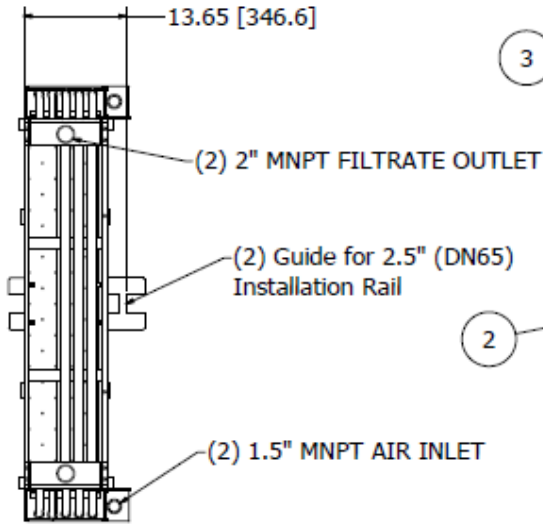
b- Maximum chemical tolerance for estimated life span of membrane.

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

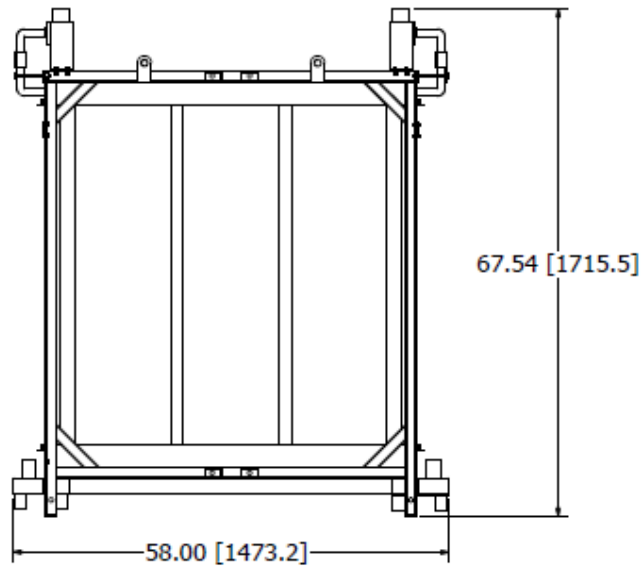
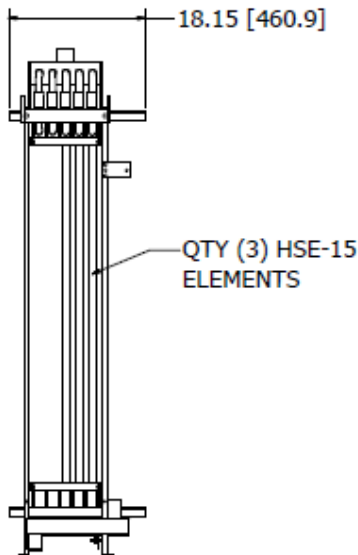
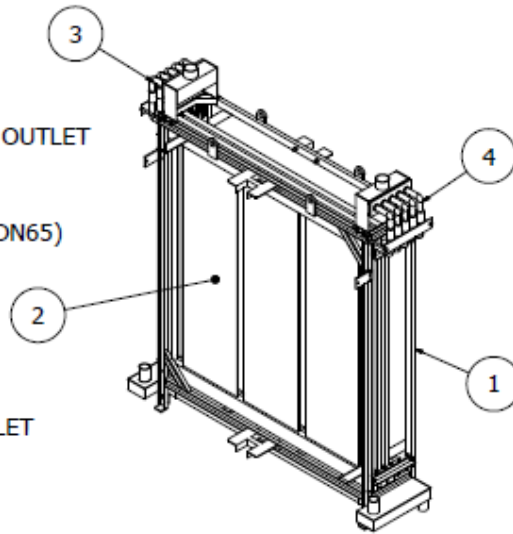
d- Refer to operating manual for chemical concentrations and cleaning frequencies.

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Top View



Isometric View



Side View

Front View

HYDRAsub-MBR Parts List to Order 45m ² 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

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