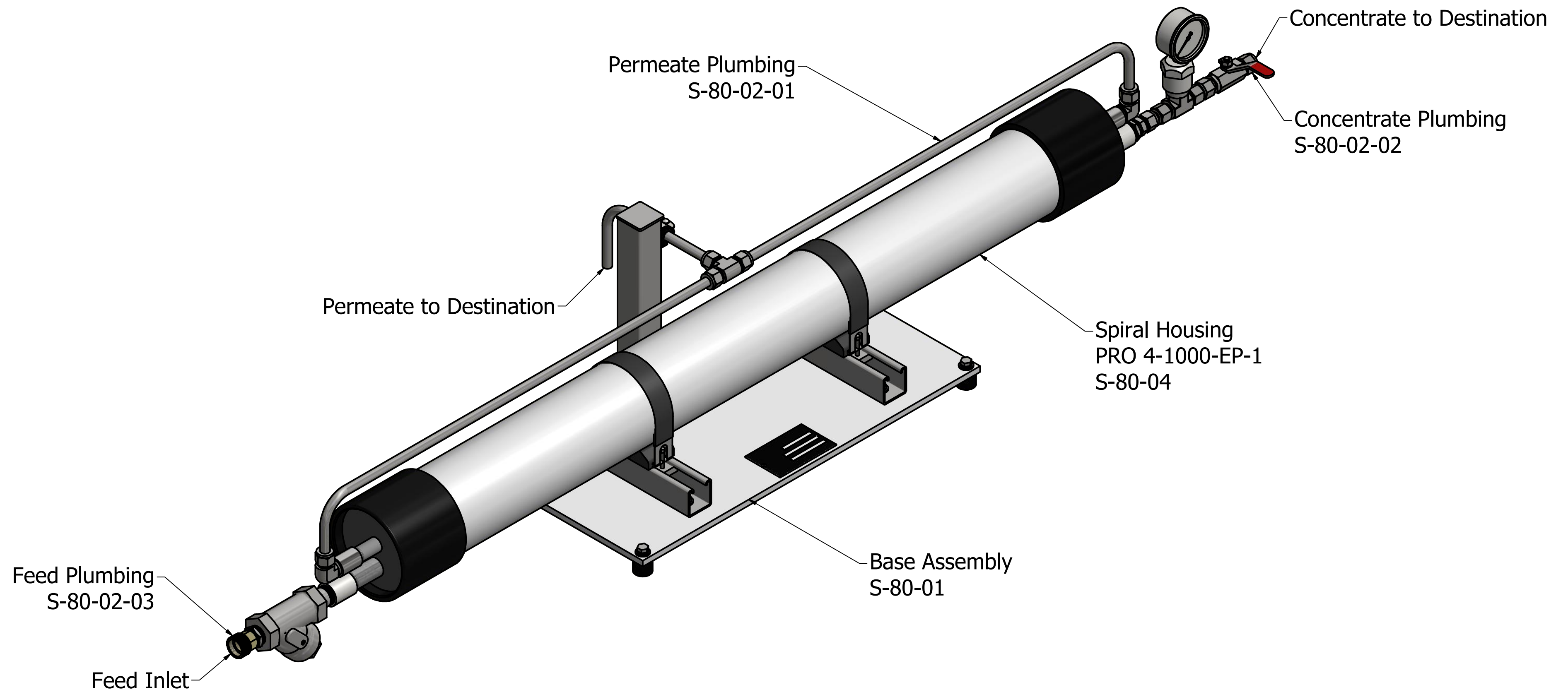


Confidential Material  
Preliminary Only

Revision		NEW LOGIC RESEARCH	
S-80 Spiral System			
		P&ID	
August 2020		M. Ayers	

ISO VIEW



## S-80 Spiral System

### NOTES:

1. New Logic Research confidential material.
2. Slight differences between drawings and actual system may be attributed to New Logic Research Continuously evolving and improving its technology.
3. All dimensions are shown in inches [mm] and for reference only.

4

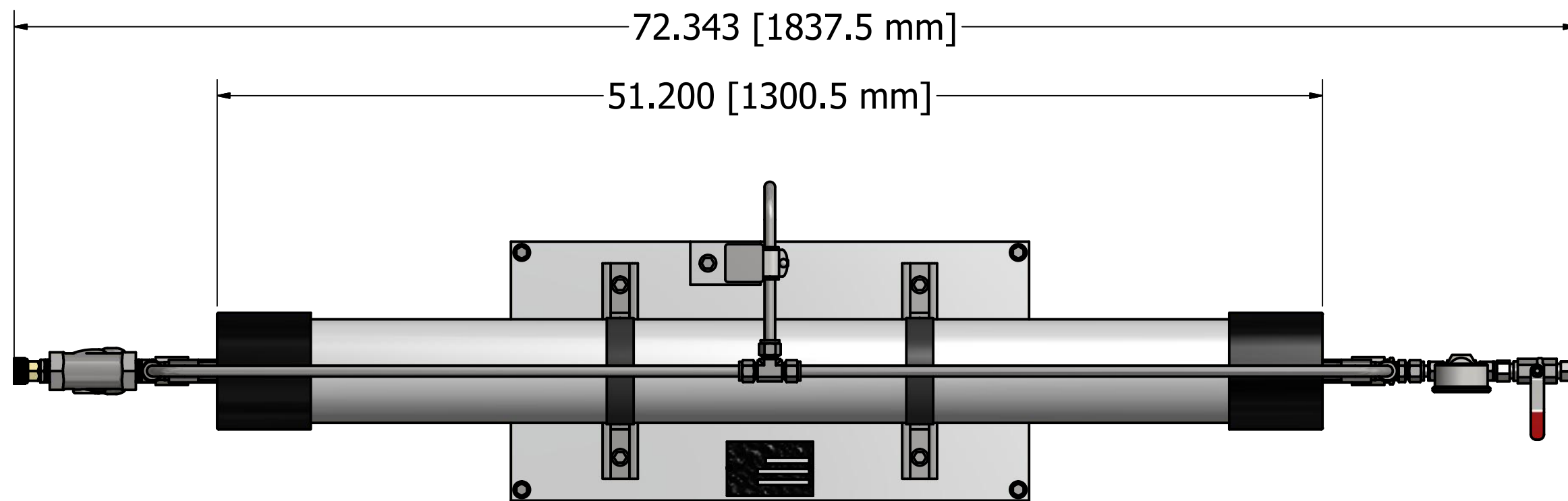
3

2

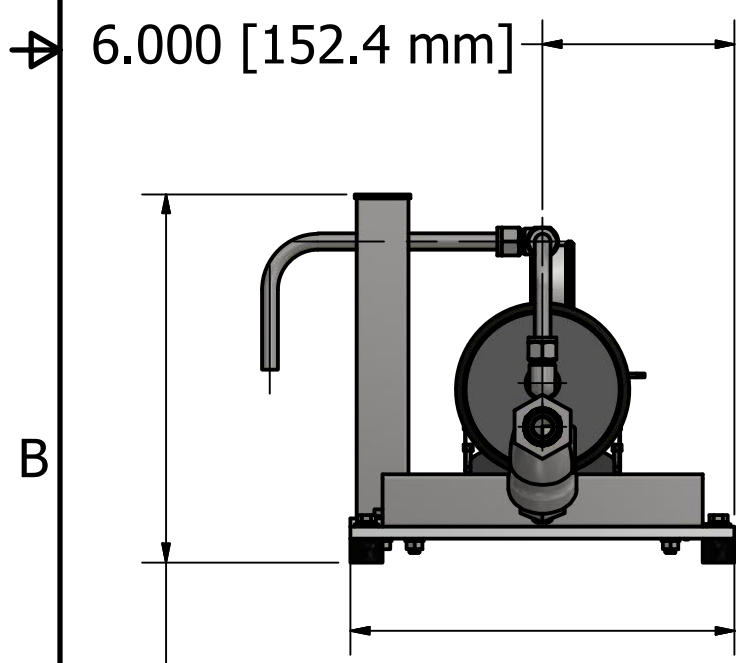
1

1

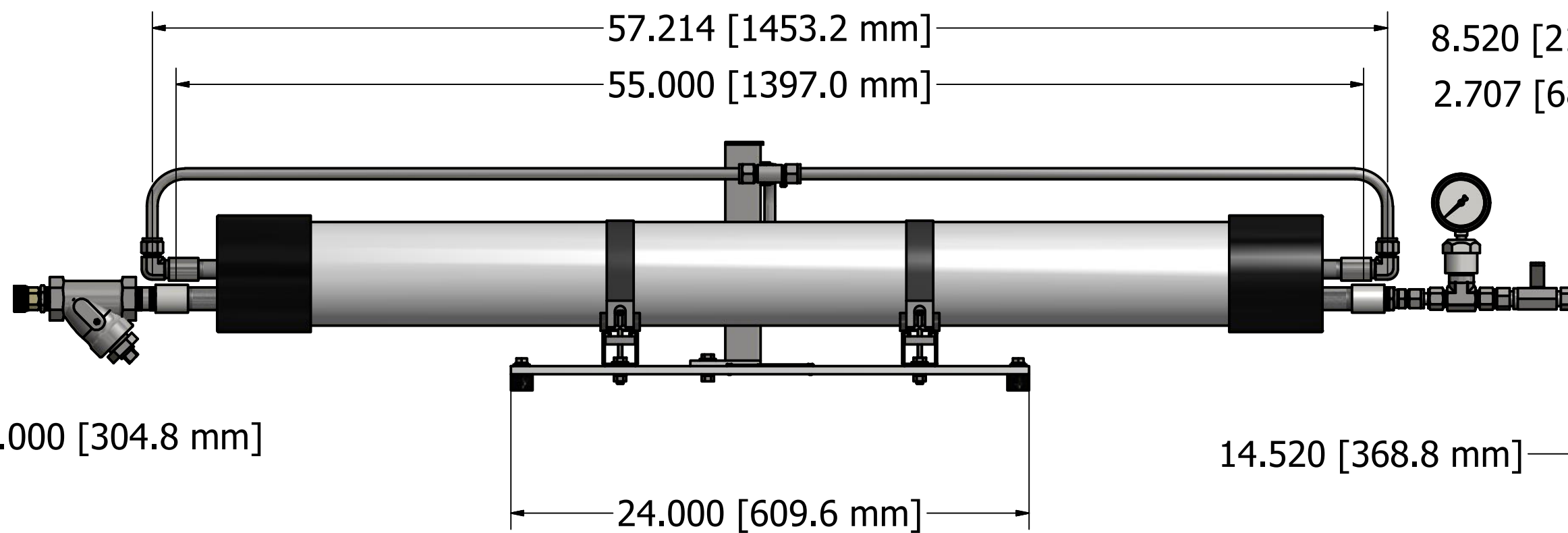
### TOP VIEW



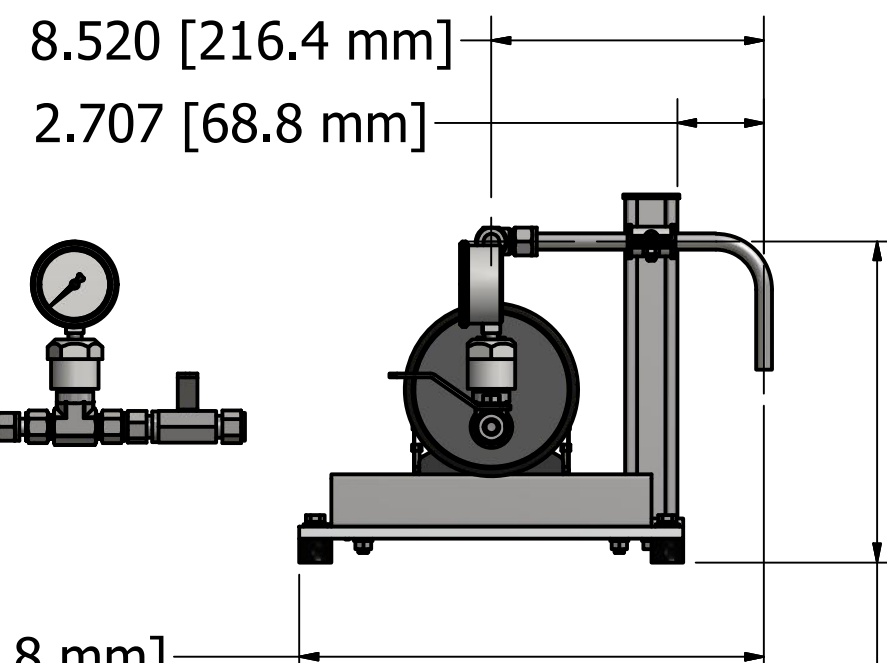
### LEFT SIDE VIEW



### FRONT VIEW



### RIGHT SIDE VIEW



## S-80 Spiral System

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4

3

2

1

1

A

A

B

B

C

C

D

D

**SPIRAL SYSTEM COMPONENT SPECIFICATIONS**

## S-80 Spiral System

**1] Filter Pack**

Membrane:	MF, UF, NF, RO (depends on application and pilot testing)
Membrane Surface Area:	80sf (7.4m <sup>2</sup> ) (1ea 4" Dia x 40" L)
Estimated Production:	0.27-0.55gpm (at 5-10GFD)
Maximum Operating Temperature:	120 °F (49°C) (Options for up to 80°C)
Allowable Feed Slurry pH Range:	2-11 (Options for 1-14)
O-ring Material:	Ethylene Propylene
Filter Pack Housing:	Polyurethane Coated, Filament Wound, Epoxy FRP
Wetted Ports:	316L Stainless Steel
Wetted Plastic End Plates:	PVC Thermoplastic

**2] Piping**

Maximum Pressure:	550 psi (Options for up to 1200 psi)
Pressure Piping:	316L Stainless Steel Tubing
Atmospheric Piping:	316L Stainless Steel Tubing
Pipe Clamps:	None
On/Off Valves:	316L SS Tubing ball valve
Flow Control Valves:	None
Check Valves:	None
Pneumatic Actuators:	None
Positioners:	None
Skid Pipe Terminations:	½" Compression Fittings
Flange Gaskets:	None
Clean in Place Tank:	None

**3] Pump Specifications:**

Feed Pump Type:	None
Feed Pump Motor:	None
Motor Speed Controller:	None

**5] Operating Site Conditions:**

Equipment Rating:	NEMA 4, Indoor/Outdoor protect from sunlight & rain.
Ambient Temperature:	5 - 37°C
Storage Temperature:	2 - 70°C (Protect Filter Pack from Freezing)
Max Relative Humidity:	<95%, non-condensing
Elevation:	3300 ft maximum without derating

**SPIRAL SYSTEM COMPONENT SPECIFICATIONS (continued)****6] Electrical Specifications:**

Controls Voltage:	None
Programmable Controller Type:	None
Touch Screen Display Type:	None
Enclosures:	None
Switches, Relays, & Contactors:	None
Pressure Sensors:	Wika Gauges
Mag Flow Tube and Transmitter:	None
Bag Filter DP Sensors:	None
Temperature Sensor:	None
Conductivity Meter:	None
pH Meter:	None
Level Sensors:	None
Solenoid Valves:	None
VFD Communication:	None

Utility Summary				New Logic Research			
VSEP System							
<b>AIR COMPRESSOR SIZING INFORMATION</b>							
	# of Valves	In <sup>3</sup> Air/stroke	Strokes/day	CFM	M3/hr		
<b>Spiral RO</b>							
No Pneumatic Actuators							
<b>System Air Totals</b>				<b>System Totals</b>	<b>0.00</b>	<b>0</b>	
Supply instument grade dry air at 80-90 psi (560-630kPa)							
Supply air to enclosure mounted regulator/filter 3/8" NPT connection							
Totals do not include air for tools or other sources.							
<b>HOT WATER SIZING INFORMATION</b>							
	# /Day	Temp degC	Gallons/Day	GPM	M3/hr		
<b>Spiral RO</b>							
Cleanings	0.14	45-50	14	0.01	0.0022		
Rinse filter pack at 2gpm for 5mins	0.14	45-50	1.4	0.00	0.0002		
Intermittent need of additional cleaning or flush of filter pack	0.033	45-50	0.33	0.00	5E-05		
<b>System Water Totals</b>				<b>System Totals</b>	<b>0.01</b>	<b>0.0025</b>	
Supply chlorine free water at >300 uS/cm							
Supply water at 45degC and 5gpm (1.2m3/hr)							
Supply water at 15 psi to 2" Hot Water flange connection on Combo Skid							
<b>ELECTRICAL LOAD PANEL SIZING INFORMATION</b>							
Circuit Breaker Sizing 1.25-2x Nameplate Current							
3-Phase Power Voltage VAC	400-460	50/60 Hz					
1-Phase Power Voltage VAC	220-120	50/60 Hz					
	# Motors	Rated Motor HP	Nameplate Current	Nameplate Current	Recommended CB Sizing		
No Motors Supplied	0		400V	460V			
<b>Totals</b>	<b>0</b>						
Supply 3-Phase power from customer supplied load panel (with circuit breakers, disconnects, line filters, etc.) to the inlet of each VFD provided by New Logic.							
	# Connections	Rated Motor HP	Nameplate Current	Nameplate Current	Recommended CB Sizing		
No Main Control Enclosures	0		220V	120V			
New Logic provided transformer inside the control enclosure will provide 1 phase power for switches.							
Note: These are estimates only based on very preliminary data. These calculations are subject to change and do not include equipment offskid of VSEP system (ie: Transfer Pumps, Generators, Heaters, Lighting, Cranes, etc). For power consumption estimates refer to the operating cost spreadsheet.							