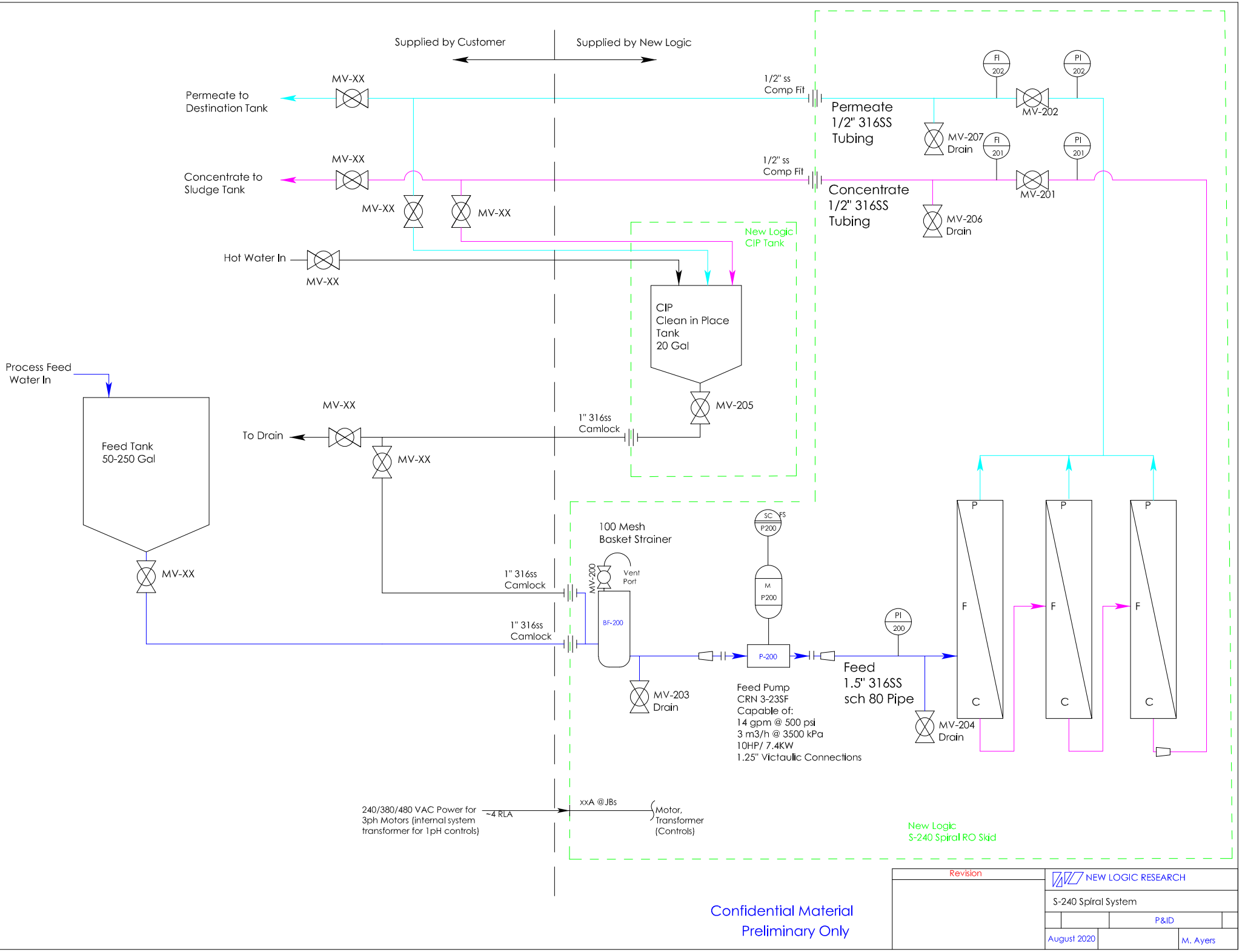
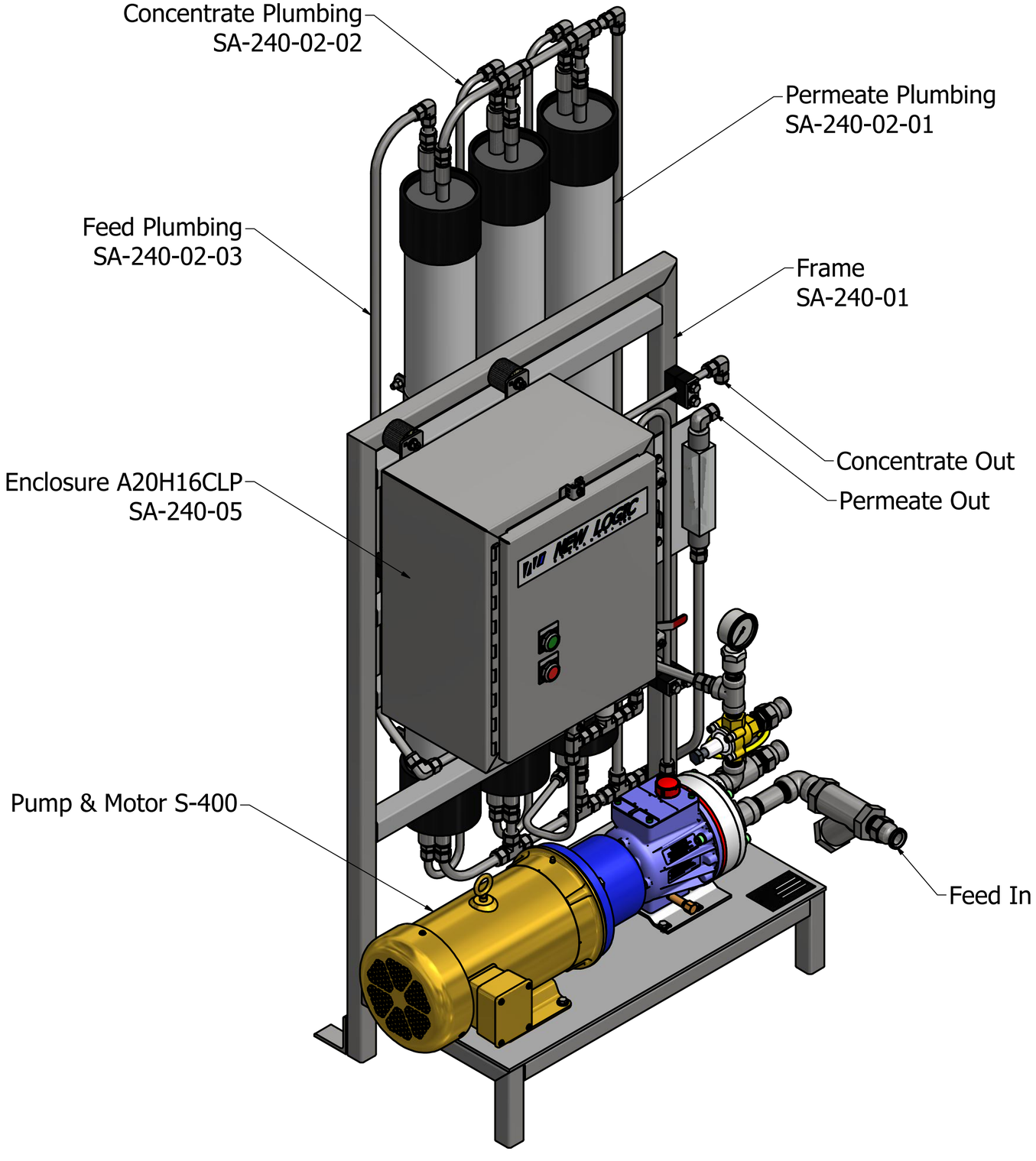

Supplied by Customer
Supplied by New Logic
Permeate to Destination Tank
MV-XX
1/2" ss Comp Fit
Permeate 1/2" 316SS Tubing
FI 202
PI 202
MV-202
MV-207 Drain
FI 201
PI 201
MV-201
Concentrate to Sludge Tank
Concentrate 1/2" 316SS Tubing
MV-206 Drain
New Logic CIP Tank
Hot Water In
CIP Clean in Place Tank 20 Gal
MV-205
Process Feed Water In
Feed Tank 50-250 Gal
To Drain
1" 316ss Camlock
100 Mesh Basket Strainer
SC FS P200
Vent Port
MV-200
M P200
BF-200
PI 200
P-200
MV-203 Drain
Feed Pump CRN 3-23SF Capable of: 14 gpm @ 500 psi 3 m3/h @ 3500 kPa 10HP/ 7.4KW 1.25" Victaulic Connections
Feed 1.5" 316SS sch 80 Pipe
P
F
C
MV-204 Drain
240/380/480 VAC Power for 3ph Motors (internal system transformer for 1pH controls)
~4 RLA
xxA @JBs
Motor, Transformer (Controls)
New Logic S-240 Spiral RO Skid
Confidential Material
Preliminary Only
Revision
NEW LOGIC RESEARCH
S-240 Spiral System
P&ID
August 2020
M. Ayers

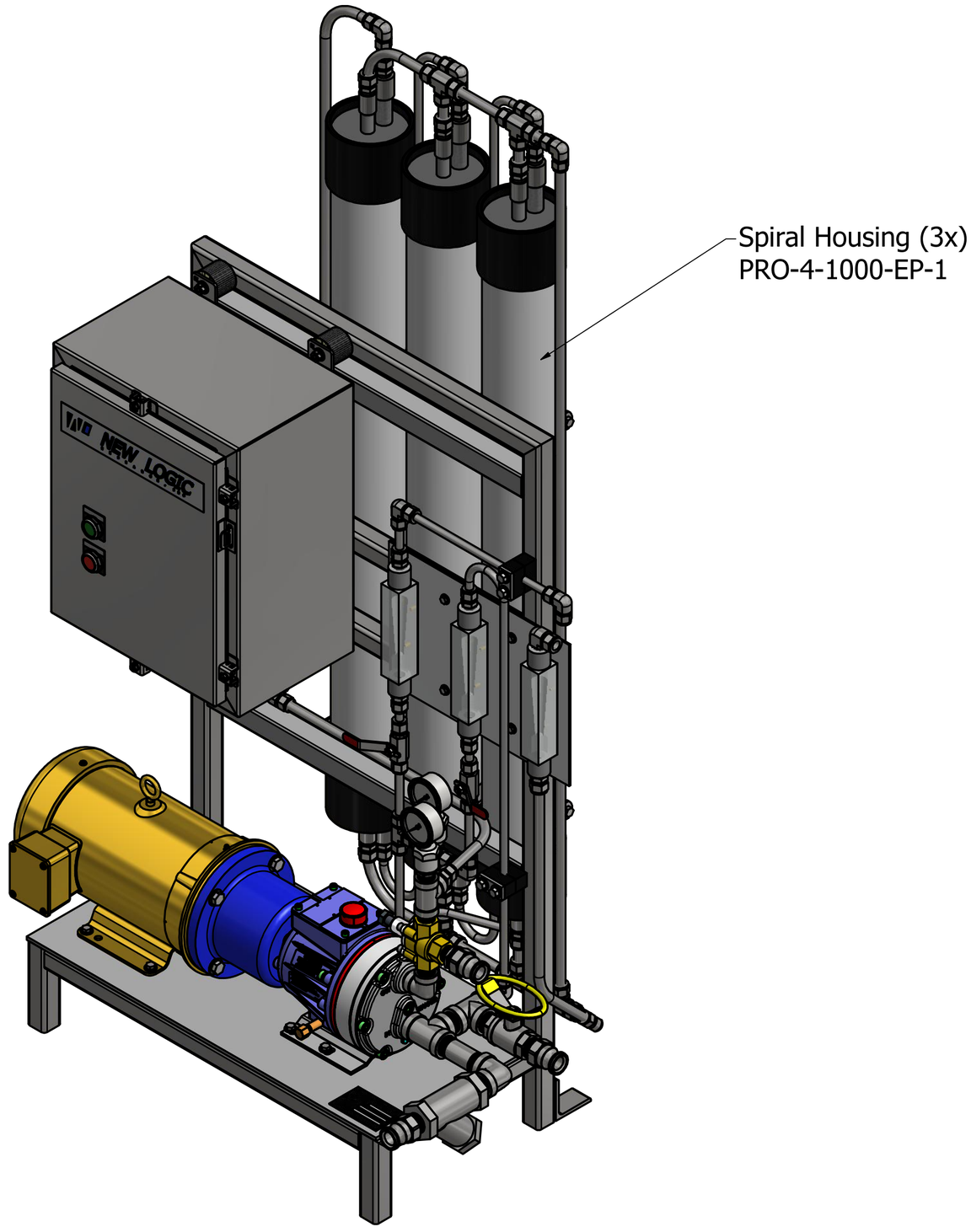
ISO TOP LEFT VIEW



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.

S-240 Spiral System

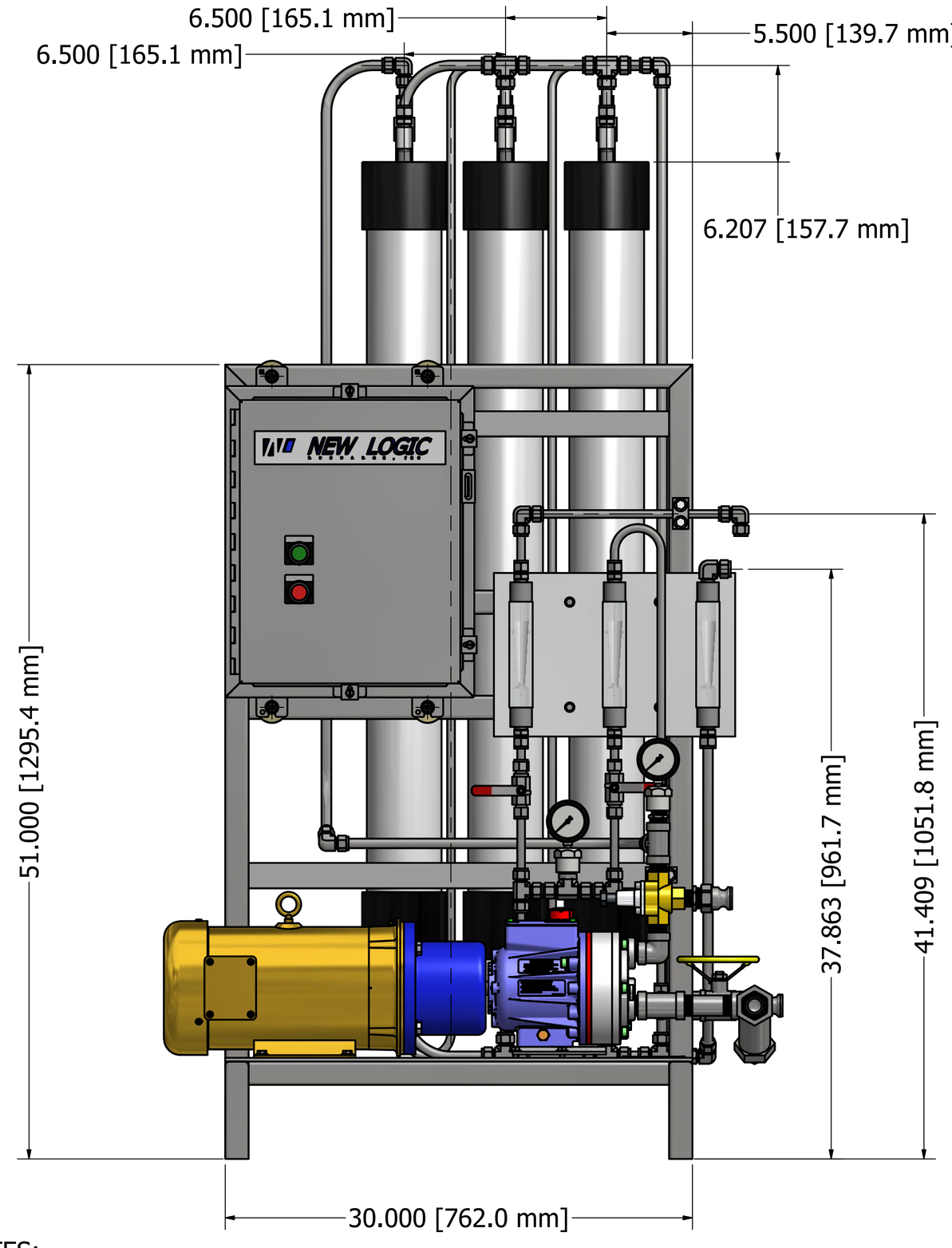
ISO TOP RIGHT VIEW



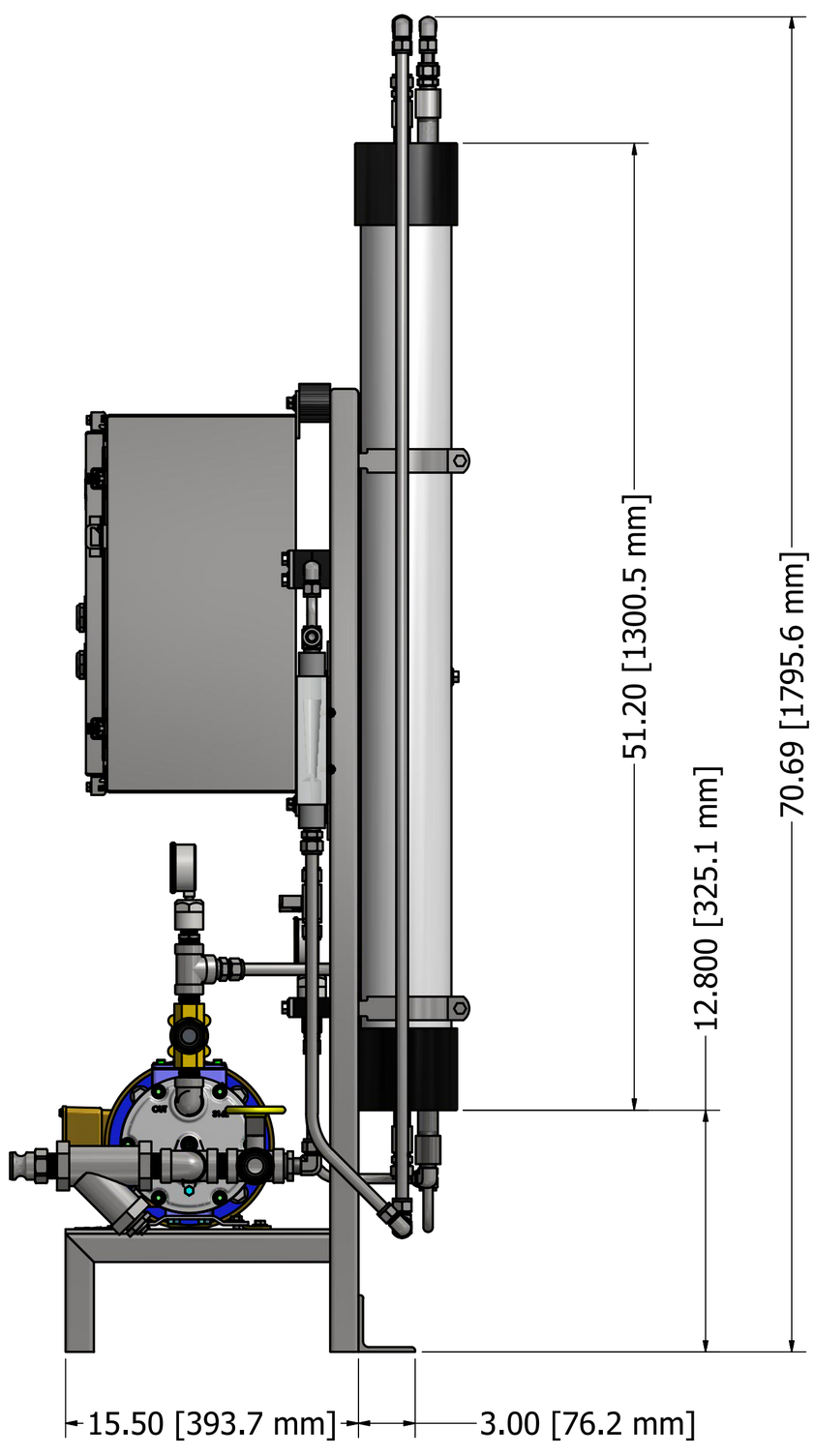
NOTES:
1. New Logic Research confidential material.
2. Slight differences between drawings and actual system may be attributed to New Logic Research Continuously evolving and improving its technology.
3. All dimensions are shown in inches [mm] and for reference only.

S-240 Spiral System

FRONT VIEW



RIGHT SIDE VIEW

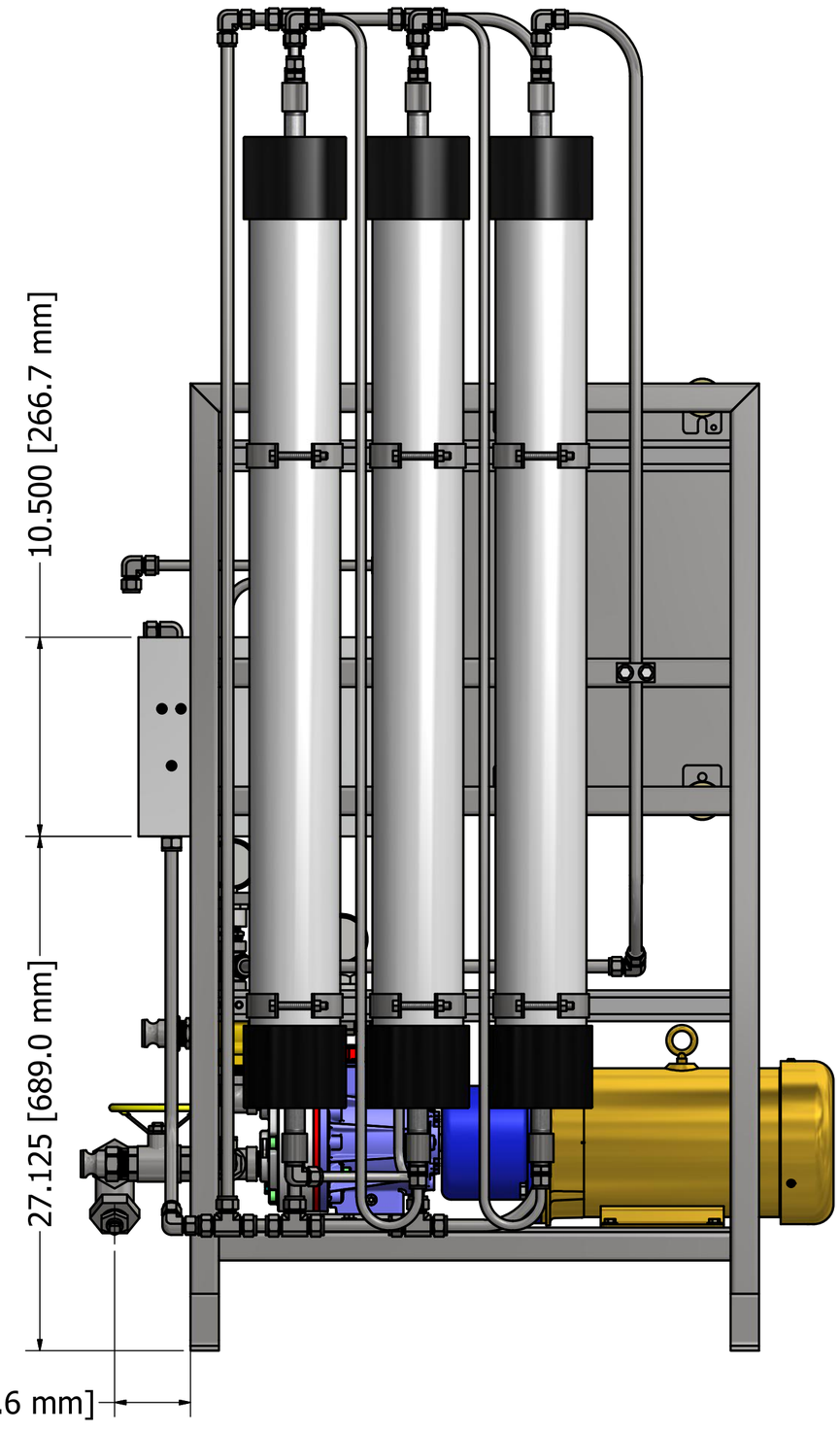


NOTES:

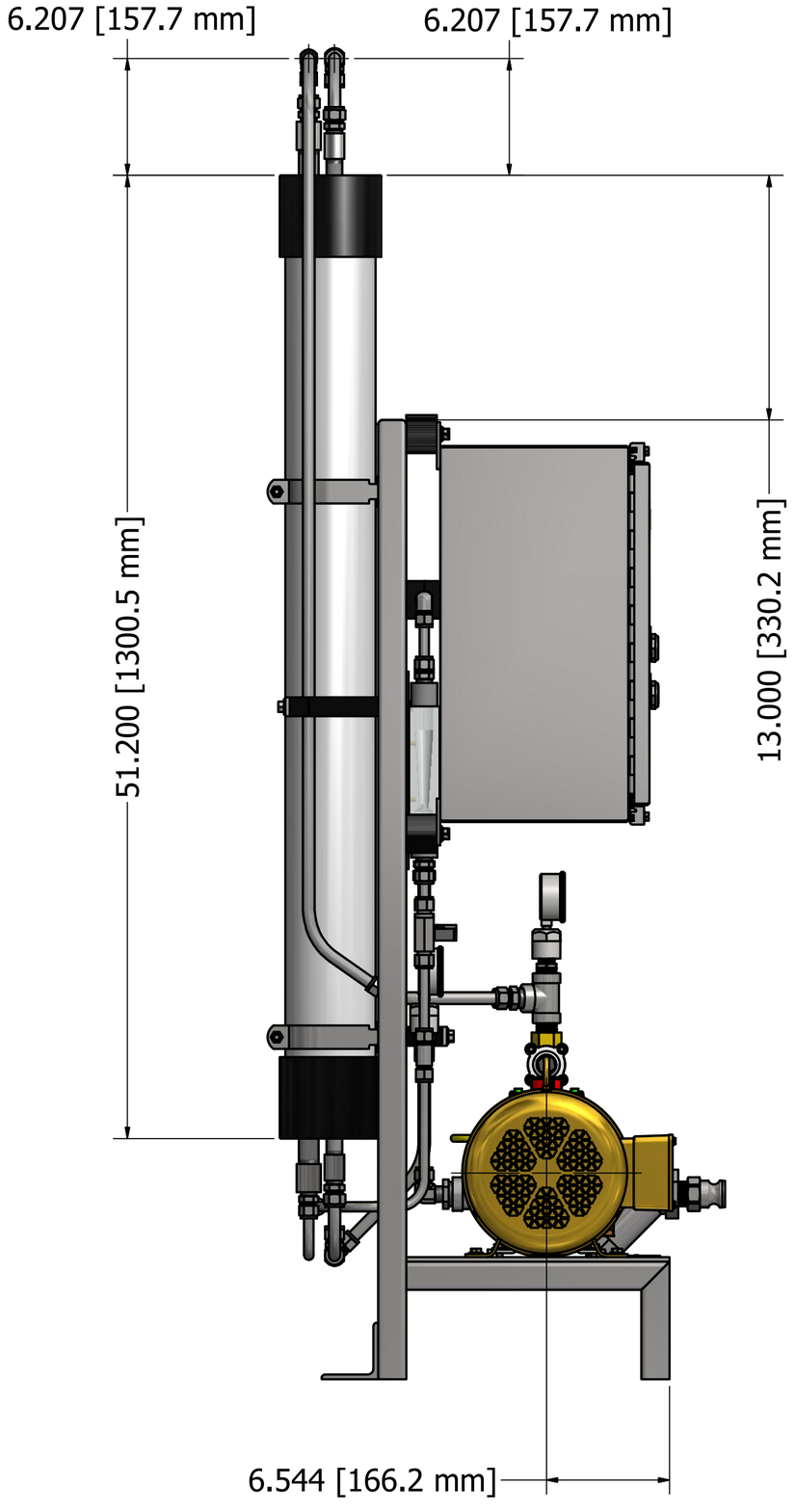
1. New Logic Research confidential material.
2. Slight differences between drawings and actual system may be attributed to New Logic Research Continuously evolving and improving its technology.
3. All dimensions are shown in inches [mm] and for reference only.

S-240 Spiral System

BACK VIEW



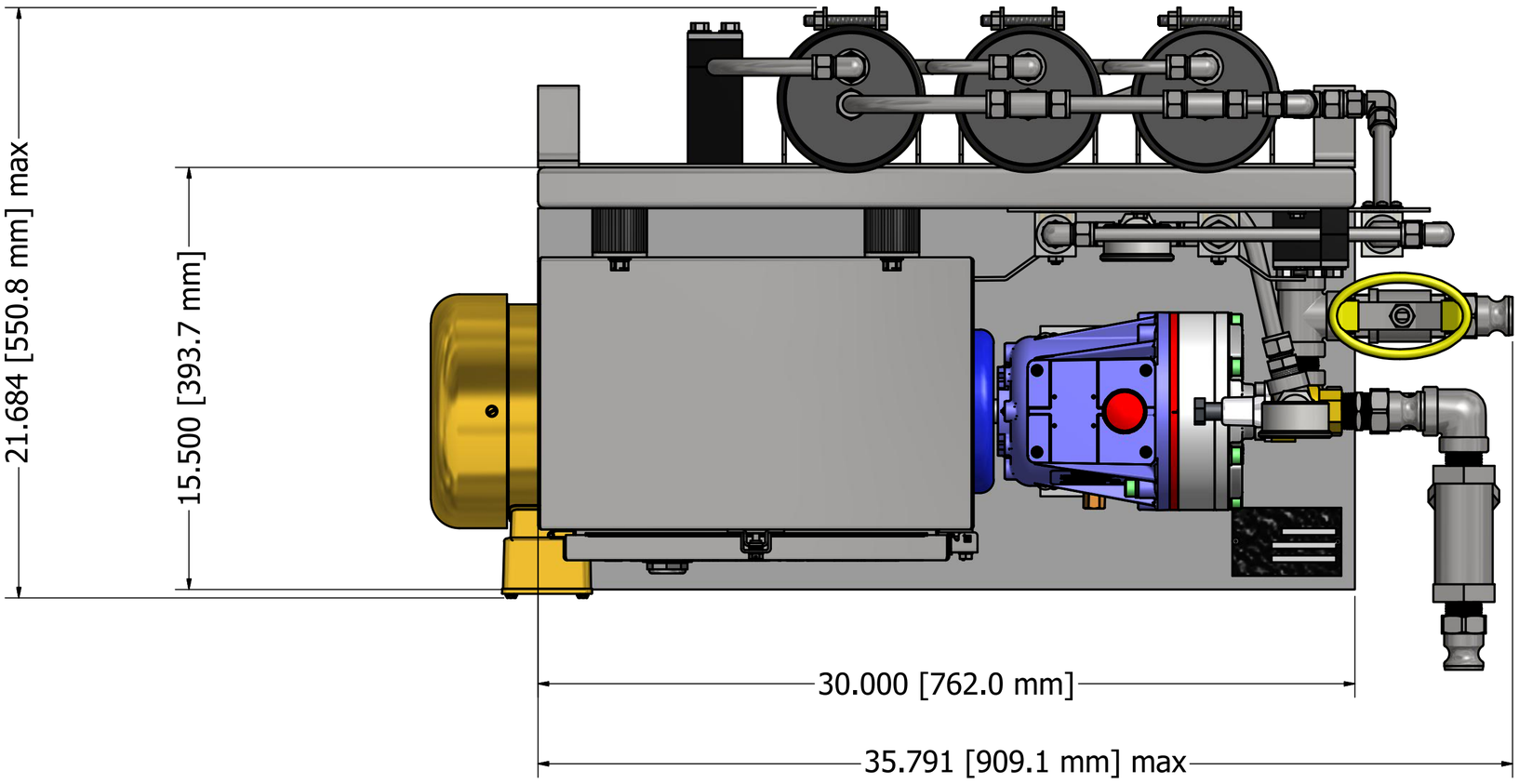
LEFT SIDE VIEW



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.

S-240 Spiral System

TOP VIEW



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.

S-240 Spiral System

SPIRAL SYSTEM COMPONENT SPECIFICATIONS
S-240 Spiral System

1] Filter Pack

Membrane:	MF, UF, NF, RO (depends on application and pilot testing)
Membrane Surface Area:	240sf (22.3m2) (3ea 4"Dia x 40"L)
Estimated Production:	0.83-1.66 gpm (at 5-10GFD)
Maximum Operating Temperature:	120 ºF (49ºC) (Options for up to 80ºC)
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
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:	15 gallon PolyPro 15" Dia x 19" Height

3] Pump Specifications:

Feed Pump Type:	Hydracell 10 GPM 316SS Horizontal Diaphram
Feed Pump Motor:	Baldor 5 HP 1720 rpm TEFC 460VAC, 3phase
Motor Speed Controller:	Danfoss 380-480VAC, NEMA 4 (or Equal)

4] Pre-Screen Basket Strainer:

Filter Housing Type:	Y-Strainer 316 SS
Basket Strainer:	100 Mesh 316 SS
Capacity:	20 GPM, 0.25 sqft
Elastomers (Seals):	EPDM (option for Viton)

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:	*Hoffman* NEMA 4 Powdercoat Finish 10x12x6
Switches, Relays, & Contactors:	Allen Bradley 120/220 Volt
Pressure Sensors:	Wika Gauges
Mag Flow Tube and Transmitter:	Cole Parmer Rotameter
Bag Filter DP Sensors:	None
Temperature Sensor:	Wika Gauges
Conductivity Meter:	None
pH Meter:	None
Level Sensors:	None
Solenoid Valves	None
VFD Communication:	None

Utility Summary									New Logic Research
VSEP System									
AIR COMPRESSOR SIZING INFORMATION									
	# of Valves		In^3 Air/stroke		Strokes/day		CFM		M3/hr
Spiral RO									
No Pneumatic Actuators									
System Air Totals					**System Totals**		**0.00**		**0**
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.									
HOT WATER SIZING INFORMATION									
	# /Day		Temp degC		Gallons/Day		GPM		M3/hr
Spiral RO									
Cleanings	0.14		45-50		21.7		0.02		0.00342076
Rinse filter pack at 5.0gpm fc	0.14		45-50		3.5		0.00		0.00055174
Intermittent need of additional cleaning or flush	0.033		45-50		0.825		0.00		0.00013005
System Water Totals					**System Totals**		**0.02**		**0.00410255**
Supply chlorine free water at >300 uS/cm									
Supply water at 45degC and 10gpm (2.3m3/hr)									
Supply water at 15 psi to 2" Hot Water flange connection on Combo Skid									
ELECTRICAL LOAD PANEL SIZING INFORMATION									
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	
				400V		460V			
Spiral RO Feed Pump	1	6.2		9.6		8.0		15	
Totals	**1**								
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	
				220V		120V			
Main Control Enclosures	1	NA		10		8.0		20	
New Logic provided transformer inside the control enclosure will provide 1 phase power for switches from 3 phase cord.									
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.									