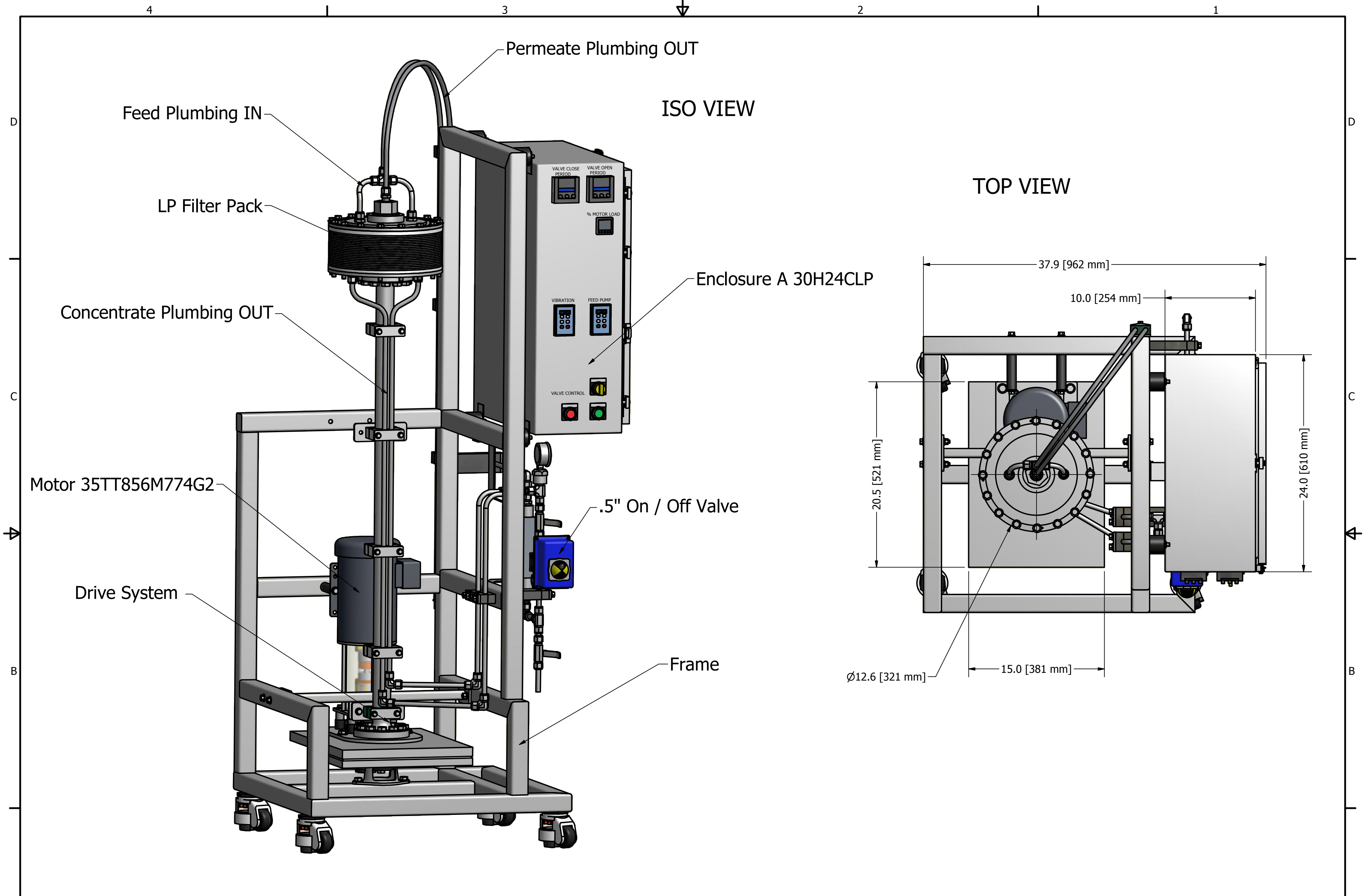


Confidential
Material

Tolerance Unless Otherwise Indicated x/x = +/- 1/16" .x = +/- .100 .xx = +/- .030 .xxx = +/- .005 x/4 = +/- .30	Revision 	
		LP System P&ID Sheet One
	Scale: 1:18	LP-010
	9/10/13	M Ayers

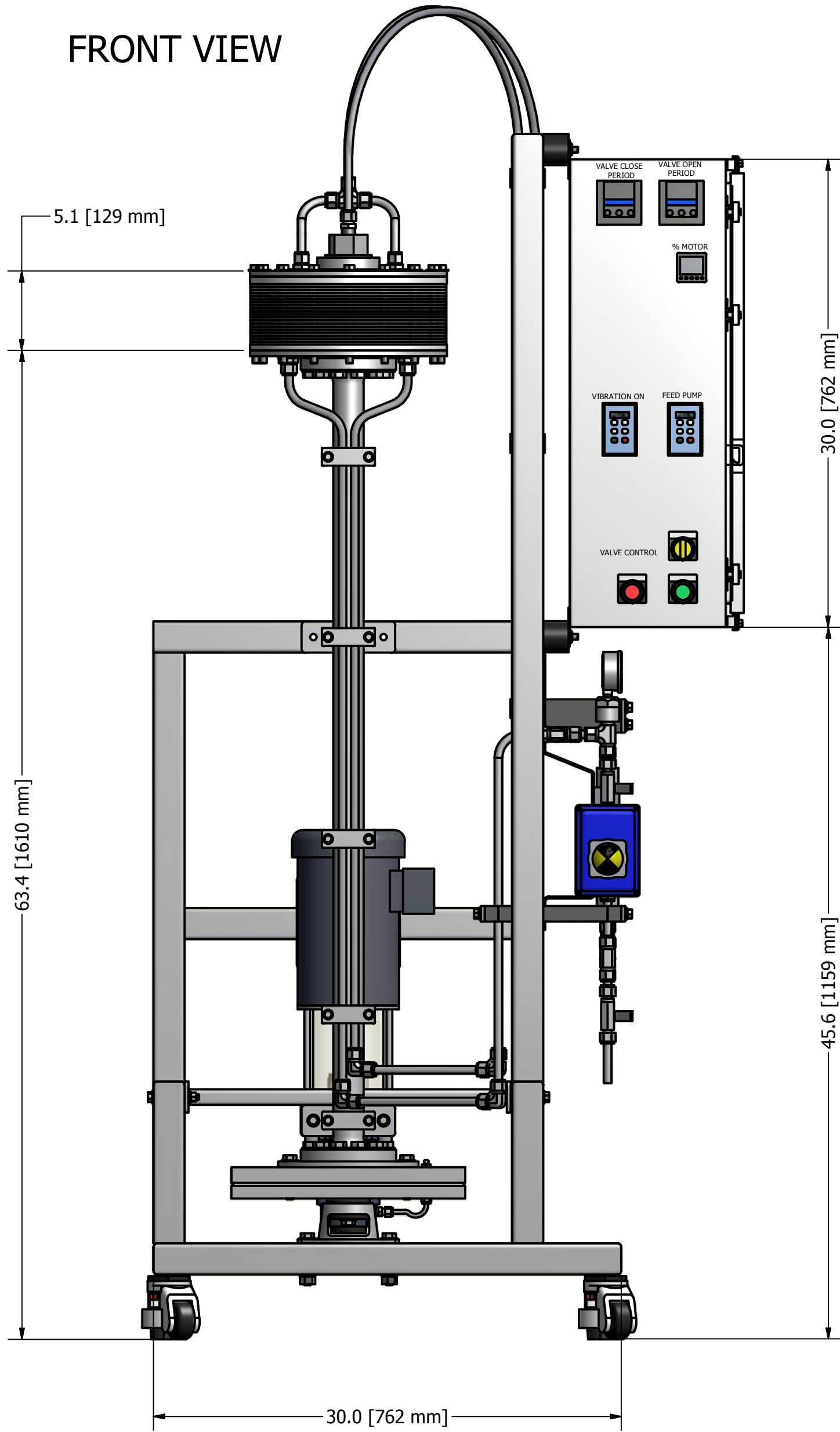


NOTES:

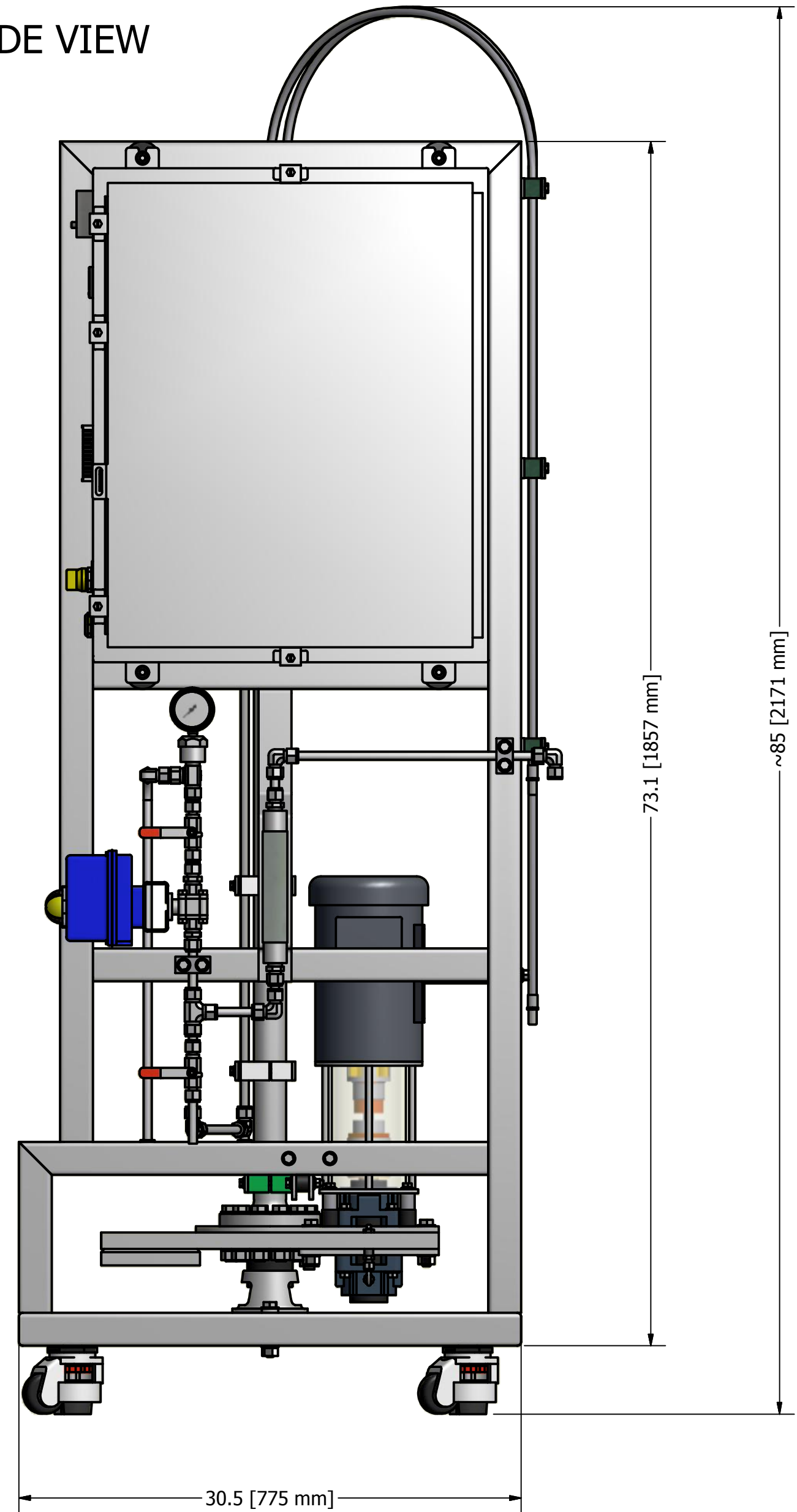
1. New Logic Research confidential material.
2. All dimensions are shown in inches [mm]& for references only.
3. Slight differences between drawings and actual system might be attributed to New Logic Research continuously evolving and improving its technology.

Series LP VSEP System (60 Hz)

FRONT VIEW



SIDE VIEW



NOTES:

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

Series LP VSEP System (60 Hz)



NEW LOGIC RESEARCH

2527 Aviation Way, Minden NV 89423 USA • 775.783.7600 • www.vsep.com

Pilot Testing

VSEP L/P Machine Specifications 10/10/2013

Current operating Manual: L/P Version 7.0

Operating Conditions:

Equipment Rating: Nema 4, Indoor-Outdoor protected from sunlight and rain.
Operating Ambient Temperature Limits: 0-40°C
Storage Temperature: 0-40°C
Relative Humidity: 90% or less, non-condensing
Elevation: 3300 ft. (1006 M), without derating.

Filter Pack:

Membrane Area: L Mode: 0.48 sq. ft. P Mode with 38 membranes: 16.9 sq. ft.
Hold Up Volume: P Mode: Approx. 0.8 Gallons (3.0 liters)
Maximum Operating pressure: 600 psi (1000psi option available with system modifications)
Maximum Shear Rate: 150,000 Inverse Seconds
Wetted Materials: 316 Stainless Steel, Polypropylene, EPDM or Viton

Vibration System:

Drive Bearings: MORSE SEALMASTER RFB2102
Vibration Motor: BALDOR VM3555, 2HP 3450RPM, 208-240 VAC 3 phase
Vibration Motor Control: AC Tech (ESV402N02TXB)

Feed System:

Pump: HYDRA-CELL (M3/D10) 3.0/10 GPM @ 1725 RPM
Motor: BALDOR M3615T 266784Y696H1, 3/5HP 1725 RPM, 208-240 VAC 3 phase
Pump Bypass Valve: WANNER C22AABBSSEF (Custom material available upon request)

Instruments:

Pressure Gauges: 1 on Process Outlet and 1 on Process Inlet WIKA 233.54
Flow Meter (Acrylic Tube Indicator): COLE-PARMER Model 32445-58
Timers: ATC Long Range Model 365 Timer
Control Valve at Process Outlet: FloTite 320SSFFFL13-1/4"
Actuator: Indelac R Series Nema 4 Model R4BF03-2

Electrical Power Requirements: Standard Unit (With a 3HP Feed Pump Motor)

(Note: A 5HP Pump can be used but generally does not operate at more than 3 HP in this System)

Standard Voltage: 208 - 240 VAC 3 phase 'wye' Power
Transformer Options Upon Request: 380 - 480 VAC, or 580-615 VAC
Normal Full Load Operating Current: 9 - 12 amps (9 - 20 amps for a 5HP Feed Pump Motor)
Power Cord: 8 Ft long with a NEMA L15-30P plug
Required Receptacle: NEMA L15-30, 30 amp circuit recommended

System Size and Weight:

Overall Dimensions: 38" w x 32" d x 81" h
System Weight: 750lbs. (341 kg) approximate

***Custom systems (CSA, CE, Class I Div II, AS3000, etc...) are available on request**

VSEP... the leader in membrane separation technology Copyright New Logic Research, All Rights Reserved

Utility Summary							New Logic Research			
VSEP System										
CLEANING WATER CONSUMPTION										
(Use Hot Water for cleaning water >300 uS/cm)										
	# /Day		Temp degC		Gallons/Day		GPM		M3/hr	
VSEP										
Cleanings	1		50-60		80		0.06		0.0126	
Intermittent need of additional cleaning or flush of filter pack	0.25		50-60		100		0.07		0.0158	
System Water Totals							System Totals		0.13	0.0284
VSEP Supply Water at 50-60degC and ~7gpm										
VSEP Supply water at 20 psi to open CIP tank										
ELECTRICAL CONSUMPTION										
Based on 240VAC, 3 phase, 60hz Input										
FLA = Full Load Amps = Full Load Drive Output x 1.15x										
RLA = Running Load Amps = FLA x .65x										
VSEP 240 VAC Motors										
	# Motors	HP /ea	kW /ea	Amps /ea	FLA /ea	RLA /ea	Total kW	Total FLA	Total RLA	
VSEP Drive Motor	1	2	1.5	5.3	6.1	4.0	1.5	6.1	4.0	
VSEP Feed Pump	1	5	3.8	15.0	17.3	11.2	3.8	17.3	11.2	
Totals	2						5.3	23.3	15.2	
<p>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</p>										