

X1 – Series Reverse Osmosis Systems

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Systems are designed as a cost-effective solution to the growing demand of tap and well water for applications in food and beverage, pharmaceutical, healthcare, microelectronics, power, chemicals and agriculture.



X1 – 6480
Industrial Reverse Osmosis System

With models ranging from 22 to 132 gallons per minute (32,000 to 190,000 gallons per day), the smart, clean utilitarian industrial design of the X1 – Series allows for convenient installation, user-friendly operation and ease of maintenance. These skid-mounted, package systems are pre-plumbed and pre-wired on a powder-coated steel frame complete with a pre-programmed computer controller, TDS probes and panel-mounted pressure gauges and flow instrumentation, allowing for straight forward system monitoring and control. The X1 – Series Systems utilize energy-efficient ultra low energy membranes with 10% greater membrane surface area than standard 8-inch reverse osmosis elements, thus producing more pure water.

Know Higher Standards™

Standard Features

- S – 150 Pre-Programmed Computer Controller*
- S – 200 Pre-Programmed Computer Controller with VFD (Variable Frequency Drive)**
- 8 – inch Low Energy Membrane Elements (440 SF)
- 8 – inch Fiberglass Membrane Housings with Stainless Steel Side Ports (300 psi)
- 5 – Micron Sediment Cartridge Filters
- Multi-Cartridge 304L Stainless Steel Cartridge Housing
- Permeate and Concentrate Rotameters*
- Permeate and Concentrate Digital Paddlewheel Sensors**
- Pre- and Post- Filter Pressure Gauges
- Pump Pressure and Concentrate Pressure Gauges



X1 – 5280
Industrial Reverse Osmosis System

- Feed and Permeate TDS
- Composite Feed Solenoid Valve*
- Motorized Feed Valve**
- Stainless Steel Globe Throttling Valves*
- Low and High Pressure Shut-Off Switches
- Efficient Vertical Stainless Steel Multi-Stage Pump
- Powder Coated Carbon Steel Frame
- Sch80 PVC Piping
- Clean-In-Place (CIP) Ports with Valves
- Permeate Sample Valves
- Chemical Feed Ports
- Chemical Feed Power Outlet
- 220VAC 3PH 60HZ

Options and Upgrades

- S – 200 Computer Controller***
- VFD***
- Programmable Logic Controller (PLC) with Touch Screen
- Permeate and Concentrate Digital Paddlewheel Sensors***
- PVC Feed Motorized Ball Valve***
- Concentrate Recycle Loop with Flow Meter
- PVC Permeate Divert Motorized Ball Valve
- Permeate Flush
- pH Sensor
- ORP Sensor
- Chemical Feed System
- Clean-In-Place Skid-Mounted System
- Voltage Options: 220VAC 3PH 50Hz, 380VAC 3PH 50Hz, 460VAC 3PH 60Hz

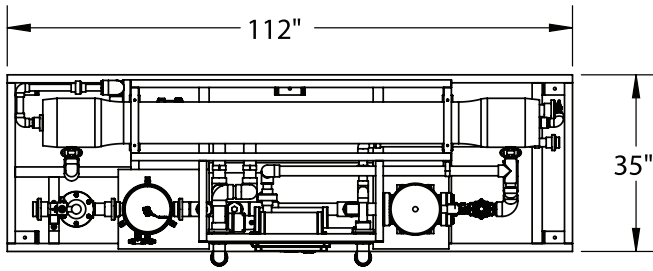
AXEON Naming Matrix

	X1	5	2	80
X-SERIES MODEL				
X1 Tap Water Model				
HOUSING QUANTITY DESIGNATION				
2 2 Vessels				
3 3 Vessels				
4 4 Vessels				
5 5 Vessels				
6 6 Vessels				
MEMBRANE QUANTITY PER HOUSING				
2 2 Membranes				
4 4 Membranes				
8.0 INCH MEMBRANE DIAMETER				

* Standard on Models X1 – 2280, X1 – 3280, X1 – 4280, X1 – 5280.

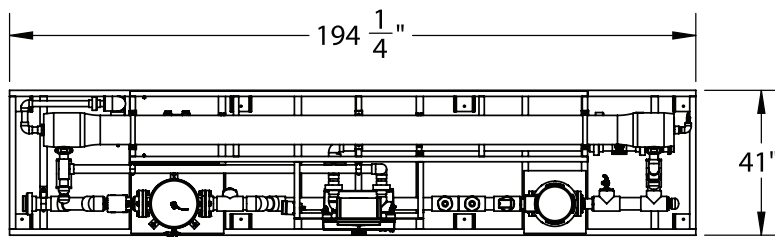
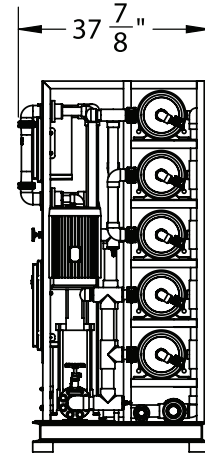
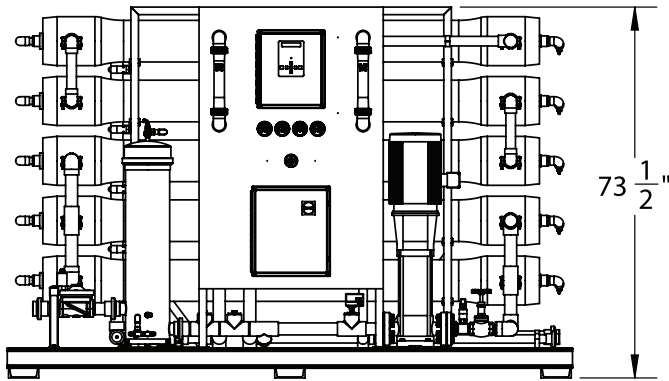
** Standard on Models X1 – 3480, X1 – 4480, X1 – 5480, X1 – 6480.

*** Option available for Models X1 – 2280, X1 – 3280, X1 – 4280, X1 – 5280. Standard on larger models.



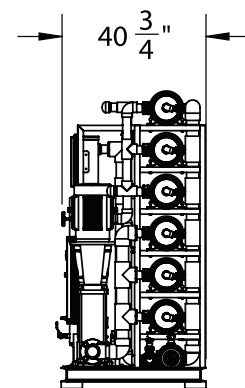
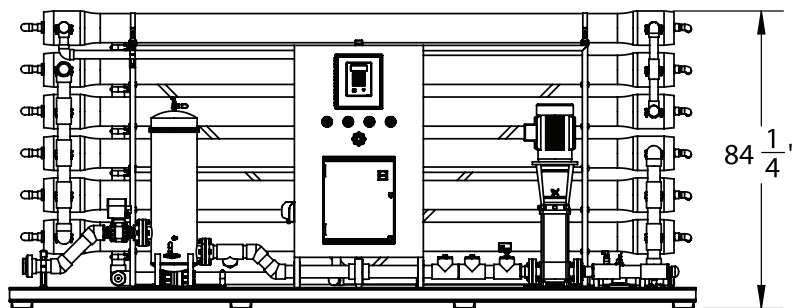
Notes:

1. All dimensions are given in inches.
2. Dimensions given for X1 – 2280 through X1 – 5280. (X1 – 5280 pictured)



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1. All dimensions are given in inches.
2. Dimensions given for X1 – 3480 through X1 – 6480. (X1 – 6480 pictured)



AXEON X1 – Series Reverse Osmosis Systems

Product Specifications								
Models	X1 – 2280	X1 – 3280	X1 – 4280	X1 – 5280	X1 – 3480	X1 – 4480	X1 – 5480	X1 – 6480
Design								
Configuration	Single Pass	Single Pass	Single Pass	Single Pass	Single Pass	Single Pass	Single Pass	Single Pass
Feedwater Source†	TDS <2,000 ppm	TDS <2,000 ppm	TDS <2,000 ppm	TDS <2,000 ppm	TDS <2,000 ppm	TDS <2,000 ppm	TDS <2,000 ppm	TDS <2,000 ppm
Standard Recovery %	61	70	75	75	75	75	75	75
Recovery with Concentrate Recycle gpm %	80	80	80	N/A	N/A	N/A	N/A	N/A
Rejection and Flow Rates †††								
Nominal Salt Rejection %	99	99	99	99	99	99	99	99
Permeate Flow Rate (gpm / lpm)	22.00 / 83.00	33.00 / 125.00	44.00 / 167.00	55.00 / 208.00	66.00 / 250.00	88.00 / 333.00	110.00 / 416.00	132.00 / 500.00
Minimum Concentrate Flow Rate (gpm / lpm)	14 / 53	14 / 53	14.6 / 55	18.3 / 69	22 / 83	29 / 111	36.6 / 139	44 / 167
Connections								
Feed Connection (in)	2 FNPT	2 FNPT	2 FNPT	2 FNPT	3 FNPT	3 FNPT	3 FNPT	3 FNPT
Permeate Connection (in)	1 1/2 FNPT	1 1/2 FNPT	2 FNPT	2 FNPT	2 1/2 FNPT	2 1/2 FNPT	3 FNPT	3 FNPT
Concentrate Connection (in)	1 1/4 FNPT	1 1/4 FNPT	1 1/4 FNPT	1 1/4 FNPT	1 1/2 FNPT	1 1/2 FNPT	2 FNPT	2 FNPT
Clean-in-Place Port (in)	1 1/2 FNPT	1 1/2 FNPT	1 1/2 FNPT	1 1/2 FNPT	2 FNPT	2 FNPT	2 FNPT	2 FNPT
Chemical Feed Port (in)	1/2 NPT	1/2 NPT	1/2 NPT	1/2 NPT	1/2 NPT	1/2 NPT	1/2 NPT	1/2 NPT
Membranes								
Membrane(s) Per Vessel	2	2	2	2	4	4	4	4
Membrane Quantity	4	6	8	10	12	16	20	24
Membrane Size	8040	8040	8040	8040	8040	8040	8040	8040
Vessels								
Vessel Array	1:1	1:1:1	1:1:1:1	2:1:1:1	2:1	2:1:1	3:1:1	3:2:1
Vessel Quantity	2	3	4	5	3	4	5	6
Pumps								
Pump Type	Vertical Multi-Stage Centrifugal Pump	Vertical Multi-Stage Centrifugal Pump	Vertical Multi-Stage Centrifugal Pump	Vertical Multi-Stage Centrifugal Pump	Vertical Multi-Stage Centrifugal Pump	Vertical Multi-Stage Centrifugal Pump	Vertical Multi-Stage Centrifugal Pump	Vertical Multi-Stage Centrifugal Pump
Motor HP / KW	10 / 7.5	10 / 7.5	10 / 7.5	10 / 7.5	15 / 11	15 / 11	20 / 11	20 / 11
System Electrical								
Standard Voltage + Amp Draw	208V – 230V, 60Hz, 3PH, 28A – 27A**	208V – 230V, 60Hz, 3PH, 28A – 27A**	208V – 230V, 60Hz, 3PH, 28A – 27A**	208V – 230V, 60Hz, 3PH, 28A – 27A**	208V – 230V, 60Hz, 3PH, 40.5A – 37A**	208V – 230V, 60Hz, 3PH, 40.5A – 37A**	208V – 230V, 60Hz, 3PH, 49A**	208V – 230V, 60Hz, 3PH, 49A**
Systems Dimensions								
Approximate Dimensions* L x W x H (in / cm)	112 x 35 x 74 / 284 x 89 x 188	112 x 35 x 74 / 284 x 89 x 188	112 x 35 x 74 / 284 x 89 x 188	112 x 35 x 74 / 284 x 89 x 188	194 x 41 x 78 / 493 x 104 x 198	194 x 41 x 78 / 493 x 104 x 198	194 x 41 x 78 / 493 x 104 x 198	194 x 41 x 84 / 493 x 104 x 213
Approximate Weight (lbs / kg)	1,285 / 583	1,435 / 651	1,585 / 719	1,735 / 787	2,005 / 910	2,275 / 1,032	2,645 / 1,200	2,910 / 1,320

Test Parameters: 550 TDS Filtered (5 – Micron), Dechlorinated, Municipal Feedwater, 65 psi / 4.50 bar Feed Pressure, 100 psi / 6.9 bar Operating Pressure 77°F / 25°C, Recovery as stated, 7.0 pH. Data taken after 60 minutes of operation.

* Does not include operating space requirements.

** Varies with motor manufacturer.

Operating Limits††

Design Temperature (°F / °C)	77 / 25	Maximum SDI Rating (SDI)	< 3
Maximum Feed Temperature (°F / °C)	85 / 29	Maximum Free Chlorine (ppm)	0
Minimum Feed Temperature (°F / °C)	40 / 4	Maximum Hardness (gpg)	0
Maximum Ambient Temperature (°F / °C)	120 / 49	Maximum pH (Continuous)	11
Minimum Ambient Temperature (°F / °C)	40 / 4	Minimum pH (Continuous)	2
Maximum Feed Pressure (psi / bar)	85 / 6	Maximum pH (Cleaning 30 Minutes)	13
Minimum Feed Pressure (psi / bar)	45 / 3	Minimum pH (Cleaning 30 Minutes)	1
Maximum Piping Pressure (psi / bar)	200 / 18.7	Maximum Turbidity (NTU)	< 1

† Low temperatures and feedwater quality, such as high TDS levels will significantly affect the systems production capabilities and performance. Computer projections must be run for individual applications which do not meet or exceed minimum and maximum operating limits for such conditions.

†† System pressure is variable due to water conditions. Permeate flow will increase at a higher temperature and will decrease at a lower temperature.

††† Product flow and maximum recovery rates are based on feedwater conditions as stated above. Do not exceed recommended permeate flow.

