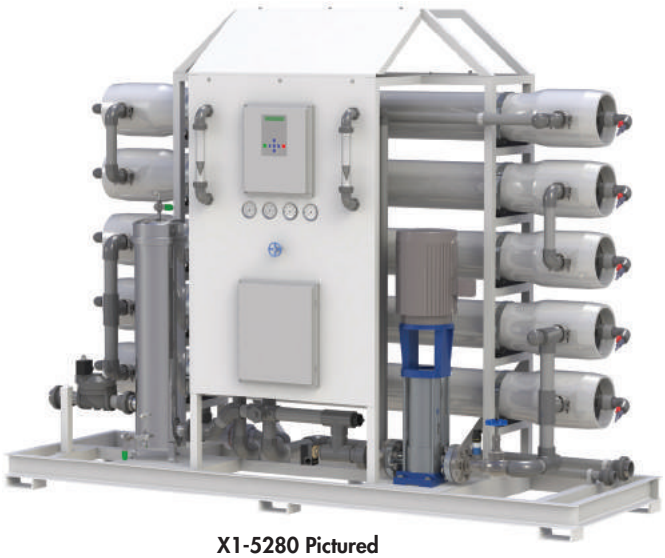
AXEON

X1-Series Reverse Osmosis System

X1-Series Reverse Osmosis Systems are designed as a cost-effective solution to the growing demand of tap water and well water for applications in food and beverage, pharmaceutical, healthcare, microelectronics, power, chemicals, and agriculture.



X1-5280 Pictured

With models ranging from 20 to 125 gallons per minute (30,000 to 180,000 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 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 RO elements, thus producing more pure water.

Standard Features

- S-150 Pre-Programmed Computer Controller*
- S-200 Pre-Programmed Computer Controller w/VFD**
- 8-inch Ultra Low Energy Elements with 440 SF Membrane
- Fiberglass Membrane Housings with Stainless Steel Side Ports
- 5 Micron Sediment Cartridge Filters
- Multi-Cartridge Stainless Steel Filter Cartridge Housing
- Permeate and Concentrate Rotometers*
- Permeate and Concentrate Digital Paddle**
- Pre- and Post-Filter Pressure Gauges
- Pump Pressure and Concentrate Pressure Gauges
- Feed and Permeate TDS
- Composite Feed Solenoid Valve*
- Motorized Feed Valve**
- Stainless Steel Globe Throttling Valves*
- Low and High Pressure Shut-Off Switches
- Vertical Stainless Steel Multistage Pump
- Powder Coated Carbon Steel Frame
- Sch80 PVC Piping
- Chemical Feed Port
- Chemical Feed Power Outlet
- Permeate Sample Ports
- 220VAC 3PH 60 HZ

Engineered Water Treatment Solutions

AXEON®
WATER TECHNOLOGIES

Options and Upgrades

- S-200 Computer Controller***
- VFD***
- Programmable Logic Controller (PLC) w/Touch Screen
- Permeate and Concentrate Digital Paddle Wheels***
- Motorized Feed Valve***
- Concentrate Recycle Loop w/Flow Meter
- Permeate Divert
- Permeate Flush
- pH and/or ORP Sensor
- Chemical Feed System
- Clean-In-Place Skid-Mounted System
- Clean-in-Place (CIP) Valves

*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.

AXEON's Naming Matrix

X1	3	2	80

X-SERIES MODE L

X1	Tap Water Mode l

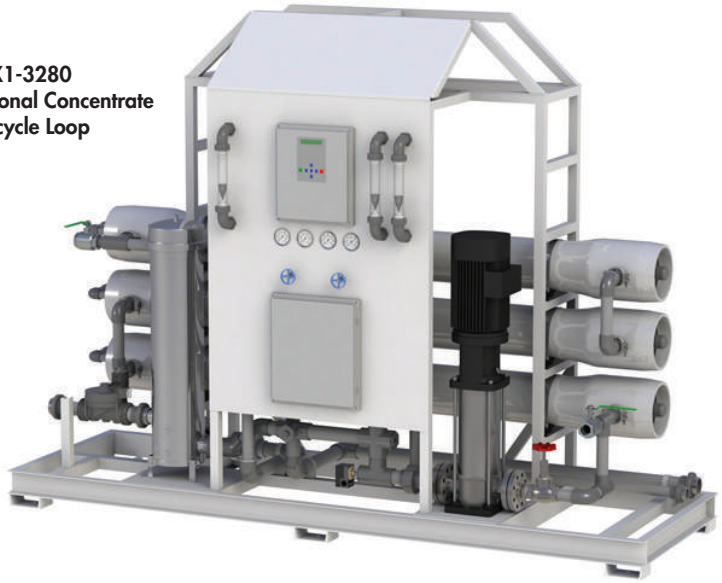
HOUSING QUANTITY DESIGNATION

2	2 Vessels
3	3 Vessels
4	4 Vessels
5	5 Vessels
6	6 Vessels

MEMBRANE QUANTITY PER H OUSING

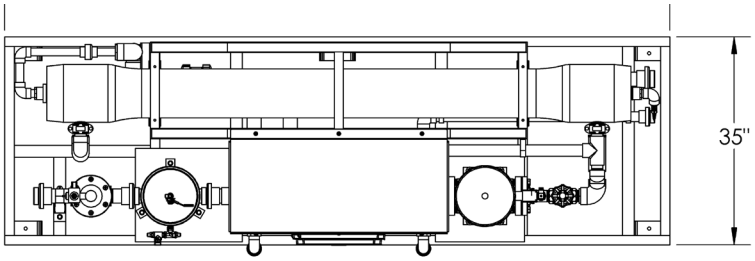
2	2 Membran es
4	4 Membra nes

8.0 INCH MEMBRANE DIAMETER

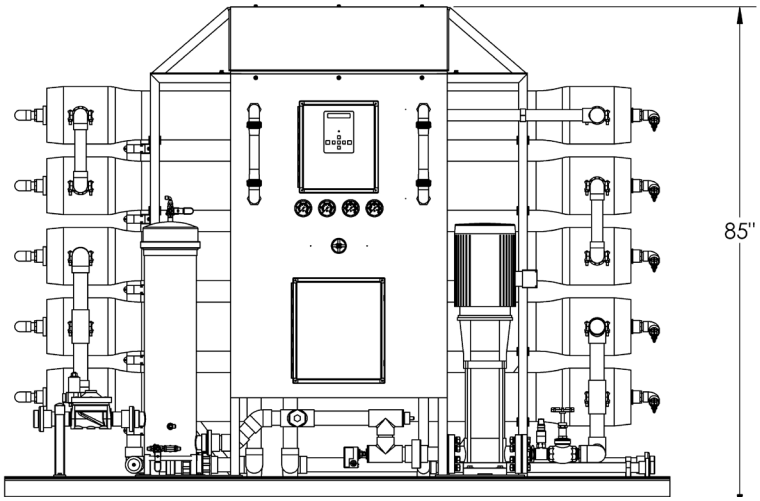


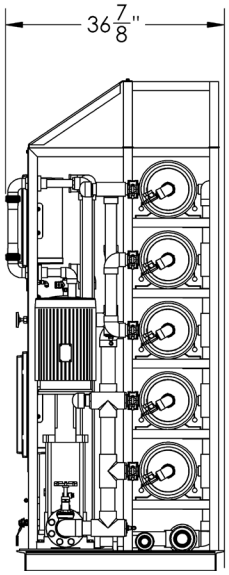
X1-3280
With Optional Concentrate Recycle Loop

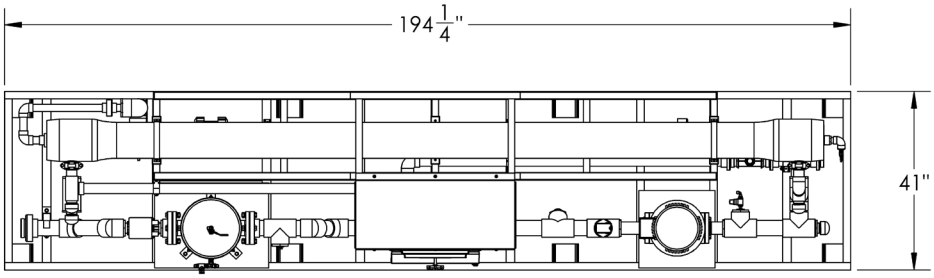
X1-6480 Pictured



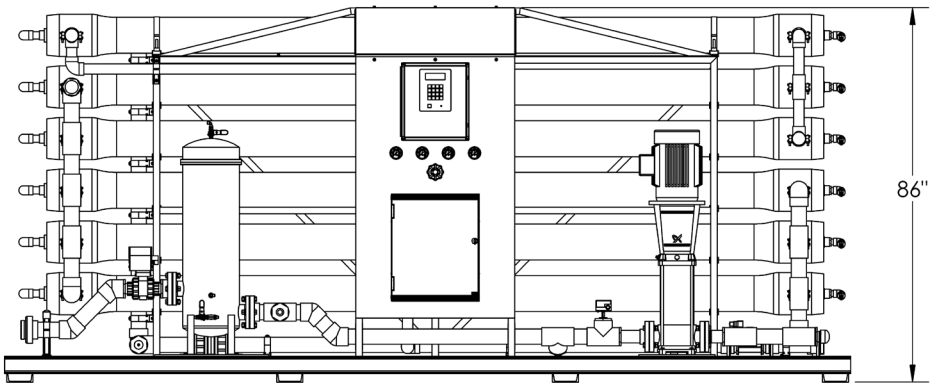
Notes:
1. All dimensions are given in inches
2. Dimensions given for X1-2280 through X1-5280. (X1-5280 pictured)

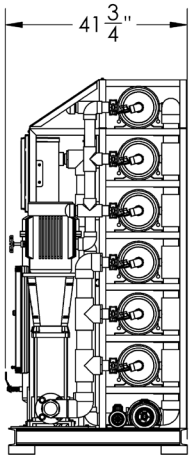






Notes:
1. All dimensions are given in inches
2. Dimensions given for X1-3480 through X1-6480. (X1-6480 pictured)





AXEON

X1-Series Reverse Osmosis System

Models	X1-2280	X1-3280	X1-4280	X1-5280	X1-3480	X1-4480	X1-5480	X1-6480
Design								
System Capacity* gpd (m^3/day)	28,800 (109)	43,200 (163)	57,600 (218)	72,000 (273)	86,400 (327)	115,200 (436)	144,000 (545)	180,000 (681)
Configuration*	Single Pass	Single Pass	Single Pass	Single Pass	Single Pass	Single Pass	Single Pass	Single Pass
Feed Water Source** (ppm)	TDS < 2,000	TDS < 2,000	TDS < 2,000	TDS < 2,000	TDS < 2,000	TDS < 2,000	TDS < 2,000	TDS < 2,000
Standard Recovery Rate***	60%	70%	75%	70%	75%	75%	75%	75%
Recovery with Concentrate Recycle gpm **	80%	80%	80%	80%	80%	80%	80%	80%
Rejection and Flow Rates								
Nominal Salt Rejection	99.3%	99.3%	99.3%	99.3%	99.3%	99.3%	99.3%	99.3%
Permeate Flow* gpm (lpm)	20 (75.6)	30 (113.4)	40 (151.2)	50 (189.0)	60 (226.8)	80 (302.4)	100 (378.0)	125 (472.5)
Minimum Concentrate Flow (gpm (lpm)	14 (53)	14 (53)	14 (53)	14 (53)	14 (53)	14 (53)	14 (53)	14 (53)
Connections								
Feed (in)	2 FNPT	2 FNPT	2 FNPT	2 FNPT	3 FNPT	3 FNPT	3 FNPT	3 FNPT
Permeate (in)	1½ FNPT	1½ FNPT	2 FNPT	2 FNPT	2 FNPT	2 FNPT	3 FNPT	3 FNPT
Concentrate (in)	1¼ FNPT	1¼ FNPT	1¼ FNPT	1¼ FNPT	1½ FNPT	1½ FNPT	2 FNPT	2 FNPT
Clean-in-Place Port (in)	1½ FNPT	1½ FNPT	1½ FNPT	1½ FNPT	2 FNPT	2 FNPT	2 FNPT	2 FNPT
Chemical Feed Port (in)	½ NPT	½ NPT	½ NPT	½ NPT	½ NPT	½ NPT	½ NPT	½ NPT
Membranes								
Membranes 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 Multistage Centrifugal Pump	Vertical Multistage Centrifugal Pump	Vertical Multistage Centrifugal Pump	Vertical Multistage Centrifugal Pump	Vertical Multistage Centrifugal Pump	Vertical Multistage Centrifugal Pump	Vertical Multistage Centrifugal Pump	Vertical Multistage 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)
Electrical								
Standard Voltage ***	220V, 60Hz, 3Ph, 27A	220V, 60Hz, 3Ph, 27A	220V, 60Hz, 3Ph, 27A	220V, 60Hz, 3Ph, 19.5A	220V, 60Hz, 3Ph, 37.5A	220V, 60Hz, 3Ph, 37.5A	220V, 60Hz, 3Ph, 46A	220V, 60Hz, 3Ph, 46A
System Dimensions								
L x W x H (in / cm)	112 x 35 x 85 (284 x 89 x 216)	112 x 35 x 85 (284 x 89 x 216)	112 x 35 x 85 (284 x 89 x 216)	112 x 35 x 85 (284 x 89 x 216)	194 x 41 x 86 (493 x 104 x 218)	194 x 41 x 86 (493 x 104 x 218)	194 x 41 x 86 (493 x 104 x 218	194 x 41 x 86 (493 x 104 x 218
Weight (lb / 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)

*Product flow and recovery rates are based on feedwater conditions of 2000 ppm TDS at 77°F. Treatment ability of the RO system is dependent on feed water quality. Higher TDS and/or lower temperatures will reduce product flow. An AXEON Applications Engineer can rate the units for these other feed water conditions.
**A concentrate recycle loop is available as an option to increase recovery to 75 to 80% (if suitable to feed water conditions).
***Other voltage options are available.

Operating Limits

Design Temperature (°F / °C)*	77 / 25	**Maximum Turbidity (NTU)^**	0
Maximum Feed Temperature (°F / °C)*	85 / 29	**Maximum Free Chlorine (ppm)**	2,000
Minimum Feed Temperature (°F / °C)*	50 / 10	**Maximum TDS (ppm)****	3,000
Maximum Ambient Temperature (°F / °C)	120 / 48.9	**Maximum Hardness (gpg)^^**	0
Minimum Ambient Temperature (°F / °C)	40 / 4.4	**Maximum pH (Continuous)**	11
Maximum Feed Pressure (psi / bar)	85 / 5.9	**Minimum pH (Continuous)**	3
Minimum Feed Pressure (psi / bar)	45 / 3.1	**Maximum pH (Cleaning 30 Min.)**	12
Maximum Piping Pressure (psi / bar)	230 / 16	**Minimum pH (Cleaning 30 Min.)**	2
Maximum SDI Rating (SDI)	<3	**Maximum Turbidity (NTU) ^^**	Up to 1

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^^Appropriate filtration must be installed in order to prevent premature membrane fouling.
^^^Scale prevention measures must be taken to prolong membrane life.

AXEON® WATER TECHNOLOGIES

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