

# Beverage Reverse Osmosis



## DESIGN FEATURES

- Hygienic, stainless steel construction protects product integrity in food & beverage manufacturing environments.
- Designed for high water utilization and low operating cost for an improved bottom line.
- Make water sooner. Fast delivery + plug & play design.
- Fully-automated operation includes Allen-Bradley PLC and easy to use touchscreen HMI for seamless plant integration and simple operation and process monitoring.
- Quiet, efficient, and reliable vertical multi-stage pumps with energy saving VFDs and flow based control.
- Sampling ports are convenient, easy to access, and useful for quality control and troubleshooting.
- Ergonomic design features ground-level pressure vessels designed to reduce working from heights.
- Food-safe construction includes NSF/FDA components assembled in the USA at Aqua-Chem's ISO-9001 registered facility.
- Available UL List or CE Mark.
- Clean in Place performed as a system or by stage.
- Options for Hot Water Sanitization (HWS)
- Aftermarket parts and service support via Aqua-Care™ including options for remote diagnostics monitoring.



## THE AQUA-CHEM ADVANTAGE

Aqua-Chem's range of Beverage Reverse Osmosis (RO) Systems are the result of decades of experience designing water systems for production of carbonated and non-carbonated beverages, juices, bottled water and food processes. Standardized beverage RO systems provide a fast, cost effective, and easy to integrate option for new plants and additional production lines. Customize your system with a variety of membrane or standard options or consult with our experts for an engineered solution to optimize recovery and reduce waste water, meet unique quality specifications, or fit into challenging environments. Water difficulties are made easy with an Aqua-Chem solutions designed around your unique quality, business, and sustainability goals. Rest assured that smart equipment design, robust components, and comprehensive service support will reduce downtime and improve your bottom line.

Rev. 08302022

Model	RO-100	RO-200	RO-300	RO-400	RO-75	RO-150	RO-250	RO-350
Design Capacity	Single Pass	Single Pass	Single Pass	Single Pass	Double Pass	Double Pass	Double Pass	Double Pass
Nominal Product Flow Range (gpm)	60-110	150-205	220-315	315-415	75-100	150-185	220-285	315-375
RO Design Recovery (%)	80	80	80	80	80	80	80	80
w/Conc. Recovery Option (%)	up to 90	up to 90	up to 90	up to 90	up to 90	up to 90	up to 90	up to 90
Nominal Salt Rejection (%)	up to 99	up to 99	up to 99	up to 99	up to 99	up to 99	up to 99	up to 99
Feed Water Temperature (°F)	77	77	77	77	77	77	77	77
<b>Operating Parameters**</b>								
Operating Temperature (°F)	50 to 77	50 to 77	50 to 77	50 to 77	50 to 77	50 to 77	50 to 77	50 to 77
Max. Operating Pressure (psi)	300	300	300	300	300	300	300	300
Operating pH Range (pH units)	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7
Nominal Feed Water Flow (gpm)	125	250	375	500	113	167	375	500
<b>Membrane Elements- Energy Savings</b>								
Membrane Surface Area (ft <sup>2</sup> )	400	400	400	400	400	400	400	400
Vessel Length (membrane/vessel)	6	6	6	6	6	6	6	6
Vessel Array (Pass 1)	2:1:1	4:2:1	6:3:2	8:4:2	2:1:1	4:2:1	6:3:2	8:4:2
Membrane Quantity (Pass 1)	24	42	66	84	24	42	66	84
Vessel Array (Pass 2)	N/A	N/A	N/A	N/A	2:1	3:1	5:2	6:3
Membrane Quantity (Pass 2)	N/A	N/A	N/A	N/A	18	24	42	54
<b>Pumps- Vertical Multistage Centrifugal Pumps</b>								
Motor (HP) (Pass 1)	25 HP	50 HP	75 HP	100 HP	25 HP	50 HP	75 HP	100 HP
Motor (HP) (Pass 2)	N/A	N/A	N/A	N/A	25 HP	50 HP	75 HP	100 HP
<b>Terminal Point Connections</b>								
Feed	3" Tri-Clamp	4" Tri-Clamp	6" Tri-Clamp	6" Tri-Clamp	3" Tri-Clamp	3" Tri-Clamp	6" Tri-Clamp	6" Tri-Clamp
Concentrate	1.5" Tri-Clamp	2" Tri-Clamp	2" Tri-Clamp	3" Tri-Clamp	1.5" Tri-Clamp	2" Tri-Clamp	2" Tri-Clamp	3" Tri-Clamp
Permeate	3" Tri-Clamp	3" Tri-Clamp	4" Tri-Clamp	6" Tri-Clamp	2" Tri-Clamp	3" Tri-Clamp	4" Tri-Clamp	6" Tri-Clamp
<b>Electrical</b>								
High Voltage (Pumps and Motors)***	480V, 60Hz, 3Ph							
Low Voltage (Control Panel)***	120V, 60Hz, 1Ph							
<b>System Dimensions</b>								
L x W x H (in)	268 x 53 x 72	268 x 53 x 74	268 x 84 x 72	268 x 90 x 87	288 x 75 x 72	268 x 80 x 74	288 x 96 x 74	288 x 108 x 87
Est. Dry Shipping Weight (lb)	3,860	5,000	7,900	8,350	4,350	5,120	9,000	9,815
Est. Wet Op. Weight (lb)	6,800	12,400	15,000	18,000	9,200	12,400	21,000	25,000

\*Treatment ability of the RO system is dependent on feed water quality.

\*\*\*Consult Aqua-Chem Inc. for other voltage options.

\*\*Feed Water Source Requirements:

- System is based on municipal feed water
- Temperature: 50 to 77°F
- Pressure: 30 to 80 psig
- NTU <1

- SDI <3
- TOC <3 ppm
- Free Chlorine <0.1 ppm
- Iron/ Manganese <0.1 ppm
- TDS <500 ppm
- Oil & Grease <0.1 ppm

- Silica <10 ppm
- Aluminum <0.5 ppm
- CO<sub>2</sub> <12 PPM

Higher TDS and/or lower temperatures will reduce product flow. An Aqua-Chem Applications Engineer can rate the units for other feed water conditions.