



VIPER Brackish Reverse Osmosis Systems



The image may not exactly resemble end product. For illustrative purposes only.

Product Overview

Brackish water or briny water is water that has more salinity than fresh water, but not as much as seawater. It may result from mixing of seawater with fresh water, as in estuaries, or it may occur in brackish fossil aquifers. Certain human activities can produce brackish water, in particular, civil engineering projects such as dikes and the flooding of coastal marshland to produce brackish water pools for freshwater prawn farming. Brackish water is also the primary waste product of the salinity gradient power process. Because brackish water is hostile to the growth of most terrestrial plant species, without appropriate management it is damaging to the environment.

VIPER Series Commercial Reverse Osmosis Systems for Brackish Water are designed for overall superior performance, high recovery rates, minimal energy consumption and offer great savings with low maintenance and operation costs.

VIPER Series Commercial Reverse Osmosis Systems for Brackish Water feature a new, innovative and expandable design which utilizes fewer fittings and connections. These systems feature only the highest quality components, including a programmable computer controller with many built-in standard features, a stainless steel booster pump for high performance and corrosion resistance, low energy membranes and stainless steel membrane housings for enhanced performance and durability.

VIPER Series Commercial Reverse Osmosis Systems for Brackish Water have been engineered for capacities ranging from 1500—9000 gallons per day.

Benefits

- Fully Equipped and Customizable
- Components Easily Accessible
- Pre-Plumbed, Wired, and Assembled
- Individually Tested and Preserved
- Low Operating and Maintenance Costs
- Easy Maintenance and Servicing
- 1-Year Limited Warranty
- Made in the U.S.A.

Standard Features*

- S-150 Computer Controller
 - LCD Backlit Display
 - Pre-Treatment Lockout
 - Tank Level Input
 - Low-Pressure Monitoring Alarm
 - Dual TDS Monitoring
 - Feed Flush
- Crystal Quest Permeate and Concentrate Flow Meters
- Pre-Filter 0-100 psi Panel Mounted Glycerin Filled Gauges
- Crystal Quest Pump Discharge and Concentrate 0-600 psi Panel Mounted Glycerin Filled Gauges
- Crystal Quest 5 Micron Sediment Filter
- Crystal Quest by Pentek Single O-Ring Heavy-Duty Filter Housing
- LCLE Low Energy Membrane Elements
- Crystal Quest Stainless Steel Membrane Housings-300 psi
- Permeate Sample Ports
- Vertical Multistage Stainless Steel Booster Pump
- Feed Solenoid Valve with Electronic Bypass
- Feed Low-Pressure Switch
- Pump High-Pressure Switch
- Clean-in-place (CIP) Ports
- High-Pressure Stainless Steel Tubing and Fittings

Options and Upgrades

- S150 Expander Board
- LCHR Membrane Elements\Pump Pressure Relief Valve
- Blending Valve
- Permeate Divert Valve
- Chemical Pump Outlet
- pH Controller
- ORP Controller

** Design and specifications are subject to change without notice.*

Array Specifications

Model	Vessel Array	Vessel Size	Vessel Quantity	Membrane Size	Membrane Quantity
CQE-BW-01961	1	4040	1	4040	1
CQE-BW-01962	1:1	4040	2	4040	2
CQE-BW-01963	1:1:1	4040	3	4040	3
CQE-BW-01964	1:1:1:1	4040	4	4040	4
CQE-BW-01965	1:1:1:1:1	4040	5	4040	5
CQE-BW-01966	1:1:1:1:1:1	4040	6	4040	6

Systems Specifications

CQE-	BW-01961	BW-01962	BW-01963	BW-01964	BW-01965	BW-01966
System Capacity gpd/lpd	1,500/5,678	3,000/11,356	4,500/17,0354	6,000/22,713	7,500/28,391	9,000/34,069
Configuration	Single Pass	Single Pass	Single Pass	Single Pass	Single Pass	Single Pass
Feed Water Source***	TDS < 10,000 ppm	TDS < 10,000 ppm	TDS < 10,000 ppm	TDS < 10,000 ppm	TDS < 10,000 ppm	TDS < 10,000 ppm
Standard Recovery Rate	15%	20%	25%	36%	36%	36%

Rejection and Flow Rates

CQE-	BW-01961	BW-01962	BW-01963	BW-01964	BW-01965	BW-01966
Nominal Salt Rejection %	99.2%	99.2%	99.2%	99.2%	99.2%	99.2%
Permeate Flow* gpm (lpm)	1.04 (3.94)	2.08 (7.89)	3.13 (11.83)	4.17 (15.77)	5.21 (19.72)	6.25 (23.66)
Minimum Feed Flow gpm (lpm)	4.04 (15.3)	5.08 (19.2)	6.13 (23.2)	7.17 (27.1)	8.21 (31.1)	9.25 (35.0)
Maximum Feed Flow gpm (lpm)	14.00 (53.0)	14.00 (53.0)	14.00 (53.0)	14.00 (53.0)	14.00 (53.0)	14.00 (53.0)

Connections

CQE-	BW-01961	BW-01962	BW-01963	BW-01964	BW-01965	BW-01966
Feed Inch	1 FNPT	1 FNPT	1 FNPT	1 FNPT	1 FNPT	1 FNPT
Permeate Inch	3/4 FNPT	3/4 FNPT	3/4 FNPT	1 FNPT	1 FNPT	1 FNPT
CIP Inch	3/4 FNPT	3/4 FNPT	3/4 FNPT	3/4 FNPT	3/4 FNPT	3/4 FNPT
Concentrate Inch	3/4 FNPT	3/4 FNPT	3/4 FNPT	1 FNPT	1 FNPT	1 FNPT

Membranes

CQE-	BW-01961	BW-01962	BW-01963	BW-01964	BW-01965	BW-01966
Membrane Per Vessel	1	1	1	1	1	1
Membrane Quantity	1	2	3	4	5	6
Membrane Size	4040	4040	4040	4040	4040	4040

Vessels

CQE-	BW-01961	BW-01962	BW-01963	BW-01964	BW-01965	BW-01966
Vessel Array	1	1:1	1:1:1	1:1:1:1	1:1:1:1:1	1:1:1:1:1:1
Vessel Quantity	1	2	3	4	5	6

Pump

CQE-	BW-01961	BW-01962	BW-01963	BW-01964	BW-01965	BW-01966
Pump Type	Multistage	Multistage	Multistage	Multistage	Multistage	Multistage
Motor Hp	3	3	3	5	5	5
Rpm @60 (50 Hz)	3450	3450	3450	3450	3450	3450

Electric

CQE-	BW-01961	BW-01962	BW-01963	BW-01964	BW-01965	BW-01966
Standard Voltage	220V, 60Hz, 1Ph, 14.6A	220V, 60Hz, 1Ph, 14.6A	220V, 60Hz, 1Ph, 14.6A	220V, 60Hz, 1Ph, 14.6A	220V, 60Hz, 1Ph, 14.6A	220V, 60Hz, 1Ph, 14.6A
Voltage Options	220V, 50Hz, 1Ph,17.4A, 220V, 50Hz, 3Ph, 10.6A 220V, 60Hz, 3Ph,9A 460V, 60Hz, 3Ph, 5A	220V, 50Hz, 1Ph,17.4A, 220V, 50Hz, 3Ph, 10.6A 220V, 60Hz, 3Ph,9A 460V, 60Hz, 3Ph, 5A	220V, 50Hz, 1Ph,17.4A, 220V, 50Hz, 3Ph, 10.6A 220V, 60Hz, 3Ph,9A 460V, 60Hz, 3Ph, 5A	220V, 50Hz, 3Ph,16.1A4 60V,60Hz, 3Ph,7A	220V, 50Hz, 3Ph,16.1A4 60V,60Hz, 3Ph,7A	220V, 50Hz, 3Ph,16.1A4 60V,60Hz, 3Ph,7A

Overall System Dimensions

CQE-	BW-01961	BW-01962	BW-01963	BW-01964	BW-01965	BW-01966
L X W X H Inch (Cm)	27 x 26 x 61 (69 x 66 x 155)	27 x 26 x 61 (69 x 66 x 155)	30 x 26 x 61 (75 x 66 x 155)	32 x 26 x 61 (80 x 66 x 155)	32 x 26 x 61 (80 x 66 x 155)	37 x 26 x 61 (94 x 66 x 155)
Weight Lb. (Kg)	560 (250)	590 (270)	620 (280)	650 (300)	680 (310)	700 (320)