

# SEAWATER CONTAINERIZED DESALINATION SERIES ARKQUA®



Fig1: ARKQUA® model ARKQUA150

## DESCRIPTION:

Single pass, single stage, three pressure vessels total. Each pressure vessel contains 3 membranes in series for a total of 9. System produces 150 m<sup>3</sup>/day (39500 GPD or 27.41 gpm) of product water at 45% recovery.

## OPERATING PARAMETERS:

TDS	37,000-45,000 mg/l (as NaCl)
SDI 15	< 3.0
Temperature	25 to 35°C (77 to 95°F)
Recovery	40 to 45%
Nominal Rejection	>98%
Incoming Power	480/380Hz 60/50Hz
Power Consumption	10 - 14 Kw/hr/KGal

Note: Required 3bar (45psi) minimum customer supplied pressure to high pressure RO Feed Pump.  
Temperatures and high salinities will reduce system productivity

## Ref: ARKQUA150

### GENERAL FEATURES:

The ARKQUA® Series of containerized water treatment systems offers a fully integrated design for **industrial, commercial, and municipal applications**. Each unit is engineered for **independent operation** and includes the necessary pretreatment to ensure reliable performance under a wide range of operating conditions.

With its **modular design**, the ARKQUA® Series allows you to expand your plant capacity in line with your specific water requirements making it a scalable and future-ready solution.

Our standard configuration features a containerized system equipped with a duplex centrifugal pump, media filtration unit, and cartridge filter system, all arranged within a space-efficient layout for easy transport and rapid installation.

### COMPONENTS:

- Container designed for oversea transportation
- High Pressure Centrifugal RO Feed Pump w/ 400/460V 3 phase 50/60 Hz TEFC motor
- Energy Recovery Device Turbo Charger
- VFD for RO Pump & RO Feed Pump
- Digital flowmeters
- PLC
- Pressure switches: High and low
- Isolation butterfly valves
- Integral permeate flush and CIP system

### CONTROL AND POWER:

- PLC with Ethernet card and spare cards
- 6-inch HMI
- Remote start/stop & alarm capabilities
- Zero recovery flush on shutdown
- Power: 380/460V, 3 phase, 50/60Hz

## Features and Benefits



Fig2: ARKQUA® model ARKQUA500 rendering (similar system)

### MEMBRANE AND HOUSINGS:

- Multi Ported FRP pressure vessel design, 1000psi rated
- Spiral wound thin film composite membranes 98% nominal salt rejection.

### MATERIALS OF CONSTRUCTION:

<b>Power Distribution Panels</b>	NEMA 12
<b>Control Enclosure</b>	NEMA 12
<b>High pressure piping</b>	Super Duplex SS
<b>Low pressure piping</b>	PVC Sch 80
<b>High Pressure Tubing</b>	Par flex
<b>Low Pressure Tubing</b>	Polyethylene
<b>Pressure vessel rack</b>	Marine-anodize-Aluminum
<b>Multimedia Filters</b>	FRP
<b>PVC Sample Valves</b>	On each vessel, feed, permeate and reject

### INSTRUMENTS:

<b>Conductivity</b>	Permeate, Final product
<b>Flow meters digital</b>	Feed and permeate
<b>Pressure switch</b>	RO Feed and Discharge pump
<b>Pressure gauges</b>	Liquid filled for high and low pressures

### ALARMS:

- Low pump suction pressure
- High pump pressure discharge
- Permeate water quality
- Low permeate flow
- High permeate flow
- Low reject flow
- Low/high voltage
- Phase protection
- Pump motor overload
- High membrane feed pressure
- Chemical tank protection level
- Flush storage tank level protection

### OPTIONALS:

- ASME Code stamped pressure vessels
- Post-treatment degasifier
- 220 V, 3 Ph, 50 Hz fuse, A/C, Lighting kit
- pH meter and H2SO4 chemical feed
- NaOCl pretreatment chemical feed
- SBS chemical feed
- Installation and commissioning
- Supervision/services are available

### SYSTEM SPECS:

Model-SKU	PERFORMANCE						SPECIFICATIONS									
	Output		Product	Feed	Reject	Recovery	Membranes		Pump HP	Weight		Connections Size (Inch)			System Size	
	GPD	M3/D	GPM	GPM	GPM	%	Qty	Size		lbs.	Kgs.	Feed - Inlet	Product - Permeate	Reject - Brine	Inch	cm
<b>ARKQUA150</b>	39500	150.0	27.4	61.0	33.5	45	9	8"	40	10000	4547	2"	1-1/2"	1-1/2"	170 x 38 x 67	431x97x170