



# Puro™ RD Reverse Osmosis System



## Overview

**Enjoy the benefits of Reverse Osmosis water with the feature-rich, compact, and scalable Puro RD™ from Avidity Science.**

The Puro RD Reverse Osmosis system removes contaminants from water detrimental to animal health, protecting them and minimizing unforeseen variables that could compromise vital research. The cabinet style unit provides easy access to the onboard RO membranes, filtration, distribution pump, chemical injection and an integrated high-definition touchscreen controller - all within a compact footprint.

The efficient, modular design of the Puro RD allows for increased RO water production as facility demand increases. Adding additional RO membranes can boost production to 200 liters (52 gallons) of purified water hourly. Product water can be stored in the 100-liter tank within the Puro RD unit, or in an external tank tailored to facility requirements.

The Puro RD makes optional post-treatment by chemical injection easy. It analyzes user designated setpoints, automatically mixing water and post-treatment chemicals to the desired ratio. Localized system alarming is displayed on the touchscreen and can be adapted into the building automation system by dry contact for general alarm notifications.

## Features & Benefits

- Removes 99.99% of contaminants from incoming feed water.
- Scalable hourly water production rates of 50 liters (13 gal) to 200 liters (52 gal).
- Compact, all-in-one energy efficient system
- Cassette technology allows for more RO membrane modules to be added.
- Onboard 100-liter (26 gal) storage tank or external tank sized to meet facility demand.
- Large, 254 mm (10 in.) high resolution touchscreen with icon-based user interface.
- Password protected interface with settable levels of user access.
- Localized, onboard system alarming and compatibility options available with building automation systems.
- Consumable notification with onscreen user guides.
- Durable polyurethane access doors make the system easily accessible for maintenance.
- Locking casters provide ease of access and unit mobility.

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## Specifications

### UNIT SPECIFICATIONS

- 750 mm (W) x 600 mm (D) x 1852 mm (H)  
29.50 in (W) x 23.60 in (D) x 73.00 in (H)
- Working Depth: 800 mm (31.50 in)
- Net Weight: 182 kg (401 lbs)
- Operating Weight: 292 kg (644 lbs)
- Operating Temperature: 5°C to 35°C  
(41°F to 95°F)
- Optimal Ambient Temperature: < 25°C (77°F)
- Humidity: Maximum 80% for temperatures up to 31°C (88°F) decreasing to a minimum 50% at 40°C (104°F)
- Power: 115/230 VAC, 5/10 Amps, 1100 Watts

### Inlet (Feed) Water Requirements

- Inlet pressure: 2 bar at 380 liters/hr (29 psi @ 1.7 gpm) minimum to 5 bar (72 psi)
- Temperature: 5°C (41°F) minimum to 25°C (77°F) maximum

### SYSTEM CAPABILITIES

#### Makeup Flow Rate (Liters/hour at 20°C)

- Model Configuration is based on number of RO membrane cassettes
- Inorganics: > 98% rejection
- Particles (micron filter): <0.2
- Delivery Flow Rate: 7.5 lpm @ 1 Bar maximum; (2 gpm @ 14 psi.)
- Distribution Pressure: Variable speed pump up to 5 bar (72 psi)

### OPTIONAL EQUIPMENT

#### PRS9500 Pressure Reducing Station

#### Power

- Single phase, universal external wall plug
- 24 VDC operation uses < 50 Watts

### Pre-RO Filtration Options

- Sand Filter
- Carbon Filter
- Ultrafilter

### Post-RO Treatment Options

- Post Chemical Injection - Injection Station for Post Chlorination



Touchscreen Interface

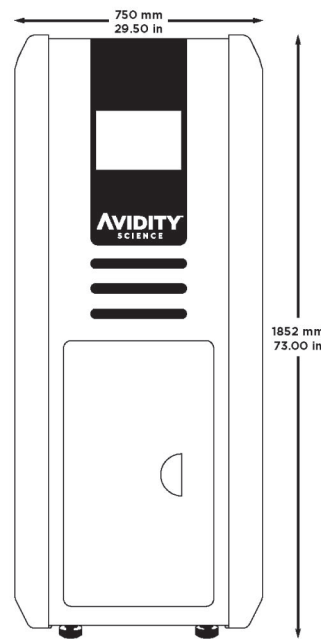


Easy Panel Access

## Operation

The Puro RD Reverse Osmosis System produces reverse osmosis water in volumes of 50, 100, or 200 liters per hour based on the number of RO membrane cassettes docked in the system. The *permeate* or product water generated by the system is stored in either the 100-liter storage tank inside the Puro RD cabinet, or in an optional external storage tank.

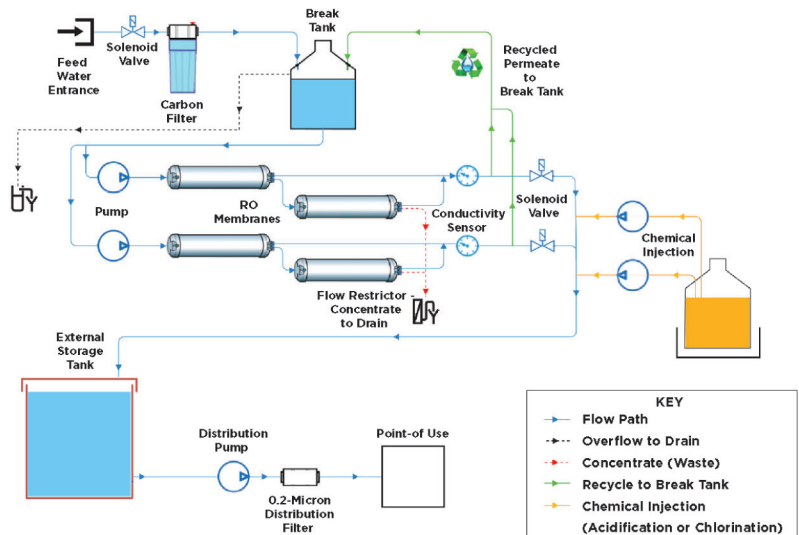
Feed water entering the system through a solenoid valve is passes through a 5-micron carbon filter to remove large waterborne particles and is stored



in a break tank. From here, the water is pressurized and passes through one or more RO membranes, which traps nearly all bacteria, viruses, heavy metals, organics, and nearly 98% of salts. The *concentrate*, or rejected water, is either sent to drain or recycled back to the break tank for another pass through the RO membranes, which conserves water.

The permeate is then analyzed via a conductivity sensor which detects whether the water meets prescribed limits or needs to be sent back to the break tank for reprocessing. Water meeting these limits is allowed to proceed on to post treatment chemical injection (if desired), or sent directly to the storage tank for distribution.

## Puro RD Purification Process



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