



# Proteus

## Key Data

Product Flow <sup>1</sup>	Up to 300 m <sup>3</sup> /h (1320GPM)
Maximum Operating Temp.	50 °C (122 °F)
Max Feed Turbidity	50 NTU (Brackish water)
Max Feed Turbidity	10 NTU (Seawater)

<sup>1</sup> Based on media loading and treatment process

## Overview

Ecolutia Services operates the world's most efficient fleet of mobile water and wastewater treatment systems. Industrial and municipal customers trust our 24-hour, 365 days per year service for emergency, short-term or long-term use. We solve critical water issues, such as overcoming water scarcity, plant start-ups, through to providing total water provision.

The Proteus family is a range of mobile multi-application, multimedia systems custom loaded for a number of treatment options to produce up to 7200 m<sup>3</sup>/d (~1.9 MGD) of product water. Available as single vessels or a merged system of four vessels, the versatile design permits a range of treatment options to overcome a water difficulty or to supplement your existing supply. You can select from typical treatments such as demineralisation, filtration, softening, condensate polishing

and de-oxygenation, as well as specialist loadings for more complex treatment projects.

A Proteus is at ease treating seawater or brackish water within a stand-alone or integrated solution and can be configured for pre or post-treatment. The Proteus system can provide sufficient pre-treated water for one Triton SWRO60 system or two Triton BWRO65 systems. This permits the production of up to 130 m<sup>3</sup>/h (572 GPM) of RO permeate water.

Each Proteus system is housed within standard shipping containers for ease of transport and comes to you pre-loaded with specific treatment media for your project needs. The Proteus system is reliable, efficient, robust and is integrated with high levels of instrumentation and automation to ensure you always receive the quality and volume of water you need.

## Typical Applications

- Emergency water requirement
- Plant start-up and commissioning
- Planned or unplanned maintenance outages
- Seasonal or peak water consumption changes
- Temporary change in quality requirement
- Condensate recovery and polishing
- De-aerator bypass during annual inspection
- Pre-treatment to brackish or seawater RO plant
- Specialist process treatment for manufacturing
- Full flow pilot plant testing

## System Features

- Remote monitoring capabilities
- Turbidity, hardness and conductivity monitoring
- Fully automated shutdown system
- Automated backwash and regeneration system
- Multiple media and multiple application system
- Modular building block to increase quality or flow
- Complements Triton RO systems

## Treatment Options

**Softening** – Up to 300 m<sup>3</sup>/h (1320 GPM) of softened water is produced with a hardness level of <1ppm. A separate brine skid for onsite regeneration reduces additional expensive transport and preparation charges. Hardness monitoring and automated control ensure efficient and reliable operation.

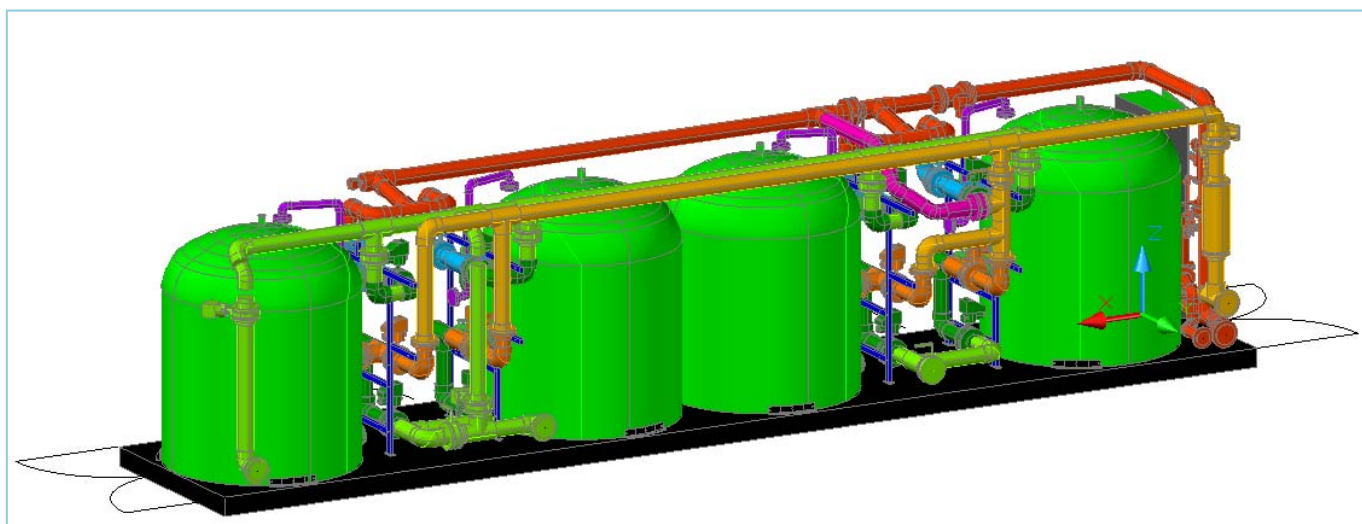
**Filtration** – While producing an industry leading 150 m<sup>3</sup>/h (660 GPM) of filtered water from a single system our proprietary filter media also reduces NTU, TSS and SDI levels. Granular Activated Carbon is used for chlorine adsorption and organics removal. Greensand reduces iron and manganese.

The system includes in-line coagulation dosing and turbidity monitoring systems with automated shut-down features to ensure quality and reliable operation.

**Demineralisation** – By using ion exchange resin up to 300 m<sup>3</sup>/h (1320 GPM) of demin water is produced. The system comes with a separate 'regen-in-place' skid for a quick on-site regeneration, which reduces your additional logistical and preparation costs.

**Condensate Polishing** – This service can regain up to 250 m<sup>3</sup>/h (1100 GPM) of condensate while saving you discharge and make-up water costs. Removal of particulate

## Mobile Proteus System



## Operating Parameters

Length – Width - Height	12.2 - 2.5 - 2.9 m (40.0 - 8.0 - 9.6 ft)
Shipping Weight <sup>2</sup>	22-26,000 kg (~49-58,000 lbs)
Operating Weight	~38,500 kg (~85,000 lbs)
Min Inlet Pressure	5 bar (70 psi)
Max Inlet Pressure	7 bar (100 psi)
Inlet, Outlet and Waste Connector	DN 150 (ANSI 6")
Power Requirements	415V, 50-60Hz, 16A

<sup>2</sup> Dependent upon application and media used

ingress and ionic contamination protects your boilers and by working at 50 °C (122 °F) you retain greater heat energy.

**De-oxygenation** – With <5 ppb dissolved oxygen and a flow of 200 m<sup>3</sup>/h (880 GPM), this service is invaluable for any industry using high pressure boilers. The ability to treat most feedwaters and produce greater volumes is often a critical factor for your operations.

## Service & Operation

Our systems are operated and maintained by our team of university graduate Field Service Engineers (FSEs) fully trained and skilled in water treatment plant operation and troubleshooting. The lead project FSE will work with you to ensure continuity and efficiency in the service provided. With regular updates you will benefit from a total 'hands-off' approach and gain confidence in the project success.

We are committed to the highest standards of customer satisfaction to meet your expectations. The FSEs have 24-hour technical back-up support, as well as our 'Project Execution Plan' which is our guide to project goals.

For a secure treated water supply contact Ecolutia Services