

# Ultrapure Water System PROTEUS AS



The “all-in-one” system PROTEUS AS systems fulfils highest standards for a reliable supply of pure water and maximum operational safety. Everything in one space-saving cabinet.



The ready-for-connection pure water system PROTEUS AS has been developed to economically produce high quality pure water and pump it, as required, to clinical analysers.

Pre-treatment, reverse osmosis, optional EDI purification steps, 2 stainless steel polishing cartridge a pure water tank and a booster pump are compactly combined and mounted in a compact cabinet.


The modern touch interface controls all operating and performance parameters.

The pure water that the systems produce complies with appropriate standards such as CLRW/CLSI.



## Features

- ✓ Reliable ultrapure water quality - CLRW
- ✓ Simple and economical change of the consumables
- ✓ Large and intuitive touchscreen
- ✓ Leak water detector
- ✓ Integrated pretreatment cartridge to protect the RO membrane
- ✓ Reverse-osmosis module for desalination and removal of up to 99% organic and inorganic impurities
- ✓ Pressure reducer
- ✓ Dry-run protection
- ✓ Digital Pressure and flow sensors
- ✓ Production rate monitoring
- ✓ Internal 80l tank with complete recirculation ensures the highest microbial purity
- ✓ Booster pump with for low-noise delivery of pure water to the clinical analyser
- ✓ 2 long-life polisher cartridges (alternatively 2x stainless steel cartridges) for residual demineralisation
- ✓ UV flow through disinfection
- ✓ Sterile filter 0.2µm
- ✓ Emergency supply
- ✓ Plug and Use – All consumables and installation material are included
- ✓ Warnings and notes in clear text
- ✓ Alarm history
- ✓ 100% Made in Germany

 **Optional:** EDI module for constant pure water quality and to reduce operating costs

 **Optional:** Degassing module for removing dissolved gases



## System configuration

- Wide-range power supply 100-240V / 50-60Hz
- Compact production unit fits easily into various free spaces in the lab
- Integrated pressure reducer for different inlet pressures
- Flow meter for an accurate measuring of the production rate
- Pressure sensor for monitoring of the working pressure and as a dry-running protection
- Low-noise and durable RO pressure pump
- RO membrane removes up to 99% of all impurities in the feed water
- 2 polishing cartridges for a constant pure water quality
- Flush valve for the effective cleaning of all wetted parts as well as an adjustable quality flush during stand-by
- Internal pure water tank with sloped bottom and pure water outlet
- Emergency supply to bypass the unit and only use the polishing cartridges in a situation of a system failure
- Sterile filter 0.2 $\mu$ m at the outlet
- Up to three measuring cells for the exact measurement of the conductivity and temperature after each purification cartridge
- Distribution pump for supplying downstream consumers

## User interface

- Large and intuitive touchscreen
- Individual adjustment for displaying the conductivity (M $\Omega$ cm or  $\mu$ S/cm)
- Multilevel conductivity and temperature monitoring for pure and ultrapure water, temperature compensated with stepless limit adjustments
- High-precision measuring with integrated reference resistors as well as deactivatable temperature compensation acc. to USP
- Leakage monitor with error message and automatic shut-off of the feed water supply
- Continuous surveillance of all relevant parameters and values incl. early reminders when a change of consumables is pending



## Pure water tank 80L

Storage tank for the storage of pure water fed in from the reverse osmosis. Made of black PE. Closed, square and opaque construction, with a 200 mm inspection opening for cleaning. The tank is supplied completely piped and with a level control for fully automatic stock holding. With sterile overflow and sterile vent filter.

Nominal volume	80 Litre
Material	PE black



## UV disinfection

High quality UVC LED (mercury free) with patented flow chamber to for an efficient chemical-free flow-through disinfection.



## Sterile filter 0.2µm

A sterile filter prior to sampling removes microorganisms (such as bacteria, viruses and fungi) and particles that could cause contamination in the analysis processes

## Option - 2 x stainless steel cartridge (mixed bed resin content: 17 litres / cartridge)

Alternative to the standard disposable cartridges.  
Reduced operating costs thanks to the option of regeneration.



## Optional components - EDI module

Low-energy, integrated EDI module for the final demineralization. Reliable high-purity water supply without regeneration or other interruptions. No chemicals needed. Lowest operating costs combined with high, constant quality. Regulating valves and flow meters for setting the pure water and concentrate flow.

Pure water quality	< 0.2 µS/cm typ. 0.055-0.1 µS/cm
Recovery rate	90-95 %



## Feed water requirements

Feed water quality	Softened or hardness stabilized potable tap water
Conductivity at 25°C	< 2000µS/cm
Total organic carbon (TOC)	< 1ppm
Inlet pressure*	1 – 6bar
Temperature	5 – 35°C

*Additional pretreatment units are available if the feed water is out of specs*

## Pure water specifications

Performance	40 l/h at 10°C 52 l/h at 20°C
Retention rate (RO)	> 99 % ions, germs and bacteria
Pure water quality	< 0.1 µS/cm
Bacteria	<10 CFU/ml

## Technical data

Ambient temperature	+2 - 35°C
Supply voltage	100-240V / 50-60Hz
Connection size	R $\frac{3}{4}$ "

## Dimensions

