# Ultrapure Water System
# **PROTEUS**

NEPTEC

PROTEUS systems are engineered to meet the highest standards for reliable pure water supply and exceptional operational safety. All essential components are integrated into a compact, space-saving cabinet, ensuring efficiency without compromising performance.

The PROTEUS system is designed for cost-effective production of high-quality pure water, with the capability to supply entire laboratory floors or medical offices, even in limited spaces.

This ready-to-use system integrates pre-treatment, reverse osmosis, a pure water storage tank, and a booster pump—all within a sleek, compact cabinet.

Featuring a modern 5“ touch interface, the PROTEUS allows precise control and monitoring of all operating and performance parameters.

The produced pure water produced meets stringent standards, including ASTM, DIN EN 285, and DIN EN 15883.

NEPTEC GmbH
Heidenhäuschenstr. 14
65627 Elbtal

+49 6436 94891 00
info@neptec.de
www.neptec.de

## Features

- ✓ Reliable ultrapure water quality - ASTM type 2 or Type 3
- ✓ 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 convenient constant pressure control for low-noise delivery of pure water to the end user
- ✓ 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 as residual desalination for consistently highest pure water quality

Optional UV disinfection

Optional Connection for external polishing cartridge including circulation

Optional Frame extension for accommodating softener or polishing cartridges

Optional External dispenser

- detachable and ergonomically shaped
- rotatable and vertically adjustable
- accurate, adjustable volume dispensing
- circulation until point of use

## System configuration

- 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
- 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
- Up to three measuring cells for the exact measurement of the conductivity and temperature after each purification cartridge

## User interface


- Large and intuitive touchscreen
- Individual adjustment for displaying the conductivity (MΩcm or µS/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 |

## Booster pump

Fully integrated, self-priming, compact booster pump with extremely low-noise permanent magnet motor and water cooling. The integrated speed control enabling the keeping of the perfect pressure at the end users, meaning that the pump performance will increase with increasing demand. Delivered with built-in dry run protection.

| | |
|---|---|
| Pumped liquid | Pure water |
| Max. flow | 5 m³/h |
| Max. pressure | 5 bar |
| Connection size | R 1“ |

## 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<br>typ. 0.055-0.1 µS/cm |
| Recovery rate | 90-95 % |

## Optional components - Tabletop dispenser

- Ergonomic design for a one-handed operation
- All dosing functions can be easily executed with the rotary encoder at the dispensing handle
- The external dispenser can be placed independent of the production unit
- For an even greater range the handle can be detached and reattached with a simple hand movement
- Withdrawal reports ensure traceability of the withdrawn pure water
- GLP-compliant data storage via USB

## Optional components - UV disinfection (Flow through and/or tank disinfection)

- High quality UVC LED (mercury free) with patented flow chamber to for an efficient chemical-free flow-through disinfection.
- UVC LED tank disinfection specially developed for the chemical-free disinfection of water in storage tanks using UV radiation. The UV light irradiates the water and the tank walls above and below the water level with UV-C radiation, so that no biofilm can develop, and the water is permanently disinfected.

## Optional components - Polishing cartridge

Possibility to connect an ion exchange cartridge.
With cyclical circulation and integrated conductivity measurement for the best possible water quality.

## Option – Frame extension for accessories (Softener or Polisher)

Extending the frame to accommodate a water softener or up to 2 stainless steel polishing cartridges.

## Feed water requirements

| | |
|---|---|
| Feed water quality | Potable tap water<br>(Softened water for systems with EDI) |
| Conductivity at 25°C | < 2000µS/cm |
| Total organic carbon (TOC) | < 1ppm |
| Chlorine* | < 0,01mg/l |
| $CO_2$* | < 15 mg/l |
| $SiO_2$* | < 10 mg/l |
| pH value* | 4 - 11 |
| Inlet pressure* | 1 – 6bar |
| Temperature | 5 – 35°C |

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

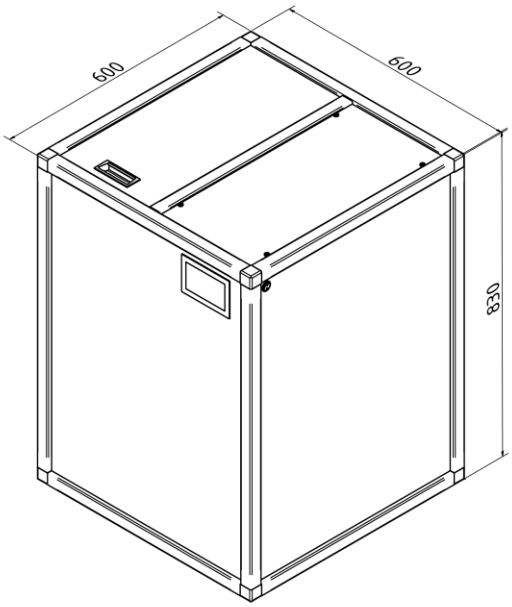
## Pure water specifications

| | |
|---|---|
| Performance | 40 l/h at 10°C<br>52 l/h at 20°C |
| Retention rate | > 99 % ions, germs and bacteria |
| Pure water quality<br>(with EDI module or ion exchanger) | < 0.2 µS/cm<br>typ. 0.055-0.1 µS/cm |

## Technical data

| | |
|---|---|
| Ambient temperature | +2 - 35°C |
| Supply voltage | 230V / 50-60Hz |
| Connected load | 900W |
| Connection size | Tube d8 inlet, R 1“ outlet |

## Dimensions




## Dimensions incl Option – Extension frame for accessories