Ultrapure Water System

HALIOS 6 | 12

NEPTEC

HALIOS 6 | 12 lab water systems are designed for direct connection to tap water, combining ease of use and comfort with enhanced lab productivity.

The HALIOS 6 or 12 Lab Water Series features a modular design and direct connection to tap water, offering versatility and adaptability for diverse laboratory needs.

Equipped with an integrated 10 L tank and a production rate of 10 L/h or 20 L/h, it delivers reliable performance tailored to specific requirements.

Each system exceeds ASTM Type 1 and 2 standards, ensuring exceptional water purity.

The integrated pre-treatment cartridge extends the durability of the RO membrane and purification cartridges while maintaining consistent ultrapure water quality for reproducible analytical results.

The compact production unit integrates seamlessly into any lab environment, with operations streamlined through an external tabletop dispenser.

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Features

- ✓ Reliable ultrapure water quality - ASTM type 1^{+} and 2
- ✓ External tabletop dispenser
  - ❖ detachable and ergonomically shaped
  - ❖ rotatable and vertically adjustable
- ✓ Simple and economical change of the consumables
- ✓ Pre-treatment cartridge for a direct connection to tap water
- ✓ Large and intuitive touchscreen
- ✓ Leak water detector
- ✓ Pressure reducer
- ✓ Data capture via USB
- ✓ Accurate, adjustable volume dispensing
- ✓ Dry-run protection
- ✓ Simple disinfection procedure
- ✓ Pressure and flow sensor
- ✓ Production rate monitoring
- ✓ Tank water conductivity and temperature measurement
- ✓ Plug and Use – All consumables and installation material are included
- ✓ Note on the replacement of all consumables (no obligation to replace)
- ✓ Complete recirculation ensures the highest microbial purity
- ✓ Warnings and notes in clear text
- ✓ Alarm history
- ✓ UV-unit (185|254nm) for the ultimate microbiological purity and TOC reduction
- ✓ 100% Made in Germany
- ECO Mode to extend the cartridge life by up to 20%

System configuration

- Wide-range power supply 80-264V / 50-60Hz
- Housing with an easily accessible service cover
- Compact production unit fits easily into various free spaces in the lab
- Exchange of consumables within seconds due to quick-connect couplings
- Integrated pressure reducer for different inlet pressures
- Flow meter for an accurate volume dispensing
- Pressure sensor for monitoring of the working pressure and as a dry-running protection
- Two low-noise and durable pressure and recirculation pumps for the complete internal recirculation of all wetted parts up to the final dispensing valve
- Integrated pre-treatment cartridge protects from impurities in the feedwater and protect the RO membrane as well as guarantees reproducible results of analysis, a high capacity and low operating costs
- RO membrane removes up to 99% of all impurities in the feed water
- Ultrapure water cartridge for the final removal of organics and remaining ions
- Dual wavelength UV disinfection for lowest TOC values
- Up to five measuring cells for the exact measurement of the conductivity and temperature after each purification cartridge
- Flush valve for the effective cleaning of all wetted parts as well as an adjustable quality flush during stand-by
- Dispenser with 0.2 µm microfiltration for the sterile ultrapure water withdrawal at the point of use
- 10 L pure water tank with conical bottom and pure water (type 2) outlet

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 HALIOS handle can be detached and reattached with a simple hand movement

User interface

- Large and intuitive touchscreen
- Stored dispensing reports with all information ensure an absolute traceability of the water withdrawals
- Individual adjustment for displaying the conductivity (MΩ.cm 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 sensor monitors 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
- GLP-compliant data storage via USB
- ECO Mode to extend the cartridge life by up to 20%

Various options to adapt to your specific needs:

- Ultrafiltration module - Flushed and integrated for the retention of pyrogens, endotoxins, proteins and nucleases (DNases and RNases)
- TOC monitor – Real time for continuous TOC measurement of the organic compound acc. to USP
- Up to 4 external dispensers can be connected to one production unit
- 50 L Pure water tank – Stackable with pressure outlet and dispensing gun for type 2 water
- UVC-LED (mercury-free) 265nm tank disinfection
- EDI module for residual desalination for a continuous quality improvement and lower running costs
- Potential-free contact for collective error signal
- XXL dispenser (heigh +15cm) for even more space underneath the dispensing handle
- Wall mounts for production unit, tank and dispenser
- Qualification documents

Technical data

Ambient temperature	+2 – 35 °C
Supply voltage	90-240V / 50-60Hz
Connected load	120 W
Connection size	R ¾“
Weight (complete):	25 kg

Feed water requirements

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

Additional pre-treatment units are available if the feed water is out of specs

Ultrapure water specifications (ASTM type 1)[1]:

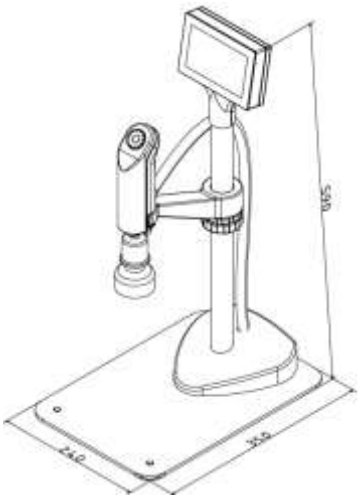
Resisitivity (Conduct.) at 25°C [2]	18.2 MΩ.cm (0.055 µS/cm)
Total Organic Carbon [3] (TOC)	≤ 2 ppb (µg/L)
Particle content [4]	< 1 /mL
Bacteria	< 0.01 CFU/mL [4] < 0.005 CFU/mL [5]
Pyrogens (endotoxins) [5]	< 0.001 EU/mL
RNases [5]	< 0.004 ng/mL
DNases [5]	< 0.024 pg/µL
Flow rate	Up to 2 L/min

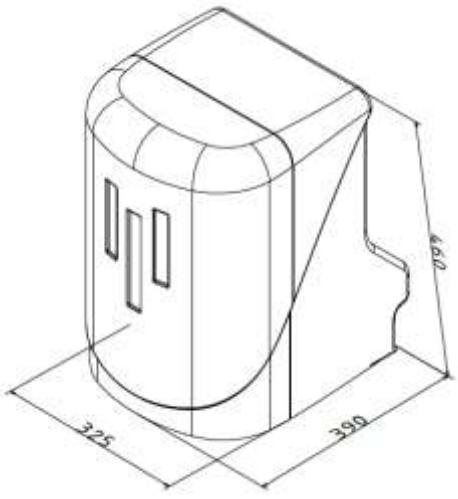
Pure water specifications in the tank (ASTM type 2)

Resisitivity (Conduct.) at 25°C	> 10 MΩ.cm (<0.1 µS/cm)
TOC	≤ 30 ppb (µg/L)
Performance HALIOS 6	6 L/h at 10°C 10 L/h at 25°C
Performance HALIOS 12	12 L/h at 10°C 20 L/h at 25°C

[1] The actual values may vary depending on the nature and concentration of the contaminants in the feed water
[2] Conductivity/resistivity can also be displayed non-temperature compensated as required by USP
[3] In the appropriate operating conditions, otherwise typically ≤5ppb
[4] With sterile filter capsule at the POU and in the appropriate operating conditions
[5] With option – ultrafiltration module

Dimensions Dispenser and Production Unit





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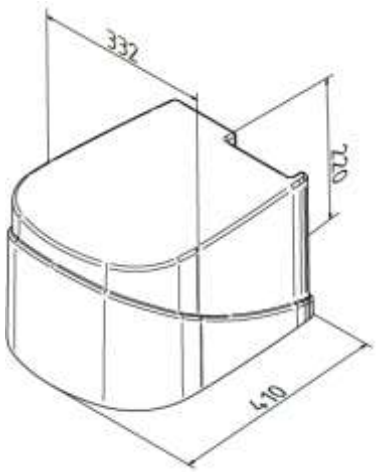
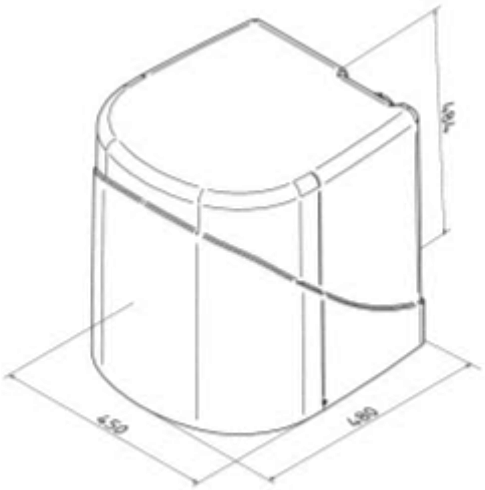
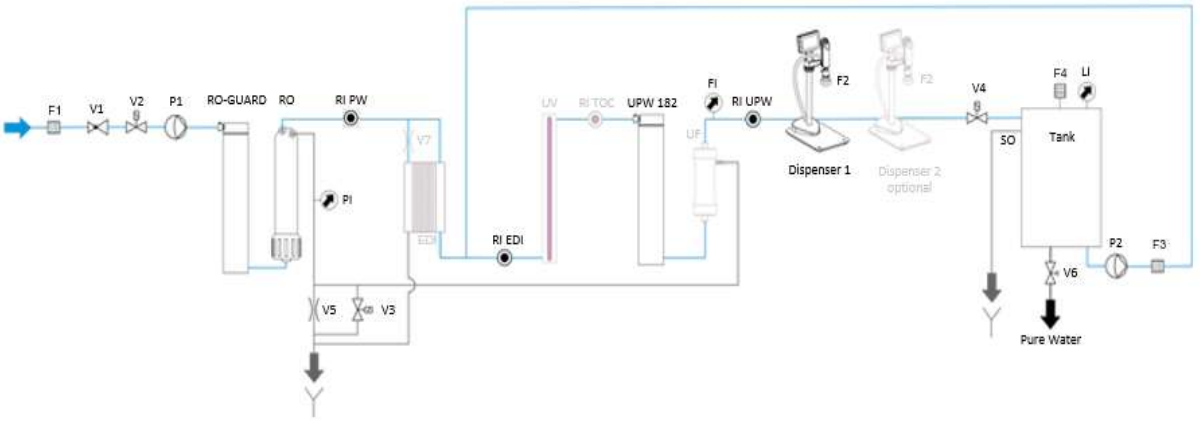
Dimensions 10 L Tank



Dimensions 50 L Tank (optional)



Flow Chart (simplified)



F1:	Particle filter (inlet)	RI PW:	Conductivity cell pure water	UF:	Ultrafilter (optional)
F2:	Sterile filter capsule 0.2µm	RI EDI:	Conductivity cell EDI (optional)	UPW 182:	Ultrapure water cartridge
F3:	Particle filter (tank)	RI TOC:	Conductivity cell TOC (optional)	UV:	UV lamp 185/254nm
FI:	Flow meter	RI UPW:	Conductivity cell ultrapure water	SO:	Sterile overflow
LI:	Level sensor	RO Guard:	Pre-treatment cartridge RO-GUARD	V1:	Pressure reducer
P1:	RO pump	RO:	Reverse osmosis module	V2- V4:	Solenoid valves
P2:	Circulation pump	EDI:	Electrodeionization module (optional)	V5:	Pressure hold valve
PI:	Pressure sensor				

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