



werner



Systems for pure and ultrapure water

Ion exchanger cartridges

Regeneration system

Reverse osmosis systems

EDI (electrodeionization)

Ultra pure water systems

CARTRIDGE SYSTEM: Water deionization with ion exchanger cartridges



The **Aquadem®** cartridge system:
Economical water deionization for all requirements
with the corresponding cartridge size

The **Aquadem®** cartridge system achieves a quality which covers
the majority of common laboratory applications.

- Specially proven technology with very simple operation
- Simple handling with quick connection system
- Suitable for set up into laboratory benches

Aquadem® DL

- Pressureless water deionization cartridge with plastic housing, filled with regenerable mixed-bed resins
- Compact and inexpensive solution for smaller requirements, ready for connection
- Simple and practical handling

| Model | Flow rate | Capacity* at 10°/25° dGS | Order no. |
|-------|-----------|--------------------------|-----------|
| 5 DL | 50 l/h | 450 / 180 l | 1941-015 |
| 10 DL | 100 l/h | 1 000 / 360 l | 1941-025 |
| 25 DL | 100 l/h | 2 500 / 900 l | 1941-035 |

| Accessories DL | Description | Order no. |
|--|---|-----------|
| Connection set SB | • inlet tubing • outlet tubing • conductivity cell • riser tube • conductivity meter type SB | 1944-001 |
| Connection set GS (with set point) | • inlet tubing • outlet tubing • conductivity cell • riser tube • conductivity meter type GS | 1944-002 |

Aquadem® DF

- Pressure-resistant deionization cartridge, filled with regenerable mixed-bed resins
- Patented connection head with built-in conductivity cell
- Integrated base closure makes it the ideal cartridge for the Aquadem® refill system

| Model | Flow rate | Capacity* at 10°/25° dGS | Order no. |
|-------|-----------|--------------------------|-----------|
| 8 DF | 500 l/h | 1000 / 400 l | 1942-005 |
| 12 DF | 600 l/h | 1500 / 600 l | 1942-015 |
| 22 DF | 800 l/h | 2750 / 1100 l | 1942-025 |
| 42 DF | 1000 l/h | 5000 / 2100 l | 1942-035 |

| Accessories DF | Description | Order no. |
|--|--|-----------|
| Connection set SA | • inlet tubing • outlet tubing • adapter • conductivity meter type SA | 1944-004 |
| Connection set GS (with set point) | • inlet tubing • outlet tubing • adapter • conductivity meter type GS | 1944-005 |

CARTRIDGE SYSTEM: Water deionization with ion exchanger cartridges

Aquadem® SDF

- Pressure-resistant water deionization cartridge, stainless steel, filled with regenerable mixed-bed resins

| Model | Flow rate | Capacity* at 10°/25° dGS | Order no. |
|--------|-----------|--------------------------|-----------|
| 13 SDF | 200 l/h | 1400 / 560 l | 1943-005 |
| 20 SDF | 600 l/h | 2500 / 1000 l | 1943-015 |
| 42 SDF | 800 l/h | 5000 / 2000 l | 1943-025 |

- Aquadem® SDF 20 — the classical standard equipment for laboratory glass dishwashers

| Accessories SDF | Description | Order no. |
|--------------------------|--|-----------|
| Connection set SA | • inlet tubing • outlet tubing • conductivity cell • conductivity meter type SA | 1944-007 |

- Long life time, transportable, suitable for particularly high demands

| | | |
|--|--|----------|
| Connection set GS (with set point) | • inlet tubing • outlet tubing • conductivity cell • conductivity meter type GS | 1944-008 |
|--|--|----------|

* the capacity refers to an average water with total dissolved solids of 25° dGS (4.45 mol/m³), conductivity rising up to 20 µS/cm

On request all Aquadem® cartridges can be filled with disposable or ultrapure resin. Special adsorbers are also available.

Special: Aquadem® regeneration and refilling service



Aquadem® regeneration and refilling service

- A high-capacity regeneration plant at Leverkusen: 2 reactors, capable to regenerate up to 3200 l resin per day, environmentally friendly, documented and checked for constant high resin quality
- All resins supplied, whether as cartridge refills or as bulk packages, are documented with batch numbers
- Special Werner voucher system for an economical and trouble-free regeneration service
- The Aquadem® refill system: refilling used cartridges yourself with regenerated resin from Werner saves transport costs and delivery time

Reverse Osmosis System

The WERNER reverse osmosis systems for all demands

Newest technologies integrated in design – the WERNER reverse osmosis system

The compact units with two or three purification steps produce economically demineralized water direct from tap water without any pretreatment for all lab requirements. Systems with flow rates from 3 up to 90 l/h are able to cover demands up to 2000 l per day. The demineralized water is suitable for nearly all lab requirements as dishwashers, autoclaves, glass cleaning, simple analytics or pretreatment for ultra pure water systems.

Beside the integrated pre filter (3 µm absolut) and high efficient TFC membranes a third purification step can be integrated:

- Post demineralization with Aquadem® cartridges
- Electrodeionization with EDI systems

Using this technologies the purified water quality will be highly increased by dramatical reduced running costs even for higher demands of pure water.

Reverse osmosis system, the extendable system

As a single, individual extendable system the Werner RO 10...40 can be extended at any time to meet increased pure water demands, e.g. from 200 l to 1000 l/day without any problems.

- Integrated pre filter, automatic flush system and reliable stainless steel pressure vessels
- Optional available as a modul which fits into lab furnitures; control panel for front view
- Two integrated conductivity meters for monitoring the whole system

- Optional available with integrated EDI modul for conductivities down to 0.055 – 0.2 µS/cm (PLUS Systems)
- RS 232 and centronics port allows a system monitoring according to GLP

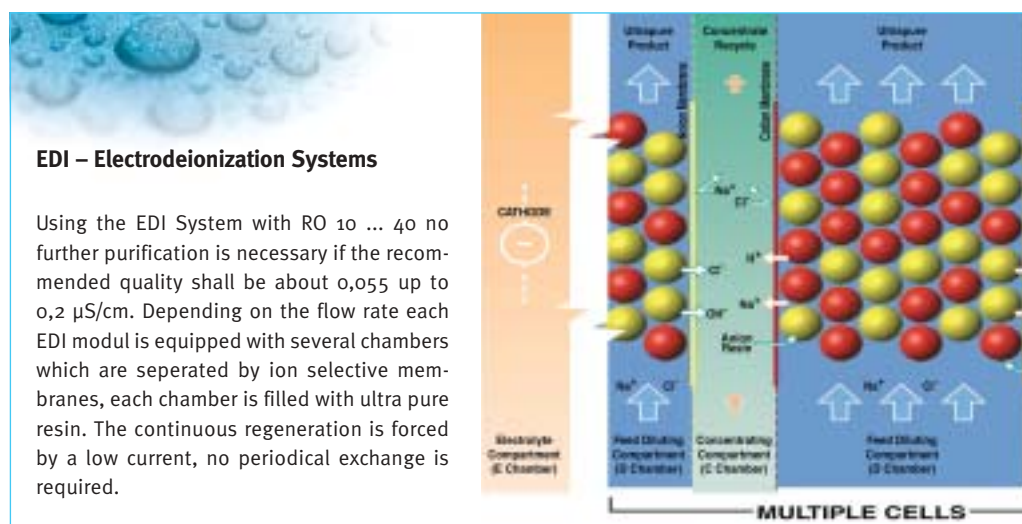


RO 10...40

| Technical data | RO 10 | RO 20 | RO 30 | RO 40 |
|--------------------------------|---|----------|----------|----------|
| Product flow (l/h at 10 °C) | 10 | 20 | 30 | 40 |
| Feedwater requirements (l/h) | 40 | 80 | 100 | 120 |
| Weight (kg) | 30 | 30 | 32 | 32 |
| Feedwater quality | tap water, according to WHO | | | |
| Feedwater connection | each tap (3/8" tubing) | | | |
| Product/brine connection | 8 mm tubing | | | |
| Rejection | > 97 % Ions, > 99 % microorganism, pyrogens | | | |
| Typ. conductivity RO 10 ... 40 | 5 – 20 µS/cm | | | |
| Typ. conductivity PLUS systems | < 0.2 µS/cm | | | |
| Electrical | 230 – 240 V, 50 Hz | | | |
| Power consumption | 300 W | | | |
| Dimensions H x W x D (mm) | 600 x 500 x 295 | | | |
| Order no. | 1981-001 | 1981-002 | 1981-003 | 1984-004 |

Accessories

Base with built-in storage tank, post-deionization cartridges, booster pump, pure water tanks with complete drainage, extension sets for increasing the capacity are all available on request.



ReversinO, the comfortable mini system for all minor demands

ReversinO, the compact unit can be installed and start up within half an hour; more installations in the lab are not necessary. The system is the perfect choice for smaller demands and economical production. ReversinO will be direct connected to the tap water, no pretreatment is necessary. The system is equipped with an activated carbon pre filter, flush system and state of the art TFC membranes for long operation time. The integrated post demineralization cartridge ensures a product quality less than 1 µS/cm.



| Technical data | ReversinO 3 Plus | ReversinO 6 Plus |
|---------------------------|--|---|
| Feed water quality | tap water, according to WHO | |
| Min feed pressure | 2 bar | 2 bar |
| Max. feed pressure | 8 bar | 8 bar |
| Feedwater requirement | 12 l/h | 24 l/h |
| Product flow | 2 l/h (2 bar, 10°C) 6 l/h (8 bar, 10°C) | 4 l/h (2 bar, 10°C) 12 l/h (8 bar, 10°C) |
| Typ. conductivity | < 1 µS/cm | |
| Weight (kg) | 11.5 | 12.0 |
| Electrical | 230 – 240 V, 50 Hz | |
| Dimensions H x W x D (mm) | 700 x 370 x 250 | 700 x 370 x 250 |
| Order no. | 1981-040 | 1981-041 |

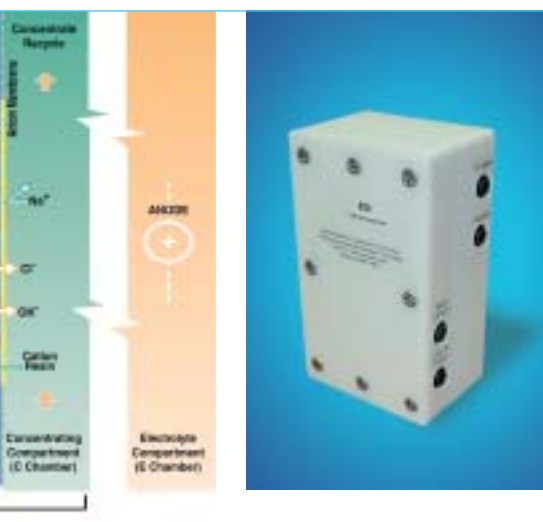


MobilRO, the movable solution for highest product quality

The MobilRO system can be set- and start up within a few minutes – MobilRO offers the complete purification as a compact unit.

- Pre filter 3 µm, activated carbon filter
- Reverse osmosis 30, 60 or 90 l/h (extendable)
- TFC membranes in stainless steel pressure vessels, microprocessor control with RS 232 interface, two conductivity meters
- Storage tank 40 l with sterile vent
- Booster pump 5 l/min at 2 bar
- Aquadem® mixed bed cartridge for post demineralization, UV disinfection at 125 mJ/cm² made of stainless steel
- Final filtration 0.2 µm

| Technical data | MobilRO 30 | MobilRO 60 | MobilRO 90 |
|-----------------------|-------------------------------------|------------|------------|
| Feed water quality | tap water, according to WHO | | |
| Product flow at 10 °C | 30 l/h | 60 l/h | 90 l/h |
| Max. product flow | 5 l/min | | |
| Product quality | according to ASTM/CAP/NCCLS Type II | | |
| Typ. conductivity | < 0.1 µS/cm | | |
| Bacteria | < 100 cfu/ml | | |
| Particles | < 0.2 µm | | |
| Dimensions H x W x D | 1150 x 650 x 605 mm | | |
| Electrical | 230 – 240 V, 50 Hz; 400 Watt | | |
| Order no. | 1981-030 | 1981-031 | 1981-032 |



Ultra Pure Water Systems

Einspeisung

NANOpure Diamond™ the new generation for ultra pure water purification



NANOpure Diamond™ complies to GLP and GMP rules and can be delivered in 8 different specifications. All Diamond™ systems are equipped with a single cartridge pack according to the desired application. The volumetric dispense allows to sample water controlled by the alphanumeric display adjustable to 6 languages

- **volumetric controlled (from 0.25 up to 60 litres)**
- or
- **time controlled**

The RS 232 output enables to print or save all necessary data by a printer or PC according to GLP. NIST traceable calibration, online sanitisation and a compensated or uncompensated conductivity reading complying to USP 24 are some more highlights of all Diamond™ systems. Via the remote control the unit can be wall or under desk mounted, the optional dispenser allows to sample water up to 8 feet from the unit.

| Technical Data | NANOpure Diamond™ |
|--------------------------|--------------------------|
| Feed water | < 5 µS/cm |
| TOC | < 2 ppb (UV) |
| Pyrogen | < 0.005 EU/ml (UF/UV-UF) |
| Bacteria | < 1 cfu/ml |
| Ultra pure water quality | > ASTM type I |
| Resistivity | > 18.2 MΩxcm |
| Flow rate | 1.3 – 1.5 l/min |
| Dimensions H x W x D | 340 x 428 x 495 mm |
| Electrical | 90 – 240 VAC |



Special:

All systems are optional available with an integrated TOC-analyzer. The analyzer is positioned after all purification steps, reading 1 – 250 ppb via the multilingual display. The data can be recorded by printer or PC.

| Model | Description | Order no. |
|-----------------------|--|-----------|
| Analytical | integrated pressure regulator, for all applications like AA, IC and rinsing | 2121-007 |
| Analytical TOC | with integrated TOC analyzer | 2121-011 |
| UV | dual wavelength UV 185/254 nm with control system for critical applications like ICP, ICP/MS, IC, GC, TOC | 2121-008 |
| UV TOC | with integrated TOC analyzer | 2121-012 |
| Bioresearch UF | ultra filtration 6 log pyrogen reduction for cell and tissue culture, pyrogen free water < 0.005 EU/ml | 2121-009 |
| Bioresearch UF TOC | with integrated TOC analyzer | 2121-013 |
| LifeScience UV/UF | dual wavelength UV 185/254 nm and ultra filtration for biotechnology applications as PCR, DNA studies, IVF (TOC < 3 ppb) | 2121-010 |
| LifeScience UV/UF TOC | with integrated TOC analyzer | 2121-014 |



EASypure – 5 ultra pure water systems for all requirements

All EASypure systems are based on proven technologies for the production of ultra pure water at 18.2 MΩxcm. Depending on the system different moduls are installed.

- Integrated pressure regulator (all systems)
- UV Disinfection/Oxidation at 254/185 nm for TOC < 2 ppb
- Ultrafiltration for pyrogen levels < 0.005 EU/ml, automatic flush system
- Temperature compensated resistivity meter (all systems)



| Model | Description | Order no. |
|----------------|---|-----------|
| EASypure RF | with build in feed-tank (6,5 l) for all applications like AA, IC and rinsing 0.5 l/min | 2101-001 |
| EASypure LF | for all applications like AA, IC and rinsing 1.5 l/min | 2101-002 |
| EASypure UV | dual wavelength UV 185/254 nm with control system for critical applications like ICP, ICP/MS, IC, GC, TOC | 2101-003 |
| EASypure UF | ultra filtration 6 log pyrogen reduction for cell and tissue culture, pyrogen free water < 0.005 EU/ml | 2101-004 |
| EASypure UV/UF | dual wavelength UV 185/254 nm and ultra filtration for biotechnology applications as PCR, DNA studies, IVF (TOC < 3 ppb) | 2101-005 |

Infinity – ultra pure water systems for higher demands



Infinity is the right choice for ultra pure water demands > 50 l per day with economical running costs. The modular design with up to 6 purification steps allows to upgrade each unit with UV or UF moduls at any time.

- UV Disinfection/Oxidation at 254/185 nm for TOC < 2 ppb
- Ultrafiltration for pyrogen levels < 0.005 EU/ml, automatic flush system
- Temperature compensated resistivity meter (all systems)
- 4 different cartridges according to the individual applications

| Model | Description | Order no. |
|----------------|---|-----------|
| Infinity base | for all applications like AA, IC, rinsing | 2121-003 |
| Infinity UV | dual wavelength UV 185/254 nm with control system for critical applications like ICP, ICP/MS, IC, GC, TOC | 2121-004 |
| Infinity UF | ultra filtration 6 log pyrogen reduction for cell and tissue culture, pyrogen free water < 0.005 EU/ml | 2121-005 |
| Infinity UV/UF | dual wavelength UV 185/254 nm and ultra filtration for biotechnology applications as PCR, DNA studies, IVF (TOC < 3 ppb) | 2121-006 |

Quality

Our target is quality



Experience and innovation

For more than twenty years now the name of WERNER stands for the highest quality in pure and ultra pure water technology for lab and industry. WERNER is your partner with own sales and service locations in many European countries. With quality reference, innovative strengths and flexibility we are a leading supplier of pure and ultra pure water systems in the german and international markets.

Products and services from a single supplier

Ever more accurate and ever more analytical and production technologies in industry and research require innovative water treatment methods. We offer everything from the smallest laboratory unit with an output of 0.5 l/min up to technical plants with 20000 l/hour — precise and tailor-made solutions from a single supplier. This is backed up by a highly motivated team that develops and produces solutions from analyzing and advising, via CAD design and production, to start-up and maintenance.

WERNER quality – certified to ISO 9001:2000

Since 1996 we fulfill the highest internationally recognized quality requirements and have the certificate to prove it. WERNER is one of the first suppliers of water treatment plants who has gained the ISO certification. In this way we have provided a safeguard for the future for our company, our customers and our business partners.



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