



sartorius

arium® advance RO

Reverse Osmosis System with iJust



Reverse osmosis system for water purification

Optimized water consumption – automatic with iJust

Easy-to-use – unique glass display with touch function

Easy handling – intuitive menu navigation

Description

The arium® advance RO provides type 3 reverse osmosis water of the highest quality. The innovative iJust makes the best use of environmental resources by automatically optimizing water consumption. Unlike conventional water purification systems, the unique display with touch functions in combination with the intuitive menu navigation creates an easy to use system.

With a flow rate of up to 8, 16 or 24 l/h, the automatic RO membrane backflush and a constant flow rate, the arium® advance RO is the optimal choice for daily laboratory applications.

Applications

- Feed water for ultrapure water systems
- Rinsing of glass and laboratory containers
- Feed water for various laboratory devices, such as humidifiers, autoclaves and lab glassware washers

iJust

iJust is based on an innovative technology which optimizes the water production. The intelligent arium® software controls a valve at the concentrate outlet according to measurement data for CaCO_3 and CO_2 . iJust thereby optimizes product water quality and water consumption

- Premium product water quality at all times
- Optimized, economic water consumption
- Guaranteed longer life of down-stream ultrapure water systems

Display with touch function

Simply navigate intuitively in the easy-to-use and clear menu by lightly touching the display – even with gloves.

High system flexibility

The space-saving installation of the device as bench-top, wall mounted or built-in unit integrates it perfectly into any laboratory environment.

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Technical Specifications

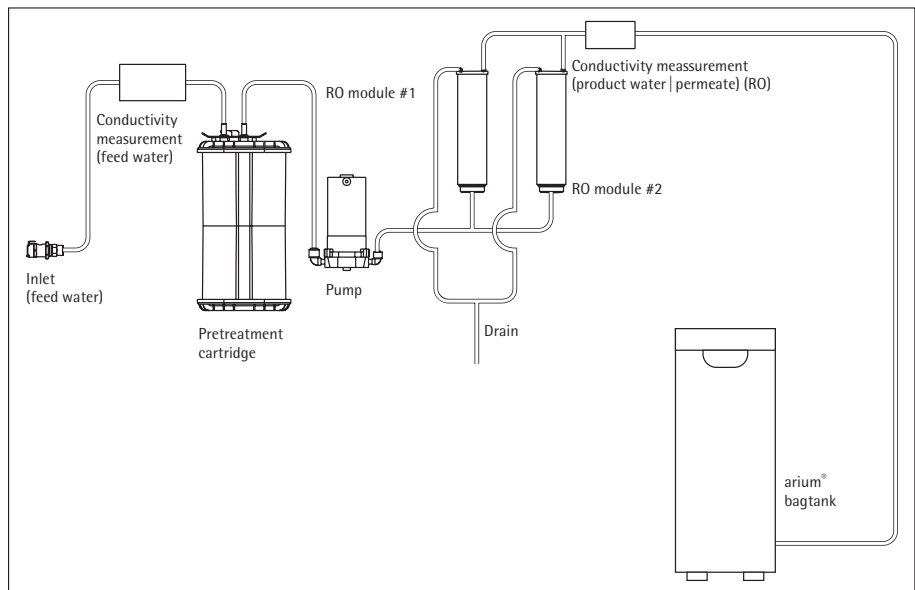
Technical Specifications

Water purification methods	Particle filtration, spherical activated carbon, catalyst, reverse osmosis, optional final particle and sterile filtration
Dimensions: Width × height × depth	35.0 × 50.1 × 45.1 cm
Empty weight	approx. 15 kg
Operating weight	approx. 22 kg
Power supply	100–240 VAC (± 10%); 50–60 Hz, 130 VA (max.)
Operating temperature	2°C – 35°C at max. 80% relative humidity
Storage temperature	5°C – 45°C at max. 80% relative humidity

arium® advance RO reverse osmosis system for producing type 3 pure water

Equipment supplied: 1 arium® advance H2O-RO, RO (reverse osmosis) Module(s) and Connection Set

Order no.	Description
H2O-RO-1-T	arium® advance RO Bench-Top system in a compact design for every laboratory workstation, product water flow rate 8 l/h
H2O-RO-1-B	arium® advance RO space-saving Wall-Mounted system with integrated wall bracket, product water flow rate 8 l/h
H2O-RO-2-T	arium® advance RO Bench-Top system in a compact design for every laboratory workstation, product water flow rate 16 l/h
H2O-RO-2-B	arium® advance RO space-saving Wall-Mounted system with integrated wall bracket, product water flow rate 16 l/h
H2O-RO-3-T	arium® advance RO Bench-Top system in a compact design for every laboratory workstation, product water flow rate 24 l/h
H2O-RO-3-B	arium® advance RO space-saving Wall-Mounted system with integrated wall bracket, product water flow rate 24 l/h



Flowchart arium® advance RO (H2O-RO-2-T)

Product water quality

Water type	Pure water Type 3
Product water flow rate ³	8, 16 or 24 l/h
Water dispensing flow rate ⁴	3 l/min
Typical conductivity ¹	< 20 µS/cm
Typical resistivity ¹	< 0.05 MΩ × cm
Microorganism content ²	< 1 CFU/1000 ml
Particle content ²	< 1/ml
Typical ion retention	up to 98%
Retention of dissolved organic substances (MW > 300 Dalton)	> 99 %
Particle and microorganism retention	> 99 %

Feed Water Quality

Exclusively potable water according to the drinking water regulations of the USA, the European Union, or Japan.

Input pressure	0.5 – 6.9 bar, recommended > 2 bar
Temperature	2 – 30 °C
Specific conductivity	< 1500 µS/cm compensated to 25 °C
TOC	< 2000 ppb
Max. permanent hardness (max. CaCO ₃)	360 ppm
Free chlorine	< 4 ppm
Iron (total Fe content)	< 0.1 ppm
Fouling Index (SDI)	< 5
Turbidity	< 1 NTU
pH value	4 – 10

¹ Depending on the feed water and temperature

² When using an arium® Sterile Filter (Sartopore® 2 150)

³ Depending on the feed water pressure, temperature, and condition of the RO Modules

⁴ Depending on the arium® bagtank design, hydrostatic pressure, connected accessories and end filter

arium® bagtanks

The most innovative tank system



- Integrated venting filter with check valve securely protects against CO₂ contamination
- Optional rollers provide highest flexibility
- Easy replacement of arium® bags, with no time-consuming sanitization
- High operation safety, no use of cleaning agents

Description

Pure water is stored in the innovative, closed arium® bagtank system. Here, the prepared pure water is securely protected from secondary contaminations. The arium® bagtank system enables high water quality over an extended period, thereby providing for long-term, reproducible results. In contrast to typical water tanks, the arium® bag provides a high degree of user safety and saves time by the elimination of complex sanitization processes with chemicals.

arium® bagtanks are housings that are equipped with arium® bags. The arium® bagtanks are available in 20 l, 50 l, and 100 l volumes. Their space-saving design is adaptable to any laboratory environment, and the optional rollers make the system extremely flexible.

Integrated distribution pumps are a standard components of the 50 l and 100 l bagtanks. An optional additional pump is also available for a 20 l bagtank. Also available is a wall bracket for a space-saving and user-friendly installation of the arium® bagtank 20.

Water dispensing flow rate

with pump ¹	up to 3.0 l/min
with pump, dispense gun and sterile-grade filter ²	up to 2.0 l/min
without pump ²	up to 1.5 l/min

Intended Use

System type:

arium® comfort I and comfort II,
arium® advance RO and advance EDI

¹ bagtank 20 is supplied without pump, pump optionally available

² Value only applies for bagtank 20 dispensing site at the same height or lower than the tank connection

³ Note: The arium® bag is not included in the equipment supplied with the arium® bagtank

Technical Specifications

Materials

bagtank	Stainless steel plastics
bag	S71 Film
Tubing	PE silicon

Dimensions, without rollers and wall brackets [H × W × D]

bagtank 20	80.8 × 16.6 × 43.7 cm
bagtank 50	85.2 × 25.4 × 58.7 cm
bagtank 100	85.2 × 51.4 × 58.7 cm
bag 20 l	86.5 × 43.0 cm
bag 50 l	90.0 × 58.1 cm

Empty weight without arium® bag | Operating weight with filled arium® bag

bagtank 20	19 kg 40 kg
bagtank 50	33 kg 84 kg
bagtank 100	47 kg 148 kg

Number of bags per tank

bagtank 20	1 × 20 liter
bagtank 50	1 × 50 liter
bagtank 100	2 × 50 liter

Power supply ¹	240 VAC (± 10%), 50 Hz, 120 VA (max.)
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Power supply, US versions ¹	115 VAC (± 10%), 60 Hz, 170 VA (max.)
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Operating temperature	2°C–35°C at max. 80% relative humidity
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Storage temperature	5°C–45°C at max. 80% relative humidity
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Water connection input	1 × 3/8" PLC Quick Coupling
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Water connection output

bagtank 20 ¹	1 × 3/8" PLC Quick Coupling
bagtank 50, bagtank 100	2 × 3/8" PLC Quick Coupling

Order Number	Description
H20-AOV-20 ³	arium® bagtank 20 l, without pump, qty. 1 unit
H20-AOV-50 ³	arium® bagtank 50 l, with pump 240 VAC 50 Hz, qty. 1 unit
H20-AOV-50-US ³	arium® bagtank 50 l, with pump 115 VAC 60 Hz, qty. 1 unit
H20-AOV-50-W ³	arium® bagtank 50 l, without pump, qty. 1 unit
H20-AOV-100 ³	arium® bagtank 100 l, with pump 240 VAC 50 Hz, qty. 1 unit
H20-AOV-100-US ³	arium® bagtank 100 l, with pump 115 VAC 60 Hz, qty. 1 unit
H20-AOV-100-W ³	arium® bagtank 100 l, without pump, qty. 1 unit
H20-ADP-20	arium pump® bagtank 20 l, 240 VAC 50 Hz, qty. 1 unit
H20-ADP-20-US	arium pump® bagtank 20 l, 115 VAC 60 Hz, qty. 1 unit
H20-ATR	Rollers for arium® bagtank 50 & bagtank 100, incl. fittings, qty. 4 units
H20-CBS-20	arium® 20 l bag for arium® 20 l bagtank, qty. 2 units
H20-CBS-50	arium® 50 l bag for arium® 50 l and 100 l bagtank, qty. 2 units
H20-ATB	Wall bracket for arium® bagtank 20, qty. 1 unit

arium® bagtank Dispense Gun

Ergonomic water dispensing from the arium® bagtank with a working radius of up to 3.7 m



- Extended work area of 3.7 m
- Available with height-adjustable stand or with wall brackets
- Ergonomic design
- Easy-to-use
- Sterile-grade filter can be connected

Description

The arium® dispense gun is an ergonomically designed, easy-to-use dispensing unit and is perfectly suited for dispensing pure water.

Depending on the work environment, either position the dispense gun on the wall to save space or on the 70 cm height-adjustable stand. Moreover, the stand lets you work in a relaxed position and allows optimal adjustment to different sized sampling vessels. The extended tube guide ensures a work area 2.5 m away from the arium® bagtank or pressure tank and a further 1.2 m from the stand.

A sterile-grade Sartopore® 2 150 capsule with 0.2 µm pore size can be easily connected for guaranteed sterile and particle-free water dispensing.

Order Number Description

613-AMDG1	arium® Dispense Gun inclusive height-adjustable Stand, qty. 1 unit
613-AMDG2	arium® Dispense Gun inclusive wall mounting kit, qty. 1 unit

Technical Specifications

Materials

Stand	Aluminum (gray anodized)
Dispense gun	Plastic, white finish
Tubing	PE

Dimensions without tubing [W × H × D]

Dispense gun with stand	18.5 × 59.5 × 51.0 cm
Dispense gun with wall mounting bracket	9.0 × 10.0 × 28.5 cm

Weight without tubing

Dispense gun with stand	5.60 kg
Dispense gun with wall mounting bracket	0.46 kg

Intended Use for arium bagtanks:

arium® bagtank 20*
 arium® bagtank 50
 arium® bagtank 100
 arium® pressure tank 30
 arium® pressure tank 50
 arium® pressure tank 70
 arium® pressure tank 100

* suitable only with optionally available distribution pump

arium® Water Guard

Early Detection of Leakages Protects the Laboratory



- Highly sensitive optical sensor
- Audiovisual alarm signals
- Automatic water-stop in case of leakage
- High-grade material, non-corrosive
- Easy to install
- Integrated wall mounting bracket for magnetic valve

Description

Only the early detection of water leakages provides optimal protection against water damage in the laboratory. Leakages are registered by the highly sensitive optical sensor.

In contrast to conventional sensors, this sensor functions independently of conductivity measurement values as these are so low in the pure and ultrapure water area that the activation of the guard is not guaranteed. Once a leakage is detected the water guard automatically locks the feed water inlet line. An acoustic warning is triggered immediately and the system status can be constantly controlled using the integrated LED display. The sensitive, optical sensors and high-grade materials mean that the arium® water guard is perfect for all ultrapure and pure water systems.

Order Number Description

610AWG1	arium® Water Guard, qty. 1 unit
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Technical Specifications

Sensor Dimensions

Diameter	5 cm
Height	2.5 cm
Cable length	2 m

Tubing Connections

Input	3/8" plug connection
Output	3/8" plug connection
Power supply	100–240 VAC 50–60 Hz

Intended Use

System type:
 arium® comfort I and comfort II
 arium® pro, pro DI, pro UF, pro UV and pro VF
 arium® advance RO and EDI
 arium® 611, 612 and 613

arium® Sterile Filter

Sterile and Particle-free Water Dispensing



- Excellent service lifetime and flow rate
- Integrity tested
- Validated acc. to HIMA and ASTM F-838-05
- Meets WFI quality standards acc. to USP incl. USP plastic class VI test
- Manufacture acc. to DIN ISO 9001
- Easy to install
- Automatic venting
- Certified quality

Description

The arium® Sterile Filter (Sartopore® 2 150) is a sterile, ready-to-use membrane filter capsule for the most stringent requirements. Sartopore® 2 150 membrane filter capsules contain a hydrophilic, heterogeneous polyethersulfone double membrane. It enables an excellent service life and output. The capsule is attached, by a quick connector, at the final position and reliably removes all particles and micro-organisms in the last water purification step. A hydrophobic PTFE membrane at the farthest point „upstream“ allows for easy and clean venting of the capsule.

All pleated Sartopore® 2 membrane filter units are validated as sterile filters for bio-pharmaceutical applications according to the HIMA and ASTM F-838-05 guidelines (documentation available). During the manufacturing process, every unit is tested for integrity in order to meet the highest quality standards and safety regulations.

Technical Specifications

Materials

Membranes	Asym. Polyethersulfone
Filling bell	Polycarbonate
Other plastics	Polypropylene
Pore size	0.45 µm + 0.2 µm
Filtration area	0.015 m ²
Input and output	¼" plug connection
Sterilization (max. 3 cycles)	Autoclaving at 134°C, 1 bar, 30 min.
Max. diffusion	1 ml/min @ 2.5 bar
Min. bubble point	3.2 bar

Intended Use

On Dispense Guns and Display-Dispense Unit for system type:
arium® comfort I and comfort II
arium® pro, pro DI, pro UF, pro UV and pro VF
arium® 611
arium® bagtank Dispense Gun
arium® Dispense Gun

Order Number	Description
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5441307H4--CE--B	arium® Sterile Filter (Sterile-grade Sartopore® 2 150 capsules), 0.2 µm pore size, qty. 5 units
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arium® RO Pretreatment Cartridge

Safe Protection of the RO Modules



- Quick and effective adsorption of impurities by high-grade activated carbon
- 5 µm depth filter for the retention of particles
- Highly efficient catalyst for removing free chlorine
- Easy to install by patented cartridge design

Description

The best protection for a downstream reverse osmosis (RO) membrane is the combination of spherical, catalytic effective activated carbon, a catalyst and a depth filter. It reliably removes oxidizing agents, such as free chlorine, heavy metal ions and particles, from the feed water.

A special catalyst is an integral part of the pretreatment. It is particularly efficient at removing free chlorine and at a lower temperature and | or higher pH value compared to activated carbon alone.

Apart from preventing deposits, the catalyst reduces fouling processes and inhibits micro-biological growth. The patented cartridge design saves time with its easy installation and replacement.

Technical Specifications

Materials

Housing	High-grade polypropylene
Cleaning media	Spherical catalytic effective activated carbon plus polypropylene filter cartridge with nom. 5 µm separation rate
Dimensions [W × H × D]	18 × 26 × 11 cm
Operating weight	3.5 kg
Feed water requirements	see "Technical specifications" page 2

Intended Use

System type:
arium® advance RO and advance EDI
61316, 61215

Order Number	Description
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613CPF05-----V	arium® RO Pretreatment Cartridge Set, qty. 2 units
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arium® RO Modules

Reverse Osmosis Modules with Low-Energy Membranes



- Highly efficient reverse osmosis membranes, optimized water consumption
- Low-energy membranes for ecological and economical operation
- Backflush with product water increases the service life
- Easy replacement
- Constant flow
- Consistently high water quality

Description

The arium® RO Modules consist of two independent membranes whose design guarantees easy installation and reliable operation. Each of the two modules contain a low-energy reverse osmosis membrane in a polypropylene housing. The housing has connections for feed water, permeate (product water) and concentrate (waste water). The RO Modules typically enable high recovery rates. This optimize the water consumption while still retaining at least up to 98% of the ions. Thanks to the backflush with permeate, particles and salts are removed from the surface of the membrane. This results in a longer service life and lower system maintenance costs. In addition, this backflush function on restarting the system allows for the immediate dispensing of high quality water.

Technical Specifications

Materialien

RO membranes	Low-energy membrane made of polyamide
Housing	Polypropylene

Dimension of each Module

Height	30.8 cm
Diameter	7.8 cm
Weight	0.468 kg
Product water quality	see "Technical specifications" page 2

Intended Use

System type:
arium® comfort I
arium® advance RO
arium® 61316 and 61215

Order Number

Description

613CPM4-----V	arium® RO Modules, qty. 2 units
613CPM4	arium® RO Module, qty. 1 unit

arium® RO Module Cleaning Set

Maximum Service Life of the RO Module



- Effective removal of scaling and metal fouling
- Elimination of organic compounds
- Dispersion of colloids
- Stable pH values
- Gentle on materials

Description

Two-stage cleaning system for removing scaling and organic contaminants.

The alkaline substance contains non-foaming tensides that dissolve organic compounds, disperse colloids and can be quickly removed from the membrane surface. The cleaning efficiency depends on the pH value that can be safely maintained over a wide temperature range by the contained buffer substances.

The acidic cleaning agent to remove scaling contains chelate and reducing agents in order to dissolve metallic fouling. The ideal pH value also remains consistently low over a wide range during cleaning in this case thanks to the buffers.

Technical Specifications

Ingredients

Alkaline cleaner	HEDTA, ethanolamine, triethanolamine
Acidic cleaner	HEDTA, phosphoric acid, citric acid

Intended Use

System type:
arium® comfort I and comfort II
arium® advance RO and advance EDI
arium® 612 and 613

Order Number

Description

H2O-CCS	arium® RO Module Cleaning Set, qty. 1 unit
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