

Arium® Advance RO

Reverse Osmosis System
With iJust



Advantages

- Time-saving - Use of innovative bag technology, eliminates costly tank cleaning
- Optimized water consumption - Automatic with iJust
- Easy to use - Display with touch function and intuitive menu

Product Description

The Arium® Advance RO provides high-quality Type 3 reverse osmosis water. The innovative iJust automatically optimizes water consumption and ensures the conscientious use of our environmental resources. In contrast to conventional water purification systems, the unique touch display with intuitive menu navigation makes it extremely easy to use.

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 general laboratory applications.

Innovative Bag Technology

The pure water is stored in the enclosed Arium® Bagtank system. This guarantees optimal storage of the pure water and protects against secondary contamination. Time-consuming tank cleaning intervals are eliminated thanks to the interchangeable bag.

Display With Touch Function

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

Technical Specifications

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

Feed Water Quality

Exclusively potable tap water pursuant to the drinking water standards of the USA, the European Union, or Japan.

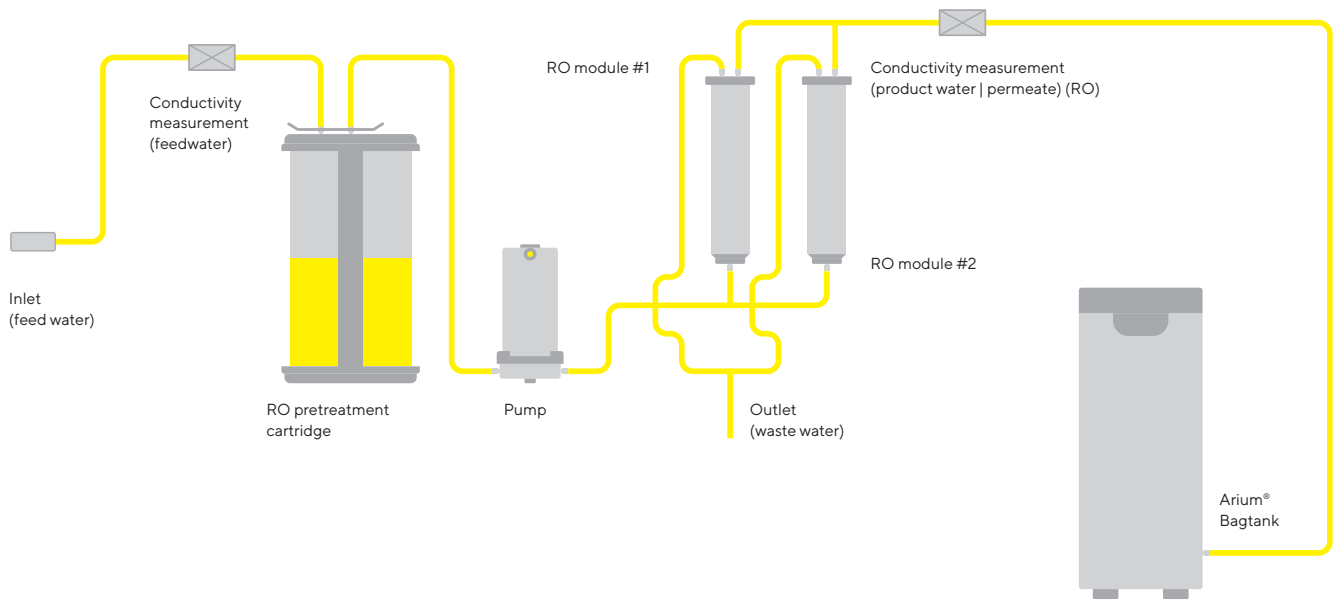
Input pressure ¹	0.5 – 6.9 bar, recommended > 2 bar
Temperature	2 – 30 °C
Specific conductivity	< 1,500 µS/cm compensated to 25 °C
TOC	< 2,000 ppb
Max. total hardness (max. CaCO ₃)	360 ppm
Free chlorine	< 4 ppm
Iron (total Fe content)	< 0.1 ppm
Fouling Index (SDI)	< 5
Turbidity	< 1 NTU
pH value	4 – 10

¹ Dynamic pressure/flow pressure 100 L/h

iJust

iJust stands for innovative technology that optimizes water production. Amongst other things, the intelligent Arium® software controls a valve on the concentrate outlet in accordance with the data that have been entered for CaCO₃ and CO₂. iJust therefore optimizes the product water quality and water consumption.

- High product water quality at all times
- Optimized, economical water consumption
- Guarantees a longer life of the downstream ultrapure water systems



Flow diagram Arium® Advance RO (H2O-RO-2-T)

Water Applications

Lab Water System Quality

	Advance RO
Water Quality	
Type 3 Reverse Osmosis Water	■
Lab Water System by Daily Water Consumption	
Type 3 reverse osmosis water <140 Liter/day (8 L/h)	■
Type 3 reverse osmosis water <200 Liter/day (16 L/h)	■
Type 3 reverse osmosis water <270 Liter/day (24 L/h)	■
Feed Application	
Feed ultrapure water systems	■
Water for Laboratory devices (Autoclaves Washing Machine etc.)	■
General Laboratory Application	
Buffer, media and pH solutions	■

Product Water Quality

Water purification method	Particle filtration, adsorption by means of spherical activated carbon, catalyst and reverse osmosis
Water type	Type 3, reverse osmosis water
Production output ²	8, 16 or 24 L/h
Water dispensing flow rate ³	Up to 3 L/min
Typical conductivity ¹	< 20 µS/cm
Typical resistivity ¹	< 0.05 MΩ cm
Typical ion retention	up to 98%
Retention of dissolved organic substances (MW > 300 Dalton)	> 99%
Particle and microorganism retention	> 99%

¹ Depending on the feed water quality and temperature

² Depending on the feed water pressure, temperature, and condition of the RO modules

³ When using an Arium® Bagtank with pump, depending on hydrostatic pressure, connected accessories or end filter

Product Water Quality from Arium® Smart Station¹ with connected final filter

Particle content ²	No particles > 0.22 µm
Bacteria ²	< 0.001 CFU/mL
Endotoxins ³	< 0.001 EU/mL
RNase concentration ³	< 1 pg/mL
DNase concentration ³	< 5 pg/mL
Water dispensing flow rate ⁴	Up to 2 L/mL

¹ Connected to an Arium® Bagtank

² When using an Arium® Sterile Plus (Sartopore® 2 150 final filter)

³ When using an Arium® Cell Plus final filter

⁴ When using an Arium® Bagtank with pump, depending on hydrostatic pressure, connected accessories or end filter

Ordering Information

Arium® Advance RO reverse osmosis systems for the production of Type 3 pure water

Scope of supply: 1 Arium® Advance, water guard, RO-(reverse osmosis) module(s) and connection kit

Order number	Description
H2O-RO-1-T	Arium® Advance RO benchtop device, flow capacity 8 L/h
H2O-RO-1-B	Arium® Advance RO wall-mounted device, flow capacity 8 L/h
H2O-RO-2-T	Arium® Advance RO benchtop device, flow capacity 16 L/h
H2O-RO-2-B	Arium® Advance RO wall-mounted device, flow capacity 16 L/h
H2O-RO-3-T	Arium® Advance RO benchtop device, flow capacity 24 L/h
H2O-RO-3-B	Arium® Advance RO wall-mounted device, flow capacity 24 L/h

Accessories

Arium® Bagtanks

Innovative tank system

- Integrated ventilation filter with non-return valve provides reliable protection against CO₂ pollution
- High flexibility through the 4 rollers available as an option
- Easy and fast exchange of the Arium® Bags
- No chemical cleaning required



Description

The pure water is stored in the innovative enclosed Arium® Bagtank system. This system protects the prepared pure water against secondary contamination. The Sartorius Bag-tank system enables consistent water quality over a prolonged period, thereby ensuring permanent, reproducible results. Unlike conventional water reservoirs, the Arium® Bag eliminates time consuming tank cleaning intervals thanks to the interchangeable technology.

Arium® Bagtanks are housings which are equipped with Arium® Bags. The Arium® Bagtanks are available in 20 L, 50 L, and 100 L volumes. Their design is adaptable and saves space in any laboratory environment, and the optional rollers make this an extremely flexible system.

Integrated distributor pumps are a standard component of the 50 L and 100 L Bagtanks. A distributor pump is also available as an option for the 20 L Bagtank. In addition, a wall holder for the space-saving and user-friendly installation of this tank is also available.

Water dispensing flow rate

With pump ¹	up to 3.0 L/min
With pump, remote dispenser and Sterile Plus filter ¹	up to 2.0 L/min
Without pump ²	up to 1.5 L/min
Pump pressure	3 bar

Intended Use

Device type:

- Arium® Advance RO

Technical Specifications | Ordering Information

Materials	
Bagtank	Stainless steel plastic
Bag	S71 film
Tubing	PE silicone

Dimensions, excluding rollers and wall bracket [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 L
Bagtank 50	1 × 50 L
Bagtank 100	2 × 50 L
Power supply ¹	240 VAC (± 10%), 50 Hz, 120 VA (max.)
Power supply US versions ¹	115 VAC (± 10%), 60 Hz, 170 VA (max.)
Operating temperature	2°C – 35°C at max. 80% relative humidity
Storage temperature	5°C – 45°C at max. 80% relative humidity

Water connection input

1 × 3/8" PLC quick-connect coupling

Water connection output

Bagtank 20	1 × 3/8" PLC quick-connect coupling
Bagtank 50, Bagtank 100	2 × 3/8" PLC quick-connect coupling

¹ Bagtank 20 is supplied without a pump as standard, pump optionally available

² Value only applies to Bagtank 20, dispensing site at the same height or lower than the tank outlet

³ Note: The Arium® Bag is not included in the scope of delivery of the Arium® Bagtank

Order number	Description
H2O-AOV-20 ³	Arium® Bagtank 20 L, without pump, 1 pc
H2O-AOV-50 ³	Arium® Bagtank 50 L, with pump 240 VAC, 50 Hz, 1 pc
H2O-AOV-50-US ³	Arium® Bagtank 50 L, with pump 115 VAC, 60 Hz, 1 pc
H2O-AOV-50-W ³	Arium® Bagtank 50 L, without pump, 1 pc
H2O-AOV-100 ³	Arium® Bagtank 100 L, with pump 240 VAC, 50 Hz, 1 pc
H2O-AOV-100-US ³	Arium® Bagtank 100 L, with pump 115 VAC, 60 Hz, 1 pc
H2O-AOV-100-W ³	Arium® Bagtank 100 L, without pump, 1 pc
H2O-ADP-20	Pump Arium® Bagtank 20 L, 240 VAC, 50 Hz, 1 pc
H2O-ADP-20-US	Pump Arium® Bagtank 20 L, 115 VAC, 60 Hz, 1 pc
H2O-ATR	Rollers for Arium® Bagtank 50 & bag-tank 100, including fastening material, 4 pcs
H2O-CBS-20	Arium® 20 L Bag for Arium® 20 L Bagtank, 2 pcs
H2O-CBS-50	Arium® 50 L Bag for Arium® 50 L and 100 L Bagtank, 2 pcs
H2O-ATB	Wall mount for Arium® Bagtank 20, 1 pc

Arium® Smart Station

Remote dispensing at high flexibility

- Compact: Save space integrating in your lab
- Intuitive: Touch-activated color display with direct access to all important functions
- Flexible: Stepless height adjustment to fill different size containers
- Accurate: Precise volume dispense for reliable buffer and sample preparation

Description

The Arium® Smart Station is designed for flexible remote dispensing of pure water directly at the point of use. While dispensing water into a broad range of different sized containers, the Smart Station offers constant control of every important quality parameters, at all times. The ergonomic design supports left- and right-hand operation and can be easily adjusted to your need.

Using the extended connection set, the distance between the Smart Station and the Arium® Bagtank can be set up to 4 meters. Based on your needs different point of use filters can be added.

Arium® Smart Station Pure:

Supply pure water from Arium® Bagtank



Technical Specifications | Ordering Information

Dimensions Smart Station Bench-Top

Control box with stand (w × d × h)	213 × 213 × 598 mm (8.4 × 8.4 × 8.2")
Operating range fixed dispense arm (d × w × h)	428 × 476 × 835 mm (16.9 × 18.7 × 32.9")
Tubing Length: Distance to water system bagtank	2 Meter
Operating range flexible hand held	0.7 Meter
Weight	Approx. 4.9 kg (10.8 lbs)

Dimensions Smart Station Wall-Mounted

Control box (w × d × h)	172 × 157 × 343 mm (6.8 × 6.2 × 13.5")
Operating range dispense arm (d × w × h)	242 × 90 × 300 mm (9.5 × 3.5 × 11.8")
Tubing Length: Distance to water system bagtank	2 Meter
Operating range flexible hand held	0.7 Meter
Weight	Approx. 2.4 kg (5.3 lbs)

General Specifications

Volume-controlled dispensing	50 mL - 50 Liter
Volume accuracy	±5% between
Power supply	100 - 240 VAC; 50 and 60 Hz, 2.5 A (max.) 2 °C - 40 °C
Power cord (IEC 60320-1 / C14)	Country specific

Order number	Description
H2O-ARST-P-T	Arium® Smart Station Pure for benchtop installation
H2O-ARST-P-B	Arium® Smart Station Pure for wall-mounted installation

Benchtop and wall-mounted edition can be assembled for left or right hand side, without additional equipment required.

Intended Use

Device type:

- Arium® Bagtank

Arium® Extended Connection Set

Flexible enhance your working space

- Extend the operating range up to 4 meter
- Fast and reliable connection

Description

The extended tubing set is used for the Arium® Smart Station Pure for uncomplicated extension of the standard supplied tubing set.

With the extension set the operating range can be easily increased from 2 up to 4 meter.



Technical Specifications | Ordering Information

Materials

Cable	Ethernet CAT6A
Tubing	¼"

Length

Operating range	4 meter
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Order number

H2O-ATES-P

Description

Arium® Tubing Extension Set Pure

Benchtop and wall-mounted edition can be assembled for left or right hand side, without additional equipment required.

Intended Use

Device type:

- Arium® Smart Station Pure

Arium® Water Guard

Early detection of leakages protects the laboratory

- Highly sensitive optical sensor
- Audiovisual alarm signals
- Automatic water stop in the case of leakage
- High-quality material, no corrosion
- Easy to install
- Integrated wall mounting bracket for solenoid 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 range that the activation of the guard is not guaranteed. Once a leak 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. With its sensitive optical sensors and high-quality materials, the Arium® Water Guard is perfect for all ultrapure and pure water systems.



Technical Specifications | Ordering Information

Sensor dimensions	
Diameter	5 cm
Height	2.5 cm
Cable length	2 m

Tubing connections	
Input	3/8" Plug-in connector
Output	3/8" Plug-in connector
Power supply	100 – 240 VAC 50 – 60 Hz

Order number	Description
610AWG1	Arium® Water Guard, 1 pc

Intended Use

Device type:

- Arium® Advance RO

Consumables

Arium® Sterile Plus

Sterile and particle-free water dispensing

- Excellent service life and flow rates
- Integrity tested
- Validated according to HIMA and ASTM F-838-05
- Meets WFI quality standards pursuant to USP incl. USP plastic class VI test
- Production in accordance with DIN ISO 9001
- Easy to install
- Automatic venting
- Certified quality



Description

The Arium® Sterile Plus (Sartopore® 2 150) is a sterile, ready-to-use membrane filter capsule suitable for the most stringent requirements. Arium® Sterile Plus membrane filter capsules contain a hydrophilic, heterogeneous polyethersulfone double membrane. These provide an excellent service life and flow rates. The capsule can be attached to an Arium® Smart Station and reliably removes all particles and microorganisms. A hydrophobic PTFE membrane at

the farthest point “upstream” allows for easy and clean ventilation of the capsule.

All pleated Arium® Sterile Plus membrane filter units are validated as sterile filters for biopharmaceutical application according to the HIMA and ASTM F-838-05 guidelines (documentation available). During the manufacturing process, every capsule is integrity-tested to meet the highest quality standards.

Technical Specifications | Ordering Information

Materials	
Membranes	Asym. Polyethersulfone
Bell assembly	Polycarbonate
Other plastics	Polypropylene

General Specifications	
Pore size	0.45 µm × 0.22 µm
Filtration area	0.015 m ²
Input and Output	¼" Plug-in connector
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

Typical Specifications	
Bacteria	<0.001 CFU/mL
Particle content	No particles > 0.22 µm

Order number	Description
5441307H4--CE	Arium® Sterile Plus (Sartopore® 2 150 Capsule), 0.22 µm pore size, 1 pc

Intended Use

Device type:

- Arium® Smart Station Pure

Arium® Cell Plus Ultrafilter

For effective removal of endotoxins in cell culture applications

- Effective removal of RNase | DNase
- Reliable removal of endotoxins
- High flow rate performance
- Certified quality
- Sterile-packaged

Description

The Arium® Cell Plus is a point-of-use ultrafilter for efficient removal of endotoxins, RNase, DNase, microorganisms and particles.

Connected to an Arium® Smart Station, this sterile-packaged ultrafilter provides high protection for your critical cell culture applications. A protective bell supplied with the ultrafilter additionally prevents retrograde contamination.

Moreover, the high-grade material selected for Arium® Cell Plus enables excellent total throughputs and optimal flow rates.



Technical Specifications | Ordering Information

Materials	
Membrane	Polysulfone
Composite material	Polyurethane (PUR)
Housing	Acrylonitrile butadiene styrene (ABS)
Protective bell	Polycarbonate (PC)

Typical Specifications	
Flow rate (depends on the inlet pressure and type of system)	Up to 2.0 L/min
Endotoxins	<0.001 EU/mL
Bacteria	<1 cfu/100 mL
RNase concentration	<1 pg/mL
DNase concentration	<5 pg/mL

General Specifications	
Cut-off	15,000 Daltons 0.005 µm
Inlet and Outlet	¼" Plug-in connector
Dimensions (height x diameter)	169 x 50 mm
Max. operating pressure	6 bar (87 psi)
Max. inlet temperature	50 °C
Effective membrane area	0.5 m ²

Order number	Description
H2O-CUF	Arium® Cell Plus Ultrafilter, 1pc

Intended Use

Device type:

- Arium® Smart Station Pure

Arium® RO Pretreatment Cartridge

Safe protection of the RO module

- Fast and effective adsorption of impurities through high-grade activated carbon
- 5 µm depth filter for the retention of particles
- Highly efficient catalyst for removing free chlorine
- Patented cartridge design for easy installation

Description

An efficient 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 oxidation agents, such as free chlorine, heavy-metal ions and particulate contaminants from the feed water of the system.

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

The patented cartridge design ensures minimal time expenditure with ultra-easy installation and exchange.

Technical Specifications | Ordering Information

Materials	
Housing	High-quality 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



Order number	Description
H2O-CPFAD-1	Arium® RO Pretreatment Cartridge, 1 pc

Intended Use

Device type:

- Arium® Advance RO

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 contains a low-energy reverse osmosis membrane in a polypropylene housing.

The housing has connections for feed water, permeate (product water) and concentrate (discarded water). The RO modules enable an ideal water yield, thereby optimizing the water consumption. At the same time, up to 98 % of the salts are typically retained. 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 after a standstill allows for the immediate dispensing of high quality water.

Technical Specifications | Ordering Information

Materials	
RO membranes	Low-energy membrane made of polyamide
Housing	Polypropylene

Dimensions for each module	
Height	30.8cm
Diameter	7.8cm
Weight	0.468 kg
Product Water Quality	See "Technical Specifications" page 2

Order number	Description
H2O-CRO-H- 1	Arium® RO Module, 1pc
H2O-CRO-H- 2	Arium® RO Module, 2 pcs

Intended Use

Device type:

- Arium® Advance RO

Arium® RO Cleaning Set

Maximum service life of the RO module

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

Description

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

The alkaline substance contains non-foaming surfactants that dissolve organic compounds, disperse colloids and can be quickly removed again from the membrane surface. Cleaning efficiency depends on the pH value that is steadily maintained by buffer substances through a large temperature range.

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



Technical Specifications | Ordering Information

Ingredients	
Alkaline cleaner	HEDTA, ethanolamine, triethanol-amine
Acidic cleaner	HEDTA, phosphoric acid, citric acid

Order number	Description
H2O-CCS	Arium® RO cleaning Set, 1 pc

Intended Use

Device type:

- Arium® Advance RO

Sartorius Service

We Ensure the Quality of Your Results

At Sartorius, quality products go hand in hand with professional service. With our wide service offering, we will help guarantee the reliable and optimal operation of your Arium® systems. Just ask us and we will even cover the entire life cycle of your laboratory water system – from commissioning to qualification to regular maintenance. Together with you, we will ensure the consistently high quality of your laboratory water purification.

Our Services at a Glance:

Installation and Commissioning

Your advantage: Your system will operate reliably at peak performance from day one

Equipment Qualification (IQ | OQ)

Your advantage: You will meet all regulatory requirements (GMP | GLP)

Regular Preventative Maintenance, including **Calibration**, inspection and testing of your system and exchange of consumables

Your advantages: Optimal operation of your system; reliable results; prevention of downtime or even equipment failure

Get more information now at:

www.sartorius.com/en/services




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