

adrona

Water purification systems

Crystal B series



Crystal B Ultrapure
Crystal B HPLC
Crystal B Bio
Crystal B Pure

Features

■ The highest water quality

- Perfect water quality control is guaranteed by two sensors directly at the Grade I dispense point and at the entrance of the storage tank.
- Automatic recirculation maintains good quality of water in the storage tank.
- Graphic LCD display with large and clear water quality indication.

■ Attractive price and low running costs

- Both pure and ultrapure water produced by the same system.
- Indication of deionization module replacement, based on module performance, not on running time. You replace the module only when it is fully exhausted.

■ Convenience of use

- Easy replacement of cartridges. No tools are needed!
- Convenient ultrapure water dispense
- Removable wireless controller based on Bluetooth technology intended for easy operation and space-saving
- Built-in pure water dispense pump allows the tank to be placed under the table to save space.
- Indication of remaining pre-filter life time.

■ Safety of operation

- High reliability of all components.
- Feed pressure control.
- Safety functions to prevent storage tank overflow.



Description

Crystal B systems are advanced water purification systems designed for convenient and reliable operation. Crystal B systems produce pure and ultrapure water of highest quality and have very competitive running costs.

Ultrapure water quality with resistivity $18.2 \text{ M}\Omega \times \text{cm}$ exceeds requirements of ISO 3696 Grade I.

It is well known that pure (ISO 3696 Grade II) water production is much cheaper than ultrapure (ISO 3696 Grade I) water production. Moreover, pure water meets requirements of many analytical methods, including atomic absorption and ICP-OES. Crystal B systems are equipped with a storage tank with a pump. The tank pump allows convenient dispensing of pure water right from the storage tank with a high flow rate (4 LPM).

For ultrapure applications the system has an ultrapure (Grade I) water dispense port at the front of unit.



To save space, the Crystal B system can be attached to a wall. Thanks to the dispense pump, the storage tank can be placed on the floor, under the desk. So, no desk space is required!

For convenience of operation, the system can be controlled remotely via Bluetooth controller. If the system is placed on a wall above the laboratory desk you can easily control it by keeping the wireless controller on the desk.

Large graphic LCD display assures clear and legible indication of water quality and provides all information about system status.

Pre-filter life is shown on the display, so you always know how much time is left till the replacement filter is needed.



Crystal B systems monitor deionization module performance. When the module life comes to an end, a message is shown that the module needs replacement. The module replacement interval is based on module performance, not on running time. In that way we make sure that the deionization module fully uses its resource.

Water dispensing is as easy as pressing a button. Automatic recirculation is used to make sure the dispense water is of highest quality.

Depending on application, Crystal B system is available in three modifications.

- **Crystal B Pure** is a water purification system that produces Grade II water, that is suitable for preparation of reagents, atomic absorption spectrometry and methods of inorganic analysis, biochemical analyzers.
- **Crystal B Ultrapure** is a general purpose water purification system. It is suitable for preparation of reagents, atomic absorption spectrometry (graphite furnace), ICP-OES analysis, ICP-MS.
- **Crystal B HPLC** produces water with low organic carbon (low TOC), so it meets requirements of liquid chromatography methods. Can be also used for microbiological and a number of molecular biology applications.
- **Crystal B Bio** system produces water with low organic and RNase/DNase content that is intended for molecular biology applications, that are sensitive to RNase.

Applications

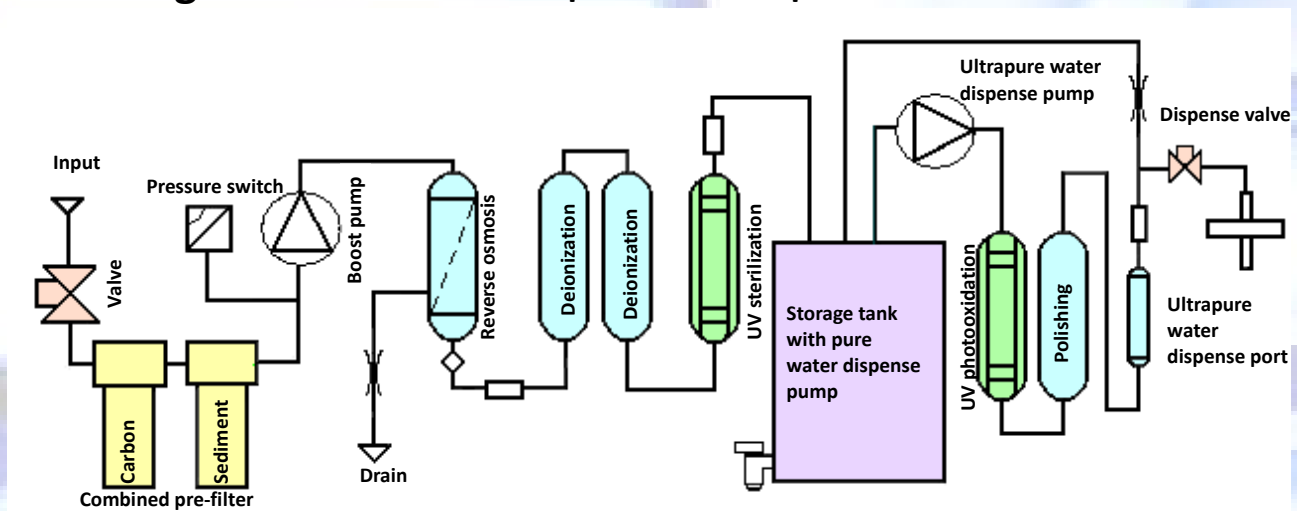
Application	Crystal B Pure	Crystal B Ultrapure	Crystal B HPLC	Crystal B Bio
Grade II	●	●	●	●
Grade I water	-	●	●	●
Atomic absorption, ICP-OES	●	●	●	●
ICP-MS	-	●	●	●
HPLC, GC	-	-	●	●
TOC	-	-	●	●
Flow cytometry	-	-	-	●
Cell and tissue culture	-	-	-	●
Molecular biology	-	-	-	●

Specifications

Purified water specifications	Crystal B Pure	Crystal B Ultrapure	Crystal B HPLC	Crystal B Bio
Grade II water resistivity	>10 MΩ x cm	>10 MΩ x cm	>10 MΩ x cm	>10 MΩ x cm
Grade II water conductivity	<0.1 μS/cm	<0.1 μS/cm	<0.1 μS/cm	<0.1 μS/cm
Grade I water resistivity	-	18.2 MΩ x cm	18.2 MΩ x cm	18.2 MΩ x cm
Grade I water conductivity	-	0.055 μS/cm	0.055 μS/cm	0.055 μS/cm
TOC	5 – 10 ppb	5 – 10 ppb	<2 ppb	<2 ppb
RNase	-	-	-	<0.01 ng/mL
DNase	-	-	-	<4 pg/μL
Bacteria	-	< 1 cfu/mL	< 1 cfu/mL	< 1 cfu/mL
Endotoxins	-	<0.15 EU/mL	<0.15 EU/mL	< 0.001 EU/mL
Particles > 0.22 μm	-	<1 per mL	<1 per mL	<1 per mL
Nominal flow, pure water (to storage tank)	10 L/h	10 L/h	10 L/h	10 L/h
Dispense flow, ultrapure water	-	1 L/min	1 L/min	0.5 L/min
Dispense flow, pure water	4 L/min	4 L/min	4 L/min	4 L/min
Deionization module life (standard module)	1 m ³	1 m ³	1 m ³	1 m ³
Recovery	>30 %	>30 %	>30 %	>30 %
Width	470 mm	470 mm	470 mm	470 mm
Depth	400 mm	400 mm	400 mm	400 mm
Height	590 mm	590 mm	590 mm	590 mm
Storage tank	option	25 L	25 L	25 L

Feed water specifications				
Feed water pressure	0.5 – 5 bar	0.5 – 5 bar	0.5 – 5 bar	0.5 – 5 bar
Feed water conductivity	< 900 μS/cm	< 900 μS/cm	< 900 μS/cm	< 900 μS/cm

Flow diagram with indication of pure water dispense



Accessories

Part number	Accessory	Crystal B Pure	Crystal B Ultrapure	Crystal B HPLC	Crystal B Bio
10009	Pre-filter for chlorine and organics reduction	+	+	+	+
	Boost pump	+	+	+	+
	Reverse osmosis module	+	+	+	+
10310	Deionization module, standard	+	+	+	+
10029	Polishing module	-	+	+	+
10105	Photooxidation module	option	option	+	+
10012	Point-of-use microfilter	-	+	+	-
10109	Point-of-use ultrafilter for RNase elimination	-	option	option	+
10102	UV sterilization module	option	option	option	+

Consumables

Part number	Description	Replacement interval	Comments
10019	Replacement pre-filter set, Crystal B	When filter life counter goes to zero or when the filter is clogged	
10310	Replacement deionization module	When ION error message is shown, or when water conductivity is > 0.5 µS/cm	
10029	Replacement polishing module, double	Depends on water consumption	
10011	Replacement sterilization UV bulb	Every year	For the systems equipped with 10102 UV sterilization module
10018	Replacement photooxidation UV bulb	Every 2-3 years	For the systems equipped with 10105 photooxidation module
10012	Replacement 0.22 µm dispense filter	Every 6 months	

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