

Crystal

Water purification systems



adrona

Crystal

Water purification system

The Adrona Crystal system is a multi-purpose water purification system producing both Grade I and Grade II water. The system is based on reverse osmosis and ion exchange technologies optimized to the best quality. Crystal has a good price/performance ratio and low operation costs.

Product Features



Remote control based on Bluetooth technology

The Crystal system provides unprecedented installation flexibility due to the removable microprocessor control module based on Bluetooth technology. The module provides full control of functions, operation parameters and accessories. It can be easily placed or removed from the Crystal system. Possibility to control Crystal remotely allows saving space on laboratory benches, as the system can be placed under a bench.

Full information on system status

The Crystal controller provides full information about the system thus ensuring operator awareness of the current operation mode, water quality, residual service life of the filters.

Cost-saving

The Crystal system notifies the operator when replacement of the filters is necessary. Replacement interval for the filters is based on operational time, thus enabling to take advantage of full filter service life. The quality of deionization module is monitored and it is replaced only when depleted, not on time basis, providing optimal running costs.

Space saving

The Crystal system is designed to ensure space-saving on laboratory benches. It can be mounted on a wall or under bench. Bluetooth controller provides easy access to the device.

No compromises!

The Crystal system is equipped with all components necessary for smooth operation in the worst case conditions. Some manufacturers exclude various components (e. g. booster pump, reverse osmosis module) from purification chain. We ensure water quality is not compromised, so all the necessary components are included into the Crystal system.

Automatic disinfection

The Crystal system automatically performs the disinfection of RO module in programmed intervals. No user intervention is required. The process is fully automatic.

Easy maintenance

Maintenance is simple due to easy access to cartridges. Quick connectors allow fast replacement of the components.

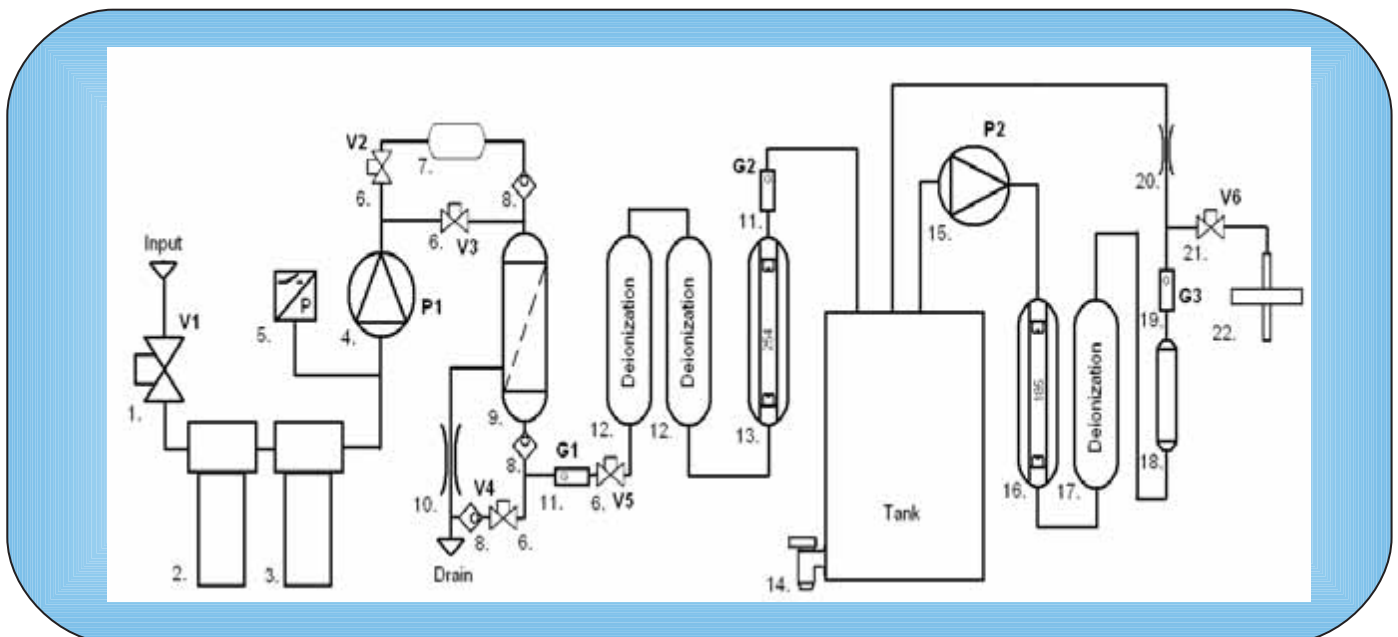
UV Photo-oxidation technology

Optional dual-wavelength UV lamp is provided for TOC sensitive applications. SIA Adrona can provide a custom-made design to meet the demands of the regulatory bodies and to satisfy specific customer needs.

Water storage tank

A storage tank stocks Grade II water available for direct dispensing and supplies it for the production of Grade I water. Grade I water is produced by a further treatment of Grade II water including bacteria filtration and photooxidation. The tank contains a level sensor, a faucet or a pump for dispensing Grade II water and a pump for dispensing Grade I water. The tank can be equipped with optional accessories such as recirculation pump, sterile air filter.

Flowsheet



Nr.	Name	Amount
1	Input solenoid valve	1
2	Carbon filter	1
3	Sediment filter	1
4	RO pump	1
5	Low pressure sensor	1
6	Solenoid valve	4
7	Sanitization module	1
8	Checkvalve	3
9	RO membrane	1
10	Restrictor	1
11	Conductivity sensor	2
12	Ion-exchange module	2
13	UV lamp (254 nm)	1
14	Water storage tank	1
15	Pump	1
16	UV lamp (185 nm)	1
17	Ion-exchange module	1
18	Sediment filter (5 micron)	1
19	Conductivity sensor	1
20	Restrictor	1
21	Solenoid valve	1
22	Bacteria filter	1

Crystal Benefits

- Quality of permeate water corresponds to ISO 3696 standard Grade II and Grade I.
- Capacity from 10 to 20 liters per hour.
- Based on the proven technologies such as reverse osmosis, ion exchange and photooxidation.
- Fully automated system.
- Easy and convenient user interface.
- Remote controller based on bluetooth technology.
- 60 l or 30 l pure water storage reservoir with level control, a faucet and a pump.
- Additional features for storage tank such as sterile vent and recirculation.
- Low operation costs.
- Organic contaminants are effectively removed by dual-wavelength
- Photo-oxidation UV lamp.
- Anti-bacteria dispense filter.

Bluetooth



Bluetooth

Bluetooth Wireless Technology

Crystal water purification system is equipped with a microprocessor control module that can be operated remotely. Bluetooth wireless technology is used for communication between the controller and the module.

- *Bluetooth* wireless technology can operate over a distance of 10 meters.
- *Bluetooth* wireless technology is able to penetrate solid objects.
- *Bluetooth* technology is omni-directional and does not require line-of-sight positioning of connected devices.
- *Bluetooth* technology is safe and reliable.

Remote controller allows saving laboratory space, as the water purification system itself can be placed under the bench.

Crystal E

Multi-purpose water purification system

Product Features

Adrona *Crystal E* system is an economic model of a multi-purpose water purification system. In spite of an extremely affordable price, Crystal E system is able to produce both Grade I and Grade II water. The system is based on reverse osmosis and ion exchange technologies optimized to the best quality. Crystal E has a good price/performance ratio and very low operation costs.



A storage tank stocks Grade II water available for direct dispensing and supplies it for the production of Grade I water. Grade I water is produced by a further treatment of Grade II water including bacteria filtration and photooxidation. The tank contains a level sensor, a faucet for dispensing Grade II water and a pump for dispensing Grade I water. The tank can be equipped with optional accessories such as recirculation pump, sterile air filter.

No compromises! Crystal E system is equipped with all components necessary for smooth operation in the worst case conditions. Some manufacturers exclude components (e. g. booster pump, reverse osmosis module) from purification chain. We make sure water quality is not compromised, so all necessary components are included into the Crystal E system.

SIA Adrona can provide a custom-made design to meet the demands of the regulatory bodies and to satisfy specific customer needs.

Sterifeed

Water purification system for autoclaves

Sterifeed is a water purification system that is specially designed to produce feed water for autoclaves. Use of Sterifeed reduces the maintenance costs of autoclave and eliminates downtimes caused by inappropriate water supply.

Product Features



Water quality meets autoclave vendor's requirements

For smooth operation an autoclave needs feed water with conductivity of 3-15 uS/cm. If water conductivity is above 15 uS/cm then salt depositions may accumulate on heating elements eventually leading to heating element failure. If water conductivity is below 3 uS/cm, then water can attack internal surfaces of autoclave, thus damaging water level sensors, heating elements, connections. Sterifeed produces water inside 3 – 15 uS/cm range that is recommended by autoclave vendors and is not harmful for an autoclave.

Pressurized water storage tank

Pressurized water storage tank ensures consistent water supply to an autoclave. Many autoclaves need pressurized purified water supply. Some autoclaves have suction pumps for purified water intake, but if water supply is not pressurized, an air gap may appear that blocks the water flow. In such case no operation of the autoclave is possible until air is removed from the system. Pressurized water storage tank of "Sterifeed" system ensures smooth operation of an autoclave.

Status and water quality monitoring

„Sterifeed" system has a LCD display that provides information about the status of the system and water quality.

Easy connection

The "Sterifeed" has all necessary accessories for easy connection to an autoclave. No tools are required!

Low maintenance costs

The system does not require replacement of expensive components.

Built-in water softening module

Water softening module ensures long life of purifying elements.

Water purification

CRYSTAL 10 and CRYSTAL 5 laboratory deionizers

Crystal 10 and Crystal 5 are entry-level water purification systems allowing customers to replace obsolete water treatment technologies with modern ones. As all Crystal series systems, Crystal 10 and Crystal 5 have a good price/performance ratio and low operation costs.



CRYSTAL 5



CRYSTAL 10

Crystal 10 and Crystal 5 benefits:

- Quality of permeate water corresponds to ISO 3696 standard Grade II and Grade I (depending on accessories).
- Capacity from 5 till 10 liters per hour.
- Based on reverse osmosis and ion exchange technologies.
- Fully automated system.
- Easy and convenient user interface.
- Microprocessor control.
- 60 l or 30 l pure water storage reservoir with level control and a pump.
- Low operation costs.

•The capacity of the system is independent on fluctuations of feed water pressure. The operation is not affected even if water pressure falls below 0.7 bars!

•Desktop and wall-mount models with performance from 5 till 10 liters per hour. The quality of permeate water corresponds to ISO 3696 standard Grade II and Grade I (depending on accessories) that is sufficient for most laboratory applications. The quality of water is confirmed by independent laboratory tests.

•For bacteria sensitive applications we offer additional UV lamp cartridges and bacteria micro filters as well as pure water recirculation.

•Organic contaminants are effectively removed by dual-wavelength photo-oxidation UV lamp.

Specification / Model	CRYSTAL (wall-mount and benchtop)	CRYSTAL E (benchtop)	CRYSTAL 5 (wall-mount)	CRYSTAL 10 (benchtop)
Flow rate	10 - 20 l/h *	10 l/h	5 l/h	10 l/h
Max DI module life ^{2*}	6 m ³	5 m ³	2.5 m ³	8 m ³
Components:				
●sediment filter	+	+	+	+
●carbon filter	+	+	+	+
●boost pump	+	+	+	+
●waterstorage tank	optional	optional	optional	optional
●UV lamp	optional	optional	-	optional
●recirculation	optional	optional	-	optional
●bacteris filter	optional	optional	-	optional
●UV for low TOC	optional	optional	-	optional
●remote controller	+	-	-	-
●ultrafiltration module	optional	-	-	-
Dimensions (mm)	500x400x550	400x380x550	500x200x500	420x550x550
Weight (kg)	16	13	15	30
Purified water parameters	Na ⁺ , SO ₄ ²⁻ , Cl ⁻ , Br ⁻ , NO ₂ ⁻ , NO ₃ ⁻ , PO ₄ ³⁻ < 0.5 ppb Fe, Zn, Cu, Ce, Mn < 0.1 ppb Conductivity: 0.055 µS/cm.			
Recovery	> 30%	> 30%	> 30%	> 30%
Power consumption	100W	100W	50W	100W
Water connections:				
●input water: ¾" thread connector.	+	+	+	+
●output water and drain: ¼" JG connectors.	+	+	+	+

* capacity of 20 l/h is optional

^{2*} life depends on quality of input water