Laboratory water purification systems

adrona

PRODUCT CATALOGUE

WATER PURIFICATION SYSTEMS

Adrona water purification systems provide ultrapure (Grade 1), pure (Grade 2) and reverse osmosis (RO- Grade 3) water for laboratory needs. The quality of water meets the requirements of ISO 3696 standard and corresponding ASTM and CLSI standards.

Tap water systems	Water type
Q-Front	Ultrapure/pure
B30	Ultrapure/pure
Integrity +	Ultrapure
E30	Ultrapure/pure
Crystal EX	Ultrapure/pure/RO[1]
Crystal Clinic	Pure
Crystal Sterifeed	Pure

Polishing systems	Water type
Onsite +	Ultrapure
Connect	Ultrapure

1 depending on model, water purification systems can produce ultrapure and pure water or RO and pure water

Configurations According to Applications

Each Adrona model is available in various configurations according to the customer needs

Applications		RO	Pure	EDI	Trace	HPLC	Bio
General laboratory applications	Glassware rinsing	•	•	•	•	•	•
	Laboratory washers	•	•	•	•	•	•
	Autoclaves	•	•	•	•	•	•
	Electrochemistry		•	•	•	•	•
	Wet chemistry		•	•	•	•	•
	Spectrophotometry		•	•	•	•	•
	Buffer and media preparation		•	•	•	•	•
	Reagent preparation			•	•	•	•
Inorganic analysis methods	Flame atomic absorption spectrophotometry			•	•	•	•
	Graphite automizer atomic absorption spectrophotometry				•	•	•
	Plasma mass-spectrometry (ICP-MS)				•	•	•
	Plasma spectrophotometry (ICP-OES)				•	•	•
	Ion chromatography				•	•	•
Organic analysis methodes	Liquid chromatography (HPLC/ UHPLC)					•	•
	Gas chromatography					•	•
	Total organic carbon measurments					•	•
Molecular Biology	Flow cytometry						•
	Cell and tissue culture						•
	Molecular biology						•

FEATURES

The systems are installable by user and all cartridges and filters are user replaceable. All necessary consumables are installed into the water system and they are included in price.

Adrona water purification systems can be installed either on a laboratory bench or on a wall[1]. Wallmount installation provides the saving of valuable laboratory space.

Volumetric Dispense

Adrona water purification systems[2] have a volumetric dispenser, which enables the user to set accurate dispensing volume for each dispense cycle. The dispense volume can be set either from the keyboard or by using “teaching” mode. In “teaching” mode user uses “Dispense On/OFF” button to do the first dispense cycle manually. Afterwards, the system will dispense exactly the same volume each time the user presses the dispense button again.

Water Quality and Validation

Embedded recirculation loop ensures stable premium water quality and enables practical elimination of Total Organic Carbon (TOC).

Performance of the deionization and polishing modules is constantly monitored. Monitoring algorithm enables cutting running costs, as replacement of the modules is requested only when service life is close to the end.

Stability of water quality guaranteed by double Ion Exchange cartridge system. (Adrona systems have 2 Ion Exchange cartridges (deionization and polishing) therefore excellent water quality guaranteed even if one of them is waiting for replacement at the moment).

User can carry out the validation of water quality sensors right on the site (available on B30, Integrity+, Connect and Onsite+). It is possible to validate conductivity measuring circuits to check if they are operating properly. Validation kit for OQ is available as an option. This helps the customer to validate water quality measuring circuits on periodical basis. No visit of service engineer is required.

1 If not specified otherwise
2 Depends on model and configuration

Total Organic Carbon (TOC) Monitor

Organic contaminants may not have effect on conductivity of water, so conductivity sensors cannot be used for TOC monitoring. Therefore, a special TOC monitoring module is needed to measure TOC level. Several models of Adrona water purification systems have the TOC monitor feature. TOC values are shown on display.

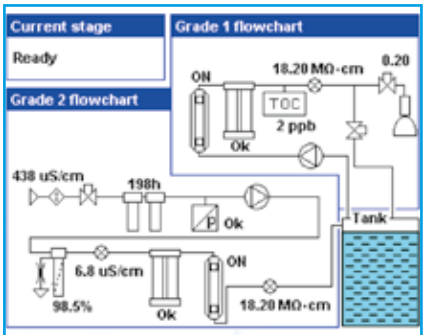
Displays

Provides clear water quality readout and information about the system status including current resistivity and remaining pre-filter service life.

Monochrome high resolution LCD display

Color graphic LCD display

The 16-bit color display provides clear readout of water quality, system component status, performance of the polishing module. System component status is reflected on the display in an intuitive color pattern (Green/Yellow/Red).



System flowchart shows all component status and water quality parameters at a glance.

Image can vary depending on model and its configuration.

Electrodeionization module

For the laboratories with the high water consumption Adrona offers electrodeionization module that is an option. It allows significantly reduce the running costs of water purification system due to fact the replacement of EDI module is not required anymore.

Safety

All the Adrona water purification systems have all necessary safety functions. They are tested by an independent and accredited company for compliance with the CE directives related to safety and electromagnetic compatibility.

Warranty and aftersales support

Adrona provides 2 year warranty and continuous technical support. Adrona support is evaluated very positively by dealers worldwide.

Certification

Adrona design, manufacturing, sales and service is ISO 9001:2009 certified to provide the highest quality in every aspect.

B30 AND INTEGRITY+

The high-end B30 and Integrity+ series water purification systems produce ultrapure and pure water for laboratory needs.

B30 model is equipped with external tank with capacity of 25L, larger capacities up to 60L (up to 300L for B30 EDI) are available as an option. Integrity+ series systems contain a 5L embedded tank to keep the system compact.

Description

	B30 Trace	B30 HPLC	B30 Bio	B30 EDI
Water type	• ultrapure water (Grade 1) • pure water (Grade 2)	• ultrapure water (Grade 1) • pure water (Grade 2)	• ultrapure water (Grade 1) • pure water (Grade 2)	pure water (Grade 2)
Application	• atomic absorption spectrometry • plasma optical emission spectrometry • other inorganic trace analysis	• chromatography • mass spectrometry • microbiology • molecular biology	• highly sensitive molecular biology • cell culture • other methods sensitive to RNase and endotoxins • biology applications	• water for general laboratory applications and inorganic analytical methods • recommended for labs with high pure water consumption
Display	colour graphic LCD display			
Water quality sensor	•	•	•	•
TOC Monitor	option	•	•	option
Measurment validation port	•	•	•	•
Volumetric dispense	•	•	•	-
Connection possibility to Flow Point	•	•	•	•
Storage tank	tank “Pro” 25 L included, other tanks optional			Not included
Installation	installable either on a laboratory bench or on a wall			

Description

	Integrity+ Trace	Integrity+ HPLC	Integrity+ Bio
Water type	ultrapure water (Grade 1)	ultrapure water (Grade 1)	ultrapure water (Grade 1)
Application	• atomic absorption spectrometry • plasma optical emission spectrometry • other inorganic trace analysis	• chromatography • mass spectrometry • microbiology • molecular biology	highly sensitive biology applications
Display	Color graphic LCD display		
Conductivity sensor	•	•	•
TOC Monitor	option	•	•
Measurment validation port	•	•	•
Volumetric dispensing	•	•	•
Connection possibility to Flow Point	•	•	•
Storage tank	embedded tank 5L		
Installation	installable either on a laboratory bench or on a wall		

Ordering information

Model	Part number
B30 Trace	CB-2301
B30 HPLC	CB-2303
B30 Bio	CB-2305
B30 EDI	CB30-1018
Integrity+ Trace	CB-2101
Integrity+ HPLC	CB-2103
Integrity+ Bio	CB-2105
Water quality sensor validation kit	10913
Electrodeionization module (for B30)	410107
Software compliant to GLP & CFR 21	410162
IQ/OQ documentation	10141

Specifications

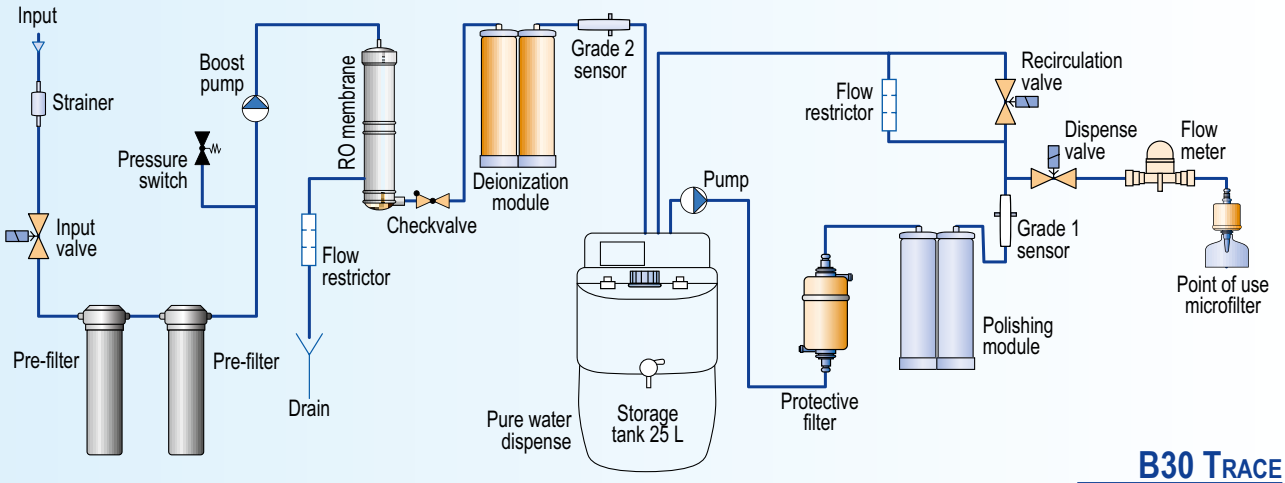
Purified water parameters	B30/Integrity+ system configuration			
	Trace	HPLC	Bio	EDI
Grade 1 water resistivity	18.2 MΩ x cm	18.2 MΩ x cm	18.2 MΩ x cm	-
Grade 1 water conductivity	0.055 µS/cm	0.055 µS/cm	0.055 µS/cm	-
Grade 2 water resistivity	10 MΩ x cm	10 MΩ x cm	10 MΩ x cm	10 MΩ x cm
Grade 2 water conductivity	0.1 µS/cm	0.1 µS/cm	0.1 µS/cm	0.1 µS/cm
Total Organic Carbon (TOC) level	<10 ppb	<2 ppb	<2 ppb	<30 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/mL	<1/mL	<1/mL	-
Deionization module life*	1 m^3	1 m^3	1 m^3	N/A
Dimensions (WxDxH), cm	32x54x60	32x54x60	32x54x60	32x54x60
Feed water pressure	0,5 – 4 bar* 2 – 6 bar**	0,5 – 4 bar* 2 – 6 bar**	0,5 – 4 bar* 2 – 6 bar**	0,5 – 4 bar*

** B30 ** Integrity+*

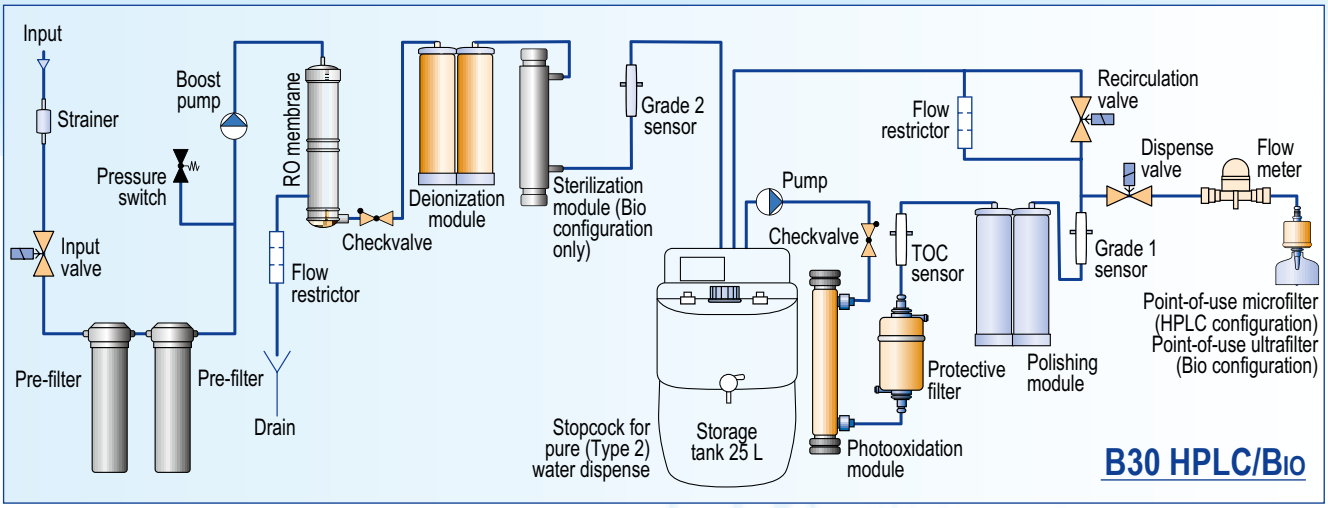
Consumables

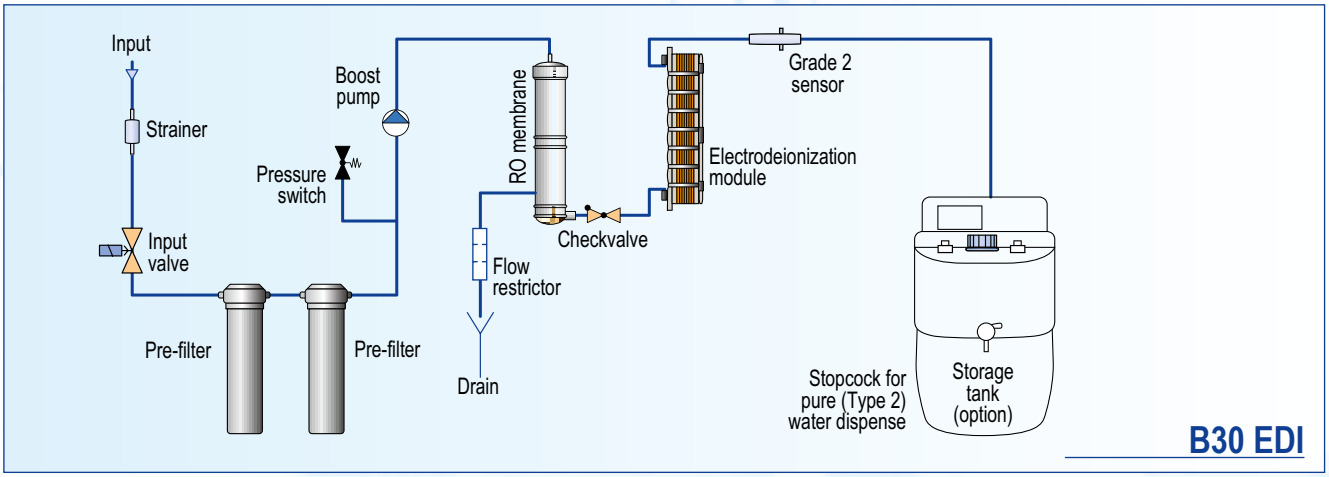
Part number	Description	Replacement criteria	Comments
10310	Deionization module	When indicated on the display or water conductivity is constantly > 0.1 µS/cm during tank filling stage	
10029	Polishing module	When indicated on the display or water conductivity is constantly > 0.1 µS/cm during recirculation	
10030	Polishing module “Polishing+”	When indicated on the display or water conductivity is constantly > 0.1 µS/cm during recirculation	
10319	Pre-filter set	Every 6 months or when pre-filters are clogged	
10018	UV photooxidation bulb	2-3 years on average	Only for „Bio” and „HPLC”
10012	Point-of-use microfilter	Every 6–12 months	Only for „Trace” and „HPLC”
10120	Point-of-use ultrafilter	Every 6–12 months	Only for „Bio”
10011	UV sterilization bulb	When required (on average every 3 years)	Only for „Bio”

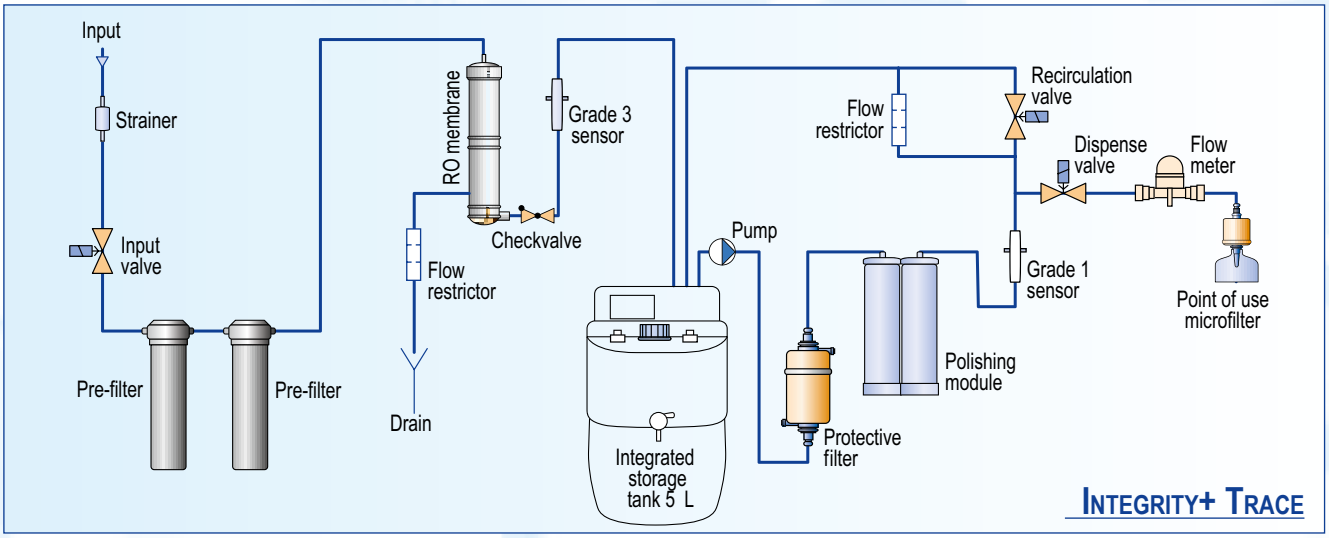
Flow diagram

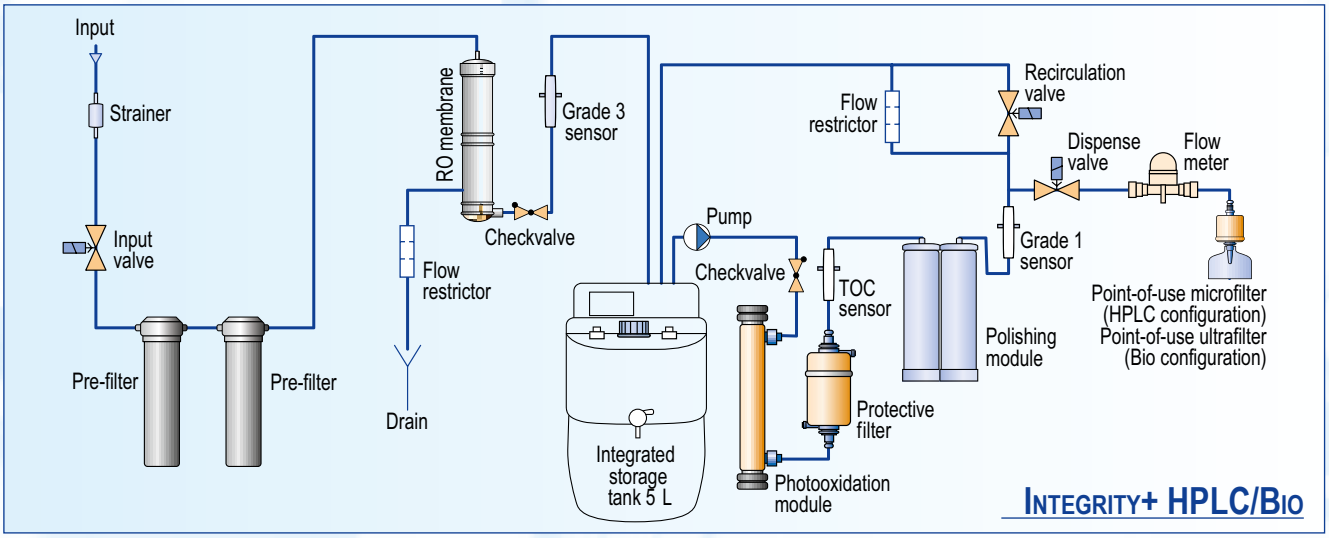


B30 Trace


Input
Strainer
Boost pump
Pressure switch
Input valve
Pre-filter
Pre-filter
RO membrane
Checkvalve
Deionization module
Sterilization module (Bio configuration only)
Grade 2 sensor
Flow restrictor
Drain
Pump
Checkvalve
Recirculation valve
Flow restrictor
Dispense valve
Flow meter
TOC sensor
Grade 1 sensor
Protective filter
Polishing module
Point-of-use microfilter (HPLC configuration)
Point-of-use ultrafilter (Bio configuration)
Stopcock for pure (Type 2) water dispense
Storage tank 25 L
Photooxidation module
B30 HPLC/Bio


Input
Strainer
Boost pump
Pressure switch
Input valve
Pre-filter
Pre-filter
RO membrane
Checkvalve
Electrodeionization module
Grade 2 sensor
Flow restrictor
Drain
Stopcock for pure (Type 2) water dispense
Storage tank (option)
B30 EDI


Input
Strainer
Input valve
Pre-filter
Pre-filter
RO membrane
Checkvalve
Grade 3 sensor
Flow restrictor
Drain
Pump
Recirculation valve
Flow restrictor
Dispense valve
Flow meter
Grade 1 sensor
Point of use microfilter
Polishing module
Protective filter
Integrated storage tank 5 L
INTEGRITY+ TRACE


Input
Strainer
Input valve
Pre-filter
Pre-filter
RO membrane
Checkvalve
Grade 3 sensor
Flow restrictor
Drain
Pump
Checkvalve
Recirculation valve
Flow restrictor
Dispense valve
Flow meter
TOC sensor
Grade 1 sensor
Point-of-use microfilter (HPLC configuration)
Point-of-use ultrafilter (Bio configuration)
Polishing module
Protective filter
Photooxidation module
Integrated storage tank 5 L
INTEGRITY+ HPLC/Bio

Q-FRONT

The newest pure and ultrapure water system with maximum features, convenience and performance. This is the essence of know-hows and experience of Adrona engineers obtained during the decades. Choose between 3 configurations to fit all specific laboratory needs.

Description

	Q-Front Trace	Q-Front HPLC	Q-Front Bio
Water type	• ultrapure water (Grade 1) • pure water (Grade 2)	• ultrapure water (Grade 1) • pure water (Grade 2)	• ultrapure water (Grade 1) • pure water (Grade 2)
Application	• atomic absorption spectrometry • plasma optical emission spectrometry • other inorganic trace analysis	• chromatography • mass spectrometry • microbiology • molecular biology	• highly sensitive molecular biology • cell culture • other methods sensitive to RNase and endotoxins • biology applications
Display	colour graphic LCD display		
Water quality sensor	•	•	•
TOC Monitor	option	•	•
Measurment validation port	•	•	•
Volumetric dispense	•	•	•
Connection to water dispensing unit "Flow Point"	Flow Point included in price	Flow Point included in price	Flow Point included in price
Storage tank	tank "Pro" 25 L included, other tanks optional		
Installation	installable either on a laboratory bench or on a wall		

Ordering information

Model	Part number
Q-Front Trace	AB-4101
Q-Front HPLC	AB-4103
Q-Front Bio	AB-4105
Water quality sensor validation kit	10913
Electrodeionization module (for B30)	410107
Software compliant to GLP & CFR 21	410162
IQ/OQ documentation	10141

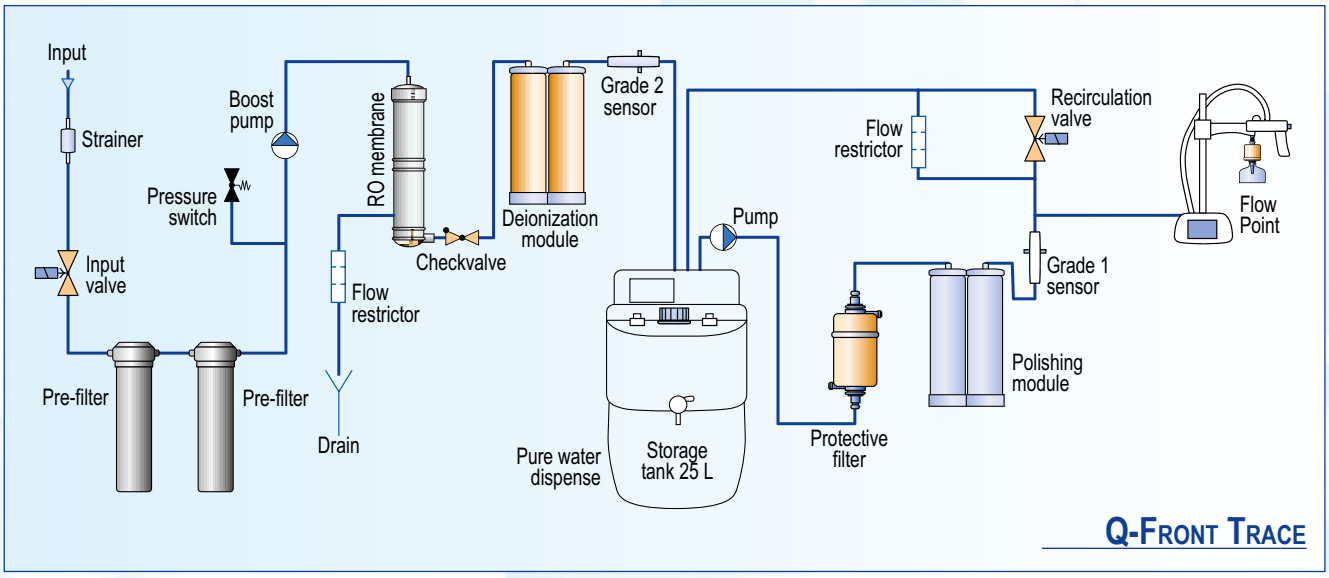
Specifications

Purified water parameters	Q-Front system configuration		
	Trace	HPLC	Bio
Grade 1 water resistivity	18.2 MΩ x cm	18.2 MΩ x cm	18.2 MΩ x cm
Grade 1 water conductivity	0.055 µS/cm	0.055 µS/cm	0.055 µS/cm
Grade 2 water resistivity	10 MΩ x cm	10 MΩ x cm	10 MΩ x cm
Grade 2 water conductivity	0.1 µS/cm	0.1 µS/cm	0.1 µS/cm
Total Organic Carbon (TOC) level	<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/mL	<1/mL	<1/mL
Deionization module life	1 m^3	1 m^3	1 m^3
Feed water pressure	0,5 – 4 bar	0,5 – 4 bar	0,5 – 4 bar

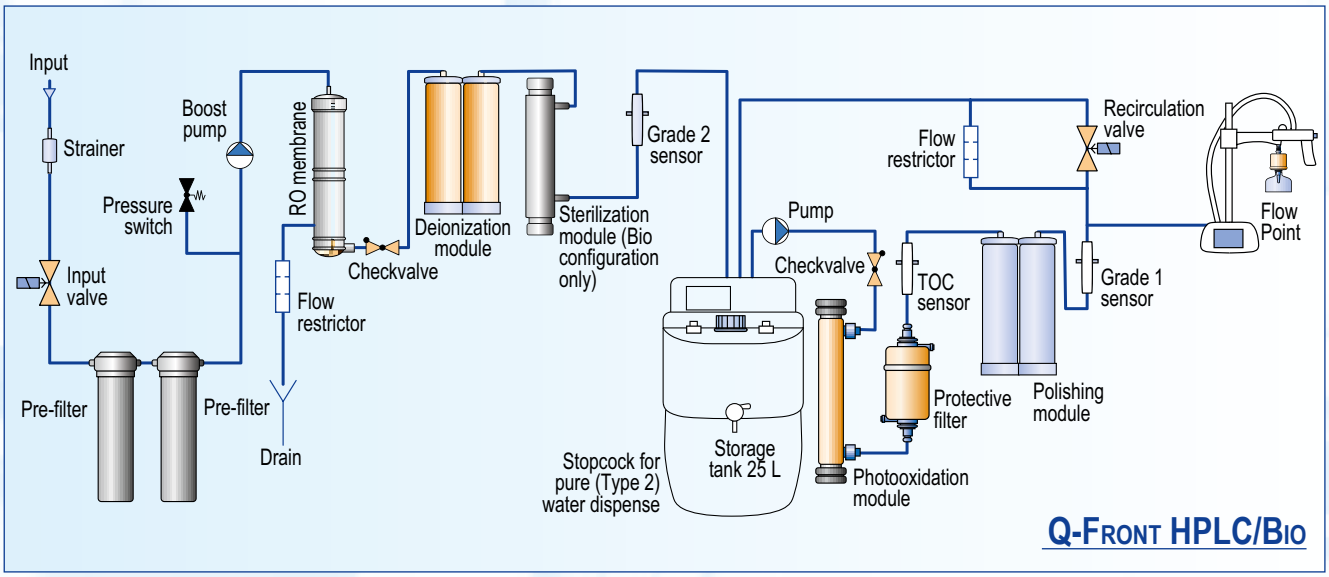
Consumables

Part number	Description	Replacement criteria	Comments
10310	Deionization module	When indicated on the display or water conductivity is constantly > 0.1 µS/cm during tank filling stage	
10029	Polishing module	When indicated on the display or water conductivity is constantly > 0.1 µS/cm during recirculation	
10030	Polishing module “Polishing+”	When indicated on the display or water conductivity is constantly > 0.1 µS/cm during recirculation	
10319	Pre-filter set	Every 6 months or when pre-filters are clogged	
10018	UV photooxidation bulb	2-3 years on average	Only for „Bio” and „HPLC”
10012	Point-of-use microfilter	Every 6–12 months	Only for „Trace” and „HPLC”
10120	Point-of-use ultrafilter	Every 6–12 months	Only for „Bio”
10011	UV sterilization bulb	When required (on average every 3 years)	Only for „Bio”

Flow diagram



Q-Front Trace



Q-Front HPLC/Bio

E30

E30 water purification system produce ultrapure and pure water for laboratory needs. It is designed for maximum convenience of use and have maximum features. This system is with optimal price/ performance ratio.

Ordering information

Model	Part number
E30 Trace	CE30-1001
E30 HPLC	CE30-1101
E30 Bio	CE30-1201

Description

	E30 Trace	E30 HPLC	E30 Bio
Water type	• ultrapure water (Grade 1) • pure water (Grade 2)	• ultrapure water (Grade 1) • pure water (Grade 2)	• ultrapure water (Grade 1) • pure water (Grade 2)
Application	• atomic absorption spectrometry • plasma optical emission spectrometry • other inorganic trace analysis	• chromatography • mass spectrometry • microbiology • molecular biology	highly sensitive biology applications
Display	Color LCD display		
Conductivity sensor	•	•	•
TOC Monitor	•	•	•
Measurment validation port	-	-	-
Volumetric dispensing	•	•	•
Connection possibility to Flow Point	•	•	•
Storage tank	tank “Pro” 25 L included, other tanks optional		
Installation	installable on a laboratory bench		

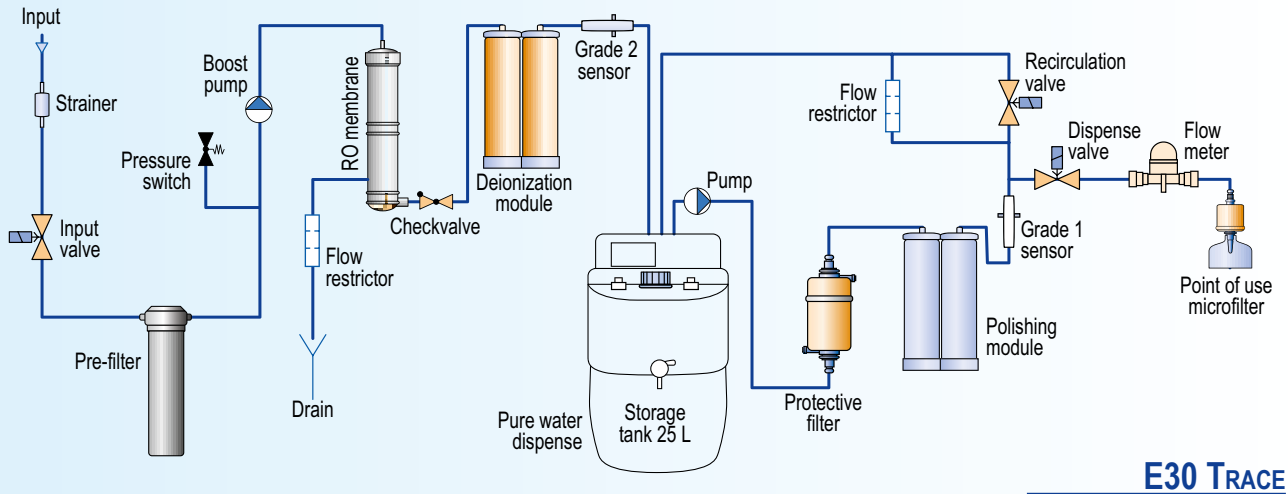
Specifications

Purified water specifications	E30 Trace	E30 HPLC	E30 Bio
Grade 1 water resistivity	18.2 MΩ x cm	18.2 MΩ x cm	18.2 MΩ x cm
Grade 1 water conductivity	0.055 µS/cm	0.055 µS/cm	0.055 µS/cm
Grade 2 water resistivity	>10 MΩ x cm	>10 MΩ x cm	>10 MΩ x cm
Grade 2 water conductivity	<0.1 µS/cm	<0.1 µS/cm	<0.1 µS/cm
Total Organic Carbon (TOC) level	5 – 10 ppb	<2 ppb	<2 ppb
RNase	N/A	N/A	<0.01 ng/mL
DNase	N/A	N/A	<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
Nominal dispense flow, pure water	4 L/min	4 L/min	4 L/min
Deionization module life (standard module)	1 m^3	1 m^3	1 m^3
Recovery	>30 %	>30 %	>30 %
Dimensions (WxDxH), cm	40x35x55	40x35x55	40x35x55
Feed water pressure	0,5 – 4 bar	0,5 – 4 bar	0,5 – 4 bar
Feed water conductivity	< 900 µS/cm	< 900 µS/cm	< 900 µS/cm

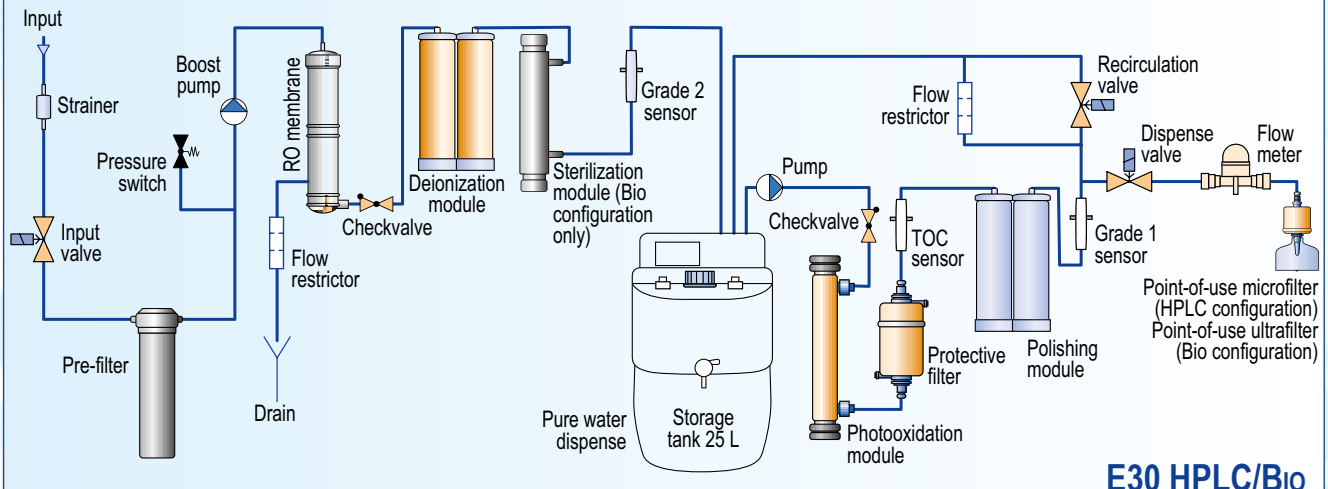
Consumables

Part number	Description	Replacement criteria	Comments
10320	Replacement pre-filter, E30	Filter life counter is zero or the filter is clogged	
10310	Replacement deionization module	„DI Err" message is shown, or water conductivity is consistently > 0.5 µS/cm	
10029	Replacement polishing module	Every 1–2 years, depending on operation	
10030	Polishing module "Polishing+"	Every 1–2 years, depending on operation	
10011	Replacement sterilization UV bulb	As required (on average – every 3 years)	„Bio" systems only
10018	Replacement photooxidation UV bulb	2-3 years on average	„HPLC" and „Bio" systems only
10012	Replacement 0.22 µm dispense microfilter	Every 6–12 months	„Trace" and „HPLC" systems
10120	Replacement ultrafilter	Every 6–12 months	„Bio" systems only

Flow diagrams



E30 Trace



E30 HPLC/Bio

CRYSTAL EX

Adrona Crystal EX produces ultrapure and pure water. This multipurpose water purification system is highly appreciated due to the very affordable price.

Ordering information

Model	Part number
Crystal EX Trace	EX-1001
Crystal EX HPLC	EX-1101
Crystal EX Bio	EX-1201
Electrodeionization module	410107
TOC monitoring module	10106

Description EX series

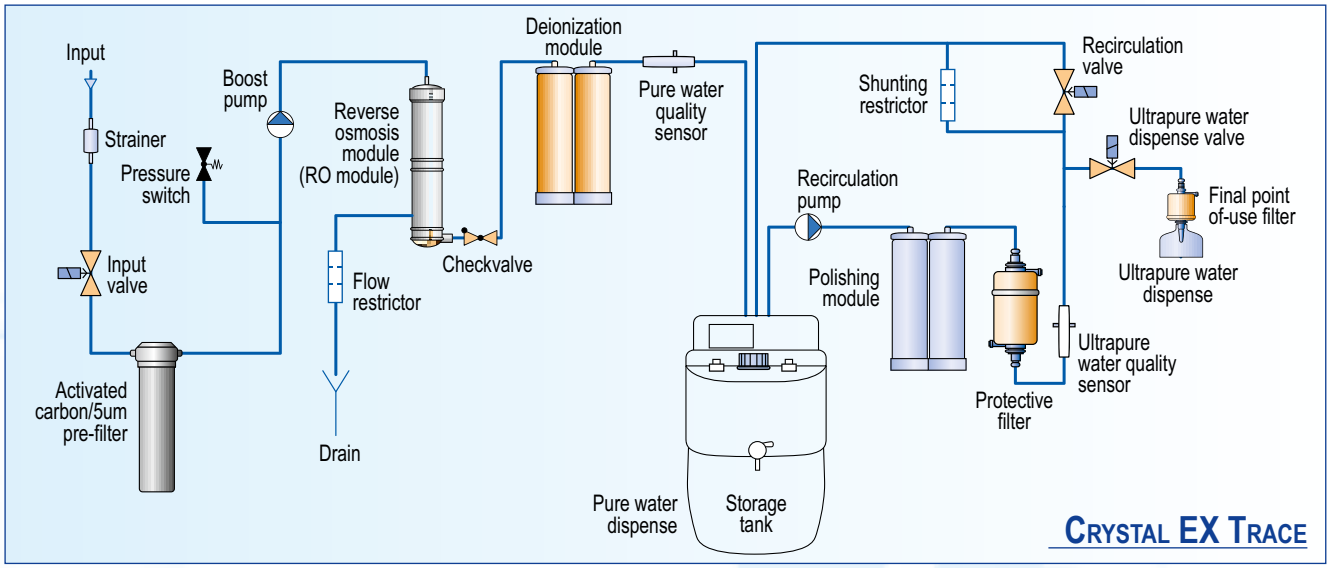
	Trace	HPLC	Bio
Water type	• ultrapure water (Grade 1) • pure water (Grade 2)	• ultrapure water (Grade 1) • pure water (Grade 2)	• ultrapure water (Grade 1) • pure water (Grade 2)
Application	• atomic absorption spectrometry • plasma optical emission spectrometry • other inorganic trace analysis	• chromatography • mass spectrometry • microbiology • molecular biology	highly sensitive biology applications
Display	Monochrome LCD display		
Conductivity sensor	•	•	•
TOC Monitor	option	option	option
Measurment validation port	-	-	-
Volumetric dispensing	-	-	-
Connection possibility to Flow Point	No	No	No
Storage tank	tank “Pro” 25 L included, other tanks optional		
Installation	installable on a laboratory bench		

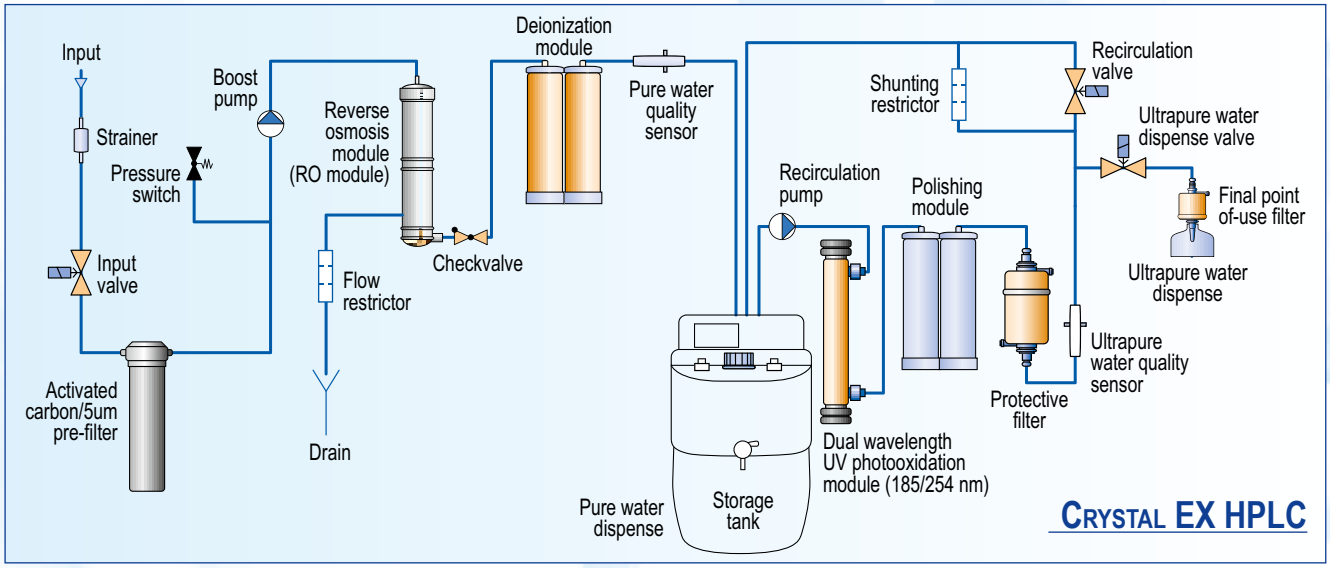
Specifications

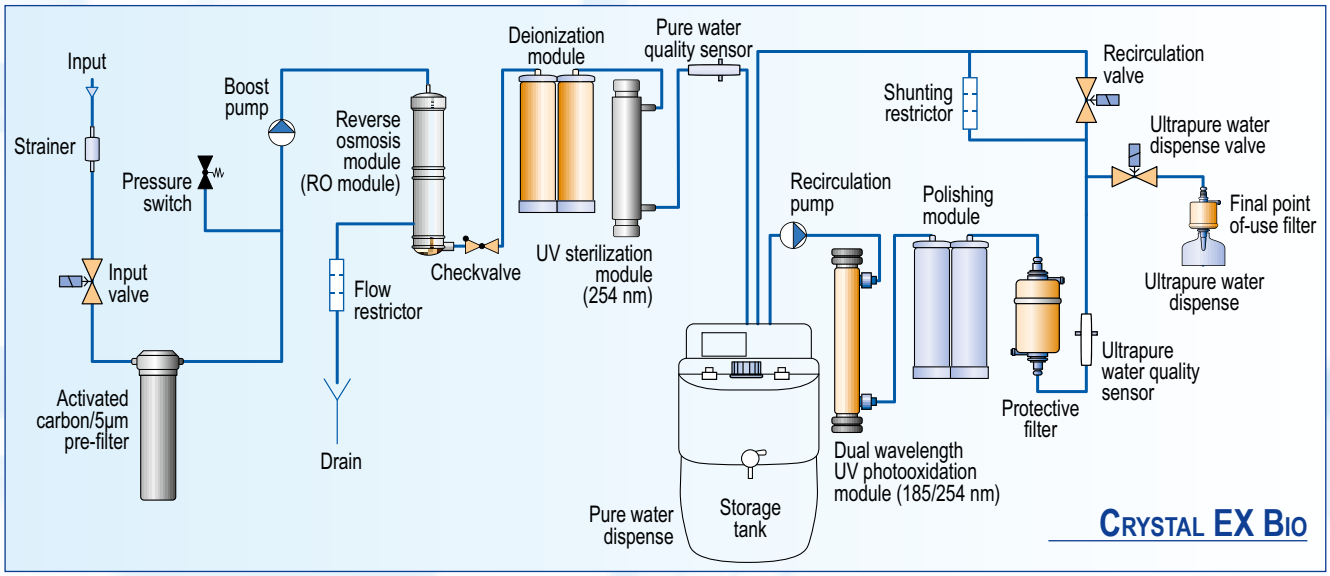
Purified water specifications	Crystal EX Trace	Crystal EX HPLC	Crystal EX Bio
Grade 1 water resistivity	18.2 MΩ x cm	18.2 MΩ x cm	18.2 MΩ x cm
Grade 1 water conductivity	0.055 µS/cm	0.055 µS/cm	0.055 µS/cm
Grade 2 water resistivity	>10 MΩ x cm	>10 MΩ x cm	>10 MΩ x cm
Grade 2 water conductivity	<0.1 µS/cm	<0.1 µS/cm	<0.1 µS/cm
Total Organic Carbon (TOC) level	5 – 10 ppb	<2 ppb	<2 ppb
RNase	N/A	N/A	<0.01 ng/mL
DNase	N/A	N/A	<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
Nominal dispense flow, pure water	4 L/min	4 L/min	4 L/min
Deionization module life (standard module)	1 m^3	1 m^3	1 m^3
Deionization module life (high capacity module)	3 m^3	3 m^3	3 m^3
Recovery	>30 %	>30 %	>30 %
Dimensions (WxDxH), cm	40x35x55	40x35x55	40x35x55
Feed water pressure	1 – 4 bar	1 – 4 bar	1 – 4 bar
Feed water conductivity	< 900 µS/cm	< 900 µS/cm	< 900 µS/cm

Consumables

Part number	Description	Replacement criteria	Comments
10320	Replacement pre-filter, Crystal EX	Filter life counter is zero or the filter is clogged	
10310	Replacement deionization module	„DI Err" message is shown, or water conductivity is consistently > 0.5 µS/cm	
10029	Replacement polishing module	Every 1–2 years, depending on operation	
10030	Polishing module "Polishing+"	Every 1–2 years, depending on operation	
10011	Replacement sterilization UV bulb	As required (on average – every 3 years)	„Bio" systems only
10018	Replacement photooxidation UV bulb	2-3 years on average	„HPLC" and „Bio" systems only
10012	Replacement 0.22 µm dispense microfilter	Every 6–12 months	„Trace" and „HPLC" systems
10120	Replacement ultrafilter	Every 6–12 months	„Bio" systems only


Input
Strainer
Pressure switch
Input valve
Activated carbon/5um pre-filter
Boost pump
Reverse osmosis module (RO module)
Flow restrictor
Drain
Checkvalve
Deionization module
Pure water quality sensor
Shunting restrictor
Recirculation valve
Ultrapure water dispense valve
Final point of-use filter
Ultrapure water dispense
Recirculation pump
Polishing module
Ultrapure water quality sensor
Protective filter
Pure water dispense
Storage tank
CRYSTAL EX TRACE


Input
Strainer
Pressure switch
Input valve
Activated carbon/5um pre-filter
Boost pump
Reverse osmosis module (RO module)
Flow restrictor
Drain
Checkvalve
Deionization module
Pure water quality sensor
Shunting restrictor
Recirculation valve
Ultrapure water dispense valve
Final point of-use filter
Ultrapure water dispense
Recirculation pump
Polishing module
Ultrapure water quality sensor
Protective filter
Dual wavelength UV photooxidation module (185/254 nm)
Pure water dispense
Storage tank
CRYSTAL EX HPLC


Input
Strainer
Pressure switch
Input valve
Activated carbon/5um pre-filter
Boost pump
Reverse osmosis module (RO module)
Flow restrictor
Drain
Checkvalve
Deionization module
UV sterilization module (254 nm)
Pure water quality sensor
Shunting restrictor
Recirculation valve
Ultrapure water dispense valve
Final point of-use filter
Ultrapure water dispense
Recirculation pump
Polishing module
Ultrapure water quality sensor
Protective filter
Dual wavelength UV photooxidation module (185/254 nm)
Pure water dispense
Storage tank
CRYSTAL EX BIO

CRYSTAL EX PURE
CRYSTAL EX DOUBLE FLOW
CRYSTAL EX RO

Flow diagrams

Crystal EX RO and Pure systems produce pure (Grade 2) and RO (Grade 3) water. Pure and RO water comply with the requirements of a variety of applications, including:

- many inorganic methods of analysis (e. g. flame spectrophotometry);
- wet chemistry methods;
- electrochemistry;
- labware washing, etc.

The water purification system Crystal Double Flow is specially designed for the laboratories and applications with high water consumption (30 L/day and more). The system includes a high capacity (8L) deionization module, that provides a reduction of system running costs. It is also possible to order 8L module option (P/N 10101) for the Crystal EX Pure system.

Description

	Crystal EX RO	Crystal EX Pure	Crystal EX Double Flow
Water type	RO water (Grade 3)	pure water (Grade 2)	pure water (Grade 2)
Application	• wet chemistry methods • labware washing • steam sterilizers	• flame spectrophotometry • inorganic analytical methods • electrochemistry • buffer preparation	• flame spectrophotometry • inorganic analytical methods • electrochemistry • buffer preparation
Display	Monochrome LCD display		
Conductivity sensor	•	•	•
TOC Monitor	-	-	-
Measurement validation port	-	-	-
Volumetric dispensing	-	-	-
Connection to Flow Point	No	No	No
Storage tank	Not included		
Installation	installable on a laboratory bench		

Ordering information

Model	Part number
Crystal EX RO	EX-1245
Crystal EX Pure	EX-1005
Crystal EX Double Flow	EX20-1001HC
Electrodeionization module	410107
High capacity deionization module	10101

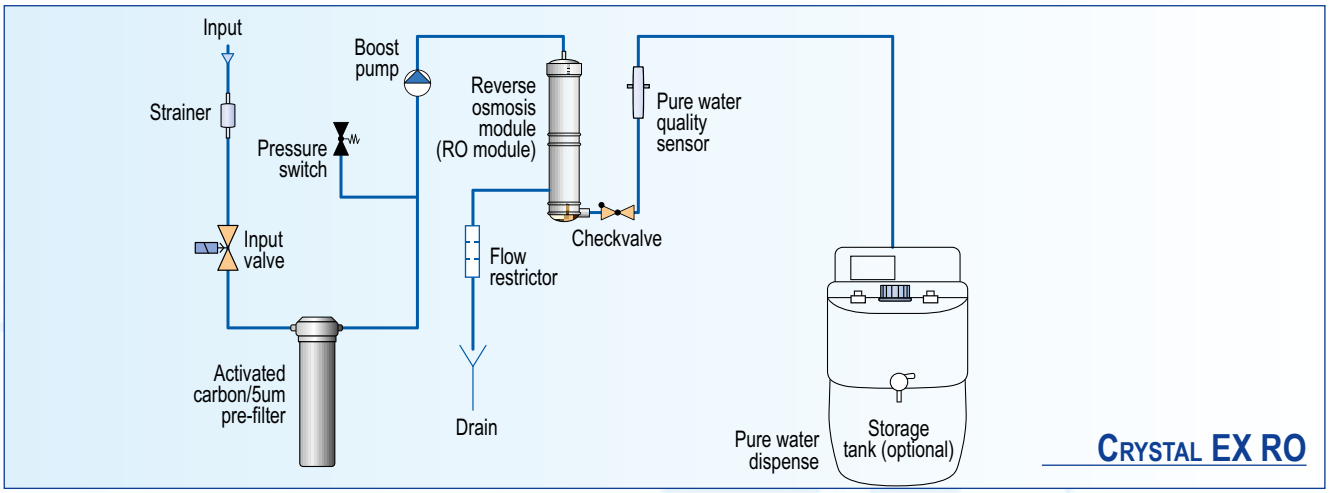
Specifications

Purified water specifications	Crystal EX RO	Crystal EX Pure	Crystal EX Double Flow
Purified water resistivity		>10 MΩ x cm	>10 MΩ x cm
Purified water conductivity	TDS rejection rate >98%	<0.1 µS/cm	<0.1 µS/cm
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	20 L/h
Dispense flow, pure water	4 L/min	4 L/min	4 L/min
Deionization module life (standard module)	N/A	1 m^3	N/A
Deionization module life (high capacity module)	N/A	3 m^3 (optional)	3 m^3
Recovery	>30 %	>30 %	>30 %
Dimensions (WxDxH), cm	40x35x55	40x35x55	40x50x55
Feed water pressure	1 – 4 bar	1 – 4 bar	1 – 4 bar
Feed water conductivity	< 900 µS/cm	< 900 µS/cm	< 900 µS/cm

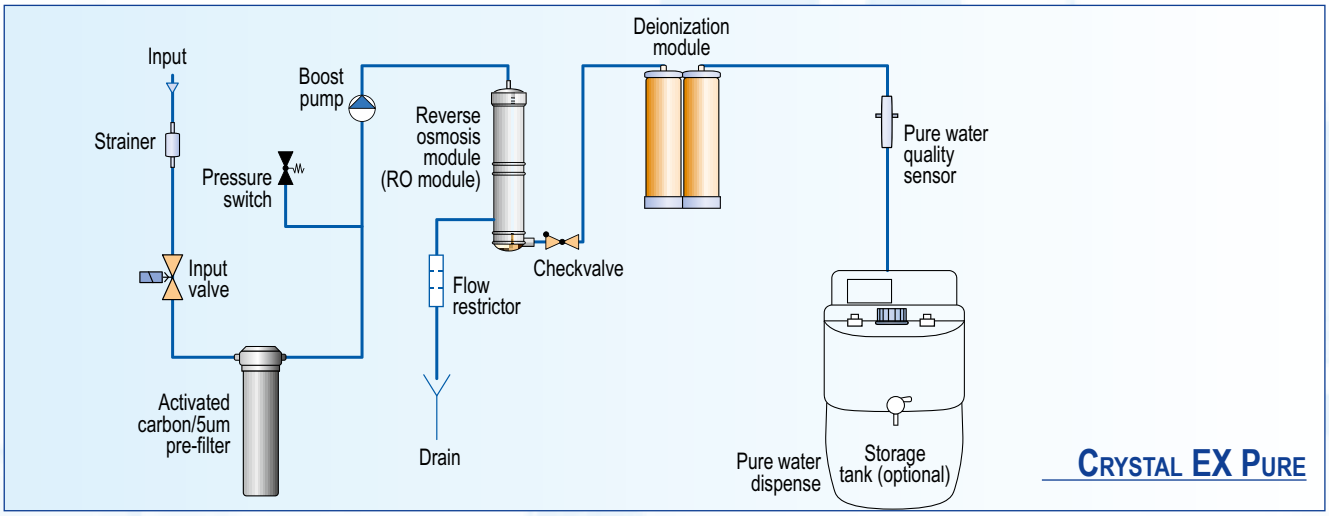
Consumables

Part number	Description	Replacement criteria	Comments
10320	Replacement pre-filter, Crystal EX RO, Pure	Filter life counter is zero or the filter is clogged	
10319	Replacement pre-filter set, Crystal EX Double Flow	Filter life counter is zero or the filter is clogged	
10310	Replacement deionization module	„DI Err" message is shown, or water conductivity is consistently > 0.5 µS/cm	"Pure" systems only
10113	Replacement high-capacity deionization module	„DI Err" message is shown, or water conductivity is consistently > 0.5 µS/cm	Only "EX Double Flow" or systems with 10101 option
10011	Replacement sterilization UV bulb	As required (on average every 3 years)	Only systems with 10102 option
10012	Replacement 0.22 µm dispense filter	Every 6–12 months	Only systems with 10201 option

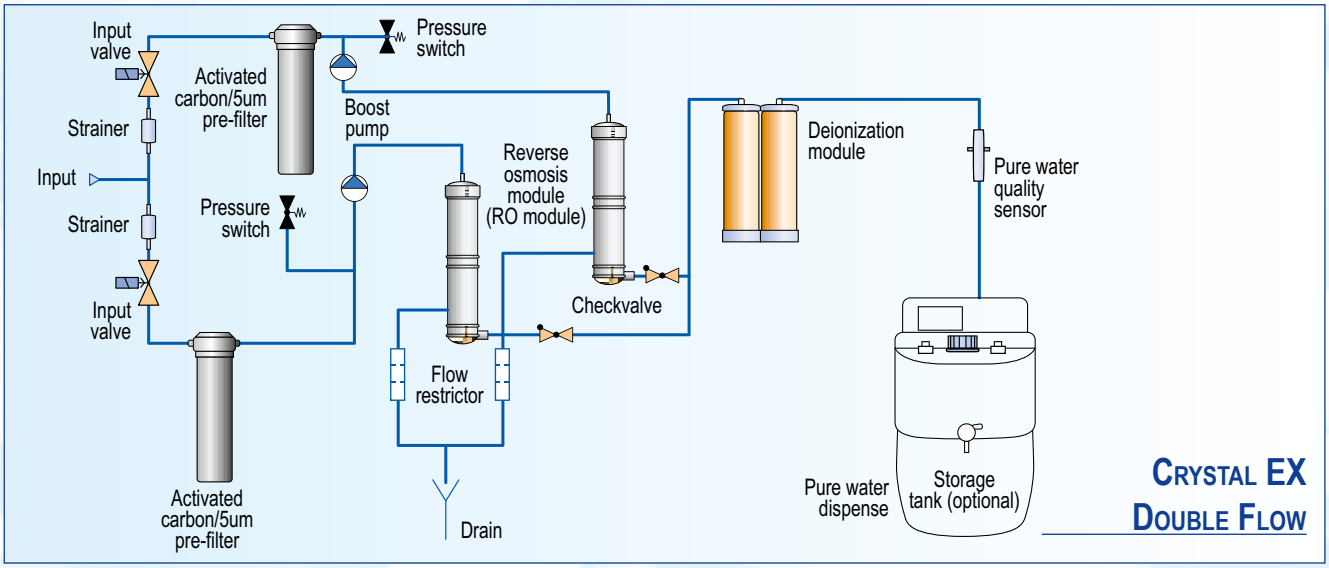
Flow diagrams



Crystal EX RO



Crystal EX Pure



Crystal EX Double Flow

CRYSTAL CLINIC

The Crystal Clinic water purification system is designed to provide purified water for smooth and reliable operation of automated biochemistry analyzers.

Crystal Clinic has two reverse osmosis modules and high capacity deionization cartridge (DI). Large DI cartridge volume significantly reduces running costs.

Crystal Clinic has two water quality sensors. The first sensor controls quality of water filling the storage tank that is shown on the display while the tank is beeing filled. The second sensor controls quality of water supplied to a biochemical analyzer.

Description

Water type	pure water (Grade 2)
Application	purified water for automated biochemistry analyzers
Display	monochrome LCD display
Conductivity sensor	•
TOC Monitor	-
Measurement validation port	-
Volumetric dispensing	-
Connection to Flow Point	-
Storage tank	pressurized storage tank, 100 L
Installation	installable on a laboratory bench

Specifications

Purified water specifications	Crystal Clinic
Grade 2 water resistivity	>10 MΩ x cm
Grade 2 water conductivity	<0.1 µS/cm
Particles >0.22 µm	<1 per mL
Nominal flow, pure water (to storage tank)	28 L/h
Dispense flow to analyzer	4 L/min
Dispense pressure (adjustable)	100 - 180 kPa
Deionization module life (high capacity module)	3 m^3
Recovery	>30 %
Dimensions (WxDxH), cm	40x50x55
Pressurized storage tank	100 L
Feed water pressure	1 – 4 bar
Feed water conductivity	< 900 µS/cm

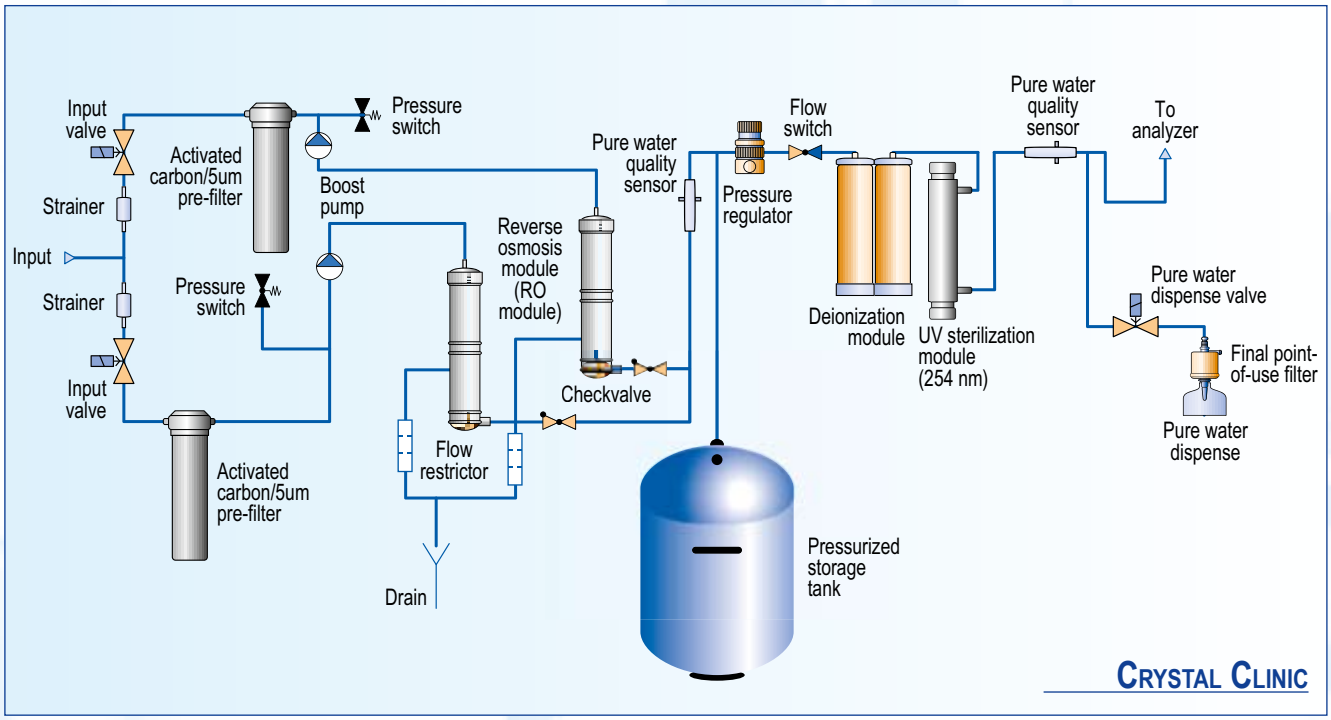
Ordering information

Model	Part number
Crystal Clinic	CL-2810

Consumables

Part number	Description	Replacement criteria	Comments
10319	Replacement pre-filter set, Crystal Clinic	Filter life counter is zero or the filter is clogged	
10113	Replacement high-capacity deionization module	„DI Err" message is shown, or water conductivity is consistently > 0.1 µS/cm	
10011	Replacement sterilization UV bulb	As required (on average every 3 years)	Only systems with 10102 option

Flow diagram



CRYSTAL STERIFEED

Sterifeed is a water purification system that is specially designed to produce feed water for autoclaves.

Sterifeed produces water with conductivity 5-11 µS/cm, that is insisde the conductivity range recommended by autoclave vendors. Usually 3-15 µS/cm is the recommended conductivity range for autoclave feed water for reliable operation of autoclave.

Pressurized water storage tank provides consistent water supply to an autoclave. Many autoclaves need pressurized purified water supply. Some autoclaves have priming pumps for purified water intake, but in case the water supply is not pressurized, an air gap may block the water flow. If the blockage occurs, the operation of autoclave is not possible until the air is removed from the system. Pressurized water storage tank of the "Sterifeed" system eliminates any possibility of air gap formation and ensures smooth operation of an autoclave.

Description

Water type	pure water (Grade 2)
Application	purified water for autoclaves
Display	monochrome LCD display
Conductivity sensor	•
TOC Monitor	-
Measurement validation port	-
Volumetric dispensing	-
Connection to Flow Point	-
Storage tank	pressurized storage tank, 60 L
Installation	installable on a wall

Ordering information

Model	Part number
Crystal Sterifeed	CS-1002

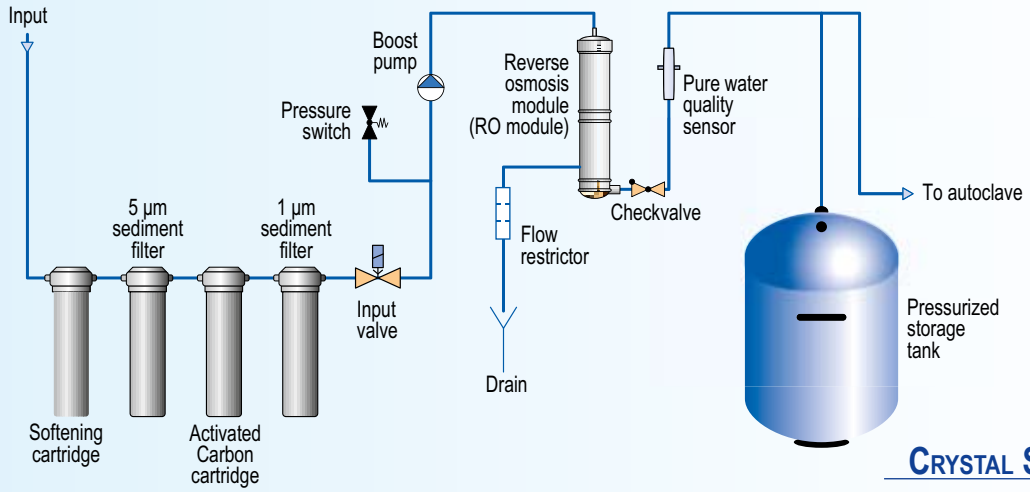
Specifications

Purified water specifications	Sterifeed
Purified water conductivity	5-11 µS/cm
Particles >0.22 µm	<1 per mL
Nominal flow, pure water (to storage tank)	10 L/h
Deionization module life	N/A
Recovery	>30 %
Dimensions (WxDxH), cm	50x20x52
Pressurized storage tank	60 L
Feed water pressure	0.5 – 4 bar
Feed water conductivity	< 900 µS/cm

Consumables

Part number	Description	Replacement criteria	Comments
10016	Replacement pre-filter set, Sterifeed	Filter life counter is zero or the filter is clogged	

Flow diagram



ONSITE+ AND CONNECT SERIES

Onsite+ and Connect are hi-end polishing water purification systems. The feed water must be pre-treated by reverse osmosis or distillation. Systems are recommended for laboratories with average daily consumption of water within 5-10 litres.

Onsite+ series systems contain an embedded tank that has to be filled with pre-treated water before operation. Pre-treated water can be obtained by distillation or reverse osmosis. For user convenience the Onsite+ system comes with additional 5L carboy. The carboy has a stopcock and handle for easy transportation of water from water still to the Onsite+ unit.

Connect series systems should be connected to a water pre-treatment unit or a distilled water distribution system in a lab. The pre-treatment system should maintain water pressure of no less than 1 bar.

Ordering information

Model	Part number
Onsite+ Trace	CB-1901
Onsite+ HPLC	CB-1903
Onsite+ Bio	CB-1905
Connect Trace	CB-1701
Connect HPLC	CB-1703
Connect Bio	CB-1705
Water quality sensor validation kit	10913
Software compliant to GLP & CFR 21	410162

Description Onsite+ series

	Trace	HPLC	Bio
Water type	ultrapure water (Grade 1)	ultrapure water (Grade 1)	ultrapure water (Grade 1)
Application	• atomic absorption spectrometry • plasma optical emission spectrometry • other inorganic trace analysis	• chromatography • mass spectrometry • microbiology • molecular biology	highly sensitive biology applications
Display	Color graphic LCD display		
Conductivity sensor	•	•	•
TOC Monitor	option	•	•
Measurement validation port	•	•	•
Volumetric dispensing	•	•	•
Connection to Flow Point	•	•	•
Storage tank	Integrated tank 5L		
Installation	installable either on a laboratory bench or on a wall		

Description Connect series

	Trace	HPLC	Bio
Water type	ultrapure water (Grade 1)	ultrapure water (Grade 1)	ultrapure water (Grade 1)
Application	• atomic absorption spectrometry • plasma optical emission spectrometry • other inorganic trace analysis	• chromatography • mass spectrometry • microbiology • molecular biology	highly sensitive biology applications
Display	Color graphic LCD display		
Conductivity sensor	•	•	•
TOC Monitor	option	•	•
Measurement validation port	•	•	•
Volumetric dispensing	•	•	•
Connection to Flow Point	•	•	•
Storage tank	Not included		
Installation	installable either on a laboratory bench or on a wall		

Specifications

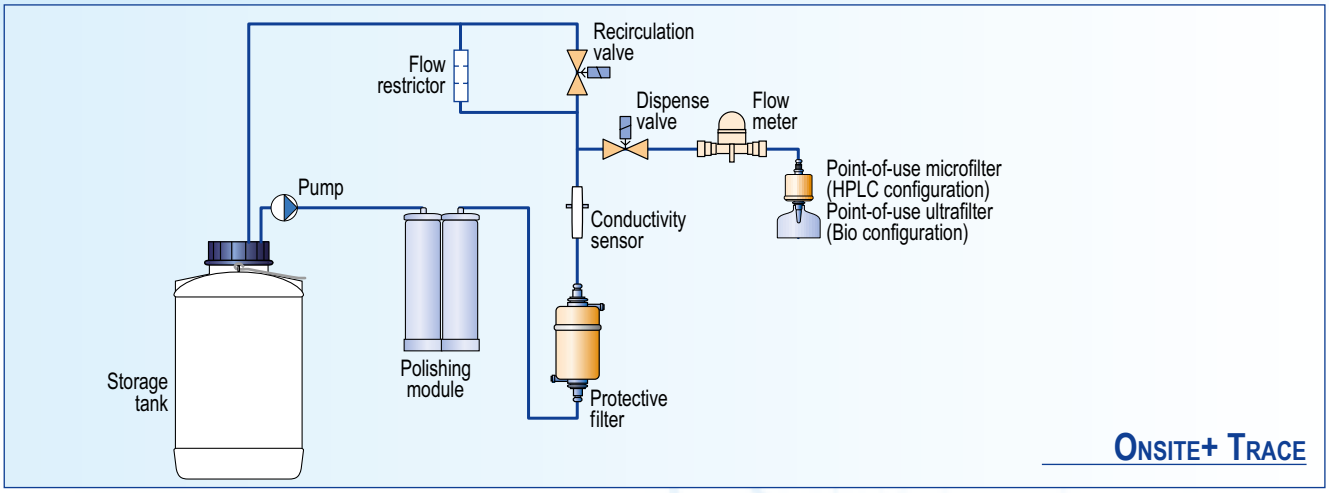
Ultrapure water parameters	Onsite+/Connect system configuration		
	Trace	HPLC	Bio
Ultrapure water resistivity	18.2 MΩ x cm	18.2 MΩ x cm	18.2 MΩ x cm
Ultrapure water conductivity	0.055 µS/cm	0.055 µS/cm	0.055 µS/cm
Total Organic Carbon (TOC) level	<10 ppb	<2 ppb	<2 ppb
RNase	-	-	<0.01 ng/mL
DNase	-	-	<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/mL	<1/mL	<1/mL
Polishing module life*	1 m^3	1 m^3	1 m^3
Dimensions (WxDxH), cm	30x40x60	30x40x60	30x40x60
Feed water conductivity	< 30 µS/cm	< 30 µS/cm	< 30 µS/cm

* *Polishing module life depends on feed water quality.*

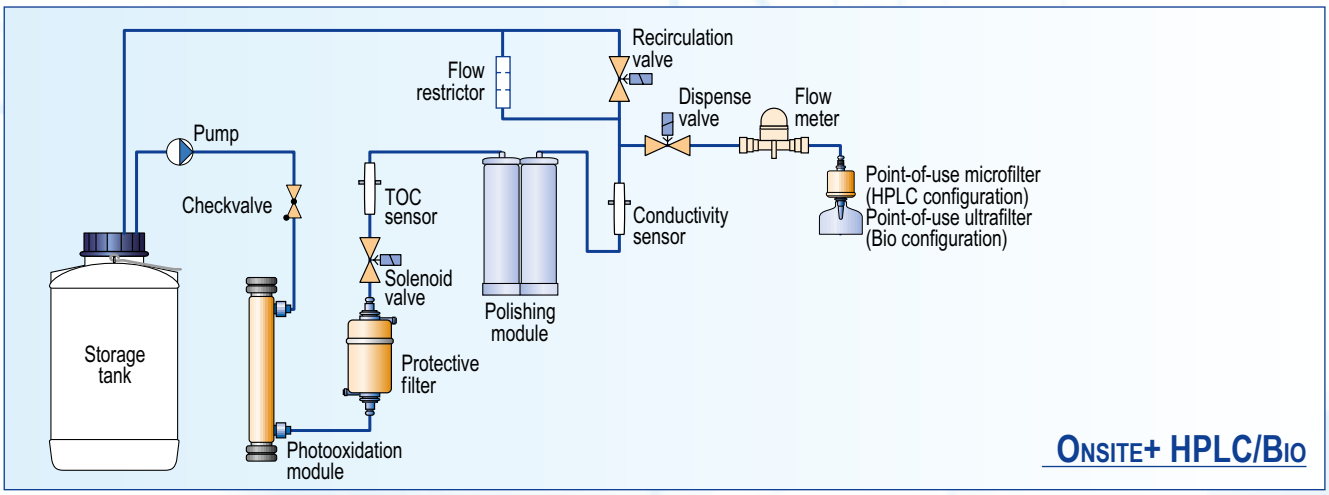
Consumables

Part number	Description	Replacement criteria	Comments
10029	Polishing module	When indicated on the display or water conductivity is constantly > 0.1 µS/cm during recirculation	
10030	Polishing module “Polishing+”	When indicated on the display or water conductivity is constantly > 0.1 µS/cm during recirculation	
10018	UV photooxidation bulb	2-3 years on average	Only for „Bio” and „HPLC”
10012	Point-of-use microfilter	Every 6–12 months	Only for „Trace” and „HPLC”
10120	Point-of-use ultrafilter	Every 6–12 months	Only for „Bio”

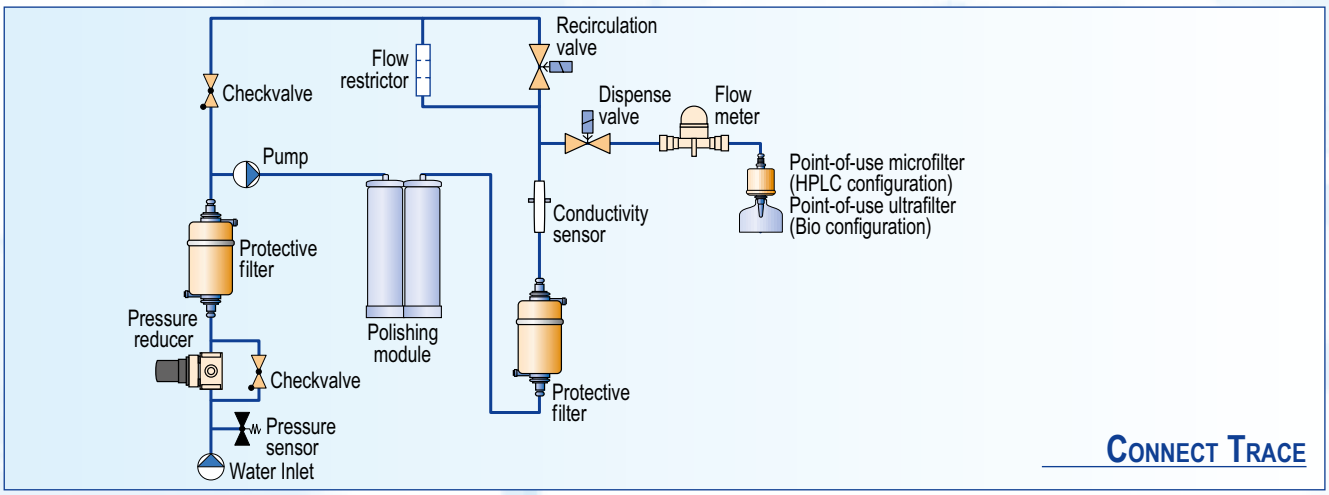
Flow diagram



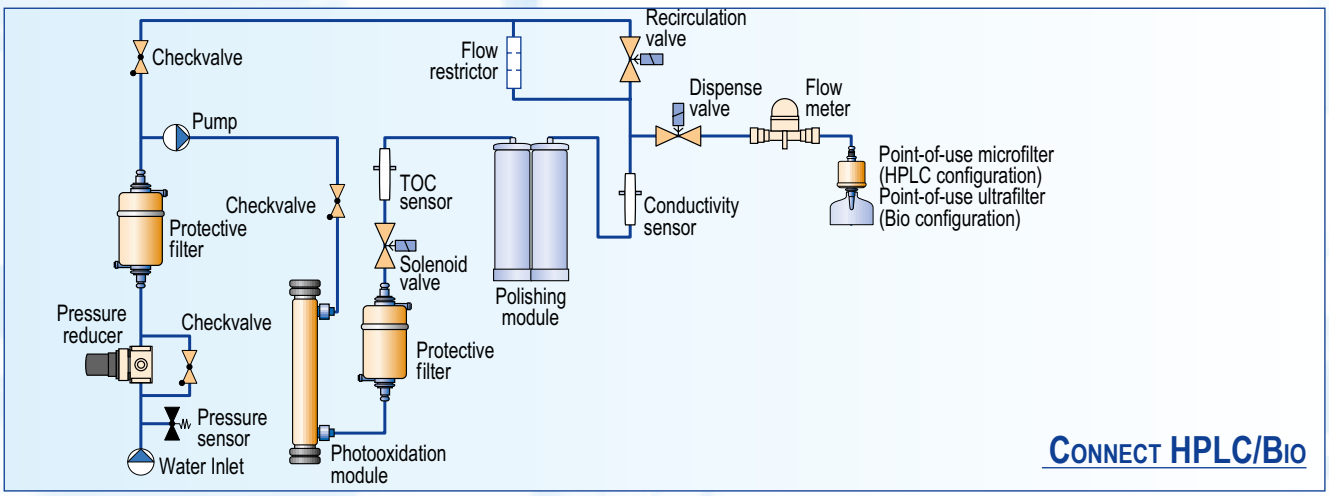
Onsite+ Trace



Onsite+ HPLC/Bio



Connect Trace



Connect HPLC/Bio

ACCESSORIES

For increased convenience of use of the Adrona water purification systems, choose from the variety of accessories to meet your specific needs.

Storage Tanks

Adrona water purification systems can be equipped with water storage tanks of various capacity. Depending on the consumption of purified water, user can choose the tank starting from tank with capacity of 10 litres up to 300 litres. All the storage tanks are equipped with level switch.

Water storage tank "Pro"

Specially designed for significant reduction of microbiological contamination possibilities

Features:

- Capacity 25 or 60 litres
- Opaque housing walls for protection against light
- Conical bottom for complete draining
- Ergonomical design
- Equipped with stopcock
- Recirculation system for maintaining the water quality
- Automatic UV sanitization (UV lamp) module (option)
- Multi-position level switch, that enables precise control of remaining water
- Fast pure water dispense pump (option)

Water dispensing unit "Flow Point"

Water dispensing unit provides more convenient use of Adrona systems. One water purification system can be equipped with 2 water dispensing units.

- Adjustable in all dimensions
- Manual and/or volumetric dispensing with teaching mode
- Colour graphic LCD display
- Full remote control for water purification system
- Compatible with Q-Front, B30, Onsite+, Integrity+, Connect and E30 systems

Ordering information

Model	Part number
Water storage tank "Pro" w/multi- position level switch, 25 L	11015
Water storage tank "Pro" w/multi-position level switch, 60 L	11016
50 L water storage tank "Economy" w/ level switch, pump	10004
Water storage tank "Comfort" w/ level switch, dispense pump, 60 L	10007
Water storage tank "Tiny" w/ level switch, dispense tap, 10L	11014
Storage tank "Comfort" w/dispense pump, 100L	10027
Storage tank "Comfort" w/dispense pump, 200L	10026
Storage tank "Comfort" w/dispense pump, 300L	10025
Automatic sanitization module for tank	10315
Water dispensing unit	10305

Water storage tank "Pro" 60 L

Water storage tank "Economy" 50 L

Water storage tank "Comfort" 60 L

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