

LABORATORY ULTRAPURE WATER SYSTEM

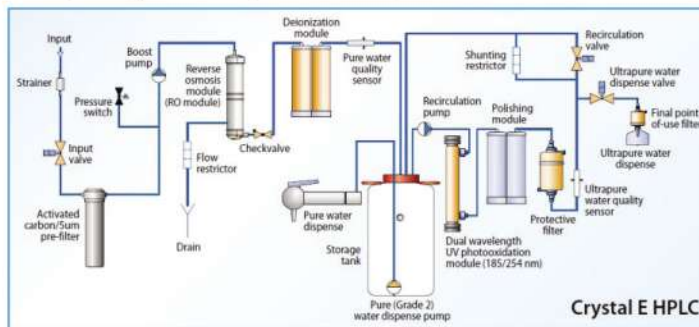
Crystal EX Series



The Crystal EX Ultrapure systems are economy class, multi-purpose, water purification systems. All Crystal EX Systems produce two types of water : Ultrapure (ISO 3696 Grade 1) and Pure (ISO 3696 Grade 2). Ultrapure water produced by the Crystal EX systems has resistivity 18.2 Mega Ohm*cm (conductivity 0.055 $\mu\text{S}/\text{cm}$). This exceeds requirements of all the relevant standards (ISO 3696 Grade 1, ASTM Type I, CLSI Type I). Purified water is collected in a storage tank. The recirculation system ensures a consistent quality of water, and a low level of organic carbon content (TOC). TOC is <2 ppb for "HPLC" and "Bio" configurations, and 5-10 ppb for the "Trace" configuration.

The dispensing rate of high quality Ultrapure water is 2 L/min.

Pure water produced by Crystal EX systems can be used for labware washing, wet chemistry methods, flame spectrophotometers, etc., Pure water is dispensed directly from the storage tank. The dispensing flow rate of pure water is 4 L/min.



Crystal EX Ultrapure water systems are available in the following configurations:

- **Crystal EX Trace System (P/N EX-1001-P)** produces water for inorganic trace analysis. This water is recommended for atomic absorption spectrometry (with graphite furnace atomizer), ICPOES analysis, ICP-MS and other inorganic analytical methods.
- **Crystal EX HPLC System (P/N EX-1101-P)** produces water with very low organic carbon content (TOC) to comply with the requirements of liquid chromatography methods. Crystal E HPLC water can also be used for some microbiological and molecular biology applications.
- **Crystal EX Bio System (P/N EX-1201-P)** produces water with very low organic and RNase / DNase content, intended for molecular biology, including RNase - sensitive applications.

Description EX series

Application	EX-1001-P Trace	EX-1101-P HPLC	EX-1201-P Bio
Water Type	<ul style="list-style-type: none"> • Ultrapur water (Grade 1) • Pure water (Grade 2) 	<ul style="list-style-type: none"> • Ultrapur water (Grade 1) • Pure water (Grade 2) 	<ul style="list-style-type: none"> • Ultrapur water (Grade 1) • Pure water (Grade 2)
Application	<ul style="list-style-type: none"> • Automatic absorption spectrometry • Plasma optical emission spectrometry • Other inorganic trace analysis 	<ul style="list-style-type: none"> • Chromatography • Mass spectrometry • Microbiology • Molecular biology 	<ul style="list-style-type: none"> • High sensitive biology applications
Display	Monochrome LCD display	Monochrome LCD display	Monochrome LCD display
Conductivity Sensor	•	•	•
TOC Monitor	-	-	-
Connection Possibility to Water Dispensing Unit	-	-	-
Storage Unit	Water storage tank 'Pro' 30 L w/o multipoint sensor included		
Installation	Installation on a laboratory bench		

Specification

Purified Water Specifications	Crystal EX Trace	Crystal EX HPLC	Crystal EX BIO
Grade 1 water resistivity	18.2 M Ω x cm	18.2 M Ω x cm	18.2 M Ω x cm
Grade 1 water conductivity	0.055 $\mu\text{S} / \text{cm}$	0.055 $\mu\text{S} / \text{cm}$	0.055 $\mu\text{S} / \text{cm}$
Grade 2 water resistivity	>10 M Ω x cm	>10 M Ω x cm	>10 M Ω x cm
Grade 2 water conductivity	<0.1 $\mu\text{S} / \text{cm}$	<0.1 $\mu\text{S} / \text{cm}$	<0.1 $\mu\text{S} / \text{cm}$
Total organic carbon (TOC) level	<10 ppb	<5 ppb	<5 ppb
RNase	N/A	N/A	<0.01 pg/ml
DNase	N/A	N/A	<4 pg/ml
Bacteria	<0.01 CFU / ml	<0.01 CFU / ml	<0.01 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
Nomial dispense flow, pure water	2 L / min	2 L / min	2 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 (W x D x H) cm	40 x 35 x 55	40 x 35 x 55	40 x 35 x 55
Feed water pressure	1-4 bar	1-4 bar	1-4 bar
Feed water conductivity	<1500 $\mu\text{S} / \text{cm}$	<1500 $\mu\text{S} / \text{cm}$	<1500 $\mu\text{S} / \text{cm}$