ultrapure water tailored for trace elemental analysis

Milli-Q® IQ Element

Water Purification
and Dispensing Unit



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The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the U.S. and Canada.

Milli-Q®
Lab Water Solutions

ultrapure water without compromise

Milli-Q® IQ Element Water Purification and Dispensing Unit

Ultrapure water suitable for the most stringent trace elemental analyses

Don’t let trace contaminants interfere with your sensitive analyses.

The Milli-Q® IQ Element unit, combined with a Milli-Q® IQ 7 series water purification system, delivers analytical-grade ultrapure water that is suitable for trace and ultra-trace elemental analyses, including **ICP-MS, GF-AAS** and **trace IC**.

Using fresh ultrapure water from a Milli-Q® IQ 7000 or Milli-Q® IQ 7003/05/10/15 system, the Milli-Q® IQ Element unit purifies even further. The water dispensed at your point of use is confirmed to contain **extremely low levels of elemental contaminants, from single ppt to sub-ppt detection levels***. Independent laboratories specialized in ultra-trace elemental analyses have verified the unit’s water quality.

Designed to fit into your trace analysis workflow

Easy to Integrate
The compact unit is designed for seamless, contaminant-free installation in your cleanroom environment or laminar flow hood.

Easy to Use
A touchscreen lets you continuously view essential quality parameters and, in a few clicks, you can print a dispense report or program your desired dispense volume.

Easy to Avoid Contamination
There’s no need to touch the unit while working; a footswitch allows for hands-free dispensing at your point of use.

Easy to Maintain
All purification cartridges have been designed to be effortlessly replaced. The procedure can be performed without the intervention of a field service engineer.

Easy Data Management
Never lose track of your water quality. An intuitive data management system lets you monitor, store and rapidly retrieve water quality data in a few clicks—from a single dispense to a complete history.



*See Technical Appendix for data.

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Designed to produce and maintain the purity of high-quality ultrapure water

Removes trace ionic contaminants from feed ultrapure water

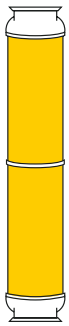
Milli-Q® IQ 7 series water purification system
Delivers consistently high-quality ultrapure water

IPAK Quanta® ICP polishing cartridge
Removes trace ions

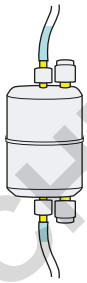
0.1 µm Optimizer LW™ final filter
Removes trace particulates

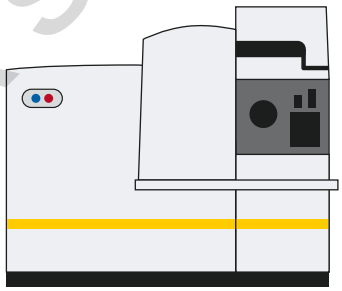
Product ultrapure water is suitable for sensitive ICP-MS applications.







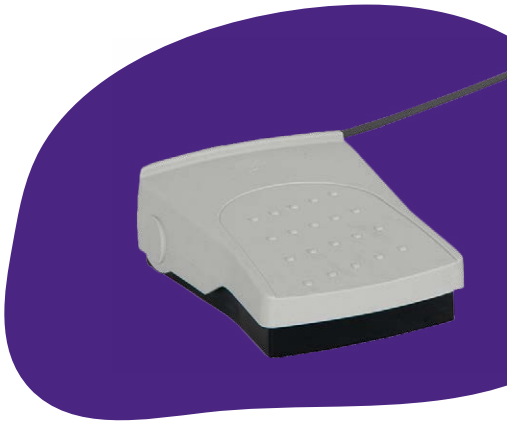




Safeguards against the introduction of contaminants

The Milli-Q® IQ Element unit not only further purifies ultrapure water down to trace (ppt) and ultra-trace (sub-ppt) levels, but its design protects the water from the introduction of contaminants from the environment.

- All components used for water production are made from **selected low-extractable materials**
- **Footswitch and dispenser** provide hands-free water delivery to reduce risk of contamination from your surroundings while you are working
- **Touchscreen display** allows for water quality monitoring at a glance







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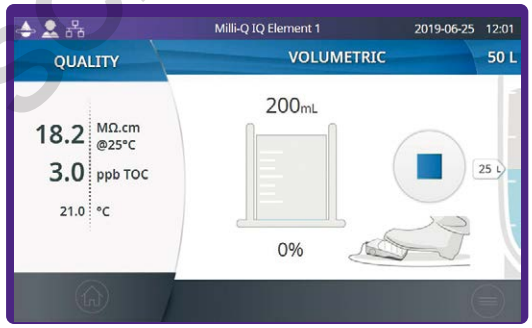
Intuitive touchscreen allows for easy control, monitoring and maintenance



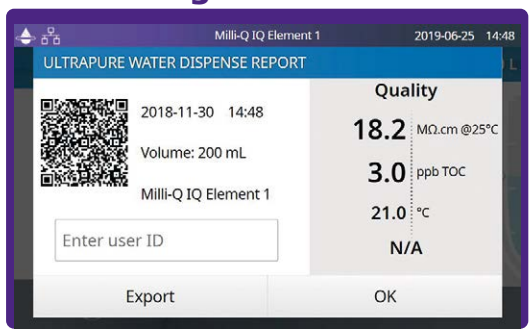
Quality Monitoring



Volumetric Dispensing



Data Management



Maintenance Wizards



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Easy integration into your laboratory space

The compact Milli-Q® IQ Element unit can be easily installed inline of a Milli-Q® IQ 7 series water purification system. Its simple dispensing unit can be placed directly at your point of use, in a clean and controlled environment, with no risk of contamination.



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technical appendix

Ultrapure (Type 1) Water Specifications

Parameter	Value or range[1]
Resistivity @ 25°C	18.2 MΩ.cm
Total Organic Carbon (TOC)	≤ 5 ppb
Flow rate	up to 1.5 L/min

1. Under standard operating conditions. For more information, please refer to the user manual of the Milli-Q® IQ 7000 or Milli-Q® IQ 7003/05/10/15 water purification systems.

Dimensions & weights

Parameter	Value
Dimensions (H x W x D)	67.1 x 21.1 x 27.0 cm 26.4 x 8.3 x 10.6 in.
Dry weight	7.5 kg (16.5 lb)
Shipping weight	10.3 kg (22.7 lb)
Operating weight	9.1 kg (20.1 lb)

Ordering information

Description	Catalog number
Milli-Q® IQ Element unit	ZIQELEMT0
Milli-Q® IQ Element consumables kit	IPAKICPK1

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ICP-MS analysis of ultrapure water from Milli-Q® IQ Element unit

Excerpt from ICP-MS analysis with high purity water obtained from a Milli-Q® IQ Element purification unit connected to a Milli-Q® IQ 7005 water purification system. Additional results as well as detailed experimental methods are available in the Milli-Q® IQ Element Data Sheet.

Isotope	Element	Sample (ng/L)	DL (ng/L)
7	Lithium (Li)[1]	< DL	0.04
9	Beryllium (Be)[2]	< DL	0.20
11	Boron (B)[2]	< DL	0.50
23	Sodium (Na)[1]	0.68	0.11
24	Magnesium (Mg)[1]	0.01	0.01
27	Aluminium (Al)[1]	0.07	0.04
28	Silicon (Si)[1]	198.65*	4.98
39	Potassium (K)[1]	0.54	0.16
40	Calcium (Ca)[2]	< DL	0.29
45	Scandium (Sc)[2]	0.59	0.53
47	Titanium (Ti)[1]	0.61	0.51
51	Vanadium (V)[1]	0.03	0.01
52	Chromium (Cr)[1]	0.08	0.02
55	Manganese (Mn)[1]	0.01	0.02
56	Iron (Fe)[1]	< DL	0.50
59	Cobalt (Co)[1]	< DL	0.01
60	Nickel (Ni)[1]	< DL	0.16
63	Copper (Cu)[1]	< DL	0.04
66	Zinc (Zn)[1]	< DL	0.48
70	Germanium (Ge)[2]	< DL	0.10
71	Gallium (Ga)[2]	< DL	0.13
75	Arsenic (As)[1]	0.06	0.04
78	Selenium (Se)[2]	< DL	0.57
85	Rubidium (Rb)[1]	< DL	0.03
88	Strontium (Sr)[2]	< DL	0.02
89	Yttrium (Y)[2]	< DL	0.02
90	Zirconium (Zr)[2]	< DL	0.05
93	Niobium (Nb)[2]	< DL	0.03
95	Molybdenium (Mo)[1]	< DL	0.10
101	Ruthenium (Ru)[2]	0.42	0.20
103	Rhodium (Rh)[2]	< DL	0.01
105	Palladium (Pd)[2]	< DL	0.34
107	Silver (Ag)[2]	0.40	0.15
111	Cadmium (Cd)[1]	< DL	0.08

Isotope	Element	Sample (ng/L)	DL (ng/L)
115	Indium (In)[2]	< DL	0.01
118	Tin (Sn)[2]	< DL	0.15
121	Antimony (Sb)[1]	< DL	0.02
126	Tellerium (Te)[2]	0.08	0.07
133	Caesium (Cs)[1]	0.01	0.00
138	Barium (Ba)[1]	< DL	0.05
139	Lanthanium (La)[2]	< DL	0.02
140	Cerium (Ce)[2]	< DL	0.03
141	Praseodymium (Pr)[2]	< DL	0.02
146	Neodenyum (Nd)[2]	< DL	0.08
147	Samarium (Sm)[2]	< DL	0.13
153	Europium (Eu)[2]	< DL	0.04
157	Gadolinium (Gd)[2]	< DL	0.13
159	Terbium (Tb)[2]	< DL	0.02
163	Dysprosium (Dy)[2]	< DL	0.07
165	Holmium (Ho)[2]	< DL	0.02
166	Erbium (Er)[2]	< DL	0.11
169	Thulium (Tm)[2]	< DL	0.03
172	Ytterbium (Yb)[2]	< DL	0.09
175	Lutetium (Lu)[2]	< DL	0.02
178	Hafnium (Hf)[2]	< DL	0.11
181	Tantalum (Ta)[2]	< DL	0.03
182	Tungsten (W)[1]	< DL	0.07
185	Rhenium (Re)[2]	< DL	0.09
189	Osmium (Os)[2]	< DL	0.14
193	Iridium (Ir)[2]	< DL	0.05
195	Platinum (Pt)[2]	0.18	0.16
197	Gold (Au)[2]	< DL	0.43
202	Mercury (Hg)[2]	5.1	1.52
205	Thallium (Tl)[2]	<DL	0.05
208	Lead (Pb)[1]	< DL	0.08
209	Bismuth (Bi)[2]	< DL	0.06
232	Thorium (Th)[2]	<DL	0.04
238	Uranium (U)[2]	<DL	0.04

DL: Detection limit
1. Data obtained courtesy of Agilent Technologies, Tokyo, Japan. © Agilent Technologies, Inc. Reproduced with Permission, Courtesy of Agilent Technologies, Inc.
2. Data obtained courtesy of UT2A, Pau, France.
* Si is known to be difficult to measure by ICP-MS. When measured by GF-AAS, concentration was < DL (0.5 ppb).

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