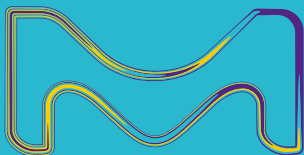


The Authentic Milli-Q® Ultrapure Experience Designed for Modern-Day Scientists

Milli-Q® EQ 7008/7016

Ultrapure & pure water
purification systems



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

Milli-Q®
Lab Water Solutions

Scientists Face Many Challenges. Water Should Not Be One of Them.

To deliver reliable, high-quality scientific results, you require consistently high-quality ultrapure water.

Milli-Q® EQ 7008/7016 ultrapure and reverse osmosis (RO) water systems are designed to produce consistent ultrapure water quality [resistivity 18.2 MΩ·cm @ 25 °C; total organic carbon (TOC) ≤ 5 ppb] direct from a tap water source. Final ultrapure water quality can be adapted to each user's specific application requirements. Plus, a range of intelligent design features make it effortless to dispense water as needed and where needed in the lab.

A tap-to-ultrapure water system designed by scientists, for scientists.

Convenient Q-POD® dispensing

- 3 flow rates or one-touch volumetric dispensing
- Dispenser mounts where you want, up to 3 m from the system
- Confidence as you work with 'Check & Dispense' lights

Flexibility that adapts to your needs

- Multiple space-saving setups: on or under the bench, or on the wall
- Customize water quality with application-specific final filters
- Hands-free dispensing foot pedal option



Control at your fingertips

- Large, intuitive touchscreen simplifies system use and data access
- Place the screen where you want, up to 3 m from the system

At-a-glance quality monitoring

- Rapid quality monitoring assures your every dispense
- Inline proprietary TOC indicator measures at the point of use

Intelligent water storage

- Unique and seamless design protects water quality and allows easy lab integration

Enjoy confidence in Milli-Q® quality...

- High-quality ultrapure water at predictable running costs
- Expert support throughout system lifetime
- Full range of services, including timesaving MyMilli-Q™ digital services

...and be supported in your sustainability goals

- Up to 42% smaller footprint*
- Smaller purification cartridges*
- More sustainably sourced plastic
- Minimal water and energy consumption when not used for extended periods

* Vs. our previous generation Milli-Q® Direct system.

Flexibility that Fits Your Space & Needs

Choose an installation option that works for you

Production unit installation options

- Benchtop
- Under bench
- Wall mounted

HMI touchscreen options

- Maintain movement flexibility with a 3 m cable that connects the screen to the main unit; Hold, move and use the touchscreen as is most comfortable for you *or*
- Wall mount, up to 3 m from the system



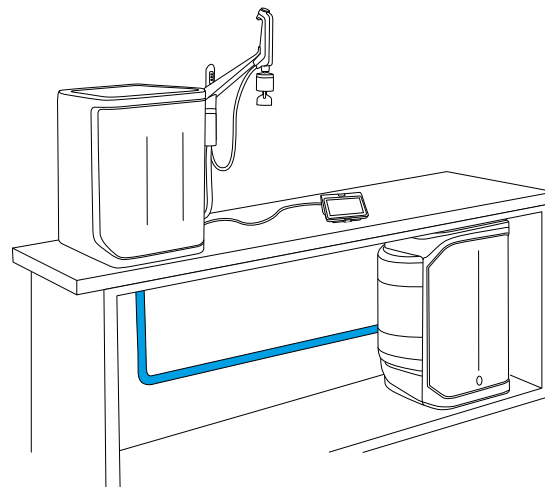
Water storage tank options

- 25, 50, 100L
- Automatic sanitization module (ASM)
- Front valve to obtain RO (Type 3) water

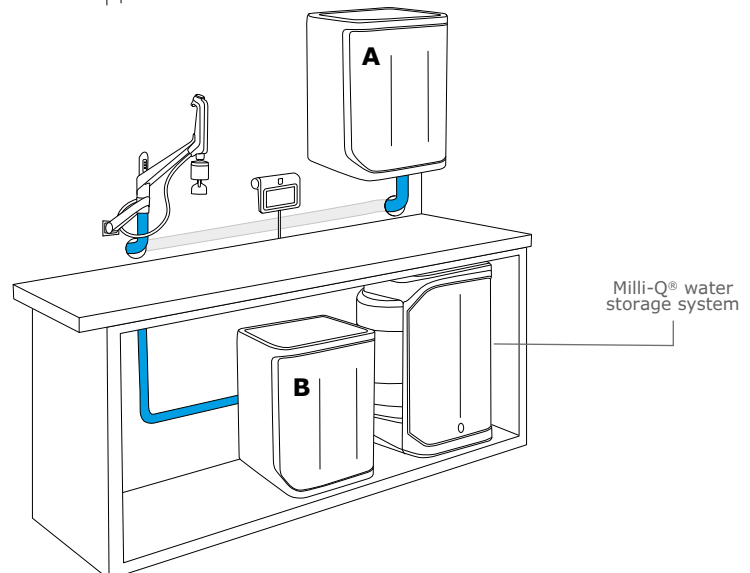
Q-POD® dispenser options

- System mount with choice of positions: on the left or right side, and at the top or bottom of the system *or*
- Wall mount, up to 3 m from the system

Create a compact & flexible benchtop setup by system mounting the Q-POD® dispenser and placing the screen anywhere on the bench, up to 3m.



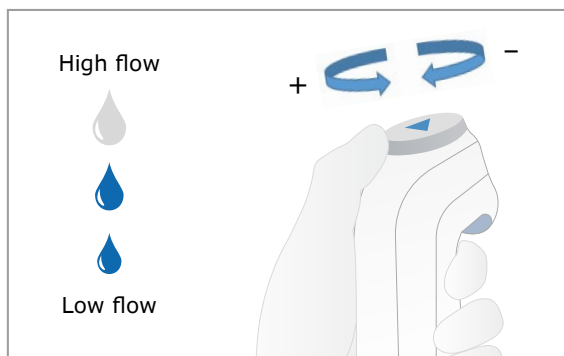
Save space by placing the system (A) on the wall, or (B) under the bench.



Easy & Agile Dispensing...

Convenience

- Easy-to-use Q-POD® ultrapure water dispenser
- 3 manually controlled flow rates
 - Low, Medium, High (< 2 L/min)
 - Adjust with your thumb
- One-touch volumetric dispensing
 - Quickly select from a pre-set menu of volumes, or customize to your needs
 - From 100 ml to 25 L, in 100 mL increments



Flexibility

- Wall- or system-mounted setup options (see page 3)
- Q-POD® dispenser rotates on a fixed arm for convenient filling
- Unhook the Q-POD® dispenser from its magnetic hold for agile manipulation



Confidence

Check & Dispense lights on the Q-POD® arm rapidly confirm that your every dispense is a high-quality dispense.



System power

Water quality

System status



Try the foot pedal option for hands-free dispensing.

Leave your hands free to do other things, or simply avoid touching the dispenser, supporting lab sanitary protocols. A simple tap of your foot starts and stops the flow of water.

...With All Information at Your Fingertips

User-friendly touchscreen interface

Navigate and control your Milli-Q® EQ system efficiently and effortlessly with its 7" (~18 cm) colored, touchscreen.

Intuitively organized menus help you quickly find what you're looking for, including:

- System information and controls
- Water quality monitoring
- Dispense options
- Purification cartridge status
- Data access and reports

At-a-glance quality monitoring

Essential water quality information is conveniently in view on the touchscreen interface:

- Resistivity and temperature
- TOC indication (see page 7 for more information)
- Application POD-Pak installed
- Water recirculation status

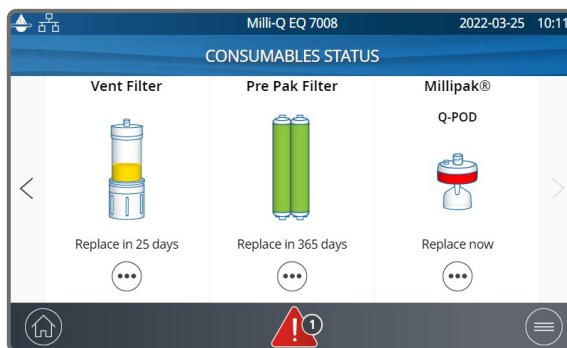
After each dispense, updated resistivity and temperature measurements and the TOC indication are displayed on the screen.

Intuitively organized system menus support ease of use and greater lab efficiency.

Colored icons display the status of installed purification cartridges.

Essential water quality information is in view.

Just tap or swipe to control and monitor your system and its data.



A USB port supports easy data export.

Connect to simplified system monitoring & data management

Connect your Milli-Q® EQ system to an authorized network or device:

- Local network (DHCP protocol/fixed IP address) via an Ethernet port
- Laptop with a fixed IP address

Connectivity facilitates:

- Remote system monitoring and control
- Rapid data access
- Paperless data management

Alternatively, data can be transferred to a USB key from the port on the touchscreen.

Support for Your Sustainability Goals



At Lab Water Solutions, we are proactively engaged in reducing the environmental impact of our products and supporting your efforts to identify more sustainable solutions. All our products are produced at our ISO 14001 and ISO 50001 certified manufacturing site and all our systems comply with critical environmental regulations and directives, such as RoHS, REACH and WEEE.

We are proud of the innovation and design features that give Milli-Q® EQ 7008/16 systems a reduced environmental footprint vs. our previous generation Milli-Q® Direct system:

Reduced plastic and size

- Up to **42%** smaller footprint
- **33%** smaller and lighter purification cartridges. Smaller beads of IQnano® ion-exchange media reduce the bed volume and improve kinetics within the IPAK Quanta® and IPAK Meta® polishing cartridges.
- IPAK Gard® purification cartridge is smaller than former pre-treatment cartridges.
- **47%** plastic by weight from suppliers following the *Together for Sustainability* approach, audited by EcoVadis.

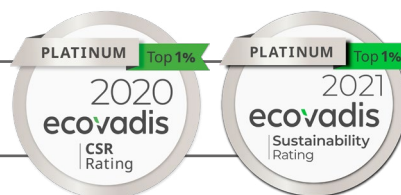
Reduced electricity consumption

- **Lab Close mode** saves energy and reduces wear of system components as recirculation is reduced to once a day during long periods of inactivity. The system automatically refills the tank with fresh RO water 24 hours prior to resuming lab activity, ensuring the system is ready for use.

Reduced waste management

- A mercury-free ech_2o ® UV lamp is used in the tank's ASM (optional)

In 2020 and 2021, Merck KGaA, Darmstadt, Germany was awarded Platinum status from EcoVadis, placing us in the top 1% of all companies assessed.



Discover our [Sustainability website](#) to learn how our innovative purification technologies and design features can support your lab's desire to make a difference.

Easy Upkeep & Carefree Maintenance

We've made Milli-Q® EQ systems easy to use and carefree to maintain so that your valuable resources can focus on what truly matters – accurate scientific results.



- **Automated quality upkeep**, including Lab Close mode and an optional mercury-free ASM lamp, ensures that water quality is preserved when the system is not in use
- **Automatic alerts** notify you when purification cartridges need replacing to avoid risk of impacting major components
- **Coordinated, once-a-year** purification cartridge replacements minimize hassle
- **Onscreen wizards** guide you to perform simple maintenance and troubleshooting procedures in-house
- **Twist & Lock** cartridge replacements can be confidently performed by anyone in the lab in a few minutes
- **Predictable** operating costs

Twist & Lock cartridge design makes consumable changes easy and fast.



To replace purification cartridges, scan the QR code to be automatically connected to: SigmaAldrich.com/mymilliqconsumables

Work Confidently with Authentic Milli-Q® Ultrapure Water

Milli-Q® EQ systems produce ultrapure water that exceeds the requirements of the most demanding norms and can be adapted to your specific applications. (See page 11 for details on how water is purified and delivered by the system.)

Water quality grade

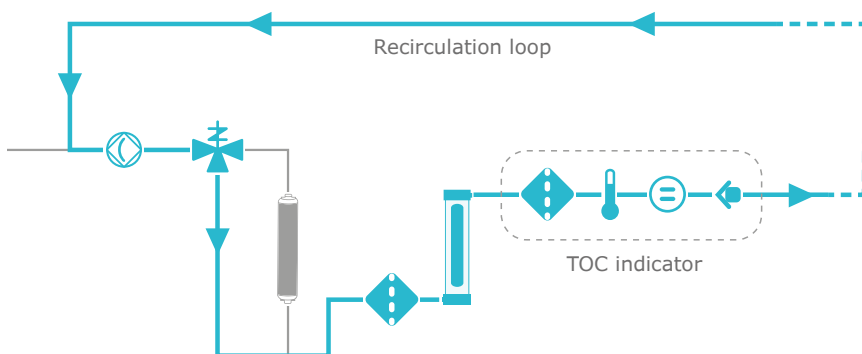
With respect to daily, freshly produced water, Milli-Q® EQ systems are intended to dispense ultrapure water that meets or exceeds water quality specifications described by the organizations below:

Organization	Ultrapure water quality/grade
European Pharmacopoeia	Purified water in bulk
U.S. Pharmacopeia	Purified water in bulk
Japanese Pharmacopoeia	Purified water
Chinese Pharmacopoeia	Purified water
ASTM® D1193	Type I water
ISO 3696	Grade 1 water
Chinese National Standard GB/T 6682	Grade 1 water
Chinese National Standard GB/T 33087	Ultrapure water
JIS K 0557	A4 water
Clinical and Laboratory Standards Institute (CLSI®)	Clinical Laboratory Reagent Water (CLRW)

Rapid, inline Milli-Q® TOC indicator

To ensure the reliability of your organic-sensitive applications, such as HPLC, Milli-Q® EQ systems integrate a new, proprietary TOC indicator that assures organic contamination is ≤ 5 ppb. This inline indicator provides TOC at the point of use, so you're certain every dispense is an optimal dispense.

Parameter	Milli-Q® TOC Indicator
Monitoring frequency	At dispense
Accuracy	Accurate indication within the range
TOC values display	≤ 5 ppb, if 0–5 ppb ≤ 10 ppb, if 6–10 ppb >10 –999 ppb, a whole number is displayed
TOC measuring process	Inline, post-dispense
Photooxidation UV lamp	Low pressure mercury lamp, 185 nm
UV lamp replacement frequency	Once every 2 years



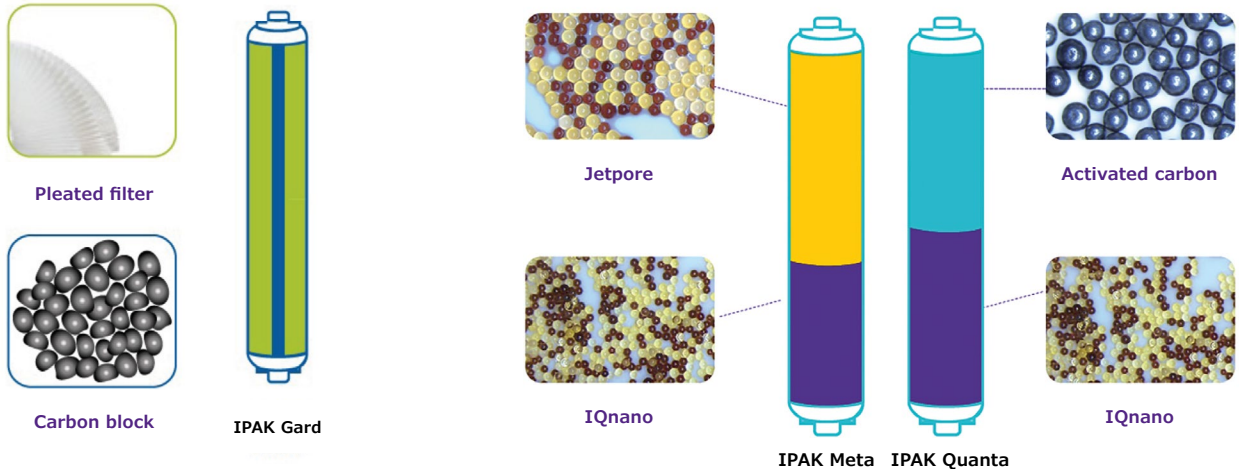
Milli-Q® TOC Indicator

Once a dispense is complete, product water flows through the recirculation loop inside the system to the UV oxidation lamp, bypassing the IPAK Meta® polishing cartridge. UV radiation oxidizes neutral organics into charged molecules, increasing water conductivity. This change is detected by an intermediate resistivity sensor and is converted by an algorithm to a TOC value. The TOC indication appears on the touchscreen monitor after each dispense.

A Powerful Combination of Purification Media

Slim IPAK Gard®, IPAK Meta® and IPAK Quanta® cartridges are designed to keep your system compact and to function synergistically.

Powerful & innovative purification media



IPAK Gard® pretreatment packs

- Pleated filter and carbon block components provide high-efficiency removal of colloids, particles and free chlorine from tap water
- Pack type can be tailored with polyphosphate beads for added protection against scaling of the RO membrane

IPAK Meta® and IPAK Quanta® polishing cartridges

- Designed to function as a pair, the combination of Jetpore® mixed-bed ion-exchange resin and innovative IQnano® ion-exchange media achieve ion removal down to trace levels
- IQnano® media's small bead size significantly improves kinetic properties while dramatically reducing media volume — 33% less than former Milli-Q® purification cartridges
- High-grade synthetic activated carbon targets traces of organic contaminants

Match Water Quality to Your Needs

Application POD-Paks are final filters that adapt water quality to specific application needs. Each targets specific contaminants and removes them right at the Q-POD® dispenser.



Millipak® & sterile Millipak® Gold 0.22 µm filters
to remove bacteria and particulates from water.

Biopak® ultrafiltration polisher
for critical applications requiring pyrogen-, nuclease-, protease- and bacteria-free water.

Other available POD-Paks include:

- **EDS-Pak® polisher** for endocrine disruptor experiments
- **LC-Pak® polisher** for trace and ultra-trace organic analyses
- **VOC-Pak® polisher** for analysis of volatile organic compounds

All Application POD-Paks feature:

- e-Sure tags for full data traceability and consumable status monitoring
- Easy snap-into-place installation
- Dispensing protective bell

Protect Stored Water & Maintain its Purity

Discover an intelligent storage solution that is uniquely designed to safeguard your water's purity better than ever before.



25 L



50 L



100 L

Three tank sizes are available to ensure your lab's needs can be met today and tomorrow.

- **Prior to water production**, automatic rinsing of the RO membrane ensures that RO (Type 3) water quality enters the tank
- **Within the tank**, RO water quality is preserved thanks to:
 - **The vent filter**, redesigned for seamless integration, provides improved protection against airborne contaminants
 - **An optional Automatic Sanitization Module (ASM)** with an integrated mercury-free $\text{ech}_2\text{o}^\circledR$ UVC LED lamp emitting at 265 nm, which regularly irradiates stored water and tank walls, preventing bacterial growth and biofilm formation

Trust Best-in-Class Milli-Q® Services

And save time with MyMilli-Q™ digital services

From installation and training to yearly check-ups and our timesaving digital solutions, with Milli-Q® Services you receive best-in-class service and support from the people who designed and built your system.

Quality certified & globally harmonized expertise

- Only Milli-Q®-certified field service engineers install, maintain and repair our systems
- Genuine parts from our ISO 9001-certified manufacturing site
- In compliance with our worldwide, auditable Standard Operating Procedures
- Standardized visit reports and traceable records of care

Installation & user training

- Highly trained engineers efficiently install your system, supplying all components required
- Receive user training and advice on how to use your system

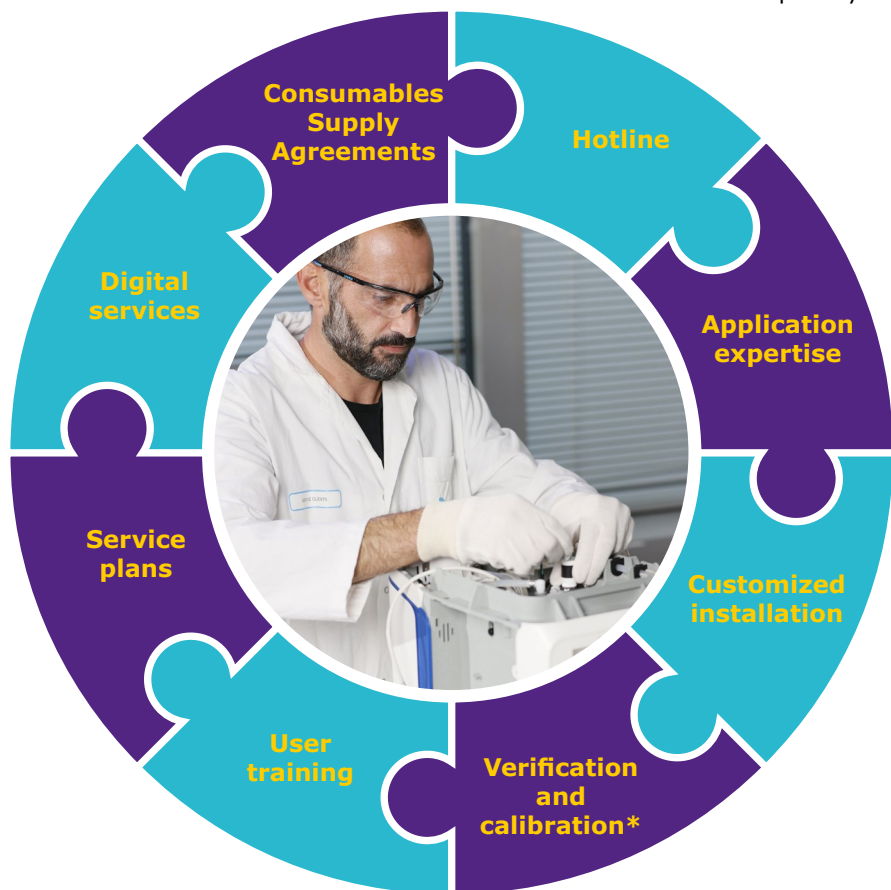
Milli-Q® Service Plans & support options to meet any lab's needs

To ensure your Milli-Q® system continuously operates at optimum efficiency, we provide a range of service plans and options that can be tailored to suit your application, compliance and budgetary requirements. All Milli-Q® Service Plans include an annual preventive maintenance visit from one of our engineers and access to our cloud-based digital service portal, MyMilli-Q™ online solution.

Milli-Q® digital services

Log into **MyMilli-Q™ online solution** to streamline the care of your Milli-Q® systems:

- Track service history and reports
- Manage purification cartridge deliveries
- Plan maintenance visits
- Renew service contracts and Consumable Supply Agreements
- Get priority access to the Milli-Q® Services hotline



Discover more:
SigmaAldrich.com/milli-qservices

* For Milli-Q® EQ systems, applies to temperature and conductivity cells.

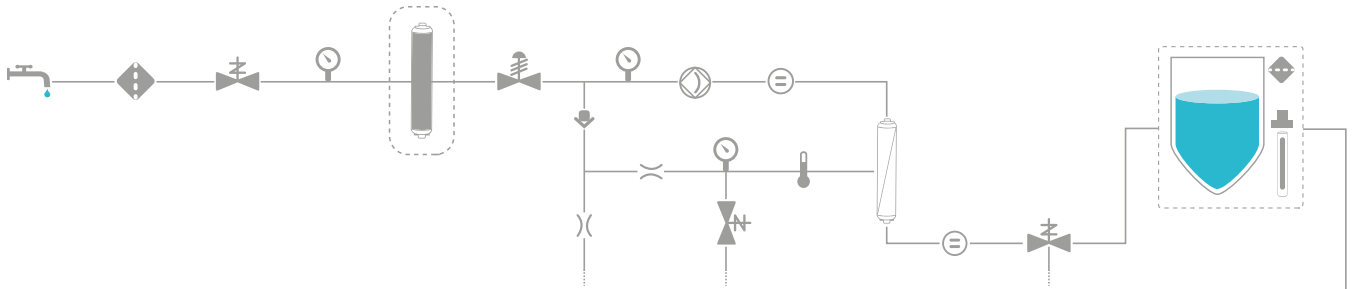
Technical Appendix

Milli-Q® EQ 7008/16 ultrapure & pure water systems

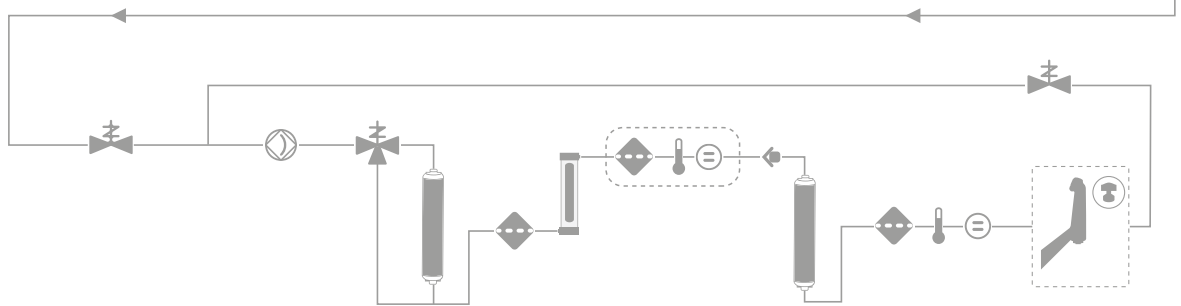
Milli-Q® EQ 7008/16 systems manage the production and the distribution of ultrapure (Type 1) water from a tap water source.



















Water is purified to a resistivity of 18.2 MΩ.cm at 25°C and TOC ≤ 5 ppb. During dispense, water is sent through a small recirculation loop to the Q-POD® dispenser where a final purification step—the Application POD-Pak—removes specific contaminants just before water leaves the system.

Purification flow schematic



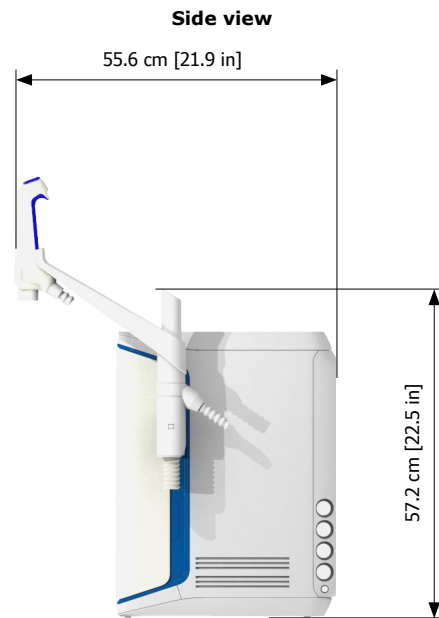
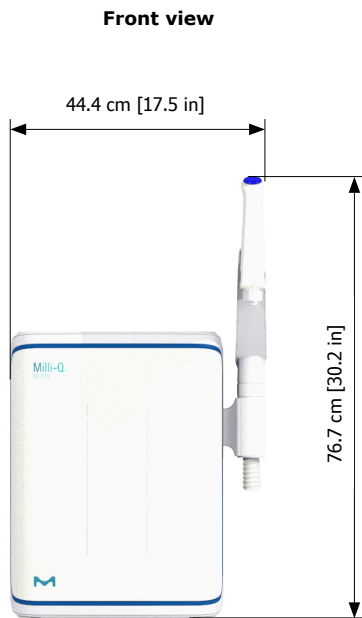
Distribution flow schematic



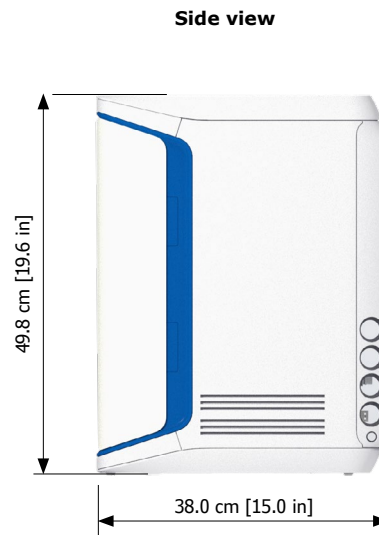
- | | | | | | |
|---|--------------------------------------|---|-------------------------------|---|--|
|  | Tap feed water |  | Vent filter |  | Flow controller |
|  | RO membrane
(2 required for 7016) |  | Storage tank
(25/50/100 L) |  | ech ₂ o ASM UV lamp
(optional) |
|  | Strainer filter |  | Pressure sensor |  | UV lamp, 185 nm |
|  | Solenoid valve |  | Pump |  | TOC indicator |
|  | Conductivity /
resistivity cell |  | 3-way valve |  | Q-POD dispenser |
|  | Pressure regulator |  | IPAK cartridge |  | Application POD-Pak |

Dimensions

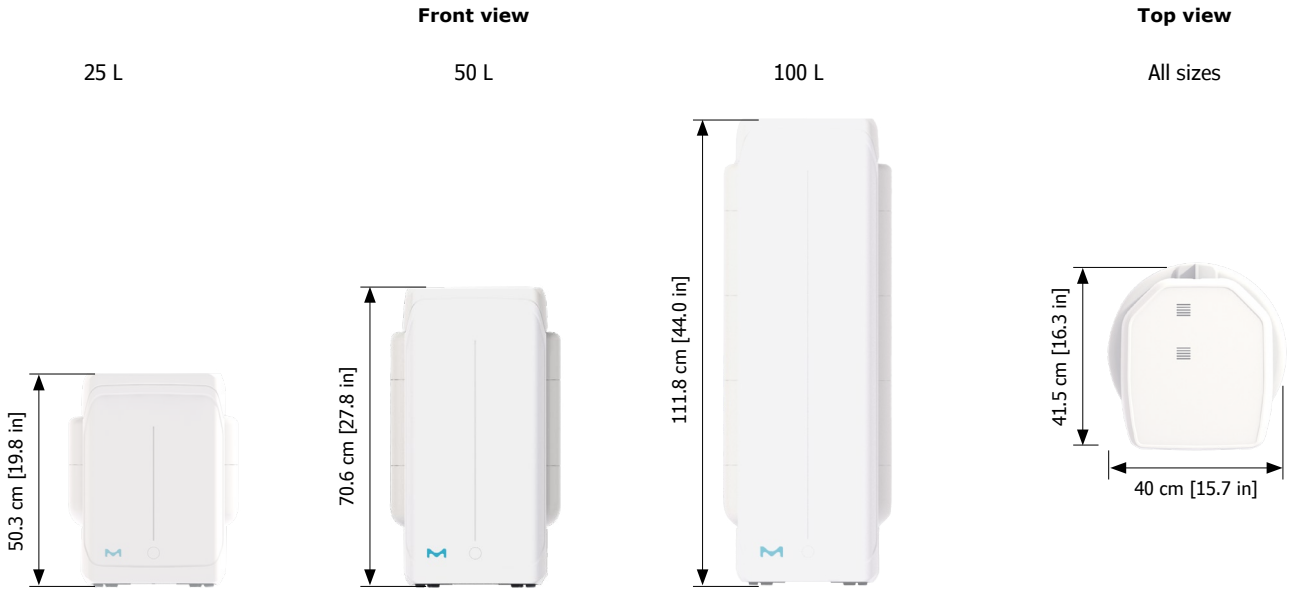
Compact benchtop solution



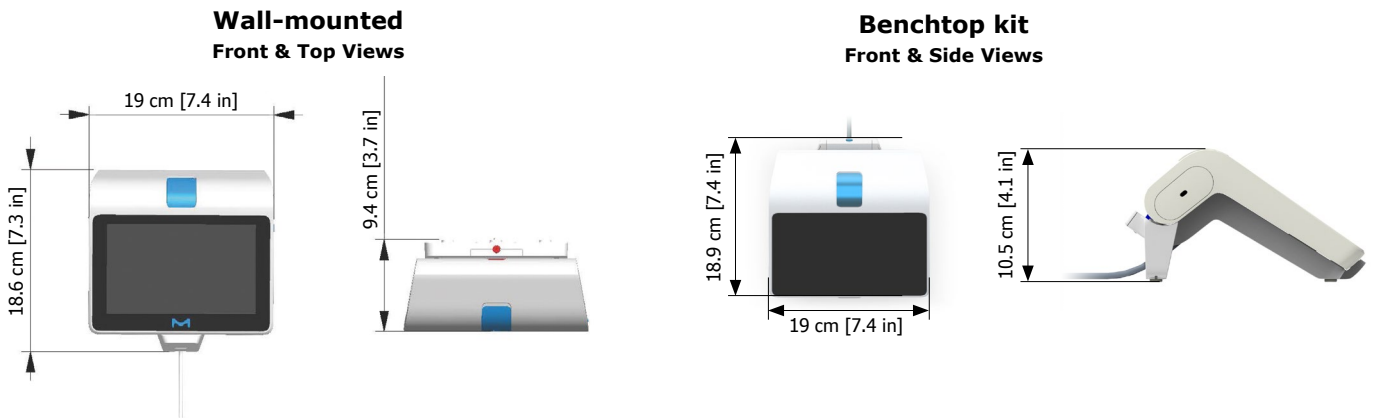
Remote system solution



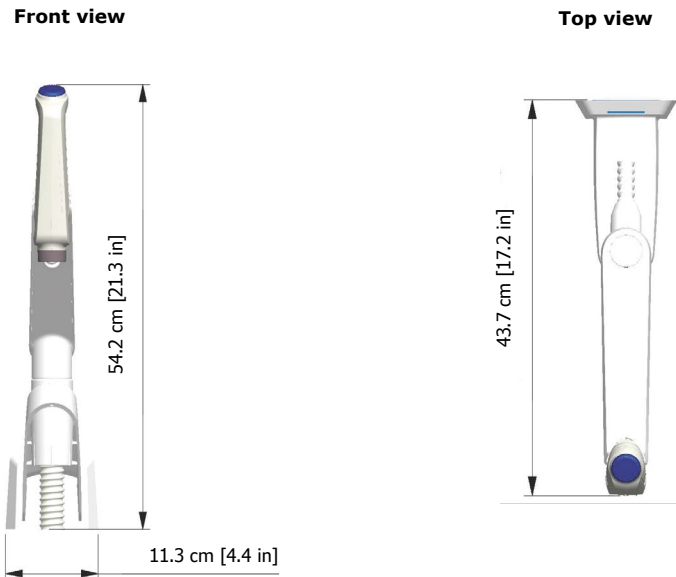
Storage tank



HMI touchscreen (7 in/18 cm screen)



Q-POD® dispenser



Tubing and port requirements

Parameter	Description
Feed water connection	½" GAZ
Distance from feed water port	Maximum 5 m (16.4 ft)
Distance from purification unit to wall-mounted Q-POD® dispenser	Maximum 3 m (9.8 ft)
Distance from purification unit to tank	Maximum 5 m (16.4 ft)
Power entry	Connection IEC13
ON/OFF switch	Available on the unit
Water sensor port	Fits with standard leak detector (Cat. No. ZWATSENA1)
Ethernet port	IEEE P802.3

Electrical connections and specifications

Parameter	Description
Power source voltage	100–240 VAC ± 10%
Power frequency	50/60 Hz ± 2 Hz
Power used	Maximum 200 VA
Power cord length	2.5 m (8.2 ft) plug: IEC13 female
Operational temperature	4–40 °C (39–104 °F)
Altitude	Up to 3000 m (9842 ft)
Tank material	High purity polyethylene

Weights

System type		Dry weight	Shipping weight	Operating weight
Purification unit + HMI touchscreen	7008	19.0 kg (41.9 lb)*	22.4 kg (49.4 lb)	25.2 kg (55.6 lb)*
	7016	19.7 kg (43.4 lb)*	23.1 kg (50.9 lb)	26.5 kg (58.4 lb)*
HMI touchscreen		0.58 kg (1.3 lb)	**	0.58 kg (1.3 lb)
HMI touchscreen mounting kits	Benchtopy	0.42 kg (0.9 lb)	0.56 kg (1.2 lb)	0.42 kg (0.9 lb)
	Wall	0.49 kg (1.1 lb)	1.4 kg (3.0 lb)	0.49 kg (1.1 lb)
Q-POD® dispenser	System	1.2 kg (2.7 lb)	1.5 kg (3.3 lb)	1.2 kg (2.7 lb)
	Wall	2.2 kg (4.9 lb)	2.8 kg (6.1 lb)	2.2 kg (4.9 lb)
Storage tank	25 L	6.7 kg (15 lb)	8.5 kg (19 lb)	31.7 kg (70 lb)
	50 L	7.6 kg (17 lb)	10.6 kg (23 lb)	57.6 kg (127 lb)
	100 L	10.9 kg (24 lb)	12.8 kg (28 lb)	110.9 kg (244 lb)

*HMI touchscreen not included.

**Included in shipping box with purification unit.



HMI touchscreen specifications

Screen descriptions and functionalities

Parameter	Description
Capacitive touchscreen	Size: 7" (18 cm); Resolution: 800 x 480
USB port	USB 2.0 Highspeed standard
Display in 9 languages	Chinese / English / French / German / Italian / Japanese / Portuguese / Russian / Spanish

Water specifications international conformity

Feed water requirements

Feed water quality	Potable tap water
Pressure	1–6 bar
Temperature	5–35 °C (41–95 °F)
Conductivity	< 2000 µS/cm at 25 °C
Dissolved CO ₂	< 30 ppm
Free chlorine	< 3 ppm*
Fouling Index (FI)	< 10**
pH	4–10
Total Organic Carbon (TOC)	< 2 ppm
Langlier Saturation Index (LSI)	< 0.3
Hardness (as CaCO ₃)	< 300 ppm
Silica	< 30 ppm

* If free chlorine between 1 and 3 ppm, apply PrePak PRPK00001. ** If FI between 5 and 10, apply PrePak PRPK000A1.

Ultrapure, Type 1 water specifications¹ (from Q-POD[®] dispenser)

Resistivity ²	18.2 MΩ·cm at 25 °C
Conductivity	0.055 µS/cm at 25 °C
TOC	≤ 5 ppb
Particles ³	No particles with size > 0.22 µm
Bacteria	< 0.01 cfu/mL (< 10 cfu/L) ⁽⁴⁾ < 0.005 cfu/mL (< 5 cfu/L) ⁽⁵⁾
Pyrogens (endotoxins) ⁶	< 0.001 EU/mL
RNases ⁶	< 1 pg/mL
DNases ⁶	< 5 pg/mL
Proteases ⁶	< 0.15 µg/mL
Flow rate	< 2 L/min

1 These values are typical and may vary depending on the nature and concentration of contaminants in the feed water.

2 Resistivity can also be displayed non-temperature-compensated as required by USP.

3 With Millipak[®] or Millipak[®] Gold filter.

4 With Millipak[®] or Biopak[®] filter.

5 With Millipak[®] Gold filter when installed and used in a laminar flow hood.

6 With Biopak[®] polisher.

Tank water / Type 3 water delivery

Dispensing tank water is possible provided that a tank front valve is installed.

Reverse osmosis (RO), Type 3 water specifications

Resistivity	> 0.05 MΩ·cm at 25 °C
RO ionic rejection	97–98%
Organics rejection	≥ 99% (depending on the type of molecule)
TOC	< 200 ppb
Colloids	< 1000 ppb
Bacteria	< 1000 cfu/mL (with ASM option installed)
Production flow rate	8 L/h (Milli-Q [®] EQ 7008) 16 L/h (Milli-Q [®] EQ 7016)

Ordering information

Water purification systems, dispensers and mounting kits	Catalog number
Milli-Q® EQ 7008 system (8 L/h production flow rate) & HMI touchscreen	ZEQ7008T0C
Milli-Q® EQ 7016 system (16 L/h production flow rate) & HMI touchscreen	ZEQ7016T0C
Benchtop kit for HMI touchscreen	BTEQ0DKT
Wall mounting kit for HMI touchscreen	WMEQ0DKT
System-mounting kit for Q-POD® dispenser (includes Q-POD® unit)	SMEQ00KT
Wall-mounting kit for Q-POD® dispenser (includes Q-POD® unit)	WMEQ0RKT

Water storage tanks	Catalog number
Milli-Q® storage tank, 25 L	TANKA025
Milli-Q® storage tank, 50 L	TANKA050
Milli-Q® storage tank, 100 L	TANKA100
Milli-Q® storage tank top assembly (includes ASM)	TANKT0PA1
Milli-Q® storage tank top assembly (no ASM)	TANKT0PEQ

Purification consumables	Catalog number
IPAK Gard®/IPAK Meta®/IPAK Quanta®/vent filter consumable kit	EQ70XXPKT1
IPAK Gard®/IPAK Meta®/IPAK Quanta®/vent filter consumable kit for hard water	EQ70XXPKT1H
IPAK Meta®/IPAK Quanta® consumable kit	IPAKKITA1
IPAK Gard® pretreatment pack	IPAKGARA1
IPAK Gard® pretreatment pack for hard water	IPAKGARH1
Vent filter	TANKV01A1
Vent filter HF (for high-flow applications)	TANKVH1A1
UV lamp	ZEQ7UVLP0

Application POD-Paks	Catalog number
Millipak® 0.22 µm filter	MPGP002A1
Millipak® Gold 0.22 µm sterile filter	MPGPG02A1
Biopak® polisher	CDUFBI0A1
LC-Pak® polisher	LCPAK00A1
EDS-Pak® polisher	EDSPAK0A1
VOC-Pak® polisher	VOCPAK0A1

For easy consumable ordering, visit [SigmaAldrich.com/mymilliqconsumables](https://www.sigmaaldrich.com/mymilliqconsumables)

Accessories & Connectors	Catalog number
System wall mounting bracket	SYSTFIXA1
Tank wall mounting bracket	TANKFIXA1
Tank valve kit	ZFTVK07A1
Connector 2 m system-to-storage tank	ZFC0NN2ST
Connector 5 m system-to-storage tank	ZFC0NN5ST
Water sensor	ZWATSENA1
Foot pedal	ZMQSFTSA1
Alarm relay cable	ZMQ0ALCA1
External solenoid valve for feed water	EXTSV00A1
Washer distribution kit 230 V (right)	ZWDK5R100
Washer distribution kit 230 V (left)	ZWDK5L100
Washer distribution kit 115 V (right)	ZWDK6R100
Washer distribution kit 115 V (left)	ZWDK6L100
Washer distribution kit adaptor	ZWDKADPA1
Wall mounting bracket for washer distribution kit	WMBWASH1
Multi system installation kit	ZIQ7MSKT1

System care	Catalog number
ROCare A - Acidic care	ZWACID012
ROCare B - Basic care	ZWBASE012
ROProtect C - Chlorine tablets	ZWCL01F50
EfferSan Effervescent Tablets (USA)	5874316024
EfferSan Effervescent Tablets (CAN)	5874316024C

International regulatory requirements

EU declaration of conformity – UL safety marking

Milli-Q® EQ 7008/16 systems have been designed and manufactured in accordance to the international standard and test method defined by the IECCE organization according CB Scheme process. CB Scheme process was applied for electromagnetic compatibility and safety compliance.

Milli-Q® EQ 7008/16 systems are also subject of the UL listing Marking Program and meets the following marking and registration requirements listed below:

- UL registration can be verified on the UL website: www.ul.com
- Access to CB certificate: <http://members.iecee.org/>

We also meet the regulatory requirements of the following organizations:





WolfLabs

Pricing on any accessories shown can be found by keying the part number into the search box on our website.

The specifications listed in this brochure are subject to change by the manufacturer and therefore cannot be guaranteed to be correct. If there are aspects of the specification that must be guaranteed, please provide these to our sales team so that details can be confirmed.

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Fax : 01759 301143

sales@wolflabs.co.uk

Please contact us if this literature doesn't answer all your questions.