



PURELAB™ UHQ

Ultra-Pure Water
Purification Systems

PURELAB UHQ – Setting the standard in water purity

Where a lower volume supply of ultra-high purity water is required, PURELAB UHQ provides the ideal solution. Designed for ease of use, this compact system incorporates an extensive range of innovative features which meet the needs of the modern laboratory. Peak water quality is assured by the unique utilization of proven purification techniques, enabling the PURELAB UHQ to satisfy the requirements of a wide range of demanding laboratory applications.

TYPICAL APPLICATIONS

- HPLC
- Atomic Absorption Spectrophotometry
- Ion Chromatography
- ICP Mass Spectrometry
- Trace metal detection
- TOC analysis
- Microbiological analysis
- Tissue culture
- Sample dilution
- Critical glassware washing
- Critical solution make-up

WATER SUPPLY OPTIONS

To provide maximum flexibility, the PURELAB UHQ is available in two versions: the PURELAB UHQ II and the PURELAB UHQ PS.

The PURELAB UHQ II is designed to operate automatically on raw potable feedwater, thus providing a single system solution for producing ultra-pure water.

The PURELAB UHQ PS system excludes the reverse osmosis (RO) membrane and is designed to operate automatically on a pre-purified water supply. The PURELAB Option or PURELAB Prima systems are ideal units to work as a pre-feed for the PURELAB UHQ PS model.

PARTICULATE FREE

To protect the microbore columns in analytical instruments, the PURELAB UHQ is fitted with a 0.05 μ m filter module.

BACTERIAL CONTROL

The water produced by the PURELAB UHQ has a bacterial content of <1 colony forming unit/ml (CFU/ml) ensuring low bacterial integrity for life science applications.



LOW TOC INTEGRITY

The purification media in the PURELAB UHQ has been specifically selected to reduce TOC levels. These levels are further reduced by the use of a short wavelength UV cell. Additionally, an innovative composite vent filter prevents entry of air-borne organisms, organic vapors and CO₂ into the pure water reservoir.

DISPOSABLE CARTRIDGES

Deionization, adsorption and filtration cartridges are readily available and easily replaced as they become exhausted.

RECIRCULATION

Ultra-pure water is recirculated to maintain optimum quality and inhibit microbial growth.

WATER QUALITY METER

Incorporating automatic temperature compensation of resistivity, the water quality meter constantly displays resistivity in MΩ-cm.



ATOMIC ABSORPTION

Graphite furnace analysis in the µg/l range dictates that only the highest purity water can be used for preparation of 'standards' and 'blanks'.

Impurity	Concentration (µg/l)	Impurity	Concentration (µg/l)	Impurity	Concentration (µg/l)
Al	<0.01	Hg	<0.1	Na	<0.01
Ca	<0.02	K	<0.02	Ni	<0.04
Cd	<0.05	Pb	<0.05	Sn	<0.2
Co	<0.006	Mg	<0.02	SiO ₂	<0.5
Cu	<0.01	Mn	<0.02	Zn	<0.02
Fe	<0.02	Mo	<0.1		

Results obtained by a Perkin Elmer model 2100 atomic absorption spectrometer with an HGA-700 furnace.

ION CHROMATOGRAPHY

Ultra-pure water is essential to provide low ionic 'blank' and 'standards' preparation water.

Anions	Concentration (µg/l)	Eluent	Detector
F	<0.01	1.7mM NaHCO ₃	CDM
Cl	<0.02	1.8mM Na ₂ CO ₃	
NO ₂	<0.03		Sample Volume:
Br	<0.02	Columns:	20ml (at
NO ₃	<0.02	AG4A, AS4A	1.5ml/min)
P	<0.01	(TAC-1 concentrator)	
SO ₄	<0.02	Flow rate:	Regenerant:
		2.0ml/min	0.025N H ₂ SO ₄

Results obtained by a Dionex 4000 ion chromatograph.

TECHNICAL
SPECIFICATIONS

PURELAB UHQ model	PURELAB UHQ II	PURELAB UHQ PS
Performance Specifications		
Inorganics	18.2 MΩ-cm @ 25°C	18.2 MΩ-cm @ 25°C
TOC¹	<20 ppb	<20 ppb ²
Micro-organisms	<1 CFU/ml	<1 CFU/ml
Particles	0.05µm filtration	0.05µm filtration
Product Specifications		
Dimensions	Height: 400mm Width: 232mm Depth: 400mm	Height: 400mm Width: 232mm Depth: 400mm
Weight	10kg empty, 14kg full	9kg empty, 13kg full
Status Displays	Power on Process and ready Tank level indicator – LCD % full Water quality indicator – LCD 1-18MΩ-cm (temperature compensated)	Power on Process and ready Tank level indicator – LCD % full Water quality indicator – LCD 1-18MΩ-cm (temperature compensated)
Safety Features	High level shut-off Low level shut-off Process inhibit during refill	High level shut-off Low level shut-off Process inhibit during refill
Dispense Flow-rate	Up to 0.75 Liters/min	Up to 0.75 Liters/min
Output per 8 Hour Day	15 Liters	15 Liters
Power Requirements	230/115V 50/60Hz	230/115V 50/60Hz
Power Consumption	77VA	77VA
Tank Capacity	4 Liters (nominal)	4 Liters (nominal)
Cycle Time	10 minutes (typically)	10 minutes (typically)
Drain Requirements	1.0 Liters/min gravity fall (for cleaning)	1.0 Liters/min gravity fall (for cleaning)
Electrical Safety	Designed to conform to the relevant requirements of IEC 348 and BS 4743	Designed to conform to the relevant requirements of IEC 348 and BS 4743
Feedwater Specifications		
Quality	Potable water free from turbidity and organics	Pre-purified water of <20µS/cm and filtered to at least 0.2 µm
Temperature	4-35°C	4-35°C
Pressure Maximum	6 Bar (90psi)	6 Bar (90 psi)
Pressure Minimum	2 Bar (30 psi) – below this a separate water pressure boost pump is available	Flooded suction

Conforms to ASTM, CAP, NCCLS – Type 1 and ISO 3696: 1987

¹ Subject to suitable feedwater

² When fed with reverse osmosis water

SYSTEM DESCRIPTION

The PURELAB UHQ is a unique system, combining the most efficient water purification techniques in a compact, well-styled unit, which is ideally suited to the modern laboratory. Built-in technologies include:



Reverse osmosis

A pre-treatment cartridge containing a highly efficient, low pressure, thin-film composite membrane to deionize the feedwater and remove colloidal and microbiological impurities.

Adsorption

A cartridge of high quality adsorption media optimized for the removal of low molecular weight organic compounds.

Deionization

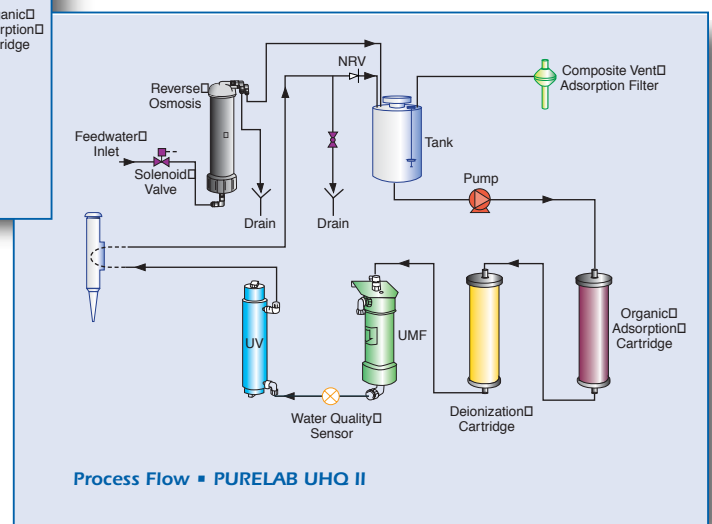
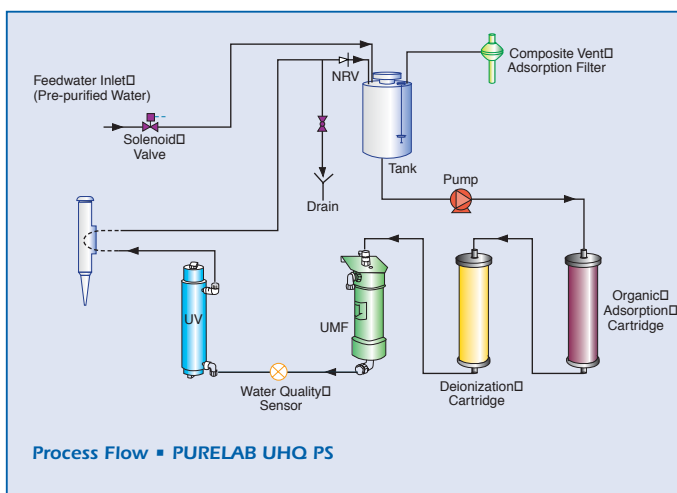
A cartridge of electronics grade ion exchange resin for absolute ionic purity.

Microfiltration

A 0.05 micron hollow fibre membrane cartridge to provide security from any trace colloidal organics, micro-organisms and particles.

Photo-oxidation

A short wavelength ultra-violet photochemical reactor cell for destruction of micro-organisms and cleavage of trace organic compounds, to assist in the reduction of Total Organic Carbon (TOC).



THE SINGLE SOURCE SOLUTION

PURELAB UHQ systems are part of the complete range of ELGA water purification systems designed to meet the pure water requirements of today's laboratories.

From glassware washing to molecular biology, every ELGA system has been carefully designed to give you uncompromising water quality in a cost-effective, convenient, and easy to use package.

With a network of over 600 service centers worldwide, ELGA provides an unrivalled package of service and support for its range of pure water

systems. Whatever support you require, ELGA's team of water treatment experts will respond quickly to ensure your total satisfaction with our products and services, guaranteed.

With our wide range of technologies, products and services, we can provide the right solution tailored to your own specific pure water needs.

Contact us today for further information on the water purification systems featured in this brochure or for details on other models in the range.



Contact your nearest ELGA LabWater representative at:

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