

QUATTRO Technical Specifications

MODEL		500	1000	2000	3000
Product ² (nominal ¹)	l/h (GPM)	500 (2.2)	1000 (4.4)	2000 (8.8)	3000 (13.2)
Feed (nominal ¹)	l/h (GPM)	690 (3.0)	1370 (6.0)	2740 (12.1)	4110 (18.1)
Concentrate (nominal ¹)	l/h (GPM)	190 (0.8)	370 (1.6)	740 (3.3)	1110 (4.9)
Pump Motor Size	kW	3.0	4.0	5.5	7.5
Recovery (maximum)	%	73			

¹ Nominal flows are based on operation of RO/CEDI system at 15°C (60°F), SDI<3 and are dependent on feedwater quality

² Product flows at a maximum outlet pressure of 1 bar (15 PSI)

QUATTRO Technical Data

PIPE CONNECTIONS		500	1000	2000	3000
Inlet union	mm (inches)	25 (1)	25 (1)	32 (1)	40 (1 1/2)
Outlet union	mm (inches)	20 (3/4)	20 (3/4)	25 (1)	32 (1)
Outlet triclamp	mm	ISO DN10	ISO DN15	ISO DN20	ISO DN25
Drain union	mm (inches)	63 (2)			

DIMENSIONS		Height	Width	Depth
All models	mm (inches)	2000 (79)	2250 (89)	1300 (52)

QUATTRO Material Specifications

Break Tank	PE
Pipework	uPVC
Cartridge Filter Housing	Polypropylene
Softeners	HDPE and GRP Composite
Reverse Osmosis - High Pressure Pipework & Vessels	316L Stainless Steel
Product Pipework Option	316L Stainless Steel
Frame	304 Stainless Steel
Control cabinet	Painted Mild Steel

Feed Water Requirements

General	Potable water free from organics, colloids and suspended matter, SDI<3
Free Chlorine	<0.25 mg/l
Temperature	5–30°C (45–80°F)
Pressure	4–6 bar (60–90 PSI)

Typical Treated Water Quality

Conductivity ³	<0.7 µS/cm
Bacteria	<100 cfu/ml
TOC	<500 ppb

³ Depends on feedwater quality, flowrate & product option selected.

Key benefits:

- Cost - reduced design and engineering through repeatability
- Risk - test and qualify before delivery, lower installation time
- Time - fixed delivery times
- Continuity - all systems use common components

ELGA Process Water

The production of Purified Water, Highly Purified Water, Pyrogen Free Water and WFI to international Pharmaceutical standards is widely recognised as a critical process operation. ELGA Process Water's unparalleled technological experience delivers industry specified systems that meet and exceed the stringent regulations attached to these water qualities.

Our comprehensive support capability includes system design, project management, validation, installation, commissioning and on-site maintenance.

For further information contact your nearest sales office, details below.

Local office

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PROCESS WATER

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VEOLIA
Water

LITR37928 Rev A: 09/04 In keeping with the progressive nature of the company, we reserve the right to amend details without notice.

ELGA
PROCESS WATER

QUATTRO-S

Flexible
Cost-Effective
Water
Treatment



The QUATTRO-S – the latest fully-integrated water purification package for the pharmaceutical industry:

- Flexible process and monitoring options
- Fast-track project delivery
- Microprocessor control
- Unique HMI touch screen
- Meets USP and Ph Eur purified water specifications

VEOLIA
Water

QUATTRO-S – Your Cost-Effective Flexible Water Purification Package

QUATTRO-S

Features and Benefits

Packaged system

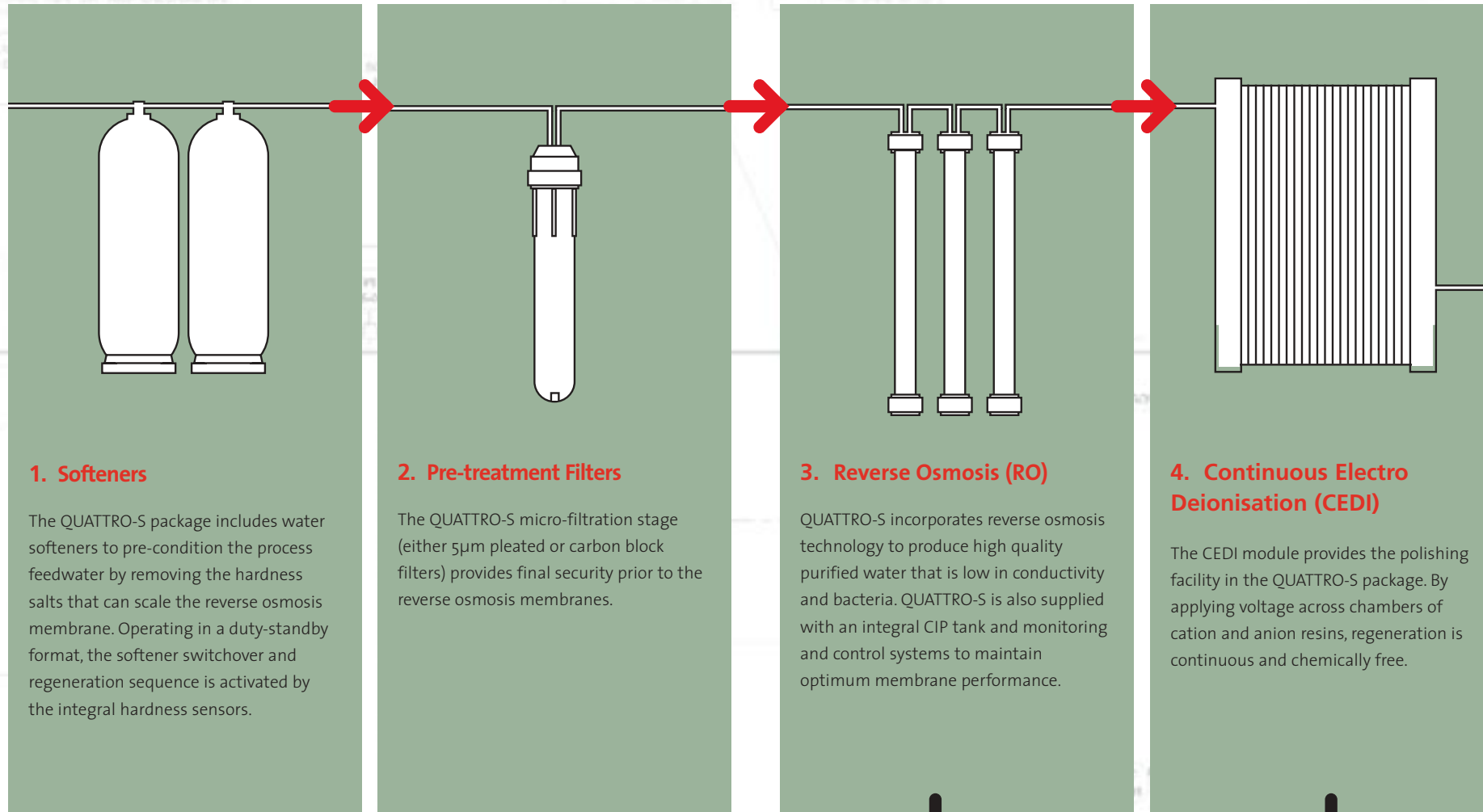
- Skid-mounted
- Fast track project delivery
- Minimum site disruption
- Footprint optimisation
- Integrated CIP system
- Microprocessor control

QUATTRO Care

- Easy access design to reduce downtime during scheduled maintenance visits
- Full range of service maintenance and spare parts contracts

Risk Control

- Process security
- Multi-level access keys
- Alarms
- Real-time conductivity monitoring
- Pre-tested and pre-validated in our ISO 9000:2001 accredited production and test facility
- Integrated CIP system



1. Softeners

The QUATTRO-S package includes water softeners to pre-condition the process feedwater by removing the hardness salts that can scale the reverse osmosis membrane. Operating in a duty-standby format, the softener switchover and regeneration sequence is activated by the integral hardness sensors.

2. Pre-treatment Filters

The QUATTRO-S micro-filtration stage (either 5µm pleated or carbon block filters) provides final security prior to the reverse osmosis membranes.

3. Reverse Osmosis (RO)

QUATTRO-S incorporates reverse osmosis technology to produce high quality purified water that is low in conductivity and bacteria. QUATTRO-S is also supplied with an integral CIP tank and monitoring and control systems to maintain optimum membrane performance.

4. Continuous Electro Deionisation (CEDI)

The CEDI module provides the polishing facility in the QUATTRO-S package. By applying voltage across chambers of cation and anion resins, regeneration is continuous and chemically free.

Standard RO Packaged System

- Base Exchange Softeners
- Filtration
- RO with Stainless Steel Pressure Vessels
- Stainless Steel Skid

Standard RO/CEDI Packaged System

- Base Exchange Softeners
- Filtration
- RO with Stainless Steel Pressure Vessels
- Stainless Steel Skid
- CEDI
- Stainless Steel Product Pipework with UV and Quality Monitoring Kit
- Validation Package

Options

Feedwater Tank and Pump Set

Pre-treatment options

- 5µm pleated filter element
- Carbon block filter element

Process options

- Caustic Dosing for pH adjustment
- Degasser

Monitoring options

- Chlorine monitor
- Hardness monitor
- TOC monitor

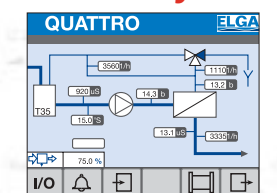
Outlet options

- 3-way stainless steel valve

Testing options

- Witnessed FAT

Control System



- Intuitive touch screen
- Microprocessor control
- Multi-level access keys

Validation



The QUATTRO-S has been designed in accordance with the principles of GAMP. Its elementary validation package fulfils GMP requirements.



Applications for RO water

- Boiler feed make-up
- General rinse water
- Cooling water
- Feed for pure steam generation
- Feed for WFI stills

Applications for Purified Water

- Cosmetics
- Toiletries
- Contact lens
- Centralised laboratory feed
- Primary pharmaceutical manufacture
- Feed for WFI stills

