



**eVOQUA**  
WATER TECHNOLOGIES



## **MEDICA® SYSTEMS**

**WATER PURIFICATION SYSTEMS  
FOR CLINICAL DIAGNOSTICS**



## MEDICA® SYSTEMS

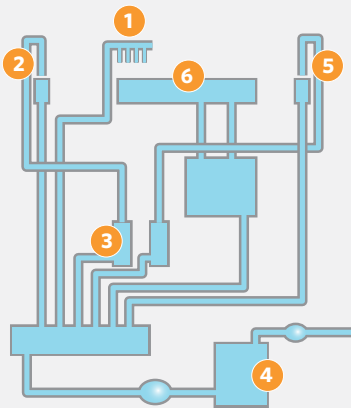
We understand it is critical for clinical analyzers to receive a constant and reliable supply of compliant water to attain accurate and reproducible diagnostic test results. Water quality that is below accepted standards affects the chemistry of the tests and the general operation of the analyzer. This reduces the accuracy of the results and increases calibration times and reagent costs.

Evoqua is proud to partner with ELGA Labwater who has combined experience gained from 75 years of innovating water purification technologies and working in partnership with major clinical diagnostics companies, to offer the unrivaled MEDICA range of products. These reliable, compact water purification systems with in-built wrap-around reservoirs occupy a minimal amount of precious lab space. Constructed from the highest quality components, the MEDICA system ensures bacterial control and optimal purity, as well as an uninterrupted workflow. Built-in technology results in predictable, low consumable and running costs with the highest water quality. All MEDICA units have a bypass loop which continues to provide compliant water to the analyzer in emergency situations.



### Water is vital to many different stages of the clinical analyzer process

Purified water is used as a zero/baseline standard in clinical chemistry tests and if the levels of certain ions (e.g.  $\text{Ca}^{2+}$ ,  $\text{Mg}^{2+}$ ,  $\text{PO}_4^{3-}$ ,  $\text{HCO}_3^-$ ) are not optimal then this will affect the calibration stability and reduce assay sensitivity. Likewise, bacterial by-products, most notably alkaline phosphatase, can interfere with enzyme-based immunoassays.



Diagrammatic view of how purified water is used in a clinical analyzer

#### 1 Cuvette wash station

Consistent high quality water for effective cuvette washing, eliminating carry over and contamination

#### 2 Sample probe and wash station

Consistent high quality water increases calibration stability and eliminates sample to sample cross contamination

#### 3 Pipetting syringes

High quality particle free water for more accurate and precise pipetting of both sample and reagent

#### 4 Internal reservoir

UV and 0.2 micron filter for bacterial and particle control, reducing bacterial contamination

#### 5 Reagent probe and wash station

Consistent high quality and bacterial free water delivers longer reagent stability and eliminates reagent to reagent contamination

#### 6 Incubator bath

Bacteria and particle free water for accurate and precise photometric readings

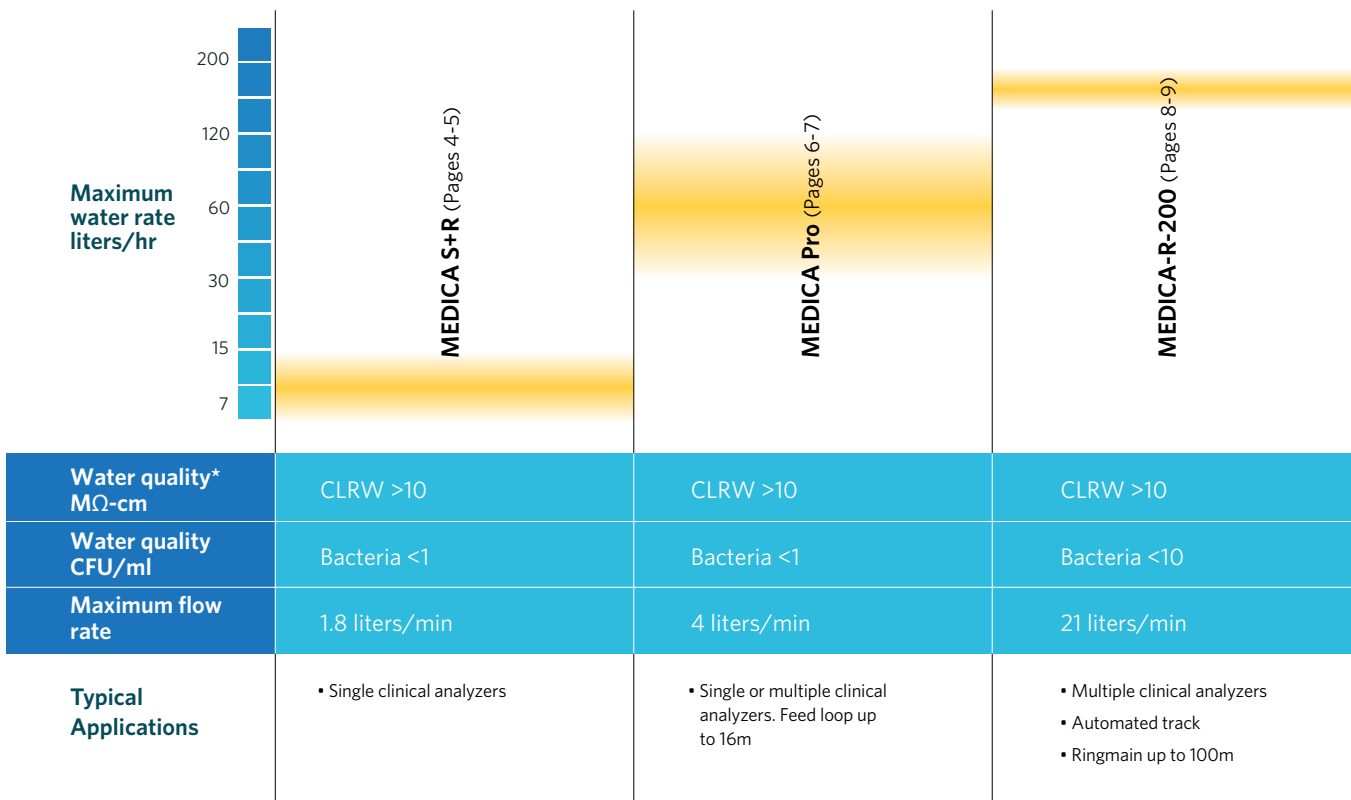
## MATCHING SYSTEMS TO CLINICAL ANALYZERS

### Supporting you all the way

This brochure outlines the key features in the MEDICA® product range. The systems are designed to provide water to clinical analyzers specified to Clinical Laboratory Reagent Water (CLRW) standard (formally Clinical Laboratory Standards Institute Type 1). Whether you have access to tap or partially purified water, or need to feed analyzers on a small or large scale, Evoqua has the system for you.

To help you choose the system that is most suited to your clinical analyzer needs, we have developed the MEDICA product finder. Furthermore, our team of technical and application specialists are always available to answer any questions, as well as provide friendly, expert advice in choosing the most suitable water purification systems.

### MEDICA product finder



\* For more information on applications and scientific water standards see our education guidebook "The Pure LabWater Guide". A free copy is available at [www.evoqua.com](http://www.evoqua.com)



## SERVICE AND SUPPORT

### FOR TOTAL CONFIDENCE IN YOUR MEDICA SYSTEMS

Every MEDICA® system comes complete with one extra feature – first class service and support wherever you are North America. Evoqua has installed thousands of systems, and our service engineers will apply their expertise to the installation and maintenance of your water purification systems to insure optimal performance. Furthermore, for complete peace of mind, your MEDICA system is provided with unparalleled service support. This means maximum uptime for the clinical analyzer system, which must be operational every day of the year.

Our Evoqua team works together with project managers, installation engineers, facilities managers, and clinical scientists to provide help and expertise at all stages.

Prior to installation we will perform a site survey and assess a wide range of parameters that include:

- Specific analyzer applications
- Assessment of feedwater quality
- Required range of water qualities
- Volume of water needed (i.e. peak demand and normal usage per day)
- Space availability
- Budget

After our site survey we will be able to recommend the best MEDICA product for your clinical analyzer application. In addition to providing you with a cost for purchase, we will provide the cost of ownership throughout the life of the product, giving you a predictable budget. All of the MEDICA products are produced as modular units, giving faster installation times, helping to reduce costs.

After commissioning and installation, our ongoing service and support will ensure that your systems are running optimally.



### Pre-installation support

Whether you require purification systems that feed a single small analyzer, a large analyzer, or even multiple independent analyzers throughout an entire building, we will provide solutions that meet all specified clinical analyzer requirements economically, and on budget.

### Service excellence

- We aim to provide first-time-fix service
- We offer a wide range of service solutions, tailored to meet your precise needs, to minimize interruptions to your workflow
- All our calibration equipment is maintained to traceable standards and operated by fully trained service technicians, ensuring the water quality

### Training

- “Hands on” operation training is arranged to ensure optimal system performance and minimize the risk of downtime

### Technical assistance

- Our specialized local team will ensure you find the perfect product to match both your budget and applications
- Our 24/7 technical support team is always available to provide advice, troubleshooting and parts identification

### Quality Assured

Evoqua can combine your water requirements into a complete WaterOne® service agreement designed to provide water quantity and quality guarantees. We provide the water treatment equipment, preventative maintenance, spares and consumables for a monthly fee without an upfront investment.

For customers who prefer to own the equipment, Evoqua can provide the same water quantity and quality guarantees via its WaterComplete® service agreement.

With WaterOne® and WaterComplete® services, customers gain the “peace of mind” that comes with having the industry leader maintain their equipment. This ensures maximum uptime and allows customers to focus on their core competencies, leaving their water purification needs to the experts.



### **The first step to Pure Water: The Evoqua LabWater water analysis**

An informed start for a streamlined solution. At Evoqua we do not speculate or work on assumptions about your water quality. On our first visit to your laboratory we will perform an on-site test that analyzes your feed water quality. Armed with data about your laboratory’s water quality, required applications, lab design and budget, our team will deliver an informed proposal about the best water purification solutions to suit your needs.



## MEDICA-S AND MEDICA-R SYSTEMS

### RELIABLE AND ECONOMICAL SUPPLY FOR LOW USAGE

Designed to supply CLRW grade water to a single analyzer

When high purity water is required in low volumes for a single analyzer, the MEDICA-S and -R range of systems offer an undemanding cost of ownership.

#### Common applications:

- Single clinical analyzers requiring up to 15 liters/hr
- Single clinical analyzers requiring up to 1.8 liters/min instantaneous demand of pure water

- 1 Space-saving wrap-around reservoir**
  - Smooth sides and vented filtration for optimized water

- 2 Easy to operate**

- 3 Sanitization**
  - Designed to run quickly and easily

- 4 Integral 0.2 µm ultra microfilter**
  - Essential to meet CLRW particulate specification

- 5 Fully recirculating UV\***
  - Ensures the highest microbial quality
  - Avoids bacterial alkaline phosphatase

- 6 Built in recirculation and distribution pump\***
  - Keeps stored pure water ready for immediate delivery to analyzers at up to 1.8 liters/min

\* only applies to MEDICA-R units

### MEDICA S/R SYSTEMS

#### The low-usage option for tap water feed

A compact, dedicated unit providing CLRW grade water, the MEDICA S/R systems are an ideal choice for use with a single chemistry or immunoassay clinical analyzer. Two models are available providing either 7 or 15 liters/hr, and facilitating an instantaneous demand of up to 1.8 liters/min from tap water feed.



## MEDICA-S and -R Systems

## MEDICA® Systems - The solution for overcoming your water purification challenges

Challenge	Solution
Operating with and adhering to a tight annual budget, you want the lowest cost of ownership and a long-serving piece of equipment	A pre-installation site survey provides realistic information on the cost of ownership resulting in no surprises. Robust deionization processes provide a constant supply of high purity water at minimal running costs
Lab or plant room space is at a premium, therefore, only a small area is available for a water purification unit	Built-in wrap-around 25 liter reservoir contributes to the smallest footprint for this water specification. This flexibility allows units to be positioned either under or on top of a bench, or mounted on the wall
You need reliability and ease-of-use, while demanding schedules limit the time you can spend on water unit maintenance	MEDICA systems self monitor during operation and exhaustion of consumables is indicated by software on an easy-to-read display
Microbial and inorganic specifications consistently meet the CLRW standard and bacteria specification of <10 CFU/ml	Bacterial specification is ensured with purified water recirculating throughout all the purification processes. Combined with an easy sanitization system





## MEDICA® PRO-R AND PRO-RE SYSTEMS

### HIGH VOLUME AND HIGH PURITY FOR HIGH USAGE

Designed to supply CLRW grade water to large or multiple clinical analyzers

When high purity water is required in high volumes for large or multiple analyzers, the MEDICA Pro range of systems offers a choice at an undemanding cost of ownership.

#### Common applications:

- Large clinical analyzers or linked multiple analyzers requiring up to 120 liters/hr and an instantaneous demand of up to 4 liters/min
- Automated analyzer platforms that use a mix of technologies, e.g. combining chemistry and immunoassays
- Analyzer feed loops of up to 16m in length that employ standard 10mm pipework
- Duplex operation (i.e. two linked MEDICA Pro units) to provide an even greater operational contingency that avoids a single point of failure



## MEDICA® Pro System

- 1 Built in variable speed recirculation and delivery pump**
- Keeps stored pure water ready for immediate delivery to analyzers at up to 4 liters/min

- 2 Economic design**
- Unique wrap-around reservoir
  - Easy-access doors and castors enables the system to be installed under bench

- 3 Integral break tank**
- Complies with "class A" air gap requirements

- 4 Sanitization**
- Designed to run quickly and easily

- 5 Unique system operation protection**
- Automated alarms
  - Access to important control systems limited by "E-key"

- 6 Medpure cartridge**
- Optional addition for maximum delivery rate of 4 liters/min

- 7 Integral 0.05 µm ultrafiltration filter**
- Exceeds CLRW particulate specification

- 8 Fully recirculating UV**
- Ensures the highest microbial quality
  - Avoids bacterial alkaline phosphatase

- 9 Economic Purity**
- Optional degassing system further increases capacity of Medpure cartridge



## MEDICA® PRODUCT RANGE

Complete with a 50 liter, built-in wrap-around reservoir, these systems are available as 30, 60 or 120 liters/hr rates and this space saving design can be readily upgraded to higher flow rates. Long-lasting Protek pre-treatment cartridges have a high capacity adsorbant/pre-filter that provides increased protection by minimizing contaminants, e.g. chlorine and chloramines, and can be easily installed thereby reducing maintenance time. Twin Medpure deionization cartridges ensure an instantaneous demand of up to 4 liters/min.

### MEDICA® Systems - The solution for overcoming your water purification challenges

Challenge	Solution
To avoid any interference from bacterial alkaline phosphatase or other bacterial by-products in the immunodiagnostic assays, the highest level of bacterial purity is required	Designed to recirculate purified water through DI (deionization), UV (ultraviolet) and ultrafiltration technologies. This maintains a bacterial specification of <1 CFU/ml
You have very limited space in your lab or plant room and may require a duty and standby arrangement of water units as a precautionary measure	The single compact design with a built-in reservoir makes the system easy to install under a bench or free standing. This means that two MEDICA Pro units may be installed in the space of one conventional system
Downtime cannot be allowed for the clinical analyzer system	An emergency bypass prevents downtime by providing an uninterrupted supply of pure water to the analyzer at all times. This is backed up with our support service
Predictable running costs are required to meet the laboratory budget	A pre-installation site survey realistically assesses the cost of ownership, while the E Cartridge degasser unit reduces the CO <sub>2</sub> load on the deionization pack giving predictable, low running costs



#### Pro-R

Providing pressurized feed to single or multiple analyzers requiring consistent high purity water.

#### Pro-RE

Addressing high CO<sub>2</sub> water issues for maximum cartridge utilization or multiple analyzers that are heavily utilized.



## MEDICA-R 200 SYSTEM

### HIGH PURITY WATER FOR THE HIGHEST USAGE

Designed to supply CLRW grade water to multiple analyzers on a loop

Designed to supply up to 21 liters/min of CLRW grade water to high volume or multiple clinical analyzers on a loop, this system is easy to install, operate and sanitize, and can be customized to your requirements. The MEDICA-R 200 compact unit can be positioned inside the lab.

#### Common applications:

- Large clinical labs with many different analyzers linked by an automated track
- A hospital lab with large standalone clinical analyzers in different labs and on different floors
- Pure water provision for other applications such as a glass washer as well as for clinical analyzers
- A laboratory with a need for a large central water system with economy of operation



### Quality assured

Our commitment to the highest quality control processes guarantees reliability and compliance with both international, environmental and user organization standards. Designed and manufactured under an ISO9001:2000 total quality system. Tested to comply with CE, EMC, EN 61010 (UL CSA), PIRA, WEEE Directive and other standards as appropriate.

## MEDICA® Systems - The solution for overcoming your water purification challenges

### Challenge

You need to avoid a complicated component installation for a large clinical analyzer ring main across two floors or a large automated clinical laboratory wishes to install a tracked automation system with multiple clinical analyzers integrated where the water system must be adjacent for operational flexibility

A high instantaneous demand is required to make sure that all the analyzers on the ring main have sufficient pure water

You require CLRW grade water quality, with special emphasis on bacterial containment to satisfy the differing water specification in a mix of clinical chemistry and immunoassay analyzers

You require a cost-effective system that covers installation, component replacement as well as maintenance, technical and service support for the whole life of the product

### Solution

Designed as a single modular unit with in-built: pure water storage of 350 liters, ring main pump, UV and filter technologies that are housed in a compact and aesthetic cabinet to provide a powerful multifloor ring main system of up to 100m. Quick fit connections make the system easy to install, while experience in project planning simplifies the installation, making it hassle free for you

Multiple integrated technologies are responsible for the system producing 200 liters of pure water per hour and an instantaneous delivery of up to 21 liters/min directly to the analyzers

Built in recirculation through UV, filtration technologies and easy sanitization ensures optimal bacteria purity of <10 CFU/ml and CLRW specification are met at all time

A pre-installation site survey provides realistic information on the cost of ownership resulting in no surprises. The Service Deionization (SDI) cylinders that contain a regenerable resin provide the maximum economy of operation with a low environmental impact





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