wasserLab

AUTWOMATIC PLUS 1+2 from 3 to 10 l/h

TYPE I WATER | TYPE II WATER | OSMOTIZED WATER

One unit, three lab water qualities from tap water

The Autwomatic Plus 1+2 range of equipment produces and dispenses Ultrapure Type I Water, Pure Type II Water (ASTM D1193) from two independent dispensing points and Osmotized Water from the tank, with production versions of 3, 5 and 10 liters per hour, incorporating the highest technologies in the production and quality control of purified water.

Water quality supplied:

	Ultrapure Water (Type I)	Pure Water (Type II)	Osmotized Water
Dispensing flow rate	<2 l/min	<1,1 l/min	<1,1 l/min
Production flow rate		3 - 5 - 10 l/h	3 - 5 - 10 l/h
Conductivity	0,055 µS/cm	<1 µS/cm	<98% Tap Water rejection
Resistivity	18,2 MΩ-cm		
TOC[1]	<3 ppb	<30 ppb	
Bacterial count[1]	<0.01 cfu/ml	<0.01 cfu/ml	
Particles > 0.22 µm/ml[1]	<1	<1	
Endotoxins[2]	<0.001 EU/ml		
RNases[2]	<1pg/ml		
DNases[2]	<5 pg/ml		

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

2. GF (GRUF) version of Ultrapure Water.

Type I Water Applications

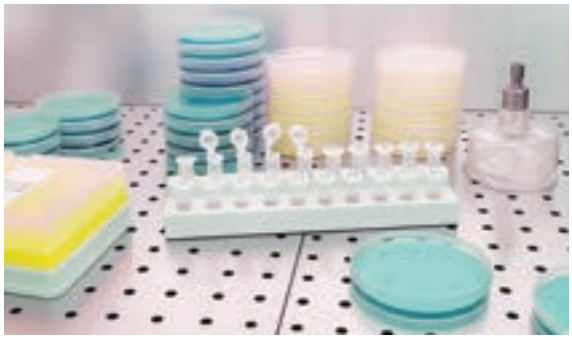
- Atomic absorption / ICP
- HPLC
- Ion Chromatography
- GC-MS
- TOC analysis
- DNA sequencing (GF version)
- PCR (GF version)
- General molecular biology techniques (GF version)
- Production of monoclonal antibodies (GF version)

Type II Water Applications

- Preparation of culture media
- Spectrophotometry
- RIA/ELISA
- AA-Flame
- Preparation of reagents, solutions and buffers

Osmotized Water Applications

- Autoclave feed
- Washer-disinfector feeding
- Cleaning of laboratory equipment



Versions

MODEL	REFERENCE	FLOW RATE PRODUCTION	CONSUMPTION RECOMMENDED
Autwomatic Plus 1+2 GR 3	QA03DPGR	3 l/h	30 l/day
Autwomatic Plus 1+2 GR 5	QA05DPGR	5 l/h	50 l/day
Autwomatic Plus 1+2 GR 10	QA10DPGR	10 l/h	100 l/day
Autwomatic Plus 1+2 GF 3	QA03DPGF	3 l/h	30 l/day
Autwomatic Plus 1+2 GF 5	QA05DPGF	5 l/h	50 l/day
Autwomatic Plus 1+2 GF 10	QA10DPGF	10 l/h	100 l/day

TANK OPTIONS[1]	REFERENCE
Pressurized 10 L	70200
Pressurized 30 L	70220
Pressurized 50 L	70230

1. The system allows the combination of several tanks.

Water purification process of Type II Water

The equipment integrates various technologies to optimise the water purification process, through the following stages:

Pre-treatment

The equipment is designed with an external pre-treatment system to guarantee the protection of the osmosis membrane, eliminating particles smaller than 1 micron, which contributes to the reduction of mineral incrustation, organic matter and the elimination of chlorine.

The depth filter has a high filtration capacity, with optimised retention of the colloids present in the water.

The granular bacteriostatic activated carbon acts effectively in the elimination of free chlorine and in the minimisation of bacterial growth.

The anti-limescale agent, based on polyphosphates, protects against incrustations, preventing the precipitation of calcium and magnesium salts inside the equipment, without releasing ions.

Reverse Osmosis

The high performance reverse osmosis system removes up to 99.95% of the organic matter present in the water and up to 98% of the Total Dissolved Solids (TDS). In addition, the equipment has an automatic washing system, designed to prolong its useful life.

Storage

The water produced in the reverse osmosis phase is accumulated in a hermetic, pressurized tank of 10, 30 or 50 liters, being protected from air and environmental pollution.

The system allows to manually dispense Osmotized Water from a stopcock placed in the tank outlet, automatically feed washer-disinfector or autoclaves. The connections to this type of system are not included in the installation kit of this equipment, so it is recommended to consult the factory.

Purification Phase with Ion Exchange Resins

The Osmotized Water passes through a mixed bed cationic/anionic ion exchange resin, retaining the few dissolved salts in the water, providing purified Type II Water Analytical Grade, according to ASTM (American Society for Testing and Materials) specification, with a conductivity of less than 1 µS/cm.

The configuration of the system by means of a Pressurized Tank of Osmotized Water plus a subsequent ion exchange phase **provides, unlike other systems, a freshly produced Type II Water.** In other words, the user does not store Type II Water but obtains the water directly from the equipment, with a sufficient flow rate to meet their needs.

UV lamp and 0.22 µm final filter

For a reduction of microorganisms present in the water; the equipment incorporates a photo oxidation lamp that reduces this contamination.

To meet even more stringent microbiological requirements (< 0.01 cfu/ml), the equipment incorporates a 0.22 µm in-line final filter. This additional filter ensures the retention of possible microorganisms that may be present in the final water, guaranteeing that the purified water meets high microbiological quality standards.

Water purification process of Type I Water

Ultrapurification module

The Type II Water produced passes through an Ultrapurification module that reduces ionic contaminants to trace levels.

Photo-oxidation lamp for TOC reduction

The photo-oxidation lamp is designed to reduce TOC (Total Organic Carbon) in water. It emits ultraviolet radiation at two specific wavelengths: 254 nm, which has a germicidal action that deactivates micro-organisms present, and 185 nm, which generates free hydroxyl radicals. These radicals efficiently oxidise the organic compounds dissolved in the water, transforming them into carbonate and bicarbonate ions. Subsequently, these ions are retained in the second stage of Ion Refinement, eliminating trace ions and ensuring superior water purity. As a result, a resistivity of 18.2 MΩ.cm is achieved, guaranteeing Ultrapure Water quality with the highest purity standards for laboratory applications and sensitive industrial processes.

Ultrapure Water Refinement Module

is an essential stage in the water purification process, which focuses on reducing especially dissolved organic matter and trace ions present in the water. These elements are crucial to achieve the necessary purity levels in Ultrapure Water. By removing the last traces of ionic and organic contaminants, water with a resistivity of 18.2 MΩ-cm is obtained.

Ultrafiltration Module (GF version)

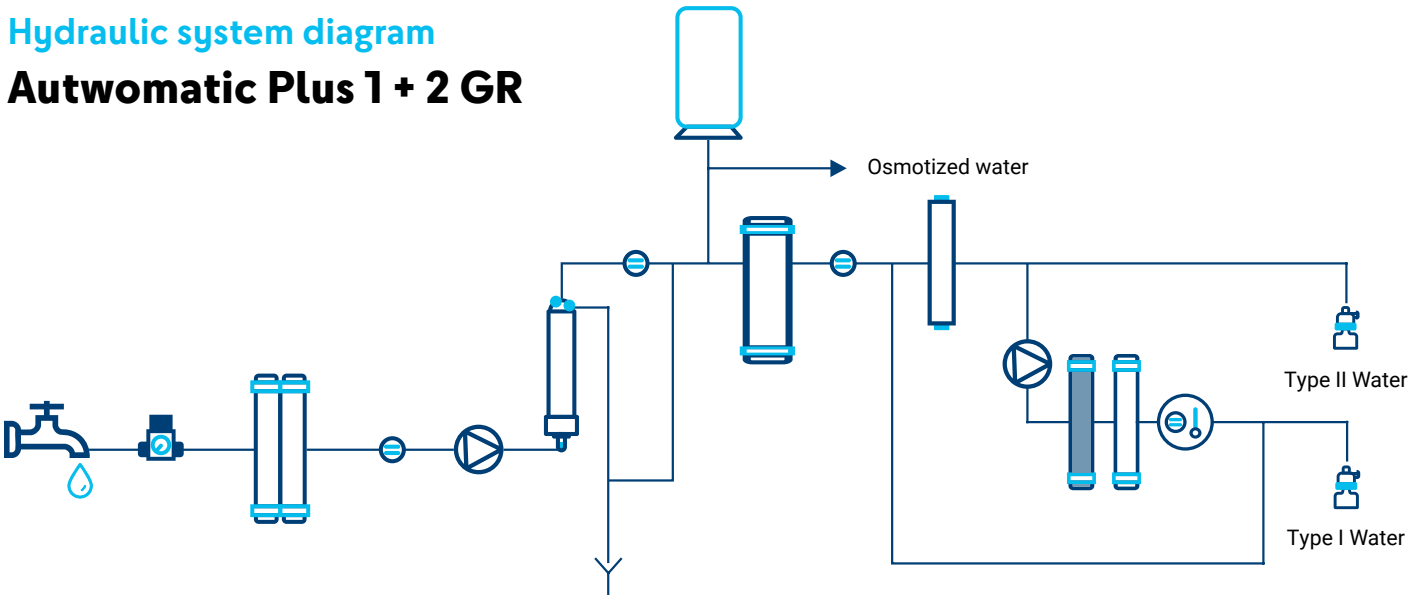
Designed for the most critical applications in molecular biology (such as PCR, DNA sequencing, electrophoresis, Western Blot, among others), this module has a hydrophilic encapsulated hollow fibre membrane with a large filtering surface (0.56 m²). Its main function is to efficiently remove bacteria, pyrogens and nucleases present in the water, ensuring its suitability for these types of techniques.

0.22 micron amicrobic final filter

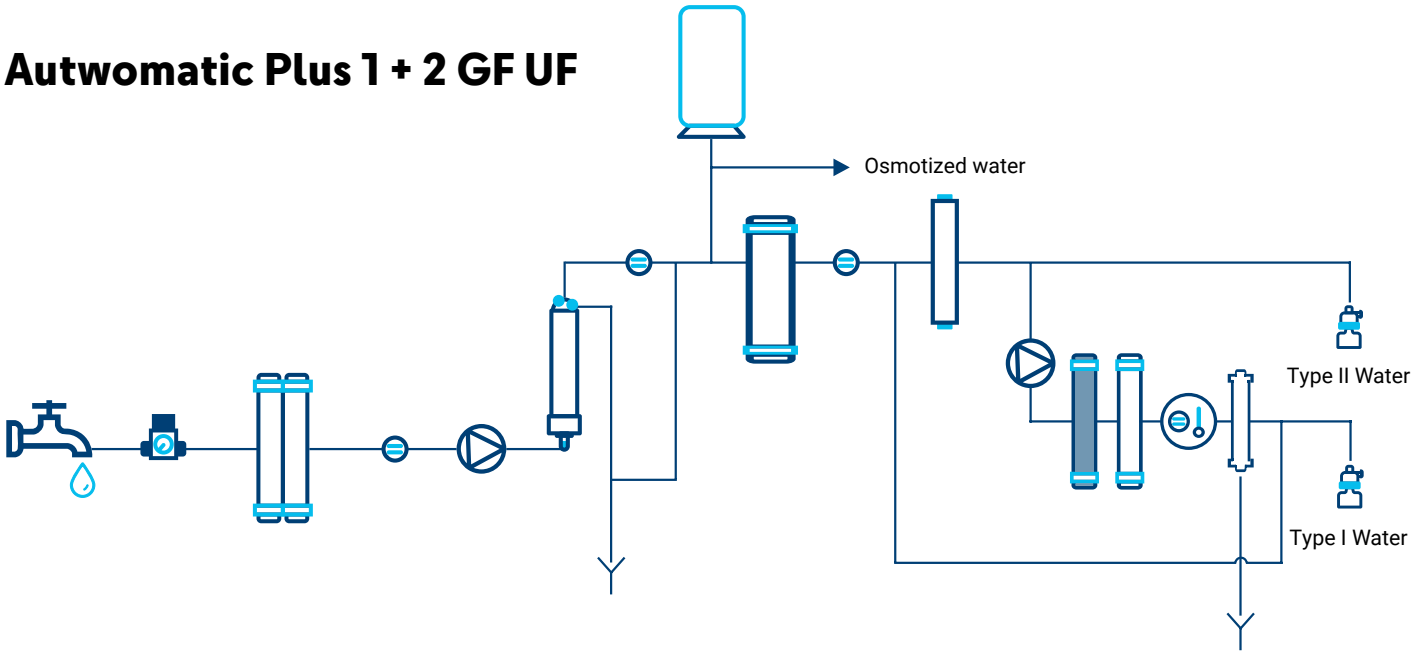
With a high flow membrane and free of extractables, i.e., manufactured in such a way that it does not release particles, chemicals, monomers, or any other type of contaminants that may affect water quality or interfere with sensitive experiments. This filter is designed for efficient particle retention and to achieve a bacterial count ≤ 0.01 cfu/ml, ensuring microbiological purity of the water at the end of filtration.

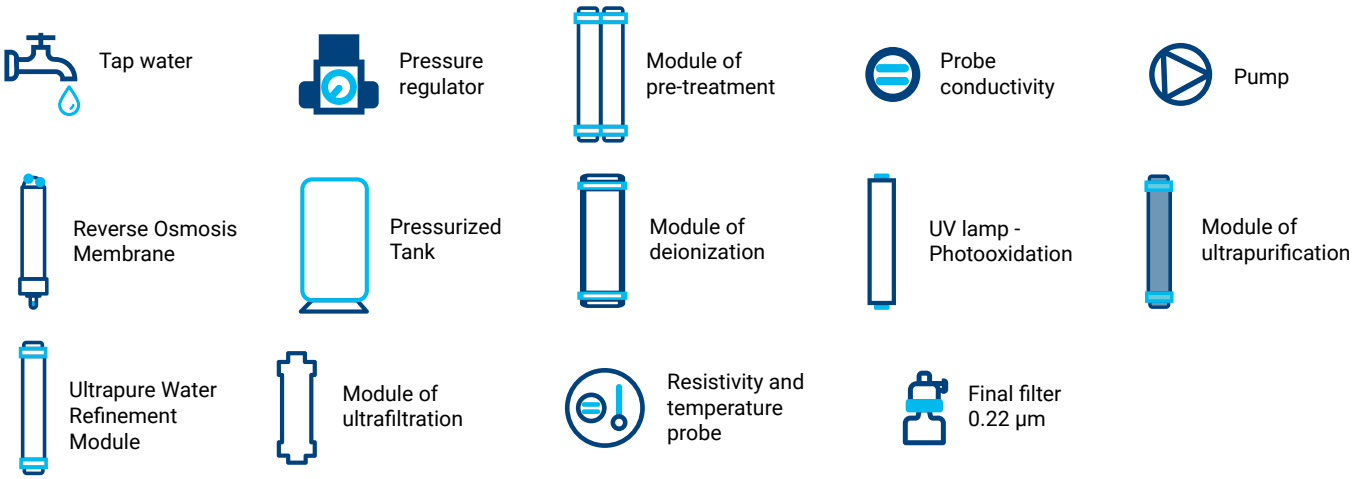
Hydraulic system diagram

Autwomatic Plus 1 + 2 GR

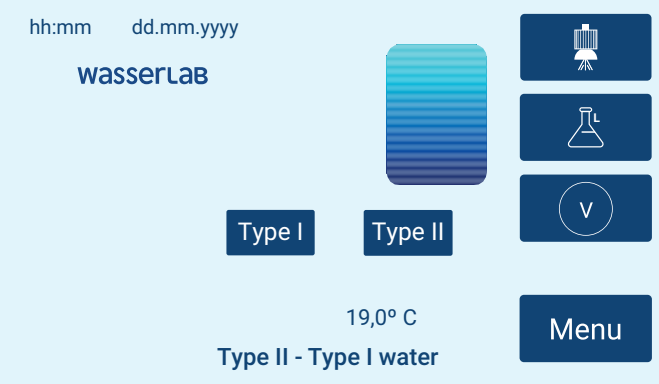


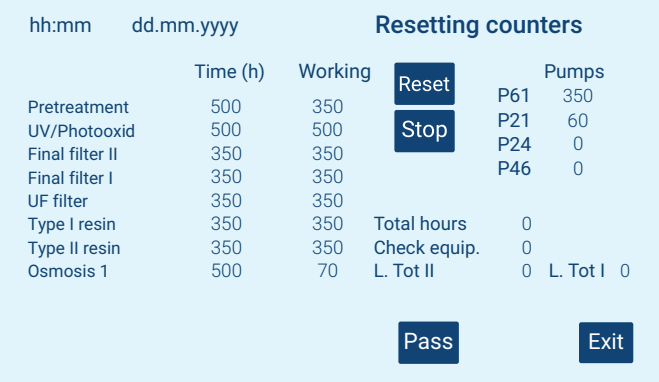
Autwomatic Plus 1 + 2 GF UF

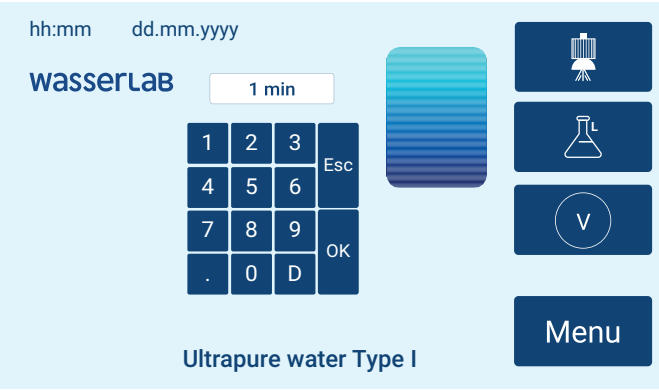


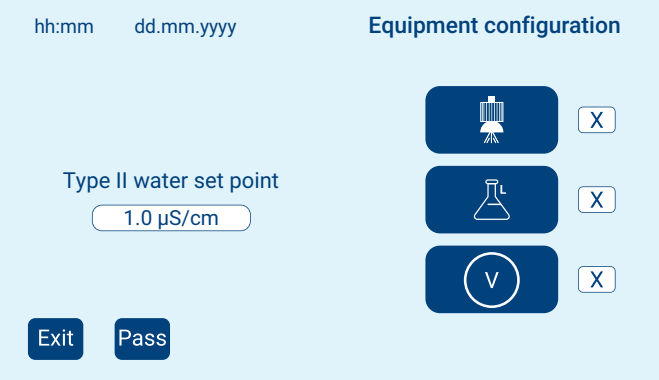


Operation and monitoring









1. Dispensing

The equipment is designed to operate automatically, ensuring that the tank is always kept full, thanks to its automatic stop system. In addition, its design ensures easy and accessible operation for the user.

It incorporates a 4.3 inch touch screen, which facilitates the dispensing of purified water in various ways, adapting to the user's needs.

Available options are:

- Manual dispensing
- Dispensing by volume[1]
- Dispensing by time

1. Accuracy not suitable for flush volumes.

The equipment dispenses Type II Water and Type I Water independently.

2.Monitoring

This comprehensive monitoring system allows detailed tracking of key aspects of the process, ensuring that the equipment operates within the ideal parameters and guaranteeing the quality of the water produced.

- Conductivity measurements (at 25ºC):
  - Equipment feed water (µS/cm).
  - Permeate water from the reverse osmosis module (µS/cm).
  - Type II Water produced (µS/cm).
- Resistivity measurement (at 25 ºC)
  - Type I Water produced (MΩ.cm).
- Water temperature (ºC)
- Percentage performance of the reverse osmosis module.
- Control of operating parameters:
  - Hours of operation of the different components of the system.
  - Liters produced during the purification process.

3. Customization and Security

The system offers customization options, allowing to adjust the type of dispensing and conductivity settings according to the user's needs. In addition, to ensure security and access control, the equipment has a custom password that allows the user to access specific menus and functions, ensuring that only authorised persons can make adjustments or modifications to the system.

4. Automatisms

The system is equipped with a microprocessor that manages the automatic start and stop of the equipment, depending on the volume of water accumulated in the tank. It also has various automated systems to guarantee optimum performance and prolong the useful life of the equipment, such as:

- Automatic shutdown in the event of a water cut-off, to prevent operation without supply.
- Cleaning of the osmosis membrane by flushing, which helps to maintain the efficiency of the filtration process.
- Cleaning of the osmosis membrane with osmotized water, in order to prolong its useful life and ensure maximum performance.

These automatisms contribute to an efficient and low maintenance operation, ensuring the constant quality of the purified water.

5. Data Output

The equipment is designed to allow the extraction of operating data to an external memory (USB). The report generated includes detailed records on the quality and quantity of water dispensed, as well as maintenance alerts and changes made to consumables, providing a useful tool for monitoring and controlling system performance.

6. Mobile phone notification (optional)

The system can send alarm notifications directly to mobile phones, allowing real-time alerts on various problems or irregularities in the operation of the equipment.

Preventive maintenance, sanitization and calibration

Ease of maintenance and control of the system

The system has been carefully designed for ease of maintenance, allowing the user to perform tasks easily and efficiently. The replacement of consumables is carried out quickly, thanks to a quick-connect system with anti-drip technology built into the cartridges.

The service life of the consumables depends on several factors, such as the quality of the incoming water, including its turbidity, hardness and conductivity, as well as the amount of water dispensed over time.

The integrated software is configured to perform scheduled self-checks, ensuring constant and effective monitoring of the system's operation. This control ensures continuous monitoring of the equipment components and the values related to the quality of the water produced.

In addition, the system issues warnings to notify the user about the need to change consumables, water cuts or possible malfunctions of the measuring probes, allowing an early intervention in case of incidents.

System Sanitization

The system is designed to facilitate the sanitization of the equipment through a semi-automatic process, which ensures a thorough and effective cleaning of all its components. During sanitization, the equipment performs a series of automated steps that include the circulation of disinfectant solutions through critical parts of the system, such as membranes and filters. User intervention is limited to initiating and monitoring the process, following clear instructions provided by the system. This sanitization process is designed to remove microorganisms, bacteria and other contaminants that may have accumulated in the equipment, ensuring that the system continues to operate at maximum efficiency and that the water produced always maintains the highest quality standards. The function also helps to extend the life of the equipment by preventing the build-up of impurities that can affect its performance.

Additional system functionalities

Optional Remote Dispensers

Digitally controlled remote dispensers designed to allow additional Type II water outlets at a distance from the main equipment, optimising space and improving operational efficiency.

Pedestal support options:

- Type I Water: Ref. W- DIS101-B03
- Type II Water: Ref. W-DIS100-B03

Wall solution:

- Type I Water: Ref. W-DIS103-B03
- Type II Water: Ref. W-DIS102-B03

Optional additional Osmotized Water outlet

Manual dispenser (Ref. W-DIS006)

Additional mechanically operated Osmotized Water outlet, especially convenient for filling and dispensing bottles a few meters away from the main equipment.

Equipment can be integrated into furniture

The equipment is designed to be fully integrated into laboratory furniture, optimising the available space and leaving the laboratory work bench free for other tasks. Its minimalist design adapts perfectly to laboratory work environments, offering an aesthetic and functional solution that maximises efficiency without compromising system performance. We work with leading furniture brands.

Flexibility to offer solutions that ADAPT TO EACH LABORATORY

Accommodating the needs of the space available

Wall bracket (Ref. 10261)

Base designed to allow safe and stable installation of the equipment directly on the wall. Its robust structure guarantees a firm mounting, optimising the use of space and ensuring that the equipment is well fixed and accessible. Ideal for environments where space in the work area needs to be freed up.

Compact Module (Ref. 10092)

A functional and compact design cabinet, it offers a solution for housing the equipment and its components in an orderly and efficient manner. Perfect for environments where equipment needs to be kept protected and in place, while ensuring accessibility and ease of use.

Wall bracket

Compact Module

Design and Installation of Distribution Loops

We design and install distribution loops, interconnected systems that guarantee an efficient distribution of purified water between different points, adapted to the specific needs of each project.

IQOQ Qualifiable Equipment for the Pharmaceutical Sector

The equipment is designed to be qualified in the processes of **IQOQ (Installation and Operational Qualification)** required in the pharmaceutical sector. It complies with industry specific regulatory standards, ensuring its suitability for use in regulated environments, where traceability, quality and process validation are critical to ensure compliance with current regulations.

Declaration of Product Use: WEEE Directive

In accordance with European Union legislation, this product will be considered **Waste Electrical and Electronic Equipment (WEEE)** once it reaches the end of its useful life.

For detailed information on the recycling and proper disposal of this product, please contact our website.

Quality Assurance to Facilitate GLP and cGMP Compliance

The system has been designed and manufactured to facilitate its integration into regulated working environments such as GLP (Good Laboratory Practices) and cGMP (current Good Manufacturing Practices). Some of its outstanding features include:

- Manufactured under the standards **ISO 9001:2015 and ISO 14001,** ensuring that the product meets the highest standards of quality and environmental management.
- **CE marking:** The equipment has passed rigorous safety and electromagnetic compatibility tests (emission and immunity), carried out by an external accredited centre, which certifies its compliance with European safety and performance standards.
- **Calibration certificate:** The equipment is delivered factory calibrated, guaranteeing its accuracy from the first moment of use. It also allows the adjustment and recalibration of the conductivity meter by means of a certified standard, traceable to the national standards of the Deutscher Kalibrierdienst (DKD) of Germany, ensuring the reliability and accuracy of the measurements over time.

Installation Requirements

- **Alternating current socket** 110 / 120 / 230 V - 50 - 60 Hz. with earth connection at a maximum of 2 meters from the equipment.
- **Tap water connection** (maximum 3 meters).
- **Connection:** 3/8" male gas thread.
- **Drainage** (maximum 3 meters).
- **Tap water quality:**
  - Conductivity: <2.000 µS/cm
  - pH: 4 - 10
  - Hardness: <300 ppm $CaCO_3$
  - Turbidity: <1 NTU
  - CO_2: <30 ppm
  - Silica: <30 ppm
  - TOC: <50 ppb
  - Free chlorine: <1.5 ppm
  - SDI: <7
  - Temperature: 5 - 35 ºC
- **Pressure:** 2 - 6 bar.
- **Installation space** for the equipment and its elements, guaranteeing an accessible work area for handling.

Specifications:

Dimensions:

- Equipment Autwomatic Plus 1+2: 60 x 36 x 49 cm (height / width / depth).
- 10 liters Tanks: 40 cm height x 28 cm diameter.
- 30 liters Tanks: 60 cm height x 40 cm diameter.
- 50 liters Tanks: 80 cm height x 40 cm diameter.
- External Pretreatment: 55 x 24 x 16 cm (height / width / depth).
- Compact Module: 96 x 46 x 60 cm (height / width / depth).

Weight: 35 Kg.

Power consumption: 0.8 A (230 VAC) - 1.6 A (110 VAC).

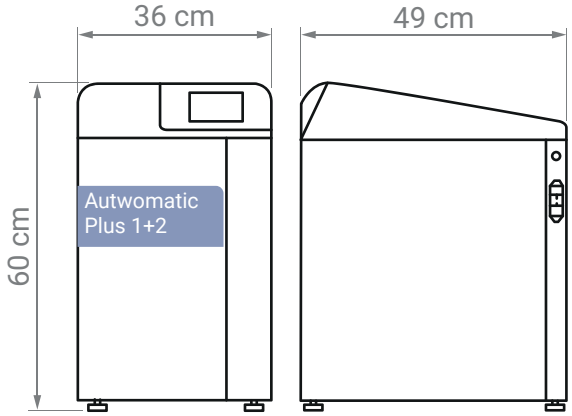
Power: 174 VA (230 VAC) - 174 VA (110 VAC).

Noise level: <50 dB.

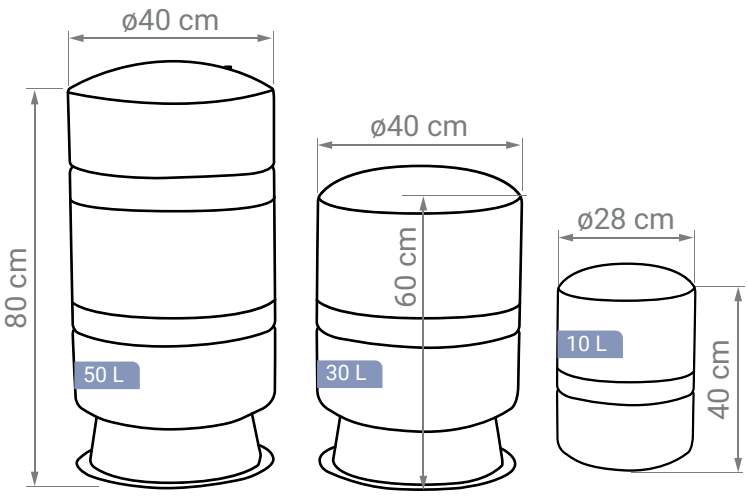
Communication port: USB.

Language Software: English, Spanish, French, Portuguese and Italian.

Equipment



Tanks



Wasserlab®

We are manufacturers of **water purification equipment** with an extensive track record in the installation of solutions in **multiple sectors.**

We offer **personalised advice** in the selection of equipment and we provide **comprehensive technical support** to guarantee optimum operation.

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