BIOSAFETY EQUIPMENT

Ultrapure Water Systems

Medical–Biological
Research & Technologies

Labaqua
Water purification system

Operating Manual | for version V.4A02

Contents

1. Safety precautions

The following symbol means:

Caution! Make sure you have fully read and understood the present Manual before using the equipment. Please pay special attention to sections marked by this symbol.

Caution! Do not service the unit while the open UV lamp is switched ON. Otherwise it can expose the operator to a dangerous level of UV emission.

GENERAL SAFETY

- Use only as specified in the operating manual provided.
- The unit should not be used if dropped or damaged.
- The unit must be stored and transported in a horizontal position (see package label).
- After transportation or storage, keep the unit at room temperature for 2-3 hrs before connecting it to the electric circuit.
- Use only cleaning and decontamination methods recommended by the manufacturer.
- Use only original accessories (fuses, tubes, etc.) provided by the manufacturer and ordered specifically for this model.
- Do not make modifications to the design of the unit.
- Do not block any ventilation openings.
- Do not operate the unit with its covers removed.
- Do not drink deionized water.

WATER LEAKAGE SAFETY

- Make sure that all water connection tubes are unbent, kink-free.
- Make sure that all water connectors are tight.
- When installing the tank, connect the fitting marked „Overflow" to the drain. Make sure that the drain level is lower than the „Overflow" fitting level. This will prevent water leakage in case of tank level sensor failure.
- Do not operate the tank pump if there is no water in the tank. Tank pump may fail if it is run dry.
- A 5 µm sediment filter has to be installed in the feed water supply line. Failure to install the filter may result in clogging of strainer inside the system and water flow blockage.
- **Shut off tap water supply when leaving the system unattended.**

ELECTRICAL SAFETY

- A power line regulator may be required in the areas where the supplied power is subject to voltage fluctuations exceeding 10% of the nominal.
- Connect only to a mains outlet with voltage corresponding to that on the serial number label.
- Verify that the fuses are properly installed.

- Do not plug the unit into an ungrounded mains outlet, and do not use an ungrounded extension lead.
- Ensure that the power switch and power connector are easily accessible during use.
- Disconnect the unit from the electric circuit before moving or performing servicing tasks.
- Turn off the unit by disconnecting the mains plug from mains outlet.
- If liquid penetrates into the unit, disconnect it from the external power supply unit and have it checked by a repair and maintenance technician.
- Do not operate the unit in premises where condensation can form. Operating conditions of the unit are defined in the Specifications section.

DURING OPERATION

- Do not operate the unit in environments with aggressive or explosive chemical mixtures. Please contact manufacturer for possibility of operation of the unit in specific atmosphere.
- Do not operate the unit if it is faulty or has been installed incorrectly.
- Do not use outside laboratory rooms.

BIOLOGICAL SAFETY

- It is the user's responsibility to carry out appropriate decontamination if hazardous material is split on or penetrates into the equipment.

2. General information

Water purification system "Labaqua" produces pure and ultrapure water that complies with ISO 3696 Grade II and Grade I water requirements respectively.

Pure (ISO 3696 Grade II) water applications include, but are not limited to:

- Feed for laboratory equipment (washing machines, clinical analysers, humidifiers, autoclaves, hydrogen gas generators);
- Manufacturing of chemical and biochemical reagents;
- Buffer preparation;
- Microbiological media preparation;
- Sensitive analytical techniques (e.g. atomic absorption, ICP-OES).

Ultrapure (ISO 3696 Grade I) water applications include, but are not limited to:

- High sensitivity analytical techniques (ICP-MS);
- High performance liquid chromatography;
- Molecular biology;
- Cell culture.

There are two types of Labaqua water purification systems:

Labaqua HPLC – Ultrapure water system for analytical applications. Includes 25 l water storage tank. Uses tap water as feed water, often referred to as “tap water system”.

Labaqua Bio – Ultrapure water system for molecular biology and cell culture applications. Includes 25 l water storage tank. Uses tap water as feed water, often referred to as “tap water system”.

Principle of operation

The hydraulic diagram of Labaqua water purification system is shown below.

The solenoid valve (Fig. 1/1) controls intake of feed water from the tap. The first purification stage consists of the pre-filter set (P/N 10019, fig. 1/2 and 1/3) that includes sediment filter and activated carbon intended to remove particles, free chlorine, organics and colloids. A pressure switch (Fig. 1/5) controls feed water pressure. If feed water pressure falls below 0.7 bar, the system will automatically switch on the boost pump (Fig. 1/4) and “LowPres” message will be shown on the display.

The boost pump (Fig. 1/4) is used to maintain pressure at the level necessary for the efficient operation of the reverse osmosis membrane (only in the tap water systems, Fig. 1/9), deionization module (P/N 10310, fig. 1/12), and UV sterilization module (if installed, P/N 10102, fig. 1/16).

From the boost pump, the feed flow goes to the membrane to be split into two parts: the permeate, diffused through the membrane, and the concentrate, which passes over the membrane, carrying away contaminants to the drain. The permeate goes to the third purification step – the IonPro deionization module (P/N 10310, fig. 1/12) where the remaining ions are removed.

Before entering the tank, water is sterilized by UV lamp (if installed, P/N 10102, fig. 1/16); water quality is controlled by Grade 2 water conductivity sensor (Fig. 1/11). LCD display provides information about the system status.

Purified water is stored in the tank and recirculated on periodical basis. Water in the tank meets requirements of ISO 3696 Grade II.

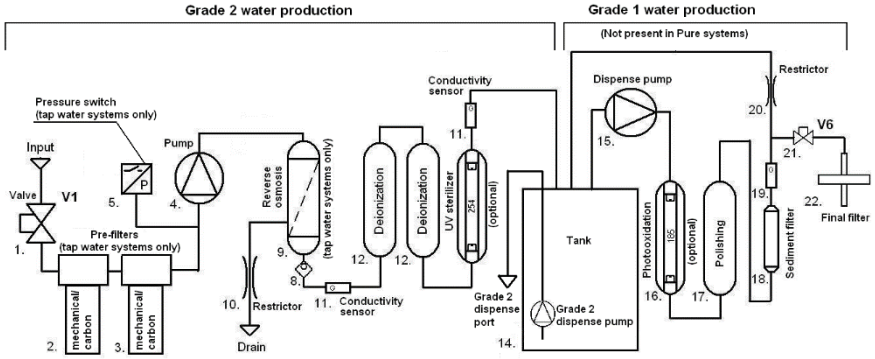


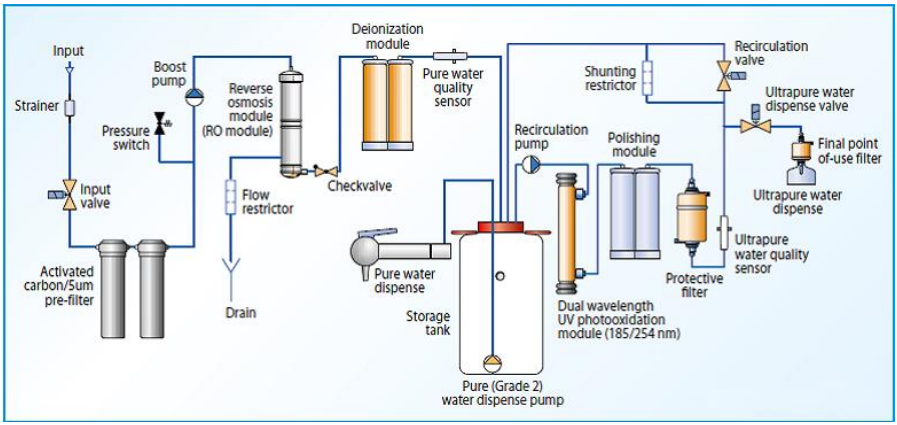
Fig. 1. Principle of operation

Water dispensing

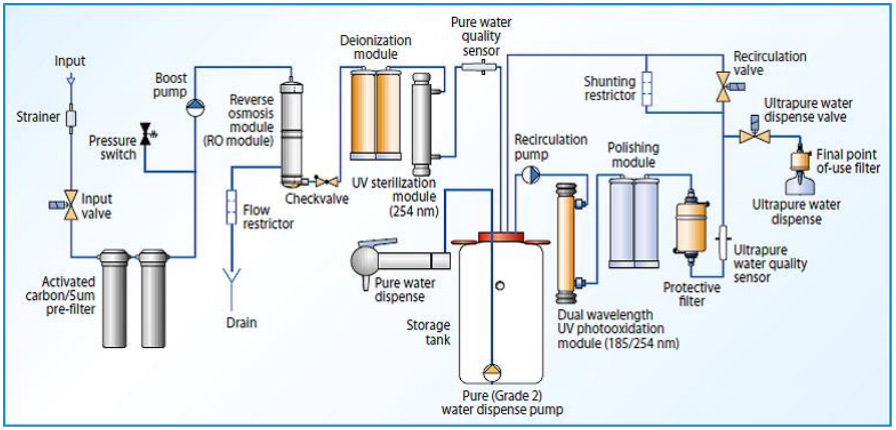
To dispense ISO 3696 Grade I water, press the **Pump Grade I** key. The pump (Fig. 1/15) is switched on and water flows through photooxidation module (P/N 10105, fig. 1/16), polishing cartridge (P/N 10030, fig. 1/17) and protective sediment filter (Fig. 1/18). After several seconds the valve (Fig. 1/21) opens and Grade I water is dispensed via the 0.22 µm point-of-use microfilter. **Labaqua Bio** system has an ultrafilter instead of the microfilter.

To dispense ISO 3696 Grade II water, press the **Pump Grade II** key. Grade II dispense pump is switched on, and water is dispensed via the “Out” port of the tank.

Possible **Labaqua** modifications



Labaqua HPLC: Ultrapure, equipped with photooxidation module for low TOC.



Labaqua Bio: Ultrapure, equipped with UV sterilization module, ultrafilter and photooxidation module for low TOC.

3. Getting started

3.1. Unpacking.

Remove packing materials carefully and retain for them future shipment or storage of the unit. Examine the unit carefully for any damage incurred during transit. The warranty does not cover in-transit damage.

Caution! Due to the unit's weight its unpacking and installing is to be carried out by two persons.

3.2. Complete set. Package contents:

Standart set:

- Labaqua Bio / Labaqua HPLC unit ..... 1 pce
- LLDPE tube, Ø1/4", 3m ..... 5 pcs
- point-of-use ultrafilter set (Bio) / microfilter set (HPLC) ..... 1 set
- power cable ..... 1 pce
- prefilter cartridge ..... 2 pcs
- IonPro deionization cartridge ..... 1 pce
- polishing cartridge ..... 1 pce
- controller module ..... 1 pce
- Ø1/4" elbow ..... 5 pcs
- Ø1/2" NPTF tap water to Ø1/4" JG elbow adapter ..... 1 pce
- Ø3/4" NPTF tap water to Ø1/4" JG elbow adapter ..... 1 pce
- Ø1/2" NPT tap water to Ø1/4" JG adapter ..... 1 pce
- Ø1/4" bypass tube with elbows ..... 2 pce
- Ø1/4" elbow with tube ..... 4 pce
- external storage tank, with pump, level switch and tap ..... 1 set
- Ø3/8" with elbow, 3m overflow tube ..... 1 pce
- Ø3/8", 1m tank dispense tube ..... 1 pce
- tank cable ..... 1 pce
- hex key for controller module ..... 1 pce
- Operation manual, declaration of conformity ..... 1 copy

Optional accessories:

- TOC monitoring module (integrated) ..... on request
- 0.22 µm air vent filter for the storage tank ..... on request
- Reverse osmosis membrane for higher capacity (20 L/h) ..... on request
- Electrodeionization module 10-30 L/h ..... on request
- Water storage tank "Comfort"
  with level switch and dispense pump, 60 L ..... on request
- Water storage tank "Economy"
  with level switch and dispense pump, 50 L ..... on request
- Water storage tank "Comfort" with dispense pump, 100 L ..... on request
- Water storage tank "Comfort" with dispense pump, 200 L ..... on request
- Water storage tank "Comfort" with dispense pump, 300 L ..... on request
- IQ/OQ documentation ..... on request
- For clean tap water with hardness < 130 ppm:
  Pre-filter housing 10" with fittings ..... on request
  Sediment filter 1 µm ..... on request
- For muddy and/or hard tap water with hardness > 130 ppm:
  Pre-filter set 3 x 10" with cartridges (polyphosphate, 5 and 1 µm) ..... on request

3.3. Pre-installation requirements

- The Labaqua system can be placed on a bench or attached to a wall. If the system is placed on the bench, allow space on the bench 500x500mm. Allow enough space for the tank (DMH 400x400x600mm) under the bench.
- Electrical connections: 230 V, 3A.
- Feed water should be filtered with 5 µm sediment filter (not included).
- Feed water should be filtered with at least one 5 µm sediment filter. **If the filter is not installed, the input strainer may become clogged thus blocking the water flow**, or pre-filter life can be reduced.
- Sediment filter for tap water line is usually available from a local plumbing shop. If necessary, the sediment filter set (that consists of 5 um sediment filter and 1 um sediment filter) can be obtained (example below). The part number is 10168.

Attention! In case of Labaqua system pre-filter set (P/N 10019) pre-mature clogging, we ship the new pre-filter under warranty only if we get a photo of the sediment filter installed in the tap water line.

- Feed water hardness does not affect produced water quality. However, operation of the system with hard fed water may result in premature clogging of reverse osmosis membranes and reduced Grade 2 water flow. Therefore, it is strongly recommended to install **a water softener or polyphosphate filter** if water hardness is above 160 ppm.
- Drain level should be lower than **Overflow** port of the tank. Drain is required. The water purification system is equipped with Ø1/4'' drain pipe. **Overflow** port pipe is Ø3/8''.
- Feed water outlet for Labaqua system connection has to be ½'' or ¾'' male thread. A feed water outlet with ½'' female thread is acceptable although not recommended. The system is equipped with feed water tube (1/4'' OD) and adapters for ½'' threaded outlets (male and female thread) as well as for ¾'' threaded outlet (male thread). The feed water tube should be connected to the ¼'' JohnGuest fitting of the adapter. Feed water outlet should be equipped with a valve for shutting off water supply.

3.4. **Setting up**

3.4.1. Install the controller module and connect the cable (Fig. 2/1).

3.4.2. Carefully attach the controller module to the holder at the top right of the system (Fig. 2/2)

3.4.3. While the system is disconnected from mains, it is recommended to carefully remove the rear panel and check for any transportation damage. Reinstall the panel before connecting the power cable to 230V AC power supply socket.

3.4.4. Fix the controller module with two screws on the lower side of the module.

3.4.5. Unpack the microfilter/ultrafilter and screw it into the threaded outlet under the controller module holder (Fig. 2/3). Before connecting, make sure that the sealing O-ring is inside the holder.

3.4.6. Connect the feed water to the Ø1/4'' John Guest inlet marked **Tap Water**. Use an appropriate adapter from tap water to Ø1/4'' tube, see p. 3.2. Tap water should be filtered with 5-micron mechanical filter (not included).

3.4.7. Connect Ø1/4'' JG connector marked **Drain** to the drain using Ø1/4'' plastic tube.

Note: Unscrew the cap of the purified water storage tank and remove the packing material inside.

3.4.8. Connect Ø1/4'' John Guest outlet "**OUT"** to the inlet "**In"** of the tank.

3.4.9. Connect Ø1/4'' John Guest outlet "**Rec Out"** to the inlet "**Rec In"** of the tank.

3.4.10. Connect Ø1/4'' John Guest outlet "**Rec In"** to the inlet "**Rec Out"** of the tank.

3.4.11. Connect the tank cable to the **TANK** connector.

Note: If nothing is connected to the **TANK** connector, the system will show "TnkFull".

3.4.12. Connect the power cable. Make sure the system is properly grounded.

3.4.13. Connect approximately 1 m of Ø3/8'' tube to the tank **Out** connector to ensure convenient Grade II water dispensing. The end of the tube should be free and must not be connected to anything. The backpressure will damage the pump.

3.4.14. Connect the **Overflow** connector of the tank to the drain with Ø3/8'' tube.

Fig. 2. Setting up

3.5. **Feed water and drain requirements**

3.5.1. Feed water should be filtered with 5 µm sediment filter. If the filter is not installed, the input strainer may become clogged and block the water flow. Life of pre-filters can be reduced too.

3.5.2. Feed water connector port can be Ø1/2'' (male or female) or Ø3/4'' NPTF (male) thread. The system is equipped with adapters for both water supply connectors. The feed water tube should be connected to the Ø1/4'' JG port of the adapter.

3.5.3. Tap water pressure should be above 0.7 bar.

3.5.4. Drain pipe should be lower that the level of the instrument and the level of the **Overflow** connector of the tank. The water purification system has Ø1/4'' OD drain pipe. The **Overflow** connector of the tank is for Ø3/8'' OD pipe.

3.5.5. Feed water supply connector and drain should be within 3 meters from the installation site.

3.6. **Deionization and Polishing module installation**.

3.6.1. Push the stems in the ¼'' elbows with ¼'' tubes into the John Guest fittings of the Deionization and Polishing modules.

3.6.2. Install the deionization and polishing modules. The positions of the modules are marked with labels "IonPro deionization module" and "Polishing module". Each module has now John Guest elbows and short tubes installed. Open the front door. Place a module at the labelled site; push the tubes into John Guest fittings at the inner wall. Then attach the module fully to the inner wall by putting the latch at the bottom of the module into slot on the wall.

3.6.3. Screw the pre-filters into the grey filter heads.

4. Rinsing the system

Note: The pre-filter should be rinsed prior operation and each time new filter is installed. Failure to do so can lead to reduced life of the reverse osmosis membrane.

Rinse the system according to the following procedure:

4.1. Open the front door. Disconnect the pre-filter outlet tube (right behind the prefilter heads) from the John Guest fitting (see pictures below). Put a beaker under the tube.

4.2. Switch on the unit. The display is switched on and "STANDBY" message is shown.

4.3. Open the tap water supply.

4.4. Press and hold the **Run** key (Fig. 4/8) for 2 seconds and collect approximately 1 litre of water and press the **Run** key to stop the water flow. The pre-filter is rinsed.

Note: If "TnkFull" message is shown then probably the tank plug is not connected.

4.5. Reconnect the outlet tube to the outlet John Guest elbow.
4.6. Press **Run** key and wait until storage tank is filled with water.
4.7. Put the end of 3/8'' tank "Out" tube into a sink, press "Pump Grade 2" and dispense water from the tank.
4.8. Let the system fill the tank again. As the tank is full, ask the customer to leave the system overnight (shut off tap water supply for safety reasons). The system will recirculate water in the tank and get rid of organic compounds as well as rinse the polishing module.
4.9. The microfilter (or ultrafilter) should be rinsed prior to use! Ask the customer to press "Pump Grade 1" next morning and dispense water in the tank through point-of-use filter (microfilter on Labaqua HPLC or ultrafilter on Labaqua Bio). The microfilter (or ultrafilter) needs to be rinsed with at least 20 litres of purified water.

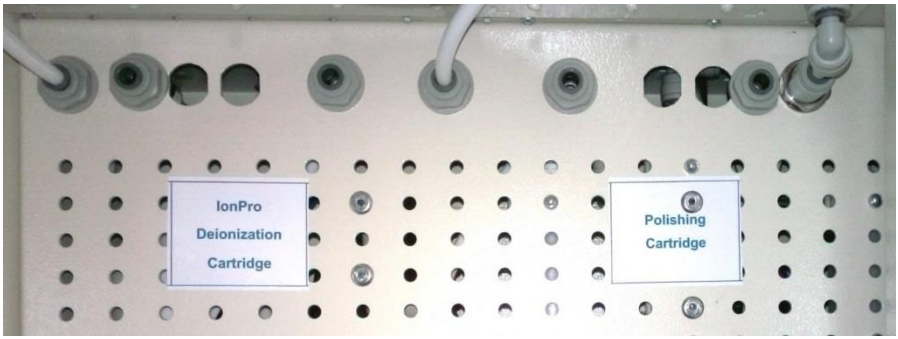


Fig. 3. Deionization and polishing module sites. The grey fittings above are used for connecting the modules.

5. Operation

5.1. Switch on the system with the power switch. The display (Fig. 4/1) lights up after few seconds.
5.2. The display shows information in several rows:
- system messages and current status;
- error messages, if present;

Status messages	**Description**
Standby	Labaqua is switched off and does not produce water to the tank.
LowPres	Input pressure is too low.
TnkFull	The storage tank is full.
Disp.	Water is being dispensed.
Recirculate	Water in the storage tank is being recirculated

Error messages	Description
Filter	Pre-filter set (P/N 10019) needs replacement
DI Err.	Deionization module (P/N 10310) needs replacement
TankS	Tank sensor is damaged
Beeping sound during “Running” stage	Sterilization UV bulb needs replacement.

- indication of current water grade (superscript) and water conductivity (precise readings of water quality are shown when the system is in Running, Grade I dispense or Recirculation mode);
- water temperature and filter life counter.

5.3. If the system is equipped with TOC (total organic carbon) level monitoring module, display shows TOC reading (e. g. <2 ppb). TOC level reading will be shown only after the storage tank is at least partially filled with water and recirculation stage has started.

5.4. The purified water quality is controlled by two sensors. First sensor (Fig. 1/11) measures and displays conductivity of Grade II water, flowing into or recirculating in the storage tank. Second sensor (Fig. 1/19) measures and displays conductivity of Grade I water that is dispensed at the moment.

5.5. Indication in superscript next to the conductivity can take values “1” or “2”, showing current water grade.

5.6. To fill the tank with purified water, press and hold the **Run** key (Fig. 4/8) for 2 seconds. If tank is neither full nor disconnected and the feed water pressure is enough, the display shows “Running”. Now the Labaqua system is filling the tank with Grade II water. As soon as the tank is full, the system shuts down the water supply and shows the “TnkFull” message.

5.7. To dispense Grade I water, press **Pump Grade I** key (Fig. 4/6). After five to ten seconds, Grade I water is dispensed through the 0.22 µm filter. If ultrafilter is installed, loosen the degassing valve to get rid of air. Press the **Pump Grade I** key again to stop water dispensing.

5.8. To dispense Grade II water from the tank, press the **Pump Grade II** key (Fig. 4/7). To stop dispensing, press the **Pump Grade II** key again.

5.9. System will circulate water on periodical basis to prevent growth of microorganisms in the tank. During recirculation phase, the reading of Grade II water is shown on the display. For the systems with TOC monitoring module, display shows TOC reading in ppb. TOC reading appears in the left bottom display when purified water storage tank is full and recirculation stage starts.

5.10. Recirculation is switched off when the system is in the Standby mode. To prolong life of polishing module, please set the system to the Standby mode if it is not used for long time (e.g. for the night).

5.11. Press **Run** key to toggle Standby mode on and off.

5.12. If feed water pressure falls, the display indicates “LowPres”.

Note: To actuate a key, press and hold it for two seconds.

Note: If the system is newly installed or has not been used for a long time, it recommended to leave it in the Recirculating mode for several hours before usage. It will allow the system to fill the tank and recirculate water to reduce TOC content.

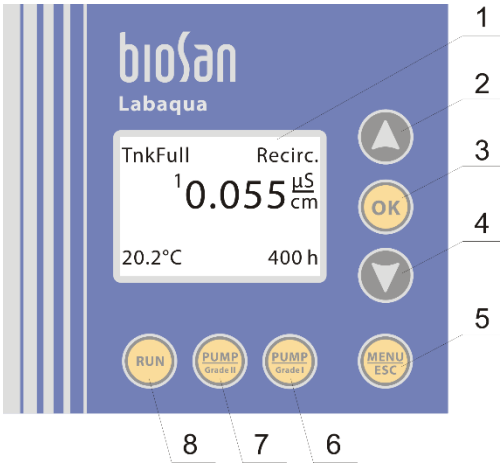


Fig. 4. Control panel of Labaqua Bio/HPLC

5.13. Navigating the menu. To enter menu, press **Menu ESC** key (Fig. 4/5). Press ▼ and ▲ keys (Fig. 4/2 and 4/4) to select options, **OK** key (Fig. 4/3) to confirm and **Menu ESC** key to exit.

5.14. Menu consists of two options, “Reset filter counter” that is required to reset filter life counter when changing filters, and “Options” submenu:

- switch between MΩ*cm and µS/sm conductivity units;
- set recirculation period (time between recirculation cycles);
- set recirculation cycle duration time;

6. TOC level reduction and monitoring

Total organic carbon (TOC) describes level of organic contaminants in pure water. High concentration of organic contaminants may affect results of several analytical methods, e.g. high performance liquid chromatography. Therefore, for some applications TOC level should be controlled and kept minimal.

Grade II water coming to the storage tank generally has low TOC level if proper deionization resins are used. However, TOC level may rise during storage, therefore water recirculation through photooxidation module and polishing cartridge is necessary to keep TOC level low.

Unfortunately, organic contaminants may not have effect on conductivity of water, so conductivity sensors cannot be used for TOC level monitoring. A special TOC level monitoring module is needed to measure TOC level. The monitoring module consists of a TOC photooxidation module, valve and a conductivity sensor.

TOC monitoring module (optional) operation principle

During recirculation stage a water sample is introduced into the TOC photooxidation module where it is oxidized for several minutes. During this phase, water conductivity rises because of the oxidation of organic molecules. The rise of conductivity is proportional to TOC level of water.

After the oxidation phase is finished, water is released from the TOC photooxidation module and its conductivity is measured by the conductivity sensor. TOC level is calculated from the rise of conductivity.

Note: As TOC level measurement is made during the recirculation stage, the TOC level value is shown on the display only with storage tank partially filled with water and during recirculation.

7. Specifications

The unit is designed for operation in cold rooms, incubators and closed laboratory rooms at ambient temperature from +15°C to +30°C with maximum change at less than 2°C in 24 hours, in a non-condensing atmosphere and relative humidity between 20% and 80%.

Biosan is committed to a continuous programme of improvement and reserves the right to alter design and specifications of the equipment without additional notice.

7.1. Purified water specifications

Grade II water conductivity	<0.1 µS/cm
Grade I water resistivity	18.2 MΩ x cm
Grade I water conductivity	0.055 µS/cm
TOC	<2 ppb
RNase (Labaqua Bio)	<0.01 ng/mL
DNase (Labaqua Bio)	<4 pg/mL
Bacteria	< 1 cfu/mL
Endotoxins	
Labaqua HPLC	<0.15 EU/mL
Labaqua Bio	< 0.001 EU/mL
Particles larger than 0.22 µm	<1 per mL
Nominal flow, Grade II water	10 L/h
Dispense flow, ultrapure water	2 L/min
Dispense flow, pure water	4 L/min
Deionization module life (standard module)	1 m3
Recovery	>30 %

7.2. General specifications

Dimensions 500x400x600mm
Weight*..... 30 kg
Storage tank..... 25 L
Input current / Power consumption..... AC 200-240 V, 50-60 Hz / 130W
Fuse ..... 220V, 3 A
Feed water pressure ..... 0.5 – 5 bar
Feed water conductivity ..... < 900 µS/cm
Water connections ..... Ø1/2'' and Ø3/4'' NPTF, Ø1/2'' NPT

Optional accessories	**Catalogue number**
Integrated TOC monitor	BS-070102-S05
0.22 µm air vent filter for the storage tank	BS-070102-AK
Reverse osmosis membrane for higher capacity (20 L/h)	BS-070102-BK
Electrodeionization module 10-30 L/h	BS-070102-CK
Water storage tank "Comfort" with level switch and dispense pump, 60 L	BS-070102-EK
Water storage tank "Economy" with level switch and dispense pump, 50 L	BS-070102-DK
Water storage tank "Comfort" with dispense pump, 100 L	BS-070102-FK
Water storage tank "Comfort" with dispense pump, 200 L	BS-070102-GK
Water storage tank "Comfort" with dispense pump, 300 L	BS-070102-HK
IQ/OQ documentation	BS-070102-IK
For clean tap water with hardness < 130 ppm:	
Pre-filter housing 10" with fittings	BS-070102-JK
Sediment filter 1 µm	BS-070102-KK
For muddy and/or hard tap water with hardness > 130 ppm:	
Pre-filter set 3 x 10" with cartridges (polyphosphate, 5 and 1 µm)	BS-070102-LK

Replacement parts	**Catalogue number**
Pre-filter set	10019
Deionization module	10310
Polishing module	10030
Photo-oxidation module	10105
Photo-oxidation UV bulb	10018
Point-of-use microfilter*	10012
UV sterilization module**	10102
Sterilization UV bulb**	10011
Point-of-use ultrafilter**	10120

* Accurate within ±10%

* In Labaqua HPLC only.

** In Labaqua Bio only.

8. Cleaning and maintenance.

8.1. If the unit requires maintenance, disconnect the unit from the mains and contact Biosan or your local Biosan representative.

8.2. Clean the exterior of the system with soft tissue. Do not use chemicals.

8.3. The water storage tank should be cleaned and disinfected every 2-3 months.

8.4. When the filter counter goes to zero, the pre-filters should be replaced.

- Press the **Run** key to set the system into the Standby mode.
- Open the front panel and unscrew old pre-filters.
- Rinse and install the new pre-filters (see **4. Rinsing the system**).
- Close the front panel.
- Enter menu (see 5.13), select the “Reset filter counter”. Press **OK** key (Fig. 4/3) two times to select and confirm.
- Switch off the system.
- Wait 5 seconds and switch on the system again.

8.5. Expendable parts and the replacement interval are shown below:

Description	Replacement interval	Catalogue number
Pre-filter set	When filter life counter goes to zero or when the filter is clogged (LowPres appears on the screen even if tap water pressure is > 1 bar)	10019
Deionization module	When “DI Err” error message is shown, or when water conductivity is constantly more than 0.5 µS/cm	10310
Polishing module, double	When Grade I water conductivity is constantly more than 0.2 µS/cm	10030
Sterilization UV bulb*	When beeping sound is heard during Running stage	10102
Photooxidation UV bulb	Every 2 years	10018
Point-of-use microfilter**	Every 6-12 months	10012
Point-of-use ultrafilter*		10120

* In Labaqua Bio only.

** In Labaqua HPLC only.

9. Warranty and Claims

9.1. The Manufacturer guarantees the compliance of the unit with the requirements of Specifications, provided the Customer follows the operation, storage and transportation instructions.

9.2. The warranted service life of the unit from the date of its delivery to the Customer is 24 months (excluding expendable parts mentioned in **8.5.**). For extended warranty, contact your local Biosan representative or our service department through the **Technical support** section on our website at the link below.

9.3. Warranty covers only the units transported in the original package.

9.4. If any manufacturing defects are discovered by the Customer, an unsatisfactory equipment claim shall be compiled, certified and sent to the local distributor address. To obtain the claim form, visit section **Technical support** on our website at link below.

Technical support

biosan.lv/en/support

9.5. The following information will be required in the event that warranty or post-warranty service comes necessary. Complete and retain for your records.

Model	Labaqua HPLC / Labaqua Bio water purification system
Serial number	
Date of sale	

10. Declaration of Conformity

Declaration of Conformity

Equipment name:	**Labaqua HPLC / Labaqua Bio**
Type of equipment:	Water Purification System
Directive:	EMC Directive 2014/30/EC Low Voltage Directive 2014/35/EC RoHS 2011/65/EC WEEE 2002/96/EC & 2012/19/EU
Manufacturer:	SIA BIOSAN Ratsupites 7, build.2, Riga, LV-1067, Latvia
Applied Standards:	**EN 61326-1:** Electrical equipment for measurement, control and laboratory use EMC requirements. General requirements. **EN 61010-1:** Safety requirements for electrical equipment for measurement, control and laboratory use. General requirements.

We declare that this product conforms to the requirements of the above Directive(s)

Signature

Svetlana Bankovska
Managing director

4.03.2015
Date

Signature

Aleksandr Shevchik
Engineer of R&D

4.03.2015
Date

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