

## Anexa 91, Sistem de purificare a apei

### Labaqua Bio, Biosan, Letonia

Specificarea tehnică deplină solicitată, Standarde de referință	Specificarea tehnică deplină oferită, Standarde de referință
<p>Sistem de apă ultrapură și pură pentru analiza urmelor anorganice, cromatografie, microbiologie și biologie moleculară analog Crystal EX HPLC (Grade 1) and pure (Grade 2) apă pentru analiza urmelor anorganice</p> <p>Rezistivitatea apei de gradul 1 la 25 °C: 18,2 MΩ x cm</p> <p>Conductivitate de gradul 1 a apei la 25 °C: 0,055 μS/cm</p> <p>Rezistivitate de gradul 2 a apei la 25 °C: &gt;10 MΩ x cm</p> <p>Conductivitate de gradul 2 a apei la 25°C:</p> <p>rezervor de stocare &amp;lt;</p> <p>0,1 tominal μS: L/h</p> <p>Rata de dozare,apă ultrapură: până la 1,5 L/min.</p> <p>Pachet cu rezervor de stocare (rezervor de stocare apă „Pro” fără senzor multipunct, nr.piesa 13003)</p>	<p>Sistem de apă ultrapură și pură pentru analiza urmelor anorganice, cromatografie, microbiologie și biologie moleculară analog Crystal EX HPLC (Grade 1) and pure (Grade 2) apă pentru analiza urmelor anorganice</p> <p>Rezistivitatea apei de gradul 1 la 25 °C: 18,2 MΩ x cm</p> <p>Conductivitate de gradul 1 a apei la 25 °C: 0,055 μS/cm</p> <p>Rezistivitate de gradul 2 a apei la 25 °C: 10 MΩ x cm</p> <p>Conductivitate de gradul 2 a apei la 25°C: 0,01 μS/cm</p> <p>rezervor de stocare 30 lt;</p> <p>0,1 tominal μS: L/h</p> <p>Rata de dozare,apă ultrapură: până la 1,5 L/min.</p> <p>Configuratie cu rezervor de stocare incorporat, de 30 litri</p>

# Labagua Bio, ultrapure water system

## DESCRIPTION

Labagua ultrapure systems are multi-purpose water purification systems. The Labagua systems produce ultrapure and pure water directly from tap water.

**Labagua Bio** system produces water with very low organic and RNase/DNase content that is intended for the use in molecular biology, including RNase sensitive applications.

Any configuration of a Labagua ultrapure system produces both ultrapure and pure water. Ultrapure (Grade 1) water is dispensed through the point-of-use filter on the front panel. Pure (Grade 2) water is dispensed directly from the storage tank.

Labagua ultrapure water can be used for the most demanding applications including, but not limited to: **Inorganic trace analysis, Liquid chromatography, Cell culture, Molecular biology.**

With resistivity of 18.2 Mega — Ohm\*cm (0.055 µS/cm) ultrapure water produced by a Labagua system exceeds requirements of all relevant standards (ISO 3696 Grade 1, ASTM Type I, CLSI Type I). Purified water is collected in a storage tank. An integrated recirculation system ensures consistent quality of water and reduces total organic carbon (TOC) to very low levels: <5ppb.

Pure water produced by the Labagua systems complies with the requirements of ISO 3696 Grade 2 water and can be used for labware washing, wet chemistry methods, flame spectrophotometers, etc.

All Labagua systems have a controller with a color graphic LCD display for water quality indication. The LCD display provides all necessary information about system status, as well as system flow-chart the remaining pre-filter life and deionization (DI) module performance. The smart DI module monitoring system also provides a reduction in running costs. A user is instructed to replace the DI module only when the module is near the end of its service life.

All cartridges and filters are easily accessible and no tools are required to replace them. The Labagua system can be installed on a laboratory bench or mounted on a wall.

Features:

- **Volumetric dispense** - enables the user to set accurate dispensing volume for each dispense cycle. The dispense volume can be set either from the keyboard or by using "teaching" mode.
- **Water quality** - embedded recirculation loop ensures stable premium water quality and enables practical elimination of Total Organic Carbon (TOC).
- **Low running costs** - performance of the deionization and polishing modules is constantly monitored. Monitoring algorithm enables cutting running costs, as replacement of the modules is requested only when service life is close to the end.
- **Total organic carbon (TOC) monitor** - organic contaminants may not have effect on conductivity of water, so conductivity sensors cannot be used for TOC monitoring. Therefore, a special TOC monitoring module is needed to measure TOC level.
- **Color graphic LCD display** - system component status is reflected on the display in an intuitive color pattern (Green/Yellow/Red).
- **System flowchart** - shows all component status and water quality parameters at a glance.

The Labagua systems include:

- Boost pump
- Pre-filter set
- Reverse osmosis module
- Deionization module
- Final stage polishing module
- 30L storage tank with an integrated Grade 2 dispensing valve
- Recirculation system



## CAT. NUMBER

	30l storage tank
BS-070106-A02	230VAC 50Hz Euro plug
BS-070106-A06	230VAC 50/60Hz UK plug
BS-070106-A03	230VAC 50/60Hz AU plug
	60l storage tank
BS-070107-A01	230VAC 50/60Hz Euro plug
BS-070107-A06	230VAC 50/60Hz UK plug
BS-070104-HK	IQ/OQ/PQ/DQ documentation for LabAqua

Model specific modules:

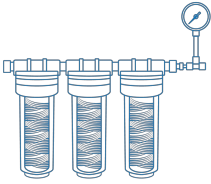
- **Labqua Trace** - Point-of-use microfilter
- **Labqua HPLC** - Point-of-use microfilter, TOC monitor
- **Labqua Bio** - Point-of-use ultrafilter, UV sterilization module, TOC monitor

Compliance of the system with the technical specification is ensured if the following minimum tap water requirements are followed and the maintenance requirements specified in the user manual are carried out in a timely manner.

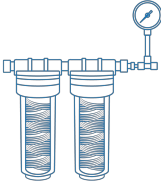
- Type of feedwater: Potable
- Minimum pressure:  $\geq 0.5$  bar
- Maximum pressure:  $\leq 5$  bar
- Conductivity:  $<1300 \mu\text{S}/\text{cm}$
- Temperature: 5 to  $35^{\circ}\text{C}$
- pH: 4 - 10
- Fouling Index:  $<10$
- Iron:  $<0.1$  ppm as  $\text{CaCO}_3$
- Aluminum:  $<0.05$  ppm as  $\text{CaCO}_3$
- Manganese:  $<0.05$  ppm as  $\text{CaCO}_3$
- Free Chlorine:  $<1$  ppm
- Langerier Saturation Index:  $<+0.2$
- TOC:  $<2000$  ppb

## SPECIFICATIONS

Ultrapure (Grade 1) water resistivity	18.2 M $\Omega$ x cm
Ultrapure (Grade 1) water conductivity	0.055 $\mu\text{S}/\text{cm}$
Pure (Grade 2) water resistivity	10 M $\Omega$ x cm
Pure (Grade 2) water conductivity	0.1 $\mu\text{S}/\text{cm}$
TOC	$< 5$ ppb
RNase	$< 0.01$ ng/ml
DNase	$< 4$ pg/ $\mu\text{l}$
Bacteria	$< 0.01$ CFU/ml
Endotoxins	$< 0.001$ EU/ml
Particles $> 0.22 \mu\text{m}$	$< 1/\text{ml}$
Deionization module life (standard module)	1 m <sup>3</sup>
Storage tank	30 l
Feed water pressure	0.5 – 5 bar
Feed water conductivity	$< 1300 \mu\text{S}/\text{cm}$
Dimensions (W×D×H)	320×560×620 mm
Weight	26 kg
Power consumption	130 W
Nominal operating voltage	100-240VAC 50/60Hz



External pre-filter set  
(polyphosphate/carbon/1 µm)  
with manometer  
BS-070104-LK



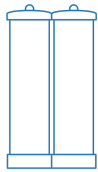
External pre-filter set  
(carbon/1 µm) with manometer  
BS-070104-KK



Internal prefilter set  
BS-070104-AK



Polishing module  
BS-070104-BK



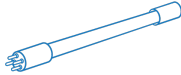
Deionization module  
BS-070104-IK



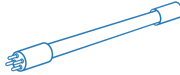
Microfilter - 0.22 µm sterile  
BS-070104-FK



Ultrafilter  
BS-070104-GK



UV bulb 254 nm  
BS-070104-RK



UV bulb 185 nm  
BS-070104-DK



Storage tank 60l  
BS-070102-SK

Storage tank with base, tap and  
multipoint level switch, 60 l



Storage tank 100l  
BS-070102-FK

Storage tank with base, tap and  
multipoint level switch, 100 l



Remote grade 1 water dispenser  
BS-070110-AK

Ultrapure water dispenser is  
designed to dispense ultrapure  
water that complies with ISO  
3696 Grade I water  
requirements.



Remote grade 2 water dispenser  
BS-070104-JK

Universal remote dispenser set  
with 3 m supply hose and water  
distribution module

# EU Declaration of Conformity

**Unit type** Water purification systems

**Models** Labaqua Trace, Labaqua HPLC, Labaqua Bio

**Serial number** 14 digits styled XXXXXYYMMZZZZ, where XXXXXX is model code, YY and MM – year and month of production, ZZZZ – unit number.

**Manufacturer** SIA BIOSAN  
Latvia, LV-1067, Riga, Ratsupites str. 7/2

**The objects of the declaration described above is in conformity with the following relevant Union harmonization legislations:**

<b>LVD 2014/35/EU</b>	<b>LVS EN 61010-1:2011</b> Safety requirements for electrical equipment for measurement, control, and laboratory use. General requirements.
<b>EMC 2014/30/EU</b>	<b>LVS EN 61326-1:2013</b> Electrical equipment for measurement, control and laboratory use. EMC requirements. General requirements.
<b>RoHS3 2015/863/EU</b>	Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment.
<b>WEEE 2012/19/EU</b>	Directive on waste electrical and electronic equipment.

**I declare that the Declaration of Conformity is issued under sole responsibility of the manufacturer and belongs to the above-mentioned objects of the declaration.**

Svetlana Bankovska  
Managing director



Signature

07.02.2020.  
Date

Applications		Trace	HPLC	Bio
General laboratory applications	Glassware rinsing	•	•	•
	Laboratory washers	•	•	•
	Autoclaves	•	•	•
	Electrochemistry	•	•	•
	Wet chemistry	•	•	•
	Spectrophotometry	•	•	•
	Buffer and media preparation	•	•	•
	Reagent preparation	•	•	•
Inorganic analysis methods	Flame atomic absorption spectrophotometry	•	•	•
	Graphite atomizer atomic absorption spectrophotometry	•	•	•
	Plasma mass-spectrometry (ICPMS)	•	•	•
	Plasma spectrophotometry (ICPOES)	•	•	•
	Ion chromatography	•	•	•
Organic analysis methods	Liquid chromatography (HPLC/UHPLC)		•	•
	Gas chromatography		•	•
	Total organic carbon measurements		•	•
Molecular biology	Flow cytometry			•
	Cell and tissue culture			•
	Molecular biology			•