

# 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:

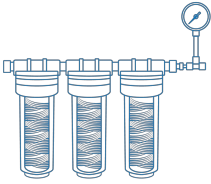
- **Labqua Trace** - Point-of-use microfilter
- **Labqua HPLC** - Point-of-use microfilter, TOC monitor
- **Labqua Bio** - Point-of-use ultrafilter, UV sterilization module, TOC monitor

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.

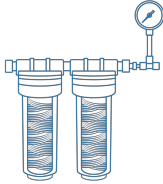
- Type of feedwater: Potable
- Minimum pressure:  $\geq 0.5$  bar
- Maximum pressure:  $\leq 5$  bar
- Conductivity:  $<1300 \mu\text{S}/\text{cm}$
- Temperature: 5 to  $35^{\circ}\text{C}$
- pH: 4 - 10
- Fouling Index:  $<10$
- Iron:  $<0.1$  ppm as  $\text{CaCO}_3$
- Aluminum:  $<0.05$  ppm as  $\text{CaCO}_3$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

## SPECIFICATIONS

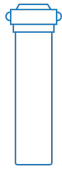
Ultrapure (Grade 1) water resistivity	18.2 MΩ x cm
Ultrapure (Grade 1) water conductivity	0.055 $\mu\text{S}/\text{cm}$
Pure (Grade 2) water resistivity	10 MΩ x cm
Pure (Grade 2) water conductivity	0.1 $\mu\text{S}/\text{cm}$
TOC	$< 5$ ppb
RNase	$< 0.01$ ng/ml
DNase	$< 4$ pg/ $\mu\text{l}$
Bacteria	$< 0.01$ 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



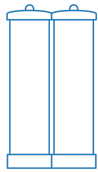
External pre-filter set  
(carbon/1 µm) with manometer  
BS-070104-KK



Internal prefilter set  
BS-070104-AK



Polishing module  
BS-070104-BK



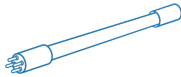
Deionization module  
BS-070104-IK



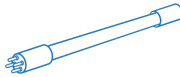
Microfilter - 0.22 µm sterile  
BS-070104-FK



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