



# PURELAB<sup>®</sup> Innovation and Flexibility

Lab Water Purification Solutions  
for your Research Needs



At ELGA we are experienced in meeting the challenges that arise during the development, installation and servicing of single point-of-use purification systems as well as large projects involving consultation, consultants and clients.

## ELGA. The LabWater Specialists

We are the LabWater Specialists. For 80 years we have been working with scientists to guarantee pure and ultrapure water for their experiments and lab work. We resource science and healthcare markets for a better world by bringing the world's leading scientists a critical reagent.

*Why choose ELGA as your laboratory water partners?*

Customer-focused – what we create is for our customer

Our commitment to developing and providing you with pure water means that you can focus and concentrate on obtaining accurate and reliable results.

Innovative – the keystone of our thinking

Our UK R&D facilities are always looking to provide products dedicated to supplying you with the right water quality for your application.

Sustainable – at the forefront of all of our activities

Our products are designed to have the lowest possible impact on the environment at all stages: manufacture, in service and at end of life. We can calculate the carbon value of all our products through their lifetime.

British Engineered – the standard for all our products

All our systems are manufactured in the UK and we are accredited to ISO:9001 and ISO:14001 standards.

## Our Awards



reddot design award  
winner 2011



dba design effectiveness  
award winner

## A trusted brand delivering you choice

We understand how important it is for scientists to obtain a choice of water qualities that range from primary grade for simple routine washing and rinsing, through to ultrapure water for the most critical applications.

With this in mind, we have applied our expertise, gained over 80 years of innovation in water purification technologies, to design the unrivalled PURELAB range. Our reliable water purification systems are constructed from the highest quality components to ensure optimal purity, while a rapid and easy sanitization program contributes towards an uninterrupted workflow. Built-in economical processes results in the lowest consumables costs with the highest water quality and precision.

At ELGA we do not speculate or work on assumptions about your water quality. On our first visit to your laboratory we will carry out a test, on site, that analyzes your feed water quality.

We understand that future needs change and so we have developed a unique and modular set of solutions that can grow as you and your lab grow. You do not need to feel restricted to one solution for the next 10 years.

## The Range



PURELAB  
Chorus 1



PURELAB  
Chorus 1 Complete



PURELAB  
Chorus 2+



PURELAB  
flex 1 & 2



PURELAB  
Chorus 2 & 3

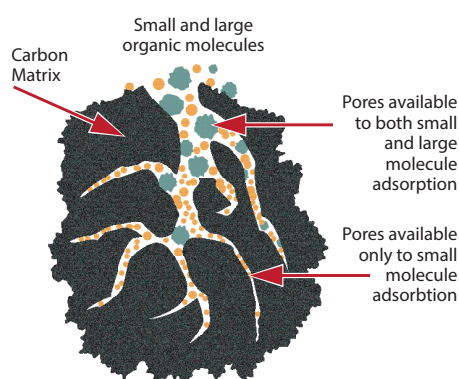


PURELAB  
flex 3 & 4

Type III	Type II	Type II <sup>+</sup>	Type I	Type I <sup>+</sup>
Conductivity 1-50 µS/cm	Resistivity 1-10 MΩ.cm  Conductivity 1-0.1 µS/cm	Resistivity 10-15 MΩ.cm	Resistivity >18 MΩ.cm	Resistivity 18.2 MΩ.cm
<div>Pre purification</div> <div>Recirculation</div> <div>Polishing</div> <div>PureSure®</div>				
PURELAB Chorus 3	PURELAB Chorus 2 (RO/DI)	PURELAB Chorus 2 <sup>+</sup> (RO/EDI/UV)	PURELAB Chorus 1 Complete	PURELAB Chorus 1
PURELAB flex 1	PURELAB flex 1	PURELAB Chorus 2 <sup>+</sup> (RO/DI/UV)	PURELAB flex 2, 3 & 4	

When combined, the technologies used in ELGA equipment are able to remove impurity from water down to extremely low levels; some technologies focus on specific contaminants while others have a broader spectrum of targets. To achieve the correct water purity for a particular application, in a cost effective manner, technologies must be arranged in combination and their operation optimised.

## Activated Carbon



Contains a maze of tiny pores with sizes ranging from 500-1000 nm and a surface area of about 1000 square meters per gram. The nature of this surface allows adsorption of organic impurities from the water and catalytic decomposition of free chlorine and, more slowly, chloramines.

It is applied in:

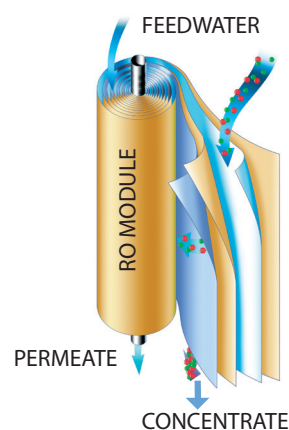
- Pre-treatment cartridges
- Composite Vent filters
- Final Purification cartridges

## Microporous Depth Filter

Pre-filtration using microporous depth filters, provides an entrapment/adsorption barrier for the removal of large suspended particles and some colloids from the water entering the ELGA purification process. Typically rated at 5 – 10µm and combined with an activated carbon treatment, these filters act to protect subsequent RO systems from fouling and blockage.

## Reverse Osmosis

Reverse osmosis (RO) is a process where pressure is used to push water through a membrane filter in a cross-flow fashion. RO-membranes are extremely fine filters and reject water contaminants that are less than 1nm diameter. Typically >90% of ionic impurity, most organic impurity, and nearly all particulates, bacteria and bio-molecules are removed from the filtrate or permeate water; these are carried out of the RO module in a waste or concentrate water stream.



## Ion Exchange

Ion exchange resins are often used as part of a final treatment step. Single-use purification packs typically use a mixture of ion-exchange resins and other media. When used to deionize water, charged impurities are retained on these resins, while  $H^+$  and  $OH^-$  ions (which combine to form water) are released to replace them. This is a highly efficient process and can remove ions to give product-water resistivity of up to 18.2 MΩ.cm.

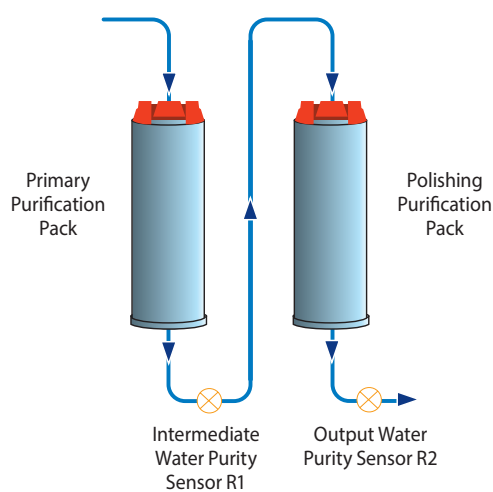
## Electrodeionization

Electrodeionization (EDI) combines ion-exchange resins and ion-selective membranes, which are used to move ionic impurities into a waste or concentrate water stream leaving purified product-water. As impurities leave via the concentrate water stream, their build-up does not exhaust the resin, and therefore prolongs resin lifespan. A single EDI unit may operate for many years before a replacement is required. Typically product water resistivity of  $>15 \text{ M}\Omega\cdot\text{cm}$  is consistently achieved using this process. This technology can be used as an alternative to single-use purification cartridges.

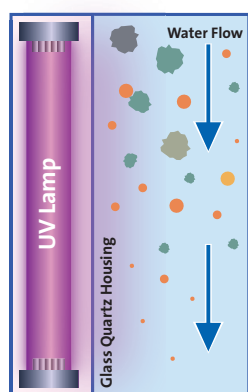
## PureSure®

Deionization processes in which ion-exchange resins are used to retain impurities within a cartridge have a finite capacity for the impurity. Once that capacity is reached, traces of weakly-ionised impurities will begin to elute into the product water and finally (once the concentration is sufficient) the product-water resistivity will fall from  $18.2 \text{ M}\Omega\cdot\text{cm}$ . ELGA's PureSure technology prevents that from happening.

A twin-bed ion-exchange process with inter-stage resistivity monitoring allows retention of any impurity released during exhaustion of a primary cartridge, by the secondary polishing cartridge. This method gives guaranteed, optimum, product-water quality, advanced warning of consumable change, and extended consumable service life.



## Ultraviolet (UV) Light



Treatment of water with UV-C light is used to photo-oxidise organic impurities and/or inactivate micro-organisms. Photo-oxidation of organic impurities results in polar or charged species that can subsequently be removed by ion-exchange processes. Typically the UV lamp forms part of a 'polishing' treatment loop including ion-exchange, through which water is repeatedly circulated to maintain quality. Water with Total Organic Carbon (TOC) of  $<5\text{ppbC}$  and bacteria at  $<1\text{CFU/ml}$  can be achieved in ELGA products that use this approach.

## Sub-Micron Filtration

Sub-micron filtration, including micro, ultra-micro and ultra filters ( $1\text{-}200\text{nm}$ ) are used as part of a 'polishing' loop or at the point-of-use. Fine filtration is applied to remove bacteria (live or dead) and biologically active molecules. These absolute filters have pores smaller than their intended target and can retain the impurity while allowing water to pass through. Impurities that are removed by sub-micron filtration, include bacteria, colloids, enzymes, endotoxins and particulates.



## Type I<sup>+</sup> Water

Liters per day: 1 - 120

18.2 MΩ.cm

## Key Features

Real-time TOC

Fully re-circulating

Integrated filtration

Multiple dispensing

## Ideally suited for:

- Mass Spectrometry
- Molecular biology
- Ultra trace analyses
- Electrochemistry
- Atomic Spectroscopy
- Liquid Chromatography
- Ion Chromatography
- Cell cultures
- Qualitative Analyses
- Gas Chromatography
- Immunochemistry

## Flexible. Configurable. Simple.

### Delivering the ultimate in water purity for absolute confidence in your results

When you require the ultimate in water purity, PURELAB Chorus 1 provides the perfect solution. Consistently delivering water purity of 18.2 MΩ.cm (Type I<sup>+</sup>/I) and underpinned by the advanced PureSure<sup>®</sup> deionization system, the PURELAB Chorus 1 enables you to focus on attaining accurate results while ensuring an uninterrupted work flow.



Model shown is PURELAB Chorus 1 with Advanced Halo Dispense

### Advanced PureSure Deionization

Eliminates trace ions that leach into your water, and provides advanced warning to change the purification packs.

### Fully Recirculating

Ensuring microbial purity and guaranteeing pure water at the point-of-use.

### Real-time TOC Monitoring

Provides complete confidence in organic purity.

### Integrated Filtration

Ultrafiltration or microfiltration filters out endotoxins, proteins, nucleases and particulates.

### Full Spectrum UV Treatment

### Data Capture

Data capture via USB for system performance validation and software updates.

## Halo Dispense Solutions



### Flexible Dispensing

- Variable flow
- Auto-volume dispense
- Hands free
- Locked dispense
- Hand-held dispensing

### Multiple Positioning

Position the dispenser independent from the water purification system. Optimize your lab space.

### Real-Time TOC monitoring

Water purity is monitored right up to the point of use for complete peace of mind with real-time TOC monitoring for critical applications.



### Halo Glow

The unique glow changes colour and flashes alerting you to changes in system performance.

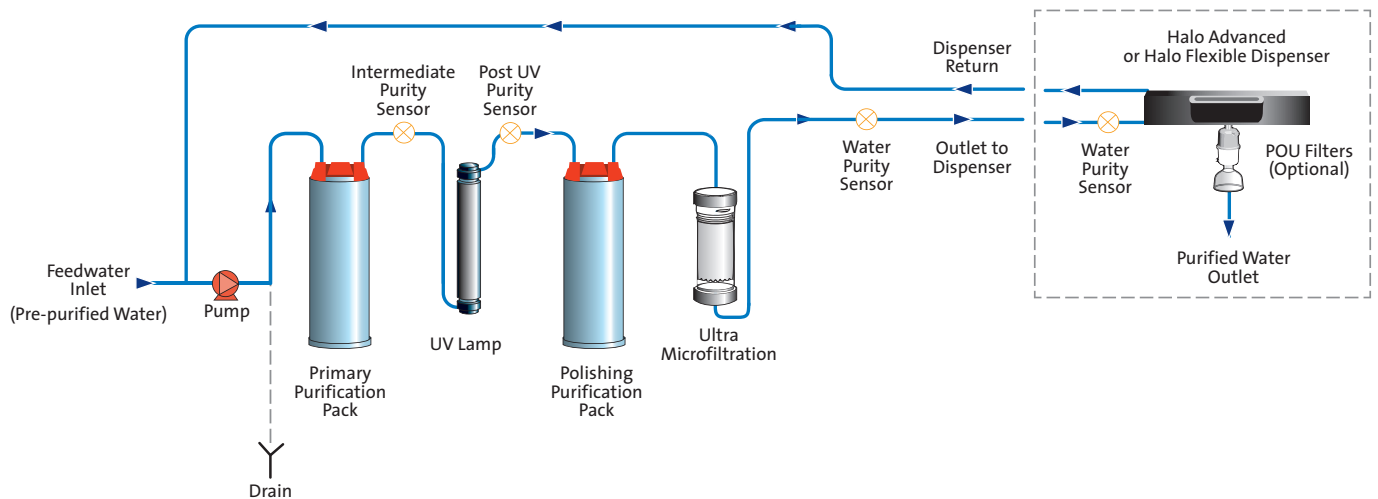
### Clear Display

Prioritized information displayed at all times (system status, TOC, alarm) for absolute confidence as you dispense.



# PURELAB Chorus 1

## Process Flow PURELAB Chorus 1 Analytic



## Specifications

TREATED WATER SPECIFICATIONS

APPLICATION	LIFE SCIENCE	ANALYTICAL RESEARCH	GENERAL SCIENCE
Dispense Flowrate	Up to 2.0 l/min <sup>†</sup>	Up to 2.0 l/min <sup>†</sup>	Up to 2.0 l/min <sup>†</sup>
Inorganics @25°C	18.2 MΩ.cm	18.2 MΩ.cm	18.2 MΩ.cm
Total organic carbon (TOC)	1-3 ppb*	1-3 ppb*	3-10 ppb*
Bacteria	<0.1 CFU/ml <sup>°</sup>	<0.1 CFU/ml <sup>°</sup>	<0.1 CFU/ml <sup>°</sup>
Bacterial Endotoxin	<0.001 EU/ml	<0.001 EU/ml <sup>°</sup>	<0.001 EU/ml <sup>°</sup>
pH	Effectively neutral	Effectively neutral	Effectively neutral
Particles	<0.01 µm	<0.05 µm	0.2 µm <sup>°</sup>
RNase	<0.002 ng/ml	<0.002 ng/ml <sup>°</sup>	<0.002 ng/ml <sup>°</sup>
DNase	<20 pg/ml	<20 pg/ml <sup>°</sup>	<20 pg/ml <sup>°</sup>
Purification pack capacity	Liters to 18.2 MΩ.cm = 94,100/(µS/cm + (2.3 x ppm CO <sub>2</sub> ))		

\* Dependant on feed water – recommended feed <50 ppb TOC ° With POU filter fitted †When connected to Halo, Advanced or flexible

FEEDWATER REQUIREMENT

Source – originally from potable supply, then pretreated	Preferably RO produced by PURELAB Chorus 3 or filtered service deionization (SDI) or distilled. Note: mixed bed or twin bed deionized supplies should be cation limited at exhaustion		
Fouling index (max)	1 for all models. A 5-10 micron membrane prefilter is recommended for all non-RO feeds		
Service deionization (SDI) – MΩ.cm	1 MΩ.cm minimum resistivity at exhaustion		
Reverse Osmosis (RO) – µS/cm	Recommended <30 µS/cm		
Free Chlorine	0.05 ppm max		
TOC	<50 ppb max (RO feed)		
Carbon dioxide	30 ppm (max recommended)		
Silica	2 ppm (max recommended)		
Particulates	Filtration down to 5-10 micron advisable to protect internal and/or point of use filters		
Temperature	1-35°C (Recommend 10-15°C)		
Flowrate (maximum requirement)	130 l/hr (34 USG)		
Drain requirements	Up to 2 l/min (0.5 USG)		
Feedwater pressure	0.7 bar (10 psi) maximum; 0.07 bar (1 psi) minimum		

\* Fit LA652 Pressure Regulator where feedwater pressure exceeds specified limits

Dimensions	Height 435mm, Width 375mm, Depth 340mm		
Weight	19 kg (42 lbs)	19 kg (42 lbs)	18 kg (40 lbs)



## Type I Water

Liters per day: 1 - 100

18.2 MΩ.cm

## Key Features

Tap-to-ultrapure  
Fully re-circulating  
Integrated filtration  
Multiple dispensing

## Ideally suited for:

- Mass Spectrometry
- Molecular biology
- Electrochemistry
- Atomic Spectroscopy
- Liquid Chromatography
- Gas Chromatography
- Immunochemistry
- General laboratory
- Spectrophotometry

**Flexible. Configurable. Simple.****One complete solution for the laboratory**

PURELAB Chorus 1 Complete provides a complete solution from tap to ultrapure water direct from a potable water supply, and is ideal for laboratories needing up to 100 liters of 18.2 MΩ.cm ultrapure water. With its simple and ergonomic design and ease-of-use, water can be dispensed directly from the system or from a choice of additional Halo Dispensers.

**Fully Recirculating**

Recirculation of purified water through our modular reservoir to maintain consistent peak water purity at 18.2 MΩ.cm.

**ELGA Biofilter (optional)**

When fitted, PURELAB Chorus 1 Complete produces water which is free from biologically active impurities.

**Single System Solution**

Perfect single system solution for analytical and life science applications requiring 18.2 MΩ.cm.

**Easy Access**

Front entry service doors provide quick and easy access to consumables.

**Space Saving Design**

Designed to be modular and stackable to save space, whether wall-mounted or under the bench.

**Data Capture**

Data capture via USB for system performance validation and software updates.



## Halo Dispense Solutions

The modular nature of PURELAB Chorus 1 Complete means that your dispense solutions sit independently from the unit. You can even have the Halo Dispenser installed in an adjacent laboratory. With Halo Dispenser you have the ultimate flexibility.

### Clear Display

Prioritized information displayed at all times (system status, alarm) for absolute confidence as you dispense.

### Multiple Positioning

Position the dispenser independent from the water purification system. Optimize your lab space.

### Flexible Dispensing

- Variable flow
- Auto-volume dispense
- Hands free
- Locked dispense
- Hand-held dispensing



## Reservoir Solutions

Our unique range of storage solutions are designed to maintain optimum purity of stored water and provide effective protection against airborne contaminants. They are designed to accommodate PURELAB Chorus water purification systems by maximizing the space in a single integral, compact unit or to sit independently to suit the layout of your laboratory.

### Dispense Tap

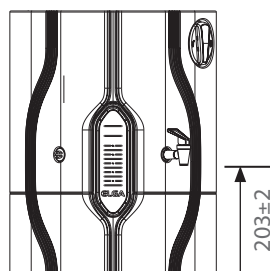
Positioned to minimize accidental operation or damage (choice of positions).

### Advanced vent filtration

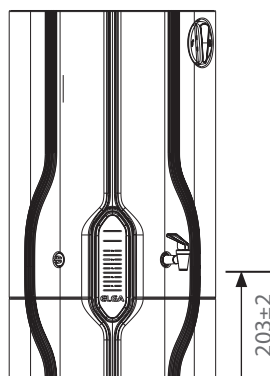
Prevents the ingress of airborne bacteria, particulates, organic vapours and CO<sub>2</sub>.

### Hygienic Overflow

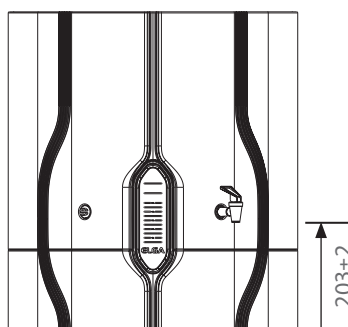
Hygienic overflow in the unlikely event of water system malfunction.



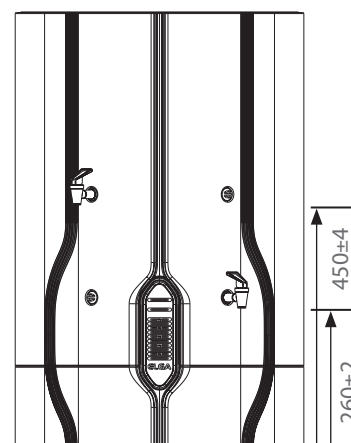
Capacity: 15 liters  
Dimensions (mm):  
470 (h) x 376 (w) x 340 (d)  
Flow Rate: 6 l/min



Capacity: 30 liters  
Dimensions (mm):  
660 (h) x 376 (w) x 340 (d)  
Flow Rate: 8 l/min

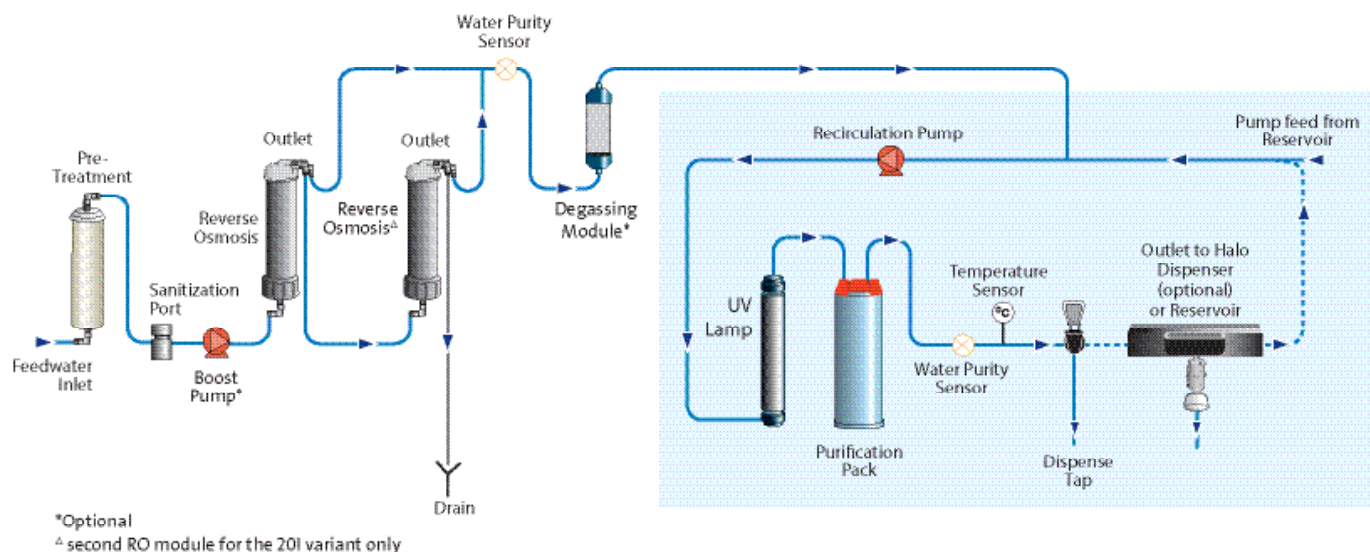


Capacity: 60 liters  
Dimensions (mm):  
570 (h) x 532 (w) x 522 (d)  
Flow Rate: 10 l/min



Capacity: 100 liters  
Dimensions (mm):  
806 (h) x 532 (w) x 522 (d)  
Flow Rate: 10 l/min

## Process Flow PURELAB Chorus 1 Complete



## Specifications

TREATED WATER SPECIFICATIONS

APPLICATION	PURELAB Chorus Complete	
Nominal output at 15°C	10 l/hr	20 l/hr
Dispense Flowrate	>1.5 l/min	>1.5 l/min
Inorganics @25°C	18.2 MΩ.cm	18.2 MΩ.cm
Total organic carbon (TOC)	<10 ppb	<10 ppb
Bacteria	<0.1 CFU/ml <sup>°</sup>	<0.1 CFU/ml <sup>°</sup>
Bacterial Endotoxin	<0.001 EU/ml <sup>°</sup>	<0.001 EU/ml <sup>°</sup>
pH	Effectively neutral	Effectively neutral
Particles	0.2 µm <sup>°</sup>	0.2µm <sup>°</sup>
RNase	<0.002 ng/ml <sup>°</sup>	<0.002 ng/ml <sup>°</sup>
DNase	<20 pg/ml <sup>°</sup>	<20 pg/ml <sup>°</sup>
Purification pack capacity	Liters to 18.2 MΩ.cm = 94,100/(µS/cm + (2.3 x ppm CO <sub>2</sub> ))	

<sup>°</sup> With POU filter fitted

FEEDWATER REQUIREMENT

Source	Potable mains water supply
Fouling index (max)	<10
Free Chlorine	0.5 ppm max
Carbon dioxide	Ideally <20 ppm
Silica	30 ppm (max recommended)
Temperature	1-35°C (Recommend 10-15°C)
Flowrate (maximum requirement)	130 l/hr (34 USG)
Drain requirements	Up to 2 l/min (0.5 USG)
Feedwater pressure	4.0 bar (60 psi) min; 6 bar (90 psi) max* With boost pump: flooded suction (min) to 2.0 bar (30 psi) max

\* Fit LA652 Pressure Regulator where feedwater pressure exceeds specified limits

Dimensions	Height 679mm, Width 376mm, Depth 353mm	
Weight (with boost pump)	17 kg (38 lbs)	18 kg (40 lbs)
Weight	15 kg (33 lbs)	16 kg (36 lbs)

# PURELAB Chorus 2<sup>+</sup>

(RO/EDI/UV)

## Type II<sup>+</sup> Water

Liters per day: 1 - 120

>15 MΩ.cm

## Key Features

Tap to Type II

Fully re-circulating

Integrated filtration

Multiple dispensing

## Ideally suited for:

- Electrochemistry
- Cell cultures
- Spectrophotometry
- Feed to ultrapure water
- Media / buffer preparation
- General chemistry

## Flexible. Configurable. Simple.

### One complete solution for the laboratory

PURELAB Chorus 2<sup>+</sup> (RO/EDI/UV) features our patented recirculating EDI technology: the only EDI system on the market that is able to fully recirculate to maintain >15 MΩ.cm.

The PURELAB Chorus 2<sup>+</sup> provides additional bacteria and inorganic quality for sensitive analytical and life science applications above that of basic laboratory work. With its simple design and ease of use, water can be dispensed from the system or from a choice of additional Halo Dispensers.



### Fully Recirculating EDI

ELGA's patented fully recirculated EDI provides a constant supply of high purity that guarantees a minimum of 15 MΩ.cm water at all times.

### Ideal for High Volume Labs

A cost-effective solution for laboratories requiring higher output volumes thanks to the incorporated EDI technology.

### Single System Solution

Perfect single system solution for analytical and life science applications requiring >15 MΩ.cm.

### Reduced Maintenance Times

Quick and easy replacement of consumables to reduce maintenance times.

### Space Saving Design

Designed to be modular and stackable to save space, whether wall-mounted or under the bench.

### Data Capture

Data capture via USB for system performance validation and software updates.

## Halo Dispense Solutions

The modular nature of PURELAB Chorus 2<sup>+</sup> means that your dispense solutions sit independently from the unit. You can even have the Halo Dispenser installed in an adjacent laboratory. With Halo Dispenser you have the ultimate flexibility.

### Clear Display

Prioritized information displayed at all times (system status, alarm) for absolute confidence as you dispense.

### Multiple Positioning

Position the dispenser independent from the water purification system. Optimize your lab space.

### Flexible Dispensing

- Variable flow
- Auto-volume dispense
- Hands free
- Locked dispense
- Hand-held dispensing



## Reservoir Solutions

Our unique range of storage solutions are designed to maintain optimum purity of stored water and provide effective protection against airborne contaminants. They are designed to accommodate PURELAB Chorus water purification systems by maximizing the space in a single integral, compact unit or to sit independently to suit the layout of your laboratory.

### Dispense Tap

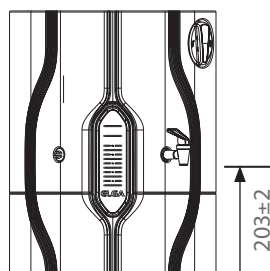
Positioned to minimize accidental operation or damage (choice of positions).

### Advanced vent filtration

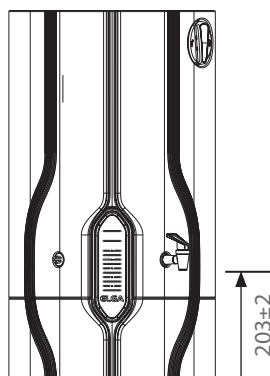
Prevents the ingress of airborne bacteria, particulates, organic vapours and CO<sub>2</sub>.

### Hygienic Overflow

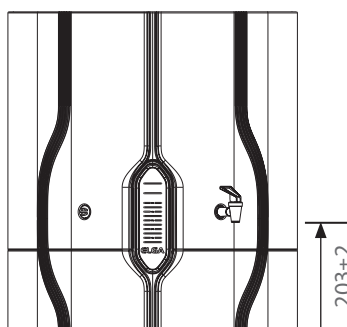
Hygienic overflow in the unlikely event of water system malfunction.



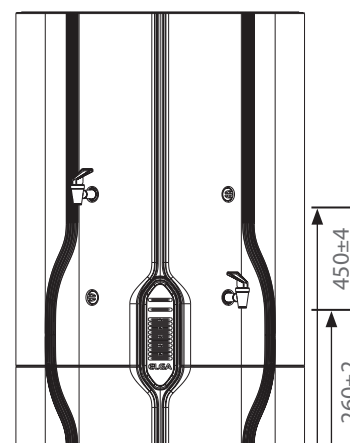
Capacity: 15 liters  
Dimensions (mm):  
470 (h) x 376 (w) x 340 (d)  
Flow Rate: 6 l/min



Capacity: 30 liters  
Dimensions (mm):  
660 (h) x 376 (w) x 340 (d)  
Flow Rate: 8 l/min



Capacity: 60 liters  
Dimensions (mm):  
570 (h) x 532 (w) x 522 (d)  
Flow Rate: 10 l/min

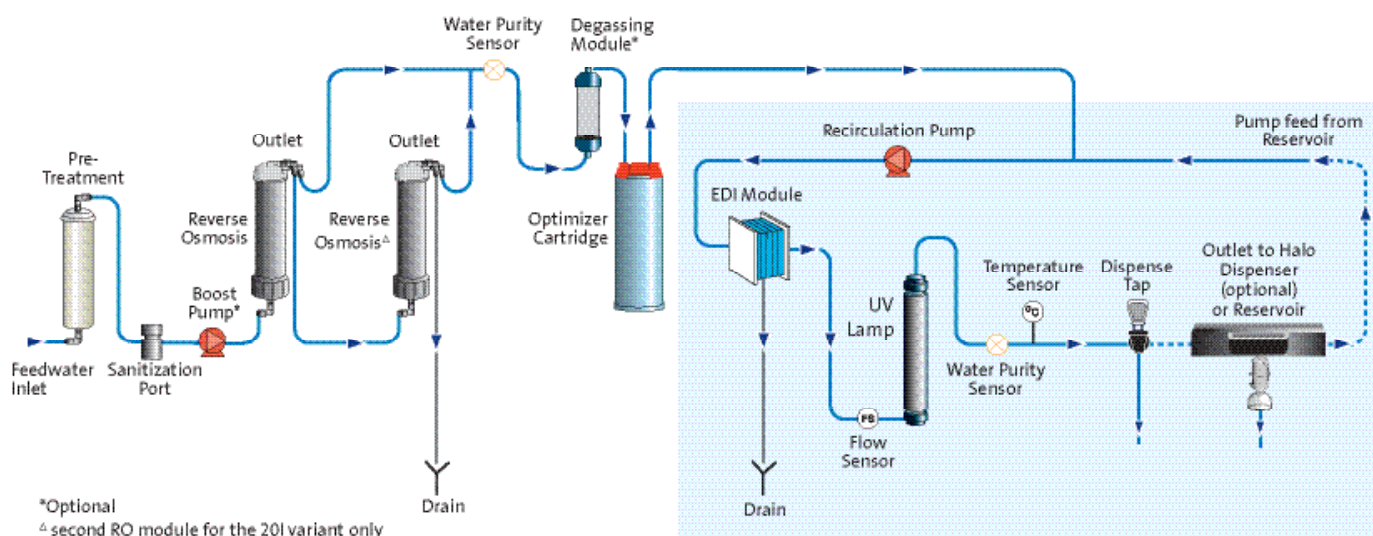


Capacity: 100 liters  
Dimensions (mm):  
806 (h) x 532 (w) x 522 (d)  
Flow Rate: 10 l/min



# PURELAB Chorus 2<sup>+</sup>

## Process Flow PURELAB Chorus 2<sup>+</sup> (RO/EDI/UV)



## Specifications

TREATED WATER SPECIFICATIONS

APPLICATION	PURELAB Chorus 2 <sup>+</sup> (RO/EDI/UV)	
Nominal output at 15°C	10 l/hr*	20 l/hr*
Nominal daily output	220 l/day	440 l/day
Inorganics @25°C	1 to >15 MΩ.cm	
Organics (MW>200 Dalton)	>99% rejection	
Total organic carbon (TOC)	<30 ppb	
Bacteria	<0.1 CFU/ml <sup>0</sup>	
pH	Effectively neutral	
Particles	>99% rejection	

\* Standard conditions are 4 bar inlet pressure at 15°C, fed with potable water and a clean pre-treatment cartridge. Refer to flow tables outside these conditions. <sup>0</sup> With POU filter fitted

FEEDWATER REQUIREMENT

Source	Potable mains water supply
Fouling index (max)	<10
Conductivity	<1400 μS/cm
Free Chlorine	0.5 ppm max
Heavy Metals (max)	0.05 ppm
Silica	30 ppm
Temperature	1-35°C
Flowrate (maximum requirement)	100 l/hr (27 USG)
Drain requirements	80 l/hr (21 USG)
Feedwater pressure	4.0 bar (60 psi) min; 6 bar (90 psi) max* With boost pump: flooded suction (min) to 2.0 bar (30 psi) max

\*Fit LA652 Regulator where feedwater pressure exceeds specified limits

Dimensions	Height 679mm, Width 376mm, Depth 353mm	
Weight (with boost pump)	21 kg (46 lbs)	22 kg (49 lbs)
Weight	18 kg (40 lbs)	19kg (42 lbs)

Type II<sup>+</sup> water

Liters per day: 1 - 100

&gt;15 MΩ.cm

**Key Features**

Tap-to-Type II

Fully re-circulating

Integrated filtration

Multiple dispensing

**Ideally suited for:**

- Electrochemistry
- Spectrophotometry
- Feed to ultrapure water
- Media / buffer preparation
- General chemistry

**Flexible. Configurable. Simple.****One complete solution for the laboratory**

PURELAB Chorus 2<sup>+</sup> (RO/DI/UV) provides tap to 15 MΩ.cm pure water for laboratories requiring up to 100 liters per day and is able to fully recirculate to maintain 15 MΩ.cm.

The PURELAB Chorus 2<sup>+</sup> provides additional bacteria and inorganic quality for sensitive analytical and life science applications above that of basic laboratory work. With its simple design and ease of use, water can be dispensed from the system or from a choice of additional Halo Dispensers.

**Fully Recirculating**

In addition to simple composite vent filtration, the PURELAB Chorus 2<sup>+</sup> is the only fully recirculating Type II<sup>+</sup> pure water system on the market, maintaining consistent peak water purity at 15MΩ.cm.

**Configuration**

Ability to configure multiple systems to increase flow rate and save space through stackable solutions that can be wall mounted, on or under the bench.

**Simplicity**

Simple to install, operate and maintain, with a clear indication of water purity. It is also simple to replace consumables, reducing maintenance time.

**Data Capture**

Data capture via USB for system performance validation and software updates.

**Dispense**

Choose from three different Halo Dispense solutions to allow additional dispense points, even in adjacent labs.



## Halo Dispense Solutions

The modular nature of PURELAB Chorus 2<sup>+</sup> means that your dispense solutions sit independently from the unit. You can even have the Halo Dispenser installed in an adjacent laboratory. With Halo Dispenser you have the ultimate flexibility.

### Clear Display

Prioritized information displayed at all times (system status, alarm) for absolute confidence as you dispense.

### Multiple Positioning

Position the dispenser independent from the water purification system. Optimize your lab space.

### Flexible Dispensing

- Variable flow
- Auto-volume dispense
- Hands free
- Locked dispense
- Hand-held dispensing



## Reservoir Solutions

Our unique range of storage solutions are designed to maintain optimum purity of stored water and provide effective protection against airborne contaminants. They are designed to accommodate PURELAB Chorus water purification systems by maximizing the space in a single integral, compact unit or to sit independently to suit the layout of your laboratory.

### Dispense Tap

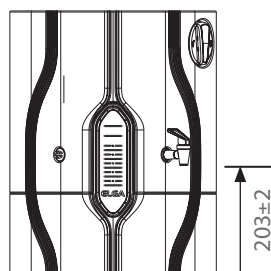
Positioned to minimize accidental operation or damage (choice of positions).

### Advanced vent filtration

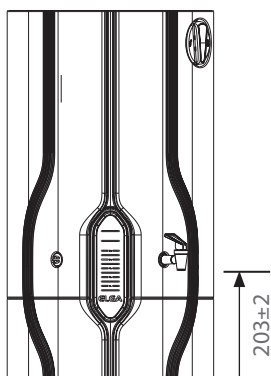
Prevents the ingress of airborne bacteria, particulates, organic vapours and CO<sub>2</sub>.

### Hygienic Overflow

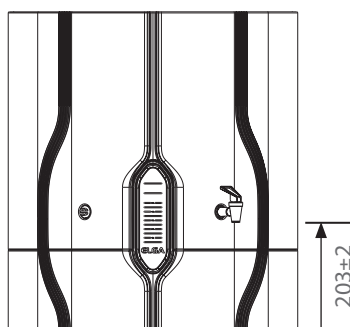
Hygienic overflow in the unlikely event of water system malfunction.



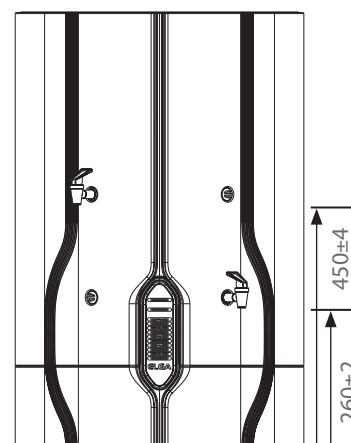
Capacity: 15 liters  
Dimensions (mm):  
470 (h) x 376 (w) x 340 (d)  
Flow Rate: 6 l/min



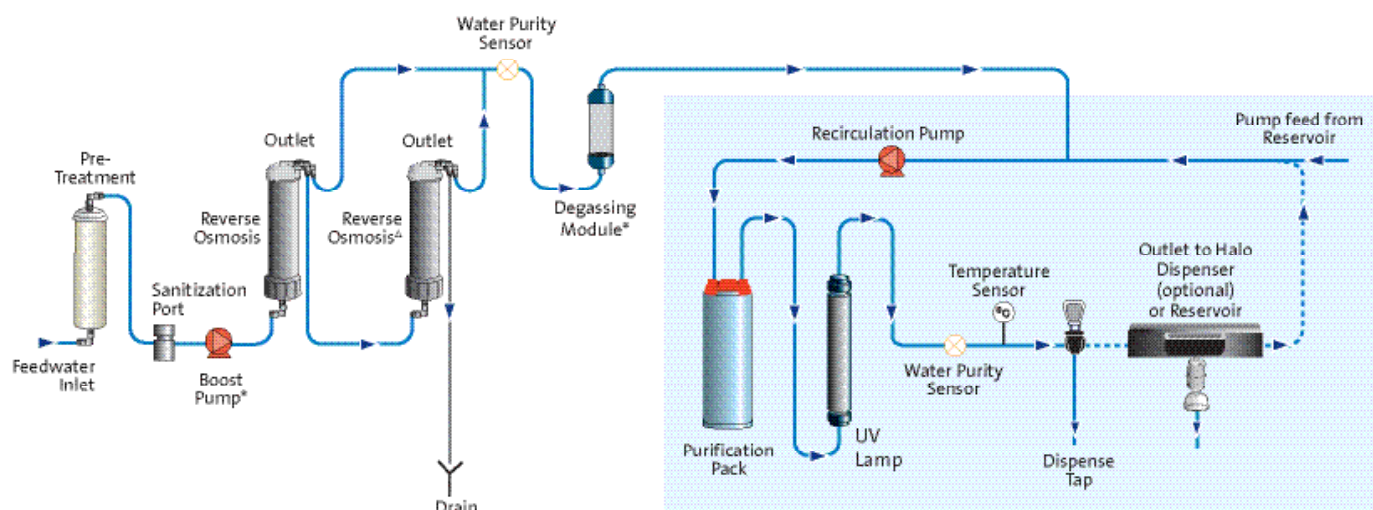
Capacity: 30 liters  
Dimensions (mm):  
660 (h) x 376 (w) x 340 (d)  
Flow Rate: 8 l/min



Capacity: 60 liters  
Dimensions (mm):  
570 (h) x 532 (w) x 522 (d)  
Flow Rate: 10 l/min



Capacity: 100 liters  
Dimensions (mm):  
806 (h) x 532 (w) x 522 (d)  
Flow Rate: 10 l/min

Process Flow PURELAB Chorus 2<sup>+</sup> (RO/DI/UV)

\*Optional

^ second RO module for the 20l variant only

## Specifications

TREATED WATER SPECIFICATIONS

APPLICATION	PURELAB Chorus 2 <sup>+</sup> (RO/DI/UV)	
Nominal output at 15°C	10 l/hr*	20 l/hr*
Nominal daily output	240 l/day	480 l/day
Inorganics @25°C	1 to >15 MΩ.cm	
Organics (MW>200 Dalton)	>99% rejection	
Total organic carbon (TOC)	<30 ppb	
Bacteria	<0.1 CFU/ml <sup>o</sup>	
pH	Effectively neutral	
Particles	>99% rejection	
Purification pack capacity	Liters to 15 MΩ.cm = 74,700/(μS/cm + (2.3 x ppm CO <sub>2</sub> ))	

\* Standard conditions are 4 bar inlet pressure at 15°C, fed with potable water and a clean pre-treatment cartridge. Refer to flow tables outside these conditions. <sup>o</sup> With POU filter fitted

FEEDWATER REQUIREMENT

Source	Potable mains water supply
Fouling index (max)	<10
Conductivity	<2000 μS/cm
Free Chlorine	0.5 ppm max
Heavy Metals (max)	0.05 ppm
Silica	30 ppm
Temperature	1-35°C
Flowrate (maximum requirement)	100 l/hr (27 USG)
Drain requirements	80 l/hr (21 USG)
Feedwater pressure	4.0 bar (60 psi) min; 6 bar (90 psi) max* With boost pump: flooded suction (min) to 2.0 bar (30 psi) max

\*Fit LA652 Regulator where feedwater pressure exceeds specified limits

Dimensions	Height 679mm, Width 376mm, Depth 353mm	
Weight (with boost pump)	17 kg (37 lbs)	18 kg (40 lbs)
Weight	15 kg (33 lbs)	16kg (35 lbs)

## Type II

Liters per day: 10 - 480

10 MΩ.cm

## Key Features

Easy configurability

Modular

## Ideally suited for:

- Stills Replacement
- Buffer Preparation
- pH solution Preparation
- Washing / Rinsing
- Autoclaves
- General Chemistry
- Hydroponics
- Steam Generators
- Sterilizer Feed
- Feed to Type I polishers

## Modular. Flexible. Reliable.

### Reliable delivery of Type II water purity

When Type II water is all you need, then PURELAB Chorus 2 (RO/DI) is the reliable solution with the flexibility to suit your requirements.

Range of storage reservoirs designed to maintain optimum purity of stored purified water in a choice of 15, 30, 60 and 100 liter capacities.



### Deionization

The Reverse Osmosis feed contains optimized resin mixes to maximize consumables capacity.

### Simplicity

Simple to install, operate and maintain with a clear indication of water purity.

### Economical

Optional CO<sub>2</sub> removal from the purified water (post RO) increasing the life of downstream consumables.

Option to reduce water consumption for low hardness feed waters.

### Modular

Multiple PURELAB Chorus 2 units can feed into one reservoir and systems can be expanded post-installation. As such, the cost of future upgrades is minimized. Duplex systems also guarantee maximum uptime.

Model shown is PURELAB Chorus 2  
with 15l reservoir



Type III water

Liters per day: 10-720

RO water

**Key Features**

Easy Configurability

Auto rinse

Modular

**Ideally suited for:**

- Buffer Preparation
- Washing / Rinsing
- Autoclaves
- General Chemistry
- Hydroponics
- Steam Generators
- Sterilizer Feed
- Feed to Type I polishers

**Modular. Flexible. Reliable.****Reliable delivery of Type III water purity**

When general laboratory grade water is all you need, then PURELAB Chorus 3 is the reliable solution with the flexibility to suit your requirements.

Range of storage reservoirs designed to maintain optimum purity of stored purified water in a choice of 15, 30, 60 and 100 liter capacities.

**Configuration**

Ability to configure multiple systems to increase flow rate.

**Simplicity**

Simple to install, operate and maintain with a clear indication of water purity.

**Auto Rinse**

Maintains purity of water during periods of low use.

**Economical**

Optional CO<sub>2</sub> removal from the purified water (post RO) increasing the life of downstream consumables.

Option to reduce water consumption for low hardness feed waters.

**Modular**

Multiple PURELAB Chorus 3 units can feed into one reservoir and systems can be expanded post-installation. As such, the cost of future upgrades is minimized. Duplex systems also guarantee maximum uptime.



Model shown is PURELAB Chorus 3  
with 15l reservoir



## Storage Reservoirs

Our unique range of storage solutions are designed to maintain optimum purity of stored water and provide effective protection against airborne contaminants.

They are designed to accommodate PURELAB Chorus water purification systems by maximizing the space in a single integral, compact unit or to sit independently to suit the layout of your laboratory.

### Multiple positioning

Multiple positioning / mounting options to suit your laboratory layout.

### Polyethylene construction

Inert opaque polyethylene construction with smooth inner surface.

### Dispense tap

Positioned to minimize accidental operation or damage (choice of positions).

### Advanced vent filtration

Prevents the ingress of airborne bacteria, particulates, organic vapours and CO<sub>2</sub>.

### Auto fill

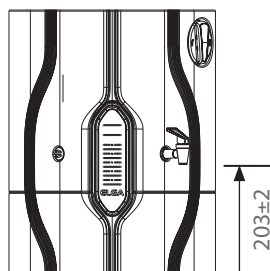
Monitoring of reservoir water levels with automated refill ensures purified water is always available.

### Hygienic Overflow

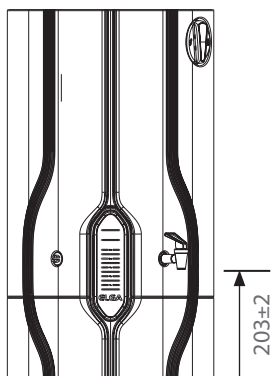
Hygienic overflow in the unlikely event of water system malfunction.

### Easy display

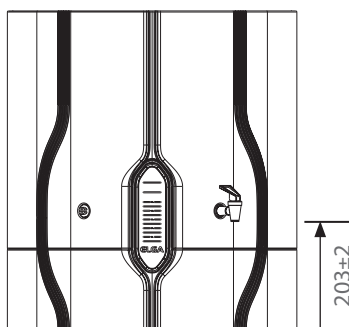
Direct display of stored purified water on the front of the reservoir for easy identification.



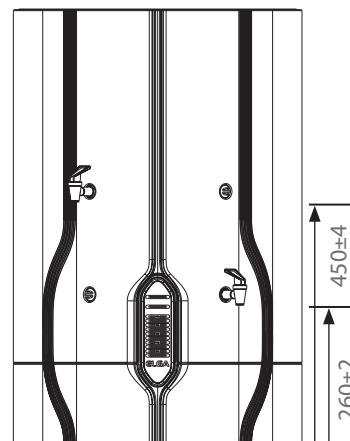
Capacity: 15 liters  
Dimensions (mm):  
470 (h) x 376 (w) x 340 (d)  
Flow Rate: 6 l/min



Capacity: 30 liters  
Dimensions (mm):  
660 (h) x 376 (w) x 340 (d)  
Flow Rate: 8 l/min

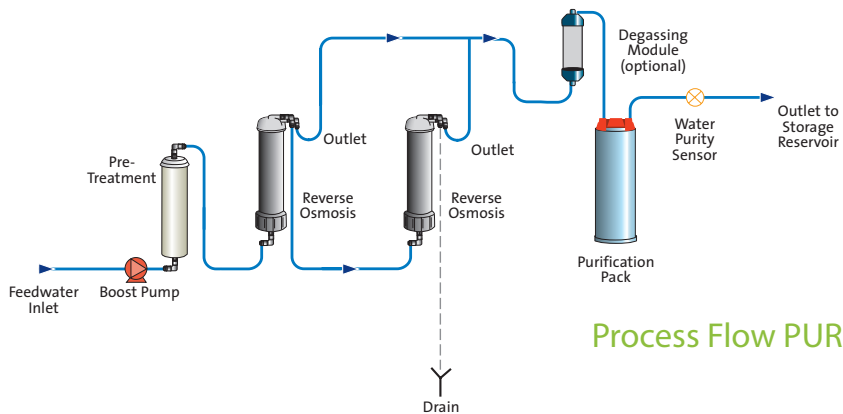


Capacity: 60 liters  
Dimensions (mm):  
570 (h) x 532 (w) x 522 (d)  
Flow Rate: 10 l/min

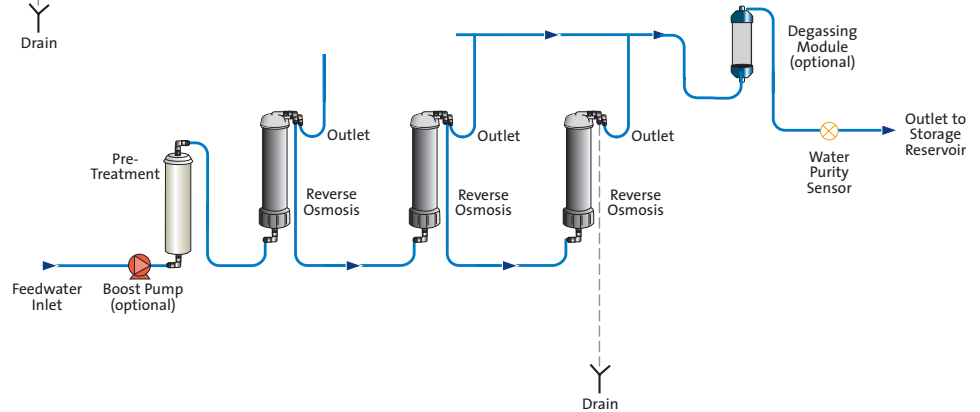


Capacity: 100 liters  
Dimensions (mm):  
806 (h) x 532 (w) x 522 (d)  
Flow Rate: 10 l/min

## Process Flow PURELAB Chorus 2 (RO/DI)



## Process Flow PURELAB Chorus 3 (RO)



Quantity of Reverse Osmosis Modules dependent on Chorus Model.

## Specifications

APPLICATION	PURELAB Chorus 2 (RO/DI)		PURELAB Chorus 3 (RO)		
Nominal output at 15°C	10 l/hr	20 l/hr	10 l/hr	20 l/hr	30 l/hr
Nominal daily output	240 l/day	480 l/day	240 l/day	480 l/day	720 l/day
Inorganics @25°C	1 to >10 MΩ.cm		>95% rejection		
Organics (MW>200 Dalton)	>99% rejection		>95% rejection		
Total organic carbon (TOC)	<30 ppb		<50 ppb		
Bacteria	<5 CFU/ml		<50 CFU/ml		
pH	Effectively neutral		Effectively neutral		
Particles	>99% rejection		>99% rejection		
Purification pack capacity	Liters to 1MΩ.cm = 103,200/(μS/cm + (2.3 x ppm CO <sub>2</sub> ))		N/A		

Standard conditions are 4 bar inlet pressure at 15°C, fed with potable water and a clean pre-treatment cartridge. Refer to flow tables outside these conditions.

Source – originally from potable supply, then pretreated	Potable mains water supply	Potable mains water supply
Fouling index (max)	10	10
Conductivity	<2000 μS/cm	<2000 μS/cm
Free Chlorine	0.5 ppm max	0.5 ppm max
Heavy Metals (max)	0.05 ppm	0.05 ppm
Silica	30 ppm	30 ppm
Temperature	1-35°C	1-35°C
Flowrate (maximum requirement)	100 l/hr (27 USG)	100 l/hr (27 USG)
Drain requirements	80 l/hr (21 USG)	80 l/hr (21 USG)
Feedwater pressure	2.0 bar (30 psi) maximum; 0.5 bar (7.5 psi) minimum*	2.0 bar (30 psi) maximum; 0.5 bar (7.5 psi) minimum*

\*Fit LA652 Regulator where feedwater pressure exceeds specified limits

Dimensions	Height 435mm, Width 376mm, Depth 340mm				
Weight (with boost pump)	19 kg (42lb)	20 kg (44 lbs)	17 kg (37 lbs)	18 kg (40 lbs)	19 kg (42lb)
Weight	17 kg (37 lbs)	18 kg (40 lbs)	15 kg (33 lbs)	16 kg (35 lbs)	17 kg (37 lbs)

TREATED WATER SPECIFICATIONS

FEEDWATER REQUIREMENT

Type III – Type I  
dependent on use  
with a DI pack  
Liters per day: 1 - 100

### Key Features

Flexible dispensing  
Customise settings  
Fully re-circulating  
Integrated filtration

### Ideally suited for:

- Dispensing
- With DI pack
- General lab
  - Type II applications

## Simplicity and Elegance.

### The best dispenser for your distribution system

The PURELAB flex 1 is designed to dispense water when it is connected to a reservoir or distribution loop. This system works as a dispenser as well as a simple deionization system.



### Customized settings

Be in control of your PURELAB flex by customizing the settings to suit your application.

### Easy Access

Routine maintenance has never been easier.

### Data capture

Download all of the data to USB for system performance validation.

## Type I water

Liters per day: 10 - 100

18.2 MΩ.cm

## Key Features

Real-time TOC  
Fully re-circulating  
Customize settings  
Integrated filtration  
Adjustable dispensing

## Ideally suited for:

- Mass Spectrometry
- Molecular biology
- Electrochemistry
- Atomic Spectroscopy
- Liquid Chromatography
- Gas Chromatography
- Immunochemistry
- Spectrophotometry
- Media / Buffer prep
- General chemistry

## Designed for the laboratory of today.

### Reliable delivery of Type I water purity

The PURELAB flex is designed to deliver accuracy, flexibility and ease-of-use. The award winning system provides perfect water purity for analytical and life science applications which require RO type III water up to ultrapure type I (18.2 MΩ.cm) water. It allows focus on routine test work without concern about the water quality affecting test results.

### Guaranteed water purity

Full recirculation through the UV lamp and purification pack right to the point of use for peace of mind.

### Intuitive flexible dispense

Clear water purity display for absolute confidence as you dispense.

### Real-time TOC Monitoring

Provides complete confidence in organic purity by reducing the level of organics for critical applications.

### Easy to maintain

Easy access to the consumables through the front door panels means that maintenance time is reduced, with less disruption to your work.

### Data capture

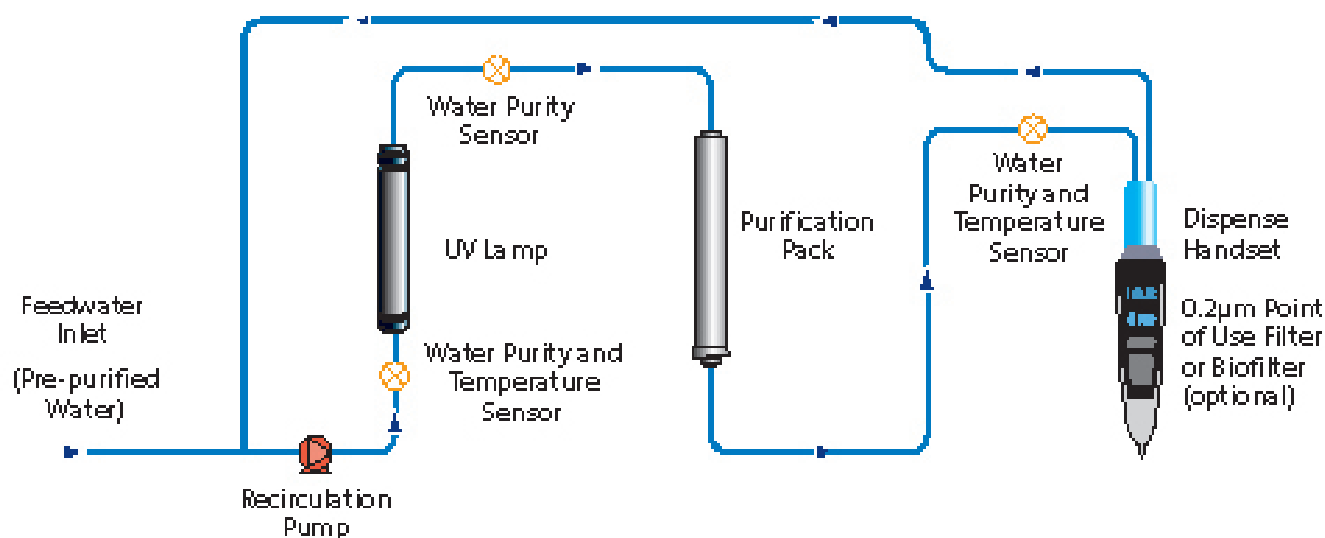
Download all of the data to USB for system performance validation.





# PURELAB flex 1 & 2

## Process Flow PURELAB flex 2



## Specifications

TREATED WATER SPECIFICATIONS

APPLICATION	PURELAB flex 1	PURELAB flex 1 (with purification pack)	PURELAB flex 2
Daily volume	<100 liters	<100 liters	<100 liters
Dispense Flowrate	Up to 2.0 l/min	Up to 2.0 l/min	Up to 2.0 l/min
Inorganics @25°C	As per feedwater	18.2 MΩ.cm	18.2 MΩ.cm
Total organic carbon (TOC)	Dependent on feedwater		<5 ppb
Bacteria	<0.1 CFU/ml <sup>°</sup>	<0.1 CFU/ml <sup>°</sup>	<0.1 CFU/ml <sup>°</sup>
Bacterial Endotoxin	N/A	<0.001 EU/ml <sup>°</sup>	<0.001 EU/ml <sup>°</sup>
RNase	N/A	N/A	<0.002 ng/m <sup>°</sup> l
DNase	N/A	N/A	<20 pg/ml <sup>°</sup>

<sup>°</sup> With POU filter fitted

FEEDWATER REQUIREMENT

Source	Originally from potable supply, then pretreated. Preferably reverse osmosis (RO) or filtered service deionization (SDI) or distilled.		
Fouling index (max)	<1 for all models		
Free Chlorine	<0.05 ppm max		
TOC	N/A		
Carbon dioxide	<0.1 ppm		
Silica	<2 ppm		
Particulates	5-10 µm		
Temperature	4-40°C (Recommend 10-15°C)		
Flowrate (maximum requirement)	>2 l/min (0.5 USG)		
Drain requirements	None required		
Feedwater pressure	1.5 bar (22 psi) maximum; Flooded suction minimum		

\* Fit LA652 Pressure Regulator where feedwater pressure exceeds specified limits

Dimensions	Height 900-1020mm, Width 236mm, Depth 374mm		
Weight	10 kg (22 lbs)	10.5 kg (23.1 lbs)	11 kg (24.2 lbs)
Installation	Bench / wall		

**Type I water**

Liters per day: 1 - 10

18.2 MΩ.cm

**Key Features**

Real-time TOC

Fully re-circulating

Integrated filtration

Adjustable dispensing

**Ideally suited for:**

- Mass Spectrometry
- Molecular biology
- Electrochemistry
- Atomic Spectroscopy
- Liquid Chromatography
- Cell cultures
- Gas Chromatography
- Immunochemistry
- Spectrophotometry
- Media / Buffer prep
- General chemistry

## Power and flexibility.

### A small unit with big power capabilities

The PURELAB flex 3 is the ultimate system providing tap to ultrapure water in one single unit.

### Space saving design

The compact unit can be placed on the bench or can be wall mounted and has an integrated 7 liter reservoir filled by a 10 l/hr RO membrane, ensuring that water is always available.

### Fully Recirculating

Ensuring the highest microbial purity and guaranteeing pure water at the point-of-use as recirculation of the water occurs from the reservoir right to the point of use.

### Real-time TOC Monitoring

Provides complete confidence in organic purity and clear display at all times. The final quality sensor is placed at the entry of the flexible dispenser giving you peace of mind.

### Flexible dispenser

The intuitive dispenser offers a clear display of the water purity for absolute confidence as you dispense.

### Easy to maintain

The front doors ensure easy access to the consumables, making them quick and easy to replace.

### Data capture

Data capture via USB for system performance validation and software updates.



Type I water

Liters per day: 1 - 10

18.2 MΩ.cm

### Key Features

Real-time TOC

Fully re-circulating

Integrated filtration

Adjustable dispensing

### Ideally suited for:

- Mass Spectrometry
- Molecular biology
- Electrochemistry
- Atomic Spectroscopy
- Liquid Chromatography
- Cell cultures
- Gas Chromatography
- Immunochemistry
- Spectrophotometry
- Media / Buffer prep
- General chemistry

## Flexible elegance.

### An independent system

As the PURELAB flex 4 has manual-filling capability, it can operate independently from a tap, in temporary locations.

The system can be connected to a pre-treated water supply and is particularly suited for small volumes of water where TOC levels are critical and must remain stable.



### Space saving design

The compact unit can be placed on the bench or can be wall mounted and has an integrated 7 liter reservoir filled by a 10 l/hr RO membrane, ensuring that water is always available.

### Portable system

Access on the top of the system gives the option to fill the reservoir with pre-purified water. This means that it can be moved at any time as the lab environment evolves.

### Real-time TOC Monitoring

Provides complete confidence in organic purity and clear display at all times.

### Flexible dispenser

The intuitive dispenser offers a clear display of the water purity for absolute confidence as you dispense.

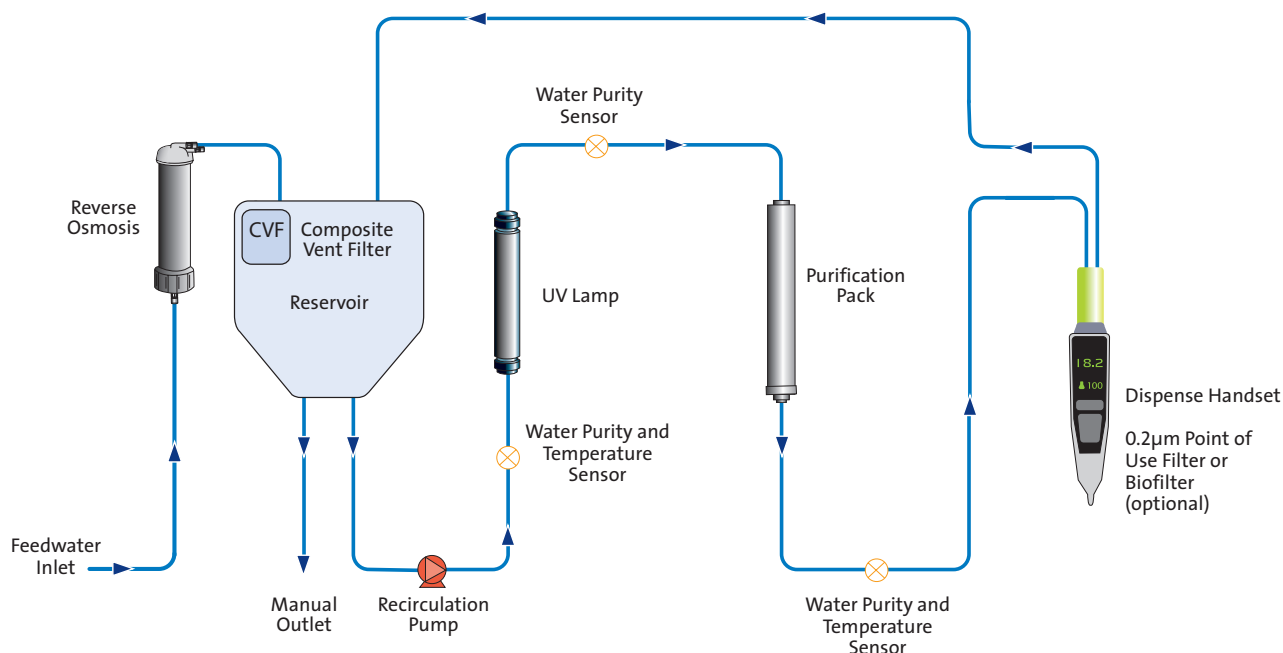
### Easy to maintain

The front doors ensure easy access to the consumables, making them quick and easy to replace.

### Data capture

Data capture via USB for system performance validation and software updates.

## Process Flow PURELAB flex 3



## Specifications

TREATED WATER SPECIFICATIONS

APPLICATION	PURELAB flex 3	PURELAB flex 4
Daily volume	<10 liters	<100 liters
Dispense Flowrate	Up to 2.0 l/min	Up to 2.0 l/min
Reverse osmosis make up flow rate at 15°C	10 l/hour	N/A
Inorganics @25°C	18.2 MΩ.cm	18.2 MΩ.cm
Total organic carbon (TOC)	<5 ppb	<5 ppb*
Bacteria	<0.1 CFU/ml <sup>°</sup>	<0.1 CFU/ml <sup>°</sup>
Bacterial Endotoxin	<0.001 EU/ml <sup>°</sup>	<0.001 EU/ml <sup>°</sup>
RNase	<0.002 ng/ml <sup>°</sup>	<0.002 ng/ml <sup>°</sup>
DNase	<20 pg/ml <sup>°</sup>	<20 pg/ml <sup>°</sup>

\* Dependant on feed water ° With POU filter fitted

FEEDWATER REQUIREMENT

Source	Potable tap water	Originally from potable supply, then pretreated. Preferably reverse osmosis (RO) or filtered service deionization (SDI) or distilled.
Fouling index (max)	<10	<1
Free Chlorine	<0.5 ppm max	<0.05 ppm max
TOC	<2 ppm	<50 ppb recommended
Carbon dioxide	<30 ppm (recommended <20 ppm)	
Silica (recommended max)	<30 ppm	<2 ppm
Particulates	-	5-10µm
Temperature	4-40°C (Recommend 10-15°C)	
Flowrate (maximum requirement)	Up to 75 l/hr (20 USG)	Up to 75 l/hr (20 USG)
Drain requirements	<90 l/hr (23 USG)	<70 l/hr (18 USG)
Feedwater pressure	6 bar (90 psi) max; 2 bar (30 psi) min	6 bar (90 psi) max; 0.07 bar (1 psi) min

\* Fit LA652 Pressure Regulator where feedwater pressure exceeds specified limits

Dimensions	Height 900-1020mm, Width 236mm, Depth 470mm	
Weight	23 kg (57.3 lbs)	23 kg (57.3 lbs)
Installation	Bench / wall	

# Find your product?



	PURELAB Chorus 1				PURELAB Chorus 2 & 3				PURELAB flex		
	Life Science	Analytical Science	General Science	Complete	2+ (RO/EDI/UV)	2+ (RO/DI/UV)	2 (RO/DI)	3	flex 1	flex 2	flex 3&4
<b>Water Type</b>											
Ultrapure Type I											
Pure Type II											
General Type III											
<b>Impurities to remove</b>											
Nucleases		*	*	*	*	*				*	*
Endotoxins / Pyrogens		*	*	*	*	*				*	*
Inorganics											
Organics											
Bacteria			*						*	*	
Particulates			*						*	*	*
Trace Ions											
<b>Features</b>											
PureSure®											
Real time TOC monitoring											
Potable water feed											◊
Wall mounting											
Floor mounting											
Purity monitoring to POU*											
Halo Dispense compatible											
Auto Volume Dispense	†	†	†	†	†	†					
Variable flow rate dispense	†	†	†	†	†	†					
Drop-by-drop control	†	†	†	†	†	†					
Locked dispense	†	†	†	†	†	†					
USB connection											
Full product validation											

\* With POU filter fitted. ◊ PURELAB flex 3 only † When fitted with a Halo dispenser solution.



# Find your product?



	PURELAB Chorus 1				PURELAB Chorus 2 & 3				PURELAB flex		
	Life Science	Analytical Science	General Science	Complete	2+ (RO/EDI/UV)	2+ (RO/DI/UV)	2 (RO/DI)	3	flex 1	flex 2	flex 3&4
<b>Ideal solution for</b> Systems also have wider applicability. Speak to your local ELGA specialist for further information.											
Cell cultures (inc. Bacteria, Mammalian, Plant etc)											
Liquid Chromatography (HPLC, UHPLC)											
Microbiological Analysis											
Genetic (inc. PCR, DNA/ RNA sequencing, DNA microarrays, Nucleic acid, electrophoresis)											
Gas Chromatography											
Electrochemistry											
Immunochemistry											
Atomic Spectroscopy (Flame AA, GFAA, ICP-AES)											
Mass Spectrometry (ICP-MS, GC-MS, LC-MS)											
General lab water requirement (glassware washing, heating baths, autoclave filling)											
Spectrophotometry (inc. UV, IR, nearUV, nearIR)											
Feed to ultrapure water system											
Media / buffer preparation (inc pH solution)											
General chemistry (inc Titrimetry)											

# The LabWater Specialists

ELGA is an integral part of Veolia, the global leader in optimized resource management. Veolia has a worldwide team of over 200,000 people and is renowned for its capabilities in providing water, waste and energy management solutions that contribute to the sustainable development of communities and industries.

The ELGA team focuses exclusively on water and its purification. It continually contributes to the unique technical and scientific applications and expertise developed for over 75 years. We are experienced in meeting the challenges that arise during the development, installation and servicing of single point-of-use water purification systems as well as large projects involving consultation with architects, consultants and clients.

## Commitment to Sustainability

The ELGA products are designed to have the lowest possible impact on the environment at all stages: manufacture, in service and at end of life.

We can calculate the carbon value of all our products throughout their lifetime and we make this information available to our customers and partners.

Visit: [www.elgalabwater.com/sc](http://www.elgalabwater.com/sc) for more details.

## Contact us:

ELGA offices and distributors are located in more than 60 countries and are fully trained in all ELGA systems.

To find your nearest ELGA representative, go to [www.elgalabwater.com](http://www.elgalabwater.com) and select your country for contact details.

ELGA Global Operations Centre

tel: +44 (0) 203 567 7300

fax: +44 (0) 203 567 7205

[info@elgalabwater.com](mailto:info@elgalabwater.com)

[www.elgalabwater.com](http://www.elgalabwater.com)

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