ELGA

PURELAB flex 3 & 4 - US

Operator Manual

VEOLIA WATER
Solutions & Technologies

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1. INTRODUCTION

1.1 Health & Safety

Please ensure you read the Health & Safety notes in Section 9.

1.2 Product Range

This Operators Manual has been prepared for PURELAB flex product models:

- PURELAB flex 3 - US (Ultra Pure Water (Type I) Directly from tap water)
- PURELAB flex 4 - US (Ultra Pure Water (Type I) from RO (Type III) feed water)

1.3 Use of this Manual

This manual guides you through the basic operation and maintenance of the PURELAB flex allowing you to obtain a guaranteed supply of purified water to meet your requirements.

1.4 Installation

PURELAB flex is supplied with a Quick Start Guide and Quick Reference Guide.

Quick Start Guide shows you how to install and commission the PURELAB flex.

Quick Reference Guide shows you how to perform day to day functions in order to get the most from your PURELAB flex without having to refer to the Operators Manual.

1.5 Environment

The PURELAB flex unit should be installed on a flat, level surface, in a clean, dry environment. The unit can also be wall mounted using the purpose designed wall mounting kit against a vertical wall capable of supporting the combined weight of the unit and mounting kit.

1.6 Commissioning

PURELAB flex is supplied in a preset commissioning mode which has to be completed before purified water can be dispensed.

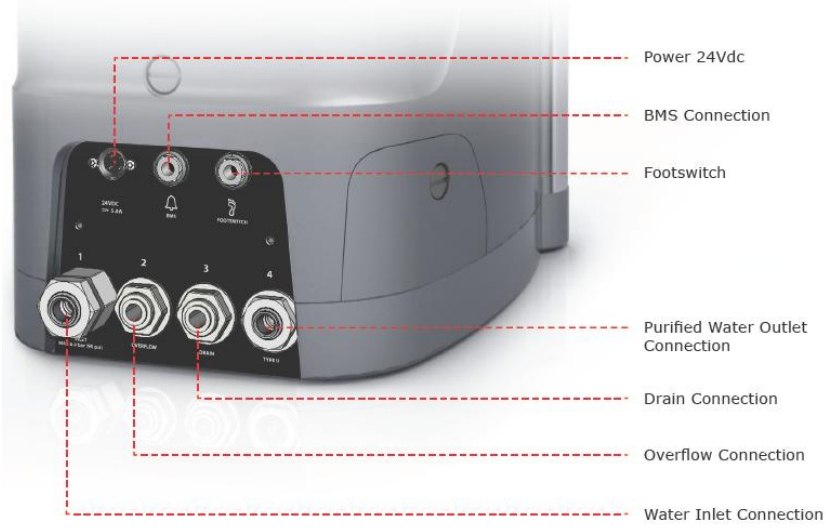
1.7 Customer Support

If you need help with your PURELAB flex, please call your local ELGA representative. For the address of the nearest ELGA LabWater Sales and Service office visit the country list on our website.
www.elgalabwater.com

Or contact ELGA LabWater at;

E-mail: techsupport@elgalabwater.com
E-mail: info@elgalabwater.com

2. YOUR GUIDE TO THE PURELAB flex 3 & 4



3. CONSUMABLES

Consumables			
Part No.	Description	Typical Service Life*	Max. Shelf Life
LC214	Purification Pack	6 months	2 years
LC210	UV Lamp	12-18 months	5 years
LC145	0.2µm Microfilter - Point-of-Use	90 Days	2 years
LC197	Biofilter – Point-of-Use	90 Days	2 years
LC216	Composite Vent Filter	1 Year	2 years
LC217	Reverse Osmosis Module	Typical life 2-3 years	2 years
LC209-M2	Sanitization cartridge	Single use	2 years

*Service Life is an estimate only, and will depend on the application and feed water quality. Please take care to ensure you order the correct consumable items.

4. OPERATION

PURELAB flex 3 & 4 provides high purity water typically where daily usage does not exceed 10 liters/day.

To provide the ultimate purity, water is re-circulated through a range of treatment technologies and stored in an internal reservoir.

The reservoir is filled automatically from either a potable water or pre-treated supply. Please refer to Section 9. Technical Specifications for details.

During periods of non-use the unit will automatically operate in intermittent (10 minutes every 2 hours) re-circulation mode to maintain water purity with maximum efficiency.

Refilling of the reservoir is determined by usage and achieved in the following ways;

1. AUTOMATIC REFILL. When the water level in the reservoir reaches <4 liters the PURELAB flex will begin to refill. An option in main menu allows 'Refill set point' to be adjusted. Follow instructions on the Dispense handset.
2. INITIATING A RESERVOIR REFILL. Pressing the Initiate Reservoir Refill button on the display handset for 2 seconds.
3. MANUAL REFILL. Water added directly into the reservoir by removing the Composite Vent Filter.
4. TIMED AUTO REFILL. The timed auto refill is a feature downloadable from the website (only available when the clock feature is selected). The timed auto refill allows the user to set a time at which the system will automatically enter a refill cycle. With Auto Refill set to 16:00 the unit will enter refill cycle at 4pm everyday.

The Quick Reference Guide shows you how to perform day to day functions in order to get the most from your PURELAB flex without having to refer to this Operators Manual.

5. CUSTOMIZED OPERATION

It's possible to customize your PURELAB flex by downloading additional features and changing your current settings.

To find out more, please visit **www.purelabflex.com**

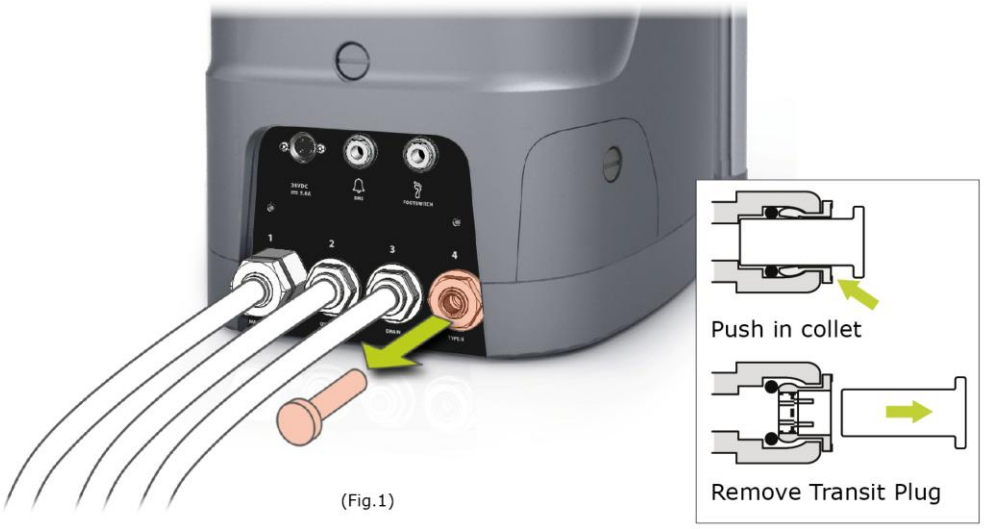
Additional features will be added periodically.

6. PURIFIED WATER OUTLET CONNECTION

An additional outlet connection is located at the rear of PURELAB flex for applications that may require a direct feed.

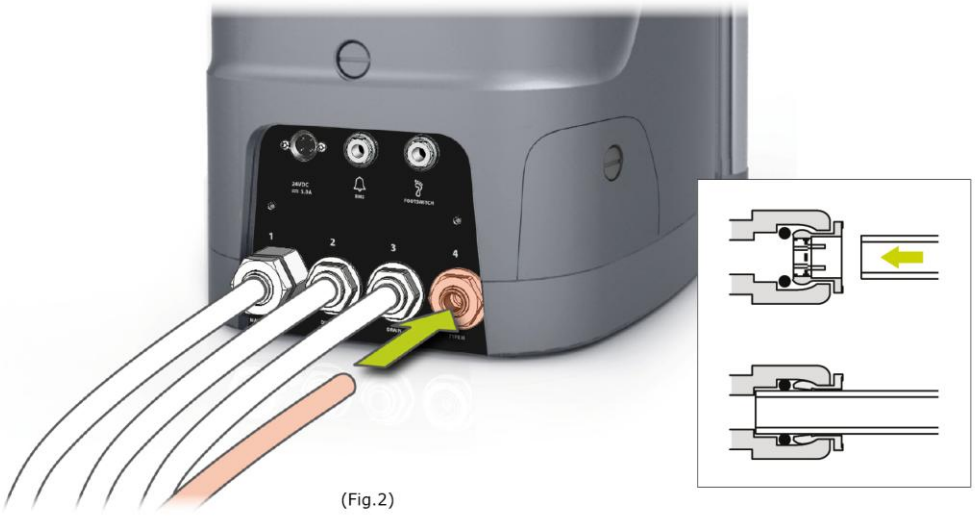
CAUTION! **Maximum usage should not exceed 10l/day. Maximum take off flow rate 1.8l/min with positive head. Water purity may vary depending on usage. Check water purity is suitable for application.**

Please follow the instructions below for correct connection.



(Fig.1)

a) Remove the transit plug from the Pure Water Connection (Fig.1).



(Fig.2)

b) Connect the Pure Water Connection (Fig.2).

(Fig.3)

c) Remove Side Cover
(Turn Screw 90º Clockwise or Anti-clockwise).

(Fig.4)

d) Open Isolating Valve (Turn 90º Anti-clockwise).

7. MAINTENANCE

An approved supplier or distributor should carry out any maintenance work not included in this manual.

Note: Disposal of all end-of-life consumable items should be in accordance with local statutory regulations.

7.1 Replacing Ultraviolet lamp (LC210)

The Ultraviolet (UV) lamp should be replaced when;

- UV lamp failure occurs.
- UV lamp efficiency decreases affecting water purity.

If either occurs you'll be prompted to change the UV Lamp.

WARNING! **UV-C RADIATION IS HARMFUL TO THE EYES AND SKIN. UV LAMP SHOULD ONLY BE OPERATED IN THE CHAMBER.**

IT IS STRONGLY RECOMMENDED THAT DURING THE HANDLING OF THE UV LAMP CUT-RESISTANT GLOVES ARE WORN.

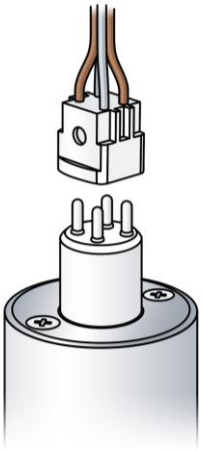
WARNING! **MERCURY HAZARD, DO NOT BREAK. THE UV LAMP CONTAINS A SMALL AMOUNT OF MERCURY. MAY CAUSE REDNESS OR IRRITATION AS A RESULT OF CONTACT WITH SKIN AND/OR EYES.**

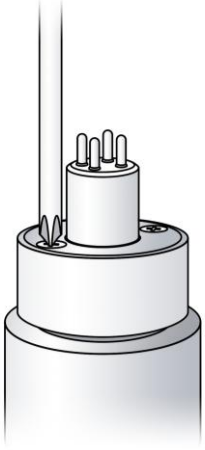
Step 1 – Switch Unit Off

- ISOLATE the electrical supply where the power cable is connected to the mains electrical supply.
- TURN OFF the water supply.
- OPEN the left hand access door.

Step 2 – Remove UV Lamp from PURELAB flex.

- DISCONNECT the lamp connector fitted to the top of the UV lamp.
- LOOSEN the 2 securing screws at the top of the UV housing.





- LIFT and REMOVE the UV lamp from the UV housing.
- DISCARD the used UV lamp in accordance with local regulations.

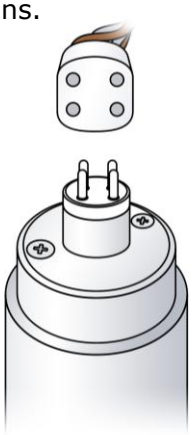
CAUTION! **Hold on to the UV lamp carefully to ensure it doesn't break.**

Step 3 - Replace the UV lamp

- UNPACK new UV lamp.

CAUTION! **Take care not to touch the surface of the glass. Ideally wear gloves, handle with soft cloth and wipe the surface with alcohol before fitting into the housing.**

- SLIDE the new UV lamp into the UV housing.
- CONNECT the lamp connector to the end of the UV making sure the connector is correctly aligned with the pins.



- TIGHTEN the 2 securing screws at the top of the UV housing.
- CLOSE the left hand access door.

Step 4 – Turn Unit On

- TURN ON the water supply.
- SWITCH ON the mains electrical supply.

7.2 Cleaning the Inlet Filter Assembly

PURELAB flex is fitted with an inlet filter to protect it from particles in the feed water supply which could affect performance.

It's recommended that you periodically clean the inlet filter to ensure that it doesn't become blocked.

Step 1 –Isolate the Electrical Supply

- ISOLATE the electrical supply where the PURELAB flex power cable is connected to the mains electrical supply.
- TURN OFF the water supply.
- LOCATE the inlet filter assembly at the rear of the PURELAB flex.

Step 2 – Dismantle the Inlet Filter.

- UNSCREW the inlet filter.
- REMOVE the mesh filter
- CHECK mesh filter for signs of damage; REPLACE or CLEAN as necessary.

Step 3 – Reassemble the Inlet Filter

- INSERT the mesh filter into its original position ensuring that it is facing the correct direction (see diagram).
- RE-ASSEMBLE the Inlet Filter Assembly.

Step 4 – Turn Unit On

- TURN ON the water supply
- SWITCH ON the electrical supply.

7.3 Replacing the Reverse Osmosis Module (LC217)

PURELAB flex 3 is fitted with a Reverse Osmosis (RO) module.

The RO Module may need replacing if the permeate water purity or flow rate is not adequate and does not meet predicted or previous performance.

For information regarding the replacement of the LC217 RO Module contact Customer Support.

WARNING! **ALL NEW RO MODULES ARE FILLED WITH A BACTERIOSTATIC SOLUTION TO PREVENT BACTERIAL CONTAMINATION DURING STORAGE. THE RO MODULES WILL THEREFORE REQUIRE RINSING PRIOR TO USE.**

7.4 Replacing the Composite Vent and Point-of-Use Filters

Details of how to install/replace the Composite Vent Filter can be found in the Quick Reference Guide.

Details of how to install/replace the Point-Of-Use Filters are supplied with each filter.

8. SELF HELP GUIDELINES

This section covers some of the issues that could occur with your PURELAB flex, and provides the troubleshooting steps to help you to resolve the issue yourself.

When troubleshooting doesn't resolve your issue, please call your local ELGA LabWater representative *(See Section 8 - Useful Contact Details).*

WARNING! ALWAYS ENSURE THAT THE ELECTRICAL POWER SUPPLY IS ISOLATED BEFORE WORKING INSIDE PURELAB flex.

CONDITION	RECOMMENDED ACTION
Nothing showing on handset display.	Press any button to wake the unit from sleep mode. Check electrical supply and lead. Check that the electrical power is switched on. Check the fuse in the electrical power and replace if blown.
Unable to enter main menu	Press Auto Volume Dispense button to exit Auto Volume dispensing.
Purification Pack change reminder	Reset Purification Pack change reminder. Replace Purification Pack – See Quick Reference Guide.
Short Purification Pack Life	Water usage is >10 L/day. Inlet feed water is out of specification. Check replacement date.
Sanitization reminder	Reset Sanitization reminder. Contact local distributor or technical support for further information.
UV change reminder	Reset UV change reminder. Replace the UV lamp.
High Temperature Water Alarm	Check correct alarm point is set. Check feed water temperature has not risen suddenly. Dispense some water to allow cold water to be drawn into the system.
Reduced Dispense Water flow rate	Check inlet water strainer is not blocked. Replace POU filter if fitted. Call Customer Services.
Dispense Water Purity Alarm	Check correct alarm point is set. Change Purification Pack.

9. HEALTH AND SAFETY NOTES

WARNING! **WARNINGS ARE GIVEN WHERE FAILING TO OBSERVE THE INSTRUCTIONS COULD RESULT IN INJURY OR FATALITY.**

CAUTION! **Cautions are given where failure to observe the instructions could result in damage to the equipment, associated equipment and processes.**

9.1 Environment

Clean dry indoor. Temp 5-40°C.
Humidity max 80% non-condensing.

CAUTION! **Failure to follow the environmental specification could result in damage to the system.**

The PURELAB flex is not designed for use in fume cupboards where chemicals could damage the system.

9.2 Display Handset

CAUTION! **The display handset is not designed to be submersed in water.**

9.3 Electricity

The appliance coupler (mains lead) or power supply connected to the rear of the unit can be removed to isolate the power supply. If access to this is restricted then it is recommended that access to the supply socket is easily available to disconnect the electrical supply.

ONLY USE THE APPLIANCE COUPLER (MAINS LEAD) AND POWER SUPPLY PROVIDED.
THE USE OF THESE WILL ENSURE ADEQUATE EARTH PROTECTION IS PROVIDED.

WARNING! **IF THE EQUIPMENT IS USED IN A MANNER NOT SPECIFIED BY ELGA, THE PROTECTION PROVIDED BY THE EQUIPMENT MAY BE IMPAIRED**

POSITION THE POWER SUPPLY SO THAT IT CANNOT COME INTO CONTACT WITH WATER.

9.4 Ultraviolet Light

WARNING! **UNDER NO CIRCUMSTANCES SHOULD THE LAMP BE CONNECTED AND ACTIVATED WHEN OUTSIDE THE HOUSING. EXPOSURE COULD CAUSE SERIOUS INJURY TO EYES AND SKIN.**

ENSURE THE UV LAMP IS DISPOSED OF IN ACCORDANCE WITH LOCAL REGULATIONS.

9.5 Residual Biostat

WARNING! **DURING THE COMMISSIONING CYCLE TRACE RESIDUAL BIOSTAT IS FLUSHED FROM THE SYSTEM. A MATERIAL SAFETY DATA SHEET IS AVAILABLE UPON REQUEST.**

9.6 Control of Substances Hazardous to Health (COSHH)

Material safety data sheets covering the various replaceable Purification Packs are available upon request.

10. TECHNICAL SPECIFICATIONS

FEEDWATER		
Model	PURELAB flex 3 (Ultra Pure Water (Type I) directly from tap water)	PURELAB flex 4 (Ultra Pure Water (Type I) from RO (Type III) feed water)
SOURCE	Potable tap water as detailed below.	Purified water filtered to at least 0.2µm as detailed below.
Conductivity	< 2000µS/cm [1]	
Ionic Load		Recommended Total Equivalent Conductivity (TEC) <70µS/cm [2]
CONTAMINANT		
Hardness	<350 ppm as $CaCO_3$	N/A
Free Chlorine	<0.05 ppm CL_2	<0.05 ppm CL_2
Chloramine	<0.02 ppm CL_2	<0.05 ppm CL_2
Total Chlorine	<0.05 ppm CL_2	<0.05 ppm CL_2
Silica	<30 ppm SiO_2	<2 ppm SiO_2
CO2 (Carbon Dioxide)	<30 ppm (Recommended <20 ppm)	
Fouling Index	<10	<1
Iron/Manganese	< 0.5 ppm Fe/Mn	N/A
Organics (Total Organic Carbon)	Recommended <2 ppm TOC	Recommended <50 ppb TOC
Particulates	A 0.2 micron membrane pre filter is recommended for all non-RO feeds to extend point-of-use filter life.	
TEMPERATURE	4 - 40ºC (Recommended 10 - 25ºC)	
FLOWRATE (maximum requirement at 15ºC)	Up to 75 L/hr	Up to 60 L/hr
Drain Requirements	>90 L/hr	>70 L/hr

[1]Purification Pack life may me low with feedwaters >1400 µS/cm
[2]TEC (µS/cm) = Conductivity (µS/cm) + 2.3 X CO2 (ppm)

FEEDWATER PRESSURE	
Minimum Inlet Pressure	2bar (30psi)
Maximum Inlet pressure	6bar (90psi)
Optimum Inlet Pressure	4bar (60psi)

CONNECTIONS	
Point-Of-Use	1/4" BSP (Dispense Tip Removed)
Inlet	8mm (5/16) OD tube
Internal Reservoir Overflow	8mm (5/16) OD tube
Drain	8mm (5/16) OD tube
Internal Reservoir	8mm (5/16) OD tube

DIMENSIONS and WEIGHTS		
Dimensions	Width 236mm, Depth 470mm, Height minimum 900mm, Height maximum 1020mm.	
Model	PURELAB flex 3 (Ultra Pure Water (Type I) Directly from tap water)	PURELAB flex 4 (Ultra Pure Water (Type I) from RO (Type III) feed water)
Operational weight	23 kg (57.3 lb)	23 kg (57.3 lb)
Installation	Bench / Wall	

ELECTRICAL REQUIREMENTS	
Mains input	100-240V ac, 50-60 Hz
System control voltage (not including pumps and UV)	24 V dc
Power consumption (peak demand)	100 VA

PRODUCT WATER SPECIFICATION		
Model	PURELAB flex 3 (Ultra Pure Water (Type I) directly from tap water)	PURELAB flex 4 (Ultra Pure Water (Type I) from RO (Type III) feed water)
Volume of Ultra Pure (Type 1) Water used per working day.	Up to 10 L/day	
Ultra Pure delivery flow rate from Dispense Handset	Up to 2 L/min	
Inorganics (Resistivity @25°C)	18.2MΩ-cm	
Organics (TOC) – typically	<5ppb[1]	
Bacteria – Typical	<1 CFU/ml (when fitted with POU filter)	
Bacteria – Typical	<1 CFU/10ml (when fitted with Biofilter)	
Endotoxin	<0.001 EU/ml (when fitted with Biofilter)	
DNase	<20 pg/ml (when fitted with Biofilter)	
RNase	0.002 ng/ml (when fitted with Biofilter)	
Particles	0.2µm filtration (when fitted with POU filter)	
pH	Effectively neutral	
Reverse Osmosis (Type III) Make-up flow rate	Up to 10 L/hr	
Volume of Pure (Type III) Water used per working day. (Taken directly from the internal reservoir)	<10 L/day	

[1]Dependent on feed water

As part of our policy of continual improvement we reserve the right to alter the specifications given in this document.

11. USEFUL CONTACT DETAILS

ELGA LabWater

Lane End Industrial Park

High Wycombe

Bucks HP14 3BY

UK

Tel: +44 (0) 203 567 7300

Fax: +44 (0) 203 567 7205

E-mail: info@elgalabwater.com

For the address of the nearest ELGA LabWater Sales and Service office visit the country list on our website.

http//www.elgalabwater.com

Or contact ELGA LabWater at the number above.

12. WARRANTY / CONDITIONS OF SALE

ELGA LabWater is a trading name of VWS (UK) Ltd.

General Limited Warranty

VWS (UK) Ltd. warrants the products manufactured by it against defects in materials and workmanship when used in accordance with applicable instructions for a period of one year from the date of shipment for the products. VWS (UK) Ltd. MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED. THERE IS NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. The warranty provided herein and the data, specifications and descriptions of the VWS (UK) Ltd. products appearing in VWS (UK) Ltd. published catalogues and product literature may not be altered except by express written agreement signed by an officer of VWS (UK) Ltd. Representations, oral or written, which are inconsistent with this warranty or such publications are not authorized and, if given, should not be relied upon.

In the event of a breach of the foregoing warranty, VWS (UK) Ltd. sole obligation shall be to repair or replace, at its option, any product or part thereof that proves to be defective in materials or workmanship within the warranty period, provided the customer notifies VWS (UK) Ltd. promptly of any such defect. The exclusive remedy provided herein shall not be deemed to have failed of its essential purpose so long as VWS (UK) Ltd. is willing and able to repair or replace any nonconforming VWS (UK) Ltd. product or part. VWS (UK) shall not be liable for consequential, incidental, special or any other indirect damages resulting from economic loss or property damage sustained by any customer from the use of its products.

VWS (UK) Ltd. Warranty

VWS (UK) Ltd. warrants the water systems manufactured by it, BUT EXCLUDING MEMBRANES AND PURIFICATION PACKS, against defects in materials and workmanship when used in accordance with the applicable instructions and within the operating conditions specified for the systems for a period of one year from the earlier of:

the date of installation, or

the 120th day following the date of shipment.

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