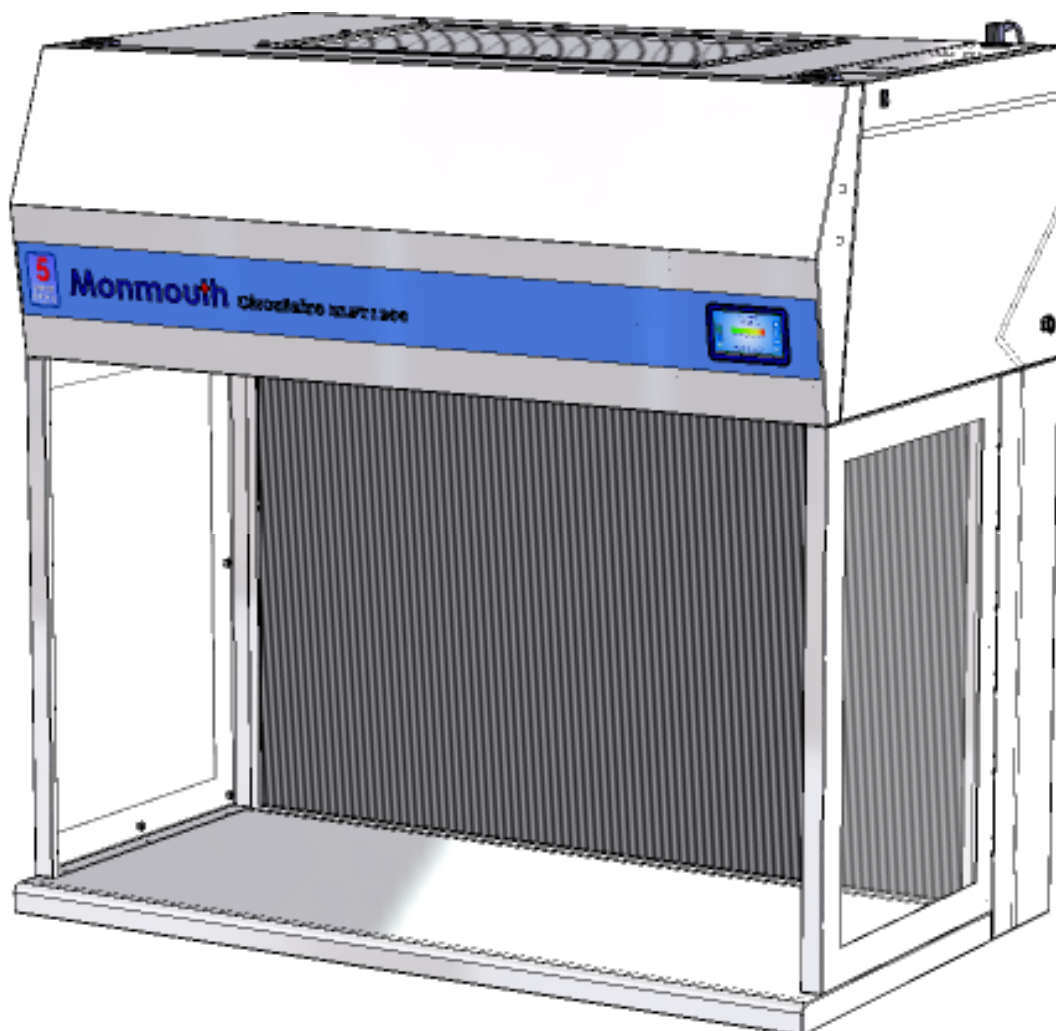# Monmouth
Circulaire

HORIZONTAL LAMINAR FLOW CABINET

HLFT900, HLFT1000, HLFT1200, HLFT1500 & HLFT1800

OPERATING AND MAINTENANCE MANUAL

CONTENTS

This manual is intended to provide information about the product.
Monmouth Scientific Limited assumes no liability whatsoever for the accuracy of any information contained herein, as products can be subject to improvement changes at any time.

The contents may not be distributed, shared or commercially exploited in any form or by any means, redistributed or reproduced in entirety or in part in any form, for individual or third party use, photocopied or stored on any form of electronic retrieval system or linked to any other website, without the prior express written permission of Monmouth Scientific Limited.

For permission requests, please write to:-
Monmouth Scientific Limited,
Units 5 & 5 Kilnside, East Quay, Bridgwater, Somerset, TA6 4DB.
Email: info@monmouthscientific.co.uk
Tel: +44(0)1278 458090

<u>Warning</u>

This cabinet must be used in compliance with these instructions and any repairs or maintenance carried out by qualified personnel.

For parts or service information please contact Monmouth Scientific on: +44 (0) 1278 458090

SECTION 1

DESCRIPTION OF THE CABINET

The Circulaire range of Horizontal Laminar Flow cabinets provide Class 100 clean air at a velocity >0.35m/sec. over the entire working area. The cabinets are supplied in 5 sizes to suit most applications. All cabinets are fitted with an airflow monitor which provides visual and audible warning should the airflow drop below the minimum level.

	Circulaire HLFT900	Circulaire HLFT1000	Circulaire HLFT1200	Circulaire HLFT1500	Circulaire HLFT1800
External Dimensions	900mmWide 700mmDeep 1165mm High	1000mmWide 700mmDeep 1165mm High	1200mmWide 700mmDeep 1165mm High	1500mmWide 700mmDeep 1165mm High	1800mmWide 700mmDeep 1165mm High
Internal Dimensions	885mmWide 490mmDeep 715mm High	985mmWide 490mmDeep 715mm High	1185mmWide 490mmDeep 715mm High	1485mmWide 490mmDeep 715mm High	1785mmWide 490mmDeep 715mm High

SECTION 2

INSTALLATION

GENERAL

The cabinet is supplied fully assembled and ready for use.

The following guidelines should be observed when installing the cabinet:

- Site the cabinet in a draught free position with a minimum of 200mm from the top of the cabinet to the ceiling to prevent obstructing the air inlet and to provide access to change the pre-filter.
- Connect the cabinet to a 13A socket.

TESTING / COMMISSIONING

A test certificate will be supplied for conformity to CE marking, and electrical test.

The airflow should be checked using a vane anemometer and the results recorded.

The main ULPA (U15) filter will have been factory tested before delivery. A DOP filter challenge test should be carried out to verify filter integrity when the cabinet is installed.

THE CABINET SHOULD BE TESTED EVERY 12 MONTHS.

SECTION 3

GENERAL OPERATION

The main on/off switch is located on the right hand side near the top of the cabinet. When first turned on the LCD control panel will be displayed providing operator instructions for cabinet use. The cabinet can be put into standby mode by pressing the ⏻ key. When in standby mode the fan, lights and control system are turned off. Normal operation can be resumed by touching the screen. An ECO mode can be activated (see page 13) which turns off the lights if no activity is seen inside the cabinet for a time period set in the supervisor settings (see page 13). Normal operation is resumed by touching the screen. If the cabinet is not to be used for several days the cabinet can be turned off at the main on/off switch if preferred.

CONTROL SYSTEM

The cabinet is controlled and monitored by a microprocessor with an LCD touch screen. The touch screen provides the operator with general information about the cabinet and displays the current laminar velocity and differential pressure across the ULPA filter. Control of light level, fan speed and other operating settings are all accessed via a menu system. The control system is factory set to maintain the following parameters:
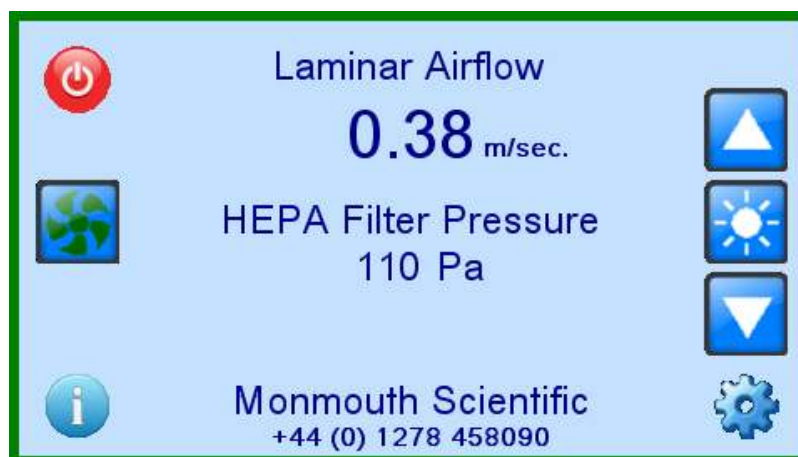
Normal airflow velocity: 0.40m/sec.

Low airflow alarm: 0.30m/sec.

These settings can be changed by a Monmouth engineer. Please contact Monmouth Scientific for further advice.

START-UP

When first turned on the screen below is displayed

LAMINAR AIRFLOW

The microprocessor controls the fan speed to compensate for filter blockage. The airflow velocity is continuously monitored and displayed. The value will fluctuate slightly during normal operation, this is normal and is an indication that the fan is under microprocessor control. If preferred the units displayed can be changed to ft/min. in the Supervisor Settings (see page 13)

ULPA FILTER PRESSURE

The cabinet is fitted with a pressure sensor which monitors the pressure drop across the ULPA filter. As the filter becomes blocked over time the pressure will slowly increase. When the pressure reaches the recommended maximum (250pa) a warning will be displayed. The ULPA filter is protected by a pre-filter and should last several years unless working in a very dirty environment or the pre-filters are not changed on a regular basis.

CONTROL BUTTONS

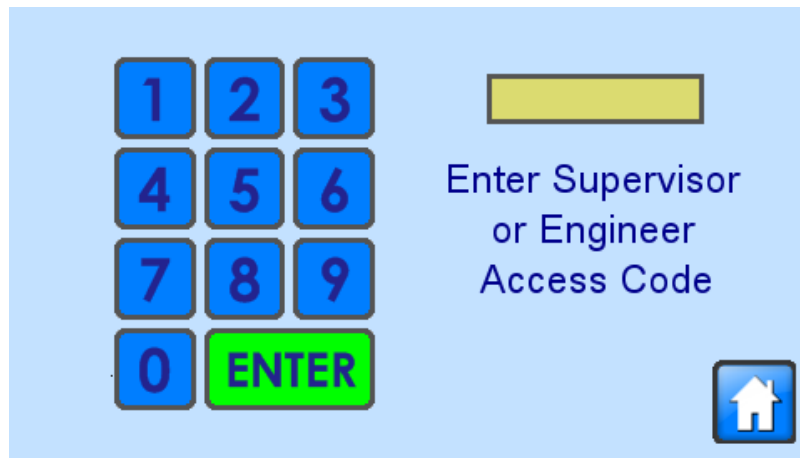|	
	Light On / Off
	Reduce Brightness
	Increase Brightness
	Fan On
	Fan Off
	Settings - access to settings menu
	Information - Cabinet and filter information
	Standby - Puts cabinet into standby
	UV sterilisation settings (where fitted)

SETTINGS

Pressing the ⚙ key on the main screen enters the Set-Up menu access screen.

The supervisor access code is supplied with the cabinet and allows access to change operating preferences.

The engineer access code is reserved for service engineers to carry out maintenance procedures.

The 🏠 key returns to the normal display screen.

SUPERVISOR SETTINGS

When the correct Supervisor code is entered the screen below is displayed.

Laminar Airflow Display - select preferred velocity units.

ECO Mode - turns off the lights if no activity is seen inside the cabinet for a time period set by using the arrow keys at the bottom of the screen. Normal operation will be resumed when operator touches the screen.

Audible Alarm - Turns off the audible low airflow alarm.

Keypad Sounds - Turns off the audible key beeps.

Set Time - displays a time / date setup screen

Pressing the ← key returns to the previous screen.

Reset UV - displays a UV reset screen to reset the date a new UV tube is fitted and the hours run. This key will only be displayed on models fitted with a UV sterilisation option.

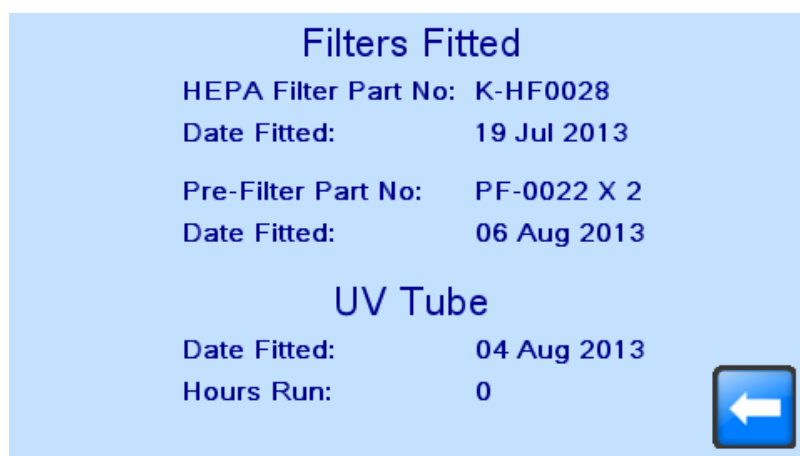Pressing the key returns to the previous screen without resetting.

INFORMATION SCREEN

Pressing the ⓘ key on the main screen will display the information screen below.


```
0.17
              06 Aug 2013 12:30:27
            Service Due: Aug 2014
      Date Of Last Service: 06 Aug 2013
     Hours Run Since Last Service: 0
          Total Hours Run: 10:45
            Serial No: VLF-109
        Commissioned: 07 Jul 2013
  ⓘ  Filter Information
```

Service information is reset by a Monmouth engineer during a service visit. When a service becomes due a warning screen will be displayed momentarily on start-up during the proceeding month.

Pressing the ⓘ key will display the screen below providing information on the filters fitted and UV tube life. The ⬅ key will return to the previous screen.


```
              Filters Fitted
  HEPA Filter Part No:  K-HF0028
  Date Fitted:          19 Jul 2013

  Pre-Filter Part No:   PF-0022 X 2
  Date Fitted:          06 Aug 2013

               UV Tube
  Date Fitted:          04 Aug 2013
  Hours Run:            0
```
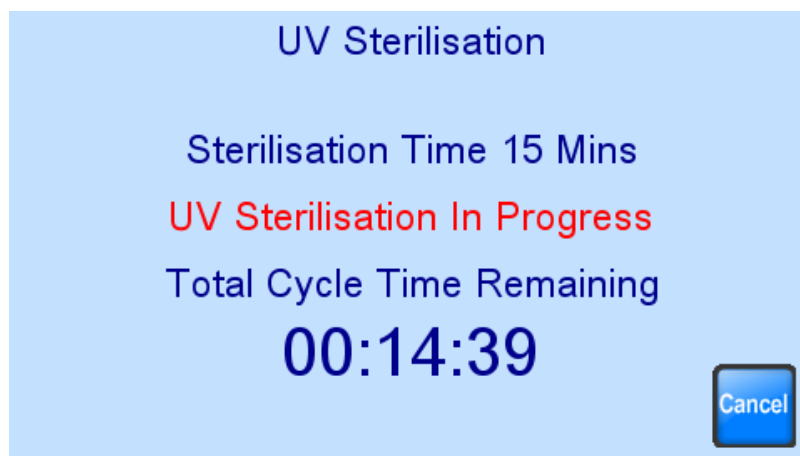
UV STERILISATION (if fitted)

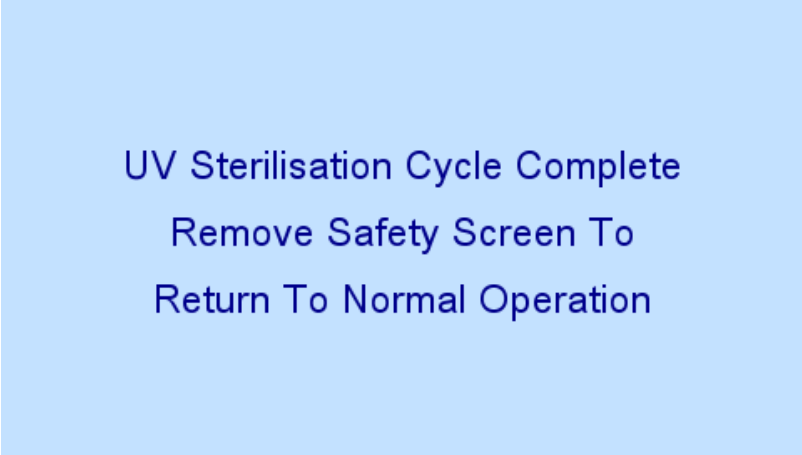Pressing the [UV] button on the home screen will display the screen below

The safety screen is interlocked with the UV sterilisation cycle and the cycle will not run if it is not fitted. Use the arrow keys to set the sterilisation time and cycle start delay if required.

When the [Start Cycle] button is pressed the screen below is displayed providing a countdown time to the end of the cycle.

If the safety screen is removed or the [Cancel] button is pressed the cycle will terminate and the normal running screen will be displayed

If the cycle is allowed to run to completion the screen below will be displayed

UV Sterilisation Cycle Complete

Remove Safety Screen To

Return To Normal Operation

SECTION 4

MAINTENANCE

The cabinet should be isolated from the electricity supply before carrying out any maintenance procedures.

FUSES
The main fuses are located in the mains inlet socket on the top of the cabinet. Remove the mains lead and withdraw the fuses using a small screwdriver. Always replace with the correct type and rating.

LED LIGHTING
The high efficiency, low voltage LED light tubes are fitted to the inside of the enclosure. They should provide many years of service without requiring replacement. Spare tubes are available from Monmouth Scientific and have the following part numbers:

Circulaire HLFT 900 - GS-01514
Circulaire HLFT1000 - GS-01539
Circulaire HLFT1200 - GS-01539
Circulaire HLFT1500 - GS-01540
Circulaire HLFT1800 - GS-01540

Care should be taken to ensure the tubes are fitted in the correct orientation with the red+ marking on the tube aligning with red mark on the fitting.

PRE-FILTER(S)
This is located on top of the cabinet and can be changed by removing the ten thumbscrews on the securing frame. Monmouth Pre-Filter part No: K-PF0022

MAIN HEPA FILTER
- Remove the screws securing the back panel and lift it clear.
- Remove the screws securing the filter clamp frame.
- The ULPA filter may now be withdrawn from the rear of the cabinet and a replacement fitted.

  Part Nos:
  > HLFT 900   - K-HF0139
  > HLFT 1000 - K-HF0140
  > HLFT 1200 - K-HF0141
  > HLFT 1500 - K-HF0142
  > HLFT 1800 - K-HF0143

- The replacement filter should be DOP tested prior to use and the airflow and alarm re-calibrated if necessary.

SECTION 5

SERVICING

An annual service is recommended to maintain optimum operating conditions and will include the following points

- Check / replace pre-filter
- DOP test the main ULPA filter
- Check airflow monitor and re-calibrate if necessary
- Check and record downflow velocity readings
- Check general condition of cabinet - glazing, hinges etc.
- Inspect electrical components, lighting, cables etc.
- Issue test report and airflow certificate.

For parts or service information:
Please contact Monmouth Scientific on: +44 (0) 1278 458090

Monmouth Scientific Ltd
Units 5 & 6 Kilnside
East Quay
Bridgwater
Somerset TA6 4DB
Email: info@monmouthscientific.co.uk