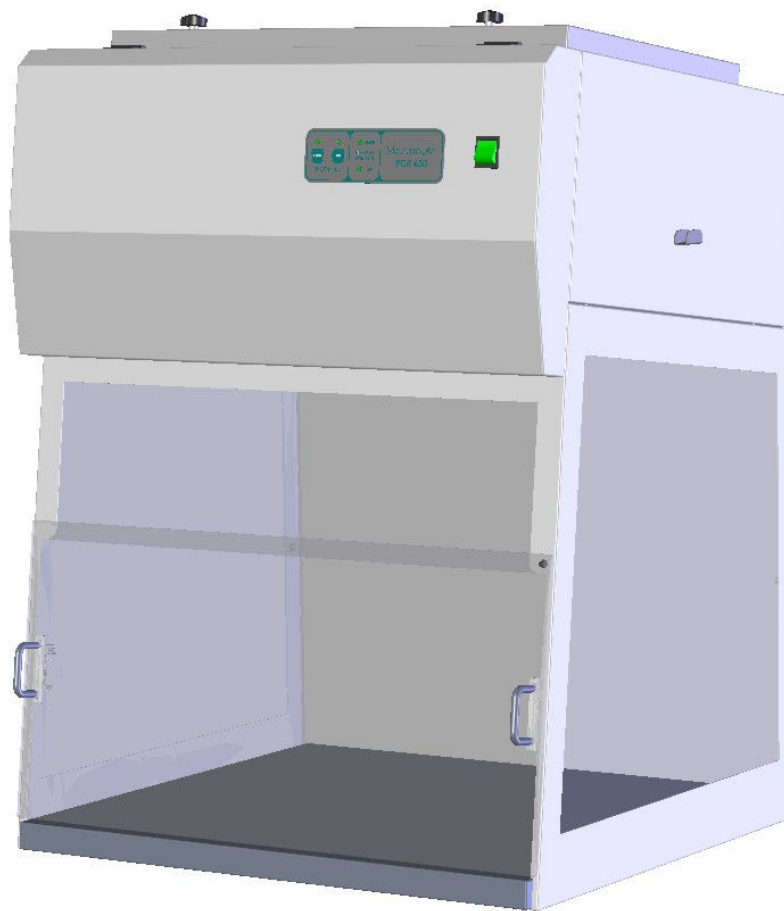


PCR650

OPERATING AND MAINTENANCE MANUAL



Monmouth
Scientific

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Warning

This system 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 Monmouth PCR Cabinet provides optimum clean air characteristics for the processing of Polymerase Chain Reaction (PCR).

The cabinet significantly lowers the risk of cross contamination of your PCR sample by providing a curtain of Class 100 clean air (Laminar Flow) over the entire worksurface. To further reduce the risk of cross contamination between samples, the PCR cabinet is supplied with a time controlled UV light to sterilise the working area between samples. 6 individual pre-set time functions are provided as standard.

	<i>Circulaire PCR Cabinet</i>
External Dimensions	650mm Wide 550mm Deep 900mm High
Internal Dimensions	630mm Wide 500mm Deep 500mm High

SECTION 2

INSTALLATION

- The cabinet should be sited in a draught free position

ASSEMBLY

The cabinet is supplied fully assembled with the main HEPA filter and pre-filter fitted.

TESTING / COMMISSIONING

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

SECTION 3

OPERATION

STARTING THE CABINET

The cabinet is switched on by the green rocker switch to the right of the control panel. If the safety screen is fitted the fluorescent light will come on and the fan will remain off. The fan will start when the safety screen is removed.

UV CYCLE OPERATION

TO START A UV CYCLE THE SAFETY SCREEN MUST BE IN POSITION.



STARTING A UV STERILISATION CYCLE

Fit the Safety Screen and turn the cabinet on.

Press the UV button on the membrane panel to select the duration of the cycle.

- 1 Press = 5 minutes
- 2 Presses = 10 minutes
- 3 Presses = 15 minutes
- 4 Presses = 20 minutes
- 5 Presses = 25 minutes
- 6 Presses = 30 minutes

The UV pre-set timed cycle will start, the fluorescent light will switch off and the UV lamp will switch on. The red UV warning light on the membrane panel will flash to indicate the cycle selected – (1 flash = 5 minutes, 2 flashes = 10 minutes etc.)

When the UV timing cycle is finished, the UV light will switch off, the UV warning light will flash slowly and the audio will beep every 4 seconds to inform the cycle has finished.

A cycle may be interrupted at any time by pressing and holding the UV button. The audio beep will stop and the cabinet will return to normal mode.

If the night door is removed during the UV cycle, the function will be cancelled. The UV light will switch off, the fan and fluorescent light will switch on and the cabinet will return to normal mode ready for use.

UV TIMER ALARM

The UV timer is pre-set to alarm after a 1000 hrs of tube operation. The tube should be replaced at this interval. Although the blue light will still be visible the UV power from the tube will be diminished.

When the tube operation exceeds the pre-set limit, during a UV cycle an audio beep will be observed every minute.

To reset the alarm timer, switch the cabinet off, press and hold the “LIGHT “ and the “ UV “ button and switch the cabinet on again. When an audio beep sounds release the buttons. The counter will be reset and the system return to normal mode.

LOW AIRFLOW ALARM

The airflow is continuously monitored while the cabinet is running. An audible alarm will sound if the airflow drops below a preset level and the red low airflow warning light will flash on the control panel. This is an indication that the Pre-Filter requires replacement – see section 4. If changing the pre-filter does not cancel the alarm the cabinet requires re-calibration or a new main HEPA filter.

SYSTEM MONITOR

The UV timer control circuit has a monitoring component which will indicate a system failure. All red warning lights will flash on and off, a continuous audio alarm will sound and the fluorescent light will be switched off.

If this occurs the cabinet is unsafe to use. Contact Monmouth Scientific for further advice.

SECTION 4

FILTERS

PRE-FILTER - CHANGING

The Pre-Filter should be changed when the low airflow alarm is activated. Remove the thumbscrews on top of the cabinet and lift off the pre-filter retainer. Replacement pre-filters may be obtained from Monmouth Scientific – Part No PF-0023

MAIN HEPA FILTER - CHANGING

The HEPA filter should be changed by trained personnel. Contact Monmouth Scientific for advice.

SECTION 5

MAINTENANCE

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

FUSES

Always replace fuses with the correct type and rating:

The main fuses (5A Type T) are located in the mains inlet socket at the back of the cabinet. Remove the mains lead and withdraw the fuses using a small screwdriver.

The fan fuse (3.15A Type T) is located on the control circuit board and may be changed by removing the two securing screws from inside the cabinet and hinging the control panel open.

LIGHTING

The fluorescent light tube can be accessed from inside the cabinet. The starter is located inside the control panel and may be changed by removing the two securing screws from inside the cabinet and hinging the control panel open. The fluorescent light fuse (2A Type F) is located on the control circuit board.

UV TUBE

The UV tube can be accessed from inside the cabinet. The starter is located inside the control panel and may be changed by removing the two securing screws from inside the cabinet and hinging the control panel open. The UV light fuse (2A Type F) is located on the control circuit board.

AIRFLOW

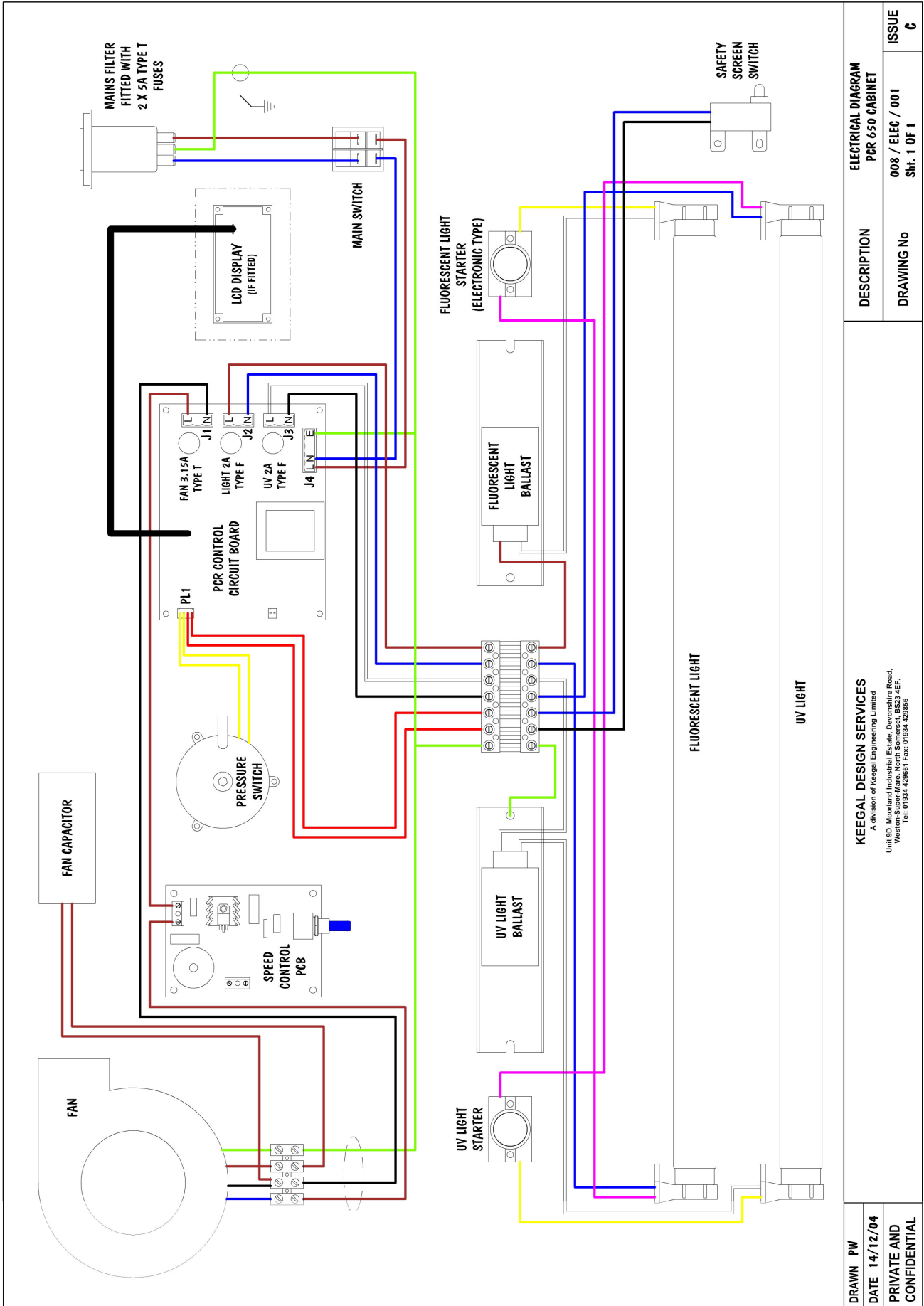
WARNING: This procedure requires adjustment of live circuits and should only be carried out by a qualified person.

The airflow should be set using a calibrated rotating vane anemometer. The fan speed is adjusted by turning the blue potentiometer on the speed control circuit board inside the control panel. The speed should be set to achieve a downflow of 0.3 – 0.35m/sec. at 100mm above the lower edge of the front fixed glazing panel.

LOW AIRFLOW ALARM

1. Set the airflow to the correct speed with new pre-filters fitted.
2. Switch the cabinet on and place a piece of paper or similar material against the pre-filter inlet grille covering all but 14 of the 84 holes to simulate a partially blocked filter.
3. Unscrew the pressure switch adjusting screw until the low airflow warning LED comes on. Screw in until the LED goes out then slowly unscrew until the LED comes on again.
4. Remove and replace the paper several times to check operation of warning LED / audio.

CIRCUIT DIAGRAM



DRAWN PW DATE 14/12/04 PRIVATE AND CONFIDENTIAL	KEEGAL DESIGN SERVICES A division of Keegal Engineering Limited Unit 9D, Moorland Industrial Estate, Devonshire Road, Weston-Super-Mare, North Somerset, BS23 4EF. Tel: 01934 429861 Fax: 01934 429856		ELECTRICAL DIAGRAM PCR 650 CABINET 008 / ELEC / 001 Sht. 1 OF 1	ISSUE C
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SECTION 6

SERVICING

An annual service is recommended and will include the following points:

- Check / replace pre-filter
- Check airflow monitor and re-calibrate if necessary
- Check safety interlocks and alarms
- 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**

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