

CIRCULAIRE 650FDS

**FILTRATION FUME CABINET
FORMALIN DISPENSING UNIT**

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:
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SECTION 1

DESCRIPTION OF THE CABINET

The Circulaire 650 Formalin dispensing cabinet is designed to provide operator and environmental protection. The cabinet provides an inflow of air $>0.5\text{m/sec}$ through the working aperture to provide operator protection. The contaminated air is then passed through electrostatically charged pre-filters to remove particulate and then through Activated Carbon main filters to remove chemical contaminants before exhausting the air back to the laboratory.

	<i>Circulaire 650</i>
External Dimensions	650mm Wide 600mm Deep 1100mm High
Internal Dimensions	630mm Wide 550mm Deep 630mm High

The cabinet is mounted on its own purpose built stand with integral stainless steel spillage tray and formalin dispensing system.

The cabinet is fitted with an Activated Carbon filter FORM grade for absorption of formalin fumes.

See the section on Filters for filter changing instructions.

SECTION 2

ASSEMBLY

The Cabinet may be delivered fully assembled or in sections. If assembly is required observe the following instructions:

- Lift the enclosure onto the lower cabinet and secure with the 4 screws provided
- Slide the stainless steel worksurface into the enclosure. – It may be necessary to remove the 3 lower side glazing securing screws on one side of the enclosure to aid assembly. The screws should be replaced when the worksurface is in position
- Connect the power inlet to the rear of the lower cabinet
- Fit the main carbon filter – see section 4
- The cabinet is ready for use

INSTALLATION

- The cabinet should be sited in a draught free position
- The cabinet is recirculating and requires no connection to ductwork
- The cabinet is supplied with the main filter fitted.
- Check the pre-filter is in place by rotating the small plastic catch located inside the enclosure, which will allow the pre-filter retaining frame to be lowered.
- Connect the cabinet to a 13A outlet socket.

TESTING / COMMISSIONING

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

THE CABINET MUST BE TESTED EVERY 14 MONTHS TO COMPLY WITH C.O.S.H.H REGULATIONS.

OPERATION

The cabinet is started by the illuminated rocker switch on the control panel.

FORMALIN DISPENSING

Place the container of Formalin to be dispensed inside the lower cabinet and the pump inlet hose into the neck of the container.

Pressing the red button on the fascia panel of the lower cabinet (or using the optional footswitch) will dispense Formalin from the swanneck outlet inside the enclosure.

NOTE: site safety officer prior to starting work should approve Operating procedures.

SECTION 3

FILTERS

Filters concentrate dust, pollutants etc. and care must be taken when changing filters.

IMPORTANT: Personal Protective Equipment must be worn when changing filters including gloves and particulate face mask.

PRE-FILTER – CHANGING

This may be carried out with the cabinet running to provide additional protection to the operator.

- Rotate the small plastic catch inside the enclosure which will allow the pre-filter retaining frame to be lowered and the filter replaced.

MAIN CARBON FILTER – CHANGING

A FORM grade filter must be fitted to this model for absorption of formalin fumes. Contact Monmouth Scientific for information if required.

- The cabinet should be turned off whilst changing the main Carbon Filters and the mains cable un-plugged.
- Open the front control panel by removing the two securing screws and disconnect the airflow sensor.
- Close and secure the front cover.
- Remove the pre-filter (See Pre- Filter changing procedure above)
- From inside the lower enclosure remove the four screws securing the fan module.
- Lift the fan module off the lower enclosure to expose the carbon / HEPA filter.
- Remove the filter and seal in a marked bag for disposal.

Fit the new filter checking the seals for integrity and re-assemble the cabinet.

MAXIMISING FILTER LIFE

Handle minimum volumes of chemicals

Minimise surface area of exposed chemicals to reduce evaporation rates

Cover containers as far as practical

Do not boil off large volumes of chemicals

Minimise use of heat

Acids should be at room temperature and covered as far as practical

FILTER FOR C650 FORMALIN DISPENSING SYSTEM

A FORM grade filter must be fitted to this model for absorption of formalin fumes.

CARBON FILTER EFFICIENCIES

Typical filter efficiencies are >99% and this efficiency is maintained for most of the filter life. Filters should be changed when efficiency has reduced to below 90%.

ABSORPTION CAPACITIES

Circulaire cabinets have very large filter capacities, with a typical value of >30% for hydrocarbons. The cabinet has the following nominal absorption capacities:

Model	Carbon Weight	Hydrocarbon capacity at 30% absorption
Circulaire C650	1 X 14Kg	4.2Kg

Impregnated filters have different densities and filter capacities. Contact Monmouth Scientific for absorption capacities for different applications.

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. Fuses for the fan and light are located on the power supply PCB inside the electrical enclosure on the inside of the front cover. Remove the cover screws to access the fuse holders. **Always replace fuses with the correct type and rating.**

LIGHTING

Remove the securing screws and open the front panel to gain access to the fluorescent tube. The starter is located inside the fitting.

CALIBRATION OF THE LOW AIRFLOW ALARM

This requires the use of a calibrated Ø100mm rotating vane anemometer and should be carried out by a trained service engineer.

- 1) Place the head of the anemometer in the centre of the aperture supported by a laboratory stand.
- 2) Open the front cover and reduce the fan speed to achieve a face velocity of 0.35m/s by rotating the potentiometer on the speed control PCB.
- 3) Turn off the cabinet and restart whilst pressing the  key.
- 4) The alarm warning lights will flash alternately while in calibration mode. When the airflow has stabilised to around 0.35m/sec. Press the  key to store the set point.
- 5) Reset the fan speed to achieve 0.55m/s.
- 6) Check operation of the low airflow alarm by raising the lower glazing panel. The alarm should sound when the panel is raised and stop when the panel is lowered.

SECTION 5

SERVICING

An annual service is recommended and testing is mandatory under C.O.S.H.H regulations and will include the following points:

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

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