



**Manufactured
in the UK**



Operational Safety Log Book

Ducted Fume Cupboards

**Please Read And Complete The Information In This Booklet To
Comply With COSHH Regulations**

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Fume Cupboard Information

Establishment	
Employer	

Address	
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Make and Model	
Serial Number	

Location	
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1.0 - Introduction

This operational safety log book is provided to enable you to record the necessary safety and maintenance data to comply with Section 6 of HSE Health and Safety at Work etc Act 1974 and COSHH Regulation 9. Additionally, use of this log book is in accordance with CLEAPSS G9 Fume Cupboards in Schools document (formerly DfEE Building Bulletin 88) and British Standard EN 14175 – Fume Cupboards.

1.1 The Reason For Regular Safety Checks And Maintenance

The Control Of Substances Hazardous to Health Regulations 2002 (COSHH) dictates that it is a requirement *"that equipment to control exposure is maintained in an efficient state, in efficient working order, in good repair and in clean condition"*

The Airone X and XP Range of Recirculatory Filtration Fume Cupboards is designed to offer the highest degree of operator protection from harmful concentrations of toxic vapours, fumes and particles. In order for maximum containment and protection to be possible, the fume cupboard must be monitored and maintained.

1.2 How Often Should The Fume Cupboard Be Monitored

The Control of Substances Hazardous to Health (COSHH) 2002 regulations dictates that fume cupboards are to be maintained in effective and efficient working order and to be subject to inspection and testing **at least every 14 months** or more frequently when risk assessments identify a high risk of exposure.

In addition to this, we recommend carrying out visual inspections of the fume cupboard on a regular basis. A suggested checklist of inspection can be found in Annex A at the back of this booklet.

Airflow monitoring should be carried out periodically so that any changes in performance are easily recognised, explanation on how to do this can be found in section 3.1

We recommend completing the Fume Cupboard Test Summary Sheet (Annex B) to allow for easy recognition of the fume cupboard status at a glance. This log book and summary sheet should be kept with the corresponding fume cupboard (when possible) to allow all users access to the important information it contains.

1.3 Standards And Guidelines Applicable To Airone X and XP Range of Ducted Fume Cupboards

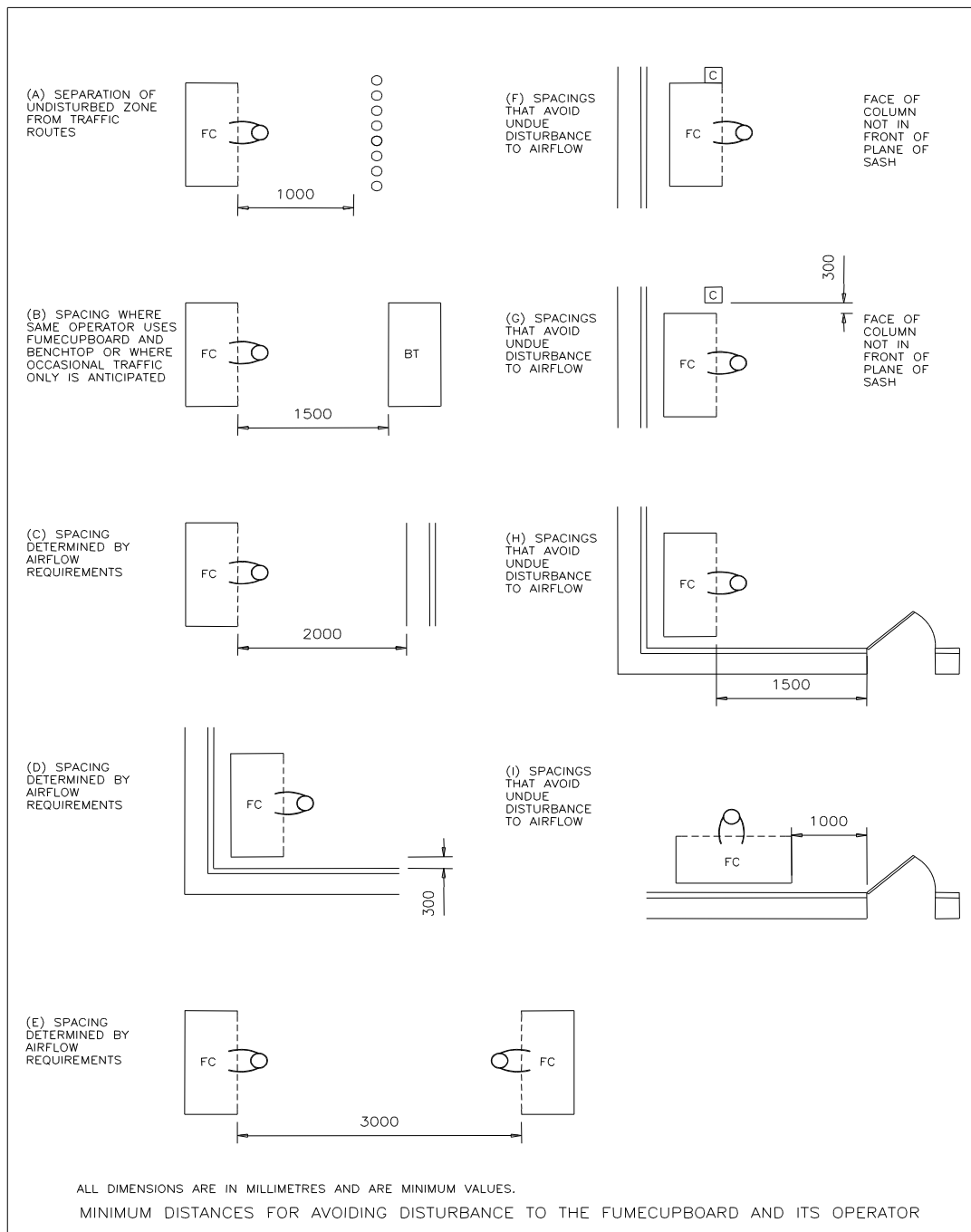
Standards and guidelines which are applicable to the Airone R range of Recirculatory fume cupboards are:

- BS EN 14175: 2006 - Fume cupboards – Part 5: Recommendations for installation and maintenance
- The Control of Substances Hazardous to Health (COSHH) Regulation 9
- CLEAPSS – G9 – Fume Cupboards in Schools (*Revision of DfEE Building Bulletin 88*)

2.0 – Location of Fume Cupboards

Fume cupboard location should be chosen to minimise any undue airflow disturbances to reduce the risk of contaminants leaving the fume cupboard and to reduce the chances on anomalous results when carrying out the following maintenance checks.

A general guide to suitable distances from common airflow disturbances is shown below and if any fume cupboards are found to be exposed to these conditions, it should be noted in this log book.





3.0 - Routine Maintenance Checks

The Control of Substances Hazardous to Health (COSHH) 2002 regulations dictates that fume cupboards are to be maintained in effective and efficient working order and to be subject to inspection and testing at least every **14 months** or more frequently when risk assessments identify a high risk of exposure.

The aim of the routine maintenance tests is to check whether the performance of the fume cupboard is maintained. The tests can be used to monitor the fume cupboard performance when empty (as it would have been during commissioning) or to monitor and differences in performance under normal working conditions (i.e. with equipment in the fume cupboard)

3.1 Face Velocity Test

The following test procedure is In accordance with CLEAPSS G9 – Fume Cupboards in Schools and BS EN 14175:2004 – Fume Cupboards

All ducted units must be fitted with a low airflow alarm (LAFA). This is an extremely useful safety feature which will indicate if the airflow drops below a pre-set safety level. Although this safety feature is fitted, it is still important to monitor the airflow manually as an additional check of the fume cupboard and LAFA.

Objective: To determine the face velocity of the fume cupboard as an indicator of blockages or fan malfunction and to ensure appropriate containment is achieved.

Equipment: A calibrated anemometer (Vane anemometer or hot wire anemometer) e.g. Airflow LCA301

Preparation:

- Arrange the ventilation in the room so that it is most unfavourable (windows and doors shut, other extraction units switched on)
- Remove all obstructions from inside the fume cupboard

Procedure:

1. Lift the sash window to a height of 400 mm and imagine the face of the fume cupboard to be divided into nine sections (additional grid sections can be added for units which are 1500 mm or 2000 mm)

A	B	C
D	E	F
G	H	I

2. Stand to one side or as far away as possible from the fume cupboard with the sensing head of the anemometer in the plane of the sash and take airflow rate readings at the centre of each of the 9 sections.
3. Record for each grid section the approximate average reading over a period of at least 10 seconds (applying any correction from the calibration chart supplied with the meter.)

Result: Record Airflow results in **Table 1** provided on pg 9

- Fail if any reading is below 0.3 m s^{-1}
- Fail if the variation is excessive (e.g. more than 30%) or if there is less variation (eg, 20%) but it tends to be at one side
- Fail if there is a significant drop in average face velocity compared to the commissioning face velocity



3.3 – Pressure Drop Test

An initial pressure drop test is carried out during the type testing and commissioning of a unit. Subsequent pressure drop tests are recommended by British Standard EN14175-4:2004 Section 6.4. However, we believe this is beyond the scope of in-house testing and recommend it is carried out by a qualified engineer.

3.4 – Airflow Visualisation Test

Objective: To obtain qualitative information of air flow and the interaction of the cupboards air flow with the room.

Equipment: Any visual Tracer, e.g. MSA smoke tubes, Gastec smoke tubes or Draegar smoke tubes.

Procedure:

- Release visual tracer gas about 400 mm away from the fume cupboard at low impulse (less than 0.2 m s⁻¹)
- Repeat this around the perimeter of the sash opening to determine any airflow disturbances e.g. by the room make-up air

Results:

- Record any abnormal air movements in **Table 3** below
- If particular disturbance is observed in one area, seek to rectify e.g. move equipment from inside the fume cupboard, close windows/doors etc

Table 3 – Airflow Visualisation Test

Date of Test	Airflow Disturbance (description and location)	Attempted Solution	Tested By



3.5 – Room Air Velocity Test

Objective: To quantify the air flow in the surroundings of the fume cupboard. Room air

Equipment: A calibrated anemometer (Vane anemometer or hot wire anemometer) capable of measuring omnidirectional air velocities down to 0.3 ms^{-1} or better.

Preparation:

- Arrange the ventilation in the room so that it is most unfavourable (windows and doors shut, other extraction units switched on)

Procedure:

- The measurements shall be performed in a vertical plane about 400 mm in front of the fume cupboards sash plane
- The anemometer is to be positioned at the 10 intersections of the lines in this plane:
 - Two horizontal lines approximately 900 mm and 1400 mm above floor level
 - Five vertical lines. Two aligned with the edges of the fume cupboard, 1 aligned with the centre of the fume cupboard and two final lines in between

Result:

- The mean speed in meters per second at each measurement point shall be calculated and the result rounded to the second decimal place.
- Room airflows exceeding 0.2 m s^{-1} can reduce containment of the fume cupboard and steps should be taken to rectify any measurements exceeding this. E.g. modification of any air handling unit in proximity
- Record the data in **Table 4**

Table 4 – Room Air Velocity Test

Date of Test	Average Airflows at each of the 10 positions					Tested by	Action Taken



3.7 - Fume cupboard visual inspection

The results of these visual inspections are to ensure the fume cupboard is maintained properly in order to extend the overall lifetime. There is no reason to fail a fume cupboard due to minor defects which do not pose health risks. However, if the fume cupboard is in a state of disrepair, we recommend contacting our service department to arrange a quote for repair or replacement parts.

Inspection Check	Notes
Is there any damage to the work surface or lining?	
Glazing: Is the glazing dirty or clouded? Are there any cracks or other damage?	
Baffle: Is the baffle clean and free from dust build up? Is there any damage to the baffle (cracks or splits)?	
Sash Mechanism: Is the sash functional (i.e. does not require excessive force to open or close & stays closed by itself) Is there any sign of damage to the sash cable?	
Sash Limits: Are there functional stops to limit the aperture to the correct maximum height? Are there functional stops to prevent the sash being closed completely?	
Services (electricity, gas, water, waste): Is there any corrosion or damage which may make the services unsafe? Check the drip cup and drain for signs of leakage or blockage Check the service connections are clean and free from damage (including any quick-connections and docking stations) Check that the light is fully functional	
Fan: (if appropriate and safe access is available) Check for excessive noise or any changes in noise since previous inspection (this could be a sign of a damaged fan or ductwork)	



Service & Maintenance

Safelab will contribute significantly in helping you achieve a safe, high performance laboratory. Our service personnel are trained to the highest standards and have intrinsic working knowledge of laboratory safety equipment ranging from fume cupboards (ducted and filtration) through to biohazard safety cabinets.

Our clients benefit because we have built a dedicated team of qualified engineers who provide:

- Answers to your technical queries quickly via telephone, e-mail or fax
- Professional safety & maintenance inspection
- Rapid response to equipment breakdown calls

Choosing Safelab as your service provider ensures that your laboratory equipment will be tested to comply with the relevant British and European Standards. Our engineers follow strict testing procedures which challenge the equipment's performance and proves whether it's safe for use. Should your equipment fail during testing we are able to supply approved replacement parts and repair the equipment quickly ensuring that safety levels are restored and optimum performance achieved.

We believe in giving our customers:

- Peace of mind
- Reliable high quality service
- Value for money

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Service & Maintenance

Filter Replacement

Safelab Service holds the position of being able to offer replacement filters for the majority of other manufacturers' fume cupboards, downflow benches, safety cabinets and laminar flow systems.

We have in-house experts who can offer a filter advice service if you are unsure about filter size, type or any other filter queries.

Service Programs

Safelab offer a choice of service programs because we understand you need flexibility in planning regular, routine inspections and maintenance visits that fit into your working schedule. Specialist testing is also provided for clients that need additional certification of their laboratory equipment's performance.

Free technical advice and support is available by phoning: 01934 421 340.

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