



**LEV Log # 60**

**LEV serial number:** Safety Cabinet 41426603  
**LEV Building location:** JBL (Joseph Banks Laboratory)  
**LEV Room location Floor:** First  
**LEV Room title** Tissue Culture Lab 4  
**LEV Room number:** JBL1E08  
**Planon Asset number:** 1000021362

**Schedule of Revisions**

Revision	Date of Issue	Details of Revision
Original	28/10/2015	

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## Introduction

Each LEV system, including fume cabinets has a separate log book. Depending upon the LEV system there may be more than one extractor hood, the log book is primarily for each motor and extractor fan or in the case of fume cabinets, each individual fume cabinet.

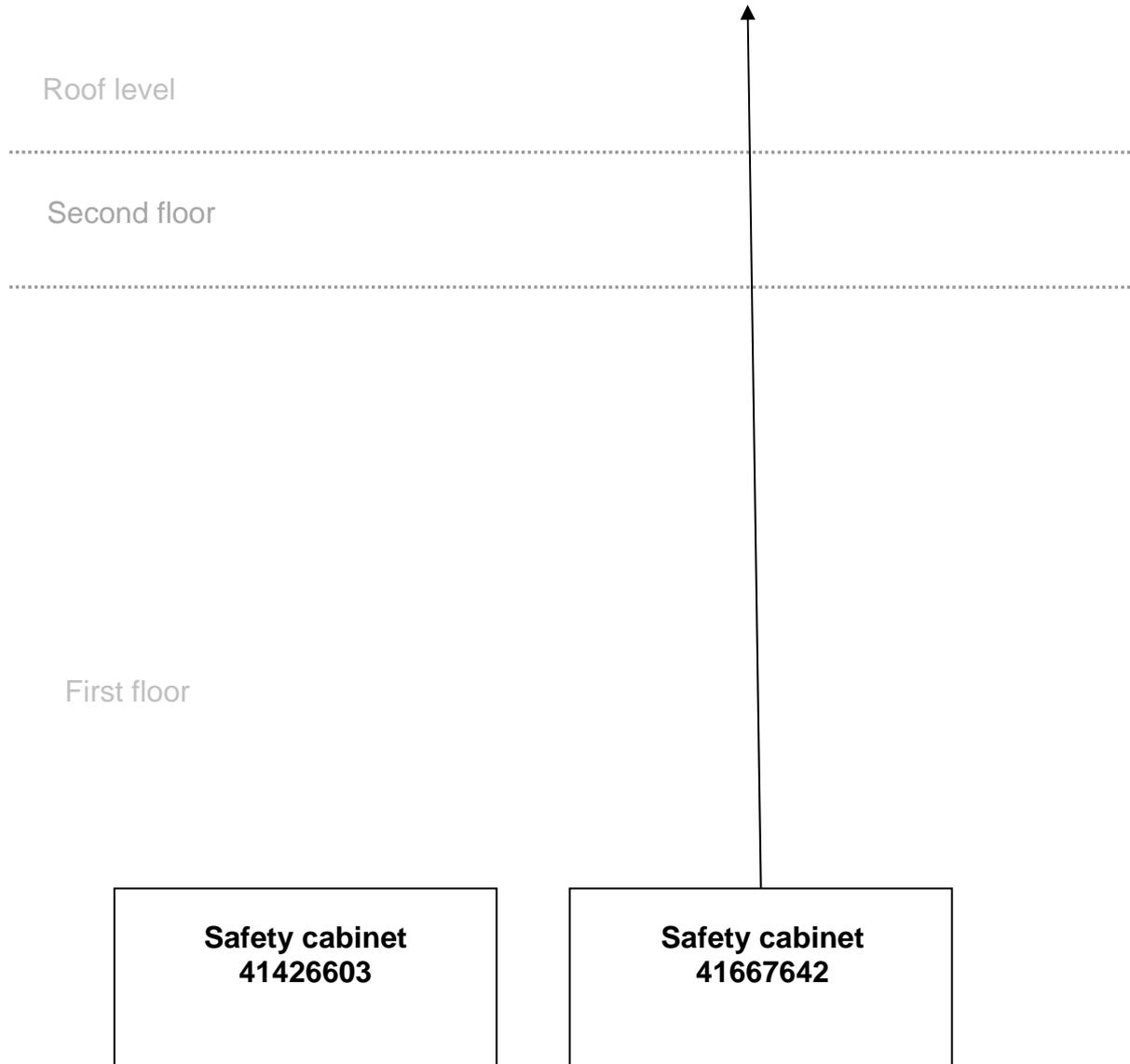
The log should be filled in on a weekly basis, the hours run at present until hours clocks are fitted are estimated and should always be rounded up to the nearest hour.

***The log book entry pages start at page 3, refer to guidance on pages 11 onwards***

### System technical information

<b>Manufacturer:</b>	Thermo scientific	<b>Model Number:</b>	S2020 1.2
<b>Year of Manufacture:</b>	2013	<b>Year of Installation:</b>	2014
<b>Fume Cabinet sash width (mm)</b>	980	<b>Area (m2)</b>	0.285
<b>Airflow meter fitted</b>	Yes	<b>Average face velocity air flow</b>	<b>0.35m/s</b>
<b>Electrical circuit number:</b>	FFEP1/10L3	<b>Distribution Box location:</b>	
<b>Voltage:</b>	240	<b>Kw/hr</b>	1.7 @ 7.3 amps
<b>Fan asset details</b>			
<b>Voltage:</b>	415	<b>Kw/hr</b>	
<b>Electrical circuit number:</b>		<b>Isolation point location:</b>	Local on roof
<b>Manufacturer</b>		<b>RPM</b>	
<b>Serial number</b>		<b>Amps</b>	
<b>Duct size</b>		<b>Duct material</b>	
<b>Motor asset details</b>			
<b>Manufacturer</b>		<b>Motor Type</b>	
<b>Serial number</b>		<b>Serial number</b>	

**System design/layout**



**JBLE08**

**Tissue Culture lab 4**

















## **User Instructions**

### **Operator's instructions**

The Control of Substances Hazardous to Health (COSHH) regulations require that a risk assessment must be carried out on all procedures used in laboratories, in order to eliminate or minimise risk. Work with substances that produce/generate toxic or harmful fumes, vapours or gases, dust or chemical aerosols, should be carried out in a fume cupboard in order to eliminate or reduce the risk of exposure to an acceptable level. Fume cupboards are not to be used for the containment of biological materials. Where such containment is required a microbiological safety cabinet must be used.

A fume cupboard is a means of containing or extracting hazardous fumes/vapours/aerosols away from the operator to be safely discharged to the atmosphere.

### **Before use checks**

- A safe operating procedure must be available including instructions for an emergency (such as a spill outside of the fume cabinet or a failure of the fume cabinet) and safe waste disposal. **HAVE YOU READ IT, DO YOU UNDERSTAND IT?**
- Ensure that the fume cabinet you are using is appropriate for the task.
- Fume cabinets should be tested and maintained annually, evidence that this test has been undertaken is the presence of a sticker fixed to the front of the unit, ensure this is present and in date.
- Confirm that the fume cabinet is working satisfactorily by a visual means, check lights, air flow gauge is in a safe zone and by means of a tissue paper strip in the opening. For high risk operations the air velocity must be measured using a vane anemometer. The reading must be recorded in this book in the appropriate box.
- Check for obvious surface contamination. Clean if necessary, to avoid adverse reactions with the chemicals you intend to use.
- Ensure that you have enough space to conduct your work safely and that all unnecessary items of equipment and chemicals not required in the process are removed.
- Ensure that all items required for the operation are available in the fume cabinet.

### **Preparing to use the fume cabinet**

- 1) Position equipment, apparatus, and materials in the centre and back of the cabinet to minimise disturbance to airflow. Where practical, place everything within the cabinet before starting operations.
- 2) Equipment in the fume cabinet should be kept to a minimum and sited at least 150mm (15cm) inside the front plane of the sash to ensure efficient containment. Also ensure that items are kept away from the sash opening to allow instant closure in an emergency.
- 3) Avoid placing large pieces of equipment in a fume cabinet, they spoil the aerodynamic flow and may reduce the containment of fumes. If their use cannot be avoided they should be raised up about 100mm (10cm) using lab jacks, in order to allow air flow to pass unimpeded across the work surface and exhaust from rear of fume cabinet.
- 4) The experimental materials must be sited at least 150mm (15cm) inside the plane of the sash to ensure efficient containment.

## During use

- a) Fume cabinets should be used with the sash as low as reasonably practicable as this gives the best containment of fume/vapour and helps contain any fire or explosion that may occur.
- b) Use the sash position to your advantage –
  - Fully open to provide access for setting up equipment
  - Partially open, to a comfortable work height when handling the material inside the cupboard.
  - Lowered as far as is practicable, when the process is in operation and your intervention is no longer required.
- c) Try to avoid sudden rapid movements in front of the cabinet. These can cause turbulence that may draw the airborne hazardous material out of the cupboard.
- d) Do not use naked flames as they will have a serious adverse effect on the air flow.
- e) Perchloric acid must not be used in a fume cabinet, unless fitted with a wash down facility, as this presents a risk of fire, consult the laboratory technician for advice.
- f) Chemicals must not be stored in a fume cupboard used for experimental work, they could escalate an accident.
- g) Hot plates must be kept to a minimum and be aware that they may adversely affect the airflow. If hot plates are used, these should be placed at least 100mm (10cm) from the side of the cabinet to avoid damage the cabinet structure.
- h) Any accidental spill of chemicals inside the fume cabinet should be cleaned up immediately (i.e. as soon as it is safe to do so).
- i) If any experiment is left running out of hours, a contact name and telephone number must be prominently displayed. Do not leave potentially hazardous work unattended.

## After use

- At the end of your experiment remove equipment and clean the surfaces, leave the fume cabinet in a clean, tidy and safe state.
- Dispose of waste in a safe appropriate manner as identified by the risk assessment.

## Maintenance and testing

Fume cabinets, ducts and associated extract equipment must be examined and tested within a 14 month cycle. In practice this is an annual check, instigated by the Estates and commercial facilities department, normally the compliance officer.

Suitable records of the examination/testing and any repairs must be kept for at least 5 years and in our case would be electronically recorded via the 'plan on' system, the log book would have a shortened version entered into it and a label should be affixed to the fume cabinet indicating the date of testing and the average face velocity.

The face velocity must exceed the guidance figure shown below dependent upon the severity of risk recorded on the risk assessment.

<b>Risk</b>	<b>Use of fume cabinet</b>	<b>Minimum acceptable Face velocity M<sup>3</sup>/s</b>
<b>Low</b>	Storage of low hazard, non flammable COSHH substances	<b>0.2</b>
<b>Medium</b>	Standard work with hazardous substances	<b>0.5</b>
<b>High</b>	Work with high risk or radioactive substances	<b>0.7</b>

Fume cabinets that are used on a daily basis should have the following tests carried out and recorded in this log book at least weekly.

- A visual check of the general state of the cabinet (cleanliness and serviceability)
- For new fume cabinets where there is automatic detection of low air flow, a visual and physical check to ensure that warning lights sash alarms and airflow gauges are working.
- For older fume cabinets that do not give any indication of low flow or other problems, it is recommended that the face velocities are measured at least on a weekly basis using a measuring vane anemometer (available from the lab technicians) and recorded in this log book. Any problem should be reported to the lab technician and the Estates and Commercial facilities office via the Zen desk fault reporting system. A tail of tissue paper or similar attached to the sash also provides a good visual indication of whether there is an airflow providing it is less than 7 days since the last recorded air flow measurement in the logbook.
- Weekly checks and face velocity measurements must be recorded in this log book which is to be kept close to the fume cabinet it refers to, this must be checked regularly by the departmental/line manager or chief laboratory technician/manager (as applicable). They must be kept available for inspection on demand.
- Problems with fume cabinets performance must be promptly reported as mentioned above, fume cabinets found to be below the flow advised rates for the type of use should be taken out of service pending repair.