

Fumigation Options	D	DRS	R	RRS	RD
• Integral formalin vapouriser with auto timer	O	S			
• Integral formalin vapouriser with auto timer and exhaust sealing valve			O	S	O
• Auto-purge to allow full automatic fumigation cycle	O	S	O	S	O
• 5m fumigant extract flexible duct including connection			O	S	
• Mobile carbon filter unit			O	O	
• H ₂ O ₂ vapour phase biodecontamination system including connections and sealing valves	O	O	O	O	O

Note:

When a formalin vaporiser is fitted to a recirculating (R or RRS) cabinet, it must be used either in conjunction with the 5m fumigant extract flexible duct including connection (if there is a window or fume cupboard nearby through which it can exhaust) or with the Mobile carbon filter unit.

Useful Information - Definitions	
BS EN 12469 2000:	ACDP (Advisory Committee for Dangerous Pathogens)
Microbiological safety cabinet (MSC): Ventilated enclosure intended to offer protection to the user and the environment from the aerosols arising from the handling of potentially hazardous and hazardous micro-organisms, with air discharged to the atmosphere being filtered.	Hazard Group 1: A biological agent unlikely to cause disease.
MSC Class I: Safety cabinet with a front aperture through which the operator can carry out manipulations inside the cabinet and which is constructed so the worker is protected and the escape of airborne particulate contamination generated within the cabinet is controlled by means of an inward airflow through the working front aperture and filtration of the exhaust air.	Hazard Group 2: A biological agent that can cause human disease and may be a hazard to employees; it is unlikely to spread to the community and there is usually effective prophylaxis or effective treatment available.
MSC Class II: Safety cabinet with a front aperture through which the operator can carry out manipulations inside the cabinet and which is constructed so the worker is protected, the risk of product and cross contamination is low and the escape of airborne particulate contamination generated within the cabinet is controlled by means of an appropriate filtered internal airflow and filtration of the exhaust air. NOTE A typical way of achieving this is by means of a unidirectional downward laminar airflow inside the cabinet and an air curtain at the front aperture.	Hazard Group 3: A biological agent that can cause severe human disease and presents a serious risk to employees; it may present a risk of spreading to the community, but there is usually effective prophylaxis or treatment available.
MSC Class III: Safety cabinet in which the working area is totally enclosed and the operator is separated from the work by a physical barrier (i.e. gloves mechanically attached to the cabinet). Filtered air is continuously applied to the cabinet and the exhaust air is treated to prevent release of micro-organisms.	Hazard Group 4: A biological agent that causes severe human disease and is a serious hazard to employees; it is likely to spread to the community and there is usually no effective prophylaxis or treatment available.

Essential reading:

Advisory Committee on Dangerous Pathogens: The management, design and operation of microbiological containment laboratories, HSE Books, 2001

Envair

York Avenue
Haslingden
Rossendale
Lancashire
BB4 4HX
United Kingdom

T: +44 (0) 1706 228 416

F: +44 (0) 1706 242 205

email: info@envair.co.uk

website: www.envair.co.uk

Product Sheet 101
April 2006



CLASS I MICROBIOLOGICAL SAFETY CABINET - BIO 1

Compact highly specified, high performance Class I microbiological safety cabinets

Applications

Handling of biological agents up to Hazard Group 3*.

* *ACDP Categorisation*

Benefits

- Carefully designed and extensively tested to provide assurance of microbiological safety when used with pathogens up to ACDP Hazard Group 3 (subject to proper siting, operation and maintenance)
- Easy to clean inside and out
- Easy to maintain
- Wide range of sizes, configurations and fumigation options to provide a solution for every laboratory and application

Standards Compliance

- BS EN 12469: 2000
- All HEPA filters H14 to BS EN 1822-1: 1998
- Electrical wiring designed to IEC 61010-1: 2001
- Installation to BS 5726: 2005 is recommended
- Air quality to ISO Class 5 (BS EN ISO 14644-1: 1999) and EC GMP Grade A for a high level of product protection

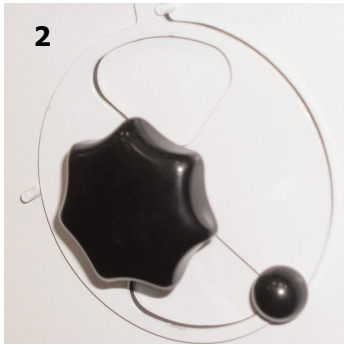


Principal Design Features

- Clean and attractive compact design in stainless steel construction, white polyester coated (outside only)
- Smooth internal and external surfaces and radiused internal corners for easy cleaning
- Very high levels of retention efficiency (operator protection)
- Integral double HEPA filtration on recirculating models
- Prefilter for extended HEPA filter life
- Barless toughened glass front visor (edge protective strip only)
- Self-sealing light-weight night door/closure panel for safe fumigation
- Comprehensively alarmed and interlocked for safety
- Easy to clean membrane control panel with comprehensive indicators
- Variable speed controlled fan for maximum filter life and optimum performance
- Fast and easy set-up and maintenance with all access from front of cabinet
- Built in BMS (Building Management System) and auto-damper signal outputs

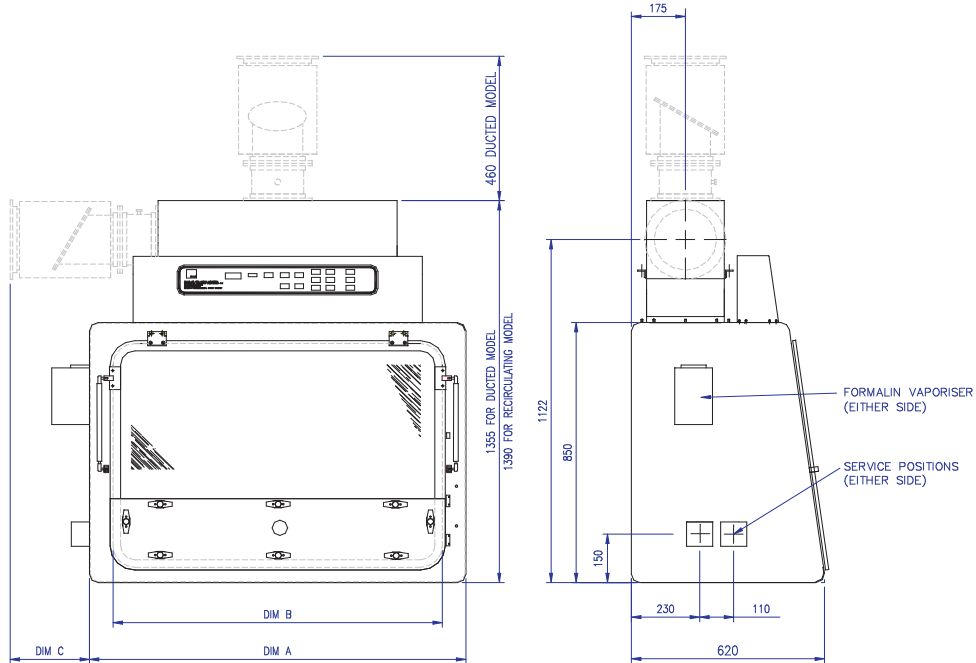


1. Formalin vapouriser (optional)



2. Venting valve

Dimensions



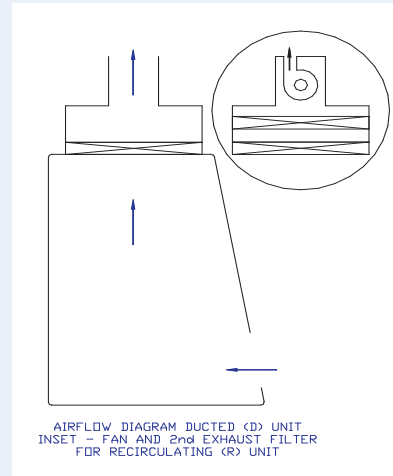
Bio 1+*	A (mm)	B (mm)	C (mm)	Weight		Max Power Consumption		Exhaust rate m ³ /s
				R (Kg)	D (Kg)	R (w)	D (w)	
1.0m	900	830	350	125	136	650	1800	0.174
1.2m	1200	1050	250	160	172	650	1800	0.2
1.5m	1500	1350	250	220	238	980	1800	0.26
1.8m	1800	1650	250	270	288	1000	1900	0.31

* Except DRS and RRS models. Drawing and dimensions of these models available on request

MODEL DESIGNATIONS

D	The Bio 1+ D is designed to exhaust HEPA filtered air to atmosphere via a dedicated ducting system and remote mounted extract fan.
DRS	The Bio 1+ DRS is similar to the Bio 1+ D but is generously sized and has additional features in order to accommodate Robotic Samplers and other equipment that might require aperture protection (operator protection).
R	The Bio 1+ R is designed to exhaust HEPA filtered air back to the laboratory via a dual in line HEPA filter and an integral exhaust fan.
RRS	The Bio 1+ RRS is similar to the Bio 1+ R but is generously sized and has additional features in order to accommodate Robotic Samplers and other equipment that might require aperture protection (operator protection).
RD	The Bio 1+ RD is designed to exhaust HEPA filtered air into a thimble extract system (provided by the client) via a dual in line HEPA filter, an integral exhaust fan and a special exhaust spigot. A thimble extract system takes the exhaust of a microbiological safety cabinet into a specially designed room extract in such a way that the volume of air taken out of the room remains the same whether the cabinet is working or not.

Airflow Diagram



Specification	D	DRS	R	RRS	RD
• Single exhaust HEPA filter to H14 (BS EN 1822)	S	S			
• Dual in line exhaust HEPA filter to H14 (BS EN 1822)			S	S	S
• Anti-blow back damper box, horizontal (LHS or RHS) or vertical discharge (please specify with order)	S	S			
• Integral exhaust fan box			S	S	
• Integral exhaust fan box and thimble spigot					S
• Hinged toughened glass visor, with gas strut supports for opening	S	S	S	S	S
• Light weight 100% sealable night door (closure panel)	S		S		S
• Night door interlocked with formalin/UV light for safety	S		S		S
• Light weight night door (closure panel) suitable for sealing with tape		S		S	
• Easy to clean touch control membrane on hinged lockable control access panel	S	S	S	S	S
• Solid state fan speed controller, selectable automatic fan speed control	S	S	S	S	S
• Latched audible /visible alarms for low and high airflow and for visor open, alarm mute and alarm test	S	S	S	S	S
• Digital inflow air monitoring, filter soil indicator, hours run counter	S	S	S	S	S
• Switchable auxiliary circuits for gas, UV and formalin vapouriser options, plus 3 spare switches	S	S	S	S	S
• Internal fluorescent lighting behind sealed acrylic panel	S	S	S	S	S
• Robotic sampler transfer chassis on roller and rail		S		S	
• Guide rails for loading and removal of robotic sampler		S		S	
• 1 No. RS 232 computer data point (LHS)		S		S	
• Electrical supply: 230v/50Hz/1Ph	S	S	S	S	S
• Support frame with adjustable levelling feet	O	S			O
• Support frame with lockable castors			O	S	
• 316L stainless steel polished internally and externally	O	O	O	O	O
• UV light	O	O	O	O	O
• Solenoid controlled fail-safe gas valve	O	O	O	O	O
• 13amp single splashproof (2 fitted LHS & RHS as standard on RS models)	O	O	O	O	O
• Service taps (i.e. Vacuum, Nitrogen, Compressed Air)	O	O	O	O	O

S Standard Feature

O Optional Feature