SAFEMATE ECO+

CLASS II MICROBIOLOGICAL
SAFETY CABINET

BIOAIR®

GREEN EVOLUTION IMPROVED

Safemate ECO+ Class II (Type A2) Microbiological Safety Cabinet Series further improves the best selling Safemate ECO series by using a new and more efficient motorblower technology and implementing a streamlined design that makes it more user-friendly.

As always at BioAir: **Your Safety is our Commitment.**

No compromise for Operator, Product and Environment. Protection guaranteed as required by EN12469:2000 standard.

NEW FEATURES

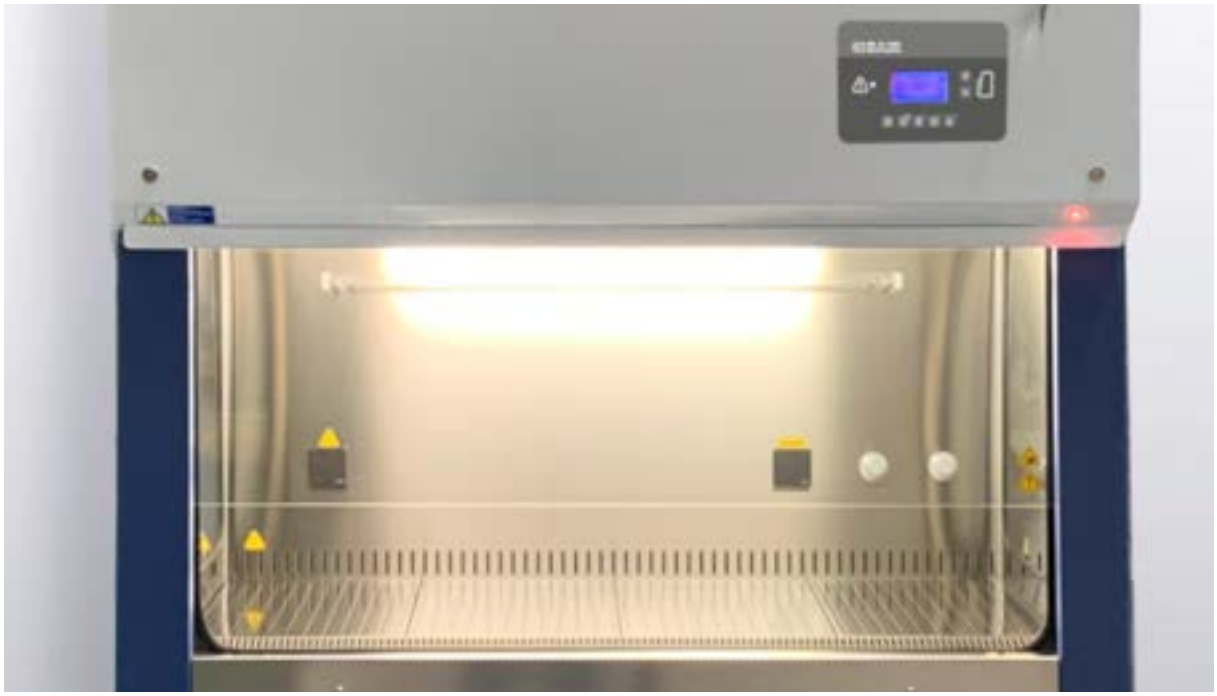
In BioAir we believe simplicity is key for a better experience. The new Safemate ECO+ takes this approach to its core by introducing a series of design improvements to make it easier to use the cabinet.

Tool-less front window cleaning
Removing the side protection carters to lift the front glass for cleaning is now easier with the new snap-in approach. No tools are required to perform this routine cleaning operation.

Easily installable taps
Quick&easy installation taps terminals make it for an easily configurable cabinet.

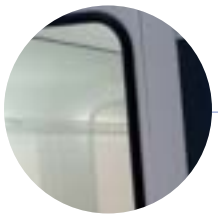
Reduced external depth
With an external depth lower than 800mm it is easy to fit the cabinet through any doorway.

Same-size sectors working surface
The sectors of the working surface are all the same size (300mm wide) making it easier to fit them in an autoclave for sterilization



SAFEMATE ECO+

CLASS II MICROBIOLOGICAL SAFETY CABINET



Silent operation: <49dB(A)

Tempered glass side windows to provide higher luminosity

Sloped front for the most comfortable access

Air/Aerosol tight electrical sliding sash with exclusive “yzy” movement

Solid liquid retaining work surface (optional)

Italian Quality

Our cabinet are completely made in Italy using components of italian or european origins! We use only the best for our cabinets!

German Certification

Our quality has been certified by the most prestigious body in Europe! All of our cabinets have been tested according to the most rigorous requirements to provide the best performance possible!

Utilities connection from the top

An elegantly crafted standard control panel and display, for your convenience

Integrated UV Lamp and Utilities

Anti obstruction “V” shaped front grille

A better world

As a manufacturer we feel that is our responsibility to reduce our ecological footprint to grant for a sustainable working place both economically and ecologically!

MAIN SPECIFICATIONS:

- Microprocessor controlled DC motorblower enhances energy efficiency, reducing operating costs
- Fully compliant with the EN 12469 safety standard as independently tested and certified by TUV Nord, the leading testing agency in Europe
- GS quality mark
- Air and aerosol tight electrical sliding sash with unique “YZY” movement
- Available in 0.9 m, 1.2 m 1.5 m & 1.8 m cabinet widths
- Fully stainless steel working area
- Sloping front aperture to maximise user comfort
- CE certification according to Machinery Directive 89/392/ EEC, 91/368/EEC, 93/44/EEC 93/68/EEC
- Fully compatible with hydrogen peroxide vapours sterilization

FEATURES FOR UNBEATEN SAFETY, QUALITY AND USABILITY:

- *Front grille with anti-obstruction "V" design.* This special front grille design guarantees that the air flow of the front barrier, primary containment and protection mechanism of the cabin, is not obstructed during the use of the latter as prescribed by the reference standard EN12469:2000, even without the use of uncomfortable armrests. This feature ensures the operational safety of the machine over the entire length of the work area without sacrificing comfort.

- *Active control system of the tension of the front glass handling belts.* This mechanism prevents the unrolling of the front glass support belts in case of obstruction to the movement of the glass, thus ensuring that accidental falls do not occur and reducing the risk of crushing during handling.

- *Front gasket and sealed closing mechanism.* The special front glass moving mechanism allows the complete sealing of the working area when in closed position. This ensures a cleaner work area when the machine is closed and reduces air leakage risks from the front glass when in operating position.

- *Single motor blower design.* The ventilation system with a single motor blower with electronic inverter guarantees an optimal performance with reduced consumption. Moreover, the airflow balancing is guaranteed by the plenum design and is independent of the state of filters clogging or of any electronic compensation mechanisms between different motors.

- *ECO Mode.* By engaging the ECO Mode the cabinet will lower the front sash and reduce the speed of the motorblower in order to minimize power consumption and noise while keeping the work area clean. This is ideal if you need to leave the cabinet on during the night or between working shifts.

HYDROGEN PEROXIDE READY

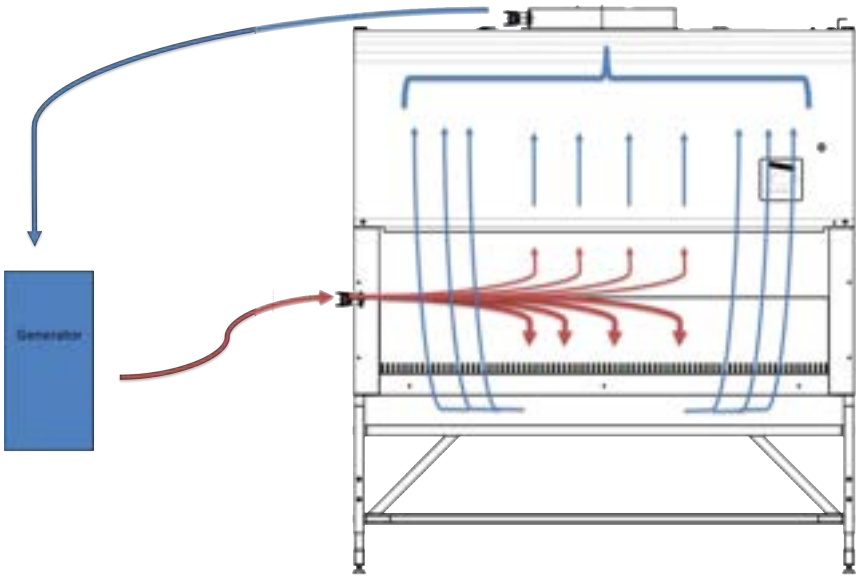
The optional camlock adapters allow the Safemate ECO+ to be connected to *any* hydrogen peroxide vapour generator.

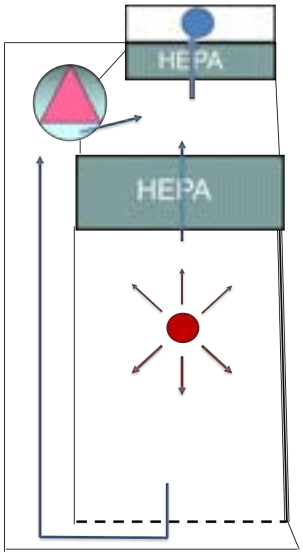
The system is composed by two adapters:
- an Inlet adapter installed in the side glass
- an Outlet adapter which is placed on top of the exhaust filter

The cabinet is fully compatible with hydrogen peroxide, allowing you to take advantage of this pharma-approved decontamination system.

MANAGING THE FLOWS

By creating a closed circuit with the cabinet the generator can control the inner pressure of the system, keeping it neutral or slightly below room pressure. This, along wiht the gasket seal on the front window and the use of a single removable part (the outlet adapter), highly reduces the risk of leakages in the room, making the use of tape or bags unneccesary.





WHY “ECO”?

By providing both economical and ecological advantages, the new Safemate ECO is a logical step forward in the evolution of the Safemate Series of cabinets.

	SAFEMATE 1.2	SAFEMATE ECO+ 1.2	DIFFERENCE
Cabinet power requirement	465 W	325 W	-140 W (-30%)
Motorblower only power requirement	339 W	215 W	-124 W (-37%)
Power consumption per year	1305 kWh	910 kWh	-395 kWh
Annual Operating Costs	221 €	155 €	-66 €
Heat output per year	4455.3 kBTU	3114 kBTU	-1341.3 kBTU
CO_2 Emission	656 Kg	458 Kg	-198 Kg

COMPARISON SETTINGS

- The needed power was measured for the motorblower only and for the whole cabinet in operational status (fluorescent lights on, Mode 1). No additional loads were connected to the cabinet power outlets
- Running costs have been calculated considering a usage profile of 9 hrs/day for 6 days/week (tot 2808 hrs/year)
- Average European electricity costs have been used to estimate the economic impact (0.17€/kWh)
- Thermal output in British Thermal Units (BTU) has been calculated multiplying the energy consumption in kilowatt hours by 3412.141
- CO_2 emissions were calculated considering 0.5 Kg/kWh.

STANDARD UTILITIES

ELECTRICAL EQUIPMENT	SIZE 0.9	SIZE 1.2	SIZE 1.5	SIZE 1.8
Automatic electronic airflow velocity control PCB	•	•	•	•
Main switch all position removable key	•	•	•	•
UVC Lamp (backwall mounted)	•	•	•	•
Motorblower (fan)	•	•	•	•
ECO Mode	•	•	•	•
Inverter	•	•	•	•
Fluorescent lamps	•	•	•	•
Sliding window electric motor	•	•	•	•
Auxiliary electrical service socket	•	•	•	•
2nd auxiliary electrical service socket	•	•	•	•
Voltage-free contact (VFC) outlet	•	•	•	•
Alarm mute connector (for service personnel only)	•	•	•	•

OPTIONS & ACCESSORIES

CODE	DESCRIPTION	NOTES	SIZE 0.9	SIZE 1.2	SIZE 1.5	SIZE 1.8
AC10000	Chest drawer	2 drawers – with castors	√	√	√	√
AS1L300	Fixed Support stand 0.9	h= 730 mm	√			
AS1L400	Fixed Support stand 1.2			√		
AS1L500	Fixed Support stand 1.5				√	
AS1L600	Fixed Support stand 1.8					√
AS1L310	Adjustable Support stand 0.9	h= 730 - 890 mm	√			
AS1L410	Adjustable Support stand 1.2			√		
AS1L510	Adjustable Support stand 1.5				√	
AS1L610	Adjustable Support stand 1.8					√
AZ1L010	Castors kit	With retractable foot	√	√	√	√
AP1K603	IV bar for 0.9	(includes 10 hooks)	√			
AP1K604	IV bar for 1.2			√		
AP1K605	IV bar for 1.5				√	
AP1K606	IV bar for 1.8					√
AZ1H613	Armrests		√	√	√	√
DT00003	Data output port	RS232	√	√	√	√
DUCTING AND ADDITIONAL FILTERS OPTIONS						
AZ1H124	Active extraction kit		√	√		
AZ1H126	Active extraction kit				√	√
AZ1H204	Passive transition adapter kit	Requires remote blower for extraction	√	√		
AZ1H206	Passive transition adapter kit				√	√
AZ1H304	Extraction open hood ("thimble")	Requires remote blower for extraction	√	√		
AZ1H306	Extraction open hood ("thimble")				√	√
LIGHTING OPTIONS						
AP2M003	LED Illumination system		√			
AP2M004	LED Illumination system			√		
AP2M005	LED Illumination system				√	
AP2M006	LED Illumination system					√

TECHNICAL DATA

DESCRIPTION	SIZE 0.9	SIZE 1.2	SIZE 1.5	SIZE 1.8
Part No. (no work surface)	LDM320N	LDM420N	LDM520N	LDM620N
SPECIFICATIONS				
Reference Standards:	IEC 61010-1:2010 / EN 61010-1:2010 IEC 61326-1:2012 / EN 61236-1:2013 / EN 12469:2000			
Electrical insulating/protection class [IEC 61140]:	I			
Mains supply voltage:	220-240 V- 50/60 Hz			
Required power line (W): (700 W service socket included)	1200	1200	1350	1750
*Absorbed power (W): (fan and light on only)	200	325	400	625
Window glass UVC radiations retention (%):	98			
Combustible gas fixture max pressure (mbar):	20			
Inert fluids/vacuum fixture max pressure (bar):	4			
Electrical service socket max current (A):	3			
WEIGHT AND SIZE				
Weight (Kg):	210	245	275	335
Overall size L x D x H (mm) (without support stand):	1075 x 795 x 1450	1380 x 795 x 1450	1685 x 795 x 1450	1990 x 795 x 1450
Front aperture size L x H (mm):	860 x 195	1165 x 195	1470 x 195	1775 x 195
Working space size L x D x H (mm):	925 x 580 x 700	1230 x 580 x 700	1530 x 580 x 700	1840 x 580 x 700
MATERIALS				
Main structure:	cold rolled steel, stove enamel coated RAL 9016			
Working space surface:	stainless steel AISI 304- SB finishing			
Front and side walls windows:	laminated safety glass			
PERFORMANCES				
Laminar Air Flow mean velocity [EN 12469](m/s):	0,35 ÷ 0,40			
Inflow Air Barrier mean velocity [EN 12469](m/s):	0,53 ±10%			
Exhaust Air flow rate (m^3/h):	330±10%	450±10%	500 ±10%	600 ±10%
Exhaust Air flow ratio (%):	30±10			
Apf - Aperture Protection Factor [EN 12469]: *(Retention efficiency at front aperture)*	≥1,0 x 10^5			
Working space air cleanliness class [EN 14644-1]:	ISO 5			
Illuminance [EN 12469] (lux):	>750			
** Sound level [EN ISO 3744] (dB[A]):	<49	<50	<54	<58
Vibration [EN 12469] (mm RMS):	<0,005			
Max increase inside cabinet in temperature from the ambient [EN 12469] (°C):	<5			
FILTERS				
Filters efficiency class [EN 1822-1]:	H14 ***			
Filters global MPPS efficiency [EN 1822-1](%):	99,995			
MPPS diameter [EN1822-1](µm):	0,1 ÷ 0,3			

** Measured in operating conditions. Power requirements with lights off at minimum airflow speeds (as per EN12469:2000), are about 35% less than those shown in table.*
*** Measured in operating conditions. Actual values at customer site may be different due to room structure.*
**** Efficiency higher than ULPA (Class F) as per IESP-RP-CC001.*

OVER 40 YEARS OF EXPERIENCE

BioAir has been manufacturing Biohazard and Laminar Air Flow cabinets since the early '70s, when the Gelaire® brand became the "gold standard" for airborne contamination control in laboratories all over the world.

A family of Recirculating Fume Hoods, based on the adsorption of toxic vapors by charcoal filters, was successfully introduced a few years later, thus positioning the Company as the only one seriously focused on the protection of its operators, in line with its inspiring motto "Your safety is our commitment".

This unique know-how and insistence on quality were continually developed, and 25 years on, under the name of BioAir®, the entire range was completely re-designed to meet the changing requirements of laboratory staff and increasingly stringent regulations.

At the top of the range are the Biohazard Cabinets (or Microbiological Safety Cabinets - MSC), the sum of the Company's know-how, certified to European standards (EN12469:2000) and also complying with Australian regulations. In other words, they are designed to provide technicians with the maximum level of safety when used according to GLP/GMP standards in their respective environments.

Today, in a facility occupying over 2,800 square meters, BioAir manufactures a full range of microbiological safety cabinets, laminar flow cabinets and fume cupboards, with over 15 models, many of which available in different sizes. Customized models and cabinets designed for specific applications can be produced by our team of skilled engineers and operators.

Decades of experience in sales and support for cell biologists have enabled BioAir to give the market an extremely innovative CO_2 Incubator, the Safegrow® PRO, the fruit of deep knowledge of the optimum conditions required for critical tissue culture methods and input from scientists engaged in growing cells in vitro.

The core business of the recently established BioAir® Industrial Team is the design, manufacturing and validation of customized equipment for the protection of the operator and of the product in pharmaceutical and healthcare production facilities.

This dedicated team will leverage the long experience and production capability acquired in laboratory LAF applications to offer complex equipment ranging from **dispensing/ sampling Downflow Booths** and **Clean Rooms** to **RABS** and **Isolators** for Regenerative Medicine and Advanced Cell Therapy.

PLUS BIOAIR

MADE IN ITALY

Our products are designed and produced in Italy, drawing on the long tradition and internationally recognized high quality of Italian manufacturing, to bring you the best equipment for your safety.

TRADITION AND EXPERIENCE

All our Microbiological Safety Cabinets were designed with your safety in mind and that's a task where even the smallest details count. Our team stems directly from the company that launched the market for MSCs in Europe, so we put a lot of history and experience into all our products, as well as care over those often-overlooked details that improve your safety.

WE CARE FOR YOU

Thanks to our network of highly trained dealers and distributors, our complete portfolio and long experience in the field, we will always be able to help you find the right product for your needs, no matter how unique they are. And our commitment doesn't stop there: our Service network will make sure your equipment always performs at its best.

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