

SAFEMATE ECO

CLASS II MICROBIOLOGICAL
SAFETY CABINET



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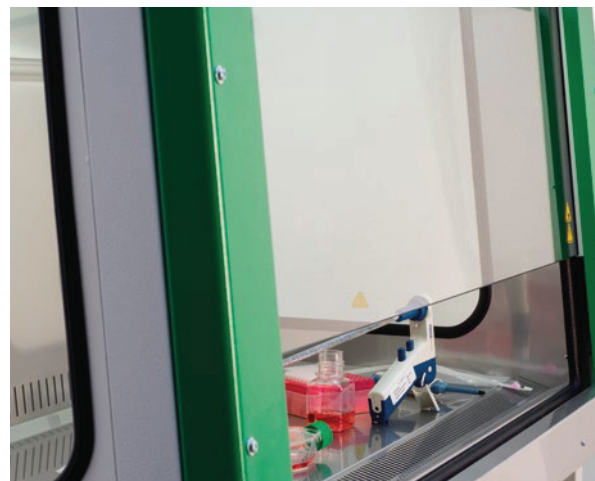


GREEN EVOLUTION

Safemate ECO Class II (Type A2) Microbiological Safety Cabinet Series evolves from our bestseller Safemate Series adding an eco-friendly approach: the new EC Motorblowers enhance significantly the efficiency of the Cabinet reducing operating costs and improving building energy balance thanks to the lower heat output.

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

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



EC TECHNOLOGY

EC stands for Electronically Commutated, and it takes advantage of the most modern technologies in order to improve efficiency reducing overall power requirements!

HERE ARE THE FACTS!

The New Safemate ECO Series requires 25% less Energy compared to a conventional AC Motor Cabinet. This implies that CO₂ emission is reduced by 250 Kg/year (average).

HOW DOES EC TECHNOLOGY BENEFITS YOU?

- It reduces your Energy Bill! Lower Power Consumption and Better Efficiency means money saving!
- It guarantees a lower Heat Emission compared to the conventional AC motor. This reduces running costs as well thanks to lowered building cooling load
- It saves the Planet! Lower Energy Consumption and Highest Efficiency means less CO₂ Emission and sustainable workflow.



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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



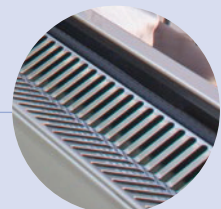
An elegantly crafted standard control panel and display, for your convenience



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 EC 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
- ✓ 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
- ✓ Highest air flow stability both in terms of transitional disturbances and of progressive filter clogging
- ✓ 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
- ✓ Semi-automatic fumigation cycle (EN12297 tested and certified).



FEATURES FOR UNBEATEN SAFETY, QUALITY AND USABILITY:

- ✓ Air and aerosol tight electrical sliding sash system with unique “YZY” movement ensures the containment of aerosol within the chamber when the front window is fully closed. The sash can be rapidly closed in an emergency situation
- ✓ Continuous monitoring of the front barrier airflow for the highest operator safety
- ✓ Permanent monitoring of HEPA filters life span
- ✓ Multilevel alarm system
- ✓ Control panel featuring a large digital high resolution display and soft touch keys
- ✓ Steel with a perforated work surface as a no cost option
- ✓ Front aperture inlet grille is a recessed V profile in the work surface to prevent flow restriction from the user’s arms / clothing
- ✓ Stainless steel internal surfaces with full access to exposed surfaces for ease of cleaning
- ✓ Cleanability Index C grade (EN12296 tested and certified)
- ✓ Sloping front aperture and rear chamber lining for optimal downflow air distribution across the work surface
- ✓ Self calibration cycle performed each time the cabinet is switched on
- ✓ Removable stainless steel three part work surface for easy steam sterilisation in an autoclave
- ✓ Interconnected UV and fluorescent lights
- ✓ C Shaped support stand for one man installation
- ✓ Side windows for maximum illumination of the working area.

GREEN TECHNOLOGY

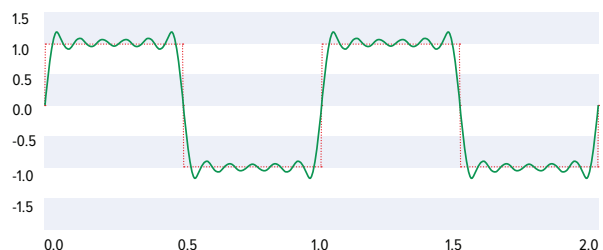
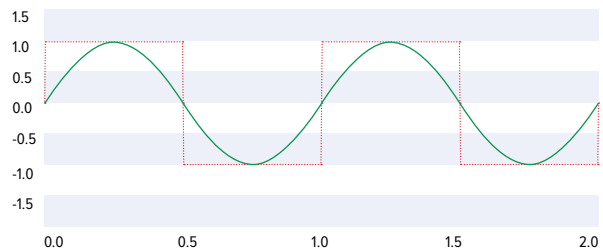
The new Safemate ECO uses a 3-Phase AC asynchronous motorblowers driven by a programmable electronic inverter with the most advanced 16khz technology: this allows direct control of the motorblower's speed obtaining higher overall efficiency and reduced noise and heat emissions.

Asynchronous 3-Phase AC induction motors with electronic control play a key role in reducing the use of Biological Safety Cabinet costs, offering a **modern solution to the problem posed by the requirement of good energy efficiency with low noise level and competitive price.**



ADVANTAGES OF ECM MOTORS

- **Reduced running costs:** energy consumption is reduced by about 30% with comparison to standard single-phase triac-controlled motors
- **Reduced heat output:** helps reducing the overall air conditioning costs
- **Stepless speed regulation:** extremely efficient and precise regulation of airflows
- **Reduced sound level:** thanks to the sinusoidal waveform, ECM motors are more silent than conventional single-phase AC motors
- **External electronics:** the inverter is not in the contaminated area allowing for easier maintenance than with DC motors
- **Long life:** reduce maintenance costs!



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	365 W	-100 W (-24%)
Motorblower only power requirement	339 W	239 W	-100 W (-29%)
Power consumption per year	1305 kWh	1024 kWh	-280 kWh
Annual Operating Costs	221 €	174 €	-47 €
Heat output per year	4455.3 kBTU	3497.17 kBTU	-958.13 kBTU
CO ₂ Emission	656 Kg	515 Kg	-141 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
- ✓ CO₂ 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)	•	•	•	•
2nd motorblower (fan)	NO	NO	NO	•
Inverter	•	•	•	•
Fluorescent lamps	•	•	•	•
Sliding window electric motor	•	•	•	•
Combustible gas solenoid valve	•	•	•	•
Tap for combustible gas line	•	•	•	•
Tap for inert fluids/vacuum line	•	•	•	•
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	CODE	SIZE 0.9	SIZE 1.2	SIZE 1.5	SIZE 1.8
AC10000	Chest drawer	2 drawers - with castors	√	√	√	√
AS1L310	Support stand 0.9		√			
AS1L410	Support stand 1.2			√		
AS1L510	Support stand 1.5				√	
AS1L610	Support stand 1.8					√
AZ1L010	Castors kit	With retractable foot	√	√	√	√
AP1K603	IV bar for 0.9		√			
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						
ACMOT12	Active extraction kit with additional charcoal filter		√	√		
ACMOT15	Active extraction kit with additional charcoal filter				√	
ACMOT18	Active extraction kit with additional charcoal filter					√
AZ1A200	Passive transition adapter kit		√	√		
AZ1B200	Passive transition adapter kit	Requires remote blower for extraction			√	
AZ1C200	Passive transition adapter kit					√
AZ1A300	Extraction open hood ("thimble")		√	√		
AZ1B300	Extraction open hood ("thimble")	Requires remote blower for extraction			√	
AZ1C300	Extraction open hood ("thimble")					√

TECHNICAL DATA

DESCRIPTION	SIZE 0.9	SIZE 1.2	SIZE 1.5	SIZE 1.8
Part No. (solid work surface)	LDD2200	LDE2200	LDF2200	LDG2200
Part No. (perforated work surface)	LDD2201	LDE2201	LDF2201	LDG2201

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)	270	375	430	650
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):	230	260	300	360
Overall size L x D x H (mm) (without support stand):	1075 x 840 x 1450	1380 x 840 x 1450	1685 x 840 x 1450	1990 x 840 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 7035
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.



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