Safemate™ EZ Series

MICROBIOLOGICAL SAFETY CABINETS

- Fully EN12469 compliant
- State of the art microprocessor control system.
- Large digital display
- Air and aerosol-tight sliding sash, electrically operated by finger touch
- Alarms for low air flow and wrong front window position
- Sloped front and back wall for the most comfortable access
- Front access for filter maintenance and service
- C-shaped support stand with adjustable height
- Easy retrofit option kits
- HPV compatible for sterilization

BioAir S.p.A. - Tel.: +39 0382 6672.1
www.bioair.it - info@bioair.it
Numero REA: MI-2577880
Partita IVA e Codice Fiscale: 11078210967
Cap. Soc. Euro 3.000.000 i.v.
Sede Legale: Via Pagano, 61 - 20145 Milano - Italy
Sede Operativa: Via Lombardia, 12 - 27010 Siziano (PV) - Italy

Safemate EZ Cabinets are supplied in two different sizes (1.2mt and 1.8mt).
These last generation Microbiological Safety Cabinets Class II type A2, have been designed according to the most stringent safety standards (EN12469-2000).
The internal design, the air flow aerodynamics and monitoring, the built-in safety devices, and the very accurate manufacturing, guarantees the highest performances at the most stringent safety levels, as specified by EN12469 standard.
High intrinsic biological safety, combined with impressively competitive prices, gives the end user a state-of-the-art cabinet accessible to every budget, that only experienced European design and accurate quality manufacturing, can provide.

The EZ series sets a new standard for entry level cabinets combining a very attractive price with a full range of comfort options that were only available in more expensive cabinets.

Main specifications

- Fully EN12469 compliant
- Microprocessor controlled motor blower, with volumetric sensor for exhausted air flow monitoring
- State of the art Microprocessor control system offering:
    - Large screen monitor.
    - Automatic control of preset airflow volumes.
    - Sliding sash window with smart control.
    - Permanent monitoring of HEPA filters life span.
    - Alarms. Multilevel alarms, with redundancy functions.
    - Permanent display of working conditions.
    - High air flow stability both in case of transitional disturbances or to progressive filter clogging
    - Continuous monitoring of front barrier air flow to guarantee operator safety
    - Low barrier alarm
    - Power failure alarm
- Volt-free contact for remote monitoring of exhaust fan.
- Automatic reset of initial conditions in case of power failure
- C-shaped support stand with adjustable height for easy *one-man installation* procedure

Mechanical and functional specifications

- 5° Sloped front design to increase operational comfort. Sloped back side of the working chamber for the best down flow distribution
- Utilities inlets from the top of the cabinet.
- Stainless Steel internal surfaces with SB finishing (including spillage tray). Solid or perforated work surface (divided in sectors) and "V" shaped anti obstruction front grill.
- Electrically operated sliding multilayer safety glass window (max opening at 120°)
- Comfortable 200mm front opening
- Easy to install retrofit options through lateral sides.
- Exposed exhaust HEPA filter for easy visual integrity check.
- H14 class High Efficiency Particulate Air filters with 99.999% efficiency on .3micron particles (most penetrating particle diameter) (Efficiency >= 99.995% on 0.1-0.2 micron particles MPPS as per EN1822-1)

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- Both exhaust and Main Filters are equipped with a micromesh membrane located downstream which acts as airspeed equalizer expansion plenum, as well as a clear indicator of filter damages.
- Filter change and maintenance from the front of the cabinet.
- Exhaust transitions easily installable.
- Key operated. The key can be removed when the unit is in SAFE mode, to avoid unwanted operation. In case of power failure, the cabinet is re-set to original working conditions.
- Self-calibration cycle performed when cabinet is switched on.
- Visual display of SAFE conditions. Pre-warning before actual alarm condition is reached (visual and acoustic alarms)
- Soft touch control with keys for standard service utilities. Interconnected UV and LED lights.
- Microprocessor equipped with analogical watch dog.

Default utilities

- UV lamp on back wall. Controlled by control panel with timer for delayed start and cycle duration (max 1h)
- Two power sockets (Shucko/Europlug standard). Other socket standards are available as options
- LED lights

Optional utilities

- Compressed air/vacuum tap. Installs on the right wall.
- Combustible gas tap with solenoid safety valve. Installs on the right wall.
- HPV adapter kit (inlet camlock on left wall and outlet camlock connector on transition adapter)
- Additional sockets and sockets standards (max power overall 3Amperes)
- Passive and active transition adapters or thimble for ducting

Technical Features Safemate EZ Series

DESCRIPTION	***SIZE 1.2***	***SIZE 1.8***
1.1 POWER SUPPLY		
Mains supply voltage:	220-240 V~ 50/60 Hz	
Required power line (W): *(700 W service socket included)*	1200	1750
Absorbed power (W): *(fan and light on only)*	375	650
Main fuses rating:	F10A H, 250 V (**Material:** steatite – **Size:** 5x20 - **I^2t:** 121)	
Electrical insulating/protection class [IEC 61140]:	I	
IP protection degree:	Ordinary equipment (IP10B)	
1.2 REFERENCE STANDARDS		
SAFETY:	IEC 61010-1:2010 / EN 61010-1:2010	

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EMC:	IEC 61326-1:2012 / EN 61326-1:2013	
MICROBIOLOGICAL SAFETY:	EN 12469:2000	
1.3 DECLARATIONS AND APPROVALS		
Mark of conformity:	CE	
1.4 USE ENVIRONMENTAL CONDITIONS		
Use:	indoor	
Altitude (m):	up to 2000	
Temperature (°C):	from 10 to 35	
Maximum relative humidity (%):	80 for temperatures up to 31 °C, decreasing linearly to 50 at 40 °C	
Max MAINS supply voltage fluctuations (%):	up to ±10	
TRANSIENT OVERVOLTAGE CATEGORY:	II	
POLLUTION DEGREE:	2	
1.5 TRANSPORT AND STORAGE CONDITIONS		
Ambient temperature (°C):	from -5 to 45	
Relative humidity (%):	up to 90	
Atmospheric pressure (mbar):	from 800 to 1060	
1.6 WEIGHT AND DIMENSIONS		
Weight (kg):	260	360
Overall dimensions L x D x H (mm): *(without support stand)*	1380 x 780 x 1450	1990 x 780 x 1450
BioAir support stand authorized heights (mm):	690, 730, 770, 810	
Front aperture dimensions L x H (mm):	1165 x 195	1775 x 195
Working space dimensions L x D x H (mm):	1230 x 580 x 700	1840 x 580 x 700
Safe working area dimensions L x D (mm):	1030 x 350	1640 x 350
1.7 MATERIALS		
Main structure:	cold rolled steel, epoxy powder coated	
Walls inner surface of the working area:	stainless steel AISI 304 - SB finishing	
Working surface:	stainless steel AISI 304 - SB finishing	
Front window:	laminated safety glass	
1.8 PERFORMANCES		
Intended life of the equipment (years):	10	
Laminar Air Flow mean velocity [EN 12469](m/s):	0,35 ÷ 0,40	
Inflow Air Barrier mean velocity [EN 12469](m/s):	0,56 ±10%	
Exhaust Air flow rate (m^3/h):	450 ±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 3	
Illuminance [EN 12469] (lux):	>750	
Sound level [EN ISO 3744] (dB[A]):	<65	
Vibration [EN 12469] (mm RMS):	<0,005	
Max increase inside cabinet in temperature from the ambient [EN 12469] (°C):	<5	
Leaktightness index of the cabinet housing [EN 12469]:	LI-C	
Cleanability index [EN 12469]:	CI-B	
Sterilizability index [EN 12469]:	SI-B	
1.9 DIMENSIONS AND FEATURES OF FILTERS		
LAF filter dimensions L x D x H (mm):	1219 x 610 x 68	1829 x 610 x 68
EXH filter dimensions L x D x H (mm):	610 x 457 x 68	915 x 457 x 90
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	
1.10 OTHER FEATURES		
Out VFC [voltage free contact] (Vmax; A)	24; 2	
Electrical service sockets total max current (A):	3	
LED lamps power (W):	1 x 27	1 x 40
Type of lamp:	LED	
CRI (Color Rendering Index)	80	
Lamp colour temperature (K):	4000	
LED lamp average life at 90% yield (h):	40000	
UV-C lamp power (W):	1x 30	1x 40
Type of UV-C lamp:	tubular T8	tubular T10
UV-C spectral peak (nm):	253,7	
UV-C lamp average life (h):	8000	
Surface power density of UV-C lamp at 1 m (µW/cm2):	117	151
Window glass UV-C radiations retention (%):	≥ 98	

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Impact maximum energy sustainable by the glass front window [EN 61010-1, clause 8.2.2] (J):	4
1.11 OPTIONAL ACCESSORIES FEATURES	
Combustible gas fixture max pressure (mbar):	20
Inert fluids/vacuum fixture max pressure (bar):	6

These Microbiological Safety Cabinets, are manufactured according to EN12469:2000