DATASHEET

SAFEMATE TOTAL

Class II MicroBiological Safety Cabinet Type B2,

Safemate TOTAL Cabinets have been designed according to the airflow specifications for NSF49 Class II Type B2 cabinets, also known as "total exhaust". 100% fresh air is taken in from the lab, either from the front aperture and from a main inlet. The air from the main inlet is then cleaned by the main HEPA H14 filter to provide an ISO3 working area and joins with the air from the front aperture on the bottom of the cabinet. All the air is then circulated behind the backwall of the unit and filtered via the exhaust HEPA H14 filter and reinjected into the environment.
This kind of units are designed to be hard ducted and provide the possibility to work safely with small amounts of chemicals without the risk of increased concentration due to the air recirculation.

This cabinet MUST be connected to an external ducting system. Please read the information provided in the INSTALLATION REQUIREMENTS paragraph for more details.

MAIN SPECIFICATIONS

- Sloped front sash (5°)
- Swinging front window for optimal clearing access
- Maximum height of front aperture: mm 440.
- Front sash in stratified safety glass, 6mm.
- Front window presses on the gasket when in closed position to ensure no leakages.
- Sliding sash with electrical operation and auto recognition of the correct work position
- Front grid with "V" shape to avoid obstructing it with the arms. No need to use armrests.
- Filter replacement and electric/electronic components maintenance from front side.
- External surface in epoxy-painted steel.
- Working chamber and work surface fully realized in stainless steel AISI304 with SB finishing. Easy to clean as required by EN12469:2000.
- Work surface divided in sectors, available both solid or perforated.
- Air decontamination provided by HEPA H14 filters, with efficiency >99.995% (test MPPS according to EN1822.1)
- DOP test port for easy check of HEPA filters integrity.
- Internal sockets with IP55 protection level.

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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

- Constant monitoring of the following parameters:
  - Laminar flow speed (measured by anemometer monitoring of exhaust flow);
  - Inflow speed (measured by anemometer monitoring of exhaust flow);
  - Optical/acoustic alarm for insufficient inflow barrier;
  - Optical/acoustic alarm for insufficient laminar flow;
  - Operating hours visualization for: cabinet, HEPA filters, UV.
- Volt-free contact for remote blower control or connection to a remote alarm system.
- Exhaust connector: diameter 315mm.

STANDARD UTILITIES

Utilities are located on the back wall of the working area. Connectors for the utilities are located on the top of the cabinet towards the back.

Electrical sockets. On the back wall
DOP sampling port. Below the work surface, left side.
UV lamp installed on the back wall.

OPTIONALS ACCESSORIES

Description	Part No.
Stand for Safemate TOTAL 1.2	AS1L410
Stand for Safemate TOTAL 1.8	AS1L610
Castor kit	AZ1L010

OPTIONAL UTILITIES

Vacuum tap. On right side.
Gas tap with safety solenoid valve. On right side.
Additional sockets
RS232 data transmission kit (Software not included)

TECHNICAL SPECIFICATIONS

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)*	1300	1780

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Absorbed power (W): *(fan and light on only)*	600	1080
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 (xxB)	
1.2 REFERENCE STANDARDS		
SAFETY:	IEC 61010-1:2010 / EN 61010-1:2010	
EMC:	IEC 61326-1:2012 / EN 61326-1:2013	
MICROBIOLOGICAL SAFETY:	EN 12469:2000; NSF/ANSI 49-2008	
1.3 DECLARATIONS AND APPROVALS		
Mark of conformity:	CE	

1.4 USE ENVIRONMENTAL CONDITIONS		
Electromagnetic operating area:	industrial	
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):	280	400
Overall dimensions L x D x H (mm): *(without support stand)*	1380 x 795 x 1640	1990 x 795 x 1640
BioAir support stand authorized heights (mm):	690, 730, 770 e 810	
Frontal barrier dimensions L x H (mm): *(safe operating position)*	1165 x 195	1775 x 195
Front aperture maximum height H (mm):	400	

(unsafe position)		
Working space L x D x H (mm):	1230 x 580 x 700	1840 x 580 x 700
Safe working area L x D (mm):	1030 x 350	1640 x 350
Exhaust fitting diameter (mm):	315	

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	
Maximum load possible on working surface (kg): *[uniformly distributed]*	7 per sector 15 total in case of single work surface	
Front window:	2 layers laminated safety glass	
Glass thickness (mm):	3+3	4+4
1.8 PERFORMANCES		
Intended life of the equipment (years):	10	
Laminar Air Flow mean velocity [EN 12469](m/s):	0,35 ÷ 0,38	
Inflow Air Barrier mean velocity [EN 12469](m/s):	0,54 ±10%	
Exhaust Air flow rate (m^3/h):	1300 ±10%	2270 ±10%
Initial / final head required for air exhaust (Pa):	-400 / -500 ±5%	
Inflow 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 FILTERS		
LAF filter dimensions L x D x H (mm):	1219 x 610 x 68	1829 x 610 x 68

Other features of LAF filter:	fabric equalizer downstream	
EXH filter dimensions L x D x H (mm):	457 x 762 x 115	457 x 1219 x 115
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 [applicable voltage/current] (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	1 x 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	
Window glass UV-C radiations retention (%):	≥ 98	
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

INSTALLATION REQUIREMENTS

IMPORTANT: Read carefully the following information. The requirements provided in this paragraph are mandatory and must be available at the installation site to allow a proper installation and functioning of the cabinet.

These cabinets requires to be connected to an external duct provided with an extraction motorblower properly sized to provide a prevalence at the exhaust filter of at least 400 pascal and up to 500pascal, with an airflow volume of 1300m^3/h ± 10% (accounting for any additional load due to the channel structure) for the 1.2 and 2270m^3/h ± 10% for the 1.8

For the activation of the external motorblower along with the cabinet, the unit provides a volt-free contact (Normally Open) which can support a maximum voltage/current of 24V/2A.

The power supply for the external blower is not provided by the cabinet.