

# BIOHAZARD SAFETY CABINET

## STERIL VBH - CLASS II A

Images herein provide are intended for illustration purpose only. The specifications can change without notice.



## Introduction

Biohazard Safety Cabinets (BSC) are used in all those situations where it is necessary to protect the operator and the environment from harmful effects deriving from the uncontrolled spread of airport contaminants and, in equal measure, until no environmental interference of a microbiological nature involves and compromises the product during its manipulation.

## Applications

They are normally used in the laboratories of Microbiology, Virology, Haematology, Cell cultures.

They find an ever-increasing use in innovative research fields and in particular for the manipulation of:

- Oncogenic viruses
- Recombinant DNA
- Pathogens

Regarding the correct use and correct application of the equipment covered by this technical data sheet, reference should be made to the regulations in force in the relevant countries of use.

## Definition

The VBH series cabins produced by ALS are defined as:

- ✓ **BIOHAZARD** as they manage to satisfy the performances described in the following paragraphs.
- ✓ **Class II** in that they are equipped with a partial front working opening designed to allow the intake of 30% of the total air in play at a minimum speed of 0.4 m / s and a recirculation system of the remaining 70% which is sent on the laminar flow work area at an average speed of 0.4 m / s (as defined by the EN 12469 standards).
- ✓ **Type A1**, according to NSF 49 (U.S.A.) regulations, as they can be used in safety conditions even by returning the portion of expelled air from the front barrier to the environment.
- ✓ **Type A2** as, according to NSF 49 (U.S.A.) regulations, the expelled air quota can be channelled towards the outside of the room (for more technical details see the dedicated paragraph)

## Specifications

**External structure in epoxy powder coated cold-rolled steel** for excellent corrosion resistance to the attack by aggressive common chemicals.

**Rear wall in stainless steel AISI 304 L**, designed to conform to requirements and pass the “cleanability test” according to EN12469:2000.

**Work surface (PERFORATED) in stainless steel AISI 316L** consisting of sections (or in one piece upon request) which are easily removable for carrying out routine cleaning and/or autoclaving sterilization procedures (closed surface upon request).

**Work chamber in single piece AISI 304** stainless steel for the best cleanability.

**Front window:** Stratified hinged safety glass to give easy access to large items. It is provided with gas springs to keep it open during maintenance or sanitization operations.

**Re-circulating and extractor fans:** the ‘S’-Series are supplied with single centrifugal fan, whilst models of the ‘D’ Series with double centrifugal fan (main and exhaust) to provide complete operator, product and environmental protection. Moreover the ‘D’ models fitted with double motor-fan are designed and are also suitable to discharge the filtered air outside the laboratory through a ducting system if required.

**Filtration:** H14 HEPA/ULPA filters with an efficiency better than 99,995 % MPPS (EN-1822).

**Operation Condition:** Air cleanliness in Class ISO 3 as per ISO EN 14644-1

**The user-friendly practical keyboard** and the rear-lit LCD will continuously display all required data keeping the user constantly informed of the cabinet conditions in operation, and in particular:

- display of laminar airflow velocity and frontal air barrier velocity
- display of inside and outside temperature
- display of residual lifetime of HEPA/ULPA filters, UV Lamp and activated carbon filter (if fitted)
- display of total number of hours of operation
- display of saturation level of HEPA/ULPA filters.

**Audio-visual alarms provided for:**

- out of range or incorrect laminar airflow velocity and frontal air barrier velocity
- front window opened
- clogging of HEPA/ULPA filters
- end of life-cycle of UV lamp and saturation of activated carbon filter (if fitted)
- blockage in the exhaust duct ( if fitted )
- fan-motor malfunction
- power failure

**Lighting:** fluorescent tubes in built-in housing, placed outside the contaminated area.

**Aluminium front closure panel** that ensures the sealing of the cabinet for sterilization/fumigation.

**D.O.P.-DEHS inlet port** for testing the HEPA/ULPA filters.

**UV sterilizing lamp** (optional) installed on the aluminium front closure panel complete two switch-off countdown timers, one variable on a 0-3 hours scale (1-minute steps), the other set to 3 fixed hours.

**Direct Ducting:** As standard supplied with 200 mm diameter collar on the top of the cabinet for optional direct ducting to facility exhaust system

Standard equipment

- Perforated work surface, divided into sectors
- Power socket
- Empty circuit with tap
- Gas circuit with tap and solenoid valve
- Front closing panel in anodized aluminium
- 100% DES door

Optional accessories

- Floor stand
- UV lamp (mounted on the front closure panel)
- Armrest (pair)
- Chest of drawers on wheels, with three drawers
- Additional filter in expulsion with activated carbon (without collar)
- Additional power socket
- Compressed air circuit with tap
- Nitrogen circuit with manual tap
- NO/NC clean contact

Testing

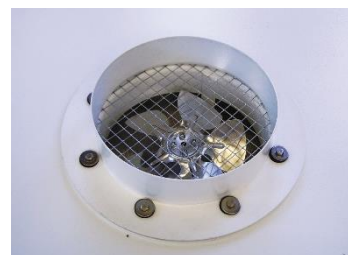
Each cabin is individually tested by the quality control office of our production site, with certified instrumentation in SIT centres and in accordance with internal procedures included in the ISO 9001 quality manual.

Upon request it is possible to carry out “VALIDATION TESTS” on site with IQ / OQ PROTOCOLS

Installation of exhaust duct

The hoods of the CTH series are equipped with provision for connection outside the room; the indications relating to the maximum length of the channel to be connected do not consider any curve. It should be considered that each curve provides a pressure drop equivalent to one linear meter (10 linear meters with three curves = 13 linear meters)

Model	Flange diameter	Duct max length
VBH 36	200mm	15m
VBH 48		
VBH 60		
VBH 72		18m



### Technical Data

Description	Unit	VBH 36	VBH 48	VBH 60	VBH 72
<b>Code</b>		<b>14520</b>	<b>14521</b>	<b>14522</b>	<b>14523</b>
External dimensions WxDxH	mm	1015x785x1470	1320x785x1470	1625x785x1470	1930x785x1470
Internal dimensions WxDxH	mm	885x580x660	1190x580x660	1495x580x660	1800x580x660
Working frontal aperture	mm	200			
Max frontal aperture	mm	430			
Weight	kg	185	215	260	300
Exhaust air volume	m <sup>3</sup> /h	290	390	485	585
Noise (1)	dB(A)	<57	<58	<59	<60
Light	lux	>1000	>1100	>1200	>1200
Voltage		230V / 1 + T / 50Hz			
Power consumption (2)	A	2,22	2,24	3,9	4,2
Electrical class/IP		1/20			
Internal electrical outlet	The electrical outlets have a total load capacity of 6A and are protected by a T6A fuse				
Heat emission	W	175	240	295	360
(1) Under operating conditions, in accordance with EN12469: 000					
(2) Clean filters, activated lighting, internal sockets without loads					

Product name	<b>VBH series. STERIL™</b> brand is full property of Angelantoni Group
Manufacturer	Angelantoni Life Science S.r.l. Loc. Cimacolle, 464 06056 Massa Martana (PG) - Italy
Voltage	208 – 253 VAC 50 Hz
Environmental conditions - operations	Temperature: +2° ~ +50° C RH%: 30 ~ 85% without condensation
Environmental conditions - storage	Temperature: +2° ~ + 50° C RH%: 20 ~ 80% without condensation
Alarms	Acoustic and visual
In case of black-out	System shuts down
Warranty	12 (twelve) months