Biological Safety Cabinet, SMARTFLOW Series

BSC-1004IIB2/1304IIB2/1604IIB2/1804IIB2

Airtech Biological safety cabinet Class IIB2 airflow ratio is 100% exhaust, providing protection to person, samples and environment from biological hazards and contamination.

It equips with DC ECM motor for 60% energy saving, ULPA filter (U15) efficiency 99.9995%@0.12 micron which conforms EU standard EN1822 and Japan velocity sensor for accurate control and display accuracy at 0.001m/s. The performance meets the standard of YY0569, EN12469 and NSF/ANSI49.

TÜV SÜD CE

ECM DC brushless motor for stable and durable running and energy saving

ULPA Filter (EN1822), 99.9995％ efficiency for partical size 0.12um
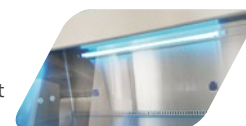
Exhaust air valve with electromagnetic control, automatically adjust the air volume. When it is out of use, it full closes to avoid external impurities entry into cabinet

LCD color controller with angeled design for easy viewing display of working status and operation

LED lamp provids sufficient and uniform lighting; UV lamp with timer and Interlocked with LED lamp and sash window for convenient and safe decontamination

AIRTECH

Waterproof Socket X 2 pcs

Interior work zone is made of one piece of stainless steel 304 sheet and with round corner, no leakage piont and easy for cleaning
The table is made of stainless steel 304 and can be lifted with support and taken out.

Angled arm rest for comfortable working posture and prvents grill blocking

Removable spill retaining table top with front grille, curved corners made in SUS304，easy to reach & cleaning

Casters for easy moving

Height adjustable support stand to make sure cabinet is set firmly

Tempered glass sash window anti-UV, it can be pulled down throughtly for easy cleaning

International Standards				
	Biosafety Cabinets	Air Quality	Filtration	Electrical Safety
Standards Compliance	Designed to meet: EN 12469 (Europe) NSF/ ANSI 49 (USA) JIS K 3800 (Japan) SFDA YY0569 (China)	ISO 14644.1, Class 4, Worldwide JIS B9920, Class 4, Japan JIS BS5295, Class 4, Japan US Fed Std 209E, Class 10 USA	ISO29463, Worldwide EN-1822, Europe EN13091, Europe IEST-RP-CC034.1, USA	EN-61010-1, Europe IEC61010-1, Worldwide

Reliable ECM DC brushless motor

Intelligent CAV technology(Constant Air Volume) and CPAS (Constant Pressure Apheresis System) technology

The biological safety cabinet adopts the USA Genteq brand ECM DC brushless motor working with CPAS and CAV technology providing safe and reliable airflow and pressure in operation. Based on the ECM feature that can determine supply air volume and pressure by detecting changes in internal current and power, and realize automatic regulation on the balance of air volume or pressure. The CPAS and CAV technologies are to precisely control airflow.

When the cabinet is operated at set velocities and without readjusting the fan speed control, a 50% increase in pressure drop across the filter doesn't decrease total air delivery more than 10%.

The velocity meets USA NSF/ANSI49 standard and EN12469 standard.

Integrated Filtration System

USA HV brand ULPA Filter medium are applied in the supply U15 ULPA filter and exhaust ULPA filter guarantee the filtration efficiency ≥99.9995% for 0.12micron particles (Europe EN1822 standard) providing strong filtration capability. 2 ULPA filters are designed with the leakage resistance patent technology, ensuring the work area air cleanness at Class 4 (ISO14644.1 standard) . Therefore, it can provide the samples operated in clean environment.
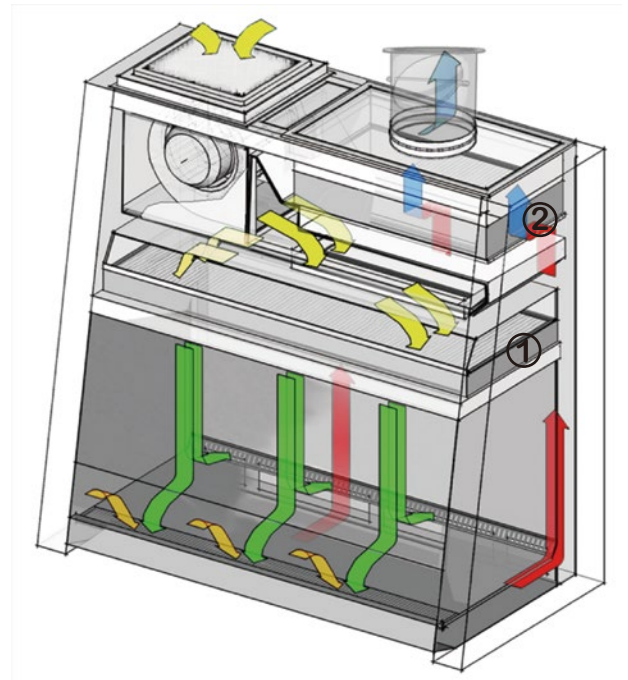
Work area is surrounded by Negative pressure,

The work area is made of one piece of SUS304 plate without weld point, it supports the precisely controlled airflow forms to the biologically contaminated ducts and plenums under negative pressure or surrounded by negative pressure ducts and plenums. It reduces the contaminated air in work area to leak to room and protects the operator in safety.
100% contaminated air is filtrated by ULPA filter and exhousted to the outside through duct system.
Japan Airflow sensors have a known standard of deviation exceeding safe airflow requirements by biological safety cabinets.

100% contaminated air is filtered by ULPA filter and exhausted to the outside through duct system.

①Downflow ULPA filter
②Exhaust ULPA filter

- Room air
- ULPA filter downflow air
- Contaminated air
- ULPA filter exahust air

Intelligent Smartflow control system
ECO mode, Energy saving, lower noise level
When close front window and BSC will turn to ECO mode automatically. It reduces the speed of the motor blower to save the energy. The cabinet is in slightly negative pressure to prevent contaminant from escaping and to keep work area clean. When open front window, BSC will return to standard running immediately.
Using ECO Mode can reduce the open-close time. At the same time of saving energy, it saves time for self-purification, UV disinfection and also for cleaning works.
The controller is with password protection, the unauthorized person can not adjust the operating parameters.
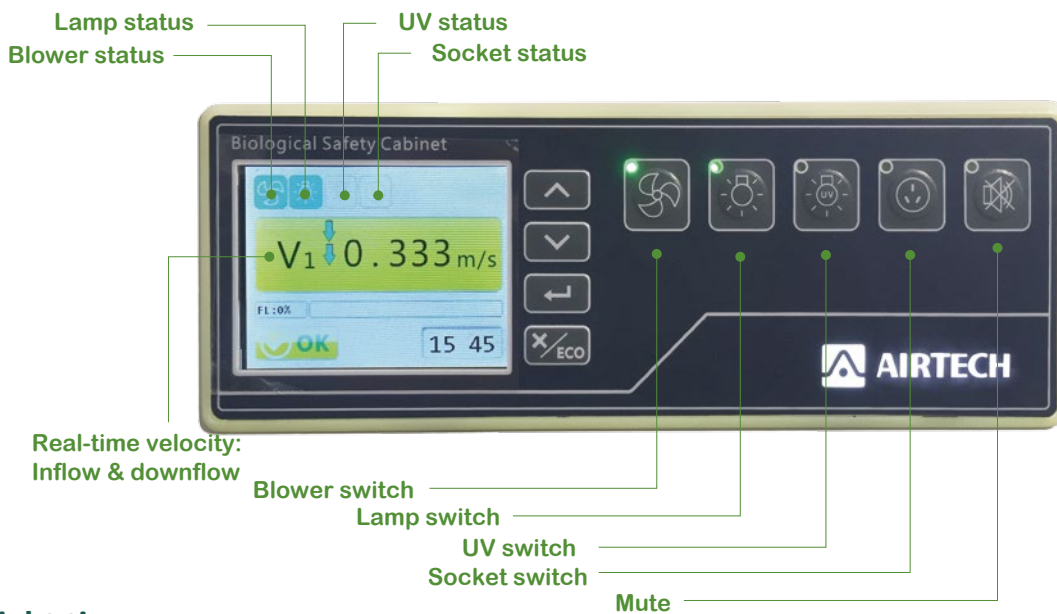
Control buttons and button indicators :

1) Blower, 2) LED light, 3) UV light 4) Socket power, 5) Mute, when the button works, the indicator is on.

Angled color LCD display is easy to read the BSC working status.

▶Display blower, LED light, UV light and socket works condition
▶Display downflow velocity and inflow velocity, the velocity display accuracy is 0.001m/s, This is based on 2 independent sets of velocity sensors made in Japan.
▶Display filter life display in percentage, it reminds user tochange the filter in time.
▶Display time display it is easy to know the operation time
▶Display UV timer

Alarm system:

Inflow velocity alarm   Downflow velocity alarm   Sash height alarm   Filter high resistance alarm
Blower failure alarm   UV life time alarm

Lamp status
Blower status
UV status
Socket status
Real-time velocity: Inflow & downflow
Blower switch
Lamp switch
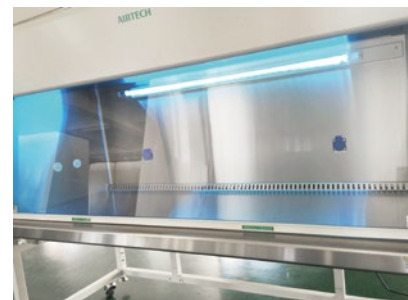UV switch
Socket switch
Mute

UV light timer

UV light timer is programmable with increment of 1 minutes. UV light working time can be set according the enhanced contamination control, extending UV lamp life and saving energy.
1) UV light turning off delay setting: UV light will be off automatically when delay time is set. UV light off time is 0~999 minutes programed.

2) UV light turning on time and turning off time setting: UV light can be on and off automatically and programed 00:01 to 23:59.

254nm UV germicidal light for decontamination UV light, light and sliding sash are interlocked, UV light can only be turned on when light is off and anti-UV sliding sash is fully closed. It is to protect the operator in safe.

The controller is with password protection, the authorized person can not adjust the operating parameters.

Structure:

▶Front sash window adopts hanging lifting system (Imported from Japan) , using spring to limit the sash glass height level at arbitrary positioning, and avoid sash glass drop down suddenly.
Front sash glass thickness is 6mm, high stability and convenient to sterilization when it closed.
Front sash can be pulled down throughly after removing arm rest, it enables user to clean all over the sash glass including interior and exterior.
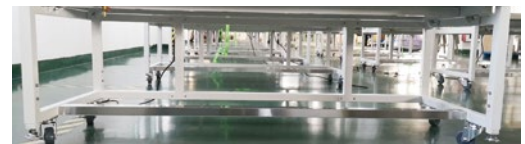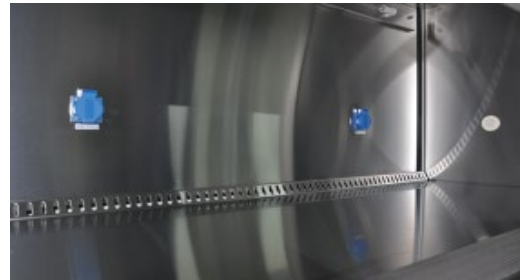
▶The interior work zone is made of one piece of SUS304 plate with round corner, no weld point, no leakage risk and easy for cleaning. The work zone is surrounded by negative pressure, ensuring the contaminated air not leak outside.

▶Work table is made of SUS304 plate and can be taken out from work zone. It can be risen up by handle and support rode, convenient for cleaning the area below working table and collecting tank. (Work table can be divided into 2~4 pieces according customers' requirements)

▶ 4 liter capacity SUS collecting tank with drainage valve, easy to collect water, cleaning and disinfection liquid.
The exterior is made of steel with sprayed powder, anti-bacteria and easy for cleaning.

▶ The base stand is equipped with mobile castors and leveling feet. The base stand height is adjustable and leveling foot is without exposure thread. It is convient for user to adjust the height of BSC and easy to fix BSC.

Accessories:

▶ 2 power sockets are reserved on right and left of interior back wall, it is easy for operator to use small device in BSC.
▶ Each left wall and right wall are reserved 2 ports, enable user to install the water, vacuum or gas tap.
LED light and UV lamp are standard Installed.
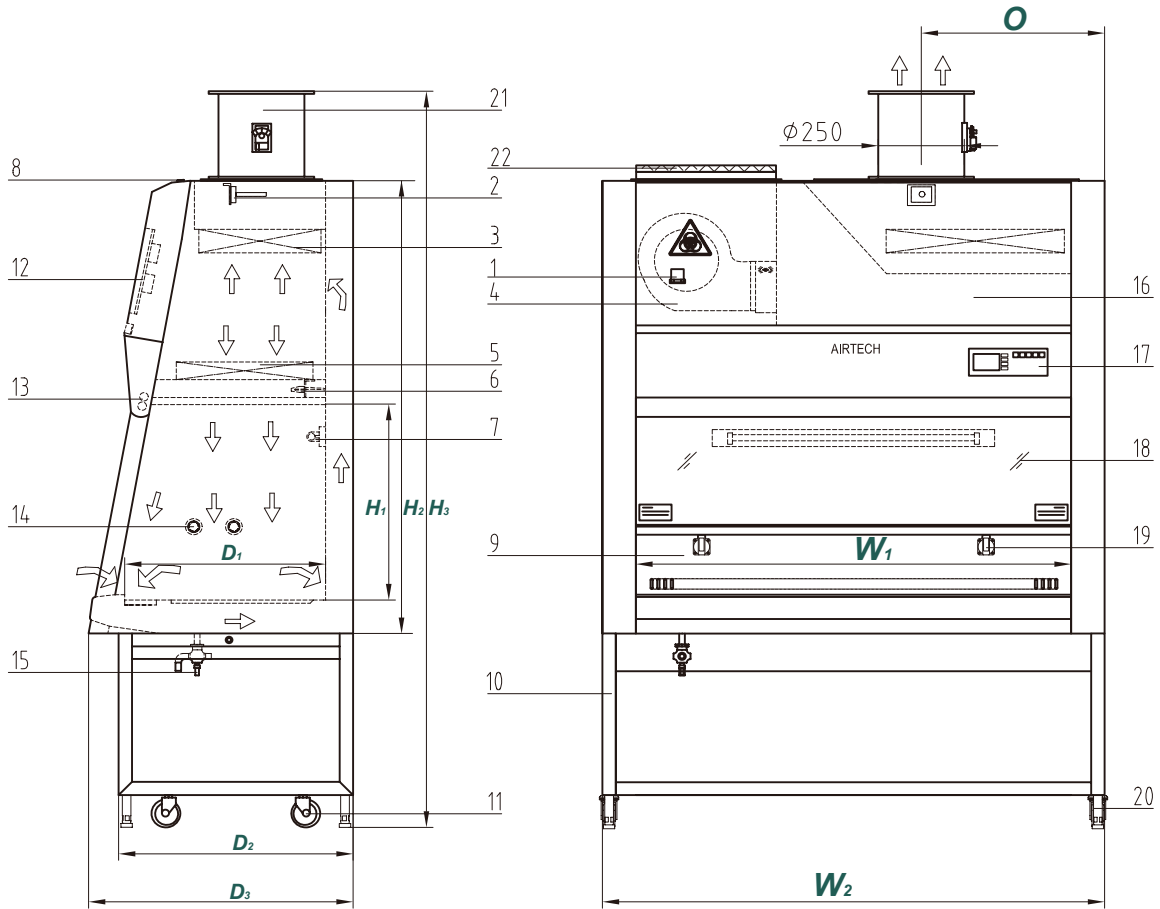▶ Remote Dry contact enable user know the biosafety cabinet power on or off in remote distance.
▶ Blower positive pressure test port (filter upstream test) and Blower negative pressure port are convenient engineer to test the biosafety cabinet condition.
▶ Optional exhaust blower is intalled at the terminal end of duct system, it is powerful and 100% exhaust the air from Biosafety cabinet.

Class II Type B2 Biological Safety Cabinet Engineering Drawing

1. Power Switch	8. Fuse Holder	15. Water Valve
2. Air Velocity Sensor	9. Working Chamber	16. Body
3. Air Exhaust Filter	10. Lower Stand	17. Control Panel
4. Fan	11. Universal Caster	18. Sliding Sash
5. Air Supply Filter	12. Elec.Box	19. Spare Socket
6. Air Velocity Sensor	13. LED Light	20. Leveling Feet
7. UV Light	14. Water/gas Pipe	21. Air Valve
22.Pre-filter		

Model	Dimensions in mm								
	W_1	W_2	H_1	H_2	H_3	D_1	D_2	D_3	O
BSC-1004IIB2	1004	1200	300	630	2300	600	700	795	250
BSC-1304IIB2	1304	1500	300	630	2300	600	700	795	250
BSC-1604IIB2	1604	1800	300	630	2300	600	700	795	250
BSC-1804IIB2	1804	2000	300	630	2300	600	700	795	250

TECHNICAL SPECIFICATIONS

Model		BSC-1004IIB2	BSC-1304IIB2	BSC-1604IIB2	BSC-1804IIB2
Dimensions	Nominal Size	3 feet	4 feet	5 feet	6 feet
	Internal Dimensions (W x D x H)	1004*630*630 mm	1304*630*630 mm	1604*630*630 mm	1804*630*630 mm
	External Dimensions (W x D x H)	1200*795*2050 mm	1500*795*2050 mm	1800*795*2050 mm	2000*795*2050 mm
Airflow	Type	Class II, Type B2			
	Exhaust Direction	Top Exhaust			
	Airflow Pattern (downflow / exhaust)	100% Exhaust			
	Avarage Inflow Velocity	0.55m/s			
	Averrage Downflow Velocity	0.35m/s			
	Inflow volume	727m3/h			
	Exhaust volume	1125m3/h			
	Static pressure	≥680Pa			
Cabinet Construction	Blower	DC EBM Blower			
	Work Zone	Stainless Steel SUS304			
	Main Body	Electro-galvanized steel with Akzo-Nobel white oven-baked powder coating			
	Sash Glass Thickness	5mm			
	Sash Glass Type	Tempered Glass, UV-proof			
	Sash Working Opening	200mm			
	Sash Maximum Opening	460mm			
	Full Access for Glass Cleaning	Yes			
	Illumination (Lx)	≥1100			
	virbration	≤5um(center of table top)			
	Noise (dB)	≤60			
Cleanliness	Cleanliness	ULPA: ISO Class 4			
	Filtration Efficiency	ULPA:≥99.9995%,@0.12 µm			
	Total colony in impaction sampler	≤10CFU./Time			
	Total colony in slit type sampler	≤5CFU./Time			
	Total colony in culture dish	≤5CFU./Time			
	Total colony in culture dish	≤2CFU./Time			
Controlling System	Display	LED Color Screen			
	Downflow Velocity Display	Yes			
	Inflow Velocity Display	Yes			
	Filter Lifetime Display by %	Yes			
	Blower Switch	Yes			
	Brightness Lamp Switch	Yes			
	UV Lamp Switch	Yes			
	Socket Power Switch	Yes			
	UV Timer	Yes			
	Main Power Switch	Yes			
Filter	Downflow	ULPA Filter, ≥99.9995%@0.12 µm			
	Exhaust	ULPA Filter, ≥99.9995%@0.12 µm			
Electrical Data	Reated Power (W)	330	380	430	430
Power Supply	AC220V,1Φ,50HZ	Yes	Yes	Yes	Yes
	AC220V,1Φ,60HZ	Yes	Yes	Yes	Yes
Weight	Net Weight(kg)	270	310	370	410
	Gross Weight	302	350	408	460
Alarm	Alarm Type	Yes	Yes	Yes	Yes
	Sash Height High/Low	Sound+Flash			
	Filter Blocked	Yes			
	Filter Shattered	Yes			
	Filter Lifetime Remind	Yes			
	Inflow Velocity High/Low	Yes			
	Downflow Velocity High/Low	Yes			
Accessories	LED Brightness Lamp	24.5W*1 pc	31W*1 pc	36W*1 pc	36W*1 pc
	UV Lamp	25W*1 pc	30W*1 pc	40W*1 pc	40W*1 pc
	Receptacle (pieces/Power/Current)	2 pcs/500W/3A	2 pcs/500W/3A	2 pcs/500W/3A	2 pcs/500W/3A
	Water Valve	Optional * 1 pc			
	Gas Valve	Optional * 1 pc			
	Stand	Yes			
	Adjustable Feet	4, as standard			
	Casters	4, as standard			