Biological Safety Cabinet, SMARTFLOW Series

BSC-1004IIA2/1304IIA2/1604IIA2/1804IIA2

Airtech Biological safety cabinet Class IIA2 airflow ratio is 70% recirculation and 30% exhaust, providing the protection to person, samples and environment from biological hazards and contamination.

It equips with DC ECM motor for 60% energy saving,U15 ULPA filter 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 YY0569, EN12469 and NSF/ANSI49.
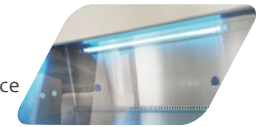
ECM DC brushless motor for stable and durable running and energy saving

U15 ULPA Filter (EN1822), 99.9995% efficiency for partical size 0.12um

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

LED lamp providing sufficient and uniform lighting; UV lamp with timer and is Interlocked with LED lamp and sash window for convenience and safet to do decontamination

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 working tray is made of stainless steel 304 and can be lifted by supporter and taken out for sterilization

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

Adjustable stand to make sure cabinet is set firmly and horizontally

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

AIRTECH

International Standards

Standards Compliance	Biosafety Cabinets	Air Quality	Filtration	Electrical Safety
	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 the CPAS and CAV technology providing safe and reliable airflow volume and pressure during the operation in BSC. 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 guaranteeing the filtration efficiency ≥99.9995% for 0.12micron particles (Europe EN1822 standard) providing strong filtration capability. The 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 products the production in 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 reduce the contaminated air in work area to leakage to room and protects the operator in safety.
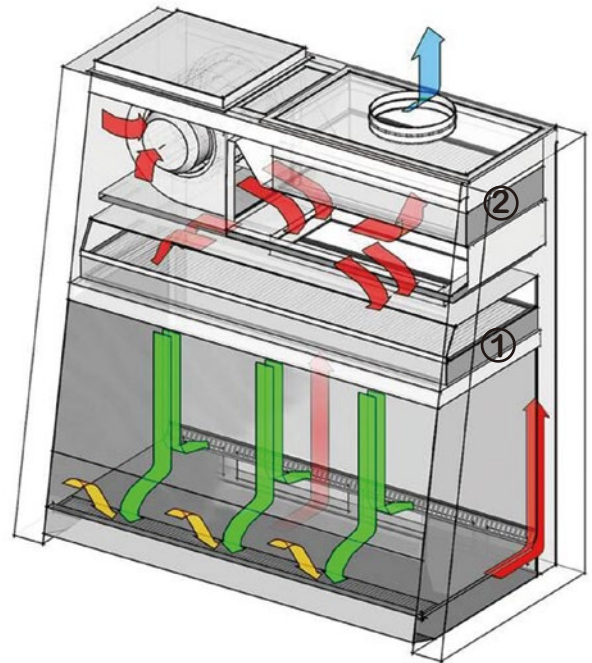Filtered air exhaust to room or outside.
Approximately 30% of the air in the common plenum is exhausted through the ULPA filter to the room. The contaminated air filtrated by U15 ULPA filter and becomes clean air into the room.
Japan Airflow sensors have a known standard of deviation exceeding safe airflow requirements by biological safety cabinets.

Approx. 30% air exhausted
Approx. 70% recirculated through downflow
Inflow air creates a air barrier to protects the
Inside air leakage to room and room air entry into
Work zone.

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

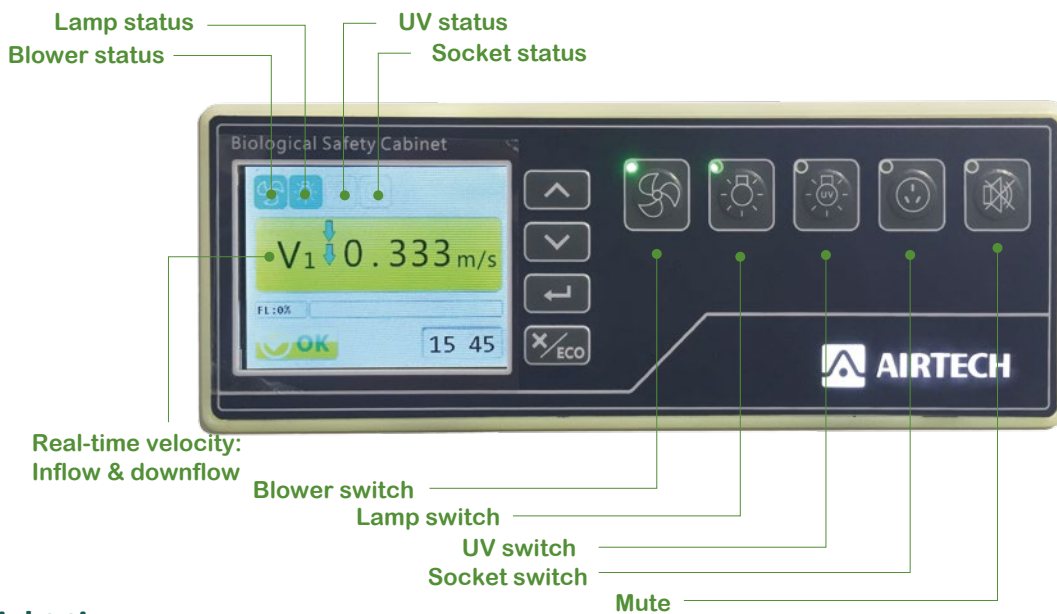## Control buttons and button indicators :

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 the user to in safe condition to operate the BSC and change 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
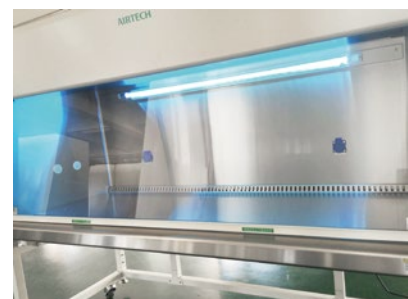Blower failure alarm   UV life time alarm

UV light timer

UV light timer function is programmable with increment of 1 minutes. UV light works time can be set according the enhances contamination control, extending UV lamp life and saves energy.
1) UV light turning off delay setting: UV light will be off automatically when delay time is set up, the 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 be off automatically and programed 00:01 to 23:59.
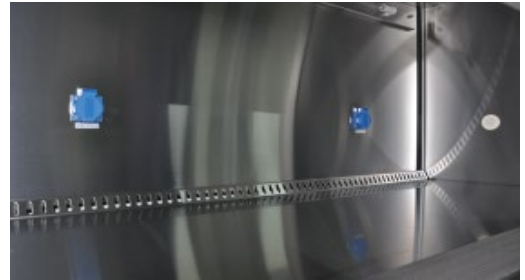
254nm UV germicidal light for decontamination UV light, light and sliding sash are interlocked, UV light can only be turned on when light is off and anti-UV sliding sash is fully closed. It is to protects the operator in safe.

Excellent Designed parts

▶ 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 closed. Front sash can be pulled down throughly after removing armrest. It enables user to clean all over the sash glass including exterior and interior.

▶ The interior work zone is made of one piece of SUS304 plate with round corner and no weld points, no leakage risk and easy for cleaning. The work zone is surrounded by negative pressure, ensuring the contaminated air not leak outside.
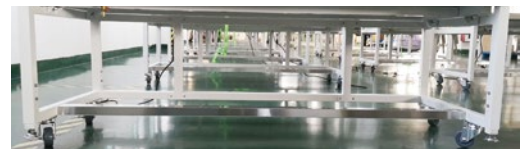
▶ Work table is made of SUS304 plate and can be taken. It can be risen up by handle and support rode, convenient for cleaning the area below working table and collecting tank.
（Work table can be divided into 2~4 pieces according customers' requirements)

▶ 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 level 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.
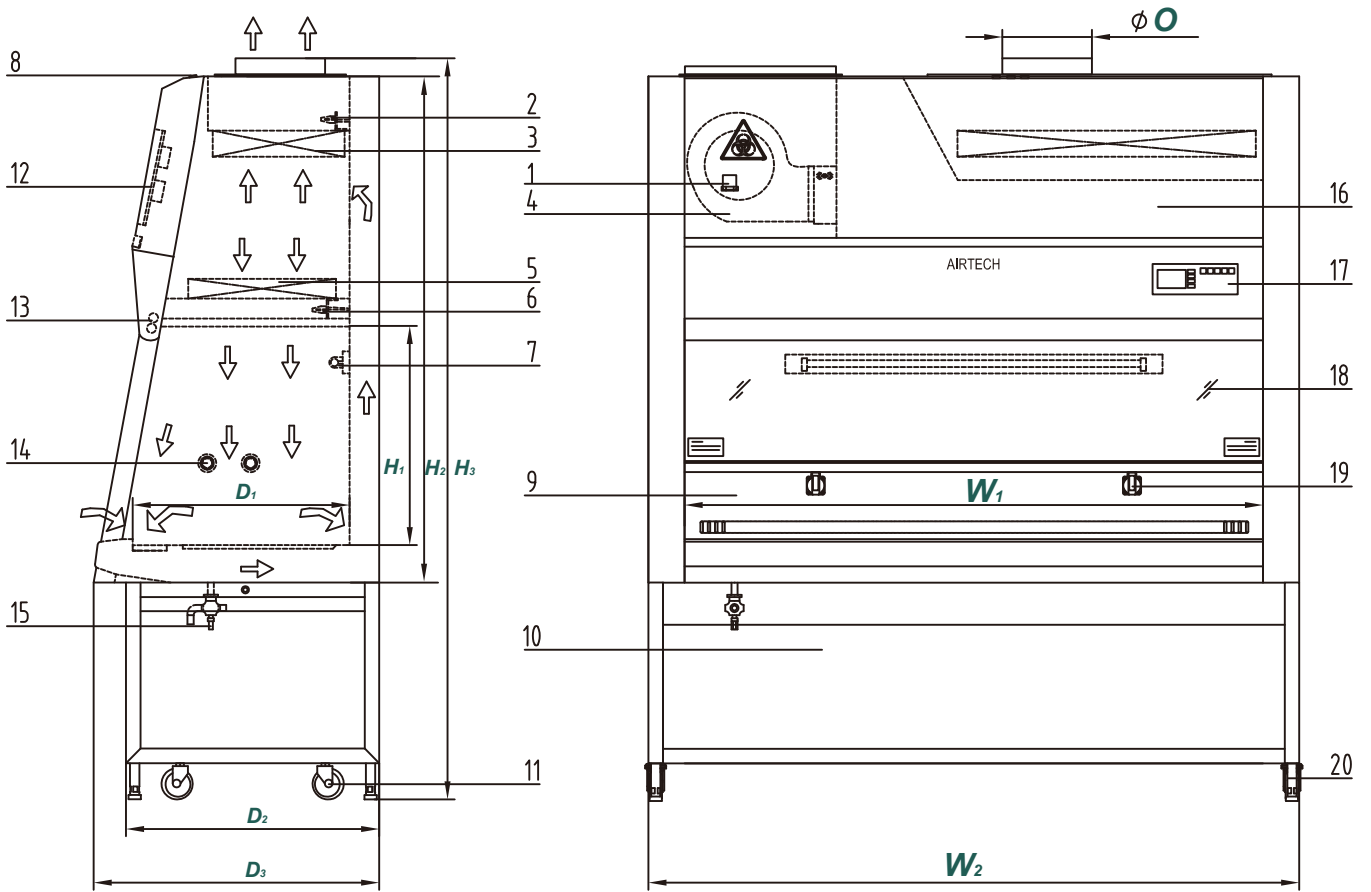
▶ Each left wall and right wall are reserved 2 ports, enable user to install the water, vacuum or gas tap. LED light and UV lamp are standard Installed.

▶ 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 for engineer to test the biosafety cabinet condition.

Class II Type A2 Biological Safety Cabinet Engineering Drawing

1.Power Swith	8.Fuse Seat	15.Waste 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.Power Socket
6.Air Velocity Sensor	13.LED Light	20.Leveling Feet
7.UV Light	14.Water/gas Valve Port	

Model	Dimensions in mm								
	W_1	W_2	D_1	D_2	D_3	H_1	H_2	H_3	O
BSC-1004IIA2	1004	1200	630	700	795	630	1490	2130	250
BSC-1304IIA2	1304	1500	630	700	795	630	1490	2130	250
BSC-1604IIA2	1604	1800	630	700	795	630	1490	2130	250
BSC-1804IIA2	1804	2000	630	700	795	630	1490	2130	250

TECHNICAL SPECIFICATIONS

Model		BSC-1004IIA2	BSC-1304IIA2	BSC-1604IIA2	BSC-1804IIA2
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*2130 mm	1500*795*2130 mm	1800*795*2130 mm	2000*795*2130 mm
Airflow	Type	Class II, Type A2			
	Exhaust Direction	Top Exhaust			
	Airflow Pattern (downflow / exhaust)	70% / 30%			
	Avarage Inflow Velocity	0.55m/s			0.53m/s
	Averrage Downflow Velocity	0.35m/s			0.33m/s
Cabinet Construction	Blower	DC ECM Blower			
	Work Zone	Stainless Steel SUS304			
	Main Body	Electro-galvanized steel with Akzo-Nobel white oven-baked powder coating			
	Sash Glass Thickness	6mm			
	Sash Glass Type	Tempered Glass, UV-proof			
	Sash Working Opening	200mm			
	Sash Maximum Opening	460mm			
	Full Access for Glass Cleaning	Yes			
	Illumination (Lx)	≥1100			
	Noise (dB)	≤60			
Cleanliness	Cleanliness	ULPA: ISO Class 4			
	Filtration Efficiency	U15 ULPA:≥99.9995%,@0.12 μm			
	Personnel Protection	Total colony in impaction sampler ≤10CFU./Time			
		Total colony in slit type sampler ≤5CFU./Time			
	Product Protection	Total colony in culture dish ≤5CFU./Time			
	Cross-contamination Protection	Total colony in culture dish ≤2CFU./Time			
Controlling System	Display	LCD 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			
Electrical Data	Reated Power (W)	330	430	530	530
Power Supply	AC220V,1Φ,50HZ	Yes	Yes	Yes	Yes
	AC220V,1Φ,60HZ	Yes	Yes	Yes	Yes
Weight	Net Weight(kg)	260	300	360	400
	Gross Weight	292	340	398	450
Alarm	Alarm Type	Sound+Flash			
	Sash Height High/Low	Yes			
	Filter Blocked	Yes			
	Filter Shattured	Yes			
	Filter Lifetime Remind	Yes			
	Inflow Velocity High/Low	Yes			
	Downflow Velocity High/Low	Yes			
Filter	Downflow	ULPA Filter			
	Exhaust	ULPA Filter			
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			