



**SAPPHIRE**  
CLEANROOMS

# BIOLOGICAL SAFETY CABINETS



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A biosafety cabinet (BSC)—also called a biological safety cabinet or microbiological safety cabinet—is an enclosed, ventilated laboratory workspace for safely working with materials contaminated with (or potentially contaminated with) pathogens requiring a defined biosafety level. Several different types of BSC exist, differentiated by the degree of biocontainment required.

The primary purpose of a BSC is to serve as a means to protect the laboratory worker and the surrounding environment from pathogens.

		TYPE A1	TYPE A2	TYPE B1	TYPE B2	
		It is used for laboratories which are work with nonvolatile, radionuclide/chemical protection, microorganisms in Risk.		It is used for laboratories which are work with lightly volatile, radionuclide/chemical protection, microorganisms in Risk.		
Containment and Protection	Applications					
	Personnel	Yes	Yes	Yes	Yes	
	Product	Yes	Yes	Yes	Yes	
	Environmental	Yes	Yes	Yes	Yes	
	Provides Protection from Vapors & Gases	Personnel	Not suitable for use with chemicals	Only if exhausted to facility exhaust system	Reduces exposure	Yes
		Product	Not suitable for use with chemicals	No	Reduces exposure	Yes
Environmental		Not suitable for use with chemicals	Only if exhausted to facility exhaust system	Reduces exposure	Yes	
Airflow Characteristics	Cabinet Face Velocity	Minimum of 75 FPM	Minimum of 100 FPM	Minimum of 100 FPM	Minimum of 100 FPM	
	Nominal Percentage*	Recirculated	~ 70%	~ 70%	~ 50%	~ 0%
		Exhausted	~ 30%	~ 30%	~ 50%	~ 100%
Plenum	Biologically contaminated plenum pressure	Negative to room	Negative to room	Negative to room	Negative to room	
	Cabinet Exhaust source	Common plenum	Common plenum	Exhaust plenum	"Exhaust plenum"	
Exhaust Characteristics	Exhaust Destination	To room	Yes (No, if vented outside)	Yes (No, if vented outside)	No	No
		Vented Outside	Optional	Optional	Yes	Yes
	Connection Type	Canopy	Canopy	Hard ducted	Hard ducted	

\*The percentage of air recirculated and exhausted in Type A1, A2 and B1 cabinets varies by size of the access opening.

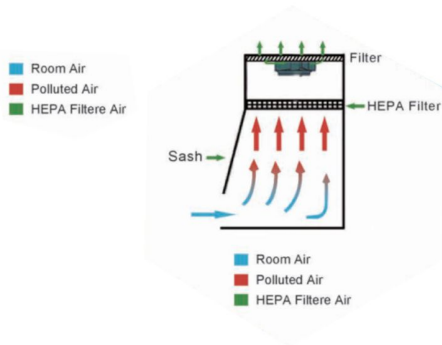
BC grades	Inlet Air Velocity	% of air flow		Exhaust System
	M/S	Internal Re-circulated	Exhaust	
Class II A1	0.38	70	30	Internal or external (Exhaust hood)
Class II A2	0.5	70	30	
Class II B1	0.5	30	70	External (Exhaust hood)
Class II B2	0.5	0	100	



Sapphire Cleanrooms offers a wide variety of Biosafety cabinets such as:

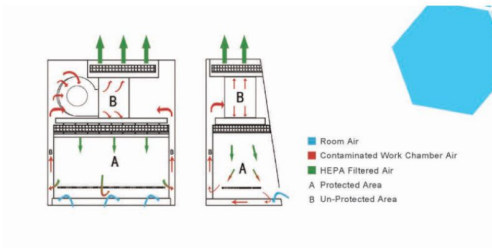
### Class I Biological Safety Cabinet

Personnel and environment protection  
Class I Biosafety cabinet is suitable for work involving low to moderate risk agents. (Biosafety levels 1, 2 and 3) where there is a need for containment, but not for product protection.



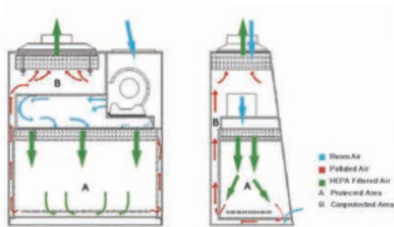
### Class II A2 Biological Safety Cabinet

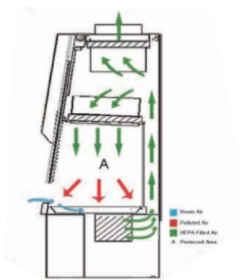
Three protection: operator, sample and environment. Airflow system: 70% air recirculation, 30% air exhaust A2 cabinet is suitable for working with microbiological research in the absence of volatile or toxic chemicals and radionuclide.



### Class II B2 Biological Safety Cabinet

Three protection: operator, sample and environment.  
Airflow system: 0% air recirculation, 100% air exhaust.  
A class II B2 BSC, also called a total exhaust cabinet, is necessary when significant amounts of radionuclides and volatile chemicals are expected to be used.

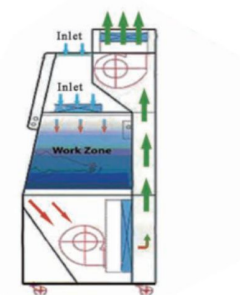




### Cytotoxic Safety Cabinet

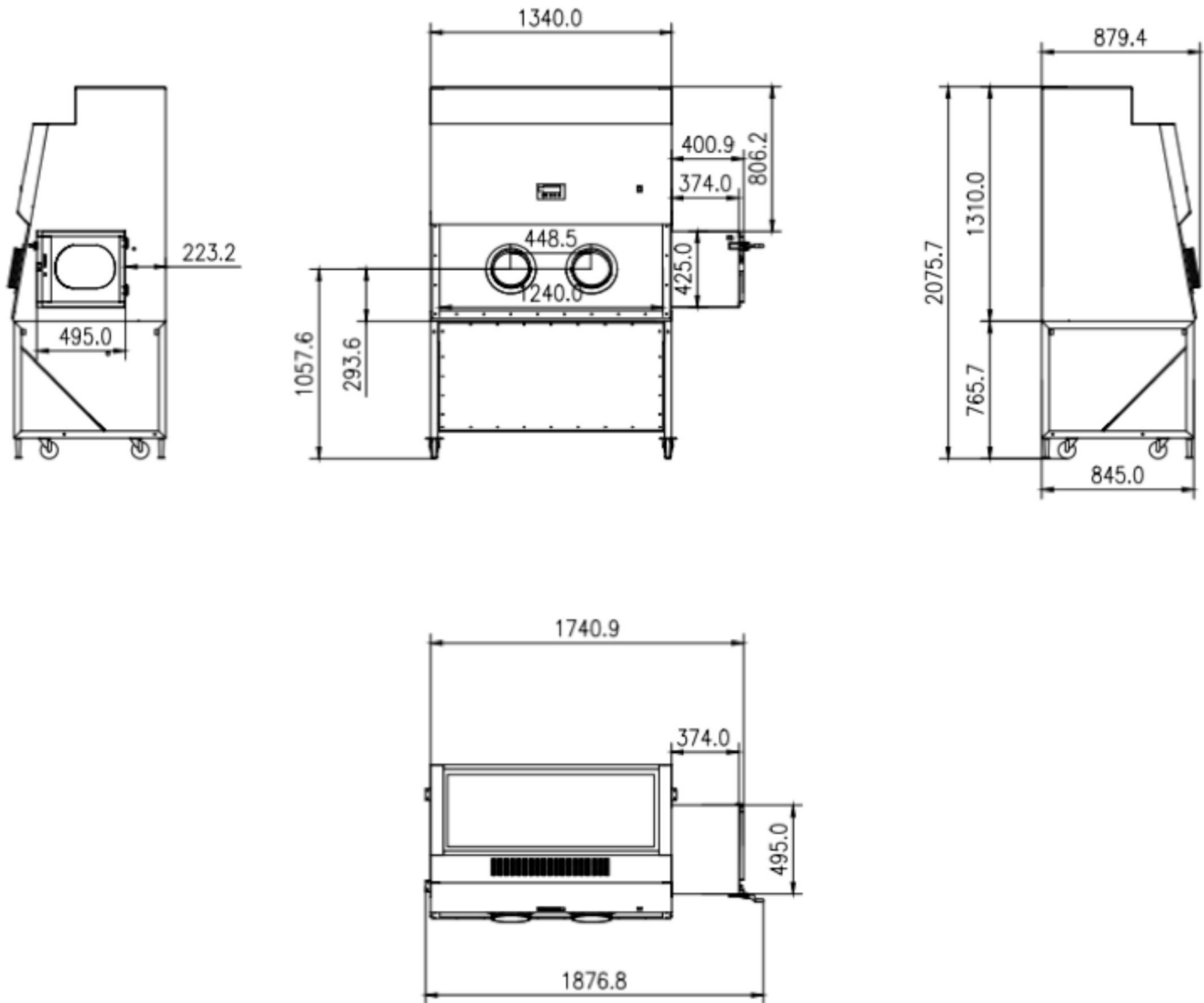
This cabinet is the premium solution for cytotoxic / antineoplastic drug processing, providing the highest level of patient, pharmacist and environmental protection.

The unique demands of handling and preparing cytotoxic drugs for use in chemotherapy require a specialized cabinet.



### Class III Biological Safety Cabinet

Class II Biosafety cabinet is totally enclosed and gas-tight with ULPA filtered supply and exhaust air. Work is performed with long-sleeved gloves. The cabinet is kept under negative pressure of at least 120 Pa, and airflow is maintained by a dedicated exterior exhaust system. It can protect the operator, product and environment.



Note: Not all features shown below are available or come standard with an specific unit.



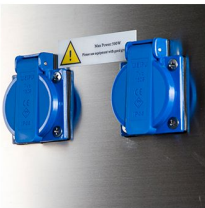
### Work Zone

Work zone is made of 304 stainless steel, is surrounded by negative pressure.



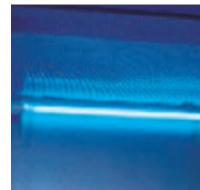
### Remote Control

All functions can be realized with it, making the operation much easier and convenient.



### Waterproof socket

2 Waterproof sockets are located in the side panel, for optimum convenience of using small devices inside the cabinet.



### UV Lamp

Emission of 253.7 nanometers for most efficient decontamination.



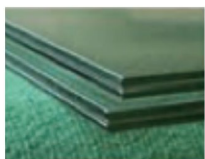
### LCD Display

Large Digital LCD display is easy to monitor all the safety parameters at a glance and ergonomically sized control panel improves user interface.



### Foot Switch

Adjust front window height by foot during experiment, to avoid airflow turbulence caused by arm movement.



### Front Window

Two-layer laminated toughened glass>5mm, anti UV.



### Footmaster Caster

Universal caster with brake and leveling feet.



### SS Water Tap & Gas Tap

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Note: Not all features shown below are available or come standard with an specific unit.



**Exhaust Blower**  
Centrifugal fan, speed adjustable.



**Bag in and bag out filter**  
The PVC bag can ensure the safety of the personnel and the environment, and make the replacement process convenient and quick.



**Pass Box**  
Double doors with interlock function and UV Lamp.



**Pressure Meter**  
Display the pressure of work zone.



**Key lock**



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