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Biosafety Cabinet (Class-II)

Class II Biological Safety Cabinets are commonly-used primary engineering controls to protect you, your research and the environment from exposure to biohazards and cross contamination during routine procedures
Class II biological safety cabinets are primary engineering controls typically used for microbiological studies, cell culture, pharmaceutical procedures and toxicology.

BSC classifications and standards for the United States are set by NSF International (formerly the National Sanitation Foundation). NSF defines four types of Class II cabinets (A1, A2, B1 and B2) that are distinguished by differences in airflow patterns and velocities, HEPA air filter positions, ventilation rates and exhaust methods.



Class II Biosafety Cabinet Protection:

- Personnel protection from harmful agents used inside the biosafety cabinet.
- Product protection to avoid contamination of the work, experiment or process from outside contaminants.
- Environmental protection from contaminants contained within the biosafety cabinet.

Class II Biosafety Cabinets Key Features:

- A front access opening with carefully maintained inward airflow.
- HEPA-filtered, vertical, unidirectional airflow within the work area.
- HEPA-filtered exhaust air to the room or exhaust to a facility exhaust system.

Class II Biosafety Cabinets Applications:

- Type A1 and A2 cabinets are typically used for biosafety levels 1 through 3. Because Type A1 cabinets are not suitable for work with chemicals, use of Type A2 cabinets is more prevalent. As long as vapors are not hazardous and will not interfere with the work when recalculated, it is acceptable to use an A2 cabinet with a small amount of chemicals when the cabinet is exhausted to the outdoors for removal of gases.
- Type B1 and B2 cabinets are also typically used for biosafety levels 1 through 3. As with type A2 cabinets, type B1 cabinets can be used for work generating chemical vapors as long as the vapors do not interfere with the work when recalculated or when the work is done in the directly exhausted portion of the cabinet. The type B2 total exhaust cabinets are widely used in toxicology laboratories and similar applications where chemical effluent is present and clean air is essential.
- All types of Class II cabinets may be used in biosafety level 4 laboratories when workers utilize positive pressure suits.

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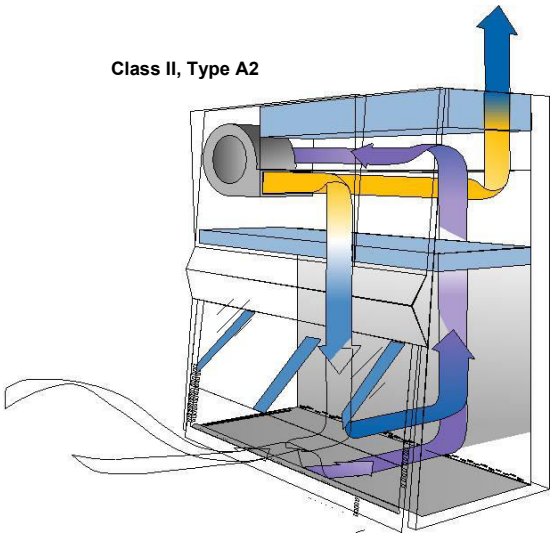
Airflow Characteristics of Class II Biological Safe
Class II, Type A1 and Type A2 Cabinets

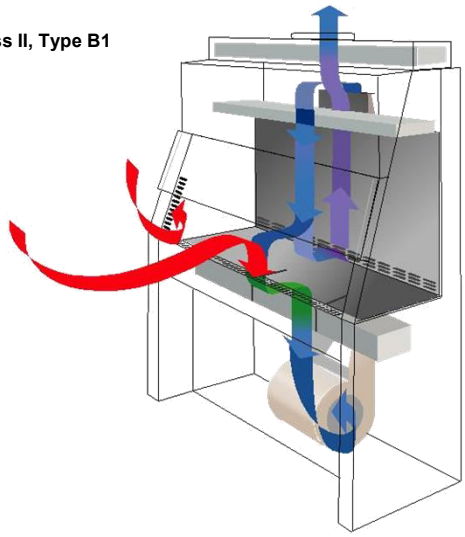
1. Recalculating systems
2. May be vented into the room or to the facility's HVAC system through a canopy exhaust connection
3. Remaining air is recalculated to the work area through a HEPA supply filter.
4. HEPA-filtered down flow air is a mixture of recalculated and inflow air from a common plenum, and will vary in total volume based on the cabinet design
5. Intake air velocity for a Type A1 is a minimum of 75 FPM and Type A2 is a minimum of 100 FPM
6. All biologically contaminated ducts and plenums are under negative pressure or surrounded by negative pressure ducts and plenums

Class II, Type A2



Room Air
Contaminated Air – Positive Pressure
HEPA-filtered Air
Contaminated Air – Negative Pressure

Class II, Type B1

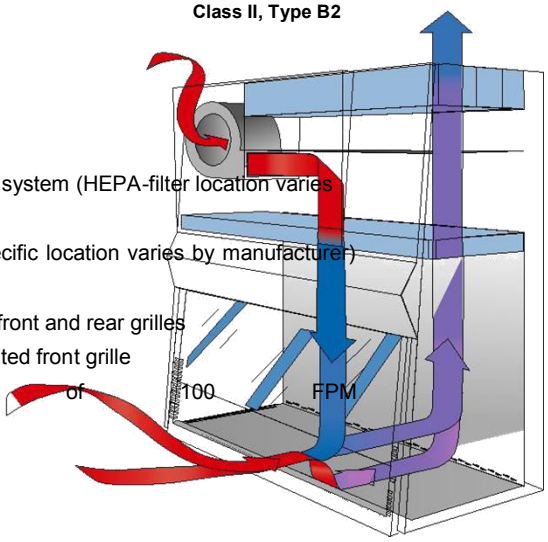


Room Air
Contaminated Air/Direct Exhaust
HEPA-filtered Air
Contaminated Air

Class II, Type B1 Cabinet

- Recirculating system
- Exhausted air is pulled through a dedicated duct and through a HEPA filter
- Remaining air is mixed with the inflow air and recalculated to the work
- Recirculated air is HEPA filtered to prevent contamination of the cabinet plenums
- Intake air velocity is a minimum of 100 FPM

Class II, Type B2



Room Air
HEPA Filtered Air

Class II, Type B2

- Provide no air recirculation within the work area
- Must be hard-connected to a facility's exhaust system
- HEPA filter air is immediately exhausted through a dedicated duct, into the HVAC system (HEPA-filter location varies by manufacturer)
- Room air enters through a blower/motor located near the top of the cabinet (specific location varies by manufacturer) and pushed through a HEPA supply filter into the work area.
- Descending air is pulled through the base of the work area through the perforated front and rear grilles
- Simultaneously, air entering through the front opening is pulled through the perforated front grille
- Intake air velocity is a minimum of 100 FPM

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CONTROL & AUTOMATION

- Equipped with Microprocessor controller having alphanumeric/ Graphic LCD display and soft touch controls. Controller indicates all input status, alarm function and control for blower, lights and UV.
- Real time Clock (Optional)
- Display of door Status with audiovisual alarm.(Optional)
- UV light/Door/Fluorescent Light Inter Lock, i.e. UV switches ON only when door is closed, and automatically switches OFF when door Opened (Optional)

SPECIFICATIONS

Class II Type			
*Model	BCN-600XX	BCN-900XX	BCN-1200XX
Internal Dimensions (WxDxH) mm	600x600x600	900x600x600	1200x600x600
MOC	Internal Working Chamber : Stainless steel (SS-304) Exterior Cabinet : Electro Galvanized Steel or Stainless Steel (SS-304)		
Pre - Filter	Mounted on aluminum frame, of rating 20 microns		
Supply / Main Filter	HEPA or ULPA with efficiency 99.97% @0.3 microns to meet air quality ISO Class IV		
Exhaust Filter	HEPA or ULPA with efficiency 99.97% @0.3 microns to meet air quality ISO Class IV		
Drain trough with valve	The trough at base is easy to clean and for offloading liquid spillage if any		
Front window/door	Counterbalanced front window/Door having laminated U.V. protected Acrylic/ toughened safety glass with front closure panel and specially extruded anodized aluminum frame.		
Noise level	< 65 dB		
Virus Burn out Unit	YES		
Power Supply	220 Vac ± 5% 50 Hz		
Sash Lift	Can be lifted and adjusted manually		
Utility	Gas/Air/vacuum cock and multipoint 15/5 Amp. Electric socket.		

An ISO9001:2015 Certified Company

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