Bright Star
AIRCON

Class III

BIOSAFETY CABINET

& Vertical Laminar Air Flow Cabinets

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Move a bright future...

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Bright Star

Biosafety Cabinet

Class III (PLT-275 A)

Bright Star Biosafety Cabinet also called a biological 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 Biosafety Cabinet exist, differentiated by the degree of biocontainment required.

The primary purpose of a Biosafety Cabinet is to serve as a means to protect the laboratory worker and the surrounding environment from pathogens. All exhaust air is HEPA-filtered as it exits the biosafety cabinet, removing harmful Bacteria & Viruses.

Applications Of Biosafety Cabinet

- BIOSAFE BIOLOGICAL SAFETY CABINET Class III exhaust 100% of air in the cabinet.
- **Bright Star** Biosafety Cabinet is used to protect personel, product and the environment from exposure to biohazards and cross contamination during routine procedures.
- Biosafety cabinets are Used for various applications in the life science, clinical, pharmaceutical and industrial laboratory.
- These Biosafety Cabinets are designed to provide 3 basic types of protection.
  a) Personnel protection from harmful agents inside the cabinet.
  b) Product protection to avoid contamination of the work, experiment or process.
  c) Environment Protection

Body & Dimension

- Main body should be made of stainless steel [(304 grade)- Heavy gauge- 16 G]
- Table top and working zone should be made of stainless steel [(304 grade)- Heavy gauge- 14 G &16 G]
- Table top should be in two parts:
  a) Front perforated portion 4" in size
  b) Non perforated working zone: Table sunken type rough type) for spillage management that can be lifted easily for cleaning below the table.

Body & Dimension

- Work Area should be approximately 900 or 1200 x 600 x 600 mm (3 – 4 feet) in size with shutter opening of 489 mm Overall Size of the cabinet should be approximately 1000 or 1300 x 825 x 2450 mm.
- Air Flow should be vertical down flow with 100% exhaust.
- Cleanliness level should be less than 3.5 particles/ litre of 0.5 µm and larger (ISO 14644-1).
- Noise Level should be less than 65 db.
- Vibration level: Less than 2.3 µm.
- Average air flow should be 90±20 fpm (down flow).

Salient Features & Construction Of Biosafety Cabinet

- Low Cost.
- Low Noise.
- User Friendly Ergonomic Design.
- Controlled Environment Particulate Free Product Protection.
- Work area surrounded by negative pressure, double wall plenums for protection.
- Aerodynamic designed airflow grille maintains safety by preventing blockage.
- Silent Vibration-Free Blower ensure noiseless operation.
- Sound level no more than 65 dbA.
- The Unit is suitable for CLASS 100 conditions.
- 100% of the air is re-circulated through the HEP A filter.
- Filtered Exhaust – protects ambient environment, and avoids build up, air borne particles.
- The exhaust of Safety Cabinet is connected to the Virus Burn out Unit for product and personnel protection.
- Air is drawn through Pre-Filter and is made to pass through high effective HEP A (High Efficiency Particular Air) filters.
- The efficiency of HEP A Filter is greater than 99.97% down to 0.3 micron.
- Basic material is thick board wood front back top and exterior surfaces are covered with Formica.
- Cold rolled steel duly powder coated OR Stainless Steel (SS-304) (as ordered).
- Working table is made of Stainless Steel Sheet (SS-304 grade).
- Window opens to 20cm±5mm working height with predefined locking device.
- Built in U.V . Germicidal light – facilitates sterilization of working area before and after use.
- Cock – for gas, air or vacuum, (only 1 no.) is provided.
- Working area is illuminated by fluorescent lighting fitted to the unit.
- The blower and motor assembly is statically and dynamically balanced of 1/5 H.P . capacity operates with minimum noise level.
- Height of the working table provides comfortable "SIT DOWN" working position for the operator .
- Supplied complete with cord & plug to work on Single Phase 220 / 230 volts A.C. supply .



Features Of Biosafety Cabinet

Model No	BSC -11	BSC -21	BSC -31	BSC -41
Working Table	2' x 2'	3' x 2'	4' x 2'	6' x 2'
Working Size	2' x 2' x 2'	3' x 2' x 2'	4' x 2' x 2'	6' x 2' x 2'
HEPA Filter Size	2' x 2' x 6"	3' x 2' x 6"	4' x 2' x 6"	3' x 2' x 6"
No. of Motor/Blower	1	1	1	1
Illumination	1 x 40 w	1 x 40 w	2 x 40 w	2 x 40 w
Cabinet Materiel	Wooden or Cold Rolled Steel Powder Coated or Stainless Steel (SS-304)			
Work Table	Stainless Steel (SS-304 grade)			
View Window	In work chamber to monitor the samples			
Main Filter	HEPA Filter (99.97% efficient at 0.3 micron particles)			
Pre -Filter	High efficiency pre -filter (Washable)			
Sterlization	By U. V. Germicidal Tube in work area			
Manometer	Static pressure analogue type.			
Sliding Sas	Counter balanced door for effortless operation			
Noise Level	Less than 65 db			
Accessory	Gas/Air cock and Multipoint 15/5 Amp. electric socket			
Electric Supply	AC 230V, 50/60Hz			

Other Features

- Installation, validation/ performance demonstration should be carried out at site with all ultra modern facilities like Velocity test, Laser based particle test etc.
- The cabinet should be based on NSF 49/ ANSI 49, ETL, CE certification.
- Suitable power supply/ UPS should be provided to continue, if the electricity goes off during the work.
- **Guarantee:** 3 years guarantee from the date of installation inclusive of one year spare replacements, if any.

Bright Star

Vertical laminar

air flow cabinets

Bright Star Laminar Air flow Cabinets is a closed cabinet fitted with HEPA filtered air flow system. Here, laminar means unidirectional constant flow of air with almost no or minimal turbulence. The air flow velocity remains between 0.3 m/s to 0.5 m/s. The purpose of using such workstations in laboratory is to create particle and bacteria free working environment to carry out specialized work. As these units discharge air towards user,they provide no personal protection but product protection from room contaminants. LAF is short form of laminar air flow.

Laminar Air Flow Applications

Laminar air flow systems are used in various applications such as life science research, microbiology, IVF, IUI and histopathology / pathology lab, plant tissue and cell culture and pharmaceutical and electronics industry and many more.

Types Of Laminar Air Flow

There are two different types of laminar air flow cabinets are constructed- Horizontal and Vertical.

The difference between vertical and horizontal laminar flow hoods is direction of air flow and placement of HEPA filter. These cabinets are made with either horizontal or vertical air flow systems and have two stages filtration. It is the type of application which decides which is most suitable to use.

- ***Vertical Laminar Air flow***

It is the most used type of laminar air flow. In vertical flow cabinet, room air is entered in working area through HEPA filter fitted on top of the cabinet. Thus, air flows downward (vertically) towards work surface and leaves the cabinet sweeping out particles and bacteria.

- ***Horizontal Laminar Air flow***

Horizontal Laminar Air Flow In horizontal air flow cabinet, room air is entered in working area through HEPA filter fitted on the back side of the cabinet. Filtered air flows horizontally towards the user creating sterile working environment.

Parts Of Laminar Air Flow Chamber

★ Blower
Blower assembly draws room air through pre filter and throws towards HEPA filter.

★ Pre Filter
It is primary air filter which filters room air initially and forward towards HEPA filter. Usually, pre filter keeps out particles 5 microns or higher.

★ HEPA Filter
This is final filter. Air filtered through pre filter is forwarded towards HEPA filter. HEPA filter offers 99.99% efficiency for 0.3 micron particulates.

★ Pressure Gauge
Magnehelic gauge is used to monitor differential pressure across HEP filter with respect to ambient.

★ Work Bench
It is made of stainless steel. Samples / products are put on it for work.

★ Sash
Sash is sliding front door. User can slide it manually and adjust the opening height as needed.

★ Light
Light is fitted to provide proper illumination under the working area.

★ Service fixtures
Main chamber is fitted with electrical socket, air and gas cock.

★ Germicidal UV lamp
UV lamp is an added option which is used to sterilize working area prior use. It is advised no contact to made in chamber during this time.

★ Air Filtration
The efficiency of a Laminar Air Flow workstation depends upon the quality of pre filters and HEPA filters. The Air filtration system is created to work efficiently even in critical environment. Pre filter that we use are box type pleated having efficiency 95% down to 5 micron and made of HDPE + Non-woven + HDPE mesh media and fitted in aluminum case. The HEPA filters are of high quality having efficiency 99.99 % down to 0.3 micron and fitted in aluminum anodized case. The blower assembly has ¼ HP; 1400 RPM branded motor and has aluminum anodized impellers.

★ Work Area
The working area is carefully designed for comfortable working and easy cleaning. The workbench is made of stainless steel. Standard fittings are air / gas cock and electrical outlet. For illumination, we use fluorescent lamps. Front side of working area is covered by manual sliding door (sash), which is made of transparent acrylic plastic.

There are some optional features that can be added if required by customer. LCD display for air velocity, time and lamp on/off status are displayed on it. *Germicidal UV lamp*, extra electrical socket and magnahelic gauge are also fitted if required.

If you want to know about laminar air flow price, customization, installation and validation etc. please email us your detailed query. Our sales personnel will contact you with everything you need.

Standard Sizes / Dimensions

2 x 2 x 2 610 x 610 x 610 2ft x 2ft x 6inch
3 x 2 x 2 915 x 610 x 610 3ft x 2ft x 6inch
4 x 2 x 2 1220 x 610 x 610 4ft x 2ft x 6inch
6 x 2 x 2 1828 x 610 x 610 3ft x 2ft x 6inch
8 x 2 x 2 2438 x 610 x 610 4ft x 2ft x 6inch

Note: While sending requirement, please mention Vertical or Horizontal Air Flow

Technical specification of Laminar Air flow

Laminar Flow Cabinets are built to a very high standard using only the best quality materials and fan components. Experience has shown that VLF Laminar Flow Cabinets give consistent performance, which is only dependent on replacement of the pre and HEPA filters at recommended intervals.

Vertical Laminar Flow occupies less space and can be installed in a small area. Provides extra workspace (Depth of 24" / 600mm) Advantage of working from both the sides and visibility from all sides

Specifications

General Construction:	Fabricated of powder coated steel members.. Base includes 1" (25 mm) steel - reinforced nylon leveling feet
Rear Panel:	Extends from hood to bench top height, 31" (787 mm) above floor, to optimize laminar flow. Stainless steel VLF has stainless steel rear panel Powder coated VLF has powder coated rear panel VLF for wet station has polypropylene rear panel
Side Panels:	24"D x 48"H (600 mm x 1200 mm) powder coated
Pre filters:	Washable fiberglass filter(s), located at top of VLF housing
Final Filters:	
Average airflow velocity:	100 (± 10) FPM (0.55 m/sec) at high setting, measured 6" (303 mm) below filter face
Sound level:	50 dBA, measured 12" (305 mm) from filter face @ 109 FPM (0.55 m/s)
Vibration level:	0.0004 G (from accelerometer)
FFU housing:	Powder -coated steel; includes integral air baffle system to ensure even air distribution. FFU fully encased in powder-coated steel housing
Lighting:	Fluorescent, 2800 lumens. Does not disturb the air flow
Electrical:	110VAC, 50/60Hz or 220VAC, 50/60 Hz. Meets the requirements of the National Electrical Code and applicable local codes. All components UL listed and CE marked
Performance:	Dust count exceeds ISO 5 (Class 100) requirements
Installation:	System is shipped as turnkey system, No installation required

Bright Star Aircon

Reg. Office : Plot No. 434/1, Shishuwala Talab Road
Near Mundka Metro Station, Village & P.O. Mundka, Delhi-110041
Mob : +91-11-9999648530, 8800274290
Phone : +91-11-8860648789
Email : brightstaraircon49@gmail.com, brightstaraircon@hotmail.com
info@brightstaraircon.com,
Website: www.brightstaraircon.com. www.brightstaraircon.in