EXPULSER
FUME HOOD

Certified to

ASHRAE EUROPEAN NORM EN SEFA

FUME CONTAINMENT SOLUTION
FUME EXTRACTION SYSTEMS
FUME HOOD ACCESSORIES

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FUME HOOD (FUME CUPBOARD)

A Laboratory fume hood (Fume cupboard) is a type of local exhaust ventilation system inside the laboratory. It is a typical enclosed cabinet except front face. The front opening will be equipped with a moving sash made out of toughened / safety glass. Air is drawn in to the hood under, through the opened sash and is exhausted through openings in the rear & top of the cabinet to a remote point such as an exhaust stack on the roof of the building.

Chemical fume hoods, when used properly are one of the most reliable engineering controls in the Laboratory. They protect the users by:

Containing vapors, dusts, gases, fumes etc generated within the hood, and removing them as airflows in to the hood and then out via the laboratory exhaust systems.

Contributing to laboratory ventilation as air flows through the hood.

Shielding the user with a clear sliding window called sash, that controls aerosols and prevent injury from splashes, fires or minor explosions that may occur inside the cupboard.

PURPOSE OF FUME CUPBOARD IN LABORATORY

Laboratory fume hoods are one of the most important equipment's used to protect laboratory personnel from exposure to toxic gases, hazardous chemicals fumes and harmful vapors generated during experiments inside the fume hoods.

FUNCTION

A laboratory fume hood is equipped with a baffle designed to control air flow patterns within the enclosure and manage an even distribution of air at the opening. When connected to properly designed exhaust system, the fume hood will carry the undesirable effluents -generated within the enclosure during a laboratory procedure- away from laboratory personnel. When used properly, they can provide an effective backup safety device for the containment and exhaust of toxic, offensive or flammable materials.

THE IMPORTANCE OF A CERTIFIED FUME HOOD

An ASHRAE 110, SEFA 1, and EN 14175 certified fume hood is vital because it provides verified safety. The certifications objectively prove the hood effectively contains hazardous materials, is built with durable, chemical-resistant materials, and operates safely under real-world conditions. This protects users, reduces institutional liability, and ensures long-term value.

THE GLOBAL BENCHMARK FOR FUME HOOD SAFETY

We ensure the highest level of safety for laboratory personnel through independent certifications that validate our fume hoods performance against the most rigorous international benchmarks.

ASHRAE 110-2016 Certified | **EN 14175 Certified** | **SEFA 1-2010 – Certified**

- **ASHRAE 110-2016 Certified:** Verifies superior fume containment performance through quantitative testing.
- **SEFA 1-2010 Certified:** Confirms adherence to strict design, construction, and performance standards.
- **EN 14175 Certified:** Ensures compliance with the leading European standard for safety and airflow.

ABOUT EXPULSER FUME HOOD

EXPULSER fume hood manufactured by BON Furniture Industries LLC (BONLAB Lab Furniture), are built to provide maximum visibility, superior containment, and effortless ergonomics. When you choose EXPULSER, you are choosing a partner dedicated to the long-term safety of your scientific personnel.

Dedicated Support & Lifetime Reliability:
At BON Furniture Industries LLC (BONLAB Lab Furniture), our commitment to your safety doesn't end at the point of installation. We understand that a fume hood is a critical piece of life-safety equipment. Our comprehensive support structure is designed to ensure your lab remains compliant and operational 24/7.

DESIGNING

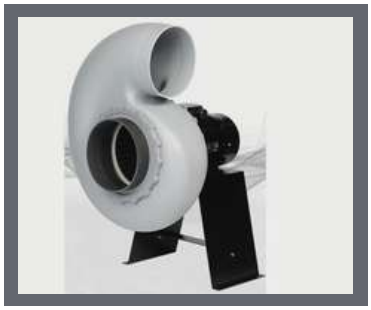
We create design, based on your need.

MANUFACTURING

Manufacturing, complying to International standards

INSTALLATION

Responsible installations & after sales services



FEATURES OF EXPULSER FUME HOOD

CHAIN AND SPROCKETS

NYLON CHAIN & SPROCKET DRIVE SYSTEM
The heart of a high-performance fume hood is the sash movement. While conventional hoods use stainless steel cables that can fray or "sing" under tension, our hoods utilize a Reinforced Nylon Chain and Sprocket Drive.

This engineering choice provides an ultra-smooth, gliding sensation that transforms the user experience from a mechanical chore into a seamless interaction.

Whisper-Quiet Operation: Unlike metal-on-metal systems, Nylon dampens vibration. The result is a nearly silent vertical movement, reducing ambient noise in the laboratory.

Total Corrosion Resistance: In an environment where acid and solvent vapors are present, metal components are at risk of oxidation. Our Nylon drive system is chemically inert, ensuring it will never rust or seize.

Self-Lubricating Properties: Modern industrial polymers have low-friction coefficients. This means the sash moves with a "weightless" feel without the need for messy grease that can attract dust and debris.

No "Cable Stretch": Conventional cables stretch over time, leading to an unbalanced or tilted sash. Our sprocket-driven chain maintains its pitch and length, ensuring the sash remains perfectly level for the life of the unit.

SASH HANDLE

FULL – WIDTH SASH AIRFOIL HANDLES
The safety of a fume hood is measured by its ability to contain hazardous vapors. Our hoods feature a Full-Width Aerodynamic Sash Handle, precision-engineered to act as a primary air-intake profile. This design is strictly aligned with ASHRAE 110 and EN 14175 standards for optimal containment and operator protection.

When air enters a fume hood, any sharp edge or obstruction creates "dead zones" and turbulence. Our contoured handle acts as a specialized airfoil, guiding the air smoothly over the threshold and into the chamber.

Turbulence Reduction: The curved, low-profile shape prevents the formation of "eddy currents" at the face of the hood, which are the leading cause of fume leakage.

Uniform Face Velocity: By spanning the entire width of the sash, the handle ensures that air enters the hood evenly, regardless of whether the sash is fully open or at its working height.

ASHRAE 110 Compliance: This design is specifically optimized to pass the "Sash Movement Effect" and "Tracer Gas" tests, ensuring that fumes stay inside the chamber even when an operator moves in front of the hood.

Ergonomic Grip: Beyond safety, the full-width design allows the operator to lift the sash from any point—left, right, or center—without straining the mechanism.

AIRFOIL

FULL-WIDTH AIRFOIL SYSTEM
In high-hazard laboratory environments, the difference between containment and exposure is measured in millimeters. Our fume hoods are equipped with a Full-Width Aerodynamic Airfoil, precision-engineered to eliminate turbulence at the critical entry point of the work surface.

This design is a direct response to the rigorous requirements of ASHRAE 110, ensuring that air enters the chamber in a smooth, laminar "sweep" rather than a chaotic swirl.

Engineered for Operator Safety: The airfoil acts as the primary transition zone between the laboratory environment and the containment chamber. Its contoured shape performs several vital functions.

Vortex Elimination: Standard flat-sill hoods create a low-pressure zone (vortex) just inside the sash. Our airfoil bypasses this, guiding air smoothly across the work surface to "flush" the deck of heavy vapors.

Constant Airflow Bypass: Even when the sash is fully closed, the airfoil provides a dedicated "bypass" gap. This ensures a continuous flow of air into the hood, preventing a vacuum effect and maintaining a safe face velocity at all times.

ASHRAE 110 Optimized: Designed specifically to pass the Tracer Gas Containment Test, our airfoil prevents the "escape" of fumes that typically occurs when an operator moves their arms or walks past the hood.

Debris Management: The raised profile of the airfoil prevents accidental spills from leaking out of the front of the hood, acting as a secondary containment curb.

INTERCHANGEABLE PANEL

INTERCHANGABLE FRONT FACIA PANELS
Modern laboratory requirements are constantly evolving. To meet this demand, our fume hoods feature a modular front facia system with interchangeable service panels. This design allows for seamless integration of electrical, gas, and data services without the need for structural modifications.

Plug-and-Play Adaptability: Easily swap out blank panels for pre-configured modules including electrical outlets, data ports, or specialized gas valves.

Future-Proofing: As your research projects change, so can your hood. You can add or relocate services in minutes, ensuring the workstation remains relevant for years to come.

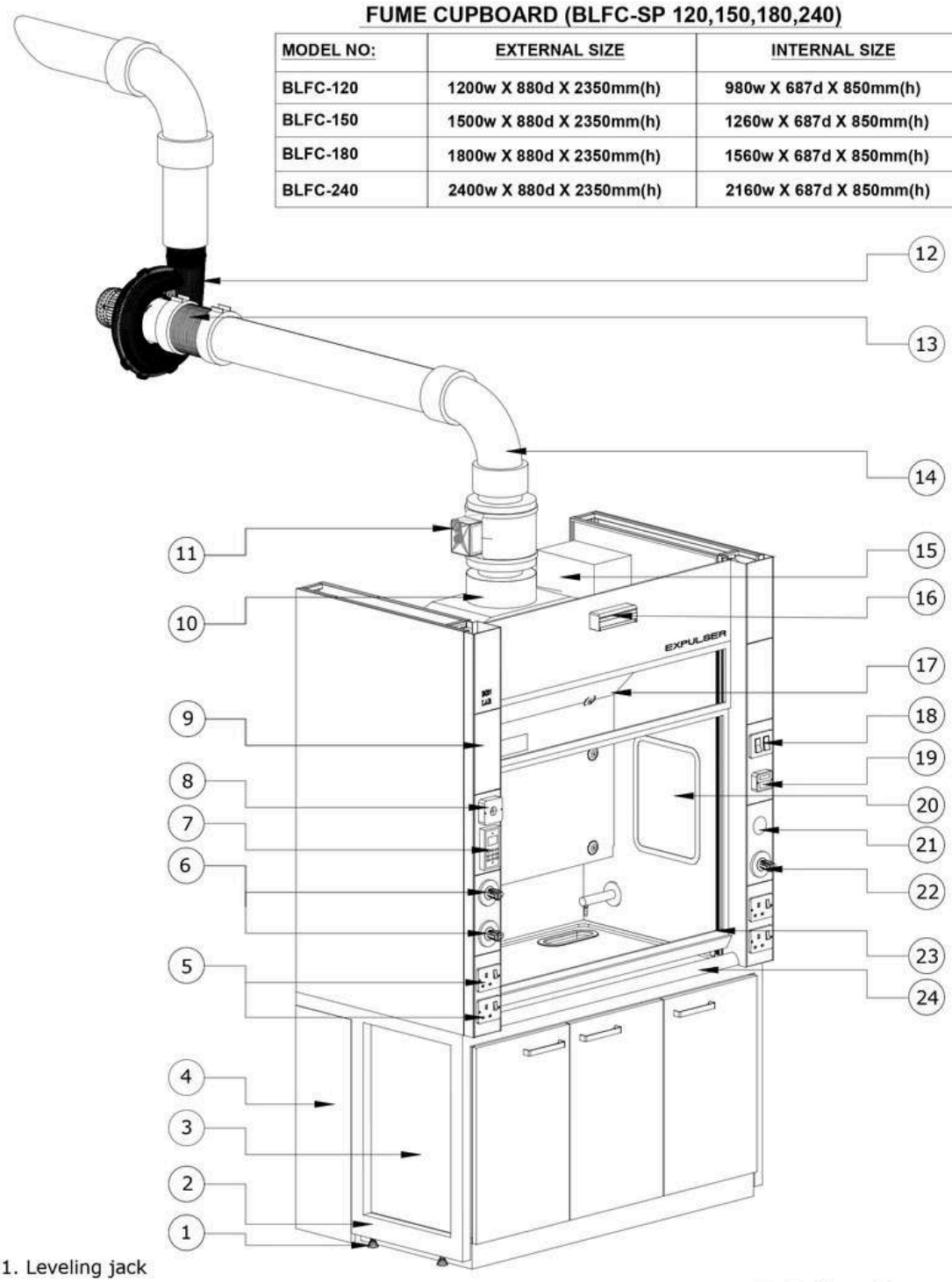
Maintenance Without Downtime: Because the panels are independent of the main hood structure, servicing a specific utility or replacing a damaged outlet is faster and safer, minimizing laboratory disruptions.

Ergonomic Customization: Technicians can position high-use services exactly where they are needed—at eye level or within easy reach—improving workflow efficiency and safety.

SPECIFICATION DETAILS

FUME CUPBOARD (BLFC-SP 120,150,180,240)

MODEL NO:	EXTERNAL SIZE	INTERNAL SIZE
BLFC-120	1200w X 880d X 2350mm(h)	980w X 687d X 850mm(h)
BLFC-150	1500w X 880d X 2350mm(h)	1260w X 687d X 850mm(h)
BLFC-180	1800w X 880d X 2350mm(h)	1560w X 687d X 850mm(h)
BLFC-240	2400w X 880d X 2350mm(h)	2160w X 687d X 850mm(h)

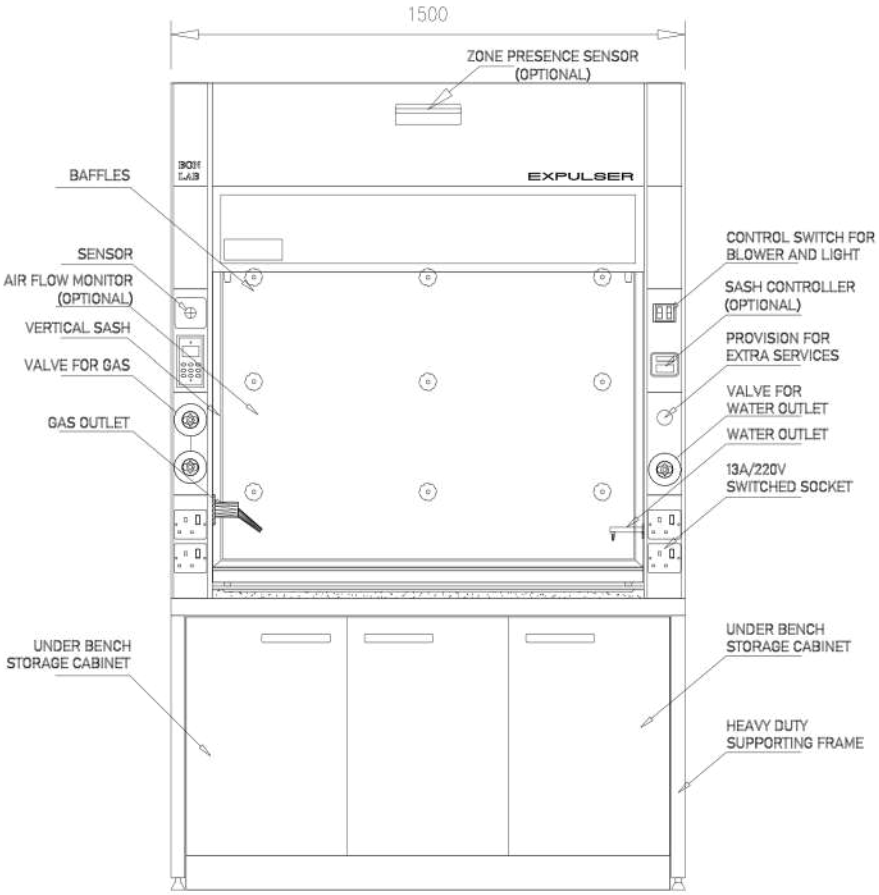


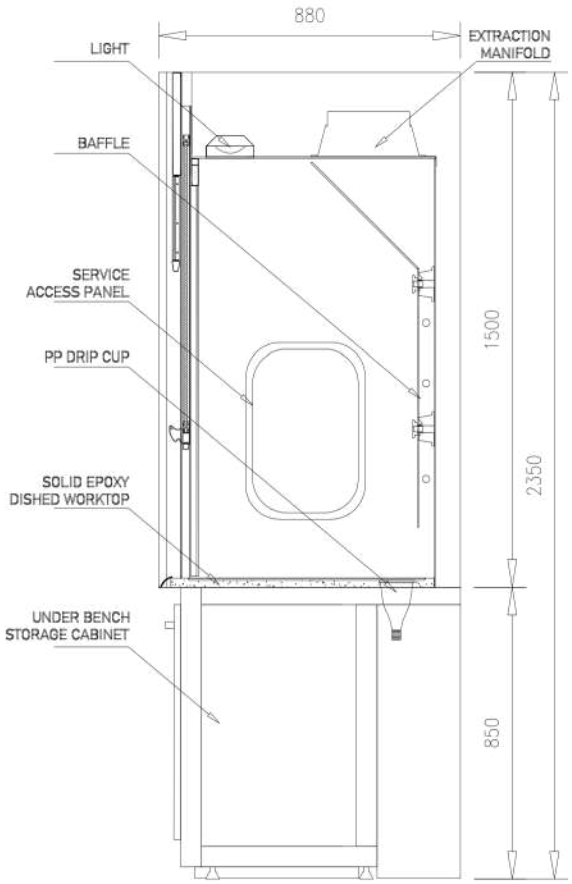
01. Leveling jack
02. Fume hood stand-frame work structure
03. U/b storage cabinet
04. Covering panels
05. 13A/220V Switched Socket
06. GAS Valve
07. Airflow monitor
08. Sensor
09. Service pillar
10. Canopy
11. Motorized Damper
12. Blower
13. Flexible connector
14. PVC Bend
15. VAV Control box
16. Zone presence sensor
17. Baffle wall
18. Blower/Light switches
19. Sash controller
20. Internal Access panel
21. Provision for extra services
22. Water regulator
23. Vertical Sash
24. Worktop

TYPES OF FUME CUPBOARD

BENCH MOUNTED FUME CUPBOARD

Majority fume hood types are bench mounted. Mainly, there are two parts for Fume Hood.
a) Fume Hood Upper Unit, b) Fume hood Base cum storage
(In case of Walk-in type Fume Hood, there is Upper Unit only)

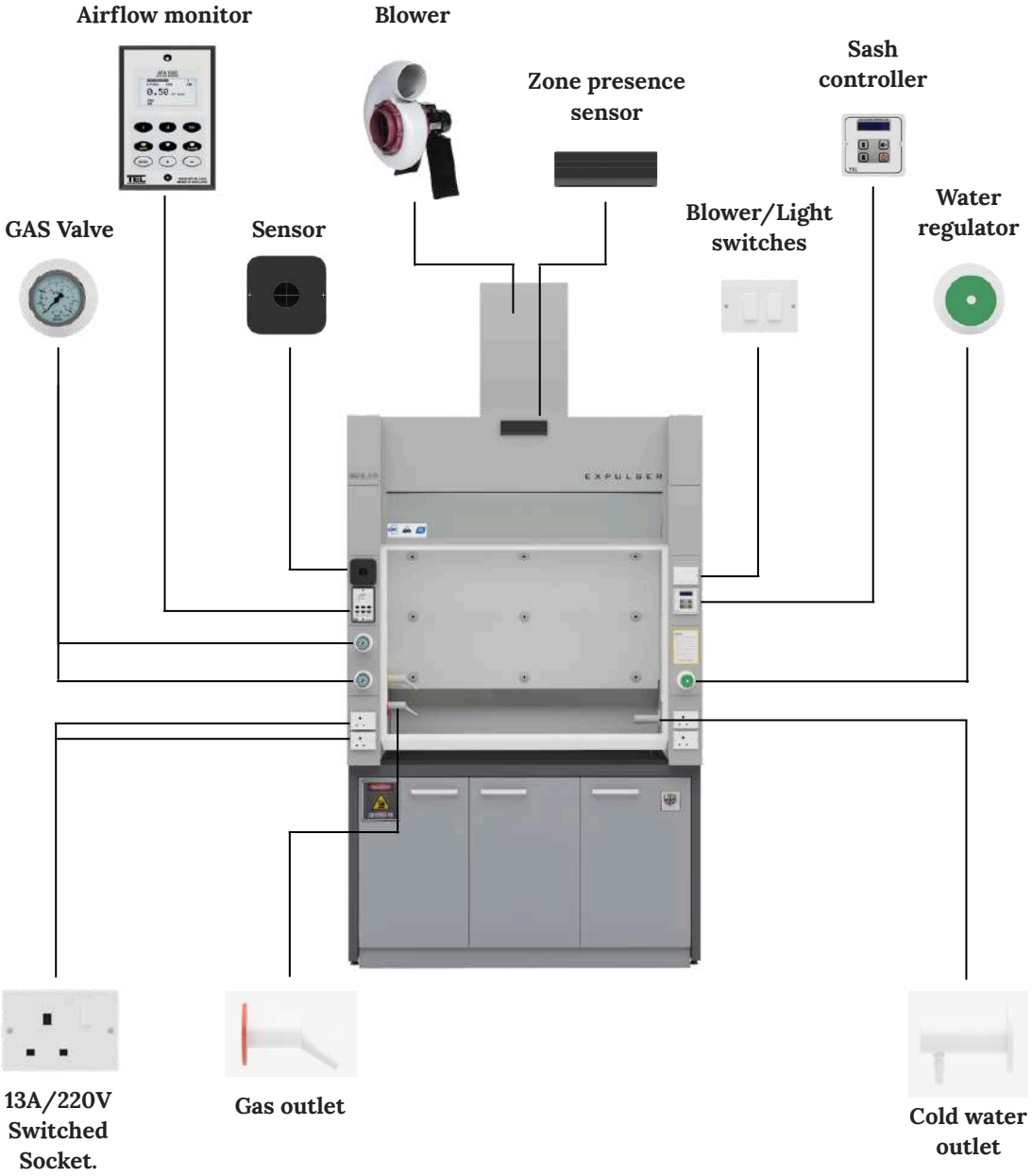




- Structure made of 1.2mm thick cold rolled steel with epoxy powder coating
- Baffle and internal linings are Phenolic resin panel
- Worktop 19mm thick epoxy
- Sash made of 6mm thick toughened glass vertically sliding
- A cold water outlet
- A Cup sink made of polypropylene
- 1no. LPG Standout
- 2no. 13A / 220V Electrical switched single socket mounted on front fascia
- 2no. 20W daylight lamp with glass insulation lamp box
- 1no. Under bench melamine lamineted plywood cabinet.

VARIABLE AIR VOLUME FUME CUPBOARD

Variable air volume (VAV) fume hood design is for the regulation of air flow, rather than being a constant air flow system, the VAV fume hood allows for variation thereby reducing unwanted airflow and overall cost of operation.

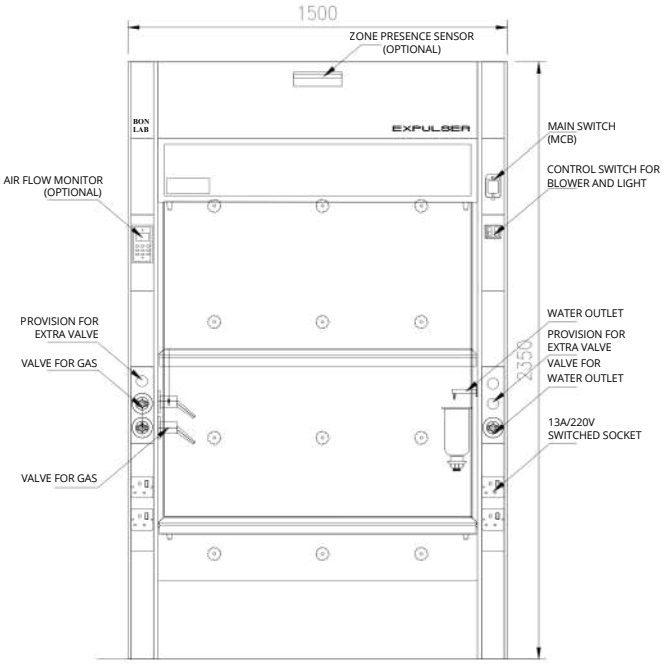


- Equipped with variable airflow controller
- The 0-10v output signal of the controller can be connected to a frequency inverter or motorized damper
- Automatically regulates airspeed
- Significant energy savings of more than 60% while ensuring the highest level of safety
- Prevents the fume hood user about a loss of face velocity or if the sash is raised above the safe working height
- Adapted to all laboratory applications

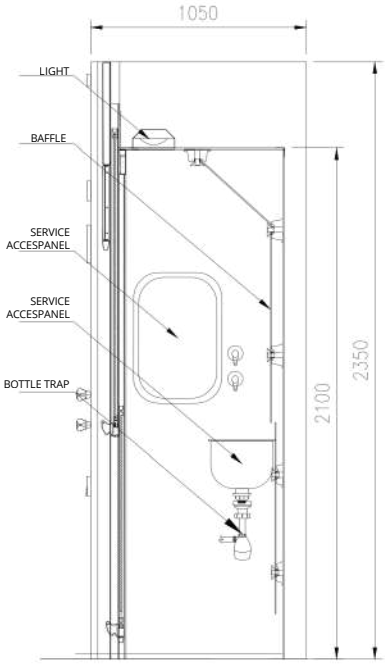
WALK-IN TYPE FUME CUPBOARD

Walk-in fume hood are basically a bench hood that reach the floor, do allow users to walk in and out to set up equipment before and after work begins.

Walking fume hood is also known as a Floor Mounted Fume hood.



ELEVATION



SIDE VIEW

Walk-in fume cupboard is appropriate for placing large floor standing equipments.

The standard sash arrangement for walkin fume hood will be double sash opening. However, this can be customized for special applications

SPECIAL CUSTOMIZED FUME HOOD

Customization of the underbench to accommodate equipments

When customizing a fume hood, the space beneath the worktop, the underbench, is often the most underutilized area. While standard cabinets are meant for bottles and jars, modifying this space to accommodate unique equipment can significantly improve laboratory workflow and safety.

We can do custom modifications for the Expulser fume hood, including:

- **Acoustic Insulation:** Lining the cabinet with sound-dampening foam to reduce decibel levels in the lab.
- **Active Ventilation:** Integrated cooling fans that trigger automatically to prevent the pump from overheating in a confined space.
- **Pull-out Trays:** Heavy-duty sliding rails that allow the pump to be pulled out for oil changes and maintenance without disconnecting hoses.
- **Vibration Isolation:** Dampening mounts to prevent pump tremors from vibrating the delicate glassware on the worktop above.

POLYPROPYLENE FUME HOOD

Superior Chemical Resistance for Maximum Lab Safety

For labs working with highly corrosive acids, alkalis, and solvents, standard steel fume hoods don't provide adequate protection. The Polypropylene Fume Hood is engineered with a robust, welded 8mm polypropylene structure, ensuring exceptional chemical resistance and a longer operational lifespan. Its non-porous and non-corrosive properties make it the ideal choice for even the most demanding chemical and cleanroom applications.

Key features for enhanced performance:

- **Unmatched chemical resistance:** Constructed from high-grade, seamless polypropylene, this hood is impervious to strong acids, alkalis, and corrosive chemicals that would damage standard metal units.
- **Optimal safety and containment:** Protect personnel and the environment by efficiently exhausting noxious fumes and vapors. Advanced airflow management ensures no dead angles, providing maximum containment.
- **Durable and lightweight construction:** Polypropylene provides high mechanical strength and impact resistance in a lightweight package, allowing for easier transport and installation.
- **Easy to clean and maintain:** The smooth, non-porous surface prevents the adhesion of chemical residues and odors, making decontamination simple and efficient.
- **Configurable options:** Customize your setup with a range of options, including different worktop materials (ceramic, epoxy), touch-screen control systems, and various service fixtures like gas and water taps.

Invest in the safety of your lab and the integrity of your work with a fume hood built for ultimate corrosion resistance.

The power of polypropylene

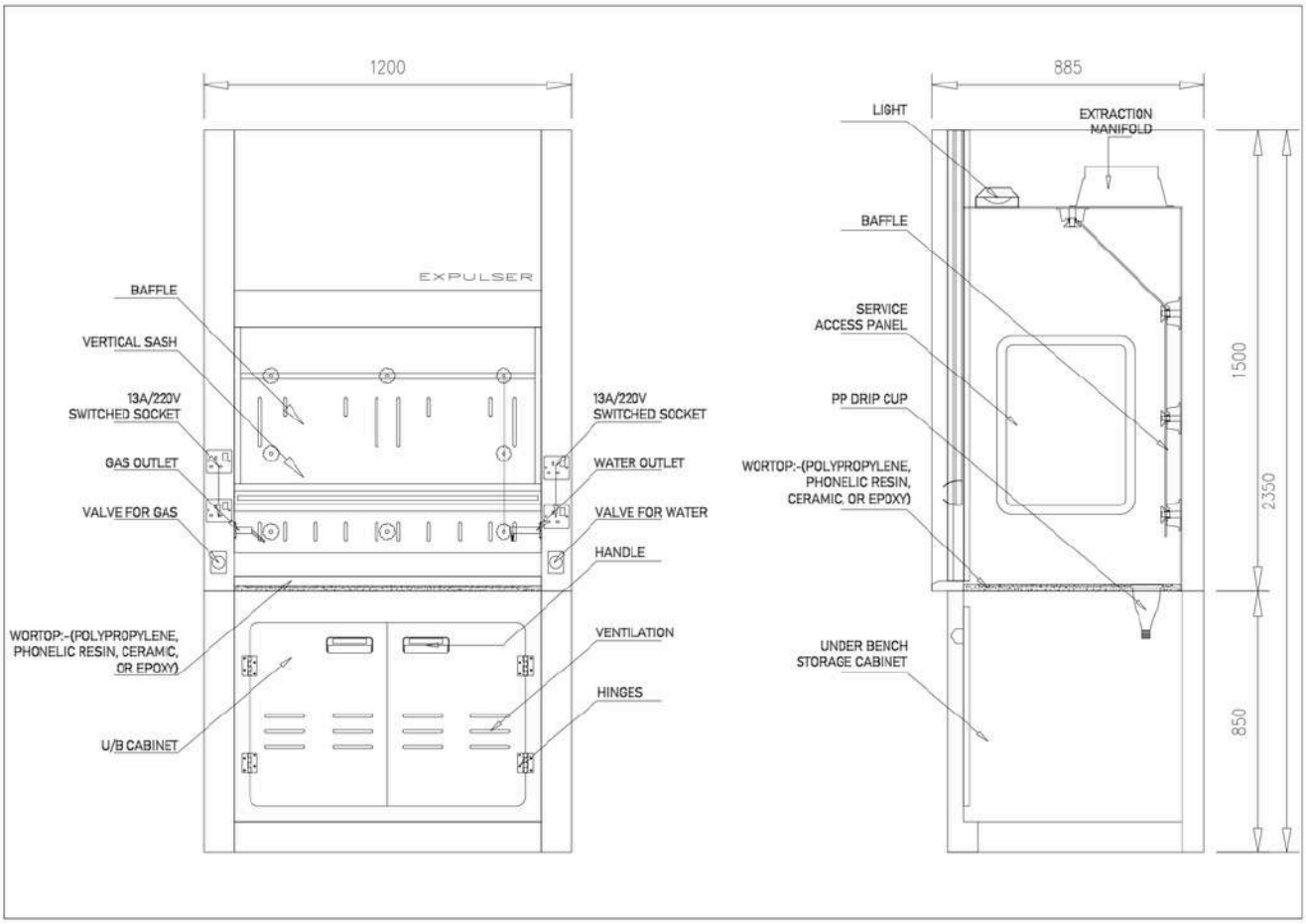
Polypropylene is the material of choice for advanced chemical applications. Its inherent resistance to strong acids and alkalis ensures that your fume hood will not rust, corrode, or degrade over time, dramatically reducing maintenance costs and ensuring a longer service life.

Designed for critical performance

- **For cleanrooms and wet processes:** The material's non-porous nature makes it perfect for environments demanding high hygiene standards, such as cleanrooms and food processing facilities.
- **Superior containment:** A one-piece, welded interior minimizes turbulence and eliminates dead spots, providing optimal air capture efficiency to protect laboratory staff.

POLYPROPYLENE FUME CUPBOARD (PPFC-120,150,180,240) SIZE AND SPECIFICATION

MODEL NO:	EXTERNAL SIZE	INTERNAL SIZE
PPFC-120	1200W X 885D X 2300mm(H)	1000W X 660D X 850mm(H)
PPFC-150	1500W X 885D X 2300mm(H)	1300W X 660D X 850mm(H)
PPFC-180	1800W X 885D X 2300mm(H)	1600W X 660D X 850mm(H)
PPFC-240	2400W X 885D X 2300mm(H)	2200W X 660D X 850mm(H)



OPTIONAL ACCESSORIES FOR FUME CUPBOARD

ATEX RATED ACCESSORIES

Fume hood with ATEX system integration, consisting of a set of explosion proof fittings and wiring materials.

All electrical components including socket outlets, LED lighting and wiring system are suitable for Zone 2 Hazardous atmospheres. But the main control panel has to be at Safe Area located within 20m of the fumecupboard with all associated Industrial standard wiring installation.

GAS REGULATOR WITH GAUGE

The special laboratory tapping points incorporate the functions of shut-off, pressure regulation, and pressure indication in one compact, ergonomic unit. These can be mounted on the front fascia of the fume hood with the remote outlet point inside the fume chamber.

AIRFLOW MONITOR PANEL

- Audible alarm and led visual
- Ventilation ON/OFF
- Fume hood light ON/OFF
- Prevents the fume hood user in case of air speed too low
- Prevents the user if the sash is
- raised above the safe working height
- Remote control panel with small
- sizes (4cm*13cm)

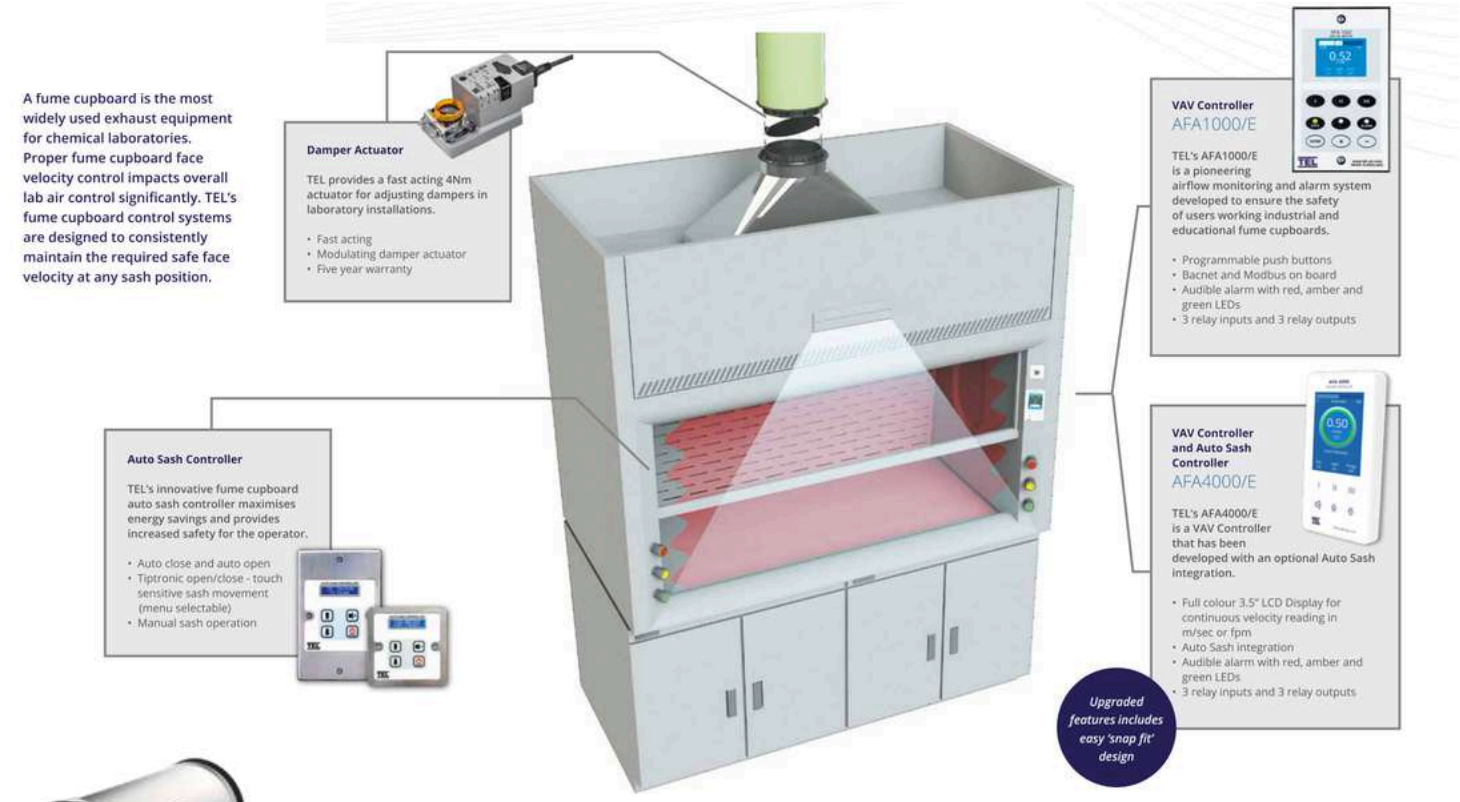
SAFETY STORAGE CABINETS

Safety storage cabinets, as an optional under-bench integration, transform a standard fume hood from a simple exhaust vent into a comprehensive, self-contained safety workstation.

Depending on the chemicals being used, you likely offer two primary types of specialized LOCKUP safety cabinets

- Flammable Liquid Storage Cabinets
- Corrosive/Acid Storage Cabinets

SASH CONTROL SYSTEM



VAV Terminals

Circular VAV Terminal Unit

The Variable Volume Circular type RVP-C provides volume flow control of extract and supply air systems across a wide range of sizes and volumes to suit any application. Ideally suited for use with the TEL AFA5000 Room Space Controller.

FIRE SUPPRESSION SYSTEMS

A Pre-Engineered Fire Suppression System as an optional feature is perhaps the ultimate "peace of mind" upgrade for a fume hood. In high-risk labs where volatile solvents or open flames are common, this system acts as the last line of defense, reacting in seconds—often before a smoke alarm even triggers.

Unlike a building-wide sprinkler system, a pre-engineered system is localized. It is designed specifically for the internal volume of the hood.

- **Detection Tubing:** High-tech, pressurized polymer tubing is routed through the hood's "ceiling" and baffle area.
- **Automatic Activation:** If a fire occurs, the heat causes the tubing to burst at the hottest point
- **Suppression Discharge:** The drop in pressure instantly opens the cylinder valve, flooding the hood interior with a suppression agent (like CO2, FM-200, or Dry Chemical) through specialized nozzles.
- **No External power required:** The system is pneumatically actuated (based on pressure), it will function even during a total lab power failure.

OUR PARTNERS

DISCLAIMER

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