



Custom Enclosures

- Customized Containment Cabinets and Enclosures



Custom designed
aluminum frame enclosure.



Operator



Product



Particulate



Vapor



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INTRODUCTION

Setting up new operations or developing new processes can be difficult when limited to existing models of vented and ductless enclosures. Air Science® understands that your needs are unique and we can help you find the configuration that is best for you. Get the customized enclosures you need, while we guide you on the best options.

We build custom enclosures for specific customer requirements and applications. Each unit is designed to maximize operator safety and accessibility and is tested and certified to factory specifications and industry standards.



Deep into its second generation, Air Science embraces the diversity and cultural heritage of the founders and co-workers who are continuing a tradition of excellence. Demonstrating a commitment to adaptation, inclusion and quality output from a United States-based company with a domestic and global reach.

APPLICATIONS

Air Science manufactures enclosures to meet any specialized filtration need. Common applications for our products include:

State and Federal Crime Laboratories \ Law Enforcement Agencies \ Compounding \ Enclosing Balances, Microscopes and Robotic Equipment \ Forensics \ Histology \ Educational \ Microscopy \ Mobile and Classroom Demonstrations \ Pharmaceutical \ Powder Weighing \ Sample Prep Work \ Soldering \ Solvent Cleaning and Welding \ Veterinary \ Dental

PRODUCT FEATURES

- Custom enclosures can be designed to protect the process, operator or both from particulates, fumes and vapors.
- Air Science has developed enclosures to accommodate many of the most commonly used robotic systems.
- Customization can range from small modifications of existing standard Air Science models, to completely custom, application-specific enclosures.



Total Exhaust, bench top Custom ENCLOSURE.

Extra Deep VLF Custom ENCLOSURE.

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CUSTOMIZABLE CHOICES FOR ANY APPLICATION:

The Air Science staff works closely with you to provide high quality enclosures built to your specifications, providing consultation on optimum materials and dimensional layouts to achieve the best results.

Our process is completely customized, delivering a host of options including custom sizes, construction materials, door types, airflow patterns, filtration and accessories.

- **Construction.** We can build enclosures to any dimension and from a wide array of materials. We offer construction in epoxy-coated sheet metal, stainless steel, aluminum extrusion, polypropylene, acrylic, polycarbonate as well as tempered glass.
- **Filtration.** Custom enclosures can be designed to utilize carbon filtration to trap a host of chemical vapors utilizing the Multiplex™ Filtration System. We can provide HEPA/ULPA filtration to trap particulates or design without filtration if the enclosures are to be connected to a filtered in-house HVAC system.
- **Airflow Patterns.** We offer positive pressure enclosures to protect the process in both vertical downflow and horizontal airflow configurations. Negative pressure systems, designed to protect the operator from harmful particulates and vapors, can be configured in vertical upflow or horizontal flow patterns. Air Science is also able to incorporate crossflow and multi-directional airflow to ensure both process and operator are protected. Dead air systems are available as well.
- **Doors and Openings.** Each enclosure can be fitted with your choice of door type. Common selections include overlapping sliding doors (horizontal or vertical), hinged horizontal upward swing doors, or vertical outward swing doors. We also can include vinyl strip doors and glove port openings.

- **Accessories.** In addition to our construction, filtration and airflow options, we can offer a variety of optional accessories to meet your needs as well. Cable ports, fan speed controllers, lighting, airflow and filter alarms, as well as sinks and service outlets can be installed in any of our custom enclosures.
- **Standard Compliant.** Air Science enclosures' performance specifications and construction meet or exceed OSHA, ANSI and relevant international standards to assure operator safety.

THE BENEFITS OF CUSTOM DESIGN:

Custom enclosures are designed to incorporate as seamlessly as possible into your current operation. We can build enclosures to be ducted directly into your existing HVAC system or create a ductless design that can fit anywhere. Ductless technology offers a host of benefits and features designed to help you save money and offer enhanced protection to operators, processes and the environment.

- **Environmental Benefits.** Ductless chambers capture vapors and particles to prevent operator exposure and eliminate ecological impact.
- **Energy Efficient.** Because filtered air is returned to the room, no demands are required of the facility HVAC capacity for make-up air.
- **Cost Effective.** Facility duct work, HVAC and construction costs are eliminated.
- **Safe to Use.** Cabinet isolation and filtration protects users from incidental exposures to harmful fumes.
- **Versatile.** The filtration system uses the exclusive Air Science Multiplex filtration technology.
- **Easy to Install.** Air Science ductless chambers are self-contained. Set-up, operation and filter maintenance are straightforward.



Custom ENCLOSURE with vertical rise door.

Custom Microscope Enclosure with cut-out.

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Each Air Science Custom ENCLOSURE includes features expressed through sound design and certified quality construction. Options and accessories add functional performance to meet specific applications.

PERFORMANCE

The Air Science Multiplex Filter offers a range of options for high performance protection.

- Multiplex filter configuration permits a customized combination of filter media for a broad range of chemical families and biological agents if required.

DESIGN

Professional quality Air Science fume hoods comply with current technical and safety regulations. The cabinet frame and work surfaces, comprised of industrial components, are durable and chemically resistant.

The Air Science filter assembly is easy to access, easy to change, plus a unique filter clamping design eliminates bypass leakage outside the cabinet.

RELIABILITY

Internal systems are isolated from fumes, extending product life.



Drum Enclosure



Rotovap Enclosure



Tablet Press Enclosure

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FILTRATION

At the heart of the Custom ENCLOSURE product line is innovative filtration technology. The **Multiplex Filtration System** consists of a pre-filter and main activated carbon or HEPA/ULPA filter. The system permits a customized combination of filter media and configuration for chemical and physical adsorption specific to each application need.

The Air Science carbon filtration technique is based on enhanced, activated carbon particle formulations from specially selected, naturally occurring raw material that is superior to wood or other organic sources. The carbon is treated to attain the proper porosity and aggregate surface area and to react with several ranges of aerosolized chemicals moved through the filter by an air handling blower.

FILTER CONFIGURATION

The Multiplex feature permits one or more filtration options to be combined to meet a wider range of multiple-use applications.

Custom enclosures can be equipped with a single activated carbon main filter or with a stacked configuration which combines two main filters, each activated to adsorb one or more specific vapors or family of vapors. For safety against particulates, an optional HEPA or ULPA can also be added. When used with a HEPA/ULPA filter, the ductless fume hood may be applied as a Class I Biological Safety Cabinet.

The carbon filter is sized to fit the specified product model number and configured to optimize airflow across 100% of the filter surface area. The self-contained assembly maximizes filter efficiency, prolongs filter life, optimizes diffusion and saturation and improves user safety.

- P. Electrostatic Pre-Filter:** Protects the main filters from aerosols, mists, dust and particulates.
- C. Activated Carbon Main Filter:** A single, blended or stacked filter configuration.
- H. HEPA/ULPA Filter, Optional:** Both HEPA and ULPA filters use micro-glass fiber media designed to capture fine particles and biologicals. Both filters can capture particles smaller than the micron size for which they are tested. HEPA and ULPA filter efficiencies are 99.97% at 0.3 microns and 99.999% at 0.12 microns respectively.

MULTIPLEX FILTRATION SYSTEM, SUMMARY

Application	Chemical	Powder/ Biological	Chemical & Powder	Chemical within Cleanroom
Primary Filter	C	H	H C	H C
Pre-Filter	P	P	P	P

The system can be configured for the capture of acids, bases and particulates, such as biological aerosols, when paired with HEPA or ULPA filters.

AIRFLOW

The custom enclosures maintain a constant face velocity of 100 fpm in compliance with USA and international standards for safety and performance. Contaminated air is pulled through the Multiplex filtration system; clean air is returned to the room.

The main filters are easy to replace and install. The filter clamps tightly against the filter gasket to prevent filter bypass and maintain filter integrity.

⚠ **The pre-filter** may be replaced while unit is in operation.



SECUR.
safe disposal service



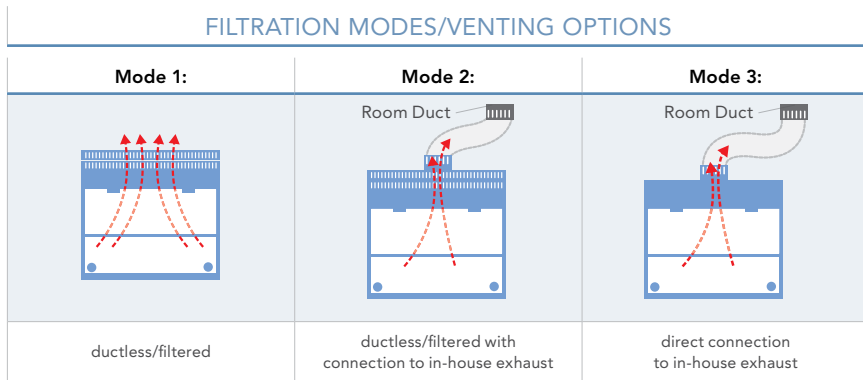
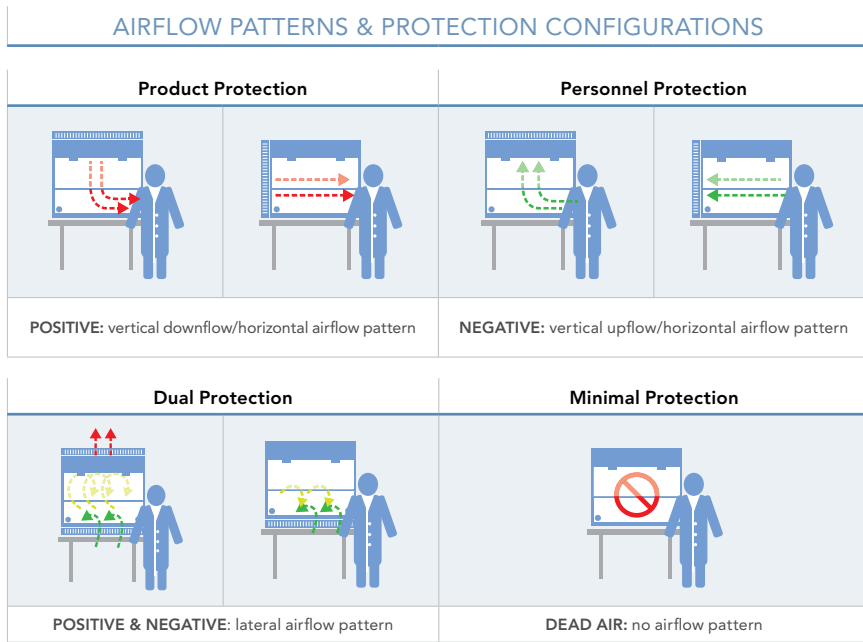
Filter disposal services are available in selected markets providing responsible destruction or recycling of saturated filters in authorized facilities.



Through our partner company [Filtco Filters](#), Air Science is a single source supplier of all pre-filters, carbon filters and HEPA/ULPA filters used in our products.

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TYPES OF AIRFLOW:

Vertical Airflow. Well suited for enclosing tall equipment that may disrupt airflow or create dead spots in horizontal airflow settings

Horizontal Airflow. Recommended for shorter equipment types, such as balances, that are susceptible to turbulence at the work surface in vertical airflow settings.

Lateral Airflow. Offers flexibility when dual protection is required on equipment that is too large or long to be housed in a traditional Class II biological safety cabinet. Lateral airflow combined with dual filtration provides a high level of containment.

VENTING OPTIONS:

There are three venting options available for custom enclosures:

- Vent to Fan Filter System, top mount or remote connection with flex hose, with the Multiplex HEPA and/or carbon filtration for recirculation into the room.
- Vent to Fan Filter System with Bag Multiplex HEPA and/or carbon filtration and connect to house exhaust.
- Connect directly to house exhaust.

NOTE: Dead air versions are also available, but offer limited to no personnel/sample protection.

SUPERIOR PROTECTION:

Enclosures are designed to protect the process, the operator, or both through airflow pattern design and filtration type. We offer a number of configurations to fit the needs of any industry.

Personnel/Operator Protection. Vented enclosures with face openings and negative pressure allow particles and vapors to be drawn out of the enclosure and into a HEPA filtration unit or existing house exhaust. These enclosures are designed to provide protection for operators with low flow and turbulence free containment providing a safe work environment.

Product/Equipment Protection. Enclosures with positive pressure prevent particles and other contaminants from entering the work zone. Typically, these enclosures utilize HEPA filters with class 100 clean air.

Dual (Personnel and Product) Protection. Enclosures are designed to protect the internal work zone from particulates and other contaminants with filtered air, while maintaining negative pressure to protect the work environment and lab personnel. Dual filtration provides the highest level of containment available.

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* This is an interactive form. Fill in the desired dimensions for the custom enclosure and then mark the options for construction. Mark the additional accessories that you would like to add to the order. Complete the contact information and save the file. Email, fax or print and mail the form to Air Science for your custom quote.

Company _____ Name _____

Mailing Address _____ City _____

State _____ Zip _____

SPECIFY YOUR OWN CUSTOM ENCLOSURE

Set Your Dimensions:

Internal External Height: _____ " Depth: _____ " Width: _____ "

Step 1: Choose the type of protection you need.

<small>(negative pressure)</small>	<small>(positive pressure)</small>	<small>(positive & negative pressure)</small>	<small>(no pressure)</small>
Operator	Product/Process	Both	Dead Air

Step 2: Choose your filtration type. (see chart on page 5)

Carbon	HEPA/ULPA	NONE/Connect to in-house
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Step 3: Choose your construction options.

Orientation:	Horizontal	Vertical		
Frame:	Polypropylene	Metal	Aluminum Extrusion	Stainless Steel
Window & Sidewall:	Metal	Acrylic	Polycarbonate	Tempered Glass
Tray:	Polypropylene	Epoxy Resin	Stainless Steel	

Step 4: Pick your preferred door type.

Upward Hinged	Vertical Swinging	Vertical Sliding	Horizontal Sliding	French	Vinyl Strips
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Step 5: Select additional options and accessories.

Tray Color	White	Black		
Shelving	Fixed	Repositionable		

OPTIONS TABLE

Cable Ports	Electrical cords and cables are safely routed into the cabinet through pass through ports; located only on the side panels.	TE-CPRH	
Trash Chute	Side mounted trash chute. Bags not included.	TRASH	
Speed Controllers	The operator may set the centrifugal fan motor speed as desired.	SPDC	
Bag-In / Bag-Out Filters	Our HEPA filters are fitted with a "bag-out" system to completely protect operators during filter changes.	HEPA-BO	
UV Lamps	A UV lamp is available for overnight decontamination of interior surfaces. The UV kit includes a timer, door microswitch, fully closing front sash and UV filtering clear polycarbonate panels. The UV operation must comply with local codes and facility safety practices.	UV	
Base Stands	Provides a lower storage half shelf; accommodates wheelchair access. Available with locking casters or leveling feet. Adjustable height.	CART	
Airflow and Filter Alarms	Alarms to identify low airflow or clogged filters help keep operators and processes safe.	EAFA	
Fluorescent Lighting	Lamp in vapor proof housing.	FLUOR	
Glove Ports	Ports to incorporate Polyurethane Tapered Sleeves with Double O-ring Cuffs.	GLOVE	
Hanging Rods	Versatile stainless steel hanging rods are removable and adjustable for proper orientation of items being processed.	HANGR	
Humidifier System	Programmable to achieve preset humidity conditions quickly and accurately.	DHUM	
Cup Sink	Chemically-resistant optional polypropylene sink cup integrated into the work surface.	SINK	
Service Fitting	Petcocks are available for gas and water. Specify service fitting type (faucet, valve, or petcock) and location below. Fitting Type: _____ Location: _____	SF-X	
Electrical Outlets	Duplex power outlets can be mounted on any area of the cabinet surface.	ELOU	
Other	_____		

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WARRANTY

This product is protected by the Air Science Legacy Limited Lifetime Warranty™.



For details visit the [Warranty section](#) of our website.

STANDARDS & COMPLIANCE

Quality Management Systems	ISO 9001:2015
Electrical Safety	UL-C-61010-1 CAN/CSA C22.2 61010-1-12 EN 61010-1:2010 CE Mark
OSHA, Occupational Safety and Health Information	OSHA Standard -29 CFR, Safety and Health Regulations for General Industry, 1910.1450: Occupational exposure to hazardous chemicals in laboratories. Part B, definition, laboratory type hood. This product may assist you with compliance or as part of your chemical hygiene plan. Please consult your Safety Officer and/or Industrial Hygienist.
Environment	ISO 14001:2015 ENERGY STAR® Partner



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