

# CustomEnclosure<sup>™</sup> SERIES

## Customized Containment Cabinets and Enclosures

"The World's Most Extensive Selection of Containment Solutions."



— Custom designed  
aluminum frame enclosure

Customizable Enclosures to Fit  
Your Specialized Filtration Needs

Meets or Exceeds OSHA, ANSI and  
other International Standards



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**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 and dental work


**CustomEnclosure<sup>SERIES</sup>**

*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 (left)  
Extra Deep VLF Custom Enclosure (right)*

**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.

**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 down-flow 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.

- **Standards 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 Enclosures (left to right):  
Drum Enclosure; Rotovap Enclosure; and Tablet Press Enclosure

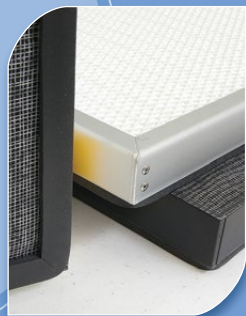


Custom Enclosure with vertical rise door (left)  
Custom Microscope Enclosure with cut-out (right)

## THE AIR SCIENCE PERFORMANCE ADVANTAGE

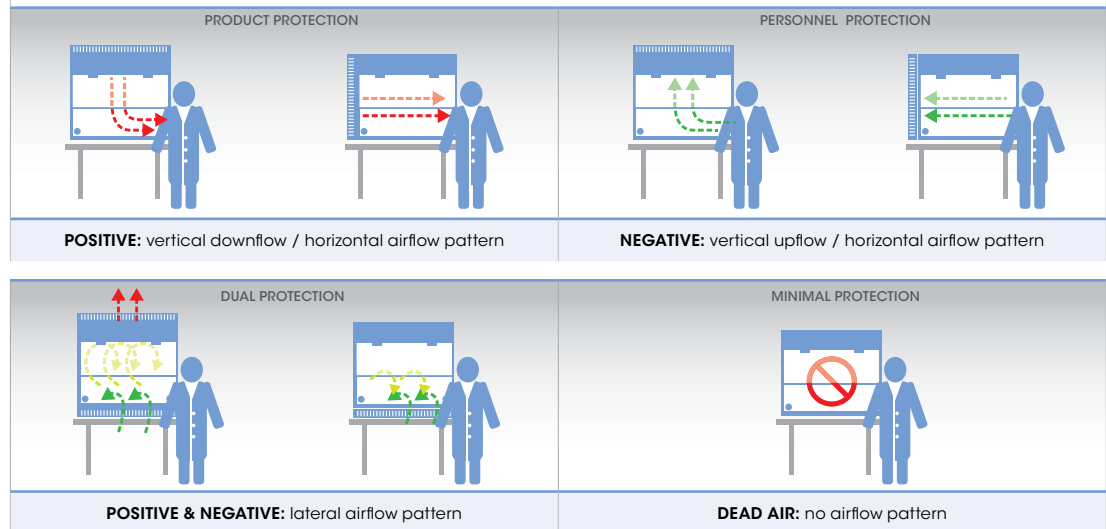
Air Science Custom Enclosures include features expressed through sound design and certified quality construction. Accessories add functional performance to meet specific applications.

- **Professional Quality.** All enclosures comply with current technical and safety regulations.
- **Multiplex Filtration.** The Air Science Multiplex Filter offers high performance and safety.
- **Industrial Components.** The cabinet frame and work surfaces are durable and chemically resistant.
- **Reliability.** Internal systems are isolated from any fumes, extending product life.



The Multiplex filter configuration permits a customized combination of filter media for a broad range of chemical families and biological agents if required. EFT Filtration Technology broadens the Air Science application for ductless fume hoods.

## AIRFLOW PATTERNS & PROTECTION CONFIGURATIONS



### 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.

### 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.

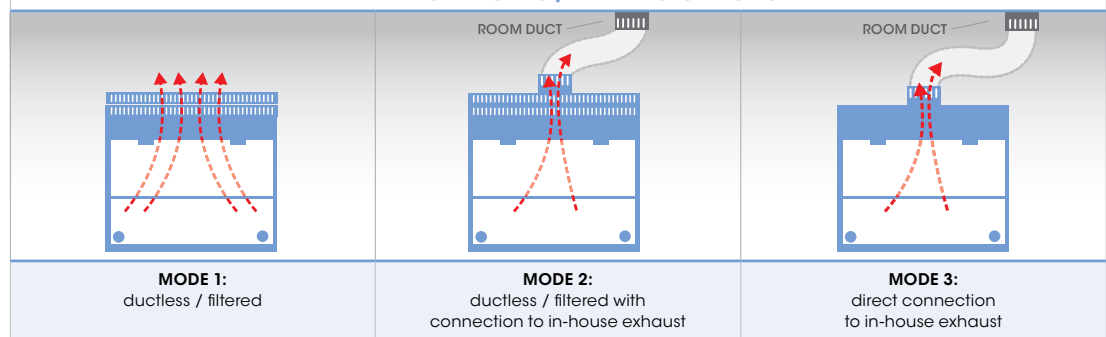
### VENTING OPTIONS:

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.

## FILTRATION MODES / VENTING OPTIONS






**THE MULTIPLEX™ ADVANTAGE:**

Multiplex Filtration consists of a pre-filter and main filter to create a combination of chemical and physical architecture customized to each application. The mechanical design enhances safety, convenience and overall value.

- The electrostatic pre-filter is accessible from within the cabinet.
- A filter clamping mechanism allows for the filter to be easily installed and ensures an even seal at the filter peripheral face at all times to prevent bypass leakage.
- The filter chamber prevents contaminated air from contacting internal cabinet mechanisms.
- The main filter number and installation date are displayed in a front-access window.

The Air Science carbon filtration technique is based on enhanced, activated carbon particle formulations from specially selected, naturally occurring raw material 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.

**MULTIPLEX FILTRATION SYSTEM, SUMMARY**

	Pre-Filter	Main Filter
<b>Electrostatic</b>	Protects the main filters from aerosols, mists, dust and particulates with filter efficiency superior to 95.5% down to 0.5 microns.	
	Standard	--
<b>Activated Carbon</b>	FILTCO™ Sourced. A single carbon filter containing activated carbon granules chemically formulated to capture one or more specific vapors or family of vapors.	
<b>Single:</b> One type of activated carbon.	--	Specify
<b>Blended:</b> A single filter with two or more types of carbon blended throughout.	--	Specify
<b>Layered:</b> A single filter with two or more types of carbon in separate layers.	--	Specify
<b>Stacked:</b> Two or more single filters each with a different type of carbon.	--	Specify
<b>HEPA/ULPA</b>	A self-contained filter designed to physically capture particles larger than 0.3 microns (HEPA) or 0.12 microns (ULPA). Normally used as a safety filter; can be used as a main filter. When used with a HEPA/ULPA filter the ductless fume hood may be applied as a Class I Biological Safety Cabinet.	
	--	Specify
<b>Filter Specifications</b>	Electrostatic	HEPA and/or Carbon; Bag-out version available

**STANDARDS & COMPLIANCE**

Quality Management Systems	ISO 9001
Chemical Fume Containment	ANSI/ASHRAE 110 1995
Carbon Filter Efficiency	BS 7989-2001 ANFOR NFX 15-211
Biological Safety Filter Efficiency HEPA and ULPA	IEST-RP-CC-0034.2 IEST-RP-CC007.1 IEST-RP-CC001-4 EN 1822
Electrical Safety	UL-C-61010-1 CE Mark ROHS Exempt under EEE Category 9
Product Design	ANSI Z 9.5-2003 ANSI Z 9.7-1998
OSHA, Occupational Safety and Health Administration	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. All Air Science products meet this definition.
Environment	ISO 14001 Energy Star Partner

## CUSTOM CONSTRUCTION, OPTIONS, AND ACCESSORIES

Air Science offers a host of options and accessories that are available as add-ons to your customized enclosures. Use this form to request a quote for the product build that is right for you.

*\* 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.*

### SPECIFY YOUR OWN CUSTOM ENCLOSURE

#### Set Your Dimensions:

Internal      External      Height: \_\_\_\_\_ " X Depth: \_\_\_\_\_ " X Width: \_\_\_\_\_ "

#### Step 1: Choose the type of protection you need.

(negative pressure) Operator	(positive pressure) Product / Process	(positive & negative pressure) Both	(no pressure) Dead Air
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#### 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.

<b>Orientation:</b>	Horizontal	Vertical		
<b>Frame:</b>	Polypropylene	Metal	Aluminum Extrusion	Stainless Steel
<b>Window &amp; Sidewall:</b>	Metal	Acrylic	Polycarbonate	Tempered Glass
<b>Tray:</b>	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.

<b>Tray Color</b>	White	Black
<b>Shelving</b>	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.	CE-CPRT	
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	
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			

Company:

Name:

Mailing Address:

City:

State:

Zip:



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