

## Vented ENCLOSURE

- Precision Containment for All Applications



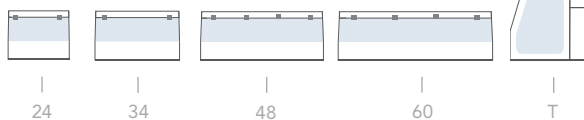
Vented ENCLOSURE model VE24T  
shown with Fume EXTRACTOR,  
model VE-FES



Operator



Particulate



## CONTENTS:

- Product Overview (p.2)
- Design Features (p.3)
- Performance & Selection (p.4)
- Filtration Technology (p.5)
- Specifications (p.6)
- Warranty (p.9)

## INTRODUCTION

Vented ENCLOSURES provide effective containment of airborne particulates during manipulation and transfer of potent compounds. The turbulent-free design utilizes environmentally friendly, ductless technology in combination with carbon/HEPA filtration to provide precise, safe containment in all applications. Our selection of vented enclosures meets every analytical need.

## APPLICATIONS

Bulk Powder Weighing and Transfers \  
Task-Specific Workstations \ Short Duration Projects \  
Balance and Microscope Enclosure \ Robotics \  
Enclosure \ Compounding Activities



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.

## KEY FEATURES

- Custom sizes to meet every need.
- Turbulent-free airflow pattern.
- Proven performance.
- Specialized HEPA filter technology for increased safety.
- Easy to change filtration system.
- Ductless design increases location possibilities.

## DUCTLESS TECHNOLOGY

### The Eco-Friendly Choice

Advanced carbon filtration technology offers a safe, high performance alternative to conventional ducted fume hoods for a broad range of applications.

**Environmental Benefits.** Air Science® ductless fume hoods isolate and trap chemical vapors to prevent ecological impact through release into the environment.

**Versatile.** Each filtration system is selected for its specific application. Carbon filters are available in more than 14 configurations for use with vapors of organic solvents, acids, mercury, and formaldehyde. HEPA/ULPA filters can be added for biological safety.

**Easy to Install.** The ductless fume hood is self-contained and does not require venting to the outside. Many units are portable and may be moved with minimal downtime and without filter changes. Set-up, operation, and filter maintenance are straightforward.

**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 ductwork, HVAC, and construction costs are eliminated.

**Safe to Use.** Cabinet airflow and face velocity protect users from incidental exposures to fumes.



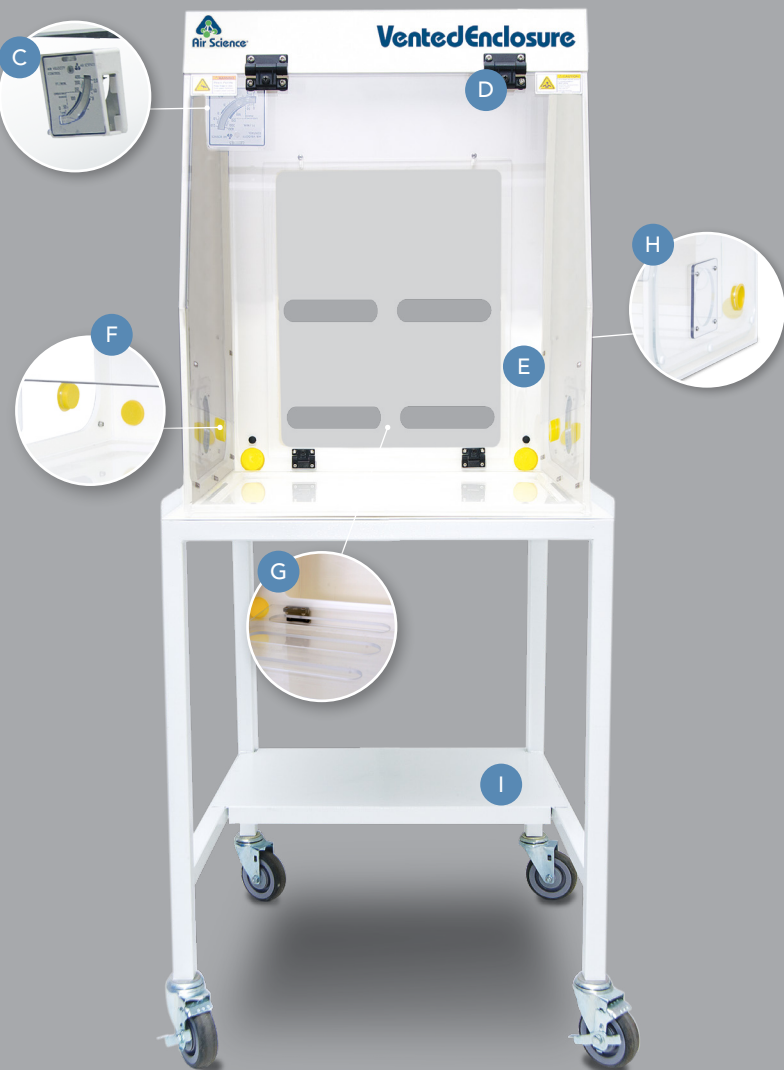
Vented ENCLOSURE  
Model VE34S



Fume EXTRACTOR Model VE-FED

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## DESIGN FEATURES

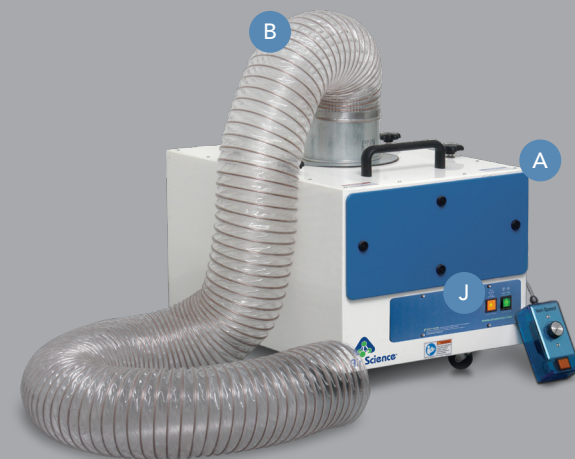
- A. Filtration:** Available with extended life HEPA filtration systems, in conjunction with Multiplex filtration. Our HEPA filters are fitted with a "bag-out" system to completely protect operators during filter changes.
- B. Hose:** Each unit is provided with an 8 ft. PVC heavy-walled flex hose with smooth inner surfaces to minimize pressure drop and friction loss.
- C. Air Velometer:** An analog air velocity meter in the field of vision of the user provides independent backup to the electronic filter blockage alarm.
- D. Single Hinged Front Sash:** Allows full access to the work area.
- E. Turbulent Free Design:** Our enclosure designs provide a smooth transition of airflow into the enclosure, with the air pulled across the work surface in a uniform, horizontal pattern, reducing the rolling effect found in conventional vented enclosures.
- F. Pass Through Ports:** Electrical cords and cables are safely routed into the cabinet through pass through ports; located only on the side panels.
- G. Plenum-Slotted Baffle:** Produces a horizontal airflow pattern in the work area. Baffle can be lowered for cleaning. A 4"OD exhaust port is provided to connect to ductwork or Fume EXTRACTOR.
- H. Clear Side Panels:** Clear side panels with optional waste chute allow for disposal bags to be connected and prevent contamination to the surrounding lab.
- I. Stand:** Optional mobile cart with locking casters.
- J. SafeSwitch Filter Shutter System:** Optional unique filter shutter system closes the exposed filter media face and minimizes exposure to the contaminated filters, protecting the operator and the environment.

## ADDITIONAL FEATURES

**Flexible Design:** Air Science offers flexible solutions for any analytical operation. Our ventless enclosures can be plumbed into an existing HVAC setup or incorporated with our Fume EXTRACTOR to minimize upfront workstation construction costs.

**Validated Performance:** Safebridge Consultants have verified and confirmed performance of Air Science vented enclosures in controlling airborne concentrations of particulate powder.

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



Vented ENCLOSURE Model VE24T, shown with optional mobile cart.

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Precision Containment

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PERFORMANCE & SELECTION

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Each Air Science fume hood 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.
- EFT™ filtration technology broadens the Air Science application for ductless fume hoods.

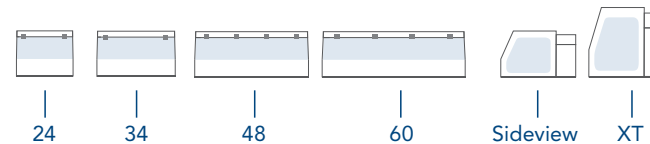
A high capacity air handling system delivers face velocity of 100 fpm.

## DESIGN

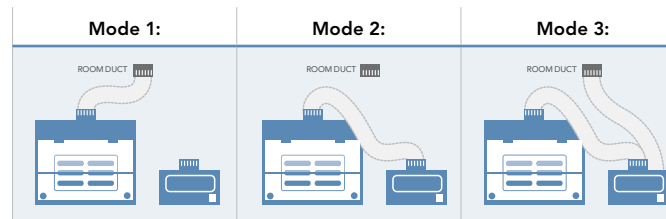
Professional quality Air Science Vented ENCLOSURES comply with current technical and safety regulations. The cabinet frame and work surfaces, comprised of industrial components, are durable and chemically resistant.

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

The optional SafeSwitch HEPA Filter Shutter System is available for safer filter exchange.



## OPERATION MODES



## SELECTION

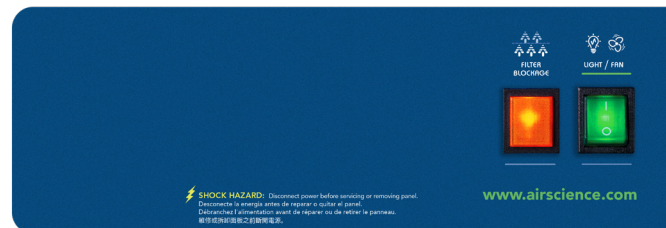
Vented ENCLOSURE products are available in 8 sizes, including 4 standard and 4 XT tall models.

## RELIABILITY

Internal systems are isolated from fumes, extending product life.

## CONTROL

The **basic control panel** is standard and includes an On/Off switch and filter blockage alarm.



Basic Control Panel



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FILTRATION TECHNOLOGY

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## FILTRATION

At the heart of the Purair product line is innovative filtration technology. **The Multiplex Filtration System** consists of a pre-filter, main activated carbon or HEPA/ULPA filter, and safety 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.

View available filters and descriptions on [page 8](#).



The optional SafeSwitch HEPA Filter Shutter system ensures that operators are safely separated from trapped contaminants during filter changes.



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

## FILTER CONFIGURATION

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

The Vented ENCLOSURE 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 Vented ENCLOSURE 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/<br>Biological | Chemical<br>& Powder | Chemical within<br>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.



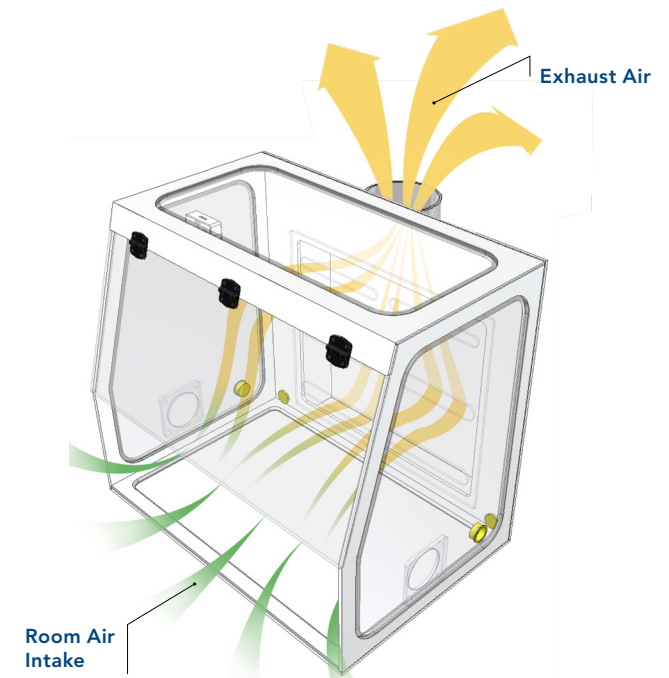
Through our partner company [Filtco Filters](#), Air Science is a single source supplier of all pre-filters, carbon filters, and HEPA/ULPA filters used in our products.

## AIRFLOW

The Vented 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 primary 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.



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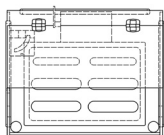
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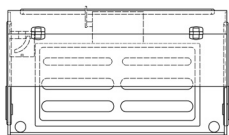
SPECIFICATIONS

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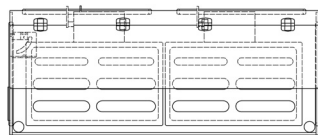
VE24S



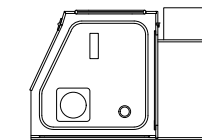
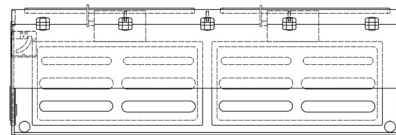
VE34S



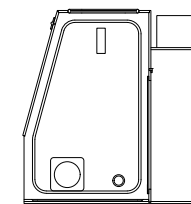
VE48S



VE60S



Side View (S-Series)



Side View (T-Series)

| MODEL | DIMENSIONS      |                      |                      | WEIGHT (LBS/KG) |      |
|-------|-----------------|----------------------|----------------------|-----------------|------|
|       | Internal Height | External (W × D × H) | Shipping (W × D × H) | Net             | Ship |

### Standard Height Models (S-Series)

|       |              |   |   |          |          |
|-------|--------------|---|---|----------|----------|
| VE24S | 17" / 432 mm | 24" × 30" × 19.5" / 610 × 762 × 495 mm  | 40" × 40" × 40" / 1016 × 1016 × 1016 mm | 40 / 18  | 95 / 43  |
| VE34S | 17" / 432 mm | 34" × 30" × 19.5" / 864 × 762 × 495 mm  | 48" × 40" × 40" / 1219 × 1016 × 1016 mm | 50 / 23  | 110 / 50 |
| VE48S | 17" / 432 mm | 48" × 30" × 19.5" / 1219 × 762 × 495 mm | 55" × 40" × 40" / 1397 × 1016 × 1016 mm | 90 / 41  | 155 / 70 |
| VE60S | 17" / 432 mm | 60" × 30" × 19.5" / 1524 × 762 × 495 mm | 72" × 40" × 40" / 1829 × 1016 × 1016 mm | 100 / 45 | 180 / 82 |

### Tall Models (T-Series)

|       |                 |                                       |   |          |          |
|-------|-----------------|---------------------------------------|---|----------|----------|
| VE24T | 28.75" / 730 mm | 24" × 30" × 30" / 610 × 762 × 762 mm  | 40" × 40" × 40" / 1016 × 1016 × 1016 mm | 45 / 20  | 100 / 45 |
| VE34T | 28.75" / 730 mm | 34" × 30" × 30" / 864 × 762 × 762 mm  | 48" × 40" × 40" / 1219 × 1016 × 1016 mm | 55 / 25  | 115 / 52 |
| VE48T | 28.75" / 730 mm | 48" × 30" × 30" / 1219 × 762 × 762 mm | 55" × 40" × 40" / 1397 × 1016 × 1016 mm | 95 / 43  | 160 / 73 |
| VE60T | 28.75" / 730 mm | 60" × 30" × 30" / 1524 × 762 × 762 mm | 72" × 40" × 40" / 1829 × 1016 × 1016 mm | 105 / 48 | 185 / 84 |

### Fume EXTRACTOR

|        |    |  |  |         |          |
|--------|----|--|--|---------|----------|
| VE-FES | -- | 17.5" × 25.5" × 18" / 445 × 648 × 457 mm | 40" × 40" × 35" / 1016 × 1016 × 889 mm | 45 / 20 | 120 / 54 |
| VE-FED | -- | 35" × 25.5" × 18" / 889 × 648 × 457 mm   | 60" × 40" × 35" / 1524 × 1016 × 889 mm | 90 / 41 | 200 / 91 |

### POTENT COMPOUND CHARACTERIZATION SCHEME

| Powder Toxicity Level    | Operator Exposure Limit<br>(8-hr Time Weighted Average) | Protection Required            |
|--------------------------|---|--------------------------------|
| 1- Low Toxicity          | <0.5 mg / m <sup>3</sup>                                | Open Bench or Vented ENCLOSURE |
| 2- Intermediate Toxicity | 0.5 mg / m <sup>3</sup> to 10 µg / m <sup>3</sup>       | Fume Hood or Vented ENCLOSURE  |
| 3- Potent                | 10 µg / m <sup>3</sup> to 30 ng / m <sup>3</sup>        | Vented ENCLOSURE               |
| 4- High Toxicity         | >30 ng / m <sup>3</sup>                                 | Isolator                       |



### PERFORMANCE VERIFICATION

SafeBridge Consultants executed performance verification and assessed the ability of Air Science Vented ENCLOSURES (VE48S) to contain and control airborne concentrations of particulate powder during bench-scale operations.

### PROCEDURE:

Three separate operators performed small-scale powder manipulations, utilizing Naproxen Sodium as a surrogate powder to identify the range of potential exposures and respective containment during handling procedures. Air samples measuring the exposure of each operator were taken, culminating in the development of the Potent Compound Characterization chart outlined here.

*Model VE48S was used in performance verification.*

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### Vented ENCLOSURE

### PRODUCT SPECIFICATIONS

| Filtration          | VE24S                    | VE24T   | VE34S   | VE34T   | VE48S   | VE48T   | VE60S   | VE60T   |
|---------------------|--------------------------|---------|---------|---------|---------|---------|---------|---------|
| Airflow             | <... Horizontal. ...>    |         |         |         |         |         |         |         |
| Face Velocity (60)  | 100 cfm                  | 126 cfm | 141 cfm | 180 cfm | 200 cfm | 252 cfm | 249 cfm | 318 cfm |
| Face Velocity (100) | 166 cfm                  | 210 cfm | 236 cfm | 299 cfm | 333 cfm | 420 cfm | 416 cfm | 530 cfm |
| Construction        | VE24S                    | VE24T   | VE34S   | VE34T   | VE48S   | VE48T   | VE60S   | VE60T   |
| Finish              | <... Polypropylene. ...> |         |         |         |         |         |         |         |
| Work Surface        | <... Polypropylene. ...> |         |         |         |         |         |         |         |

### Fume EXTRACTOR

### PRODUCT SPECIFICATIONS


| Construction | VE-FES  | VE-FED |
|--------------|---|--------|
| Finish       | <... Metal or Polypropylene. ...>   |        |
| Blower       | <... Centrifugal blower. ...>   |        |
| Controls     | <... Main On/Off. ...>  |        |
| Electrical   | <... 120V, 60Hz or 230V, 50Hz volatages available. Specify when ordering. Other voltage options available. ...> |        |
| Monitoring   | <... Filter blockage alarm, standard. ...>  |        |

### FILTER SPECIFICATIONS

| Fume EXTRACTOR     | VE-FES | VE-FED |
|--------------------|--------|--------|
| Primary Filter(s)* | (1)    | (1)    |
| Pre-Filter*        | (1)    | (1)    |

\* For specific examples refer to Multiplex filtration system summary on [page 5](#).

### FILTER SUMMARY\*

| Formula   | Description  |
|---|--|
| GP Plus!  | The most widely used filter in the range, primarily for solvent, organic and alcohol removal.                        |
| ACI Plus!/SUL   | Designed to neutralize volatile inorganic acid vapors.   |
| ACR   | Iodine and methyl iodide vapors; It is frequently used for iodination reactions with lower level radioactive iodine. |
| ACM   | Mercury vapor.   |
| AMM   | Removes vapors from dilute ammonia solutions and to remove low molecular weight amines.                              |
| FOR   | Designed to oxidize formaldehyde and glutaraldehyde fumes; It is widely used in hospital pathology laboratories.     |
| HEPA/UPLA   | Powders and particulates.  |
|  | Universal filtration.  |

\*Other formulas may be available.

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# VentedENCLOSURE™

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SPECIFICATIONS

# 8

## OPTIONS & ACCESSORIES

| Vented ENCLOSURE                    |  | VE24S           | VE24T | VE34S           | VE34T | VE48S           | VE48T | VE60S           | VE60T |
|-------------------------------------|--|-----------------|-------|-----------------|-------|-----------------|-------|-----------------|-------|
| Spill Tray (Epoxy Resin)            | Removable for easy cleaning.   | TRAY-VE24-RESIN |       | TRAY-VE34-RESIN |       | TRAY-VE48-RESIN |       | TRAY-VE60-RESIN |       |
| Base Stand, Mobile, With Casters    | Provides a lower storage shelf; accommodates wheelchair access. Locking casters fix the hood in place. | CART-25         |       | CART-35         |       | CART-50         |       | CART-60         |       |
| Base Cabinet, Fixed (Metal)         | Provides storage space below.  | CART-MCC-25     |       | CART-MCC-35     |       | CART-MCC-50     |       | CART-MCC-60     |       |
| Base Cabinet, Fixed (Polypropylene) | Provides storage space below.  | CART-SSC-25     |       | CART-SSC-35     |       | CART-SSC-50     |       | CART-SSC-60     |       |
| Fire Safety Cabinet Base            | Flame resistant safe storage for combustible and flammable liquids.                                    | CART-FSC-25     |       | CART-FSC-35     |       | CART-FSC-50     |       | CART-FSC-60     |       |
| Trash Chute                         | Side mounted trash chute. Bags not included.   | TRASH           |       | TRASH           |       | TRASH           |       | TRASH           |       |

| Fume EXTRACTOR                         |   | VE-FES      | VE-FES      |
|--|---|-------------|-------------|
| Remote Control**                       | Wired controller, provides lower access height to comply with ADA requirements                          | REMOTE      | REMOTE      |
| SafeSwitch HEPA Filter Shutter System* | Minimizes exposure to filter contaminants when removing used HEPA filters for insertion of new filters. | ASTM-030-SS | ASTM-030-SS |

\* Factory installed; specify when ordering.

\*\* Handheld box connects via cable to head unit. Includes On/Off switch and blower speed control. Can be placed inside work zone.



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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   |
| 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<br>ENERGY STAR® Partner  |



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