



Ductless versus Ducted Venting Options: **The benefits of a ductless laboratory**

Efficiency, sustainability, and versatility:

Air Science® manufactures a complete series of high efficiency ductless fume hoods, ductless workstations, laboratory filtration products, and custom enclosures designed to protect the user, the process and the environment from hazardous vapors, fumes, and particulates.



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The benefits of a ductless laboratory

2



Clean Air is Expensive

Fume hoods and accessories represent one of the largest expenditures that a laboratory manager faces. The cost of air filtration does not end at the initial purchase price of a fume hood. Construction of ductwork and placement of utilities may be a one-time expense, however the ongoing cost of power and the increased HVAC load on the facility can be significant.

Total Cost of Fume Hood Ownership and Operation:

Ducted Fume Hood	Ductless Fume Hood
Fume Hood Cost	Fume Hood Cost
+	+
Ductwork/Construction	Ductwork/Construction
+	+
Utilities over Life of Hood	Utilities over Life of Hood
+	+
HVAC Load from Hood Use	HVAC Load from Hood Use
TOTAL COST	TOTAL COST

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The benefits of a ductless laboratory

3



Ducted versus Ductless Fume Hoods

Traditional “ducted” fume hoods are connected to existing facility ductwork and pull contaminated air through the hood and direct it outside the facility and into the atmosphere. Ducted fume hoods can be filtered or unfiltered depending on the design and application.

Ductless fume hoods contain filters which clean contaminated air and recirculate it directly back into the laboratory. No additional ductwork is required to exhaust air to the outside. Ductless fume hoods provide the same filtration capabilities as ducted hoods, but are easier to install, have lower initial installation costs and can be highly efficient.

Ductless versus Ducted Venting Options:

The benefits of a ductless laboratory

4



Protecting People and the Environment

Ductless fume hoods make work safer in laboratories and help protect the environment. Up until the 1960s, laboratories used vented hoods to exhaust polluted air directly into the atmosphere which damaged many environmental resources and put people that lived and worked near the laboratories in danger. Ductless fume hoods completely eliminate the discharge of pollutants into the air and help protect operators from harmful airborne toxins.

BETTER TECHNOLOGY, ENHANCED SAFETY

Ductless fume hoods are equipped with numerous technological advances to enhance safety and function. Low airflow alarms ensure the proper containment of fumes inside the hood, filter saturation alarms help maintain near to zero chemical emissions in recirculated air and backup safety filters protect against filter malfunction.

Ductless versus Ducted Venting Options:

The benefits of a ductless laboratory

5



Efficiency in Design

Air Science ductless fume hoods require very little energy to operate, particularly when compared to ducted hoods. Every aspect of fume hood design focuses on efficient operation. Internal surfaces are designed to be easily cleaned and provide low-resistance airflow. Air Science fume hoods use energy-efficient ebmpapst™ brand centrifugal blowers for long life, and dependable performance. Finally, because filtered air is returned to the room, no demands are required of the facility HVAC capacity for make-up air.

A ductless fume hood can be placed in any laboratory space without consideration of adding ductwork or major utilities.

Pictured Above: Purair® ECO cabinets offer a high capacity air handling system with the ECOair™ Controller to manage all local cabinet functions, setpoints and alarms. The Air Science filter assembly is easy to access, easy to change.

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The benefits of a ductless laboratory

6



Sustainable Solutions

Ductless fume hoods can be customized to capture a wide variety of chemical families, saving money and resources by allowing more work to be performed with a single fume hood.

Ductless fume hoods cut energy bills by filtering and recirculating heated or cooled air back into the laboratory. This means that unlike ducted fume hoods, which constantly send treated air outside the facility, ductless fume hoods keep more treated air inside of the facility and reduce the load on the HVAC utilities.

Pictured Above: Purair Advanced fume hoods feature a high airflow capacity with easy to change carbon filters. Improved clamping eliminates by-pass leakage and interchangeable filters can be used for a variety of chemical families.



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The benefits of a ductless laboratory

7



Versatile Installation and Use

Many ductless fume hoods are portable and may be moved from one location to the next with minimal downtime and without filter changes. This helps save time and increases the ability of a laboratory to react to ever-changing scientific landscapes. Ductless fume hoods mounted on portable base stands or that have a built-in base on rollers can be quickly moved from room to room, regardless of HVAC or ductwork location.

Enhanced Filter Technology (EFT) allows specific filters to be built to meet highly individualized application needs. Universal filters are also available and can handle a wide spectrum of applications to more closely replicate the capabilities of vented hoods.

Pictured Above: The EDU Series filtering fume hood units are mounted on heavy duty transfer carts and are sized to fit through standard doorways for easy transportation from lab to lab. This makes them the perfect university fume hood or general classroom fume hood.



The Air Science Ductless Advantage

Ductless fume hoods by Air Science protect your personnel and the environment from toxic or volatile chemicals so that you can concentrate on what matters most: your work. Continuous airflow across the work surface draws contamination away from the user, recycling clean air back into your laboratory. Our ductless fume hoods provide energy savings, safety and convenience and are available in a variety of configurations, including mobile fume hoods and polypropylene fume hoods.

Contact us today to obtain a quote or [visit our website](#) to download literature on any of our ductless products.



120 6th Street • Fort Myers, FL 33907
T/239.489.0024 • Toll Free/800.306.0656 • F/800.306.0677
www.airscience.com



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