

# DWS™

## Ductless Downflow Workstations

24 • 36 • 48

"The World's Most Extensive Selection of Ductless Downflow Fume Hoods."



— DWS24

Provides Feature-Rich Operator Safety & Facilitates  
Operator-Intensive Applications with Unrestricted Access

Meets or Exceeds OSHA, ANSI and other International Standards



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**APPLICATIONS**

- Chemical
- Dental
- Forensic
- Histology
- Industrial
- Microscopy
- Pharmaceutical
- Powder fingerprinting
- Veterinary applications

**INTRODUCTION**

Air Science DWS™ Downflow Workstations are high efficiency ductless fume hoods designed to protect the user and the environment from hazardous vapors generated on the work surface. Unrestricted front and side access facilitates applications requiring complex and intensive operator involvement, while downward airflow in the chamber protects the operator. The DWS Downflow Workstation product line is based on an innovative Air Science Multiplex™ Filtration Technology that creates a safe work environment over the widest range of applications in the industry.



## DWS™ Downflow Workstations

- Downward airflow protects operator from fume and particle hazards.
- Unrestricted front and side access to work area.
- Easy to change filter.
- Improved filter clamping eliminates bypass leakage.
- Low airflow alarm.
- High capacity filters.

DWS48, shown



### DUCTLESS TECHNOLOGY: The Eco-friendly Choice

Advanced carbon filtration technology offers a safe, high performance alternative to conventional ducted fume hood products 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. The Multiplex Filter broadens the range of applications. Carbon filters are available in more than 14 configurations for use with vapors or organic solvents, acids, mercury and formaldehyde. HEPA/ULPA filters can add to 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 from one location to the next with minimal down-time 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.** Workstation airflow and face velocity protect users from incidental exposures to fumes.
- **Self testing.** Electronic airflow monitoring assures continuous safety. An optional electronic gas sensor monitors carbon filter performance.

**PRODUCT FEATURES:**

**A. Filter I.D. Window:** A strategically placed front cover window shows the installed filter part number and installation date for convenience and to encourage timely filter replacement.

**B. Control Panel:** Electronic controls and displays include switches for the blower, low airflow alarm and electronic hour counter.

**C. Steel Support Frame:** The chemical resistant epoxy coated steel frame adds mechanical strength. Optional all polypropylene construction is available if desired; see accessories.

**D. Electrostatic Pre-Filter:** The 99.5% effective electrostatic pre-filter can be changed from below the work surface while unit is operating, to prevent user exposure to chemical vapors and powders trapped in the filter.

**E. Color:** The cabinet is white with blue trim; optional side panels and front sash are clear. (Black color also available, see Options and Accessories.)

**F. Airflow Alarm:** A continuous air velocity monitoring system alerts the operator upon unacceptable values.

**G. Internal Manual Speed Controller:** Authorized personnel may set the centrifugal fan motor speed as desired.

**H. Stand:** Optional mobile cart with locking casters.

**I. Work Surface:** Under the perforated stainless steel internal work surface is a polypropylene tray to retain any spillage.

**J. Filter Door Key:** Filter access keys prevent unauthorized removal or accidental exposure to dirty filters.

**K. Integral Lighting:** A vapor proof fluorescent lamp illuminates the interior of the workstation.

**OTHER FEATURES:**

**Side Panels and Front Sash:** (Optional) When installed, optional side panels and optional front sash provide better containment of hazardous vapors. The Front Sash is easy to open and close.

**270 Degree Visibility:** Unrestricted user access to the front and sides of the workstation also admits ambient illumination and provides an unobstructed view of its contents.

**Standards Compliant:** Performance specifications and construction meet or exceed OSHA, ANSI and relevant international standards to assure operator safety.

**Construction:** All models are available in either metal or polypropylene construction. See selection chart for specifications and dimensions. Specify metal or polypropylene when ordering. Available in 110V, 60Hz or 220V, 50Hz models.

DWS24, shown with optional mobile cart.

## THE AIR SCIENCE PERFORMANCE ADVANTAGE

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.

- Professional Quality.**  
Air Science fume hoods comply with current technical and safety regulations.
- Multiplex Filtration.**  
The Air Science Multiplex™ Filter offers a range of options for high performance.
- Industrial Components.**  
The cabinet frame and work surfaces are durable and chemically resistant.
- Reliability.**  
Internal systems are isolated from fumes, extending product life.



Air Science fume hoods use energy-efficient ebmpapst™ brand centrifugal blowers for long life, dependable performance.



The standard **Advanced** control panel includes an on/off switch, low airflow alarm and hour meter to aid in determining available filter life.



An optional electronic **Filter Saturation Alarm (FSA)** is available with the optional **Advanced** control panel. In addition to all the features of the **Advanced** control panel the **FSA** adds an electronic gas sensor and emits audio and visual alerts when the main filter needs to be changed.

## DWS DOWNFLOW WORKSTATION FEATURES & BENEFITS

- Available in 3 standard sizes, in metal or polypropylene construction, totaling 6 models.
- Wider units, comprising two or more workstations can be positioned side-by-side with junction connections option.
- High capacity air handling system delivers face velocity of 80 fpm at the work surface.
- A low airflow alarm warns of insufficient face velocity.
- The Air Science filter assembly is easy to access, easy to change.
- A unique filter clamping design eliminates bypass leakage outside the cabinet.
- Accessories include an optional filter saturation alarm.



DWS36, shown in black with acrylic side option  
Metal units powder coated black; Polypropylene units made with black material.

# multiple<sup>x</sup>

## AIR SCIENCE MULTIPLEX™ FILTRATION TECHNOLOGY

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 type 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.

- The multiplex option permits one or more filtration options to be combined to meet a wider range of multiple-use applications. Multiplexing permits configuration for the capture of acids, bases and particulates such as biological aerosols when paired with HEPA or ULPA filters.
- The Air Science carbon filter is a self-contained assembly sized to fit the specified product model number, and configured to optimize airflow across 100% of the filter surface area for maximum efficiency, prolonged filter life, optimal diffusion and saturation capacity, and user safety.

Air Science is the single source supplier for all pre-filters and carbon filters used in its products, plus those of many other manufacturers.

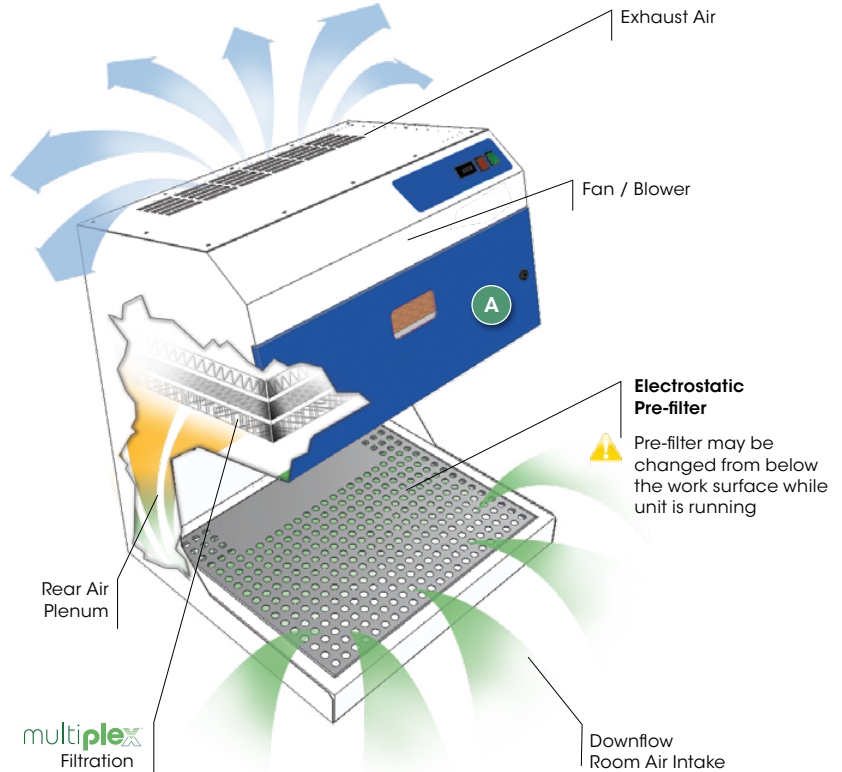


## ENHANCED FILTRATION TECHNOLOGY

The Air Science EFT™ is a universal filtration system developed for use with a wide range of core chemical families. These include organic acids, aliphatic hydrocarbons, aromatic hydrocarbons, alcohols, esters, aldehydes, ketones, ethers, halogens and others. Although the EFT system is weighted to accommodate these families, it can handle inorganic acids as well. Available as an option on Air Science Downflow Workstations.



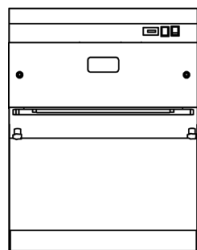
## DWS DOWNFLOW WORKSTATION AIRFLOW PATTERN



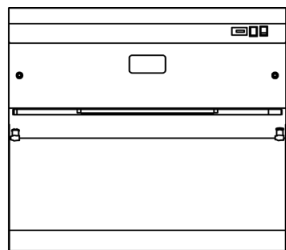
- DWS36, shown with Multiplex Filtration System.
- DWS Downflow Workstations maintain a constant face velocity of 80 FPM at the work surface in compliance with USA and international standards for safety and performance. Contaminated air is pulled through the Multiplex filtration system where activated carbon adsorbs chemical vapors and/or particulates if HEPA/ULPA filters are used. Clean air is returned to the room.
- A. The main filter is easy to replace, no tools required. The filter clamps tightly against the filter gasket to prevent filter bypass and maintain filter integrity.

### MULTIPLEX FILTRATION SYSTEM, SUMMARY

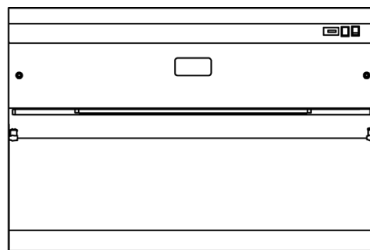
	Pre-Filter	Main Filter
<b>Electrostatic</b>	Protects the main filters from aerosols, mists, dust and particulates with filter efficiency superior to 95.5% down to 0.5 microns. Standard	--
<b>Activated Carbon</b>	FILTCO™ Sourced. A single carbon filter containing activated carbon granules chemically formulated to capture one or more specific vapors or family of vapors.	
<b>Single:</b> One type of activated carbon.	--	Specify
<b>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). --	
	--	Specify



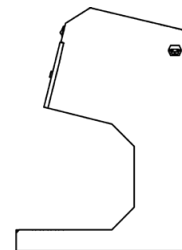
DWS24



DWS36



DWS48



Side View

MODEL		DIMENSIONS			WEIGHT (lbs/Kg)	
Metal	Polypropylene	Internal Height	External (W x D x H)	Shipping (W x D x H)	Net	Ship

**Standard Models**

Model	Material	Internal Height	External (W x D x H)	Shipping (W x D x H)	Net Weight	Ship Weight
DWS24	DWS24-PP	15.75" 400 mm	24" x 22.75" x 31.5" 610 x 580 x 800 mm	40" x 40" x 40" 1016 x 1016 x 1016 mm	120 / 55	160 / 73
DWS36	DWS36-PP	15.75" 400 mm	36" x 22.75" x 31.5" 915 x 580 x 800 mm	40" x 45" x 40" 1016 x 1143 x 1016 mm	131 / 60	227 / 103
DWS48	DWS48-PP	15.75" 400 mm	48" x 22.75" x 31.5" 1220 x 580 x 800 mm	40" x 55" x 40" 1016 x 1397 x 1016 mm	185 / 84	250 / 114

Specifications are subject to change without notice.

**PRODUCT SPECIFICATIONS**

DWS™ Model	DWS24	DWS36	DWS48
Airflow CFM	145	290	435
Face Velocity FPM	80	80	80
Noise, dBA, 1 meter	< 52	< 52	< 52
Lighting	<... Compact fluorescent lighting. ...>		
Construction	<... White epoxy coated steel frame and head unit. Clear side panels. Stainless steel spill tray. ...>		
Blower	<... ebmpapst™ centrifugal fan. ...>		
Electrical	<... 120V, 60Hz or 220V, 50Hz voltages available. Specify when ordering. Other voltage options available. ...>		
Electrical Switches	<... Main On/Off ...>		
Monitoring	<... Low airflow alarm, standard. ...>		

**Filter Specifications**

Pre-Filter	Electrostatic, 1 lbs/ .45 kg (nominal)		
Main*	(1) 22 lbs / 10 kg	(1) 27 lbs / 12.3 kg	(1) 27 lbs / 12.3 kg

**STANDARDS & COMPLIANCE**

Quality Management Systems	ISO 9001
Carbon Filter Efficiency	BS 7989-2001 AFNOR 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 CRF, Safety and Health Regulations for General Industry, 1910.1450: Occupational exposure to hazardous chemicals in laboratories. Part B, definition, lab-oratory type hood. The DWS meets this definition when fitted with acrylic side window and front sash.
Environment	ISO 14001 Energy Star Partner

### OPTIONS & ACCESSORIES

DWS Model		DWS24 DWS24-PP	DWS36 DWS36-PP	DWS48 DWS48-PP
Filter Saturation Alarm*	An electronic gas sensor emits audio and visual alerts when the main filter needs to be changed.	FSA	FSA	FSA
Base Stand, Mobile, with Casters	The 34" tall mobile cart provides a lower storage shelf; accommodates wheelchair access. Locking casters fix the hood in place.	P5-CART	P15-CART	P20-CART
Base Cabinet, Fixed	Provides enclosed storage space. (specify: Yellow, Blue, White, locking casters or leveling feet)	P5-ENCB	P15- ENCB	P20- ENCB
ADA Compliance*	Provides wheelchair access and lowered remote controls.	All DWS models are available in <... ADA compliant configurations. Contact ...> Air Science for ordering information.		
Polypropylene Construction*	Cabinets are available in all polypropylene construction. Contact Air Science for information.	DWS24-PP	DWS36-PP	DWS48-PP
Stainless Steel Hanging Rod*	Hanging rod spans the width of the cabinet.	HANGR-XX <... Must order ACRYLIC SIDE WINDOWS option. ...>		
Side Windows Attachment*	Transparent acrylic side panels for the downflow workstation.	SIDE WINDOW	SIDE WINDOW	SIDE WINDOW
Front Sash Attachment*	Transparent acrylic front sash for the downflow workstation.	<... Must order ACRYLIC SIDE WINDOWS option. ...>		
Junction Connections*	Connects two or more workstations to form a continuous unit with only one control system.	JUNCT-FR	JUNCT-FR	JUNCT-FR
Rear Shelf	Epoxy coated steel 15" rear shelf provides additional storage space for operator tools and analysis materials.	DWS-S	DWS-S	DWS-S
Black*	Metal units powder coated black; Polypropylene units made with black material.	BLACK	BLACK	BLACK

\* Factory installed; specify when ordering.

### FILTER SUMMARY

Formula	Description
GP Plus!	The most widely used filter in the range, primarily for solvent, organic, and alcohol removal.
ACI Plus!	Neutralizes volatile inorganic acid vapors.
ACR	Iodine and methyl iodide vapors. It is frequently used for iodination reactions with low level radioactive iodine.
ACM	Mercury vapor.
AMM	Removes vapors from dilute ammonia solutions and to remove low molecular weight amines.
SUL	Designed to remove hydrogen sulphide and low molecular weight mercaptans.
CYN	Removal of hydrogen cyanide. Many cyanide compounds will evolve HCN gas if acidified, so this filter is normally specified if working with any cyanide compound.
FOR	Designed to oxidize formaldehyde and glutaraldehyde fumes. It is widely used in hospital pathology laboratories.
ETH	Diethyl ether is adsorbed on activated carbon, but because of its low boiling point, local heat adsorption can reduce the capacity of the filter. Special impregnation allows a chemical reaction which increases the filter capacity.
HEPA/UPLA	Powders and particulates.
EFT	Universal filtration.



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