

# **Ductless Fume Hoods**

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

# $10 \cdot 10XL \cdot 15 \cdot 20 \cdot 25 \cdot 30 \cdot 40$



Air Science

Provides the Finest Operator Safety in the World Meets or Exceeds OSHA, ANSI and other International Standards





# JUMP TO:

Filtration Technology (p.5)



## **APPLICATIONS**



INTRODUCTION

The Purair<sup>®</sup> Advanced Series

ment from hazardous vapors

generated on the work surface.

At the heart of the Purair fume

Air Science Multiplex<sup>™</sup> Filtration

of applications in the industry.

ductless fume hoods are a series

of high efficiency products designed

to protect the user and the environ-

hood product line is the innovative

Technology that creates a safe work

environment over the widest range

# **Advanced Ductless Fume Hood Group**

- High operator protection to fume and particle hazards.
- Easy to change filters.
- Improved clamping eliminates by-pass leakage.
- Low airflow alarm.
- Optional back up safety filter.
- High capacity.
- Purair 20, shown with optional spill tray and Filter Saturation Alarm(FSA).



#### 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. The Multiplex Filter broadens the range of applications. Carbon filters are available in more than 14 configurations for use with vapors of organic solvents, acids, mercury, 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 from one location to the next 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.
- Self testing. (selected models) Electronic air flow monitoring assures continuous safety. An electronic gas sensor monitors carbon filter performance.



10 • 10XL • 15 • 20 • 25 • 30 • 40



#### **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. Air Velometer:** An analog air velocity meter in the field of vision of the user provides independent backup to the electronic airflow alarm.

C. Double Hinged Self Locking Front Sash: When closed, the cabinet sash protects the operator with 100 FPM airflow. The sash is easy to open and latch.

D. **Control Panel:** Electronic controls and displays include switches for the blower and lights, an electronic hour counter and low airflow alarm, all located on a convenient front surface panel.

E. Steel Support Frame: The chemical resistant epoxy coated steel frame adds mechanical strength. Optional all polypropylene construction is available if desired. The pre-filter can be changed while the unit is operating to prevent operator exposure to chemical vapors.

F. Electrostatic Pre-Filter: The A 99.5% effective electrostatic pre-filter is accessible from inside the chamber to contain the release of any particulates that it traps.

G. Pass Through Ports: Electrical cords and cables are safely routed into the cabinet through ports on the back and side walls

H. Air Sampling Port: A filtered air sampling port allows manual filter monitoring.

I. Color: The cabinet is white; side and back panels are clear.

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

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

L. **Dynamic Filtration Chamber:** The dynamic filter chamber prevents any possible leakage of contaminated air by pressurizing the fan plenum (positive air) and depressuring the filter compartment (negative air).

M. Stand: Optional mobile cart with locking casters.

N. Safety Filter: The optional carbon or HEPA/ULPA safety filter adds an additional layer of protection.

O. Work Surface: The internal work surface can be fitted with an optional polypropylene tray; see Accessories.

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

Q. Track & Wheel System: The filter glides in on a wheel and track system, then clamps tightly against the filter gasket to prevent filter tears and maintain filter integrity.

#### **OTHER FEATURES:**

**360 Degree Visibility:** Clear back and side panels allow ambient illumination into the chamber and provide users with 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 /60 Hz models.

Purair 10XL, shown with optional mobile cart and spill tray.

### PURAIR ADVANCED FEATURES & BENEFITS

Purair Advanced products are available in 21 standard sizes, in metal or polypropylene construction, totaling 42 standard models.

- Purair Advanced product line is available in seven standard sizes.
- High capacity air handling system delivers face velocity of 100 FPM.
- 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 and optional back-up filter.



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

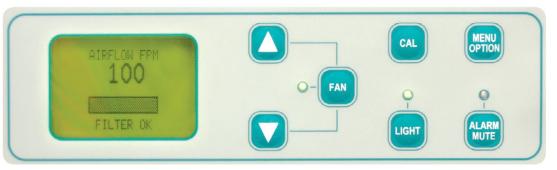




The standard **Advanced** control panel includes an on/off switch, low airflow alarm and hour meter to aid in determining available filter life.



An optional electronic **Filter Saturation Alarm (FSA)** is available with the standard **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.



The optional **Monitair** microprocessor controller monitors and displays cabinet operating parameters, airflow, containment, and filter condition; emits audio and visual alerts if conditions become unsafe, all on a LCD display.

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 protection.

# Industrial

Components. The cabinet frame and work surfaces are durable and chemically resistant

#### Reliability.

Internal systems are isolated from 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 durations from broads



**PURAIR®** 

# ENHANCED FILTRATION TECHNOLOGY

The Air Science **Enhanced Filtration** Technology (EFT<sup>™</sup>) is a universal filtration system developed for use with a wide range of core chemical families. These include organic acids, alcohols, aliphatic hydrocarbons, aromatic hydrocarbons, esters, aldehydes, ketones, ethers, halogens and others. Although the EFT system is weighted to accommodate these families, it can handle inorganic acids as well.

The Air Science EFT system is available as an option on Air Science Advanced ductless fume hoods, standard on Purair Eco Series fume hoods, and can be retrofitted on many Air Science ductless fume hoods already in service worldwide.

#### Independent Test Results

Independent testing confirms that the Air Science EFT system is superior in critical areas to other "green" fume hood systems recently introduced to the industry. AFNOR NFX 15-211 requires that three chemicals (isoproponal, cyclohexane and hydrochloric acid) be tested under very precise conditions to ascertain and establish retention capacity at 1% of the threshold limit value (TLV) for each chemical.



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Purair 20, shown with Multiplex Filtration System.

The Purair Series ductless fume hood maintains 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 where activated carbon adsorbs chemical vapors; clean air is returned to the room.

A. The main filter is easy to replace, no tools required. The filter glides in on a wheel and track system, then clamps tightly against the filter gasket to prevent filter tears and maintain filter integrity.

# Retention Capacity (grams) for a Single Module at 1% of the TLV (Threshold Limit Value)

Specification	AFNOR NFX 15-211			
Testing Laboratory	IBR	Intertek		
Product Manufacturer	Air Science	Brand E		
Filter Type	<b>EFD</b>	Green		
Test Results				
Isopropanol (alcohol)	2052	673		
Cyclohexane (aliphatic hydrocarbon)	1531	914		
Hydrochloric acid (inorganic acid)*	1205	2729*		

\*Based on "core" chemical families typically used in ductless fume hood applications, the Air Science EFT filter offers significant advantages over filters marketed as "universal" filters. On inorganic acids the EFT filter provides a lesser but more realistic usable capacity in that with moderate to heavy acid applications, all ductless fume hoods made of metal are subject to corrosion and rust. In those applications Air Science recommends its polypropylene or total exhaust hoods with a specially formulated heavy duty acid filter. The Multiplex<sup>™</sup> Filtration System consists of a pre-filter, main filter and optional safety 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 prefilter is accessible from within the cabinet.
- A filter clamping mechan-ism 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

#### AIR SCIENCE MULTIPLEX FILTRATION TECHNOLOGY

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.

# 

Air Science strongly discourages the unsafe practice of revolving secondary back-up filters into the primary filter compartment. All Air Science units are designed to avoid this false sense of security.

In a revolving filter system, users are instructed to rotate the secondary back-up filter into the primary filter position after non-permissible exposure levels of chemicals are detected within the monitoring chamber.

Depending on when the unit can be properly shut down, the secondary filter can be loaded to the point of saturation itself, thereby creating a safety hazard if the filter is considered new.

If a new spare filter is not immediately available, a user may inadvertently (or knowingly) re-install a contaminated primary filter into the secondary location permitting the system to operate without protection.

Additionally, the secondary filter can become contaminated as it ages, sometimes for years, on top of an operational cabinet, losing filter efficiency by the time it is installed.

Either practice puts both personnel and the environment at risk, even though some manufacturers provide stickers to label the filters as "used".

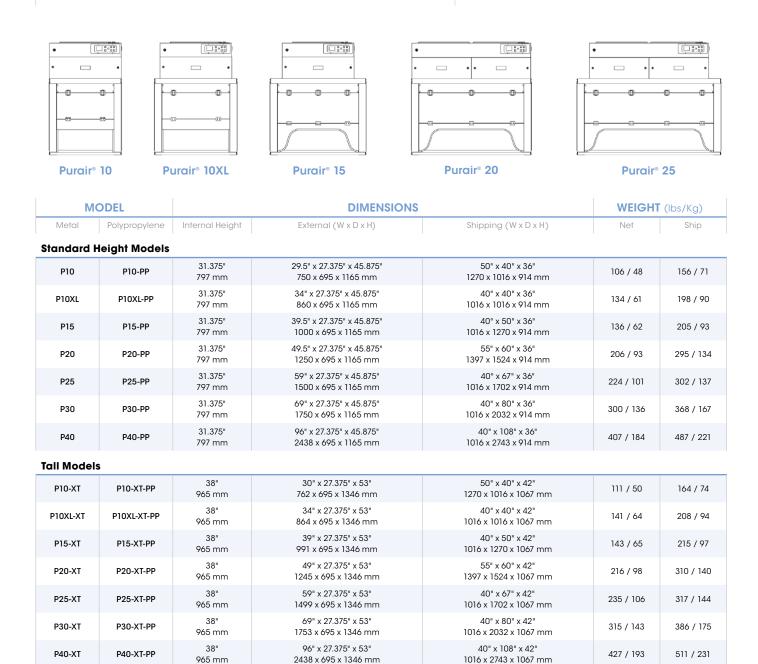
The Air Science non-revolving filter practice ensures that only a new filter is fitted into the primary filter compartment, and permits the secondary filter to remain installed for at least twice the change-out period, resulting in a 50% savings in filter change-out costs.

## **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	lodine and methyl iodide vapors. It is frequently used for iodination reactions with low level radioactive iodine.
ACM	Mercury vapor.
АММ	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.
EDU	Designed to handle chemicals normally used in a university level chemistry curriculum.
MIL	As the name implies, this filter is designed for military applications involving war gasses.
HEPA/UPLA	Powders and particulates.
<b>GPD</b>	Universal filtration.

	Pre-Filter	Main Filter	Safety Filter					
Electrostatic		Protects the main filters from aerosols, mists, dust and particu- lates with filter efficiency superior to 95.5% down to 0.5 microns						
	Standard	Standard						
Activated Carbon	carbon granules che	FILTCO <sup>™</sup> Sourced. A single carbon filter containing activated carbon granules chemically formulated to capture one or more specific vapors or family of vapors.						
Single: One type of activated carbon.	-	Specify	Specify					
Blended: A single filter with two or more types of carbon blended throughout.		Specify	Specify					
Layered: A single filter with two or more types of carbon in separate layers.		Specify						
Stacked: Two or more single filters each with a different type of carbon.		Specify						
HEPA/ULPA	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						

# MULTIPLEX FILTRATION SYSTEM, SUMMARY

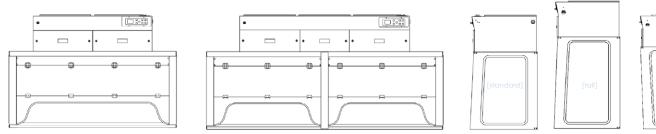


#### Standard Height; Shallow Depth Models

P10-BT	P10-BT-PP	31.375" 797 mm	30" x 24" x 45.875" 762 x 610 x 1165 mm	50" x 40" x 36" 1270 x 1016 x 914 mm	106 / 48	156 / 71
P10XL-BT	P10XL-BT-PP	31.375" 797 mm	34" x 24" x 45.875" 864 x 610 x 1165 mm	40" x 40" x 36" 1016 x 1016 x 914 mm	134 / 61	198 / 90
P15-BT	P15-BT-PP	31.375" 797 mm	39" x 24" x 45.875" 991 x 610 x 1165 mm	40" x 50" x 36" 1016 x 1270 x 914 mm	136 / 62	205 / 93
P20-BT	P20-BT-PP	31.375" 797 mm	49" x 24" x 45.875" 1245 x 610 x 1165 mm	55" x 60" x 36" 1397 x 1524 x 914 mm	206 / 93	295 / 134
P25-BT	P25-BT-PP	31.375" 797 mm	59" x 24" x 45.875" 1499 x 610 x 1165 mm	40" x 67" x 36" 1016 x 1702 x 914 mm	224 / 102	302 / 137
P30-BT	P30-BT-PP	31.375" 797 mm	69" x 24" x 45.875" 1753 x 610 x 1165 mm	40" x 80" x 36" 1016 x 2032 x 914 mm	300 / 136	368 / 167
P40-BT	P40-BT-PP	31.375" 797 mm	96" x 24" x 45.875" 2438 x 610 x 1165 mm	40" x 108" x 36" 1016 x 2743 x 914 mm	407 / 184	487 / 221

Specifications are subject to change without notice.

**Pur Ductless Fume Hoods** 10 • 10XL • 15 • 20 • 25 • 30 • 40



Purair<sup>®</sup> 30\*

Purair® 40

Side View

**Side View** 

**Side View** 

## **PRODUCT SPECIFICATIONS**

Purair Model	P10 P10XT P10BT	P10XL P10XL-XT P10XL-BT	P15 P15-XT P15-BT	P20 P20-XT P20-BT	P25 P25-XT P25-BT	P30* P30-XT* P30-BT*	P40 P40-XT P40-BT	
Airflow CFM	145	145	220	295	365	440	590	
Face Velocity FPM	100	100	100	100	100	100	100	
Noise, dBA, 1 meter	< 50	< 50	< 53	< 53	< 53	< 56	< 67	
Lighting	2 x 15 watts							
Construction	< White epoxy coated steel frame and head unit. Clear sides and back panel. Polypropylene spill tray>							
Blower	<··· EBM centrifugal fan. ···>							
Electrical	< 110V, 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 lb / .45 kg (nominal)							
Main	(1) 22 lbs / 9.6 kg	(1) 22 lbs / 9.6 kg	(1) 22 lbs / 9.6 kg	(2) 44 lbs / 20 kg	(2) 44 lbs / 20 kg	(2) 44 lbs / 20 kg	(3) 66 lbs / 30 kg	
Safety Filter, Carbon	(1) 11 lbs / 5 kg	(1) 11 lbs / 5 kg	(1) 11 lbs / 5 kg	(2) 22 lbs / 9.6 kg	(2) 22 lbs / 9.6 kg	(2) 22 lbs / 9.6 kg	(3) 33 lbs / 15 kg	
Safety Filter, Biological	(1) HEPA / ULPA	(1) HEPA / ULPA	(1) HEPA / ULPA	(2) HEPA / ULPA	(2) HEPA / ULPA	(2) HEPA / ULPA	(3) HEPA / ULPA	

\* The P30 Series is configured with two filter sections, standard. A three filter configuration (similar to the Purair 40) is available to increase the airflow volume to 590 CFM; specify when ordering.

# **STANDARDS & COMPLIANCE**

Quality Management Systems	ISO 9001
Chemical Fume Containment	ANSI/ASHRAE 110 1995 SAFEBRIDGE Performance Verification (VE)
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, laboratory type hood. All Air Science products meet this definition.
Environment	ISO 14001 Energy Star Partner
Education (UK)	CLEAPPS Instruction Approved (EDU)



Purair 10, shown with optional polypropylene construction, base cabinet and spill tray.

### **OPTIONS & ACCESSORIES**

Purair Model		P10 P10XT P10BT	P10XL P10XL-XT P10XL-BT	P15 P15-XT P15-BT	P20 P20-XT P20-BT	P25 P25-XT P25-BT	P30 P30-XT P30-BT	P40 P40-XT P40-BT
HEPA Safety Filter* ULPA Safety Filter*	An additional carbon, HEPA or ULPA safety filter exceeding ANSI/AIHA Z9.5 require- ments can be installed after the main filter.	<··· HEPA and ULPA safety filters for biological safety protection are available for all models. ···> Contact Air Science for ordering information.						
Filter Saturation Alarm*	An electronic gas sensor emits audio and visual alerts when the main filter needs to be changed.	FSA	FSA	FSA	FSA	FSA	FSA	FSA
Spill Tray	Polypropylene spillage tray, available in white or black, slides out for easy cleaning.	TRAY-P10	TRAY-P10XL	TRAY-P15	TRAY-P20	TRAY-P25	TRAY-P30	TRAY-P40
Monitair® Controller*	Microprocessor controller monitors cabinet operating parameters, airflow, containment, and filter condition; emits audio and visual alerts if conditions become unsafe.	MON-P	MON-P	MON-P	MON-P	MON-P	MON-P	MON-P
Base Stand, Mobile, With Casters	The mobile cart provides a lower storage shelf; accommodates wheelchair access. Locking casters fix the hood in place.	P10-CART	P10XL-CART	P15-CART	P20-CART	P25-CART	P30-CART	P40-CART
Base Cabinet, Fixed	Provides storage space below and a cup sink, swan neck faucet, and service fixtures.	P10-ENCB	P10-ENCB	P15-ENCB	P20-ENCB	P25-ENCB	P30-ENCB	P40-ENCB
ADA Compliance*	Provides wheelchair access and lowered remote controls.	< All Purair Advance models are available in ADA compliant configurations> Contact Air Science for ordering information.						>
Polypropylene Construction*	Cabinets are available in all polypro- pylene construction. Contact Air Science for information.	P10-PP P10-XT-PP P10-BT-PP	P10XL-PP P10XL-XT-PP P10XL-BT-PP	P15-PP P15-XT-PP P15-BT-PP	P20-PP P20-XT-PP P20-BT-PP	P25-PP P25-XT-PP P25-BT-PP	P30-PP P30-XT-PP P30-BT-PP	P40-PP P40-XT-PP P40-BT-PP
Duplex Electrical Outlet *	Two NEMA-1420R receptacles with ground fault interrupter. 110V service standard; international fixtures available.	AS-GFI	AS-GFI	AS-GFI	AS-GFI	AS-GFI	AS-GFI	AS-GFI
Service Fitting	Cabinets can be fitted with service fixtures such as petcocks, faucets or valves.	<···· SF-X.	Specify service fi	tting type (fau	cet, valve, peto	cock) and locc	ation when ord	ering. ···>
Tempered Glass Side Windows	Windows are available in tempered glass construction for increased breakage protection. Contact Air Science for additional information.	GLASS-S	GLASS-S	GLASS-S	GLASS-S	GLASS-S	GLASS-S	GLASS-S
Stainless Steel Hanging Rod*	Hanging rod spans the width of the cabinet.	HANGR-P10	HANGR-P10XT	HANGR-P15	HANGR-P20	HANGR-P25	HANGR-P30	HANGR-P40
Cup Sink, Mounts into Tray*	Cup sink is fitted into the base tray.	SINK-P	SINK-P	SINK-P	SINK-P	SINK-P	SINK-P	SINK-P
Remote Control**	The remote control consists of a hand held box connected via cable to the head unit, and can be used inside the work zone. Includes an On/Off switch and blower speed control.	RC-P	RC-P	RC-P	RC-P	RC-P	RC-P	RC-P
UV Lamp***	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. Contact your facility safety officer for details.		UV-15			UV	-30	

\* 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.

\*\*\* Includes timer, door micro-switch and fully closing front sash, all clear panels polycarbonate (UV filtering). Safety precautions need to be followed.



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