

Ductless Nanoparticle Containment Enclosure

- Provides Personnel Protection from Engineered Nanoparticles, Fine Dusts and Aerosols
- Meets or Exceeds OSHA, ANSI and Related International Standards



34 watt¹ Purair model P5-36-XT (NANO), with powder scale.



22–50 watt¹

The single EC blower motor assures lower cost of ownership in one of the world's most energy efficient ductless fume hoods.



Air Science[®]

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



Schedule
Contract GS-07F-9832P



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NANO

Ductless Fume Hoods

24 • 36 • 48

PRODUCT OVERVIEW

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INTRODUCTION

The Purair® NANO ductless enclosure is designed to contain nanoparticles and fine powders of <100 nm. The stainless steel infrastructure, powder-coated fan filtration unit and dual filtration options assure superior containment and maintenance of a safe work surface.



22–50 watt¹

The single EC blower motor assures lower cost of ownership in one of the world's most energy efficient ductless fume hoods.

APPLICATIONS

Research \ Academic \ Pharmaceutical \ Aerospace



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

- High efficiency ebm-papst EC blower.
- Energy saving LED lighting.
- Protects the operator from nanomaterial particle hazards.
- Improved filter clamping eliminates bypass leakage.
- Low airflow alarm.

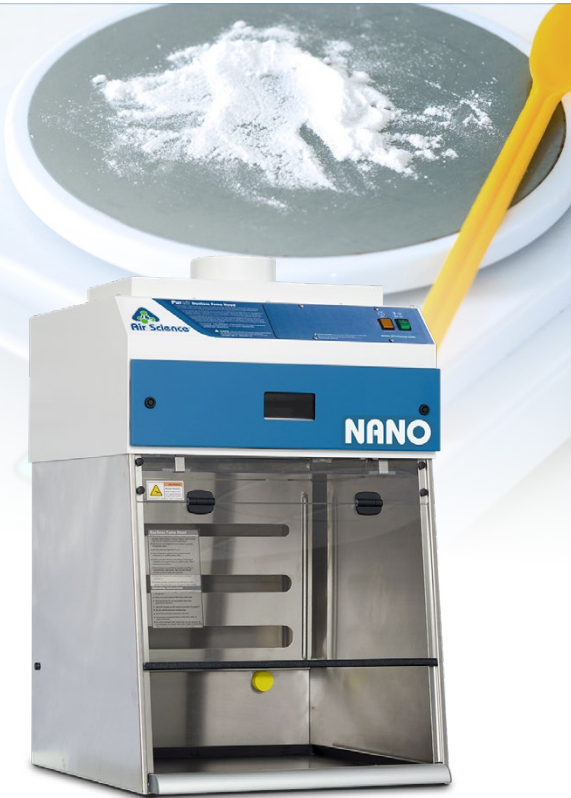
DUCTLESS TECHNOLOGY

The Eco-Friendly Choice

Some sources indicate that due to their extremely small size, nanoparticles have characteristics more similar to a gas than a solid. As nanoparticles diffuse, they collide with air molecules and move in a random pattern. For this reason, diffusion filtering is most commonly recommended to capture nanoparticles and nanomaterial.

Because the Purair NANO uses a HEPA filter as the main filter, a supplemental carbon filter can be used to trap chemical vapors emitted from the work process. The carbon filter does not capture nanoparticles.

- **Environmental Benefits.** Air Science ductless enclosures isolate and trap powders and particulates 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 nanomaterial enclosure is self-contained and does not require venting to the outside. The cabinet is 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 nanomaterial.
- **Self-Testing.** (selected models) Electronic airflow monitoring assures continuous safety. An electronic gas sensor monitors carbon filter performance.



22 watt¹ Purair P5-24-XT (NANO)

120 6th Street, Fort Myers, FL 33907

Toll Free. 800-306-0656 \ www.airscience.com

This product exceeds OSHA, ANSI and other International Certification Standards. Specifications are subject to change without notice.

¹ Energy consumption disclosure is based on internal testing with primary filters during normal operation. Power consumption published is nominal and dependent on cabinet size.

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DESIGN FEATURES

- A. Filter I.D. Window:** A strategically placed front cover window shows the installed filter part number and installation date to encourage timely filter replacement.
- B. Control Panel:** Electronic controls and displays include switches for the blower and low airflow alarm. Ergonomics, safety and aesthetics all come together with the 10° pitch of the face.
- C. Airflow Alarm:** Low airflow alarm continuously monitors filter loading and alerts user when service is needed.
- D. Air Velometer:** An optional analog air velocity meter is positioned in the user's field of vision.
- E. Stainless Steel Support Frame:** The 304 grade stainless steel provides excellent strength, chemical resistance, and is cleanroom compatible. The satin finish enhances illumination.
- F. Hinged Front Sash:** When closed, the cabinet sash protects the contents from inadvertent external contact and better isolates the air within. The sash is easy to open and close and includes a self-locking feature.
- G. Work Surface:** The internal work surface can be fitted with an optional polypropylene (available in white and black) or stainless steel tray; see accessories.
- H. Pass Through Ports:** Electrical cords and cables are safely routed into the cabinet through ports on the back.
- I. Electrostatic Pre-Filter:** The electrostatic pre-filter is accessible from inside the chamber and 91% effective down to 1-3 microns.

- J. Filter Door Key:** Filter access keys prevent unauthorized removal or accidental exposure to dirty filters.
- K. Internal Manual Speed Controller:** Authorized personnel may set the EC blower speed as desired.
- L. Stand:** An optional mobile cart with locking casters is available.
- M. Rear Internal Baffle:** Rear baffle provides smooth horizontal airflow pattern. Removable for easy cleaning.
- N. External Exhaust Connection:** Removable 6" diameter exhaust connection port allows ducting to the outside and comes standard on every Purair NANO.

ADDITIONAL FEATURES

Standards Compliant: Performance specifications and construction meet or exceed relevant standards to ensure operator safety.

Construction: All models are available in either metal or polypropylene construction. Specify metal or polypropylene when ordering. See selection chart for specifications and dimensions. Available in 120V, 60Hz and 230V, 50Hz models.



34 watt¹ Purair P5-36-XT, shown with optional velometer, stainless steel spill tray, and mobile cart.

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PERFORMANCE & SELECTION

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Each Air Science NANO hood is expertly designed and certified for quality construction. Standard features, options, and accessories are developed purposely to enhance user-friendliness.

PERFORMANCE

The Purair NANO accommodates the full range of [Multiplex™ Filtration System](#) options.

The high capacity air handling system delivers face velocity of 100 fpm in compliance with US and international safety and performance standards.

DESIGN

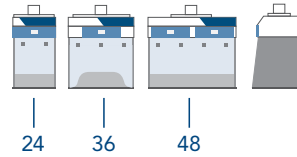
Professional quality Air Science fume hoods comply with current technical and safety regulations.

The cabinet frame and work surfaces, comprised of industrial components, are durable and chemically resistant.

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

RELIABILITY

Internal systems are isolated from fumes, extending product life.



SELECTION

Purair NANO hoods are available in 3 standard sizes.

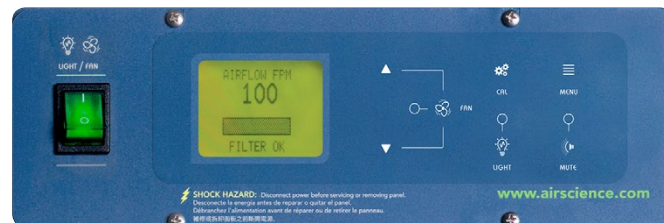
CONTROL

The **basic control panel** is standard on Purair NANO models and includes an On/Off switch and low airflow alarm.

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 an LCD display.



Basic Control Panel



Monitair Control Panel



Energy-efficient ebm-papst brand EC blowers promote long life and dependable performance of Purair NANO fume hoods.



SECUR.

safe disposal service



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

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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** in the NANO consists of a pre-filter, HEPA filter, with optional ULPA filter and/or supplemental carbon filter. HEPA/ULPA filtration combined with a supplemental activated carbon filter maximizes the number of particles captured through Brownian diffusion. The mechanical design enhances safety, convenience, and overall value.

View available filters and descriptions on [page 7](#).

FILTER CONFIGURATION

The Multiplex feature permits configuration for the capture of ultra fines, when paired with ULPA filters, and for the capture of acids, bases when paired with carbon filters.

The optional 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.

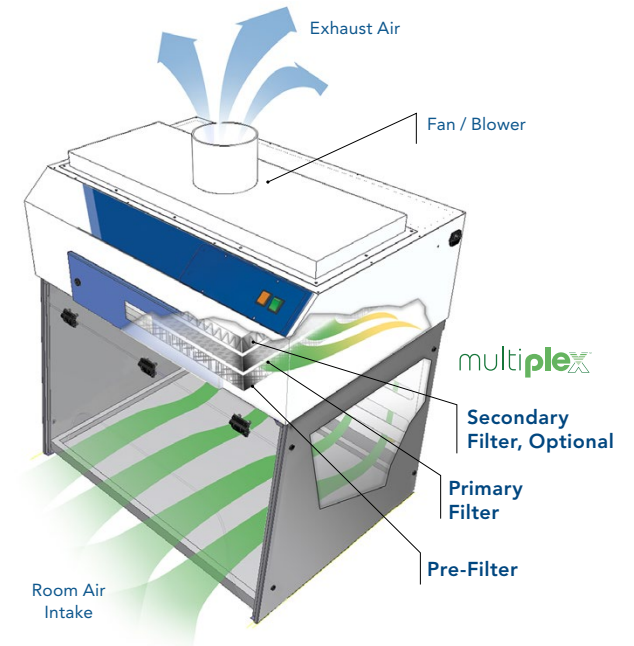
- P. Electrostatic Pre-Filter:** Protects the main filters from aerosols, mists, dust, and particulates.
- C. Activated Carbon Main Filter, Optional:** A single or stacked filter configuration.
- H. HEPA Filter (ULPA Optional):** Both HEPA and ULPA filters use micro-glass fiber media designed to capture 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 99.995% at 0.3 microns and 99.9995% at 0.12 microns respectively.

AIRFLOW

The Purair NANO Series ductless nanoparticle enclosure 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 and clean air is returned to the room.

The main filters are easy to replace with no tools required. 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.



MULTIPLYX FILTRATION SYSTEM, SUMMARY

Application	Chemical	Powder/ Biological	Chemical & Powder	Chemical within Cleanroom
Secondary/ Stacked Filter, Optional	C	H	C	H
Primary Filter	C	H	H	C
Pre-Filter	P	P	P	P



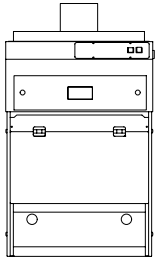
The optional SafeSwitch HEPA Filter Shutter system ensures that operators are safely separated from trapped contaminants during filter changes.

¹⁾ Energy consumption disclosure is based on internal testing with primary filters during normal operation. Power consumption published is nominal and dependent on cabinet size.

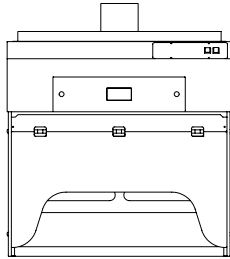
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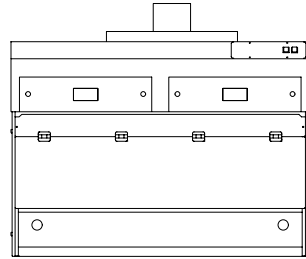
**Purair P5-24-XT
(NANO)**



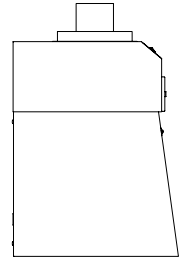
**Purair P5-36-XT
(NANO)**



**Purair P5-48-XT
(NANO)**



Side View



MODEL	DIMENSIONS			WEIGHT (LBS/KG)	
	Internal Height	External (W × D × H)	Shipping (W × D × H)	Net	Ship
Standard Models					
P5-24-XT (NANO)	23.6" / 600 mm	24" × 27" × 35" / 610 × 676 × 889 mm	40" × 40" × 40" / 1016 × 1016 × 1016 mm	72 / 33	150 / 68
P5-36-XT (NANO)	23.6" / 600 mm	36" × 27" × 35" / 914 × 676 × 889 mm	40" × 40" × 40" / 1016 × 1016 × 1016 mm	99 / 45	170 / 77
P5-48-XT (NANO)	23.6" / 600 mm	48" × 27" × 35" / 1219 × 676 × 889 mm	45" × 55" × 40" / 1143 × 1397 × 1016 mm	138 / 63	230 / 104

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PRODUCT SPECIFICATIONS

Filtration	P5-24-XT (NANO)	P5-36-XT (NANO)	P5-48-XT (NANO)
Airflow	135.9 cfm	206 cfm	281.25 cfm
Face Velocity	100 fpm	100 fpm	100 fpm
Construction	P5-24-XT (NANO)	P5-36-XT (NANO)	P5-48-XT (NANO)
Finish	<... Stainless steel frame and head unit. ...>		
Blower	<... ebm-papst EC blower. ...>		
Controls	<... Main On/Off. ...>		
Electrical	<... 120V, 60Hz or 230V, 50Hz voltages available. Specify when ordering. Other voltage options available. ...>		
Monitoring	<... Low airflow alarm, standard. ...>		
Efficiency	P5-24-XT (NANO)	P5-36-XT (NANO)	P5-48-XT (NANO)
Power Consumption ¹	22 watt	34 watt	50 watt
Lighting	<... LED. ...>		
Noise, dBA ²	< 54	< 55	< 60

¹ All measurements are with Filter Type ASTS-030.

² Measured 12" (30 cm) from the cabinet front and 15" (38 cm) above the work surface plane.

FILTER SPECIFICATIONS

Purair Model	P5-24-XT (NANO)	P5-36-XT (NANO)	P5-48-XT (NANO)
Secondary/Stacked Filter, Optional*	(1)	(1)	(2)
Primary Filter*	(1)	(1)	(2)
Pre-Filter*	(1)	(1)	(2)

* 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!	Neutralizes volatile inorganic acid vapors.
ACR	Iodine and methyl iodide vapors as well as 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.
EDU	Designed to handle chemicals normally used in a university level chemistry curriculum.
MIL	Designed for military applications involving war gasses.
HEPA/UPLA	Powders, particulates, and biologicals.

View additional information on the Multiplex Filtration System on [page 5](#).



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 and those of many other manufacturers.

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OPTIONS & ACCESSORIES

Purair Model		P5-24-XT (NANO)	P5-36-XT (NANO)	P5-48-XT (NANO)
Safety Filter*	An additional carbon, HEPA or ULPA safety filter exceeding ANSI/AIHA Z9.5 requirements can be installed after the main filter.	<... Safety filters for vapor or particulate protection are available for all models. ...> Contact Air Science for ordering information.		
Monitair Controller*	Microprocessor controller monitors cabinet operating parameters, airflow, containment, and filter condition; emits audio and visual alerts if conditions become unsafe. Not TUV compliant.	MON-P	MON-P	MON-P
Spill Tray (Polypropylene)	Removable for easy cleaning.	TRAY-P5-24	TRAY-P5-36	TRAY-P5-48
Spill Tray (Stainless Steel)	Removable for easy cleaning.	SS-TRAY-P5-24	SS-TRAY-P5-36	SS-TRAY-P5-48
SafeSwitch HEPA Filter Shutter System	Minimizes exposure to filter contaminants when removing used carbon or HEPA filters for insertion of new filters.	ASTS-030-SS	ASTS-030-SS	ASTS-030-SS
Dwyer Airflow Meter	Continuous display of face velocity.	DWYER	DWYER	DWYER
Base Stand, Mobile, with Casters	Provides a lower storage shelf; accommodates wheelchair access. Locking casters fix the hood in place.	CART-24	CART-36	CART-50
Base Cabinet, Fixed (Metal)	Provides storage space below.	CART-MCC-24	CART-MCC-36	CART-MCC-50
Base Cabinet, Fixed (Polypropylene)	Provides storage space below.	CART-SSC-24	CART-SSC-36	CART-SSC-50
Fire Safety Cabinet Base	Flame resistant safe storage for combustible and flammable liquids.	CART-FSC-24	CART-FSC-36	CART-FSC-50
Remote Control**	Wired controller, provides lower access height to comply with ADA requirements.	RC-P	RC-P	RC-P
Polypropylene Construction*	Ductless fume hoods are available in all polypropylene construction.	P5-24-XT-PP	P5-36-XT-PP	P5-48-XT-PP
Duplex Electrical Outlet*	Two NEMA-1420R receptacles with ground fault interrupter. 120V service standard; international fixtures available.	AS-GFI	AS-GFI	AS-GFI
Stainless Steel Hanging Rod*	Hanging rod spans the width of the cabinet.	HANGR-P5-24	HANGR-P5-36	HANGR-P5-48

* 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 Lifetime Warranty™** which starts on the date of shipment from our factory. This limited warranty is the result of thousands of successful Air Science production applications in pharmaceutical, laboratory, forensic, industrial, and educational applications.

This warranty covers defects in materials and workmanship. Our liability under the Legacy Lifetime Warranty is, at our option, to repair or replace any defective parts of this equipment if you document that these parts were defective at the time we sold the product to you. Normal conditions apply.



For details visit the [Service section](#) of our website at www.airscience.com.

STANDARDS & COMPLIANCE

Quality Management Systems	ISO 9001
Chemical Fume Containment	ANSI/ASHRAE 110 1995
Carbon Filter Efficiency	BS 7989-2001 AFNOR NFX 15-211
Biological Safety Filter Efficiency HEPA and ULPA	IEST-RP-CC007.1 IEST-RP-CC001-4 EN 1822
Electrical Safety	UL-C-61010-1 CAN/CSA C22.2 61010-1-12 EN 61010-1:2010 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



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