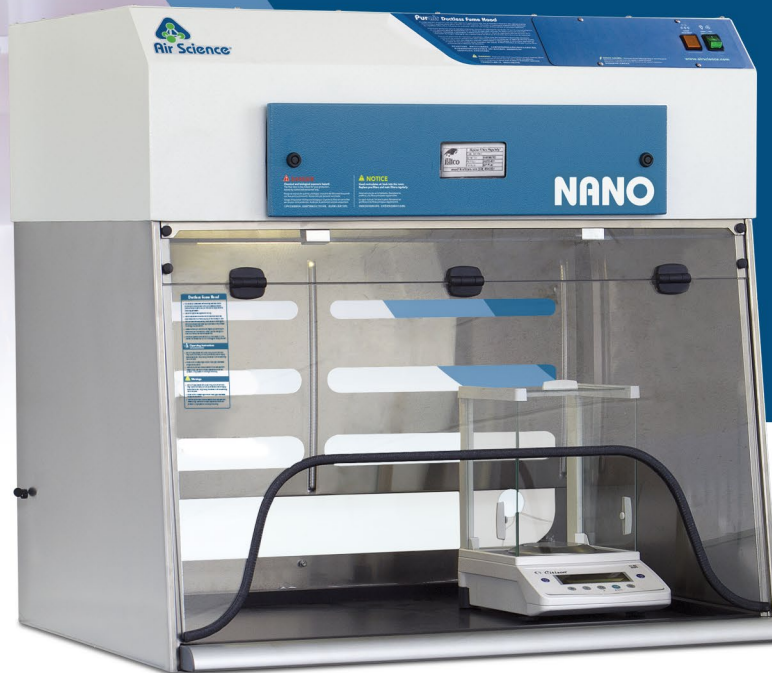




## Ductless Nanoparticle Containment Enclosure

- Provides Personnel Protection from Engineered Nanoparticles, Fine Dusts and Aerosols

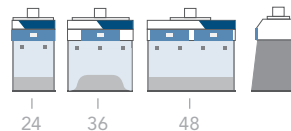


54 watt<sup>1</sup> Purair model P5-36-XT (NANO), with powder scale.



30–71 watt<sup>1</sup>

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



## CONTENTS:

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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.



30–71 watt<sup>1</sup>

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

## APPLICATIONS

Using innovative filtration technology, the Purair NANO creates a safe work environment over the widest range of applications in the industry.

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.

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## KEY FEATURES

- High efficiency EC blower.
- Energy saving LED lighting.
- Protects the operator from nanomaterial particle hazards.
- Improved filter clamping eliminates bypass leakage.
- Filter blockage 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.



30 watt<sup>1</sup> Purair P5-24-XT (NANO)

Specifications are subject to change without notice or obligation on the part of Air Science. For questions contact Air Science.

<sup>1</sup>) 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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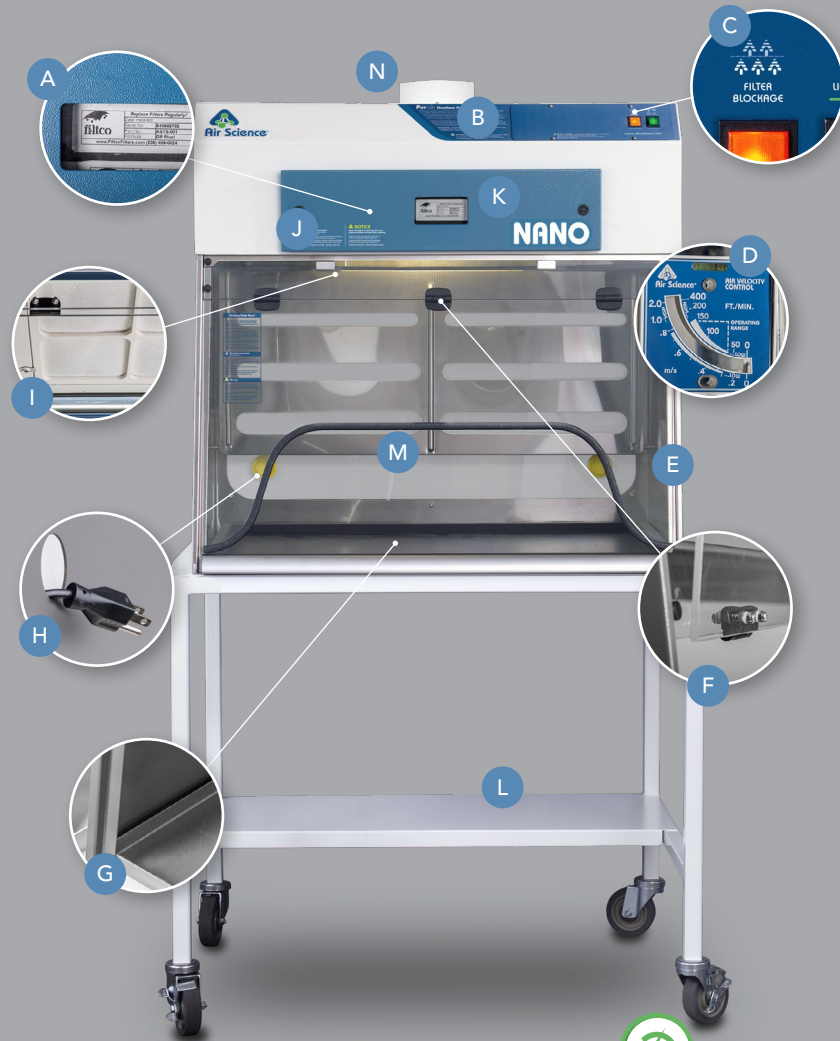
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DESIGN FEATURES

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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 filter blockage alarm. Ergonomics, safety and aesthetics all come together with the 10° pitch of the face.
- C. Filter Blockage:** 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 stainless steel work surface is easy to clean.
- 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:** Optional mobile base stand with locking casters.
- 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.



54 watt<sup>1</sup> Purair P5-36-XT, shown with optional velometer and mobile base stand.

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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.

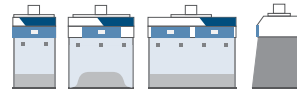
The high capacity air handling system delivers face velocity of 100 fpm in compliance with US and international safety and performance standards.

## 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.



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## SELECTION

Purair NANO hoods are available in 3 standard sizes.

## RELIABILITY

Internal systems are isolated from fumes, extending product life.

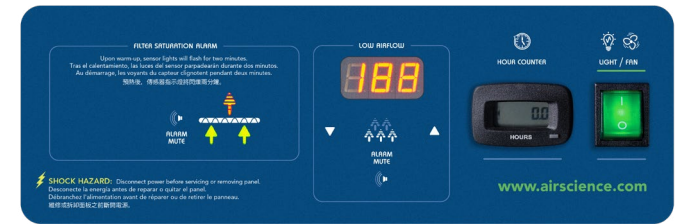
## CONTROL

The **Basic control panel** is standard and includes an On/Off switch and Filter Blockage alarm.

The **Advanced controller** displays the airflow and offers limited detection of low concentrations of hydrocarbon, some gases and organic acids. Audio and visual alarms alert users to filter saturation and if the airflow reaches preset thresholds. An Hour Counter is also included.



Basic Control Panel



Advanced Control Panel (ADVP)



**Energy-efficient** blowers promote long life and dependable performance of Purair NANO fume hoods.

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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](#).



*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 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 99.97% at 0.3 microns and 99.999% at 0.12 microns respectively.

**MULTIPLEX FILTRATION SYSTEM, SUMMARY**

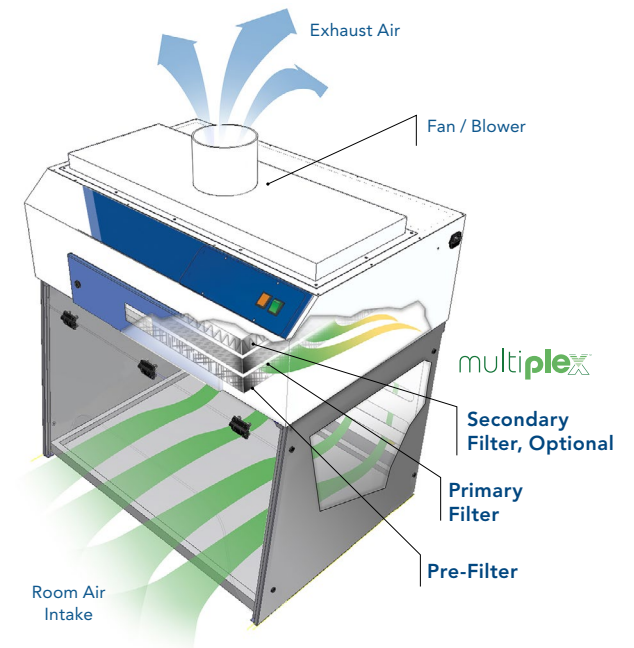
Application	Chemical	Powder/ Biological	Chemical & Powder	Chemical within Cleanroom
Secondary/ Stacked Filter, Optional	C	H	C	H
Primary Filter	C	H	H	C
Pre-Filter	P	P	P	P

**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.



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<sup>1)</sup> 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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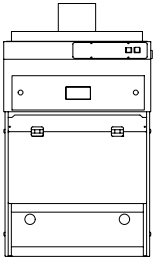
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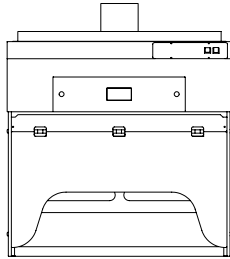
SPECIFICATIONS

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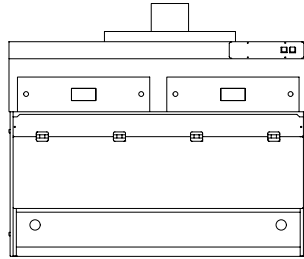
**Purair P5-24-XT (NANO)**



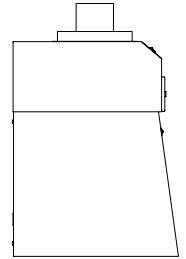
**Purair P5-36-XT (NANO)**



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



**Side View**



MODEL	VOLTAGE	DIMENSIONS			WEIGHT (LBS/KG)	
		Internal Height	External (W x D x H)	Shipping (W x D x H)	Net	Ship
<b>Standard Models</b>						
P5-24-XT-A (NANO)	120V, 60Hz	23.6" / 600 mm	24" x 27" x 35" / 610 x 676 x 889 mm	40" x 40" x 40" / 1016 x 1016 x 1016 mm	72 / 33	150 / 68
P5-24-XT-G (NANO)	230V, 50Hz	23.6" / 600 mm	24" x 27" x 35" / 610 x 676 x 889 mm	40" x 40" x 40" / 1016 x 1016 x 1016 mm	72 / 33	150 / 68
P5-36-XT-A (NANO)	120V, 60Hz	23.6" / 600 mm	36" x 27" x 35" / 914 x 676 x 889 mm	40" x 40" x 40" / 1016 x 1016 x 1016 mm	99 / 45	170 / 77
P5-36-XT-G (NANO)	230V, 50Hz	23.6" / 600 mm	36" x 27" x 35" / 914 x 676 x 889 mm	40" x 40" x 40" / 1016 x 1016 x 1016 mm	99 / 45	170 / 77
P5-48-XT-A (NANO)	120V, 60Hz	23.6" / 600 mm	48" x 27" x 35" / 1219 x 676 x 889 mm	45" x 55" x 40" / 1143 x 1397 x 1016 mm	138 / 63	230 / 104
P5-48-XT-G (NANO)	230V, 50Hz	23.6" / 600 mm	48" x 27" x 35" / 1219 x 676 x 889 mm	45" x 55" x 40" / 1143 x 1397 x 1016 mm	138 / 63	230 / 104

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SPECIFICATIONS

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### PRODUCT SPECIFICATIONS

Filtration	P5-24-XT (NANO)	P5-36-XT (NANO)	P5-48-XT (NANO)
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	<... EC blower. ...>		
Controls	<... Main On/Off. ...>		
Monitoring	<... Filter blockage alarm, standard. ...>		
Efficiency	P5-24-XT (NANO)	P5-36-XT (NANO)	P5-48-XT (NANO)
Power Consumption* 120V, 60Hz	30 watt	54 watt	71 watt
Power Consumption* 230V, 50Hz	30 watt	54 watt	71 watt
Lighting	<... LED. ...>		

\* Watts at calibrated airflow setpoint with GP Filter(s) and prefilter installed.

### 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!/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.

\*Other formulas may be available.



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.

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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.		
Advanced Controller*	The optional Advanced controller displays the airflow and offers limited detection of low concentrations of hydrocarbon, some gases and organic acids. Audio and visual alarms alert users to filter saturation and if the airflow reaches preset thresholds. An Hour Counter is also included.	P5-24-XT-A-ADVP (NANO) P5-24-XT-G-ADVP (NANO)	P5-36-XT-A-ADVP (NANO) P5-36-XT-G-ADVP (NANO)	P5-48-XT-A-ADVP (NANO) P5-48-XT-G-ADVP (NANO)
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	ASVLF-P5-36-030-SS	ASTS-030-SS(2)
Dwyer Airflow Meter	Continuous display of face velocity.	DWYER	DWYER	DWYER
Base Stand, Mobile, with Casters	Mobile base stand, fixed height, with locking casters.	CART-25	CART-36	CART-50
Bottom Shelf	Provides a lower storage shelf for mobile base stand.	CART-25-SHELF	CART-36-SHELF	CART-50-SHELF
Base Cabinet, Fixed (Metal)	Provides storage space below.	CART-MCC-25	CART-MCC-36	CART-MCC-50
Base Cabinet, Fixed (Polypropylene)	Provides storage space below.	CART-SSC-25	CART-SSC-36	CART-SSC-50
Fire Safety Cabinet Base	Flame resistant safe storage for combustible and flammable liquids.	CART-FSC-25	CART-FSC-36	CART-FSC-50

\* Specify when ordering.



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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
Electrical Safety	UL-C-61010-1 CAN/CSA C22.2 61010-1-12 EN 61010-1:2010 CE Mark
OSHA, Occupational Safety and Health Administration	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. Please consult your Safety Officer and/or Industrial Hygienist.
Environment	ISO 14001: 2015 ENERGY STAR® Partner



120 6th Street \ Fort Myers, FL 33907  
T. 239-489-0024 \ Toll Free. 800-306-0656 \ F. 800-306-0677  
airscience.com

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T. 0151 526 2457 \ airscience.com/UK

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