Breathe Pure Air with Our Ultra-
Efficient Fume&Dust Purifier!

PURE-AIR
Fume Extractor & Dust Collector

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PURE-AIR
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BORN FOR LASER, INTELLIGENTLY PROTECTING CLEAN PRODUCTION

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CONTENTS

BORN FOR LASER,
INTELLIGENTLY PROTECTING CLEAN PRODUCTION

ABOUT PURE-AIR

10+ YEARS

10+ CORE TECHNOLOGY

5000+ SUCCESSFUL CUSTOMERS

PURE-AIR, 10+ years are focusing on R&D and manufacturing of Fume Extractor, Dust Collector, and Explosion-proof Dust Collector.

With more than 10 technical standards that lead the industry, Pure-Air products sold well in China and 70+ countries and regions around the world, making the production equipment of 5000+ customers including 50+ of the world's TOP 500 more valuable and the production environment cleaner, and becoming the guardian of occupational health of thousands of employees. Pure-Air products are used in more than 30 industries such as laser processing, electronic processing, metal processing, lithium battery, semiconductor production, 3D printing, inkjet printing,food and pharmaceuticals production,medical beauty, etc.

The new PIPS adopts intelligent control system and multiple sensors.It has pioneered solutions to multiple industry dificulties and bring greater use value to customers. It meets stringent purification reauirements of industries including semiconductor chip production, banknote printing, food and pharmaceuticals production. etc.


PURE-AIR
Fume Extractor & Dust Collector

BECOME GLOBAL FAMOUS BRAND IN FUME & DUST PURIFICATION INDUSTRY

Integrity & Fust Are The Foundation

Pursue Innovation & Cherish Dreams

Strictly Quality Control, Focus On Efficiency, Win-Win Cooperation



2011-2012

1st generation: The market demand for industrial smoke purification has sprouted, we developed FS series. The filters have large dust holding capacity, good purification effect and long service life.

2015-2016

2nd generation: With the increase of automated production, we developed IQ series. They are equipped with brushless fan, the size is greatly reduced, and air volume can be adjusted.

2018-2019

3rd generation: With the popularization of automated production, we developed HP-IQ series. They are equipped with high-negative-pressure brushless fan with suction power that is three times higher, the service life of filters is extended by more than 30%, and they have multiple control and communication functions.

10+

10+ years manufacturer
Fume Extractor
Dust collector
Explosion-proof Dust Collector

2020-2021

High-tech Enterprise Certification: Through continuous technological R&D, we obtained a number of patents and High-tech Enterprise Certificate. The Explosion-proof Dust Collector also obtained whole machine explosion-proof certification certified by the national inspection agency.

2023-2025

PURE-AIR
Fume Extractor & Dust Collector

Brand upgrade: We proudly uses new LOGO, VIS and PI system, which marks our persistent pursuit and commitment to high-quality products. We hope that all our customers can"Breath Pure Air with Our Ultra-efficient Fume & Dust Purifier!"

4th generation: With the increase of unmanned factories and higher requirements for production environment in industries such as lithium battery, semiconductor & medical, we developed new PIPS. It has pioneered solutions to multiple industry difficulties and bring greater use value to customers.

OUR QUALIFICATIONS

R&D Strength

R&D Department Introduction:

The R&D Department is responsible for optimizing the company's existing products and developing new products.

Pure-Air use advanced design software and rich experience to continuously improve and develop various types of smoke & dust purification equipment that meet customer requirements.

Pure-Air use a full range of testing instruments to continuously improve the purification efficiency of our equipment and truly achieve the goal of "Breathe Pure Air with Our Ultra-efficient Fume & Dust Purifier".

Introduction to R&D Team

Specific job positions include: structural design engineer, electrical engineer, software engineer, hardware development engineer, motor development engineer, etc.

Introduction to After-Sales Service Team

An after-sales service team led by engineers with 10+ years of equipment after-sales experience assists in the installation or debugging of equipment. If there are any problems during the use of the equipment, we will respond promptly and solve the problem quickly to protect your safety and health at all times.

10 THE LATEST TEN CORE TECHNOLOGIES

- Pure-air Intelligent Purification Tech (PIPT)
- Automatic Flow Compensation Tech (AFCT)
- Multi-voltage Compatible Tech (MVCT)
- Filter Real-time Monitor Tech (FRMT)
- Air-quality Real-time Monitor Tech (ARMT)
- Ultra-large Area Filtration Tech (UAFT)
- High-efficiency Purification Tech (HEPT)
- Long-lasting Odor Purification Tech (LOPT)
- Patented Sticky Smoke Purification Tech (SSPT)
- Patented Automatic Rotary Cleaning Tech (ARCT)

SOLUTIONS TO INDUSTRY PROBLEMS

01

Traditional centrifugal fans have low suction, large size, high noise, and unadjustable air volume;

Solution: 10+ years of experience in developing high-negative-pressure brushless fans, suction increased by 3-5 times, and air volume adjustable in variety of ways.

02

The actual air volume is simulated data, which is not true and accurate and can not meet the customer's working condition design requirements;

Solution: The new PIPS use sensors and algorithms to display the accurate actual flow and negative pressure in real time to ensure that it meets the design requirements.

03

The filter element has many layers, large resistance, small suction, low air volume, small single-layer filtration area, and short filter element service life;

Solution: Use new filter with a single-layer filtration area that is more than 5 times higher, fewer layers, longer service life, and low cost of use.

04

As the usage time increases, the actual air volume and suction force cannot reach the set air volume, the smoke and dust are diffused, affecting product quality and polluting the environment;

Solution: The new PIPS use automatic compensation algorithm to match the actual air volume with the set air volume in real time to achieve constant air volume and negative pressure, ensuring the on-site smoke and dust purification effect.

05

VOC and odor filters have small capacity, high dust content, short service life, and poor deodorization effect;

Solution: Use different filters for different working conditions, specially made activated carbon and other materials to absorb VOC and odor for a long time.

06

Sticky smoke easily clogs the filter element, and there is no good solution;

Solution: The innovative patented design solves the industry problem, and the service life of the filter element is increased by more than 5 times.

07

Venturi tube, spiral spray head and other cleaning systems have low efficiency and poor effect. Especially the cleaning effect of oily smoke is worse;

Solution: Patented automatic pulse cleaning rotary spray system, the service life of the filter cartridge is extended by more than 3 times, greatly reducing the cost of machine use.

08

The outlet air quality can not be sensed, it is not certain whether it meets health and environmental protection requirements.

Solution: The new PIPS has variety of air quality sensors to choose from, and the air quality at the outlet is displayed in real time to ensure compliance with environmental protection requirements.

09

The filter element usage status cannot be sensed, and which layer of the filter is blocked cannot be directly known. It needs to be tested one by one to know. It will cause serious hidden dangers of production line shutdown.

Solution: The new PIPS use sensors and algorithms to display the usage status of each layer filter in real time, so that customers can sense the filter usage at any time and replace the filter element in time.

10

The temperature and humidity of the filter or fan cannot be sensed, which may cause the filter to catch fire or the fan to be damaged due to insufficient heat dissipation.

Solution: The new PIPS use sensors to display data in real time to ensure long-term stable operation of the purifier.

PIPS

New generation

PURE-AIR Intelligent Purification System

Touch screen:
Color touch screen, the main interface can display all important parameters;

Multiple communication ports:
I/O, RS-485, WIFI, etc., to meet the communication control needs of various production environments;

Automatic air volume compensation:
Using sensors and intelligent algorithms, the actual air volume is automatically compensated to the set air volume according to the filters blockage status, ensuring that the customer's vacuuming effect remains the same;

Multi-sensor detection (optional):
Air quality sensor (PM2.5, VOC, HCL, O3, etc.), temperature and humidity sensor, etc., to ensure that the purifier can operate normally under long-term unattended state;

Signal output:
Important sensors data or machine failure signals can be output to the host computer in real time to ensure that the central control system is always aware of the purifier operation status;

Filter real-time monitoring:
Knowing the filters usage status clearly, so that customers can replace the filter element in time to avoid the risk of production line shutdown;

Filter temperature & humidity monitoring:
If the temperature and humidity are detected to be too high, it will automatically shut down to protect the machine to avoid the risk of fire or filter damage.

Quickly upgrad:
The system can be upgraded via TF card.

Laser Marking / Coding
Fumes, Dust and Odor Purification Solutions

Hazards of laser marking fumes, dust, and Odor

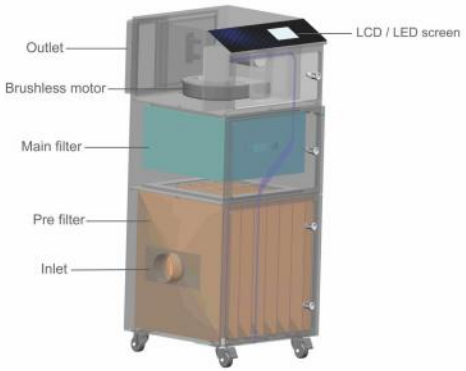
1. Plastic/coating decomposition releases benzene (carcinogenic) and formaldehyde (irritating mucous membranes); ozone/nitrogen oxides damage the respiratory tract; halogen-containing materials generate highly toxic dioxins;
2. Metal oxide dust causes pneumoconiosis;
3. Volatile organic compounds (VOCs) in inks cause dizziness and nausea;
4. Odor residues reduce product cleanliness (food/medical industry); smoke and dust adhere to equipment and affect accuracy;
5. Long-term exposure increases occupational health risks.

- **Application industries:** Automotive parts, 3C electronic products, PCB, semiconductor, food and pharmaceuticals, etc.
- **Advantages:** High negative pressure brushless fan (strong suction), Low noise, Adjustable speed, Large filter area, High filtration accuracy, Good deodorization effect, and can be discharged indoors.

Technical configuration

- Intelligent Control System (IQ/PIPS)
- Ultra-large Area Filtration (UAF)
- Multi-Voltage Compatibility (MVC)
- High Efficiency Purification (HEP)
- Filter Quick Release (FQR)
- Air-Flow Adjustment (AFA)
- Long-lasting Odor Purification (LOP)

Structural diagram



Technical parameters

Application conditions	Processing materials	Laser marking: metal and some plastic materials (Stainless steel, Plastics, Cartons, PET, PC, PCB, Chips, etc.).						
	Working format	Single-station		Product line				
Model		PA-F250s	PA-F350s	PA-DS400 PA-DS400i	PA-DS500 PA-DS500i	PA-DS800 PA-DS800i	PA-DS1600 PA-DS1600i	PA-DS2400 PA-DS2400i
Airflow		250m³/h	350m³/h	400m³/h	500m³/h	800m³/h	1600m³/h	2400m³/h
Pressure		2800Pa	3700Pa	8000Pa	10000Pa	10000Pa	10000Pa	10000Pa
Rated power		0.2kw	0.35kw	1.0kw	1.1kw	1.3kw	2.3kw	3.5kw
Input voltage / Frequency		90v-110v / 210-257v, 1ph, 50/60Hz						
Filter	Pre filter	F5 pad (95%@1um)		F9 accordion filter bag (95%@0.9um)				
		F9 deeppleat filter (95%@0.9um)						
	Main filter	H14 deeppleat filter (99.997% @0.3um)		H14 deeppleat filter (99.997% @0.3um)				
		Treated activated carbon		Treated activated carbon (Weight 12-30kgs approx)				
Noise level *		< 60dBA	< 63dBA	<58 dBA	< 60dBA	< 63dBA	< 65dBA	< 68dBA
Dimensions (W*D*H)		430*250*412mm	520*310*515mm	450*482*941mm	550*562*1091mm		720*769*1389mm	800*907*1374mm
Weight		14.5kg	20.5kg	45kg	72kg	75kg	164.5kg	201kg
Inlet size		50mm / 75mm		50mm / 75mm	75mm / 100mm	100mm / 125mm	150mm	200mm
Cabinet construction		Powder coated mild steel / Brushed stainless steel						

* At typical operating speed testing data.

Laser Cutting / Engraving Non-metal Fumes, Dust and Odor Pulification Solutions

Hazards of laser cutting / engraving non-metal fumes, dust & odor

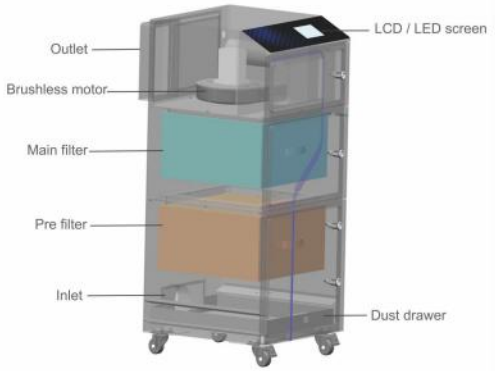
1. Organic materials (such as PVC) decompose to release chlorine and dioxins (highly toxic and carcinogenic); benzene (epoxy resin) causes leukemia risk; ozone/nitrogen oxides damage the lungs;
2. Dust (fiberglass, resin) causes respiratory diseases; heavy metal additives (lead/cadmium) cause chronic poisoning;
3. Irritant gases (formaldehyde, hydrogen cyanide) burn mucous membranes;
4. Odor-contaminated products (food/medical); smoke and dust block equipment and increase the failure rate;
5. Flammable dust (wood chips) explosion risk.

- **Application industries:** handicrafts, 3C electronic products, electrical components, clothing and accessories, shoes, bags, medical products, daily necessities, etc.
- **Advantages:** High negative pressure brushless fan (strong suction), Low noise, Adjustable speed, Large filter area, High filtration accuracy, Good deodorization effect, and can be discharged indoors.

Technical configuration

- Intelligent Control System (IQ/PIPS)
- Ultra-large Area Filtration (UAF)
- Sticky Smoke Purification (SSP)
- Multi-Voltage Compatibility (MVC)
- High Efficiency Purification (HEP)
- Filter Quick Release (FQR)
- Air-Flow Adjustment (AFA)
- Long-lasting Odor Purification (LOP)

Structural diagram



Technical parameters

Application conditions	Processing materials	Laser cutting/engraving: paper, acrylic, leather, fabric and other materials.					Laser cutting/engraving: wood, plywood.		Laser cutting: Carbon fiber and composite materials such as CFRP and CMC, etc.	
	Working format	30*40cm, 30*50cm	40*60cm, 80*100cm	90*130cm	100*160cm	130*250cm	80*100cm	90*130cm, 100*160cm	80*100cm	90*130cm, 100*160cm
Model		PA-FS300	PA-FS500 PA-FS500i	PA-FS800 PA-FS800i	PA-FS1600 PA-FS1600i	PA-FS2400 PA-FS2400i	PA-FGS800 PA-FGS800i	PA-FGS1600 PA-FGS1600i	PA-DFS800 PA-DFS800i	PA-DFS1600 PA-DFS-1600i
Airflow		300m³/h	500m³/h	800m³/h	1600m³/h	2400m³/h	800m³/h	1600m³/h	800m³/h	1600m³/h
Pressure		3700Pa	10000Pa	10000Pa	10000Pa	10000Pa	10000Pa	10000Pa	10000Pa	10000Pa
Rated power		0.35kw	1.1kw	1.3kw	2.3kw	3.5kw	1.3kw	2.3kw	1.3kw	2.3kw
Input voltage / Frequency		90v-110v / 210-257v, 1ph, 50/60Hz								
Filter	Pre filter	F9 deeppleat filter (95%@0.9um, surface media area 12m² - 30m² approx)					PTFE cartridge filter with natural mineral powder		Flame retardant PTFE cartridge filter	
	Main filter	H14 deeppleat filter (99.997% @0.3um) Treated activated carbon (Weight 12-30kgs approx)								
Noise level *		< 58dBA	< 60dBA	< 63dBA	< 65dBA	< 68dBA	< 62dBA	< 65dBA	< 62dBA	< 65dBA
Dimensions (W*D*H)		560*310*835mm	500*562*1040mm		670*768*1356mm	750*967*1341mm	500*597*1439mm	670*834*1705mm	500*597*1439mm	670*834*1705mm
Weight		35kg	83kg	86kg	185kg	205kg	128kg	210kg	121kg	200kg
Inlet size		50mm / 75mm	75mm / 100mm	100mm / 125mm	150mm	200mm	100mm / 125mm	150mm	100mm / 125mm	150mm
Cabinet construction		Powder coated mild steel / Brushed stainless steel								

* At typical operating speed testing data.

Laser Cutting / Welding / Cladding Metal Fumes, Dust and Odor Purification Solutions

Hazards of laser cutting / welding / cladding metal fumes, dust & odor

1. Metal dust (such as iron, aluminum, chromium) causes respiratory diseases and pneumoconiosis; long-term exposure increases occupational health risks;
2. High temperature produces ozone and nitrogen oxides, which irritate the lungs and eyes; toxic gases (carbon monoxide, hexavalent chromium) cause chronic poisoning or cancer;
3. Smoke pollutes the workshop environment and damages the life of equipment; residual pollutants affect the cleanliness of precision parts (such as electronics/medical industries);
4. Explosive dust (such as magnesium and titanium) poses a safety hazard.

- **Application industries:** automobiles, ships, mechanical equipment, furniture, kitchenware, Lithium batteries, 3C electronic products, etc.
- **Advantages:** High negative pressure brushless fan (strong suction force), especially good dust suction speed and effect. Small size, large filter element dust holding capacity, patented automatic pulse cleaning system with 2 times higher efficiency, multiple filter elements available to meet customers' needs for various working conditions.

Technical configuration

- Intelligent Control System (IQ/PIPS)
- Ultra-large Area Filtration (UAF)
- Multi-Voltage Compatibility (MVC)
- High Efficiency Purification (HEP)
- Filter Quick Release (FQR)
- Air-Flow Adjustment (AFA)
- Automatic Rotary Cleaning (ARC)

Structural diagram

Technical parameters

Application conditions	Processing materials	Laser cutting / welding: Carbon steel, stainless steel, galvanized sheet and other materials. Laser Cladding: Alloy Materials.				Laser cutting: Aluminum, magnesium-aluminum alloy and other dust-prone and flammable materials.			Laser welding: Carbon steel, stainless steel, galvanized sheet and other materials.	
	Working format	130*250cm	200*400cm	200*600cm	400*600cm	100*160cm	130*250cm	200*400cm	Small workpiece	
Model		PA-D5000	PA-D6000	PA-D10000	PA-D12000	PA-DE3000	PA-DE5000	PA-DE6000	PA-D800 PA-D800i	PA-D1600 PA-D1600i
Airflow		5000m³/h	6000m³/h	10000m³/h	12000m³/h	3000m³/h	5000m³/h	6000m³/h	800m³/h	1600m³/h
Pressure		3200Pa	3500Pa	3200Pa	3500Pa	3000Pa	3200Pa	3500Pa	10000Pa	10000Pa
Rated power		5.5kw	7.5kw	10.0kw	15.0kw	3.0kw	5.5kw	7.5kw	1.3kw	2.3kw
Input voltage / Frequency		220v/ 380v / 415v / 440v, 3ph, 50/60Hz							90v-110v / 210-257v, 1ph, 50/60Hz	
Filter	Pre filter	PTFE cartridge filter / Flame retardant PTFE cartridge filter (Optional)				Anti-static & flame retardant PTFE cartridge filter			Flame retardant PTFE cartridge filter	
	Main filter	Treated activated carbon (Optional)				Treated activated carbon (Optional)			H14 deeppleat filter (99.997% @0.3um)	
Noise level *		< 75dBA	< 78dBA	< 80dBA	< 85dBA	< 73dBA	< 75dBA	< 78dBA	< 63dBA	< 65dBA
Dimensions (W*D*H)		950*903*2015mm	1400*952*2086mm	1900*951*2112mm		814*845*1985mm	964*995*2052mm	1402*1046*2194mm	500*587*1296mm	670*794*1570mm
Weight		260kg	600kg	750kg	850kg	250kg	350kg	800kg	86kg	180kg
Inlet size		250mm	300mm	350mm	400mm	200mm	250mm	300mm	100mm / 125mm	150mm
Cabinet construction		Powder coated mild steel / Brushed stainless steel								

* At typical operating speed testing data.

Laser Scoring / Drilling
Fumes, Dust and Odor Purification Solutions

Hazards of laser scoring / drilling fumes, dust & odor

1. Metal/silicon dust causes respiratory diseases; fiberglass dust causes silicosis;
2. Epoxy resin decomposes to release benzene (carcinogenic), and odor pollutes the clean workshop environment;
3. Halogen flame retardants produce highly toxic dioxins; ozone/nitrogen oxides irritate mucous membranes;
4. Copper fume deposition damages equipment accuracy;
   residual pollutants in electronic components reduce product yield;
5. Long-term exposure increases occupational health risks.

▸ **Application industries:** solar cells, PCB, electronic components, ceramic products, glass products, 3C electronic products, etc.

▸ **Advantages:** High negative pressure brushless fan (strong suction force), especially good dust suction speed and effect. Small size, large filter element dust holding capacity, patented automatic pulse cleaning system with 2 times higher efficiency, multiple filter elements available to meet customers' needs for various working conditions.

Technical configuration

- Intelligent Control System (IQ/PIPS)
- Ultra-large Area Filtration (UAF)
- Multi-Voltage Compatibility (MVC)
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- Air-Flow Adjustment (AFA)
- Automatic Rotary Cleaning (ARC)

Structural diagram

Technical parameters

Application conditions	Processing materials	Laser scribing / drilling: solar cells, PCB, glass, ceramics, etc.						
	Working format	Single-station small batch production			Production line mass production			
Model		PA-D200	PA-D250	PA-D350	PA-D500 PA-D500i	PA-D800 PA-D800i	PA-D1600 PA-D1600i	PA-D2400 PA-D2400i
Airflow		200m³/h	250m³/h	350m³/h	500m³/h	800m³/h	1600m³/h	2400m³/h
Pressure		2200Pa	2700Pa	3700Pa	10000Pa	10000Pa	10000Pa	10000Pa
Rated power		0.15kw	0.2kw	0.35kw	1.1kw	1.3kw	2.3kw	3.5kw
Input voltage / Frequency		90v-110v / 210-257v, 1ph, 50/60Hz						
Filter	Pre filter	F9 accordion filter bag (95%@0.9um)				Flame retardant PTFE cartridge filter		
	Main filter	/	H14 deeppleat filter (99.997% @0.3um)					
Noise level *		< 55dBA	< 55dBA	< 60dBA	< 65dBA	< 63dBA	< 65dBA	< 68dBA
Dimensions (W*D*H)		250*330*388mm	520*360*555mm			500*597*1296mm	670*794*1570mm	750*907*1564mm
Weight		10kg	22kg	23.5kg	25kg	86kg	180kg	200kg
Inlet size		50mm / 75mm			75mm / 100mm	100mm / 125mm	150mm	200mm
Cabinet construction		Powder coated mild steel / Brushed stainless steel						

* At typical operating speed testing data.

Laser Cleaning
Fumes, Dust and Odor Purification Solutions

Hazards of laser cleaning fumes, dust & odor

1. Metal dust (such as iron and lead) causes respiratory damage and pneumoconiosis; heavy metals (cadmium and chromium) cause chronic poisoning;
2. Oil stains/coatings decompose to release benzene and polycyclic aromatic hydrocarbons (carcinogenic); ozone/nitrogen oxides irritate mucous membranes;
3. Residual odor affects the cleanliness of precision parts;
4. Combustible dust (such as aluminum powder) has the risk of explosion.

- **Application industries:** molds, automobiles, high-speed trains, ships, mechanical equipment, etc.
- **Advantages:** High negative pressure brushless fan (strong suction force), especially good dust suction speed and effect. Small size, large filter element dust holding capacity, patented automatic pulse cleaning system with 2 times higher efficiency, multiple filter elements available to meet customers' needs for various working conditions.

Technical configuration

- Intelligent Control System (IQ/PIPS)
- Ultra-large Area Filtration (UAF)
- Sticky Smoke Purification (SSP)
- Multi-Voltage Compatibility (MVC)
- High Efficiency Purification (HEP)
- Filter Quick Release (FQR)
- Air-Flow Adjustment (AFA)
- Automatic Rotary Cleaning (ARC)

Structural diagram

Technical parameters

Application conditions	Processing materials	Laser Cleaning: Moulds, wheelsets, auto parts,bearings, mechanical equipment parts, etc.						
	Working format	Handheld	Removable small workpieces			Medium and large workpieces with paint		
Model		PA-D200	PA-DS400 PA-DS400i	PA-DS500 PA-DS500i	PA-DS800 PA-DS800i	PA-DFS800 PA-DFS800i	PA-DFS1600 PA-DFS1600i	PA-DFS2400 PA-DFS2400i
Airflow		200m³/h	400m³/h	500m³/h	800m³/h	800m³/h	1600m³/h	2400m³/h
Pressure		2200Pa	8000Pa	10000Pa	10000Pa	10000Pa	10000Pa	10000Pa
Rated power		0.15kw	1.0kw	1.1kw	1.3kw	1.3kw	2.3kw	3.5kw
Input voltage / Frequency		90v-110v / 210-257v, 1ph, 50/60Hz						
Filter	Pre filter	F9 accordion filter bag (95%@0.9um)				Flame retardant PTFE cartridge filter		
	Main filter	/	H14 deeppleat filter (99.997% @0.3um)					
		/	Treated activated carbon (Weight 12-30kgs approx)					
Noise level *		< 55dBA	< 58dBA	< 60dBA	< 63dBA	< 62dBA	< 65dBA	< 68dBA
Dimensions (W*D*H)		250*330*388mm	450*482*941mm	550*562*1091mm		500*597*1439mm	670*834*1705mm	750*907*1698mm
Weight		10kg	45kg	72kg	75kg	121kg	200kg	237kg
Inlet size		50mm / 75mm	50mm / 75mm	75mm / 100mm	100mm / 125mm	100mm / 125mm	150mm	200mm
Cabinet construction		Powder coated mild steel / Brushed stainless steel						

* At typical operating speed testing data.

PURE-AIR
Customers Success Stories

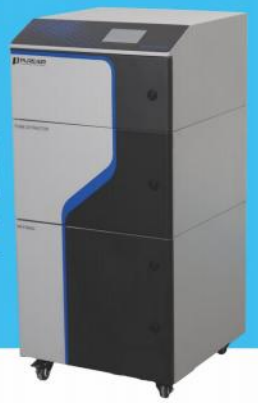
PURE-AIR Helps International Beverage Giants Achieve Efficient And Clean Production

A world-renowned beverage company faces environmental challenges in laser coding processes

10 high-speed production lines run 18 hours a day, and the smoke and dust concentration of a single line exceeds 50mg/m³ per hour, and the VOCs emission peak reaches 80mg/m³. If the traditional external exhaust solution is adopted, it is necessary to set up a kilometer-level pipeline and a high-altitude emission system, with an initial investment of more than 3 million yuan and an additional annual maintenance cost of RMB 450,000.

PURE-AIR has deployed 10 intelligent smoke and dust purifiers in a targeted manner, with a single machine processing air volume of 800m³/h and equipped with a three-stage filtration system (pre-filtration + HEPA high-efficiency purification + activated carbon adsorption). The measured data shows that the smoke and dust concentration has dropped to 0.8mg/m³ (84% lower than the national food workshop standard of 5mg/m³), the VOCs removal rate is 98.2%,

and the purification efficiency is 99.97%. The equipment adopts a closed-loop design, eliminating the need for external exhaust engineering, directly saving 2.8 million yuan in infrastructure investment, reducing energy consumption by 60% compared to traditional solutions, and saving 220,000 yuan in electricity bills annually.



The measured PM2.5 value during customer acceptance was only 3μg/m³, and the air quality in the workshop reached the ISO 14644-1 clean room standard. The production director gave feedback: "After the equipment was put into use, the failure rate of the production line dropped by 35%, truly achieving a win-win situation for environmental protection and benefits." PURE-AIR redefines the new standard of clean food manufacturing with precise data solutions.

PURE-AIR High-negative Pressure Fume Extractor Escorts Semiconductor Intelligent Manufacturing Yield And Health Upgradesproduction

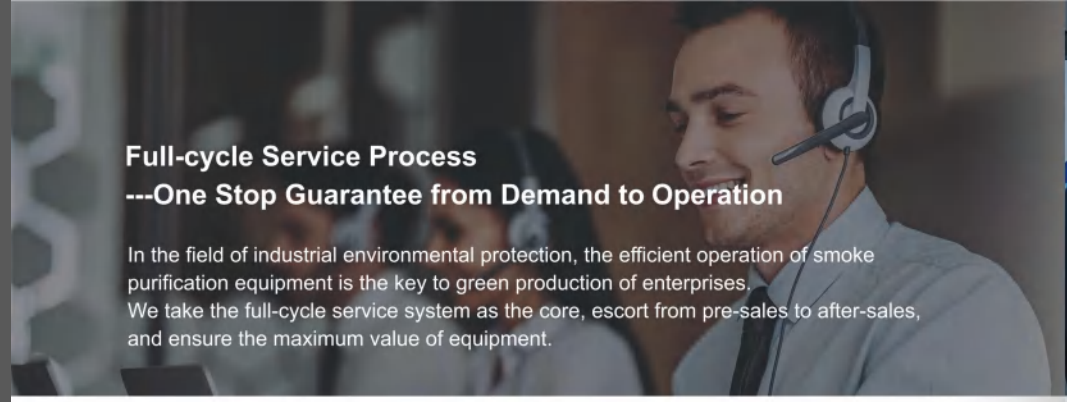
A global TOP5 semiconductor component manufacturer faces severe challenges

50 laser cutting equipment , when processing 0.1μm-level wafers, a single device produces more than 5×10⁶ metal smoke particles with a particle size of ≤0.3μm per minute, and releases harmful gases containing benzene and fluoride (peak concentration of 120ppm), resulting in a wafer surface contamination rate of up to 3.7%, and an average of 12 employee health complaints per month.

PURE-AIR has specifically configured 50 sets of high-negative pressure smoke purification systems, equipped with 9600Pa ultra-strong negative pressure brushless fans, with H14-level high-efficiency filter elements (filtration accuracy 0.01μm) and special activated carbon decomposition technology. Actual measurements show that the smoke collection efficiency reaches 99.999%, the residual particles on the wafer surface arereduced from 2200 particles/cm² to 18 particles/cm², and the yield rate is increased by 3.8% (annual gain exceeds 120 million yuan); the concentration of harmful gases is stably controlled below 0.5ppm, which is 60% better than the SEMI S2-0203 standard.

Compared with the traditional central dust collection solution (a 2000m³/h air duct system needs to be built, and the infrastructure cost exceeds 5 million yuan), PURE-AIR adopts distributed nearby purification, saving 76% of equipment transformation costs and reducing energy consumption by 45% (annual electricity bills save more than 850,000 yuan). The equipment is equipped with an intelligent pulse backwash system, the filter life is extended to 4800 hours, and the production line downtime rate is reduced by 40%.

The customer's production director confirmed: "Six months after the purification system was put into use, the PM0.3 concentration in the workshop stabilized at 8μg/m³ (reaching ISO 14644-1 Class 5 cleanliness level), and the respiratory discomfort symptoms of employees decreased by 92%." PURE-AIR uses millimeter-level purification technology to reshape the environmental benchmark for semiconductor precision manufacturing.



Full-cycle Service Process
---One Stop Guarantee from Demand to Operation

In the field of industrial environmental protection, the efficient operation of smoke purification equipment is the key to green production of enterprises.
We take the full-cycle service system as the core, escort from pre-sales to after-sales, and ensure the maximum value of equipment.

Pre-sales Consultation: Accurately Match Demand

We start the first step of cooperation with in-depth communication. The technical team fully understands the customer's working conditions (such as smoke type, emission, workshop layout, etc.) through on-site surveys or online surveys, and sorts out the core pain points in combination with industry standards and policy requirements. At this stage, free technical Q&A and preliminary plan are provided to help customers clarify the direction of demand.

Professional Recommendation: Customized Solution Design

Relying on the multi-series purification equipment independently developed, we match the best model for customers based on 10+ years of industry experience and scenario simulation. The plan details the air volume calculation, pipeline layout, intelligent control system and emission acceptance indicators to ensure that the plan is both technically feasible and economical.

Technical Training: Enabling Long-term Operation

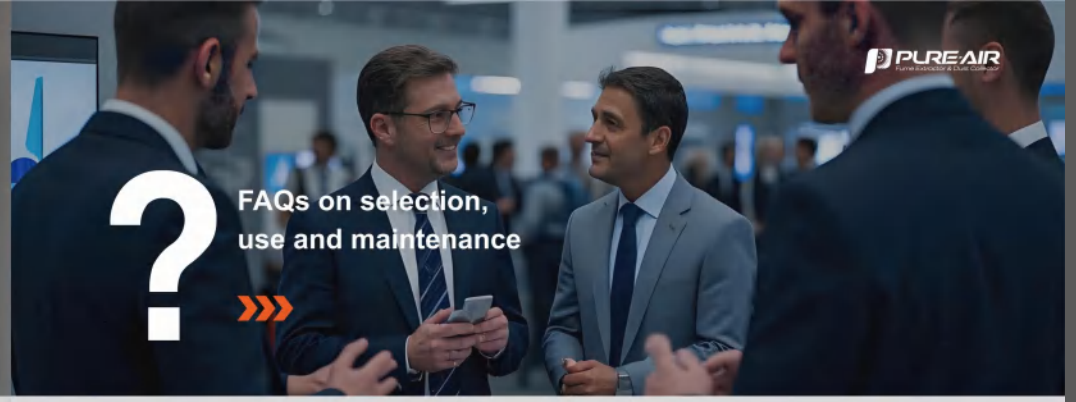
After the equipment is delivered, the engineering team conducts "theory + practice" training: from power on and off operation, filter material replacement to the use of intelligent monitoring system, covering all aspects of daily operation and maintenance; set up simulation drills for common faults to improve customers' self-diagnosis capabilities. At the same time, provide electronic operation manuals and video libraries, and establish exclusive technical groups to achieve 7×24 hours remote support.

Lifelong Maintenance: Full-link Service Commitment

We build an "active" maintenance network: regularly inquire about equipment performance, replace consumables with warnings; open a 4-hour emergency response channel, and provide solutions for major faults within 48 hours. Provide modular transformation services to extend the life cycle of equipment in response to process upgrade needs.

From consulting to maintenance, we redefine industrial environmental protection services with a "full-cycle responsibility closed loop" - not only solving current problems, but also creating sustainable environmental protection value for customers. Choosing us means choosing a peace of mind guarantee throughout the life cycle of the equipment.

Let professionalism achieve efficiency and protect the blue sky with service.



FAQs on selection, use and maintenance

I. Equipment selection issues

1 How to choose a suitable purifier for smoke, harmful gases and irritating odors generated by laser processing?

Before selecting the equipment, please provide the laser equipment type, equipment processing width, processing materials, average daily working hours and other parameters, and we will customize the adaptation plan for you!

2 Does the smoke purifier need an explosion-proof design? In which scenarios must an explosion-proof model be selected?

If the processing material is flammable metals such as aluminum-magnesium alloy and titanium alloy, or there are flammable gases in the workshop, an explosion-proof model must be selected, and ordinary models can be selected for other scenarios.

3 When handling smoke from different materials (such as metal, plastic, and wood), what are the differences in the configuration of the smoke purifier?

The smoke from laser processing of metal materials needs to be equipped with a spark arrester + flame retardant filter element; The smoke from laser processing of plastic/wood is recommended to adopt a multi-stage filtration combination design; high-humidity smoke requires a moisture-proof design.

II. Use and replacement of filter elements

1 How long is the filter element replacement cycle? How to determine whether it needs to be replaced?

The filter element replacement cycle is different under different processing frequencies and processing conditions of different materials. PURE-AIR's smoke purifier has a filter element status monitoring system, and customers can easily know when the filter element needs to be replaced.

2 What may be the reason for the filter element to be blocked too quickly?

It may be caused by pretreatment failure (such as sparks not intercepting and burning through the filter element), excessive smoke concentration or excessive ambient humidity, resulting in agglomeration. It is necessary to check the matching of the pre-filtration system with the working conditions.

3 Can the filter element be cleaned and reused?

Only metal sintered filter elements can be cleaned a limited number of times, and HEPA/PTFE coated filter elements cannot be cleaned. Forced flushing will damage the filter structure.

4 Is there a filter element life warning function?

PURE-AIR's latest PIPS purification system has a real-time display function for the filter element usage status, real-time prompts for the filter element status, and supports early replacement reminders.

III. Voltage and compatibility

1 Is the device compatible with voltages in different countries (such as 220V/380V)?

Standard models support 220V single-phase electricity, and high-power equipment requires 380V three-phase electricity. Export models can be customized with single-phase 110V or three-phase 220V, 400V, 415V, 440V and other different voltages and frequencies.

2 Is an additional voltage stabilizer required when the voltage fluctuates greatly?

Built-in wide voltage design (can work normally within the fluctuation range of ±10%). If the power grid fluctuation exceeds this range, it is recommended to install a voltage stabilizer.

IV. Control and operation

1 What control methods does the device support?

The basic model supports key panel control.
The smart model supports I/O remote start and stop control, RS-485 control, and some can be connected to the MES system.

2 How to adjust the air volume in automatic mode?

The latest PIPS purification system of PURE-AIR has a built-in sensor to monitor the status of the filter element in real time, automatically adjust the fan speed, and realize automatic compensation between the actual air volume and the set air volume.

3 Does it support linkage control of multiple purifiers?

RS485 networking can be used to achieve centralized start and stop and air volume coordination, which is suitable for large workshops with multiple workstations.

V. Safety and Maintenance

1 What are the special maintenance requirements for explosion-proof models?

It is necessary to regularly check the sealing of explosion-proof joints, grounding line resistance (≤4Ω), and regularly clean the dust in the dust hopper. Non-original explosion-proof accessories are prohibited.

2 How to maintain the equipment in a high temperature and humid environment?

High temperature environments require appropriate cooling, and high humidity environments require moisture-proof filters to extend the service life of the filters.

3 How to perform daily maintenance on non-explosion-proof smoke purifiers?

Before using a smoke purifier, you need to check whether the filter element is sealed to ensure the normal use of the machine. When the smoke purifier filter element is blocked, the filter element should be replaced in time with a new original one to prevent the filter element from being damaged, so that smoke and dust can enter the fan and damage the fan and control system.

PURE-AIR

Global Customers

10+ years in the R8D and manufacturing of Fume Extractor, Dust Collector, Global customers across 70+ countries and regions.