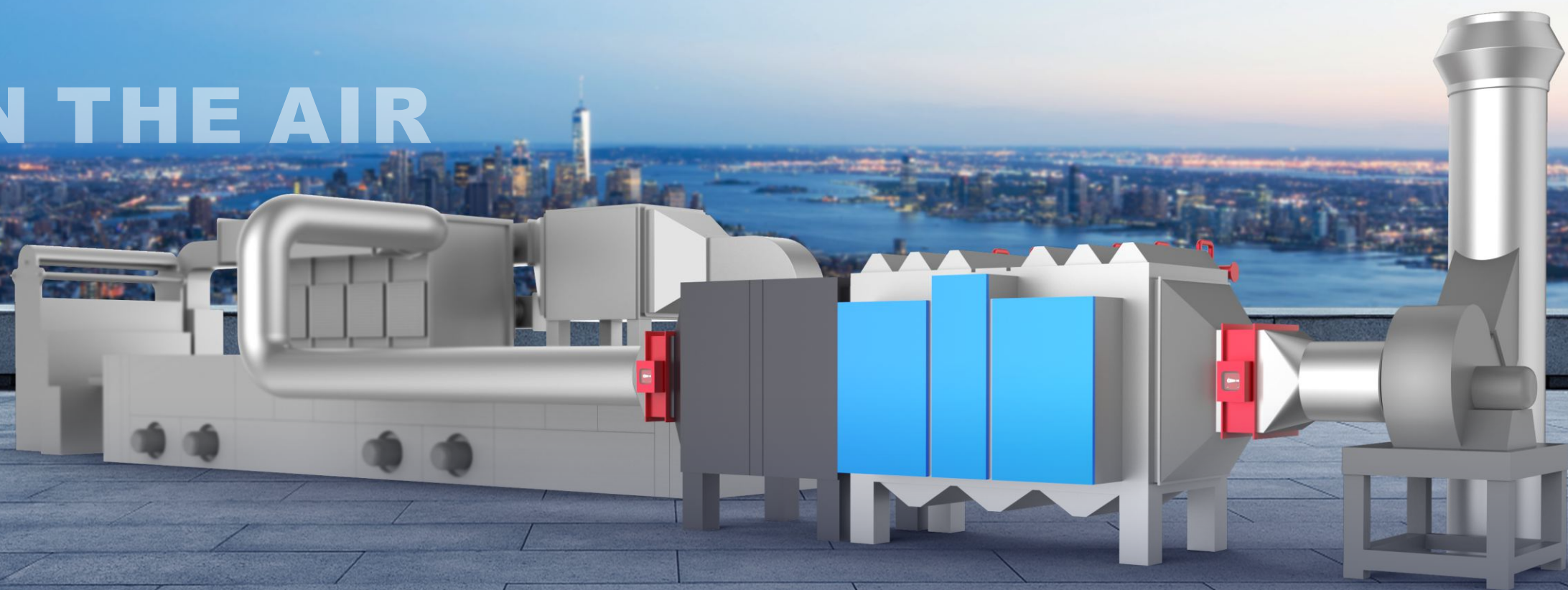


# WE CLEAN THE AIR



**Brand Owner: KLEAN Environmental Technology Co., Ltd**

Add.: Building 4, Leagure Science Park of RITS, No.99, Taoyuan East Road, Shishan Town, Nanhai District, Foshan City, Guangdong, China.

**Manufacturer: KLEAN Environmental Equipment Co., Ltd**

Add.: Building 1, Building 2, No. 7, Hongxing Road, Yayao Town, Heshan City, Jiangmen, Guangdong, China.

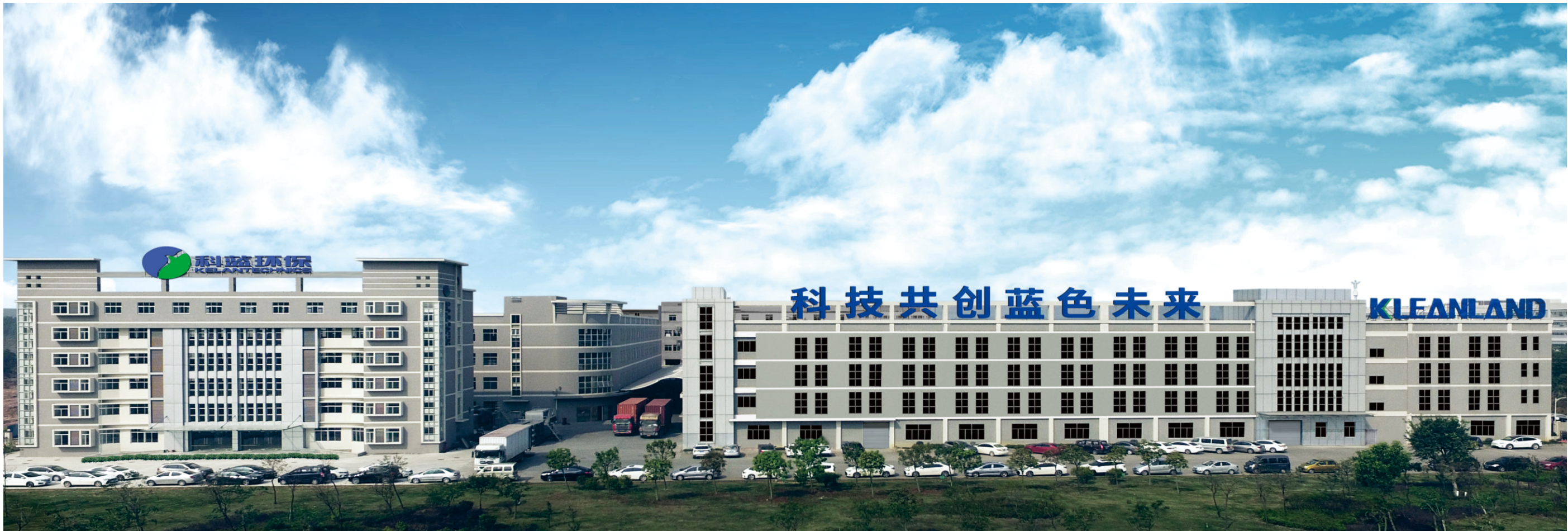
+86-18923161984    sales@klean-esp.com    www.klean-esp.com

## Industrial Exhaust Emission Control Solution

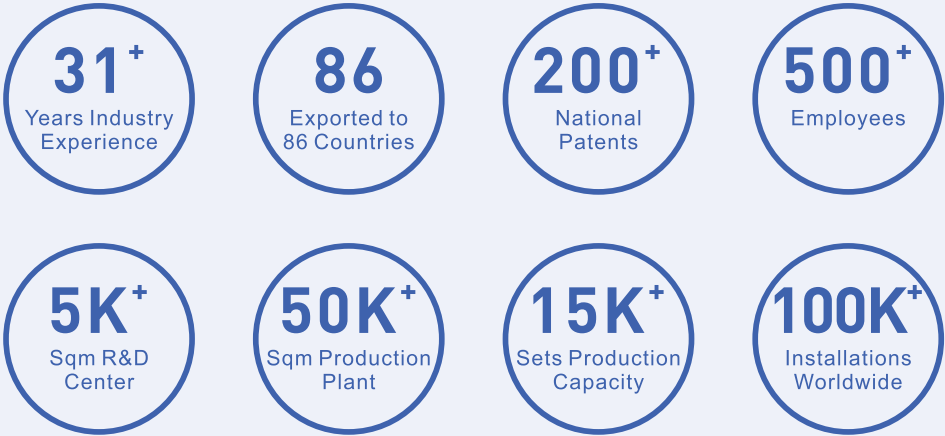
- Electrostatic Precipitator (ESP)
- Waste Heat Recovery Units
- VOCs Adsorption and Solvent Recovery System
- and More



About KLEAN



Our Strengths

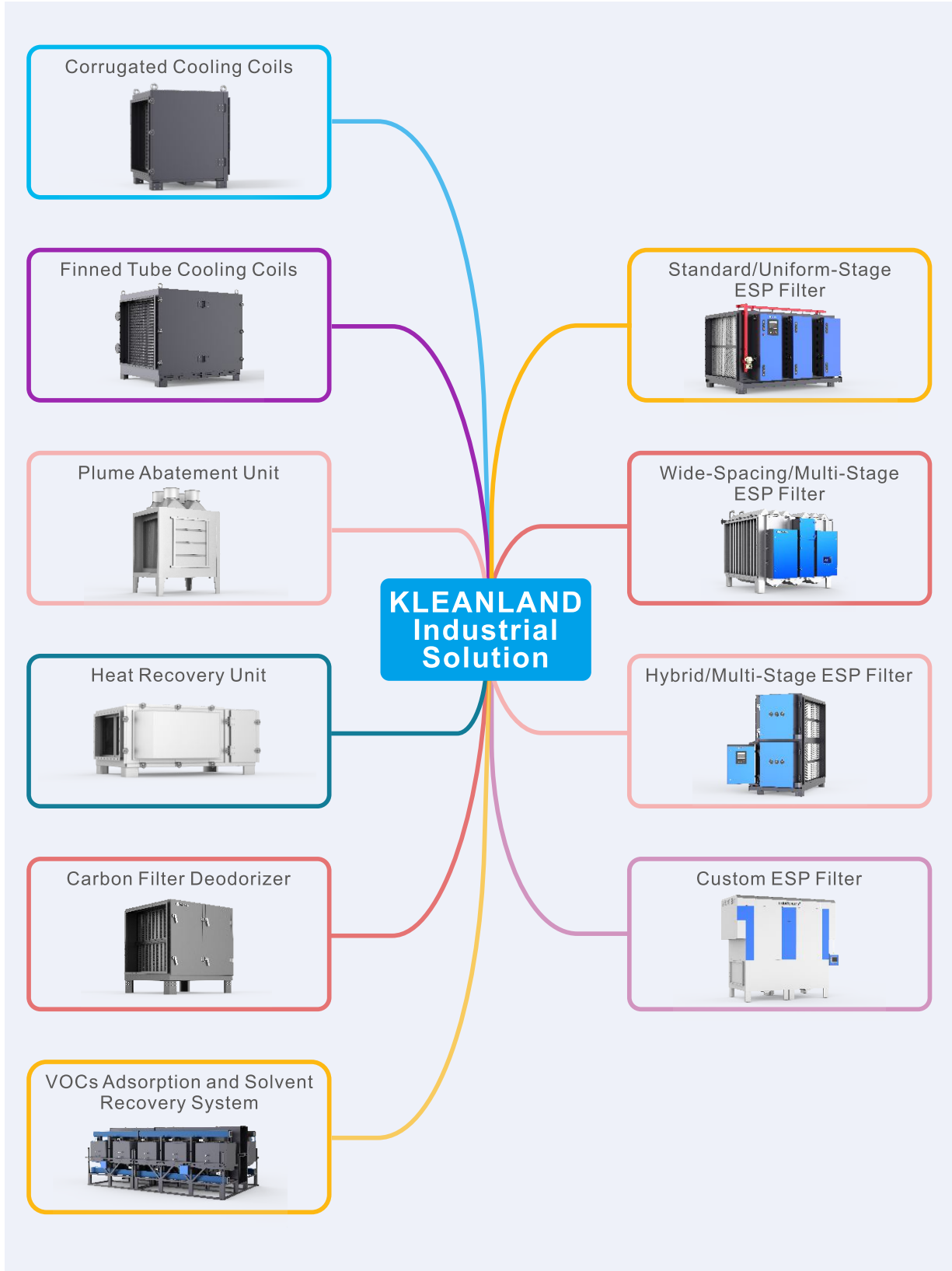


Scope of Business

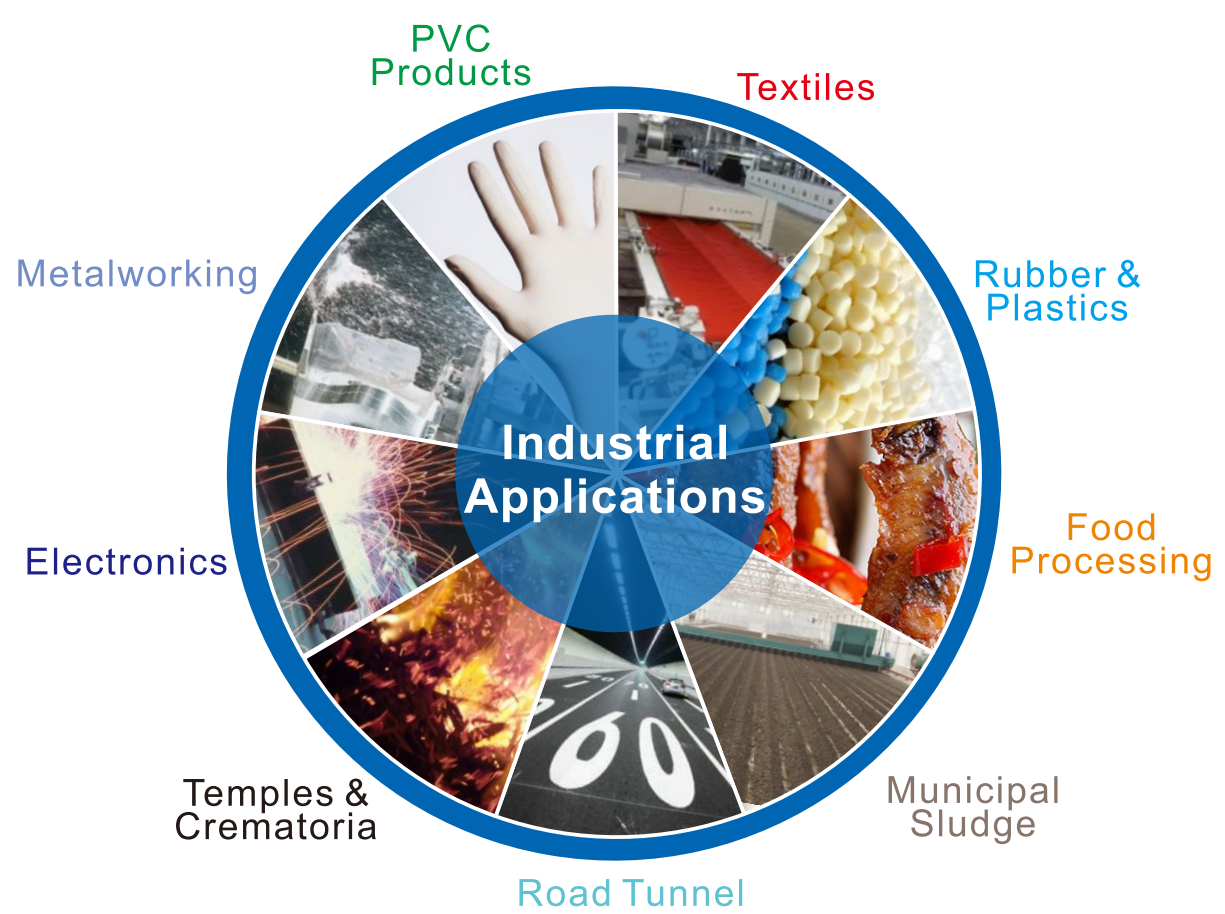




Product Portfolio



Industrial Applications



Rubber & Plastics	Textiles	Metalworking	Food Processing	Other
PVC Gloves	Heat-setting Stenter	CNC Machining	Coffee Roasting	PCB Hot Air Solder Leveling
PVC Wallpaper	Polishing Machine	Laser Cutting	Fried Potato Chips	Joss Paper Burning at Temples
PVC Artificial Leather	Singeing Machine	Cold Heading	Hot Pot Seasoning	Road Tunnel Ventilation
PVC Flooring	Printing Machine	Oil Quenching	Fried Anchovies	Municipal Sludge Treatment
PVC Film	Chemical Fiber Spinning	Welding	Fried Peanuts	Cremation Furnace
PVC Anti-Slip Mat	Polyester Spinning	Die Casting	Fried Instant Noodles	Biomass Boiler
PVC Conveyor Belt	Draw Texturing	Wire Drawing	Tobacco Baking	
PVC Fabric Air Ducting				
PVC Tarpaulin				
Plastic Granulation				
PVC Foaming Oven				
PVC Coating Line				
Printing and Embossing Lines				

Standard/Uniform-Stage ESP Filter

Reasonable size, suitable for indoor installation. Flexible in sizing and performance retrofitting.



**Central Control Panel**  
Intuitive HMI Interface for Optimum Ease of Use.



**Horizontal Filter Arrangement**  
Laminar Flow and Less Pressure Drop across the Filter.



**Removable Filter Cells**  
Thorough Cleaning and Fast Fitting of Cells without Impeding Production.





SUS Honeycomb Cell



IoT Power Pack



Horizontal Flow Direction



Electrical Sectionalization



Low Pressure Drop



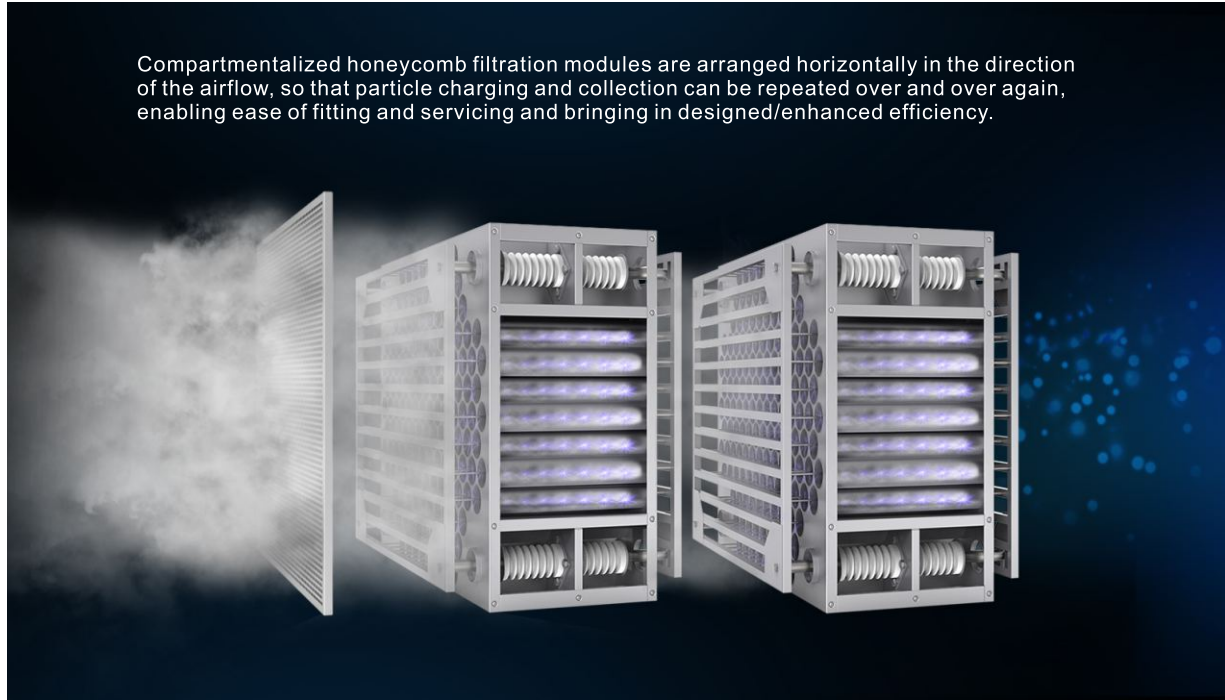
Consumable-Free



Full-Dimensional Fire Safety




Steam Auto-Clean



Wide-Spacing/Multi-Stage ESP Filter

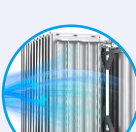
Suitable for the treatment of smoke emissions with high content of moisture, wax, lint and dust.




**Flip-Open Top Plate**  
Easy and Quick Access during Filter Cleaning and Servicing.




**Wide-Spacing Vertical Electrodes**  
Extended Manual Cleaning Cycle, Less Contaminant Build-up.




**Horizontal Filter Arrangement**  
Laminar Flow and Less Pressure Drop across the Filter.






Higher Moisture and Dust Tolerance



IoT Power Pack



Distributed HV Supply and Control







Plate and Spike Electrodes




Low Pressure Drop



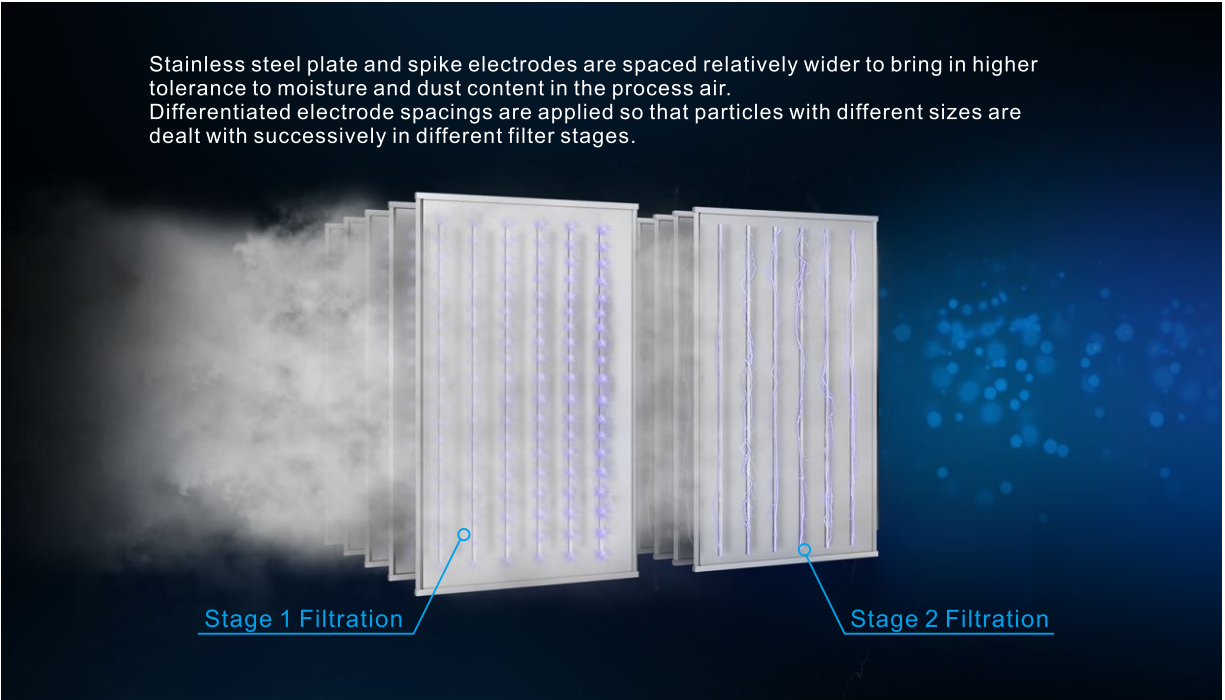
SUS 304 Construction



Consumable-Free



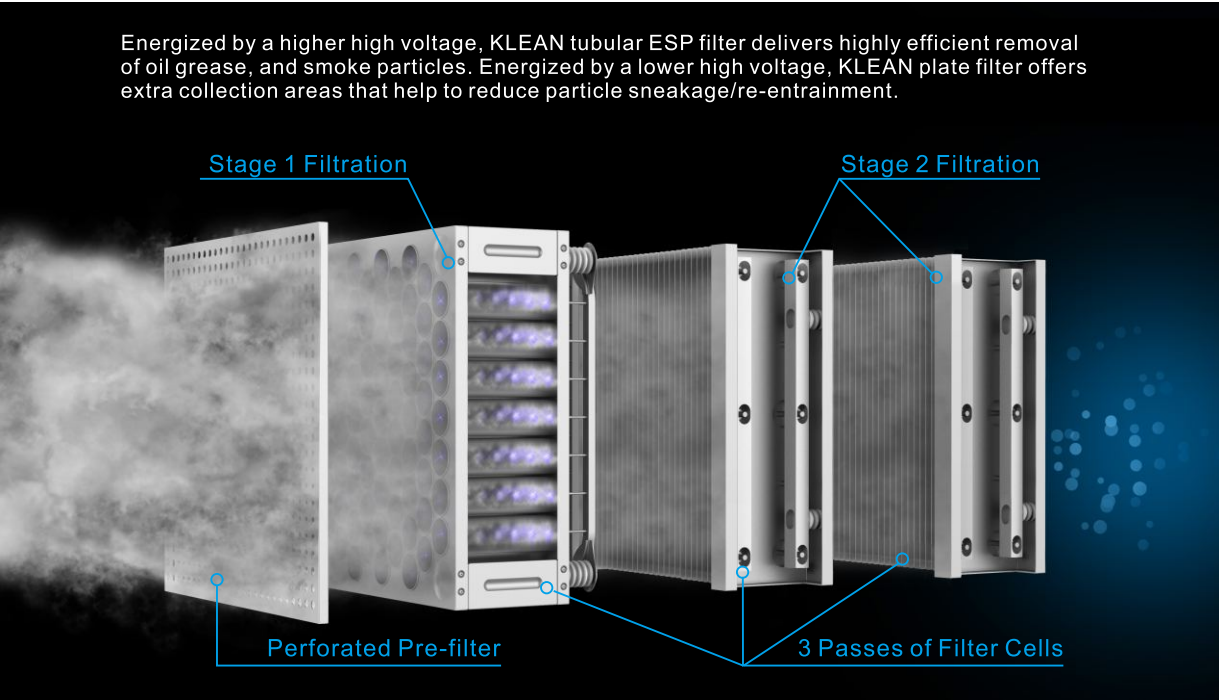
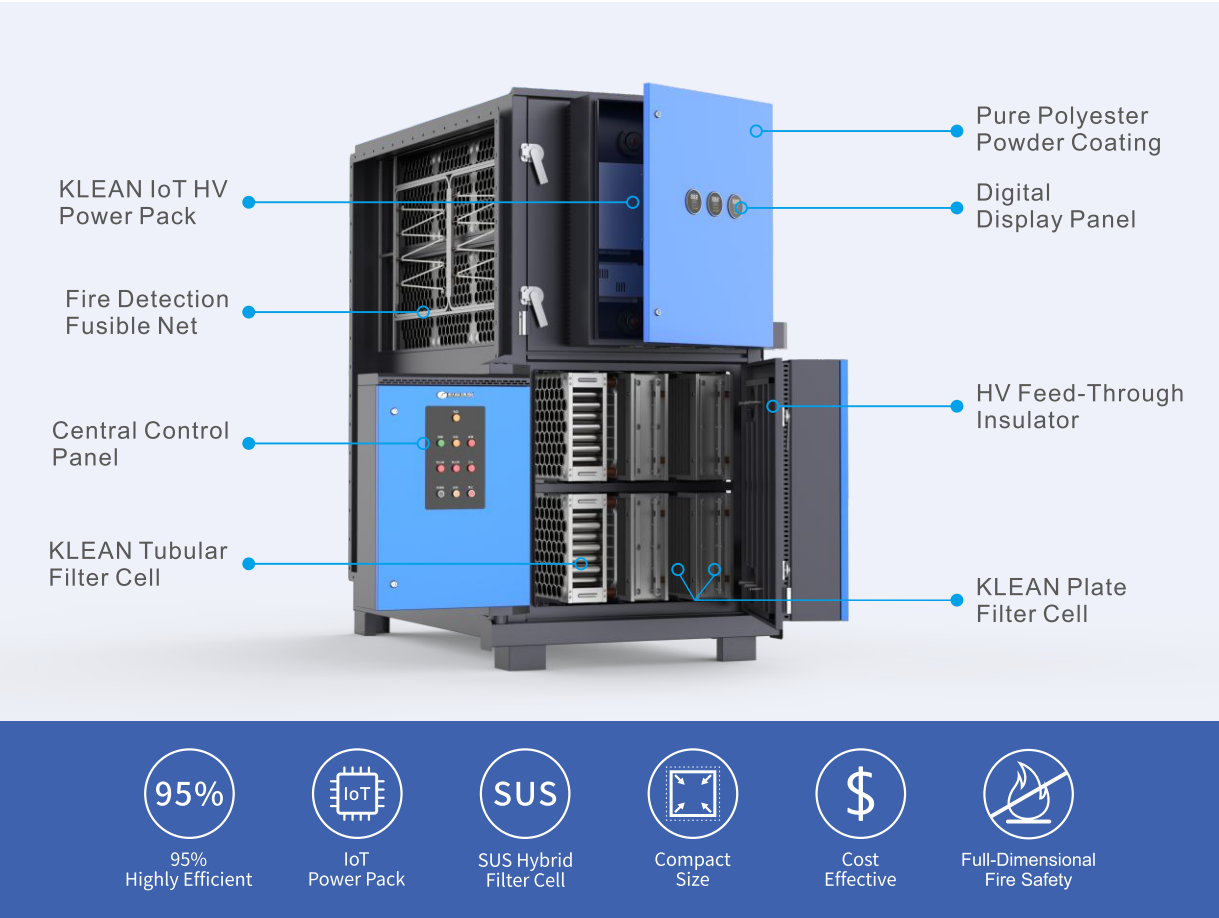
Water Auto-Clean





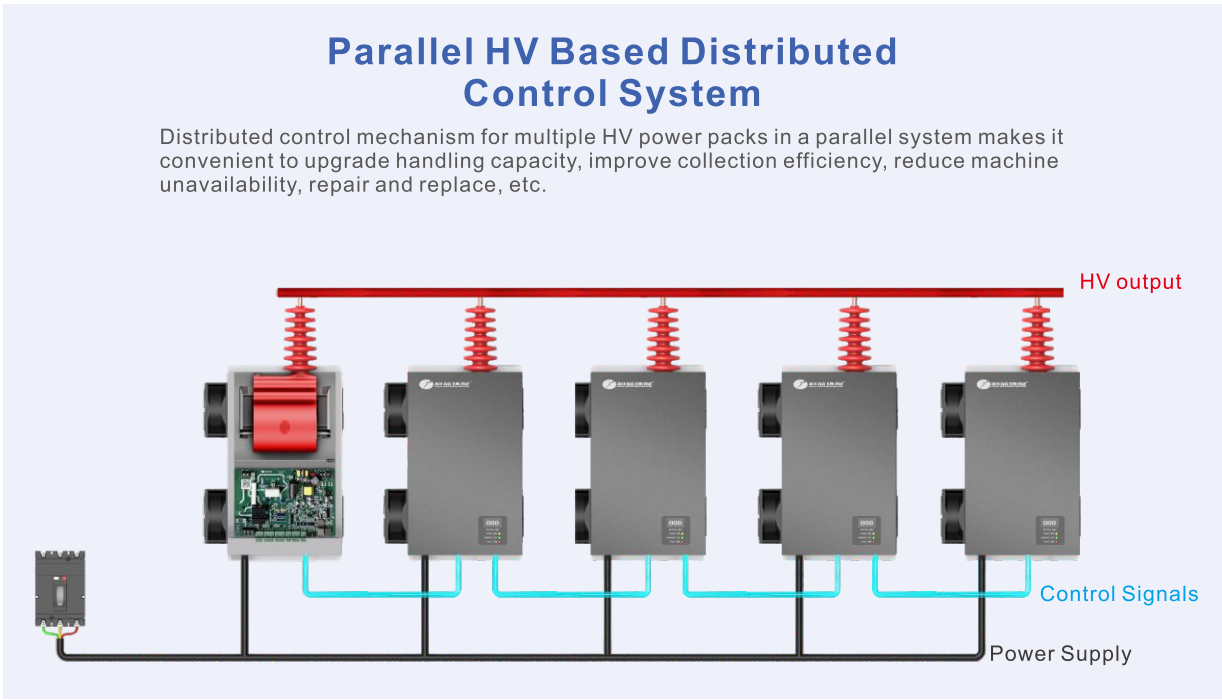
Hybrid/Multi-Stage ESP Filter

Ideal for process air with higher flowrate, lower particle concentration, and simpler composition.



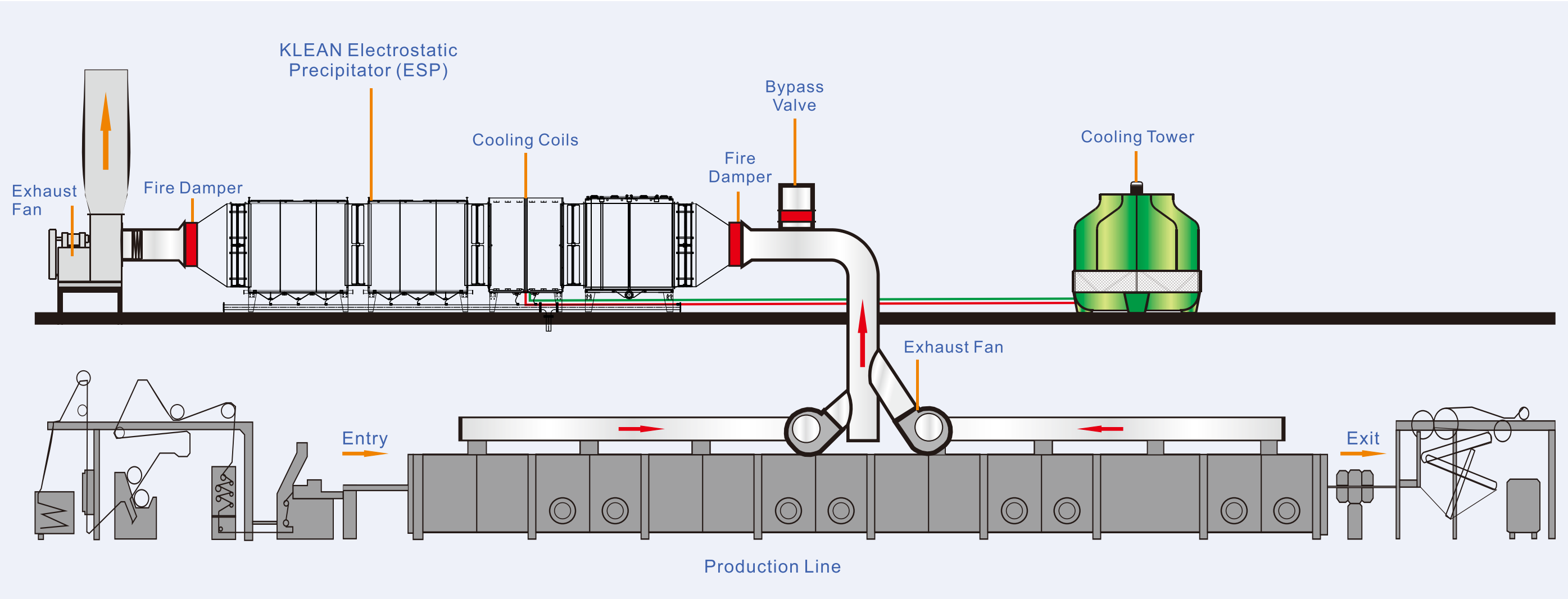
Power Pack with IoT Capabilities

Self-Contained and smart control units, safe and stable control eco-system.





Typical Filtration System Design

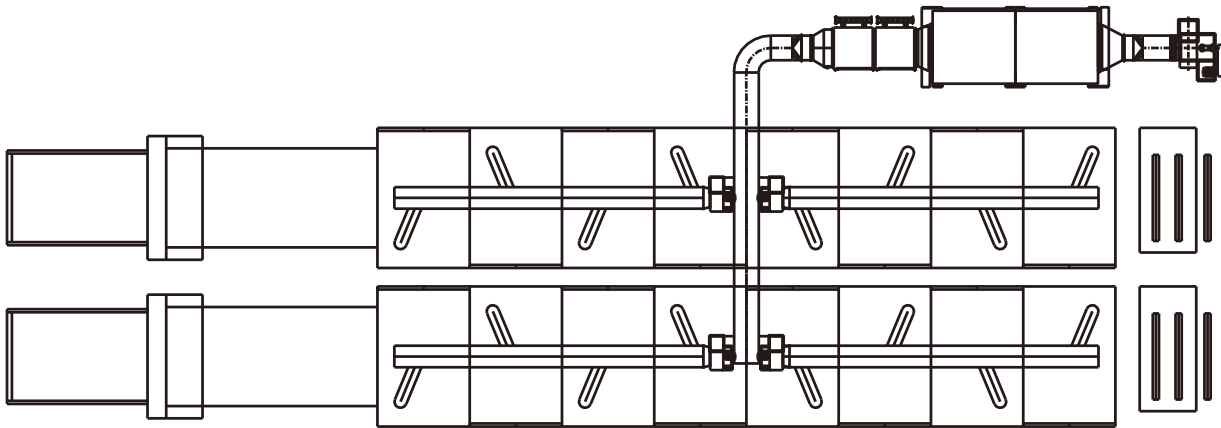


Oil-laden process air emitted from fabric/yarn heat-setting and drying, plasticizer coating, calendaring, dipping and curing, etc contains toxic pollutants that will pollute the environment and directly harm human health.

With KLEAN electrostatic precipitator (ESP) installed in place, up to 95% of the pollutant particles/aerosols/oil droplets are electro-statically charged, attracted to the collection electrodes and separated from the air steam by the application of high voltage inside the filter cells.

Conditioning equipment, such as cooling coils and VOC adsorption and solvent recovery system, may precede or follow the ESP filter to meet different regulatory compliance and customer needs.

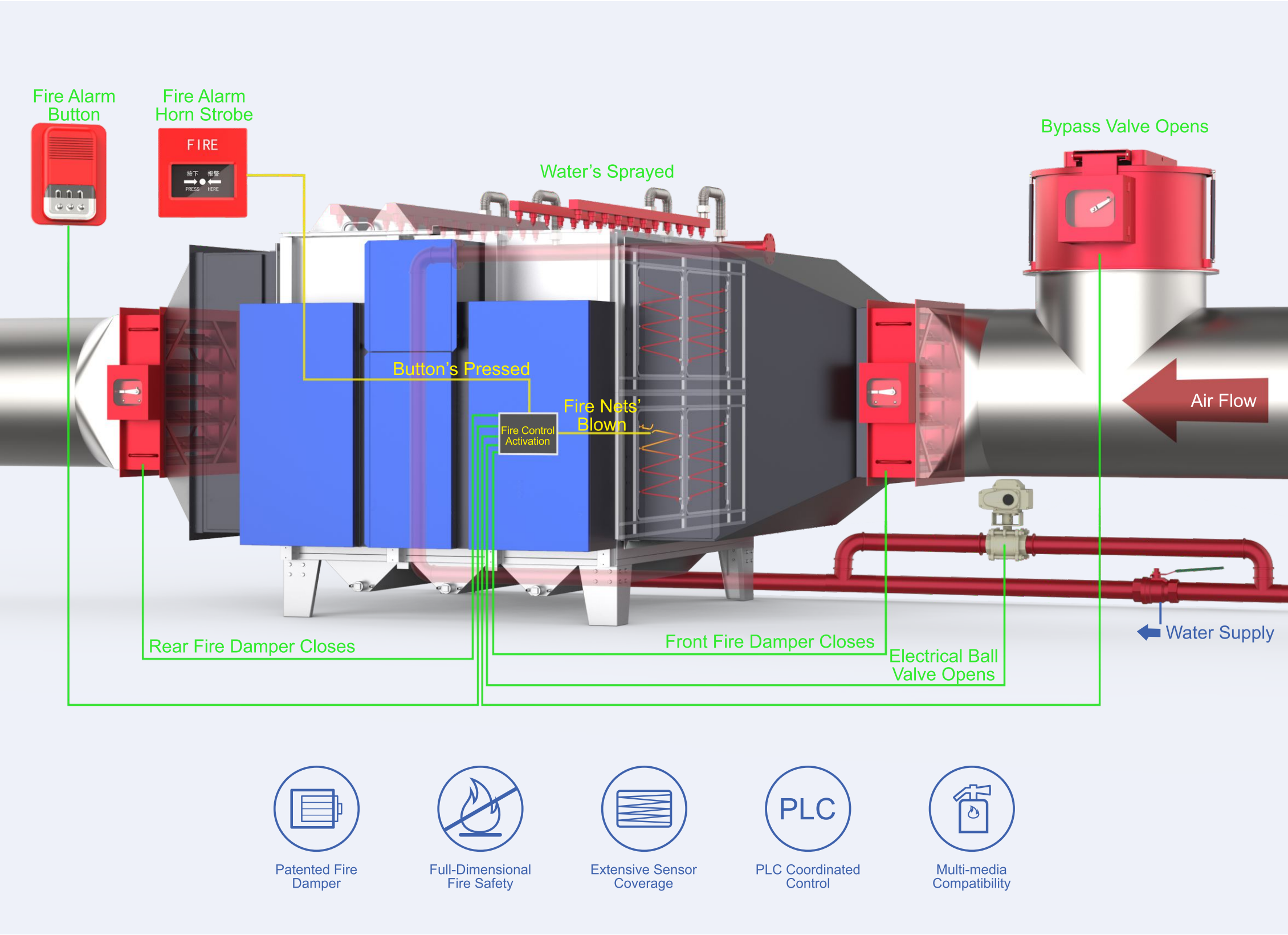
Centralized Treatment for Multiple Production Lines





# Full-Dimensional Fire Safety

Top-to-Toe protection against fire hazards along the entire cross sectional area of air passageway



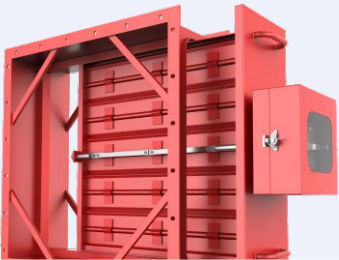
## Extensive Sensor Coverage

An array of fusible links are laid out in a zigzag pattern to provide full coverage across the air passageway.



## Patented Fire Damper

Detachable blade-and-actuator assembly is designed to provide ease of cleaning and maintenance.



## PLC Coordinated Control

Responsive activation of the fire control system is executed with accuracy and reliability using a PLC.





Corrugated/Finned Tube Cooling Coils

1

Closed-Loop Water Cooling, Indirect Air-To-Water Heat Transfer.

2

Real-time Display of Temperatures Before and After Treatment.

3

Corrugated Stainless Steel Cooling Coils for Ease of Servicing.

4

Finned Tube Carbon Steel Cooling Coils for Extensive Surface Area.

Corrugated Stainless Steel Cooling Coils

Low Pressure Drop

Light Weighted

Corrosion Resistant

SUS Construction

Easy to Clean

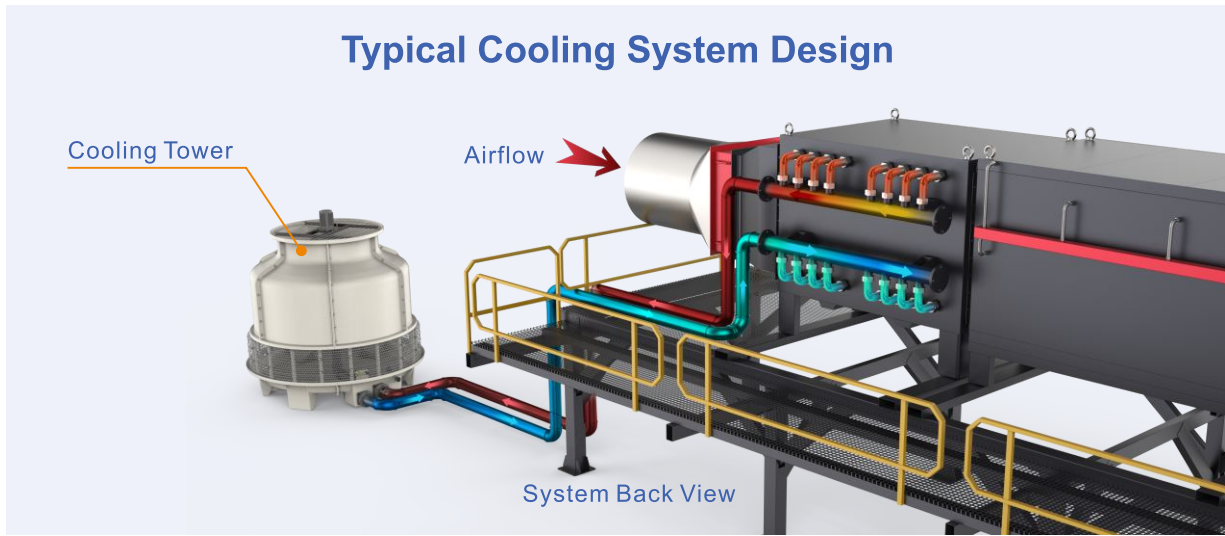
Finned Tube Cooling Coils

Extensive Surface Area

High Heat Transfer Efficiency

Instant Cooling Effect

Sturdy and Durable



Plume Abatement Unit

1

Closed-Loop Cross-Flow Exchange, Indirect Air-to-Air Heat Transfer.

2

Use latent Heat of the Hot Exhaust Air to Minimize Visible Plume.

3

Eliminate Plume-associated Aesthetic and Environmental Impacts.

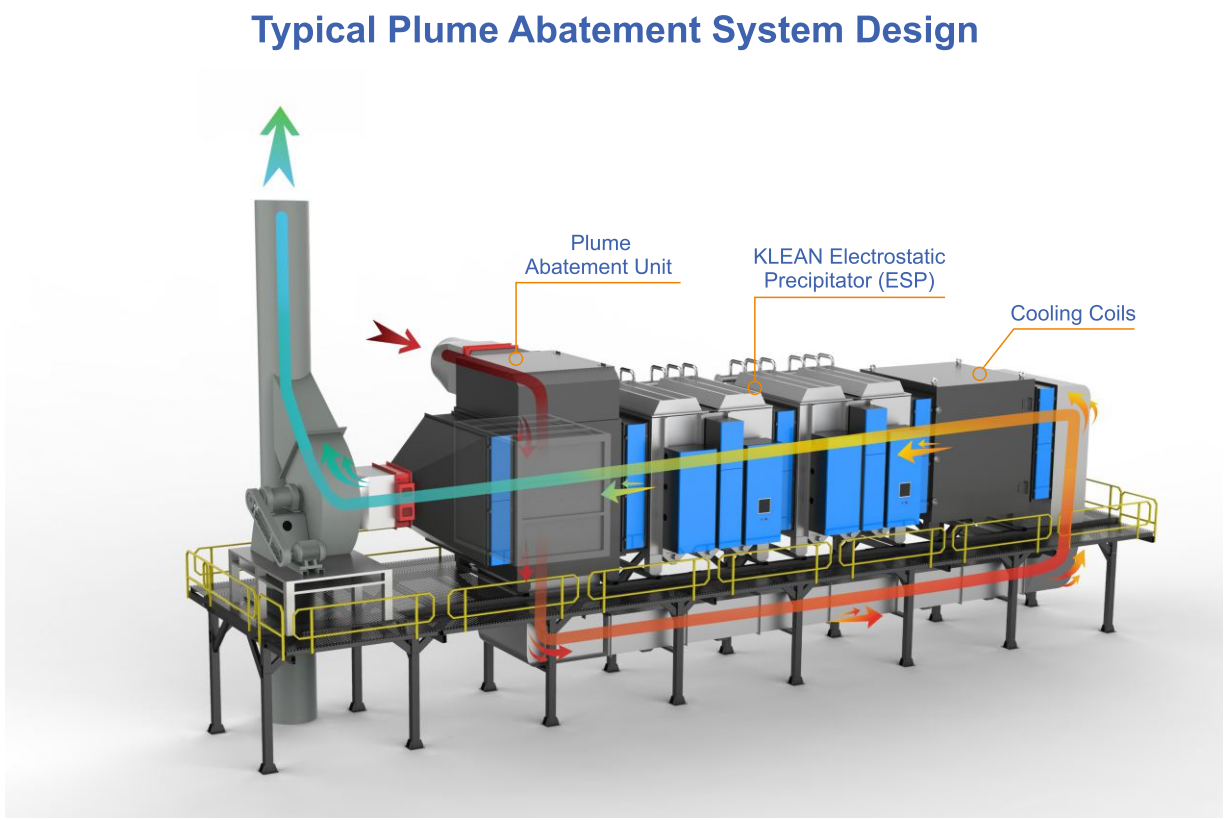
4

Optional Finned-Tube Heat Exchanger Using Steam Also Available.

Highly Efficient

Easy to Clean

Cost Effective





Heat Recovery/Air Economizer Units

### 10-20% Gas Saving for the Stenter

By utilizing energy potentials of the hot exhaust air emitted from the heat-setting ovens to heat up the ambient air, which can then be used to effectively lower the wet pickup of the fabric, KLEAN heat recovery units can improve the natural gas economy of your stenter by 10-20%

Heat Recovery Unit  
Cooled Exhaust Air  
Exhaust Air Blower  
Hot Exhaust Air  
Ambient Air Inlet  
Heated Ambient Air  
Air Economizer  
Recirculating Water Tank  
Pre Filter w/ Auto Cleaning  
Central Control Panel

For illustration purposes only.

Fully Stainless Steel

In-Place Automatic Cleaning

Low Pressure Drop

Payback Period < 2 Years

### How It Works

Heat is transferred from the hot exhaust air to the ambient air stream.  
Heated ambient air can be used to lower wet pickup of the fabric to eventually reduce gas consumption.

Heated Ambient Air  
Ambient Air Inlet  
Cooled Exhaust Air Outlet  
Exhaust Air Inlet  
SUS Pre-Filtration Element  
SUS Plate Heat Recovery Module

For illustration purposes only.

### Automatic In-Place Cleaning

Fully automated in-place cleaning is available on the exhaust air side of the heat recovery unit. Risks of frequent air channel clogging and troubles in subsequent manual cleaning can be significantly reduced.

For illustration purposes only.

Cleaning Schedule on Timer

Less Dirt/Grease Build-ups

Recirculating Water Usage

### Highly Efficient Pre Filtration

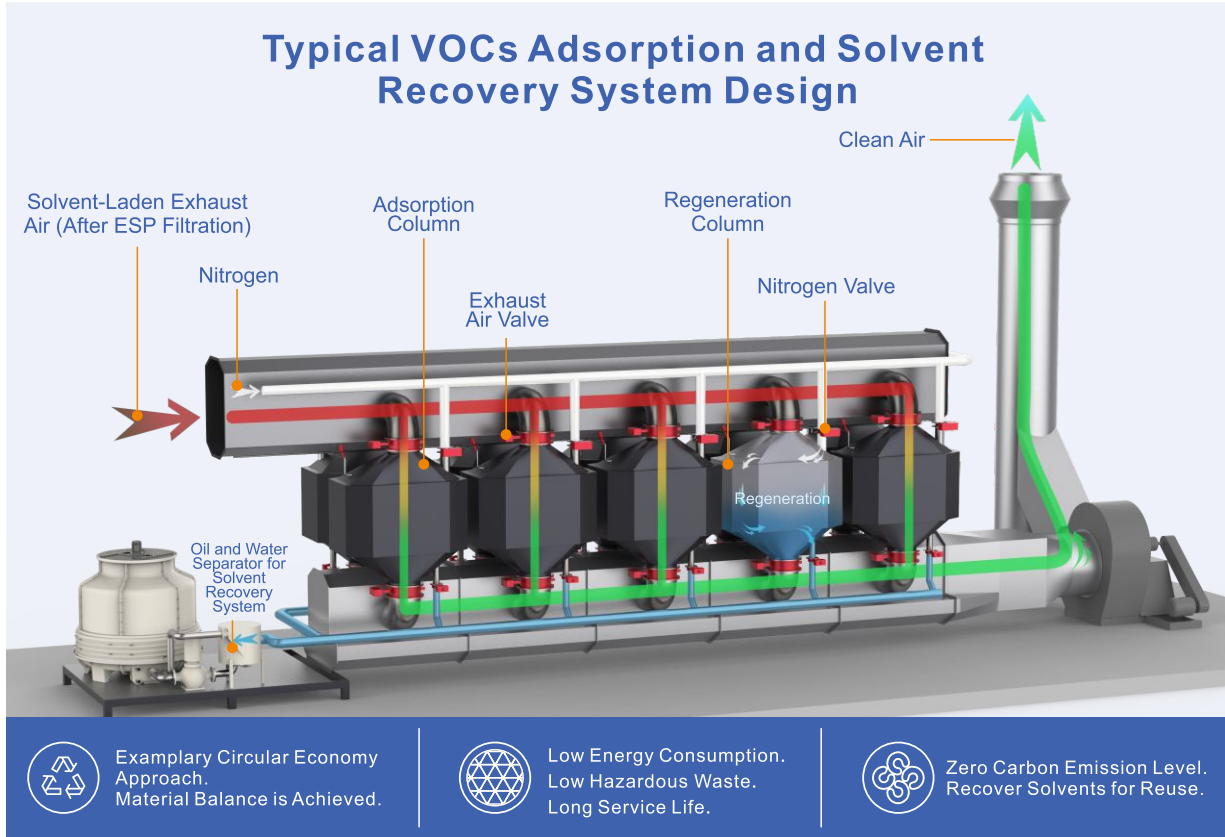
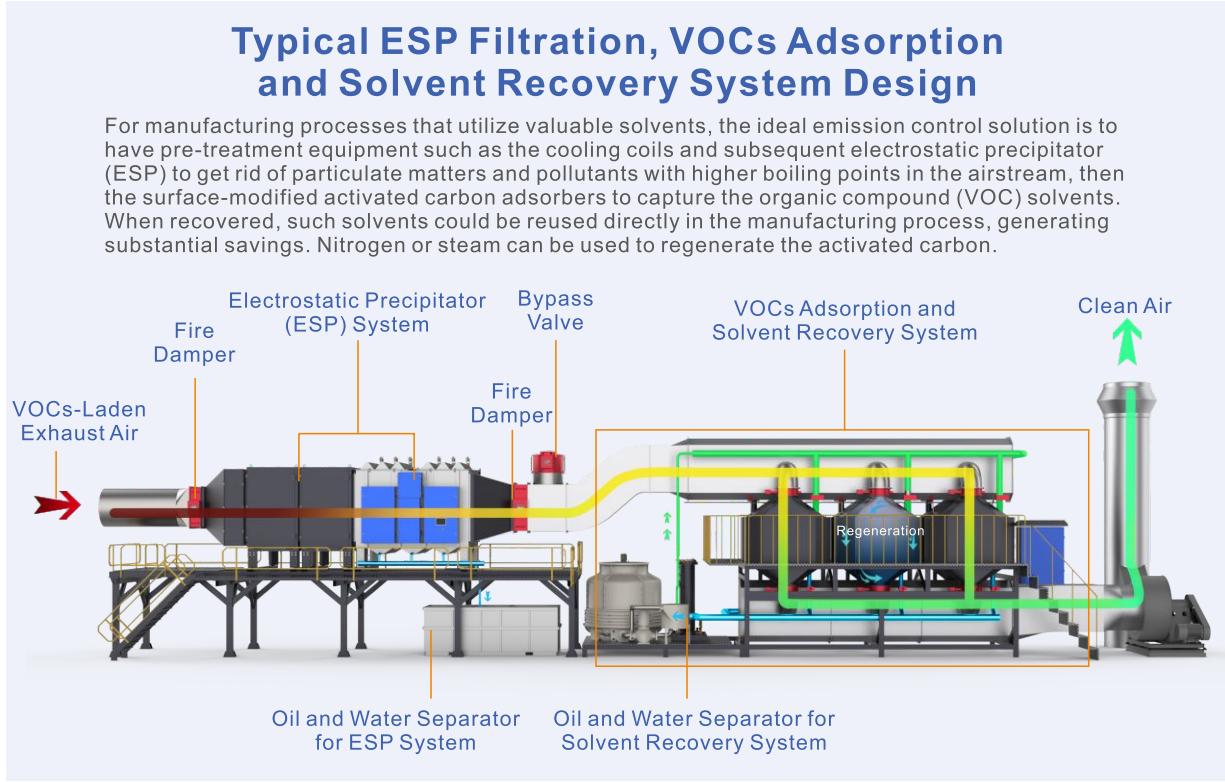
Stainless steel pre-filtration element is used to effectively separate coarse particles and lint from the air stream, preventing the air channels from frequent clogging. Maintenance frequency and labor intensity during subsequent manual cleanings will be significantly reduced, bringing in savings in overall cost.

SUS Pre-Filtration Element

SUS Plate Heat Recovery Module

# VOCs Adsorption and Solvent Recovery System

High Performance Carbon Adsorbers for Cost Effective Treatment of Valuable(VOC) Solvents



## Other Auxiliary Devices



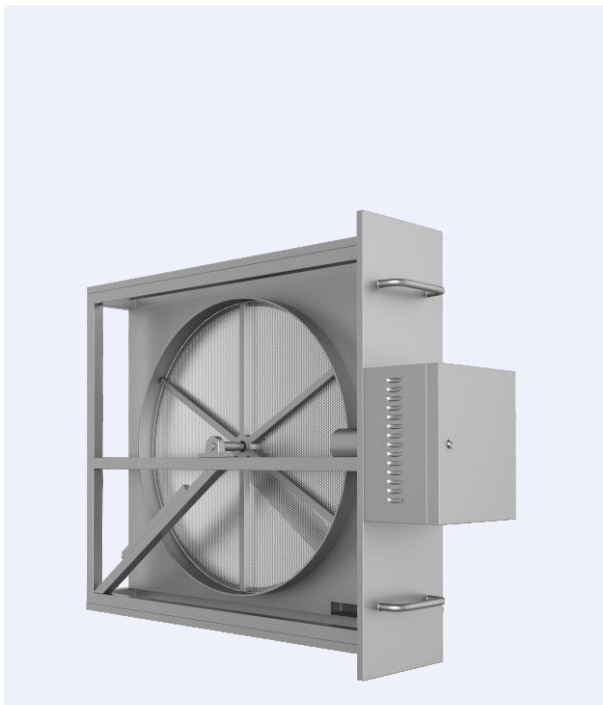
Carbon Filter Deodorizer



Water Scrubber



Oil and Water Separator

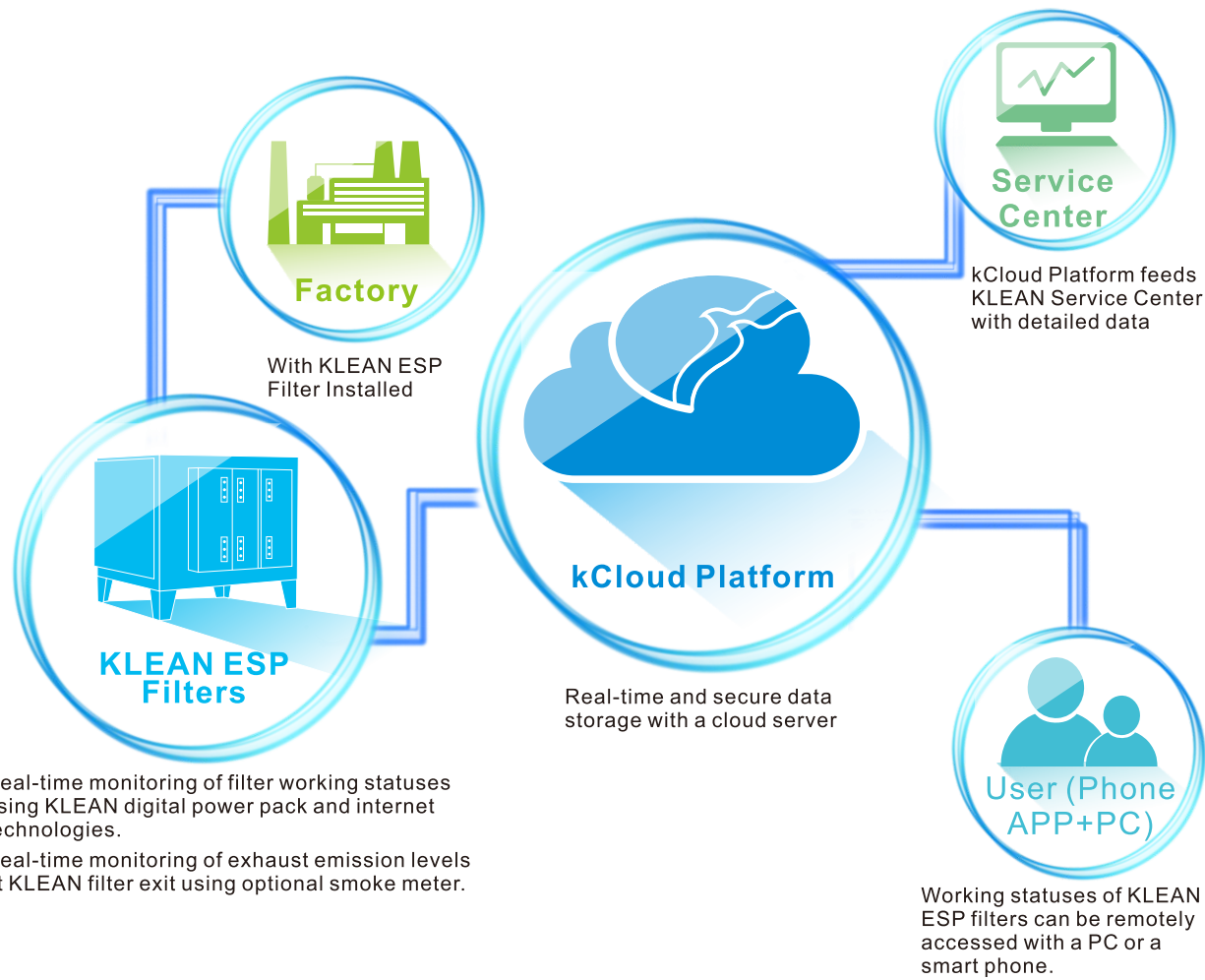


Self-Cleaning Pre-filter



kCloud Platform

Effective Monitoring System for Real-time Working Status of Your KLEAN Equipment





**Collaborative Remote Support is Available**

Optimal operation suggestions and maintenance alerts can be shared through the kCloud Platform by KLEAN's professionals behind the screen. When necessary, active onsite services can be initiated to handle complex issues in a more timely manner.

Honors and Awards

 <p>HNTE (High and New Technology Enterprise) Certificate</p>	 <p>"Eagle Plan" Enterprise of Nanhai District in 2015</p>	 <p>National Hidden Champion of Nanhai's Manufacturing Industry</p>	 <p>Large Taxpayer Classification (Over 100million a Year)</p>	
 <p>Computer Software Copyright Registration Certificate</p>	 <p>Foshan Environmental Management Key Enterprise</p>	 <p>OHSAS18001 Certification</p>	 <p>ISO14001:2015 Certificate</p>	 <p>ISO9001:2015 Certificate</p>
 <p>Environmental Service Leading Enterprise</p>	 <p>Guangdong Environmental Pollution Control Ability Assessment Certificate</p>	 <p>Foshan Technologically Advanced Enterprise</p>	 <p>Guangdong Environmental Protection Industry Key Enterprise</p>	



PATENTS 200 AND COUNTING



Cases

