TRION
Indoor Air Quality

TRION® Air Green Series

The TRION Air Green Series offers customers market-leading air purification solutions

The power behind **your mission**

Johnson Controls

Puravent

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Cooking oil fumes – a global issue

Continuously evolving changes in societies and economic improvements are driving up the quality of our living standards. The catering industry has also developed rapidly.

However, the catering industry's cooking oil fume (COF) emissions have become the third-largest air polluter after industrial and traffic pollution. The rise in pollution has created a significant impact on the living environment and the atmosphere. Therefore, the national environmental protection department and most countries' local governments have stipulated the control and rectification of COF emissions.

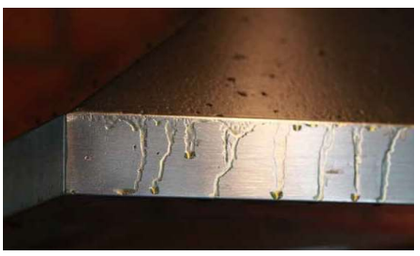
The pollutants of kitchen cooking oil fumes

The volatilized fats, organic matter and their thermal decomposition or cracking products produced during food cooking and processing are collectively referred to as COF. Cooking oil fume pollutants include grease, oil fumes and gaseous volatiles.

Gaseous volatile VOCs are mainly fatty acids, alkanes, olefins, aldehydes, ketones, alcohols, esters, and aromatic compounds. Among them, polycyclic aromatic hydrocarbons are one of the carcinogens.

Odor

Oil smoke



Grease

Particle characteristics

Air purification methods and particle sizes range

	Particle size (μm)	0.01	0.10	1	10	100
Particles	Coal dust					
	Cement dust					
	Atmospheric dust					
	Dust and fumes					
	Tobacco smoke					
	Oil smoke					
	Cooking oil smoke					
	Pollen					
Cleaning equipment	Electrostatic precipitators					
	High-efficiency filters					
	Liquid scrubbers					
	Mechanical separators					
	Common air filters					

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The impact of kitchen cooking oil fumes

Cooking oil fumes (COF) emissions in kitchens pollute the environment and buildings and pose a considerable fire hazard. At the same time, it will also affect the health of the people exposed to them, such as consumers and employees. These kitchens risk closure for failing to abide by local government pollution regulations or an audit check.

With improving quality of life and living standards, people are conscious of the effects of environmental pollution and have a strong preference for a healthy environment. Therefore, having a good kitchen purifying system that meets national standards is a social responsibility and a necessity for long-term business gains.

The impact of kitchen cooking oil fumes

Disturbance and air pollution

Fire hazards

Polluted buildings

Business closures caused by pollution non-compliance and audits

Bad customer experiences

Affects employee health

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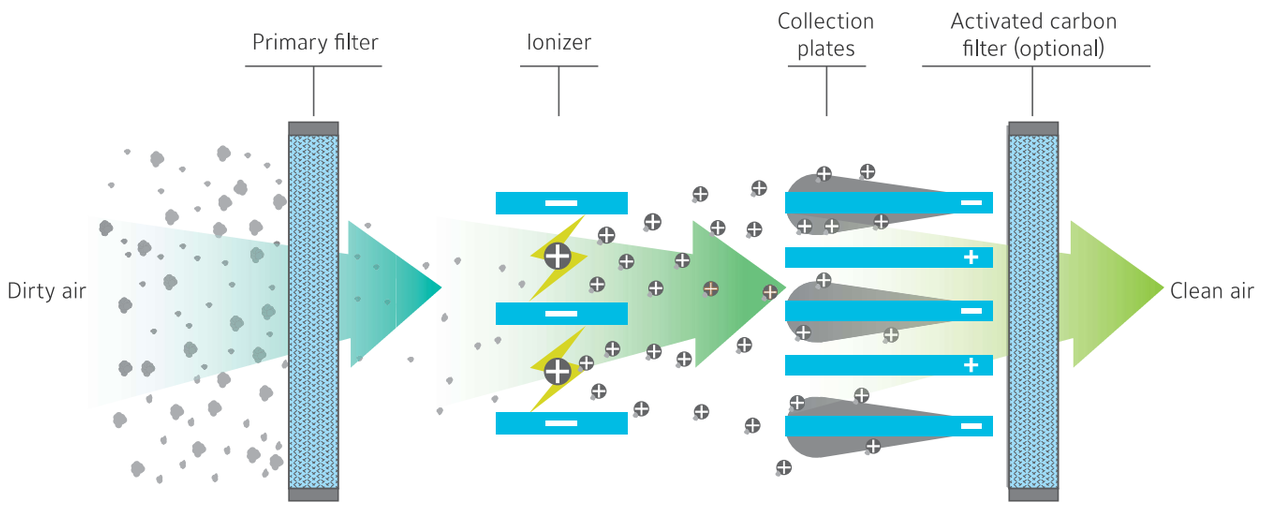
TRION Kitchen Exhaust Air Cleaner

The principle of electrostatic purification technology

- The dirty air will go through the primary filter, where large particles of pollutants in the air are intercepted. The smaller particles that escape through the primary filter enter the ionization zone.
- In the ionization zone, particles as small as 0.01μm are effectively ionized and carry a positive charge to continue to the dust collection area.
- The dust collection area is composed of many parallel plates. These charged particles are then attracted to and adhere to this series of parallel plates, which form the negative elements of an electrostatic field.
- The clean air enters the activated carbon filter (optional). The activated carbon filter will absorb the odor molecules and the clean and fresh air will be sent back to the room or discharged into the atmosphere.



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TRION Kitchen Exhaust Air Cleaner

Air Green Series

The TRION Air Green Series Kitchen Air Cleaner is an ideal product for removing air pollutants such as smoke, soot and oil mist. According to the type of cooking and the concentration of pollutant emissions, single-stage or double-stage purification can be selected, and odor purification can be configured to ensure effective purification and meet emission standards.

High purification efficiency
The product utilizes PWM solid-state power supply, which ensures a highly efficient, stable and continuous supply.

Safe and reliable
It is equipped with a safety switch and a power switch, giving double the protection.

Modular design
The modular design enables horizontal parallel assembly or vertical stacking to meet various on-site requirements.

Staggered spiked ionization
The ionizer uses stainless steel staggered zigzag multi-point ionization and is not easily stained by oil.

Building Automation (BA) option
This model offers remote power control, a reset wash reminder and the option to monitor your operation, cleaning, time and fault statuses.

Outdoor installation
IPX4 protection rating for outdoor installation. This also offers aviation aluminum alloy plates for enhanced corrosion resistance.

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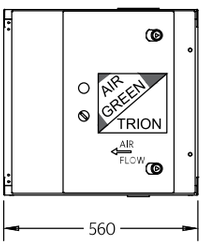
T1001

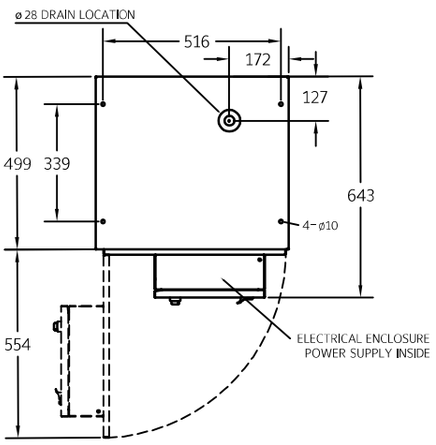
The T1001 is designed for in-duct installation where other external sources provide air movement. It has a single combined aluminum ionizer/collector cell with stainless steel spiked ionizers and an air volume range up to 4,000 CMH.

T1001 specifications	
Dimensions (mm)	560D x 643W x 534H
Installation	Suspended, wall, frame, or duct mounted
Unit weight (kg)	50
Input voltage	220-240V/50Hz/1PH
Ionizer/collector output voltage	12kV/6kV
Product power (w)	30
Number of cells	1
Airflow (CMH)	4,000 (2,354 CFM)
Pressure drop (Pa)	≤65
Flange size (mm)	499 x 534
Controls	Power switch with an indicator light
Pre-filter	460L x 460W x 22.2D Standard aluminum mesh Heavy oil filter (optional)
Primary filter	Standard forever filter – electronic ionizer/ collector cell
After-filter	Activated carbon plate filter (optional)
Power supply	High-frequency solid-state design
Efficiency	To 95% based on ASHRAE 52.2 To 99% for double pass (calculated)
Construction	Welded galvanized steel, 1.2mm (18 gauge) top/bottom, 1.5mm (16 gauge) columns
Finish	Blue epoxy powder coating (RAL 5017)
Particle size	0.01 to 10 microns
General	Multiple units can be joined together for increased volume or higher frequency

FRONT VIEW



TOP VIEW



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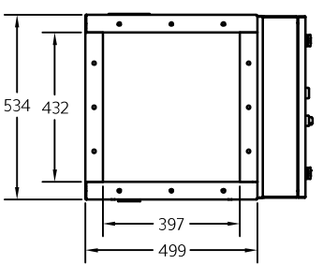

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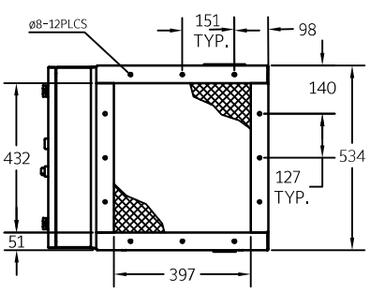

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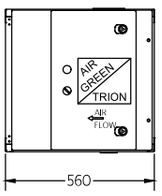
T2002

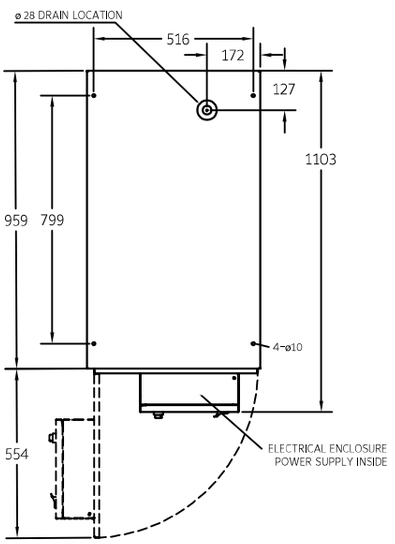
The T2002 is designed for in-duct installation where other external sources provide air movement. It has two combined aluminum ionizers/collector cells with stainless steel spiked ionizers and an air volume range up to 8,000 CMH.

T2002 specifications	
Dimensions (mm)	560D x 1,103W x 534H
Installation	Suspended, wall, frame, or duct mounted
Unit weight (kg)	70
Input voltage	220-240V/50Hz/1PH
Ionizer/collector output voltage	12kV/6kV
Product power (w)	50
Number of cells	2
Airflow (CMH)	8,000 (4,708 CFM)
Pressure drop (Pa)	≤65
Flange size (mm)	959 x 534
Controls	Power switch with an indicator light
Pre-filter	2 x (460L x 460W x 22.2D) Standard aluminum mesh Heavy oil filter (optional)
Primary filter	Standard forever filter – electronic ionizer/ collector cell
After-filter	Activated carbon plate filter (optional)
Power supply	High-frequency solid-state design
Efficiency	To 95% based on ASHRAE 52.2 To 99% for double pass (calculated)
Construction	Welded galvanized steel, 1.2mm (18 gauge) top/bottom, 1.5mm (16 gauge) columns
Finish	Blue epoxy powder coating (RAL 5017)
Particle size	0.01 to 10 microns
General	Multiple units can be joined together for increased volume or higher frequency

FRONT VIEW



TOP VIEW



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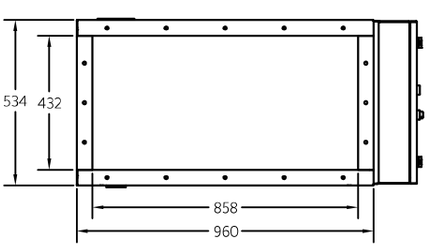

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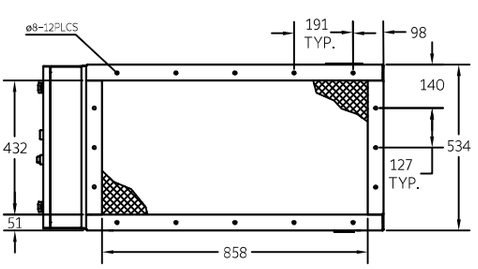

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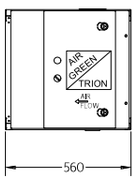
T3003

The T3003 is designed for in-duct installation where other external sources provide air movement. It has three combined aluminum ionizers/collector cells with stainless steel spiked ionizers and an air volume range up to 12,000 CMH.

T3003 specifications	
Dimensions (mm)	560D x 1,564W x 534H
Installation	Suspended, wall, frame, or duct mounted
Unit weight (kg)	105
Input voltage	220-240V/50Hz/1PH
Ionizer/collector output voltage	12kV/6kV
Product power (w)	70
Number of cells	3
Airflow (CMH)	12,000 (7,062 CFM)
Pressure drop (Pa)	≤65
Flange size (mm)	1,420 x 534
Controls	Power switch with an indicator light
Pre-filter	3 x (460L x 460W x 22.2D) Standard aluminum mesh Heavy oil filter (optional)
Primary filter	Standard forever filter – electronic ionizer/ collector cell
After-filter	Activated carbon plate filter (optional)
Power supply	High-frequency solid-state design
Efficiency	To 95% based on ASHRAE 52.2 To 99% for double pass (calculated)
Construction	Welded galvanized steel, 1.2mm (18 gauge) top/bottom, 1.5mm (16 gauge) columns
Finish	Blue epoxy powder coating (RAL 5017)
Particle size	0.01 to 10 microns
General	Multiple units can be joined together for increased volume or higher frequency

FRONT VIEW



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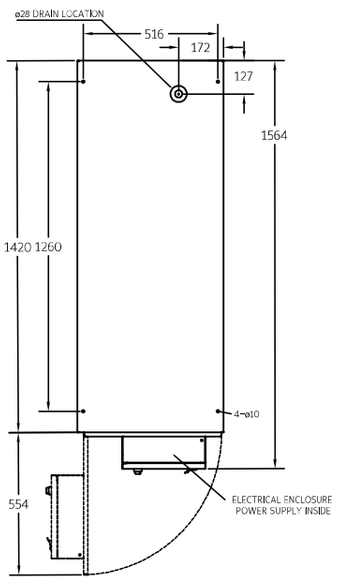

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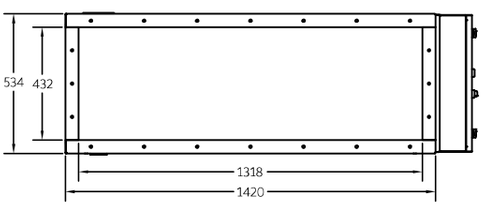

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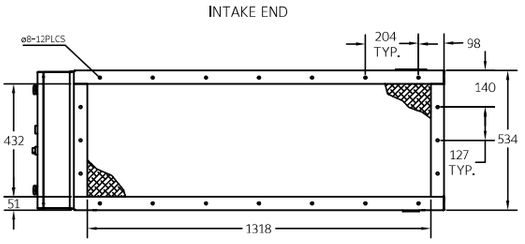

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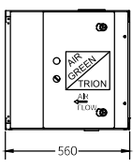
T4004

The T4004 is designed for in-duct installation where other external sources provide air movement. It has four combined aluminum ionizers/collector cells with stainless steel spiked ionizers and an air volume range up to 16,000 CMH.

T4004 specifications	
Dimensions (mm)	560D x 2,025W x 534H
Installation	Suspended, wall, frame, or duct mounted
Unit weight (kg)	145
Input voltage	220-240V/50Hz/1PH
Ionizer/collector output voltage	12kV/6kV
Product power (w)	90
Number of cells	4
Airflow (CMH)	16,000 (9,417 CFM)
Pressure drop (Pa)	≤65
Flange size (mm)	1,881 x 534
Controls	Power switch with an indicator light
Pre-filter	4 x (460L x 460W x 22.2D) Standard aluminum mesh Heavy oil filter (optional)
Primary filter	Standard forever filter - electronic ionizer/collector cell
After-filter	Activated carbon plate filter (optional)
Power supply	High-frequency solid-state design
Efficiency	To 95% based on ASHRAE 52.2 To 99% for double pass (calculated)
Construction	Welded galvanized steel, 1.2mm (18 gauge) top/bottom, 1.5mm (16 gauge) columns
Finish	Blue epoxy powder coating (RAL 5017)
Particle size	0.01 to 10 microns
General	Multiple units can be joined together for increased volume or higher frequency

FRONT VIEW



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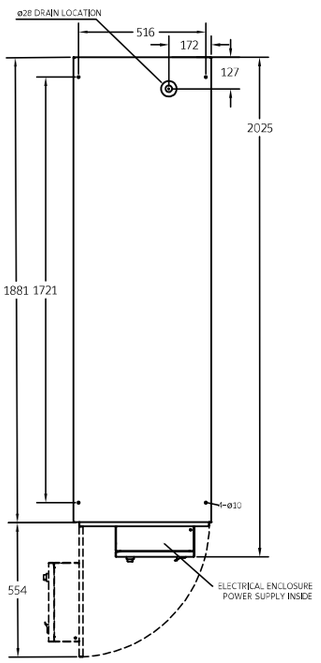

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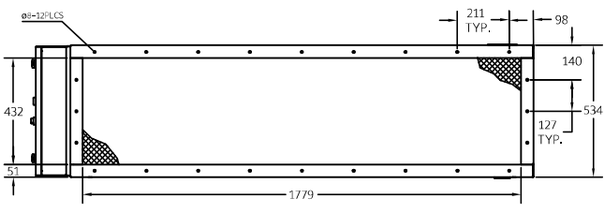

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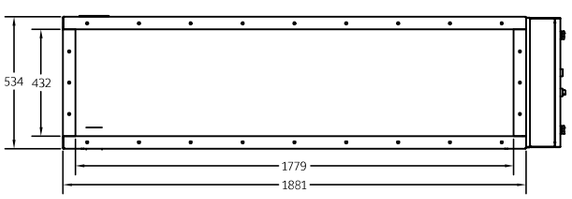

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Installation and maintenance

Suspending installation

Use an angle steel frame and lifting bolts to install and fix the equipment. Pay attention to ensure the reliability and safety of the connection between the angle steel and equipment and pay attention to the tightness of fixings.

Note: If you are using a suspended installation, a drain nozzle needs to be installed and connected to a liquid collection cup or a drain hose.

Floor-standing installation

With the exception of the TRION AG Series Air Cleaner, other air cleaners need to be equipped with weather-proof canopies to protect the units from water ingress.

Description:

- To facilitate the drainage, it is recommended that the unit be tilted by lifting the front end of the unit by 13mm and fitting a rubber wedge (Smart Auto-Clean series may not be tilted).
- A maintenance distance of at least 100cm should be left for the access door, and a maintenance distance of at least 55cm should be left in front of other auxiliary equipment (such as pumps and motors).
- Wherever it is connected to the air duct/chassis flange, it should be sealed with a sponge, rubber strip, or sealant.

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