

TRION

TRION COMMERCIAL AIR CLEANER SERIES



The power behind **your mission**



TRION, 70 Years Focus On Air Purification

Since established in 1947, TRION has built a high reputation in the industry with high quality product and excellent customer service, and are well-known worldwide. The products and solutions are now widely used in residences, offices, factories, hospitals, hotels, restaurants and other places that have high requirement of indoor air quality.

Johnson Controls Inc., the global leading company acquired TRION in 2015, and strategically focus on construction sector, combines with the business portfolio that includes HVAC, Industrial Refrigeration, Security and Fire Protection. With 105000 employees globally across 150 countries and regions around the world, striving to build a safe, comfortable and sustainable world, and are committed to support our customers to succeed.

TRION is now a brand offering air purification products under Johnson Controls' group, and continuously provides a comprehensive range of reliable and high cost performance air purification products. From residential to commercial, the hotel and the catering, TRION is always committed to creating a cleaner, safer and more comfortable indoor air environment for users. Our product innovation will continue to meet customer needs and take pride in providing world-class purification products.



1947
TRION, established in Sanford, state of North Carolina, US

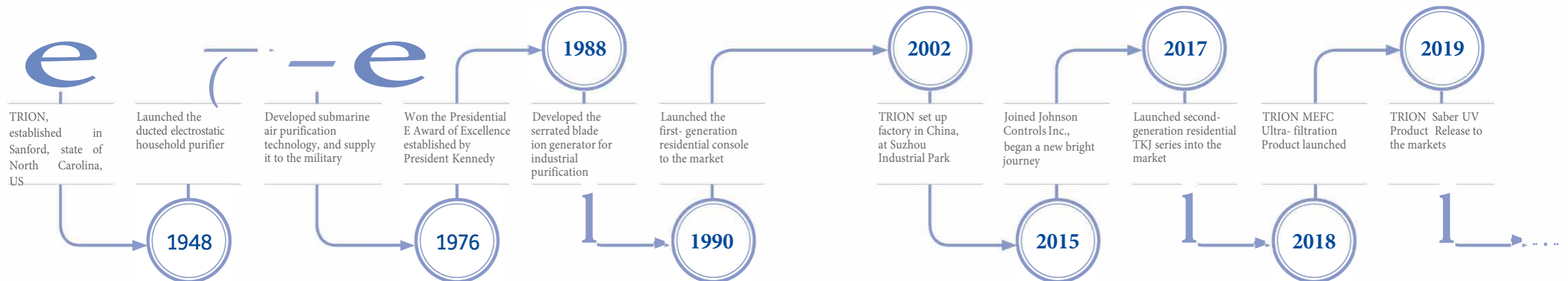


2002
TRION set up factory in China, at Suzhou Industrial Park



2015
Joined Johnson Controls Inc., began a new bright journey

Brand History



IAQ Indoor Air Quality Concerns

In recent years, economic growth has led to higher expectation towards quality of life. However, it has also brought about health concerns from the increased environmental pollution. With recent trends indicating that people are spending more than 80% of their time engaging in indoor activities, indoor air quality (IAQ) has become increasingly important.

Indoor pollution is a significant threat to healthy life at home. With modern construction adopting enclosed design with little fresh air intake, the negative impact of indoor pollution on human health has become more obvious with Sick Building Syndrome (SBS), Building Related Illness (BRI) and Multiple Chemical Sensitivities (MCI) etc.

Indoor pollution usually consist of particulate matters (PM2.5), toxic gases and biological pollutants such as bacteria. The pollutants can originate from smoking, renovation materials, furnitures, inadequate air conditioning system design and improper servicing and maintenance of the system.

On the other hand, the polluted outside air can also be introduced indoors via air inlets.

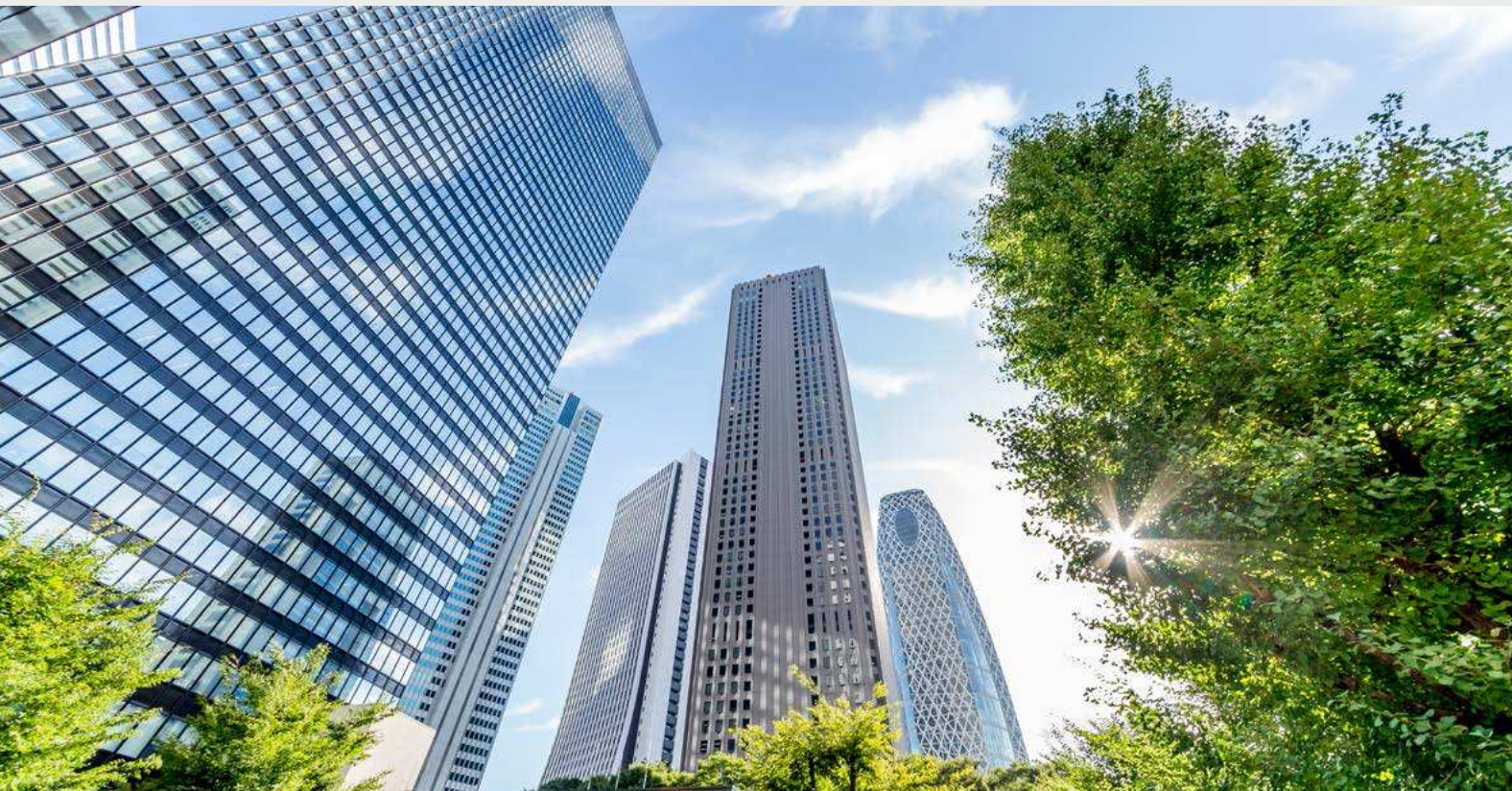
Equipping high human traffic commercial and public areas with high efficient air purification systems has become a basic requirement to protect human health.



TRION, Indoor Air Quality Specialist

Air Purification System Solutions

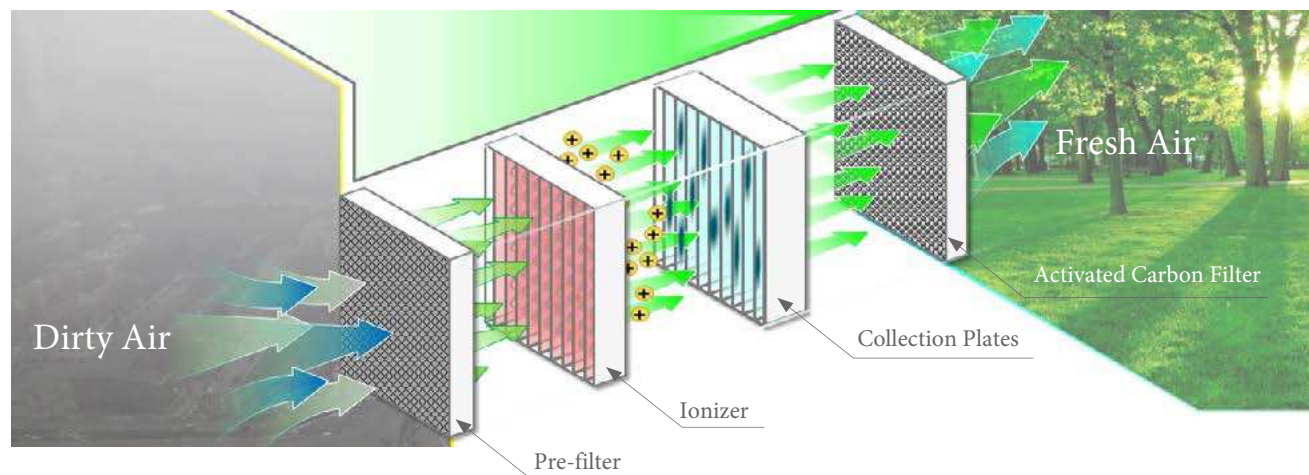
<p>Indoor Air Circulation Purification System</p>	<p>HVAC - Air Purification System</p>
	 <p>EFB (AIRCON UNIT) EFC/TGM/MEFC (FAN COIL UNIT) HE (DUCTED UNIT)</p>
<p>Fresh Air Purification System</p>	<p>Independent Recirculated Air Purification System</p>
	 <p>SE SERIES CAC SERIES</p>
<p>Fresh Air Purification System</p>	<p>UV Nano-OCO Disinfection Module (Optional)</p>
	 <p>TFAU MAP-E</p>



TRION Commercial Air Cleaner

Electrostatic Precipitator (ESP) Working Principle

- As the dirty air will first pass through the prefilter, larger pollutant particles are intercepted while the smaller particles will enter the ionization zone.
- In the ionization zone, particles as small as 0.01 μm are effectively ionized and the positive charged ions advance to the dust collection area.
- The dust collection area are composed of positively and negatively charged parallel plates. The positive ions are attracted and captured by the negatively charged plates, leaving behind clean air.
- The clean air then enters the activated carbon area and the activated carbon filter will absorb the odour molecules particles; finally, the clean & fresh air will be sent back indoor or discharged into atmosphere.



Aircon Unit ESP Air Cleaner

EFB Series

TRION EFB Series are suitable for usage in commercial and industrial central airconditioning AHU or return air duct in the ducted system. It is a hybrid air purification system that improves the indoor air quality through reducing harmful pollutants like particulate matter (PMx), PM 2.5, allergens, pollen, smoke, based on trap & kill technology. Utilising electrostatic purification technology to effectively capture particulates as tiny as 0.01 μm , EFB is the ideal high efficient and reusable purification solution.

Efficient Purification

Dust Removal: PM2.5 purification efficiency up to 95%.
 Bacterial Removal: micro-organism purification efficiency up to 95%. Efficiency equal to MERV15 as per ASHRAE 52.2.*

Low Pressure Drop

At air velocity of 2.5m/s, the pressure drop is lower than 20Pa, effectively lowering energy consumption.

Permanent Usage

The electrostatic purification (ESP) cell is made of aluminum alloy used in Aerospace. The metal also undergoes oxidation treatment to increase corrosion resistance and shelf life. The cell module are washable and reusable.

UV Sterilization Module (Optional)

The optional UV sterilization module is equipped with UV lamp and TiO_2 catalyst, which provide UV sterilization and Photocatalytic Oxidization (PCO) effects to easily eliminate airborne virus and bacteria.

Ceramic Insulation

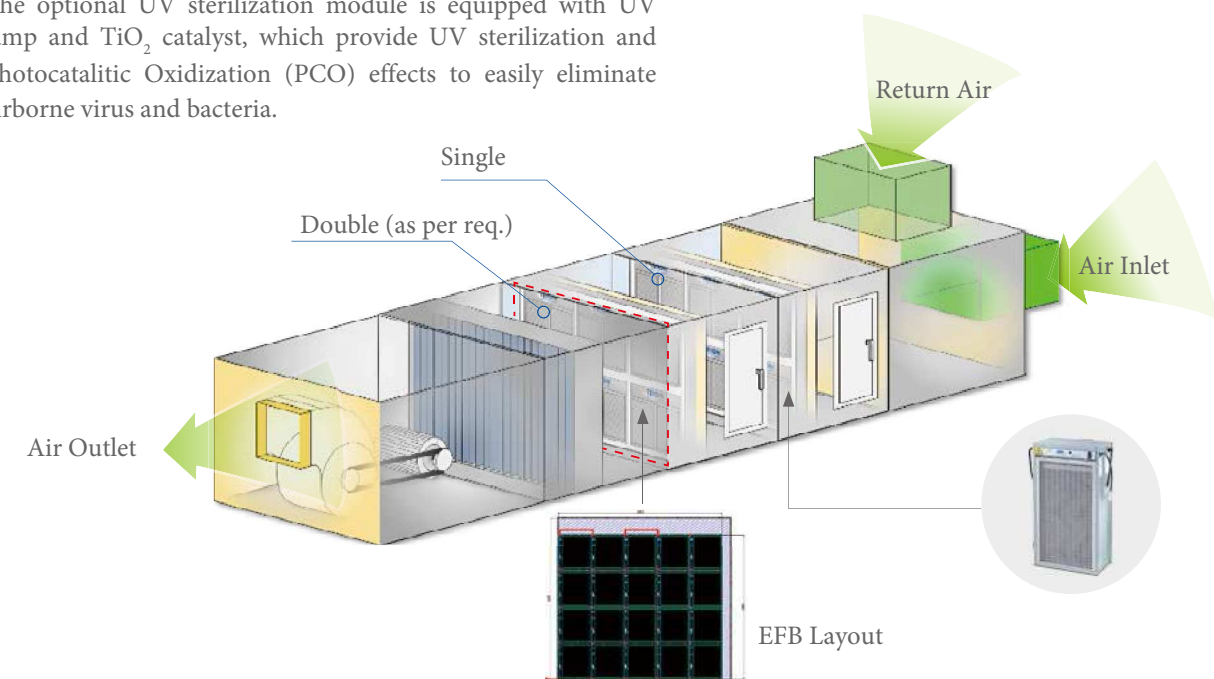
The ESP Cell utilises ceramic insulation to limit contamination buildup and prevents sparking.

Solid-state Self-regulating Power

Solid-state self-regulating power unit can monitor ambient temperature, humidity and dirt accumulation to regulate power output to ensure efficiency and stability.

Smart Control

Equipped with operation, fault and washing alert indicator lights; Optional BA communication interface connectivity.



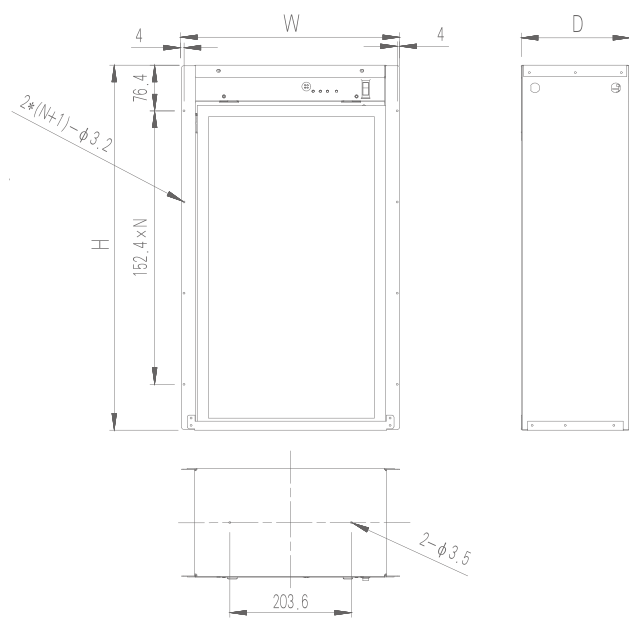
*Please refer test report no.2017A434 dated. 19.06.2017

Performance Data

Model	Horizontal			Vertical			
	Configuration	Single	Double	Double Stack	Single	Double	Double Stack
Parameter	Air volume (m³/h)	1700	3400	3400	1700	3400	3400
	Power supply	220-240V/50Hz/1PH					
	Pressure drop (Pa)	≤30					
	Power (w)	30(70)*	40(80)*	40(115)*	30	40	40
	Weight (kg)	12(14)*	18(20)*	18(20)*	12	18	18
	Safety protection	Safety switch, AFS					
	Pre-filter	Aluminum mesh, G2/G4 45mm optional					

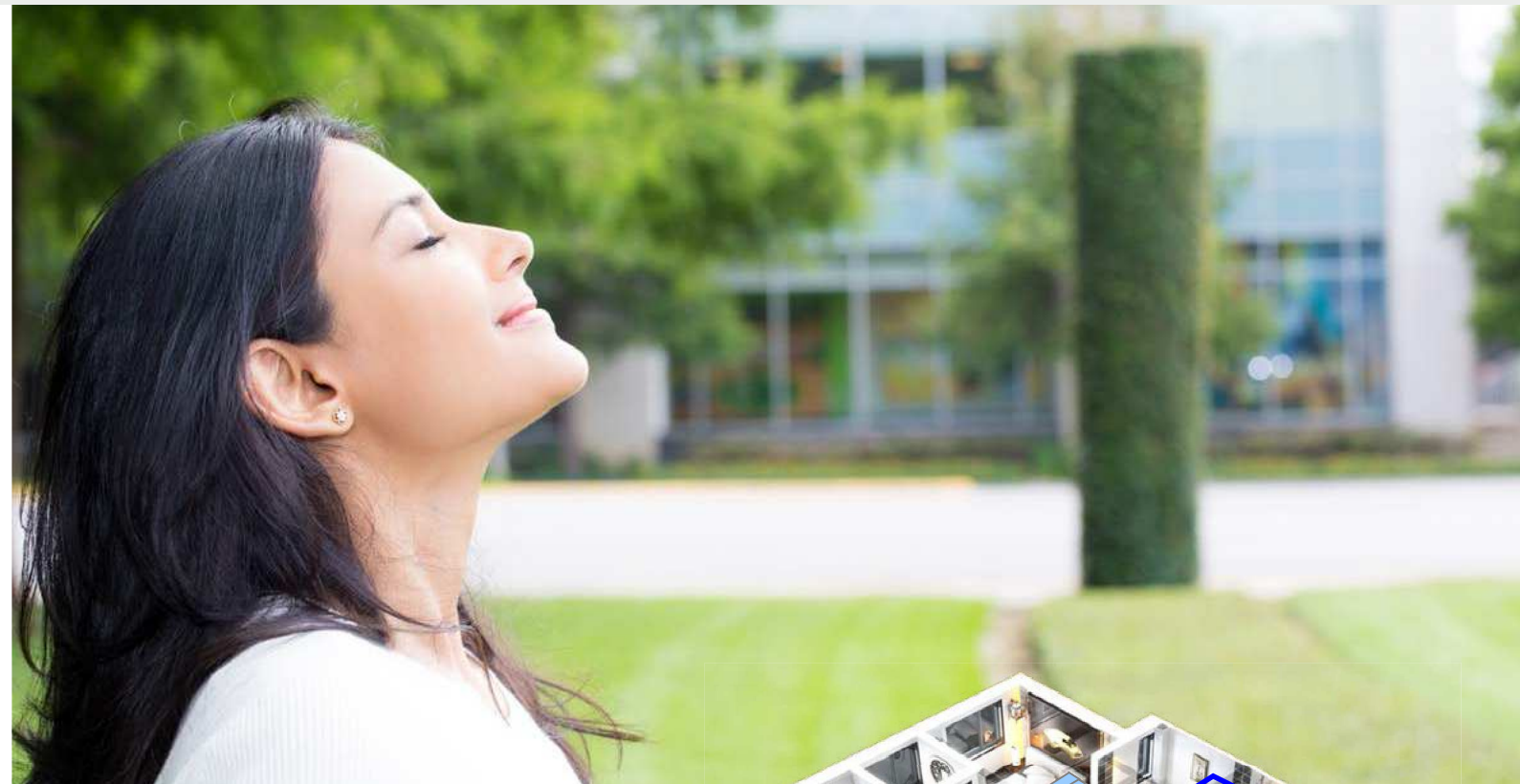
*: Denotes EFB + UV Sterilization Module (Optional)

Outer Dimension



Model	W(mm)	H(mm)	D1*(mm)	D2*(mm)	D3*(mm)	D3*(mm)	N (PCS)	
Horizontal	EFB Single	364	610	182	203	270	290	3
	EFB Double	676	610	182	203	270	290	3
	EFB Double stack	364	1115	182	203	270	290	6
Vertical	EFB Single	374	610	182	203	-	-	3
	EFB Double	686	610	182	203	-	-	3
	EFB Double stack	374	1115	182	203	-	-	6

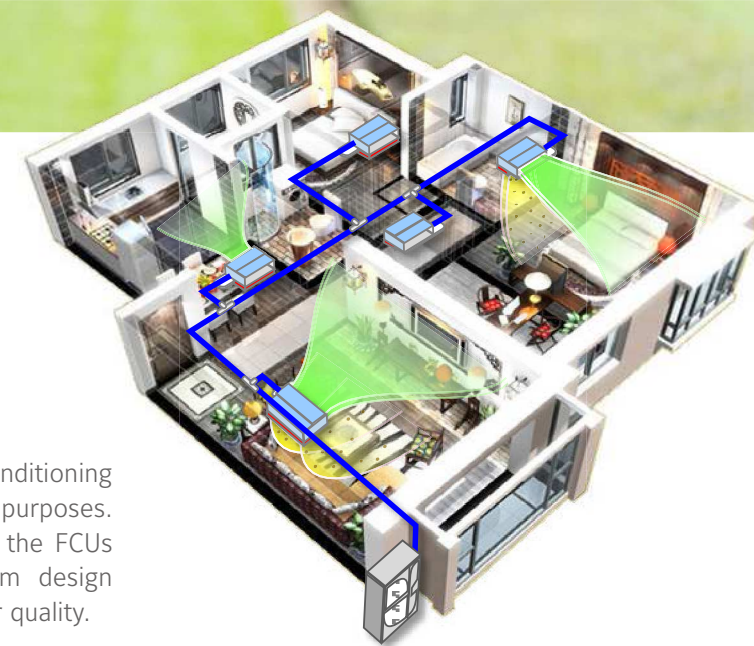
*: D1 denotes EFB with 22mm Pre-filter
 D2 denotes EFB with 45mm Pre-filter
 D3 denotes EFB + UV Sterilization Module (Optional) with 22mm Pre-filter
 D4 denotes EFB + UV Sterilization Module (Optional) with 45mm Pre-filter



FCU Return-Air ESP Air Cleaner

Fan coil units (FCU) are commonly used in central airconditioning system for commercial, industrial and residential purposes. Utilizing TRION Electrostatic Precipitation Technology, the FCUs are highly efficient with low pressure drop. Its slim design connects flawlessly with the ducts, improving indoor air quality.

TRION provides 3 different FCU series to satisfy different customer demands which can have varying efficiency and installation methods.



High Efficiency EFC Series



Grille Mounted TGM Series



Micro-porous Filtration MEFC Series

FCU Return-Air ESP Air Cleaner

High Efficiency EFC Series

High Efficiency Low Pressure Drop

Optimised design for dust-collecting plate ensure high purification efficiency & clogging capacity but low pressure drop.

Flow Sensor Interlock Logic

Smart On-Off saves energy and protect ionizer cell module.

Safety Switch

Safety switch ensures operator safety during operation & maintenance.

Cleaning Alert

Indicating signal to alert pre-filter and clog washing.

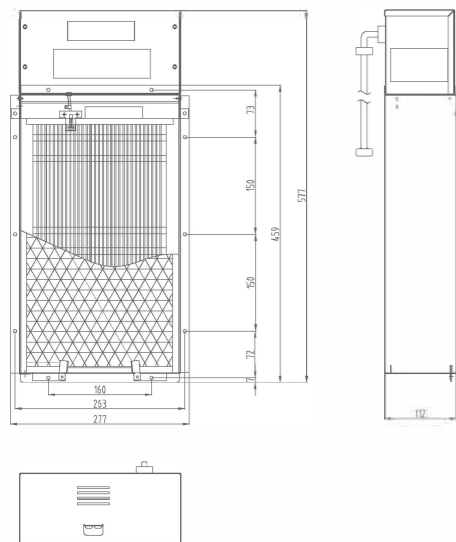


Performance Data

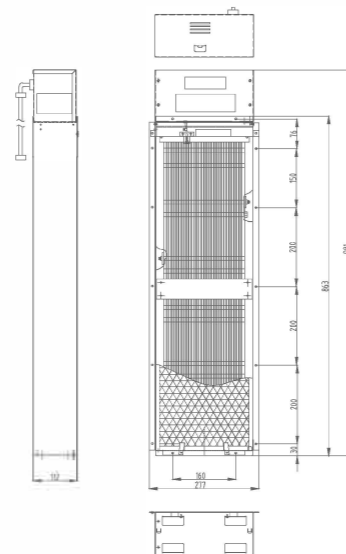
Model	EFC400	EFC800
Parameter		
Air volume (m³/h)	1700	3400
Power supply	220-240V/50Hz/1P	
Power (w)	H	
Pressure drop (Pa)	30	
Efficiency	≤20	
Weight (kg)	5.5	65%-95% 10
Dimension (W*H*D)	577 x 277 x 112	981 x 277 x 112
Accessories	Safety switch + Flow sensor	
	Pre-filter Aluminum	

Outer Dimension

EFC400



EFC800



FCU Return-Air ESP Air Cleaner

Grille Mounted TGM Series

Large Air Flow Volume

Single unit design guarantees large air flow volume with high purification efficiency, reducing new build and modification project budget.

Detachable Grille

Reduces installation cost and makes washing & maintenance easier.

Slim Design

Product depth of 174mm reduces installation space.

Quality & Durability

Ionizer cell is made of high quality & corrosion resistant aviation aluminum.

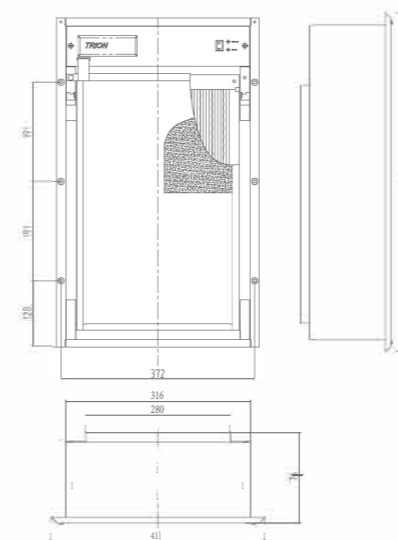


Performance Data

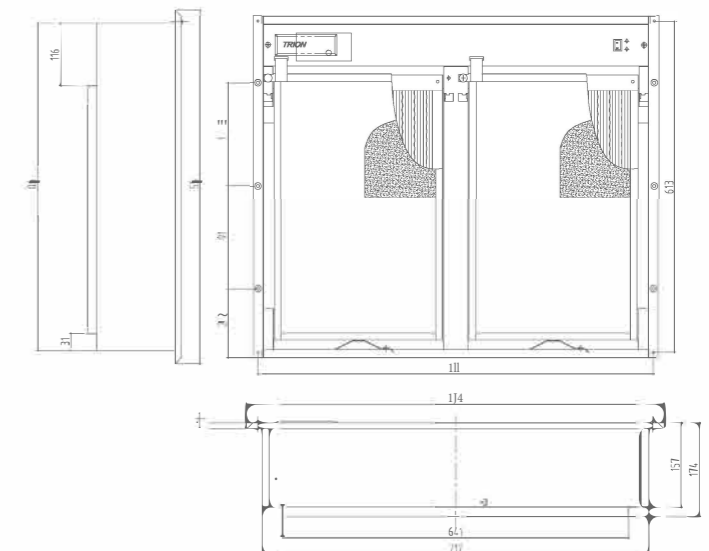
Model	TGM1000	TGM2000
Parameter		
Air volume (m³/h)	1700	3400
Power supply	220-240V /50Hz/1PH	
Power (w)	45	55
Pressure drop (Pa)	≤30	
Efficiency	95%	
Weight (kg)	13.5	24
Dimension (W*H*D)	413 x 655 x 174	774 x 655 x 174
Accessories	Safety switch + Flow sensor	
	Pre-filter Aluminum	

Outer Dimension

TGM1000



TGM2000



FCU Return-Air ESP Air Cleaner

Micro-Porous Filtration MEFC Series

MEFC utilises micro-porous filtration technique to achieve higher purification efficiency and reliability. MEFC's range of different air volume and specifications for selection will allow the best fit for the ducting installation.



Strong Filtration

PM2.5 removal efficiency up to 97%
Micro-organism removal efficiency up to 94.6%

Micro-porous Dust Collection

Bee hive shape collecton plate creates a strong electric field which increases ion absorption.

Reliability

Insulation reduces danger of breakdown and electric arcing. Filtration material fulfil UL94 V-2 retardant requirement. Unit comes equipped with safety switch and earthing, guaranteeing operational safety.

Smart Control

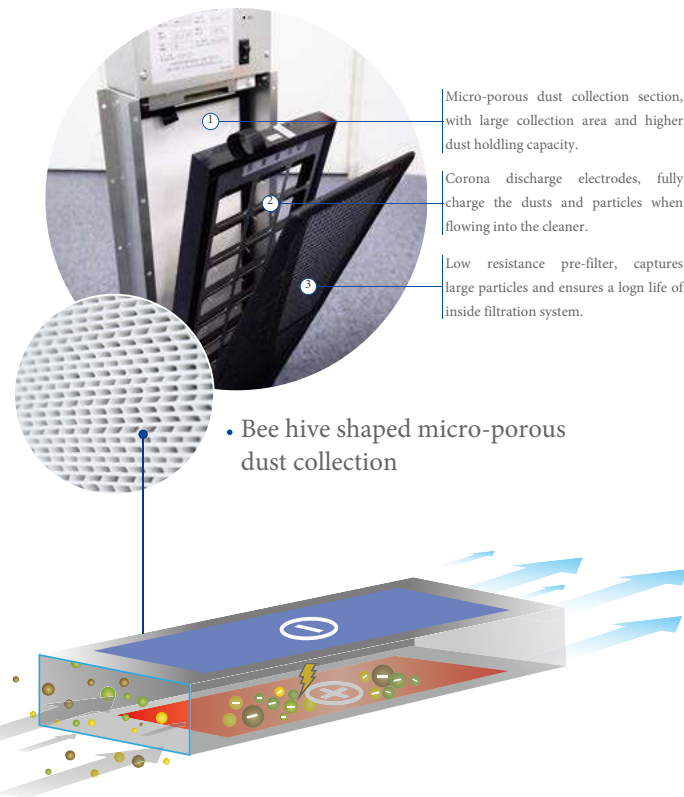
Unit on/off linked with fan to ensure indoor air quality. Unit comes with alert signal to remind washing. Comes with RS485 port which can be connected to BMS control system.

Flexible Installation

78mm ultrathin design, size matches FCU and can be installed easily. 300-1500m³/h multi-configurations and air volumes satisfy different applications.

Easy Maintenance

Micro-porous filtration module can be washed instead of replacement when the module gets dirty to save cost. Comes with Top Draw (parallel push-in and draw the unit to air flow direction) and Side Draw (perpendicular push-in and draw the unit to the air flow direction), which brings convenience for flexible installation and maintenance.

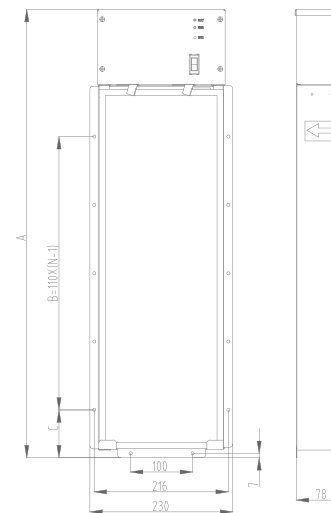


Performance Data

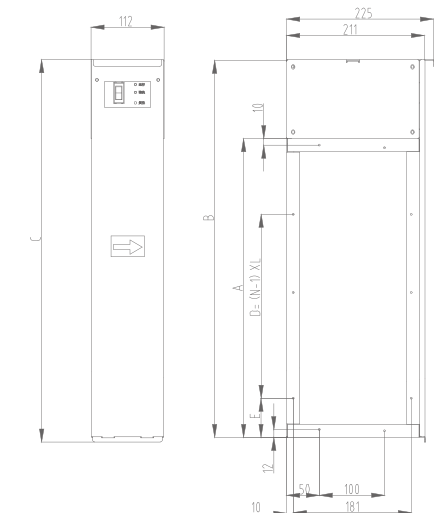
Category	Model								
	MEFC300	MEFC600	MEFC900	MEFC1200	MEFC1500	MEFC900-B	MEFC1200-B	MEFC1500-B	
Air volume (m ³ /h)	300	600	900	1200	1500	900	1200	1500	
Power supply	220V / 50Hz / 1PH								
Power (w)	4	4	5	5	5	7	7	7	
PM2.5 removal efficiency	Primary Efficiency up to 97%								
Micro-organism efficiency	Primary Efficiency up to 94%								
Pressure drop (Pa)	<20 Pa @1.0 m/s								
Pre-filter	Nylon Mesh								
Status indicator	Operation, Wash								
Control mode	Fan interlock								
Safety feature	Safety switch								
Installation connection	Return air duct opening of FCU								
Top Draw	Dimension (L*W*H) mm	443x230x78	720x230x78	997x230x78	1226x230x78	1411x230x78	997x230x78	1226x230x78	1411x230x78
	Weight (kg)	3.2	4.5	5.6	6.8	8.1	5.6	6.8	8.1
Side Draw	Dimension (W*H*D) mm	416x225x112	695x225x112	972x225x112	1199x225x112	1384x225x112	972x225x112	1199x225x112	1384x225x112
	Weight (kg)	4.6	6.0	7.1	8.4	9.9	7.1	8.4	9.9

Outer Dimension

MEFC Top Draw



MEFC Side Draw



Model	MEFC300	MEFC600	MEFC900	MEFC1200	MEFC1500
A (mm)	443	720	997	1226	1411
B (mm)	220	550	770	990	1100
C (mm)	85	34	91	77	77
Qty (pcs)	3	6	8	10	11

Model	MEFC300	MEFC600	MEFC900	MEFC1200	MEFC1500
A (mm)	288	567	844	1071	1256
B (mm)	409	688	965	1192	1377
C (mm)	416	695	972	1199	1384
D (mm)	200	480	720	960	1080
E (mm)	40	40	40	60	60
Qty (pcs)	3	5	7	9	10
Length (mm)	100	120	120	120	120



Ducted ESP Air Cleaner

HE Series

The TRION HE Series has superior purification performance in terms of efficiency, capacity, reliability, installation & maintenance to fulfill HVAC ventilation system application requirement. HE series has high efficiency, low pressure drop, durability, easier installation & maintenance, committed to create better indoor air quality for customers.

High Efficiency Low Pressure Drop

High unit efficiency with lower pressure drop than standard filters, effectively reducing HVAC ventilation system energy consumption.

Ceramic Insulation

Electrostatic field adopts ceramic insulation to prevent dampness, contamination, creepage or electric sparking.

Durability

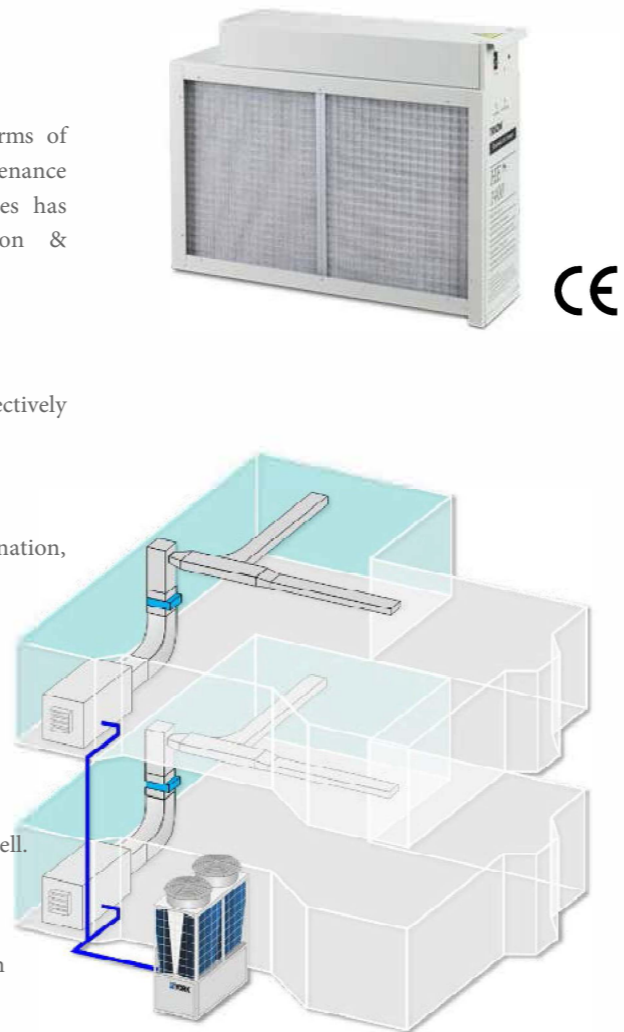
Purification module can be removed for repeated washing without the need for replacement.

Air Flow Sensor Interlock Control

Smart operation switch reduces energy consumption and protects ionizer cell.

Installation & Maintenance

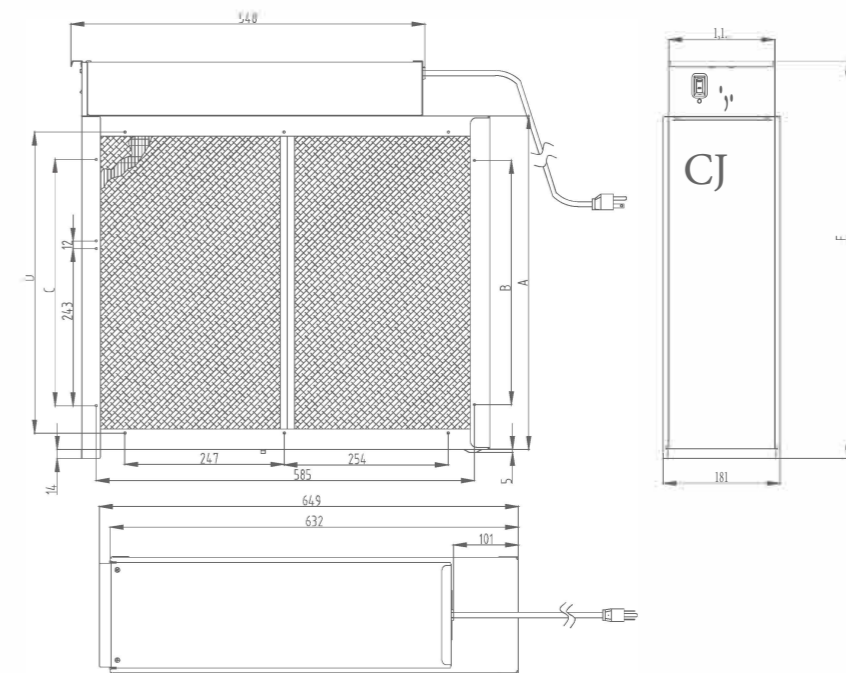
Unit can be installed in the duct in horizontal & vertical orientation. Plug-in design for ease of removal and maintenance.



Performance Data

Model	HE1400	HE2000
Air Flow (m³/h)	2380	3400
Power supply	220V 50Hz / 1PH	
Power (w)	45	50
Purification Efficiency	95%	
Pressure Drop (Pa)	:530	
Outer Dim. (W*H*D)	649 x 514 x 181	649 x 616 x 181
Weight (kg)	15	18
Accessories	Aluminum Mesh	
	Safety Switch, Flow Sensor	

Outer Dimension



Model	HE1400	HE2000
A (mm)	414	516
B (mm)	276	378
C (mm)	280	380
D (mm)	364	466
E (mm)	514	616



Independent Self-Circulated ESP Air Cleaner



SE Series



CAC Series

Efficient Purification

Electrostatic purification technology can capture as tiny as 0.01 micron particles with up to 99% efficiency.

Remove Haze and Bacteria

It can effectively remove dust, smoke and other particles in the air, as well as bacteria, pollen allergens etc., and improve indoor air quality.

Slim Design

Compact and ultrathin design, semi-hidden installation on the ceiling, SE can also be installed on the side wall.

Independent Installation

Independent operation without the need to install in the air-conditioning or ducting system.

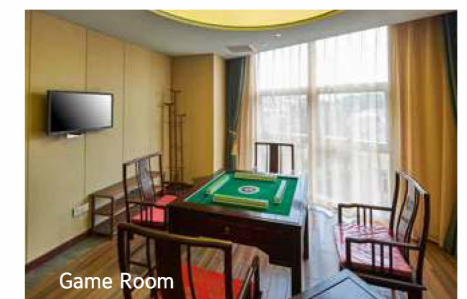
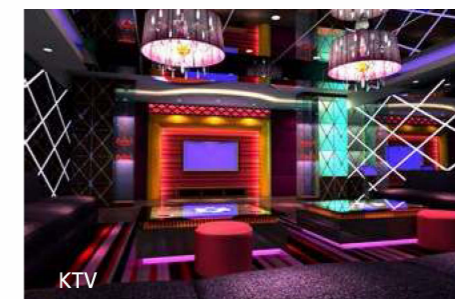
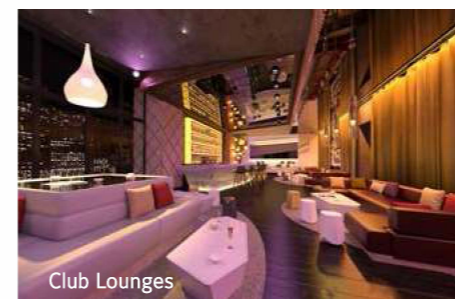
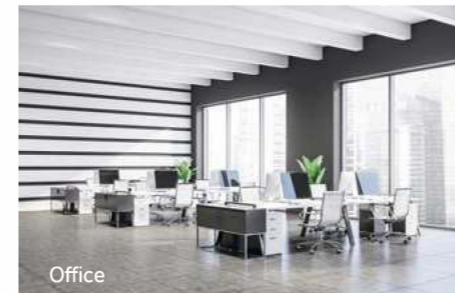
High Reliability and Long-lasting

Purification module is easy to remove for washing and can be repeatedly cleaned without replacement, has no consumables.

Smart Control

Comes with optional wired controller or remote controller, provides multiple functions such as purification, ventilation, washing alert, timer function.

Typical Application



Independent Self-Circulated ESP Air Cleaner

SE Series

Efficient Purification

Electrostatic precipitation technology is able to capture micro particles as tiny as 0.01µm with efficiency as high as 99%, effectively removing dust, smoke particles, bacteria & pollen allergens etc. to improve indoor air quality.

Smart Control

Selection of purification mode, ventilation mode, washing alert and timer function can be done by wired or wireless remote controller.

Slim Design

With its slim profile, SE can be installed on the walls and semi-hidden in the ceiling.

UV Sterilization Module (Optional)

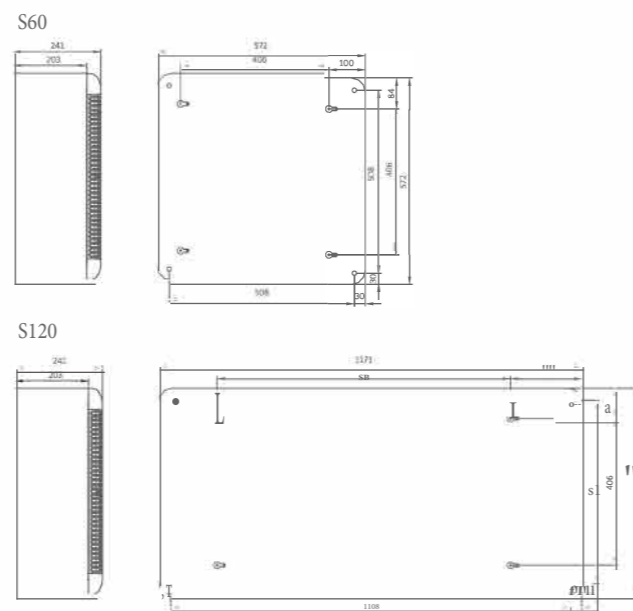
The optional UV sterilization module is equipped with UV lamp, which emits 254nm wavelength ultraviolet light, to effectively cause the DNA damage of viruses and bacteria. The sterilization efficiency is up to 99.9%.



Performance Data

	Model	S60	S120
Parameter	Power supply	220V / 50Hz / 1PH	
	Power (w)	22/30/40	37/55/75
	Air Flow (m³/h)	190/270/370	400/590/770
	Free Area (m²)	22-37	46-77
	Efficiency	> 99%	
	Noise Level (dBA)	34/45/52	42/48/55
Installation	Control	Wired / Wireless	
	Dim. (L*W*H) mm	572x572x241	1171x572x241
	Weight (kg)	19.5	
Accessories	Pre-filter	37.5 Aluminum Mesh	
	Safety feature	Safety Switch	
	Installation	Ceiling / Wall mounting	

Outer Dimension



Independent Self-Circulated ESP Air Cleaner

CAC Series

Haze and Odour Removal

Electrostatic precipitation technology effectively remove dust, smoke particles, bacteria and pollen allergens etc. When equipped with the activated carbon filter, odour, TVOCs etc. in the air can be removed to improve indoor air quality.

Coanda Air Flow Design

Comes with a Coanda effect air distribution from the outlet grille on its four sides, forming a three-dimensional airflow pattern. This ensures excellent air flow reach to the entire area and a very effective indoor air purification.

Easy Installation & Maintenance

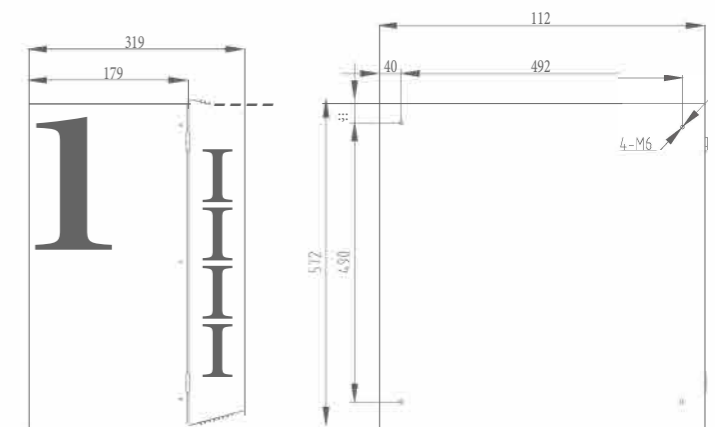
This works as a "Stand-alone" unit, without depending o HVAC unit, supply air duct etc. Long-lasting, easily washable and does not contain frequently replaced consumable items.



Performance Data

	Model	CAC1000
Parameter	Power supply	220V / 50Hz / 1PH
	Power (w)	99/122/159
	Air Flow (m³/h)	280/340/450
	Efficiency	95%
	Noise Level (dBA)	47/52/58
	Control	Wired / Wireless
Installation	Dim. (L*W*H) mm	572x572x379
	Weight (kg)	40
Accessories	Pre-filter	Aluminum Mesh
	Post-filter	Activated Carbon
	Safety feature	Safety Switch
	Installation	Ceiling mounting

Outer Dimension



UV Nano-PCO Disinfection Module (Optional)

UV Nano-PCO disinfection module can be directly inserted into the air-conditioning duct. The 254nm wavelength ultraviolet rays destroy the DNA of bacteria and viruses, preventing their reproduction and spread. UV light also catalyzes the TiO₂ coated element surrounding the UV lamp. The coating generates negative oxygen ions and hydroxyl radicals, effectively inactivating bacteria and viruses.

Features

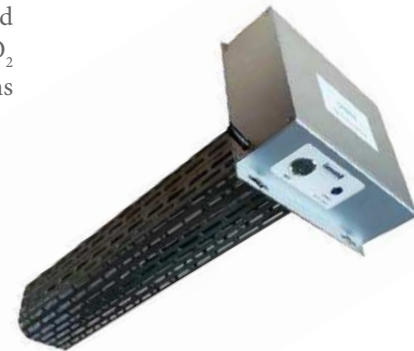
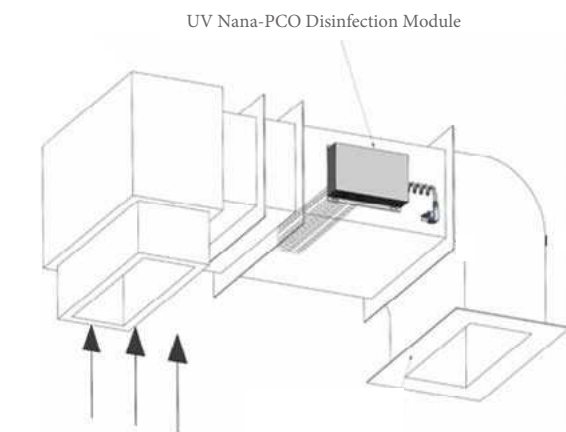
- UV and TiO₂ Photocatalyst (PCO) double disinfection.
- Plug and play, flexible and convenient, small size and low air flow resistance.
- Safety switch, working fault indicator, safe and reliable.

Performance Data

Model	UV-X	UV-Plus	UV-T
Module Insertion Length	380 mm	500 mm	810 mm
Weight	2.1 kg	2.6 kg	4.2 kg
Power	40 w	100 w	200w
Power Supply	220V / 50Hz / 1PH		
Installation	Cut out φ100 hole and mount on duct wall.		
Ambient Temperature	0~40°C, relative humidity less than 95%, no condensation.		
UV Lamp Work Indicator	Provided as standard feature		
UV Lamp Life	1.5 years		

Application Senario

This product is a disinfection and purification module specially designed for air-conditioning ducts / fan coil units. It can be widely used in commercial buildings, offices, schools, nursing wards, hospitals, subways, high-speed rails and airports and other palces that require air disinfection and purification.



Fresh Air ESP Air Cleaner

MAP-E Series

TRION MAP-E Series is used in the fresh air system to efficiently purify the incoming fresh air. It not only protects the heat recovery unit and also guarantees the indoor air quality.

MAP-E series utilizes high voltage electrostatic precipitation technology which offers high efficiency, low air flow resistance, large dust-trapping capacity and better performance to deliver best-in-class fresh air purification.



High Purification Efficiency

PM2.5 primary purification efficiency up to 95%*.

Low ozone output of only 0.015mg/m³, far below the national standard ≤0.16mg/m³.

Three-stage Self-regulated Voltage Power Output

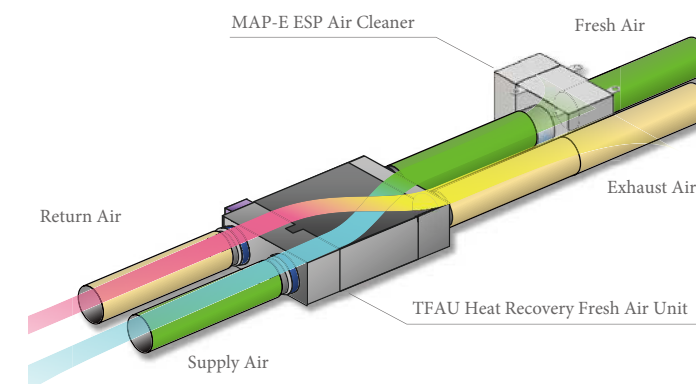
A built-in, intelligent control program self-regulates the power supply by monitoring the temperature, humidity and air flow resistance, adjust the output power in time, and continuously ensure the highest purification efficiency of the product.

Three-stage Self-regulated Voltage Power Output

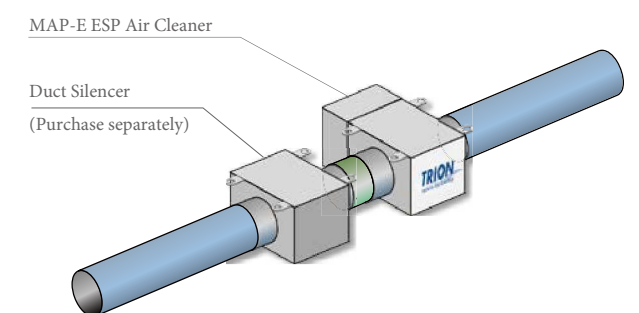
Low pressure drop of <30 Pa helps to greatly conserve end design fan energy usage. As per site requirements, activated carbon filter and cold catalyst filter are available as optional additional parts, to further enhance air quality.

*: The data is MAP300 at 300m³/h air flow according to GB/T 14295-2008 "Air Purifier" test results.

Installation Method 1: Coupled with Heat Recovery Fresh Air Unit



Installation Method 2: Standalone



Performance Data

Model	MAP300E	MAP600E
Power supply	220V / 50Hz / 1PH	
Power (w)	10	15
Air Flow (m ³ /h)	100-300	450-600
PM2.5 Primary Purification Efficiency *	95%	92%
Pressure Drop*	19	30
Outer Dim (W*D*H) mm	592 x 562 x 215	592 x 590 x 257
Weight (kg)	15	17
Inlet Size (mm)	φ150	φ200
Outlet Size (mm)	φ150	φ200
Accessories	Aluminum Mesh	
	Safety Switch + Fan Switch	
Options	Activated Carbon Filter, TiO ₂ , Cold Catalyst Filter	

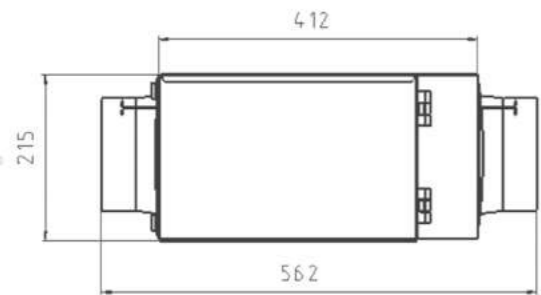
Note: MAP300E is recommended with Trion TFAU001, TFAU002, TFAU003 Heat Recovery Fresh Air Unit.

MAP600E is recommended with Trion TFAU004, TFAU006 Heat Recovery Fresh Air Unit.

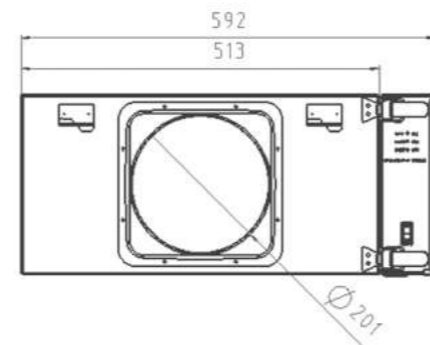
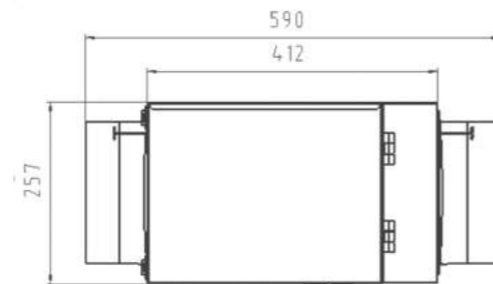
*: Tested under required air flow according to GB/T 14295-2008 "Air Purifier" test standard.

Outer Dimension

MAP300E



MAP600E



CREATING A MORE BEAUTIFUL LIFE WITH
TRION COMMERCIAL AIR CLEANER SERIES

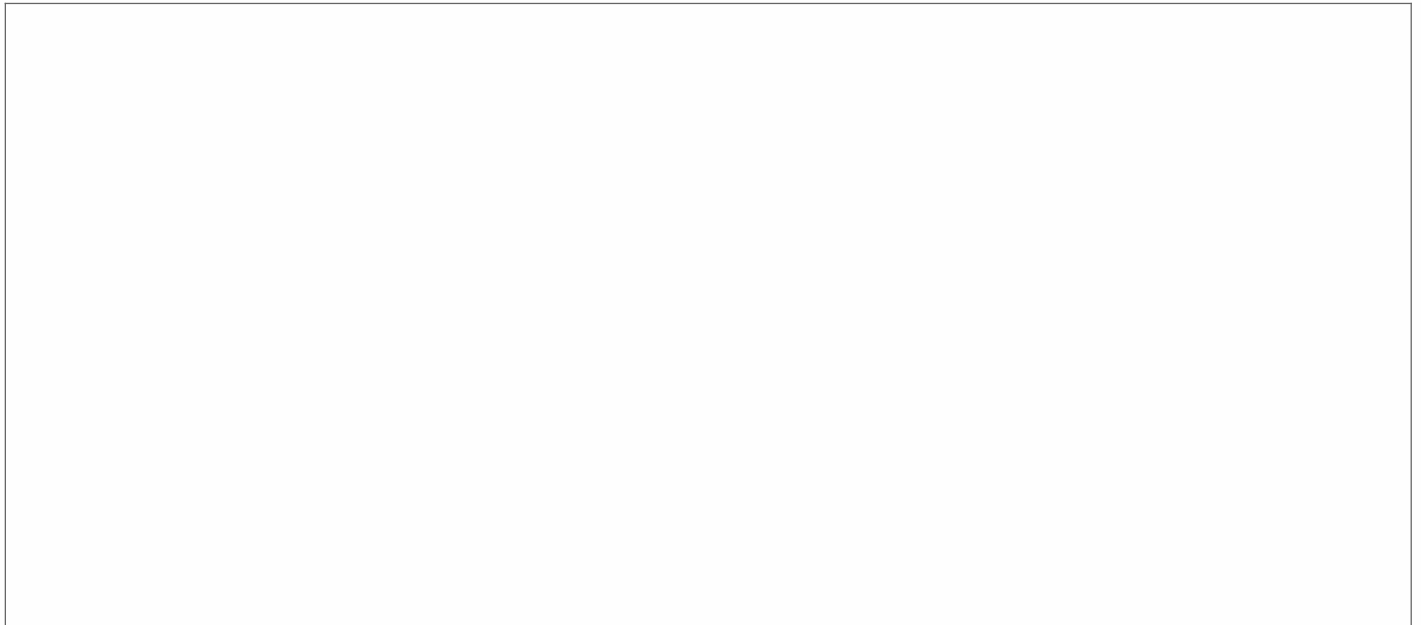
**CLEAN WORLD,
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TRION

About Johnson Controls

At Johnson Controls, we transform the environments where people live, work, learn and play. From optimizing building performance to improving safety and enhancing comfort, we drive the outcomes that matter most. We deliver our promise in industries such as healthcare, education, data centers and manufacturing. With a global team of 105,000 experts in more than 150 countries and over 130 years of innovation, we are the power behind our customers' mission. Our leading portfolio of building technology and solutions includes some of the most trusted names in the industry, such as Tyco®, YORK®, MetasysV, Ruskin®, Titus®, Frick®, Penn®, Sabroe®, Simplex®, Ansul® and Grinnell®.

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The power behind your mission

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