STERIONIZER™

Air Treatment Revolution

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D6 products catalog

Produced by **FILT AIR Ltd.** |

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Sterionizer™ D6 overview

The Sterionizer™ is a patented air purification device based upon bipolar ionization technology, specifically developed to bring the health and quality of nature's air to indoor environments.

In natural habitats, solar and earth-based thermal energies create positive and negative ions that clean and renew outdoor air by removing harmful pollutants, such as bacteria, viruses, fungi, and spores.

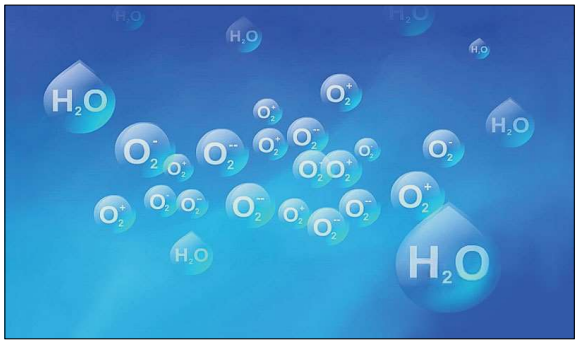
The Sterionizer™ generates these same positive and negative ions – just like those found in nature – that purify and freshen indoor air by eliminating the harmful pollutants mentioned above.

The Sterionizer™ is a compact electronic module that can easily be integrated into various air treatment products,

such as central air conditioners (duct systems), refrigerators, air purifiers, humidifiers and de-humidifiers, blowers, ventilators, cold stores and more.

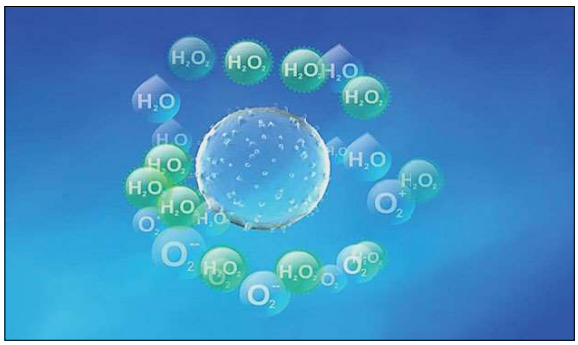
Sterionizer™ D6 operation schematic

1. The Sterionizer™ uses a corona discharge system to generate oxygen molecules O_2+ and O_2- .



2. These molecules have very high chemical activity and when reacting with water molecules H_2O in the air, OH radicals and H_2O_2 are formed.

3. Hydrogen Peroxide H_2O_2 together with OH radicals cluster around harmful particles.



4. A chemical reaction occurs and oxidants break down the protein structure of pollutants, rendering them harmless.

Sterionizer TM Proven Technology

Sterionizer™ bi-polar ionization technology was tested and proven effective in the elimination of a wide variety of harmful substances. Testing was carried out in cooperation with world-renown research institutions.

Substance	Substance Name	Testing Organization	Removal	Year
Bacteria	Escherichia Coli	EMSL Analytical, USA	99%	2011
	Escherichia Coli ATCC	Istanbul University, Turkey	91%	2011
	Staphylococcus aureus	EMSL Analytical, USA	81%	2011
	Pseudomonas aeruginosa	Istanbul University, Turkey	99%	2011
	Staphylococcus aureus (MRSA)	EMSL Analytical, USA	99%	2013
Fungus	Aspergillus Niger	EMSL Analytical, USA	97%	2011
	Candida albicans	EMSL Analytical, USA	36%	2011
	Dichobotrys abundans	Prof. Joe F. Boatman, USA	90%	2006
	Penicillium	Prof. Joe F. Boatman, USA	95%	2006
Mold	Cladosporium cladosporioides	EMSL Analytical, USA	97%	2011
Spores	Bacillus subtilis var niger	Istanbul University, Turkey	89%	2011
Viruses	Influenza H1N1	Kitasato Research Center, Japan	99%	2011
	Influenza H5N1	Kasetsart University, Thailand	99%	2011
	COV SARS-2	Hy Laboratories Israel.	99%	2020
	COVID-19	University of Patras	99%	2020

Technology Highlights

- minimaize risk of **Corona virus**
- Inactivates airborne pollutants, such as viruses, bacteria, fungus, and mold spores
- Neutralizes odors
- Reduces the allergic effects of allergy sufferers
- Discharges static electricity and prevents electrostatic build-up
- Health benefits confirmed by leading international research institutions
- Compliant with the American standard for ozone generation
- Sterionizer™ – RoHS, EMC, CE & UL certified
- Self-cleaning emitters - maintenance free
- Communication Port - can be integrated into building management systems

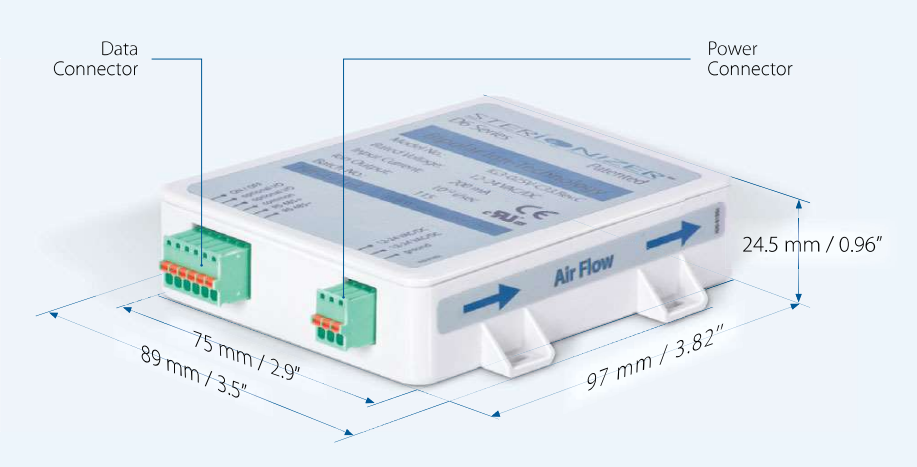
Applications

The Sterionizer™ devices can be used to improve the air in places that contain an audience such as::

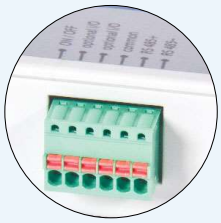
- Educational institutions
- Hospitals
- Shopping centers
- residence
- Hotels
- Elevators
- Dining places
- large transportation means

The Sterionizer™ devices can be integrated into a variety of systems:

- Air conditioners—home, public buildings, automotive and aviation systems
- Air purifiers
- Blowers and ventilation systems - duct systems
- Humidifiers and de-humidifiers
- Refrigeration systems - cold storage rooms
- air ducts
- air vents
- integration with existing air conditioners
- Static Control
- And more...




Power Connector


Data Connector


Ions needle outlet

Sterionizer™ technical specifications

D6 Series	Model
Ion output	$10^{10} \leq 10^{12}$ Ion/sec adjustable
Emitter cleaning	Self-cleaning – maintenance free
Emitter Points	Tungsten
Input voltage	12V AC/DC ± 10%, 200 mA, isolated / 24V AC/DC ± 10%, 200 mA, isolated
Operating environment	Temp. (-10)-(+70)°C, Hum. 20-93% non-condensing
Ambient Airflow	Minimum 0.3 m/sec laminar
Ozone	< 0.003 ppm (accoring to UL2998)
EMI	Below background levels (rec. 80mm distance)
LED indicator	green: power "on" - orange: "working"
Connector power	12/24 V - 0 - ground
Connector output	On/Off ; optional I/O ; optional I/O ; common
Connector interface	RS485 Modbus (up to 247 units)
Enclosure	PC-ABS plastic blend, color grey (black)
Dimensions	96 x 74 x 24.5 mm (L x W x H)
Dimensions mounting	107 x 89 x 24.5mm with bracket and connector
Weight	146 gram
Certifications	CE, UL, RoHS 2 compliant
Discharge time 1	1000V – 100 V @ < 3 sec at 60cm with airflow 1m/sec
Discharge time 2	1000V – 100 V @ < 6 sec at 60cm with airflow 1m/sec
Discharge voltage 1	< 30 V at 30 cm
Discharge voltage 2	< 10 V at 60 cm
Coverage Area	150 x 150mm at 30 cm distance / 150 x 150mm at 60 cm distance
Range	50-1000 mm application / airflow dependent

Installation in ventilation system

Central ventilation systems are probably the largest air distribution systems available. Installing Sterionizer™ ion technology within these systems is a simple way to enrich indoor areas with valuable ions, thus creating a similar environment to the natural state of nature outdoors.

The Sterionizer™ D6 series of generators has various types of accessories and includes professional solutions for installation, reducing installation time and ensuring optimal integration for ventilation systems.

Sterionizer™ D6 products

Duct Unit

Ion Bar

Mounting Bracket

AC Unit

Combi Rack

Tube Unit

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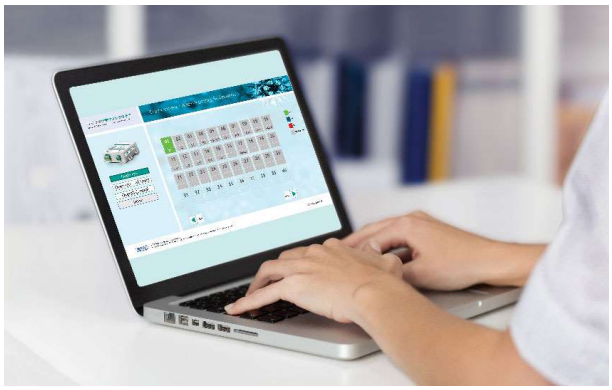
Sterionizer™ Software

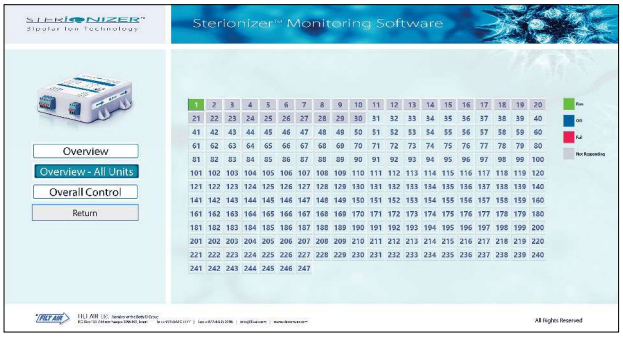
The software provides an individual address for each unit before mounting them in the duct system, it will make future steps and operation - much easier.

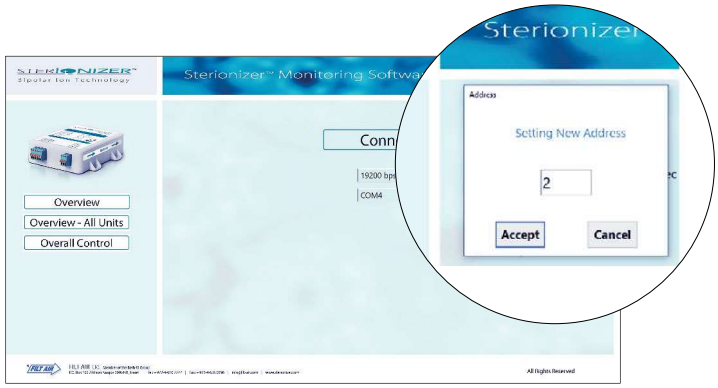
You can order your units already with "running number" or re-address them with our software. The default address for all units is "1".



Selecting a specific unit - allows you to monitor and control it:

- Turn unit on/off
- Manually perform a cleaning procedure.
- Set output power (Default password: 1234)
- Set cleaning schedule





MODBUS Output:

The Sterionizer™ has a MODBUS port that enables export of the data to an external system where it may be controlled.

The communication uses the RS-485 standard, which has two wires: A(+), B(-). It is possible to connect a communication cable between Sterionizer™ units in order to control the units. Maximum: 247 units.

Maximum wire length: 1200 meters (if the length is longer than 500 meters, use a repeater).

At the last unit a resistor (120Ω) should be connected between the communication terminals (bus termination).

Duct Unit

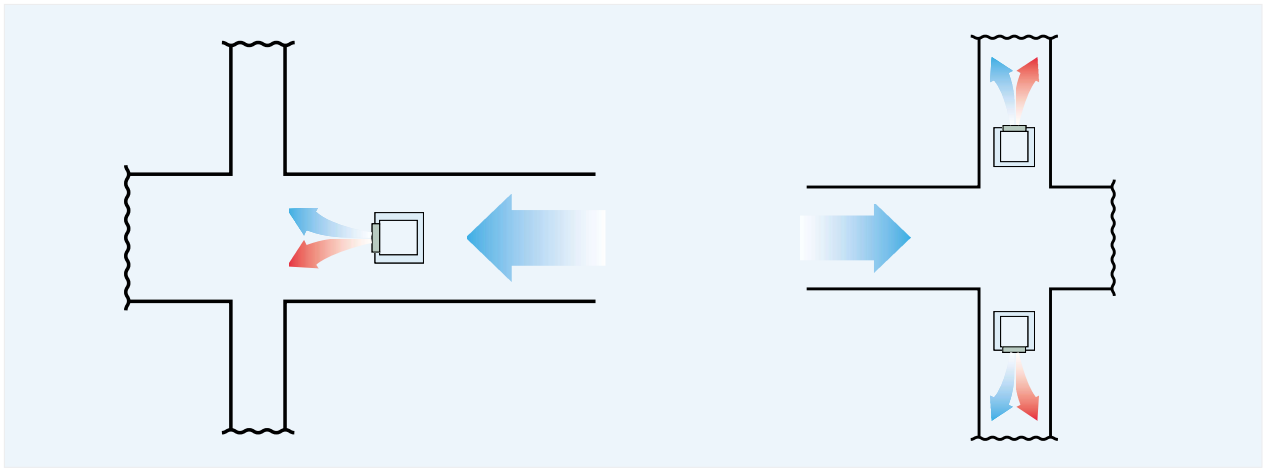
The Sterionizer™ Duct Unit is designed for adding ionizing technology into air ducts and other closed areas with an airflow.

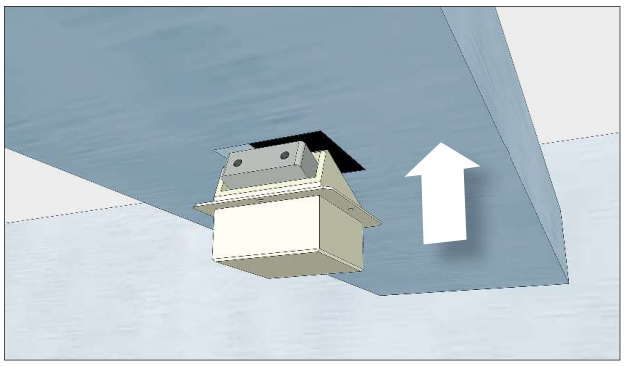
The unit is maintenance free with innovative-patented self-cleaning emitters. In addition, the unit includes a Modbus communication port that can easily be connected to any building management system.

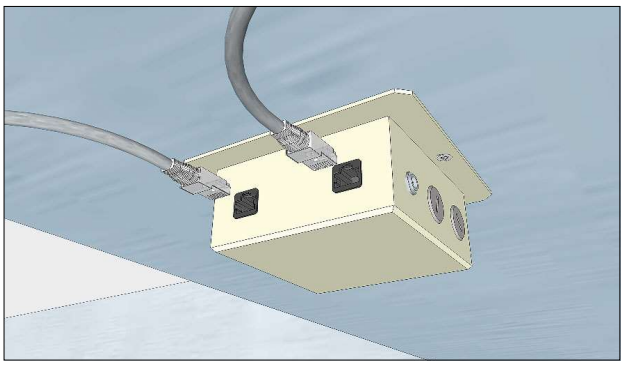
It is easy to install the unit in any duct utilizing the pre-drilled flange and factory applied gasket. When installed at appropriate points, the unit keeps the duct system clean and ensures that the air supplied is ionized.

Duct Unit Technical Specifications	
Product number	**IP2-025V-21**
Room Size	up to 200 m^2
Recommended Air Flow	up to 6000 m^3/h
Min Air Velocity (m/s)	Min. 0.5 m/s
No. of integrated Sterionizers D6	1 Units
Operation Environment	Temp. -10°c - 70°c / RH Min 20% up to 95%
Power Supply	US Version 110 V, 1 Phase, 60 HZ EU Version 230 V, 1 Phase, 50 HZ
Power Consumption	0,5A Connection
Control Network Connection	Modbus, optional
Outside Dimensions	130 mm W x 92 mm H x 130 mm D
Weight	2 kg
Recommended Ion Concentration	1000 to 30000 Ion per cm^3
Recommended distance from the air outlet from a duct System	Max. 15 m

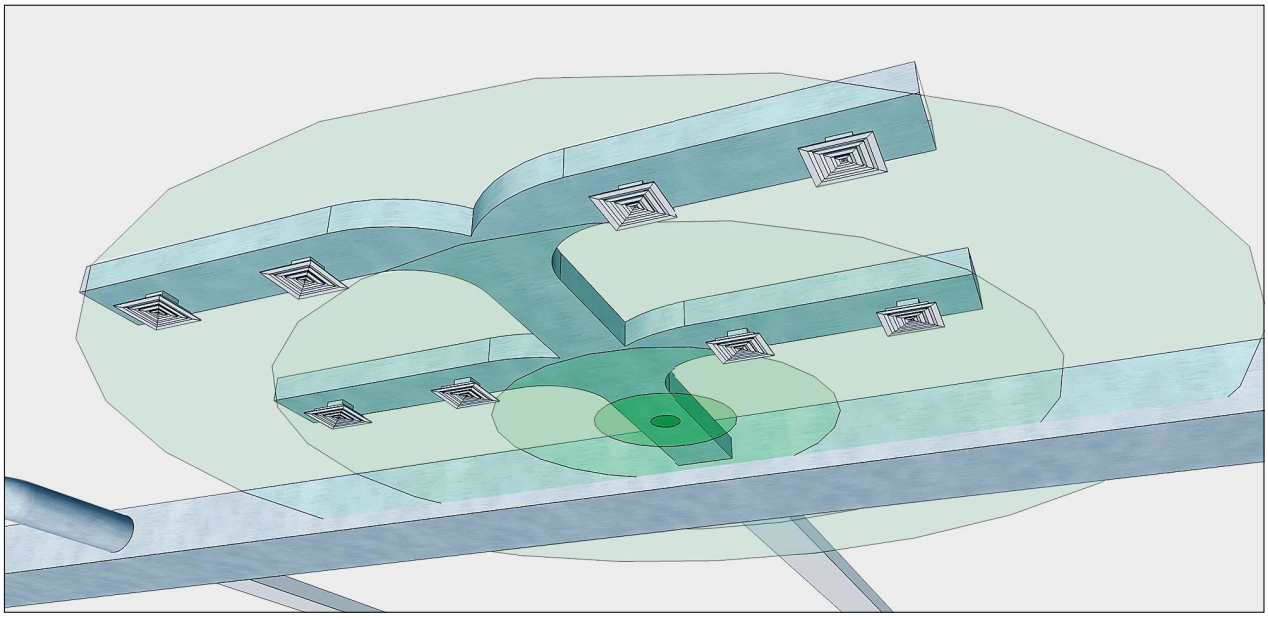
Duct Unit Installation options in ventilation system







The Duct Unit is placed into aan opening made at the ventilation duct



The unit is installed under an airconditioning system

AC (air conditioning) Unit

The Sterionizer™ Duct Unit is designed for adding ionizing technology into air ducts and other closed areas with an air flow.

The unit is maintenance free with innovative patented self-cleaning emitters. In addition, the unit includes a Modbus communication port that can easily be connected to any building management system.

It is easy to install the unit in any duct utilizing the pre-drilled flange and factory applied gasket.

When installed at appropriate points, the unit keeps the duct system clean and ensures that the air supplied is ionized.

AC Unit Specifications	
Product number	**IP8-025V-21**
Room Size	up to 100 m^2
Min Air Velocity (m/s)	Min. 1 m/s
No. of integrated Sterionizers D6	1 Units
Operation Environment	Temp. -10°c - 70°c / RH Min 20% up to 95%
Power Supply	US Version 110 V, 1 Phase, 60 HZ EU Version 230 V, 1 Phase, 50 HZ
Power Consumption	0,5A Connection
Control Network Connection	Modbus, optional
Control System	Siemens, optional
Outside Dimensions	91 mm W x 71 mm H x 51 mm D
Weight	3 kg
Recommended Ion Concentration	1000 to 30000 Ion per cm^3
Recommended distance from the air conditioner outlet	Max. 20 m

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Ion Bar 3

The Sterionizer™ Ion Bar is designed for adding ionizing technology into large air duct installations and other closed areas with an airflow.

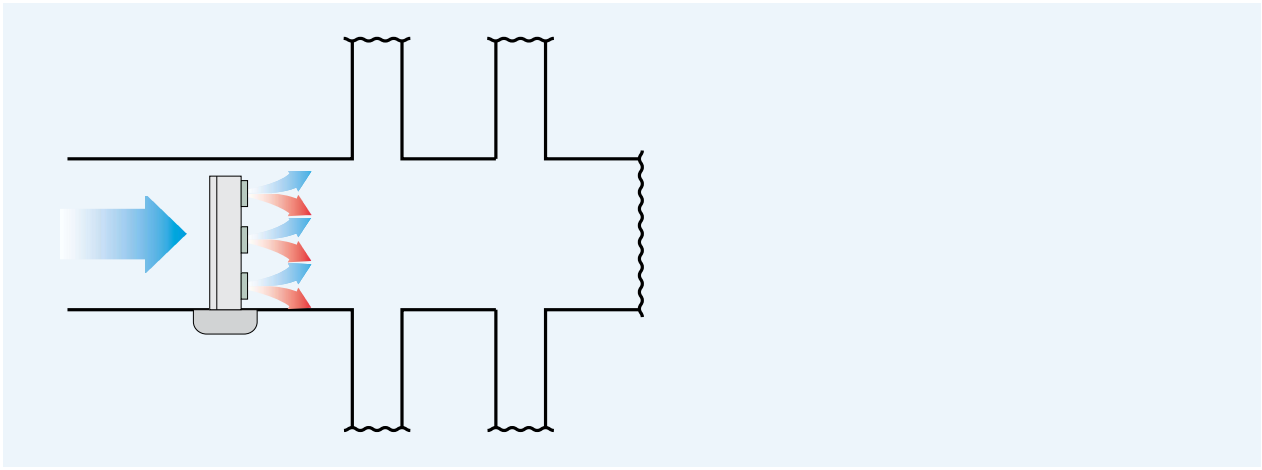
In order to treat air within a closed space, the Sterionizer™ Ion Bar must be located in front of an air outlet.

To keep the air duct or the heat exchanger in the air duct hygienic and germ free, the Ion Bar is installed at appropriate points.

For remote control each Sterionizer™ is equipped with a Modbus interface that can be connected to the Sterionizer™ system software or to a BMS (building management system).

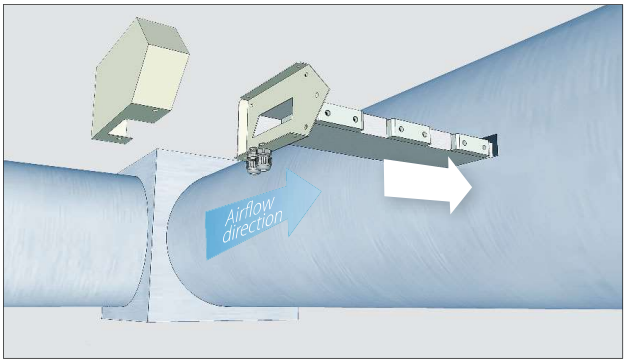
Ion Bar Specifications	
Product number	**IP8-025V-23**
Room Size	up to 200 m^2
Recommended Air Flow	up to 10,000 m^3/h
Min Air Velocity (m/s)	Min. 0.5 m/s
No. of integrated Sterionizers D6	3 Units
Operation Environment	Temp. -10°c - 70°c / RH Min 20% up to 95%
Power Supply	US Version 110 V, 1 Phase, 60 HZ EU Version 230 V, 1 Phase, 50 HZ
Power Consumption	0,5A Connection
Control Network Connection	Modbus, optional
Outside Dimensions	191 mm W x 208 mm H x 425 mm D
Weight	5 kg
Recommended Ion Concentration	1000 to 30000 Ion per cm^3
Recommended distance from the air outlet from a duct System	Max. 30 m

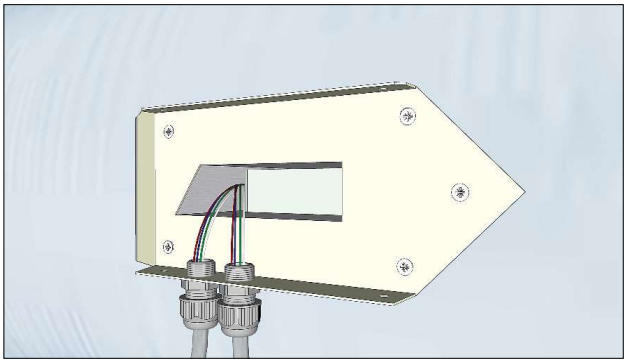
Ion Bar Installation options in ventilation system

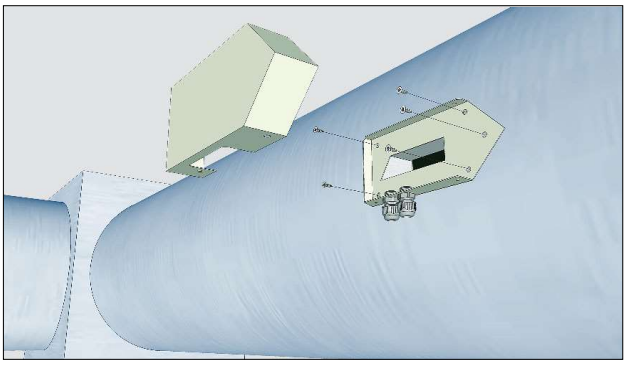


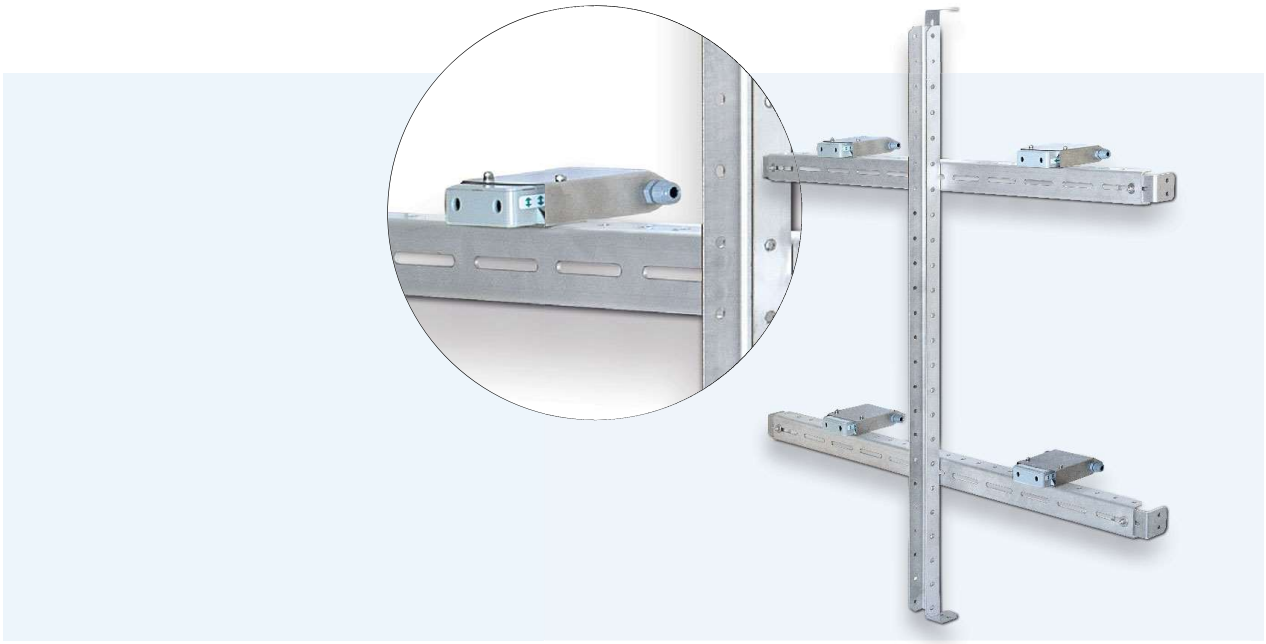
Ion Bar 3 - includes 3 x Sterionizer™ D6 units

Installing Ion Bar in an air duct pipe









Combi Rack

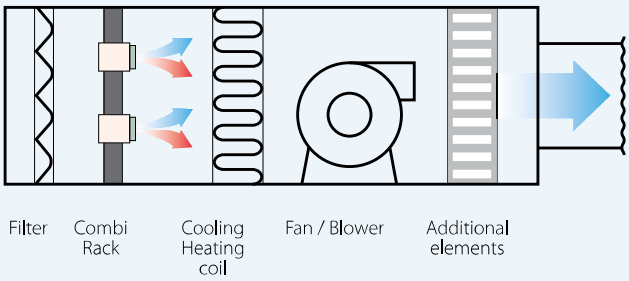
The Sterionizer™ Combi Rack is a modular mounting system for Sterionizer™ units, designed for the placement of Sterionizer™ in Air Handling Units (AHU's) and similar spaces with an airflow.

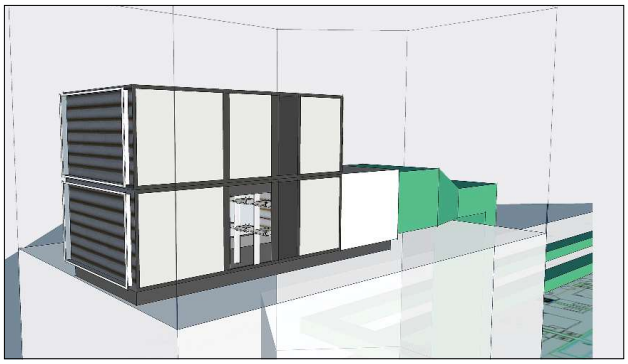
In order to keep heat exchangers and other equipment hygienic and germ free the Sterionizer™ units must be placed at relevant points. Using the modular profiles, it is easy to build an individual structure.

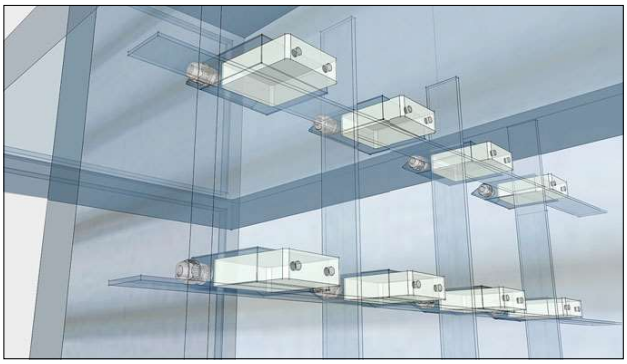
Combi Rack - includes a number of Sterionizer™ D6 units as per customer requirement, starting from 2 units but can be adapted to hold many more.

Combi Rack Specifications	
Product number	????????
Air Flow Rate	up to 50,000 m^3/hour
Min Air Velocity (m/s)	Min. 1 m/s
No. of integrated Sterionizers D6	1-25 Units
Operation Environment	Temp. -10˚c - 70˚c / RH Min 20% up to 95%
Power Supply	US Version 110 V, 1 Phase, 60 HZ EU Version 230 V, 1 Phase, 50 HZ
Power Consumption	0,5A Connection
Control Network Connection	Modbus, optional
Outside Dimensions	according to the HVAC system
Recommended Ion Concentration	1000 to 30000 Ion per cm^3
Recommended distance from the air outlet from a duct System	Max. 20 m

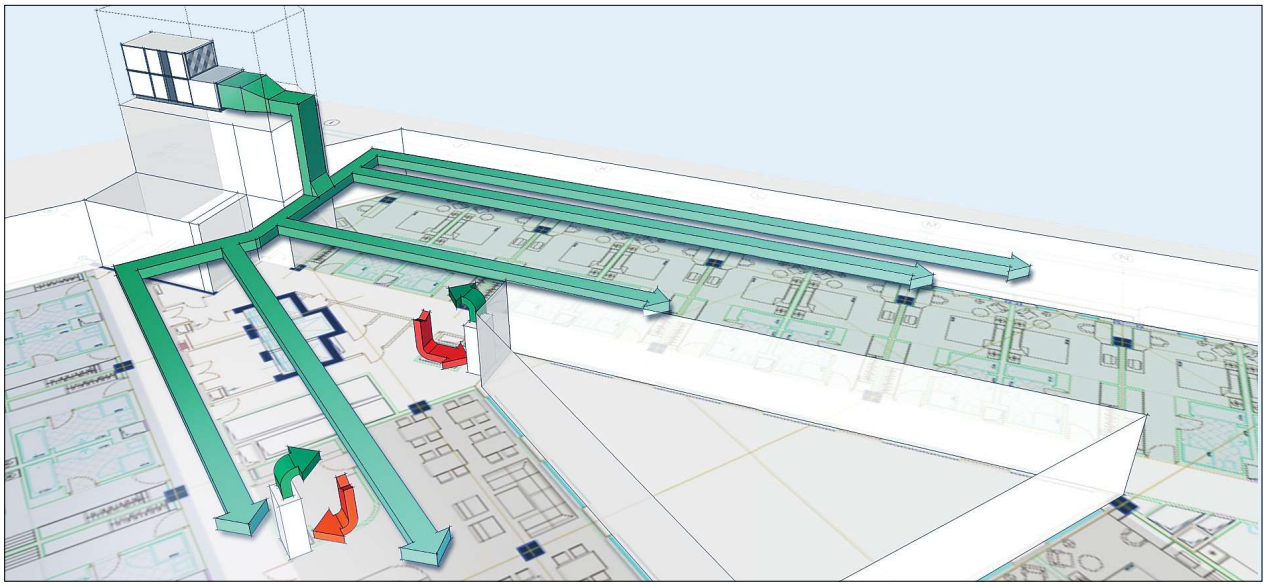
Duct Unit Installation options in ventilation system







Example of assembly within AHU. Usually placed after initial filters in order to keep all components clean and provide ions to the duct system



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Tube Unit

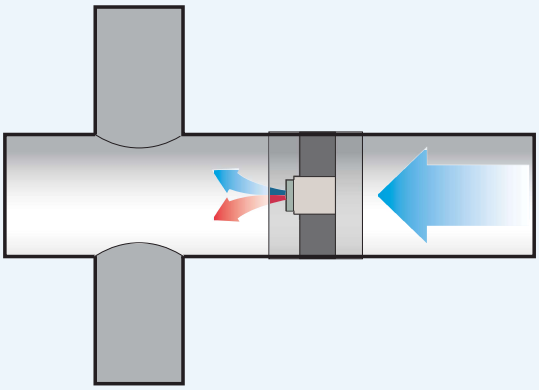
The Sterionizer™ Tube Unit is designed to add ionizing technology into round air duct systems.

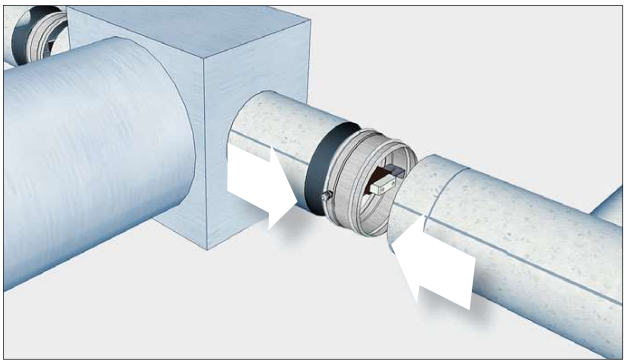
One Sterionizer™ D6 unit is located in the center of the ring and generates ions. The Tube Unit generates ions, distributes them through the airflow and sub-sections then out to the indoor space

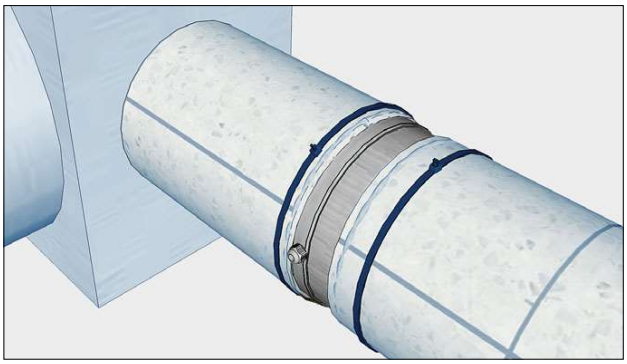
Ring size is customized per order to customer requirments. The tube is made of steinless steel.

AC Unit Specifications	
Product number	??????????
Room Size	up to 250 m^2
Recommended Air Flow	1000 – 3000 m^3/h
Min Air Velocity (m/s)	Min. 1 m/s
No. of integrated Sterionizers D6	1 Units
Operation Environment	Temp. -10˚c - 70˚c / RH Min 20% up to 95%
Power Supply	US Version 110 V, 1 Phase, 60 HZ EU Version 230 V, 1 Phase, 50 HZ
Power Consumption	0,5A Connection
Control Network Connection	Modbus, optional
Control System	Siemens, optional
Outside Diameter Dimensions	200, 250, 300 mm
Recommended Ion Concentration	1000 to 30000 Ion per cm^3
Recommended distance from the air outlet from a duct System	Max. 20 m

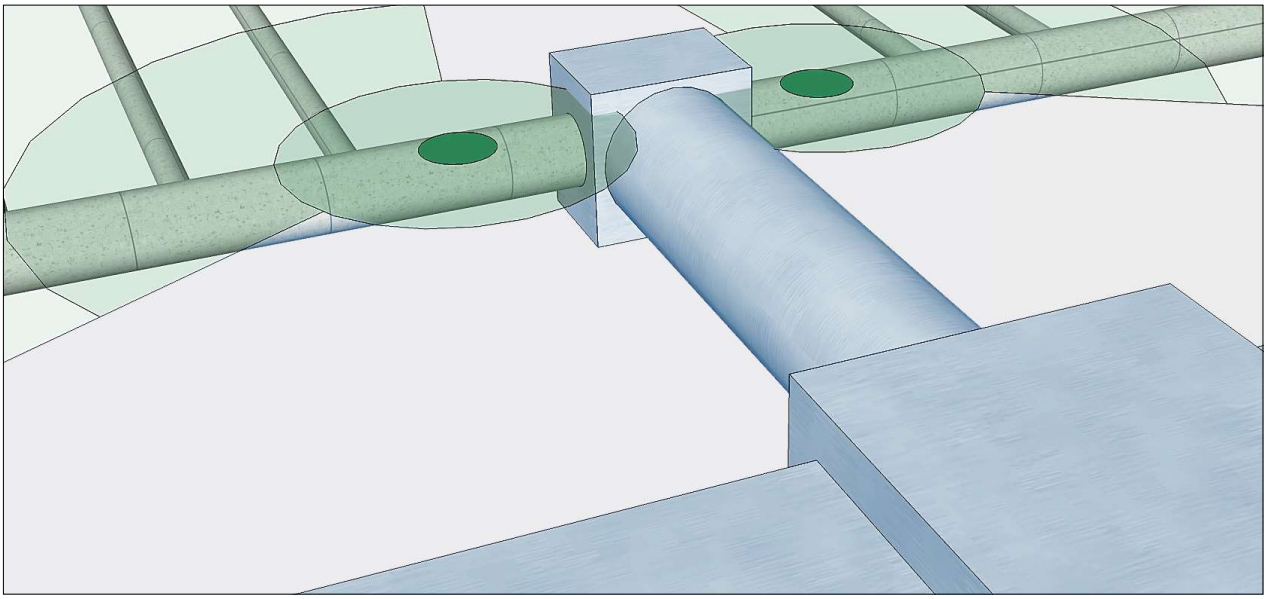
Duct Unit Installation options in ventilation system



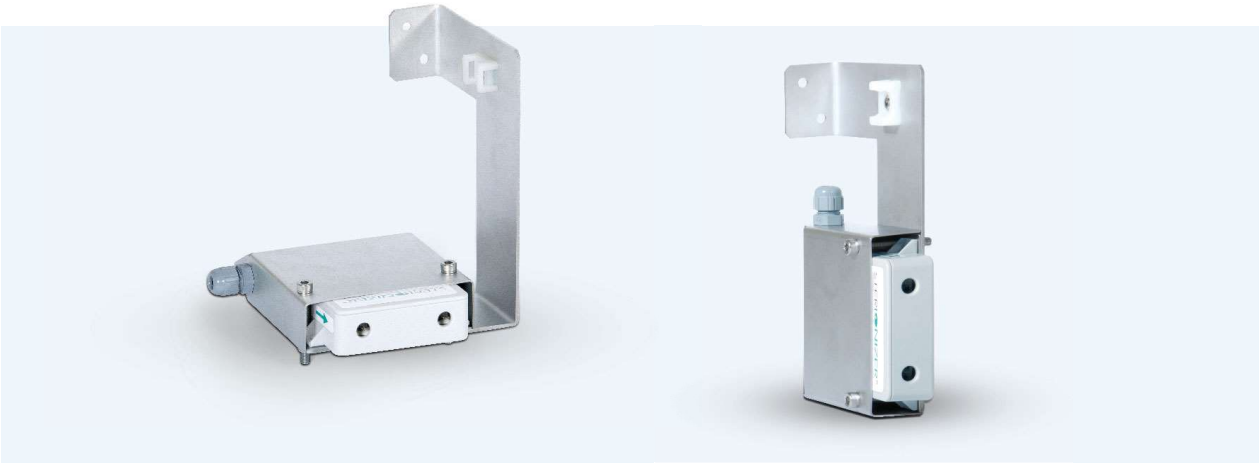




The tube unit unit is placed into the open pipe and then closes within the two tightly attached sides



An example of an installation in a round air duct system. 2 x Tube units are used to create ions in both directions



Mounting bracket

The Mounting bracket unit has been designed to address the assembly of sterinizer systems for all spaces where the air supply system is non-standard and does not allow the assembly of units intended for air ducts or routine air vents.

The unit includes a modular structure that allows it to be installed in ventilation systems located in refrigeration rooms and other industries with the limitation of air conditioning systems. The system ensures relible and consistent conditions that help reduce the presence and to deactive air floating germs and bacteria.

The basic principal is permanent flushing of the area with clean air rienfoced with positive and negative ions.

These charged oxygen molecules O_2+ and O_2- have high chemical activity and when Reacting with water molecules in the air, OH radicals and H_2O_2 (Hydrogen Peroxide) are formed. this reaction break down the protein structure of pollutants, rendering them harmless. This process enables halting and controling the growth of microbes and bacteria in aparticular area.

Mounting Bracket Specifications	
Product number:	**IP5-025V-212**
Room Size	up to 150 m^2
Min Air Velocity (m/s)	Min. 0.5 m/s
No. of integrated Sterionizers D6	1 Units
Operation Environment	Temp. -10˚c - 70˚c / RH Min 20% up to 95%
Power Supply	US Version 110 V, 1 Phase, 60 HZ EU Version 230 V, 1 Phase, 50 HZ
Power Consumption	0,5A Connection
Control Network Connection	Modbus, optional
Outside Dimensions	? mm W x ?mm H x ? mm D
Weight	2 kg
Recommended Ion Concentration	1000 to 30000 Ion per cm^3
Recommended distance from the air outlet from a duct System	Max. 20 cm

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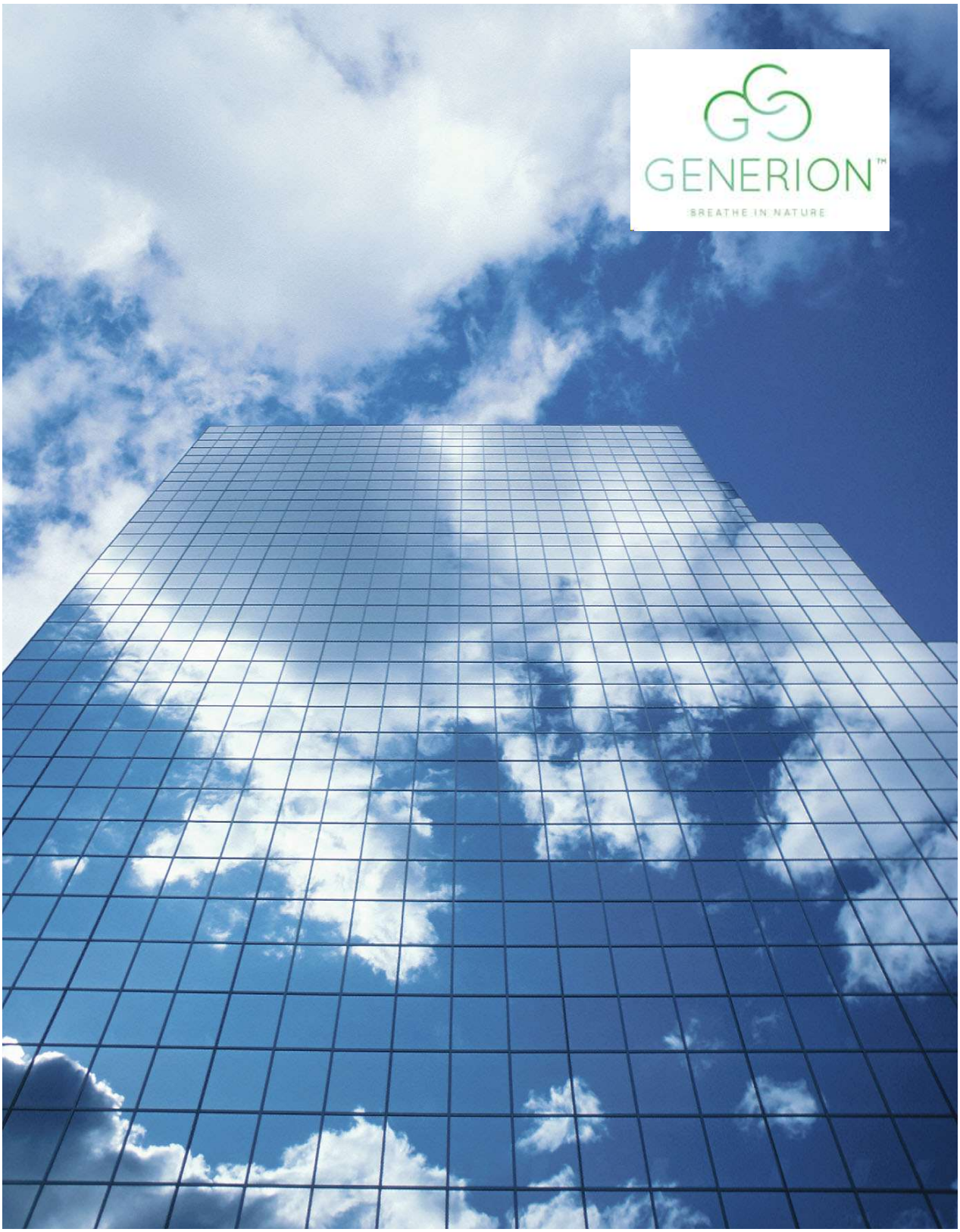

Carefully selected materials, combined with quality engineering and workmanship, guarantee excellent performance, long lifetime, and long standing quality.

The products are designed, manufactured, and tested in accordance with established international standards.

Research & Development:

In order to grow continuously with our customer's demands, our R&D department stays up-to-date with the latest standards of technological advancement. In recent years, an intense process of standardization, testing methods, and classification of systems have been developed for all types of filters.

To guarantee that our filters meet the requirements of these standards, in terms of quality and effectiveness, we send our filters to independent laboratories that work in accordance with international standards of test procedures.

Our research and development aims to produce products that are economically efficient, with low capital expenditures and minimal operating costs.

Creating an environment-friendly process is a high priority. In developing our products, we actively seek innovative ways to ensure the protection of the environment.

Sales:

The close cooperation between the customer, sales and development (R&D) departments makes it easy to meet the specific demands of each standard and the market, without undue time delay.

Our experienced personnel will guide you through the labyrinth of different filtration systems, whether choosing the right filter type or designing your system based on the requirements of your applications.

We know that the optimum clean air solution is reached, only when it is adapted to each individual case.