Bringing clean air to life

High Purity Filtration Solutions

Self-Contained HEPA Filtration Units

AstroPure 2000 - Self-Contained Recirculation and Negative Pressure Units for areas where additional, extra high, filtration performance is needed.

AstroPure

AIR PURIFICATION SYSTEM

Product description

AstroPure is a totally self-contained stand-alone Recirculation Unit for areas where additional, extra high, filtration performance is needed against any type of contamination including viruses.

AstroPure, which can also be used as a Negative Pressure Unit, combines state-of-the-art HEPA filtration with optionally available UV germicidal irradiation (UVGI) to create total clean air solutions fulfilling all relevant guidelines such as the VDI 6022. Thanks to the insulated double-wall constructions leading to whisper-quiet operation, it is ideally suitable for indoor use in for example offices, schools, health care facilities or hotel lobbies, just to name a few. When properly sheltered outdoor use with duct connection is also possible.

AstroPure is available in two expansion stages that provide air flow rates from 2.000 m^3/h. Together with the ability to take various filter combinations and variance of optional features, AstroPure provides herewith highest flexibility to meet all customer-specific requirements at point of use.

The unit contains a high performance encapsulated AAF optimized direct driven backward curved EC fan/motor combination with variable speed and control options with CE compliance.

Plug & Play Design

To allow economical and easy installation AstroPure is designed as a Plug & Play unit hence no modifications required at your premises. Simply install the selected air filters and dispose it when no longer effective.

Maintaining the unit is as easy as the installation itself. The sliding tray design provides easy access to and servicing of the fan. The easy to access instrument panel provides easy access and servicing of gauges, disconnect, and speed control.

Features & Benefits

- Suitable for in-room use or sheltered outdoor installation
- Combines HEPA filters and optional UV germicidal irradiation (UVGI)
- Designed with internal variable speed fan (electronically commutated) and filter combinations to meet specific application requirements
- Insulated double-wall construction provides whisper-quiet operation
- Easy installation, operation, and maintenance in a totally self-contained system
- Sliding tray design provides easy access and servicing of filters
- CE-compliance, VDI 6022 guided design

Applications

Schools and Universities

Commercial Buildings

Healthcare

Hospitality

Shops and Shopping malls

Technical data

Unit dimensions

Type	Design air flow rate	Dimensions (WxLxH)	Air inlet / outlet*	Unit weight*
	m^3/h	mm	m	Kg
AstroPure 2000	2000	770x720x1628*	OD250 / 300x200	150*
			*depending on execution	

Filter configuration

	Pre-filter dimensions	Nominal flow rate	HEPA filter dimensions	Nominal flow rate	UV-C lamp Details
	mm	m^3/h	mm	m^3/h	
AstroPure 2000	592x592x45	3400	610x610x292	3400	450xOD26mm G13

Power consumption and performance details

Type	Fan	SPL / dB	UV-Irradiation unit / W
AstroPure 2000	0,5 KW 1PH 230V 50 / 60Hz	35-52	25

Highly Adaptable

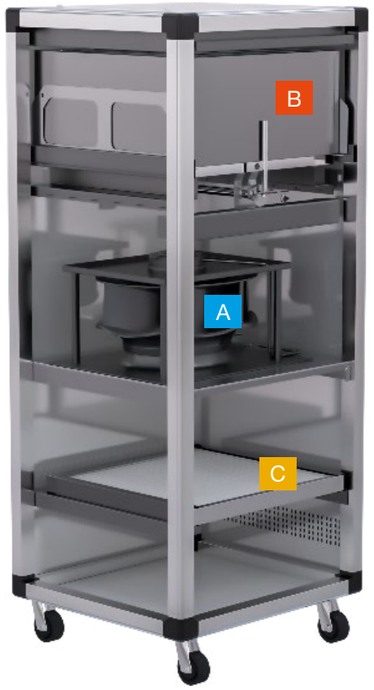
AVAILABLE AS RECIRCULATION OR NEGATIVE PRESSURE UNIT

Clean Air supply options

AstroPure is used to draw out the indoor contaminated air in a room, the contaminated air passes the HEPA filter before releasing it to the outside environment.
Negative pressure from a room prevents the spread of virus to other rooms, areas and environment.
Highly recommended to improve IAQ by recirculating indoor air and providing occupants with better health and comfort.

- A Fan / Motor Unit
- B HEPA Filter
- C Prefilter
- D Control panel providing indication for filter change, speed control and on/off switch
- E Air outlet grill
- F UV lamp
- G 4-Wheel foundation

In its standard configuration AstroPure is delivered with a galvanized steel finish. Optionally the unit is also available with powder coated finish (any RAL) for a smooth integration into any room environment.



Unit control options

On the front side AstroPure is as a standard equipped with control lights to indicate necessary changes of the pre- or the HEPA filter. Switching the unit on and off as well as the speed control is done via integrated knobs. s an option AstroPure can be delivered with a fully digital LCD Display, which then replaces indicator lights and control knobs.

Fan/motor combination

AstroPure contains a high performance encapsulated, direct driven, backward curved fan/motor combination. The specialized electronic commutation motor design permits variable speed control via Potentiometer. The complete section is mounted on a sliding tray providing easy access to service the fan.

Standard Configurations

Construction	Insulated double-wall construction
Power supply	Single-phase 200-277 VAC, 50/60 Hz
Recommended operational airflow	2.000 m^3/h
Fan type	EC centrifugal fan, backward-curved, single-intake
Prefilter	RedPleat, ISO coarse 70%, card board frame (ISO16890)
Main filter	MEGAcel I H14 HEPA membrane filter, metal frame (EN 1822) AstroCel III H14 HEPA filter, metal frame (EN1822)
Air inlet	Inlet grilles or inlet duct
Air outlet	Outlet grilles or outlet duct (circular / rectangular)
Deployment	4x castor rolls for easy maneuverability
Allowed operating conditions	0 – 50° C, H0 dry environment, ambient air ≤ 95% rH

Note: Definite recommendation on prefilter and main filter needs to be done case by case depending on local conditions.

Prefilter options

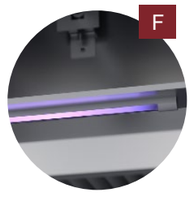
In its standard configuration AstroPure is equipped with an RedPleat ISO coarse 70% prefilter. As an option the unit can also be equipped with RedPleat Carb, an ISO coarse 65% Prefilter including active carbon media able to additionally control unpleasant odors in the room.

Air supply options

When operated as a Recirculation Unit, AstroPure releases the cleaned air via a perforated outlet grill on the top side of the unit into the room. Optionally, the air outlet can be designed so that the AstroPure unit can be connected to ventilation ducts.

Easy filter installation and maintenance

The unique design of the clamping system is designed to take various AAF pre and main filters and hereby ensures easy installations and filter maintenance and dispose when no longer effective. The complete servicing is done from the back-side.



Optional UV lamp

Intelligently engineered to kill pathogens while maintaining higher filtration performance. The optional available fluorescent UV-C irradiation unit radiates 255 nm germicidal wavelength which prevents the Ozon production that is responsible for faster degradation of filters while keeping the appropriate range to kill bacteria and viruses. Installing UV lamp will provide wider germicidal coverage without affecting the filtration efficiency.

Filter Recommendations

PROVIDING HIGH-EFFICIENCY 2-STAGE FILTRATION

Prefilters

The Standard installation includes an ISO Coarse 70% pre-filter providing the lowest possible total cost of ownership with lower resistance, longer filter life and protection of the installed HEPA filter.

RedPleat

- ISO 16890: ISO coarse 70%
- Low pressure drop
- High dustholding capacity (DHC)
- Available with Antimicrobial treated media (RedPleat ULTRA)

RedPleat Carb

- ISO 16890: ISO coarse 65%
- Low pressure drop
- High dustholding capacity (DHC)
- Effectively removes offensive odors

Main filters

The HEPA filter features eFRM filtration media which combines ultra-high efficiency and particulate loading to remove 99.99% of dust, pollen, mold, bacteria, viruses, and any airborne particle with a size of 0.3 microns or greater.

MEGAcel® I eFRM

- H14 filtration efficiency according EN 1822
- eFRM media combines ultra-high efficiency with the lowest possible pressure drop
- Highly resistant to corrosive environments (acids, alkalis, and organic substances)
- No boron outgassing
- Compatible with Discrete Particle Counter (DPC) test methods

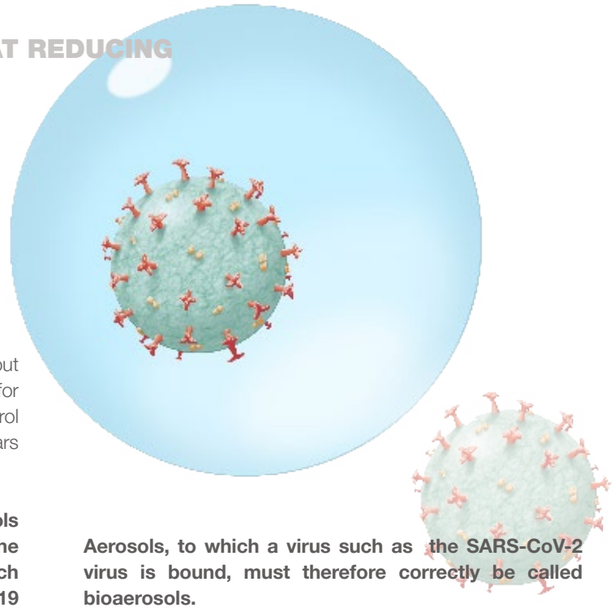
AstroCel® III

- H14 filtration efficiency according EN 1822
- V-shaped filter configuration, combined with microglass media, delivers higher flow and the lowest possible pressure drop vs traditional box style HEPA filters
- Utilizes high performance microglass media to provide high efficiency particulate removal
- Compatible with Discrete Particle Counter (DPC) and photometric test methods as access and instrumentation allow

Note: Definite recommendation on prefilter and main filter needs to be done case by case depending on local conditions.

Efficient Controls of Aerosols*

AAF FILTERS PROOVE EFFECTIVE AT REDUCING AIRBORNE VIRAL CARRIERS



According to the latest scientific report from the World Health Organization on the transmission of SARS-CoV-2, there is overwhelming evidence that aerosols play an important, if not decisive, role in the spread of the SARS-CoV-2 virus.

In general, quite apart from the ubiquitous discussion about the SARS-CoV-2 virus, air filters are the method of choice for the efficient removal of viruses due to their ability to control aerosol levels in the air. This has been researched for years and has been proven by numerous studies.

The Conclusion: The control or containment of aerosols by means of efficient filtration is synonymous with the containment of the viral load in the air, which consequently leads to a reduced risk of COVID19 infections.

This paper is intended to contribute to a better understanding of aerosols and their properties, as well as providing explanations that show, that the right filter-choice is crucial for reducing the risk of infection due to virus-laden air.

Characteristics of Aerosols

Generally an aerosol is defined as a suspension system of solid or liquid particles in a gas. An aerosol includes both the particles and the suspending gas, which is usually air. Aerosols are typically classified according to their physical form and how they were generated. Fume, mist, smoke, smog, diesel soot or fog are typical examples.

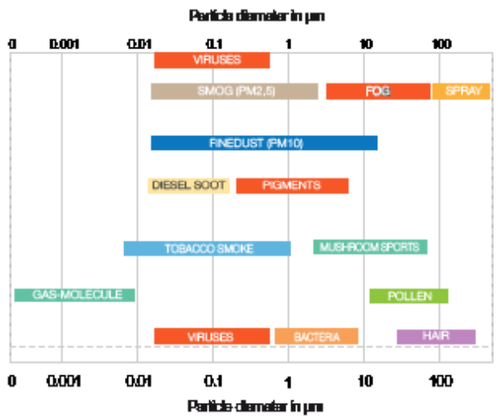
The diameter of aerosol particles is in the order of magnitude between 0,01 µm and 10 µm. Particle size is often determined by the process that generated the particle. For example combustion particles usually start out in the 0,01-0,05 µm size range, but are likely to combine with each other (agglomerate) to form larger particles. Individual aerosol particles are therefore not visible to the naked eye. A quantity of aerosol particles in air is only visible, depending on the particle size, from concentrations of 10.000 to 100.000 particles per cubic centimeter. All accumulations of aerosols in the air to which fungi, bacteria, pollen or viruses adhere are called bioaerosols.

Aerosols, to which a virus such as the SARS-CoV-2 virus is bound, must therefore correctly be called bioaerosols.

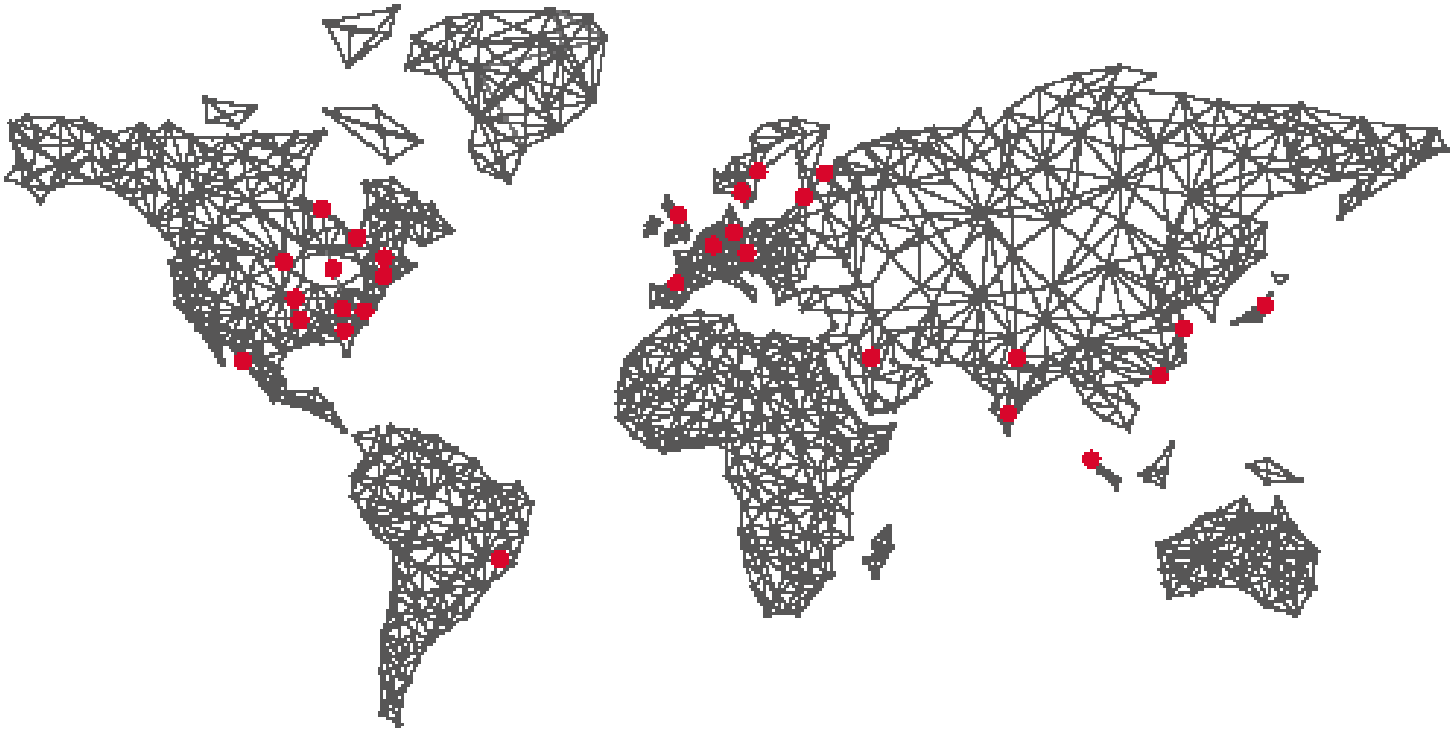
The connection between Aerosols and Viruses

How exactly the corona virus is spread - whether primarily via a droplet infection or rather via aerosols in the air we breathe is currently intensively researched. When a corona patient coughs, speaks, or sneezes, a jet of droplets and aerosols of different sizes is created, which then penetrates the room air. All of these different sized droplets and aerosols potentially contain viruses, because viruses tend to stick to larger particles.

Graphic 1: Size comparison of solid and gaseous substances in the ambient air



***Contact AAF to get the complete publication on how to reduce airborne viral carrieres in your building.**



AAF International Plant Locations

AAF, the world's largest manufacturer of air filtration solutions, operates production, warehousing and distribution facilities in 22 countries across four continents. With its global headquarters in Louisville, Kentucky, AAF is committed to protecting people, processes and systems through the development and manufacturing of the highest quality air filters, filtration equipment, and associated housing and hardware available today.

Contact your local AAF representative for a complete list of AAF Air Filtration Product Solutions.

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Bringing clean air to life

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