

- BEYOND Guardian Air goes beyond traditional purification systems

BEYOND, HARMLESS FOR PEOPLE, LETHAL FOR VIRUSES AND BACTERIA

We live 90% of our lives indoors, where pollutant levels can be about 5 times higher than outdoor ones, due to bacteria, viruses, dust, mold, fungi, pollen, gases, chemicals, smoke ...

To protect astronauts inside vehicles and the International Space Station, NASA has developed a system based on technology capable decontaminating the air and surfaces.

Subsequently, the American company Aerus transferred and patented this technology for terrestrial and domestic uses from which Beyond Guardian Air was born, a medical device registered at the Ministry of Health with identification code 1614154 and compliant with European directives 93/42 / EEC, 2007 / 147 | CE. 2006/42 / EC, 2014/35 / UE, 2014/35 / UE, 2011/65 / EC, 2012/19 / UE, 2001/95 / EC.



BEYOND Guardian Air thanks to its Active Pure technology, protects your air and surfaces 24/7; just insert the plug and turn it on, it destroys volatile organic compounds, fungi, viruses, bacteria, smoke and bad smells, WITHOUT USING OZONE.

Active Pure technology is the only one to have been awarded the CERTIFIED SPACE TECHNOLOGY certification by the Space Foundation; the Space Certification Program was created in collaboration with NASA.

BEYOND Guardian Air is distributed in Italy by Vitha Group Spa.

## Advantages

-Eliminates the most common factors that cause allergies, asthma and irritation for those who have a particular sensitivity of the immune system

- It's portable, requires no installation

-Eliminates VOCs, Viruses, Bacteria, Allergens, Micro-dust, Pollen, Fungi, Mold, smoke and odours without the use of ozone

-ActivePure is the only purification technology exclusively recognised, globally and certified by Space Technology

-Five-year warranty (based on the terms and conditions)

-Acts 24/7

## How it works

Uses ActivePure technology for ultra-pure air quality and attacks contaminants on surfaces

Ten unique features including technologies capable of capturing 99.97% of particles of 0.1 micron in size.

## Client type

-Perfect for home, office and business owners who want premium indoor air protection

-Medical facilities, nursing homes, schools or any facility where indoor air is of particular importance

-People who need a better night's rest.

## • BEYOND: THE MOST EFFECTIVE SOLUTION FOR LIVING IN A HEALTHY ENVIRONMENT

Beyond Guardian Air is a high-end medical sanitation device that incorporates five air treatment technologies for greater efficiency:

- Activated Carbon Filter,
- Enhanced HEPA Filter,
- Ion generator,
- UVC Germicidal lamp,
- ActivePure® technology,

Compared to traditional and more common "passive" air sanitisers with HEPA filters, thanks to its ActivePure® technology BEYOND is able to "actively" decontaminate the air and surfaces, not simply by filtering but destroying allergens, fine dust, toxic substances and infectious agents responsible for bacterial and / or viral infections.

BEYOND is the size of a PC, is quiet and uses very little electricity, emphasised by its Energy Star certification. Just plug it in and turn it on to enjoy its benefits after just a few minutes.

One device can cover an area up to 185m<sup>2</sup>.

BEYOND Guardian Air has been inducted into the prestigious Space Technology Hall of Fame which annually rewards technological innovations that truly improve the quality of life.

### HOW DOES THE DECONTAMINATION PROCESS WORK?

The whole process of active decontamination is carried out without producing ozone and without the introduction of any chemical element into the system from the outside, but by exploiting the humidity in the air for the generation of ROS (superoxide, hydroxyl radical and hydrogen peroxide), ie oxidising molecules that attack and decompose bacteria, viruses, mold and various microorganisms, thus exerting a powerful biocidal action.

Beyond Processes up to 410 m<sup>3</sup> / h of indoor air in different phases. First, the air is filtered with HEPA filters that retain 99.9% of micro particles down to 0.1 micron and is then treated with a TiO<sub>2</sub> photocatalysis process with UVC light with reduced Band-Gap.

The air returned to the environment is rich in ROS radicals: superoxide, hydrogen peroxide, hydroxyl radical. The disinfection of the air at UVC in photocatalysis occurs by chemical reaction by a semiconductor: titanium dioxide TiO<sub>2</sub>, which is activated by UVC light radiation. When exposed to UVC radiation, titanium dioxide absorbs and converts part of the light energy into electrons and electron holes. TiO<sub>2</sub> reacts with the water present in the humidity of the air and creates OH<sup>-</sup> hydroxyls while reacting with O<sub>2</sub> it creates superoxide anions O<sub>2</sub><sup>-</sup>. In billionths of a second, billions of these highly oxidising species are produced and have the function of disintegrating organic matter at the molecular level.

The biocidal action is therefore generated by the formation of electron-hole couples which oxidise, decomposing or damaging the structure of the pathogenic microorganisms. The air released into the environment is enriched with these oxidising radicals OH and superoxide O<sub>2</sub> radicals which by oxidising the organic compounds further reduce the load and viral, bacterial and fungal UFC.

The objective of installing these devices was to build a protected environment around critically ill patients, reducing the risk of exogenous HAI infections by reducing the bacterial / fungal load in the hospital area and reducing the risk of exposure to microorganisms carried in the indoor air.