

*Green Technology*

**ARPACK**<sup>®</sup> *AirClean* **AC600**  
MADE IN GERMANY

Sustainable air hygiene management with  
ARTAQUA Air Clean devices



# ARTAQUA partner ARPACK Group since 1992



## **Arpack GmbH**

Askanischer Platz 4,  
10963 Berlin

Distribution and service for  
Air-Desinfection devices,  
marketing, logistics, conceptions



## **Mark Arinstein Maschinen u. Anlagen GmbH**

Gewerbestraße 5a,  
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Research and construction  
of Air-desinfection devices



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Osiedle Przemyslowe 10A,  
69-100 Slubice

Manufacturing  
of Air-desinfection devices

# Arpack Air Clean AC 600

The ARPACK Air Clean AC 600 is an air purification device designed for purification and reduction of viral, microbial and other micro particulate contamination. It can be used in medical institutions, residential households, industrial premises and indoor workplaces with regulated amounts of allowed impurities, where air purification must be carried out in the presence of people.

The Air Clean AC 600 is designed for efficient molecular purification of air from miniscule organic pollutants, bacteria viruses, fungi and mold spores in poorly ventilated rooms. Purification of air from organic impurities (including pathogenic microflora) occurs through their oxidation on the photo catalytic filtering element, as a result of which such impurities are completely decomposed into trace amounts of water vapor and carbon dioxide.



# ARPACK – AIR Clean

## DESIGN FEATURES

The case of the device is made of sheet steel and painted with powder paint. Inside the device are two F5-F7 dust per-filters, and six photo-catalytic filters made using a patented process of sintering porous quartz glass micro beads with a nanocoating of titanium dioxide, each with a separate no-ozone UV-A LED arrays (315-400nm range). The service life of photo-catalytic filters is equal to the service life of the device as a whole. Movement of air through the air purifier occurs using a high-power centrifuge fan, controlled by a separate speed selector button on the front of the device.



# ARPACK – AIR Clean

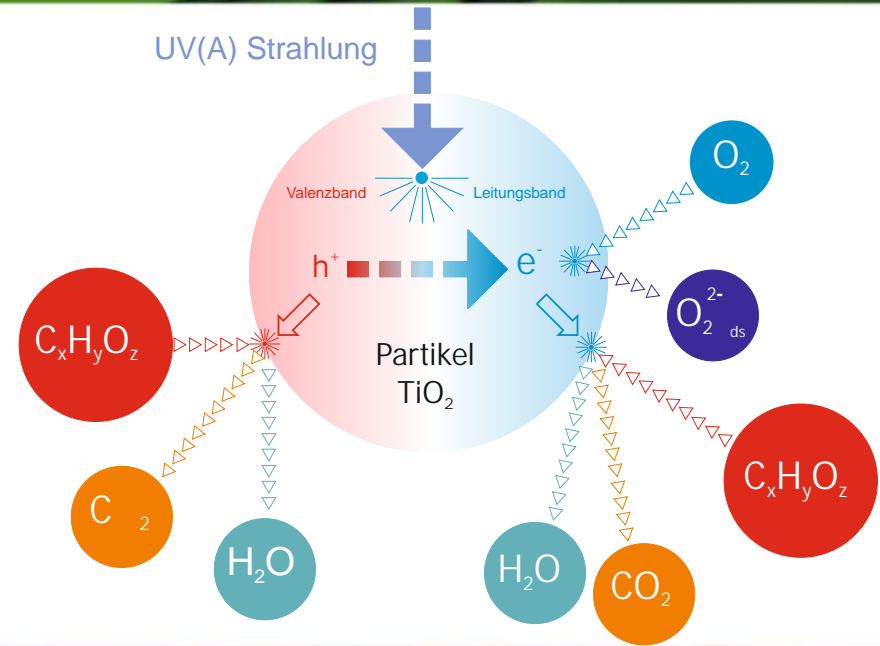
## TECHNICAL DATA

Parameters	Values
Air purification efficiency, up to, m <sup>3</sup> /hour	600
Recommended maximum room size, sq. m.	40
Noise level, max., dB	45
Ozon evolution	No
Conformity	VDI 6022
Ambient temperature, °C	10 - 35
relative humidity up to, %	85
Dimensions, width x depth x height, mm	1038mm x 438mm x 1200mm
Total weight, kgs	150

# Principles of operation

The basis of the Arpack Air Clean cleaning technology consists in the photocatalytic mineralization of microflora and volatile organic compounds, which on a working filter made of nano-crystalline titanium dioxide volatile organic compounds under the influence of "soft" UV-A radiation (315 nm - 405 nm) are treated.

As a result of the mineralization, mainly to carbon dioxide and water, an accumulation of organic pollutants on the filter does not occur.

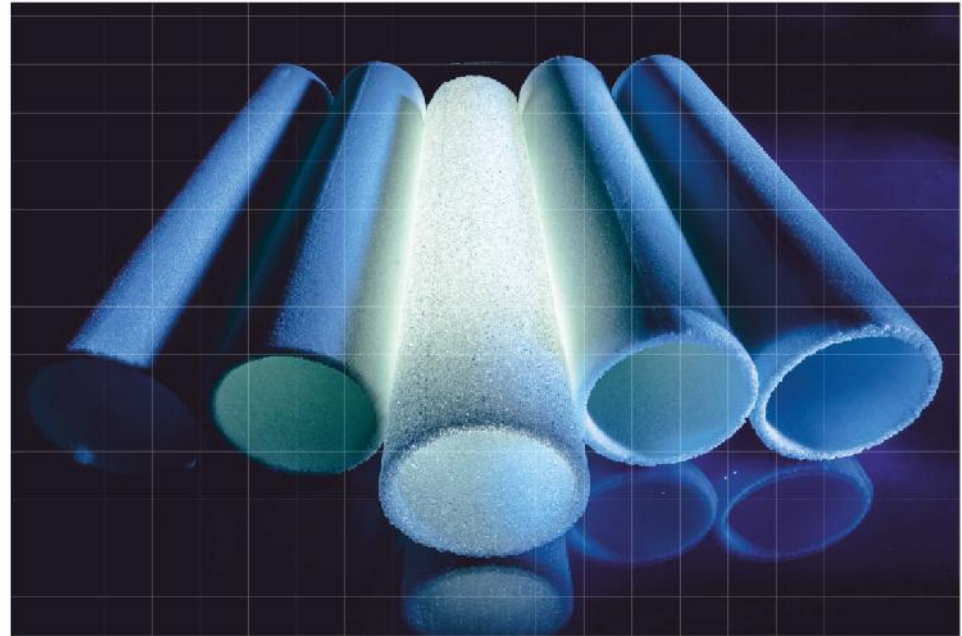


# Photocatalysis Carrier - Fundamentals of Technology

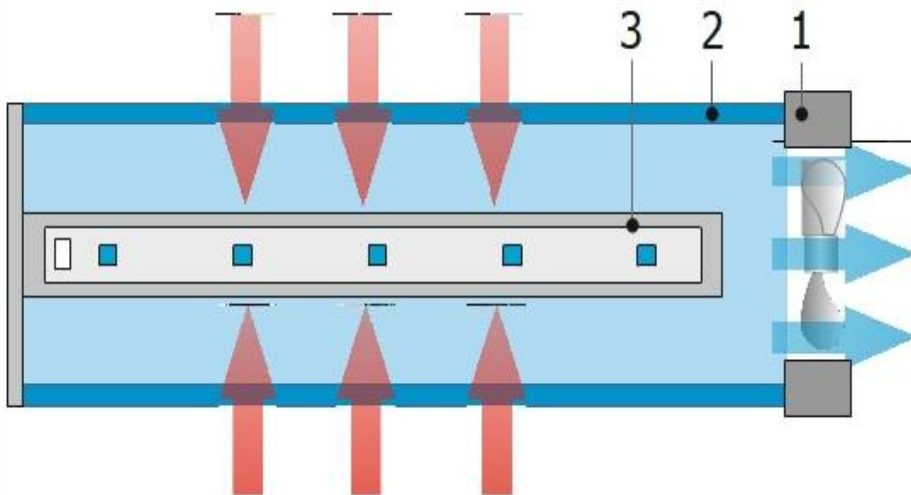
The technology is based on the use of photocatalyst supports made of porous quartz glass, which make it possible to combine mechanical filtration, adsorption and photocatalysis.

The carrier itself is inactive with regard to the action of the photo-catalyst, produces good adhesion and guarantees good air flow.

It has structural strength and a shape that allows UV-A radiation to spread.



# Process scheme



The Arpack Air Clean air purification device consists of a blow-through photocatalytic glass element and a UV-A (315 - 405 nm) radiation source.

The air flow of the cleaned air is generated by a fan (1) and takes place through the porous wall (2) of the photocatalytic glass element.

Pollutants such as bacteria, viruses, molds and molecular air pollutants are adsorbed on the surface of the photocatalytic element and mineralized by the action of the UV-A radiation source (3).

# Photocatalytic Air Disinfection Device ARPACK

At present, devices are used for various areas of application in a range of services from 100 to 10,000 m<sup>3</sup> / h.



The devices remove all types of pathogenic microflora, viruses, molds, odors and allergens without them building up inside the devices. By using LED UV-A radiation sources, maintenance intervals of 5 - 7 years can be observed.

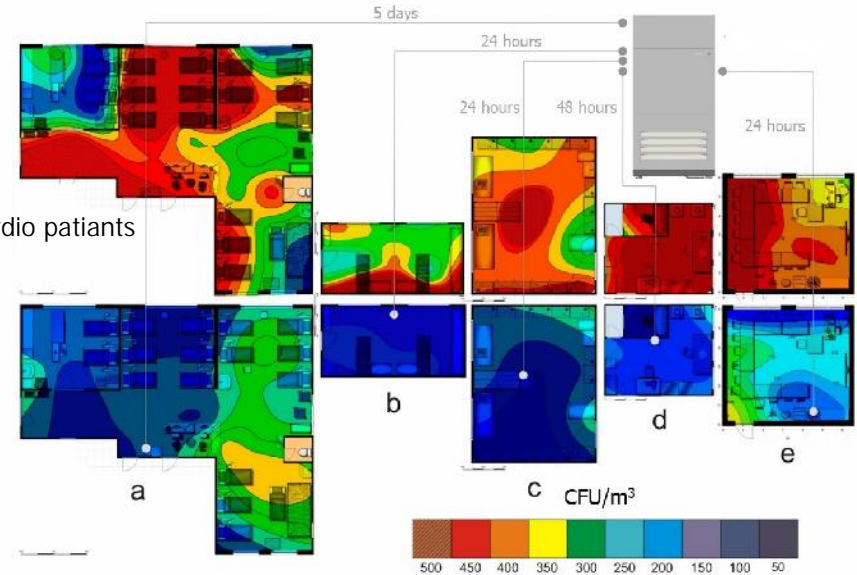
# Test results

To test the capabilities of the Arpack Air Clean devices, a graphical method was used to visualize the measurement results.

The Colony Forming Units (CFU) were mapped using the Shepard method with the construction of a spatial interpolation grid.

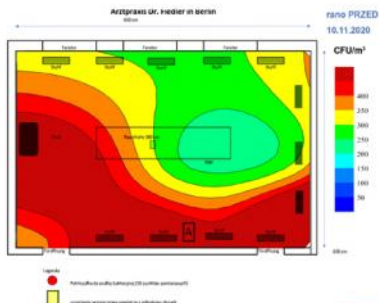
With this method, the changes in the microbiological situation in the entire room before and after the use of Arpack Air Clean can be visually displayed.

- a – Reanimation room of cardio patients
- b – Surgical room
- c – Locker room
- d – Laboratory
- e – Classroom



# Test results

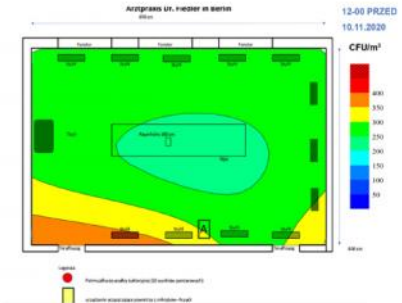
Dr. med Sven Georgi & Dr.med Thomas Fiedler - Visitors Room



mold and fungi



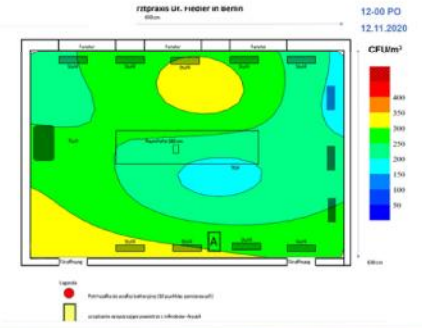
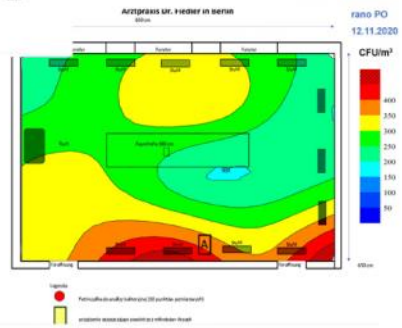
after 24 hours



bacteria and virus

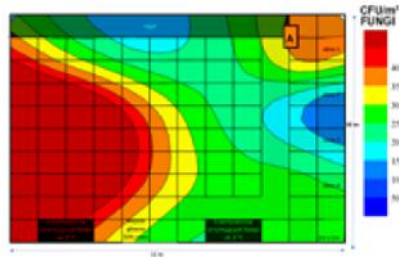


after 24 hours



# Test results

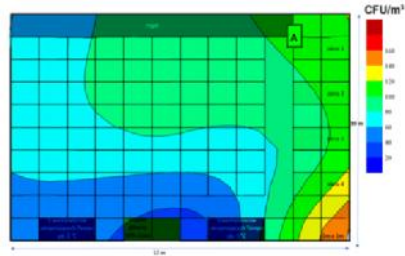
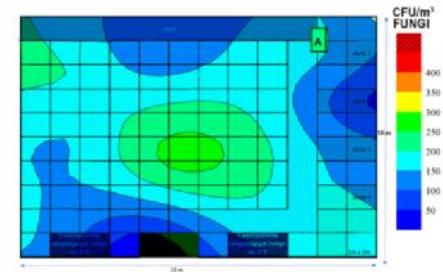
## Sausage factory in Poland



mold and fungi



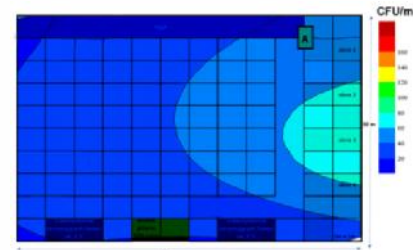
after 24 hours



bacteria and virus

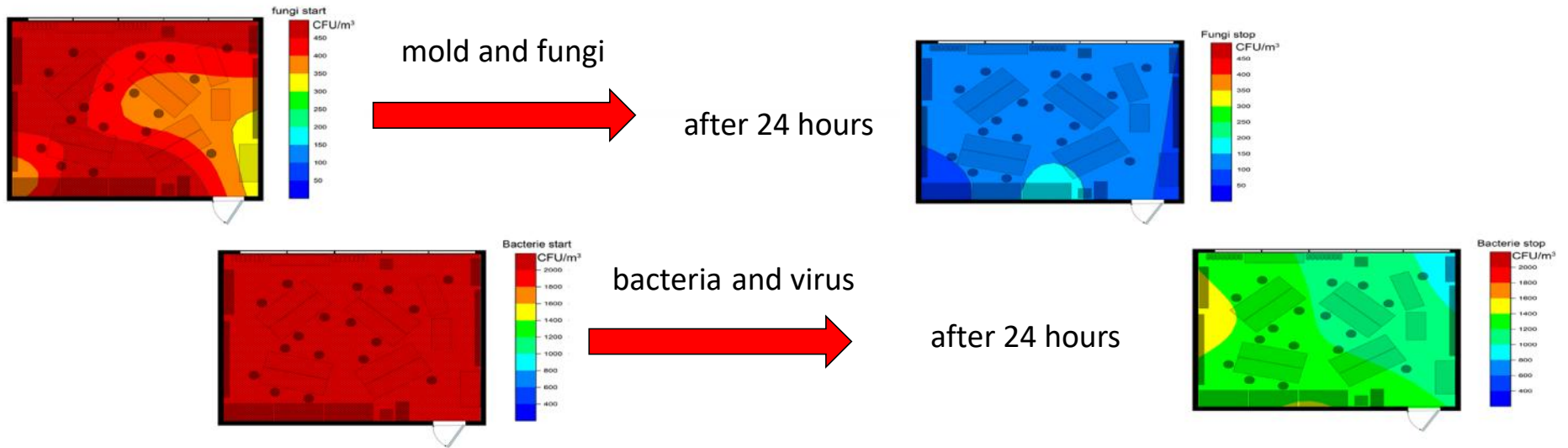


after 24 hours



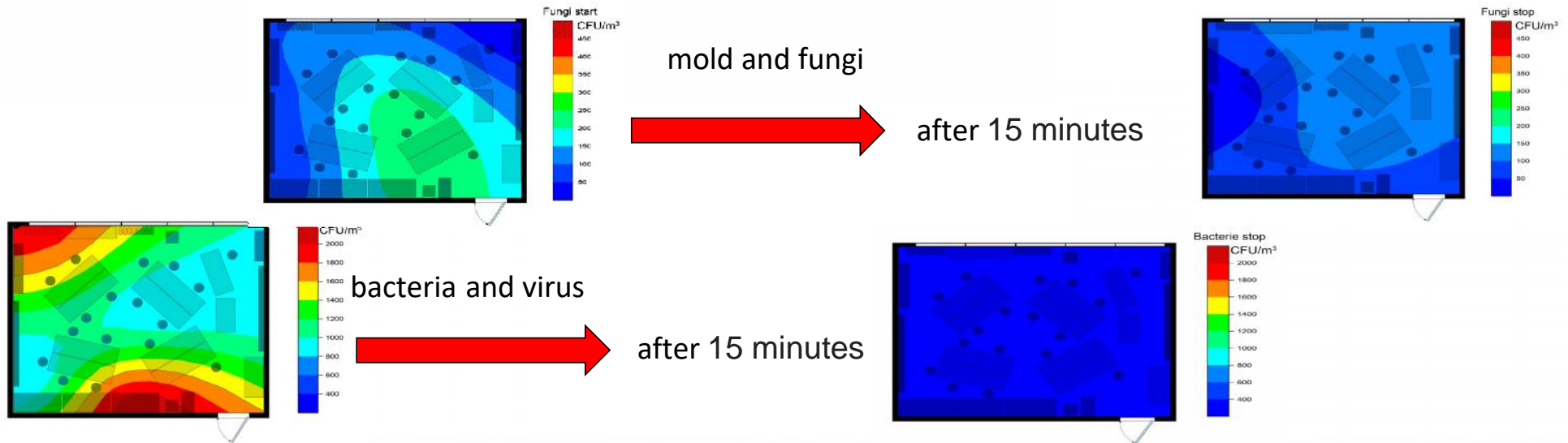
# Test results

Lew –Tolstoi European school in Berlin air cleaning 24 hours



# Test results

Lew –Tolstoi European school in Berlin air cleaning 15 minutes



# Offer

Dear customer,

thank you for your interest in our products. We would like to present you our offer for air disinfection system for your gasoline filling station.

ARPACK Air Clean AC 600 has been designed according to the latest technical and environmental requirements and is made of the highest quality materials. ARPACK Air Clean AC 600 is mobile and suitable for all common rooms according to the size. The unit can be installed in all office and living spaces including shopping areas.

Tell us the characteristics of your premises and we will choose the best device for you.



We would be pleased for your positive decision.

For further questions we are at your disposal.

Best regards,

Mark Arinstein  
Managing director

Ralph T. Niemeyer  
Chairman ArtAqua Group

Konrad Schmidt  
CEO ArtAqua Technologies Ltd.