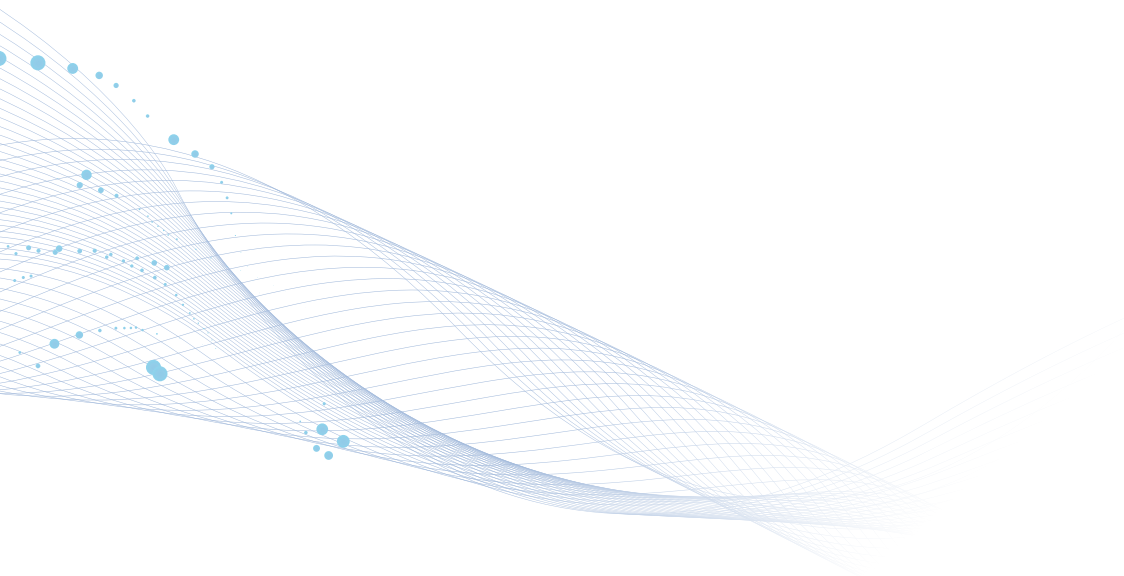
ActivePure® RCI technology

Professional systems
increasing the microbiological safety
of building users

ActivTek™
by ActivePure

A breakthrough in the fight against viruses,
bacteria and other harmful pollutants

NEW AIR QUALITY



ActivePure® RCI technology
ActivTek

ActivTek's mission is to provide
the highest standard of microbiological safety
in buildings where people are present.

ActivTek belongs to the international group of companies specializing in new technology systems that eliminate the microbiological hazards from the air and surfaces.

ActivTek is the exclusive distributor of the systems equipped with ActivePure® RCI active purification technology.

AERUS Holding LLC

EUROPE
- ActivTek POLAND
- ActivTek MEDICA
- ActivTek FOOD
- Vollara
- ActivePure
- ActivePure Medica

ASIA
- ActivTek

NORTH AMERICA
- DBG Group Investments LLC
- Vollara
- ActivTek Environment
- ActivePure
- ActivePure Medica

SOUTH AMERICA
- EcoQuest International Inc.

History of ActivTek and ActivePure® RCI technology

From Electrolux USA to ActivTek

1924
Establishing the Electrolux USA company
Since its inception, the company was distinguished on the market by high quality products, which were appreciated by the Smithsonian Institution, among others.

1990
Introducing the Photocatalytic Oxidation Technology
The NASA-funded Wisconsin Center For Space Automation & Robotics (WCSAR) has solved the problem of ethylene gas build-up around plants cultivated in a closed environment of a spacecraft, thanks to the Photocatalytic Oxidation Technology.

1995
Photocatalytic Oxidation Technology on the Columbia space shuttle
The WCSAR team created a device that kept the air clean on board the Columbia space shuttle at time of space missions.

2000
Electrolux USA is renamed Aerus
Company's mission is to create devices ensuring a healthy lifestyle.

2001
Aerus launches air purification devices
Air purification devices are introduced to the commercial market

2009
Aerus invests in ActivePure® RCI technology
Aerus invests in an early generation of ActivePure® RCI, a space technology certified by the NASA Space Foundation. ActivePure® RCI technology is significantly imporoved and commercialized

2010
Aerus's global expansion
ActivTek starts its operation in Europe
ActivTek Poland, as the exclusive distributor in Poland of ActivePure® RCI technology devices, is a pioneer in providing the systems for epidemiological safety in office buildings and other buildings.

2017
ActivePure® RCI entered to the Space Technology Hall of Fame
ActivePure® RCI technology is listed by the world-renowned and prestigious American Space Foundation on the Space Technology Hall of Fame. Over the past 30 years, this list includes only 75 unique technologies transferred from space research to civilian use (e.g. GPS).

2017
Establishing ActivTek MEDICA
ActivTek MEDICA specializes in delivery of systems with ActivePure® RCI technology for epidemiological safety in healthcare facilities.

2021
Establishing ActivTek FOOD
ActivTek FOOD specializes in delivery of systems with ActivePure® RCI technology for microbiological safety at every stage of food production.

ActivePure® RCI technology
a breakthrough system of active disinfection

The distinguishing factor of ActivePure® RCI technology is the possibility of simultaneous cleaning air and surfaces in the presence of people, animals and plants. It is completely safe for living organisms.

No other technology makes it possible.

The only active technology in the world

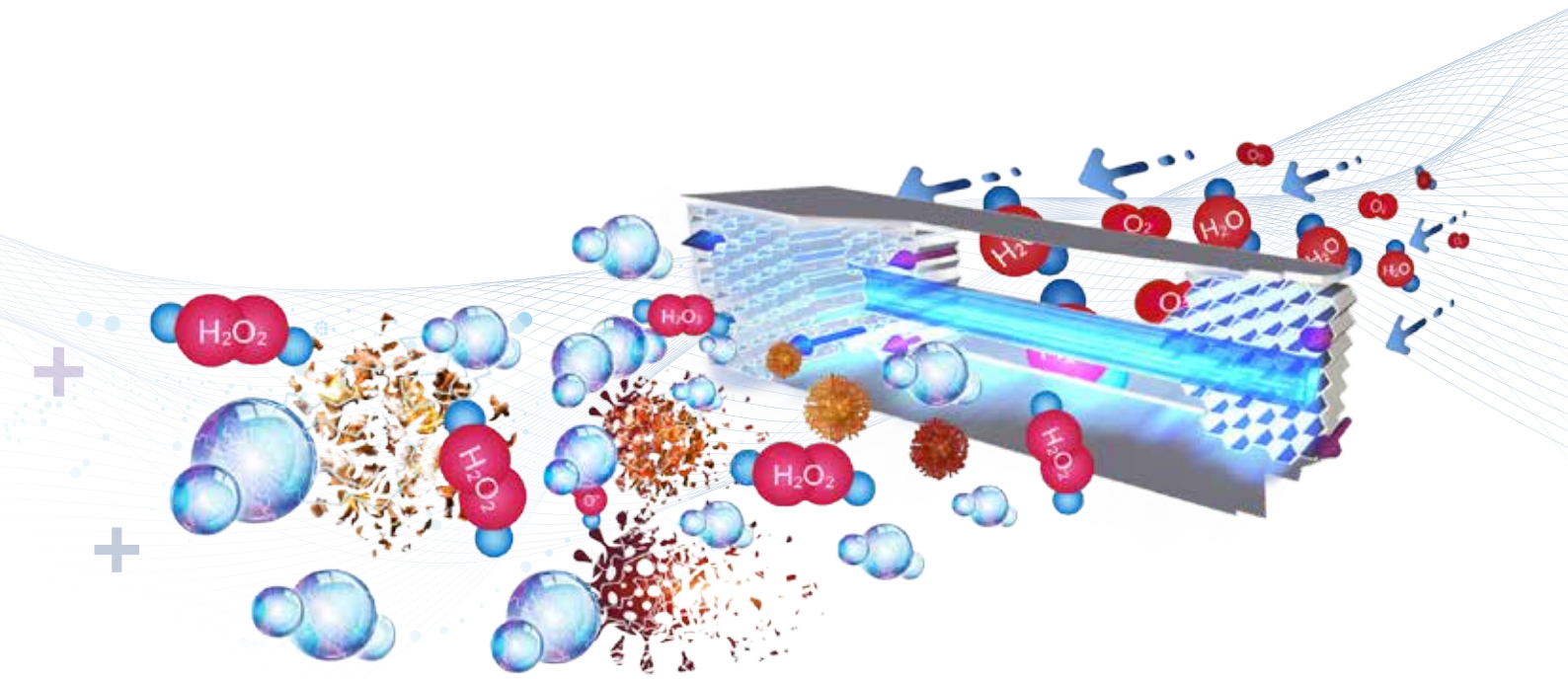
The unique active cleansing technology of ActivePure® RCI is basedon the Radiant Catalytic Ionization (RCI) process. Due to its antimicrobial effectiveness and safety in operation, it is a breakthrough in the elimination of microbiological threats.

ActivePure® RCI technology is based on the processes naturally occurring in the environment. It is the only technology that maintains microbiological purity both in the air and on surfaces, and it can operate in the presence of people, thus enabling the continued fight against the SARS-CoV-2 virus and other harmful to health pollutants.

ActivePure® RCI technology is a state-of-the-art, complex system of active air and surface cleaning, ensuring the microbiological safety inside buildings.

The ActivePure® RCI technology outclasses most disinfection methods used in various types of buildings, practically in all areas of operation. It leads to a number of practical and financial benefits.

ActivePure® RCI technology versus passive technologies	**ActivePure® technology** ActivTek	**Fogging**	**Ozonization**	**UVC lamps**	**Flow devices**
Air disinfection	■■■■	■■■■	■■■	■■	■
Surface disinfection	■■■■	■■■■	■■■	■■	–
Durability of the effect - cleanness 24 hours a day	■■■■	–	–	–	■
Operation in the presence of people	■■■■	–	–	–	■
Operation in rooms with mechanical ventilation	■■■■	–	–	■	–
Low operating costs	■■■	■	■	–	–
Security for office equipment and plants	■■■	■	–	–	■■■
Maintenance-free - no staff involvement	■■■	–	–	–	■
Disinfection of many rooms at the same time	■■■	–	–	–	–
Reducing absenteeism of sick employees	■■■	–	–	–	–
Disinfection of ventilation ducts and air conditioning devices	■■■	–	–	–	–
Supports operation of HEPA filters	■■■	–	–	–	–
No ozone production	■■■	■■■	–	–	■



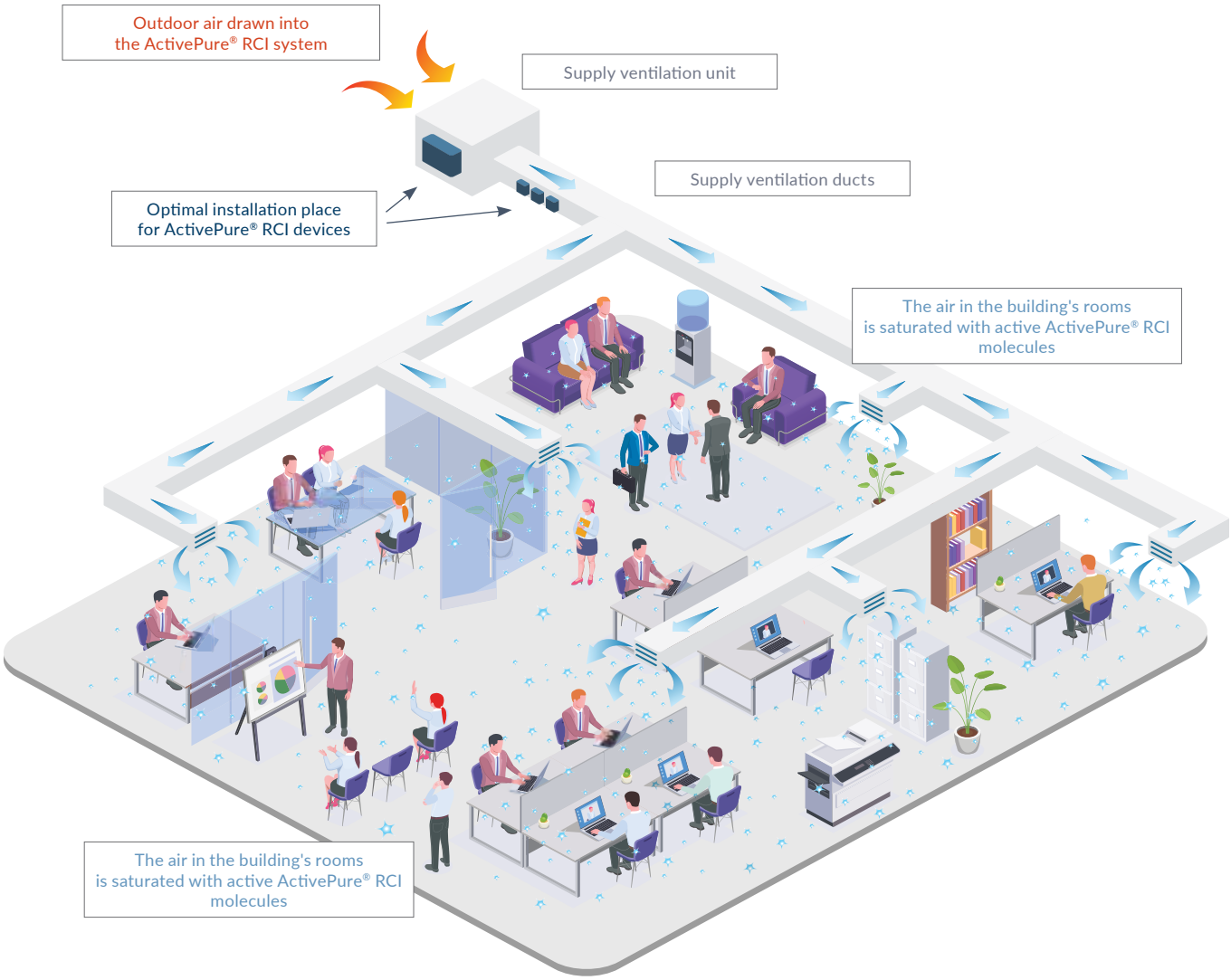
Principle of operation of the ActivePure® RCI technology

The core of the systems with ActivePure® RCI technology is a special honeycomb matrix. It exhibits hydrophilic properties and is covered with titanium dioxide, rhodium, silver, copper and other precious and rare metals. A UVX lamp is located inside the matrix, which acts as a catalyst for the process, instead of biocidal action.

The system uses naturally occurring oxygen (O_2) and water (H_2O) molecules in a steam suspension. Under the influence of light falling on the matrix, chemical reactions take place on its surface, as a result of which oxygen and water molecules are broken down.

Thus, natural oxidants are produced: gaseous hydrogen peroxide (H_2O_2), from which also hydroxyl and hydroxide radicals are formed. Peroxide ions are formed from the remaining free oxygen atom. They have strong antibacterial, antiviral and antifungal properties, and thanks to them, dust pollutants and allergens are precipitated; ionized oxidisers also reduce Volatile Organic Compounds (VOCs) and neutralize unpleasant odours.

- Actively disinfects the air and surfaces
- It is safe for people and animals
- It works continuously in the presence of people, 24/7
- Works effectively, which is confirmed by numerous research
- It is scalable and customizable to building parameters
- It is maintenance-free
- Does not use harmful substances
- It is energy efficient



ActivePure® RCI is the first technology in the world that works in an active way, thanks to the diffusion phenomenon known from the gas law. This phenomenon can be easily illustrated by an example of the rapid spread of intense odours in the air. Such a smell can spread to all rooms, even to hard-to-reach places, penetrating also e.g. clothes.

Active oxidants produced in the ActivePure® RCI system immediately reach all nooks and crannies with the air, eliminating the threats in the entire volume of the room.

ActivePure® RCI technology actively eliminates:

- viruses
- bacteria
- fungi
- volatile organic compounds
- allergens
- unpleasant odours

Devices with ActivePure® RCI technology are available in several solutions

Our team of experts will select the most appropriate solution that will be optimal for the needs of a given building.

Benefits of using ActivePure® RCI technology:

- Maintains microbiological purity, both in the air and on surfaces
- Increases the level of safety of building users, reducing the risk of infection
- Works in the entire volume of rooms, also in hard-to-reach places
- Based on phenomena occurring in nature (photocatalysis); it is an ecological and safe method
- Operates in the presence of people
- Eliminates SARS-CoV-2 virus from the air and from the surface
- Guarantees durability of the obtained results, thanks to 24/7 operation
- Reduces the costs related to the operation of the installation, ensuring the microbiological cleanliness of the ventilation ducts
- Neutralizes unpleasant odours and Volatile Organic Compounds
- Improves the comfort of living in the building

ActivePure® RCI technology
scientific power in everyday applications

ActivePure® RCI technology is an improved version of a Photocatalytic Oxidation Technology (PCO) developed for NASA, which was transferred from space research to everyday life.

ActivePure® RCI technology is uniquely recognized by the American Space Foundation

The history of ActivePure® RCI technology began with the research conducted for the needs of NASA at the international space station.

Originally, the catalytic oxidation technology (so-called PCO) had to extend the shelf life of fruit and vegetables by controlling the level of ethylene. It turned out to be a very good tool for elimination of bacteria and other pollutants from the air. However, it was a passive technology and had some serious shortcomings.

Aerus company (until 2000 known as Elektrolux LLC USA) decided to use and improve the PCO technology designed for NASA. It invested in the research, that turned out to be a breakthrough. Its effect was the creation of the world's only technology of active air purification and surface disinfection - the Radial Catalytic Ionization technology.

This technology not only eliminated the safety issues existing in the PCO technology, but also significantly increased its efficiency in cleaning the air, surfaces and various types of materials.

As a substantiation for the choice, ActivePure® RCI technology was described as "The most effective technology that ever existed. It was created to purify the air and remove pollutants from the air and surfaces"

NASA recognized the ActivePure® RCI technology as one of the most important discoveries of scientists and in 2017 listed it on the world-renowned "Space Technology Hall of Fame". Only 75 technologies in the last 30 years were distinguished in such a way. This list, alongside ActivePure® RCI, includes the following technologies: satellite navigation system (GPS), pacemaker (AICD), ventricular assist device (VAD) or cochlear implant for deaf and hard of hearing people.

FDA U.S. FOOD & DRUG ADMINISTRATION

ActivePure® RCI devices
INDUCT

Intended for assembly in the mechanical ventilation duct.

The INDUCT device is particularly adapted to the designed and existing ventilation and air conditioning systems.

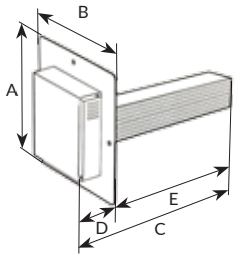
Installation of INDUCT devices is not invasive and does not require rebuilding or redesigning the installation.

The selection of devices is each time adjusted to the design of the ventilation system in the building.

Device parameter	INDUCT 500	INDUCT 750	INDUCT 2000	INDUCT 5000	INDUCT 10000
Average resistance	4-6 Pa	3-5 Pa	3-5 Pa	3-5 Pa	3-5 Pa
Dimensions (AxBxCxDxE) [mm]	260x60x30	245x245x205x60x145	245x245x285x60x225	245x245x430x60x370	255x285x430x60x370
Power supply	230 V, 50/60 Hz	230 V, 50/60 Hz	230 V, 50/60 Hz	230 V, 50/60 Hz	230 V, 50/60 Hz
Power consumption	14 W	17 W	19 W	32 W	64 W
Air flow	0-6 m/s	0-6 m/s	0-6 m/s	0-6 m/s	0-6 m/s
Air temperature	3-93,3 °C	3-93,3 °C	3-93,3 °C	3-93,3 °C	3-93,3 °C

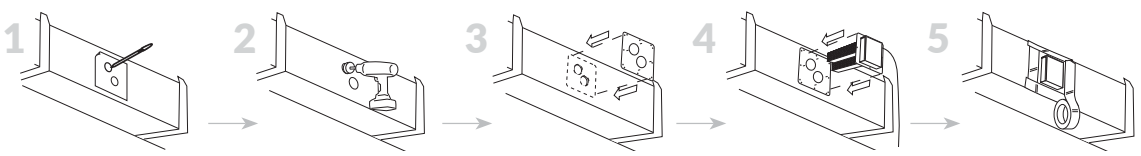
ActivePure® RCI technology is designed, developed and manufactured in the U.S.A.

ActivePure® RCI technology has been tested by an independent laboratory that carries out tests in accordance with FDA guidelines.



Installation of INDUCT devices

The devices are mounted in the ventilation ducts in a minimally invasive way and can be connected to the monitoring system.



FDA U.S. FOOD & DRUG ADMINISTRATION

ActivePure® RCI devices
INDUCT Inside IRI

Intended for assembly in the air handling unit section.

The INDUCT Inside IRI device is an ideal solution for the existing ventilation and air conditioning systems.

The device is easy to install in a free section of the air handling unit.

The selection of devices is each time adjusted to the parameters of the air handling unit and the ventilation system, with consideration to:

- air flow
- purpose of the object
- cleanliness class of the rooms
- volume of the facility
- length of the ventilation ducts

Device parameter	**INDUCT Inside IRI**
Air flow	0 - 6 m/s
Air temperature	3 - 93,3 °C
Average air resistance	3 - 5 Pa
Power supply / Power consumption	230 V / 30 W (depending on model)
Warranty	2 years

ActivePure® RCI technology is designed, developed and manufactured in the U.S.A.

ActivePure® RCI technology has been tested by an independent laboratory that carries out tests in accordance with FDA guidelines.

U.S. FOOD & DRUG ADMINISTRATION

ActivePure® RCI devices
CASSETTE

Intended for rooms, in which installation in the ventilation system is difficult or impossible.

The device is available in the following versions:

- cassette - for suspended ceilings
- modular - for ceilings without a suspended structure

Device parameter	KASETON
Efficiency*	up to 90 m²
Dimensions	600 mm x 600 mm x 120 mm
Power supply / Power consumption	230 V / 30 W (depending on model)
Control	model-dependent
Weight	4,5 kg
Warranty	2 years

*** Devices are selected depending on the type and degree of indoor air pollution**

ActivePure® RCI technology is designed, developed and manufactured in the U.S.A.

ActivePure® RCI technology has been tested by an independent laboratory that carries out tests in accordance with FDA guidelines.

Cassette version

Modular version

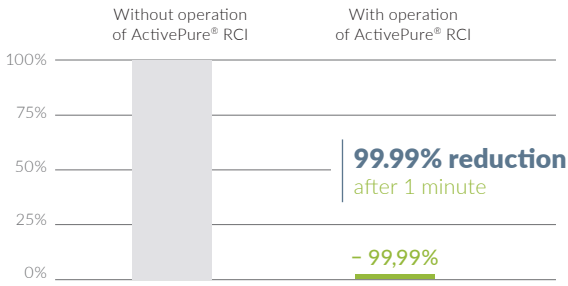
Efficiency of ActivePure® RCI technology is documented in research

The efficiency of microbiological safety systems with active ActivePure® RCI technology is evidenced by numerous researches with the relevant documents.

Reduction rate of viruses and bacteria in the air

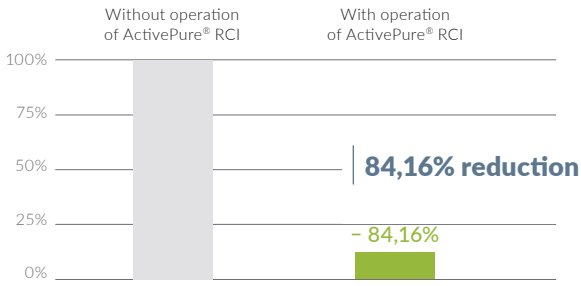
in an active method - with ActivePure® RCI technology

Reduction rate of SARS-CoV-2 virus



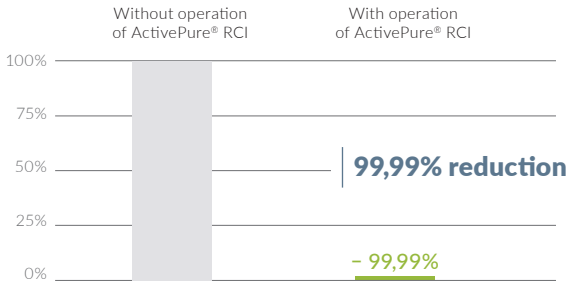
University of Texas Medical Branch (UTMB)

Bacteria reduction rate *Klebsiella pneumoniae NDM*



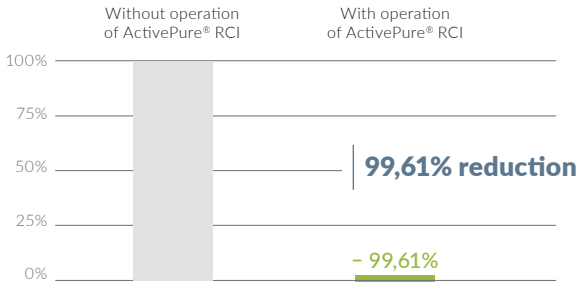
"Development of Microbiology" Association, Bydgoszcz

Bacteria reduction rate *Staphylococcus aureus*



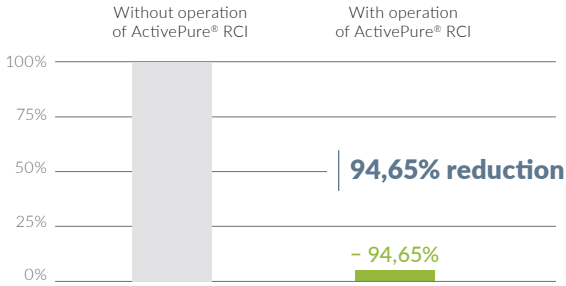
"Development of Microbiology" Association, Bydgoszcz

Bacteria reduction rate *Enterococcus faecium VRE*



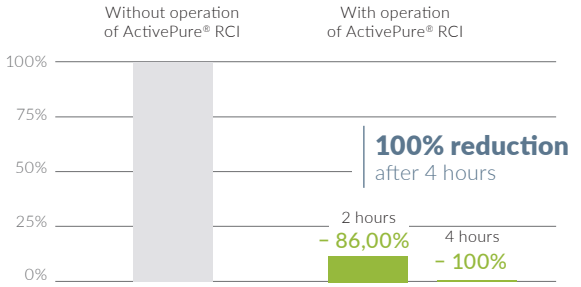
"Development of Microbiology" Association, Bydgoszcz

Bacteria reduction rate *Clostridium difficile*



"Development of Microbiology" Association, Bydgoszcz

Bacteria reduction rate *Legionelia pneumophila*



Food Safety and Security Laboratory, Kansas State University

Microbial reduction rate in the air

in an active method - with ActivePure® RCI technology

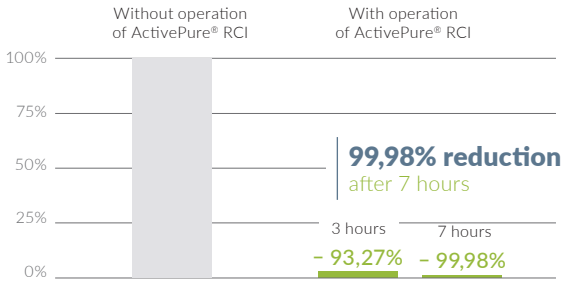
Summary of the research results	
Type of microbe	**Reduction rate**
MS2 virus	99,99%
Phi-X147 virus	99,99%
Klebsiella pneumoniae	100,00%
Enterococcus faecalis	99,99%
Enterococcus faecalis VRE	90,05%
Escherichia coli	100,00%
Staphylococcus epidermidis	100,00%
Candida albicans	100,00%
Aspergillus niger	99,99%
Legionella pneumophila	100,00%

Efficiency of ActivePure® RCI technology is documented in research

In the places of permanent or temporary residence of people, reductionof microbes from the surfaces and materials is equally important to the microbiological purity of the air. Efficiency of the ActivePure® RCI technology on the surfaces is demonstrated in the following data.

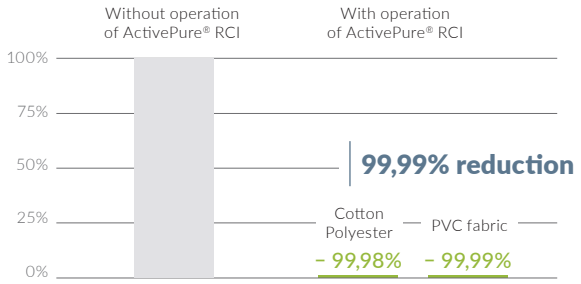
Reduction rate of viruses and bacteria on the surfaces
in an active method - with ActivePure® RCI technology

Reduction rate of SARS-CoV-2 virus



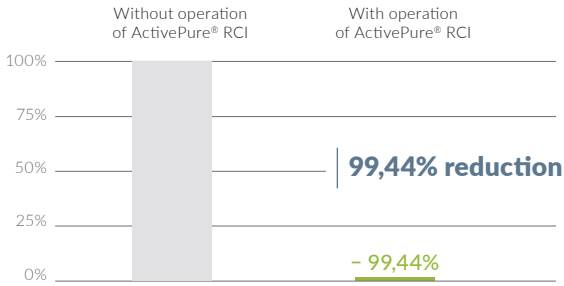
MRIGlobal Laboratory in Kansas City

Bacteria reduction rate *Klebsiella pneumoniae NDM*



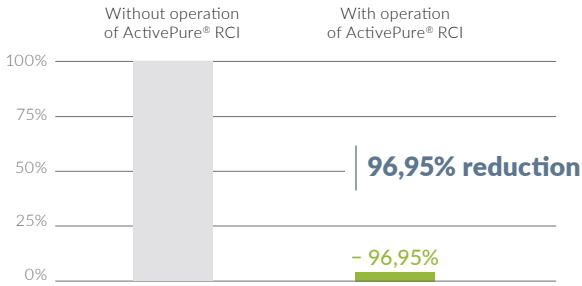
"Development of Microbiology" Association, Bydgoszcz

Bacteria reduction rate *Acinetobacter baumanii*



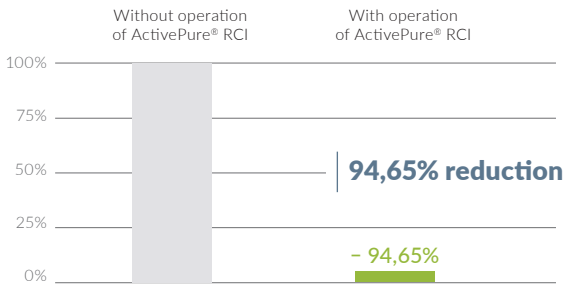
"Development of Microbiology" Association, Bydgoszcz

Bacteria reduction rate *Pseudomonas aeruginosa*



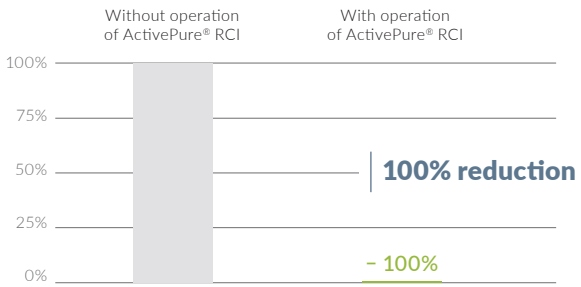
"Development of Microbiology" Association, Bydgoszcz

Bacteria reduction rate *Staphylococcus aureus*

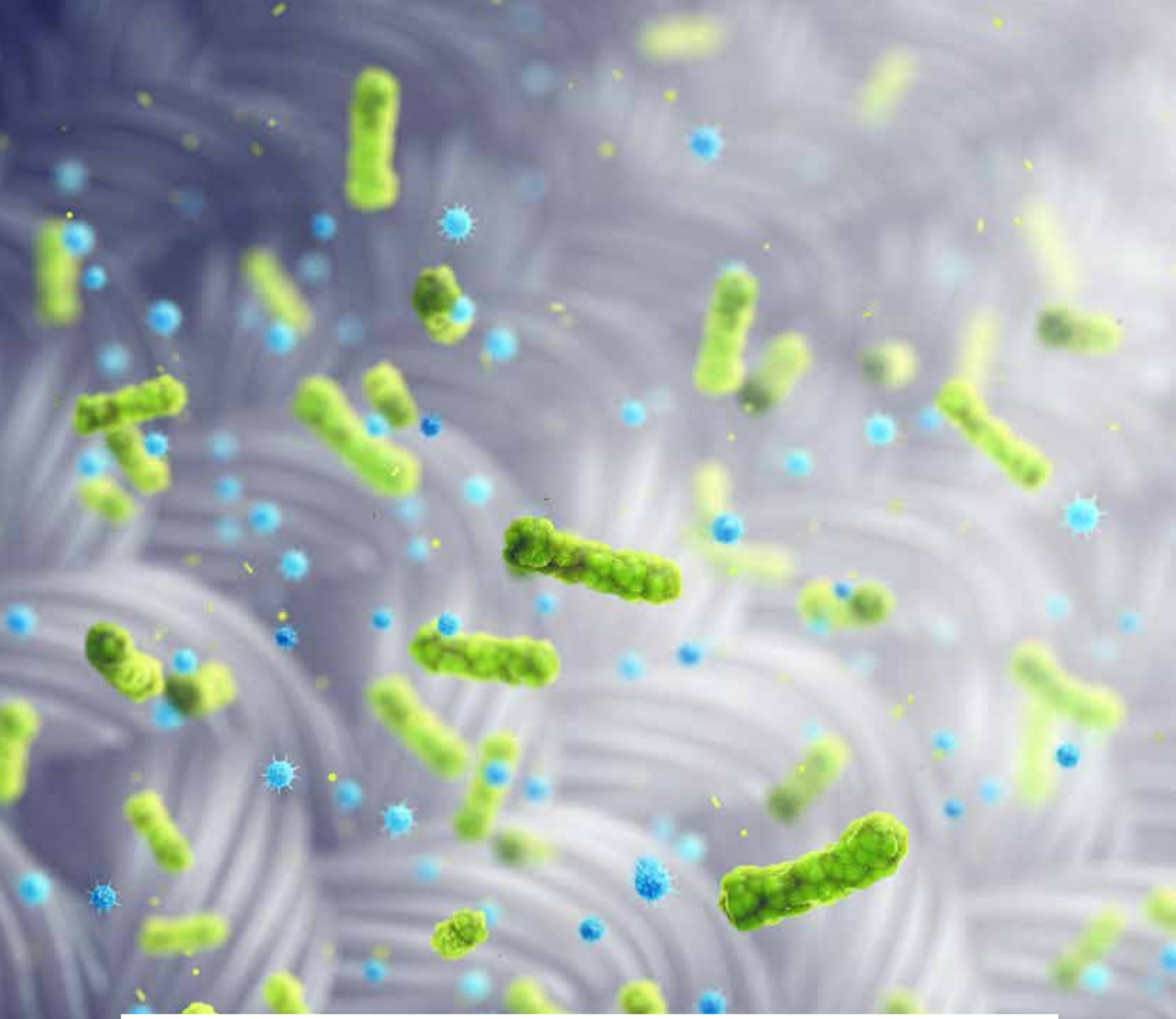


"Development of Microbiology" Association, Bydgoszcz

Bacteria reduction rate *MRSA*



Antimicrobial Testing Laboratory/Aerus



Microbial reduction rate on the surfaces
in an active method - with ActivePure® RCI technology

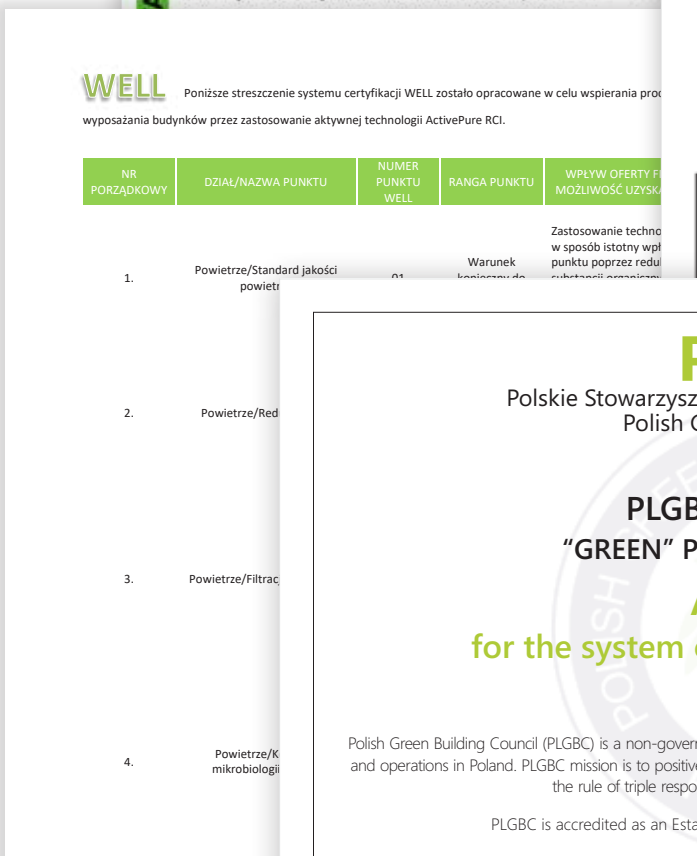
Summary of the research results	
Type of microbe*	**Reduction rate**
A H5N8 Avian influenza virus	100,00%
A H1N1 Swine flu virus	100,00%
MNV Norovirus	100,00%
HAV Jaundice virus	100,00%
Clostridium difficile endospory	99,30%
Listeria monocytogenes	94,65%
Escherichia coli	95,18%
Salmonella enteritidis	97,16%
Candida albicans	96,84%
Aspergillus niger	95,61%
Aspergillus niger	95,61%

* Standard bacteria strains were taken as the research materials

ActivePure® RCI technology
certification systems of sustainable construction

Systems with ActivePure® RCI technology, as friendly and safe systems for the environment and users, support the concept of ecological construction.

Systems with ActivePure® RCI technology contribute to the LEED certification points in the scope specified in the Green Product Card (Geen Product Card), as well as WELL and BREEAM certification.




MAG 214

Financing the purchase
beneficial purchase methods for devices

Devices with ActivePure® RCI technology can be purchased in the form adapted to the current financial needs of the customer. A significant part of the device purchase costs can be refinanced from targeted grants and assistance programmes.

Financial forms for the purchase of ActivePure® RCI technology devices:

- **Purchase**
- **Operating lease**
- **Leasing loan**

Our company helps customers in organization of the entire financing process for the purchase of devices, collection of the necessary documents and selection of the best offer.

They trusted us

example projects with application of ActivePure® RCI technology

- U.S. Military – USA
- U.S. Department of Defense – USA
- NASA – USA
- Industry City – Brooklyn, NY
- Bank of America – São Paulo, Brazil
- Facebook – São Paulo, Brazil
- Amazon – São Paulo, Brazil
- Texas Rangers Baseball Club
- Microsoft – São Paulo, Brazil
- Genesis Management Group – Boston, USA
- CNN – São Paulo, Brazil
- Echo Investment – Poland
- Kolporter – Kielce, Poland
- Hotel Arłamów – Arłamów, Poland
- PGE Bełchatów – Bełchatów, Poland
- EPP Property Management – Kielce, Poland
- AmRest – Poland
- MARS Polska – Sochaczew, Poland
- Coca-Cola HBC – Radzymin, Poland
- IKEA – Cracow, Poland
- Buro Happold – Warsaw, Poland
- American School of Warsaw – Bielawa, Poland

and many more

Companies that use ActivePure® RCI technology in their buildings:

In the world:

NASA facebook Microsoft amazon CNN MITSUBISHI MOTORS Hilton

bradesco BANK OF AMERICA citi U.S. Department of Defence

In Poland:

ECHO Investment EPP BURO HAPPOLD KOLPORTER PHN GHELAMCO

mBank KOMPANIA PIWOWARSKA GPW polsat Coca-Cola Polska ARŁAMÓW PGE IKEA

and many more

www.activtek.ae