

### Laboratory & Clinical Research Summary



In independent laboratory studies Novaerus products, utilizing NanoStrike<sup>™</sup> technology, have been shown to safely and effectively reduce viruses, bacteria, mould spores, allergens, volatile organic compounds, and particulate matter.

In clinical settings, Novaerus products have been demonstrated to reduce airborne pathogens, surface bacteria, infections, antibiotic use, and odours.



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## NanoStrike

### The First Line of Protection Against Airborne Viruses and Bacteria

NanoStrike<sup>™</sup> is the unique, patented technology at the core of all Novaerus portable air dis-infection devices. This nanotechnology inactivates all airborne microorganisms on contact providing the first line of protection against viruses and bacteria.

- Patented technology harnessing multiple pathogen inactivation processes in one powerful strike
- Inactivates at the DNA level in a sub-second time frame
- Uniquely bursts the pathogen cell, preventing self-healing
- Multiple pathogen inactivation processes guarantee no future antimicrobial resistance can develop
- Lowest total cost of ownership of any air purification technology
- Powerful but gentle for 24/7 use around the most vulnerable of people
- Independently tested and proven

Developed by the WellAir team of scientists and engineers, NanoStrike technology harnesses a range of physical concurrent pathogen inactivation process to safely dis-infect the air.

NanoStrike coils provide a powerful strike that works to burst airborne pathogen cells, rapidly inactivating them, ensuring they are no longer a threat of infection.



### Escherichia coli (E. coli) Inactivation

Laboratory Name:	NASA Ames Research Center
Laboratory Location:	Moffett Field, Mountain View, CA
Date:	February 12, 2016
Device Tested:	Protect 200
Space Treated:	.51 m <sup>3</sup>

#### Objective

To explore the modification of the cell structure of aerosolized *Escherichia coli* (*E. coli*) treated with NanoStrike Technology (a dielectric barrier discharge - DBD).

#### Methodology

The Protect 200 was placed inside a biosafety cabinet, and a compressor nebulizer was attached to the input of the system in order to aerosolize the bacterial particles for testing.

#### Summary of Results

The bacteria underwent physical distortion to varying degrees, resulting in deformation of the bacterial structure. The electromagnetic field around the DBD coil caused severe damage to the cell structure, possibly resulting in leakage of vital cellular materials. The bacterial reculture experiments confirm inactivation of airborne *E. coli* upon treating with NanoStrike (DBD) technology.



Healthy bacteria



Bacteria after NanoStrike treatment

# Staphylococcus epidermidis and Aspergillus niger Inactivation

NASA Ames Research Center
Moffett Field, Mountain View, CA
July 5, 2017
Protect 200
.51 m <sup>3</sup>

#### Objective

To explore the efficacy of the atmospheric pressure from NanoStrike Technology (DBD) technology on inactivating airborne pathogens, specifically *Staphylococcus epidermidis*, a surrogate for methicillin-resistant *Staphylococcus aureus* (MRSA), and *Aspergillus niger*.

#### Methodology

The Protect 200 was placed inside a biosafety cabinet, and a nebulizer was attached to the input of the system in order to aerosolize the bacterial particles for testing. All the DBD system vents, except the top one, were sealed to prevent any undesired microorganism from getting into the system.

#### Summary of Results

It is concluded that the NanoStrike (DBD) caused severe size and shape change of the cell structure, possibly resulting in destruction of cellular components and eventually to cell death. A similar effect was also found on the fungal spores, indicating the versatility of the equipment toward a range of microorganisms.



Healthy bacteria



Bacteria after NanoStrike treatment



### Live SARS-CoV-2 Virus Reduction

Laboratory Name:	Innovative Bioanalysis, Inc.
Laboratory Location:	Costa Mesa, CA
Date:	April 6, 2021
Device Tested:	Defend 1050
Space Treated:	36 m <sup>3</sup>

#### Objective

To evaluate the efficacy of the Defend 1050 at reducing live SARS-CoV-2, the virus causing COVID-19.

#### Methodology

The challenge pathogen, SARS-CoV-2 USA-CAI/2020, was used for testing the efficacy of the Defend 1050. The bioaerosol efficacy challenge was completed in three distinct trials with the active pathogen to create a baseline of data. The Defend 1050 was placed in the same position for each viral challenge and operated in the same manner.

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#### Summary of Results

The Defend 1050 achieved a 4.53 log10 reduction, which equates to a 99.997% percentage reduction, in 30 minutes. The live SARS-CoV-2 virus was not detectable after 30 minutes.

The Defend 1050 performed to manufacturer specifications and demonstrated a dramatic reduction of active virus after 30 minutes of exposure in aerosol form.

Every effort was made to simulate a real-life environment in the chamber while taking into consideration the special precautions needed when working with a Biosafety Level 3 Pathogen. Overall, the Defend 1050 device showed substantial efficacy in the removal of SARS-CoV-2 USA-CAI/2020 out of the breathable air.





## MS2 Bacteriophage Virus Reduction – SARS-CoV-2 Surrogate

Laboratory Name:	Aerosol Research and Engineering Laboratories
Laboratory Location:	Olathe, Kansas
Date:	April 2020
Device Tested:	Defend 1050
Space Treated:	16 m <sup>3</sup>

#### Objective

To evaluate the efficacy of the Defend 1050 at reducing aerosolized MS2 bacteriophage virus, a surrogate for SARS-CoV-2, the virus causing COVID-19.

#### Methodology

MS2 bacteriophage was aerosolized into a 16 m<sup>3</sup>, sealed environmental bioaerosol chamber containing the Defend 1050. AGI impingers were used to sample the chamber bioaerosol concentrations. Chamber control trial data was subtracted from the Defend 1050 trial data to yield net LOG reduction in the chamber for the bioaerosol challenges.

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Two control tests were conducted without the Defend 1050 in a testing chamber of 36 m3. The control tests were used for the comparative baseline to assess the viral reduction when the Defend 1050 was operated in the challenge trials, to enable net reduction calculations to be made. The device was run at maximum speed (5).**Summary of Results** 

When tested on the speed 5 setting, the Defend 1050 showed an average 4.41 net LOG reduction of MS2 bacteriophage virus which equates to over a 99.99% reduction, in 15 minutes.

When tested on the speed 3 setting, the Defend 1050 showed an average 5.53 net LOG reduction of MS2 bacteriophage virus which equates to over a 99.999% reduction, in 30 minutes.

When tested on the speed I setting, the Defend 1050 showed an average 5.1 net LOG reduction of MS2 bacteriophage virus which equates to over a 99.999% reduction, in 60 minutes.





### Human parainfluenza type 3 (HPIV3) Reduction - Measles Virus Surrogate

Laboratory Name:	Airmid Health Group Ltd
Laboratory Location:	Dublin, Ireland
Date:	October 30, 2019
Device Tested:	Defend 1050
Space Treated:	28.5 m <sup>3</sup>

#### Objective

To assess the performance of the Defend 1050 in removing aerosolised Human parainfluenza type 3 (HPIV3) (renamed human respirovirus 3), a surrogate for Measles virus.

#### Methodology

The impact of Novaerus Defend 1050 air purifier on aerosolised HPIV3 (strain MK-3) was conducted in a 28.5 m<sup>3</sup> environmental testing chamber. The test chamber was preconditioned to  $20 \pm 3$  °C and  $55 \pm 5\%$  relative humidity. During testing, the chamber air handling unit was shut down, which reduces the number of air changes to as close to zero as possible.

#### Summary of Results

The results achieved during the testing show that the Defend 1050 was able to reduce the concentration of HPIV3 by 99.87% in 20 - 30 minutes.



### Influenza A Reduction

Laboratory Name:	Airmid Health Group Ltd.
Laboratory Location:	Dublin, Ireland
Date:	April 25, 2018
Device Tested:	Defend 1050
Space Treated:	28.5 m <sup>3</sup>

#### Objective

To evaluate the efficacy of the Defend 1050 on removing Influenza A.

#### Methodology

Testing of the Defend 1050 was conducted in a 28.5 m<sup>3</sup> environmental test chamber. The chamber was preconditioned to  $20\pm3$  °C and  $50\pm10\%$  relative humidity prior to commencement of the tests. For the test runs, the Defend 1050 was placed on the floor in the centre of the chamber.

#### Summary of Results

The Defend 1050 was effective in reducing airborne Influenza A aerosols in the test chamber, reaching 99.9% airborne virus reduction within the first 10 - 20 minutes of operation at max speed.





### Phi X 174 Virus Reduction

Laboratory Name:	Korea Testing Laboratory
Laboratory Location:	Jinju, South Korea
Date:	October 22, 2019
Device Tested:	Defend 1050
Space Treated:	60 m <sup>3</sup>

#### Objective

To assess the performance of the Defend 1050 in reducing phi X 174 virus.

#### Methodology

Test Method: KOUVA AS02: 2019

Virus: Phi X 174 (ATCC 13706-BI)

Temperature: (23 +/- 2) °C

Humidity: (50 +/- 5) % R.H.

Test time: 30 minutes

Test chamber: 60 m<sup>3</sup>

Air flow: Maximum

#### Summary of Results

The Defend 1050 achieved a 98.8% reduction of Phi X 174 virus in 30 minutes in a 60 m<sup>3</sup> chamber.

### **Bioaerosols Reduction**

Laboratory Name:	Aerosol Research and Engineering Laboratories
Laboratory Location:	Olathe, Kansas
Date:	December 7, 2016
Device Tested:	Protect 800
Space Treated:	16 m <sup>3</sup>

#### Objective

To evaluate the efficacy of the Protect 800 on neutralizing four aerosolized biologicals; *Staphylococcus epidermidis* (a surrogate for methicillin-resistant *Staphylococcus aureus* (MRSA), MS2 bacteriophage (a surrogate for influenza, norovirus and coronaviruses), *Aspergillus niger* fungus, and *Bacillus subtilis* endospores.

#### Methodology

A large sealed aerosol test chamber was used to replicate a potentially contaminated room environment and to contain any potential release of aerosols into the surrounding environment.

#### Summary of Results

Test results show the Protect 800 was extremely effective at reducing viability of bioaerosols in all conducted studies:

- Staphylococcus epidermidis by 99.87%
- Aspergillus niger by 99.10%
- MS2 bacteriophage by 99.99%
- Bacillus subtilis by 86.63%





### Bacillus Globigii Endospores Reduction

Laboratory Name:	Aerosol Research and Engineering Laboratories
Laboratory Location:	Olathe, Kansas
Date:	May 12, 2020
Device Tested:	Defend 1050
Space Treated:	16 m <sup>3</sup>

#### Objective

This in vitro study characterized the efficacy of the Defend 1050 device at removing aerosolized *Bacillus Globigii* Endospores, a surrogate for Anthrax, a biological warfare agent.

#### Methodology

*Bacillus Globigii* was aerosolized into a sealed environmental bioaerosol chamber containing the Defend 1050 device. AGI Impinger samples were taken at 0, 7.5, 15, 22.5, 30 and 45 minutes from the chamber in order to quantify the reduction speed and capabilities of the Novaerus Defend 1050.

#### Summary of Results

The Defend 1050 showed an average 4 net LOG reduction of *Bacillus Globigii* endospores which equates to over a 99.99% reduction, in 15 minutes.

The Defend 1050 showed an average 5.11 net LOG reduction of *Bacillus Globigii* endospores which equates to over a 99.999% reduction, in 30 minutes.



### Mycobacterium smegmatis Reduction -Mycobacterium tuberculosis Surrogate

Laboratory Name:	Airmid Health Group Ltd.
Laboratory Location:	Dublin, Ireland
Date:	July 6, 2018
Device Tested:	Defend 1050
Space Treated:	30 m <sup>3</sup>

#### Objective

To assess the performance of the Defend 1050 in removing aerosolised *Mycobacterium smegmatis*, a surrogate for *Mycobacterium tuberculosis*.

#### Methodology

The impact of Novaerus Defend 1050 air purifier on aerosolised *M. smegmatis* was conducted in a 30 m<sup>3</sup> environmental testing chamber. The test chamber was preconditioned to  $20 \pm 3$  °C and  $55 \pm 5\%$  relative humidity. These conditions were maintained throughout the test and control runs. Prior to each run, the test chamber was decontaminated by scrubbing the walls and surfaces.

#### Summary of Results

The results achieved during the testing show that the Defend 1050 was able to reduce the concentration of *M. smegmatis*, a surrogate for *Mycobacterium tuberculosis*, artificially aerosolised by 95% within the first 15 minutes and this rose to 97% after 30 minutes of A/C operation.



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### Staphylococcus epidermidis Reduction -Methicillin-resistant Staphylococcus aureus (MRSA) Surrogate

Laboratory Name:	Novaerus Research and Development Labs
Laboratory Location:	Dublin, Ireland
Date:	June 27, 2018
Device Tested:	Defend 1050
Space Treated:	30 m <sup>3</sup>

#### Objective

To evaluate the efficacy of the Defend 1050 in reducing airborne *Staphylococcus* epidermidis bacteria, a surrogate for methicillin-resistant *Staphylococcus aureus* (MRSA).

#### Methodology

The test environment was a 30 m<sup>3</sup> test chamber, located in the Novaerus microbiology laboratory. During the testing, the Defend 1050 was tested at maximum airflow, speed setting 5, and placed inside the chamber at the centre, with the air inlet facing towards the door of the chamber.

#### Summary of Results

The Defend 1050 achieved a microbial cell reduction of 99.94% of *Staphylococcus* epidermidis, a surrogate for methicillin-resistant *Staphylococcus aureus* (MRSA), within 15 minutes of operation.



### Clostridium difficile Bacteria Spore Reduction

Laboratory Name:	Airmid Health Group Ltd.
Laboratory Location:	Dublin, Ireland
Date:	February 8, 2019
Device Tested:	Defend 1050
Space Treated:	28.5 m <sup>3</sup>

#### Objective

To assess the performance of the Defend 1050 in removing aerosolized *Clostridium difficile* spores.

#### Methodology

A 28.5 m<sup>3</sup> environmental test chamber was preconditioned to  $20 \pm 3$  °C and  $55 \pm 5\%$  relative humidity. During the test runs the air purifier was placed in the centre of the test chamber and operated at full speed mode. During the control runs the air purifier was switched off. The *C. difficile* spores were nebulised into the chamber for a fixed time and mixed with a ceiling fan.

#### Summary of Results

The Defend 1050 demonstrated to be effective in reducing the airborne C. *difficile* by 99.6% within the first 20 minutes and this increased to > 99.9% after 40 minutes.





### Staphylococcus epidermidis Bacteria Reduction

Laboratory Name:	Korea Testing Laboratory
Laboratory Location:	Jinju, South Korea
Date:	October II, 2019
Device Tested:	Defend 1050
Space Treated:	60 m <sup>3</sup>

#### Objective

To assess the performance of the Defend 1050 in reducing *Staphylococcus* epidermidis bacteria.

#### Methodology

Test Method: KOUVA AS02: 2019

Bacteria: Staphylococcus epidermidis (ATCC 12228)

Temperature: (23 +/- 2) °C

Humidity: (50 +/- 5) % R.H.

Test time: I hour

Test chamber: 60 m<sup>3</sup>

Air flow: Maximum

#### Summary of Results

The Defend 1050 achieved a 99.9% reduction of *Staphylococcus epidermidis* bacteria in 60 minutes in a 60 m<sup>3</sup> chamber.

# Methicillin-resistant Staphylococcus aureus (MRSA) Reduction

Microbac Laboratories, Inc.
Wilson, NC
May 19, 2016
Protect 800
l m <sup>3</sup>

#### Objective

To evaluate the efficacy of the Protect 800 in reducing methicillin-resistant *Staphylococcus aureus* (MRSA).

#### Methodology

The challenge bacteria were aerosolized using a six-jet collision nebulizer under high pressure air and introduced into the chamber with the Protect 800.

#### Summary of Results

The Protect 800 reduced 99.99% of methicillin-resistant *Staphylococcus aureus* (MRSA) bacteria over the course of four hours.





### Staphylococcus epidermidis Reduction -Methicillin-resistant Staphylococcus aureus (MRSA) Surrogate

Laboratory Name:	University of Huddersfield
Laboratory Location:	Huddersfield, England
Date:	May 27, 2014
Device Tested:	Protect 800
Space Treated:	l m <sup>3</sup>

#### Objective

To evaluate the efficacy of the Protect 800 in reducing *Staphylococcus epidermidis* aerosols, a surrogate for methicillin-resistant *Staphylococcus aureus* (MRSA).

#### Methodology

A 1.0 m<sup>3</sup> air tight perspex chamber was fitted with an internal fan to maintain mixing, sampling and injection ports, and the Protect 800. The fan and the Protect 800 were activated from outside of the chamber as and when required.

#### Summary of Results

In over 30 minutes of sampling, the Protect 800 reduced 95% of *Staphylococcus* epidermidis aerosols, a surrogate for methicillin-resistant *Staphylococcus aureus* (MRSA). Both the rate of removal and the final log reduction were greater in the presence of the Protect 800.



### Mycobacterium tuberculosis Inactivation

Laboratory Name:	Qualilife Diagnostics
Laboratory Location:	Mumbai, India
Date:	December 10, 2016
Device Tested:	Protect 200
Space Treated:	68 litres

#### Objective

To evaluate the efficacy of the Protect 200 on reducing *Mycobacterium tuberculosis*.

#### Methodology

The Protect 200 unit was placed inside a 68-litre plastic enclosure. The plastic enclosure and test set up was placed inside a biosafety cabinet. Clinical isolate of *Mycobacterium tuberculosis* was aseptically transferred into a sterile mycobacteria growth indicator tube (MGIT) and Lowenstein-Jensen (LJ) medium.

#### Summary of Results

The air sample collected from the test after being exposed to the Protect 200 showed no growth of *Mycobacterium tuberculosis*. This shows that the device has effectively rendered all airborne *Mycobacterium tuberculosis* non-viable.



### Aspergillus niger Spore Reduction

Laboratory Name:	Aerosol Research and Engineering Laboratories
Laboratory Location:	Olathe, Kansas
Date:	May 28, 2018
Device Tested:	Defend 1050
Space Treated:	16 m <sup>3</sup>

#### Objective

To evaluate the efficacy of the Novaerus Defend 1050 system against aerosolized Aspergillus niger spores.

#### Methodology

A. *niger* spores were aerosolized into a sealed bioaerosol chamber using a dry powder disseminator. AGI impingers were used to capture chamber bioaerosol concentrations.

#### Summary of Results

The average net LOG reduction of the Defend 1050 system at 30 minutes showed a 4.10 LOG. The net LOG reduction at 60 minutes showed a 4.28 LOG due to reaching detection limit. The actual LOG reduction is theoretically much higher at 60 minutes in a small room environment.



### Nitrogen Dioxide Reduction

Laboratory Name:	Aerosol Research & Engineering Laboratories
Laboratory Location:	Olathe, Kansas
Date:	July 27, 2018
Device Tested:	Defend 1050
Space Treated:	16 m <sup>3</sup>

#### Objective

To evaluate the efficacy of the Novaerus Defend 1050 system on eliminating nitrogen dioxide ( $NO_2$ ).

#### Methodology

 $NO_2$  gas was released into a 16 m<sup>3</sup> sealed chamber while the monitoring of the concentration was logged with specialized detectors. For the control trial, the Defend 1050 remained outside the chamber, and the gases were allowed to dissipate naturally over time.

#### Summary of Results

The Defend 1050 showed an average 99.49% reduction of  $NO_2$  in 7.2 minutes.





### Formaldehyde Reduction

Laboratory Name:	Aerosol Research & Engineering Laboratories
Laboratory Location:	Olathe, Kansas
Date:	July 27, 2018
Device Tested:	Defend 1050
Space Treated:	16 m <sup>3</sup>

#### Objective

To evaluate the efficacy of the Novaerus Defend 1050 system on eliminating formaldehyde.

#### Methodology

Formaldehyde gas was released into a 16 m<sup>3</sup> sealed chamber while the monitoring of concentration was logged with specialized detectors. For the control trial, the Defend 1050 remained outside the chamber, and the gas dissipated naturally over time.

#### Summary of Results

The Defend 1050 showed an average 99.68% reduction of formaldehyde in 1.1 minutes.



### **Toluene VOC Reduction**

Camfil Laboratories – Tech Center
Trosa, Sweden
April 25, 2018
Defend 1050
<b>19.72</b> m <sup>3</sup>

#### Objective

To evaluate the particulate and molecular efficiency of the Defend 1050 in a test chamber using Toluene, a volatile organic compound (VOC).

#### Methodology

Test method: CADR

Toluene was generated in the laskin nozzle and injected into a room until a pre-set concentration was achieved then the air cleaner was turned on. The results were then compared to the normal reduction of particles over time in the test chamber.

#### Summary of Results

The Defend 1050 produced a VOC CADR of 351 CFM. On the high speed, the Defend 1050 was shown to remove 90% of the toluene within 6 minutes and 99% within 9.1 minutes. On the low speed, the Defend 1050 was shown to remove 90% within 16 minutes.



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### Formaldehyde Reduction

Laboratory Name:	Avomeen Analytical Services
Laboratory Location:	Ann Arbor, MI
Date:	September II, 2015
Device Tested:	Protect 800
Space Treated:	l m <sup>3</sup>

#### Objective

To evaluate the efficacy of the Protect 800 on reducing formaldehyde.

#### Methodology

A plexiglass chamber was built for formaldehyde testing of the Protect 800. This chamber was also equipped for proper ventilation and interior air circulation. A calculated amount of formaldehyde solution was evaporated in an aluminum pan heated to 120 degrees Celsius with a constant temperature hot plate.

#### Summary of Results

The Protect 800 reduced formaldehyde from 100 ppm to around 13 ppm during a 14-hour testing experiment, an 85% reduction.



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### PMI and PM2.5 Reduction

Laboratory Name:	Camfil Laboratories – Tech Center
Laboratory Location:	Trosa, Sweden
Date:	April 25, 2018
Device Tested:	Defend 1050
Space Treated:	<b>19.72</b> m <sup>3</sup>

#### Objective

To evaluate the particulate and molecular efficiency of the Defend 1050 in a test chamber using DEHS.

#### Methodology

Test method: CADR

DEHS was generated in the laskin nozzle and injected into a room until a preset concentration was achieved then the air cleaner was turned on. The results were then compared to the normal reduction of particles over time in the test chamber.

#### Summary of Results

The Defend 1050 produced a CADR of 513 CFM against PM2.5 and a CADR of 507 CFM against PM1. It removed 99% of PM2.5 within 6.26 minutes and 99% of PM1 within 6.33 minutes.





### **Allergens Reduction**

Laboratory Name:	Indoor Biotechnologies Ltd.
Laboratory Location:	Cardiff, UK
Date:	September 9, 2016
Device Tested:	Protect 800
Space Treated:	l m³

#### Objective

To evaluate the efficacy of the Protect 800 on reducing airborne allergens.

#### Methodology

Testing was performed with the Protect 800 placed in a closed, thoroughly cleaned experimental chamber measuring approximately Im<sup>3</sup>.

#### Summary of Results

The Protect 800 produced an overall allergen reduction of 41.16%, with a 38.93% reduction of house dust mites, a 39.46% reduction of house dust mites (group 2), a 54.33% reduction of feline dander, a 23.54% reduction of canine dander, and a 49.53% reduction of pollen.



#### Evaluation of the Novaerus Technology in a Dialysis Centre

Fresenius Dialysis Centres: Vedras and Alverca

Portugal

Testing reflected an 87% reduction in airborne bacteria, a 93% reduction in VOCs, and up to a 67% reduction in moulds.

#### Evaluation of the Novaerus Technology in an Emergency Hospital

Bucharest Emergency University Hospital

Bucharest, Romania

The testing of air samples reflected an 89% reduction in airborne bacteria CFU/m<sup>3</sup>, an 87% reduction in airborne fungi CFU/m<sup>3</sup>, and up to a 100% reduction in airborne *Staphylococcus* CFU/m<sup>3</sup>.

#### Evaluation of the Novaerus Technology in Hospital Wards

Leopardstown Park Hospital

Dublin, Ireland

Testing reflected no outbreaks of MRSA, *C. diff*, influenza, or norovirus in wards with Novaerus units installed in three years, a continued decline in staff sickness, a reduction in odours throughout the wards, and a reduction in infections and antibiotic use.

#### Evaluation of the Novaerus Technology in a Hospital

Royal Free Hospital

Hampstead, London

Testing reflected a 97% reduction in environmental surface MRSA, a 49% reduction in environmental surface TVC, and a 75% reduction in environmental air MRSA.

## Evaluation of the Novaerus Technology in an Infectious Disease Hospital

The "Dr V. Babes" Hospital of Infectious and Tropical Diseases

Bucharest, Romania

The testing of air samples reflected a 96% reduction in airborne bacteria CFU/m<sup>3</sup> and airborne fungi CFU/m<sup>3</sup>. The hospital staff found the Novaerus air purification system to be tolerable, easy to use, and safe for patients and staff. The Novaerus air purification system complements existing measures to combat infections and does not require additional interventions to ensure that it functions without interruption.



#### Evaluation of the Novaerus Technology in Intensive Care

Brothers Hospitallers of Saint John of God Hospital

Łódź, Poland

Results of the microbiological test indicated significant reduction in the number of microorganisms in the air in the DAIC. Since the Novaerus devices were installed, the amount of microorganisms in subsequent tests were low.

#### Evaluation of the Novaerus Technology in a Nephrology Clinic

Rigshospitalet

Copenhagen, Denmark

There was a significant reduction in bacterial loads on high surfaces and window sills. In the control section with no units, the number of overall infections increased by 35% from 2013 to 2014. In the section with Novaerus units, the number of overall infections fell 23% during the same time period.

## Evaluation of the Novaerus Technology in a Paediatric Department and a Pulmonology Clinic

Międzyrzecz Hospital

Międzyrzecz, Poland

Novaerus devices effectively reduced the number of airborne pathogens in the admission room of the Paediatric Department by 61% and by 19% in the Pulmonology Clinic.

#### Evaluation of the Novaerus Technology in a Pulmonology Department and a Traumatology, Septic Department

Uzsoki Hospital

Budapest, Hungary

Testing reflected an 82% drop in CFU rates and a 93% reduction in fungi count. The air quality now meets the Swiss Class III standard (500 CFU/m<sup>3</sup> for general wards).











Defend 1050

Protect 800

Protect 200

Contact us:

address: DCU Innovation Campus Old Finglas Road Glasnevin, Dublin II call: +353 | 907 2750 email: info@novaerus.com www.novaerus.com

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