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The Defend 400

Airborne Infection Protection

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Innovation in Air Disinfection

Protected by NanoStrike™ technology

The Defend 400 is an FDA cleared medical device that inactivates aerosolized viruses, bacteria, and fungi, and purifies the air of particulate matter (PM), volatile organic compounds (VOCs), gases and odours.

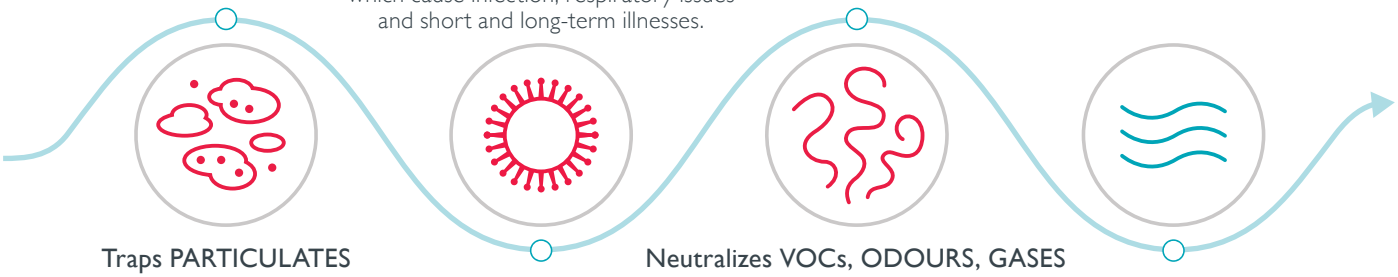
The device is designed for airborne infection control in small to medium sized rooms where risk of healthcare-accquired infections (HAIs) and surgical site infections (SSIs) is elevated.

The Defend 400 device combines NanoStrike™ Technology with a triple-stage filtration system from Camfil® to deliver healthy indoor air.

FDA Cleared
510(k) Class II Medical Device

Inactivates
VIRUSES, BACTERIA & MOULD
10µm → 1µm
which cause infection, respiratory issues and short and long-term illnesses.

Delivers CLEAN AIR
Healthy, contaminant-free air helps make the indoor world cleaner and safer.



Traps PARTICULATES
1,000µm → 100µm
which cause allergies, asthma, sneezing, itching and watery eyes.

Neutralizes VOCs, ODOURS, GASES
0.1µm → 0.01µm
which cause headaches, fatigue, dizziness, nausea, burning and itching eyes.

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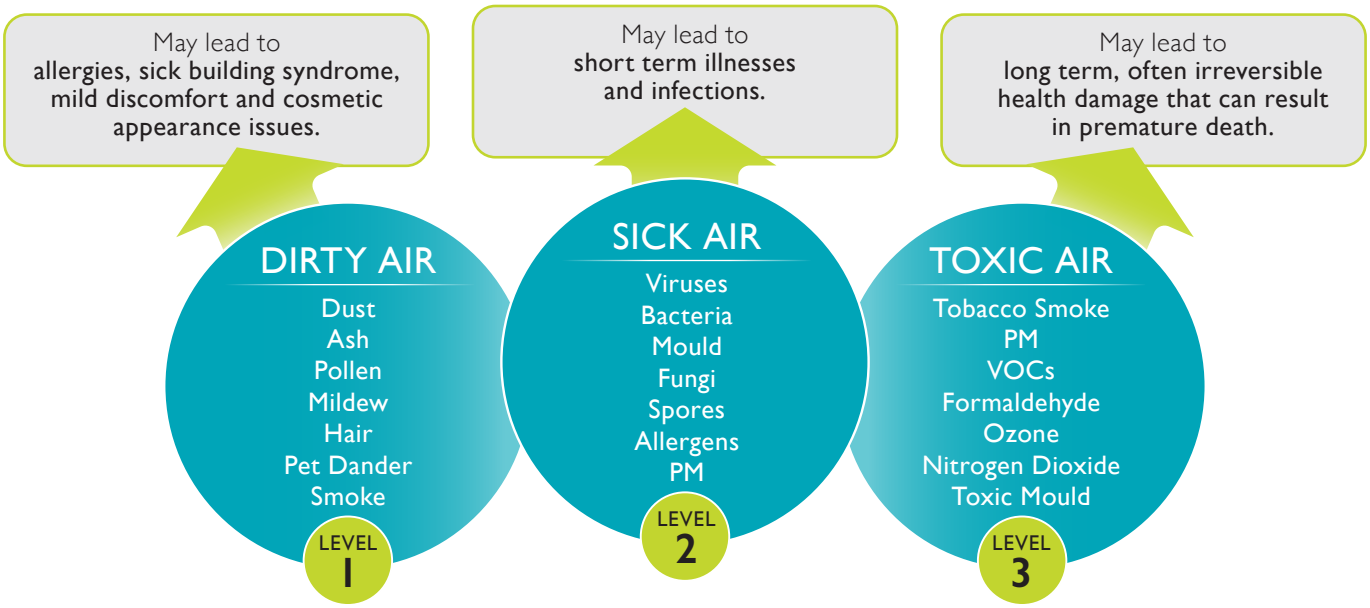
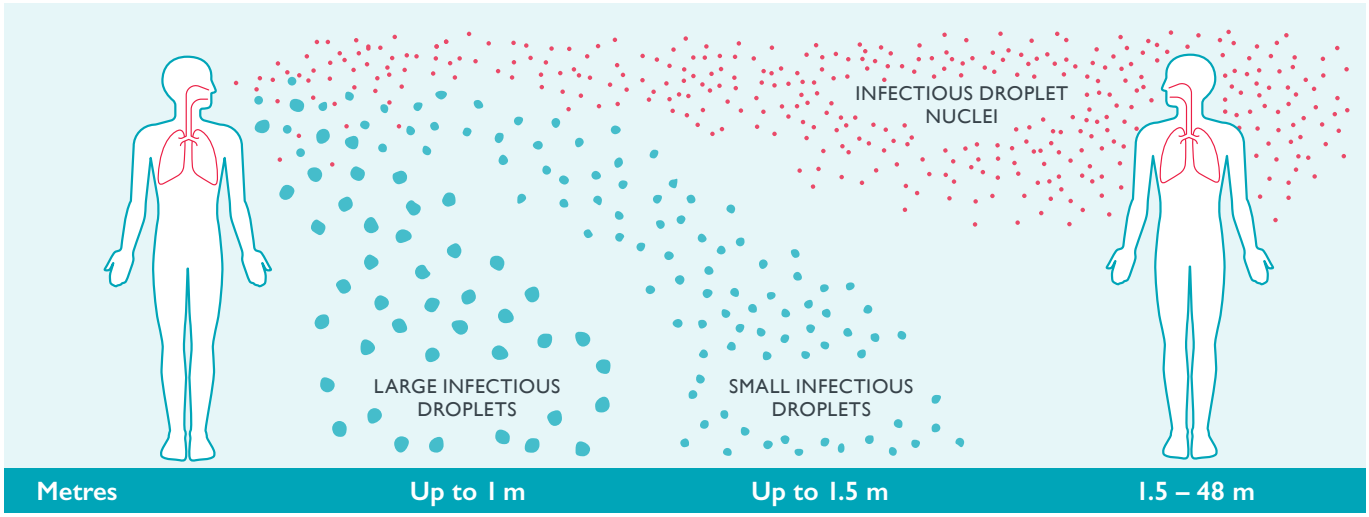
Defend Your Patients and Staff

Reduce the threats associated with dirty, sick and toxic air

Indoor air can be up to 5 times more polluted than outside air – teeming with viruses, bacteria, fungal spores, volatile organic compounds, particulate and allergens. Exposure to these pollutants can lead to many virus-based illnesses, bacterial infections, asthma, allergies and a host of long-term health issues.



Infectious aerosols can be extremely small (<5 µm) and remain suspended and viable in the air stream over long periods of time, resulting in a high risk of airborne infection. Larger infectious particles may drop from the air to contaminate surfaces and hands.



Infectious pathogens like SARS-CoV-2[1], Influenza[2], TB[3], and MRSA[4] are scientifically proven to be transmitted via indoor air currents.

1. CDC (2021). Scientific Brief: SARS-CoV-2 Transmission. Available at https://www.cdc.gov/coronavirus/2019-ncov/science/science-briefs/sars-cov-2-transmission.html#anchor_1619805184733
2. Bischoff, W., Swett, K., Leng, I. and Peters, T. (2013). Exposure to Influenza Virus Aerosols During Routine Patient Care. *The Journal of Infectious Diseases*, 207(7), pp.1037-1046.
3. CDC (2016). How TB Spreads. Available at www.cdc.gov/tb/topic/basics/howtbspreads.htm
4. Shiomori, T., Miyamoto, H. and Makishima, K. (2001). Significance of Airborne Transmission of Methicillin-Resistant Staphylococcus aureus in an Otolaryngology–Head and Neck Surgery Unit. *Archives of Otolaryngology*–Head & Neck Surgery, 127(6), p.644.

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Defend 400

Best in Class Air Disinfection and Purification Device

NanoStrike™ technology

NanoStrike™ Technology rapidly inactivates airborne contaminants to ensure they are no longer a threat of infection.

TRIPLE STAGE FILTER

Medical-grade filters from Camfil® capture bacterial debris, fine and large particles, VOCs, gases, odours, and impurities.

ANTIMICROBIAL FINISHES

Antimicrobial paintwork offers 24/7 protection for the surface of the device, reducing the need for regular cleaning.

NO EMISSIONS
NO HARMFUL BY-PRODUCTS

Medical-grade components generate no emissions and no harmful by-products, ensuring the highest safety levels and peace of mind for patient and staff.

24/7
CONTINUOUS USE

Suitable for 24/7 continuous use at the point of care.

PLUG AND PLAY

Requires no installation or set-up – just plug in and switch on. Easily transported to point of need.

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How the Defend 400 Device Works

Cleans the air via a four-stage air disinfection and purification process

Stage 3
A Camfil® HEPA H13 filter traps bacterial debris and particles as fine as 0.12µm.

Stage 1
Powerful multi-speed fan pulls indoor air through a Camfil® pre-filter, capturing large particles, protecting the internal NanoStrike™ coils and extending the life of the HEPA filter.

Stage 4
A Camfil® G4 carbon/molecular filter neutralizes VOCs, gases, odours, and impurities.

Stage 2
Four NanoStrike™ coils provide a powerful strike, made up of multiple concurrent inactivation processes, that work to burst airborne pathogen cells, rapidly inactivating them, ensuring they are no longer a threat of infection.

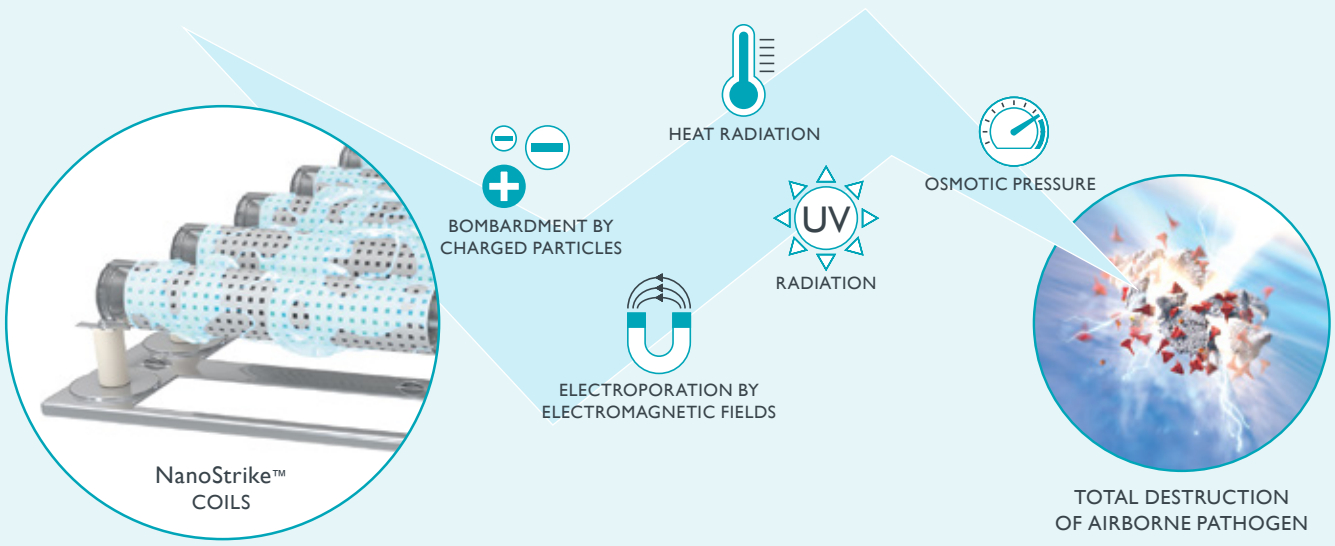
NanoStrike™ technology

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

NanoStrike Technology is the unique, patented technology at the core of the Defend 400 device. Developed by the WellAir team of scientists and engineers, NanoStrike Technology harnesses a range of physical concurrent pathogen inactivation process to safely disinfect 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.

Unlike other technologies, the effectiveness of NanoStrike lies within its ability to inactivate nanosized pathogens in a localised way.



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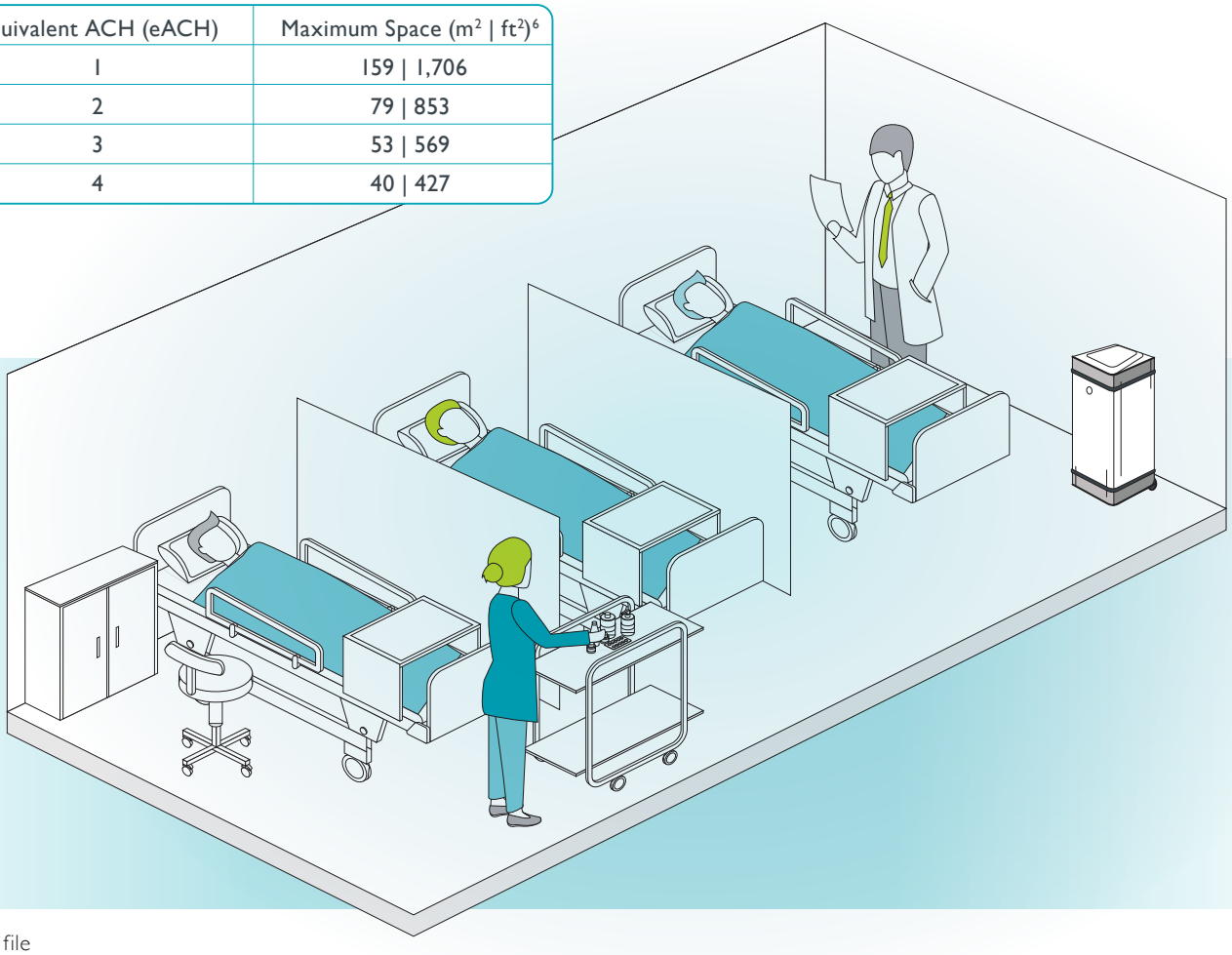
Designed for High-Risk Healthcare Environments

Risks of acquiring infections and illnesses from sick and toxic air are greatest in healthcare environments. The Defend 400 device can fully disinfect and purify air from harmful contaminants in rooms of up to 79 m^2.[5]

- Minor surgery operating rooms
- Outpatient surgery
- Small to medium ICUs
- General patient wards
- Dental practices
- Doctor practices
- Veterinarians
- Care homes
- Clinics
- Procedure rooms
- Treatment rooms
- Clean rooms
- Laser eye
- Isolation
- Oncology
- Burns
- Neonatal
- Trauma
- Cardiology
- Organ transplant
- Bone marrow
- Orthopedic




Equivalent ACH (eACH)	Maximum Space (m^2 | ft^2)[6]
1	159 | 1,706
2	79 | 853
3	53 | 569
4	40 | 427



5. Data on file
6. The above spaces are calculated from the equivalent CADR of Defend 400 (387 m^3/h) on *Staphylococcus epidermidis.*

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Independently Tested

In independent laboratory tests the Defend 400 device has been proven effective at inactivating a range of airborne pathogens, including viruses, bacteria and particulate matter.[7]

TYPE	NAME	REDUCTION	TIME	SPACE	MODEL
VIRUSES	SARS-CoV-2[1]	99.999%	45 min	16m³ | 565 ft³	Defend 400
BACTERIA	MRSA[2]	99.99%	45 min	30m³ | 1,059 ft³	Defend 400
	Bacillus Globigii endospores	99.99%	45 min	16m³ | 565 ft³	Defend 400
PARTICULATE	PM 2.5	99.99%	25.9 min	16m³ | 565 ft³	Defend 400
	PM 1	99.99%	26.0 min	16m³ | 565 ft³	Defend 400

1. Tested on MS2 Bacteriophage virus, a surrogate for SARS-CoV-2.
2. Tested on *Staphylococcus epidermidis*, a surrogate for MRSA.

Research & Development

The Defend 400 device was developed in WellAir's onsite state-of-the-art R&D electronics and microbiology laboratories and environmental test chambers. Our team of scientists and microbiologists ensure our solutions deliver maximum destruction of pathogens before being launched into the market.

Regulatory Certifications

- FDA K200321.510(k) Class II Medical Device
- IEC 60601

7. Data on file

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About Us

Novaerus is part of WellAir – a leading provider of infection control solutions. For over a decade, Novaerus has been providing medical-grade solutions that address a global problem; unhealthy indoor air. Indoor air is the culprit for many virus-based illnesses, bacterial infections, asthma, allergies and a host of long-term health issues.

Led by a dedicated and highly skilled team of scientists, we took a fundamentally different approach to air disinfection, which led to the transformational discovery of NanoStrike – the unique, patented technology at the core of all Novaerus portable air disinfection devices today. This nanotechnology inactivates all airborne microorganisms on contact providing the first line of protection against viruses and bacteria.

Utilizing NanoStrike technology, Novaerus air disinfection devices help to prevent the spread of infection in thousands of hospitals, senior living facilities, IVF clinics, dental offices, schools and homes around the world.

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