



Dolphin Care UVC Air Sterilizer

Sterilized air, reduction of CFU, allergens and odor

Dolphin Care UVC Air Sterilizer

– *testet in clinical environment and in laboratory*

- Clinical tested in Intensive Care Unit at Rigshospitalet, Copenhagen University Hospital
- Better and safe environment
- Four phase process
 - UVC-irradiation
 - TiO₂-coated filter
 - Carbon-filter
 - HEPA H14-filter
- High capacity
- Danish design

*Up till 80 %
reduction of
CFU**



Size S: 400 m³/air pr hour
Size L: 800 m³/air pr hour
Industrial: 1030 m³/air pr hour

Filtration and UVC-light generate sterilized air and a safer environment

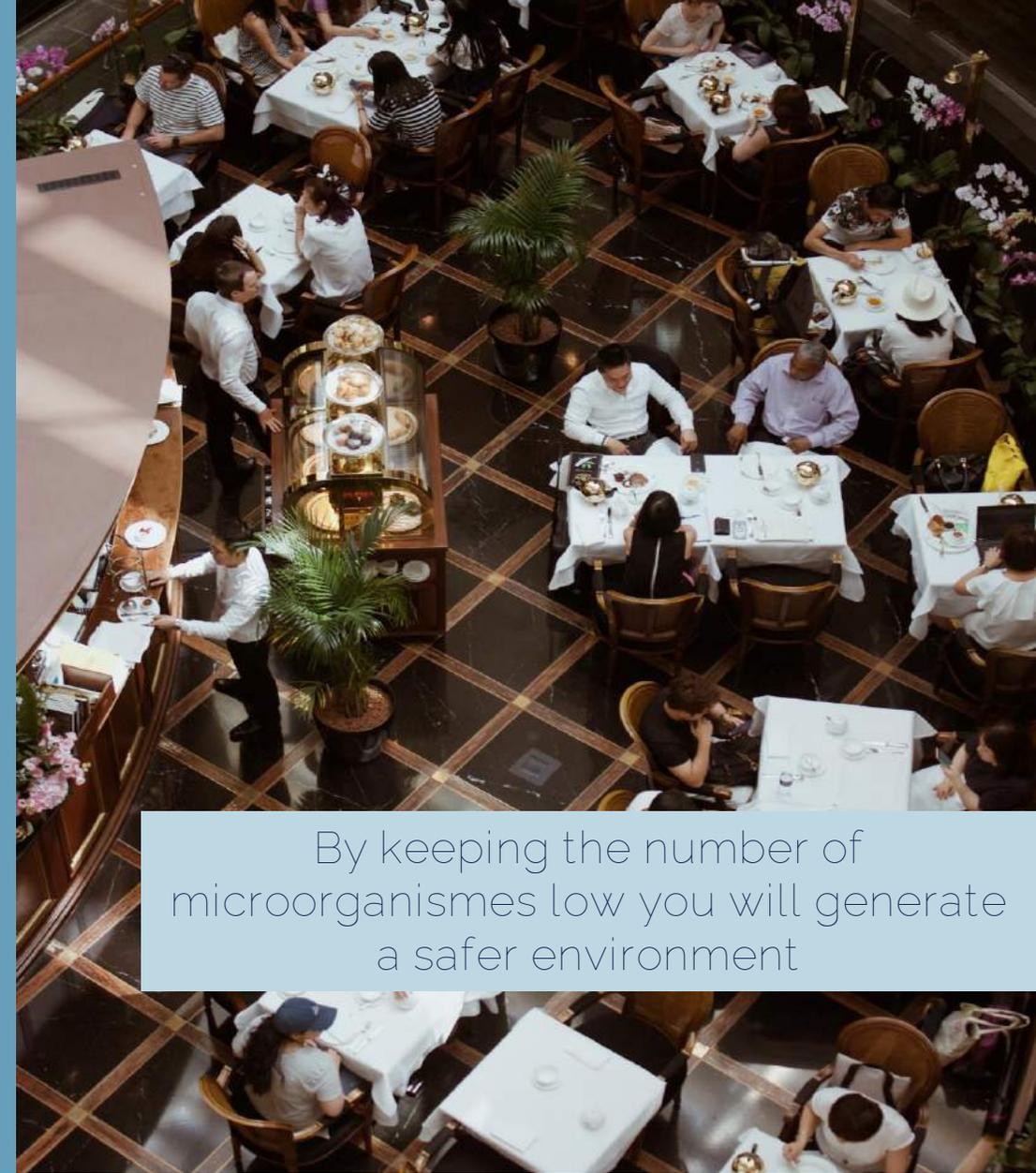
The air is irradiated by UVC-light with a wavelength of 254 nm and an intensity of $392 \mu\text{W}/\text{cm}^2$ which destroys DNA/RNA from microorganisms in the air.

The titanium dioxide coated filter together with the UVC-light secures that the cell walls of microorganisms are destroyed.

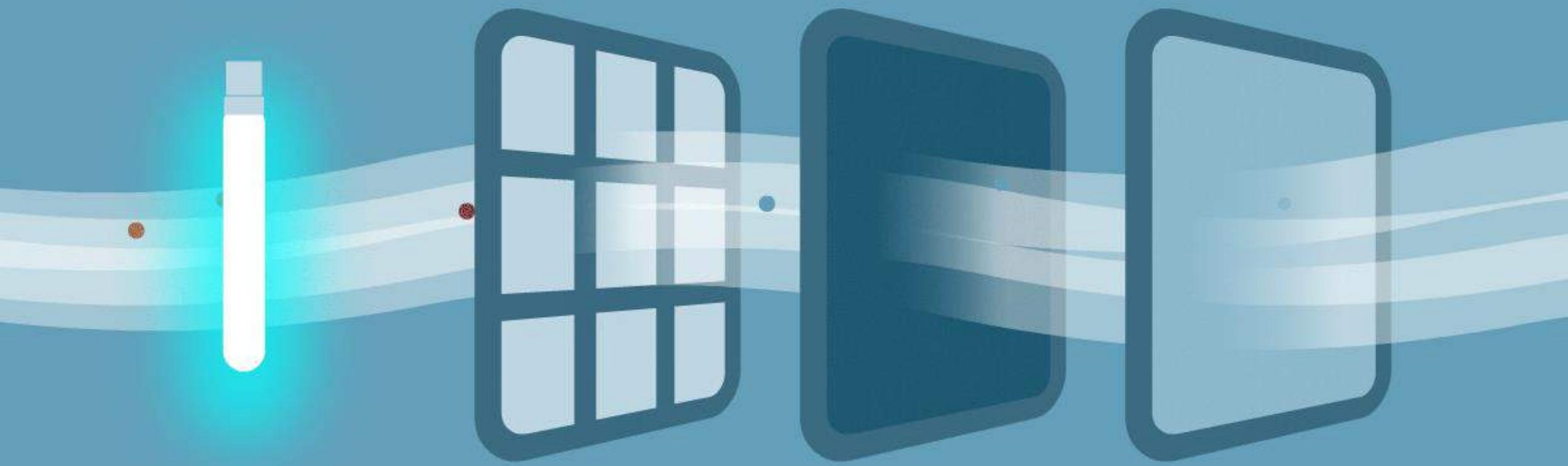
The UVC Air Sterilizer is equipped with an active carbon filter which effectively reduce bad odor from the environment before the air is recirculated.

Finally, the air passes through a large volume of HEPA H14 filter, which removes 99,995 % of all particles larger than $0.16 \mu\text{m}$.

The result of the process is sterilized air.



By keeping the number of microorganismes low you will generate a safer environment



UVC
Radiation

Titanium
Dioxide
Cartridge

Carbon
Filter

HEPA14
Filter

Competing products

Standard filter components:

- HEPA 13 – 5,8 m²
- Carbon filter – 1,2 m²



Dolphin Care filter components

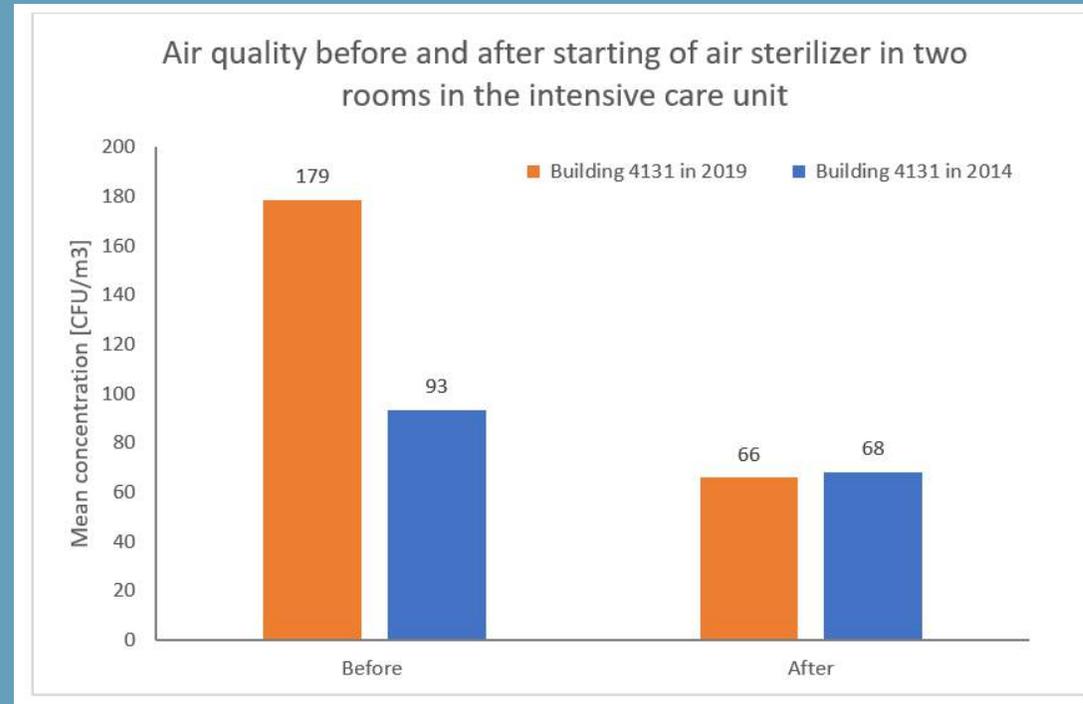
- Carbon filter - 500 gr activated carbon pr m²
Size S: 0,8 m² - Size L: 1,2 m²
- Titanium dioxide cartridge
Size S: 0,75 m² - Size L: 1,15m²
- HEPA 14 filter:
Size S: 14,5 m² - Size L: 22,5 m²

Dolphin Care filter house
– a closed and safe environment



A significant reduction of CFU

The clinical test of the UVC Air Sterilizer showed a high efficacy in reducing CFUs with up to 80 percentage, which leads to a safer environment.



From the test-report issued by MD Leif Percival Andersen, Specialist in Clinical Microbiology and Head of The Laboratory of Infection Control, Rigshospitalet, Copenhagen University Hospitalet

Summary

Background The COVID-19 pandemic has overwhelmed the respiratory isolation capacity in hospitals; many wards lacking high-frequency air changes have been repurposed for managing patients infected with SARS-CoV-2 requiring either standard or intensive care. Hospital-acquired COVID-19 is a recognised problem amongst both patients and staff, with growing evidence for the relevance of airborne transmission. This study examined the effect of air filtration and ultra-violet (UV) light sterilisation on detectable airborne SARS-CoV-2 and other microbial bioaerosols.

Methods We conducted a crossover study of portable air filtration and sterilisation devices in a repurposed 'surge' COVID ward and 'surge' ICU. National Institute for Occupational Safety and Health (NIOSH) cyclonic aerosol samplers and PCR assays were used to detect the presence of airborne SARS-CoV-2 and other microbial bioaerosol with and without air/UV filtration.

UVC filtration – efficient against SARS-CoV-2

Results Airborne SARS-CoV-2 was detected in the ward on all five days before activation of air/UV filtration, but on none of the five days when the air/UV filter was operational; SARS-CoV-2 was again detected on four out of five days when the filter was off. Airborne SARS-CoV-2 was infrequently detected in the ICU. Filtration significantly reduced the burden of other microbial bioaerosols in both the ward (48 pathogens detected before filtration, two after, $p=0.05$) and the ICU (45 pathogens detected before filtration, five after $p=0.05$).

Conclusions These data demonstrate the feasibility of removing SARS-CoV-2 from the air of repurposed 'surge' wards and suggest that air filtration devices may help reduce the risk of hospital-acquired SARS-CoV-2.

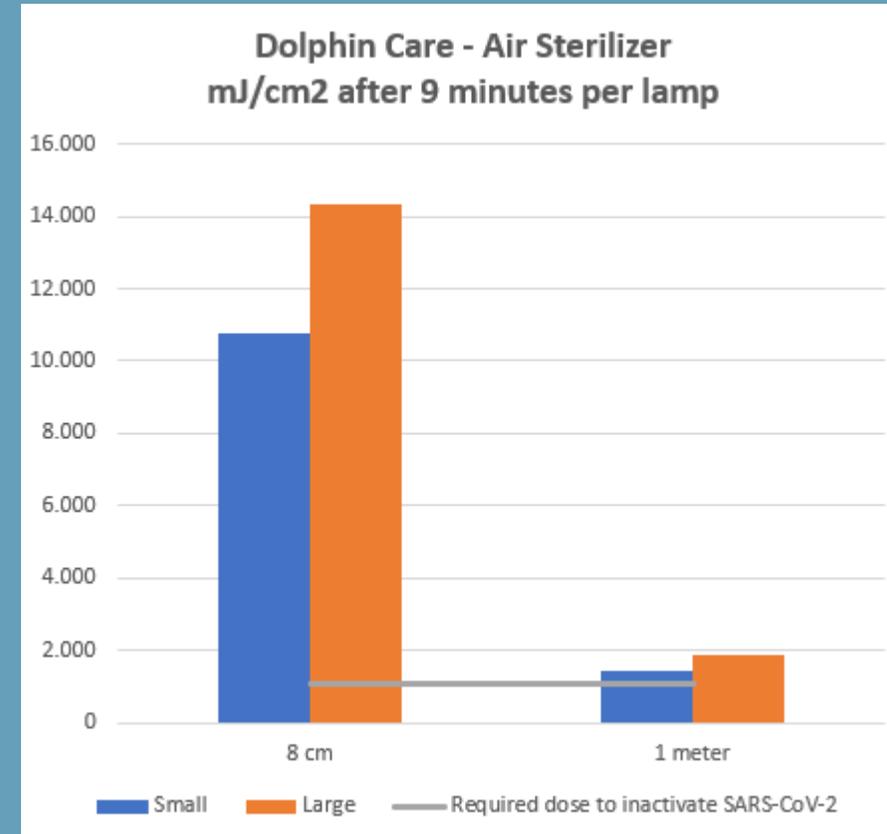
Source:
<https://www.medrxiv.org/content/10.1101/2021.09.16.21263684v1>

Effectively eliminates SARS-CoV-2

The UVC-irradiation dose delivered in the UVC Air Sterilizer is more than **10 times higher** than what is needed to inactivate SARS-CoV-2*.

The high dose is necessary to eliminate the SARS-CoV-2 passing the UVC-light with an extremely high speed and volume.

* <https://www.sciencedirect.com/science/article/pii/S0196655320308099>



From the Laboratory test of the UVC-dose in Dolphin Care Air Sterilizer

High capacity – day and night mode

Small UVC Air Sterilizer:

Processes 400 m³ of air/hour during daytime and 200 m³ air/hour during nighttime.

Large UVC Air Sterilizer:

Processes 800 m³ of air/hour during daytime and 400 m³ of air/hour during nighttime.

Day and night mode can easily be switched off if a constant high capacity is needed.





WARRENTY AND SERVICE PACK

The Air Sterilizer comes with a **three-years-guarantee** from delivery date.

To secure the high level of efficacy the UVC-lamps and the filters, they must be changed once a year.

In order to keep the documented efficacy of the Air Sterilizer it is essential that the components are replaced with similar components.

Dolphin Care and their local distributor offer service agreements which secures that the lamps and the filters are changed in due time – a guarantee for a consistent efficacy.



DOLPHIN CARE