

LEA[®] air
sterilizer



PROFESSIONAL AIR DECONTAMINATION

Innovation made in Austria



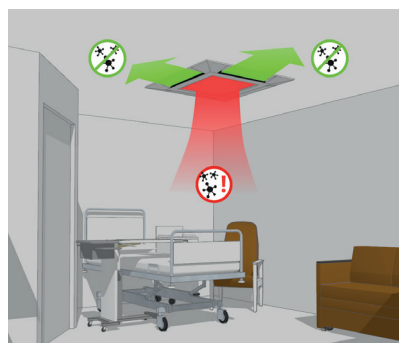
Developed on behalf of the European Commission



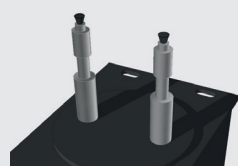
The majority of people spend often more than 75% of the day in buildings together with other people in publicly accessible room typologies, such as offices, business premises, classrooms, e.g.

A variety of pathogenic substances and airborne particles can float indoors and affect people: pollen, spores, dust particles, bacteria and viruses. Even one infected person may infect other people in the same room through such airborne bioaerosols.

Due to the precarious situation in March 2020 with SARS-CoV-2 infection clusters of patients in several hospitals,



LEA™
system
cycle -
schematic



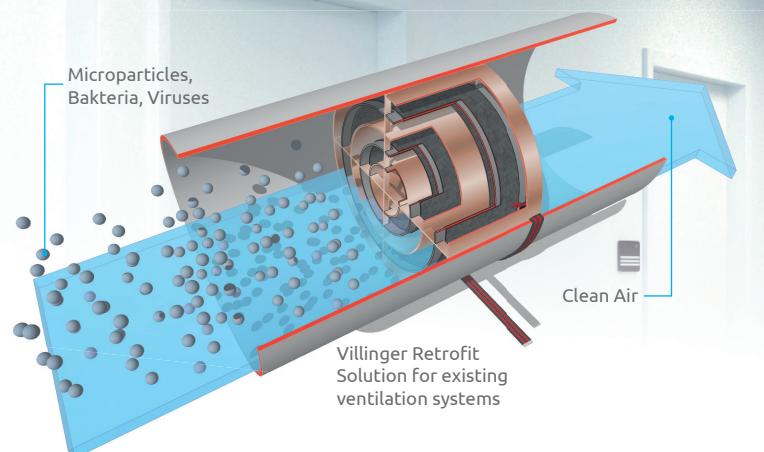
Conventional needle tip ionizer
with carbon fiber brushes



Conventional
UV-C lamps

Villinger's LEA™ Technology

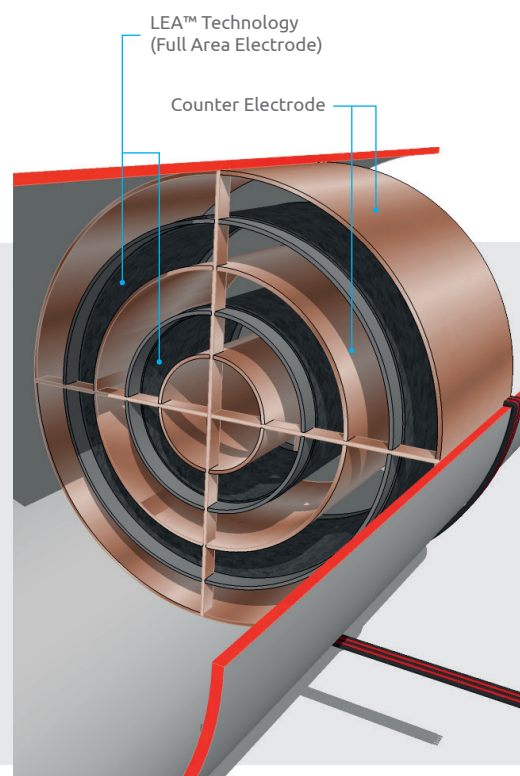
- LEA™ Technology (pat.) specification:
- Laminar Arrey - Electro-Kinetic Electrode design
- Most powerful decontamination of airborne particle (aerosols) including inactivation of pathogens such as viruses or bacteria
- Significantly increased performance compared to conventional systems
- No emission of ozone or NOx
- Kills airborne pathogens and prevents agglomeration
- System can be installed as a replacement for HEPA or as an additional safety feature to support HEPA
- Systems can be scaled to size
- Easy to maintain



In June 2021, the re-duction rate to airborne SARS-CoV-2 viruses was demonstrated in cooperation with a high-security microbiology laboratory. The test engineer's statement spoke for itself:

"A lot of the devices we test are either ionizing, UV, or a combination of the two. Your device is the most reduction I've personally seen in that amount of time"

JEFFREY TROLINGER,
Head of Testing
(Aerosol Research & Engineering Labs, Kansas, USA)





Air purification for hospital and public buildings

The most efficient way to reduce infection rates caused by germs in hospitals or public buildings is to reduce the number of airborne pathogens such as viruses and bacteria.

Until now, attempts have been made to counteract this problem with HEPA filters. Such filters are installed as standard in many hospital ventilation systems, especially in operating theaters and clean rooms, and sometimes also in patient rooms. However, the filtration performance of HEPA filters is limited to particles larger than 500 nm. This limitation means that smaller particles such as airborne pathogens (aerosols) like SARS-CoV-2 - viruses but also other pathogens, which have a particle size of only 120 nm or less, cannot be filtered with HEPA filters.

The patented LEA™ air disinfection technology is able to quickly capture and kill even the smallest airborne particles including SARS-CoV-2 - viruses.

This offers major advantages over mechanical filters by efficiently capturing and inactivating not only the finest microorganisms, viral aerosols and particles down to the size of atoms.

In addition, LEA™ technology combines the advantages of the most efficient electrical filtration devices with the added benefit of not releasing harmful compounds into the surrounding atmosphere.

Instead of HEPA filters, ionization systems and those designed to kill germs with UV lamps are also used. However, these systems have a comparatively low cleaning performance and tend to produce ozone that is harmful to health.

Our patented LEA™ air disinfection technology ensures the strongest air disinfection ever measured without producing harmful ozone.

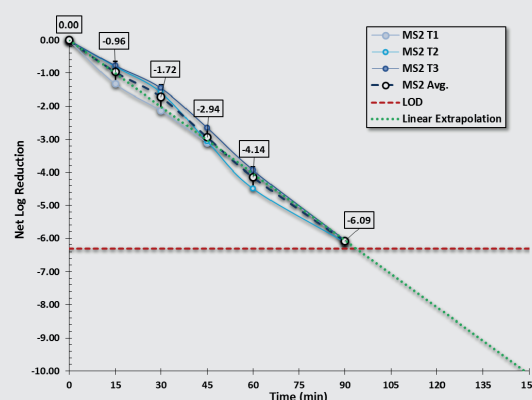
The issue regarding uncontaminated air in buildings is relevant to health, not only in times of the current COVID-19 pandemic.

Sensational test results

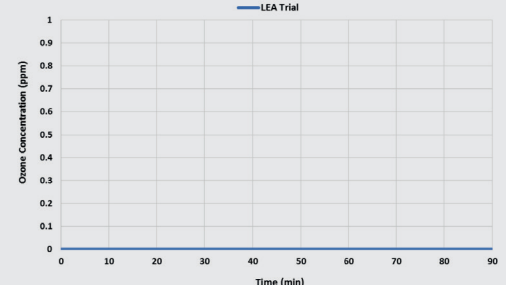
The graph shows the linear trend line of the LEA™ air sterilizair system as an estimate of the theoretically achievable reduction in the test time allotted for such tests, above the detection limit of the test procedure.

Based on this extrapolation, the expected reduction at a time of 150 minutes under the same test conditions would theoretically be 10.0 net LOG.

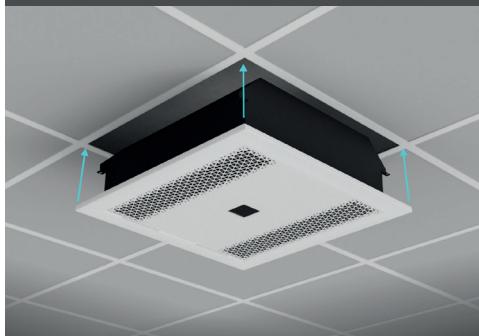
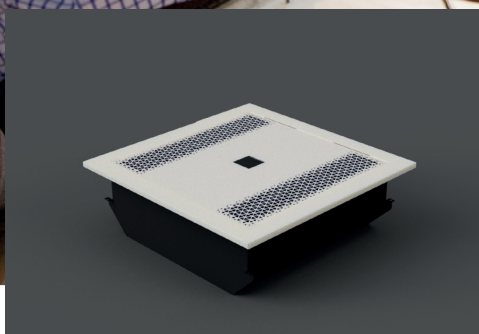
MS2 Trials: Net LOG Reduction Extrapolation
1m³ Chamber, MS2 bacteriophage, Impinger Sampling, Enumerated in Triplicate



Ozone Concentration During the LEA™ Trial
Ozone readings taken on an Aeroqual Series 500S every minute



During the test period, the ozone level was consistently below the measurable limits of 0.001 ppm.



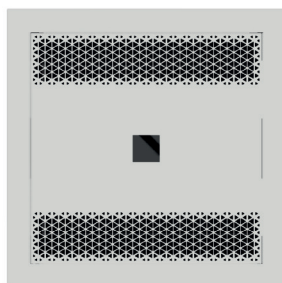
Installation:
Dimensions:
Weight:
Noise Level:
Operating voltage:
Energy Consumption:
Standby Energieverbrauch:
Operating Temperature:
Air Circulation:
LEA™ Electrodes:
Booster:

Typ: ASC-CC 3300B
Medical Product Class 1

Cassette Ceiling
 620 x 620 x 220 mm
 12.3 kg
 35 dbA
 220-240V AC 50-60Hz
 300 W; Eco-Mode: 10 W
 <0.2W
 0 - 40°C
 400 m³/h max.
 2
 Yes, max. runtime 1h

Typ: ASC-CC 9500B
Medical Product Class 1

Cassette Ceiling
 620 x 620 x 220 mm
 16.2 kg
 38 dbA
 220-240V AC 50-60Hz
 2000 W; Eco-Mode: 15 W
 <0.4W
 0 - 40°C
 900 m³/h max.
 6
 Yes, max. runtime 1h



Superior air disinfection of the LEA™ air sterilizair series:

The ASC series is based on Villinger's patented LEA™ technology. This technology convinces by reduction of airborne pathogenic substances up to the measuring limit.

99.99992% reduction factor of smallest pathogenic particles up to the size of molecules and atoms within shortest time, without producing harmful ozone or NOx. The LEA™ air sterilizair ASC series is designed as a ceiling unit for installation in conventional cassette ceilings - with dimensions of 62 x 62 cm or 60x 60cm. Positioning on the ceiling of the room is advantageous as aerosols and particles above the occupied zone and breathing level are effectively drawn in, while at the same time clean, disinfected air is evenly distributed in the room.

LEA® air sterilizer

A Brand of the Villinger GmbH

Villinger research & development

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