design360

Health Solutions

Clean air with the power of light

UV-C light is a proven way to disinfect airborne pathogens

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Protection against increasing airborne threats

A new paradigm of infectious aerosols demands a proven way to protect people from harmful pathogens.

Increasing urbanisation, globalization and interaction between humans and animals are a few of the reasons why airborne pathogens are becoming more frequent and damaging to health and economies. UV-C light provides an effective and affordable way to kill bacteria and inactivate viruses.

Airborne transmission of bacteria and viruses such as SARS-CoV-2 are predominantly spread via drops and aerosols produced by infected people. Small aerosol particles less than 5 microns in size are the rule rather than the exception. These infectious particles can remain airborne indefinitely under most indoor conditions[1] and unless there is removal by way of air currents or dilution through ventilation they can easily be inhaled and deposited in the lower respiratory track and cause disease.

UV-C disinfection

UV-C lighting disinfects radiated air which contain bacteria and viruses and helps to reduce them from spreading further. All micro-organisms tested to date respond to UV-C lighting[2].

Design360 UV-C disinfection luminaires

Our long experience in the lighting industry, technological expertise and passion for innovation in light have led us to developing a new range of UV-C disinfection luminaires specifically designed for fast deployment in retail outlets, hospitality, office, healthcare and education settings.

1 Particle sizes of infectious aerosols: implications for infection control. https://www.thelancet.com/journals/lanres/article/PIIS2213-2600(20)30323-4/fulltext#

2 Fluence (UV Dose) Required to Achieve Incremental Log Inactivation of Bacteria, Protozoa, Viruses and Algae. Revised, updated and expanded by Adel Haji Malayeri, Madjid Mohseni, Bill Cairns and James R. Bolton. With earlier contributions by Gabriel Chevrefils (2006) and Eric Caron (2006) with peer review by Benoit Barbeau, Harold Wright (1999) and Karl G. Linden.

Infectious particles can remain airborne indefinitely under most indoor conditions

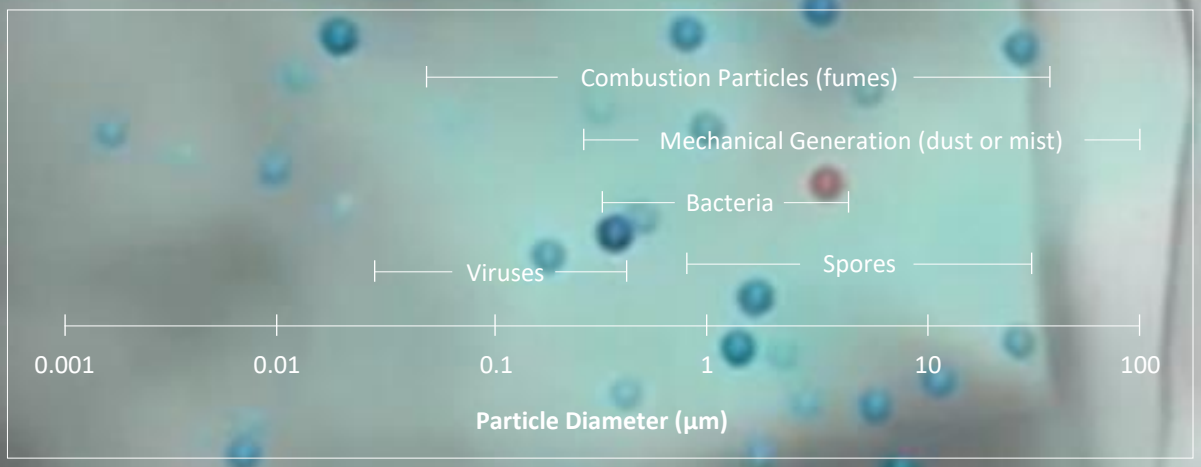


Image Source: Ville Vuorinen/Aalto University visualization: Jyrki Hokkanen/CSC. 3D model of person coughing in an indoor environment – how an aerosol cloud travels in the air

Clean air for a healthy productive life

Reduce the risk of employee absenteeism

With up to 70% of our time spent indoors we are vulnerable to building air conditioning and ventilation systems which pose an increasing threat to our health and productivity as they can be the ideal transportation vehicle for microorganisms and viruses such as mould spores, bacteria, yeasts, algae and protozoa.

Contaminated air and surfaces can result in profound effects on health and wellbeing. Anything from feeling unwell to becoming ill that cost UK businesses £77 billion each year in lost productivity[3].

3 Sick staff cost British firms £77 billion annually in lost productivity.
https://www.consultancy.uk/news/15551/sick-staff-cost-british-firms-77-billion-annually-in-lost-productivity

The power of invisible light

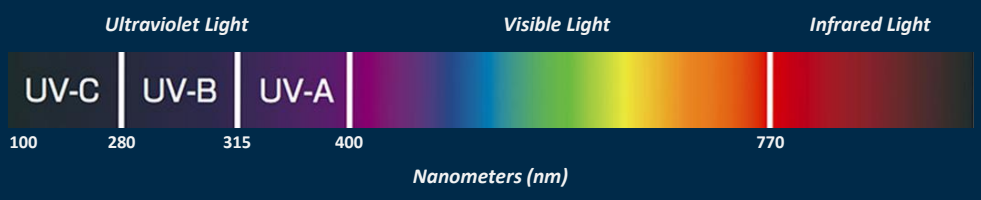
UV-C radiation can help mitigate the risk of acquiring infection.

What is UV technology?

Ultraviolet (UV) radiation has been used safely and effectively for more than 40 years to disinfectant of air, drinking water, wastewater, pharmaceutical products and surfaces against human pathogens[4].

Ultra-Violet (UV) light is invisible to the human eye and is divided into UV-A, UV-B and UV-C.

UV-C germicidal action is found within the 100-280 micrometres range and is effective at breaking down the DNA and RNA of microorganisms. This means they are no longer able to replicate and cause disease[5].



Advantage of UV-C disinfection

- Up to 99% prevention of airborne microbial contamination.
- Reduced sickness levels and absenteeism.
- Protects against premature spoilage.
- Low investment and operating costs.
- No use of harmful chemicals.
- Environmentally friendly with no Ozone.

Lighting Technology Specialist

As a leading manufacturer since 2005, we have consistently sought to challenge and develop the technological properties of sustainable light creation and management for our shared wellbeing. In doing so we collaborate with leading technology and scientific partners to explore and challenge the capabilities of materials in developing products that have equal emphasis on aesthetics, technology and market potential. Our powerful UV-C products go beyond the aesthetic demands of visible light into many areas and industries to further improve the quality of our lives.

Our experts are available to provide you with convenient solutions to your air hygiene needs.

5 A comparison of pulsed and continuous ultraviolet light sources for the decontamination of surfaces. McDonald K. F., Curry R.D., Clevenger T.E., Unklesby K., Elsenstark A., Golden J., Morgan R.D. IEEE Trans. Plasma Sci. 2000;28:1581-1587. doi: 10.1109/27.901237.

4 IUVA Fact Sheet on UV Disinfection for COVID-19
https://iuva.org/IUVA-Fact-Sheet-on-UV-Disinfection-for-COVID-19

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