



DR. FISCHER
Gruppe

KANDEM*air* / UV-C Radiator Lamp

Clean air based on decades of expertise



Information and facts KANDEMair / UV-C Radiator Lamp

KANDEM presents: clean air with UV-C light!

We live in a society where cleanliness has always been important, and since the pandemic arrived it has become essential.

For decades now the DR. FISCHER Group has been a reliable partner for air disinfection and purification, especially in the food industry. Our UV-C technology is provably effective but dependent on the correct dosage, supply air, air flow and individual system design.

For that reason we have always focused on effective custom solutions for various applications. Our UV-C solutions render all kinds of pathogenic viruses, germs and bacteria harmless without any negative impacts on the environment.

There are a lot of untrue and misleading facts about UV-C light in circulation. UV-C is good for both humans and animals because it deactivates dangerous germs.

However, direct exposure to UV-C light is dangerous for both humans and animals!

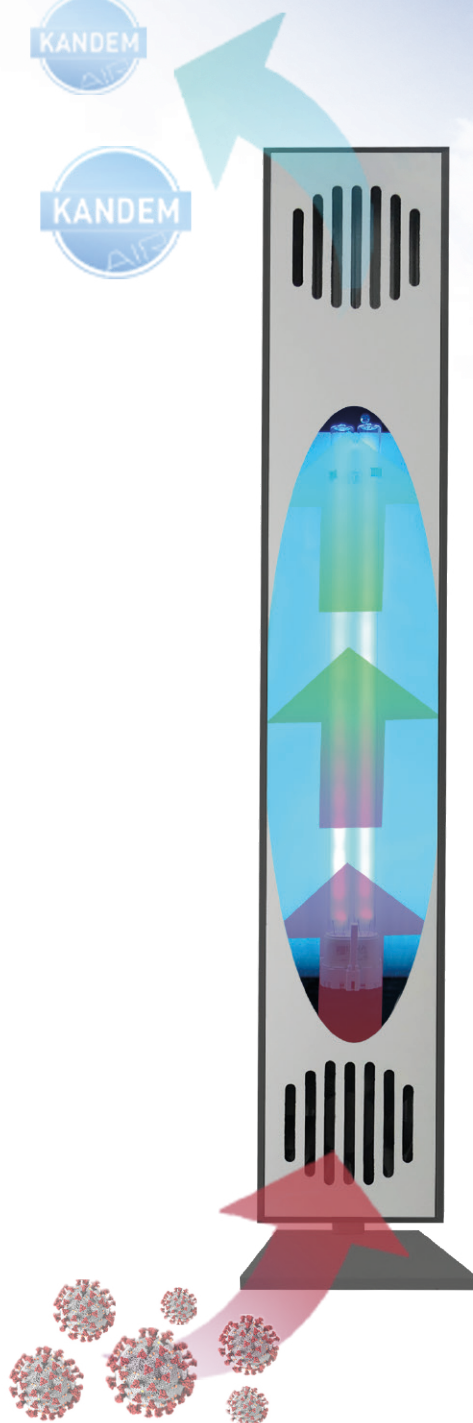
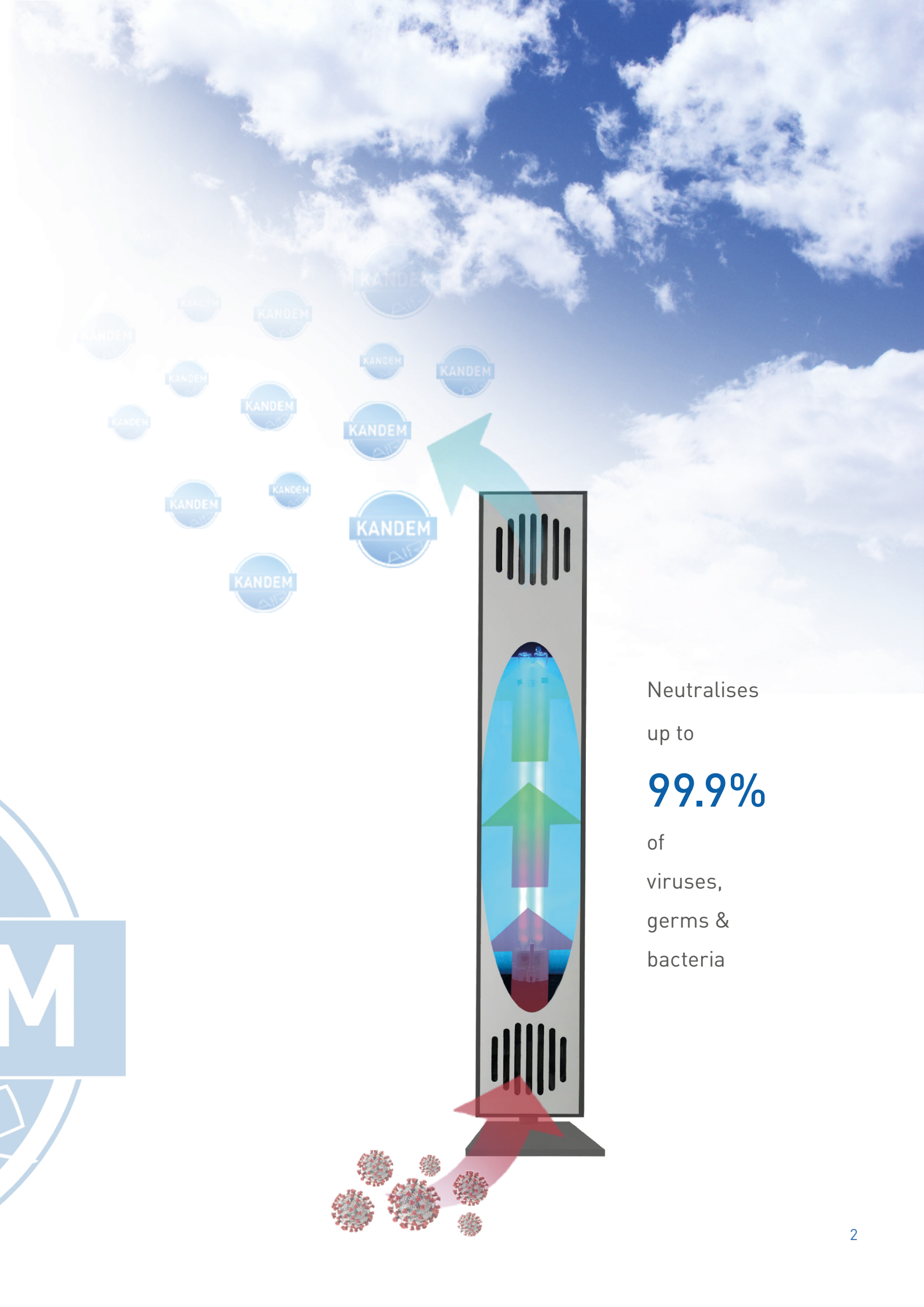
We help you to use UV-C safely.

Our UV-C systems support you in the decontamination of air, surfaces and water in diverse applications and industries.

Our disinfectant UV-C radiator lamp KANDEMair is perfect for offices, conference rooms, hotels, medical practices, care homes and bakeries.

We are the people to contact for personal advice, individual planning, project development and installation support!





Neutralises
up to
99.9%
of
viruses,
germs &
bacteria

Application examples KANDEMair / UV-C Radiator Lamp





Scientific information KANDEMair / UV-C Radiator Lamp

UV-C radiation (= shortwave ultraviolet radiation) has been used for decades to **destroy pathogenic organisms**, e.g. in drinking water or water for industrial processes, ballast water on ships, fish farm water and private garden ponds.

Scientific studies also clearly show that UV-C radiation has been used successfully for many years for the **reliable disinfection of air and surfaces, as well as for odour elimination and room air quality improvement**.

UV radiation is an optical radiation in the wavelength range of 100nm to 400nm (= nanometre, 1nm = 1/1,000mm) UV radiation occurs as UV-A, UV-B or UV-C radiation. UV-C radiation is in the wavelength range of 100nm to 280nm. The entire spectrum of UV radiation is not visible to the human eye. The visible range starts at around 380nm (violet) and ends at 780nm (dark red).

The 254nm wavelength is particularly significant because UV light at this wavelength kills viruses, bacteria and spores. Most UV-C appliances use special lamps that generate precisely this wavelength for the effective elimination of germs.

Light is really nothing more than an electromagnetic wave – like microwaves, X-rays and radioactivity. Depending on the wavelength range, materials are either invisible to the rays or absorb them and convert them into heat, for instance. Wavelengths larger than 780nm are called infrared radiation or heat radiation. The wavelengths after that are used in applications such as microwave ovens. We mainly have infrared radiation, visible light and UV-A /UV-B radiation on Earth. They all have both positive and negative impacts. An example of a positive effect is the photosynthesis of chlorophyll in plants to product oxygen. Visible UV-B radiation also helps the body to produce vitamin D via the skin, but it can also cause sunburn and cancer. Since UV-C radiation is harmful to the eyes and skin, it is a good thing that the Earth's atmosphere absorbs most of it.

UV-C radiation is making an important contribution to controlling the Corona virus pandemic. It breaks up the DNA of viruses, bacteria, yeast and mould spores, which prevents them from reproducing. The higher the so-called log rate (Log4 = 99.99% reduction), the fewer germs are left over as the basis for new contamination. To achieve the desired germ reduction (log rate) the 'dose' of UV-C radiation has to be adapted to the specific virus, bacteria, yeast or spore. This is a well-researched field and there are dosage tables that apply to the majority of germs in existence. However, mould spores generally require very high doses of UV-C radiation. The right dosage also depends on the level and time of the radiation process. The longer a surface is irradiated or subjected to airflow with UV-C radiation, the lower the germ count will be. A stronger effect can be achieved by increasing the radiation dose over the same period of time.

It is interesting to note that when a UV-C radiation appliance is used to disinfect the air, it not only eliminates viruses (including SARS-CoV, chicken pox, measles and hepatitis A) and bacteria (including E-coli, legionella, anthrax and clostridia), yeast and mould spores, the VOCs – volatile organic compounds) that are emitted from building materials, paint, carpets and the like, are also reduced. This is precisely why special UV-C radiation lamps can be found in air extractors at paint shops, fattening farms and commercial kitchens to reduce odours and VOC contamination.

The use of UV-C radiation on the food containers at food filling plants extends the shelf life of the products without the need for preservatives.

Sources:

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Dr Christoph Mehlmann, Physicist

Sales Director IR & UV Germany, Austria, Switzerland & Eastern Europe DR. FISCHER Group

KANDEM combines **best advice** and **quality** into the perfect **UV-C radiation lamp** package!



Our **UV-C experts** will be happy to answer your questions about UV-C.

Risk assessment

Please read the following information about proper use:

- Under no circumstances should a person be directly exposed to UV-C radiation
- UV-C appliances should only be opened by trained personnel
- Before opening the appliance, remove the plug from the mains and wait for at least 1 minute
- Direct exposure to UV-C radiation can cause damage to the eyes and skin
- Air purifiers minimise the concentration of viruses, germs and bacteria in the air, but they do not completely eliminate them
- Comply with the recommended safety measures to prevent infection

KANDEM your partner for individual lighting
solutions for more than 130 years

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