

A new disinfection device - Deactivate™ by Xenex

Since the onset of the COVID-19 pandemic, researchers and manufacturers of products and equipment have been frantic to develop new methods, products and equipment to effectively limit the causes.

PubMed has over 111,190 articles published on COVID-19, of which over 1,820 articles on dentistry, to which one can add the over 5 articles published by the Stomatology Edu Journal (*Stoma Edu J*).

WHO, FDI, ERO, ADA and other professional associations have developed a series of rules on protection against COVID-19, itineraries to be followed by patients, protection of patients and medical staff, disinfection of surfaces and equipment. Xenex Disinfection Services Inc., a global provider of UV-based disinfection strategies and solutions, is known for LightStrike™ Germ-Zapping rob robots, which are used by many medical institutions around the world to the room no-touch disinfection. Following the COVID-19 pandemic, LightStrike robots are now used in airports, schools, hotels, sports arenas, police stations and correctional facilities, convention centers and more to quickly disinfect rooms and large areas.

Recently, Xenex Disinfection Services Inc. has provided an efficient technology for disinfecting small spaces that are difficult to clean, a high-power LED device, Deactivate™, designed to quickly disinfect enclosed spaces, such as dental examination rooms, ambulances and pilot cabins.

Deactivate™ is a portable device that uses high-power LEDs to create ultraviolet (UV) light that deactivates pathogens, including severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2), the virus that causes COVID-19. Deactivation does not require heating or cooling time and leaves no chemical residue. After disinfection, the area is immediately available for use.

Evidence-based tests performed at the Texas Biomedical Research Institute have shown that the Deactivate™ device has the following performance:

- a 99% disinfection level against SARS-CoV-2 in 30 seconds at 1 meter
- a 99% disinfection level against vegetative bacteria (methicillin-resistant *Staphylococcus aureus*) such as MRSA, *Escherichia coli* in 1 minute at 1 meter
- a level of disinfection of 99% against bacterial spores in 2 minutes at 1 meter.

The manufacturer of the portable LED disinfection device, Deactivate™, recommends it for a variety of applications:

- Rapid disinfection of frequently affected areas between uses



The Deactivate device by Xenex
<https://xenex.com/deactivate-led/>
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- Touch-free chemical disinfection
- Improve manual cleaning in compact environments
- Ideal for hotels, schools, first aid vehicles, medical facilities, cockpits and more
- Not intended for use on medical equipment.

Three concerns need to be taken into account when working with UVC rays to disinfect dental rooms:

- The sensitivity of microorganisms to UVC rays is highly variable and also dependent on environmental factors such as temperature, relative humidity, environment (air, water, ...) and on the condition of the organism. Coronaviruses do not seem to be among the most sensitive organisms. In other words: for most systems with usual irradiance values, the air will have to pass more than once through to achieve a useful effect.

- Regarding the health risks of UVC radiation: studies report adverse effects on the human eyes and skin with direct exposure; in addition, UVC rays have genotoxic and carcinogenic properties.

- Another practical point is the maintenance of the UVC systems, which requires qualified personnel with specific protective equipment to carry out the regular cleaning of the lamps and check their efficiency, as well as replace the lamps.

For the practitioner to be fully convinced, I would like the manufacturer to provide me with a device to be tested so as to compare its efficiency with the other devices we are currently using in our clinic.

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