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Xenex LightStrike Germ-Zapping Robots deactivate SARS-CoV-2

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Patented SureStrike 360™ technology powered by pulsed xenon ultraviolet light covers the entire germicidal spectrum is used in over 500 healthcare facilities worldwide

One of Singapore's leading general hospitals has deployed the Xenex LightStrike Germ-Zapping Robots™, proven to destroy live (not surrogate) SARS-CoV-2. Its efficacy was recently confirmed through tests at a biosafety level 4 (BSL-4)

containment laboratory at the Texas Biomedical Research Institute (Texas Biomed). The LightStrike disinfection robot destroyed SARS-CoV-2, the virus that causes COVID-19, in two minutes. Texas BioMed is an independent research institute that works exclusively on discovering breakthroughs to combat the threats of deadly infectious diseases. Its BSL-4 labs provide a secured, safe environment for scientists to study deadly pathogens for which there are no known treatments or vaccine.

This proven disinfection robot is now deployed at one of Singapore's general hospitals. The deployment, initiated in March 2020, follows an 8-month trial to evaluate the robotic technology as part of the hospital's comprehensive infection prevention strategy. During the trial, tests were carried out before and after cleaning protocol, and after use of Xenex LightStrike robots, to validate its efficacy in destroying a variety of pathogens.

Xenex LightStrike robots are used at over 500 healthcare facilities worldwide, including Singapore, Thailand, Japan, South Korea, Canada, U.S., and in Europe, South America and Africa. Numerous hospitals have published studies about significant reductions in their infection rates after they began using LightStrike robots for room disinfection.

With the recent jump in COVID-19 cases, Singapore's healthcare system is stretched. To minimise environmental infection risk and alleviate human error, the use of LightStrike robots provides assurance and protection to the patients and staff at the hospital's facilities. The LightStrike robots play an instrumental role in complementing the thorough cleaning work carried out by the hospital team. After the usual cleaning protocol, which includes manual cleaning and disinfection, the cleaning personnel will deploy the LightStrike robot into a room and effectively disinfect the room in just a few minutes.

With the rise of superbugs and increased resistance to cleaning agents and antibiotics, new technology is needed to enhance existing infection control practices and reduce the risk of healthcare-associated infections (HAIs). Based on a systematic review and meta-analysis of seven studies from Southeast Asia, the pooled prevalence of overall HAIs in Southeast Asia is 9.0%. HAIs are recognised by the healthcare system as a burden in terms of patient recovery rate and cost.

Studies have shown that manual cleaning and disinfection of the hospital environment can be inadequate. LightStrike robots are powered by pulsed xenon ultraviolet light (PX-UV), which is proven to quickly destroy viruses, bacteria and spores. Xenon is an inert gas, meaning it is not harmful to humans in the rare event that the lightbulb accidentally breaks, as compared to common UV-C lightbulbs which are filled with mercury vapour. Recent research observed the environmental effectiveness and significant surface contamination reduction with the use of pulsed-xenon light, as an adjunct to manual cleaning processes.

The SureStrike 360™ technology in Xenex LightStrike Germ-Zapping Robots™ can deliver up to 4,300 times more germicidal UV pathogen killing intensity than mercury UV technologies and can disinfect an entire patient room in as little as three 5-minute cycles. PX-UV is the only technology with an extensive range of germicidal UV (200-315 nm) that includes both UV-B (280-315nm) and UV-C (200-280nm). This extended range delivers a germicidal intensity that quickly penetrates the cell walls of microorganisms where they are most vulnerable and causes irreparable damage. In other words, it is fast and effective in deactivating pathogens like viruses and bacteria, without causing damage to hospital materials or equipment.

"Xenex is a pioneer in environmental disinfection and Terumo is proud to bring the high-performing Xenex LightStrike robots to Singapore, as part of our commitment to improving public healthcare and safety through innovation and technology. Hospitals, medical office buildings, hotels, offices, gyms, and many other spaces can benefit immediately from LightStrike disinfection as the global pandemic demonstrates the need for quick and effective disinfection wherever people work, play, or live," said Mr Kevin Seto, Managing Director, Terumo Singapore Pte Ltd.

Terumo Singapore is in talks with other hospitals on purchases.