

Healthcare Tech

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HEALTHCARE TECHNOLOGY
KNOWLEDGE NETWORK

INFECTION CONTROL EDITION



DR. JOHN DUPUIS,
M.D. PRESIDENT AND CEO



ANN ALEXANDER DUPUIS,
FOUNDER, CHAIRMAN, AND COO

ELEVATED HEALTH SYSTEMS

ELEVATE YOUR DISINFECTION WITH AUTOMATED UVC SMART TECH





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COVID-19 forced global lockdowns and brought upheaval in markets, demonstrating how critical infection prevention and control is to maintaining essential health services and ensuring patient and health worker safety. According to WHO estimates, one in 10 patients gets an infection while receiving in-patient care. While sanitizers containing ethanol and isopropyl alcohol are widely used by hospitals and the general populace to disinfect surfaces, ultraviolet-C (UVC) lamps have gained popularity in healthcare and other industries impacted by the liabilities of infectious disease.

UVC light can kill or deactivate harmful microorganisms like bacteria, viruses, molds, and other pathogens. In the face of deadly diseases like coronaviruses and MRSA, UVC light is proven to radically reduce transmission rates. However, excessive exposure to UVC light can damage the human skin and eyes. Despite its many practical applications because of its interactions with organic molecules, a UVC light source must always be shielded against direct viewing.

Elevated Health Systems (EHS) provides a comprehensive disinfection system to solve this problem and helps healthcare and other industries tackle infectious diseases with its UVC

disinfection device, the ESP-DLux™. The EHS team understands effective infection control requires an array of disinfection tools, but is not 100% guaranteed even when using multiple methods and products. However, with continuous disinfection by the automated ESP-DLux™, providers in healthcare and other industries can be assured the entire enclosed environment is as pathogen-free as possible.

“Our technology ensures the room is safely and optimally disinfected with UVC light even when occupied, keeping patients, staff and other occupants safe,” says Ann Alexander Dupuis, founder and chairman of EHS.

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Our UVC device offers safety, continuous operation, and a clear indication of when maintenance is required
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A UVC Platform and Solution Built By Top Engineers

The ESP-DLux™ was envisioned and designed by EHS and built employing a team of NASA-affiliated engineers. It is the embodiment of more than a decade of research, achieving 5 U.S. Patents, 1 Canadian patent and is patent-pending in 28 other countries. The ESP-DLux™ automates UVC light for continuous disinfection of surfaces and air in enclosed spaces, utilizing multiple sensors which detect room occupancy. When the ESP-DLux™ detects an unoccupied enclosed space, it bathes the room in UVC light, killing 99.9% of pathogens on hard surfaces and much higher percentages of pathogens in the air. When a person enters the room, the shutter closes, shielding occupants from exposure while continuing to purify the air with UVC.

Although the wall-mounted device is secure and easy to install, EHS collaborates with partner organizations for larger installations. The ESP-DLux™ provides a powerful and precise dosage of UVC into the enclosed environment. Additional units may be needed for effective disinfection if the room is too large for one unit. Installation information is contained in the detailed User Guide provided with the product. The ESP-DLux™ product, including the controller, wall mount and User Guide, has been approved for safety by ETL, a Nationally Recognized Testing Laboratory.

The ESP-DLux™ is marketed through direct sales and distributorships. In addition, the Intellectual Property patented by EHS will enable license partners to create their own custom automated solutions in multiple industries. EHS welcomes these license partnerships which will enable automated UVC to create the fail-safe infection control infrastructure that is needed to help prevent and mitigate future pandemics. Target markets include medical and dental offices, hospitals, veterinary facilities, agricultural manufacturing, schools, athletic facilities, nursing homes, elevators, commercial and governmental buildings, hospitality, airports, transportation and more. The ESP-DLux™ can also be integrated into existing “Smart Building” designs.

In addition to the ESP-DLux™’s exceptional and patented safety features, EHS ensures its technology stays cost-effective and affordable. Its distinct cost and size advantages set it above conventional, expensive, and large UVC products. Also setting the ESP-DLux™ apart from its competitors is its extensive ability to customize its functionality and its continuous documentation of usage. It provides the customer with the safety and effectiveness they’re looking for. The more stringent quality standards adopted by Underwriter’s Laboratories (UL) since the pandemic have helped EHS enhance its product’s safety. The ESP-DLux™ meets the post-pandemic healthcare industry’s requirements and has received certifications from a Nationally Recognized Testing Laboratory (ETL), giving customers the confidence to place units in hospitals, dental rooms and other areas.



ESP-DLux ensures that the room is safely and optimally disinfected with UVC light even when occupied, keeping patients and staff safe



“Our UVC device offers safety, continuous operation, and a clear indication of when maintenance is required,” says Clair Strohl, engineering and regulatory compliance at EHS.

Focused On Safety and Availability

One of EHS’s trademarked features is the Safety-Net™, which involves the wireless networking of multiple units. Using the software designed employing NASA-affiliated engineers, EHS developed an intuitive platform that can work as an on-the-fly controller with many redundant safety features, including authorization codes.



The ESP-DLux™ can program multiple units from a local station and can also be used in Manual, Automated and Scheduled modes, allowing end-users the ability to customize the device to their needs. Whether in Manual, Automated or Scheduled modes, the ESP-DLux™ uses sensors to detect activity in the room and keeps the rooms safe while disinfecting.

The ESP-DLux™ can run wirelessly from a modem, laptop, tablet or phone and the performance of each unit can be checked in real time. When any criterion in a comprehensive list

of settings doesn’t match, the ESP-DLux™ fixture immediately goes off-line and is flagged on the controller desktop. In addition, a tablet on the wall outside the room could allow authorized people to observe and/or program the status of each unit in every room. The simple and intuitive technology displays issues from the panel allowing the biomedical engineer or nursing staff to get help and quickly get the unit up and running. “With the ESP-DLux™, hospital rooms are disinfected throughout the patient’s stay, especially ones with isolated patients with infectious diseases, keeping the patients and staff safe,” adds Ann Alexander DuPuis, founder and chairman.

“There are many products on the market that serve as UVC air cleaners. None of them have the surface technology with the built-in safety features we offer,” says Dr. John DuPuis, M.D., president and CEO.

Each ESP-DLux™ unit can disinfect surfaces within a 12x12 ft area and air in spaces up to 1250 ft³. EHS assists the end-user in the customization

of their unique layouts and attributes to ensure maximum coverage and effectiveness. EHS has generated many success stories with its unique capabilities. In one instance, Iowa State University performed a test of the ESP-DLux™’s effectiveness in eradicating Listeria on different surfaces. Using only one ESP-DLux™ fixture, 99.999% of the lethal pathogen was eradicated. In another setting at a veterinary clinic, EHS tested the Scheduled mode feature by placing industrial UVC-sensitive tape on many surfaces and setting the ESP-DLux™ to run from 2 a.m. to 6 a.m. The tape changes color based on the intensity of the radiation it has received. By checking the tape the first thing in the morning, it was proven the surfaces had received an enormous dose of UVC, sufficient to eliminate any pathogen in the room. It was a real validation of the effectiveness of the ESP-DLux™. It helped the client understand precisely how much UVC each part of every surface received during off hours, proving people could come back and work the next day in a completely sanitized environment.

The EHS team realizes sanitizing an environment is an ongoing process and aims to promote the optimal usage of UVC disinfection. EHS is committed to helping the building management and sanitation staff understand and implement the procedures and requirements for the utilization of UVC light to keep a space safe.

EHS’s technology has grown in scope beyond hospitals. In a post-COVID-19 world, the ESP-DLux™ product, as well as EHS’s licensable Intellectual Property, is poised to become an optimal solution for infection control across many applications, from food processing facilities to local cafes. **HT**

www.esp-dlux.com

