

VALIDATION STATEMENT

Article author, Norman Ammerer, BSc, MBA, first started in the UV industry in 1988 and went on to become a disinfection and UV supply chain expert, which enabled him to travel to over 100 countries as a UV technology and clean water process advocate. Norm is one of the original founding members of the International Ultraviolet Association in 1999, presented numerous UV technology workshops at industry conferences over the years, and has over 25 years' experience as an Independent Consultant to organizations around the world.

Using BlueScience Germicidal UV Light in Mini-Split Air-Conditioners Helps Fight the Spread of COVID-19 and Other Airborne Threats

Ultraviolet germicidal inactivation (UVGI) has been combating the airborne transmission and spread of infectious viral diseases for well over 50 years.¹ UVGI light is known to be effective for penetrating and disrupting microbial DNA, thus making it unable to reproduce or infect. UVGI popularity has grown because all known microbes are susceptible to germicidal UV-C exposure and none develop an immunity over time.

Published papers confirm UVGI should be effective for arresting SARS-CoV-2 and similar viral diseases, and UV-C LED devices can inactivate airborne viruses and other pathogens in a moving air system design.²⁻³ Finally, Japanese researchers have demonstrated that a UV-C LED device rapidly inactivated SARS-CoV-2 obtained from a COVID-19 patient quarantined in Japan in February 2020, and provided >85% virus reduction after only 1 second UV exposure.⁴ This research is continuing.

With the COVID-19 pandemic still surging in parts of the world, and infectious disease health experts predicting new viral outbreaks in the future, indoor air quality and safety is now of upmost concern everywhere.

BlueScience UV-c Technology has developed a low-cost, energy efficient, UV-C LED based retrofit kit solution for fitting into the compact space within existing mini-split A/C systems installed in homes, schools, businesses, hotels, shops, restaurants and bars that may be subject to airborne viruses, molds, and other microbial threats. Disinfection efficiency is dependent on microbe type and form, air speed, humidity, particulates, and proper maintenance. Properly installed, each UV-C LED Kit treats and protects the room air, by constant UVGI disinfection, every time it passes though the A/C unit.

When the A/C operates, the UV-C LEDs disinfect the air each time it's drawn into the A/C, so that the majority of airborne pathogens will be rendered as non-infectious when the UV treated air blows out and re-enters the room.

Using BlueScience's proven UVGI technology, disinfected indoor air quality becomes safer from airborne viral threats each time it passes through the A/C unit, allowing everyone to work safer, breathe easier, and sleep better every night.

References

- Robertson EC, Doyle ME, Tisdall FF (20 March 1943). Use of ultraviolet radiation in reduction of respiratory cross infections in a children's hospital: Final Report. JAMA (1943);121(12):908-914. <u>https://doi.org/10.1001/jama.1943.02840120010003</u>
- SARS-CoV-2 UV Dose-Response Behavior (9 July 2020). White Paper prepared for IUVA, Chevy Chase, Maryland USA. <u>https://iuva.org/resources/covid-</u> <u>19/SARS%20CoV2%20Dose%20Response%20White%20Paper.pdf</u>
- Kim, DK, and Kang, DH (29 June 2018): UVC-LED Irradiation Effectively Inactivates Aerosolized Viruses, Bacteria, and Fungi in a Chamber-Type Air Disinfection System. AEM Accepted Manuscript Posted Online 29 june 2018. Appl. Environ. Microbiol. <u>https://doi.org/10.1128/AEM.00944-18</u>
- 4. Hiroko Inagaki , Akatsuki Saito , Hironobu Sugiyama , Tamaki Okabayashi & Shouichi Fujimoto (2020): Rapid inactivation of SARS-CoV-2 with Deep-UV LED irradiation, Emerging Microbes & Infections. Accepted author version posted online 16 july 2020. <u>https://www.tandfonline.com/doi/full/10.1080/22221751.2020.1796529</u>