

Pandemic Transforms UV-C Systems From Niche Market To Mass Production



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During the coronavirus pandemic, UV-C systems have surged from a niche market to mass production capable of meeting historic demand levels. As a result, UV lamp manufacturers, as well as their component providers (e.g., glass suppliers), have struggled to meet the growing demand. Because of UV-C's historic proven effectiveness, interest in and orders for UV disinfection

equipment have increased exponentially during the COVID-19 pandemic.

[Larry Anderson](#)

For example, in July, lighting manufacturer Signify (previously Philips Lighting), reported increasing “UV-C light source production capacity by a factor of eight.” The pandemic has settled in the affirmative the question of whether 254 nm germicidal wavelength can inactivate the genetic material in the SARS-CoV-2 virus (that causes COVID-19).

acute respiratory syndrome

Moreover, when aerosolized, the COVID-19-causing virus is likely to be more susceptible to UV-C damage than other coronaviruses such as SARS-CoV-1 (that led to the 2003 severe acute respiratory syndrome) or MERS-CoV (that caused the 2012 Middle East respiratory syndrome).

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The Centers for Disease Control and Prevention (CDC) and ASHRAE [American Society of Heating, Refrigerating and Air-Conditioning Engineers] have recommended UV-C as a technology that can “reduce the risk of dissemination of infectious aerosols in buildings and transportation environments.” The need for the technology continues. Delivering billions of doses of the SARS-CoV-2 virus vaccine is one of the greatest logistical challenges ever undertaken.

airstream disinfection

As of this writing, experts do not agree on the number of vaccinated individuals necessary to outright extinguish the COVID-19 pandemic. *“As there is no clear end in sight, there is no foreseeable decline in the demand for the germ-killing and airstream disinfection benefits offered by UV-C,”* says Daniel Jones, President, UV Resources, a pioneering company in ultraviolet-C (UV-C) equipment.

Specifiers and HVAC contractors should not be deterred from recommending and specifying the proven benefits of UV-C disinfection systems, Jones contends, as the industry is rapidly adapting to what might likely be the “new normal” level of demand. *“In other words, we expect commercial and residential demand for UV solutions to remain high due to their ability to efficiently inactivate the SARS-CoV-2 virus,”* he says.

pharmaceutical processing plants

The company reports that disease-defeating UV-C surface and airstream technologies are especially popular with facility managers servicing hospitals and nursing homes, commercial offices, as well as food and pharmaceutical processing plants. Upper-room UV-C fixtures have been a "go-to" technology in the battle against the spread of COVID-19, among restaurants, school and university classrooms, airport screening areas, correctional facilities and community shelters.

"COVID-19 pandemic has ingrained the need for ongoing infection mitigation systems"

Even after the pandemic subsides, demand for UV solutions will continue to remain high as perception of the technology has shifted to a health and safety need, says Jones. *"Although the current pace of demand for germicidal UV-C solutions may decrease, the COVID-19 pandemic has forever raised awareness and ingrained the need for ongoing infection mitigation systems,"* he comments.

indoor air quality

Despite nearly eight decades of research and thousands of applications in hospital emergency and operating rooms, urgent-care centers, universities, and first-responder locations, UV-C has previously not been widely leveraged. During the 1990s and 2000s, drug-resistant "superbugs" and hospital-acquired infections renewed interest in UV-C, known to kill virtually any microorganism, including antibiotic-resistant germs.

The current pandemic, however, has laid bare the societal health outcomes offered by the proven germ-killing technology. While antibacterial UV-C applications have improved indoor air quality for decades, it was the pandemic that took the technology's use in the eyes of building managers from energy savings to infection mitigation.

air conveyance systems

Now, the market is starting to view UV-C along the same lines as air filtration - providing a cleaner,

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healthier environment which will result in a decrease in absenteeism. Additionally, HVAC systems operate better, longer and users are happier when UV-C is installed in air conveyance systems. Higher demand has produced supply challenges for these products. How can HVAC engineers best navigate equipment/parts supply shortages?

Facility engineers and HVAC contractors would be well advised to place orders as early as possible and to accept partial-order shipments, says Jones. This will ensure that HVAC firms have the components/fixtures in-house (or even installed) once the lamps finally arrive. Jones advises specifying engineers who are unfamiliar with UV-C and who are conducting their due diligence should investigate the following points when choosing a supplier:

- **Market Longevity** - There are only a handful of companies that have been selling UV-C for HVAC/R for years.
- **EPA Registration** - Examine a device manufacturer's registration with the US Environmental Protection Agency (EPA) as a pesticide device-producing establishment.
- **Industry Credentials** - Make sure products meet applicable safety standards and certifications (such as UL/CUL and CSA).
- **Industry Participation** - Look for manufacturers that routinely author technical articles, actively serve on regulatory and standards committees, and enjoy a solid industry reputation.

surface disinfection system

Selection of an air or surface disinfection system is based entirely on the application.