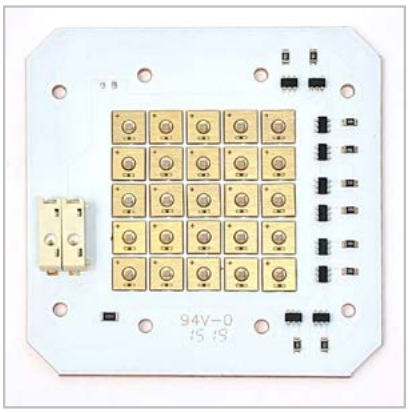
Laser Diodes

UVC Disinfection and How it Works

Questions and Answers by the Bolb Inc. Experts

During this time of COVID-19 and its impact worldwide, we took the time to speak with some experts who are on the frontlines of this technology. Here are some answers to help you better understand how this game changing technology works.



5x5 LED Array from Bolb

Are UVC disinfection devices safe?

Like any disinfection system, it is important that UVC devices be used properly, as all UVC devices produce varying amounts of UVC light in wavelengths of 200nm-280nm. This UVC light is much "stronger" than normal sunlight. It can cause a severe sunburn-like reaction to your skin, and could damage the retina of your eye, if exposed. Some devices produce ozone as a part of their cycle, others produce light and heat like that of an arc welder, while others move during their cycles. When using any UVC device, machine to human safety must be considered. These considerations should be addressed in operations, user training, and appropriate safety compliance manuals.

Are there performance standards and UVC validation protocols for UV disinfection devices?

There is a wide array of UVC devices marketed for disinfection of air, water and solid surfaces, resulting in a lack of uniform performance standards and ahigh degree of variable research. As development and validation testing that is performed on different devices moves forward, the IUVA urges consumers to exercise caution when selecting equipment:

1. Look for evidence of third-party testing.
2. Look for certification of device materials and electrical components by well-known organizations such as NSF, UL, CSA, DVGW-OVGW.
3. Look at other international requirements as applicable.

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For UVC devices designed to inactivate air and solid surfaces in the healthcare industry, members of IUVA are working diligently with other national standards organizations in the lighting industry as well, to regarding disinfection testing standards[x]. The goal is to develop guidance that will help healthcare providers world-wide choose the best possible technologies for their institutions, to use in the fight against multiple drug resistant organisms and other pathogens[xi], like the COVID-19 virus.

The International Ultraviolet Association (IUVA) believes that UV disinfection technologies can play a role in a multiple barrier approach to reducing the transmission of the virus causing COVID-19, SARS-CoV-2, based on current disinfection data and empirical evidence. UV is a known disinfectant for air, water and surfaces that can help to mitigate the risk of acquiring an infection in contact with the COVID-19 virus when applied correctly. „The IUVA has assembled leading experts from around the world to develop guidance on the effective use of UV technology, as a disinfection measure, to help reduce the transmission of COVID-19 virus. Established in 1999, the IUVA is a nonprofit dedicated to the advancement of ultraviolet technologies to help address public health and environmental concerns," says Dr. Ron Hofmann, Professor at the University of Toronto, and President of the IUVA.

It must be noted that "UVC", "UV disinfection" and "UV" as used here and in the scientific, medical and technical literature, specifically and importantly refers to UVC light energy (200-280nm light) in the germicidal range which is not the same as the UVA and UVB used in tanning beds or sunlight exposure.

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