

THE SCIENCE BEHIND CLEAN ZONEZ

Clean Zonez Panels' patent-pending technology combines physical blocking between coworkers with an air filtration system to treat air at the point in which it is exhaled, coughed, or sneezed. Intake fans pull air into five layers of air filtration including HEPA filtration and UV sterilization. UV-C irradiation is considered a highly versatile viral inactivation step that should be included in a purification process.



UV-C ENERGY, HEPA FILTRATION AND THREE ADDITIONAL FILTER SYSTEMS CLEAR THE AIR OF VIRUS, GERMS AND PARTICLES.

Clean Zonez applies UV-C energy, HEPA filtration and three additional filter systems to clear the air of virus, germs and particles to help people feel safer and more productive. Hospitals have used these technologies for decades to sterilize equipment and tools.

In summary:

- Clean Zonez applies proven technologies that can be installed close to the source of virus transmission. Clean Zonez utilizes existing technologies with an extended history of research and testing. UV-C has a decades-long trail of science proving its effectiveness in disrupting the DNA in virus and germs, making it unable to replicate itself and create infection.
- Clean Zonez uses the 253nm wavelength of UV-C proven by the International Ultraviolet Association to be one of the most effective at disabling COVID-19-type virus.
- HEPA filtration has a similar trail and history of trapping particles and droplets to prevent their transmission to occupants of a space.
- Clean Zonez has a tested CADR (Clean Air Delivery Rate) of 64.98, meaning it processes about 65 CFM of air through its system.
- The recommended application area for a single Clean Zonez System is about 100 SF.
- Clean Zonez lowers the number of COVID-19 particles / droplets in the air, significantly reducing the potential for transmission. Cleaner air is healthier for all and is effective in treating virus and germs as well as reducing allergy particles.
- The optimal ratio of Clean Zonez Air Filtration Systems per person is 1:1.
- Contaminated air that passes from an infected person past a non-infected person is not desirable, although it can be difficult to design around.
- No single technology has been identified as 100% effective in mitigating any virus, which is why overlapping systems, protocols and technologies are recommended.
- Clean Zonez is most effective when it is a part of an overall design of preventing the spread of COVID-19 or other virus or germs, which may include masks, physical distancing, controlled traffic flows and other systems or protocols designed to minimize the potential for transmission.

SCIENCE-BASED STATEMENTS ON COVID-19 AND UV-C

DROPLETS THAT AN INFECTED PERSON EMITS CAN DRIFT AROUND IN THE AIR FOR SEVERAL HOURS

“Coronavirus spreads through droplets that an infected person emits through coughs or sneezes and through smaller, infectious viral particles that can drift around in the air for several hours... They found that infectious viruses could remain in the air for up to three hours.”⁽⁵⁾

“Since UV-C rays are blocked by the ozone layer, microorganisms have not developed a natural defense against UV-C energy. When the DNA of a microorganism absorbs UV-C energy, molecular instability occurs, resulting in the disruption of the DNA sequence. This renders the cell unable to grow or reproduce. Without the ability to reproduce, the cell cannot infect, and it rapidly dies.”⁽⁴⁾

“The application of UV-C energy to inactive organisms is known as Germicidal Irradiation or UVGI. It has been used for this purpose since the early 1900s... Most commercial UV-C lamps are low pressure mercury lamps that emit UV energy at 253.7 nm, which is an ideal wavelength for disrupting the DNA of microorganisms... viruses are the most susceptible to UV-C.”⁽⁴⁾

“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.”⁽¹⁾

“All bacteria and viruses tested to date (many hundreds over the years, including other coronaviruses) respond to UV disinfection... UV light, specifically between 200-280nm^{i} (UVC or the germicidal range), inactivates (aka, “kills”) at least two other coronaviruses that are near-relatives of the COVID-19 virus: 1) SARS-CoV-1^{ii} and 2) MERS-CoV^{iii}.”⁽¹⁾

SCIENCE-BASED STATEMENTS ON COVID-19 AND UV-C (CONTINUED)

**THESE VIRAL
REDUCTIONS
ACCOMPLISHED
BY UVC LED ARRAY
IRRADIATION
WAS MUCH MORE
EFFICACIOUS
THAN IN PRIOR
RESEARCH
STUDIES USING
CONVENTIONAL
UV LAMPS.**

“IUVA recognizes that in the cases where the UVC light cannot reach a particular pathogen, that pathogen will not be disinfected. However in general, reducing the total number of pathogens reduces the risk of transmission.”⁽¹⁾

“The germicidal effects of UVC irradiation results in cellular damage by photohydration, photo splitting, photodimerization, and photo crosslinking, thereby inhibiting cellular replication... Implementation of this “no-touch” technology in various hospitals has documented a sustained reduction in surface microbial contamination, reduced cross contamination, and a reduced spread of multi-drug resistant bacterial infections.”⁽²⁾

“The Centers for Disease Control and Prevention recommended UV germicidal irradiation (UVGI) as a supplementary process in order to prevent transmission of bacteria causing tuberculosis. UVC light is well known to possess a very powerful germicidal effect capable of inactivating a wide spectrum of microorganisms, such as viruses, bacteria, protozoa, fungi, yeasts, and algae, through the formation of pyrimidine dimers, the photoproducts or genetic materials... These viral reductions accomplished by UVC LED array irradiation was much more efficacious than in prior research studies using conventional UV lamps.”⁽³⁾

SOURCE DOCUMENTS

1. <http://www.iuva.org/IUVA-Fact-Sheet-on-UV-Disinfection-for-COVID-19>
2. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6801766/>
3. <https://aem.asm.org/content/84/17/e00944-18>
4. <https://www.uvdi.com/uvdi-university/uv-basics/>
5. <https://www.health.harvard.edu/diseases-and-conditions/covid-19-basics>

ABOUT CLEAN ZONEZ

Now more than ever, organizations are in need of solutions that effectively increase the safety of the workplace. Clean Zonez Panels create a physical barrier to separate workers while cleaning the air of each individual workspace, helping employees feel safe, secure and valued.

We have developed the Clean Zonez product through virtually hundreds of reiterations and changes in just a short period of time. Using our parent brand's capabilities in cleanroom technology and leveraging it into the office space like never before. Allied Clean Rooms, a brand of our parent company, helped develop this clean air technology that can be leveraged in several ways throughout your facility. They have been providing clean rooms for America's largest brands for over 25 years.

By providing a five-level filtration system that can accommodate up to 100 square-foot per unit, this product fits in virtually any application.

CLEAN ZONEZ PANELS

These panels are thermoformed PET that can be adjusted from 18 inches or 24 inches above the work surface. These create a physical barrier between people and provides a high level of filtration. They are available in 48 inches and 60 inches in width. Clean Zonez Panels ship complete with a Clean Zonez Air Filtration System and mounting brackets.

HANGING CLEAN ZONEZ FILTRATION

Using this product independently from the panel, you can hang it from an existing partition that already exists in your facility. Using our hanging brackets, you can hang the unit from Plexiglas, PET or even a partition wall up to 3 ½ inches thick.

PROTECTING EXISTING PRIVACY ENCLOSURES

This product can be easily hung on the wall of any existing privacy pod or enclosure. It provides a level of protection that is currently not available in any privacy suite or pod. Simply mount a bracket on the wall, plug it in it in, and you're ready to go.

TAKE IT WITH YOU

This unit can be portable. You can take it with you into conference rooms or other places to ensure the air that you are breathing is both clean and filtered. Weighing only about 5 pounds, it can stand up on a desk or a conference room table where any other electronics would sit.