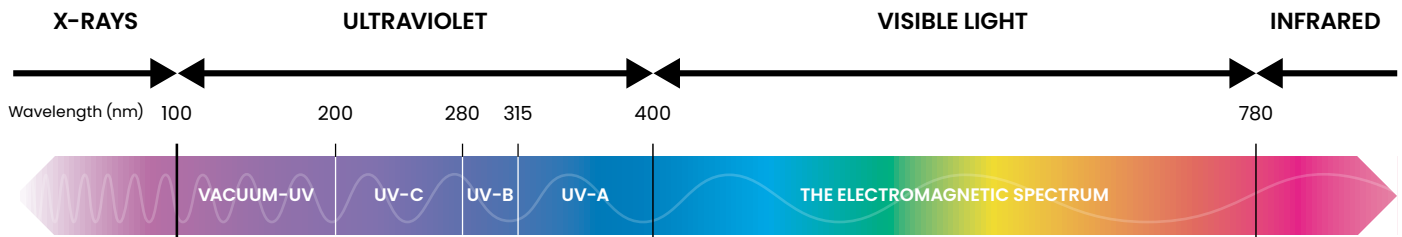


R-Zero Creates Safer Spaces for Students and Faculty: What Does That Mean?

R-Zero is the first biosafety technology company dedicated to making shared indoor spaces safe and clinically clean. Founded to help organizations protect the health of people they serve, R-Zero leverages innovative and effective UV-C disinfection technologies to reduce the risk of exposure to microorganisms. In schools, R-Zero’s flagship product, Arc, enhances existing cleaning and janitorial protocols by enabling whole-room UV-C disinfection to reset microbial counts to almost zero.

What is UV-C Disinfection?



UV-C is ultraviolet light at a wavelength of 100–280 nanometers (nm). These wavelengths do not penetrate Earth’s atmosphere and have germicidal properties. Consequently, harmful microorganisms like viruses, and bacteria, have no natural exposure and therefore no immunity to the light. When these microorganisms are exposed to UV-C light, the light disrupts vital cellular functions, like replication of RNA and DNA protein structures. This disruption of RNA and DNA replication destroys or inactivates bacterial and viral microorganisms such as influenza, E. coli, rhinovirus, and SARS-CoV-2.

UV-C has been enabling higher standards of disinfection in hospitals for decades. R-Zero’s flagship device, Arc, brings hospital-grade efficacy to non-healthcare settings. Arc emits 254nm UV-C light. In addition, Arc has been independently verified to destroy 99.99% of airborne and surface-borne microorganisms (including coronavirus, MRSA, E. coli, and more) in a 1000 square foot room in 7 minutes.

Why Use UV-C Disinfection in Schools?

Students, teachers, and staff deserve to learn and interact in safer indoor environments. Indoor environmental health in schools is possible through the implementation of Healthy Buildings principles, including attention to indoor air quality and effective disinfection, such as the disinfection enabled by R-Zero’s UV-C disinfection solutions.

R-Zero’s suite of disinfection solutions can help enable better outcomes for your school community while providing peace of mind and reducing the need for potentially harmful chemicals.

Common Questions about UV-C Disinfection

Is UV-C safe to use around people?

The UV-C wavelength that Arc uses (254 nm) is not safe to use around people. This wavelength of UV-C can cause skin and eye irritation if humans are exposed. Consequently, Arc should only be used in unoccupied rooms. To further ensure safety, Arc has redundant safety mechanisms. These features include a pre-cycle countdown to allow operators to leave the room safely before a cycle begins and sensors that detect movement and automatically trigger device shut-off if a person enters the room during a disinfection cycle.

Is UV-C a proven technology?

Since the early twentieth century, scientists have known about UV-C light's germicidal (germ-killing) properties. [In 1903, Danish doctor Niels Finsen received the Nobel Prize for Medicine](#) for his use of UV-C light to treat lupus vulgaris, a tuberculosis infection that manifests as lesions on the skin. Since then, UV-C light has been proven to destroy or inactivate bacteria and viruses, including SARS-CoV-2, E. coli, and influenza. UV-C has been used in hospitals for decades and is now available for use in schools and other non-healthcare settings thanks to R-Zero's mission to democratize disinfection.

Why is UV-C disinfection an important component of a layered mitigation strategy?

Manual disinfection is not enough. Even in hospitals, [cleaning staff can regularly miss up to 49% of high-touch surfaces](#). UV-C provides an added layer of critical air and surface protection that chemicals and wipes can miss. UV-C disinfection is an eco-friendly solution that is safe to use around furniture, food, and electronics. Unlike chemical decontamination methods (such as sprayers), germicidal UV-C leaves behind no harmful chemical residue. Spaces are immediately safe to enter following a disinfection cycle.

How will the school(s) in my district be using Arc?

Arc is designed to integrate with existing janitorial and cleaning protocols as an added layer of risk mitigation. Arc enhances rather than replaces cleaning processes.

Does UV-C light penetrate glass?

No. UV-C cannot penetrate glass, so you can run a disinfection cycle in rooms that have windows without harming anyone or anything on the other side of the windows.

How do we know the UV-C is working?

R-Zero leverages UV-C dose cards to verify surface and air exposure in rooms. These cards use photo-chromatic ink that changes color when stimulated by certain wavelengths of UV-C radiation. The colors on the card change at various energy levels, and these color changes correspond to log reductions of microorganisms. Log reductions indicate how thoroughly the UV-C irradiation is eliminating microorganisms. R-Zero's UV-C disinfection can achieve a 4 log or 99.99% reduction in potentially harmful microorganisms.*

*Third party testing of SARS-CoV-2, feline calicivirus, MRSA, and E. Coli on hard, non-porous surface in seven minutes, samples taken at eight feet.

Visit www.rzero.com to learn more about Arc and other UV-C disinfection solutions in R-Zero's portfolio.