

UVGI vs. Ionization

Ultraviolet Germicidal Irradiation (UVGI) is a trusted, proven, and effective technology for achieving pathogen reduction rates up to 99.99%, which can be achieved with the proper UVC dosage. The United Enertech team of engineers is trained to evaluate each specific application and the pathogen reduction levels needed in order to determine the best solutions.

UVGI

Ionization

Technology can be used against pathogens such as viruses.	UVGI is a proven technology that can be effective at mitigating airborne infectious disease transmission. Ultraviolet energy inactivates viral, bacterial, and fungal organisms so they are unable to replicate and potentially cause disease.*	Systems are reported to range from ineffective to very effective in reducing airborne particulates and acute health symptoms.*
ASHRAE Position	UV technology is listed by ASHRAE as a viable solution to the spread of pathogens via airstreams.*	ASHRAE does not currently have a Society position on bipolar ionization.*
Can be used for both air and surface disinfection.	Yes.	Not effective for surface disinfection, due to the process of ionization.
Performance Data	UVGI has many performance studies and data to back the technology and its effectiveness.	Convincing scientifically-rigorous, peer-reviewed studies do not currently exist on this emerging technology; manufacturer data should be carefully considered.*
Can achieve 99.9% pathogen reduction in a single air change.	Yes.	No.
Generates Ozone	The UV-C devices that United Enertech installs will produce no ozone.	Systems may emit ozone, some at high levels.*
VOC and Odor Mitigation	An optional PCO grid on products is effective on VOC, for odor mitigation.	May be effective for VOC or odor mitigation.
Maintenance	Lamp replacements required, starting from 12-24 months, depending on the manufacturer. Non-proprietary lamps provide the lowest cost of ownership.	Depending on the product/technology, little to no maintenance required in the first 12-24 months.
Proven 99.9% coil cleaning.	Yes. Reference ASHRAE Handbook, HVAC Systems and Equipment, chapter 17.	No peer-reviewed studies supporting any coil cleaning are currently available.
In-AHU UVC Energy Efficiency Benefits	Eliminates insulating biofilm to improve heat exchange and air flow, which has been proven to reduce Air Handling Unit (AHU) energy consumption by approximately 20%.	Potential energy savings benefits should be evaluated on a product-by-product basis.
Retrofit Applications	Good for new construction and retrofit applications. Small clearance requirement.	Small clearance requirement. Good for new construction and retrofit applications.

The information in this document is subject to change as new information continues to emerge. Please contact us for additional details on specific products, studies, recommendations, and pathogen reduction rates for your specific application.

*Source: <https://www.ashrae.org/technical-resources/filtration-disinfection>