

Green Owl Energy Solutions

UV-C Germicidal Irradiation Case Study - 80% YOY Reduction in COVID-19 Cases

UPDATED - Jan 2022

Georgia private school selects Green Owl Energy to install UV-C Germicidal Products for improved indoor air quality and help stop the spread of COVID-19

Application Background

Trinity Christian School

Sharpsburg, GA

Head Master Dr. Mark Anthony

1600+ Students, Faculty and Staff

Pre K – 12 grades

4 – Buildings

81 – Classrooms

1 – Gymnasium

2 – Lunch Rooms

4 – Common / Activity Areas

4 – Locker Rooms

21 – HVAC zones

Equipment Details

181 - GLO™ Upper Air Units

48 – In-Duct Systems

Products Utilized

UV Resources, Inc

GLO™ 310 UV-C upper air units

GLO™ UV-C upper air units

GLO™ 150 UV-C upper air units

DLX-N™ Dual Lamp HO Fixtures

X-Plus™ Single Lamp Fixtures

Project Resources

Green Owl Energy, LLC

Greffen Systems, LLC

UV Resources, Inc

Ungrounded Ideas, LLC



Why UV-C?

Green Owl Energy was approached by Trinity Christian School Administration about the use of UV-C germicidal products and to discuss methods to improve indoor air quality. These discussions were initiated by Trinity in an effort to “protect the students, faculty and staff while attempting to provide live, in-person instruction to TCS students.” UV-C products are not new. UV-C products have been used since the 1930’s as a safe and effective method to kill airborne pathogens. UV-C is also recommended by the CDC as a critical component of a layered protection strategy¹, and being safe and effective at preventing the spread of COVID-19 and other airborne pathogens. After hearing the science and CDC recommendations, Trinity Christian School administration approved the proposal to use UV-C germicidal products for indoor air quality improvement.

The decision making process

Trinity was able to apply for a federal grant made available to non-public schools (Emergency Assistance for Nonpublic Schools or EANS). Green Owl Energy worked with Trinity Christian School to ensure the UV-C system was in compliance with the grant regulations to be awarded the funding. Green Owl’s team worked to order and procure equipment while simultaneously working within the confines of the grant regulations and scheduling install times. TCS administration was impressed with Green Owl’s turn-key service and how smooth and stress-free they made the project. “It was a best case scenario for us that Green Owl handled everything from start to finish.” one TCS administrator commented.

The Installation Strategy

After reviewing the CDC guidelines, Trinity and Green Owl, created an approach that “blankets” the facility with clean air using both in-duct UV-C as well as in-room “upper air” UV-C fixtures. Upper air in-room UV-C fixtures stop germs from continually circulating around a room or entering the central HVAC. This limits the spread of germs at the source as quickly as possible and is constantly protecting occupants at the source. In-duct UV-C fixtures were then added to all HVAC zones in-duct, killing germs and preventing a large-scale spread throughout the building. Together, this approach provides a double layer of protection.

The Value of UV-C

Destroys up to 99+% of pathogens

Inactivates microbes in <1 sec

Produces no VOCs, chemicals or ozone

Provides Continuous UV-C protection

Proven to provide a healthier workspace

TURNKEY SOLUTIONS FROM Green Owl Energy

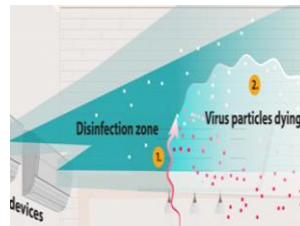
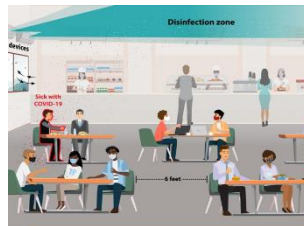
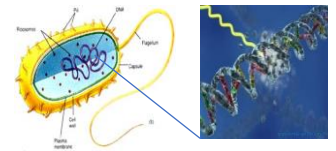
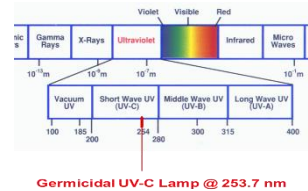
- Engineering
- System Sizing
- Product Dealer
- Installation
- Training
- Maintenance
- Safety Testing
- Grant Compliance



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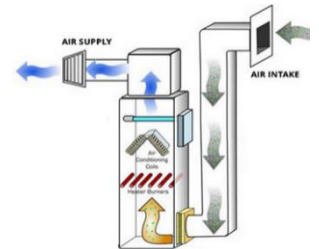
How UV-C germicidal products work

Ultraviolet light @ 253.7 nanometers uses electromagnetic energy to break down the DNA of micro-organisms within <1 second, effectively killing the germs on contact.



Upper Air UV-C fixtures installed at 7' create a safe "disinfection zone" at the ceiling level of a room and uses natural convection (circulation due to heat rising) as well as mechanical airflow from the HVAC to move aerosolic germs into the path of the light to be destroyed.

UV-C in-duct and air handler products are mounted in the HVAC downstream system and kill germs "on-the fly" as they are exposed to the light. In duct systems require a higher dose of energy and are custom designed by Greffen Systems to account for the correct exposure time prior to being installed by Green Owl. These systems disinfect air for the entire building and zone via the central air system



Trinity Product Installation – 80% YOY reduction in postive COVID Cases



181 - GLO Upper Air UVC Fixtures



30 - DLX-N Dual Lamp HO Outdoor Fixtures



18 - X-Plus Single Lamp Outdoor fixtures



Results

With help from Green Owl's team, Trinity saw an **80% reduction in the number of YOY positive COVID cases (Aug-Dec 2020-same period 2021)** Additionally, the entire cost of project was paid for with EANS grants. Faculty and staff have commented about how the UV-C system has made them feel protected. Comments from teachers were, "It means a lot when you see your administration take measures, such as these, to provide a level of protection so I can continue to teach my students in person." and "This shows me that the administration cares about my health and well-being."

The leadership of Trinity is open to providing access to the building and recommendations upon request

For more information, contact Green Owl Energy Solutions (404) 642-1945 or email us at ansley@greenowlenergy.com