

# CHARLI-5



**ONE LIGHTWAVE  
PURE AIR SOLUTIONS**

## **SEE WHY WE'RE DIFFERENT**

**One Lightwave Mfg. introduces Charli-5, a revolutionary UVGI (Ultraviolet Germicidal Irradiation) air purification system that utilizes advanced technology to deliver whole-room air purification, significantly enhancing the effectiveness of pathogen eradication. The Charli-5 system was designed for high-traffic, high-risk spaces such as classrooms, long-term care facilities, and office buildings.**

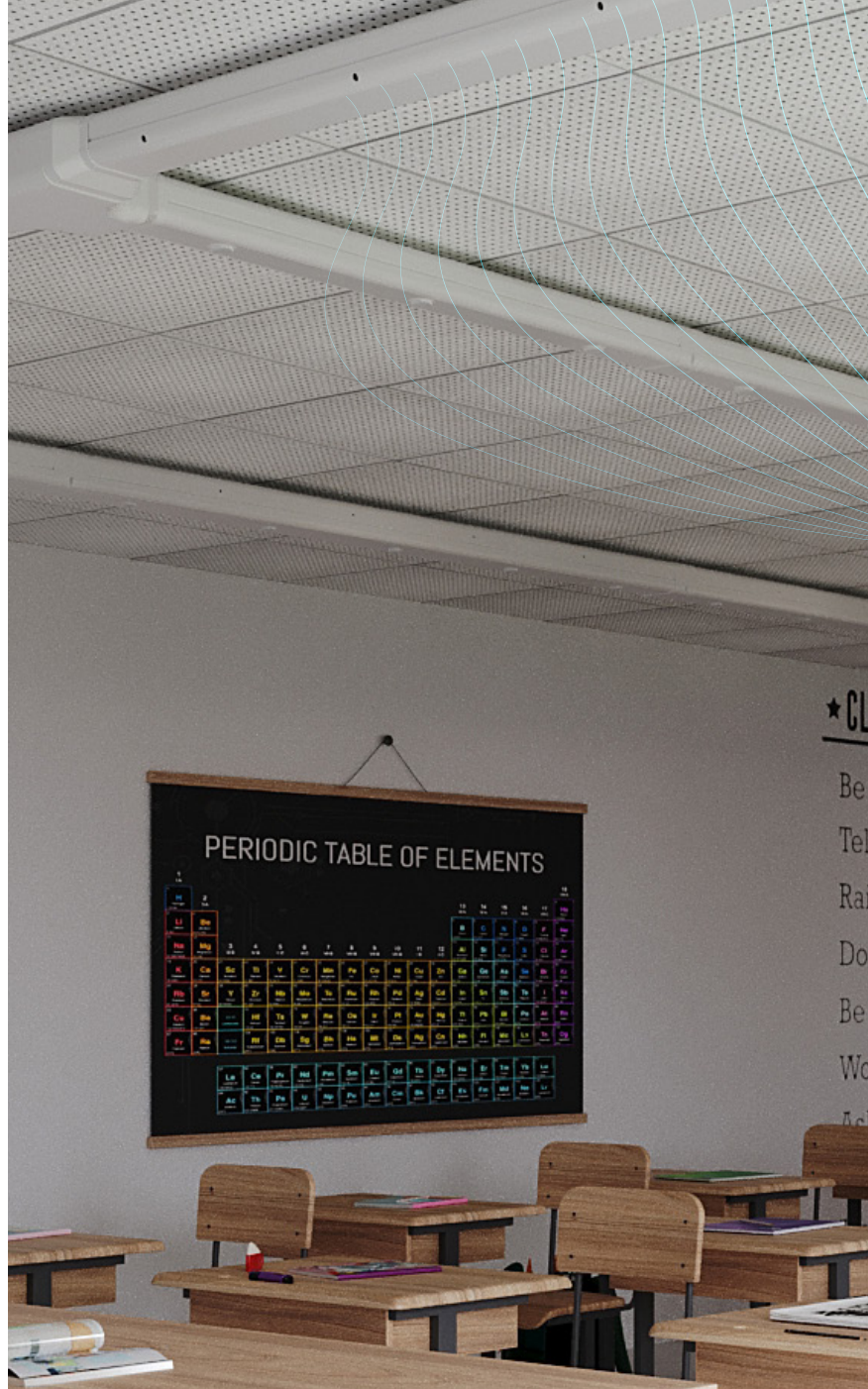
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We are committed to environmental sustainability



# Enhanced Pathogen Eradication

The optimized placement and intensity of Charli-5's UV-C lamps result in more efficient and thorough inactivation of viruses, bacteria, and other harmful microorganisms. Through rigorous third-party testing, the system has demonstrated exceptional results in eliminating pathogens, reducing the risk of airborne infections. A cutting-edge design is at the heart of Charli-5's UVC Reactor Core. This revolutionary component delivers UV-C radiation from 360 degrees, providing a "No-Shadowing Technology." The core consists of six high-intensity 254nm amalgam tubes uniquely arranged to expose passing pathogens to light radiation, significantly increasing the dose rate. The reactor core design ensures that all passing particles, including viruses, receive 360-degree light exposure, preventing any viral envelopes from escaping sterilization. This advanced technology guarantees that all pathogens are rendered sterile upon exit, effectively neutralizing airborne viruses.



## Air Supply Ducts and Air Curtain

Charli-5 utilizes specially designed air supply ducts made from plastic channels that quickly and securely attach to drop ceilings or suspension cables to achieve whole-room coverage. These air supply ducts are strategically placed to deliver purified air evenly throughout the room, including corners and hard-to-reach areas. Moreover, the system features an air curtain, providing a directed barrier stream of air that helps separate the teacher from the students in classrooms. This additional layer of protection minimizes the risk of viral transmission between occupants

## Whole-Room Coverage

Whole-Room Coverage: Comprehensive Room Cleaning: Unlike conventional air purifiers that only filter air in their immediate vicinity, our system utilizes a unique air duct supply system. This enables the purification of the entire room, ensuring consistent and high-quality air circulation throughout the space. This comprehensive cleaning approach is vital for maintaining a healthy indoor environment.



**CLASSROOM RULES ★**

ready to **LEARN**  
l the **TRUTH**  
se your **HAND**  
your **BEST**  
kind to **EVERYONE**  
rk **HARD**  
- **QUESTIONS**



# Key Features and Benefits



## Improved Indoor Air Quality

By eradicating pathogens from the air, Charli-5 significantly reduces the potential for airborne infections, contributing to healthier indoor environments. The system also helps reduce particulate matter (PM2.5) from pollen, wildfire smoke, and other air pollutants, ensuring a cleaner and safer atmosphere. In regions prone to wildfires, Charli-5 acts as a reliable defense against harmful particulate matter and smoke that can infiltrate indoor spaces. By effectively capturing and filtering these pollutants, the system ensures a clean and healthy indoor environment even during environmental distress.



## Testing and Certification

Charli-5 has undergone extensive testing in collaboration with independent laboratories and research institutions. Charli-5 successfully eliminated MS-2 (Covid19 proxy) to 99.994% after 24 minutes and has undergone rigorous air testing conducted by the NRC proving its coverage reaches the entire room uniformly.



## Energy Efficiency

The system maximizes energy efficiency with electronically controlled (EC motor, and EC stands for electronically commutated) fan motors, which are quiet, energy-efficient, and speed controllable. This ensures optimal performance while minimizing energy consumption.



## Easy Installation and Maintenance

Our system has been designed with ease of use in mind. It can be installed without significant modifications to existing HVAC systems, reducing installation costs and time. Furthermore, the system's maintenance requirements are minimal, making it a hassle-free solution for organizations and individuals.



## Smart User Friendly Operation

The Charli-5 is equipped with both Wifi and Cellular connectivity, enabling seamless remote monitoring of the system's performance, operational status, and maintenance status.



## Fresh Air Exchange System

One Lightwave Mfg. has developed a fresh air exchange system as an optional feature for Charli-5. This system utilizes outdoor air ducts connected to the unit, using existing high and low pressures within the system to pull in fresh outdoor air while discharging stale indoor air outdoors. The intake has an actuator-controlled damper and sensor suite to monitor incoming air for temperature, humidity, and particulate matter. The damper opens or closes based on predetermined parameters to maintain indoor air quality. The fresh air exchange system also includes a heat exchange unit that directs outgoing air to pass incoming air within separate ducts, scavenging heat from the exhaust air and reducing heating costs during colder days. The system's smart controls ensure energy conservation by restricting air intake during extreme weather conditions or high outdoor pollutant levels.



## Sustainable Materials and Carbon-Friendly Design

One Lightwave Inc. is committed to environmental sustainability, and Charli-5 reflects this ethos. The unit is constructed using Expanded Polypropylene (EPP), a recyclable material with excellent sound-suppressing qualities and lightweight characteristics, reducing the system's overall weight by up to 60%. The EPP is coated with a fire-resistant polyurethane coating, providing durability and safety. Additionally, its lightweight design allows for more efficient shipping, resulting in reduced carbon emissions during transportation.



ONE LIGHTWAVE

WORST CASE

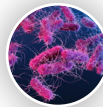
Charli-5 UVGI  
Reactor Core



# One Lightwave Charli-5

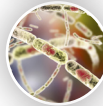
**Energy Dosage of Ultraviolet radiation (UV dose) in  $\mu\text{Ws}/\text{cm}^2$  needed for kill factor of 99% (2 log reduction)**

**The Charli-5 system underwent rigorous testing at an accredited third-party laboratory, where it was subjected to a challenge test against MS-2 Ecoli, yielding an impressive reduction rate of 99.994% within a 24-minute timeframe. Listed below are additional pathogens and their comparable irradiation doses.**



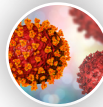
#### **Ecoli**

Irradiation Dose: 6,600  $\mu\text{Ws}/\text{cm}^2$



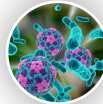
#### **Anthrax**

Irradiation dose: 8,700  $\mu\text{Ws}/\text{cm}^2$



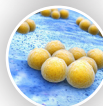
#### **SARS-CoV (SARS Coronavirus)**

Irradiation dose: 8,000  $\mu\text{Ws}/\text{cm}^2$



#### **Infectious Hepatitis**

Irradiation dose: 8,000  $\mu\text{Ws}/\text{cm}^2$



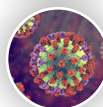
#### **Staphylococcus Aureus MRSA**

Irradiation dose: 6,600  $\mu\text{Ws}/\text{cm}^2$



#### **Salmonella**

Irradiation Dose: 6,100  $\mu\text{Ws}/\text{cm}^2$



#### **Influenza**

Irradiation Dose: 6,600  $\mu\text{Ws}/\text{cm}^2$

The Charli-5 system features a HEPA filter that can efficiently trap particles as small as 0.4-0.7 microns, including wildfire particles as seen in the image.

Additionally, the UVGI reactor core implemented in the system is capable of irradiating particles passing through the filter effectively. This feature renders the system effective against even the smallest particles that pass through the filter, such as the Coronavirus and Zika Virus.





# ONE LIGHTWAVE



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