UV-C Disinfection

LIGHTGUARD ULTRAVIOLET

User Manual

LightGuardUV.com

Read and follow all safety instructions before use. Save these instructions.

LIGHTGUARD ULTRAVIOLET TEAM

ABOUT US

LightGuard Ultraviolet installs automated germicidal systems to disinfect air and surfaces of bacteria, mold, and viruses, including Sars-CoV-2, the culprit of the Covid-19 pandemic.

Our automated germicidal UVC systems operate during non-occupied hours, custom built to your specific needs. In a matter of minutes, your surfaces including papers on your desks, mouse and keyboards, chairs, and tabletops start to disinfect. Within a few hours, your entire school, office, gym, or movie theater will be clean and ready to be occupied for your next use.

Our mission at LightGuard Ultraviolet is to provide security to our clients by providing a clean working environment.

Our team of licensed and professional electricians will install automated, motion sensored UV-C systems that can be used in various settings to decontaminate pathogens from commonly touched surfaces in your high traffic areas.

Visit LightGuardUV.com for more information.

LIGHTGUARD ULTRAVIOLET
SAFETY WARNINGS

SAFETY

In the event of UVC exposure, the following actions are recommended

- See an ophthalmologist if eye damage is suspected.
- Treat skin lesions immediately.
- For severe skin lesions, seek local medical treatment and follow their recommendations for treatment.
- Follow your organization's incident reporting procedure. These often require documentation of the date and time of the incident, persons involved, equipment involved and type of injury.

Safety Warnings

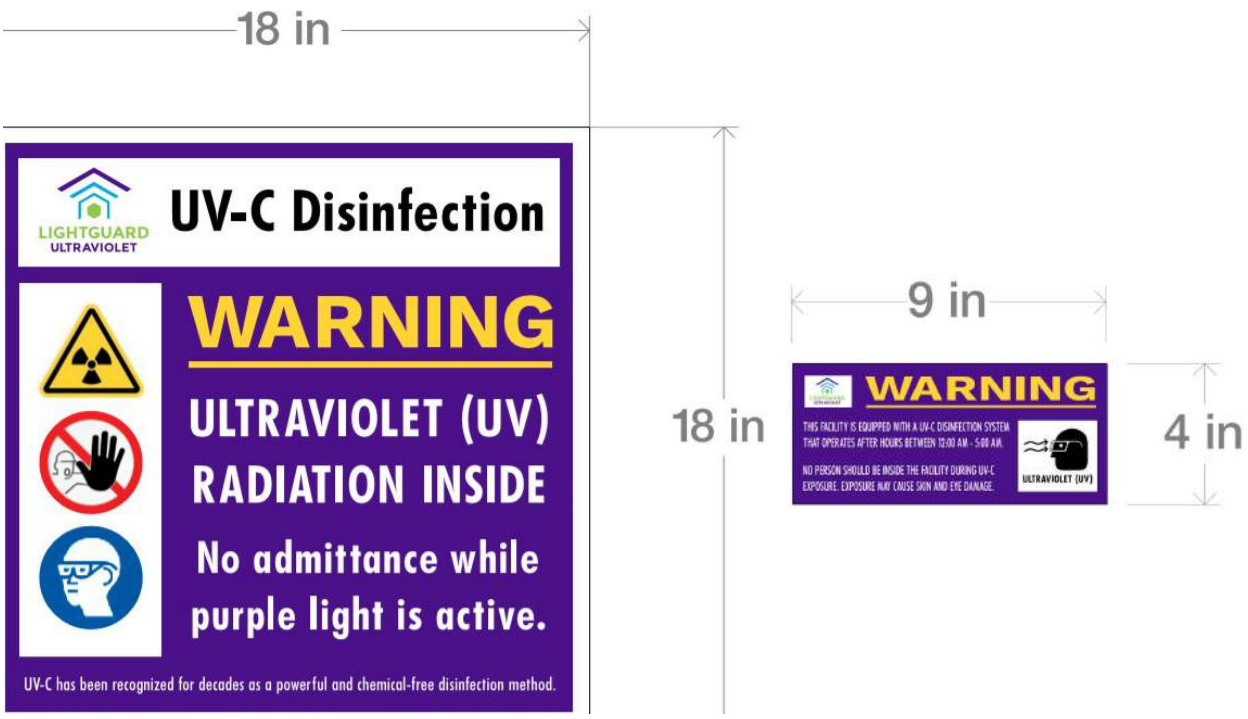
- While the UV-C light includes a sensor to shut off power when motion is detected, it is strongly recommended that access to the room is prevented during operation. All entrances should be locked and windows covered.
- The UV-C light does not contain any user serviceable parts. Do not disassemble or modify the light in any way.
- Installation, adjustments, alterations, service and maintenance must be performed by a qualified service technician.
- UV-C light can cause temporary or permanent loss of vision, and temporary acute redness or ulceration (mild to severe sunburn) to exposed skin.
- To prevent exposure, do not operate the device in any application that allows UV-C light to be visible during operation. Never look directly at the bulb during the disinfection process.
- UV-C light may damage plastics and rubber materials. May cause fabric discoloration.
- It is good practice to close curtains/shades before leaving the locations.
- DO NOT touch bulb with bare hands. The oils in your skin will damage the lamp. Fingerprints will result in reduced performance and significantly reduce the lifespan of the lamp unless they are removed with alcohol.
- Do not leave plants, pets or any living thing in disinfection area.

LIGHTGUARD ULTRAVIOLET
SAFETY NOTICE

SAFETY

LIGHTGUARD SAFETY

LightGuard will install warning labels at all enterances and break rooms
These safety notices can be customized per project.



LIGHTGUARD ULTRAVIOLET
SAFETY NOTICE

SAFETY

Disposal of used or broken UV bulbs

LightGuard will installs shatterproof bulbs as a safety precaution to keep mercury and all shatter glass pieces in the bulb in the event a UV lamp breaks.

Though there is only a small amount of mercury, and it is contained in our shatterproof coat, it is still recommended to follow the proper safety cleaning guidelines for the broken UV lamp.

DO NOT use bare hands to clean up the broken glass: wear disposable plastic gloves to avoid direct contact.
DO NOT use a vacuum cleaner to avoid the trap and spread the mercury.
DO use the disposable material such as stiff paper or cardboard to scoop up broken material.
DO place broken glass pieces into a sealed container to protect anyone from possible cuts from broken glass.
DO use sticky tape or a damp cloth to wipe up any remaining glass fragments.
DO dispose of all cleanup equipment in sealed containers.

For more information on the disposal of broken bulbs
CLICK HERE

In the event of broken UV lamp, there may be possible exposure to mercury.

⚠ WARNING

This product can expose you to a chemical including mercury that is know to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warning.ca.gov/product

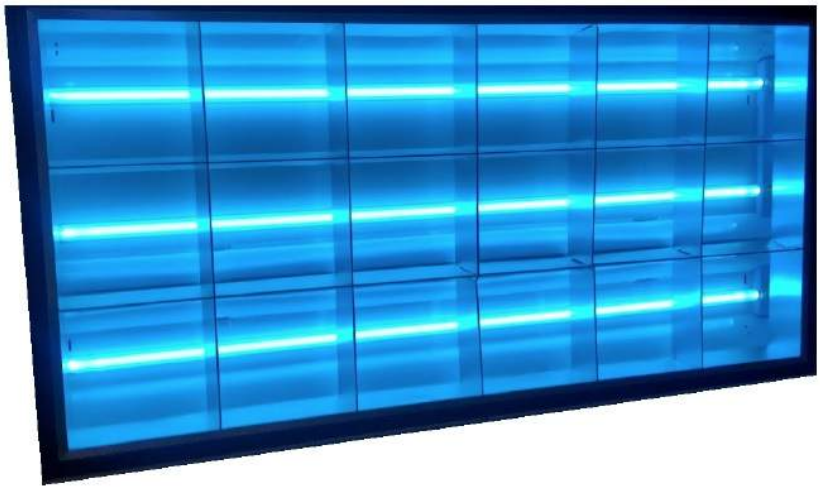
There are NO KNOWN HEALTH HAZARDS from mercury exposure to lamp that are Intact.

LIGHTGUARD ULTRAVIOLET
GLF3

EQUIPMENT

GERMICIDAL LIGHT FIXTURE 3

LightGuard Ultraviolet's GLF3 (Germicidal Light Fixture, 3-bulb) is a high performance parabolic luminaire for use in open area applications and offices where germicidal disinfection is important.



GERMICIDAL LIGHT FIXTURE 2

LightGuard Ultraviolet's GLF2 (germicidal light fixture, 2-bulb) is built with commercial-grade durability, die-formed, cold-rolled steel for use in open area applications and offices where germicidal disinfection is important.

LIGHTGUARD ULTRAVIOLET SENSOR

EQUIPMENT

LIGHTGUARD AUTOMATED

- LightGuard will install Ultrasonic Ceiling Sensors at entrances, exits, or any area that can have potential entries/movements.
- This will cause the UVC lights to turn off for any motion, then turn back on when motion stops.
- The lights will only be operational during non occupied hours. Just to be safe, we are also installing motion sensors.

TIMER

- LightGuard will install a Timer to activate the disinfection system.
- The timer will automate the system. No person will need to worry about turning the disinfection system on and off.
- The timer is set to 1:30am - 3:30am
- There will be a lock with a key for the owner or maintenance team for a manual override switch which provides added convenience.
- Keep doors locked at all times when not servicing.

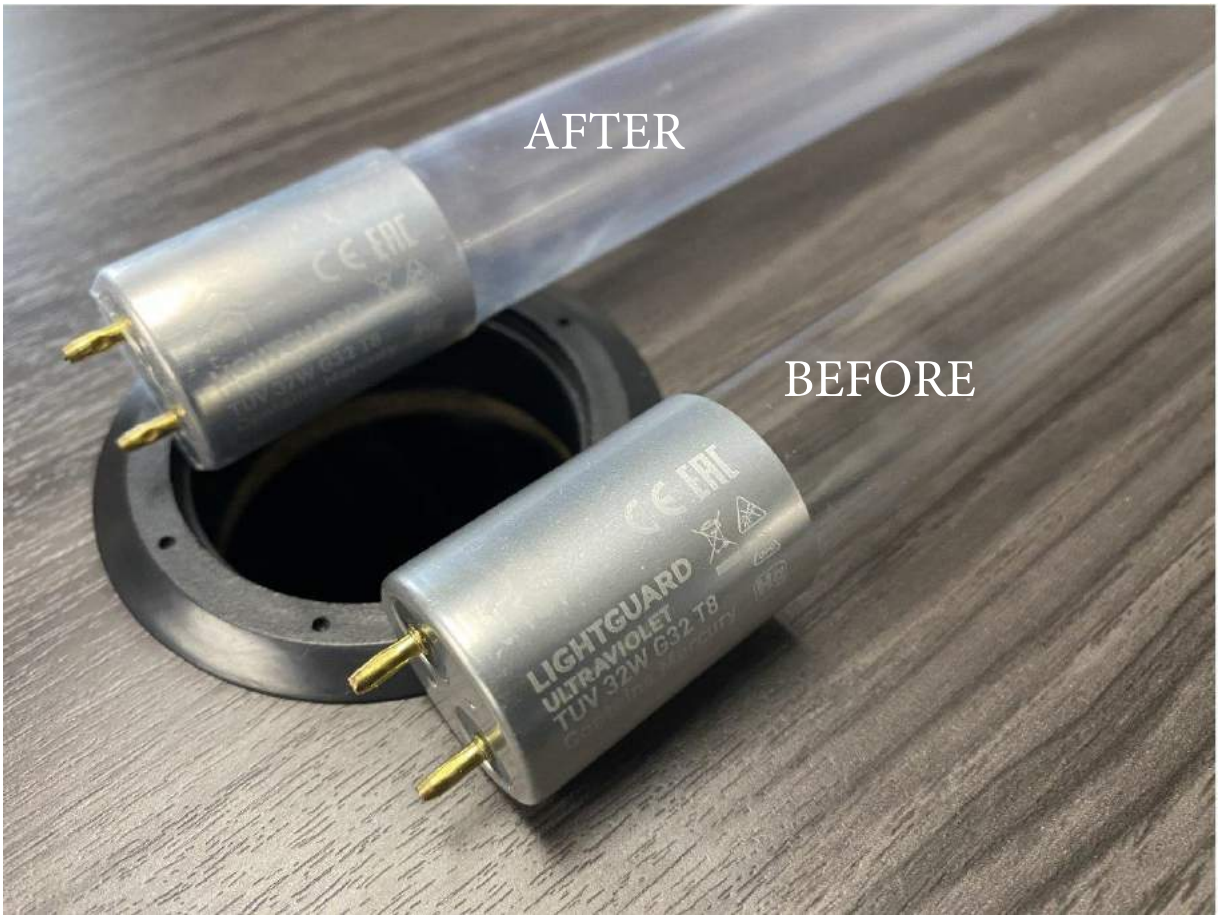
Lock Code: 888

LIGHTGUARD ULTRAVIOLET SHATTERPROOF (SP)

EQUIPMENT

LIGHTGUARD SAFE

LightGuard will install shatterproof lamp coatings on all LightGuard UVC light systems



WRAPPING FEP ON BULBS

HAMMER TEST
SHATTERED GLASS IN FEP TUBE

LIGHTGUARD ULTRAVIOLET
UVC METER READINGS

TESTING

LightGuard Installation

LightGuard Ultraviolet will install our UVC Disinfection Systems in such a way as to ensure a dose of 16.9 mJ/cm2 in all desired high traffic areas at your location.
CLICK HERE TO FIND OUT MORE

GLF3 Systems	Bulbs Used	Distance (ft)	Time to deactivate Sars-CoV-2 (min)	UVC Power (µW/cm²)
1	3	6	2.86	98.2
1	3	8.5	15.47	18.2
1	3	10	17.94	15.7
2	6	6	1.43	196.4
2	6	8.5	7.74	36.4
2	6	10	8.97	31.4
3	9	6	1	294.6
3	9	8.5	5.16	54.6
3	9	10	5.98	47.1

Contact LightGuard Ultraviolet to request recorded test reults

LIGHTGUARD ULTRAVIOLET VIRUS IN SCHOOLS

BENEFITS

UVC TECHNOLOGY FOR SCHOOLS

Decontaminating schools regularly with UV lights will not only help slow the spread the novel coronavirus, it will also help prevent other disease such as influenza and the common cold. SARS-CoV-2, the coronavirus that causes the Covid-19 respiratory disease, is a major health problem, poses a significant threat to school children, and has caused shutdowns and delays in reopening schools.

To slow the spread of the disease via fomite transmission, the CDC and WHO recommend cleaning commonly touched surfaces to slow the spread of the Covid-19 . Studies have shown that SARS-CoV-2 can remain viable on surfaces from 24 hours up to 5 days. Therefore, to promote the safety of teachers, staff, and students, it is beneficial to decontaminate surfaces on a daily basis.

UV lights have been used as a disinfection tool for decades including in schools, hospitals, and research laboratories, as well as for water purification and food and beverage protection. Ample evidence in scientific literature shows that UV light can kill or deactivate SARS-CoV-2, specifically.

LIGHTGUARD ULTRAVIOLET
Health

BENEFITS

UV-C to reduce transmission of Covid-19

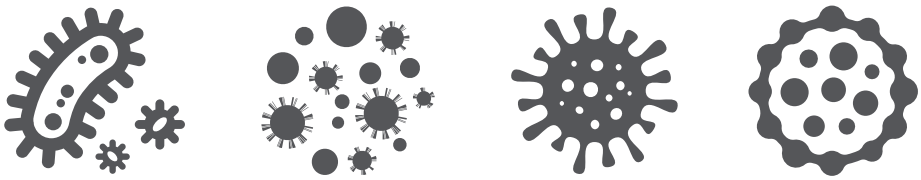
As the Covid-19 pandemic continues to spread across the world, there is an urgent need to reduce its spread. Studies have shown that SARS-CoV-2 (the viruses that causes Covid-19) can remain viable on surfaces from 24 hours up to 5 days [1], prompting recommendations from the CDC and WHO to regularly clean commonly touched surfaces to slow the spread of the Covid-19 caused by fomite transmission.

UV-C is a short wavelength, high energy light that can kill or inactivate microbes and viruses by destroying their genetic material, preventing them from infecting their hosts. UV-C technology has been used for decades as a disinfection tool against hundreds of pathogens, including bacteria, viruses, and mold. This technology has been utilized in hospitals, and research laboratories, as well as for water purification and food and beverage protection. With the spread of Covid-19, there is increased interest in utilizing Ultraviolet-C (UV-C) technology to slow its spread.

Daily decontamination with UV-C will reduce the overall viral load of SARS-CoV-2 and should thus slow the spread of Covid-19. This should provide peace of mind to students and staff. However, please note that UV-C is not a replacement for other measures such as physical distancing and mask wearing. It is a complimentary measure, which, when applied with other cleaning measures, should reduce fomite transmission. Decontaminating schools regularly with UV-C lights will not only help slow the spread of the novel coronavirus, it will also help prevent other disease such as influenza.

Daily decontamination will give a peace of mind to students, staff, and the parents of the students by ensuring a clean environment. These lights can also act as pest control against rodents and insects.

EFFECTIVELY ELIMINATES THESE PATHOGENS



LightGuardUV.com

LIGHTGUARD ULTRAVIOLET

CLICK THE LINKS FOR MORE INFORMATION

Government Websites

CDC.GOV

" The application of UV radiation in the health-care environment (i.e., operating rooms, isolation rooms, and biologic safety cabinets) is limited to destruction of airborne organisms or inactivation of microorganisms on surfaces. "

FDA.GOV

"UV disinfecting devices are devices that use UVA or UVC light to produce a germicidal effect. They are intended to augment disinfection of health care environmental surfaces after manual cleaning has been performed"

PUBMED.GOV

"Conclusion: The survival ability of SARS coronavirus in human specimens and in environments seems to be relatively strong. Heating and UV irradiation can efficiently eliminate the viral infectivity."

EPA.GOV

"UV lamps may destroy indoor biological pollutants such as viruses, bacteria, and some molds"

NCBI.GOV

"The germicidal effect of light in the UV-C electromagnetic spectrum (specifically 254-nm light) has been recognized for some time."

NCBI.GOV (2)

NCBI.GOV (3)

Hospitals Using UVC

DukeHealth

" A type of ultraviolet light called ultraviolet light C or UVC is helping hospitals cut transmission of super bugs like MRSA that linger in patient rooms and cause new infections, according to a study by Duke Health researchers."

University of Minnesota

"The UVC device used in the study was a machine that emits a lethal dose of UV light into an empty hospital room. The light waves kill bacteria by disrupting the molecular bonds that hold their DNA together."

Dental Tribune

"Among these different types, UV-C disinfection has gained favour due to its efficacy against a broad range of microbial and viral agents in a variety of environments."

N95 Face Mask - Process for Decontamination with UVC

Other Informational Websites

WebMD

"The sanitizing effects of UV lights have been seen with other coronaviruses, including the one that causes severe acute respiratory syndrome (SARS)."

Massachusetts Institute of Technology

"UV-C light has proven to be effective at killing viruses and bacteria on surfaces and aerosols, but it’s unsafe for humans to be exposed."

International Ultraviolet Association(IUVA)

"Fact Sheet on UV Disinfection for Covid-19"

LIGHTGUARD ULTRAVIOLET
PEACE OF MIND

LIGHTGUARD
ULTRAVIOLET

1 YEAR WARRANTY

WARRANTY

WARRANTY POLICY

This limited warranty begins on the original date of purchase. To receive warranty service, the purchaser must contact LightGuard Ultraviolet for problem determination and service procedures. Warranty service can only be performed by a LightGuard Ultraviolet service center. The original dated bill of sale must be presented upon request as proof of purchase to LightGuard Ultraviolet.

WARRANTY CONDITIONS

1. LightGuard Ultraviolet obligations are limited to the repair or, at its discretion, replacement of the product or the defective part.
2. Warranty repairs must be carried out by authorized LightGuard Ultraviolet service members. No re-imbursement will be made for repairs carried out by anyone other than LightGuard Ultraviolet and, any such repair work and damage to the products caused by such repair work will not be covered by this warranty.
3. This warranty covers none of the following:
    a) Periodic check ups, maintenance and repair or replacement of parts due to normal wear and tear.
    b) Cost relating to transport, removal or installation of the product.
    c) Misuse, including the failure to use this product for its normal purposes.
    d) Damage caused by Lightning, Water, Fire, Acts of God, War, Public Disturbances, incorrect mains voltage, improper ventilation or any other cause beyond the control of LightGuard Ultraviolet.
    e) Spillage of food or liquid or use of any other hazardous substances, which may effect the product.
4. This warranty is valid for any person who legally acquired possession of the product during the warranty period.