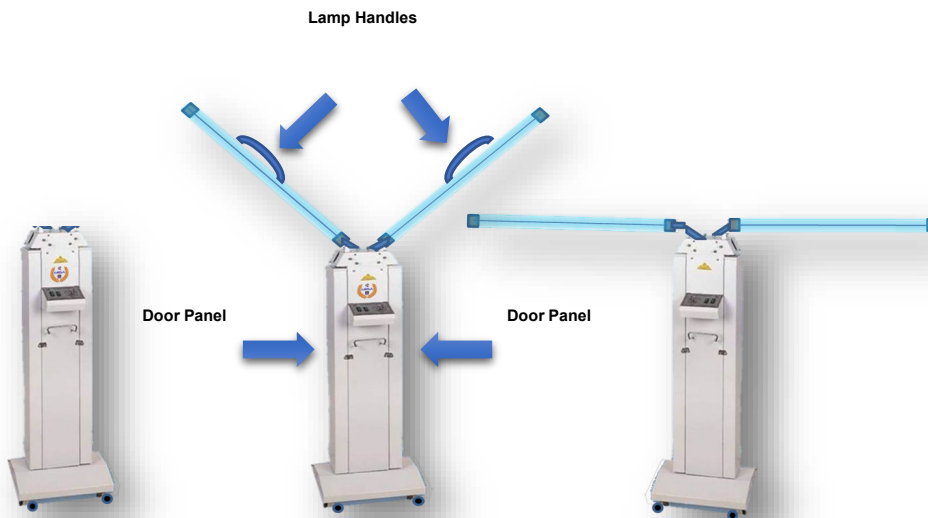


Ultraviolet Germicidal Irradiation



LIBERTY
Distributors

<https://www.libertydistributors.com/>

(800) 828-9920

Model: LD676

Input: 120V AC (60Hz) 2A maximum current

Caution: read operating instructions before operating the LD676 UVC device

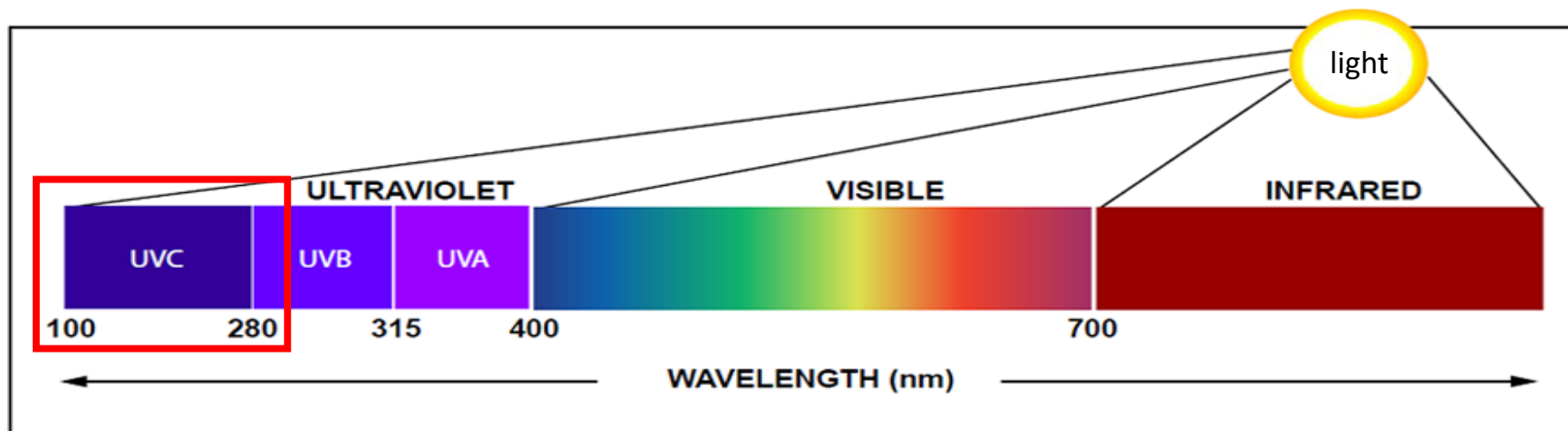
Ultra-Violet C (UVC)

What is UVC Technology?

UVC is a type of ultraviolet light, also known as Germicidal UV. It has the power to kill or incapacitate bacteria, mold, fungi, and viruses by destroying the DNA of these dangerous pathogens. This is an extremely powerful technology to facilitate clean surfaces air as there are no known microorganisms immune to UVC energy.

How Does It Work?

Miniscule airborne and surface droplets hold microorganisms that can transmit diseases such as measles, influenza and tuberculosis to humans. Germicidal UV light has a specific wavelength that breaks the DNA of these microorganisms and prohibits them from reproducing. Microorganisms that lack the ability to reproduce are consequently harmless.



UV Disinfection for COVID-19

What UVC dose is required to kill or disable the COVID-19 virus?

Because the COVID-19 virus (SARS-CoV-2) is so new, the scientific community doesn't yet have a specific deactivation dosage. However, we know the dosage values for comparable viruses in the same SARS virus family are approximately $10,000\mu\text{Ws}/\text{cm}^2$ using direct UVC light at a wavelength of 254nm; this dosage will achieve 99% disinfection (i.e. inactivation).

Room Size ¹ (feet)	Distance ² (feet)	$\mu\text{W}/\text{cm}^2$	Duration for 99% disinfection (minutes)	Recommended Setting
20 x 20	10	34	4.9	15 minutes
30 x 30	15	18	9.3	15 minutes
40 x 40	20	12	13.9	15 minutes
50 x 50	25	8	20.8	30 minutes
Larger than 40 x 40	20	12	13.9	multiple LD676 at 15 minutes

1. Place the LD676 in the center of the room
2. The LD676 IR motion detector range is approximately 25 feet

LD676 in action and Remote Control pairing



$$\frac{10,000\mu\text{Ws}/\text{cm}^2}{16\mu\text{W}/\text{cm}^2} \times \frac{1 \text{ minute}}{60 \text{ seconds}} = 10.4 \text{ minutes}$$

One 15-minute cycle disinfected the room to 99%



Remote control instructions

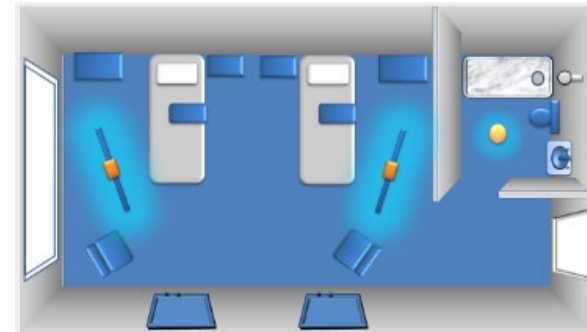
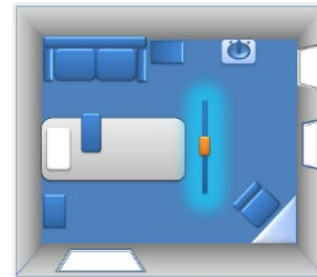
- *Pair the remote controller with the LD676 and press the "A" and "B" buttons simultaneously. You should hear a beeping sound and see flashing lights on the control panel. Release the "A" and "B" buttons and press the and briefly hold the "OFF" button. The remote controller and LD676 are now paired.*
- *The remote controller allows time increments to be increased or decreased.*

Underwriters Laboratories (UL 61010-1) and National Electric Code Certified

- One Year Manufacturer's Warranty



- 4x 30W UVC light bulbs
- 120 VAC



Instructions for UVC Sanitation

1. Clean the room before using the LD676 UVC room sterilizer.

2. Wear UVC Protective Glasses; long pants; and long sleeve shirt when operating the UVC device. Do not look directly at the UVC light source.

3. Post the “Warning Sign” and inform essential staff that UVC treatment will be conducted in a specific room for the next 15 to 45 minutes.

4. To ensure you have enough room to extend the 38 inch UVC arms simply stand in the area you wish to place the UVC device and extend your arms. If there are no obstructions you may then open the side panels and safely raise the UVC arms by their handles.

Do not touch the UVC light bulbs and keep them clean, as any substance will reduce the effectiveness of the UVD sterilization light.

5. Plug the UVC device into the nearest wall outlet.

Nearly all forms of bacteria, protozoa, virus and yeast (not molds) experience 99% sterilization at 10 feet if exposed to the UVC light from one device for at least 10 minutes. Molds require exposure of 60 minutes.

To increase sterilization success and mitigate the adverse affects of shadowing, two UVC devices, positioned appropriately, could be used simultaneously, or a single UVC device could be re-positioned and then operated for a second time.

6. Plan your exit strategy before setting the timer. The timer increases in 15 minute increments. Set the desired time (duration) in minutes.

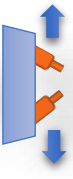
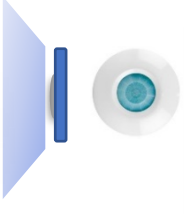
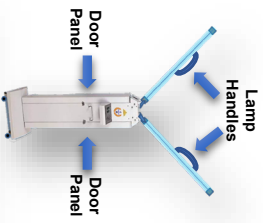
7. Once you stop increasing the timer and no motion is detected the UVC device will begin beeping and you have ~30 seconds to exit the room before the UVC bulbs come on.

A Motion Detector is located below the instrument panel. It projects outward at a 140° degree sweep. If it detects movement it will turn off the UVC bulbs. When it no longer senses any movement it will turn the UVC bulbs on. The front of the UVC device should face the entry door.

8. From outside the room, ensure the UVC bulbs are on by noticing the reflection of the “blue” UVC light.

9. Ensure the warning sign is posted and room cannot be entered.

10. After UVC sanitation is complete, unplug the UVC device and stow the UVC arms. Before stowing the UVC arms, ensure the side door panels are fully open, then while holding the UVC arm by its handle, push out on the release and gently lower and stow each UVC arm. Close the side panel and then repeat for the second UVC arm.



WARNING: Avoid exposure to direct or strongly reflected UVC ultraviolet rays. UVC rays can be harmful to the eyes and skin.

NOTE: Always wear ultraviolet safety glasses when operating the UVC device.

NOTE: Always wear long pants and sleeve shirt to protect the skin from unwanted exposure.

NOTE: Always place the “DANGER – DO NOT ENTER” sign on the door and block the room being sanitized from entry.

CAUTION: Do not operate the UVC device if the power cord is damaged.

DANGER: To prevent the risk of electrical shock, ensure the ground fault circuit interrupt (GFCI) mechanism is functional.

WARNING: Always disconnect power to the UVC device before performing and service or maintenance.

NOTE: The UVC device is intended for indoor use only.

NOTE: Do not use the UVC device for other than its intended purpose, as described in the UVC device report.

CAUTION: Excessive (many hours / days) UVC rays may break down plastic, rubber, or other non-metallic materials and can fade colors.

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2. The LD676 IR motion detector range is approximately 25 feet

Bacteria ... 1 UVC device at 10 feet	Minutes	Virus ... 1 UVC device at 10 feet	Minutes
Bacillus anthracis (Anthrax)	8.5	Bacteriophage - Escherichia coli (E. coli)	6.5
Escherichia coli (E. coli)	6.5	Herpes Simplex	7.4
Klebsiella pneumoniae (CRKP)	7	Infectious Hepatitis	7.8
MRSA	5	Influenza A - flu	6.5
Tuberculosis (MTB)	7	Poliovirus - Poliomyelitis	6.5
Vancomycin-Resistant Enterococci (VRE)	8.2	Norovirus	14



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