

Exploring Germicidal Ultraviolet (GUV):

Benefits, Risks, and Applications.

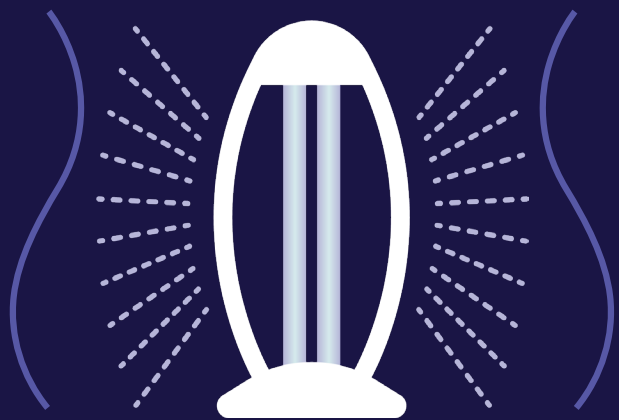


What is GUV?

Germicidal UV, also known as GUV or UV-C, is a particular type of ultraviolet light that can help reduce the number of airborne infectious disease particles. It emits radiation with wavelengths between 100 and 280 nm, with 254 nm being the most effective.

How do GUV devices disinfect the air?

GUV works by emitting short-wavelength ultraviolet light, which damages the genetic material of microorganisms such as viruses, bacteria, and fungi. This damage either kills the microorganism or renders it unable to reproduce, reducing the concentration of these particles in the air.



How are GUV devices applied for air disinfection?

- 1 As ceiling units in rooms.
- 2 In-air stream disinfection in central HVAC systems.
- 3 In enclosed in-room air cleaners.

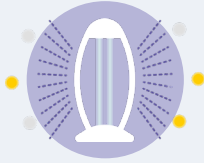
Determining the effectiveness of a GUV device

You need to consider:

- The UV source.
- How long UV is applied to the particles.
- How far away the UV light is from the particles.
- Things that might block or reflect the UV light.

NIOSH recommends these other considerations:

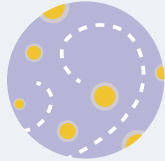
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Irradiation and dose:

It is crucial to consider the microorganisms' susceptibility to UV and the amount of UV exposure that a microorganism or a group of microorganisms receive.

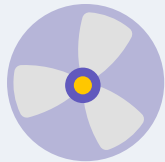
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Mechanical ventilation:

When you increase mechanical ventilation in a room with some kinds of UV devices, it reduces the effectiveness of such a system.

3



Air mixing:

You should improve air quality by adding a fan or repositioning the supply diffusers and exhaust grills if there are areas of air stagnation.

4



Humidity:

If you have installed UV devices, you should control relative humidity (RH) to 60% or less for optimal efficiency.

5



Temperature:

Temperatures from 68°F to 75 °F (20 °C to 24 °C) are optimal for the use of UV systems.



Important note

These same guidelines apply to all indoor spaces, not just healthcare settings. They assist with ensuring that the UV device helps reduce the transmission of airborne diseases while keeping all workers and visitors safe.

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Are there any risks involved with UV devices?

Direct short-term exposure to UV can cause temporary eye and skin damage. Similarly, limits on extended exposure help keep people safe.

Be aware that many UV systems come to market every day and are being sold faster than ever since the outbreak of the COVID-19 pandemic. While many new technologies showcase supporting laboratory findings, not everything that happens in a lab can be replicated in real life, and not all studies are independently verified.



How to be safe



To ensure you select the safest and most effective solution for your facility, work with an experienced **HVAC professional** or reputable UV device manufacturer. These will help you protect your employees and the community at large from the spread of infectious diseases.

Are UV devices all I need to reduce the spread of airborne viruses in my facility?

NO

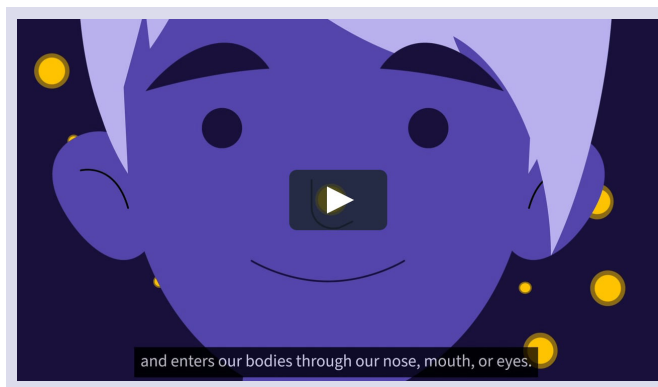
While UV can be a useful tool in reducing the spread of airborne viruses, it should be used to support other measures, such as ventilation, filtration, and other proven occupational health practices, to create a comprehensive approach to reducing the risk of infection in indoor spaces.

Looking for other measures to reduce the spread of airborne viruses from your facility?

Consider the 4Ds

Reducing exposure to an infectious disease is the most important thing you can do to reduce its spread.

Watch this video to understand and assess your risk:



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