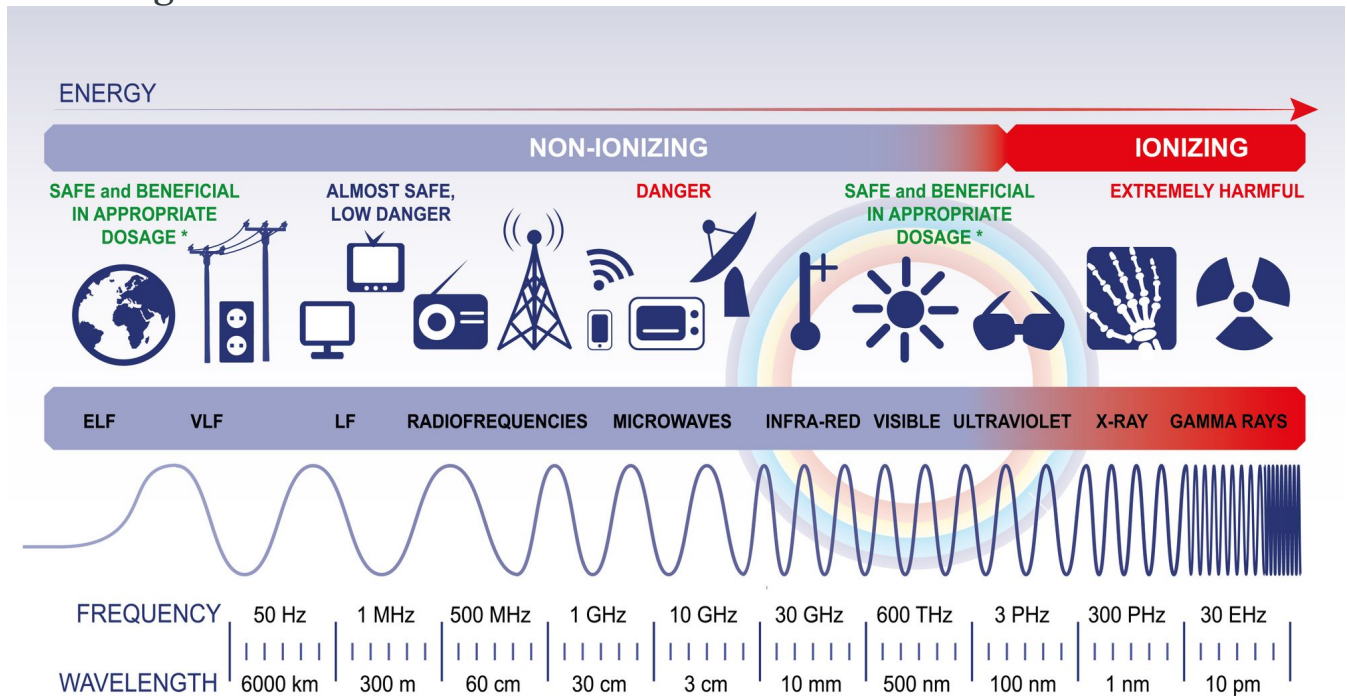


ABOUT UVC

UV Photons UVC industrial lamps radiate at a wavelength of 254nm and neutralize 99.9% of viruses, bacteria, mold, fungi, and more. Proven effective against Coronavirus, Influenza, and other diseases causing pathogens.

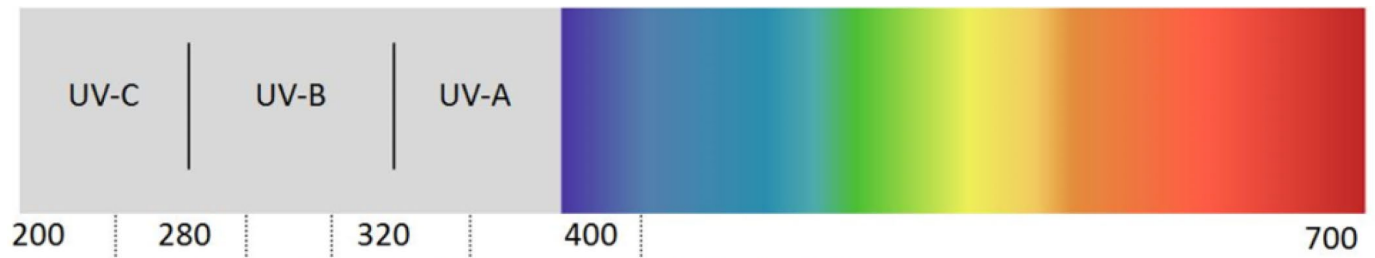
UVC is one type of ultraviolet radiation, which is an invisible form of light energy that can cause damage to living tissues, making it a useful tool for killing germs if used safely.

Scientists measure light energy on a scale called the electromagnetic spectrum. This energy includes many things you have likely already heard of like infrared light, radio waves, gamma rays, X-rays, and visible light.



Ultraviolet radiation is the part of the electromagnetic spectrum in between visible light and x-rays. It gets its name because it has slightly shorter wavelengths than violet, the shortest wavelength of visible light. This is also where the name infrared comes from – it has slightly longer wavelengths than red light.

Not all ultraviolet radiation is created equal. There are three different types that are classified according to wavelength. The three main types of UV are UVA (315 nm – 400 nm), UVB (280 nm – 315 nm), and UVC (100 nm – 280 nm).



All three types are found in sunlight, but only UVC is used to disinfect surfaces and objects.

How does UVC work?

UVC produced by the sun doesn't cause us any damage because the atmosphere absorbs the radiation before it can come to Earth. UVA and UVB can cause sunburns and skin cancer, but UVC causes the most damage to living tissues because of its short wavelength and high energy, so it's lucky we are not regularly exposed to it.

UVC does not just damage human skin – it's also extremely dangerous for bacteria and other microbes. This is why only UVC can be used for disinfecting. The high-energy waves of UVC interfere with the genetic material of microorganisms, stopping the cell from replicating this material. This halts reproduction, so the germs die out, leaving a sterile surface.

UVC is one of the best ways to kill microorganisms, but it does have its drawbacks. It relies on surfaces and objects being in the path of the light, so systems have to be set up so all target surfaces have a strong source of light. It also can cause a lot of damage to human skin. Lastly, it's too powerful to be used on any product that includes microorganisms like vaccines.

UVC radiation is extremely effective when used correctly. However, it does have a few limitations. First, it can only disinfect objects in the path of the light, so sometimes multiple bulbs are required. Second, UVC is harmful for humans as well, so systems need to be designed in

a way to minimize human exposure. Finally, UVC is so good at killing microorganisms that it cannot be used on biomedical products like vaccines, though it can be used on medical equipment that does not contain any organic material.

When is UVC used?

UVC can be used in many places for disinfection. One way you may have seen it already is in a laboratory class in high school or college. Those cabinets on the wall that you put your goggles in are called biosafety cabinets, and they use UVC to disinfect goggles and other safety equipment. Hospitals have these systems as well for their supplies.

Here are some of the major ways that UVC disinfection systems work:

- **Surface systems:** This is the most common type, and it works by shining UVC light directly onto a surface or object. These work well for smooth surfaces, but may not be completely effective for coarse or dense surfaces like rugs. Textured surfaces can introduce hiding places for microorganisms, as well as microscopic shadows on surfaces. Only microbes exposed to the light will die.
- **Air systems:** These systems rely on the natural circulation of air in a room to bring bacteria close to a lamp shining in the air. The system can also have built-in air circulation to improve its effectiveness.
- **Water systems:** Spas and swimming pools use UVC light to disinfect the water without chemicals. UVC light is shone directly into the water, killing bacteria. These systems are usually just part of a broader cleaning strategy that includes filters and possibly chemicals like chlorine.

The best thing about using UVC for disinfecting is that it can be used anywhere that light can shine through, and it doesn't leave any chemical residues. There are many companies out there, including UV Photons, that produce lamps for use in commercial and residential buildings, schools, hospitals, gyms, public spaces, warehouses, and of course, hospitals.

People rely on disinfecting strategies to keep themselves safe and healthy, especially during the current COVID-19 pandemic. Research

has indicated that UVC disinfection can help protect surfaces from COVID-19, and can help prevent its spread along with other methods like contact tracing and social distancing. UVC disinfection was already very commonplace before COVID-19, but now it may prove even more important for protecting ourselves and our families.