

What are your products' health and safety risks? Do you include instructions for safe use and training?

NetZero USA's NZGUV® upper room fixture is certified by UL and the only one that we are aware of. Also, it has a separate UL photobiological test to determine its safety risk. According to UL, they have not done this test with other like units to date. In other words, many units in the market have not been tested through UL. It is determined by UL that the unit is safe for occupied spaces if it is installed at a minimum of seven feet from the ground. This is for air disinfection to reduce aerosol transmission risk and the application through this type of fixture has been around in hospital medical settings for over fifty years, so nothing new here except the pricing is extremely favorable compared to what the medical industry pays for the same types of units. No need for PPE. NetZero USA's NZGUV® handheld disinfection unit emits UVC radiation which if not used according to the recommended guidelines can be hazardous. PPE and proper training for safe use is mandatory so that there are no risks. PPE and training information are included in the package with the product. These units are currently being used by universities and the private sector as well for electronic and surface contamination disinfection.

Do your products generate ozone?

NetZero USA's NZGUV® bulbs are made of quartz glass and do not generate ozone.

What kind of material is compatible with UVC disinfection?

UV resistant materials are not affected by UVC. Other materials can be affected by prolonged exposure, but the effectiveness of the unit in performing its germicidal function only requires a few seconds of exposure.

Do the lamps in your products contain mercury?

Yes, the lamps do contain small amounts of mercury and the same protocols that have been in place for years for fluorescent lamps also apply to these bulbs.

What viruses have your products been tested on?

Private companies do not have access to virus samples. UV-C has been tested on most known viruses and bacteria that are difficult to contain. Through the CDC and Department of health, sponsored university studies over the last seventy years have been published online for easy access. The purpose of the studies in relationship to any UV-C product is what dose is required to kill specific bacteria and inactivate virus'. Since every virus is different, they all require a different amount of radiation (dose) to work. Our products have been photobiologically tested by UL, to validate through third party testing, what doses of radiation our solutions deliver. Also, we use photobleaching cards, used by the medical industry, to demonstrate the effects of the solutions.

Are your products listed as medical devices? If not, do they need to be?

NetZero USA's NZGUV® products are currently not being listed as medical devices because we are not painting them with antimicrobial paint. That is an option, but we are not doing that until we do the trolley unit.

Does Far-UVC light (222 nm) efficiently and safely inactivate airborne human coronaviruses?

There is some evidence that excimer lamps, with peak wavelength of 222-nm may cause less damage to the skin, eyes, and DNA than the 254 nm wavelength, but long-term safety data is lacking.

Since the FDA is reporting limited published data to support disabling Covid-19, what 3rd party references can NetZero USA provide to support claims that our lights will work?

There is no known bacteria and virus that can withstand UVC radiation. The question is what dose is required to perform this task and how many log kills are desired or accepted? Covid 19 is a virus that has less testing data because of the limited time it has been around. Most recent test by Boston University explains their findings, which is specific UVC doses, at 254 nM, required to inactivate Covid 19.

<https://www.signify.com/en-us/our-company/news/press-releases/2020/20200616-signify-boston-university-validate-effectiveness-signify-uvc-light-sources-on-inactivating-virus-that-causes-covid19>

What dose will inactivate Covid 19?

The dose of 22mJ is what the test results from Boston University says will create a five log kill on Covid 19. Signify, who bought Philips and Boston University are in the article below about UV-C inactivating Covid 19. Also, other sources that have determined that it inactivates Covid 19 are Juan Leon, an environmental health scientist, from Emory and also Lena Ceric an associate professor at The University College of London.

What are the three different NZGUV[®] products that NetZero USA is making and what are the different applications?

The three products are a handheld, upper room and portable trolley. The way to calibrate every application can be measured by using Dosimeter cards. These cards change color like a chlorine strip for a pool or jacuzzi. When you apply it once and understand the time it takes to deliver a proper dosage, then you will be able to repeat. Basically, anywhere from 4 to 10 seconds gives you enough dosage to inactivate most virus concerns.

Does all of the lighting in the room need to have this technology or just some of it? If all, what kind of wattage are these bulbs or fixtures?

The solutions that we offer and that are on the market by specialty companies are upper room GUV, handheld and a portable unit. The upper room can be used 24/7 in occupied spaces because it directs the light above exposure could occur with people. This product helps mitigate aerosol and air transmission. Generally, one unit will cover from 200 sq feet to 400 sq feet. The handheld is to be used to manually hover over places that need quick decontamination. The portable unit is operated in no occupied spaces in increments of 15 minutes.

How do your products disinfect an entire room with a fixture that will be 7 feet in the air?

Generally, there are two approaches that work in tandem with each other: air cleansing which happens from the upper room GUV and the portable handheld unit which is a less expensive version of the robot.

What certifications do your products have?

Net Zero USA has a UL certification on the upper room light. NetZero USA also has UL photobiology test for all three products. According to UL, we are the first company to do photobiology through them.

How much exposure can you have before the UV-C products pose a health risk?

Over exposure is measured in the extended terms of hours and is superficial to existing dead cell tissue on the body. The cornea is more sensitive, but both can recover quickly according to medical explanations. However, it is important to continually preach and warn about these issues no matter how non serious they may be. The same over exposure can affect one person more than another. So serious caution and attention to operating instructions should be followed at all times.

Additional Information:

1. Generally speaking, viruses are generally not killed. They are inactivated. The process is that the nucleic acids (RNA and DNA) are damaged so that they are unable to mutate and replicate making them expire. However, bacteria can and is killed.
2. The wavelength used to do this is the 254 nanometer wavelength. The amount that is emitted or absorbed is measured in millijoules mJ. In UV-C, this is referred to as a dose. The question becomes what dose is required to inactivate a specific virus.

<https://schools.forhealth.org/wp-content/uploads/sites/19/2020/06/Harvard-Healthy-Buildings-Program-Schools-For-Health-Reopening-Covid19-June2020.pdf>