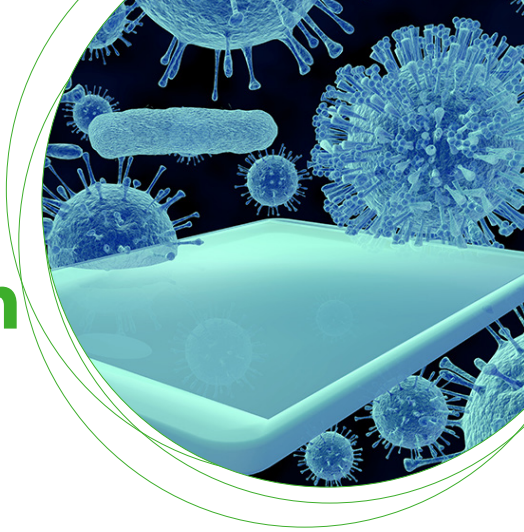

6 Things to Consider When Evaluating a UV Disinfection Charging Station

06 July, 2020

1. Ensure UV-C Light Comes into Contact with ALL Device Surfaces While Inside the Station
2. Read the Research Behind any UV Disinfection Claims
3. Understand the Significance of Exposure Time and Kill Rate for Disinfection
4. Determine How Much Physical Contact Is Needed to Operate the Sanitising Unit
5. Be Cautious of Other Sanitising Products, Such as Ozone Disinfection
6. Consider How Important It Is to Have Device Charging and Disinfection in One Device

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Recently, the Consumers Federation of Australia cautioned the public that misleading advertisements are flourishing for products falsely claiming to prevent COVID-19 infection. In light of this warning, and how incredibly challenging it is to disinfect with UV light inside of a cart, it's essential to be cautious and informed when evaluating UV disinfection charging stations.

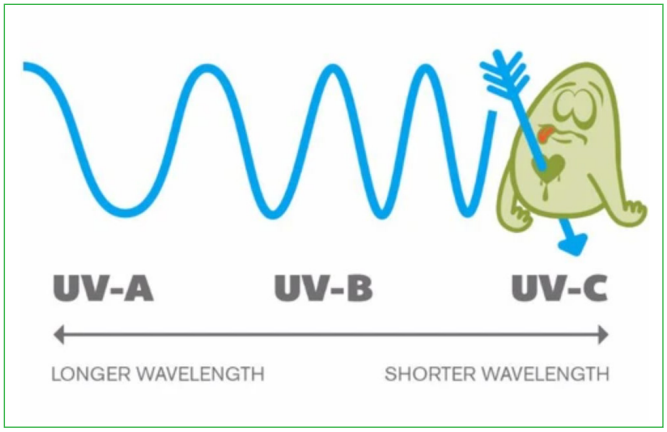
We urge you to do your homework before purchasing products that say they kill pathogens as well as perform other functions. If something sounds too good to be true, it probably is. Here are six things to consider before clicking the "Buy Now" button:

1. Ensure UV-C Light Comes into Contact with ALL Device Surfaces While Inside the Station.

For an object to be disinfected, it must have full exposure to UV-C light rays. But what exactly is UV-C light, and how does it sanitise?

We all know about the sun's UV rays and their harmful effects, that's why we slather on the sunscreen when we head outside. But did you know there are actually three different types of UV rays? Most UV rays that you come in contact with from the sun are longer wavelength UV-A rays. In addition to UV-A rays, there are also UV-B and UV-C rays. When it comes to disinfection, not all kinds of UV are effective. UV-C rays have the shortest wavelengths and the most energy. That's why they do such a great job breaking apart germ DNA, leaving it unable to function or reproduce.

Unlike UV-A and UV-B light, UV-C light is germicidal. It can even neutralise "superbugs" that have developed a resistance to antibiotics. UV-C light penetrates the cell and disrupts the DNA, killing the pathogen.



For an entire object to be disinfected, it must have full exposure to UV-C light rays. Therefore when evaluating a UV disinfection charging station, always ask, "Is the device resting on a solid shelf or on clear glass?"

For full exposure, the device MUST be resting on clear glass because UV-C light cannot penetrate a surface unless it's clear. If your object is in contact with a dark surface such as a shelf, rack, or even another device, it will NOT be fully disinfected.

When searching for a station that disinfects laptops, Chromebooks, or other devices that fold in half, another vital question to ask is about those bacteria loving keyboards. Unless you want your keyboards to be home to almost three times more bacteria than a public toilet seat, be sure also to ask, "Is the keyboard fully exposed to the UV-C light?"

2. Read the Research Behind any UV Disinfection Claims.

The best way to protect yourself and your investment is to read the research behind a manufacturer's claims. Check out this guide as to what to look for in UV-C testing research data.

- Laboratories outside of Australia may test based on different standards. Was the research done by a trustworthy, Physical Containment Level lab?
- If so, what level of physical containment is applied to the lab? In Australia, the four levels are designated as PC 1-4. PC 4 being the most stringent. In the United States, the Centers for Disease Control and Prevention (CDC) have specified these levels as BSL-1, -2, -3, and -4 level labs. According to the CDC, SARS-COV-2, the virus that causes COVID-19, must be tested by a BSL-3 lab.

Was any research or testing done in the field, meaning outside of a lab? Did users find the device effective and useful?

3. Understand the Significance of Exposure Time and Kill Rate for Disinfection.

For UV-C light to be effective, exposure time is critical. For example, waving a UV-C wand over an object will not disinfect it, unless the light directly hits every part of the surface for the prescribed and tested exposure time.

When evaluating stations, it's very important to assess what percentage of a given germ is killed by the UV disinfection process. This percentage is also known as the kill rate. In the healthcare industry, the strongest kill rate claim you can make is 99.9999%. Keep in mind that decimal points matter. 99% is not the same as 99.9999%. For those of you in IT, you know that those extra 9's in uptime can make a big difference! 99% uptime means over three days of downtime per year, whereas 99.9999% uptime translates to only 31 seconds of downtime per year.

UVone rapid UV-C technology disinfects devices to a 6-log kill, reducing the colony to 1 MRSA bacterium after a 99.9999% reduction. PC Loc's kill rate claims are based on preliminary data conducted by an accredited, GLP compliant, BSL-2 laboratory, and further testing is in process. Remember, we strongly recommend reading the research, even when it comes to our products. Request our full test data.

4. Determine How Much Physical Contact Is Needed to Operate the Sanitising Unit.

There's a reason why healthcare clinics mount touch-free automatic hand sanitiser dispensers around their facilities. Touch-free delivery eliminates cross-contamination to help reduce the spread of germs and encourage use.

Is the disinfection station that you're considering labelled touchless or zero-touch? If bacteria are on the outside of the station, and you have to touch the station to open it, doesn't that defeat the purpose of sanitising the device in the first place?

With the UVone device disinfection, a user simply waves a hand above the system to open it, places the device inside, then waves a hand again to close it. There's no need to ever physically touch the station.

5. Be Cautious of Other Sanitising Products, Such as Ozone Disinfection

Ozone molecules in the atmosphere are what forms the protective ozone layer in Earth's atmosphere. Remember those UV rays we were talking about earlier? The ozone layer is what blocks UV-C light from reaching the earth's surface. Ozone disinfection uses ozone gas rather than UV light to disinfect surfaces. There are advantages to ozone disinfection because gas can engulf an object, such as the keyboard of a closed Chromebook, more successfully than light. It can also be more effective on porous surfaces like fabric, which is why this method is often used in dry cleaning services.

However, ozone comes with risks—really BIG ones at that.

- Ozone is very reactive and corrosive. Any material exposed to ozone gas can rapidly deteriorate, which in this case would include mobile devices and charging units.
- Ozone gas is toxic. Any leaks in the cabinet or charging station can have significant effects on people. NSW Ministry of Health, exposure to Ozone "can cause eye, nose, throat and lung irritation, cough and shortness of breath. May exacerbate chronic respiratory diseases such as asthma. Is likely to increase hospital admissions and emergency room visits for respiratory disease."

Here are some tips as to what to look for in sanitising products that claim to use ozone disinfection.

- Find out if the ozone production of the charging station is below the EPA recommended ambient concentration of 0.05ppm. It has been shown that ozone content above 0.3ppm can cause lung issues, so if any leak in the cabinet occurs during ozone generation, this can have significant effects on people in a classroom or factory setting. This is why the EPA and OSHA have made an ambient ozone limit of 0.05ppm.
- Be sure to check with local regulations as well.

6. Consider How Important It Is to Have Device Charging and Disinfection in One Device

It may seem like a dream come true to have an all-in-one disinfection charging cart. But if you step back and look at the larger picture, the benefits of PC Loc's unique solutions prove that two separate devices can be better for both disinfection and charging.

- The sleek, compact design means UVone UV disinfection station for mobile devices seamlessly integrates into any environment. Unlike a larger charging station, it can be placed where it is most likely to be used—such as outside a locker room, toilet, or lunchroom. Hygiene compliance is much more likely if it's simple, convenient and visible.
- While it may seem logical to charge and disinfect devices overnight, imagine if you only washed your hands in the morning when you get up? Just like washing hands, disinfecting once per day may not be enough to stop the spread of viruses. Sanitising more often can prevent cross-contamination as germs are spread by users touching devices multiple times per day.

PC Locs offers a complete suite of solutions for mobile device charging, storage and security. Easily pair UVone with a PC Locs charging station that works best for you to ensure devices are reliably sanitised, charged, and ready for use at all times.

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