

FAQs



MARKETING

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What is UVC light?

UVC is ultraviolet radiation that falls in the wavelength range of 280 to 100 nanometers. Most people have heard of the dangers of exposure to **UV-A (400 to 315 nm)** and **UV-B (315 to 280 nm)** from the sun or from sunbeds. UVC radiation, also produced by the sun, is the shortest ultraviolet wavelength and is almost completely filtered into the ozone layer, with the rest passing through the atmosphere before reaching the Earth's surface. Therefore, people have little or no natural exposure to it.

For more than a century, the **germicidal action** of lamps that produce UVC light has been known. Many applications have been developed for disinfection, sterilization of water and surfaces, tools used in biological laboratories, and medical equipment.

Does UVC light inactivate COVID-19?

Artificially produced UVC has been used successfully as a germicide and bactericide for decades. The high energy associated with UVC light is absorbed by the DNA of bacteria, viruses, spores, and other pathogens. This absorption causes abnormalities in the DNA, rendering the microorganism unable to reproduce and infect. Due to its effectiveness and its advantages, UVC is being used in a growing range of applications. UVC is also used in medical and hospital settings for the disinfection of instruments, work surfaces, and air.

COMVAT DUO₃ and its 15 nominal 825W lamps emit more than 250W in the UVC region (254nm) sending millions of photons against the virus envelope and inactivating their DNA and RNA amino acids, eliminating their reproductive capacity and the possibility of contagion. In early July 2020, Signify (Old Philips Lighting) demonstrated in Boston, USA, that its UVC lamps are effective against SARS Cov-2¹. Also, on July 3, 2020, the Ministry of Health of the Spanish State, in its press release on UVC and Ozone devices, stated: ***“The available evidence suggests that both devices may reduce the virus population on surfaces. In the specific case of coronaviruses, the evidence suggests that UV-C devices would reduce the viral population, quickly and easily.”***²

1. <https://www.signify.com/es-es/sobre-nosotros/news/press-releases/2020/20200617-signify-boston-university-validate-effectiveness-signify-uvc-light-sources-on-inactivating-virus-that-causes-covid19>

2. https://www.mscbs.gob.es/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/COVID19_Nota_sobre_el_uso_de_UV-C.pdf

Does COMVAT DUO₃ sterilize surfaces, surgical instruments and PPE?

Sterilization is defined as the destruction of all microorganisms. UVC light provides a percentage of microbial reduction or disinfection. For example, a certain dose of UV will provide a 99.9% reduction in a particular bacteria, but we cannot call this sterilization. COMVAT DUO₃ is a device for disinfection and not for sterilization. It is designed for use in spaces and surfaces and not for other types of instruments or PPE.

Can I replace other cleaning processes with COMVAT DUO₃?

COMVAT DUO₃ does not replace any of the usual cleaning and disinfection processes, furthermore, it is highly recommended that it be combined with the usual cleaning standards and the most rigorous disinfection processes before applying the UVC dose. COMVAT DUO₃ is the last and final layer in global disinfection processes.

Does humidity or atmospheric pressure affect the efficiency or performance of COMVAT DUO3?

UVC light radiation is not affected by weather conditions such as humidity or atmospheric pressure, nor by altitude. Ozone has been shown to be significantly more effective in the inactivation of viruses and bacteria in environments with high relative humidity.

Does UVC light inactivate viruses in the air or just surfaces?

UVC light has been used for disinfecting air, surfaces and water for decades. The scientific community has been able to prove with numerous studies its effectiveness against viruses and bacteria regardless of the medium on which the germicidal light acts.

Does ozone inactivate COVID-19?

The scientific community has not yet been able to demonstrate in the laboratory that O₃ can inactivate SARS-CoV-2 from air and surfaces, however, it has been able to demonstrate it with other types of coronavirus and norovirus¹, so the contribution of ozone as one more layer in the battle against COVID-19 is always considered recommended in adequate amounts and time exposures, such as those provided by COMVAT DUO₃ and based on the latest scientific studies²

How much O₃ does COMVAT DUO₃ release for the inactivation of viruses, bacteria and fungi?

COMVAT DUO₃ has an ozone generator capable of producing **up to 15mg / h of O₃**.

The maximum concentration of O₃ that the ozone sensor will allow in a room will always be **1.5 ppm (parts per million)**, once this concentration has been reached, the equipment will keep it stable for the period of time suggested by recent publications.

1. https://www.mschs.gob.es/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/COVID19_Nota_sobre_el_uso_de_UV-C.pdf

2. Dubuis ME, Dumont-Leblond N, Laliberté C, et al. Ozone efficacy for the control of airborne viruses: Bacteriophage and norovirus models. *PLoS One*. 2020;15(4):e0231164. Published 2020 Apr 10. doi:10.1371/journal.pone.0231164

How can I know if the treatment has been effective once applied?

The doses of ultraviolet radiation suitable for the inactivation of viruses, bacteria and fungi have been meticulously studied by the R&D department following the latest published scientific evidence. There is no method, for obvious reasons, with which you can check whether the light has been effective at all points in a room, but you can measure the amount of radiation emitted at a particular point by using **photosensitive adhesives** that they can be supplied optionally. Therefore, verifying that an effective UVC Power Density has been delivered at one point is possible.

Can COMVAT DUO₃ be used in the presence of people?

COMVAT DUO₃ cannot be used in the presence of people in any case, in any of its 3 modes, **UV, O₃ or UV + O₃**. Thanks to its presence sensor, if someone accessed the room during treatment, the equipment would automatically stop immediately, thus preserving the health of people.

Does it require specifically trained personnel?

COMVAT DUO₃ does not require specific personnel for its use, it can be used by anyone who has been properly trained in its operation and in the security measures that must be carried out.

Can I use COMVAT DUO₃ in any other non-sanitary room?

Yes. Besides being designed for the most demanding healthcare environments such as hospitals and residences, **COMVAT DUO₃** can also be used in sports centers, hotels, restaurants, cruises or any other space with a high risk of contagion or high presence of people.

If a lamp breaks before or during treatment, can I continue with the disinfection cycle?

The UVC radiation doses have been carefully studied and tested with the 15 lamps operating simultaneously, even so, with the lack of radiation from one, and up to two lamps due to breakage or defect, the equipment would continue above the threshold for effective radiation. **COMVAT DUO₃** is a high-power, broad-spectrum device that has been parameterized with a wide margin to anticipate these possible cases.

If the presence detector interrupts the treatment, how should I proceed?

When the treatment is interrupted by the presence sensors, it is paused, and must be reactivated manually, resuming it in the minute it was left. There is no need to restart the cycle from the beginning. However, it could always be totally canceled if for other reasons the user needed it.

Is the ozone cannon powered from an external source?

COMVAT DUO₃ ozone is generated by its internal reactors and is fed by the oxygen itself that is found in the air, **it does not need or have any external contribution.**

Does COMVAT DUO₃ require a Wi-Fi connection?

No. Although it has a wifi antenna, this is only to communicate with the provided tablet, generating a closed, secure and inaccessible system for other external devices.

What happens if the tablet is lost or broken? Can I continue doing treatments?

If you lose the tablet, run out of battery, cannot charge it or it has simply broken, you can control all treatments from the security control panel located at the base of the equipment without ever losing the safety standards. If you have problems with the tablet, contact the manufacturer or distributor.

Can the amount of O₃ be parameterized or configured depending on the size of the surface?

Yes, but the **COMVAT DUO₃** will automatically do it for you. It is programmed to reach **1.5 ppm O₃ in any room**, enough to be able to inactivate most viruses and bacteria. The equipment monitors by means of an ozone sensor that this concentration is reached and will keep it stable for the necessary time. Subsequently, the decomposition process of the O₃ particles will begin. The device will notify you with an acoustic and visual signal when it is safe to enter the room.

What happens if the connection between the tablet and the COMVAT DUO₃ unit is lost during treatment?

Nothing will happen. The **COMVAT DUO₃** central computer will continue working until the end of the treatment. You do not need the tablet to be operational.

Can I use UVC treatment with O₃ at the same time?

No. Both treatments, although they can be combined and as a result give greater disinfection, **this combination is carried out sequentially**, that is, one after the other. The logical combination is UV and then O₃ since ozone prevents the passage of ultraviolet radiation (for this reason the ozone layer protects us from the sun's ultraviolet radiation).

Should I as a user take any specific precautions for protection against UVC light?

As a user, you should take the precaution of leaving the room when the UVC lamps are turned on, aided by the **delayed activation** of the device. In addition, you must sign the entrance door with the UVC treatment in progress sign that will have been provided with the equipment.

If the room to be disinfected has glazed or translucent walls? Are there any health hazards?

In the event that a room is not completely isolated from light, you must ensure that the crystals or materials that let it pass through filter UVC rays. Ask your infrastructure provider. When in doubt, cover the separations with duly certified materials that filter UVC rays and prevent the circulation of people around the room (we can advise you in this regard).

If a lamp breaks, is there a health hazard?

The residue left by the breakage of a UVC lamp does not have a specific toxicity nor is it greater than the breakage of any fluorescent lamp you may have in your home. On the other hand, specific risks have been described for other types of lamps such as Xenon lamps, with which other similar equipment is endowed.

Can gas or UV light affect electronic equipment? Do they have any corrosive effect on them?

There is no known effect of neither UVC nor O3 light on the concentrations that COMVAT DUO3 provides on electronic or radio electric equipment. COMVAT DUO3 has the **EN60204** and **EN61000** regulations that allow its safe use in hospital environments, environments with a high concentration of devices highly sensitive to electrical disturbances.

Do I have to take any specific precaution to protect against O₃?

As a user you should take the precaution of leaving the room when the O₃ generator is activated, aided by the **delayed activation** of the device. In addition, you must sign the entrance door with the O₃ treatment in progress sign that will have been provided with the equipment. **Observe the 50 minutes of safety once the treatment has been completed or interrupted**, so that the O₃ can decompose completely. If you still have to enter the room due to force majeure, you must protect yourself appropriately with PPE that isolates you from accidental ozone inhalation.

Can O₃ leak between the separations of rooms or through the apertures in the door? Is there any health hazard if this happens?

You must make sure to close all doors and windows to ensure the action of ozone on microorganisms, in this case the amount of O₃ that can escape from the room through slits or joints will not prevent reaching the ozone concentrations necessary to eliminate the microorganisms, nor will it be dangerous to other people. Always use ozone as much as possible in periods when there are no people in the rooms to be treated or adjacent.

If a lamp breaks or wears out, who should I ask for replacement? Is the replacement included in the warranty?

Breakage of a lamp is not covered by warranty, however an extra courtesy lamp is provided for replacement. INTERmedic can supply you with previously tested replacement units.

Does the ozone cannon require any specific revision or maintenance?

The ozone cannon if used regularly, after two years a revision is recommended. If replacement of the reactors is necessary, the cost is relatively low.

How can I know if the lamps are close to exhaustion and / or below the efficacy threshold?

COMVAT DUO3 lamps offer up to **15,000 hours of life** at their maximum power capacity.

The dose of the COMVAT DUO₃ lamps has been sufficiently dimensioned to maintain its efficacy even at the end of its useful life (loss of 20% of power) and to safeguard the effectiveness of the equipment, still hovering around 15,000h.