

STERILON

UV-C

User guide

Light in the battle against viruses and bacteria



Introduction

UV-C light degrades the DNA and RNA code in the cells of living organisms. The UV-C lamp can help eradicate pathogenic viruses, mould and bacteria from your work and home environment. The efficiency of disinfection with UV-C light has been widely known and used for years. The disinfection efficiency of UV-C light has been confirmed by the International Commission on Illumination (CIE) in ISBN 978 3 901906 25 1.

Disinfection efficiency

The disinfection efficiency is presented by CIE and other research units based on the dose that needs to be implicated to remove 90% of the microbes from the surface.

For most of the known bacteria and viruses the required dose does not exceed 8 mJ/cm².

This means that the lamp emitting 1 W of UV-C radiation at a distance of 1 metre from the source needs 800 seconds or about 13 minutes to disinfect the surface in 90%.

Lamps from the Sterilon series emit light at a distance of 1 metre from the source:

- UV-C Sterilon 36W: 0.6W UV-C radiation
- UV-C Sterilon 72W: 1.44W UV-C radiation
- UV-C Sterilon 109W: 2.16W UV-C radiation

The efficiency of UV-C radiation decreases in inverse proportion to the square of the distance from the light source. Therefore, the closer we place the light source to the surface requiring disinfection, the more effective the light will be.

We have assumed 15 minutes as an indicative disinfection time for our products.

It may vary due to the power of the lamp used, the distance between the surface being disinfected and the light source, temperature and humidity.



SARS-CoV-2 disinfection efficiency (coronavirus causing Covid 19 disease)

At the moment, there are no official tests confirming the dose needed to neutralise the SARS - CoV-2 virus causing COVID-19 disease. However, its structure is compared to a more UV-C resistant virus, i.e. "Hepatitis A Virus", for which the required dose is less than $7\text{mJ} / \text{cm}^2$. Based on this, the dose needed to neutralise the coronavirus is estimated to be approximately $4\text{mJ}/\text{cm}^2$.

This means that the lamp emitting 1W of UV-C radiation at a distance of 1 metre from the source needs 400 seconds or about 7 minutes to remove 90% of the virus from the surface.

Exposure method

- Set the light so that it falls on the surface to be disinfected.
- The UV-C light source should be positioned as close as possible to the surface to be disinfected, so that the scope of UV-C rays covers the largest part of it. Objects placed in the shade, where the UV-C rays cannot reach, will not be disinfected.
- After starting the lamp, you can stay in the room, but out of reach of the UV-C rays.
- Approximate exposure time is 15 min.
- Very long exposure to the UV-C lamp can degrade some elements within its range, e.g. plastics.
- After the exposure is completed, ventilation of the room is not required.

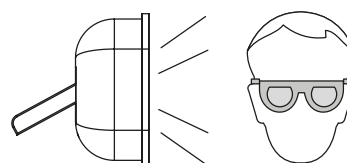
Operational safety

The UV-C light emitted by the lamp is highly harmful to humans and other living organisms. The UV-C light is harmful to the eyes and skin. After starting the lamp, there must be no people or animals within the range of direct UV-C rays. You should minimise the time of being within the range of the UV-C rays. Lamp damage bears a low risk of negative impact on your health. If the fluorescent lamps break, ventilate the room for 30 minutes and remove the parts, preferably with gloves. Place them in a sealed plastic bag and take to a local waste disposal facility for recycling. Do not use a vacuum cleaner.

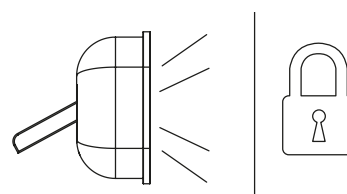


IN PARTICULAR:

Never look directly at the UV-C lamp or stay within the UV-C range. Special safety glasses are recommended.



Secure the room with the working lamp against other people's access.



Note that very long exposure to the UV-C lamp can degrade some elements within its range, e.g. plastics.



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