

Guidance for the safe use of ultraviolet UV-C germicidal irradiation lighting

Ultraviolet UV-C light is a proven technology when it comes to reducing bacteria, viruses and other harmful microorganisms that pose a risk to human health. UV-C light kills or inactivates microorganisms by destroying nucleic acids and disrupting their DNA, leaving them unable to perform vital cellular functions.

Operational safety:

The UV-C light emitted by the lamp is highly harmful to humans and other living organisms and can cause damage 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.

If lamps become damaged there is a low risk of negative impact to health. If the fluorescent lamp breaks, ventilate the room for 30 minutes and remove the parts. Place them in a sealed bag and dispose of it at your local waste facility. Do not use a vacuum cleaner.

Because UV-C germicidal illumination can be harmful, a specific risk assessment should be carried out to ensure safe and proper use.

The following will help when carrying out any such risk assessment:

Risk	Mitigation
Absorption through skin or eyes by staff	Only use equipment when surgery is empty. If this is not possible provide personal protective (PPE) equipment to include: UV safety glasses to EN-170:2002 Nitrile gloves Lab coats, scrubs, or similar overalls. Implement health surveillance where necessary and maintain appropriate records
Absorption through skin or eyes by patients and other visitors	Do not use equipment when patients are being treated. Provide appropriate signage in reception and surgery areas informing of patients and visitors of the e UV-C equipment.
Lights become inefficient and therefore reduce effectiveness.	Perform weekly check using UV-C calibrated irradiance meter to check for any deterioration
Lake of awareness causing problems with usage, effectiveness, and associated risk.	Provide relevant education to staff and signage in usage areas

Further guidance can be found in on the following UK government Website

<http://www.legislation.gov.uk/uksi/2010/1140/regulation/1/made>

Should I be worried about Ozone (O₃)?

The production of Ozone is not an issue with germicidal lamps because the UV-C range of electromagnetic radiation is from 200 nm to 280nm and does not produce any harmful O₃ at its optimal germicidal strength of 254 nm (rounded). O₃ can only be produced at less than 200 nm