



WORK INSTRUCTION FOR THE USE OF UV LIGHT

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Work instruction
Revised date:
18.10.23
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Based on the biological effect, the UV radiation is divided into three areas:

<i>Type of light</i>	<i>Wavelength (nm)</i>	<i>Biological effect</i>
<i>Visible light</i>	<i>400-780</i>	
<i>UV - A</i>	<i>400 - 320</i>	Burn injury
<i>UV - B</i>	<i>320 - 280</i>	Erythema (burns and inflammation), cataracts, possible risk of cancer
<i>UV - C</i>	<i>280 - 100</i>	Erythema, conjunctivities (eye inflammation), skin cancer

The skin reflects all visible light, while UV light is absorbed by both the skin and eyes. UV light of wavelength 280 nm is particularly easy absorbed.

PURCHASE/ START

- Report to the local radiation protection coordinator when purchasing / startup with UV light: unit / room, location (bench or ceiling), number and type of UV light.

USE

- Protect your eyes and face using UV protection screen with high optical density. UV glasses can be used for short-term exposure.
- Wear gloves and coat for protection of the body to the UV exposure.
- When irradiating benches overnight use timer that terminates the irradiation in good time before using the room.
- Ventilate the possible formation of ozone gas.

PROTECTION

- UV-protection screen / glasses.
- Lab coat and gloves.

WASTE

- Follow the [waste routines](#) at the UiB.
- Damaged UV light is treated as EE-waste.

GENERAL

UV light is among other things used to visualize ethidium bromide bound to DNA / RNA, and disinfection of equipment and sterile benches. Both skin and eyes absorbs UV light (particularly UV radiation of wavelength 280nm). The effect on the skin can be both acute (sunburn or erythema, with swelling of the skin and blister formation) and chronic (cancer). Other effects include the development of photo allergy and skin cancer induced by phototoxicity. The effects on the eyes may cause destruction of photoreceptors, which can also cause inflammation of the cornea. In case of overexposure this may lead to blindness.

UV radiation can also have an effect on the immune system. Certain types of immune responses may be impaired, including defense against tumors in the skin and against certain types of infections. UV radiation can also activate viruses such as herpes simplex (cold sores, etc.) and HIV.

Some UV sources can produce ozone, which is a toxic gas. This is particularly relevant in rooms where the UV source is on for a longer time (eg. overnight).