

## Risk Assessment: Working with and using UV light

### Scope

Instruments covered by this RA include:

UV light boxes  
Hand held UV lamps  
The UV transilluminator

These sources usually emit UV radiation (UVR) in the region of 280nm to 400nm. Ultra violet radiation [UVR] is electromagnetic radiation in the range of wavelength 100 – 400nm. The potential hazards to health arise from UVR with wavelengths greater than 180nm. UVR of shorter wavelength is strongly absorbed in air. The main organs likely to be affected by exposure are:

**Skin** - Excessive short-term exposure causes sunburn and can result in an increased risk of skin cancer

**Eyes** - Exposure can cause acute damage to the cornea and conjunctiva causing pain, light sensitivity and tearing. These effects can be felt between 30 minutes and 24hrs after exposure. Prolonged exposure can cause permanent retinal damage.

It should be noted that the UVR hazard of a potential source cannot be judged solely by its brightness. Some lamps emit only a faint visible glow but a large amount on UVR. Wherever possible, UV instrumentation should come in such a format that the exposure to the user is non-existent.

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**Risk Matrix:**

Risk Matrix		Likelihood			
		High	Medium	Low	Negligible
Consequence	Severe	High	High	Medium	Effectively Zero
	Moderate	High	Medium	Medium/low	Effectively Zero
	Insignificant	Medium/Low	Low	Low	Effectively Zero
	Negligible	Effectively Zero	Effectively Zero	Effectively Zero	Effectively Zero

**Risk Assessment:**

Hazard (Cause and consequence)	Affected Groups	Existing controls	Risk	Further Action
Exposure to UVR when using imaging equipment	All users	<p>Personal Protection: The areas of skin usually at risk are hands, eyes &amp; face.</p> <ul style="list-style-type: none"> <li>Hands must be protected by wearing gloves with low UV transmission. Nitrile/latex gloves are suitable.</li> <li>Arms will be protected by wearing long sleeve lab coat but care must be taken to ensure there is no gap between cuff and glove.</li> <li>A full-face visor made of suitable UVR absorbent material must be worn whenever the UV source is unprotected. Care must be taken not to use non-UV absorbent visors, which may be present in the lab for use with liquid nitrogen. Where 2 sorts of visor are present they should be clearly labelled as to their use. Eye protection must conform to BS EN 170:2002</li> <li>Where PPE is provided for use with UV sources it must be subject to a regular regime of checks to ensure it is available adjacent to the source, clean and not damaged.</li> </ul>	Medium	<p><b>Training.</b> Staff/students working with UVR sources must be provided with adequate information, instruction and training in its safe use.</p> <p><b>Minimising exposure.</b> The exposure time should be kept to a minimum and where source is not enclosed/shielded the user should keep as far away from source as practicable.</p> <p><b>Restricting access</b> (where possible) to people directly concerned with the operation of the UV source.</p> <p><b>Hazard warning signs</b> should be used where relevant to indicate the presence of potential UVR hazards, the requirement to restrict access and the need for personal protective equipment.</p>

<p>Disposal of tubes The tubes from UV sources contain mercury and therefore require specialist disposal.</p>	<p>All users</p>	<p>Only engineers should change UV bulbs Wherever possible it is to be encouraged that engineers take away any spent UV bulbs for disposal UV tubes must be disposed of via the Safety office – contact the lab manager if tube disposal is required. DO NOT dispose of via the waste routes in the building.</p>	<p>Medium</p>	<p>None</p>
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Signed By Author:

Approved by (sign and print):

Reviewed by:

Review date: