THE SAFE USE OF UV TRANSILLUMINATORS

UV Transilluminators

Hand-held and bench-top ultraviolet (UV) light and curing systems, such as the transilluminator shown below, are in widespread use in research laboratories.

Minimise the Risk of Exposure

Under normal operational conditions, where transilluminators are equipped with fitted shields, when personal protective equipment (PPE) is worn, and when the shields and PPE are in good condition there is no risk of UV exposure. However, it is important that protective shields and PPE are checked periodically; shields have been known to become damaged and allow the transmission of potentially dangerous levels of UV radiation, also, a shield may deteriorate over time as a result of chronic UV exposure. When gels are placed on the instrument for examination, the Persex screen should always cover the gel to protect the operator, unless it is necessary to cut bands from the gel. In this case, the shield should be hinged at the front (see picture above) and raised towards the operator.

Biological Effects of UV Radiation

Exposure to high levels of UV radiation is characterised by keratitis (severe itching of the eyes and partial blindness), swelling around the eyes, and localised erythema (reddening / burning of the skin). Although not life-threatening, all of these symptoms are extremely unpleasant.

A 10 second exposure is sufficient to severely effect persons with sensitive skin!

Personal Safety Rules

Protection from UV radiation is achieved by following a few simple rules.

- Wear a UV protective face mask or visor (labelled to indicate protection against UV) if a screen is not practical.
- Cover all exposed areas of skin by wearing a lab coat and gloves: ensure that there are no gaps between the gloves and cuffs, collar and mask.

Equipment Safety Rules

Most transilluminators are supplied with protective shields, although these are sometimes removed as they hinder certain operations. If a UV source is used without the supplied guarding, the user must wear PPE and ensure other lab users are protected from exposure.