

Ultraviolet LASER

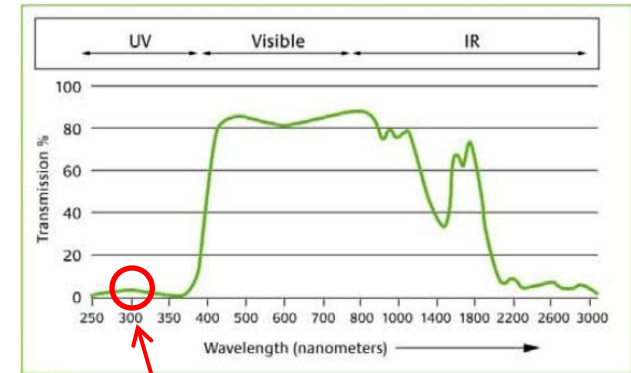
Purpose of the safety bulletin: Alert laboratory staff to possible eye injury hazard from UV Lasers.



(For illustrative purposes only)

Recently a KAUST researcher received a laser eye injury (*photokeratitis of the cornea*) after an **extended period of aligning a UV LASER**. He was wearing polycarbonate safety glasses, generally accepted to be essentially opaque to UV light, during the entire procedure. Several hours later, his eyes were giving him great pain. A visit to the KAUST Clinic and IMC followed, treatment was given, but it was a full day before the pain subsided. Such injuries bring with them the risk of infections and scarring. The long-term after-effects of such an exposure are uncertain, but may include increased risk of cataracts.

The investigation revealed that there was significant scattered laser light due to the use of a flat beam blocker which was not ideal for UV. The general purpose lab safety glasses used appear to have a range of frequency where UV blocking is comparatively poor. The UV laser operates within this range. See Lexan (polycarbonate) transmission graph.



Lexan (polycarbonate) (UV) transmission properties

Recommendations:

- Use approved laser glasses with suitable Optical Density at the frequency or frequencies in question.
- Use beam blockers designed for the specific frequency of laser light
- Do not use regular polycarbonate safety glasses – their Optical Density has not been determined and may be insufficient for the UV light used.
- Try to reduce the time and number of LASER alignments during experiments.

If you have any questions, contact: Researchsafety@kaust.edu.sa

September 2012