



Laser Safety in Higher Education video - Summary

The Video - which was produced by the University of Southampton in 1986 - is in five parts. Although now somewhat dated, especially with respect to laser classification, it remains one of the few safety training videos that deals specifically with laser hazards, and is required viewing for all intending users of lasers.

1 LASER RADIATION AND THE BODY

- Difference between laser radiation and white light.
- How the eye focuses laser radiation.
- Blink reflex and short-pulsed lasers.
- How different wavelengths of radiation affect different parts of the eye.
- The difference in the effect of short-pulsed lasers and long-pulsed or continuous-wave ones.
- The effect of laser radiation on the skin.

2 CLASSES OF LASER

- Examples and animated pictograms are used to indicate which class is which.

[This section is now out of date, as the classes of laser have been revised. Class 3A has been abolished, and three new classes introduced: 1M; 2M and 3R. Class 1M is safe for accidental eye exposure, provided that optical instruments (microscopes or telescopes) are not used to concentrate the beam. All Class 2/ 2M lasers emit visible radiation: Class 2M are higher power than Class 2, but because of beam divergence, are usually safe for accidental eye exposure by virtue of the blink reflex. Class 3R have an accessible emission limit of up to 5 times that of Class 1 (if invisible) or Class 2 (if visible.)]

3 SAFETY MEASURES

- Engineering Controls (enclosure of the beam; laser-designated areas; warning lights; safety screens; door interlocks).
- Administrative Controls.
- Personal Protection (including types of goggles).

4A OTHER RISKS

- Semiconductor lasers.
- High-powered lasers.
- Flammable solvents.
- The lethal combination of high-voltage electricity and high-pressure cooling water.

4B PRECAUTIONS

- Aligning pulsed and invisible lasers.
- Skin protection.
- Choice of goggles.
- Study of laser safety.
- The procedure in case of an accident involving a laser.

5 SUMMARY

The video is designed to be studied in conjunction with the CVCP publication “Safety in Universities, Notes of Guidance, Part 2:1 Lasers”, London , 1992, ISBN 0948890-19-7.

Users should also consult “*Safety of Laser products – Part 14, A User’s Guide*”, ref. PD IEC TR 60825-14: 2004, published by British Standards Institute.

Malcolm Iosson
University Laser Safety Officer

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