

The Blue Light Hazard

By Winn Henderson/Subject Matter Expert, LED Optical Radiation

For visible lamp radiation, including the radiation emitted from LEDs, there is a specific concern about the hazards associated from the blue light wavelengths of the radiation. Blue light hazards are principally in the 400–500nm range with a peak of approximately 440nm. One of the main concerns is photochemical damage to the retina of the eye. Photochemical change occurs when light causes chemical reactions in the body’s tissue — in this case eye tissue. The damage to the retina could result in blind spots. The blue light hazard from lamp and LED radiation is specifically addressed in ANSI/IESNA RP 27 and IEC 62471.

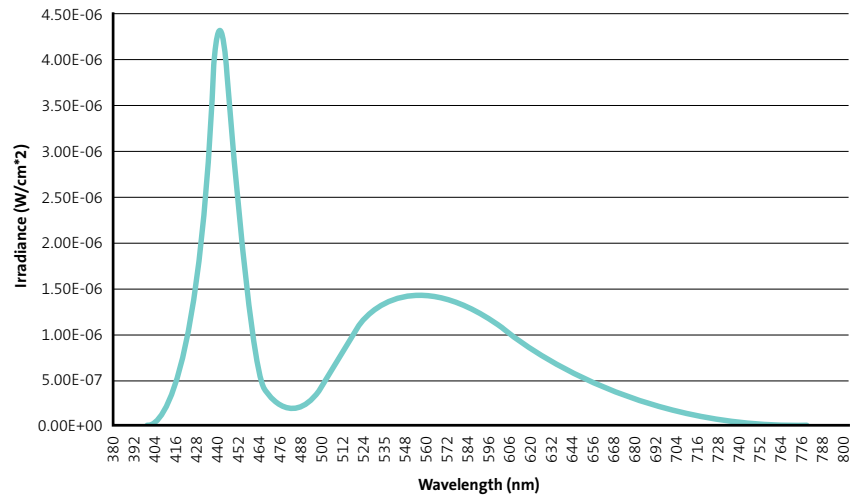
The intent of Photobiological safety requirements are to protect the eye and skin from harmful optical radiation. Photobiological requirements are mandatory for many safety certification programs for Europe.

A proposal to incorporate photobiological safety requirements into UL 8750 has been

made to the Standards Technical Panel (STP). During the July STP meeting, this proposal will be discussed. This proposal would make photobiological testing mandatory for LEDs in North America.

UL can presently evaluate lighting products to both IEC 62471 and ANSI/IESNA RP 27 — the Photobiological Safety requirements

for lamps and lamp systems. UL currently has an IEC 62471 Certification Body Testing Laboratory (CBTL) in Research Triangle Park, NC, USA, and can issue CB Test Reports and Certificates to IEC 62471. UL is also able to perform Photobiological Safety testing in Europe and in Asia.



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 October 4 – Research Triangle Park, N.C.

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 June 8 – Northbrook, Ill.
 August 3 – Hartford, Conn.
 October 5 – Research Triangle Park, N.C.



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