

Is blue light a hazard for our eyes?

The International Commission on Illumination (Commission Internationale de l'Éclairage, or CIE) released a position statement on blue light hazards in April 2019. The CIE is an independent organisation recognised by the International Standards Organisation as an authority on lighting. One of its roles is to prepare and publish standards related to light and its measurement.

The CIE position statement is important because it clarifies what constitutes a blue light hazard. The statement was developed in response to claims in the media that some light sources, such as light emitting diodes (LED), are detrimental to eye health. Here are some of the key points in the position statement.



What is a blue light hazard?

High levels of blue light can damage the eye's retina (this is called "photomaculopathy"). The light source does not need to be blue—damage can occur if a person looks directly at a very bright light source such as the sun or a welding arc without proper eye protection.

Blue light is hazardous because it causes greater retinal damage compared to other wavelengths (e.g. red light) of the same quantity.

Is there a safe blue light limit?

The blue light hazard function and exposure limits have been set by the International Commission on Non-Ionizing Radiation Protection (ICNIRP).

Eye damage doesn't occur if you are occasionally exposed to light levels at the exposure limit.

Your daily exposure limit will not be exceeded if you transiently view bright light sources during the course of normal everyday activities.

If you view bright light sources (or very blue lights) at a very close distance or for prolonged periods, and do this over many days, then you should take precautions to limit your exposure.



Are LED a hazard?

All white light sources emit some blue light. Lamps with a high colour temperature have a more bluish, or cool, appearance. However, the amount of blue light emitted from these lamps (including LED) is less than the blue light exposure limit and is generally less than what you are exposed to if looking at a blue sky. Therefore these lamps are safe to use in homes and workplaces.



Are children more at risk?

Lights which emit primarily blue light might be perceived by children as dazzling bright, even if the source emission is less than the exposure limit. The CIE recommends that blue and violet indicator lamps should not be used on children's toys, or if they are, then the blue light exposure limit should be 10 times less than that used for adults.

CIE NC CL 1911 Position Statement on the Blue Light Hazard (April 23, 2019) is a free download, available from:
<http://www.cie.co.at>

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