

Top Ten Myths of LEDs: #10 - "LEDs are dangerous"

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Any time a new, disruptive technology enters the public sphere, concern is raised about almost every conceivable aspect. This is especially the case for lighting wherein each and every one of us has a base of experience and, likely, some opinions. While it is certainly prudent to scrutinize any new technology from a health and use perspective, some of the concerns raised about LEDs are simply preposterous and cry out for a little (ok, a lot) more understanding.

My favorite is a recent paper looking at light exposure effects on human retinal cells declaring, "[LEDs can be damaging to retinas](#). [1]" Reading the actual journal article ([Photochem. Photobiol. 89, 468-473](#) [2]), we see that the experiments involved exposing eye cells to light intensity of 5 mW per square centimeter for twelve hours. While this may seem a small number to the uninitiated, for a typical white LED spectrum, this intensity level corresponds to staring directly into a 100-Watt-equivalent light bulb from about four inches away, FOR TWELVE HOURS! Who wouldn't go blind?!

Based on a slight wavelength dependence of the effects, the paper's author invokes the "blue light hazard", associates blue light with LEDs, and predicts for the future "...an epidemic' of retina problems due to increased exposure to LED lighting". Sheesh.

Feel free to say 'whoa' at any point, but let me just point out there is nothing fundamental to LEDs and blue light, and nothing fundamentally dangerous about LEDs. LEDs, the [ultimate light source](#) [3], are available in a wide array of emission wavelengths and can be tuned accordingly. While the vast majority of LED manufacturers do in fact use a primary blue emitting LED for their phosphor-down-converted white-emitting lighting products, it does not have to be the case and is not the case for Soraa. Using our proprietary GaN-on-GaN approach, Soraa goes the extra mile to provide a highly efficient primary violet emitting LED, leading to [full spectrum](#) [4] lighting products that match the visible emission spectrum of a blackbody radiator, like an incandescent bulb - a spectrum that has been utilized safely for more than one hundred years...

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...as long as you don't stare directly into 100 Watts of it....FOR TWELVE HOURS!

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Links:

- [1] http://www.luxmagazine.co.uk/news/45/research-on-retina-damage-sparks-fresh-led-health-scare?utm_source=iContact&utm_medium=email&utm_campaign=Robert%20Bain&utm_content
- [2] <http://onlinelibrary.wiley.com/doi/10.1111/j.1751-1097.2012.01237.x/abstract>
- [3] http://photonicsociety.org/newsletters/dec12/SS_p-nDiode.html
- [4] <http://www.soraa.com/technology/gan-on-gan>