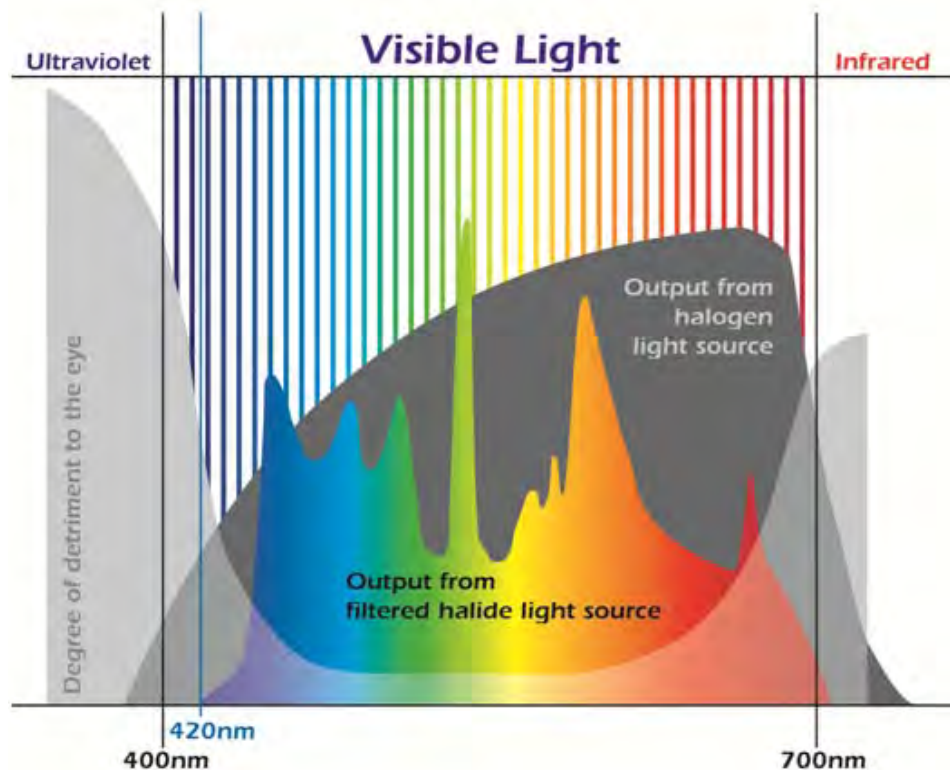


Light Toxicity Prevention

Light irradiance in close proximity to the retina can result in adverse affect on human retinal pigment epithelial (HRPE) cells, otherwise known as light toxicity. The intensity (measured by level of luminance and distance) and length of time of exposure are two determinants in the level of light toxicity introduced onto the retina during surgery. As such, it is a standard of care practice to minimize exposure to light to the extent possible while still providing for sufficient illumination of the surgical field.

A critical aspect of light toxicity is the wavelength of the light to which cells are exposed. It is widely known that exposure to UV wavelengths of light are particularly harmful, while exposure to IR wavelengths also is more phototoxic than visible light. The light gray shaded area in the graph below shows the degree of light toxicity across the light spectrum. Light sources used in vitreoretinal surgery are thus equipped with filters to eliminate those portions of the spectrum.



The Vitlite White Light source utilizes a patented filtering technology, with an on-board alarm that notifies if the filtering has somehow become compromised (say from dropping or banging of light source). Combined with the bright white metal halide bulb that naturally produces a light spectrum almost exclusively within the visible range, the risks of light toxicity during vitreoretinal surgery can be greatly reduced.

The Vitlite light source offers intensity control, tool-less quick bulb change, and the aforementioned filtering and filter alarm technology, in a small footprint to provide a safe means to brightly illuminate the surgical field.



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