

To:

Larry Cuculic, General Counsel  
Best Western Hotels and Resorts  
20400 North 29<sup>th</sup> Ave.  
Phoenix, AZ 85027

Re: Spatially Anisotropic Visual Radiation

Dear Larry Cuculic,

We wish to alert Best Western to liability issues related to spatially anisotropic radiation from Light Emitting Diodes. Figure 1 is a diagram showing the categorization of radiation. As we can see in the chart, candles, incandescent light bulbs, and High-Pressure Sodium lamps are all spatially isotropic radiation sources. LEDs, on the other hand, emit spatially anisotropic radiation.

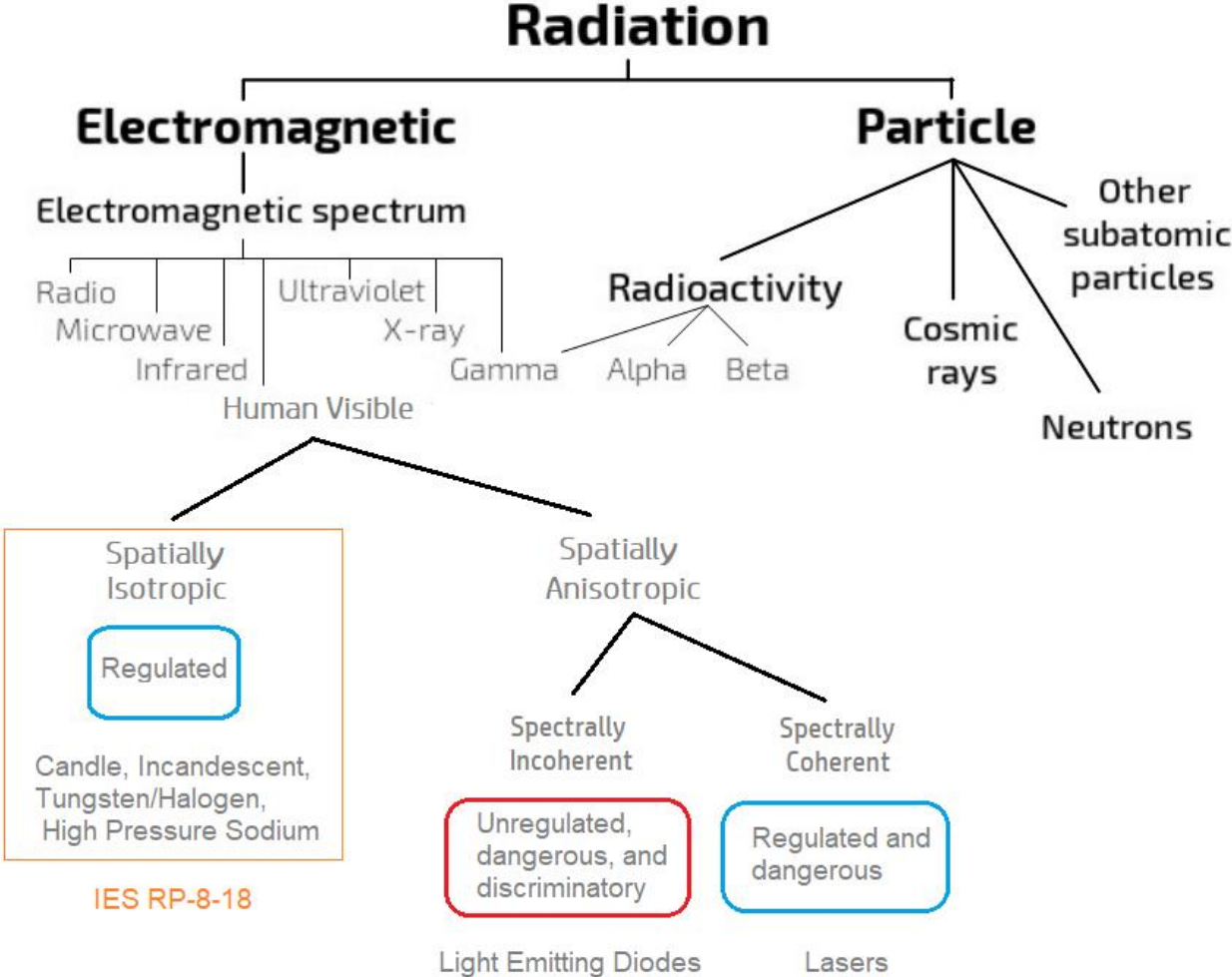


Figure 1 - Radiation Types

The Illuminating Engineering Society Recommended Practice for Design and Maintenance for Roadway Parking Facility Lighting (IES RP-8-18) is the de-facto standard for outdoor lighting for streets and parking lots. The references to “light” in IES RP-8-18 are for “spatially isotropic radiation in the visible portion of the electromagnetic spectrum”. The word “light” in IES RP-8-18 does not refer to microwaves, laser beams, or spatially anisotropic, spectrally incoherent radiation such as LEDs.

The reason this is important is because Best Western has installed LED parking lot lights and floodlights that do not comply with existing standards, emit dangerous radiation, discriminate against persons with light sensitivity disabilities and have unregulated spatial, temporal, and spectral characteristics. LED lights have been shown to cause pain, sickness, eye damage, seizures, migraines, psychological trauma, and thoughts of suicide.

The Illuminating Engineering Society does not guarantee their own standards and disclaims any liability for the use of their standards. Thus, if Best Western claims that they followed standards for LED parking lot lighting and are therefore not liable for the harms caused by LED lighting, Best Western’s claim will fail, both because IES RP-8-18 is not applicable to LED lights, and because IES has warned that their standards are not trustworthy enough to be guaranteed or relied on.

#### DISCLAIMER

IES publications are developed through the consensus standards development process approved by the American National Standards Institute. This process brings together volunteers representing varied viewpoints and interests to achieve consensus on lighting recommendations. While the IES administers the process and establishes policies and procedures to promote fairness in the development of consensus, it makes no guaranty or warranty as to the accuracy or completeness of any information published herein.

The IES disclaims liability for any injury to persons or property or other damages of any nature whatsoever, whether special, indirect, consequential or compensatory, directly or indirectly resulting from the publication, use of, or reliance on this document.

In issuing and making this document available, the IES is not undertaking to render professional or other services for or on behalf of any person or entity. Nor is the IES undertaking to perform any duty owed by any person or entity to someone else. Anyone using this document should rely on his or her own independent judgment or, as appropriate, seek the advice of a competent professional in determining the exercise of reasonable care in any given circumstances.

The IES has no power, nor does it undertake, to police or enforce compliance with the contents of this document. Nor does the IES list, certify, test or inspect products, designs, or installations for compliance with this document. Any certification or statement of compliance with the requirements of this document shall not be attributable to the IES and is solely the responsibility of the certifier or maker of the statement.

Figure 2 shows a photo of the Best Western parking lot on North First Street in Yakima, Washington on November 6, 2021. The photo shows excessive amounts of spatially anisotropic LED radiation emitted from the parking lot light.



*Figure 2 – Best Western – Yakima, Washington*

As can be seen in Figure 2, the LED radiation is violating civil rights by limiting the direction in which people can look without harm to their eyes or nervous system.

To our knowledge, there are no ocular exposure standards for LEDs. In his 2009 presentation, Senior Engineer Michael Shulman of Underwriters Laboratories wrote, "Currently, neither the U.S. nor Canada have mandatory standards or regulations for ocular exposure to LEDs emitting incoherent visible light."<sup>1</sup> In the research article, titled Light Emitting Diode Induced Retinal Damage<sup>2</sup> the authors state, "Excessive LED light exposure presents a potential hazard to retinal function." In other research, those in Risk Group 3 (those with epilepsy, autism, migraines, photophobia, etc.) are often purposely ignored during the research, invalidating results that might have shown that LEDs are safe.

The fact that LEDs are unregulated and lack standards, cause sickness and eye damage, interfere with the human nervous system, and discriminate against people with light sensitivity disabilities makes Best Western liable for the harm and discrimination they cause.

To protect human health and reduce liability, Best Western must protect the natural night resource and greatly reduce the amount of artificial light radiation its properties emit. Any lighting must

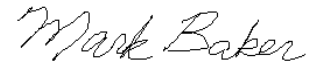
---

<sup>1</sup> [http://www.softlights.org/wp-content/uploads/2021/10/MichaelShulman\\_LEDFireElectricalSafety.pdf](http://www.softlights.org/wp-content/uploads/2021/10/MichaelShulman_LEDFireElectricalSafety.pdf)

<sup>2</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5313540/>

be fully shielded and use only spatially isotropic radiation with a Correlated Color Temperature of 2700 Kelvin or less, with 2000K preferred to protect the natural night resource.

Sincerely,

A handwritten signature in black ink that reads "Mark Baker". The signature is written in a cursive style with a slight slant.

Mark Baker  
President  
Soft Lights Foundation  
[mbaker@softlights.org](mailto:mbaker@softlights.org)  
9450 SW Gemini Drive PMB 44671  
Beaverton, OR 97008