

December 28, 2021

BY EMAIL

Lori Frugoli, District Attorney
Marin County, California
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Re: The LED Fraud

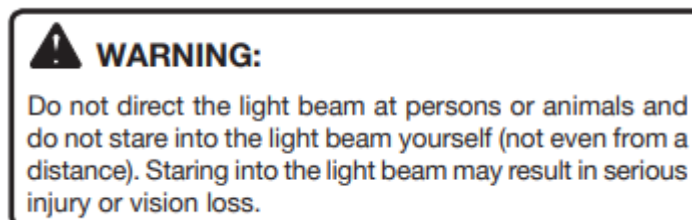
Dear Lori Frugoli,

The city of Corte Madera has made fraudulent, false, and deceptive claims regarding LED radiation devices and has deceitfully informed the residents of Corte Madera that the switch from High Pressure Sodium streetlights to Light Emitting Diode streetlights saves energy and is safe.

Incandescent and High-Pressure Sodium lights emit spatially uniform visible radiation that illuminates a volume of space. LEDs do not save energy compared to High Pressure Sodium because LEDs don't perform that same function of providing uniform illumination. The claim that LEDs save energy or are energy efficient is fraudulent.

LED radiation is discriminatory because it interferes with human nerves and disrupts major life functions such as seeing, thinking, and concentrating for people with disabilities, such as those with epilepsy, autism, PTSD, migraines, bipolar disorder, and others. LED radiation prevents safe access to public services such as roads, sidewalks, and government facilities because exposure to this type of radiation is immediate sickness in the form of headaches, nausea, eye pain, loss of balance, migraines, panic response, altered vision, epileptic seizures, disorientation, and other neurological disturbances. Each of these symptoms is being verifiably reported by an increasing number of individuals and constitute medical evidence of LED-induced harm.

As an example of the hazard of LED radiation, the operator's manual for the Ryobi P720 Work Light includes the following: "WARNING: Do not direct the light beam at persons or animals and do not stare into the beam yourself (not even from a distance) Staring into the light beam may result in serious injury or vision loss."



The Ryobi warning includes infants and children who are an identified high-risk population vulnerable to LED-exposure harm. Babies often lack an adult’s automatic, self-protective aversion response to bright or intense light, and will stare directly at the source. The city of Corte Madera has made no effort to address the issue of eye damage to babies or children who look at an LED streetlight.

Figure 1 is a diagram that shows the uniform radiation from an incandescent or High-Pressure Sodium light versus the non-uniform radiation from a flat surface emitter such as an LED.

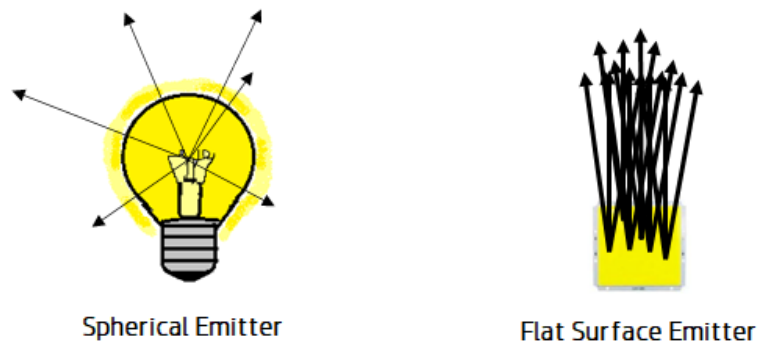


Figure 1 - Spherical vs. Flat Surface Emitter

Figure 2 shows the categorization of radiation and illustrates that *light and illumination* are spatially isotropic radiation in the human visible portion of the electromagnetic spectrum. Radiation emitted by LEDs do not meet the regulatory meaning of or comply with standards for the use of light as illumination.

Regulatory Meaning of Light and Illumination

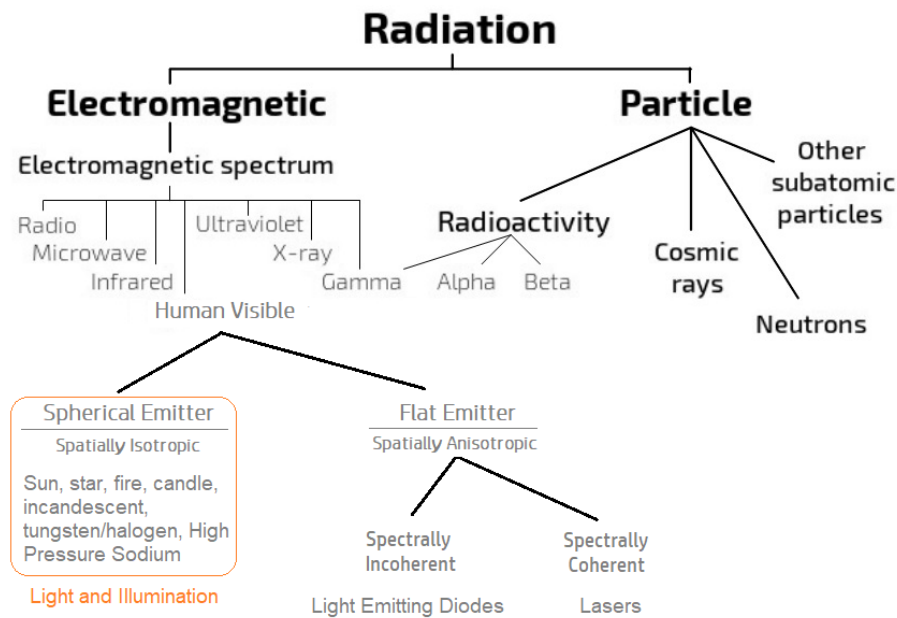


Figure 2 - Radiation Categories

The city of Corte Madera makes claims on their website that are deceitful, false or even fraudulent.¹

What kind of streetlights does the Town of Corte Madera currently use?

The majority of streetlights currently used in the Town of Corte Madera are High Pressure Sodium (HPS) lights. While HPS is one of the most common streetlight technologies across the country, HPS streetlights are not energy efficient and produce orange, low quality light under which it is difficult to see color. Recently, many cities are transitioning to newer, more effective LED lights.

The statement, “HPS streetlights are not energy efficient” is fraudulent. HPS streetlights not only produce uniform illumination, but HPS and LED also have similar luminous efficacy, with HPS possibly being more efficient than LED.²

The term “low quality light”, although possibly subjective, is false when compared to LED radiation. HPS produces uniform illumination that is compatible with the nervous system, has a low contrast compared to natural night light levels, and has protects visibility of the night stars when properly shielded and set at low luminous flux. LEDs, on the other hand, truly produce a low-quality light that is non-uniform, causes injury, and increases light pollution due to the excessive amount of 450nm blue wavelength light.

What are the benefits of the LED streetlight fixture project?

The benefits of this project include:

- Reduced energy consumption resulting in energy savings and reduced Greenhouse Gas emissions
- Lower maintenance costs
- Improved visible light for residents

The way LEDs reduce energy consumption is by producing a low quality, toxic, hazardous, and discriminatory radiation substance that is non-uniform. Stating that the reduced energy consumption results in energy savings, without informing the public of the toxicity of the LED radiation, is deceitful.

Stating that LEDs improve visibility really must be considered false. LED streetlights damage the natural night resource and greatly reduce the visibility of the stars. In addition, due to the high glare of LED radiation and excessive contrast between dark and light, the statement of improved visibility is not truthful.

¹ <https://www.townofcortemadera.org/997/LED-Streetlight-Retrofit-Project-FAQs>

² <http://www.softlights.org/why-dont-leds-save-energy/>

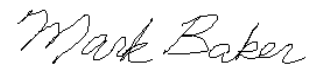
How much will the Town of Corte Madera likely save when it upgrades to LED streetlight fixtures?

The project is expected to save the Town over 259,000 kilowatt hours and approximately \$51,000 in energy costs in the first year after the project is implemented.

The city of Corte Madera could save 50% on energy costs by reducing 100-watt HPS to 50-watt HPS, with no loss of safety and without the toxicity, hazards, and discriminatory nature of switch to LED radiation devices. In addition, throwing out the existing, functioning HPS streetlights is wasteful.

The LED fraud is detailed on our website at www.softlights.org/led-fraud. We request a full-scale investigation into Corte Madera's actions because the switch to LED radiation devices is based on fraud.

Sincerely,



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