

January 13, 2022

BY EMAIL

Sachin Pavithran, Executive Director
US Access Board
pavithran@access-board.gov

Re: The LED Fraud

Dear Sachin Pavithran,

The purpose of this letter is to formally notify you that the use of LEDs, both static and flashing, violate the Americans with Disabilities Act and violate basic human rights and to request that the US Access Board develop guidelines to protect people with disabilities from discrimination from LED light beams.

MarieAnn Cherry is a person who has epilepsy, a formally recognized disability, and who has been injured by LED light beams many times. Her exposures to LED light beams, even for a fraction of a second, has led to hundreds of seizures resulting in broken bones, lost teeth, and psychological trauma. MarieAnn has researched the issue and has written up a synopsis of how the safety of LEDs has been ignored by the authorities.¹ MarieAnn's document also contains links to 40 studies on the toxic effects of LEDs.

It is unethical to directly study whether a technology triggers a life-threatening seizure in humans by exposing the person to the possible trigger. It is also unethical to involuntarily subject humans to medical experiments.² However, a study does not necessarily have to be carried out in a laboratory. A study of verifiable reports of incidents related to LED light beam exposure is a valid study. MarieAnn has compiled a list of verifiable quotes from persons who have been injured by LED exposure.

³


¹ http://www.softlights.org/wp-content/uploads/2022/01/One-Third-of-us-at-Risk_-The-Medical-science-of-LEDs.pdf

²

https://media.tghn.org/medialibrary/2011/04/BMJ_No_7070_Volume_313_The_Nuremberg_Code.pdf

³ <http://www.softlights.org/wp-content/uploads/2022/01/Quotes-from-individuals-harmed-by-LED-exposure.pdf>

On January 9, 2022, a member of the Facebook group Epilepsy and Seizure Support Group posted the following question, "LED lights bother anyone else?" This question constitutes a study on how LED light beams impact people with epilepsy.




Holly Rena Hale
January 9 at 12:18 PM · 🌐


LED lights bother anyone else?


👍 39 61 Comments 1 Share


👍 Like 💬 Comment ➦ Share

As of January 12, 2022, there are 61 responses, some of which are posted below.

- 

Patrice Marker ...
Yes
Like · Reply · Share · 3d
- 

Trista Johnson ...
Big time yes!!!
Like · Reply · Share · 3d
- 

Trina Gelinas ...
Yes it does
Like · Reply · Share · 3d
- 

Ashley Last ...
Omg yes I cannot go to my boyfriends moms house she's got them everywhere I have absent seizures constantly when I'm there 🤔😞
Like · Reply · Share · 3d



Nikki Kristal McCune
big time!!!!!! ...

Like · Reply · Share · 3d



Tiah Martinez
Yep ...

Like · Reply · Share · 3d



Lucas Howard
Yes ...

Like · Reply · Share · 3d



Kanny Ross
Yes and Florescent ones too ...

Like · Reply · Share · 3d



Riise Prochaska
All of them 😞 this is my first year diagnosed. I missed the Christmas lights because they made me feel funny ...

Like · Reply · Share · 3d



Erin Kathleen Perez
The Christmas lights in my neighborhood messed with me big time 😞 ...

Like · Reply · Share · 3d



David Kennedy
Only the ones on police cars ambulance and fire trucks really bother me I have to ask them to shut those off ...

Like · Reply · Share · 3d

The United Nations has defined 30 basic human rights.⁴ These rights are:

1. All human beings are free and equal.
2. No discrimination.
3. Right to life.
4. No slavery.
5. No torture.
6. Same right to use law.
7. Equal before the law.
8. Right to treated fair by court.
9. No unfair detainment.
10. Right to trial.
11. Innocent until proved guilty.

⁴ <https://www.youthforhumanrights.org/what-are-human-rights/universal-declaration-of-human-rights/articles-1-15.html>

12. Right to privacy.
13. Freedom to movement and residence.
14. Right to asylum.
15. Right to nationality.
16. Rights to marry and have family.
17. Right to own things.
18. Freedom of thought and religion.
19. Freedom of opinion and expression.
20. Right to assemble.
21. Right to democracy.
22. Right to social security.
23. Right to work.
24. Right to rest and holiday.
25. Right of social service.
26. Right to education.
27. Right of cultural and art.
28. Freedom around the world.
29. Subject to law.
30. Human rights can't be taken away.

The use of LED light beams violates the right to be free and equal, the right to no discrimination, the right to life, the right to no torture, the right to freedom of movement, the right to freedom of thought, the right to work, the right to social security, and the right to not have these rights taken away. The US Access Board has a duty to develop guidelines that protect the basic human rights of those with disabilities.

The Americans with Disabilities Act prohibits discrimination. Part of the definition of a disability is anything that substantially limits a major life function such as seeing, thinking, or concentrating. People with epilepsy, autism, and migraines all qualify as people with a disability. The ADA prohibits discrimination on the basis of this disability. Since LED light beams substantially interfere with major life functions such as seeing, thinking, and concentrating, the use of LED light beams is discriminatory and prohibited by the ADA in places of business, work, and government facilities. However, due to lack of guidance by the US Access Board, many facilities are using LED light beams without understanding that they are violating federal law.

To assist you with the technical details of why LED light beams are so toxic, we provide the following technical information.

“LEDs save energy” and “LEDs are energy efficient” are fraudulent claims made by the LED Cartel. According to the US Department of Energy’s website, energy efficiency means “using less energy to get the same job done.”⁵ The job is to provide uniform illumination with minimal harm. LEDs do not produce uniform illumination⁶, but rather they emit electromagnetic radiation from a flat surface which creates a mix of energies that are not uniform. Since LEDs do not do the same job as an incandescent or

⁵ https://www.energystar.gov/about/about_energy_efficiency

⁶ <https://ieeexplore.ieee.org/document/8879542>

High-Pressure Sodium, **the claim that LEDs are energy efficient cannot be made.** LEDs are simply a low quality, toxic, hazardous, and discriminatory type of visible electromagnetic radiation.

Light Emitting Diodes produce light beams, rather than spatially uniform light. The result of the emission from the flat surface of an LED chip is an exceedingly intense beam from the middle of the chip that exceeds human tolerance levels and is toxic, hazardous, and discriminatory. This spatially non-uniform electromagnetic radiation from LEDs is unregulated and not approved by the government.

The left side of Figure 1 shows a spherical emitter that sends light in all directions in space. Because of the curvature of the emitter, the light rays do not overlap, and the radiation is spatially, spectrally, and temporally uniform. Every single point on the sphere is the same as any other point. On the other hand, the right side of Figure 1 shows a flat surface emitter such as an LED, which has a middle and edges. This flat surface creates a situation where the middle of the chip has different energy than the edges of the chip. LEDs send light only in the forward direction and the light rays are confined to an 'escape angle' which is determined by the physical characteristics of the chip. Thus, there are overlapping rays, with the most overlap being in the center of the chip, and the least overlap being on the edges. The result is that every point in space has different spatial, spectral, and temporal properties.

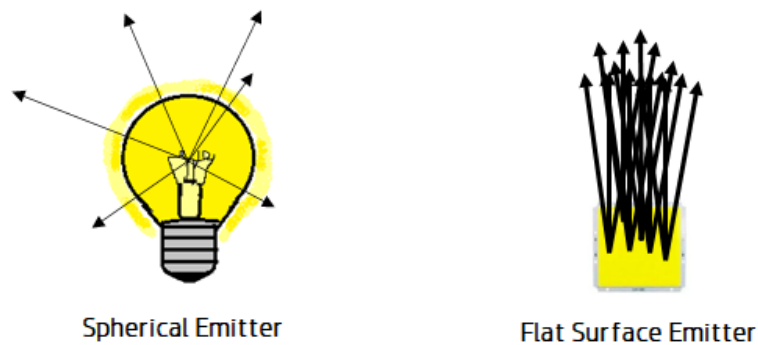


Figure 1 - Spherical vs. Flat Surface Emitter

Figure 2 shows the uniform spatial energy from candles, incandescent and High-Pressure Sodium versus the non-uniform spatial energy from an LED. The intense peak of energy will cause eye damage and will overload the nerve signals to the brain because the information is not uniform.

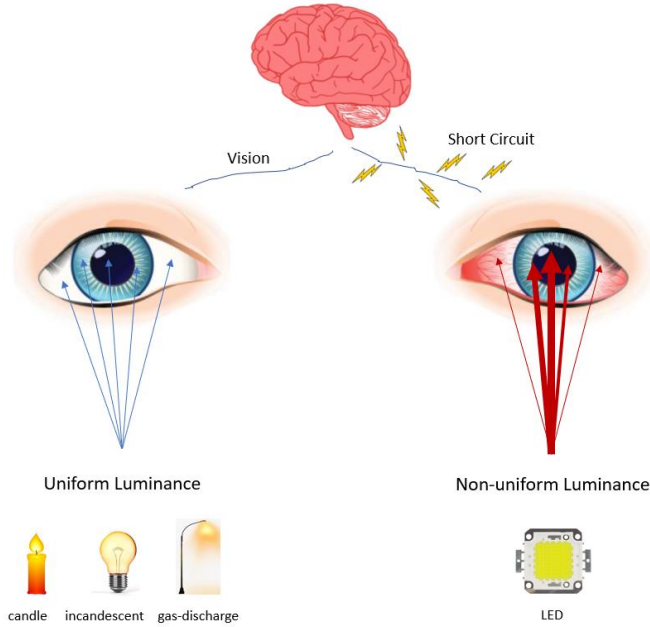


Figure 2 - Spatially Uniform v. Non-Uniform Radiation

Figure 3 is a diagram showing the categorization of radiation and shows that *light* and *illumination* are spatially isotropic radiation in the human visible portion of the electromagnetic spectrum. Radiation emitted by LEDs do meet the regulatory meaning of or comply with standards for the use of light as illumination.

Regulatory Meaning of Light and Illumination

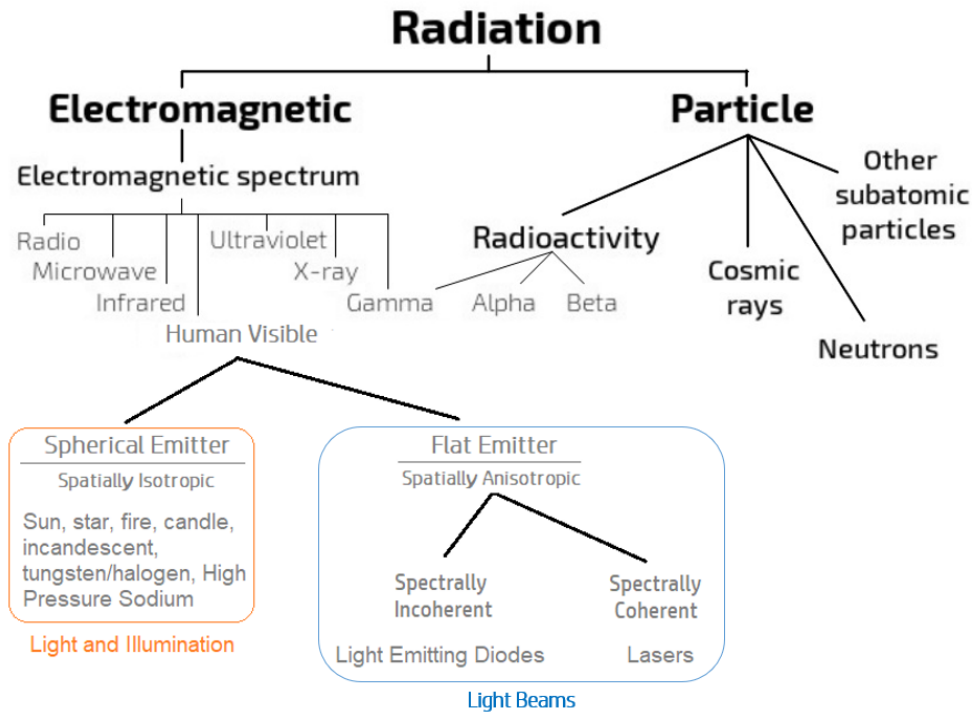
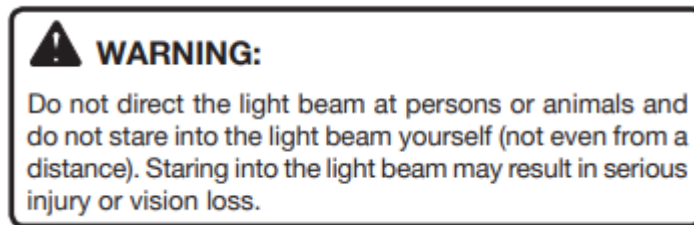


Figure 3 - Radiation Types

As an example of how dangerous LED radiation is, the operator’s manual for the Ryobi P705 Flashlight 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 warning also refers to children, who along with infants 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 parenthetical “(not even from a distance)” indicates a high level of danger.



The result of exposure to LED electromagnetic 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. LED visible radiation exposure is causing catastrophic physical harm, subjecting at-risk individuals to illness and injury, and plunging formerly healthy, independent people into crisis levels of stress, hopelessness, psychological trauma, and persistent thoughts of suicide.

LED electromagnetic 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. Use of LED radiation devices violates the federal Americans with Disabilities Act.

Figure 4 is a quote from the City of Sunnyvale, California’s website.⁷ There are fraudulent statements in the text.

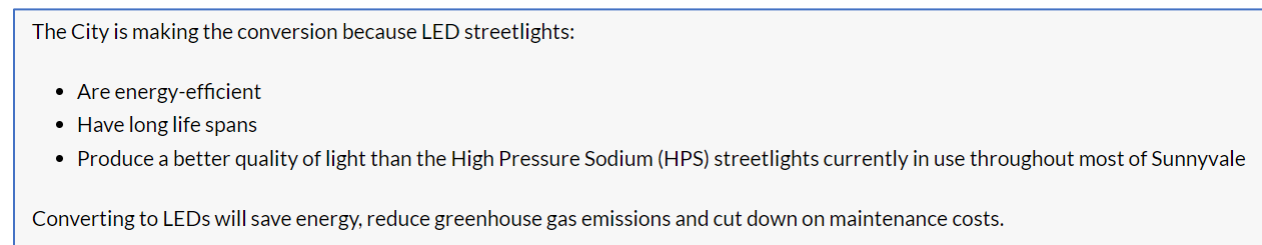


Figure 4 - Sunnyvale Fraudulent Claims

⁷ <http://sunnyvaleca-local.civica2.granicuslabs.com/news/displaynews.htm?NewsID=349&TargetID=1,49>

- *“Better quality light”* – Humans are biologically designed to process spatially uniform electromagnetic radiation in the human-visible portion of the spectrum. Humans have never in history had been exposed to electromagnetic radiation from a flat surface emitter. Humans are not biologically equipped to process spatially non-uniform electromagnetic energies. LED light beams interfere with human nerves, leading to seizures, migraines, psychological trauma, and other negative neurological consequences. LED light beams are not a “better quality light” since LEDs cause so much injury.
- *“Are energy-efficient”* – As stated earlier, for a new technology to qualify as being “energy-efficient”, the new technology must get the same job done. The job is to provide uniform illumination. An LED, on the other hand, is a directed light beam, not fit for the purpose of providing uniform illumination. **An energy efficiency comparison between an incandescent light bulb and an LED light beam cannot be made, and thus the claim “energy-efficient” is fraudulent.**

Figure 5 highlights the fraudulent claims. A uniform illumination device that is compatible with the human nervous system is shown on the left side of the diagram.

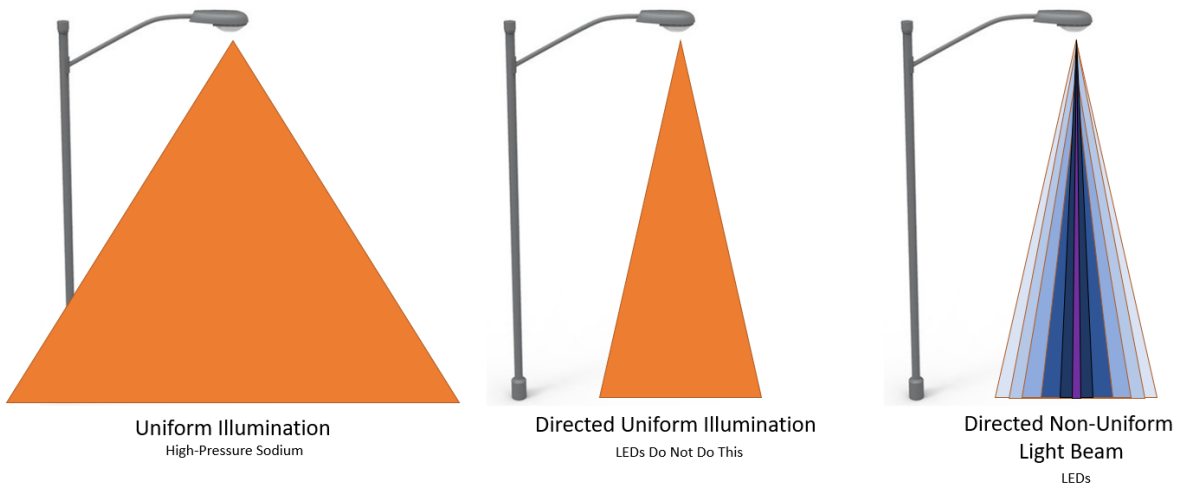


Figure 5 - Streetlight Comparison

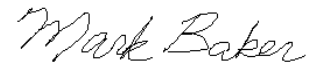
In the middle portion of Figure 5 is what the city fraudulently claims is the shape of the LED light beam. The city claims that the beam is directed, but uniform, therefore saving energy. The reason this claim is fraudulent is because the city knows that this middle diagram is not a truthful representation of the actual shape of the LED light beam. The real pattern of an LED light beam is shown on the right side of the figure which demonstrates the non-uniformity of the light and showing that the middle of the light beam is exceedingly intense, far beyond human tolerance levels.

Congress has directed the US Access Board to develop accessibility guidelines and enforce compliance of the Architectural Barriers Act.⁸ There is no doubt that light is an architectural element of any building or infrastructure and that light can be a barrier. Therefore, we request that the US Access

⁸ <https://www.access-board.gov/cj>

Board comply with Congress' directives and develop guidelines for LED light beams that will protect people with epilepsy, autism, migraines, PTSD, and others who are discriminated against by use of LED light beams.

Sincerely,

A handwritten signature in black ink that reads "Mark Baker". The signature is written in a cursive style with a large, prominent "M" and "B".

Mark Baker
President
Soft Lights Foundation
www.softlights.org
mbaker@softlights.org