

It was Memorial Day weekend in Las Vegas and we had just left a comedy show - we had a few good laughs. We had valet parked our car so we made our way through the crowd to the parking garage. Sometimes you can wait a long time for your car in Las Vegas and the people watching

had gone beyond interesting into just downright amusing. As we were waiting for the valet attendant to bring our car we sat on a bench under an annoying fluorescent



overhead light and supplement their work area with task lighting that is in front of them and lower than their eye level. The back reflection that overhead flickering fluorescent lighting has on eye glasses can bring on fantastic headaches.

Some people are even very sensitive to the light switching frequency which is driving the fluorescent tubes at levels that sometimes conflict with the refresh rate of your computer or notebook



# Kia pai to ra

Maori New Zealand phrase for saying "Have a Nice Day"

## Flicker and Hum

some things are better for music than for lighting

lighting fixture that was flickering incessantly. It was almost amusing that the music that was playing was a U2 song from "Rattle and Hum". I went to a great U2 concert in 2009. Looking back in time my mind took me to the countless offices, retail stores, and hospitals I have been too that have been graced with traces of this song - its cousin - the fluorescent light bulb and "Flicker and Hum".

As energy prices rise, fluorescent retrofits from T12 older style lamps to T8 or T5 high output lamps is becoming very common. Every time I run across someone who is in the midst of these conversions I always ask "will the conversion avoid the Flicker and Hum problems of fluorescent?" - the answer always comes with a facial expression that expresses understanding and annoyance and a simple "no it will not." The beauty of the fluorescent beast is overshadowed at times by flickering and hum.



Retrofit any fixture

Over the years I have noticed that people that wear glasses are the most annoyed with and are the most cognizant of the fluorescent shortcomings. Several use creative ways of deflecting the light or simply turn off the

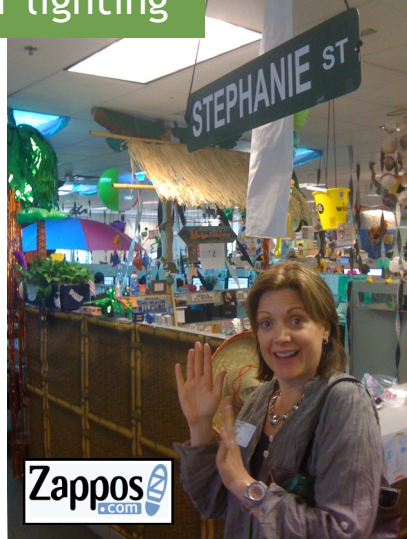
screen. I am constantly amazed how sensitive some people's eyes are. Fluorescent lighting also incorporates a component called a ballast that takes the electrical voltage it is connected to and ramps it up to much higher voltage to excite the Mercury (Hg) in the tubes to generate light.

I am not sure "Flicker and Hum" will become a new U2 song.

Well this just happens to be one area where AoTuroaLED retrofit kits can sing louder and more boldly that we can "Rattle" your views and bring a "Hum" of contentment to your employees or workforce. The AoTuroaLED systems do not flicker and the power supply/transformer does not hum like fluorescent.

AoTuroaLED systems run on DC or Direct Current instead of AC or Alternating Current which is the cause of the flickering. AoTuroaLED power supplies/transformers convert electricity from 120 Volts, 240 Volts, or 277 Volts and step it down to lower safe operating

voltages. This is the same process used in the power supplies that charge your mobile phone or notebook computer - and as you know these do not hum. We recently had an opportunity to tour the corporate headquarters of Zappos Shoes [www.Zappos.com](http://www.Zappos.com) in Las Vegas, they are one of the largest shoe retailers in the world - one out of every 60 boxes that United Parcel Service (UPS) ships is a Zappos box! Well the



AoTuroaLED founder Stephanie Prather at Zappos.com headquarters - story about making employees happy and dramatically increasing performance

company is known for having one of the best work environments for its employees and it makes work a pleasurable place for people to be. Their turn-over rate for losing employees is almost 4X less than companies in similar businesses! They hear what their employees want or need and make sure they make it happen. Their productivity is also among the highest in the world - so something is working. Kudos to them and their smart approach to not only providing

incredible customer service but to making their employees love their job.

So back to lighting - AoTuroaLED kits not only provide comparable or higher output than fluorescent, they are as much as 60% lower power, they have no hazardous Mercury (Hg) making your business more environmentally responsible, but they also do not come with Flicker and Hum. The AoTuroaLED systems solve a problem that employees complain about all the time with fluorescent. So maybe take a note from Tony Hsieh, the CEO of Zappos, listen to your employees and make the change.

And then - our valet brought our car. I gave the valet a great tip and he looked at me shocked and I told him "that is for having to work under flickering fluorescent lighting all day!". He laughed and said, "you have no idea!"

