



# WHITE PAPERS & APPLICATION NOTES



**DOWNLOAD FREE WHITE PAPERS & APPLICATION NOTES**



### Application Note

- Keywords**
- Flicker
  - Time-resolved spectra
  - Correlated color temperature

- Techniques**
- Intensity

- Applications**
- Flicker characterization
  - Lighting quality control

### Ocean FX High Speed Applications in Home Lighting

Unbeknownst to us, most of the light sources we use for general home illumination have some "flicker" associated with them, due primarily to the AC nature of the current provided for power. While this occurs at rates faster than the typical human eye can see, it can nonetheless have an impact on health, as well as operation of some high-speed devices. The rapid scan rate of the new Ocean FX™ spectrometer enables this flicker to now be evaluated easily and economically in the field. We looked at several everyday light sources with the Ocean FX to see what's happening to their intensity and color in real time.



#### Introduction

Through a phenomenon called "persistence of vision," the retina continues to report the presence of a source of light for 40-50 ms after it has disappeared. You see it when you wave a sparkler in the dark, as if the eye is performing some averaging of the light signal it receives. By nature, we're more likely to see a rapidly moving object – on time scales as short as 13 ms for some, like pro athletes – but variations in intensity and color at those same time scales are harder to perceive.

That doesn't mean that they're not important. Studies have shown that flicker at frequencies up to 2000 Hz can impact physiology and cognition. Low frequency flicker (often perceived as flashing, blinking or strobing) can be perceived at frequencies from 3-70 Hz, and can cause seizures in sensitive people (about 1 in 4000). Frequencies 100-120 Hz above the visible threshold can cause headache and eyestrain in a portion of the population.

## Application Note: Ocean FX High Speed Applications in Home Lighting

Unbeknownst to us, most of the light sources we use for general home illumination have some "flicker" associated with them, due primarily to the AC nature of the current provided for power. While this occurs at rates faster than the typical human eye can see, it can nonetheless have an impact on health, as well as operation of some high-speed devices. The rapid scan rate of the new Ocean FX™ spectrometer enables this flicker to now be evaluated easily and economically in the field. We looked at several everyday light sources with the Ocean FX to see what's happening to their intensity and color in real time.

**[DOWNLOAD NOW](#)**

Sponsored by



# PHOTONICS MEDIA

Visit Photonics Media to download other white papers and learn more about the latest developments in lasers, imaging, optics, biophotonics, machine vision, spectroscopy, microscopy, photovoltaics and more.

[www.photonics.com/WhitePapers.aspx](http://www.photonics.com/WhitePapers.aspx)

Questions: [info@photonics.com](mailto:info@photonics.com)

[Unsubscribe](#) | [Subscribe](#) | [Subscriptions](#) | [Privacy Policy](#) | [Terms and Conditions of Use](#)

Photonics Media, 100 West St., PO Box 4949, Pittsfield, MA 01202-4949  
© 1996 - 2017 Laurin Publishing. All rights reserved. Photonics.com is Registered with the U.S. Patent & Trademark Office.  
Reproduction in whole or in part without permission is prohibited.