

## LiFi Lab One - The Visible Light Spectrum

### Optical Wireless Communications

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#### Overview:

This lab is meant to introduce the student to the visible light spectrum, also known as the electromagnetic spectrum. I know this may seem basic and elementary to the class, however, I am assuming that there may be students such as I that are novices in this field. In this cases we are all learning together. So, let's have some fun with this concept and how it is going to change the world as well as our lives.

Before or after doing this lab please review the following Houston Public Media videos at:

<https://houstonpbs.pbslearningmedia.org/resource/Isps07.sci.phys.energy.lightcolor/light-and-color/>

You may copy and paste the link into your browser in order to view it.

Read the background essay.

Answer the discussion questions.

What we will need for this lab:

A Prism

A white light source (in this case a Maglite®)

A white wall

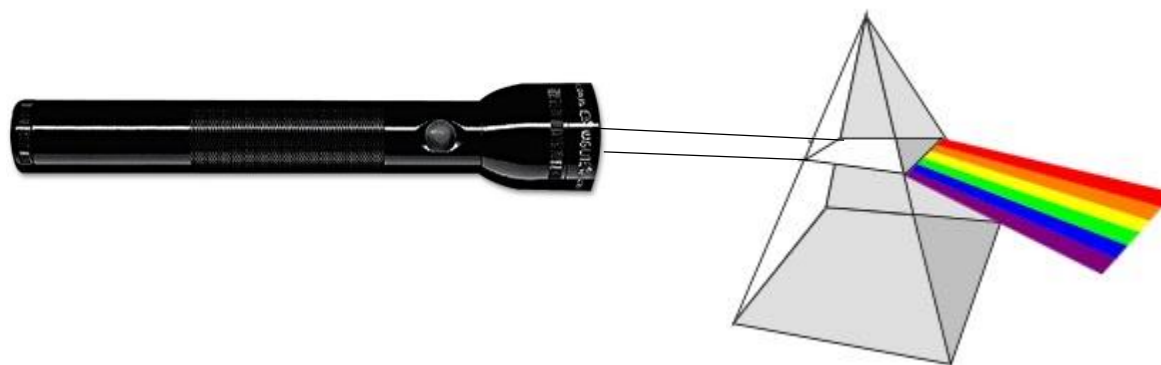
A lab partner to either hold the Maglite or the Prism



Look for a rainbow when the sun comes out right after it rains.

Credits: NASA's Picture Dictionary





Once you shine the Maglite®'s concentrated beam through the glass prism, the light should disperse into the colors of the rainbow – the visible light spectrum which is visible to the human eye in a range of wavelengths called visible light or simply light. The human eye will respond to wavelengths from about 390 to 700 nanometers. In terms of frequency, this corresponds to a band in the vicinity of 430–770 Terahertz (THz).

You have just began you LiFi journey. Congratulations!

Credits: NASA's Earth Observatory

