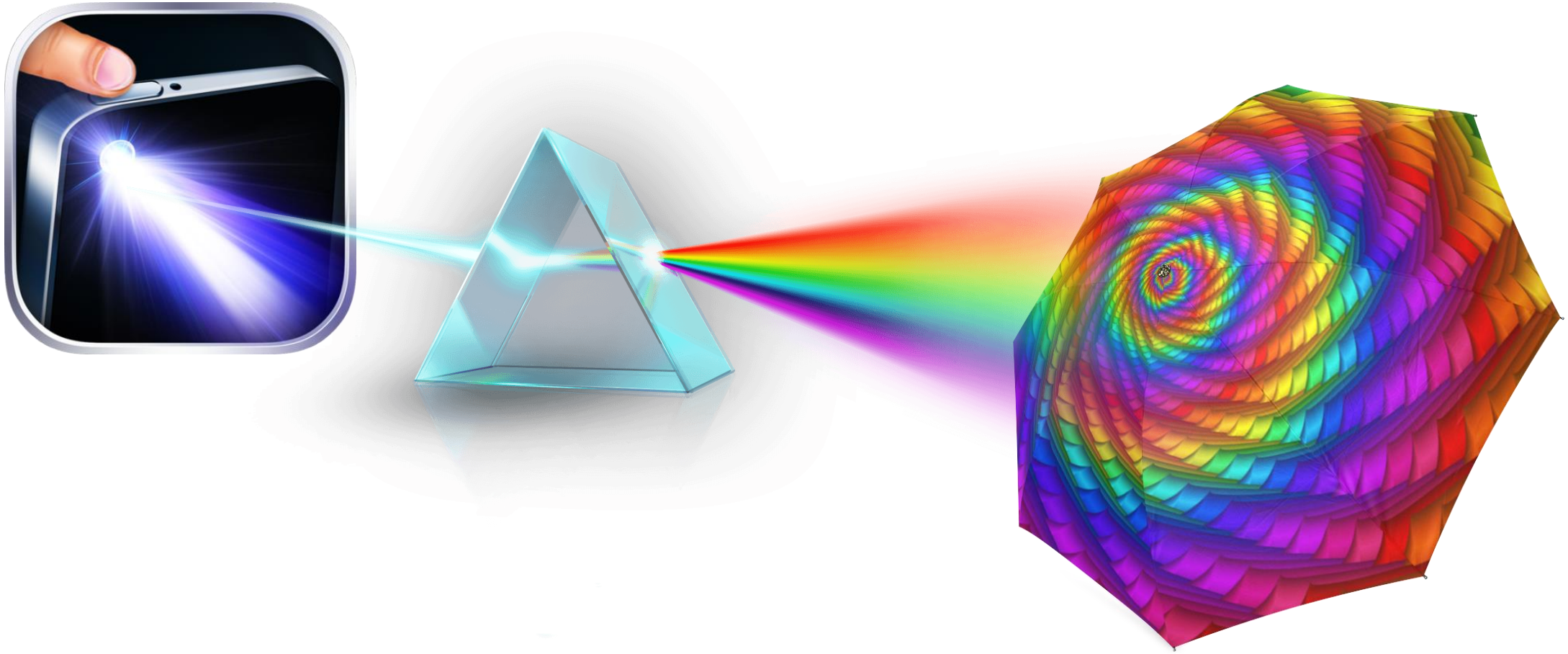
OceanOptics

Plasma

Spectroscopy Kits



If you have a prism in the lab, try pointing your cell phone flashlight at it to see how broadband light is split into individual wavelengths.

The same thing is happening inside your Ocean spectrometer!

Components

System

Software

Experiment

Components

System

Software

These spectrometers turn optical signals into meaningful numbers.

Spectrometers are powered and interfaced via USB.

Essential | 180-650 nm

ST-UV

Enhanced | 220-1050 nm

SR-4XR

Superior | 220-1100 nm

HR-4XR

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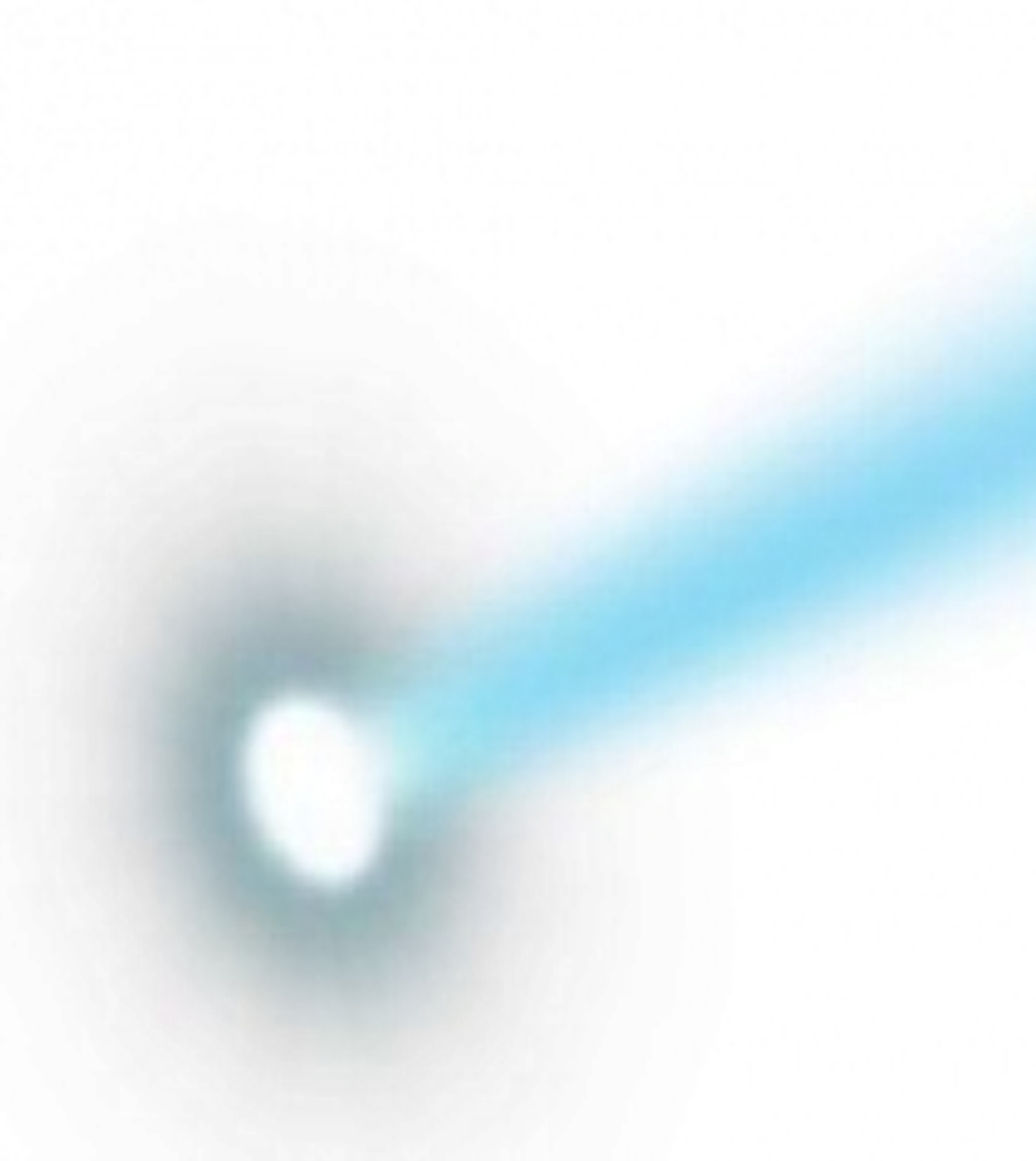
CC-3

The provided cosine corrector is useful to further homogenize the incoming light. This may or may not be necessary depending on the quality and strength of the measured source.

QP600-1-XSR

The patch fiber provided with the Plasma Kit routes the emitted light into the spectrometer.



Sampling Tip

The angle of the fiber will dramatically change the collection efficiency, which in turn changes your observed signal.

Mount your fiber in a sturdy fixture to ensure constant angle and distance of collection for applications needing high repeatability.

Components

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Pro Tip: Ensure your SMA connections are tight for repeatable measurements. Loose fiber connections can lead to variable results.

Use the patch fiber to connect the spectrometer SMA port and the cosine corrector.

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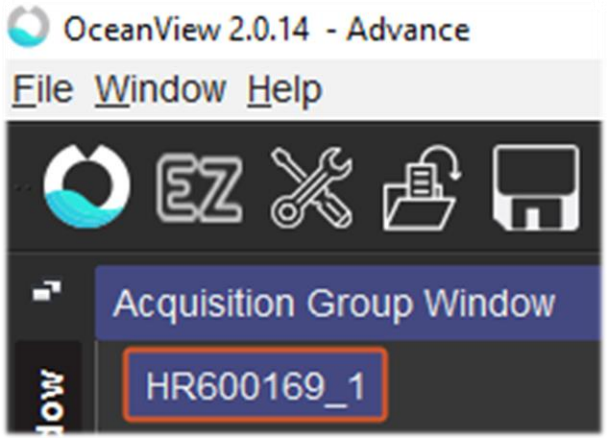
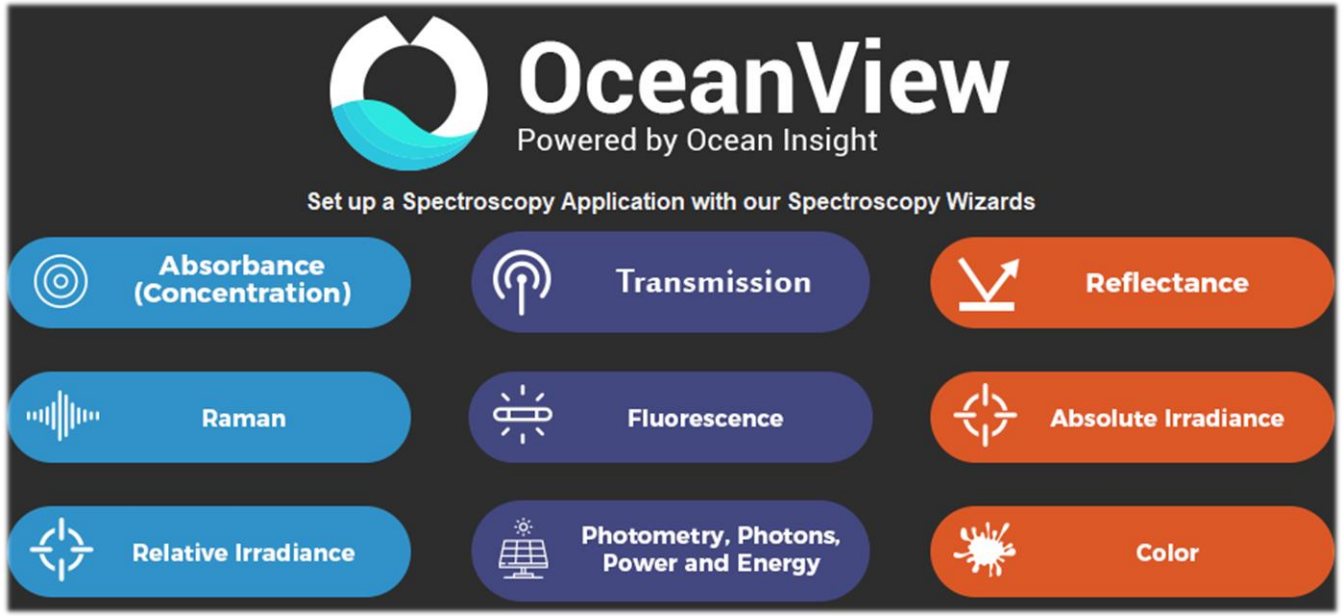


Click the **OV icon**



Select **Fluorescence**

Components

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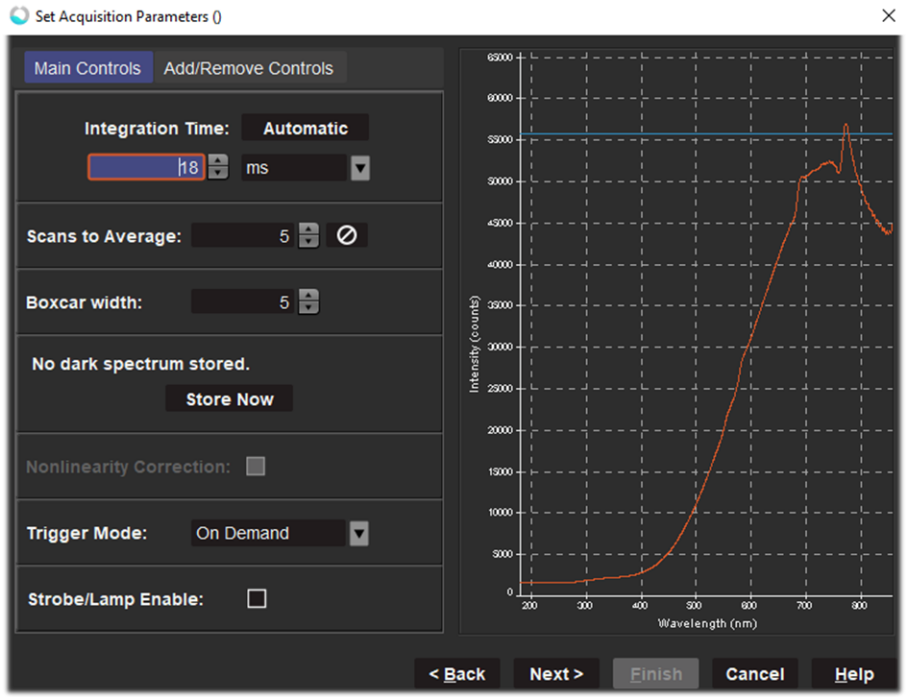
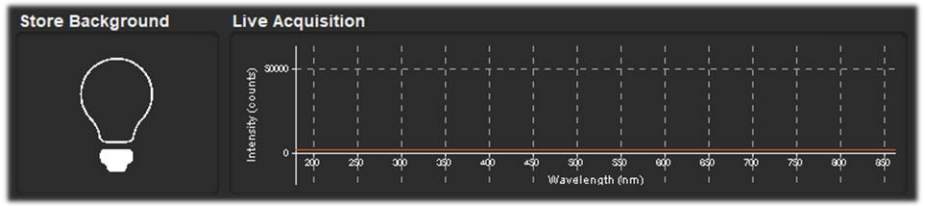
Pro Tip: Scans-to-Average averages individual pixels over time, while Boxcar averages neighboring pixels to smooth the spectrum.
The former increases scan time, but the latter does not. However, high Boxcar can begin to mute sharp peaks that may be important to your work.



Total Scan Time = *Integration Time x Scans to Average*

Hit '**Automatic**' button to auto-set Integration Time while fiber is pointed at measurement source



Take dark/background reference with fiber blocked or measurement source off

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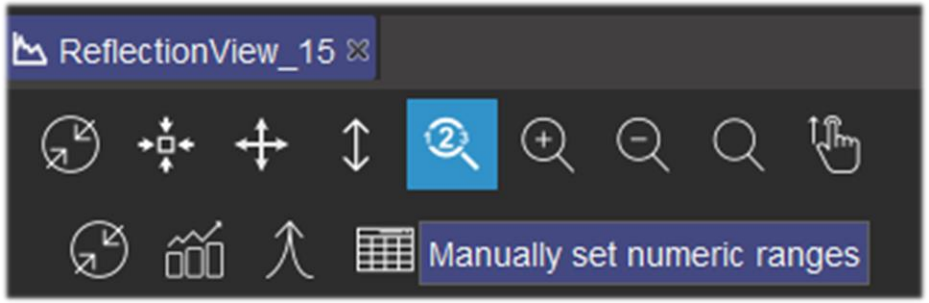
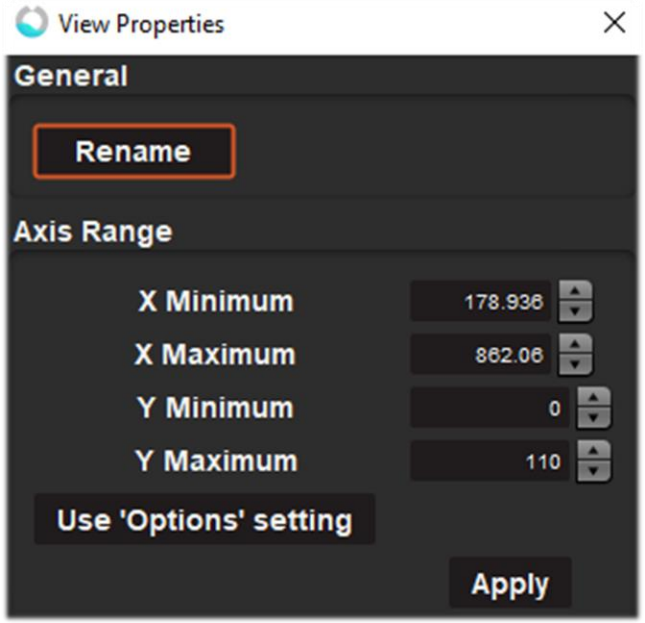


Use arrow and magnifying buttons to move and zoom around the graph. The magnifying glass with numbers in it allows you to manually set the x- and y-axis range.



Components

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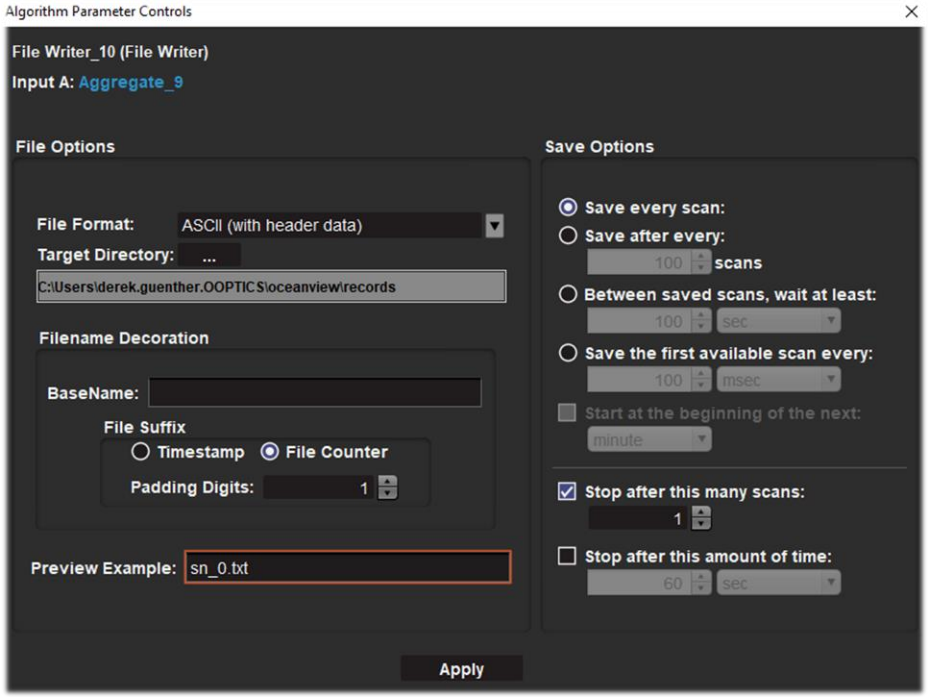
Pro Tip: Standard *ASCII* file type will save each spectrum to an individual file in column format. Changing File Format to *Time Series* or *Append Series* will place all spectra in a single compiled file in row format.

Select the gear icon to configure data save parameters.

Configure your file format, location, and naming convention on the left.

Configure the frequency and intervals of data logging on the right.



Don't forget to press '**Apply**' before exiting!

Cosine correctors are useful for setups requiring the redistribution of incident light, such as measuring…

BFHLRGJK EGGJWEJPLH

AM J FKJPH BIGMJLH EP

JEG AG ARYHG CHWEJ

Hint: H = E

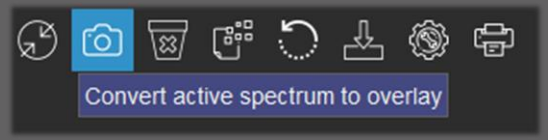
1 Assemble System and Complete Fluorescence Wizard

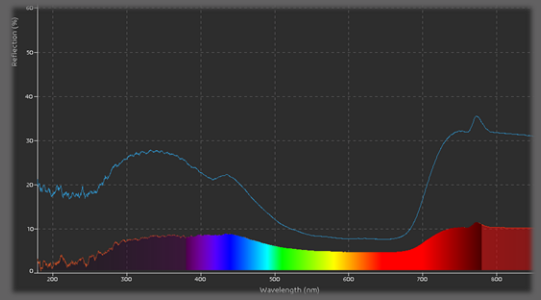
from prior steps

2 Point Fiber at Various Sources

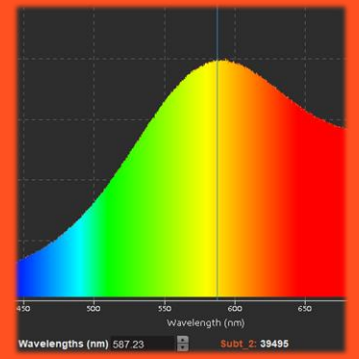
- Room Lights
- Sunlight
- Computer Screen
- Cell Phone Flashlight

3 Click Camera icon to freeze overlay





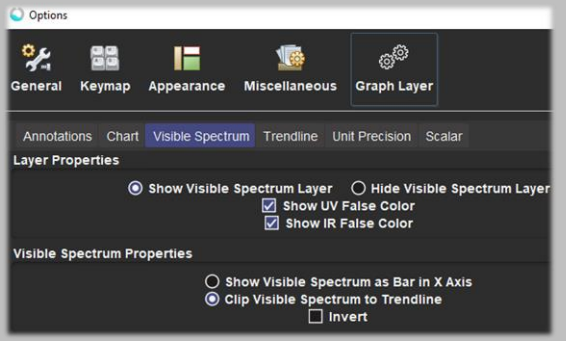
4 Click on the peak locations to note the most active wavelengths



5 Compare emissive wavelengths.

What sources emit more UV? Less?

Pro-Tip: To see the full ROYGBV spectrum in the graph, right-click in the graph and go to Graph Layer Options. Go to Visible Spectrum and select Show Visible Spectrum Layer and Clip to Trendline.



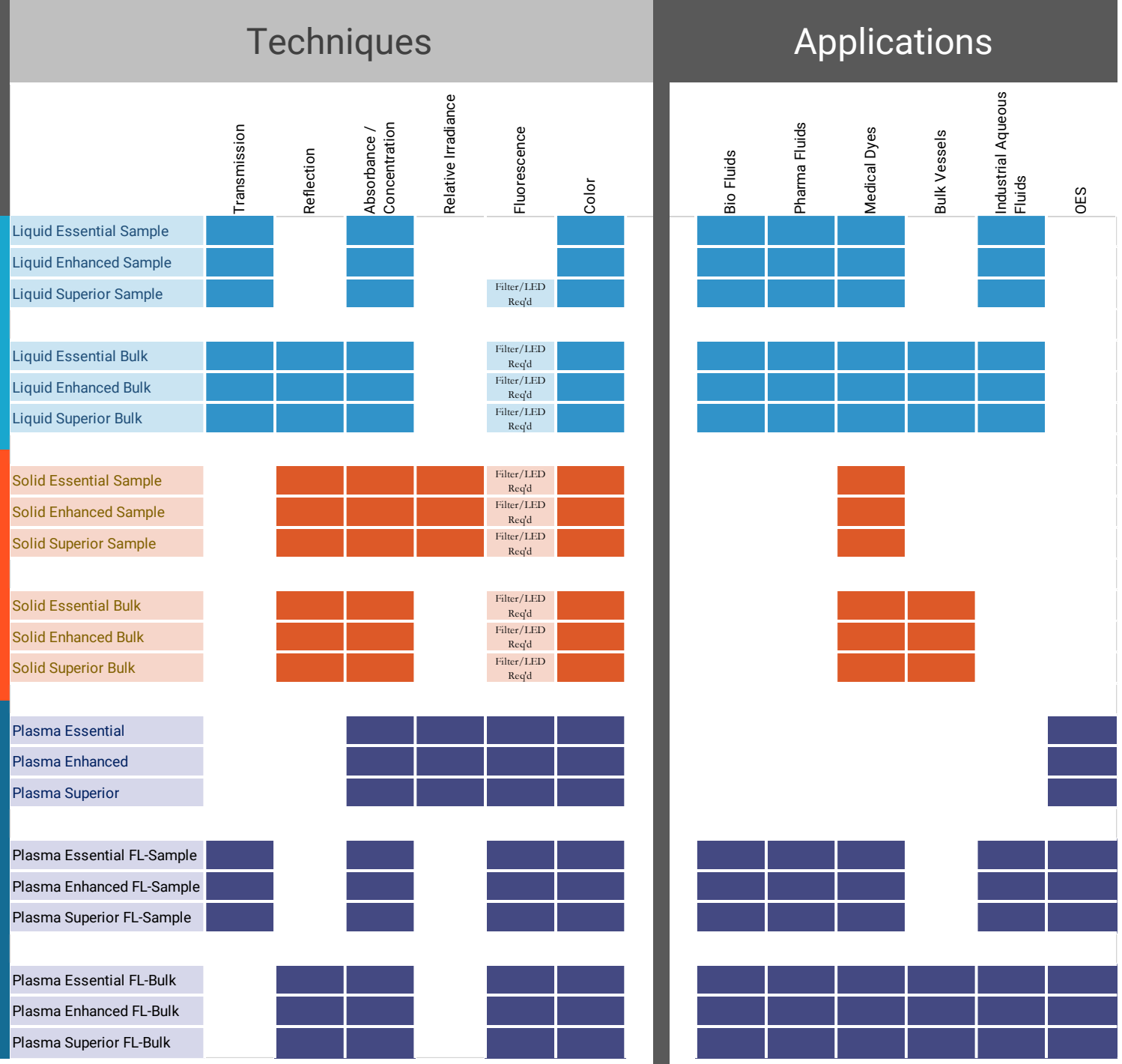
Experiment

Spectroscopy Kits

Liquids

Solids

Plasma



SPECTRAL IRRADIANCE OF A PLANE SURFACE IN AIR OR OTHER MEDIA

Crypto-Quip Solution:

OceanOptics

oceanoptics.com