



Robin Myers  
Imaging

# Chromaxion™

## The Newsletter of Interesting Imaging Stuff

### SpectraShop™ Supports New i1Pro 2

At long last we are pleased to announce a new release of SpectraShop. Here are the new features:

- i1Pro® 2 support, including M0, M1, and M2 illumination modes.
- Multiple i1Pro spectrometers may be connected although only one at a time may be used for measurements.
- ColorMunki comma separated files may now be imported.

This is a **free update** to all current SpectraShop 4 users. Go to <http://www.rmimaging.com/spectrashop.html> to get your upgrade.

### SpectraShop Tutorials

Like most programs, the manual is a good reference resource but using it to learn how to operate the program is like trying to use a dictionary to learn how to write.

To help with learning to use SpectraShop, a set of simple tutorials are now available [here](#). The first five tutorials are:

1. Measuring reflective specimens
2. Measuring emissive-monitor specimens
3. Measuring emissive-light specimens
4. Measuring emissive-flash specimens
5. Measuring transmissive specimens

If there are any particular tasks for which anyone wants a tutorial, send your request to [robin@rmimaging.com](mailto:robin@rmimaging.com).

### X-Rite Coloratti Blog

Wondering about the hardware differences between the previous i1Pro and the new i1Pro 2? Then read the X-Rite Coloratti blog by Robin Myers at <http://blog.xritephoto.com/?p=7029>.

The X-Rite Coloratti are a group of professional photographers that use color management in their work and promote good color practices at their seminars, workshops and other events.

Here is a chance to improve your game with information from some world class photographers, so while you are there, check out the other blog entries.

### Image Quality Evaluation Website

In the world of museum, library and government imaging, two sets of imaging guidelines have emerged for the photographer; the FADGI and Metamorfoze.

Both of these guidelines have defined procedures and metrics to evaluate the quality of images and imaging equipment.

To use these guidelines requires purchasing special charts and software. While the charts still must be purchased, there is a free service that can replace the software.

Announced on June 15, [delt.ae](http://delt.ae) is a free web service where you submit your images and reference data then the website software will analyze the images, producing a set of quality metrics about the color accuracy, noise, focus, light falloff and more. Check it out!

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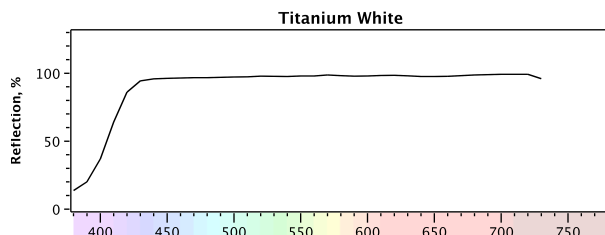
## What Are the Colors of Autumn?

Every year in the Fall, the leaves turn various shades of yellow, orange and red. Have you ever wondered what is the range of these colors?

This last Fall, while taking a walk around the neighborhood, various leaves were collected to answer this question.

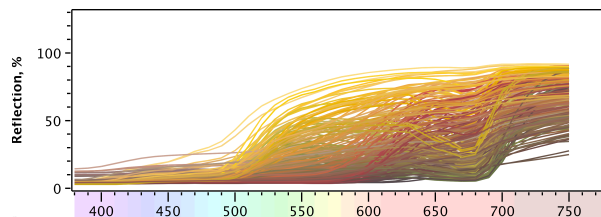
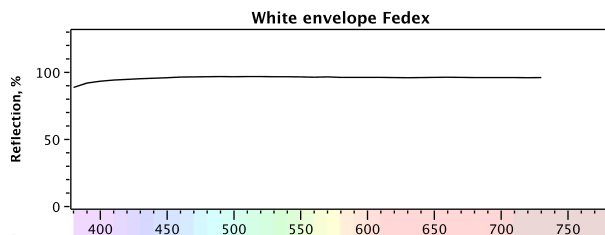
Since leaves are translucent, care must be taken to select a suitable background for the measurements. Using a black background will result in measuring the top surface only, since the transmitted light will be absorbed. A white background will reflect the transmitted light, better simulating the way the leaves are viewed on the trees, which is a combination of front surface reflections and transmitted light. For this collection, a white background was chosen. The question is then, which one?

The most common white colorant is titanium dioxide, found in most items which might serve as a measurement backing.

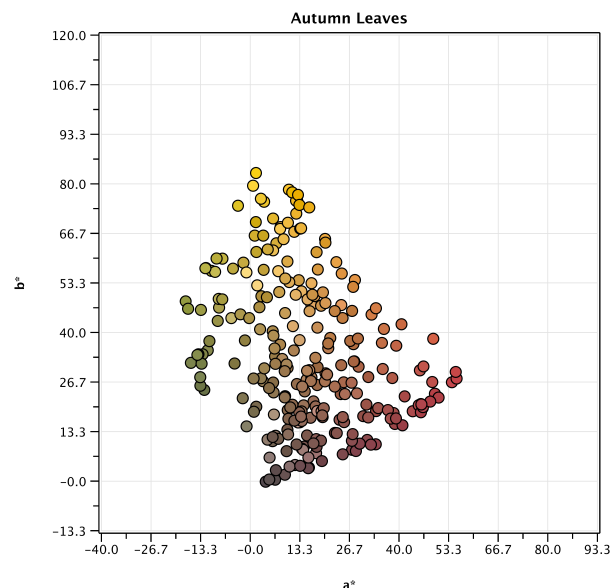


The reflectance spectrum of titanium dioxide reveals that it absorbs violet wavelengths, which is why it is used in sunblocks, and it has slightly more long wavelength reflection than blue. The result is that it is slightly yellow.

After measuring many white objects, a more uniformly reflecting white was found, the Tyvek® mailing envelopes provided by the US Postal Service and FedEx. These envelopes are themselves very slightly translucent, so several layers were used as the backing.



The reflectance spectra for the 257 leaf specimens are not too informative, so a better representation is needed.



Visualizing the specimens as an a\*b\* graph, it is apparent the leaf colors are combinations of four colorants; green chlorophyll, yellow carotenoids, red anthocyanins and brown oxidized pigments.

It is often fun to find out more about the colors of nature. Spectral databases of real world objects are uncommon, yet they are useful for a wide variety of investigations. So get out and measure the world!

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