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Imaging

# Chromaxion™

## The Newsletter of Interesting Imaging Stuff

### SpectraShop 5

The latest version of SpectraShop has some new features that are very interesting. Two of the most exciting are the new **Instant Difference** and **Instant Average** features.

To use them, begin with an open collection and click on the “C” button to display colorimetric values. Then select two items in the specimen list. The colorimetric values instantly switch to the differences between the two specimens. Selecting three or more specimens displays the average of the selected items. These features are what I call “head slappers”, they are so intuitively obvious that you slap your head thinking “why did I not do this before”! If you try slapping your head, be careful not to slap too hard, self concussing is hard to explain to others.

Oh, to accompany the new layout, it is now possible to **choose which colorimetric items you want displayed**. These can be selected by the specimen type in the Preferences. You can optionally save the choices into a separate file allowing you to have job or project specific control of the colorimetry.

To the usual set of analysis tools a new **Search Tool** has been added. Using this tool, any or all of the currently open collections may be searched for spectral matches to a list of specimens. The search is performed by comparing the spectra to find the ones with the lowest overall difference.

Another very useful improvement is **measurement routing**. By checking boxes at the bottom of the measurement windows, as each specimen is received from the spectrometer it can be sent to lists in various tools. For instance, specimens can be sent to the Test list in the Difference window for immediate comparison against a previously set reference specimen. Instant Pass/Fail indication is performed as items are measured.

While we are discussing the Difference Tool, when measuring a chart against a set of reference chart values there is now a button in the window that will **display a color-coded chart of the patch differences**. This is a fun feature for comparing the differences between two charts.

Another major change is that the graphs now offer the ability to **click on a graphed point** and its source and values are displayed.

For those with an i1Pro2, measurements using all three **measurement modes M0, M1 and M2 can be simultaneously obtained** with a single button click for reflective subjects. This is a great way to compare paper and other materials for fluorescent whitening agents.

The **Lighting Tool has been enhanced** with a choice of two methods for calculating the CRI; the usual method (CIE 13) which chooses the reference illuminant based on CCT, or the one in ISO 3664 which always uses D50 for the reference illuminant.

Another Lighting Tool improvement is an **a\*b\* gamut graph** showing the 15 CQS samples with the reference illuminant and the test illuminant. This augments the CQS and CRI values with a visual diagnostic feature.

Many of the changes and improvements in V5 are due to user requests. One of those requests was the ability to **average sets of color chart measurements**. In the Calculator Tool, put a set of chart measurements in the first list, a second set in the second list and select “Average by rows List 1 and List 2” to get the averaged values placed into the currently active collection. Up to four chart measurement sets can be averaged this way.

There are many other new features but rather than describe them, you should download the new program and try them.

## Spectro Babel

Have you ever been in a conversation about a spectrometer only to have someone correct your name for the instrument's type with a word that confuses you, or the situation? When it comes to spectrometer types, it seems that everyone is speaking in tongues only high priests of physics can understand.

Here are some examples of various terms applied to spectral measuring instruments. *Spectroradiometers* measure light emission (radiometry), *spectrophotometers* measure relative light reflection (photometry); *telespectroradiometers* perform radiometric measurements at a distance; *spectrogoniometers* measure light with varying angles of incidence and reflection; *spectrocolorimeters* measure spectra and convert the data to colorimetric values; then there is the *spectrodensitometer* which measures spectral data and uses them to calculate density values. These names made some sense when spectrometers were made to perform a single function only. However, some modern instruments can perform many of these different operations with a single instrument, so they transcend simple names.

For instance, what would be the proper term for an X-Rite i1Pro2 or Konica-Minolta FD-7 which can measure ambient light (incident photometry), monitors (emissive radiometry), flash (temporal emissive radiometry), digital projectors (tele-radiometry or tele-reflectometry), transparencies (relative transmissivity, notice that there is no "ometry" for this one, that I could find) and can also produce colorimetric and densitometric values? Would it be a spectroteletempororadiophototranscoloridensitometer?

Perhaps it is time to apply Occam's Razor, raze the Tower of Spectro Marketing Babel and just use the term **spectrometer**. After all, that is what all these instruments do as their primary function, measure a spectrum. The rest is just software.

Fun Fact: the longest word in the English language is pneumonoultramicroscopicsilicovolcanocniosis (45 letters, 19 syllables). Most people simply call it silicosis.

## Reader's Tip

### Joseph Holmes: Keeping Track of All That Software

If you're like me, you've got literally hundreds of apps on your desktop machine, and will have reached a point where it's difficult not only to remember their names, but to even remember them at all in many cases.

I decided I should create a Rich Text document called "ALL APPS of INTEREST.rtf" and stick it into my Applications folder, where it sits at the top of the list in column view in OS X.

In it I simply created a few headings in all caps, bold face, and beneath each of them a list of the apps I have or might wish to have, which fall into the category in question. I have categories, which include:

- General Image Editing
- Digital Asset Management
- Raw Conversion
- Distortion Correction
- Sharpening
- De-Noising
- Scaling
- Clarity
- Stitching
- HDR Blending
- Focus Blending
- Sky Darkening and B&W Conversion
- Lens Cast Correction
- Curve Fitting

Each has 1 to 5 apps in it at the moment, and whenever I think of another category or finally remember an app (including plug-ins) of interest, which I had overlooked, I just add them to the list. No more forgetting obscure but capable software! Often it's years between when I buy something of interest and when I eventually get around to actually using it, so this is helpful.

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