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Imaging

Chromaxion™

The Newsletter of Interesting Imaging Stuff

Break-in News

Like so many others, RM Imaging was the recent victim of a break-in. It seems someone got into our office and had a wild party. We immediately suspected leprechauns after finding a mess of empty Guinness bottles and shamrocks. During their revelry, in what they must have thought was a grand prank, they got into our computers and merged the Standard and Pro versions of SpectraShop 3 into a single program. At first this was very upsetting. But after much reflection, enhanced with copious quantities of frosty adult beverages, we realized this was a fantastic opportunity. So this mashup has now been released as SpectraShop 4.

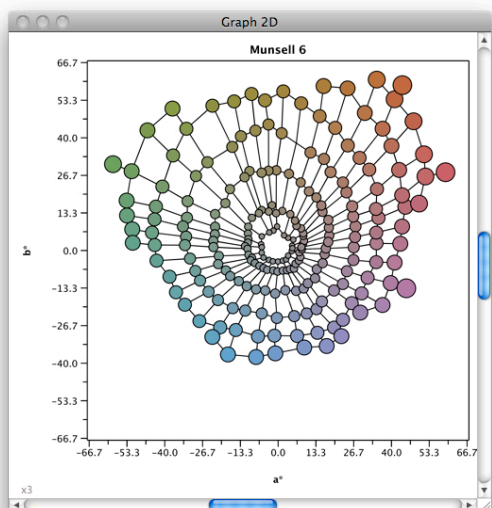
So what, you may ask, was the result of this leprechaun hack attack? Here is the rundown me boyos.

New tools with SpectraShop 4:

1. Graph 2D Tool.

This is a very powerful, yet easy to drive graphing tool. Some of the graphs it can produce are:

- Graphs of any colorimetric value against any other.
- Gamut graphs.
- Paired graphs of color changes, with or without direction arrows.
- TRC curve graphs.



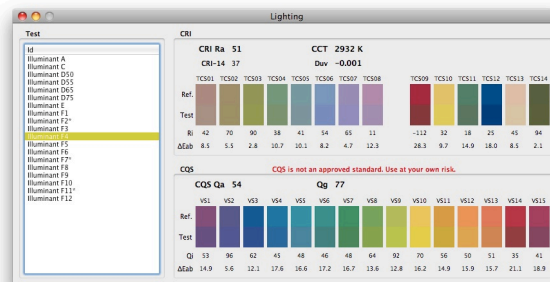
As an example of the Graph tool's versatility, here is a graph of the Munsell 6 Value plane which was constructed using the Graph 2D grouping feature. It contains 52 groups, comprised of 217 specimens. This type of graph cannot be accomplished in any other color program.

2. Lighting Tool.

This is the first publicly available tool (as far as I know) that implements the new Color Quality Scale (CQS), a proposed light source evaluation metric to replace the antiquated CRI (Color Rendering Index). For comparison purposes, both the CRI and CQS are presented in this tool.

Features:

- CRI Special Rendering Index
- CQS New color index from NIST
- CQS Gamut Area Index
- Simulated sample patches for CRI and CQS
- ΔEab values for all patches
- CRI and CQS text file export



3. Calculate Tool.

With all the power available in SpectraShop, there are times when it is necessary to combine spectra for additional capabilities. For instance, to calculate which filters will color balance one light to another. This is where the Calculate tool shines and another exclusive feature of SpectraShop.

- Add, subtract, multiply and divide up to 4 lists of specimens
- Normalize and scale specimens

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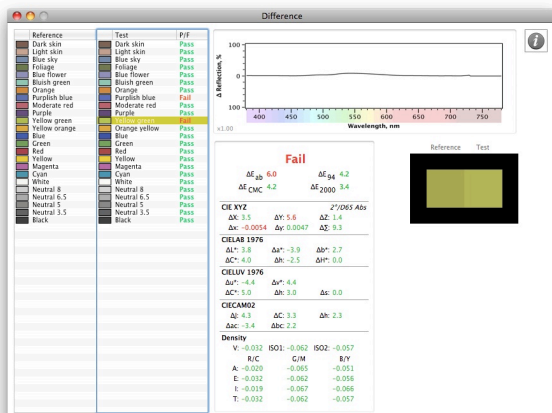
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4. Difference Tool.

Every color program has some type of difference tool. This one goes beyond the norm. Instead of just a few color difference metrics, this one calculates more than 20, depending on the specimen types. It also presents a spectral difference graph to demonstrate exactly what is causing the variance.

Features:

- Calculate differences from a single reference (good for QA/QC work)
- Compute differences between two paired lists (great for comparing two charts)
- ΔE_{ab} , ΔE_{94} , ΔE_{CMC} , ΔE_{2000}
- Pass/Fail indicator
- Difference spectral graph
- Differences of more than 20 colorimetric values



5. Enhancements

- One of the most requested features was an improvement to the patch simulator. Now all the patches undergo a chromatic adaptation to better simulate the color under the given illuminant.
- All the graphs are created at publication resolution (≥ 300 ppi) and can be printed directly from SpectraShop!
- All graphs can be saved to a disk file. This is great if you need to include the graph in a report.

Now for the really cool news!

[SpectraShop 4](#) is the same price as version 3, \$95.

[Upgrades](#) from SpectraShop 2 or 3 are only \$49.

Special Note: For those of you that purchased SpectraShop 2 or 3 after 1 October 2010, you will get a free upgrade!

Industry News

RIP Mini ColorChecker

If you were planning to get a Mini ColorChecker for your small item photography, or as an ultra-portable color chart, you are too late. A recent check of discontinued products on the X-Rite website shows the Mini ColorChecker has joined the dearly departed.

It's replacement, the ColorChecker Passport, has better armor and more patches, but it is much bigger, especially when opened for business. So at the moment, there is nothing from X-Rite that is a compatible replacement.

But do not despair. Something is in the works to fill the void. Stay tuned to this channel for further developments, reported as they happen (sort of).

RIP ColorShop

Originally released by Light Source with its Colortron® spectrophotometer, this program was an innovative mix of tools for color measurement and analysis. Acquired by X-Rite when it purchased Light Source, it was upgraded for OS X to ColorShop X, and soldiered on. Now X-Rite has retired it from service. Curiously, X-Rite has no replacement product.

However, with much more powerful analysis and graphing tools, SpectraShop™ can step in and fill much of that void. And the really cool thing is that **SpectraShop™ costs less than ColorShop X did!** [Check it out.](#)

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Join In!

A newsletter is only useful if it informs, aids or improves things for its readers. You, the reader can help by sending me your questions, comments, suggestions, even gripes. They will be gratefully received, even the gripes.

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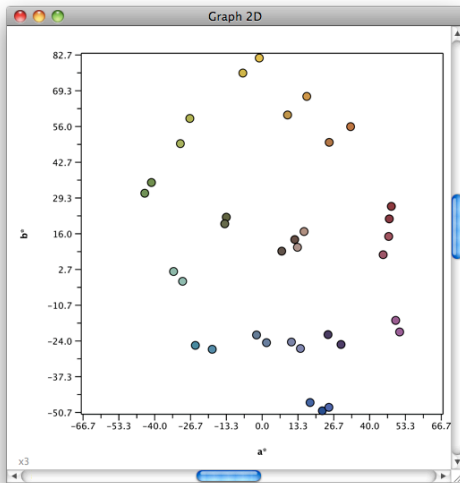
Website: rmimaging.com

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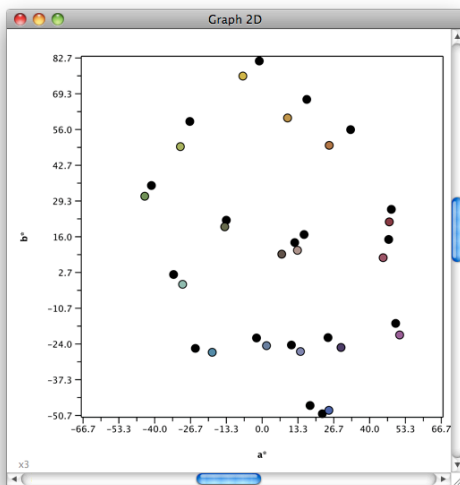
To differentiate the groups, click on the name “Untitled 0” in the *Group* list. The name can now be changed to “Reference”. Then click on the “Untitled 1” name. Change it to “Print”. This will make it easier to work with the groups.

To give the graph some correlation with the numeric values in the *Difference* window, click on the *Graph Properties* button in the *Graph 2D Inspector*. Then choose a^* from the Horizontal axis popup menu and b^* from the Vertical axis popup menu.

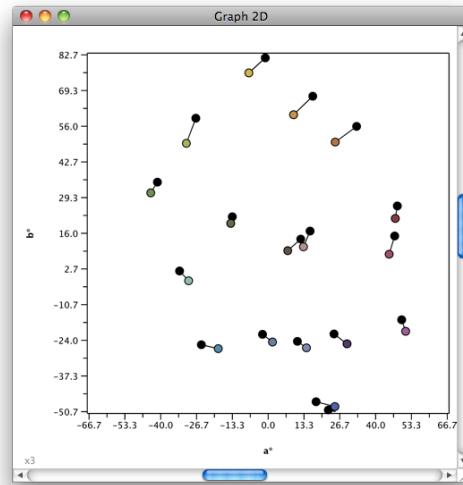


By default the two groups are shown using each patch's color which makes it difficult to tell which is the reference and which the print.

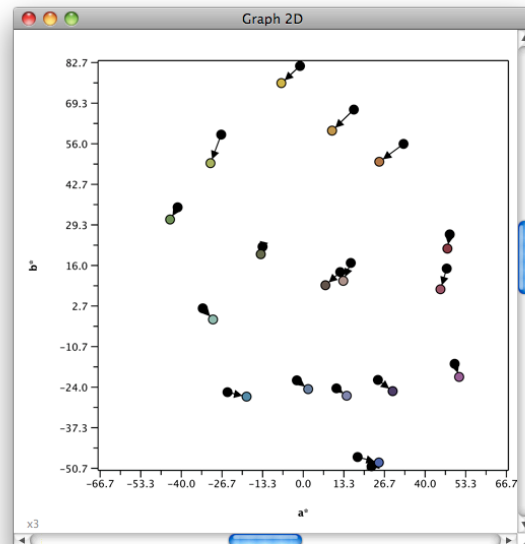
Highlight the reference group in the *Graph 2D Inspector*. Then click on the *Group Properties* icon at the top of the *Graph 2D Inspector* window. Check the *Marker* radio button to change the reference patches to a common color, which is chosen by clicking on the *marker fill color* box. Black is the default marker color and is the one used for this example.



With the reference group still selected in the *Group* list, check the *Pair* box. Then select the printed group from the *Pair* popup menu. Lines will then appear connecting each reference specimen patch with its appropriate printer patch.



To show the direction of change more clearly, check the *Arrowheads* box. Arrowheads are always drawn at the end of the line, in this case it will be at the printer specimen end.



The length of the lines in the *Graph* window are now the same as the ΔE_{ab} values in the *Difference* window.

Any overall color balance shifts in the printed image will be readily apparent in the graph as arrows pointing in the same direction.

Using this method it is easy to compare choices of rendering intents, black point compensation, or any other variables in the printer profile, the print driver and even the choice of papers and inks.