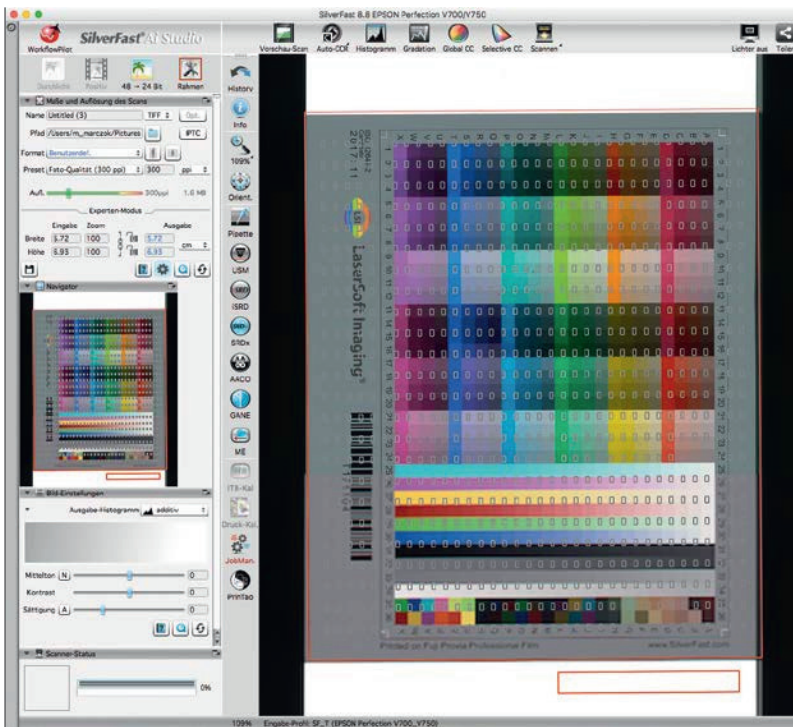


(R)EVOLUTION IN SCANNER PROFILING

Monitor calibration and printer profiling are terms arguably known by every professional. Photographers working with analogue film or wanting to digitally archive their images have to profile their scanner in order to achieve the best results possible in compliance with the chain of color management.



During the fully automatic profiling process, SilverFast 8 zooms in to the target. As a result, the many color measuring fields are easy to identify. All of the target data is read via barcode.

The scanning software manufacturer LaserSoft Imaging released its new IT8-Target, improving the results of this process and complying with the future ISO standard (12641-Part 2). For the first time, the new ISO standard takes into account the benefits made possible by new digital printing technology. More colors are made possible via the leap from the CMYK-Print with traditional printing inks to digital printing and the possibility of even more colors; the colors are furthermore able to differentiate even more from one another, allowing for even more color deviations.

To understand why a scanner should be profiled, it's important to bear in mind (in the truest sense of the word) that every input or viewing device is afflicted with physical and technical defects. Color management is there for this reason and, when used correctly, ensures a defined basis. The devices communicate with one another via this basis and speak one language - the language of color.

- Standard Calibration
- Advanced Calibration
- Advanced 3-Slide Calibration

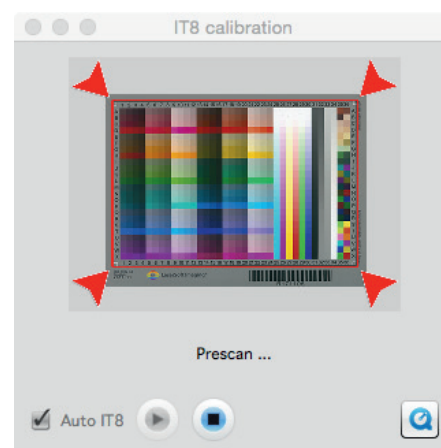
In the newest version of the SilverFast 8 Scanning Software, there are now three calibration methods. The "Advanced Calibration" performs well with the latest ISO standard IT8-Targets.

In order to deal with the mentioned errors, the basis is defined with target-values and compared with the actual values of the scanner. Knowledge of these differential values, which presents the scanner's actual color deviation, generates a device profile. This translates the values from the device for the rest of the color calibration chains. You could also say that this profile subsequently corrects mistakes. This process is very important if you don't wish your scanner to manually adjust each individual file yourself.

Scanner-Profiling with IT8-Targets

A scan made by a not yet profiled scanner is always inaccurate, not only in terms of colors, but also tonal values. This may appear familiar to most people: The scanner is plugged in, the first image is scanned and then it is processed in Photoshop & Co. Alternatively, the scanned image is already edited with a properly calibrated monitor as much as possible in the scan program itself. This may work for individual data files and produce acceptable results. But would you want to do this when performing a batch scan consisting of hundreds of thousands of images? Certainly not. It is thus important to profile the scanner.

In order to accurately determine a scanner's actual values, an exact, defined template is necessary. Now, we come to the IT8- targets, whose quality is predetermined by the ISO Organization for Standardization. Recently, a new standard has emerged for these reference templates, now equipped with even stricter specifications. A member of the ISO, LaserSoft Imaging took part in the creation of the new standard and is world-wide the first company to produce the new IT8-Targets. A highlight is the demonstrably higher amount of Color fields. Exactly 600, this is more than three times as many. This large number of measuring points results in extreme accuracy. Due



This small window is all that is seen during the profiling process.

to the fact that the colors are not continuous, but rather located in discrete steps along the target, the intermediate colors are interpolated, i. e. computationally calculated. More fields require less interpolation and thus deliver even more accurate results. There are colors that are critical or rather difficult for an interpolation. These are dark tones, grey values and pastel colors. There are now significantly more color fields in precisely these areas of the new targets.

The measured values are then compared with a reference file, which contains the target values of the targets.

It is important to note that profiling is unable to generate a large color space because generally the maximum color room of the scanner is in use. However, the new Part-2-Targets ensure that the described critical color values arrive in the data file as exact as possible. In many cases, the difference is hard to notice; however when we have a lot of gray scales in an image or a lack of tonal value in the shadow areas, a difference becomes easier to spot. In any case, you have the certainty that you have done the very best for your scans.

Profiling in practice

It comes as no surprise that the new IT8-Targets from LaserSoft Imaging work especially well with the SilverFast scanning software from the same manufacturer. They are available as transmitted light targets on Fuji- and Kodak film and are also available as reflective targets. Targets thus typically address the majority of needs of professional film materials. For the longest time, LaserSoft Imaging targets have counted among the best on the market.

Let's conduct a practical test and profile an Epson-Perfection V750-Pro scanner equipped with a transparency unit and a 6 x 7 cm transparency target with Fuji Provia professional film.

The target should always be handled with care. Targets are delicate and cost around 100 Euros. On this (medium format) slide, and that's what it is after all, is a bar code that largely automates the following process.

As scanning software, we are using SilverFast Ai Studio version 8.8. or 11 for Mac. This is important because only the latest program versions will work with the new targets. The service dialog box in the program launcher displays the software version info.

The IT8 target is already located on the scanner and the software is launched. In the main window, there is a vertical toolbar with a IT8 calibration button (it's actually more of a profiling button because nothing on the scanner is changed or adjusted). We have three possibilities, we choose advanced



When profiling with the new, more precise targets, it's no longer necessary to interpolate as many shades as before. Results are differentiated especially when there are many colors in the image. It results in a differentiated result.

Photo: pixabay

profiling in order to stay with this designation. And already the automatic process begins.

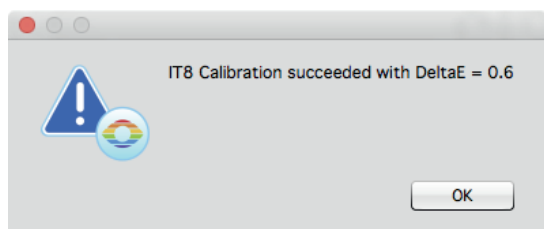
Program and scanner generate a preview, the software recognizes the target, including position, and then downloads the appropriate reference data from the LaserSoft Imaging Website. And actually that's everything. The profile is finished and must be saved. In this case, SilverFast provides an optimal save location, the place where all profiles on the computer are saved. What is unique is that the entire process functions automatically (patented by LaserSoft Imaging), which ensures that no mistakes are made.

What do you do with the profile?

Performing a monitor profiling ushers immediate visible results. Colors, brightness and contrast vary depending on profile selection. This is not the case with Scanner, where it is still impossible to see anything. Color management works more or less in the background. The software automatically selected the new profile as input profile to see under SilverFast 8 - Settings - CMS. During the output of the scan, this profile is used to create a data file with a corrected Adobe RGB color profile. You will never actually see the realized profile, it is nevertheless of immense benefit because the scans are now flawless.

Conclusion

Scanner profiling is perhaps not essential for everyone. However, those of us who profile our monitor or printer should consequently also include our scanner in color management. Professional photographers and institutions with large analogue image archives and/or exhibits, which they hope to digitize, will appreciate the new, even more accurate IT8-Targets from LaserSoft Imaging and their ease of use in SilverFast 8.



In the end, there is a short execution notification - done.