

MAMA DON'T TAKE MY KODACHROME AWAY

New And Better, Profiled Kodachrome Scanning

By: David B. Brooks

*"They give us those nice bright colors
They give us the greens of summers
Makes you think all the world's a sunny day, Oh yeah" – Paul Simon*

I don't know of any other film brand that also became the title of a hit song like Paul Simon's Kodachrome released in 1973. But that is not all that makes Kodachrome unique amongst 35mm color films, as many of you know who have written me that you have collections of Kodachrome slides. Besides reproducing the color of reality with a unique color palette Kodachrome has also proven to be much more enduring than other color films, so any collection of Kodachrome slides stored at all reasonably will have its original color images very much intact, like some of mine that go back 50 years.

So even though Kodachrome is still made and sold, and one Kodak lab that processes in Kansas is still in operation, this Kodachrome story I am about to tell about part the film's saga involves scanning Kodachrome film images. For me and I am sure many others, compared to E-6 and other related types of color transparency films, Kodachrome scanning has had its difficulties and challenges. A part of that is scanners are usually profiled using an ICC IT-8 target slide made with Ektachrome film (or rarely Fujichrome). The dye colors are one of the unique distinguishing features of Kodachrome and they and the film's characteristic attributes because they did not match a scanner's profile exactly, make scanning Kodachrome difficult and seldom preserve the unique color and look of Kodachrome. This situation has changed.

The story of that change begins many months ago when I read a post in the Shutterbug Forum that

a photographer had just purchased a Kodak K3 Kodachrome IT-8 target slide from B&H. I am rather plugged in to news and information about photography, but was unaware Kodak had ever produced IT-8 scanner profiling target slides on anything but Ektachrome. To my knowledge they never publicized that Kodachrome IT-8's existed or were available (and I now understand why as I'll get to later). So of course I got on the B&H web site and ordered one immediately, and it arrived shortly. Wow, now I could profile my scanners specifically to match Kodachrome film.

Not so fast, the Kodachrome K3 Kodachrome IT-8 target was made in 1999 and the target pattern was the old "Marilyn" version so named because of the face of a model in the upper right quadrant of the target image. My only current profiling ability for my scanners is in Lasersoft SilverFast's IT-8 profiling utility, and the software does not recognize that old Kodak IT-8 target configuration. Well I'm used to detours and having to do work-arounds but this one was not easy because most of the older scanner input color management software like Monaco Systems are out of business or like the Kodak profiling utility that was included with Microtek ArtixScan scanners, only work with those scanners, which I didn't have. Finally I found that X-Rite has an input scanner profiling software module that is part of their i1 Photo color management system, and X-rite was generous enough to provide a loan of this rather expensive suite of color management hardware and software.

THE FIRST SUCCESS PROFILING A SCANNER FOR KODACHROME

The X-Rite input profiling module in i1 Photo worked like a charm recognizing the old K3 Kodachrome IT-8 target to calibrate and generate new Kodachrome profiles for three different scanners I have in my shop, A Plustek OpticFilm 7500i, an old Minolta Scan Elite 5400 II, and an Epson Perfection V500 Photo. So the next step was to test these new profiles scanning a selection of different images on Kodachrome, and also to make as close as possible duplicate scans using a profile for the scanner made with an Ektachrome IT-8 target. Comparing the scan image results from the two profiles, one Kodachrome and the other Ektachrome, revealed a definite difference, and with many of the Kodachrome slides scans a

very distinct advantage varying somewhat between the three scanners I was testing with. And, with some Kodachrome slide scans, particularly images I had difficulty scanning successfully in the past, I could obtain a good quality scanned image result with the Kodak K3 Kodachrome IT-8 based profile. Of course the most obvious difference was in color, that the Kodachrome profile favored preserving and reproducing scanned image color that has greater fidelity to the Kodachrome film original, not to mention that strange anomalies of color shifts in some tones did not occur as in the past, and with some images I was able to retrieve more and better detail from the shadow area in the image. Of course I was encouraged and enthused and continued test scanning many more Kodachrome slides with these new Kodachrome profiles.



A key part of calibrating and profiling a scanner is the ICC target that is referenced. Kodak made thousands of Ektachrome IT-8 film target slides that were used almost exclusively to profile scanners, but Ektachrome and other E-6 films are very different from Kodachrome's unique color palette, so scanning Kodachrome with an Ektachrome based scanner profile produced less than ideal results and often real problems with some Kodachrome slide images. This 1999 Kodak K3 Kodachrome IT-8 revealed just how much a disadvantage to scanning Kodachrome using an Ektachrome based profile has been.

Ektachrome E-6 IT-8 profile



Kodachrome K3 IT-8 profile



With my newest scanner, the Plustek OpticFilm 7500i the disadvantage of using an Ektachrome profile to scan Kodachrome (above) was not just evident in color reproduction that more truly represented the Kodachrome film original, but I was able to obtain better detail in shadows with the Kodachrome profile (below).

Ektachrome E-6 IT-8 profile



Kodachrome K3 IT-8 profile



The very first Kodachrome slide I scanned first with an Ektachrome profile (above), and then with a Kodachrome K3 IT-8 profile (below) dramatically illustrated to me the advantages of using a Kodachrome based profile with a Minolta 5400 II scanner, and how disadvantageous it is to scan Kodachrome with an Ektachrome based scanner profile.

Ektachrome E-6 IT-8 profile



My first assignment to photograph flowers in the mid 60's began what has become a very devoted interest in flower photography. That entire set of flower shots for the assignment were all done on Kodachrome. I have scanned some of the Kodachrome slide from this set several time in recent years, but re-scanning this Kodachrome using a profile based on the Kodak K3 Kodachrome IT-8 (1999) reproduced an image file that actually looks just like the film image for the very first time.

Kodachrome K3 IT-8 profile



Even with a very modest flatbed scanner, the Epson Perfection V500 Photo the affect of an Ektachrome profile on a Kodachrome image (on the left), compared to a scan of the same Kodachrome slide using a Kodachrome profile (on the right) reveals a dramatic advantage in color and image quality.

Ektachrome E-6 IT-8 profile



Kodachrome K3 IT-8 profile



LASERSOFT SILVERFAST GETS INVOLVED

From the results from my tests with the profiles made with the Kodak K3 Kodachrome IT-8 profiles, I made up sets of CD's with the test image files, and sent one to my editor at Shutterbug and another to Karl-Heinz Zahorsky president and founder of Lasersoft Imaging who make the SilverFast scanning software. I've known Karl-Heinz Zahorsky since we first met when Epson introduced their then new Epson Expression 836XL large format professional scanner with Lasersoft SilverFast software. And, with some common interests we have kept in touch ever since. So in a phone conversation when I was talking about my experience with Kodachrome profiling I learned he also had the Kodak K3 Kodachrome IT-8 target slides and was also thinking where we could go with it. We agreed that the supply of these Kodachrome IT-8's was probably very limited, so how could this profile advantage to Kodachrome scanning become widely available?

It wasn't very long until I found out what kind of solution Lasersoft would offer in SilverFast scanning software in an upgrade version of SilverFast Ai 6, which now includes a new Kodachrome film option to selection. (<http://www.silverfast.com/scanner-software/>) I really don't know what programming is "under the hood" but how it must work is a bit like making a translation from one profile to another, a scanner has a profile based on an Ektachrome IT-8 and when you select the Kodachrome film scanning option the colors identified in the scanner's profile are translated to what they should be if the profile were based on a Kodachrome film IT-8 target.

So, already with some test experience using scanner profiles I had made with the Kodak K3 Kodachrome IT-8 target reference, after downloading this new version of SilverFast Ai with the Kodachrome option, I tried it scanning some of the same Kodachrome slides. The color results were quite similar to my previous use of a Kodachrome based profile and a definite advantage compared to scanning with a scanner profile made with an Ektachrome IT-8 target.



This picture of an abandoned farmhouse in northwest Utah was taken on a road trip in 1981 to produce illustrations for a book, and was one of the subjects on that assignment I shot on both Kodachrome and Ektachrome. The scans of this subject I have made from the Ektachromes were very successful and I have used them frequently, but this scan of one of the Kodachromes using the Kodak K3 Kodachrome IT-8 (1999) based scanner profile is actually a better reproduction of this scene and a better quality digital image than the Ektachrome scans I have used.

THE ULTIMATE SOLUTION

Although Karl-Heinz Zahorsky mentioned in passing in a conversation he would like to have Lasersoft produce its own Kodachrome IT-8 reference target slides, as they have been producing IT-8's on E-6 film for some time, I was taken by surprise when I received news that Lasersoft Imaging had begun manufacturing IT-8 target reference slides on Kodachrome film. (<http://www.silverfast.com/show/kodachrome-targets/en.html>)

Soon after, I received one for my use and evaluation. I stopped everything I was doing and immediately profiled my two dedicated 35mm scanners with this new Lasersoft Kodachrome IT-8 target slide. Test scans of Kodachrome slides followed very shortly. My scan results were even more consistently advantageous over scanning Kodachrome with an Ektachrome based profile. Comparing this new Lasersoft Kodachrome IT-8 to the Kodak K3 Kodachrome IT-8 of 1999, there are differences that show up in an analysis of and use of the profile.

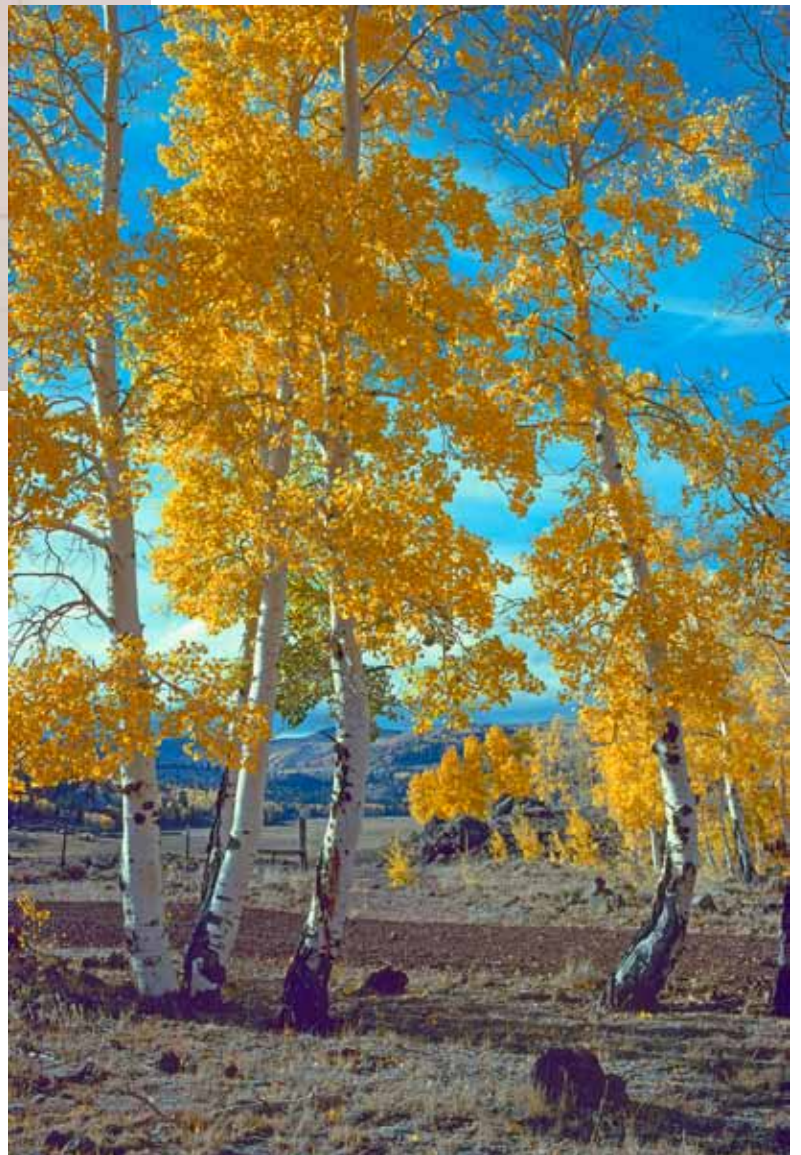
In particular the scanned raw images with the new IT-8 profile have less color casts that need correction, and the overall color correction of the raw preview scan is even easier to obtain an ideal image adjustment and resulting image file. In addition a profile made from a Lasersoft Kodachrome film IT-8 target rather than Ektachrome includes the contrast curve characteristics of Kodachrome film, which differ from Ektachrome quite significantly, so getting better shadow and high-light information in scans of Kodachrome film images resulted. With my test results using profiles made from the Kodak K3 Kodachrome IT-8, compared to the much improved performance and consistency of results with the new Lasersoft Kodachrome IT-8 film target, explains why Kodak never officially announced its availability, it has some irregularities either in the film target itself or in the Index File that is used in conjunction with IT-8 targets. The K3 Kodak was better than Ektachrome, but after using the current Lasersoft manufactured Kodachrome IT-8 not as good as it should have been. That may be because the technology involved has had ten years since the Kodak K3 was made in 1999 to be developed further and refined.



Sometimes images with very little and subdued color can be the most challenging to get right. I have always had a particular attraction to this simple image, maybe because I found the scene in a most unlikely place, across and down the street from the OK Corral in Tombstone, Arizona. Regardless I obtained the best reproduction and image adjustment of this scene shot on Kodachrome with my scanner using the Kodak K3 Kodachrome IT-8 (1999) Profile. Finally it was quite easy to reproduce the values in the film image in a digital scan file.



This very softly lit photo of my all-time favorite model taken on Kodachrome in my daylight studio in LA in the 70's is one image that has defied getting a good scan result until I tried using the Kodak K3 Kodachrome IT-8 (1999) profile to scan the film. This new resulting image file perfectly reproduces all of the subtle and delicate values in this portrait, and now makes me thankful I shot a lot of the images I made in this studio on Kodachrome.



Very high in the mountains of southern Utah the Aspen trees in the fall are a golden photo attraction. On this occasion I was test shooting the first pre-sale release of the then new K-14 version of Kodachrome. The resulting slides have been exceedingly difficult to color correct in a scan until I scanned this image with the Kodak K3 Kodachrome IT-8 (1999) profile installed in SilverFast running my scanner.



Lasersoft in their SilverFast Ai 6.6 version have included an easy access to scanning with the effect of using a Kodachrome IT-8 based profile by including an option in the SilverFast General setup Options to choose Kodachrome instead of either Positive or Negative Pos/Neg options when you are scanning a Kodachrome slide film image. It works in some respects better than the Kodak K3 Kodachrome IT-8 (1999) based profile, and is a vast improvement over scanning Kodachrome film with a standard Ektachrome IT-8 based profile.

THE BOTTOM LINE ON SCANNING KODACHROME

A good part of the motivation that kept me going for months with this project and got me past both frustrations and disappointments, is that I have a large library of film I made during a lifetime's work as a photographer I have been scanning off and on for 15 years, and a good part of it is in Kodachrome slides. So this Kodachrome project was somewhat self serving, but also with readers in mind very many of whom have written me that they too are either scanning or wanting to scan their own film libraries, and many of them contain Kodachrome slides. So the bottom line is, if you want to get the kind of Kodachrome images Paul Simon sang about, if you want your scanned

images to reproduce that famous Kodachrome look, then take this advice: profile your scanner with the new Lasersoft Kodachrome IT-8 reference, the ticket price for a Lasersoft Kodachrome IT-8 ICC reference target slide is \$50.00 (does not include software). It can be used with any Lasersoft SilverFast Ai scanner software that includes IT-8 support to custom profile your scanner, as well as other brands of ICC scanner profiling software, like the Kodak utility that was supplied with Microtek ArtixScan scanners. Of course I believe from long experience you'll get the best results scanning your Kodachrome slides using Lasersoft SilverFast Ai software to run your scanner.



If you go through my library of photographs you will find quite a few taken in graveyards, and its not because I have a morbid streak in my aesthetic, But graveyards do contain often striking subjects that often say something about the human spirit. This rather stark image made on Kodachrome in a Bisbee, Arizona graveyard contains a range of values challenging to scan successfully and accomplished effectively and rather easily using a Plustek OpticFilm 7500i scanner with SilverFast and profiled with the new Lasersoft Kodachrome IT-8 reference target slide.



There are few natural resources in Hollywood, but every so often a model agency head would send me someone new in town to photograph. One day this tall, elegant blonde with luminous gray eyes and spoke like Marlene Dietrich, showed up fresh from Europe. So I said to myself, simplicity is the only way to do her justice and opened the curtain of the studio window, moved in a black background and loaded the camera with Kodachrome. She looked just as good on film as she did in the studio, minus the intriguing voice of course. Now with my scanner equipped with a Lasersoft Kodachrome IT-8 profile I have a digital file that captures everything in the Kodachrome film.



When I first lived on California's Central Coast I'd often go out in the countryside late in the afternoon in hopes of discovering a scene to photograph in what many call "sweet light" when the sun is low. Sometimes I'd stay longer and find a subject to photograph at dusk after the sun had set. Usually I would load very fast grainy film for these shots, but this one found me when my camera was loaded with Kodachrome. In the light of dusk colors can shift strangely recorded on a slide film image and become hard to reproduce when scanned. But I obtained a very pleasing result with this scan using the new Lasersoft Kodachrome IT-8 to profile my scanner.



A scene like this shot with a moderately long lens across the Valley Of Fire north of Las Vegas, Nevada uses up the exposure latitude of most films, particularly the Kodachrome slide film this shot was recorded on. Lasersoft's new Kodachrome IT-8 target used to profile my scanner using SilverFast and its IT-8 utility, made it possible to scan this image to reproduce the full range of values with good detail from highlights to shadows, as well as replicate accurately the unique color interpretation Kodachrome achieves in capturing scenes like this.



One of my favorite images of a favorite model shot in my daylight studio by window light on Kodachrome was ideally reproduce in a digital file using my Lasersoft Kodachrome IT-8 profiled Plustek 7500i scanner running SilverFast. In this monochromatic study it is essential to maintain both color and tone separation from highlights to shadows, and this digital representation captured everything in the original Kodachrome slide accurately and faithfully.



Every time I had some kind of equipment test to do I would try to find some subjects to photograph that would be images that would be interesting photographs in their own right. So it was with this shot of leaves made testing a macro ring-light flash. But this slide has always defied getting a good scan that would make a printable image file, and finally with the support of the Lasersoft Kodachrome IT-8 profile I had success.