

The original picture was taken in raw format using a Nikon D800 in fluorescent light. White balance in camera was set to fluorescent. The pictures below are processed in Adobe Camera Raw (ACR) and are not



Adobe standard profile in ACR, white balancing from camera (fluorescent light)

manipulated in order to enhance differences. Conversion to CMYK printing limits possibilities to fully demonstrate the differences. Click on the pictures to see or download a bigger Adobe RGB version.



Same picture as to the left but manually white balanced in Photoshop



Adobe standard profile manually white balanced in ACR



QPC profile manually white balanced in ACR

The pictures above illustrates the difference between white balancing and profiling. White (or gray) balancing only compensates for global differences in the light's color temperature. The profile compensates for camera and light color differences. The profile also controls color saturation. Also please note how much better it is to perform white balancing in ACR (lower left) than after conversion to jpeg (upper right).

The topmost petal has a natural yellow color with maintained details when QPC profile is used. The green leaves are not "poisonous green". The viola has correct color with details and structure.

This is by far the best picture when natural colors and controlled saturation is desired.

QPCARD 203

*For natural colors with all cameras and light**



In all digital cameras and computer softwares that process raw images there is a profile that controls color reproduction. Image data from the camera must be interpreted with a profile before the picture can be seen. The profile is the key to colors.

QPCard 203 is a reference card with 35 meticulously selected and manufactured colors, and QPcalibration is an advanced software that from a raw image of QPCard 203 produces profiles. Using your own profiles you control color reproduction.

This is a paradigm shift in photography. We have over time gotten so used to varieties in color reproduction, we now believe it is the normal state of order: Cameras reproduce colors differently, colors are different in different types of light. Not any more! With your own profiles you can manage colors.

Buy a 203 card and get acquainted with profiling and color management. It is inexpensive, simple, instant and the result is amazing. Pictures taken in difficult light will be almost perfect and ready for immediate use, archiving and post processing. This is by far the most cost effective investment you can make in your camera equipment.

** Cameras with raw format possibility and in white light*

What is QPcard 203?

It is a color reference card to be used with a software in order to color calibrate cameras in all types of white light.

What is the advantage with using the card?

You'll get natural colors in your pictures with any camera and light.

How do I use the card?

Take a picture of QPcard 203 in raw-format and open the image file in the software QPcalibration. In less than 10 seconds the software has created a profile that is ready to use when converting raw pictures to RGB in Adobe Camera Raw (ACR).

So raw can be used, can jpeg also be used?

It has to be raw since raw contains a lot more information than jpeg. When taking pictures in jpeg, the camera has already converted them from raw. Some image data will be discarded in this process, data that might become useful when raw is converted in the computer.

How does the software work?

First the card in the picture is localized. Then all color values (35) are measured and compared with reference color values. Finally a profile that inverts the differences is created. Everything is done automatically. The only manual operation needed is to give the profile a suitable name. The profile can immediately be chosen in ACR from Photoshop or Lightroom. When Adobe's standard profile is replaced with your custom profile the colors in your pictures will be natural, almost identical to the colors in the scene.

Why doesn't the camera give natural colors to begin with?

The aim for camera manufacturers is pictures with pleasing colors. Since pleasing is a matter of taste, cameras of different brands give slightly different colors. Furthermore only one profile is used for different lights. Color difference for a scene photographed in daylight and fluorescent light is substantial, even if the pictures are separately white balanced. With QPcard 203 you create one profile for daylight and one for fluorescent light. When these two profiles are being used the colors will be almost identical and natural.

So you need different profiles for different light?

Yes. Make one profile for daylight, one for the camera flash, one for incandescent light and one for fluorescent light. If you have a studio flash, make one for that too. These profiles will cover most needs. Should you end up in a situation with another kind of light, simply take a few pictures of the card in that light too and make a custom profile when you are back home again. Always bring a card in the bag.

Do you need different profiles for sunset, cloudy days, sunlight and shadow?

No. The daylight profile works with different color temperatures. QP-calibration works with raw format so all color temperatures are represented. White balance is adjusted separately. This might be difficult to accept, but white balance and profiling must be regarded as two different phenomena. Pictures taken in daylight and fluorescent light shows, despite perfect white balancing, considerable color differences. With customized QPC profiles these differences are almost eliminated.

What if you prefer standard (pleasing) colors in some pictures?

Then choose the Adobe standard profile. QPC profiles expands your options. Adobe pictures are often a bit more saturated. The risk with too saturated colors is that strong colors might be over saturated with sections of the pictures being "flat" with no details. Over saturated colors can not be restored. With QPC profiles over saturation is limited in order to save details. These pictures can, if desired, be more saturated later.

What is the advantage with pictures with natural colors?

Everybody using the superior format raw and converting the pictures in ACR, have something to gain using QPC profiles. Many photographers generally using ACR are not familiar with profile choices when converting pictures to RGB. As soon as you have realized how easy it is to create and use custom profiles this way of working will be self-evident.

The by far most obvious advantage with QPC profiles is for pictures taken in difficult light. LEDs, fluorescent and energy saving lamps are example of lamps giving white light with "irregular spectrum", that is some colors of the spectrum have higher intensity than others, and still be perceived as white. The industry hall lit by fluorescent light, the office or sports arena being lit by artificial light are typical environments where the camera jpeg and Adobe's standard profile is not sufficient. Take some of pictures of the card, spend 10 seconds creating a custom profile and save hours of manual post processing, still getting a better end result.

Another example when natural colors really are essential in the pictures is mail or web order shopping. The customer orders products from a catalogue or web shop and want products delivered to look like the pictures they saw.

Natural colors and controlled saturation is optimal for post processing. One of the good thing about pictures that are converted with custom QPC profiles is that they contain optimal picture information. The colors are correct, that is: same as in the scene. Saturation is controlled with no over saturated "flat" color areas. Furthermore the pictures have full tonal separation with 256 nuances in each color (R, G and B) for 24 bit pictures. If the pictures are correctly exposed, they also have full tonal information from deep shadows to highlights. There is no better starting position for unlimited post processing.

Is it possible to create "cool" color effects using QPC?

There are lots of applications for color manipulation on the market. They are marketed with concepts like *enhance* and *creative* in order to describe benefits. Common for all these applications is that they reproduce colors even less natural. These applications are available as simple apps for the mobile phones, all the way to advanced softwares for the computer. They are very popular and definitely fulfill a purpose.

QPcard is aiming in the opposite direction. QPC profiles create pictures that resembles reality, pictures that, thanks to optimal picture information, actually are perfect for *creative enhancements*.

How can you be certain that the colors really are neutral, like in the scene?

A high quality calibrated monitor shows the colors in the picture in a correct way. Less expensive monitors and most of the monitors in laptop computers may have too small color gamut (space) resulting in colors that appear to be over saturated without being so in the picture file. If colors looks over saturated, test if it is the picture file or the monitor by reducing saturation temporarily in Photoshop.

Don't forget to calibrate your eyes. There are two pitfalls to look out for.

1) Colors in the environment of the monitor. The human eye have a high quality white balance that works continuously in order to neutralize colors in the environment. Use only neutral gray colors near the monitor. The eye compensates for slightly pink walls by exaggerating cyan in the vision. A neutral gray surface in the picture will be misinterpreted with a cyan touch which might misdirect you to an inaccurate compensation.

2) Ambient light near the monitor. There are three things to consider: light level (strength), color temperature and spectral distribution of the light. Too strong light will glare your eyes resulting in pictures on the monitor appearing too dark. Color temperature of monitor and ambient light should be matched. Warmer ambient light will cool your vision, which might result in incorrect compensation. Halogen and incandescent lamps or energy saving lamps with high color rendering index are preferred. Daylight with varying strength is not permitted for critical post processing.

Visit www.qpcard.com for more information and for downloading the free software QPcalibration. You can also download a test picture to be used with QPcalibration totally free of charge.