PCS Image Capture™

PCS Image Capture™ is a service for creating master images of your products. These images are color-matched to the products using spectral measurements and colorimetry. They have linear tonality, to render the finest details and nuances accurately. They are often used to make ultra-realistic POP displays, where the printed product images look exactly like the actual products.

Typically, product images are shot by photographers in a studio. The image files are processed in Photoshop, or a similar application. Photographers are skilled at composing, lighting, and adjusting images to give a pleasing appearance. A good photographer is an artist, with a portfolio of beautiful and dramatic photos to impress you.

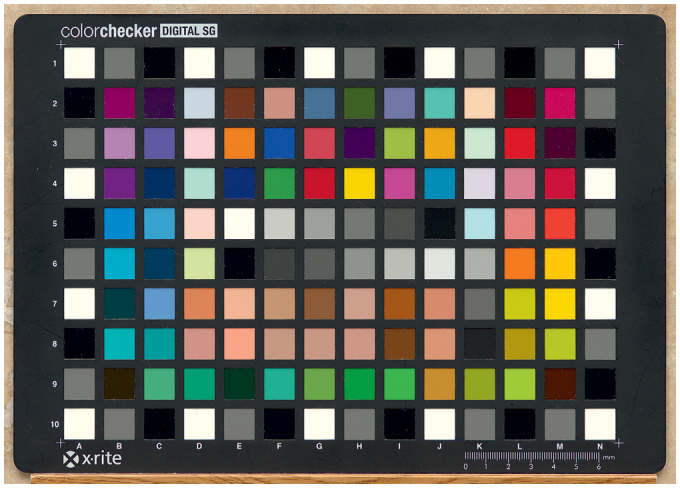
Unfortunately, these skills are not helpful when the goal is facsimile reproduction. A portrait with pleasing flesh tones has an S-shaped tone curve. But facsimile requires a perfectly linear tone curve. An image that starts with incorrect tonality will require adjustments, and may never produce a truly good result. This is a common experience – buying product images from a photographer, making color corrections at various production stages, and finally, settling for an imperfect result.

PCS Image Capture™ uses the same high-end cameras and lenses as your photographer. The difference is that we process the images with our proprietary software. Each batch is individually calibrated for perfect linearity and color correction. Lighting variations and lens falloff are removed. The output is a standard HDR floating-point image, compatible with Photoshop, and other image editors. Master images are converted for print or web using standard color management.

Precision Color Solutions began as a prepress company in 1973, making color separation films from prints, transparencies and artwork. We worked closely with ad agencies and printers, scanning, proofing and color-correcting their images. Eventually, film cameras were replaced by digital cameras, and color editing became the province of graphic designers. As the prepress business declined, we managed to find a niche applying our color knowledge to facsimile reproductions. These images came from high-end Cruse scanners, but always needed color adjustment. We developed an efficient workflow using color measurements to make these adjustments. Meanwhile, there were huge improvements in digital cameras and lenses, which eventually surpassed the image quality of the Cruse scanner. We experimented with off-the-shelf HDR software, and proved the feasibility of using high-end digital cameras for facsimile work. The results were so impressive, we decided to develop automated software, and offer an imaging service.

Color Management

ICC color management is an established standard for characterizing color devices, and transforming color data. Our images are color-managed to the working space of your choice. Each batch is individually calibrated and converted using measurements of a test chart image. In addition, a white-frame image is used to remove lighting variation and lens fall-off. This processing is done with floating-point math, to preserve every bit of detail, including specular highlights.



Illumination

Color is heavily influenced by the illumination. Our process allows you to select the illuminant for color-matching. The standard illuminant for graphic arts is D50 – daylight with a color temperature of 5000°K. This is suitable for many purposes. But the illumination in a retail store is probably not D50. The appearance of your products and printed materials may look very different under common fluorescent and LED lights. You have the option to color-match under store lighting, or any standard illuminant.

Measured Color Matching

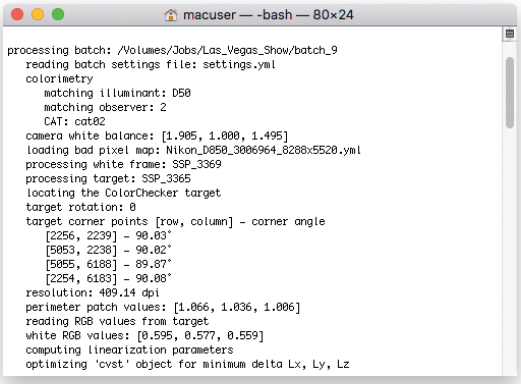
To obtain the best possible color matching, we measure your products with a spectrophotometer, and use this information to compute the color transform. Today's color cameras are very good, but they don't "see" color exactly like a person. Our software creates a spectral model of the camera, and combines that with the product measurements to "pin" key colors. This optional step is performed individually for each shot in a batch. These spectral measurements may also be used to verify the photographed products have the correct color, as defined by marketing or manufacturing.

Tone Mapping

Floating-point images are often called HDR, short for "high dynamic range". These images may be tone-mapped directly in Photoshop, or other imaging software. Tone mapping and HDR have a bad reputation in the photo world, similar to velvet paintings of Elvis. But for our purpose, tone mapping is a useful tool that allows us to preserve detail which would otherwise be lost in the printing process. Tone mapping selectively changes the illumination of an image to preserve these details. It is especially useful when lighting to enhance the texture of the product, or when the subject is three-dimensional.

Automation

Once the photography is completed, the RAW images are organized and copied to a batch folder structure. The batch folder contains various settings files, which are updated with your requirements. The batch is then processed using our proprietary software. This is a complex procedure with many steps. The software automates this work, to reduce costs and prevent errors. Although the software is proprietary, its output is not. The finished files are standard, color-managed TIFF files. These files may be used in Photoshop, or any image processing application.



Off-Site Capability

Although we normally work in our studio, our process is completely portable. We can work in a gallery or museum, so valuable items are kept safe, with minimal handling. We're willing to travel to your site.

Proofs and Prototypes

We make color-managed proofs and prototypes, using industry standard printers and software. Epson P-series printers are the de facto choice for proofing, and Epson S-series for packaging and prototypes. We use an EFI XF RIP to drive these devices. Each print media is calibrated and profiled. We also have finishing equipment to laminate and mount the prints, if needed.

Your Supply Chain

A color-managed workflow should deliver a good result for any type of output, at least in theory. But, in practice, there may be parts of your supply chain that struggle with color. This is not unusual. Many printers lack solid color expertise, despite what they may claim. We know this because of our consulting business. Doppelganger, LLC, our consulting firm, has solved color problems for printers and print buyers since 2005. We developed a technique called the Optimal Method, to calibrate printing processes to color standards. As consultants, we're available to work with your existing supply chain to identify and fix any color issues.

https://www.doplganger.com

doppelgänger LLC

https://www.optimalmethod.org

OPTIMAL METHOD

Applications

POP displays, sample boards, color cards, fan decks, fine art reproductions (giclée), cultural heritage, DAM (data asset management), manufacturing color standards.

Specifications

Image size - 8288 px by 5520 px
Format - TIFF
Bit Depth - 8, 16, or 32 (floating point)
Working Space - ROMM L-star (standard), any working space is possible
Maximum Copy Format - 45" x 30"
Camera Illuminant - D50 (standard), any illuminant is possible
Matching Illuminant - D50 (standard), any illuminant is possible

PRECISION™ COLOR SOLUTIONS

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