Express Digital Color Management

Overview

Express Digital provides a comprehensive and color-managed working environment throughout all of its applications. For the sake of simplicity and speed, all color management and profiles are turned off by default. Advanced users can, however, easily specify color management policies and ICC color profiles for all input, display and printing processes. Once these preferences are setup, all processes from capture to print are completely color-managed without user intervention. Express Digital's color managed workflow provides exceptional convenience for high volume labs requiring color matching across a variety of printers with images from a variety of sources.

Once all devices are calibrated, profiled and these profiles and policies are setup within ED, predictable color is maintained throughout a workflow.


Input Profiles

Express Digital (ED) recommends photographers shoot in-camera sRGB JPEGs. ED also accommodates images in other color spaces including custom camera profiles.

In order to access the input profile preferences choose any image in the Photo Workshop page of Darkroom or the Edit & Proof page in Labtricity and then select "color profile..." within the color balance tab.
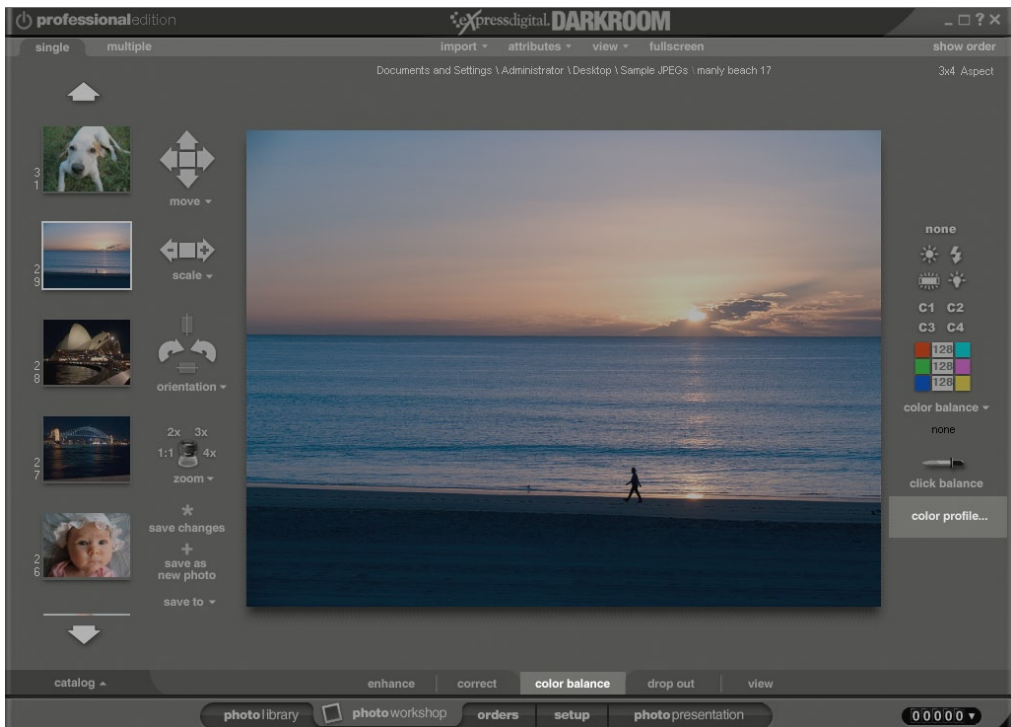
The following "Source Color Profile" dialog will appear with "None" selected.
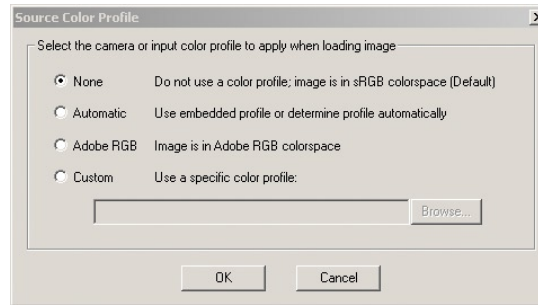
"None" assumes an image is sRGB and ignores any embedded profiles. Since Express Digital recommends photographers shoot sRGB JPEGs, the software's default policy is to assume sRGB for all images unless otherwise specified.

"Automatic" will honer an image's embedded profile or assign the appropriate profile as indicated in the EXIF metadata. This option is particularly valuable for labs receiving images from multiple sources and color spaces.

"AdobeRGB" will assign the AdobeRGB color space to the image.

"Custom" allows any RGB camera or working space profile to be assigned to an image. This option is valuable for users who wish to develop and use custom camera profiles.

When the "Source Color Profile" dialog is dismissed, the chosen policy is applied only to the image or images that were chosen prior to selecting the "color profile..." button.

In Darkroom, to make this policy the default for all images to be imported in the future, you may save this as the system default by choosing Attributes>SaveTo>SystemDefaults.
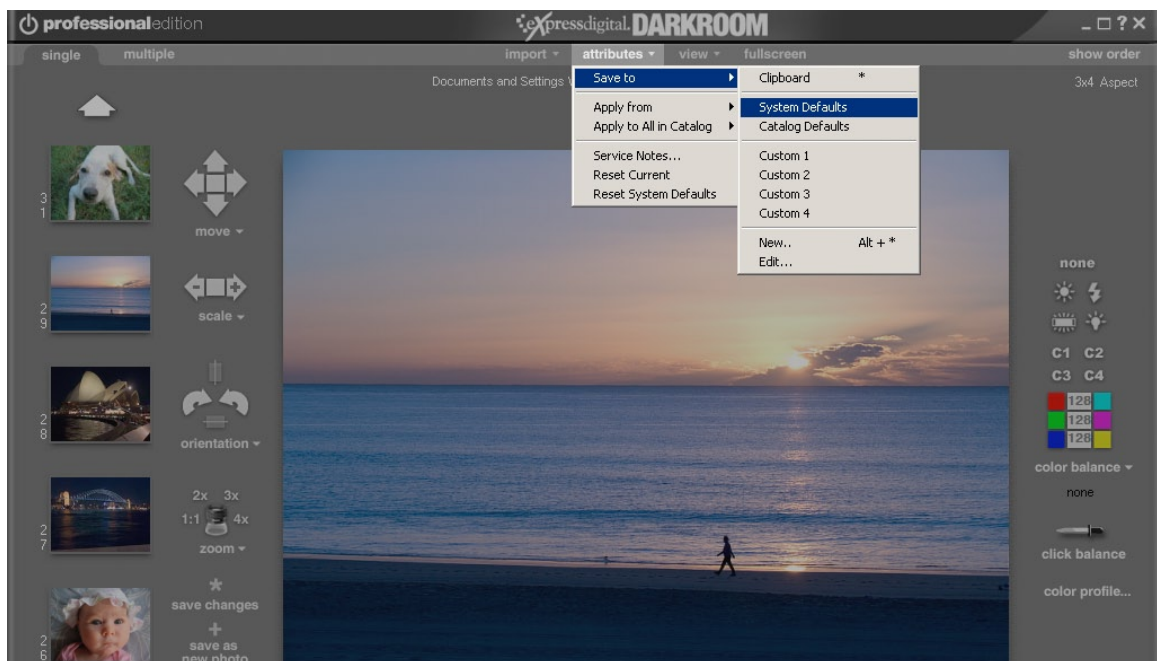

From now on all imported images will use your system default policy.

Labtricity's equivalent system default policy is to always honor embedded profiles and assume sRGB for untagged images.

Display Profiles

Darkroom and Labtricity optionally support display profiles. If you have calibrated your display using a colorimeter or spectrophotometer, check the "Use Monitor Profiles" checkbox. This is located in ApplicationOptions>GeneralSettings for Darkroom and in LabOptions>Color for Labtricity.
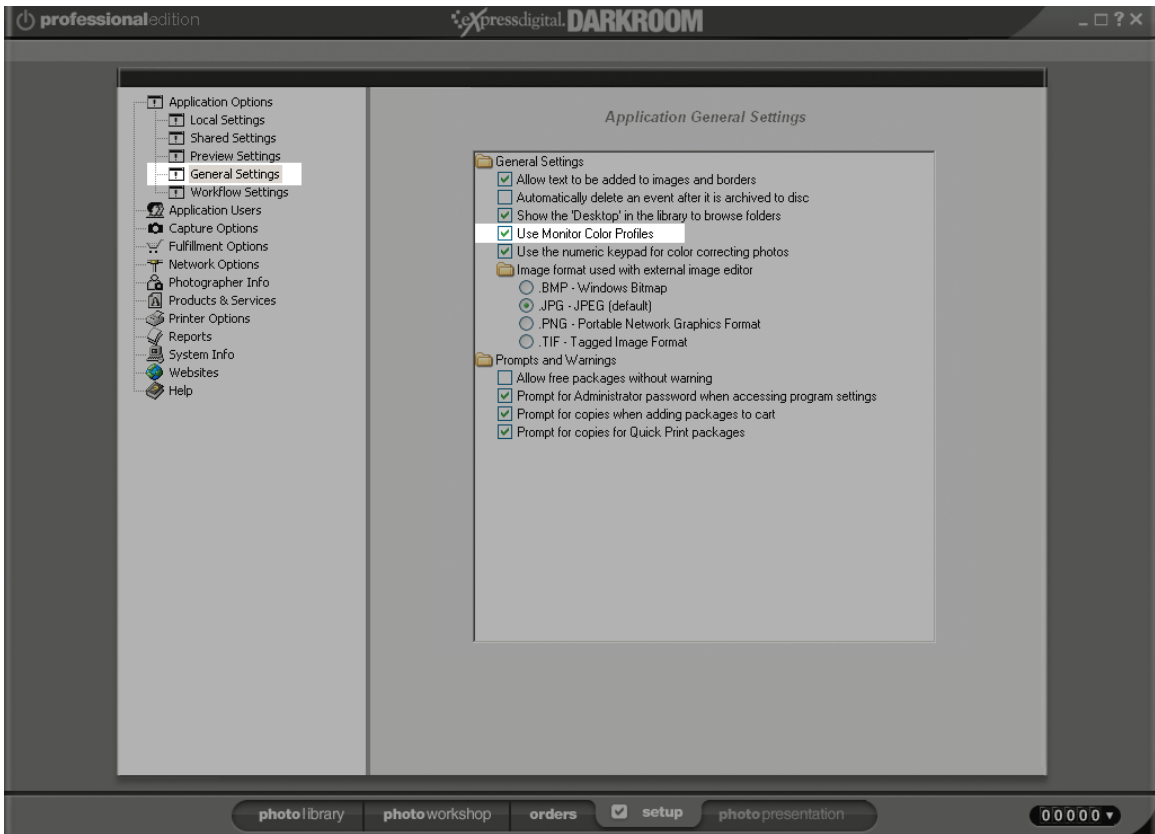

When "Use Monitor Profiles" is checked, ED will use the system display profile listed in the display's properties under Settings>Advanced>ColorManagement. Display profiles can be regularly updated and used by ED without further intervention.
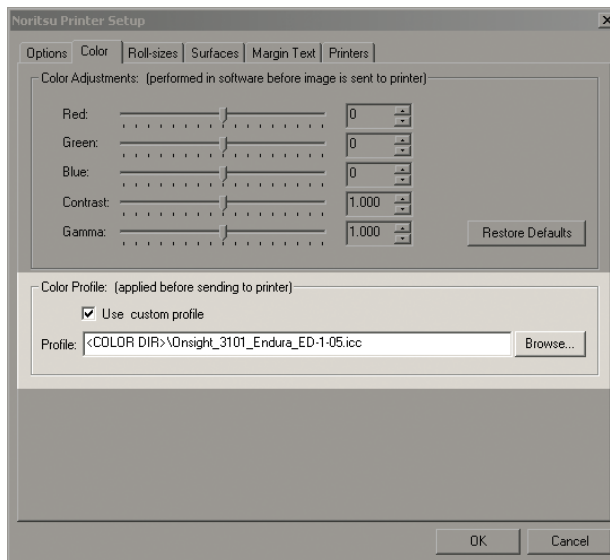

Print Profiles

ICC profiles can be specified for each printer under the color tab in the printer's options.

Choose Setup>PrinterOptions>ClickHereToConfigure for your printer.
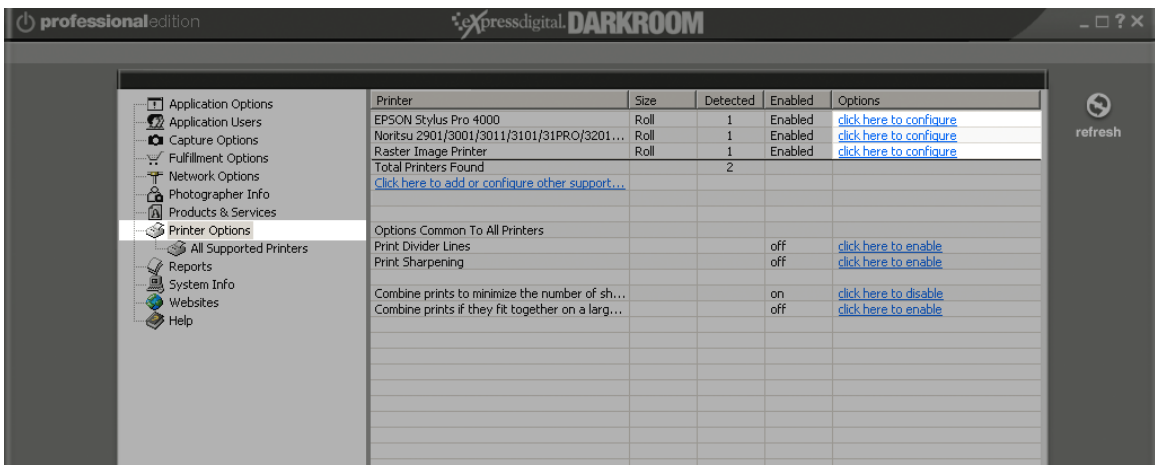
Select the color tab, check "Use Custom Profile" and "Browse" to select your printer's profile.


If necessary, multiples of the same printer can be installed and configured to accommodate different media types and profiles.

The Epson 4000 driver is notable in that it supports multiple media and profiles through a single driver. Each media type has a color profile association that is automatically used with each media selection. By default, Epson's profiles are chosen with the "Select automatically based on media type" option.
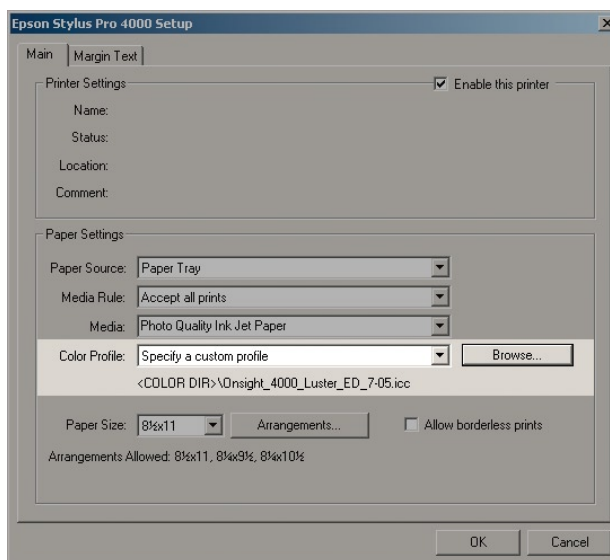
Advanced users may create their own custom profiles and select them with the "Specify a custom profile" option.
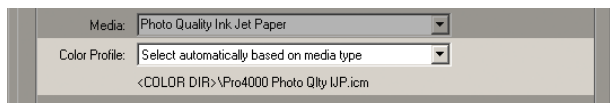
Some printers have the ability to handle their own print space conversion. Although there are always exceptions, we have found handling this print space conversion with ED to be faster, more convenient and more consistent in most situations.

Once all printer profiles are selected, ED will convert images to the appropriate printing space at the time of printing without any additional user intervention.

Printer Profiling

Advanced users should create custom profiles for all printing processes. ED supports version 2 profiles made from any of the popular profiling applications available form GretagMacbeth, XRite and others. ED interacts with some, but not all, printers in a way that can produce different results than other printing paths to the same printer. Because of this, we suggest profiling the entire printing process by printing the testchart through ED as opposed to bypassing it. In some situations, you may want to have ED profiles and non ED profiles for the same printing process if it is also used separately from ED.

PNG is the recommended file format for color testcharts as LZW TIFFs are not supported and the JPEG format can alter colors. Resave testcharts in the PNG format without conversions as necessary.

To profile a printing process, first go to the printer's options and uncheck the "Use Custom Profile" box.
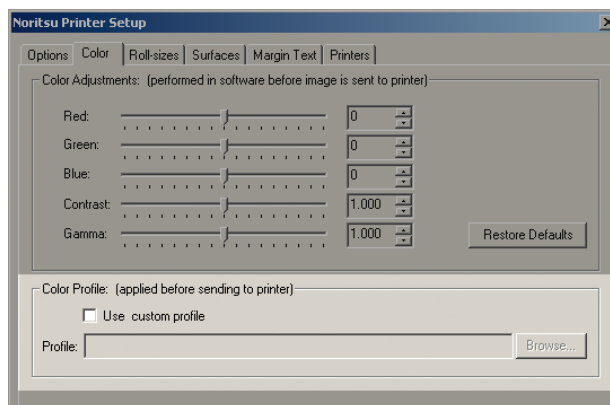
Photographic printers have an on-board linearization process that should be performed immediately prior to printing the testchart. Noritsu minilab owners should perform an emulsion change twice in a row (the second round improves linearization).

Load the appropriate color testchart into the Photo Library and check all Photo Workshop settings under each tab to ensure that no adjustments or color corrections are applied to the testchart. Under the color balance tab, choose "color profile..." and select none.
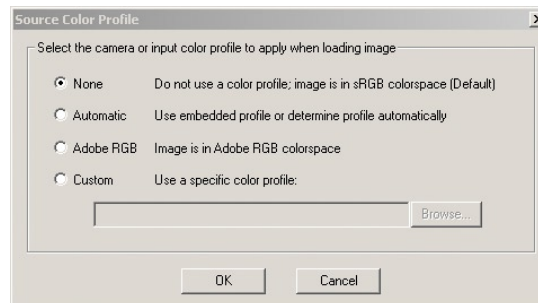
Print the testchart at its original size

Measure the testchart and build a profile with your spectrophotometer and profiling software.

Go to the printer's options, check the "Use Custom Profile" box and select the custom profile.
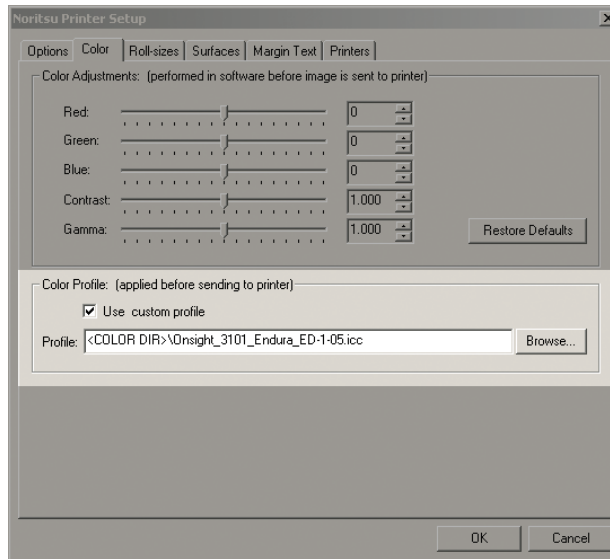
Evaluate the profile by printing an evaluation image immediately after creating the profile. Always verify a profile before putting it into production. Label and store this reference print for future process evaluation and troubleshooting purposes.

I've created an evaluation image for this purpose which you are welcome to download and use from http://www.on-sight.com/downloads.html. I would suggest using the sRGB evaluation image which is the last item on that page.

Specifications

ED uses the Microsoft Integrated Color Management (ICM) Color Management Module (CMM) with the Perceptual intent for all color space conversions. Profiles up to ICC Specification 2.4 are supported. All images, with or without color adjustments, are rendered using sRGB as the working space. RAW file adjustments are made at higher bit depths prior to conversion to sRGB.

All information is correct as of July 2005 for software versions 8.6.x

About the Author

Scott Martin is a digital imaging trainer and consultant who works one-on-one with professionals in their studios fine tuning the techniques and color management implementation necessary for top notch work. He has worked with digital photography since the 1980s and has guided thousands of photographers through the transition from film to digital photography.

Scott has traveled from England to Australia and many places in between helping Express Digital users optimize their shooting techniques, printing processes and color-managed workflows. He lives near Austin, Texas where the software is created and works closely with the development team to brainstorm new ideas and test alpha and beta versions.

Scott is also a fine art photographer whose work has been seen in numerous solo exhibitions and is included in many private and public collections. Scott is passionate about working with images and brings a printmaker's approach to making them look good. As a photographer himself, he understands the pride you take in your work and respects it as he would his own.

Visit www.on-sight.com for more information.