Color Printing
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This document explains how to manage color output on the Fiery EX for iGen4 and provides information about color profiles.

This document is part of a set that includes documentation for users and system administrators. For a complete description of your Fiery EX for iGen4, see the other documents available at your site.

For more information about supported operating systems and system requirements, see Welcome.

Terminology and conventions

This document uses the following terminology and conventions.

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<th>Term or convention</th>
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<td>Aero</td>
<td>Fiery EX (in illustrations and examples)</td>
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<td>Digital press</td>
<td>iGen4</td>
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<td>Titles in <em>italics</em></td>
<td>Other documents in this set</td>
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<tr>
<td>![Help icon]</td>
<td>Topics for which additional information is available by starting Help in the software</td>
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<tr>
<td>![Tip icon]</td>
<td>Tips and information</td>
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About this document

This document is organized to supply you with key information about managing the color output of your Fiery EX. To manage color in general, you use Command WorkStation. You can also manage color for a specific job by setting print options in the printer driver or in the job properties in Command WorkStation and Hot Folders.

This document covers the following topics:

• Setting values for ColorWise print options
• Managing color profiles and other color files
• Managing spot colors

**Note:** The Glossary in the *Fiery Color Reference* defines words in bold, for example, *output profile*, that appear throughout this document. Color terms and concepts, such as “color space,” “spot color,” “gamut,” and “source profile,” are used throughout this document. If you are new to desktop color, or if any terms are unfamiliar, see the *Fiery Color Reference.*
Key features of ColorWise

ColorWise is the color management system (CMS) built into the Fiery EX and designed to provide both casual and expert users with the best color output for a variety of purposes. The ColorWise default settings provide high-quality, out-of-box color from many Windows and Mac OS applications. This allows casual users to achieve quality output without knowing about or changing any color settings on the Fiery EX. ColorWise also allows expert users to obtain the best color output.

ColorWise features allow you to modify printing results. Depending on your particular needs, you can:

- Set the behavior of CMYK printing to emulate offset press standards.
- Match PANTONE and other spot colors for the best match when printing using four-color press conditions or presses with extra, custom plates.
- Select a rendering intent for RGB printing. Rendering intents allow for rich, saturated printing of presentation graphics, smooth, accurate printing of photographs, and relative or absolute colorimetric rendering for specialized needs.
- Define the source of incoming RGB color data for better color conversion of RGB data with no source information.
- Determine whether RGB data is converted into the full gamut of the digital press or is first converted into the gamut of another device, such as a press standard. This feature is useful for making one device behave like another for RGB data. It also allows you to evaluate the appearance of an RGB file under different printing conditions without having to convert the RGB file to CMYK first.

ColorWise color management (ColorWise) offers an open color architecture, allowing users to customize the Fiery EX to meet new printing needs as they arise. ColorWise supports ICC profiles, which are industry standard color profiles that describe the color behavior of a device. Note that ICC specification version 4 profiles (profile version 4.2.0.0) are supported as well as version 2. Downloading ICC profiles to the Fiery EX enables the Fiery EX to simulate a custom press (or another digital press), as well as accurately print colors from a particular monitor or scanner. In addition, you can create customized ICC profiles for the digital press.
Color management in Command WorkStation

Designed to give flexible control of color printing, Command WorkStation includes the following color management tools:

- **Color management**
  
  Command WorkStation allows you to set the default settings of the ColorWise print options for the Fiery EX. These default settings are applied to all print jobs sent to the Fiery EX, unless a user overrides them for an individual job by changing settings in the printer driver or in Job Properties.

- **Profiles**
  
  Command WorkStation allows you to manage all of the ICC profiles used in Fiery EX workflows. You can also create custom profiles by editing existing CMYK source or output profiles and saving them as new profiles.

- **Spot-On (spot colors)**
  
  Spot-On is a spot color (named color) manager. If Spot-On is available for your Fiery EX and is enabled, you can adjust and manage lists of spot colors and their CMYK equivalents. The matching lists of spot colors and CMYK values are known as spot color dictionaries. Spot-On allows you to edit spot color definitions on the Fiery EX and create custom spot color definitions and dictionaries.

Installing and starting Command WorkStation on a Windows or Mac OS computer is described in *Utilities*. Command WorkStation can be installed from the User Software DVD or from the Fiery EX over the network.
The ColorWise color management system provides print options that affect the output of objects in various color spaces. By specifying the appropriate settings for each print option, you can obtain the expected results for your jobs.

About this chapter

This chapter provides an overview of the ColorWise management system, which controls color on the Fiery EX (see page 10), and detailed explanations of each print option. For the location of each print option, see the following table.

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<th>ColorWise print option</th>
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This chapter also provides information about PostScript printer drivers and instructions for setting the ColorWise print options for Windows and Mac OS computers. For information about printer drivers, see page 28.
Managing color on the Fiery EX

Applications allow you to generate color data for the Fiery EX in many different color spaces. The most common type of color data produced from office applications is RGB, while prepress applications generally produce CMYK data. Desktop applications also generate spot colors, such as PANTONE colors. To complicate matters, a single page may contain a mix of RGB, CMYK, and spot colors. The Fiery EX allows you to control the printing of mixed-color documents with features that apply specifically to RGB, CMYK, or spot color data.

The following diagram illustrates the print options in the Fiery EX color management process that affect color data conversions. You can access these print options when you send a print job to the Fiery EX. Most of these options and settings are described in subsequent sections of this chapter.

RGB data ➪ RGB Source
Gray (RGB)
RGB/Lab Rendering Intent
Brightness
Black Text and Graphics
Separate RGB/Lab to CMYK Source
Output Profile

CMYK data ➪ CMYK/Grayscale Source
CMYK/Grayscale Processing Method
Gray (CMYK)
Brightness
Black Text and Graphics
Combine Separations
Output Profile

Spot color data ➪ Spot Color Matching

RGB Source or Device Link is the only color option that applies strictly to RGB color data. The other options that affect RGB color also affect the more rarely used Lab, XYZ, and other calibrated color spaces.

NOTE: With PostScript 3, a PostScript job can include calibrated CMYK (or CIEBasedDEFG) data. The RGB/Lab Rendering Intent print option, which normally affects only RGB data, affects calibrated CMYK data as well. The RGB Source or Device Link setting does not affect calibrated CMYK data.
Descriptions of ColorWise print options

The following sections provide detailed explanations of the ColorWise print options and how these options affect print jobs.

**NOTE:** For information about the following print options, see *Fiery Graphic Arts Package*.

- Halftone Simulation
- Paper Simulation
- 2-Color Print Mapping

Auto Trapping

Trapping is a technique where the size of objects is modified so that colors printed next to each other overlap slightly, to prevent white spaces between two colors. These white spaces, or “halos,” can be caused by factors such as misregistration, the physical properties of the dry inks, and the stiffness of the media. This illustration shows the same image with and without trapping.

If you enable the Auto Trapping option, trapping is applied to all of the objects in a job.

The Fiery EX is shipped with trapping values that are optimized for a Fiery-driven print device using regular paper. If these values do not provide the results necessary for the media that you use, and if Fiery Graphic Arts Package, Premium Edition is configured on the Fiery EX, you can modify the values to meet your requirements. For more information, see *Fiery Graphic Arts Package*. 
**Black Overprint**

The Black Overprint option allows you to specify whether or not black text or black text and graphics, defined as RGB=0, 0, 0, or as CMYK=0%, 0%, 0%, 100%, overprints colored backgrounds.

- **Text:** Black text overprints colored backgrounds, eliminating white gaps and reducing the halo effect or misregistration of colors. You can choose this setting only if the Black Text and Graphics option is set to Pure Black On.

- **Text & Graphics:** Black text and graphics overprint colored backgrounds, eliminating white gaps and reducing halo effects or misregistration of colors. You can choose this setting only if the Black Text and Graphics option is set to Pure Black On.

- **Off:** Black text or text/graphics knocks out colored backgrounds.

**NOTE:** Before sending the print job to the digital press, PostScript applications may perform their own black overprint conversions.

One example of how you might use this setting is a page that contains black text on a light blue background. The background blue is CMYK=40%, 30%, 0%, 0%. The black text is CMYK=0%, 0%, 0%, 100%.

- With Black Overprint set to Text or Text & Graphics, the final text or text/graphic portions of the page are overprinted, or combined with the underlying color. Black colors generated by applications (for example, RGB=0, 0, 0 or CMYK=0%, 0%, 0%, 100%) are printed using the black dry ink. This means that black text and line art does not exhibit halftone artifacts (as long as the digital press is calibrated correctly). No transition in cyan and magenta dry inks occurs. The quality of the output is improved, because it does not show artifacts near the edges of the black text.

- With Black Overprint Off, the border of the text or text/graphics is on an edge that has cyan and magenta dry inks on one side (outside the text) and black dry ink on the other side (inside the text). This transition may cause visible artifacts due to the practical limitations of the digital press.

**NOTE:** The reproduction of CMYK components is affected by the CMYK/Grayscale Source setting and calibration curve when CMYK is not 0%, 0%, 0%, 0%.
Black Text and Graphics

The Black Text and Graphics option affects black text and vector graphics. Under most circumstances, set this option to Pure Black On. When Black Text and Graphics is set to Pure Black On, black colors generated by applications (for example, RGB=0, 0, 0 or CMYK=0%, 0%, 0%, 100%) are printed using black dry ink only. The black text and line art do not exhibit halftone artifacts (as long as the digital press is calibrated correctly) and are not misregistered, since one dry ink is used. In addition, this setting eliminates blasting. This option must be set to Pure Black On if you want to set the Black Overprint option to Text or Text/Graphics.

You can also use the Black Text/Graphics option to convert rich blacks (any CMYK black where K=100% and C, M, or Y is not 0%) to K-only black. A rich black is intended to be a darker black, but on the iGen4, rich blacks actually print lighter than pure black.

For some jobs, it is preferable to set this option to Normal, for example, if the page includes gradient fills that use black. The following table describes the behavior of the Black Text and Graphics option with black data defined in different color spaces.
**NOTE:** Use the Black Text and Graphics option only when printing composites, not when printing separations.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RGB=0,0,0</strong></td>
<td>RGB=0,0,0 is printed according to the definition for RGB=0,0,0 in the output profile. This may be a rich black using all dry inks if the output profile specifies a rich black, or may be K-only if the output profile specifies K-only for RGB=0,0,0. The output is affected by the calibration curve.</td>
<td>RGB=0,0,0 is printed as K-only, using the black dry ink. All other RGB values are unaffected by the Black Text/Graphics setting.</td>
<td>RGB=0,0,0 is printed as K-only, using the black dry ink. All other RGB values are unaffected by the Black Text/Graphics setting.</td>
</tr>
<tr>
<td>(all other RGB values are unaffected by the Black Text/Graphics setting)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CMYK=0%,0%,0%,100%</strong></td>
<td>CMYK=0%,0%,0%,100% may be printed as K-only or as a rich black using all dry inks, depending on the CMYK/Grayscale Source and CMYK/Grayscale Processing Method settings. If CMYK/Grayscale Source is set to a specific profile, CMYK=0%,0%,0%,100% prints as K-only and the amount of black dry ink is limited by the CMYK Source profile and the calibration curve. Setting CMYK/Grayscale Source to ColorWise Off disables the simulation profile and the calibration curve. In this case, the black dry ink is not limited by the calibration curve.</td>
<td>CMYK=0%,0%,0%,100% is printed as K-only, using the black dry ink, regardless of the CMYK/Grayscale Source and CMYK/Grayscale Processing Method settings. All other CMYK values are unaffected by the Black Text/Graphics setting. Setting CMYK/Grayscale Source to ColorWise Off disables the simulation profile and the calibration curve. In this case, the black dry ink is not limited by the calibration curve.</td>
<td>CMYK=0%,0%,0%,100% is printed as K-only, using the black dry ink, regardless of the CMYK/Grayscale Source and CMYK/Grayscale Processing Method settings. If K=100% and CMY is not 0%, 0%, 0%, the object is printed as K-only, using the black dry ink, regardless of the CMYK/Grayscale Source and CMYK/Grayscale Processing Method settings. Setting CMYK/Grayscale Source to ColorWise Off disables the simulation profile and the calibration curve. In this case, the black dry ink is not limited by the calibration curve.</td>
</tr>
<tr>
<td>(all other CMYK values are unaffected by the Black Text and Graphics setting)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Spot Colors</strong></td>
<td>Standard spot color processing</td>
<td>Standard spot color processing</td>
<td>Standard spot color processing</td>
</tr>
<tr>
<td>(unaffected by the Black Text/Graphics setting)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** PostScript applications, such as QuarkXPress, may convert elements defined as RGB=0, 0, 0 to four-color CMYK black before sending the job to the Fiery EX. These elements are not affected by the Black Text and Graphics option. For more information, see *Fiery Color Reference.*
CMYK/Grayscale Processing Method

The CMYK/Grayscale Processing Method allows you to define your preferred CMYK-to-CMYK conversion technique.

- **Pure Primaries** prints primary colors in a job (C only, M only, or Y only) as primary colors, using only a single colorant. Secondary colors (M+Y, C+Y, and C+M) are printed as secondary colors, using only two colorants. The result is pure looking primary and secondary colors, with minimal banding in gradients.

  Pure Primaries compromises overall color accuracy. Do not use Pure Primaries if color accuracy is important, such as when printing press proofs.

- **Full (Source GCR)** provides a complete and accurate simulation based on colorimetric transformations. Hues are preserved, even for primary colors. The Gray Component Replacement level specified in the original (source) document is preserved. Process black expressed in CMY is reproduced using CMY dry ink. Full (Source GCR) is recommended for the highest quality press proofing applications.

- **Full (Output GCR)** is a complete and accurate simulation method based on colorimetric transformations. Hues are preserved, even for primary colors. With this method, the Gray Component Replacement (GCR) level that was specified in the original document is not preserved. Instead, all CMYK data is reseparated using the GCR level specified by the output profile. This simulation technique is similar to traditional ICC color matching methods and is more appropriate than Full (Source GCR) for full color printing designed for the press, but reproduced on your digital press.

**NOTE:** When you specify Pure Black On for Black Text and Graphics and Full (Output GCR) or Full (Source GCR) for CMYK/Grayscale Processing Method, the black text and graphics in your document are printed with 100% black-only dry ink.
**CMYK/Grayscale Source or Device Link**

The CMYK/Grayscale Source or Device Link print option allows you to print press proofs or simulations. This setting specifies the offset press standard or other color printing device that you want to simulate. This option affects CMYK data only.

When you specify a setting other than Bypass Conversion or ColorWise Off for the CMYK/Grayscale Source, the Fiery EX overrides source color space definitions or profiles that other color management systems may have specified. In cases where you do not want this setting to override another specified source color space, choose Bypass Conversion.

If your document contains an embedded CMYK profile that you want to use, select the Use Embedded Profile When Present (CMYK) option (see “Use Embedded Profile When Present (RGB and CMYK)” on page 25). In this case, the CMYK/Grayscale Source setting is ignored and the embedded profile is used instead.

In the printer driver, you can view an unlimited number of custom Full simulations created using Command WorkStation. The number of custom simulations is limited by the available disk space on the Fiery EX.

The CMYK/Grayscale Source setting you specify depends on the press standard for which the CMYK data was separated.

- For images that were separated using a custom separation (such as a separation produced with an ICC profile), choose the corresponding profile on the Fiery EX with the CMYK/Grayscale Source setting.

- For images that were separated for SWOP, choose SWOP as the CMYK/Grayscale Source setting.

To properly simulate a printed image that was separated using an ICC profile, the same profile must be present on the Fiery EX. For more information about importing ICC profiles to the Fiery EX, see Command WorkStation Help.

Two settings are available if you want no CMYK simulation:

- The Bypass Conversion setting sends your original CMYK data to the digital press with calibration applied, but without conversions to simulate another printer.

The Bypass Conversion setting is recommended if you use another color management system instead of ColorWise (for example, ColorSync or Photoshop). In this case, the Fiery EX is expecting to receive CMYK data already in the device color space of the Fiery EX. The Fiery EX will not convert the data, but it will apply calibration.

- The ColorWise Off setting sends your original CMYK data to the digital press without calibration applied and without conversions to simulate another printer. The CMYK data is still subject to maximum density constraints, however.

The ColorWise Off setting is not available as a setting in Command WorkStation and cannot be the default CMYK/Grayscale Source setting. You choose this setting for a specific job.
**NOTE:** When you print with the ColorWise Off setting, make sure the options you choose in your application do not cause the application to modify CMYK data. If you enable PostScript Color Management or include an embedded profile, the color data sent by the application is similar to Lab color. When you print with settings like Let Printer Determine Colors or Let Photoshop Determine Colors, the application either converts the CMYK data or tags it for color management. You must specify No Color Management in the application when you print with the ColorWise Off setting.

**Combine Separations**

The Combine Separations setting specifies how to print separated CMYK data. It supports: Cyan, Magenta, Yellow, Black.

With the Fiery Graphic Arts Package or Fiery Graphic Arts Package, Premium Edition, you can combine an unlimited number of spot color separations along with the CMYK separations. For more information, see *Fiery Graphic Arts Package*.

- **Off** prints each separation individually.
- **On** combines separations as a single, composite-color document, and automatically makes the settings for the following print options: Color Mode (CMYK) and Black Overprint (Off).

The results of combining the multiple plates are predictable and accurate, regardless of the original application used. This feature also fully supports DCS 2.0 file formats when included in a PostScript print job from a page layout application.

The following applications have been tested with Mac OS and Windows for compatibility with the Combine Separations option:

- Adobe Illustrator
- Adobe InDesign
- Adobe PageMaker
- Adobe FreeHand
- QuarkXPress

For information about using the Combine Separations option with applications such as Photoshop, see *Fiery Color Reference.*
**Composite Overprint**

When overlapping objects are printed, the foreground object can either overprint or knock out the background object. With overprinting, the color of the background object shows through the foreground object where they overlap, and the resulting color is a combination of the colors of the two objects. With a knock-out, the foreground object hides the background object where they overlap.

The Composite Overprint print option allows you to print overprinted objects as specified in the source file. By default, the Composite Overprint print option is off and overlapping objects print as knockouts.

**Note:** The Composite Overprint option does not overprint the foreground object if it is an RGB object.

The Composite Overprint print option is supported for PostScript and PDF jobs produced by the following applications:

- Adobe Acrobat
- Adobe Illustrator
- Adobe InDesign
- Adobe FreeHand
- QuarkXPress
- CorelDRAW

The 2-Color Print Mapping option is ignored when Composite Overprint is enabled.
**Gray (RGB) and Gray (CMYK)**

When Gray (RGB) is enabled, any RGB color where R=G=B is printed using only black dry ink instead of processed black. Similarly, when Gray (CMYK) is enabled, any CMYK color where C=M=Y=0 and K=any value is printed using only black dry ink instead of processed black.

You can choose to apply the Gray (RGB) or Gray (CMYK) option to either Text and Graphics or to Text, Graphics, and Images.

The following limitations apply:

- The Gray (RGB) or Gray (CMYK) option has no effect on a job that is pre-separated.
- If CMYK/Grayscale Processing Method is set to Pure Primaries, the Gray (CMYK) setting does not affect the output.
- If Separate RGB/Lab to CMYK Source is enabled, the Gray (RGB) option is set to Off. Likewise, if the Gray (RGB) option is not set to Off, you cannot enable Separate RGB/Lab to CMYK Source.
- If Black Text and Graphics is set to Pure Black On or Convert Rich Black to Pure, it takes precedence over Gray (RGB) or Gray (CMYK) for 100% black text and graphics.
- If a gray is specified as a spot color, the Gray (RGB) or Gray (CMYK) option does not affect that gray.

**Output Profile**

Because the output profile is applied to all data in the print job, make sure the profile you select is the right one for your job. The default output profile consists of a profile for your digital press that describes its color characteristics and a *calibration target* that describes the expected behavior of the digital press.

Use Command WorkStation to import your own output profile to the Fiery EX. Imported output profiles that do not already include a calibration target are at first associated with the calibration target that is tied to the default output profile. You can edit calibration target D-Max values separately.

Select the Use Media Defined Profile setting to automatically apply the output profile associated with the media type used in a print job rather than setting a specific output profile. For more information, see Command WorkStation Help.
PDF/X Output Intent

PDF/X is a subset of the PDF specification. PDF files can contain a variety of elements (text, graphics, even animations) and it is not always obvious how these elements should be displayed or printed. PDF/X was designed with a focus on high quality printing. It excludes the use of PDF features that are not appropriate for graphic arts and adds features that prevent ambiguities related to printing. A PDF/X compliant document contains embedded information about the intended printing conditions for the document.

The PDF/X Output Intent option, when enabled for a PDF/X job, specifies that the Fiery EX use the PDF/X output intent embedded in the PDF/X document. Typically, whether you use this option depends on whether you are using the Fiery EX for proofing or for production (final) printing.

Prints for proofing are expected to look exactly like the output of the final production device, regardless of the capabilities of the Fiery EX or the digital press. For instance, when proofing Newsprint, you want the color gamut of the digital press to be very limited compared to its capabilities. In production, you usually want to maximize the use of the digital press gamut by applying specific color features of the Fiery EX or the digital press. Even in production, however, you might choose to limit the color gamut in order to achieve consistency in the color produced by different devices.

The PDF/X Output Intent option only affects PDF/X files (conforming to the PDF/X3 or PDF/X-1a standard). It has no effect on non-PDF files or PDF files that are not PDF/X compliant. Profiles specified by PDF/X files must be embedded in the files, not referenced from an external location.

NOTE: With the Fiery Graphic Arts Package, Premium Edition option, you can use a Hot Folders filter to determine if a PDF file is PDF/X compliant. For information about this Hot Folders filter, see Hot Folders Help.

When PDF/X Output Intent is enabled and no other setting conflicts, the Fiery EX processes a PDF/X compliant file in a way that produces results defined by the intents and source color spaces embedded in the file. The Fiery EX ignores the CMYK/Grayscale Processing Method and CMYK/Grayscale Source options. The rendering intents in the PDF/X file are used and the printed output is limited to the color gamut specified by the output profile embedded in the file.

When PDF/X Output Intent is disabled, the Fiery EX ignores the PDF/X output intent.

You can specify the PDF/X Output Intent print option for a job in Job Properties in Command WorkStation but not when you print from the printer driver. PDF/X files can be imported directly to the Fiery EX using Command WorkStation or Hot Folders, but printer drivers always convert PDF before sending a job to the Fiery EX. The PDF/X Output Intent option does not appear in the printer driver.
When you enable PDF/X Output Intent, you must select the Use Embedded Profile When Present (RGB) option (see “Use Embedded Profile When Present (RGB and CMYK)” on page 25) so that the rendering intent embedded in the PDF/X file will be used. The PDF/X Output Intent and Use Embedded Profile When Present (RGB) options are both accessed from Expert Settings in the Color icon of Job Properties.

RGB/Lab Rendering Intent

The RGB/Lab Rendering Intent option specifies a rendering intent for color conversions. To control the appearance of images, such as prints from office applications or RGB photographs from Photoshop, select the appropriate rendering intent. The Fiery EX allows you to choose from the four rendering intents currently found in industry standard ICC profiles.

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<th>Fiery EX rendering intent</th>
<th>Best used for</th>
<th>Equivalent ICC rendering intent</th>
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<td><strong>Photographic:</strong> Typically results in less saturated output than presentation rendering when printing out-of-gamut colors. This style preserves tonal relationships in images.</td>
<td>Photographs, including scans and images from stock photography CDs and digital camera images.</td>
<td>Image, Contrast, and Perceptual</td>
</tr>
<tr>
<td><strong>Presentation:</strong> Creates saturated colors but does not match printed colors precisely to displayed colors. In-gamut colors, such as flesh tones, are rendered well. This style is similar to the Photographic rendering intent.</td>
<td>Artwork and graphs in presentations. In many cases, this style can be used for mixed pages that contain presentation graphics and photographs.</td>
<td>Saturation, Graphics</td>
</tr>
<tr>
<td><strong>Relative Colorimetric:</strong> Provides white-point transformation between the source and destination white points. For example, the bluish white color (gray) of a monitor is replaced by paper white. This style avoids visible borders between blank spaces and white objects.</td>
<td>Advanced use when color matching is important, but you prefer white colors in the document to print as paper white. This style may also be used with PostScript color management to affect CMYK data for simulation purposes.</td>
<td>Relative Colorimetric</td>
</tr>
<tr>
<td><strong>Absolute Colorimetric:</strong> Provides no white point transformation between the source and destination white points. For example, the bluish white color (gray) is not replaced by paper white.</td>
<td>Situations when exact colors are needed and visible borders are not distracting. This style may also be used with PostScript color management to affect CMYK data for simulation purposes.</td>
<td>Absolute Colorimetric</td>
</tr>
</tbody>
</table>
RGB Source or Device Link

The RGB Source or Device Link setting allows you to define the characteristics of the RGB data in your document so that the appropriate color conversion occurs on the Fiery EX. Commonly used monitor color spaces are available from the printer driver and the Fiery EX. For others, use Command WorkStation to download custom monitor or scanner profiles.

When you specify a setting for the RGB Source, the Fiery EX overrides source color space definitions or profiles that other color management systems may have specified. Because the color space definitions are overridden, the output from the Fiery EX is consistent across platforms.

If your document contains an embedded RGB profile that you want to use, select the Use Embedded Profile When Present (RGB) option (see “Use Embedded Profile When Present (RGB and CMYK)” on page 25). In this case, the RGB Source setting is ignored and the embedded profile is used instead.

The Fiery EX RGB Source options are as follows:

- **EFIRGB** specifies an EFI-defined color space recommended for users who have no detailed information about their RGB data.
- **sRGB (PC)** specifies the definition of a Windows computer monitor profile used as the default.
- **Apple Standard** specifies the definition of a Mac OS computer monitor profile used as the default.
- **Adobe RGB (1998)** is an Adobe-defined color space, used in pre-press as the default working space in Photoshop 5.
- **ColorMatch RGB** is an Adobe-defined color space, similar to sRGB (PC) but with a D50 white point instead of D65.
- **eciRGB** is the European Color Initiative (ECI) recommended space for use as an RGB working color space and color data exchange format for ad agencies, publishers, reproduction and printing houses.
- **Fiery RGB** is an EFI-defined color space recommended for users of office applications. This color space is similar to EFIRGB but is larger and can provide a more desirable blue output.
- **Splash RGB D65** is the default RGB color space recommended for Splash users who have no detailed information about their RGB data.

**NOTE:** With the Use Embedded Profile When Present (RGB) option enabled, PostScript RGB data that contains a source color space definition is converted using the RGB/Lab Rendering Intent option (see “RGB/Lab Rendering Intent” on page 21). Non-PostScript RGB data and PostScript RGB data that does not contain a source color space definition are converted using the EFIRGB source profile and Presentation rendering intent.
Separate RGB/Lab to CMYK Source

The Separate RGB/Lab to CMYK Source option determines how RGB colors (as well as Lab and XYZ colors) are converted to CMYK. The name of this option is meant to be descriptive, because the option defines the color spaces that are used by the Fiery EX to “separate” the RGB data into CMYK values.

The two choices available for this option determine whether RGB data is converted into the full gamut of the digital press (Separate RGB/Lab to CMYK Source disabled) or is first converted into the gamut of another digital printer or press standard (Separate RGB/Lab to CMYK Source enabled). This feature helps make one device behave like another for RGB data. For example, if a high-quality ICC profile is available for another print device, the digital press can simulate the behavior of that device.

Separate RGB/Lab to CMYK Source is also useful for prepress applications. For example, it allows you to experiment with the appearance of an RGB scan under different press printing conditions, without having to convert the RGB data to CMYK data for each condition. When the desired printing condition is found, convert the file to CMYK, using the same CMYK/Grayscale Source that you used during the experimentation.

**NOTE:** Use the Separate RGB/Lab to CMYK Source print option in conjunction with the Output Profile or CMYK/Grayscale Source print options.

- **Enabled** converts all RGB colors into the CMYK color space for a specified simulation (select the desired simulation with the CMYK/Grayscale Source print option).
- **Disabled** converts all RGB colors into the CMYK color space of your digital press.

Spot Color Matching

The Spot Color Matching option provides automatic matching of spot colors with their best CMYK equivalents.

- **On:** The Fiery EX uses a built-in table to generate the closest CMYK matches of spot colors your digital press can produce. (New tables are generated when you add new output profiles.)

  With Spot-On, the Fiery EX uses the CMYK matches determined through Spot-On (see page 47).

- **Off:** The Fiery EX processes the spot color as CMYK data and uses CMYK equivalents defined by the spot color manufacturer, such as PANTONE. These are the same CMYK equivalents used by applications that include spot color libraries.

**NOTE:** Spot colors that are not included in the built-in table are treated as CMYK.
For jobs that include spot colors, set Spot Color Matching to On unless you are printing press simulations. In that case, set Spot Color Matching to Off and choose the appropriate CMYK/Grayscale Source (see page 16).

For a PDF job that includes spot colors that are not included in the built-in table, setting Spot Color Matching to On retains the original spot colors. The Fiery EX references the built-in table to generate the closest CMYK matches of the original spot color.

**NOTE:** Use Spot Color Matching only when printing composites, not when printing separations.

**Spot Color Matching and the PANTONE Coated Color Reference**

The PANTONE Coated Color Reference prints differently depending on the Spot Color Matching setting (see Fiery Color Reference).

- **On:** The Fiery EX uses a built-in table or, with Spot-On, the Spot-On color dictionaries to generate the best matches for the PANTONE colors that your digital press can produce. The PANTONE number is displayed below each swatch.
  
  For more information about Spot-On, see page 47.

- **Off:** The Fiery EX prints swatches using the CMYK values recommended by Pantone, Inc. (and used by applications that provide PANTONE color libraries). The CMYK values used to generate the color, as well as the PANTONE number of the color, are printed below each swatch. These CMYK values are printed through the selected CMYK/Grayscale Source and Output Profile settings.

**Substitute Colors**

Spot-On allows you to create a list of substitute colors. These are colors that, when called for in a document by their RGB or CMYK values, are substituted with a different color having the CMYK values from the Spot-On color dictionary. This permits exact color control and overrides individual RGB and CMYK colors.

To enable substitute colors for a job, select the Substitute Colors option.

For more information about creating and using substitute colors, see Command WorkStation Help.
Use Embedded Profile When Present (RGB and CMYK)

If the Use Embedded Profile When Present (RGB) option is enabled, the Fiery EX ignores the RGB Source option and uses the RGB profile embedded in the print job as the RGB source profile. If the Use Embedded Profile When Present (RGB) option is disabled, the Fiery EX uses the profile specified in the RGB Source option.

Similarly, if the Use Embedded Profile When Present (CMYK) option is enabled, the Fiery EX ignores the CMYK/Grayscale Source option and uses the CMYK profile embedded in the print job as the CMYK source profile. If the Use Embedded Profile When Present (CMYK) option is disabled, the Fiery EX uses the profile specified in the CMYK/Grayscale Source option.

Specifying ColorWise print options

To modify Fiery EX printing behavior, do any of the following:

• Specify default values for ColorWise options in Color Setup in Command WorkStation. You can also set default values from Fiery EX Setup, as described in Configuration and Setup. The defaults apply to all subsequent print jobs unless you override them. A job uses the Fiery EX default settings (unless otherwise specified) at the time it is processed for printing, and not at the time it is sent to the Fiery EX Hold queue.

• Specify ColorWise options for an individual print job using the menus that appear in the printer driver.

• Specify ColorWise options for a job printed through Hot Folders using the Job Properties settings in Hot Folders.

• Specify ColorWise options for a job already submitted and held at the Fiery EX using the Job Properties settings in Command WorkStation.
For the location of each print option, see the following table.

<table>
<thead>
<tr>
<th>ColorWise print option</th>
<th>Color window of printer driver or Job Properties</th>
<th>Basic Settings of printer driver, Job Properties, or Color Setup</th>
<th>Expert Settings of printer driver, Job Properties, or Color Setup</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Trapping</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Black Overprint</td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Black Text and Graphics</td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>CMYK/Grayscale</td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Processing Method</td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>CMYK/Grayscale Source</td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>or Device Link</td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Combine Separations</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Composite Overprint</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gray (RGB and CMYK)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Output Profile</td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>PDF/X Output Intent</td>
<td></td>
<td>(Job Properties only)</td>
<td></td>
</tr>
<tr>
<td>RGB/Lab Rendering Intent</td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>RGB Source or Device Link</td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Separate RGB/Lab to CMYK Source</td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Spot Color Matching</td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Substitute Colors</td>
<td></td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Use Embedded Profile When Present</td>
<td></td>
<td></td>
<td>✔</td>
</tr>
</tbody>
</table>
Setting default values in Command WorkStation

Command WorkStation allows you to set the default values for the ColorWise print options and print settings for the Fiery EX.

These settings are applied to all print jobs sent to the Fiery EX, unless a user overrides them for an individual job by changing settings in the printer driver. These default settings can also be overridden using Command WorkStation Job Properties. In addition, the defaults set in Command WorkStation are automatically reflected in the printer driver and in Fiery EX Setup (for those options that can be set in Setup).

The ColorWise print option settings are in the Color Management tab under the Color Setup tab in the Device Center. For more information, see Command WorkStation Help.
Setting print options in the printer driver

The printer driver writes a PostScript file containing the instructions generated by your application and the settings for the ColorWise print options you selected. The printer driver then sends the PostScript file to the Fiery EX. The Fiery EX performs PostScript processing and color conversions and sends raster color data to the digital press.

Setting print options for Windows

This section explains how to set color management print options with the Adobe and Microsoft PostScript printer drivers for Windows, PostScript 3 printer drivers that take full advantage of the color features of the Fiery EX.

Before you proceed, do the following:

- Install the printer driver and the Fiery EX PPD (see Printing).
- Set up the Fiery EX for printing (see Printing).

**NOTE**: The following illustrations and instructions do not apply to all applications. Many applications, such as Adobe PageMaker, Photoshop, Adobe Illustrator, QuarkXPress, and CorelDRAW, have other color management options in addition to those presented in the printer driver. For information about specific applications, see Fiery Color Reference.

Use the following procedure to set the color options for Windows computers.
To set print options for Windows computers

1. Choose Print in your application.
2. Select Fiery EX as your printer and click Properties.
   In the Properties dialog box, the Fiery Printing tab is displayed.
3. Click the Color icon.
4. Specify the settings for the print options in the Color window.
   For information about ColorWise print options, see page 11.
5 **Click Expert Settings.**

The Advanced Edit window appears.

![Advanced Edit window](image)

**NOTE:** If the Basic Settings and Expert Settings buttons are not active, make sure that Two-Way Communication is enabled. For information about enabling Two-Way Communication, see printer driver Help.

6 **Click Server Defaults to display the default values currently set on the Fiery EX.**

7 **Specify settings for the ColorWise print options in each of the tabs.**

For most users, the default settings provide adequate color control. For information about individual print options, see page 11.

8 **Click OK to save the settings and close the Advanced Edit window.**

9 **Click OK to close the Properties window, and then click OK to send your job.**
Setting print options in Mac OS

This section explains how to set color management print options with the printer drivers for Mac OS.

Before you proceed, do the following:

- Install the Fiery EX PPD (see Printing).
- Set up the Fiery EX for printing (see Printing).

To set print options for Mac OS X computers

1. Choose Print in your application.

   The Print dialog box appears.

   ![Print dialog box](image)

2. Mac OS X v10.5 and 10.6: Expand the dialog box, if necessary, by clicking the arrow next to the Printer name.

3. Mac OS X v10.3.9 and 10.4.x: Click Copies & Pages, choose ColorSync from the drop-down list, and choose In Printer from the Color Conversion list.

   ![Print dialog box](image)
Mac OS X v10.5 and 10.6: Click Preview, choose Color Matching from the drop-down list, and select In Printer.

4 Choose Fiery Features from the drop-down list.

5 Select Two-Way Communication.

For information about enabling Two Way Communication, see printer driver Help.

6 Click Full Properties.
7 Click the Color icon.

The Color pane appears.

8 Specify settings for the print options in the Color pane.

For information about ColorWise print options, see page 11.
9 Click Expert Settings.

The Advanced Edit window appears.

![Advanced Edit Window]

**NOTE:** Alternatively, you can click Basic Settings to display the Color Management window, which also displays ColorWise print options. However, not all of the print options appear in the Color Management window.

10 Click Server Defaults to display the default values currently set on the Fiery EX.

11 Specify settings for the ColorWise print options in each of the tabs.

For most users, the default settings provide adequate color control. For information about individual print options, see page 25.

12 Click OK to save the settings and close the Advanced Edit window.

The Color pane reappears.

13 Click OK to close the Printing Preferences window, and then click Print to send your job.
The Fiery EX includes by default a number of RGB and CMYK profiles that you can use for printing through the RGB/Lab Source, CMYK/Grayscale Source, and Output Profile settings for a job. For more information about these options, see ColorWise Print Options.

You can manage the profiles on the Fiery EX using Command WorkStation. You can import or delete other profiles as well.

**Color files**

The User Software DVD includes a number of files, including color profiles, that are useful for color management. To add color profiles to the Fiery EX:

- Install them on your computer.
- Use Command WorkStation to import them to the Fiery EX.

For information about importing profiles to the Fiery EX using Command WorkStation, see Command WorkStation Help.

**Installing additional ICC profiles on your computer**

You can install (copy) additional ICC profiles from the User Software DVD or the Fiery EX to your computer. Use the ICC profiles with applications that support ICC standards, such as Adobe Photoshop.

<table>
<thead>
<tr>
<th>Location on User Software DVD</th>
<th>Profiles</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICC folder (Windows)</td>
<td>EFI RGB provides an EFI-defined color space for RGB data.</td>
</tr>
<tr>
<td>or ColorSync folder (Mac OS)</td>
<td>The following output profiles, which are the factory default output profiles, are designed for optimal color output when printing on an appropriate paper. These output profiles also reside on the Fiery EX by default:</td>
</tr>
<tr>
<td></td>
<td>• Fiery Xerox DCElite G 80T 150 Dot v1F</td>
</tr>
<tr>
<td></td>
<td>• Fiery Xerox DCElite G 80T 175 Dot v1F</td>
</tr>
<tr>
<td></td>
<td>• Fiery Xerox DCElite G 80T 200 Dot v1F</td>
</tr>
<tr>
<td></td>
<td>• Fiery Xerox DCElite G 80T 300 Line v1F</td>
</tr>
</tbody>
</table>
Location on User Software DVD
Adobe ICC Profiles folder (inside the Windows Color Files\ICC Profiles folder or Mac Color Files: ICC Profiles folder)

Profiles
These profiles were created by Adobe Systems, Inc. For more information, see the documents included in the folder.

CMYK Profiles:
- EuropeISOCoatedFOGRA27.icc
- EuroscaleUncoated.icc
- JapanColor2001Coated.icc
- JapanColor2001Uncoated.icc
- JapanColor2002Newspaper.icc
- JapanWebCoated.icc
- USSheetfedCoated.icc
- USSheetfedUncoated.icc
- USWebCoatedSWOP.icc
- USWebUncoated.icc

RGB Profiles:
- AdobeRGB1998.icc
- AppleRGB.icc
- ColorMatchRGB.icc
- sRGB Color Space Profile.icm
Location on User Software DVD
ECI folder
(inside the Windows Color Files\ ICC Profiles folder or Mac Color Files: ICC Profiles folder)

Profiles
These profiles were created by the European Color Initiative (ECI). For more information, see the documents included in the CMYK Profiles folder and the RGB Profiles folder, as well as the ECI web site at www.eci.org.

CMYK Profiles:
- ISOcoated_v2_300_eci.icc
- ISOcoated_v2_eci.icc
- ISOuncoated.icc
- ISOuncoatedyellowish.icc
- ISOwebcoated.icc
- SC_paper_eci.icc

RGB Profiles:
- ECI-RGB.V1.0.icc
- eciRGB_v2.icc
- eciRGB_v2_ICCv4.icc
<table>
<thead>
<tr>
<th>Location on User Software DVD</th>
<th>Profiles</th>
</tr>
</thead>
<tbody>
<tr>
<td>EFI Support folder (inside the Windows Color Files\ICC Profiles folder or Mac Color Files: ICC Profiles folder)</td>
<td>These profiles were created by EFI. For more information, see the General Requirements for Applications in Commercial Offset Lithography (GRACoL) web site at <a href="http://www.gracol.org">www.gracol.org</a>, the Fogra web site at <a href="http://www.fogra.org">www.fogra.org</a>, and the Specifications Web Offset Publications (SWOP) web site at <a href="http://www.swop.org">www.swop.org</a>.</td>
</tr>
</tbody>
</table>

**CMYK Profiles:**
- EFIEURO.icc
- EFISWOP.icc
- Enterprise CMYK.icc
- GRACoL2006_Coated1_EFI.icc
- ISOCoated.icc
- ISOCoated_FOGRA39L_EFI.icc
- ISOUncoated_FOGRA29L_EFI.icc
- SWOP2006_Coated3_EFI.icc
- SWOP2006_Coated5_EFI.icc

**Japan Profiles:**
- EFIDIC.ICC
- EFIJMPA2.icc
- JC2001_type1_EFI.icc
- JC2001_type2_EFI.icc
- JC2001_type3_EFI.icc
- JC2001_type4_EFI.icc
- TOYO Offset Coated 2.0.icc

**RGB Profiles:**
- EFISRGB.ICC
- Fiery RGB v2.icc
- Fiery RGB v4.icc
- Fiery RGB v5.icc
- RGB D65 (Splash).icc
For most ICC-aware applications, you must install the files in a folder named Color (Windows) or a folder named Profiles in the Library: ColorSync folder (Mac OS). For use with the Fiery EX, you can copy the files to a folder of your choice.

**To install ICC profiles on a Windows computer from the User Software DVD**

1. Insert the User Software DVD into the DVD drive.
2. Open the folder containing the profile.
3. Right-click the profile that you want, and then click Install Profile.
   The profiles are installed automatically to the Windows\System32\spool\drivers\color folder on your computer.

**To install ICC profiles on a Mac OS computer from the User Software DVD**

1. Insert the User Software DVD into the DVD drive.
2. Open the folder containing the profile.
3. Copy the profiles into Library: ColorSync: Profiles.
   **NOTE:** You must be logged in as an administrator.

**To install ICC profiles on a Windows computer from the Fiery EX over the network**

1. Browse for the Fiery EX over the network, using either the IP address or the DNS server name.
2. Type the user name and password, if required.
   Consult your administrator to see if this information is required.
3. Double-click the PC_User_SW directory.
4. Open the ICC folder.
5. Right-click the profile that you want, and then click Install Profile.
   The profiles are installed automatically to the Windows\System32\spool\drivers\color folder on your computer.
To install ColorSync profiles on a Mac OS computer from the Fiery EX over the network

1. Choose Connect to Server from the Go menu.
2. Type smb:// followed by the IP address of the Fiery EX and click Connect.
   If you cannot locate your Fiery EX, contact your administrator.
3. Type the user name and password if required.
   Consult your administrator to see if this information is required.
4. Double-click the Mac_User_SW directory.
5. Open the ColorSync folder.
6. Copy the profiles into Library: ColorSync: Profiles.

   NOTE: You must be logged in as an administrator.

   On Mac OS, see the ColorSync documentation for setting ColorSync profiles, such as EFIRGB.
Other color files

You can copy additional color files from the User Software DVD or the Fiery EX. These files are useful for color matching and for calibration.

Windows Color Files folder or Mac Color Files folder


PANTONE Book.ps: A 20-page, Letter-size PostScript file that indicates the closest equivalent of PANTONE coated colors that the Fiery EX and your digital press model can produce. The method used to print the PANTONE Book.ps file differs, depending on the Spot Color Matching setting. For more information, see “Spot Color Matching” on page 23.

RGB page 01.doc: A Microsoft Word file that you can print to view available RGB colors.

RGB page 02.ppt: A Microsoft PowerPoint file you can print to view available RGB colors.

Fiery ColorBar.eps: Used for the Control Bar feature. For more information about Control Bar, see Fiery Graphic Arts Package.

Ugra Fogra-MediaWedge V2.2x_EFIv1.eps: Used for the Ugra/FOGRA Media Wedge feature. For more information about this feature, see Fiery Graphic Arts Package.


The numbers in the file names refer to the number of patches on the page. The Custom files allow you to download measurement patches that incorporate the current calibration set of the digital press. The Standard files allow you to download standard measurement patches that bypass the current calibration set of the digital press.

Note: These files are provided for expert users and should not be used for day-to-day calibration.
Halftone Calibration Files folder
(inside the Windows Color Files\ Calibration Files folder
or Mac Color Files: Calibration Files folder)

Photoshop folder
(inside the Windows Color Files\ Calibration Files\ Halftone Calibration Files folder
or Mac Color Files: Halftone Calibration Files folder)

Images of measurement pages for various calibration instruments and page sizes, used for calibrating the Fiery EX for different halftone screens. Files are provided for Adobe Photoshop and for other applications. For more information about halftone calibration, see *Fiery Graphic Arts Package.*

**NOTE:** For the X-Rite DTP32 Series II densitometer, use the calibration file for the X-Rite DTP32 densitometer.

**NOTE:** Files for the ED-100 densitometer are provided. However, the ED-100 is not a supported measurement device.

The following halftone calibration files are provided for Adobe Photoshop:

- DTP32_A3.psd
- DTP32_A4.psd
- DTP32_Letters.psd
- DTP32_Tabloid.psd
- DTP41_A3.psd
- DTP41_A4.psd
- DTP41_Letters.psd
- DTP41_Tabloid.psd
- ED100_A3.psd
- ED100_A4.psd
- ED100_Letters.psd
- ED100_Tabloid.psd
- ES1000_A3.psd
- ES1000_A4.psd
- ES1000_Letters.psd
- ES1000_Tabloid.psd

**NOTE:** For the X-Rite DTP32 Series II densitometer, use the calibration file for the X-Rite DTP32 densitometer.

**NOTE:** Files for the ED-100 densitometer are provided. However, the ED-100 is not a supported measurement device.
Managing profiles on the Fiery EX

Command WorkStation allows you to import ICC profiles to the Fiery EX, export profiles, delete profiles (except for default profiles), and set the properties of profiles. You can also create custom CMYK source or output profiles by editing an existing profile and then saving it as a new profile. These features are in the Profiles tab under the Resources tab in the Device Center. For more information, see Command WorkStation Help.
COLOR PROFILES

Profile Manager

- CMYK Source Profiles
  - Description
  - Label in Driver
  - ISO Coated 300 ISO (1)
  - ISO Uncoated 300 ISO (2)
  - ICC Coated PANTONE 11PT
  - ICC Uncoated PANTONE 11PT
  - Uncoated CIE 90TR
  - Coated CIE 90TR
  - Enterprise CMYK for Splish
  - SwissColor CMYK
  - SWOP Color 500 CMYK
  - SWOP Color 500 CMYK
  - TOYO Coated 2.0
  - TOYO Coated

- RGB Source Profiles
- Output Profiles
- Device Link Profiles

Click to edit Color Settings or Spot Colors
Profiling on the digital press

The profiling feature of the digital press can be used to create custom output profiles to use when printing on the Fiery EX. Along with the calibration feature of the digital press, profiling enhances the quality and consistency of the color output.

The calibration and profiling features of the digital press can be accessed from the digital press interface. To access the calibration and profiling features, choose Options > Color Maintenance.

NOTE: For more information about the digital press interface, see the documentation that accompanies the digital press.

Color Maintenance has two tabs: Auto and Expert. Auto allows you to perform all color maintenance tasks in sequence. Expert allows you to choose a task.

The following tasks are associated with calibration and profiling:

- Engine Check: The digital press automatically validates its calibration state.
- System Check: The digital press automatically checks the color output, using the output profiles that reside on the Fiery EX. If no color problems are reported, you do not need to generate custom profiles.
- DFE Profiling: The digital press generates a custom profile for the media you specify.

NOTE: If System Check or DFE Profiling appear dimmed, check the connection between the Fiery EX and the digital press.

Before creating a custom profile for a specific media, assign the media to a tray using the digital press interface and load the media into the tray. Be sure to load at least 45 sheets, because the digital press will use this many sheets to print the measurement pages (pages of color swatches).
To create a custom profile

1. In the digital press interface, choose Options > Color Maintenance and click the Expert tab.
2. Select DFE Profiling.
3. Select your media from the list.
4. To use a different Halftone Screen from the one displayed, click Options and select one of four settings.
5. Click Start.

The digital press prints and measures the patch pages. Status messages appear in the digital press interface. When the digital press is done measuring, it outputs the measurement pages.

The custom profile name contains the media name plus the halftone setting. The custom profile is associated with the media in the media catalog. The Paper Catalog on the Fiery EX is also updated with the new profile association, which appears in the Media Front Color Profile, Media Back Color Profile, and Media Profile attributes for the media.

**NOTE:** For more information about the Paper Catalog on the Fiery EX, see *Utilities*.

The custom profile is imported to the Fiery EX. You can copy and export the profile in Profile Manager, which is part of Command WorkStation. You can select the profile as the setting for the Output Profile print option. However, you do not need to select the profile explicitly if Output Profile is set to Use Media Defined Profile (the default setting), because the Fiery EX automatically selects the output profile associated with the media that you select.

**NOTE:** For more information about Profile Manager on the Fiery EX, see Command WorkStation Help. For more information about the Output Profile print option, see “Output Profile” on page 19.

If you print a job using this media from the Paper Catalog, the following print option settings are set:

- **Output Profile = Use Media Defined Profile**
  
  This setting lets the digital press choose the correct profile for the media.


  These settings let the digital press choose the correct halftone setting that was used to create the profile for the media.
SPOT-ON

The Spot Color Matching print option automatically matches spot colors with their best CMYK equivalents so that spot colors can be simulated using the CMYK dry ink of the digital press. However, you may want to adjust the default CMYK equivalents to achieve a better match for your specific printing conditions. You can modify spot colors using the Spot-On spot color editor in Command WorkStation.

In addition to managing “named” colors, Spot-On allows you to create a list of “substitute” colors. These are colors that, when called for in a document by their RGB or CMYK values, are substituted with a different color having the CMYK values from the Spot-On color dictionary. This permits exact color control and overrides individual RGB and CMYK colors.

If Two-Color Print Mapping is enabled, Spot-On also allows you to assign spot colors and process colors to the generic colors that are used in a job. The Two-Color Print Mapping feature is designed for print shop operators to do the proofing for a two-color press. You can print a two-color job to a two-color device by mapping the colors in a job to the colors that are already created on the device. For information about Two-Color Print Mapping, see Fiery Graphic Arts Package.

Using Spot-On

Spot-On allows you to adjust and manage lists of spot colors and their CMYK equivalents. The matching lists of spot colors and CMYK values are known as Spot Color Dictionaries. Spot-On allows you to maintain multiple Spot Color Dictionaries for each output profile on the Fiery EX.

To use Spot-On, you must specify the output profile associated with the Spot Color Dictionary that you want to edit.

If you select Output profile X and redefine PANTONE 123 from 30%M to 50%M using Spot-On, you will get 50%M when you print a job with Output profile X. If you print a job with Output profile Y, you will get the original value.
If you select Output profile X and create a custom color named “My Purple” and define it as 80%C 40%M, ColorWise automatically calculates the Lab values using Output profile X and creates new CMYK values for use with Output profile Y.

The Spot-On feature is in the Spot Colors tab under the Resources tab in the Device Center. For more information about using Spot-On, see Command WorkStation Help.

**NOTE:** To use the Spot-On features with named colors, you must enable the Spot Color Matching print option. For more information about this option, see page 23.

**NOTE:** Spot colors identified by names are printed with their defined CMYK values. Edits to an output profile made in Command WorkStation do not affect how spot colors print.

Some Spot-On features require that a job be displayed with correct colors on your monitor. To display the colors correctly on your monitor, you must set up the monitor display according to the manufacturer’s recommendations, and specify the correct monitor profile for your monitor.
Specify the following settings for the monitor display:

- At the monitor: Brightness, Contrast, and Color Temperature
- From the control panel of the operating system: Resolution, Refresh rate, and Number of colors

For more information about setting up your monitor and the monitor profile, see the documentation that accompanies the monitor.

**NOTE:** The edits to a job made with the color adjustment features in ImageViewer affect all colors in the job, including spot colors. For more information about ImageViewer, see *Fiery Graphic Arts Package.*

**NOTE:** You cannot use the Substitute Colors and Postflight features at the same time. These print options are constrained from the printer driver.
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