



Fiery® EXP6000/EXP5000 Color Server

SERVER & CONTROLLER SOLUTIONS



Color Printing

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CONTENTS

| | |
|---|----|
| INTRODUCTION | 7 |
| Terminology and conventions | 7 |
| About this manual | 8 |
| Key features of ColorWise | 9 |
| COLORWISE PRO TOOLS | 10 |
| About this chapter | 11 |
| Setting up ColorWise Pro Tools on a Windows computer | 12 |
| Installing ColorWise Pro Tools | 12 |
| Installing the ICC profiles | 12 |
| Configuring the connection | 14 |
| Editing the configuration | 16 |
| Setting up ColorWise Pro Tools on a Mac OS computer | 17 |
| Installing ColorWise Pro Tools | 17 |
| Installing MRJ | 17 |
| Uninstalling MRJ | 18 |
| Installing and setting the ColorSync profiles | 18 |
| Configuring the connection | 21 |
| Editing the configuration | 23 |
| Using ColorWise Pro Tools | 24 |
| Using Calibrator | 24 |
| Using Color Editor | 24 |
| Using Profile Manager | 25 |
| Using Spot-On | 27 |
| Using Color Setup | 39 |

| | |
|--|----|
| CALIBRATION | 40 |
| About this chapter | 41 |
| Calibrating with ColorWise Pro Tools Calibrator | 42 |
| Starting Calibrator | 42 |
| Expert mode | 43 |
| Restoring default calibration measurements | 45 |
| Calibrating with the DTP32 | 45 |
| Calibrating with the DTP41 | 47 |
| Calibrating with the ES-1000 | 49 |
| Calibrating for custom halftone screens | 53 |
| Understanding calibration | 55 |
| An overview of calibration | 55 |
| How calibration works | 55 |
| Scheduling calibration | 57 |
| Checking calibration status | 57 |
| COLORWISE PRINT OPTIONS | 58 |
| About this chapter | 58 |
| Managing color on the Fiery EXP6000/EXP5000 | 59 |
| ColorWise print options | 60 |
| Black Detection | 60 |
| Black Overprint | 60 |
| Combine Separations | 61 |
| CMYK Simulation Profile | 61 |
| CMYK Simulation Method | 62 |
| Output profile | 63 |
| Pure Black Text/Graphics | 64 |
| Rendering Styles | 65 |
| RGB Separation | 66 |
| RGB Source Profile | 66 |
| Spot Color Matching | 67 |

| | |
|--|----|
| Printer drivers and print options | 69 |
| Setting print options for Windows | 69 |
| Setting color management print options for Mac OS | 70 |
| | |
| COLOR MEASUREMENT INSTRUMENTS | 76 |
| <hr/> | |
| Using the DTP32 | 76 |
| Setting up the DTP32 | 76 |
| Calibrating the DTP32 | 78 |
| <hr/> | |
| Using the DTP41 | 79 |
| Setting up the DTP41 | 79 |
| Calibrating the DTP41 | 81 |
| <hr/> | |
| Using the ES-1000 | 84 |
| Setting up the ES-1000 | 84 |
| Calibrating the ES-1000 | 84 |
| | |
| IMPORTING DENSITY MEASUREMENTS | 85 |
| <hr/> | |
| Simple ASCII Import File Format | 85 |
| Example of 1D Status T density for EFI 21 patch page | 86 |
| Example of 1D Status T density for EFI 34 patch page | 86 |
| Example of 1D Status T density for an arbitrary page | 87 |
| | |
| INDEX | 89 |





INTRODUCTION

This manual explains how to manage color output on the Fiery EXP6000/EXP5000 Color Server and provides information about calibration and color profiles.

This manual is part of a set of documentation that includes manuals for users and system administrators. For a complete description of your Fiery EXP6000/EXP5000 Color Server, see the other manuals available at your site.

Terminology and conventions

This manual uses the following terminology and conventions.

| Term or convention | Refers to |
|---|---|
| Aero | Fiery EXP6000/EXP5000 (in illustrations and examples) |
| ColorWise Pro Tools | EFI Fiery ColorWise Pro Tools |
| Command WorkStation | EFI Command WorkStation, Windows Edition and EFI Command WorkStation, Macintosh Edition |
| Digital press | DocuColor 6060/5252/2060/2045 |
| Fiery EXP6000/EXP5000 | Fiery EXP6000/EXP5000 Color Server |
| Titles in <i>italics</i> | Other books in this documentation set |
| Windows | Microsoft Windows 98, Windows Me, Windows NT 4.0, Windows 2000, Windows XP, Windows Server 2003 |
|  | Topics for which additional information is available by starting Help in the software |
|  | Tips and information |
|  | Important information |
|  | Important information about issues that can result in physical harm to you or others |

NOTE: Command WorkStation, Macintosh Edition is also known as Command WorkStation LE.

About this manual

This manual is organized to supply you with key information about managing the color output of your Fiery EXP6000/EXP5000.

- [ColorWise Pro Tools](#) describes the installation and configuration of ColorWise Pro Tools, and explains how to use Color Editor, Profile Manager, and Color Setup tools.
- [Calibration](#) provides an overview of calibration and describes how to calibrate the Fiery EXP6000/EXP5000 using various methods with ColorWise Pro Tools Calibrator.
- [ColorWise Print Options](#) describes the ColorWise print options and how to set them from Windows or Mac OS computers.
- [Color Measurement Instruments](#) provides information about color measurement instruments, available as separately purchased options.
- [Importing Density Measurements](#) describes the Simple ASCII File Format (SAIFF), which can be used to import toner density measurements from measurement devices.

Color terms and concepts, such as “**color space**,” “**spot color**,” “**gamut**,” and “**source profile**” appear in bold throughout this manual. If you are new to desktop color, or if any terms are unfamiliar, see *Glossary*, which is a separate document in this set.

NOTE: This manual uses Fiery EXP6000 screen captures. The interface may vary slightly depending on whether you are using Fiery EXP5000 or Fiery EXP6000. Major differences are noted.

Key features of ColorWise

ColorWise is the **color management system (CMS)** built into the Fiery EXP6000/EXP5000 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 EXP6000/EXP5000.

For consistent color, calibrate the Fiery EXP6000/EXP5000 on a regular basis. ColorWise Pro Tools includes an easy-to-use calibrator, which allows you to calibrate using an optional **spectrophotometer** or **densitometer** (see “Calibration” on page 40).

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

- Set the behavior of **CMYK** printing to emulate **DIC**, **Euroscale**, and **SWOP** 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 **color rendering dictionary** (CRD), also called a rendering style, for **RGB** printing. CRDs 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 screen matching and provide 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. It also allows you to evaluate the appearance of the RGB file under different printing conditions without having to reprocess the RGB data each time.

ColorWise color management (ColorWise) offers an open color architecture, allowing users to customize the Fiery EXP6000/EXP5000 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. Downloading ICC profiles to the Fiery EXP6000/EXP5000 enables the Fiery EXP6000/EXP5000 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.

ColorWise also allows you to use any **Status T** densitometer by importing data in a standard file format (see “Importing Density Measurements” on page 85). In this case, it is important to note that the quality of the instrument used determines the quality of the **calibration**.

COLORWISE PRO TOOLS

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 color settings on the Fiery EXP6000/EXP5000. The ColorWise color management system (CMS) also allows expert users to obtain the best color output. ColorWise Pro Tools allows users to customize settings to achieve the best output for a variety of purposes.

Designed to give flexible control of color printing, ColorWise Pro Tools includes the following color management tools:

- Calibrator (calibrate the Fiery EXP6000/EXP5000 in various ways)
- Color Editor (customize simulation and output profiles)
- Profile Manager (manage profiles)
- Spot-On (define CMYK equivalents for spot colors)
- Color Setup (set defaults for ColorWise print options)

About this chapter

This chapter describes the procedures for installing, configuring, and using ColorWise Pro Tools on Windows and Mac OS computers.

| Platform | To do this | See |
|--------------------|--------------------------------|-------------------------|
| Windows | Install ColorWise Pro Tools | page 12 |
| | Install the ICC profiles | page 12 |
| | Configure the connection | page 14 |
| | Modify the configuration | page 16 |
| Mac OS | Install ColorWise Pro Tools | page 17 |
| | Install MRJ | page 17 |
| | Install the ColorSync profiles | page 18 |
| | Configure the connection | page 21 |
| | Modify the configuration | page 23 |
| Windows and Mac OS | Use Calibrator | page 24 |
| | Use Color Editor | page 24 |
| | Use Profile Manager | page 25 |
| | Use Spot-On | page 27 |
| | Use Color Setup | page 39 |

Setting up ColorWise Pro Tools on a Windows computer

The following sections describe how to install ColorWise Pro Tools and other files and how to configure the connection on a Windows computer.

Installing ColorWise Pro Tools

To install the software, you must have Service Pack 4 installed on a Windows 2000 computer, or Service Pack 1 on a Windows XP computer. If not, a warning message alerts you to install the Service Pack.

To use ColorWise Pro Tools on a Windows computer, you must install the “sj141_02.exe” file. If this file is not installed on your computer, the ColorWise Pro Tools installer automatically initiates the installation process. Follow the on-screen instructions.

TO INSTALL COLORWISE PRO TOOLS ON A WINDOWS COMPUTER

- 1 **Open the ColorWise Pro Tools folder on the User Software CD.**
- 2 **Double-click the Setup.exe icon.**
- 3 **Follow the on-screen instructions to complete installation.**

Installing the ICC profiles

You can copy additional ICC profiles from the User Software CD to your computer. Use the ICC profiles with applications that support ICC standards, such as Adobe Photoshop. For most ICC-aware applications, you must install the files in a folder named Color in the System Folder. For use with ColorWise Pro Tools, copy the files to a folder of your choice.

TO INSTALL THE ICC PROFILES ON A WINDOWS COMPUTER

- 1 **Insert the User Software CD into the CD-ROM drive.**
- 2 **Open the ICC folder.**
- 3 **Windows 98/Me: Copy the profiles to the Windows\System\Color folder.**

Windows NT 4.0 or Windows 2000: Copy the profiles to the Winnt\System32\Color folder.

NOTE: If a folder named “Color” does not exist in the System32 folder, create one and copy the profiles into it.

Windows XP or Windows Server 2003: Right-click the profile that you want, and then click Install Profile.

NOTE: The profiles are installed automatically to the Windows\System32\spool\drivers\color folder on your computer.

Other color files

You can copy additional color files from the User Software CD. Many of the files are PostScript files that you can download and print using Command WorkStation.

Windows Color
Files folder
(inside
Windows_User_SW)

CMYK Color Reference.ps: An 11-page, Letter-size PostScript file used for reference when defining CMYK colors in applications.

PANTONE Book.ps: A 19-page, Letter-size PostScript file that indicates the closest equivalent of PANTONE coated colors that the Fiery EXP6000/EXP5000 and your digital press model can produce. The method used to print the Pantone.ps file differs depending on the Spot Color Matching setting. For more information, see “ColorWise Print Options” on page 58.

Rgb page 01.doc: A file you can print from Microsoft Word 97 or later to view available RGB colors.

Rgb page 02.ppt: A file you can print from PowerPoint 6.0 or later to view available RGB colors.

Calibration Files
folder (inside
Windows Color
Files folder)

Custom21.ps, Custom34.ps, Stand21.ps, and Stand34.ps.: PostScript files of color patches for obtaining measurements.

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.

Configuring the connection

The first time you start ColorWise Pro Tools, you must configure the connection to the Fiery EXP6000/EXP5000.

BEFORE YOU BEGIN

- **Print the Configuration page from Command WorkStation and note the IP address of the Fiery EXP6000/EXP5000.**

This page contains information you need when configuring the connection, such as the IP address. For TCP/IP installations, you can use the Domain Name Server (DNS) name of the Fiery EXP6000/EXP5000 instead of the IP address. Make sure the Fiery EXP6000/EXP5000 is listed in a DNS used by your network. For more information, see the documentation that accompanies your Windows system.

TO CONFIGURE THE CONNECTION FOR COLORWISE PRO TOOLS

- 1 **Start ColorWise Pro Tools.**
- 2 **If the No Servers Configured dialog box appears, click OK.**
- 3 **If the Choose Printer Device dialog box appears, click Add.**
- 4 **Enter the appropriate information for the Fiery EXP6000/EXP5000.**

Nickname: Type a name for the Fiery EXP6000/EXP5000. This name does not have to match the actual Server Name of the Fiery EXP6000/EXP5000.

NOTE: The nickname cannot contain the following characters:
[] _ " ' <space> <tab>

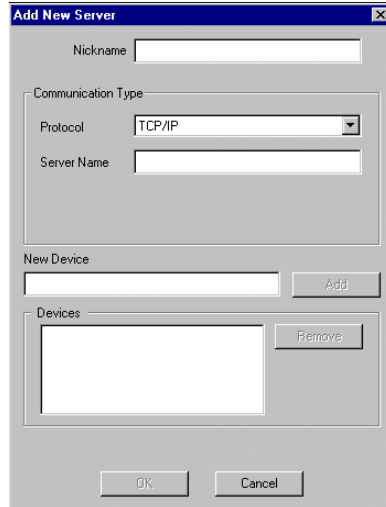
Protocol: Choose the type of network protocol you are using from the menu.

NOTE: Fiery utilities are not supported over IPX/SPX. Command WorkStation is supported on Windows computers over TCP/IP.

Server Name: Type the IP address (or DNS name) of the Fiery EXP6000/EXP5000.

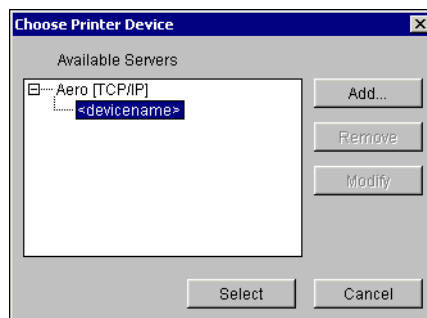
New Device: Type the name of the device the Fiery EXP6000/EXP5000 is connected to: DC6060 or DC5252.

NOTE: This term is case-sensitive, type DC6060 or DC5252 exactly as shown.



- 5 When you have typed all the information, click **Add**.
- 6 With the device name (DC6060 or DC5252) selected in the **Devices** list, click **OK**.

The Fiery EXP6000/EXP5000 appears in the list of Available Servers. The first line of the entry displays the nickname you assigned the Fiery EXP6000/EXP5000, followed by the protocol you chose. The second line displays the device name.



- 7 With the device name selected in the list of Available Servers, click **Select**.

The ColorWise Pro Tools main window appears.

Editing the configuration

Edit the configuration whenever a change to your Fiery EXP6000/EXP5000 or network occurs, such as a server name or IP address change. Change the specific Fiery EXP6000/EXP5000 Setup information before you configure the connection.

TO EDIT THE CONFIGURATION

- 1 To add a new Fiery EXP6000/EXP5000, click Add. Configure the Add New Server dialog box as outlined in steps 4 through 6 in the previous procedure.**
- 2 To remove a Fiery EXP6000/EXP5000, select the Fiery EXP6000/EXP5000 by its nickname and click Remove.**
- 3 To modify information, select the Fiery EXP6000/EXP5000 by its nickname and click Modify. Edit the information in the Modify Server Settings dialog box and click OK.**

NOTE: The nickname cannot be modified.

The list of Available Servers reflects your modifications.

Setting up ColorWise Pro Tools on a Mac OS computer

The following sections describe how to install ColorWise Pro Tools and other files and how to configure the connection on a Mac OS computer.

Installing ColorWise Pro Tools

Before you begin each installation, determine where you want to install each item on your hard disk. Otherwise, the software is placed in the “Fiery” folder by default.

Use the following procedure to install ColorWise Pro Tools on a Mac OS computer.

TO INSTALL COLORWISE PRO TOOLS ON A MAC OS COMPUTER

- 1 **Insert the User Software CD into the CD-ROM drive.**
- 2 **Double-click the ColorWise Pro Tools installer icon.**
- 3 **Follow the on-screen instructions.**
- 4 **If prompted, click Quit to close the installer.**

Installing MRJ

If MRJ is not installed, the ColorWise Pro Tools installer automatically initiates the MRJ installation process.

NOTE: MRJ 2.2.5 is provided on the User Software CD. For Mac OS X, Classic mode only is supported.

To install manually, use the following procedure.

TO INSTALL MAC OS RUNTIME FOR JAVA

- 1 **Open the MRJ folder on the User Software CD.**
- 2 **Double-click Installer.**
- 3 **Read the Apple Computer Inc. License Agreement and click Agree.**
- 4 **Click Install.**
The MRJ files are installed.
- 5 **Click Quit.**

We recommend that you use the version of MRJ provided on the User Software CD with ColorWise Pro Tools.

Uninstalling MRJ

If a newer version of MRJ (such as v2.2.5) is installed on your computer and you experience difficulty using ColorWise Pro Tools, remove or relocate the MRJ files currently installed and reinstall the version of MRJ provided on the User Software CD (see the following procedure).

TO UNINSTALL MAC OS RUNTIME FOR JAVA

- 1 **Open the System Folder on your hard disk.**
- 2 **Inside the Extensions folder, locate MRJ Libraries, and then remove or move it to another folder.**
- 3 **Inside the Apple Extras folder, locate Mac OS Runtime Java, and then remove or move it to another folder.**
- 4 **Restart your computer.**

Installing and setting the ColorSync profiles

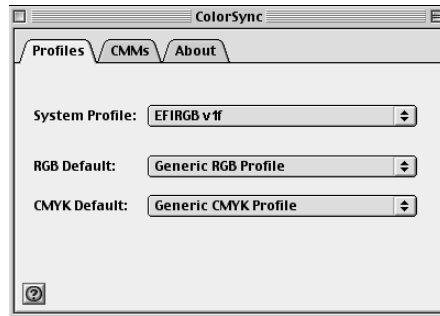
You can copy additional ICC profiles from the User Software CD to your computer. Use the ICC profiles with applications that support ICC standards, such as Photoshop. For most ICC-aware applications, you must install the files in a folder named ColorSync Profiles in the System Folder. For use with ColorWise Pro Tools, you can copy the files to a folder of your choice.

TO INSTALL THE COLORSYNC PROFILES ON A MAC OS COMPUTER

- 1 **Insert the User Software CD into the CD-ROM drive.**
- 2 **Open the ColorSync folder.**
- 3 **ColorSync 2.5: Install the profiles to the System Folder:ColorSync Profiles folder.**
An earlier version of ColorSync: Install the profiles to the System Folder:Preferences:ColorSync Profiles folder.

TO SET THE COLORSYNC PROFILES

- 1 Choose Control Panels:ColorSync from the Apple menu.
- 2 Choose EFIRGB ICC v1f from the System Profile menu.



When you select it as the ColorSync system profile, EFIRGB ICC v1f sets the optimal source color space for printing to the Fiery EXP6000/EXP5000. The color space set by the EFIRGB ICC v1f profile is the same as that set by the EFIRGB setting of the RGB Source Profile print option.

NOTE: The RGB Source Profile print option setting overrides the ColorSync system profile setting.

- 3 Close the ColorSync dialog box.

Other color files

You can copy additional color files from the User Software CD. Many of the files are PostScript files that you can download and print using Command WorkStation.

Mac Color
Files folder
(inside
Mac_User_SW)

CMYK Color Reference.ps: An 11-page, Letter-size PostScript file to use for reference when defining CMYK colors in applications.

PANTONE Book.ps: A 19-page, Letter-size PostScript file that indicates the closest equivalent of PANTONE coated colors that the Fiery EXP6000/EXP5000 and your particular 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 “[ColorWise Print Options](#)” on page 58.

RGB page 01: A file you can print from Microsoft Word 97 or later to view available RGB colors.

RGB page 02: A file you can print from PowerPoint 6.0 or later to view available RGB colors.

Calibration
Files folder
(inside the
Mac Color
Files folder)

Custom21.ps, Custom34.ps, Stand21.ps, and Stand34.ps.: PostScript files of color patches for obtaining measurements.

The numbers in the file names refer to the number of patches on the page. The Custom files are provided to allow you to download measurement patches that incorporate the currently installed calibration set. The Standard files are provided to allow you to download standard measurement patches that bypass the currently installed calibration set.

These files are provided for expert users and should not be used for day-to-day calibration.

Configuring the connection

The first time you start ColorWise Pro Tools, you must configure the connection to the Fiery EXP6000/EXP5000.

NOTE: ColorWise Pro Tools is supported only over TCP/IP networks.

BEFORE YOU BEGIN

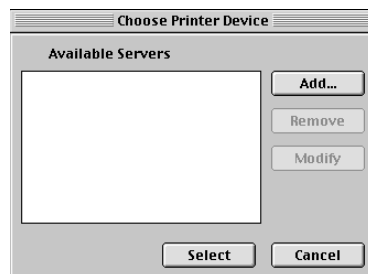
- **Print the Configuration page from Command WorkStation and note the IP address of the Fiery EXP6000/EXP5000.**

This page contains information you need when you configure the connection. For TCP/IP installations, you can use the Domain Name Server (DNS) name of the Fiery EXP6000/EXP5000 instead of the IP address. Make sure the Fiery EXP6000/EXP5000 is listed in a DNS used by your network. For more information, see the documentation that accompanies your Macintosh.

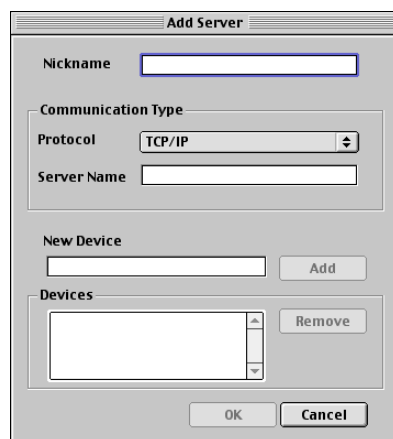
TO CONFIGURE THE CONNECTION FOR COLORWISE PRO TOOLS

- 1 **Double-click the ColorWise Pro Tools icon.**

The Choose Printer Device dialog box appears.



- 2 **If the No Servers Configured dialog box appears, click OK. If the Choose Printer Device dialog box appears, click Add.**



3 Enter the appropriate information for the Fiery EXP6000/EXP5000.

Nickname: Type a name for the Fiery EXP6000/EXP5000. It does not have to match the actual server name of the Fiery EXP6000/EXP5000.

NOTE: The nickname cannot contain the following characters:
[] _ " ' <space> <tab>

Protocol: TCP/IP is the only supported network protocol, so no selection is required.

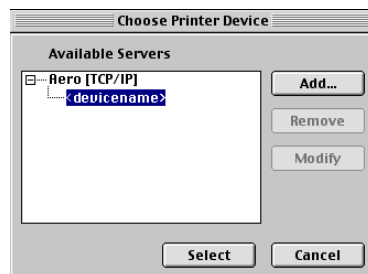
Server Name: Type the IP address (or DNS or host name) of the Fiery EXP6000/EXP5000.

New Device: Type the name of the device the Fiery EXP6000/EXP5000 is connected to: DC6060 or DC5252. This device name appears in the Printer Setup section of the Configuration page.

NOTE: This term is case-sensitive, type DC6060 or DC5252 exactly as shown.

4 When you have typed all the information, click Add.**5 With the device name selected in the Devices list, click OK.**

The Fiery EXP6000/EXP5000 appears in the list of Available Servers. The first line of the entry displays the nickname you assigned the Fiery EXP6000/EXP5000, followed by the protocol. The second line displays the device name.

**6 With the device name selected in the list of Available Servers, click Select.**

The ColorWise Pro Tools main window appears.

Editing the configuration

Edit the configuration whenever a change to your Fiery EXP6000/EXP5000 or network occurs, such as a server name or IP address change. Change the specific Fiery EXP6000/EXP5000 Setup information before you configure the connection.

TO EDIT THE CONFIGURATION

- 1 To add a new Fiery EXP6000/EXP5000, click Add. Configure the Add Server dialog box as outlined in steps 3 through 5 in the previous procedure.**
- 2 To remove a Fiery EXP6000/EXP5000, select the Fiery EXP6000/EXP5000 by its nickname and click Remove.**
- 3 To modify information, select the Fiery EXP6000/EXP5000 by its nickname and click Modify. Edit information in the Modify Server Settings dialog box and click OK.**

NOTE: The nickname cannot be modified.

The list of Available Servers reflects your modifications.

Using ColorWise Pro Tools

ColorWise Pro Tools gives you flexible control of color printing by allowing you to calibrate the Fiery EXP6000/EXP5000, customize simulation and output profiles, manage profiles on the Fiery EXP6000/EXP5000, manage spot colors, and set default values for ColorWise print options.

Using Calibrator

ColorWise Pro Tools Calibrator allows you to calibrate the Fiery EXP6000/EXP5000 using one of a number of measurement methods. For information about calibrating the Fiery EXP6000/EXP5000, see [page 40](#).

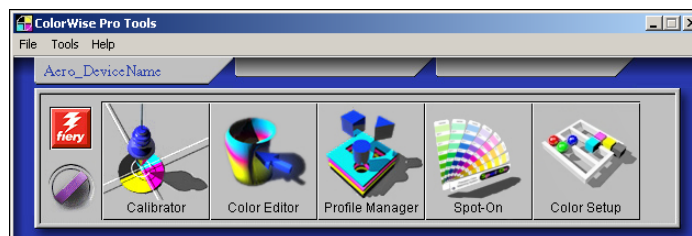
Using Color Editor

ColorWise Pro Tools Color Editor allows you to create custom profiles by editing existing simulation or output profiles, and then saving the changes as a new profile. Use Color Editor to fine-tune a profile on the Fiery EXP6000/EXP5000 to meet your exact specifications. Access Color Editor directly, by clicking its icon in the ColorWise Pro Tools main window, or indirectly, through the Profile Manager.

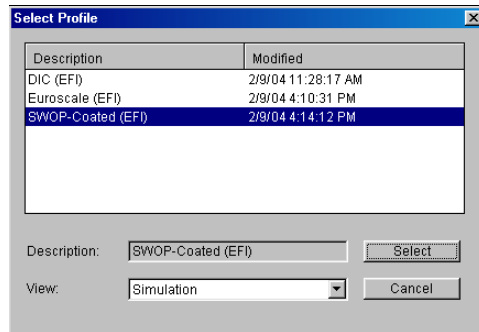
NOTE: You cannot edit source profiles. Only simulation and output profiles can be customized.

TO USE COLOR EDITOR

- 1 Start ColorWise Pro Tools and connect to the Fiery EXP6000/EXP5000.

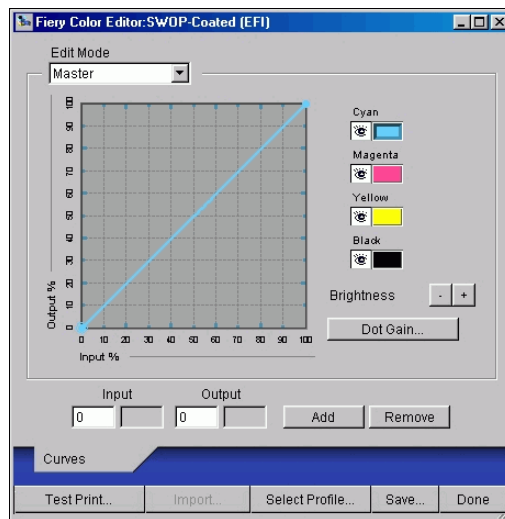


2 Click Color Editor.



Simulation lists the simulation profiles resident on the Fiery EXP6000/EXP5000. Output lists the output profiles resident on the Fiery EXP6000/EXP5000.

3 Select a profile and click Select.



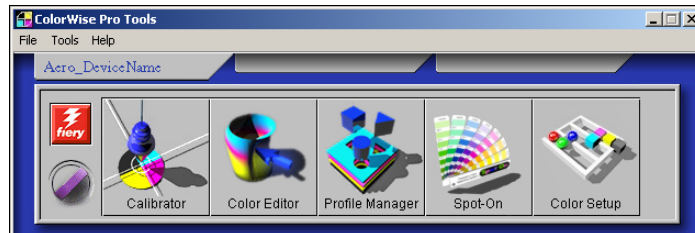
For more information about Color Editor, see ColorWise Pro Tools Help.

Using Profile Manager

ColorWise Pro Tools Profile Manager allows you to manage and edit ICC profiles.

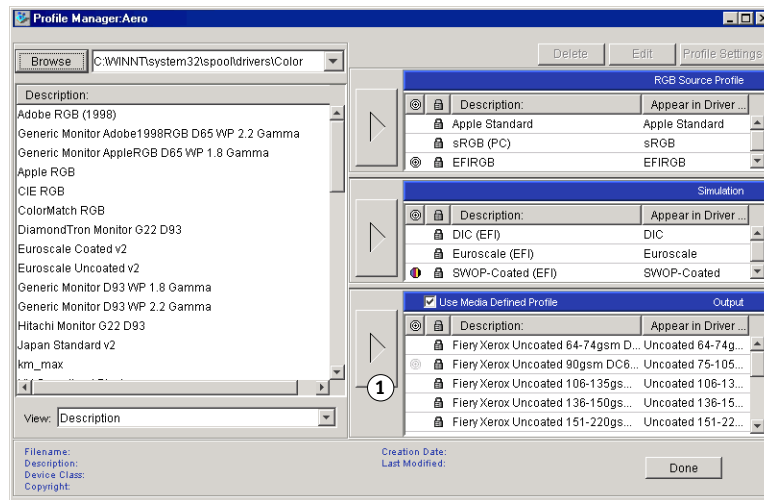
TO USE PROFILE MANAGER

- 1 Start ColorWise Pro Tools and connect to the Fiery EXP6000/EXP5000.



- 2 Click Profile Manager.

1 Output profiles



For more information about Profile Manager, see ColorWise Pro Tools Help.

For information about the Use Media Defined Profile option, see the following section.

Setting the default profiles

Use Profile Manager to set a default RGB source profile, simulation profile, or output profile. The default RGB source and simulation profiles that you set are applied to all print jobs sent to the Fiery EXP6000/EXP5000, unless you override them using print options. The same is true of the default output profile that you set, unless you select the Use Media Defined Profile option.

The Use Media Defined Profile option indicates whether or not the output profiles predefined for the media types in your print jobs are applied automatically. For more information, see the following section.

Using media-defined output profiles

Instead of having Profile Manager apply a default output profile to all your print jobs, you can keep the Use Media Defined Profile option selected. This option automatically applies the output profile predefined for the media type in your print job. If your job contains mixed media, this option can apply different output profiles predefined for the different media.

The Use Media Defined Profile option in Profile Manager is selected by default. It is applied to all print jobs sent to the Fiery EXP6000/EXP5000, unless a user overrides it for an individual job by changing settings in the printer driver.

TO USE MEDIA-DEFINED OUTPUT PROFILES

- 1 **Start ColorWise Pro Tools and click Profile Manager.**
- 2 **Select Use Media Defined Profile in the Output bar of Profile Manager.**

Changing the setting for the Use Media Defined Profile option in Profile Manager automatically changes the same setting in Color Setup. For more information, see “Using Color Setup” on page 39.

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 EXP6000/EXP5000.

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 67](#).

NOTE: Spot colors identified by names are printed with their defined CMYK values. The edits to the output profile made with Color Editor do not affect how spot colors print.

Starting Spot-On

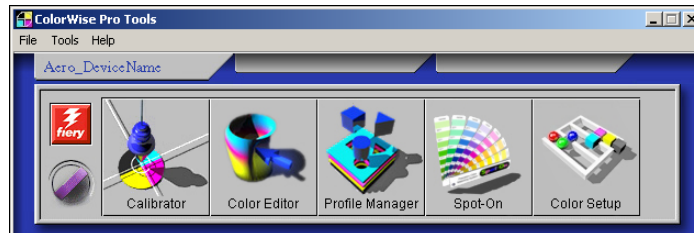
To use Spot-On, you must specify the output profile associated with the Spot Color Dictionary that you want to edit.

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 80C 40M, ColorWise automatically calculates the Lab values using Output profile X and creates new CMYK values for use with Output profile Y.

NOTE: The Fiery EXP6000/EXP5000 allows only one user to connect to Spot-On at a time.

To START SPOT-ON

- 1 Start ColorWise Pro Tools and connect to the Fiery EXP6000/EXP5000.

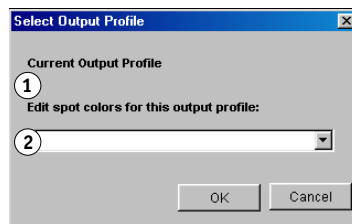


- 2 Click Spot-On.

The Select Output Profile dialog box appears.

- 3 Choose an output profile and click OK.

- 1 Current output profile
- 2 Output profiles to link



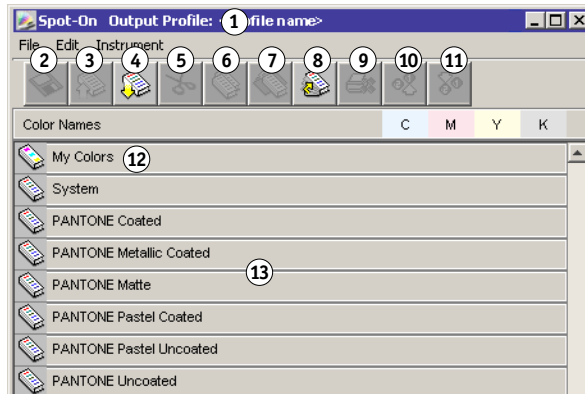
The Spot-On main dialog box appears. The CMYK values displayed in the dialog box are calculated with respect to the specified profile.

NOTE: When you print a job, choose the same output profile from the printer driver as the one that is selected in the Select Output Profile dialog box. Otherwise, color adjustments based on Spot-On have no effect.

Spot-On main window

The Spot-On main window lists color groups that represent libraries of spot colors on the Fiery EXP6000/EXP5000. Tool icons for working with colors appear at the top of the window.

- 1 Output profile
- 2 Save
- 3 Upload
- 4 Download
- 5 Cut
- 6 Copy
- 7 Paste
- 8 Collapse All
- 9 Print
- 10 Up
- 11 Down
- 12 Custom color group
- 13 Default color group



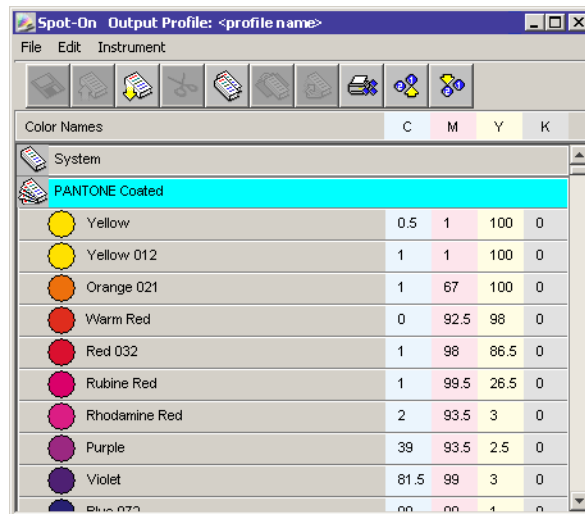
By default, the Fiery EXP6000/EXP5000 includes several PANTONE libraries along with a System library. The DIC, HKS, and TOYO libraries are also available. These factory default libraries appear marked with the default group icon (📁).

You can add custom color groups and colors to the Spot-On window (see [page 32](#)). Added groups appear marked with the custom group icon (📁). Both default and custom groups can be opened to display included colors.

TO OPEN AND CLOSE A COLOR GROUP

- 1 To open a color group, click the icon to the left of the group name.

When you open a group, all the colors in the group are displayed, and the group icon changes appearance.



- 2 To close a color group, click the icon to the left of the group name.
- 3 To close all the color groups in the list, choose Close All from the Edit menu.

Working with existing colors

Spot-On allows you to view and manage existing groups of colors on the Fiery EXP6000/EXP5000 and search for a particular color in the Spot-On list.

Color groups in the Spot-On window appear in order of their priority. Highest priority is assigned to color groups at the top of the list. For instance, if two colors from two different color groups have the same name, the Fiery EXP6000/EXP5000 uses the color from the higher group and disregards the other color. By managing the priority of colors in this way, you can maintain several CMYK variants for the same spot color.

TO REARRANGE THE PRIORITY OF COLORS

- 1 **To rearrange an entire color group, select the desired color group.**
To rearrange an individual color, select the desired color.

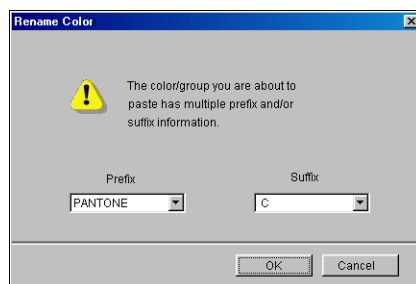
Individual spot colors are marked with circular color icons.

- 2 **To move the selection up or down in the list, click the Up or Down icon in the toolbar.**
- 3 **To paste the selection in a different location in the list, click the Cut or Copy icon in the toolbar.**

NOTE: The Cut operation is available only for custom colors.

- 4 **Click the location in the list where you want to paste the cut or copied selection, and then click the Paste icon in the toolbar.**

When you paste a default PANTONE color or group, a warning message appears asking you to rename the selection because of the multiple prefixes and suffixes for the PANTONE colors and groups. Use the menus to choose the desired prefix and suffix for the new name, and then click OK. The pasted selection becomes a custom color or group with the specified name.



TO FIND A SPECIFIC COLOR

- 1 **Choose Find from the Edit menu.**

The Find dialog box appears.

- 2 **Type the name of the color that you want to find and click OK.**

Spot-On searches for the specified color, starting from the top of the color list. Once located, the color appears selected in the color list.

- 3 **To find additional colors based on the same search criteria, choose Find Again from the Edit menu.**

Creating custom colors

Spot-On provides a number of default color groups in the color list. You can add your own custom spot colors and groups to the list.

TO ADD A NEW COLOR OR COLOR GROUP

- 1 Select the location in the group or color list where you want the addition to be placed.
- 2 Choose **New Group** from the **Edit** menu to insert a new group, or choose **New Color** to insert a new color.

A new color group entry or color entry appears as **Untitled**.

TO RENAME A CUSTOM COLOR OR GROUP

- 1 Select the specific color or group you want to rename.
- 2 Double-click the name of the color or group.
- 3 Type the new name exactly as it appears in the job, including uppercase and lowercase characters and spaces, as needed.

This new name is supplied by the source application (such as Adobe Illustrator or QuarkXPress) to your PostScript job.

NOTE: Default groups or colors (such as PANTONE) cannot be renamed.

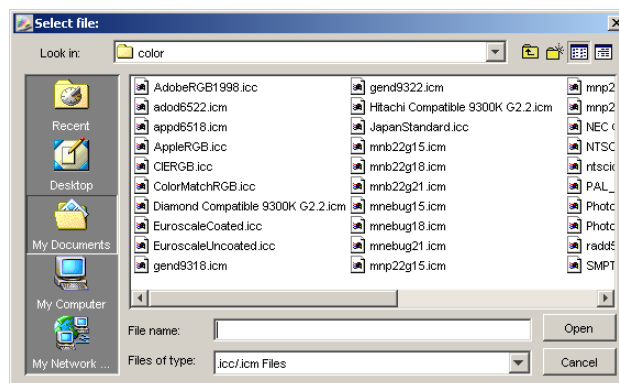
Downloading custom color groups

You can download custom color groups from your computer to the Fiery EXP6000/EXP5000. Downloaded groups are added as custom groups to the Spot-On color list and are immediately enabled for use on the Fiery EXP6000/EXP5000.

TO DOWNLOAD CUSTOM COLOR GROUPS

- 1 Select the location in the color list where you want to add the downloaded group.
- 2 Choose **Download** from the **File** menu.

The Select file dialog box appears.



NOTE: The supported file format for download is ICC Named Color Profile.

3 Locate and select the desired color group, and then click Open.

The downloaded group is added to the specified location in the Spot-On list. If you did not specify a location, the group is added to the top of the list.

If the downloaded group has the same name as an existing group in the list, you are prompted to rename the downloaded group.

Uploading custom color groups

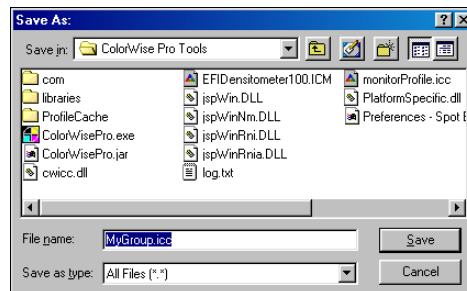
You can upload custom color groups from the Fiery EXP6000/EXP5000 to your computer as ICC files. The upload feature allows you to share a group by creating a local copy that can be downloaded to another Fiery EXP6000/EXP5000.

You must save a color group to the Fiery EXP6000/EXP5000 before you can upload it to your computer. To upload a factory default group, copy and paste the group as a new custom group, and then upload the group as required.

TO UPLOAD CUSTOM COLOR GROUPS

- 1 Select the name of the color group you want to upload.
- 2 Choose Upload from the File menu.

The Save As dialog box appears.



- 3 Browse to the location where you want to save the file, name the file, and then click Save.

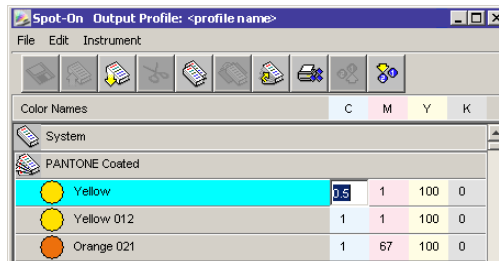
Editing color values

If an existing spot color is not printing as intended, edit the color values as needed to achieve your intended result. Edit color values by entering the exact CMYK values in the Spot-On main window or in the Set Center Patch Color dialog box, or using the Spot-On Color Search feature.

Use the following procedures to edit a named color by entering the exact CMYK values. To target a color using Spot-On Color Search, see [page 35](#).

TO EDIT A COLOR IN THE SPOT-ON MAIN WINDOW

- 1 Select the color you want to edit.
- 2 Double-click the value under C, M, Y, and K, and enter a new number for each color channel.



The edited color appears in the color list.

NOTE: The edited color is not saved until you choose Save from the File menu.

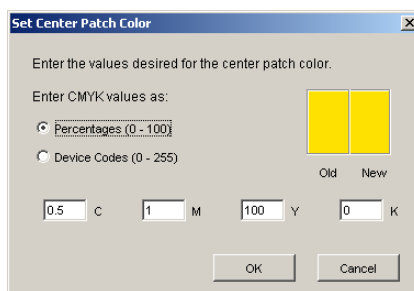
TO EDIT A COLOR IN THE SET CENTER PATCH COLOR DIALOG BOX

- 1 Select the color you want to edit.
- 2 Double-click the color icon.

The Spot-On Color Search dialog box appears with the selected color in the center.

- 3 Click the center patch.

The Set Center Patch Color dialog box appears.



- 4 Indicate whether you want to enter CMYK values as percentages or Device Codes.

The Percentages option allows you to enter color values between 0 and 100%, in increments of 0.5. Values out of this range are rounded to the nearest whole or half percentage.

The Device Codes option allows you to enter color values between 0 and 255. This option reflects the full range of color values that the Fiery EXP6000/EXP5000 can reproduce and provides finer gradations of color than are possible with Percentages.

5 Type the C, M, Y, and K values of your specific color in the appropriate fields.

Use the Tab key to move from field to field. As you enter each new value, the preview patch updates to reflect the old and new colors.

6 Click OK.

The new color is displayed in the center of the Spot-On Color Search dialog box.

7 Click OK.

The edited color appears in the color list of the Spot-On main window.

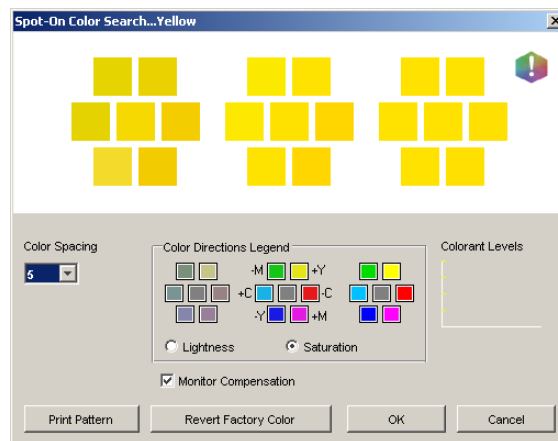
Use the following procedure to target a color using the Spot-On Color Search dialog box. Beginning with an approximate color in the Spot-On Color Search dialog box, you can adjust the hue, saturation, and lightness of the color until you achieve an acceptable match.

TO TARGET A COLOR USING SPOT-ON COLOR SEARCH

1 Select the color that you want to edit.

2 Double-click the color icon.

The Spot-On Color Search dialog box appears with the current color in the center.



3 To update the center patch to a neighboring color that more closely matches the target, click the corresponding neighbor patch.

Neighboring patches represent variations from the center patch and can be selected if they offer a closer match to the desired color. Clicking one of these patches updates the center patch to the new color and provides a new selection of neighboring colors. These patches are either lightness or saturation neighbors, depending on the option you choose in the following step.

NOTE: When you select certain colors, an exclamation point icon may appear in the upper-right corner of the dialog box. This icon indicates that one or more colorants have reached their maximum values.

4 Use the following techniques to control how neighboring color patches are generated:**Select Lightness or Saturation in the Color Directions Legend.**

Lightness generates neighbor patches based on darker to lighter shades of the original color. This variation is displayed from left to right, with the original color remaining in the center of the middle group.

Saturation generates neighbor patches based on less saturated to more saturated variations of the original color. This variation is displayed from left to right, with the original color remaining in the center of the middle group.

Choose a setting from the Color Spacing menu to control the closeness of the neighbor patches.

A higher setting generates neighbor patches that differ more noticeably from the center color. As you get closer to your target color, reduce the color spacing to a smaller value.

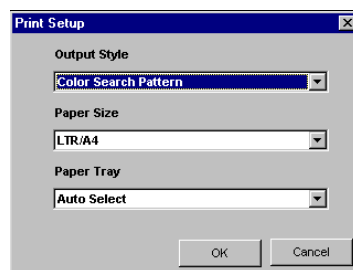
Select Monitor Compensation to simulate how all the on-screen color patches will appear when printed on paper.

This simulation depends on the monitor profile configured for your monitor. To specify the monitor profile, choose Preferences from the Edit menu in the Spot-On main window.

Make sure that you set your monitor according to the manufacturer's recommendations and select the correct monitor profile for your monitor (including the FACI monitor).

5 Continue adjusting the color patch controls and clicking neighbor patches until the color you want appears in the center patch.**6 Click Print Pattern.**

NOTE: It is very difficult to accurately match spot colors on a monitor. You should always test print to get the proper color match.

7 Choose the appropriate settings from the Output Style, Paper Size, and Paper Tray menus.

For Output Style, choose Color Search Pattern or Color Neighbor Pattern. Color Search Pattern prints patches with the same pattern as displayed in the Color Search dialog box. Color Neighbor Pattern prints patches in a three column by eight row format.

For Paper Size, choose the size of the paper that you want to use for printing the patches.

For Paper Tray, specify the paper source for the paper that you want to use.

8 Click OK to print the patches.

The Print Pattern test page provides the following information:

- Center patch color CMYK value
- Color spacing
- Lightness or Saturation neighbors selected
- Output profile selected

The goal of Spot-On Color Search is to find the color values that make a printed color patch match a target, not its screen simulation of it. Printing a Print Pattern of neighbor color patches allows you to compare the printed patches to the color target. After you compare the printed patches and find the one that matches most closely, you can select the corresponding patch on-screen.

9 Select the desired target color in the Spot-On Color Search dialog box and click OK.

The edited color appears in the color list of the Spot-On main window.

Using a measurement instrument to target colors

If you have the EFI Spectrometer ES-1000, you can import measured color values directly into Spot-On. This feature allows you to target matches based on the actual colors of immediate objects, such as the red of a printed logo or the yellow of a packaging envelope.

TO IMPORT COLOR MEASUREMENTS INTO SPOT-ON**1 Install and set up the ES-1000 for use with your computer.**

For installation and setup instructions, see the documentation that accompanies the instrument.

2 Choose Start from the Instrument menu.

The Choose Port dialog box appears.

3 For Instrument, choose the instrument you will use to take measurements. For Port, choose the serial port connection of the instrument. Click OK.**4 Place the ES-1000 over the target color, making sure to center the sample aperture over the color. Press Measure to take the measurement.**

The measured CMYK values are imported into Spot-On as follows:

- If an individual color is selected in the color list, it updates to the measured color.
- If a group is selected in the color list, a new color with the measured values is created within the group.

- If the Spot-On Color Search dialog box is open, the center patch updates with the measured values, and the neighbor patches update accordingly.
- If the Set Center Patch Color dialog box is open, the measured values are imported into the CMYK entry fields.

5 When you are finished taking color measurements, choose Stop from the Instrument menu.

Spot-On closes the connection to the instrument.

Reverting default colors to factory settings

You can revert default colors to their factory default settings. Revert all colors within a default color group, or revert one or more specific colors within a default color group, so that only those colors are reset to the factory default settings.

TO REVERT ALL COLORS WITHIN A DEFAULT COLOR GROUP TO FACTORY DEFAULTS

- 1 Click the icon to the left of the name of the group that you want to revert.**
- 2 Choose Revert Group from the File menu.**

A warning message appears.
- 3 Click OK.**

TO REVERT SPECIFIC COLORS WITHIN A DEFAULT COLOR GROUP TO FACTORY DEFAULTS

- 1 Click the icon to the left of the name of the group that contains the colors you want to revert.**
- 2 Select the colors that you want to revert to the factory defaults.**

To select more than one color, Shift-click to select an adjacent color or Control-click to select a nonadjacent color.
- 3 Choose Revert Factory Color from the File menu.**

A warning message appears.
- 4 Click OK.**

Saving changes and exiting Spot-On

To enable your spot color matches for use with the Fiery EXP6000/EXP5000, save your edits before you exit Spot-On. This ensures that all your changes to Spot-On color definitions are stored on the Fiery EXP6000/EXP5000 and available for use when printing documents that contain spot colors.

The following edits do not require saving to take effect:

- Rearranging the priority level of a color group
- Downloading a color group
- Clearing or deleting a color group

TO SAVE THE SPOT-ON COLOR LIST

- 1 Choose Save from the File menu.
- 2 Click Close in the upper-right corner of the Spot-On main window to exit the utility.

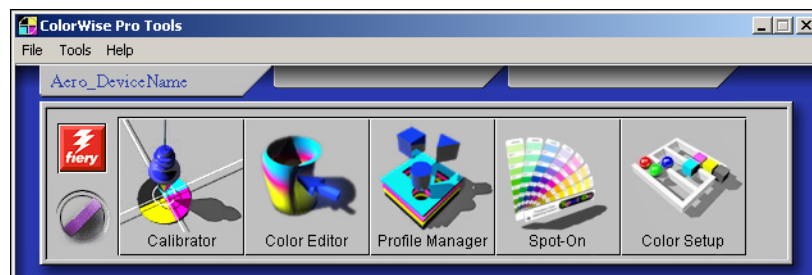
Using Color Setup

ColorWise Pro Tools Color Setup allows you to set the default values for the ColorWise print options and print settings for the Fiery EXP6000/EXP5000.

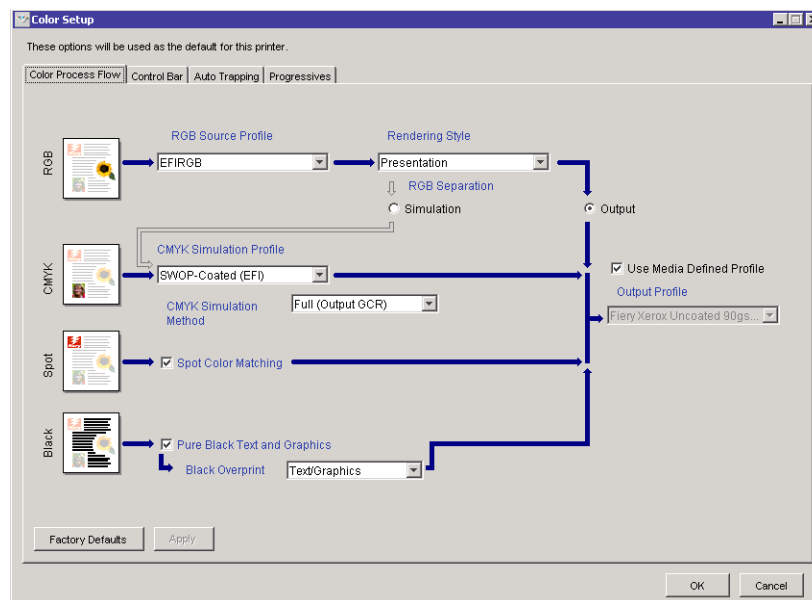
These settings are applied to all print jobs sent to the Fiery EXP6000/EXP5000, unless a user overrides them for an individual job by changing settings in the printer driver. These default settings can also be overridden using Command WorkStation.

TO USE COLOR SETUP

- 1 Start ColorWise Pro Tools and connect to the Fiery EXP6000/EXP5000.



- 2 Click Color Setup.



For information about the Control Bar, configurable Auto Trapping, and the Progressives features in Color Setup, see *Fiery Graphic Arts Package*.

CALIBRATION

Calibrating the Fiery EXP6000/EXP5000 ensures consistent and reliable color output. Calibrate the Fiery EXP6000/EXP5000 using ColorWise Pro Tools Calibrator with a densitometer or spectrophotometer.

NOTE: This manual uses the following terminology for color measurement instruments:

| Term | Refers to |
|-------------|--|
| DTP32 | X-Rite DTP32 automatic densitometer |
| DTP41 | X-Rite DTP41 automatic spectrophotometer |
| ES-1000 | EFI Spectrometer ES-1000 hand-held spectrophotometer |

About this chapter

This chapter describes the procedures for calibrating the Fiery EXP6000/EXP5000 using ColorWise Pro Tools Calibrator with various color measurement instruments. The following table provides the location of each procedure.

| Calibration method | See |
|---------------------------|-------------------------|
| DTP32 with Calibrator | page 45 |
| DTP41 with Calibrator | page 47 |
| ES-1000 with Calibrator | page 49 |

If you have defined a custom halftone screen, you must calibrate the Fiery EXP6000/EXP5000 for that halftone screen before you print a job with it. For more information, see [page 53](#).

This chapter also describes important concepts and suggestions for understanding calibration. The following table provides the location of each description.

| For more information about | See |
|-----------------------------------|-------------------------|
| An overview of calibration | page 55 |
| How calibration works | page 55 |
| Scheduling calibration | page 57 |
| Checking calibration status | page 57 |

NOTE: The procedures described in this chapter are fundamentally the same for Windows and Mac OS computers. Illustrations from a Windows computer are used in this chapter.

Calibrating with ColorWise Pro Tools Calibrator

ColorWise Pro Tools Calibrator allows you to calibrate the Fiery EXP6000/EXP5000 using the measurement method of your choice.

Changing calibration has the potential to affect *all* jobs for *all* users, so consider limiting the number of people authorized to perform calibration. Set an Administrator password to control access to calibration (see *Configuration and Setup*).

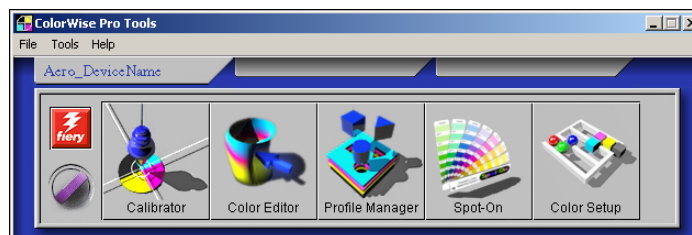
NOTE: Multiple users can be connected to one Fiery EXP6000/EXP5000 with ColorWise Pro Tools, but only one user at a time can use Calibrator. If you try to calibrate when another user is using ColorWise Pro Tools to calibrate, an error message appears.

Starting Calibrator

Start Calibrator from the ColorWise Pro Tools main window.

TO CALIBRATE THE FIERY EXP6000/EXP5000 USING CALIBRATOR

- 1 Start ColorWise Pro Tools and connect to the Fiery EXP6000/EXP5000.

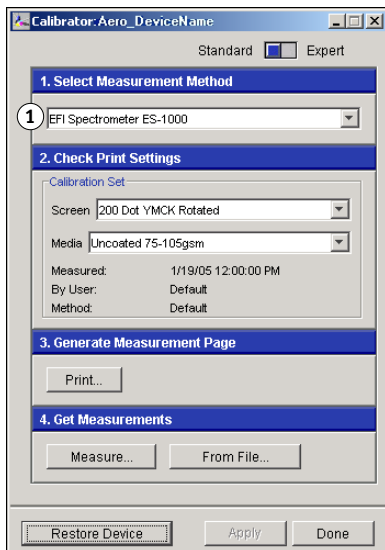


For information about configuring the connection to the Fiery EXP6000/EXP5000, see pages 14 and 21.

- 2 Click Calibrator.

3 Choose a method from the Select Measurement Method menu.

1 Calibration methods

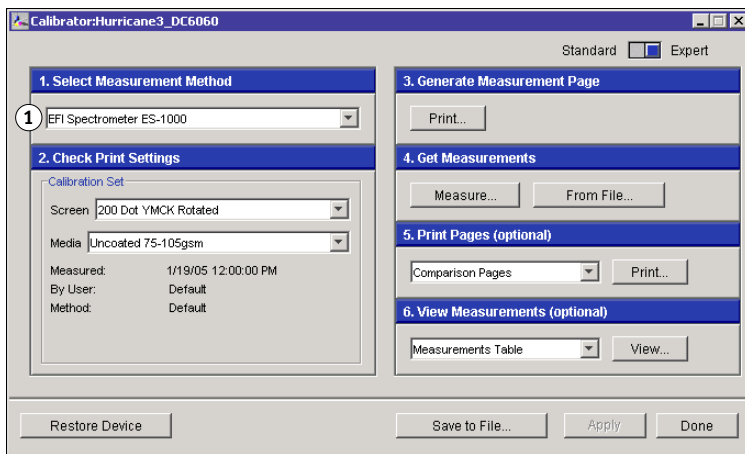


Procedures for each calibration method are described in subsequent sections of this chapter.

Expert mode

Calibrator provides two modes: Standard and Expert. You can perform all essential calibration tasks while in Standard mode. Expert mode offers two additional options: Print Pages and View Measurements.

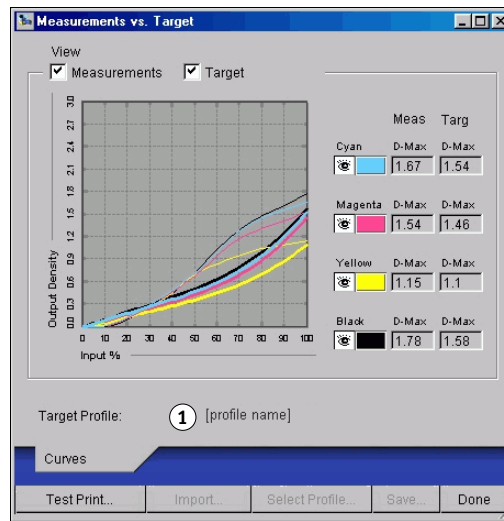
1 Calibration methods



With the Print Pages option, print Comparison Pages showing the results of the new measurements with any profile associated with the currently selected calibration set. You can create a custom Comparison Page and save it as a PostScript or Encapsulated PostScript (EPS) file called CALIB.PS. Next, print the file to the Hold queue of the Fiery EXP6000/EXP5000 from your application, or download it to the Hold queue. You can also create a CALIB.PS file by renaming any job in the Hold queue using Command WorkStation (see *Utilities*).

With the View Measurements option, you can view the current set of measurements as a table and a graph that shows both the measurements and the target curves.

1 Output profile name



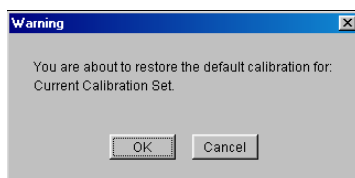
When more than one profile uses the same target, an additional menu called Plot Against appears in the upper-right corner of the dialog box. It lists all output profiles that use that same calibration set. Selecting an output profile from this menu displays the target curves associated with that profile. If each output profile contains a unique calibration target, the curves displayed also change when you switch profiles.

Restoring default calibration measurements

Use the following procedure to return to factory default calibration measurements.

TO RESTORE DEFAULT CALIBRATION MEASUREMENTS

- 1 In the Calibrator dialog box, click **Restore Device**.
- 2 Click **OK** to restore the preset default calibration set.



NOTE: Restore Device applies only to the currently selected calibration set.

Calibrating with the DTP32

Using the DTP32 densitometer, you can measure color patches generated by the digital press and automatically download the measurements to the Fiery EXP6000/EXP5000.

NOTE: Before you use ColorWise Pro Tools and the DTP32 to calibrate the Fiery EXP6000/EXP5000, follow the instructions on [page 78](#) to calibrate the DTP32.

TO CALIBRATE THE FIERY EXP6000/EXP5000 USING THE DTP32

- 1 **Start Calibrator.**
For instructions, see [page 42](#).
- 2 **In the Select Measurement Method pane, choose X-Rite DTP32.**
- 3 **In the Check Print Settings pane, choose a calibration set.**

If more than one option appears, choose the appropriate calibration set for the type of screen and media you use most often.

NOTE: For this calibration to take effect, the calibration set must be associated with one or more output profiles. The default calibration set is already associated with the default output profile. You do not need to make any new associations.

- 4 **Click Print in the Generate Measurement Page pane.**

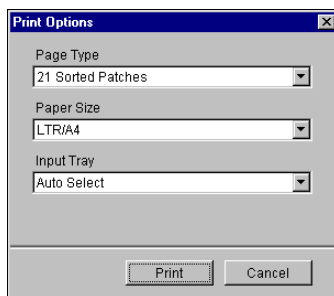
The Print Options dialog box appears.

5 Choose the appropriate options and click Print.

Page Type: Choose 21 or 34 Sorted Patches.

Paper Size: Automatically set to LTR/A4 for 21 Sorted Patches, or 11x17/A3 for 34 Sorted Patches.

Input Tray: Specify the paper source.



6 Retrieve the measurement page from the digital press.

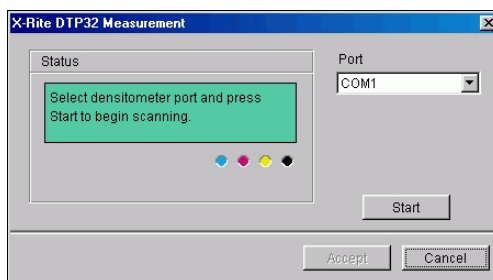
7 Click Measure in the Get Measurements pane.

The Measurement Options dialog box displays the specified Page Type and Paper Size options.

8 Click Measure.

Follow the on-screen instructions to feed the measurement page through the DTP32.

The Status field displays instructions for selecting the port and feeding the measurement page through the DTP32 four times, once for each color strip.



9 When the Status field indicates that the measurements were read successfully, click Accept.

10 Click OK in the Measure dialog box.

11 Click Apply in the Calibrator dialog box to implement the new calibration set.

12 Click OK in the Information dialog box.

This completes the calibration process.

Calibrating with the DTP41

Using the DTP41 spectrophotometer, you can measure color patches generated by the digital press and automatically download the measurements to the Fiery EXP6000/EXP5000.

NOTE: Before you use ColorWise Pro Tools and the DTP41 to calibrate the Fiery EXP6000/EXP5000, follow the instructions on [page 81](#) to calibrate the DTP41.

TO CALIBRATE THE FIERY EXP6000/EXP5000 USING THE DTP41

1 Start Calibrator.

For instructions, see [page 42](#).

2 Choose X-Rite DTP41 as the measurement method.

3 In the Check Print Settings pane, choose a calibration set.

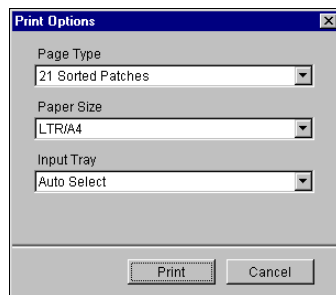
If more than one option appears, choose the appropriate calibration set for the type of screen and media you use most often.

NOTE: For this calibration to take effect, the calibration set must be associated with one or more output profiles. The default calibration set is already associated with the default output profile. You do not need to make any new associations.

4 Click Print in the Generate Measurement Page pane.

The Print Options dialog box appears.

5 Choose the appropriate options and click Print.



Page Type: Choose 21 or 34 Sorted Patches.

Paper Size: Automatically set to LTR/A4 for 21 Sorted Patches or 11x17/A3 for 34 Sorted Patches.

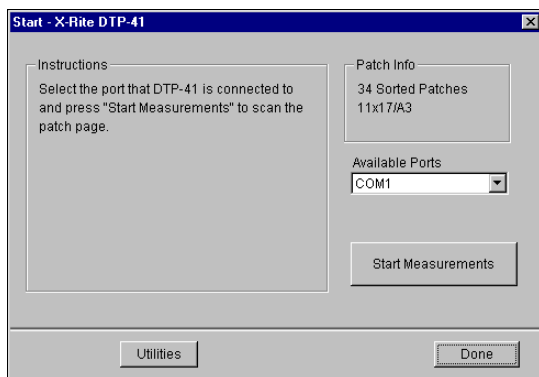
Input Tray: Choose the paper source for printing the measurement page.

6 Retrieve the measurement page from the digital press.

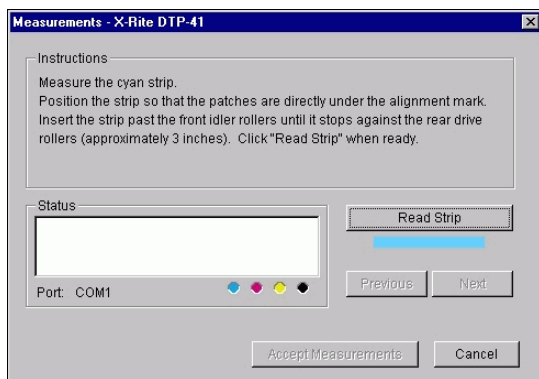
7 In the Get Measurements pane, click Measure.

The Measurement Options dialog box displays the specified Page Type and Paper Size options.

- 8 Click Measure.
- 9 If necessary, choose the appropriate COM port for the DTP41 from the Available Ports menu, and then click Start Measurements.



- 10 Feed the measurement page into the DTP41, starting with the cyan strip.



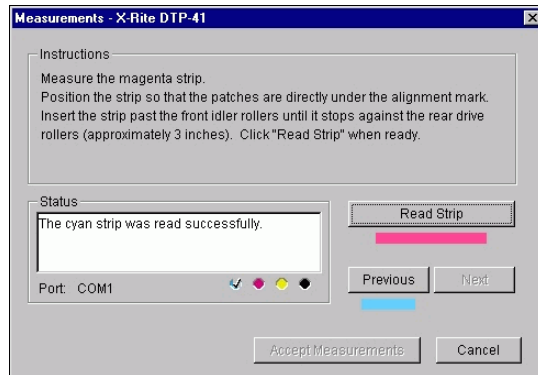
Align the page in the measurement page slot of the DTP41 so that the appropriate color column is centered below the alignment mark (see the diagram on [page 79](#)). Insert the page about three inches, past the front idler rollers, until it rests against the rear drive rollers and you feel resistance.

- 11 Click Read Strip.

The DTP41 pulls the measurement page through automatically.

After the measurement page is read, Calibrator instructs you to insert and realign the page for the next color.

- 12 Repeat the measurement process for the magenta, yellow, and black strips.



A check mark appears on the circle of the color just read, and the Status field indicates the color was measured successfully.

Use the Previous and Next buttons to reverse or advance to another step in the measurement sequence.

- 13 When the Status field indicates that all four color strips have been read successfully, click **Accept Measurements**.
- 14 Click **OK** in the Measure dialog box.
- 15 Click **Apply** in the Calibrator dialog box to implement the new calibration set.
- 16 Click **OK** in the Information dialog box.

This completes the Fiery EXP6000/EXP5000 calibration process.

Calibrating with the ES-1000

Use ColorWise Pro Tools in conjunction with the ES-1000 spectrometer to calibrate the Fiery EXP6000/EXP5000.

NOTE: Before you use ColorWise Pro Tools and the ES-1000 to calibrate the Fiery EXP6000/EXP5000, follow the instructions on [page 84](#) to set up and calibrate the ES-1000.

TO CALIBRATE THE FIERY EXP6000/EXP5000 USING THE ES-1000

- 1 **Start Calibrator.**
For instructions, see [page 42](#).
- 2 **Choose EFI Spectrometer ES-1000 as the measurement method.**
- 3 **In the Check Print Settings pane, choose a calibration set.**

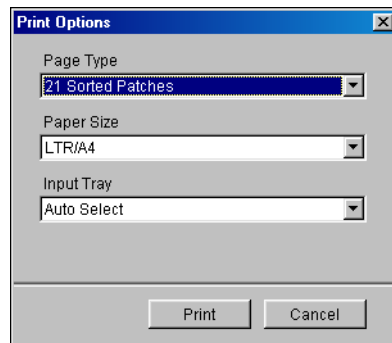
If more than one option appears, choose the appropriate calibration set for the type of screen and media you use most often.

NOTE: For this calibration to take effect, the calibration set must be associated with one or more output profiles. The default calibration set is already associated with the default output profile. You do not need to make any new associations.

4 Click Print in the Generate Measurement Page pane.

The Print Options dialog box appears.

5 Choose the appropriate options and click Print.



Page Type: Choose 21 or 34 Sorted Patches or 21 or 34 Randomized Patches. Sorted patches are printed on the page in the order of their hue and saturation levels. Randomized patches are printed on the page in random order, to help compensate for density inconsistencies on different areas of the page.

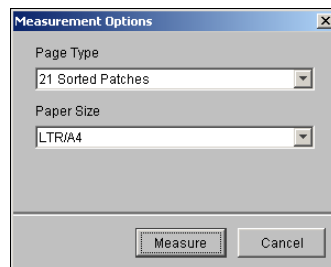
Page Size: Automatically set to LTR (if the Fiery EXP6000/EXP5000 is set up for US standards) or A4 (if the Fiery EXP6000/EXP5000 is set up for metric standards) for 21 patches, or 11x17 (US) or A3 (metric) for 34 patches.

Input Tray: Automatically set to Auto Select.

6 Retrieve the printed measurement page from the digital press.

7 Click Measure in the Get Measurements pane.

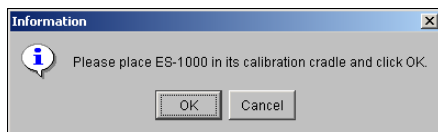
The Measurement Options dialog box appears.



Page Type is automatically set to the type that you selected in [step 5](#).

8 Check the settings and click Measure.

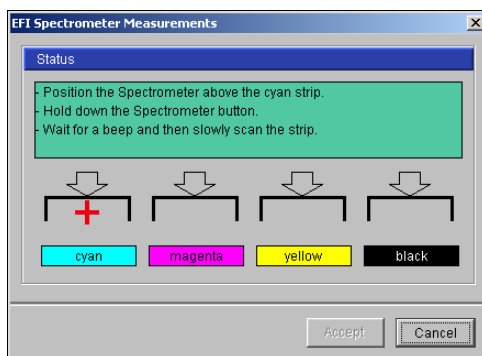
The Information dialog box appears.

**9 Place the ES-1000 in the calibration cradle.**

When you place the ES-1000 in the calibration cradle, white point calibration is used to calibrate the spectrometer and compensate for gradual drifts in the instrument. Make sure the sample aperture is in full contact with the white tile on the calibration cradle. If you do not place it correctly in the calibration cradle, the spectrometer does not return accurate measurements.

10 Click OK.

The EFI Spectrometer Measurements dialog box appears. Instructions for measuring the strips appear in the Status field.

**11 For a more accurate measurement, place several sheets of plain white paper beneath the Measurement Page.**

The extra sheets block underlying colors from being read by the instrument.

12 Orient the Measurement Page so that strips are horizontal and the scan direction (indicated by the arrows at the beginning of each strip) is left to right.**13 Hold the ES-1000 with its length perpendicular to the scan direction, and place the sample aperture in the white space at the start of the specified color.****14 Press and hold the Measure button and wait for a beep.**

NOTE: To hear a beep with a Windows compatible computer, you must install a sound card and speaker(s). You may have to turn up the volume on your computer to hear the beep.

- 15 After you hear a beep, slide the ES-1000 at a slow but consistent pace across the strip.**

Take about five seconds to slide the length of the strip.

- 16 Release the button when all the patches in the strip have been measured and you reach the white space at the end of the strip.**

When a strip is measured successfully, the cross hair moves to the next color.
If the strip is not measured successfully, a message directs you to try again.

- 17 Repeat steps 13 through 16 until all the strips are measured.**

NOTE: You must measure in the order outlined in the Status field.

- 18 When all the patches have been read successfully, click Accept.**

- 19 Click Apply in the Calibrator dialog box.**

The new calibration measurement is applied.

- 20 Click OK in the Information dialog box.**

This completes the Fiery EXP6000/EXP5000 calibration process.

Calibrating for custom halftone screens

To correct problems with color quality when using a halftone screen, such as too much magenta in the printed image, make sure that the Fiery EXP6000/EXP5000 is calibrated for the particular halftone screen you use. This is important if you expect to compare a continuous tone page printed from a calibrated Fiery EXP6000/EXP5000 to a halftone printed page.

Changing halftone screens usually modifies the color response of a printer. With most printers that offer standard multiple halftone screens, ColorWise Pro Tools Calibrator lets you select the halftone screen to calibrate. A measurement calibration set is maintained for each printer color response that is produced by different halftones coupled with other parameters, such as media and resolution. The best color is achieved when you specify a calibrated response and its corresponding output profile by setting print options at print time.

However, when user-defined halftones are specified, the Fiery EXP6000/EXP5000 does not have adequate information about the resulting color response. You must consider the halftone screen for separate calibration and profiling.

When your custom halftone changes the color response of your printer, you need a custom output profile. Perform the following custom profile creation procedure only once.

Use the following procedure to calibrate the Fiery EXP6000/EXP5000 for custom halftone screens.

TO CALIBRATE FOR CUSTOM HALFTONE SCREENS

1 Determine the measurement instrument you use for calibration.

2 Open the CustomHalftonesCalibration folder on the User Software CD.

This folder contains images of the calibration pages for various instruments and page sizes. If you print halftone screens only from Photoshop, open the Photoshop folder. Otherwise, open the Other Applications folder.

3 Locate the image file that corresponds to the patch page for your instrument and paper size.

These images were prepared at the final sheet page size. In your application, place them using no margins. Ignore warnings that the image may be clipped. Do not “color manage” these files when you open or print them.

4 Open a blank document in the application you use for generating screened print jobs.

5 Place the image of the calibration pages into the document.

This document is now the custom calibration page.

6 Print this custom calibration page, using your application-specific halftone settings and Fiery EXP6000/EXP5000 print option settings.

You must print with the CMYK Simulation Profile option set to Off, which produces an uncalibrated patch page.

NOTE: When you print the CMYK patches to the digital press, other Fiery EXP6000/EXP5000 print options are ignored. To increase the speed and reliability of the calibration, print your custom calibration page with the appropriate settings for the ColorWise print options to a PostScript file and download it to the Fiery EXP6000/EXP5000. Retaining this file in the Hold queue makes the calibration process even faster.

7 Open any output profile with Calibrator.

8 Resave the profile under a new name descriptive of your custom halftone.

9 Use Profile Manager to associate this profile with the proper calibration set.



For information about Profile Manager, see ColorWise Pro Tools Help.

10 Use Calibrator to perform the calibration.

NOTE: Do not use the Print button to generate the patch page. Use the custom calibration page that you just printed.

For information about calibration procedures, see [page 42](#).

Understanding calibration

The following sections describe important concepts and suggestions for understanding calibration.

An overview of calibration

Calibration generates curves that adjust for the difference between the actual toner densities (measurements) and the response expected by the output profile.

- Measurements represent the actual color behavior of the digital press.
- Calibration sets are sets of measurements that combine screen and media options provided for Calibrator.
- Each output profile contains a calibration target that describes the expected behavior of the digital press.

After you calibrate the Fiery EXP6000/EXP5000, a calibration set is stored. This calibration set is used when it is associated with an output profile. Every output profile has an associated calibration set. If you have not specified one, the calibration set associated with the default output profile is used.

If you change the calibration after a saved job has been processed (RIPped), you do not have to reprocess (reRIP) the job. The new calibration affects the job without reprocessing.

NOTE: Changing calibration has the potential to affect *all* jobs for *all* users, so consider limiting the number of people authorized to perform calibration. Set an Administrator password in Fiery EXP6000/EXP5000 Setup to control access to calibration (see *Configuration and Setup*).

How calibration works

Although the needs of most users are met by the default calibration set, the Fiery EXP6000/EXP5000 allows you to choose a calibration set to customize calibration for specialized jobs.

Calibration allows you to:

- Maximize the color reproduction capabilities of the Fiery EXP6000/EXP5000.
- Ensure consistent color quality over time.
- Produce consistent output across Fiery EXP6000/EXP5000 servers.
- Achieve better color matches when reproducing **spot colors**, such as PANTONE colors or other **named color** systems.
- Optimize the Fiery EXP6000/EXP5000 for using ColorWise rendering styles (CRDs), CMYK simulations, and ICC profiles.

Success in obtaining satisfactory print quality from the Fiery EXP6000/EXP5000 depends on many factors. Among the most important are establishing and maintaining optimal toner densities. The **density** is the measure of the light absorbed by a surface. By carefully regulating toner densities, you obtain consistent printed color.

Even with a calibrated system, toner density is affected by the settings of digital press, humidity, and temperature. Density also tends to drift over time. Uneven toner density on paper affects calibration results. Regular measurement detects day-to-day variations in density, gradation, and color reproduction, and calibration corrects them.

Calibration works by creating calibration curves on the Fiery EXP6000/EXP5000 that compensate for the difference between actual (measured) and desired (target) density values. These calibration curves are the graphic equivalent of transfer functions, which are mathematical descriptions of changes that are made to the initial data. Transfer functions are often graphed as input or output curves.

The Fiery EXP6000/EXP5000 generates calibration curves after comparing measured values to the final target values for each of the four toner colors. The target values are based on the output profile specified.

Measurements

Measurement files contain numerical values that correspond to the toner density produced by the digital press when it prints solid cyan, magenta, yellow, and black, and graduated tints of those colors.

To create a measurement file, print a page of color patches. Measure the patches using a color measurement instrument connected to a computer on the network. The new measurements are automatically downloaded to the Fiery EXP6000/EXP5000.

Output profiles and calibration sets

Output profiles and calibration sets define desired calibration results. One or more output profiles and calibration sets are provided with the Fiery EXP6000/EXP5000. When you calibrate the Fiery EXP6000/EXP5000, select the calibration set that corresponds to the typical printing jobs at your site. This same calibration set can be associated with one or more output profiles. For more information about output profiles, see [page 63](#).

Scheduling calibration

Calibrate the Fiery EXP6000/EXP5000 at least once a day, depending on the volume of print jobs. If it is very important to maintain consistent color, or your digital press is subject to wide fluctuations in temperature or humidity, calibrate every few hours. For optimal performance, calibrate whenever there is a noticeable change in print quality or printing results are not as expected.

If you must split a print job into two or more batches to print at different times, it is important to calibrate before you print each batch. You should also calibrate the Fiery EXP6000/EXP5000 after digital press maintenance. However, because the digital press may be less stable immediately after maintenance, wait until you have printed approximately 50 pages before you calibrate.

NOTE: Because printed output from the digital press is very sensitive to changes in temperature and humidity, do not install the digital press near a window, in direct sunlight, or near a heater or air conditioner. Paper is also sensitive to climate changes. Store it in a cool, dry, stable environment, and keep reams sealed until they are used.

To monitor print quality, print the following color pages:

- Color Charts from Command WorkStation (see *Utilities*)
- Color reference pages included in the User Software CD (see pages 13 and 20)

These pages include fully saturated color patches and pale tints of cyan, magenta, yellow, and black. Images with skin tones offer a good basis for comparison. Save and periodically compare the pages you print. If a noticeable change in appearance occurs, calibrate the Fiery EXP6000/EXP5000.

When you examine the Test Page, all color patches should be visible, even though they may be very faint in the five to two percent range. Each patch set should show uniform gradation from patch to patch as the color lightens from 100% to zero.

If the solid density patches (100% cyan, magenta, yellow, or black) look less saturated over time, show the pages to your digital press service technician to determine whether adjusting the digital press can improve output.

Checking calibration status

To verify whether the Fiery EXP6000/EXP5000 is calibrated, which calibration set and output profile were used, and when the digital press was last calibrated, perform the following:

- Print a Configuration page or Test Page from Command WorkStation.
- Select a calibration set in Calibrator. The last calibration and the user who performed it are displayed.

COLORWISE PRINT OPTIONS

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 that controls color on the Fiery EXP6000/EXP5000 (see [page 59](#)) and detailed explanations of each print option. See the following table for the location of each print option.

| ColorWise print option | See |
|-------------------------------|-------------------------|
| Black Detection | page 60 |
| Black Overprint | page 60 |
| Combine Separation | page 61 |
| CMYK Simulation Profile | page 61 |
| CMYK Simulation Method | page 62 |
| Output Profile | page 63 |
| Pure Black Text/Graphics | page 64 |
| Rendering Styles | page 65 |
| RGB Separation | page 66 |
| RGB Source Profile | page 66 |
| Spot Color Matching | page 67 |

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 69](#).

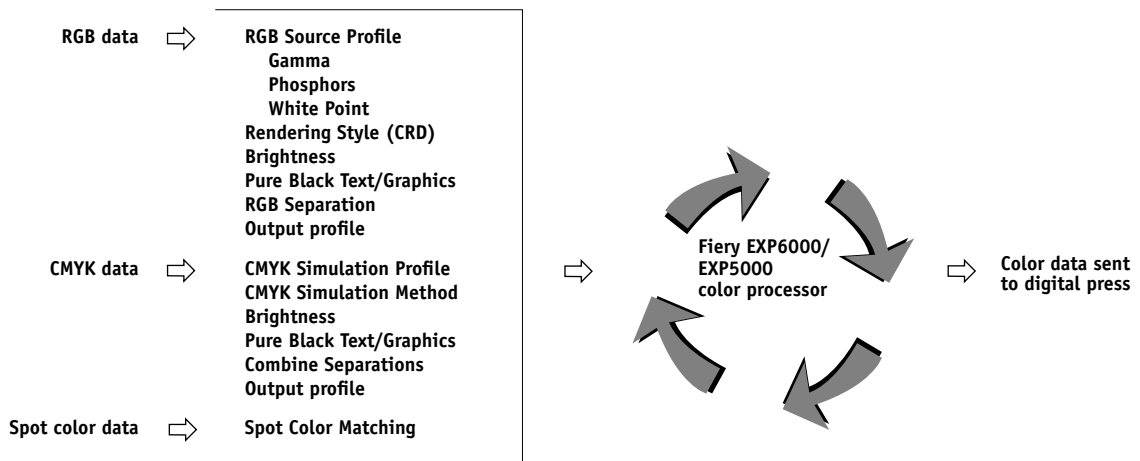
Managing color on the Fiery EXP6000/EXP5000

To modify Fiery EXP6000/EXP5000 printing behavior, do any of the following:

- Specify ColorWise options for an individual print job using the menus that appear in the printer driver.
- Specify most ColorWise options as server defaults from Color Setup in ColorWise Pro Tools (see page 39). You can also set default values from Fiery EXP6000/EXP5000 Setup, as described in *Configuration and Setup*. The defaults apply to all subsequent print jobs unless you override them.
- Specify ColorWise options, particularly default **ICC profile** settings and calibration options, from ColorWise Pro Tools. These options include default Simulation Profile (see page 61), Simulation Method (see page 62), default Source Profile (see page 66), RGB Separation (see page 66), and associated calibration set (see page 56).

Applications allow you to generate color data for the Fiery EXP6000/EXP5000 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 EXP6000/EXP5000 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 EXP6000/EXP5000 color management process that affect color data conversions. You can access these print options when you send a print job to the Fiery EXP6000/EXP5000. Most of these options and settings are described in subsequent sections of this chapter.



RGB **Source Profile** 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 color, RGB Source Profile affects all CIEBasedABC color spaces (if the source space is RGB). For example, if you send CMYK data to the Fiery EXP6000/EXP5000 in CIEBasedDEFG format by choosing PostScript Color Management in Photoshop, the setting for the Rendering Style print option, which normally affects only RGB data, also affects this CMYK data.

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 Screen
- Paper Simulation
- Substitute Colors

Black Detection

The Black Detection option allows you to specify whether or not to detect black-and-white pages before printing your job. To use this option, set Color Mode to CMYK, Standard Color, or Expert Color.

- **Off:** Select Off if your job consists of black-only text pages combined with a significant number of color pages.
- **On:** Select On if you are printing a predominantly black-and-white job.

Black Overprint

The Black Overprint option allows you to specify whether or not black text, 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. Choosing this setting automatically activates the Pure Black Text/Graphics option.
- **Text & Graphics:** Black text and graphics overprint colored backgrounds, eliminating white gaps and reducing halo effects or misregistration of colors. Choosing this setting automatically activates the Pure Black Text/Graphics option.
- **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 toner. 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 toners occurs. The quality of the output is improved, since it does not show artifacts near the edges of the text defined in the RGB color space (RGB=0, 0, 0).
- With Black Overprint Off, the border of the text or text/graphics is on an edge that has cyan and magenta toners on one side (outside the text) and black toner on the other side (inside the text). This transition may cause visible artifacts due to the practical limitations of the digital press.

NOTE: Setting Black Overprint to Text/Graphics allows black text or graphics to overprint color backgrounds (see “[CMYK Simulation Method](#)” on page 62).

NOTE: The reproduction of CMYK components is affected by the CMYK Simulation setting and calibration curve when CMYK is not 0%, 0%, 0%, 0%.

Combine Separations

The Combine Separations setting specifies how to print separated CMYK data. With Fiery Graphic Arts Package, you can combine an unlimited number of spot color separations along with the CMYK separations.

- **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), Rendering Style (None), Pure Black Text/Graphics (Off), and Spot Color Matching.

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

CMYK Simulation Profile

The CMYK Simulation Profile 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.

With Windows printer drivers, you can also view an unlimited number of custom Full simulations created using ColorWise Pro Tools. On Mac OS computers, you can view up to 10 Full custom simulations. The number of custom simulations is limited by the available disk space on the Fiery EXP6000/EXP5000.

If you are printing with the PostScript driver from a Windows computer and have Two-Way Communication enabled, the name of each downloaded or custom profile appears in the CMYK Simulation Profile menu. If you are printing with the AdobePS driver from a Mac OS computer, downloaded or custom profiles appear as Simulation-1 through Simulation-10. For more information about Two-Way Communication, see *Printing from Windows*.

The CMYK Simulation Profile 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 EXP6000/EXP5000 with the CMYK Simulation Profile setting.
- For images that were separated for **SWOP**, choose SWOP as the CMYK Simulation Profile setting.

NOTE: To properly simulate a printed image that was separated using an ICC profile, the same profile must be present on the Fiery EXP6000/EXP5000.

The None setting sends your original CMYK data to the digital press in its calibrated state, without conversions to simulate another printer.

The ColorWise Off setting sends your original CMYK data to the digital press in an uncalibrated state, without conversions to simulate another printer. This setting is not generally recommended, unless you want to bypass the ColorWise conversion and use another color management system.

CMYK Simulation Method

The CMYK Simulation Method allows you to define your preferred CMYK-to-CMYK conversion technique.

- **Quick** applies one-dimensional transfer curves to adjust output densities in the cyan, magenta, yellow, and black channels. This technique leads to eye-pleasing color output from your digital press because pure primary colors are not “contaminated” by other **colorants**. While it is the fastest simulation method and perfect for drafts, avoid using it for final documents that are used as press proofs. Other techniques offer the color simulation accuracy required by proofing applications.
- **Full (Source GCR)** provides a complete and accurate simulation based on colorimetric transformations. Hues are preserved, even for primary colors. The **Gray Component Replacement** (GCR) level that was specified in the original (source) document is also preserved for K-only text and graphics. Processed black expressed in CMY is reproduced using CMY toner. 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 re-separated 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: The black color of your print job is preserved when C=M=Y=0. K-only text and graphics are reproduced using K toner only. Processed black expressed in CMY is reproduced using CMY toner, which expresses richer black than you can achieve with Full (Source GCR).

NOTE: When you specify On for Pure Black Text/Graphics and Full (Output GCR) for CYMK Simulation Method, the black text and graphics in your document are printed with 100% black-only toner.

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.

In certain cases, you may want to customize the default output profile using the ColorWise Pro Tools Color Editor to achieve particular color effects. If you do so, the new customized output profile is applied to all data in the print job. Changing the output profile only does not affect its associated calibration target (since the target is based on a digital press model). You can edit calibration target D-Max values separately.

Use ColorWise Pro Tools Profile Manager to download your own output profile to the Fiery EXP6000/EXP5000. Downloaded output profiles 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.

For more information about Use Media Defined Profiles, see [“Using media-defined output profiles”](#) on page 27.

If you are printing with the PostScript driver from a Windows computer and have enabled Two-Way Communication, the name of each downloaded or custom profile appears in the Output Profile menu. If you are printing with the AdobePS driver from a Mac OS computer, downloaded or custom profiles appear as Output-1 through Output-10. For more information about Two-Way Communication, see [Printing from Windows](#).

Pure Black Text/Graphics

The Pure Black Text/Graphics option affects black text and **vector graphics**. Under most circumstances, set this option to On. When Pure Black Text/Graphics is set to On, black colors generated by applications (for example, RGB=0, 0, 0 or CMYK=0%, 0%, 0%, 100%) are printed using black toner 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 toner is used. In addition, this setting eliminates **blasting**. This option is automatically set to On when the Black Overprint option is set to On.

For some jobs, it is preferable to clear this option, for example, if the page includes **gradient** fills that use black. The following table describes the behavior of the Pure Black Text/Graphics option with black data defined in different color spaces.

NOTE: Use the Pure Black Text/Graphics option only when printing composites, not when printing separations.

| Color | Pure Black Text/Graphics Off | Pure Black Text/Graphics On |
|--|--|--|
| RGB=0,0,0 (all other RGB values are unaffected by the Pure Black Text/Graphics setting) | 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 toners 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. | RGB=0,0,0 is printed as K-only, using the black toner. All other RGB values are unaffected by the Pure Black Text/Graphics setting. |
| CMYK=0%,0%,0%,100% (all other CMYK values are unaffected by the Pure Black Text/Graphics setting) | CMYK=0%,0%,0%,100% may be printed as K-only or as a rich black using all toners, depending on the CMYK Simulation Profile and CMYK Simulation Method settings. For Quick and Full (Source GCR), CMYK=0%,0%,0%,100% prints as K-only and the amount of black toner is limited by the simulation profile and the calibration curve. For Full (Output GCR), CMYK=0%,0%,0%,100% prints as K-only and the amount of black toner is limited by the simulation profile and the calibration curve. If CMYK Simulation is set to ColorWise Off, it disables the simulation profile and the calibration curve. In this case, the black toner is not limited by the calibration curve. | CMYK=0%,0%,0%,100% is printed as K-only, using the black toner, regardless of the CMYK Simulation Profile and CMYK Simulation Method settings. All other CMYK values are unaffected by the Pure Black Text/Graphics setting. Setting CMYK Simulation to ColorWise Off disables the simulation profile and the calibration curve. In this case, the black toner is not limited by the calibration curve. |
| Spot Colors (unaffected by the Pure Black Text/Graphics setting) | Standard spot color processing | Standard spot color processing |

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 EXP6000/EXP5000. These elements are not affected by the Pure Black Text/Graphics option. For more information, see *Fiery Color Reference*. Also, black text and line art defined as RGB=0, 0, 0 in office applications, such as Microsoft Word, are converted to single-color black (CMYK=0%, 0%, 0%, 100%) by the Microsoft PostScript 3 printer driver for Windows 2000/XP/Server 2003. To print this single-color black at the maximum toner density of the digital press, set Pure Black Text/Graphics to On.

Rendering Styles

The Rendering Style option specifies a CRD for color conversions. To control the appearance of images, such as prints from office applications or RGB photographs from Photoshop, select the appropriate rendering style. The Fiery EXP6000/EXP5000 allows you to choose from the four rendering styles currently found in industry standard ICC profiles.

| Fiery EXP6000/EXP5000 rendering style | Best used for | Equivalent ICC rendering style |
|--|---|--|
| Photographic: Typically results in less saturated output than presentation rendering when printing out-of-gamut colors. This style preserves tonal relationships in images. | Photographs, including scans and images from stock photography CDs and digital camera images. | Image, Contrast, and Perceptual |
| Presentation: 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 style. | Artwork and graphs in presentations. In many cases, this style can be used for mixed pages that contain presentation graphics and photographs. | Saturation, Graphics |
| Relative Colorimetric: 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. | 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. | Relative Colorimetric |
| Absolute Colorimetric: Provides <i>no</i> white point transformation between the source and destination white points. For example, the bluish white color (gray) is not replaced by paper white. | 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. | Absolute Colorimetric |

RGB Separation

The RGB Separation 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, since the option defines the color spaces that are used by the Fiery EXP6000/EXP5000 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 (**output**) or is first converted into the gamut of another digital printer or press standard (**simulation**). 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.

RGB Separation 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 simulation profile you used during the experimentation.

NOTE: Use the RGB Separation print option in conjunction with the Output Profile or CMYK Simulation Profile print options.

- **Output** converts all RGB colors into the CMYK color space of your digital press (when set to the printer’s default), or a customized CMYK color space for your digital press (when set to Output 1-10).
- **Simulation** converts all RGB colors into the CMYK color space for a specified simulation (select the desired simulation with the CMYK Simulation Profile print option).

RGB Source Profile

The RGB **source profile** setting allows you to define the characteristics of the RGB data in your document so that the appropriate color conversion occurs on the Fiery EXP6000/EXP5000. Commonly used monitor color spaces are available from the printer driver and the Fiery EXP6000/EXP5000. For others, use ColorWise Pro Tools Profile Manager to download custom monitor or scanner profiles.

When you specify a setting other than None for the RGB Source Profile, the Fiery EXP6000/EXP5000 overrides **source color space** definitions or profiles that other color management systems may have specified. For example, if you specified a ColorSync System Profile on your Mac OS computer, the RGB Source Profile setting overrides it. In cases where you do *not* want this setting to override another specified source color space, choose None.

When you specify a setting other than None, since the color space definitions are overridden, the output from the Fiery EXP6000/EXP5000 is consistent across platforms. The Fiery EXP6000/EXP5000 RGB Source Profile 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.
- **Other** allows you to specify custom RGB source settings. If you choose Other as the RGB Source setting, you must choose settings for the Gamma, Phosphors, and White Point options.
- **Sources 1-10** specify the definitions you download as RGB source profiles.

If you are printing with the PostScript driver from a Windows computer and enabled Two-Way Communication, the name of each downloaded profile appears in the RGB Source Profile setting menu. If you are printing with the AdobePS driver from a Mac OS computer, downloaded profiles appear as Source-1 through Source-10. For more information about Two-Way Communication, see *Printing from Windows*.

- **None** instructs the Fiery EXP6000/EXP5000 to allow the RGB sources you defined elsewhere, such as in the application, to be used. When you set RGB Source to None, the appearance of colors is *not* independent of the file type. For example, RGB EPS files look different from RGB TIFF files.

With RGB Source set to None, PostScript RGB data that contains a source color space definition is converted using the CRD specified by the Rendering Style option (see “Rendering Styles” on page 65). Non-PostScript RGB data and PostScript RGB data that does not contain a source color space definition are converted using a general **undercolor removal (UCR)** conversion method.

Spot Color Matching

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

- **On:** The Fiery EXP6000/EXP5000 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 the Fiery Graphic Arts Package, the Fiery EXP6000/EXP5000 uses the CMYK matches determined through Spot-On (see “Using Spot-On” on page 27).

- **Off:** The Fiery EXP6000/EXP5000 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 Simulation setting (see page 61).

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 EXP6000/EXP5000 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 EXP6000/EXP5000 uses a built-in table or 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 “Using Spot-On” on page 27.

- **Off:** The Fiery EXP6000/EXP5000 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 Simulation and Output Profile settings.

Printer drivers and print options

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 EXP6000/EXP5000. The Fiery EXP6000/EXP5000 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 EXP6000/EXP5000.

Before you proceed, do the following:

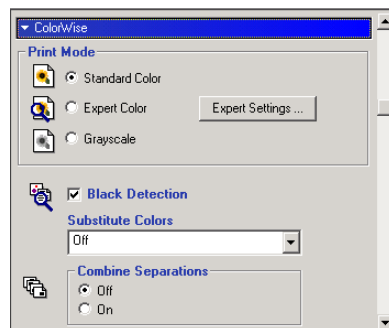
- Install the Adobe or Microsoft PostScript printer driver and the Fiery EXP6000/EXP5000 PPD (see *Printing from Windows*).
- Set up the Fiery EXP6000/EXP5000 for printing (see *Printing from Windows*).

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 EXP6000/EXP5000 as your printer and click Properties.**
In the Properties dialog box, the Fiery Printing tab is displayed.
- 3 **Click the ColorWise print option bar.**

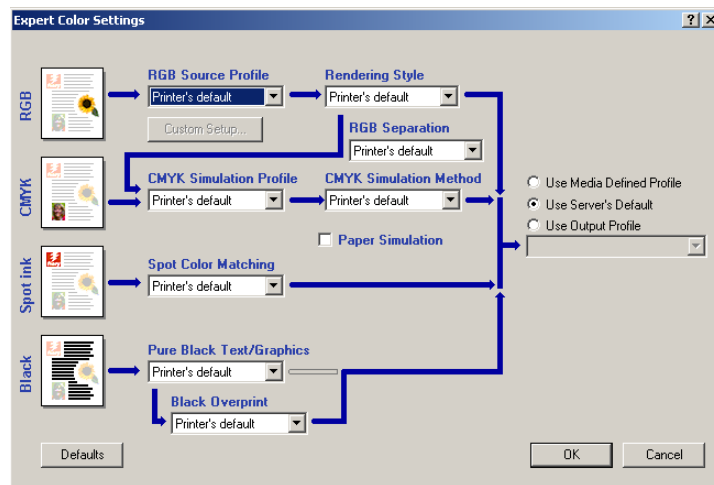


4 Specify the settings for the print options in the ColorWise pane.

For information about ColorWise print options, see [page 60](#).

5 Click Expert Settings in the Print Mode pane.

The Expert Color Settings dialog box appears.



This dialog box displays most of the ColorWise print options for the Fiery EXP6000/EXP5000.

6 Click Update to display the current Fiery EXP6000/EXP5000 settings.

If the Update button does not appear, make sure that Two-Way Communication is set up. For information about enabling Two-Way Communication, see [Printing from Windows](#).

7 Specify the settings for the main ColorWise print options.

NOTE: To specify custom settings for the RGB Source Profile print option, choose Other and click Custom Setup.

For most users, the default settings provide adequate color control. For information about individual print options, see [page 60](#).

Setting color management print options for Mac OS

This section explains how to set color management print options with the AdobePS printer drivers for Mac OS, the PostScript 3 drivers that take full advantage of the color features of the Fiery EXP6000/EXP5000.

Before you proceed, do the following:

- Install the AdobePS printer driver and the Fiery EXP6000/EXP5000 PPD (see [Printing from Mac OS](#)).
- Set up the Fiery EXP6000/EXP5000 for printing (see [Printing from Mac OS](#)).

Setting color management print options for Mac OS 9

Choose settings for color print options from the various panes of the AdobePS driver dialog box. To access the initial AdobePS dialog box, choose Print from the File menu of your application.

NOTE: The term “pane” is used to describe the different pages that appear in the driver dialog box when you make selections from the menu in the upper-left corner of the dialog box. Each pane presents a particular set of print options.

The AdobePS driver includes the following Color Matching options.

- **Color/Grayscale** enables ColorWise to provide all color conversions on the Fiery EXP6000/EXP5000. In general, use this option when printing to the Fiery EXP6000/EXP5000.
- **PostScript Color Matching** enables a color conversion to use a color rendering dictionary (CRD) that is downloaded with a print job, and can be used with PostScript devices, such as the Fiery EXP6000/EXP5000. This option requires that the file is saved as an EPS with PostScript Color Management selected.

NOTE: If you use the PostScript Color Matching option, the driver may attach a CMYK source definition to the CMYK data in your document, depending on the application you use. In this case, the CMYK data in the document is re-separated using a Fiery EXP6000/EXP5000 CRD. The destination color space for the CRD is determined by the RGB Separation print option. When RGB Separation is set to Simulation, CMYK data is printed according to all specified CMYK Simulation Profile and CMYK Simulation Method settings. When RGB Separation is set to Output, CMYK data is converted to the CMYK color space of the selected output profile.

- **ColorSync Color Matching:** Provides for color conversion on the host computer. You can use this option with PostScript devices, such as the Fiery EXP6000/EXP5000, but it is intended for use with PostScript Level 1 devices. If you use this option, you must specify the Fiery EXP6000/EXP5000 ICC profile as the Printer Profile.

NOTE: ColorSync Color Matching is not a recommended color matching method because it does not work in conjunction with all applications and requires that you disable features of ColorWise on the Fiery EXP6000/EXP5000.

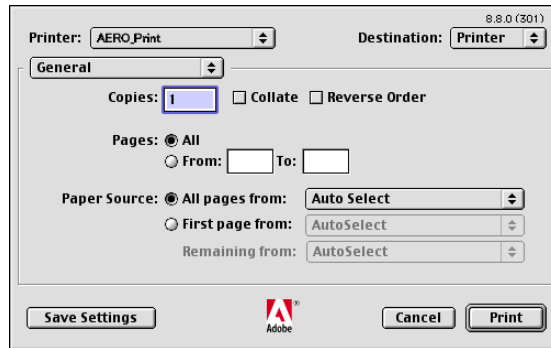
NOTE: The following illustrations and instructions do not apply to all applications. Many applications, such as PageMaker, Photoshop, Illustrator, QuarkXPress, and CorelDRAW, have other color management options in addition to those presented in the printer driver. For information about specific applications,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

Use the following procedure to set the color options for Mac OS computers.

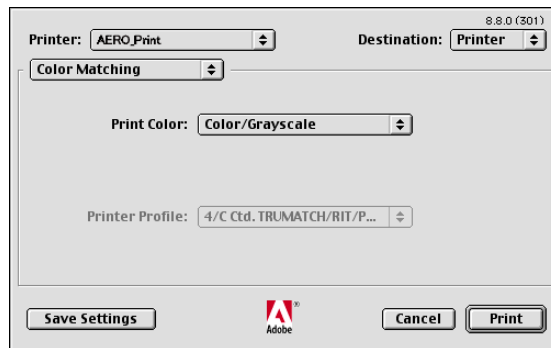
To SET PRINT OPTIONS FOR MAC OS COMPUTERS (MAC OS 9)

- 1 Choose Print in your application.**

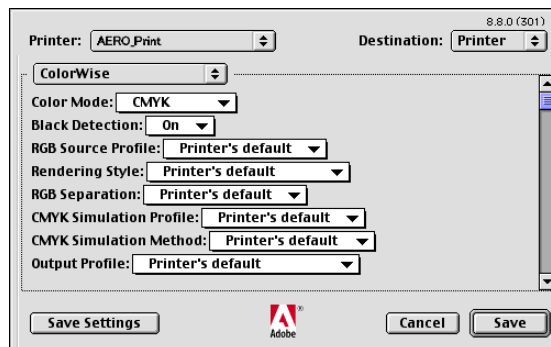
The print dialog box appears.



- 2 Choose Color Matching from the General menu.**
- 3 Choose Color/Grayscale from the Print Color menu.**



- 4 Select Colorwise from the Printer Specific Options menu to choose ColorWise print option settings.**



For information about each ColorWise print option, see [page 60](#).

To select other print options, see *Printing from Mac OS*.

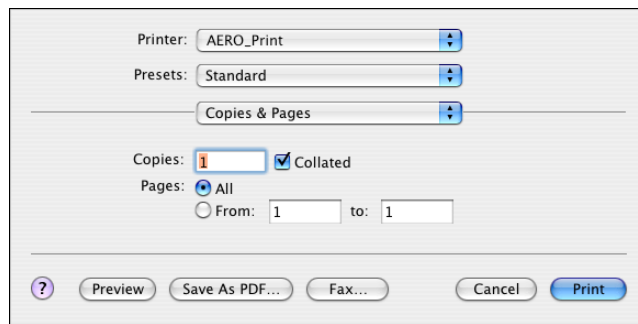
5 Click Save Settings.

The settings are saved for subsequent jobs.

TO SET PRINT OPTIONS FOR MAC OS COMPUTERS (MAC OS X)

1 Choose Print in your application.

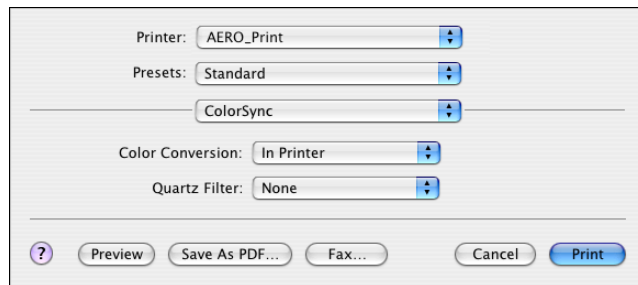
The print dialog box appears.



2 Mac OS X v10.3: Choose ColorSync from the Copies & Pages menu.

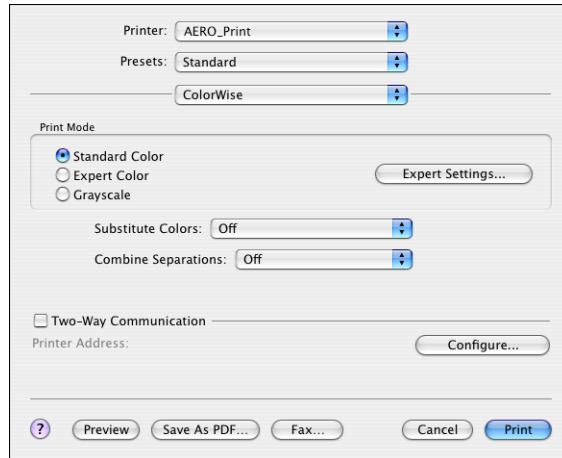
The ColorSync pane appears.

3 Choose In Printer from the Color Conversion menu.



4 Choose ColorWise from the ColorSync (default: Copies and Pages) menu.

The ColorWise pane appears.



5 Select Two-Way Communication.

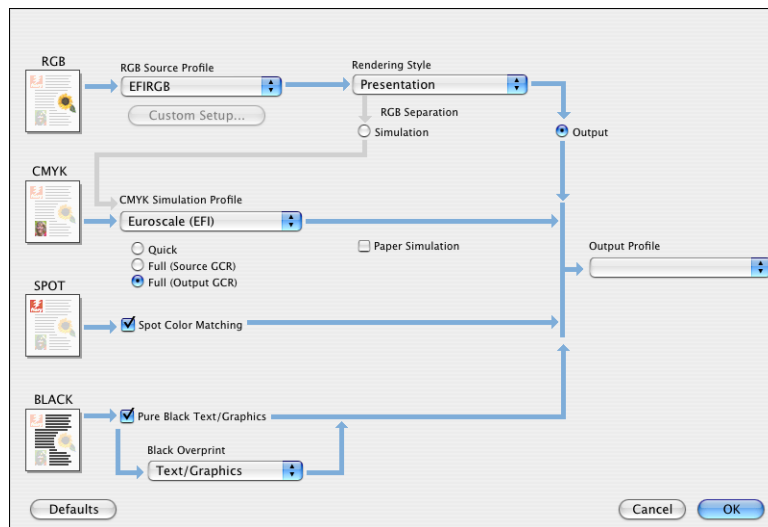
For information about enabling Two Way Communication, see *Printing from Mac OS*.

6 Specify the settings for the print options in the ColorWise pane.

For information about ColorWise print options, see [page 60](#).

7 Click Expert Settings in the Print Mode pane.

The ColorWise Expert Settings dialog box appears.



8 Choose settings for the main ColorWise print options.

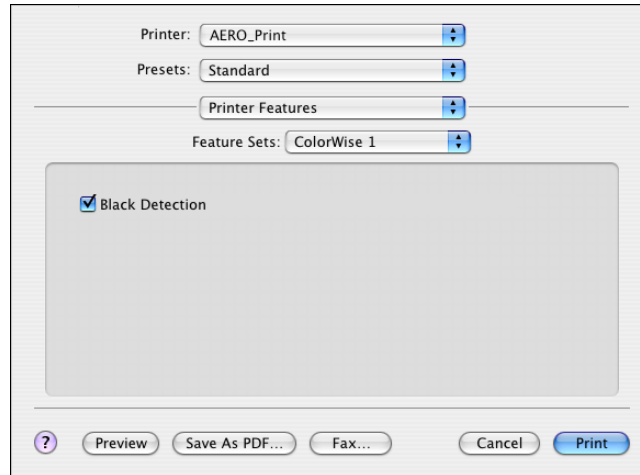
For information about ColorWise print options, see [page 60](#).

9 Click OK.

The ColorWise pane reappears.

10 Choose Printer Features from the ColorWise (default: Copies and Pages) menu.

The Printer Features pane appears.

11 Choose ColorWise 1 from the Feature Sets menu.**12 Specify the setting(s) for the print option(s) from the ColorWise 1 menu.**

For information about ColorWise print options, see [page 60](#).

COLOR MEASUREMENT INSTRUMENTS

This chapter explains how to set up and calibrate the following color measurement instruments, available as separately purchased options:

- DTP32 densitometer
- DTP41 spectrophotometer
- ES-1000 hand-held spectrophotometer

Using the DTP32

ColorWise Pro Tools is designed to work with the DTP32 densitometer, which feeds color measurements to the Fiery EXP6000/EXP5000 automatically.

NOTE: You can input measurements from other densitometers using a simple ASCII file format (see “[Importing Density Measurements](#)” on page 85).

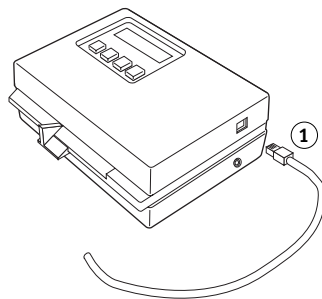
Setting up the DTP32

Before you calibrate the Fiery EXP6000/EXP5000 using the DTP32, you must connect, configure, and calibrate the DTP32 to prepare for measuring the printed patches (see “[Calibrating the DTP32](#)” on page 78). For additional information about setting up and using the DTP32, see the documentation that accompanies the DTP32.

TO CONNECT THE DTP32 TO THE COMPUTER

- 1 Turn off the computer.
- 2 Plug the square end of the interface cable (looks like a modular phone plug) into the I/O port on the side of the DTP32.

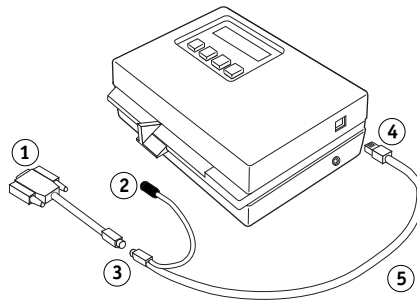
1 Square connector



3 Attach the connector to the computer.

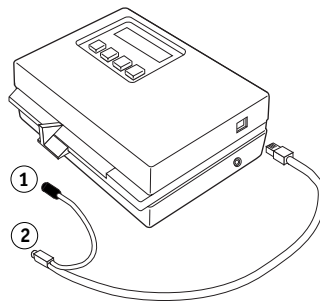
For a Windows computer, insert the 8-pin mini-DIN end of the interface cable into the 9-pin DB9 Connector cable adapter. Insert the 9-pin end into the COM1 or COM2 port on the computer and tighten the screws. If the available port on your computer is 25-pin, you must use the 8-pin-to-25-pin adapter.

- 1 Connect to computer
- 2 Unused connector
- 3 Connect to adapter
- 4 Square connector
- 5 Interface cable



For a Mac OS computer, connect the 8-pin mini-DIN plug directly into the serial port of the computer.

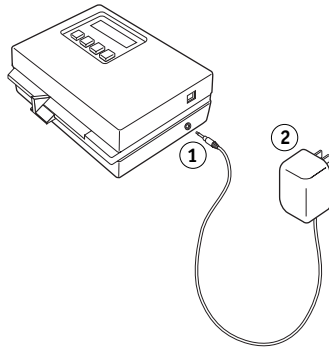
- 1 Unused connector
- 2 Connect to serial port



NOTE: For Mac OS computers with a USB port, you need an adapter to connect the DTP32 to your computer. For information about supported adapters, see the X-Rite, Inc. web site (www.x-rite.com).

- 4 Plug the small connector on the adapter cable into the side of the DTP32 and plug the AC adapter into a wall outlet.

- 1 Small connector
- 2 AC adapter



- 5 Turn on the computer.
- 6 Calibrate the DTP32 (see the following section).
- 7 Calibrate the Fiery EXP6000/EXP5000 using ColorWise Pro Tools and the DTP32 (see [page 45](#)).

Calibrating the DTP32

You need the black-and-white X-Rite Auto-Cal Strip included with the DTP32. Calibrating the DTP32 does not require ColorWise Pro Tools.

To CALIBRATE THE DTP32

- 1 Connect the DTP32 to the computer and supply power (see [page 76](#)).
- 2 From the Main Menu on the DTP32 display, press the p1 key once to reach p2.
- 3 Press the cal key.
Calibrating motor speed is displayed, followed by INSERT CAL STRIP.
- 4 Insert the arrow end of the X-Rite Auto-Cal Strip into the 35mm slot on the front of the DTP32 until it stops or the roller starts pulling the strip.

Reading appears momentarily, followed by the density values and CALIBRATION OK. The DTP32 automatically returns to the MAIN MENU.

If UNRECOGNIZABLE STRIP appears, repeat the process or try cleaning the strip (see the DTP32 Operating Manual).

Recalibrate the DTP32 at least once per month. If it is important to maintain consistent color, calibrate the DTP32 every time you calibrate the Fiery EXP6000/EXP5000. The DTP32 may also warn periodically that it requires calibration.

Using the DTP41

ColorWise Pro Tools Calibrator supports the DTP41 spectrophotometer, a device that measures density and color data. The DTP41 communicates directly with ColorWise Pro Tools Calibrator, sending measurements to the Fiery EXP6000/EXP5000 automatically.

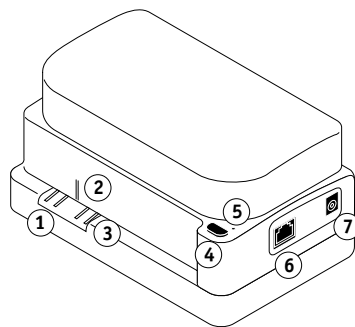
Setting up the DTP41

Before you calibrate the Fiery EXP6000/EXP5000, you must connect, configure, and calibrate the DTP41 to prepare for measuring the printed patches. For additional information about setting up and using the DTP41, see the documentation that accompanies the DTP41.

TO CONNECT THE DTP41 TO THE COMPUTER

- 1 Turn off the computer.
- 2 Unpack the DTP41 and remove the spacer from the measurement page slot.
- 3 Plug the square end of the interface cable (looks like a modular phone plug) into the serial interface connection on the side of the DTP41.

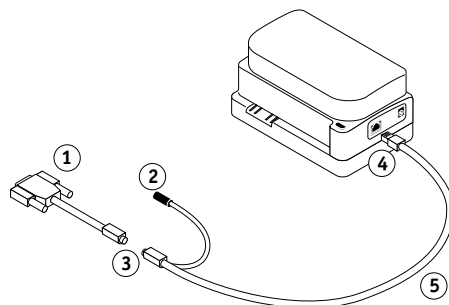
- 1 Measurement page slot
- 2 Alignment mark
- 3 Calibration strip entrance
- 4 Instrument button
- 5 LED indicator
- 6 Serial interface connection
- 7 Power input



- 4 Attach the connector to the computer.

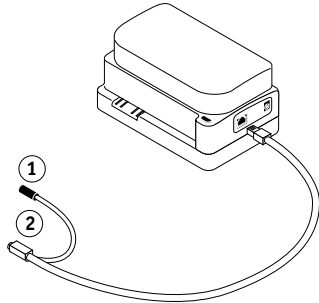
For a Windows computer, insert the 8-pin mini-DIN end of the interface cable into the 9-pin DB9 Connector cable adapter. Insert the 9-pin end into the COM1 or COM2 port on the computer and tighten the screws. If the available port on your computer is 25-pin, you must use the 8-pin-to-25-pin adapter.

- 1 Connect to computer
- 2 Unused connector
- 3 Connect to adapter
- 4 Square connector
- 5 Interface cable



For a Mac OS computer, connect the 8-pin mini-DIN plug directly into the serial port of the computer.

- 1 Unused connector
- 2 Connect to serial port

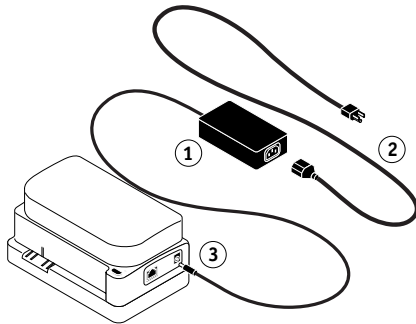


NOTE: For Mac OS computers with a USB port (for example, an iMac), you need an adapter to connect the DTP41 to your computer. For information about supported adapters, see the X-Rite, Inc. web site (www.x-rite.com).

5 Use the AC adapter to provide power.

Plug the small connector on the adapter cable into the power input of the DTP41 and plug the AC adapter into the power cord. Plug the power cord into a wall outlet.

- 1 AC adapter
- 2 Power cord
- 3 Small connector



- 6 Turn on the computer.
- 7 Calibrate the DTP41 using ColorWise Pro Tools (see the following section).
- 8 Calibrate the Fiery EXP6000/EXP5000 using ColorWise Pro Tools and the DTP41 (see [page 47](#)).

Calibrating the DTP41

For the best color accuracy, calibrate the DTP41 every time you calibrate the Fiery EXP6000/EXP5000. Initiate the calibration sequence in ColorWise Pro Tools Calibrator as part of the process of Fiery EXP6000/EXP5000 calibration. The computer may also prompt you to calibrate the DTP41.

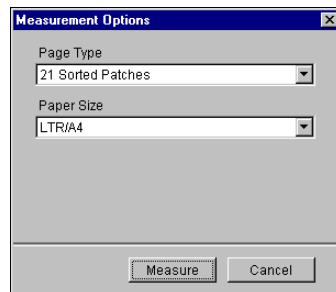
You can also initiate calibration of the DTP41 using the Instrument button on the DTP41. For more information about this method, see the documentation that accompanies the DTP41.

Multiple users can connect to one Fiery EXP6000/EXP5000 server with ColorWise Pro Tools, but only one user at a time can use Calibrator. If you try to calibrate when another user is already using Calibrator, an error message appears.

You need the Color Reflection Reference strip that is included with the DTP41. Remove the strip from the protective envelope, handling it by the edges only. Keep the strip free of dust and smudges and always store it in the protective envelope.

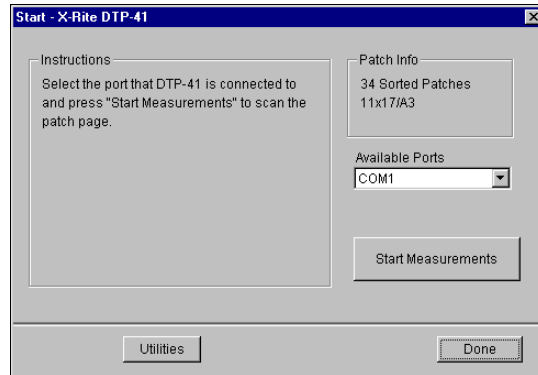
TO CALIBRATE THE DTP41

- 1 **Connect the DTP41 to the computer and supply power (see [page 79](#)).**
- 2 **Start Calibrator.**
For instructions on starting Calibrator, see [page 42](#).
- 3 **Choose DTP41 as the measurement method.**
- 4 **Click Measure in the Get Measurements pane.**
- 5 **Click Measure in the Measurement Options dialog box.**



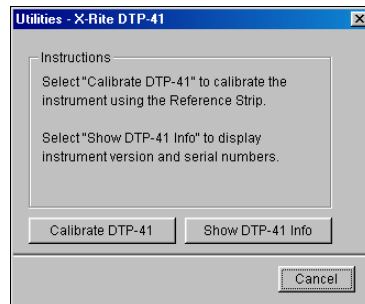
6 Choose the appropriate COM port for the DTP41 from the Available Ports menu.

The Instructions field displays instructions for selecting the port.



7 Click Utilities.

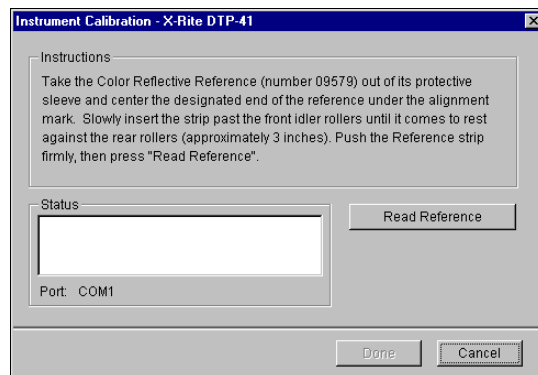
The Utilities dialog box appears.



To view version and serial number information, click Show DTP-41 Info, and then click Done.

8 Click Calibrate DTP-41.

The Instrument Calibration dialog box appears.



- 9 **If you have not already done so, remove the shipping spacer from the measurement page slot.**
- 10 **Insert the end of the Color Reflection Reference strip with the arrow into the calibration strip entrance on the DTP41, centering it below the alignment mark (see the diagram on [page 79](#)).**

Insert the strip about 3 inches, past the front idler rollers, until it rests against the rear drive rollers.

- 11 **Click Read Reference.**

The DTP41 pulls the calibration strip through automatically.

A message appears in the Status area when calibration is finished.

- 12 **Click Done to close the Instrument Calibration dialog box.**

- 13 **Close the Utilities dialog box.**

This completes DTP41 calibration.

Your computer prompts you when the DTP41 requires calibration. When the prompt message appears, click Calibrate Now and follow the instructions, starting with [step 8](#) on [page 82](#).

After calibrating the DTP41, calibrate the Fiery EXP6000/EXP5000 (see [page 47](#)).

Using the ES-1000

The ES-1000 is a hand-held **spectrophotometer** that measures the **spectral light** reflected from printed output and other colored materials. Since the ES-1000 accurately measures both the **density** and color of printed output, it is an effective tool for calibrating the Fiery EXP6000/EXP5000.

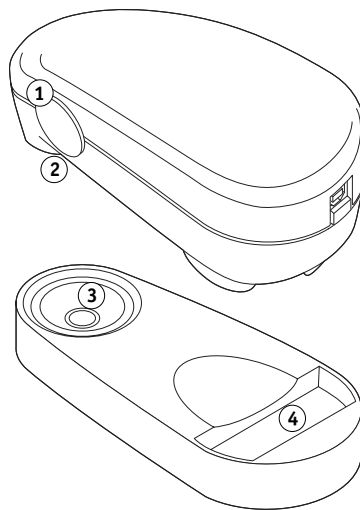
NOTE: The ES-1000 is available as a separately purchased option.

Setting up the ES-1000

To use the ES-1000 for calibration purposes, you must set it up for use with your computer. For complete instructions on setting up and calibrating the ES-1000, see the documentation that accompanies the ES-1000.

The following illustration shows the different parts of the ES-1000.

- 1 Measure button
- 2 Sample aperture
- 3 White tile reference
- 4 Cradle



Calibrating the ES-1000

When you place the ES-1000 in the calibration cradle, white point calibration is used to calibrate the spectrometer. Make sure the sample aperture is in full contact with the white tile on the calibration cradle.

IMPORTING DENSITY MEASUREMENTS

This chapter describes Simple ASCII File Format (SAIFF), which you can use to import density measurements from measurement devices. To use your own measurement data from an alternate measurement instrument, record your individual readings in a text file, and then structure the file as follows.

Simple ASCII Import File Format

This format describes **Status T** measurement data for import into the ColorWise Pro Tools Calibrator. The three possible file formats are:

- 1D Status T density for EFI 21 patch page
- 1D Status T density for EFI 34 patch page
- 1D Status T density for other pages (maximum of 256 patches per ink)

The file format is ASCII and has no tabs. A single space or multiple spaces are used as delimiters. Blank lines are not allowed. Each line in the file represents four patches (C, M, Y, K) of a specific ink value. Comments may be on any line in the file. Comment lines must start with a pound sign (#) followed by a space. (A line with a pound sign followed by any character other than a space has been reserved.) Comments must be on a line by themselves.

Each line of data contains five values. The first number is the sequential patch number (for EFI 21 and EFI 34 pages) or the ink value percentage (for other pages). The four values that follow are the density values of C, M, Y, and K of the corresponding patch. Lines are ordered either by increasing sequential patch numbers, or by increasing the ink percentage.

For Windows computers, the file extension must be .cm1. For Mac OS computers, the file type must be 'TEXT'.

Measurement data in EFI 21 and EFI 34 are paper-relative. For other pages, if the first line corresponds to zero ink value, the Calibrator assumes that the measurement data is absolute and adjusts it to become paper-relative by subtracting the density values of the first line from the remaining patches.

Example of 1D Status T density for EFI 21 patch page

This file format is used to specify the Status T density measurements of the EFI 21 patch page. The value in the first column is the patch number. The first patch must be 1 and the last must be 21.

```
#!EFI 3
# EFI ColorWise 2.0 Data
type: 1DST21
# Cyan Magent Yellow Black
1 0.0300 0.0400 0.0200 0.0400
2 0.0600 0.0700 0.0800 0.0700
3 0.1000 0.1000 0.1000 0.1000
(...more data...)
20 1.6700 1.3400 0.8900 1.6700
21 1.7200 1.4300 0.9300 1.7500
```

Example of 1D Status T density for EFI 34 patch page

This file format is used to specify the Status T density measurements of the EFI 34 patch page. The value in the first column is the patch number. The first patch must be 1 and the last must be 34.

```
#!EFI 3
# EFI ColorWise 2.0 Data
type: 1DST34
# Cyan Magent Yellow Black
1 0.0300 0.0400 0.0200 0.0400
2 0.0600 0.0700 0.0800 0.0700
3 0.1000 0.1000 0.1000 0.1000
(...more data...)
33 1.6700 1.3400 0.8900 1.6700
34 1.7200 1.4300 0.9300 1.7500
```

Example of 1D Status T density for an arbitrary page

This file format is used to specify the Status T density measurements of a user-defined patch page. The value in the first column is the ink/toner percentage of the patch. The first percentage must be 0 and the last percentage must be 100. The percentages must increase in between.

```
#!EFI 3
# EFI ColorWise 2.0 Data
type: 1DST
# percent Cyan Magent Yellow Black
0.0000 0.0300 0.0400 0.0200 0.0400
0.3922 0.0600 0.0700 0.0800 0.0700
1.1765 0.1000 0.1000 0.1000 0.1000
(...more data...)
98.0000 1.6700 1.3400 0.8900 1.6700
100.0000 1.7200 1.4300 0.9300 1.7500
```


INDEX

A

Absolute Colorimetric rendering style 65
 Apple Standard setting, RGB Source Profile
 option 67

B

Black Detection 60
 Black Overprint option 60

C

Calibrat folder 13
 calibration
 checking status 57
 Comparison Page 44
 curves 44, 56
 DTP32 45
 DTP41 47
 ES-1000 49
 importing density measurements 85
 measurement page 56
 measurements 55
 overview 55
 patches 56
 restoring defaults 45
 scheduling 57
 targets 55, 56
 viewing measurements 44
 Calibration folder 20
 Calibrator 54
 ColorWise Pro Tools 54
 Expert mode 43
 printing Comparison Page 44
 restoring defaults 45
 using 24, 42
 viewing measurements 44
 CMYK Color Reference.ps 20
 CMYK Simulation Method option 62
 CMYK Simulation Profile option 61, 62
 Cmyk_ref.ps 13
 Color Chart 57
 Color Editor 24
 color management system (CMS) 9
 color profiles 10

color reference files
 for Windows users 13
 Color Reference pages 57
 color rendering dictionary (CRD) 9, 65, 71
 Color Setup 39
 color space 59
 ColorSync Color Matching option 71
 ColorWise
 key features 9
 print options 39, 68
 workflow diagram 59
 ColorWise Pro Tools
 Calibrator 24, 42, 54
 checking calibration status 57
 Profile Manager 54
 Combine Separations option 61
 Comparison Page 44
 composites, printing 61, 64, 68
 Configuration page 14, 21, 57
 connection, configuring 14, 16, 21, 23
 Contrast ICC rendering style 65
 CRD 9, 65
 custom simulations 61
 Custom21.ps 13, 20
 Custom34.ps 13, 20

D

densitometer
 DTP32 45, 76
 ED-100 84
 density 56, 57
 importing 85
 device name 15, 22
 DNS name 14, 21
 Domain Name Server 21
 DTP32
 calibrating with 45
 instrument calibration 78
 setup 76
 DTP41
 calibrating with 47
 instrument calibration 81
 setup 79

E

- EFIRGB, RGB Source Profile
 - option 67
- ES-1000 84
 - calibrating with 49
 - instrument calibration 84
 - overview 84
- ES-1000, importing measurements
 - with 37

F

- Fiery Graphic Arts Package
 - Spot-On 67
 - unlimited separations 61
- Fiery utilities, configuring the
 - connection for 16, 23
- Full (Output GCR) setting, CMYK
 - Simulation Method option 63
- Full (Source GCR) setting, CMYK
 - Simulation Method option 62

G

- Graphics ICC rendering style 65

H

- Halftone Screen
 - calibrating 53
 - CustomHalftonesCalibration folder 53

I

- ICC profiles 10
 - defined 9
 - downloading 27
 - editing 24
 - rendering styles 65
- Image ICC rendering style 65

L

- Lightness, Spot-On 36

M

- Mac OS color management options 70
- Mac OS, uninstalling software 18
- measurements page 56
- monitor compensation
 - Spot-On 36

N

- None setting, RGB Source Profile option 67

O

- Other setting, RGB Source Profile option 67
- output profile
 - Spot-On 27, 28, 37
- Output Profile option 63
- output profiles 56

P

- PANTONE Book.ps 20
- PANTONE Coated Color Reference 68
- PANTONE.ps 13
- passwords, for calibration 42, 55
- patches page 56
- Perceptual ICC rendering style 65
- Photographic rendering style 65
- PostScript color issues 60, 65, 67
- PostScript Color Management 71
- PostScript Color Matching option 71
- PowerPoint, RGB color reference file 20
- PPD 69, 70
- Presentation rendering style 65
- print options
 - Mac OS 70
 - setting defaults 39
 - Windows 69
- printer drivers
 - Mac OS 70
 - two-way communication 62, 63, 67
 - Windows 69
- Profile Manager
 - ColorWise Pro Tools 54
 - downloading profiles 27
 - using 25
- profiles 10
- Pure Black Text/Graphics option 64

Q

- Quick setting, CMYK Simulation Method
 - option 62

R

- Relative Colorimetric rendering style 65
- rendering styles 9, 60, 65
- RGB images
 - defining source profiles for 66
 - PostScript and non-PostScript
 - conversion 67
- RGB page 01 20

RGB page 02 20
RGB Separation option 66
RGB Source Profile option 59, 66
Rgb_01.doc 13
Rgb_02.ppt 13

S

SAIFF format 85
Saturation
 Spot-On 36
Saturation ICC rendering style 65
separations
 printing 61, 64, 68
 target color space 66
simulations, custom 61
Source 1-10 setting, RGB Source
 Profile option 67
spectrometer, *see* spectrophotometer
spectrophotometer
 DTP41 47, 79
 ES-1000 84
Spot Color Dictionaries 27
Spot Color Matching option 67
spot colors, CMYK equivalents 67
spot colors, matching to CMYK
 equivalents 27
Spot-On 27, 67
 adding color 32
 Color Spacing 36
 downloading color group 32
 editing 33
 Set Center Patch Color 34
 Spot-On Color Search 35
 Spot-On main window 34
 ES-1000 37
 factory defaults 38
 Lightness 36
 main window 29
 monitor compensation 36
 named colors 27
 output profile 28
 rearranging color group 31
 renaming color 32
 Saturation 36
 Spot Color Matching 27
 uploading color group 33
 using measurement instruments 37

sRGB, RGB Source Profile option 67
Stand21.ps 13, 20
Stand34.ps 13, 20
Status T 85
SWOP 62

T

targets, for calibration 56
terminology 7, 40
Test Page 57
transfer functions 56
Two-Way Communication 62, 63, 67

U

undercolor removal (UCR) 67
uninstalling, Mac OS software 18

W

Windows Color Files folder 13
Windows, print options 69
Word, RGB color reference file 20

