Fiery Color Profiler Help

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Fiery Color Profiler

Fiery Color Profiler is designed to create a new calibration and a new profile using various measurement instruments.

Creating a new calibration is needed when none of the existing calibrations delivers acceptable output for a specific printing condition (such as a combination of ink set, halftone, substrate). Examples are poor gradations or bad ink adherence. A new calibration will most frequently require a new profile, for color management to deliver accurate color.

Fiery Color Profiler provides two methods to create a calibration:

- **Basic mode** - creates a profile using presets so you can print and measure without any color experience.

- **Advanced mode** - creates a profile using presets, but allows you to adjust black generation and gamut mapping for more control.

Using the spectrophotometer to measure patches

You use the spectrophotometer to manually measure color patches.

Using the spectrophotometer consists of these tasks:

- Calibrate the spectrophotometer.

- Measure the calibration page using the spectrophotometer.

- View and save the measurements.

Fiery Calibrator typically offer standard support of measurement instruments, such as:

- EFI ES-2000

- Fiery ES-3000

- Epson SD-10

Other types of measurement instruments may be supported by the printer.

Calibrate the spectrophotometer

Calibrate the spectrophotometer to prepare it for measuring the calibration page.

Make sure that both the white tile on the cradle and the instrument aperture are clean. If the white tile has a cover, make sure that the cover is open.

White point calibration is used to compensate for gradual drifts in the spectrophotometer. The spectrophotometer must be placed in its cradle, and the sample aperture must be in full contact with the white tile on the cradle. If you do not place it correctly in the cradle, the spectrophotometer does not return accurate measurements.

The serial numbers of the spectrophotometer and the cradle must match for accurate calibration.

1 After printing the calibration page, place the spectrophotometer in its cradle.

2 Click **Continue** or press the button on the spectrophotometer.

If the calibration is successful, you can proceed to measure the calibration page.

Guidelines when measuring a calibration page

You can use the EFI ES-2000, Fiery ES-3000, or Epson SD-10 spectrophotometer to measure color patches by scanning each strip of patches in order.

When a strip is scanned successfully, the display indicator is green, and the arrow in the display moves to the next strip. If the strip is not scanned successfully, the display indicator is red, and a message directs you to try again.

1 For more accurate measurement, place several sheets of plain white paper beneath the calibration page or use a backup board if it is available.

2 Orient the calibration page so that strips are horizontal and the scan direction is left to right.

3 Hold the spectrophotometer with its length perpendicular to the scan direction, and place the tip of the sample aperture on the white space at the start of the specified strip.

4 Press and hold the spectrophotometer button and wait for a signal (an indication on the display or a sound).

5 After you see or hear the signal, slide the spectrophotometer at a slow but consistent pace across the strip.

6 Take about five seconds to scan the length of the strip.

7 Release the button when all the patches in the strip have been scanned and you reach the white space at the end of the strip.

8 Repeat for all the strips in the order indicated on the display.
For black-and-white printers, there is a single strip.

9 When all the strips have been scanned successfully, click **Continue** to view the measurement results.

Calibration workflow

When you calibrate, you perform the following tasks.

- Print a calibration page, which contains patches of various colors in a specific layout. You use this page to measure the current output of the printer.

  The output of the printer changes with time and usage. For the most current data, always measure a newly printed calibration page.

- Measure the color values of the patches on the calibration page using a spectrophotometer.

- Apply the measurements.

  The measurement data is saved with the specific calibration setting. When you print a job with the calibration setting, the measurement data is used to calculate the calibration adjustment that is needed to produce the desired output (the calibration target).

Set total ink limit

You can make some adjustments to the total ink limit.

The total ink limit feature is available for printers requiring manual ink limiting.

1 Choose a value for the total ink limit.

The value displayed is the value suggested for your printer without additional evaluation required. You can enter a numerical value of your choosing should you decide not to use the suggested value.

2 Do one of the following:

- Click **Set Visual Chart**.

  You can modify the settings of your visual chart to customize your patch layout. When you finish adjusting your settings, click **Print**.

  The **Patch Layout** window in FieryMeasure is displayed. Click **Print** to continue.

- Click **Print Visual Chart**.

  The **Patch Layout** window in FieryMeasure is displayed. Click **Print** to continue.

3 (Optional) Select **Add redundant patches for smart data averaging**.

When the **Add redundant patches for smart data averaging** option is selected, additional patches are added to the patch measurement layout. The additional measured patches allow you to gather more measurement information for Fiery Color Profiler and improve your measurement results.

4 Click **Next** and proceed to measurement.

Follow the on-screen instructions to measure the calibration page.

Set ink controls

After you have measured the patches, you can view the ink usage and consumption that will be applied to calibrate your printer.

The Set ink controls feature is available for printers requiring manual ink limiting.

You can manually adjust the ink usage and consumption if the values are not the desired result, for example, if the calculated result is in the high 90% range, you can set the ink to 100%.

You can view and adjust individual channels by clicking the tab for each color channel.

1 (Optional) Specify the ink usage values for settings shown.

Click **Reset** to return to the original ink values.

2 Click **Next** to continue the calibration process.

Create a profile

You can create a custom output profile for your measurement instrument.

1 Select one of the following methods to create your output profile:

- **Basic mode** - uses presets to create your output profile.

- **Advanced mode** - uses presets to create your output profile, but allows you to adjust black generation and gamut mapping.

2 Click **Continue** and follow the on-screen instructions.

Basic calibration workflow

You can create an output profile using a basic workflow.

The basic calibration workflow uses a simplified process using presets to create an output profile.

View calibration summary

After you create your measurement profile, you can view the measurement results.

- Click **Done** to close the window.

Advanced calibration workflow

You can create an output profile using an advanced workflow.

The advanced calibration workflow allows you to adjust black generation and gamut mapping for more customization.

Edit profile settings for Fiery Edge profiles

The profile settings control how to handle black settings and gamut mapping in the output for Fiery Edge default profiles.

The **Profile creation settings** window allows you edit profile settings for the selected profile.

Note: Change the settings only if the default settings do not provide satisfactory results. The default settings are typically the optimal settings for your printer.

1 In the **Profile creation settings** window, click **Edit profile settings**.

2 Click the tabs to specify values for the following:

- **Black settings** - The Black settings are used to set the black colorant usage at the black point and black generation throughout the profile.

- **Gamut mapping** - Perceptual and saturation options for Fiery Edge controls that adjust the visual appearance of prints made using the perceptual and saturation rendering intents.

- **Advanced settings** - Processing options for Fiery Edge profiles to adjust input data and table smoothing, illuminant, and table sizes.

3 Click **Continue**.

Black settings for Fiery Edge profiles

You can change the default values of the black settings to set the black colorant usage at the black point and black generation throughout the profile for your printer.

1 Click the **Black settings** tab.

2 Select the **Black-only gray balance** check box to use minimal CMY ink or toner.

When the **Black-only gray balance** check box is selected, you can only adjust the **Black width** value. If the Ink saving feature is turned on and you select the **Black-only gray balance** check box, the **Black width** value will be unavailable.

3 Set the following values for **Black generation**:

- **Black ink start** - Controls when black ink is introduced on the white-to-black neutral axis (the L* axis) of the profile. You might adjust this value to adjust the stability of the gray balance or to reduce graininess in highlights when the black screen is grainy.

- **Black generation** - Controls the rate at which black ink is added along the white-to-black neutral axis. A high value adds black at a high rate. A low value adds black at a slower rate.

- **Black width** - Controls the rate at which the black ink is added to increasingly chromatic (more saturated) colors. Low values of black width hold the neutral-axis black amounts close to the neutral axis of the profile, while high values of black width allow the neutral-axis black amounts to extend outward into the gamut.

- **Gray balance preview (0-100%)** - Shows the relationship between the input value and the actual output colorant value as a percentage.

4 Set the following values for **Black point**:

The Black point controls are specified in Relative Colorimetric values.

- **Black point finder** - When selected, the profile will automatically identify a black point. When the setting is not selected, specify the CMYK ink amounts to use for black.

- **Maximum black ink** - Sets the upper limit for black ink used for the black point of the profile. You might reduce this value from 100% if that value produces undesirable effects, such as an unwanted difference between black and other colors. The default setting is a value appropriate for the type of printer being profiled. We recommend you start with the default.

- **Search radius (ΔE ab)**: If **Black point finder** has been enabled, this control allows you to search the radius around the target a*b* for black point.

- **Target (a*)** - This is the target a* of the black point.

- **Target (b*)** - This is the target b* of the black point.

- **Black point preview** - Shows the L*a*b* values for CMYK.

- **Rich black L*a*b*** - The Rich black values are set according to the values defined in the Black point controls. Both Relative Colorimetric and Absolute Colorimetric values are shown for comparison purposes.

- **Pure black L*a*b*** - Pure black represents the colorimetry of black ink only. Both Relative Colorimetric and Absolute Colorimetric values are shown for comparison purposes.

5 Set the following values for **Black blending**:

- **Yellow to composite black transition** - Sets the delay of black added to yellow.

  Low - Use for smaller black drop size printer.

  Medium - Use for medium black drop size printer.

  High - Use for large black drop size printer.

- **Transition point** - Sets the rate at which black ink is added to yellow. The adjustment ranges are from 0 (most delayed use of black) to 1 (start darkening with black directly). Typically setting the control to 1 will produce the maximum color gamut in a region but will introduce black ink at higher lightness colors. In some instances, the addition of black ink gives a grainy appearance in skin tones. For these cases move the adjustment to lower values to delay the use of black.

- **Black blending preview** - Shows the color shift from solid yellow to composite black. Solid yellow is 100% Y.

6 Click **Apply** to save your selections, click **Reset** to reset to the default settings, or one of the other tabs.

Gamut mapping for Fiery Edge controls

These controls adjust the visual appearance of prints made using the perceptual and saturation rendering intent.

1 Click the **Gamut mapping** tab.

If you are using a factory profile with hue rotation, you can customize the Fiery Edge gamut mapping settings by clicking **Revert to Legacy Mode**.

2   Set the following values for **Perceptual gamut mapping**:

- **Saturation boost** - Choose from five levels of saturation boost for the perceptual rendering intent. If **None** is selected a boost to in-gamut colors is not applied. The **Low** mode indicates that adjustments are not made to the saturation of the reproduction. The **Medium** mode provides a modest boost of the in-gamut color. Select this mode to create slightly more saturated output. The **High** mode provides a more aggressive chroma boost to in-gamut colors. Select this mode when highly saturated colors are the goal. The **Maximum** mode provides the most aggressive chroma boost to in-gamut colors. Select this mode when the highest saturated colors are the goal.

- **Contrast** - Adjust the global contrast of the printed colors. There are four levels of **Contrast** adjustment: **None**, **Low**, **Medium**, and **High**. These settings progressively increase the contrast of the printed colors.

- **Lighten shadows** - Increase the lightness in dark colored regions selectively while maintaining the lightness in brighter tones. There are four levels of **Lighten shadows** adjustment: **None**, **Low**, **Medium**, and **High**. These settings progressively increase the brightness in the darker tone regions. Use these adjustments to enhance the detail in the darker tones.

3   Set the following values for **Saturation rendering (Fiery Intensify)**:

- **Saturation boost** - Choose from five levels of saturation boost for the perceptual rendering intent. If **None** is selected a boost to in-gamut colors is not applied. The **Low** mode indicates that adjustments are not made to the saturation of the reproduction. The **Medium** mode provides a modest boost of the in-gamut color. Select this mode to create slightly more saturated output. The **High** mode provides a more aggressive chroma boost to in-gamut colors. Select this mode when highly saturated colors are the goal. The **Maximum** mode provides the most aggressive chroma boost to in-gamut colors. Select this mode when the highest saturated colors are the goal.

- **Contrast** - Adjust the global contrast of the printed colors. There are four levels of **Contrast** adjustment: **None**, **Low**, **Medium**, and **High**. These settings progressively increase the contrast of the printed colors.

- **Lighten shadows** - Increase the lightness in dark colored regions selectively while maintaining the lightness in brighter tones. There are four levels of **Lighten shadows** adjustment: **None**, **Low**, **Medium**, and **High**. These settings progressively increase the brightness in the darker tone regions. Use these adjustments to enhance the detail in the darker tones.

4   Click **Apply** to save your selections, click **Reset** to reset to the default settings, or one of the other tabs.

View calibration summary

After you create your measurement profile, you can view the measurement results.

- Click **Done** to close the window.