

# How-to: Calibrate a Fiery Driven cutsheet printer using an EFI ES-3000 spectrophotometer



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## Feature overview

Achieving predictable color every time is a major challenge for any business, so calibration is the most important aspect of color printing. All toner-based print engines use mechanisms sensitive to environmental factors like humidity and temperature. Calibration is essential to maintain consistent color reproduction despite those environmental changes.

Fiery® servers offer two calibration methods, using an external measuring device such as the ES-3000 spectrophotometer (or OEM-specific X-Rite i1 PRO 3), or using the integrated copier scanner or ColorCal method. This how-to guide will describe the ES-3000 method of calibration for Fiery Driven™ cutsheet printers.

## Objectives

- Recalibrate an existing calibration set
- Create a new calibration set
- Perform job-based calibration

## Additional resources

For additional software downloads, training resources, and more, go to [Fiery Online Resources](#).

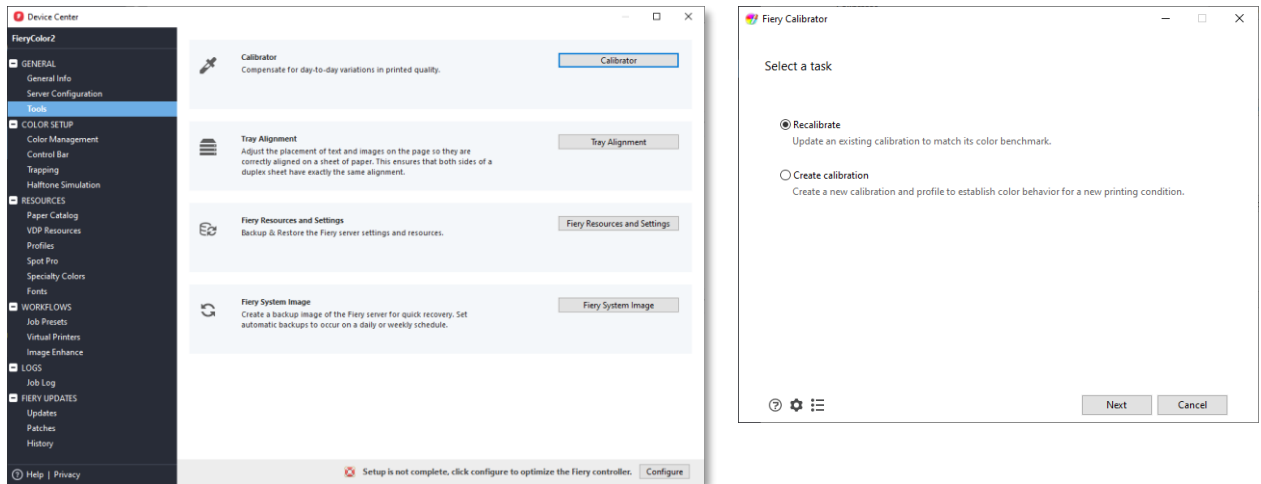
## Before you begin

- Open Fiery Command WorkStation 6.7 or later and connect to at least one Fiery server running Fiery FS500/FS500 Pro.
- Log in as the administrator on Command WorkStation.
- Have the EFI ES-3000 spectrophotometer connected to the computer running Command WorkStation.

Calibration Preferences require an administrator login on Command WorkStation.

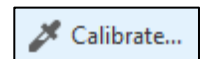
Calibration can be performed with an operator or administrator login on Command WorkStation.

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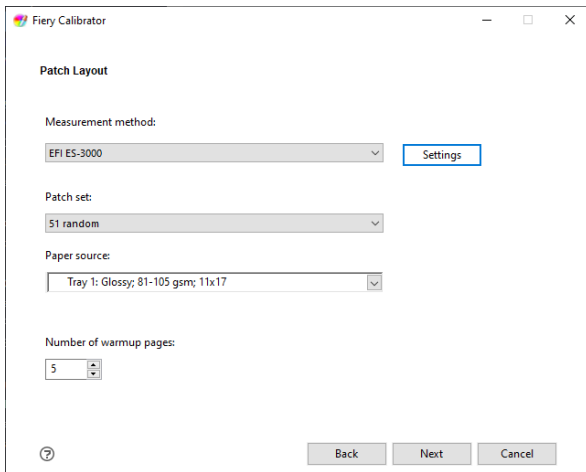


## Recalibrate an existing calibration set

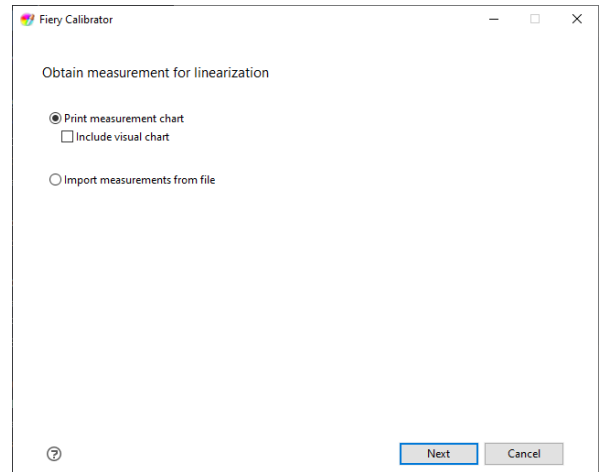
1. Click **Server > Device Center > GENERAL > Tools** in Fiery Command WorkStation. (You could also start by clicking on the Calibrate button from the upper toolbar in Command WorkStation).
2. Click the **Calibrator** button.
3. Next, configure the **Calibration Notification** settings by clicking on the **gear icon** in the lower left-hand corner of the Fiery Calibrator window that opens.
  - a. Enable the **Set time limit and display status in Job Center** check box. This enforces the length of time that can elapse between calibrations. It will also display the date and time for the last calibration for each of the media stocks used a job.
  - b. Set the **number of days or hours** that can elapse between calibrations.
  - c. Select the **Suspend printing when calibration expires** check box if your workflow will benefit from this setting. This setting is not enabled by default.
4. Click **Save**.
5. Enable the **Recalibrate** button and click **Next**.
6. In the **Calibrate name** box, select the calibration set for the media that you will be printing on and click **Next**.
7. Calibration files that are installed on your Fiery server might have been created using either Fiery Calibrator 2 or Fiery Calibrator 3. Depending upon which Calibrator was used to create the calibration file that you just selected you will now be taken to one of two Windows.



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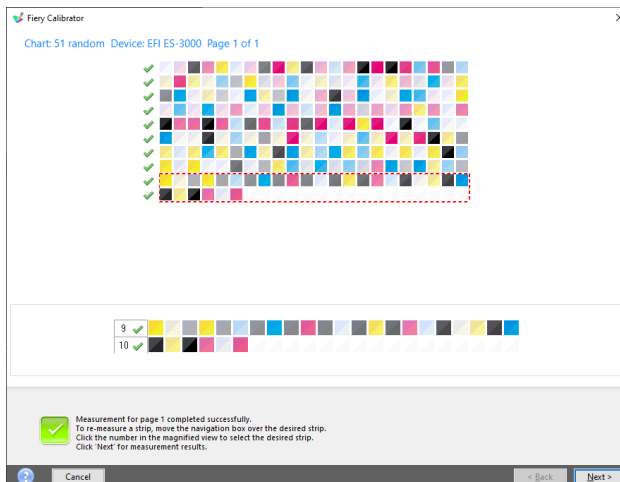
File created using Calibrator 2



File created using Calibrator 3

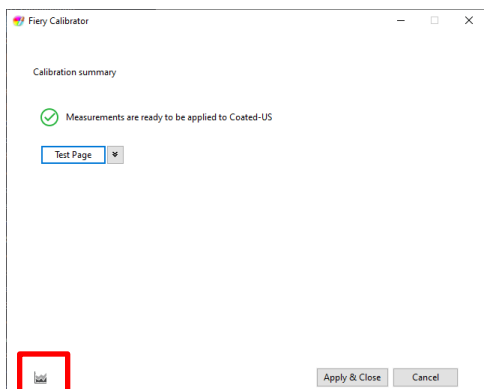
## If your file was created with Calibrator 2:

1. Select the **EFI ES-3000** in the Measurement method box.
2. Choose the Patch Layout. For this example, select **51 Unsorted Patches**.
3. Select the appropriate tray in the **Paper source**.
4. Enter a value of **5** for the **Number of warmup pages**, and click **Next**.
5. The selected chart will now print. Retrieve the printed chart from you printer and, when prompted, place your EFI ES-3000 in the calibration cradle and click **Next>**.
6. Measure the printed chart and click **Next>**.

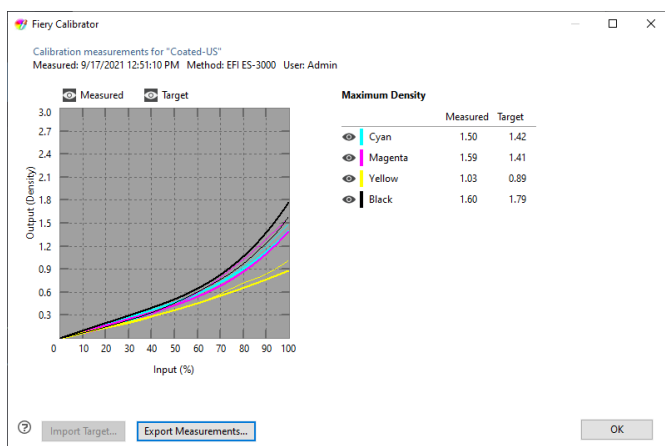


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7. In the window that opens, click on the **graph icon** in the lower left-hand corner to examine the target and measured curves.



8. If the measured **Maximum Density** values are lower than the **Target** values, consider having your printer serviced.

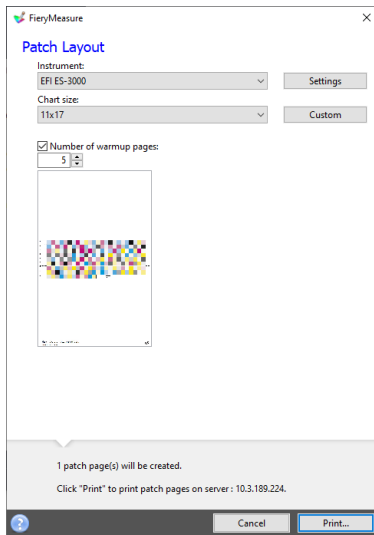


9. Click OK to close the graph window.
10. Returning to the Calibration summary window, you can click on the Test Page button to print a file where you can visually compare images before and after recalibration. When finished, click Apply & Close.

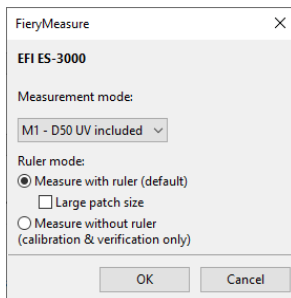
## If your file was created using Calibrator 3:

1. Continuing from step 6 in the first section, click **Next**.
2. With the **Print measurement chart** option enabled, click **Next**.
3. On the Patch Layout window, select the **EFI ES-3000 Instrument**, the **Chart size** that matched the size of the media that you will be printing on, enable the **Number of warmup pages** and enter a value of **5**.

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4. Click the **Settings** button.
5. Assume that you will be printing jobs to conform to one of the newer specifications from Fogra or Idealliance and select **M1 - D50 UV included** for the Measurement mode.



6. Ensure that the **Measure with ruler (default)** radio button is enabled and click **OK**.
7. Returning to the Patch Layout window, click **Print...**
8. In the **Job Properties window** that opens, on the **Media tab**, select the appropriate **Paper Catalog entry or configure the media options** for the media that you will be printing on.
9. On the **Color tab**, in the **Color input section**, ensure that **ColorWise off** is selected for the CMYK Source setting and then click **OK**.
10. Retrieve the printed chart from you printer and, when prompted, place your **EFI ES-3000** in the **calibration cradle** and click **Next>**.
11. Measure the printed chart and click **Next>**.
12. In the next window, if you have Fiery Color Profiler Suite installed, you can click on the **Verify** button and follow the online instructions to verify the calibration accuracy of the printer.
13. Click **Apply & close** to finish the recalibration process.

## Create a new calibration set

1. Click **Server > Device Center > GENERAL > Tools** in Fiery Command WorkStation. (You could also start by clicking on the **Calibrate button** from the upper toolbar in Command WorkStation).
2. Click the **Calibrator** button.
3. In the Calibrator window that opens, click on the **gear icon** in the lower left-hand corner of the window.
4. Next set the **Calibration Notification**.
  - a. Enable the **Set time limit and display status in Job Center** check box. This enforces the length of time that can elapse between calibrations. It will also display the date and time for the last calibration for each of the media stocks used a job.
  - b. Set the **number of days or hours** that can elapse between calibrations.
  - c. Select the **Suspend printing when calibration expires** check box if your workflow will benefit from this setting. This setting is not enabled by default.
5. Enable the Create Calibration button and click **Next>**.
6. Enter a name for your new calibration set.
7. If you wish to create a G7-based calibration set, enable the G7 gray balance calibration target checkbox.

Information on creating a G7-based calibration set is available in the **Create a Fiery G7 calibration and profile How-to-Guide**.

8. Click **Next>**.
9. With the **Print measurement chart radio button** enabled, click **Next>**.
10. Select the **EFI ES-3000** as your instrument and click the **Settings** button.
11. Assume that you will be printing jobs to conform to one of the newer specifications from Fogra or Idealliance and select **M1 - D50 UV included** for the Measurement mode.
12. Ensure that the **Measure with ruler (default)** radio button is enabled and click **OK**.
13. Select the option in the **Chart size** box that matches the size of the media that you will be printing on.
14. Enable the **Number of warmup pages** checkbox, enter a value of **5**, and click **Print...**
15. In the **Job Properties** window that opens, on the Media tab, select the appropriate **Paper Catalog entry or configure the media options** for the media that you will be printing on.
16. On the Color tab, in the **Color input** section, ensure that **ColorWise off** is selected for the **CMYK Source** setting and then click **OK**.
17. Retrieve the printed chart from your printer and, when prompted, place your EFI ES-3000 in the calibration cradle and click **Next>**.
18. Measure the printed chart and click **Next>**.
19. If desired, examine the per channel ink limits and then click **Next>**.
20. You will now repeat the above process to print and measure three additional charts: the **Linearization**, the **Total ink limit**, and the **Color benchmark** charts.
21. After measuring the color benchmark chart, click **Next** to accept the final measurements.
22. Enable the Create output profile option and click **Next**.
23. Your new calibration file will now be saved. If you have Fiery Color Profiler Suite installed on this same computer, you will automatically be taken to the screen where you can select and print a chart used to build an ICC media profile to be used with your new custom calibration file.
24. If you choose to do this, select your **Instrument** and **Patch set**, print, and measure the chart(s), review the **Summary** information, confirm the black generation settings, and your profile will be

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built, linked to your calibration file, and automatically saved. You can then select this new custom calibration set to use when printing jobs on the selected media.

Information on creating media profiles is available in the various profiling eLearning courses at [learning.efi.com](http://learning.efi.com).

### Performing job-based calibration

1. The **JOB SUMMARY** area of Command WorkStation will indicate if the calibration time limit has expired for the media assigned to the job. If you attempt to print a job with an expired calibration, the job will be suspended in the Print queue and highlighted in red.
2. To calibrate the media used in a job, select a job in the Held list, right-click and then select **Calibrate job...**
3. In the Calibrator window, click in the **Calibration name box** and select the media to calibrate for use with the selected job and click **Next**.
4. In the next window, select the **EFI ES-3000** for the Instrument, select the appropriate Chart size entry, enable the **Number of warmup pages** checkbox, enter a value of **5**, and click **Print...**
5. In the Job Properties window that opens, on the Media tab, select the appropriate **Paper Catalog entry or configure the media options** for the media that you will be printing on.
6. On the **Color tab**, in the **Color input section**, ensure that **ColorWise off** is selected for the CMYK Source setting and then click **OK**.
7. Retrieve the printed chart from your printer and, when prompted, place your EFI ES-3000 in the calibration cradle and click **Next>**.
8. Follow the on-screen instructions to calibrate the ES-3000 and measure the patch page and then click **Next**.
9. When you have successfully measured the printed chart, click **Continue** to view the calibration results.
10. In the next window, if you have Fiery Color Profiler Suite installed, you can click on the **Verify** button and follow the online instructions to verify the calibration accuracy of the printer.
11. Click **Apply & close** to finish the recalibration process.
12. The new calibration will be used with the selected job and with all jobs using the same media until the calibration expires again.



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