INKCUPS HELIX

This document provides information on how to drive the INKCUPS HELIX printer from Fiery XF. It covers the following topics:

- Workflow
- Fiery XF settings
- Creating calibration files and media profiles
- Printing with white ink and clear ink
- Workflow

The following version of Fiery XF is required:

- Fiery XF Server (v. 7.4 and higher)
  For more information, contact Fiery XF technical support.

Supported printers

The following INKCUPS printers are supported:

Printer model	Description
INKCUPS HELIX	Industrial cylindrical inkjet printer for round objects. Color configurations: • CMYK + White + Varnish • CMYKcmk + White + Varnish • CMYKOGV + White + Varnish

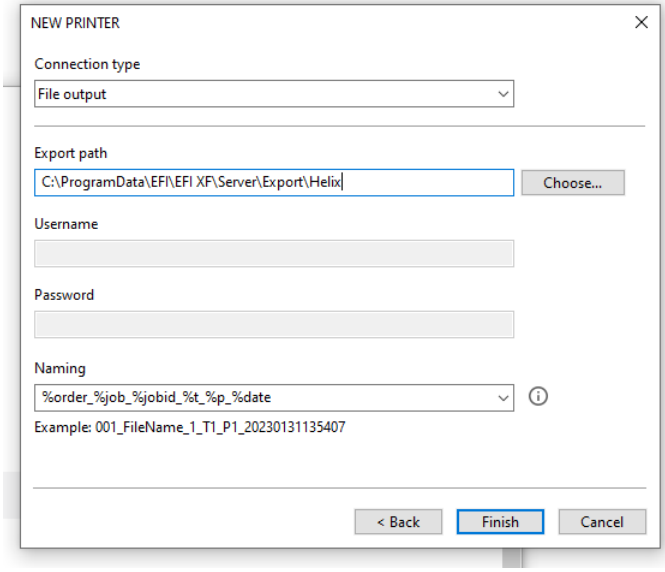
License

You require a license for the Printer Option Group 6.

Setting up the printer in Fiery XF

Set up the export path in Server Manager to generate a *.isi file which you can load into the INKCUPS HELIX Printer software.

You can configure a network path (starting with “\\”). In this case you need to specify Username and Password.



Creating calibration files and media profiles

This section provides information on specific settings that are necessary when creating a calibration file in Color Tools. The calibration file defines the print conditions for the media profile. No special license is required to create a calibration file. The Color Profiler option license is required to create custom media profiles.

How to print and measure

The INKCUPS HEIX has a calibration cylinder. Mount a sheet of vellum paper onto the cylinder with thin tape.

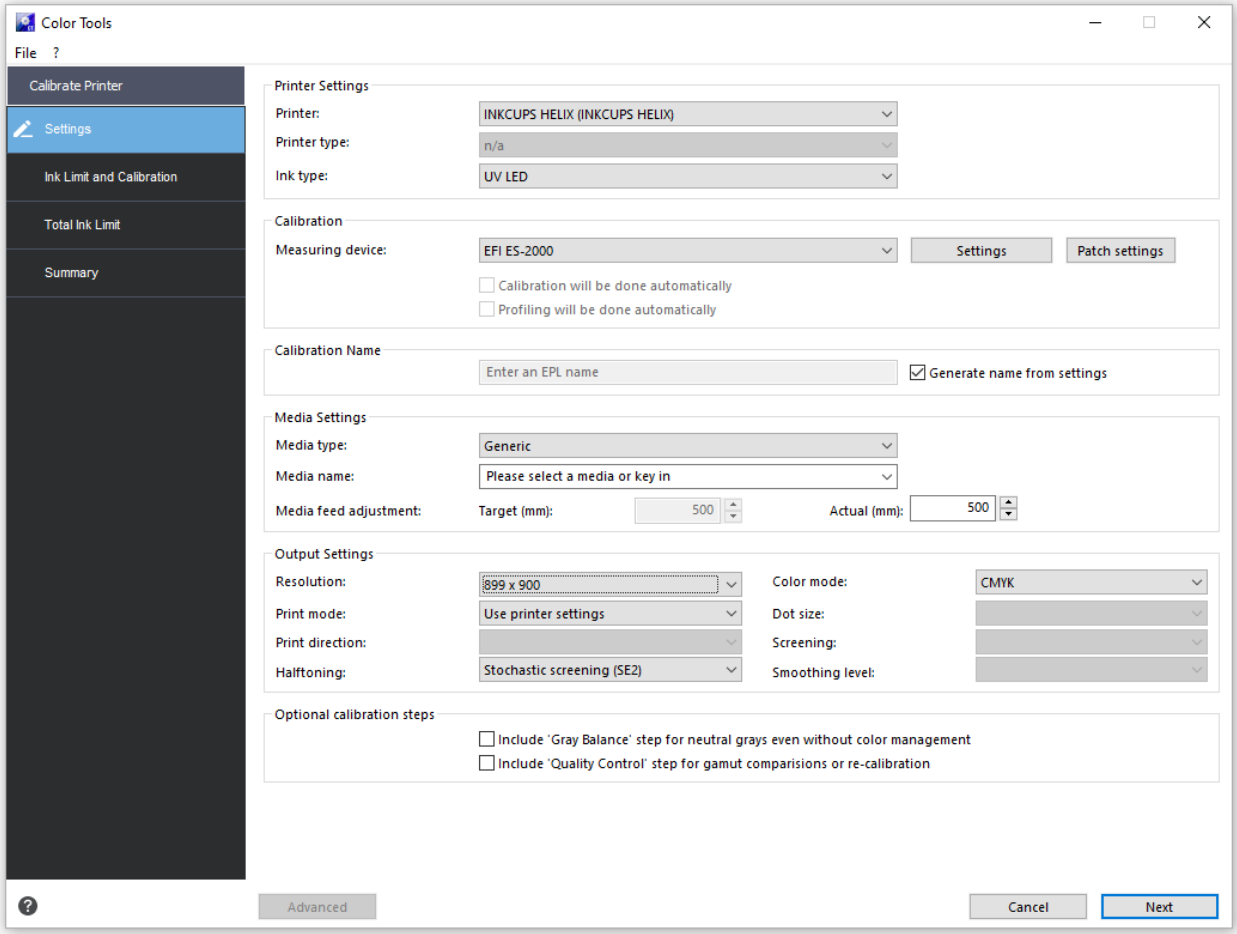
The white ink shall serve as media white. In Server Manager, set white ink printing -> print mode to “Fixed ink amount on printed areas”.

The varnish ink increases the gamut. You can enable it with a similar setting in Server Manager.

The chart width is limited. We had to scale the width of ES-2000 CMYK linearization charts down to ~90 %. For the first profile we used the chart with 234 patches.

When you print, the start position needs attention: Make sure that the seam is not in the patch area, and you have enough material around the patches.

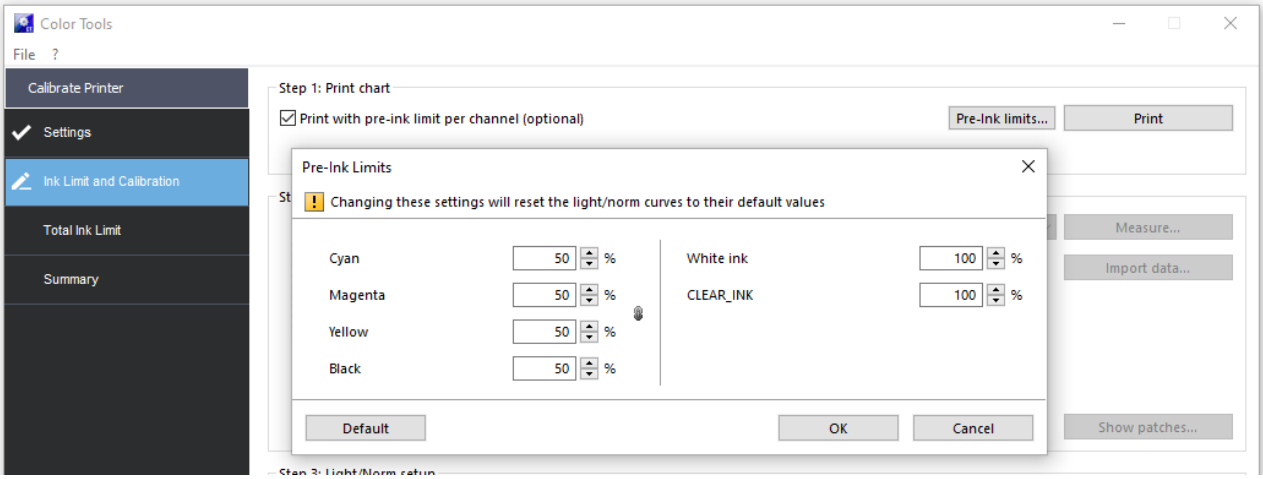
Settings


Color Tools
File ?
Calibrate Printer
Settings
Ink Limit and Calibration
Total Ink Limit
Summary
Printer Settings
Printer:
INKCUPS HELIX (INKCUPS HELIX)
Printer type:
n/a
Ink type:
UV LED
Calibration
Measuring device:
EFI ES-2000
Settings
Patch settings
Calibration will be done automatically
Profiling will be done automatically
Calibration Name
Enter an EPL name
Generate name from settings
Media Settings
Media type:
Generic
Media name:
Please select a media or key in
Media feed adjustment:
Target (mm):
500
Actual (mm):
500
Output Settings
Resolution:
899 x 900
Color mode:
CMYK
Print mode:
Use printer settings
Dot size:
Print direction:
Screening:
Halftoning:
Stochastic screening (SE2)
Smoothing level:
Optional calibration steps
Include 'Gray Balance' step for neutral grays even without color management
Include 'Quality Control' step for gamut comparisions or re-calibration
Advanced
Cancel
Next

The following resolutions are available:

Nominal	Rounded	Exact
560 x1200	562 x 1200	561.981592 x 1200
700 x 600	702 x 600	702.476990 x 600
700 x 900	702 x 900	702.476990 x 900
700 x 1200	702 x 1200	702.476990 x 1200
900 x 900	899 x 900	899.170547 x 900
900 x 1200	899 x 1200	899.170547 x 1200
1120 x 600	1124 x 600	1123.963184 x 600
1120 x 900	1124 x 900	1123.963184 x 900
1120 x 1200	1124 x 1200	1123.963184 x 1200

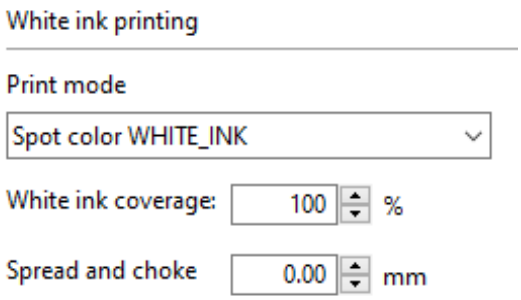
The ink amount per area is proportional to the resolution. Over-inking is likely to happen. Visible indication of this effect are saturated mid tones and color shifts, yellow to orange, cyan to blue and magenta to red. To avoid over-inking, please use Pre-ink limits. In our very first 900 x 900 profile we used these settings:



Printing with white ink

There is no specific calibration available. However, you can control the white channel by using a visual correction curve.

To print white ink, you must make the appropriate settings on the Printer & Workflow Settings for the printer.



The settings are described below.

Print mode

Select one of the following print modes:

Print mode	White channel
Spot color WHITE_INK	Prints: The spot color that is defined as WHITE_INK in the document. Any color separation from the job that is mapped to WHITE_INK and saved as a spot color table (*.cxf). The spot color table must be selected on the Spot Colors pane. The spot color WHITE_INK is output without color management in Fiery XF.
Fixed ink amount on printed areas*	A white ink dot is created for all pixel information that is not 0,0,0,0,0 (including the spot color WHITE_INK). You can exclude WHITE_INK from the print job on the Spot Colors pane.
Dynamic ink amount on printed areas*	White ink is created for all pixel information that is not 0,0,0,0,0 (including the spot color WHITE_INK). You can exclude WHITE_INK from the print job on the Spot Colors pane. The amount starts proportional with the pixel value.
Bounding box*	All image pixels are printed in white ink. This is the recommended setting for creating a calibration file.
Fixed ink amount on printed areas (inverted)* Dynamic ink amount on printed areas(inverted)*	Inverts the white channel
Off	White is not printed, even if there is an appropriate color separation.

* applied to separated and composite jobs.

For more information on defining spot colors in Fiery XF, see the Fiery XF online help.

White ink coverage

You can control white ink coverage:

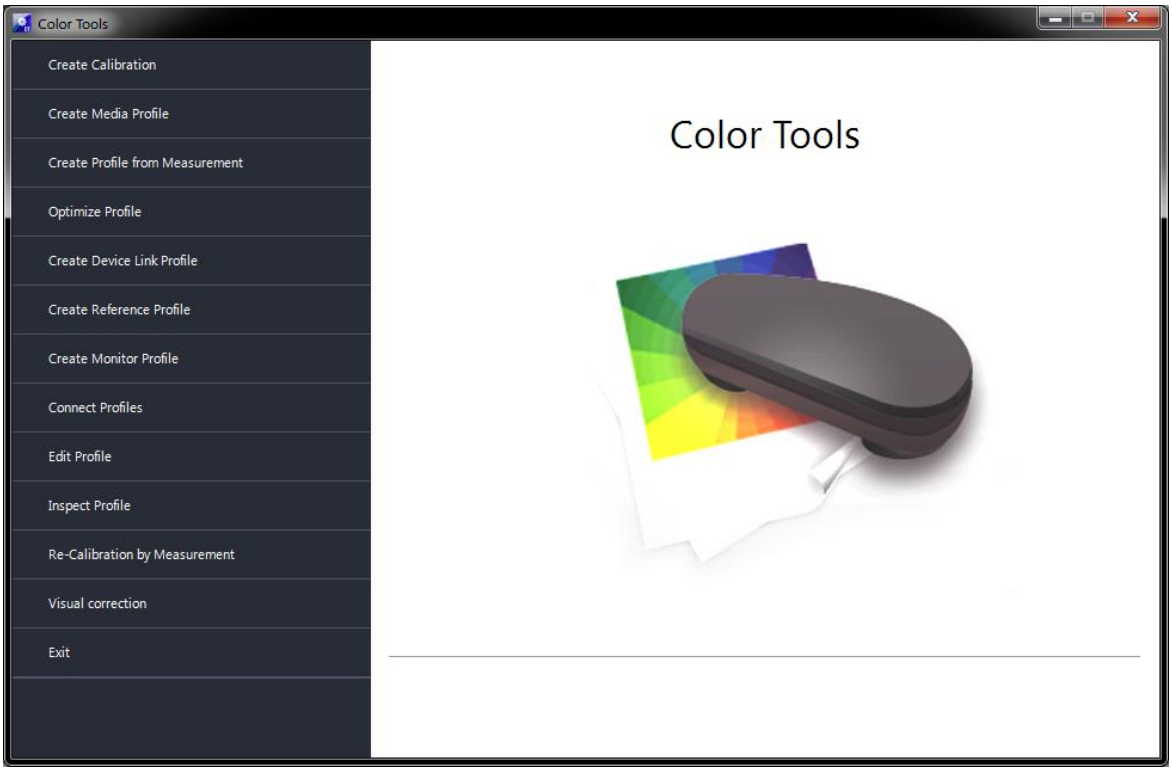
- In Fiery XF
- In Adobe Illustrator
- In Adobe Photoshop

To adjust the white ink coverage in Fiery XF

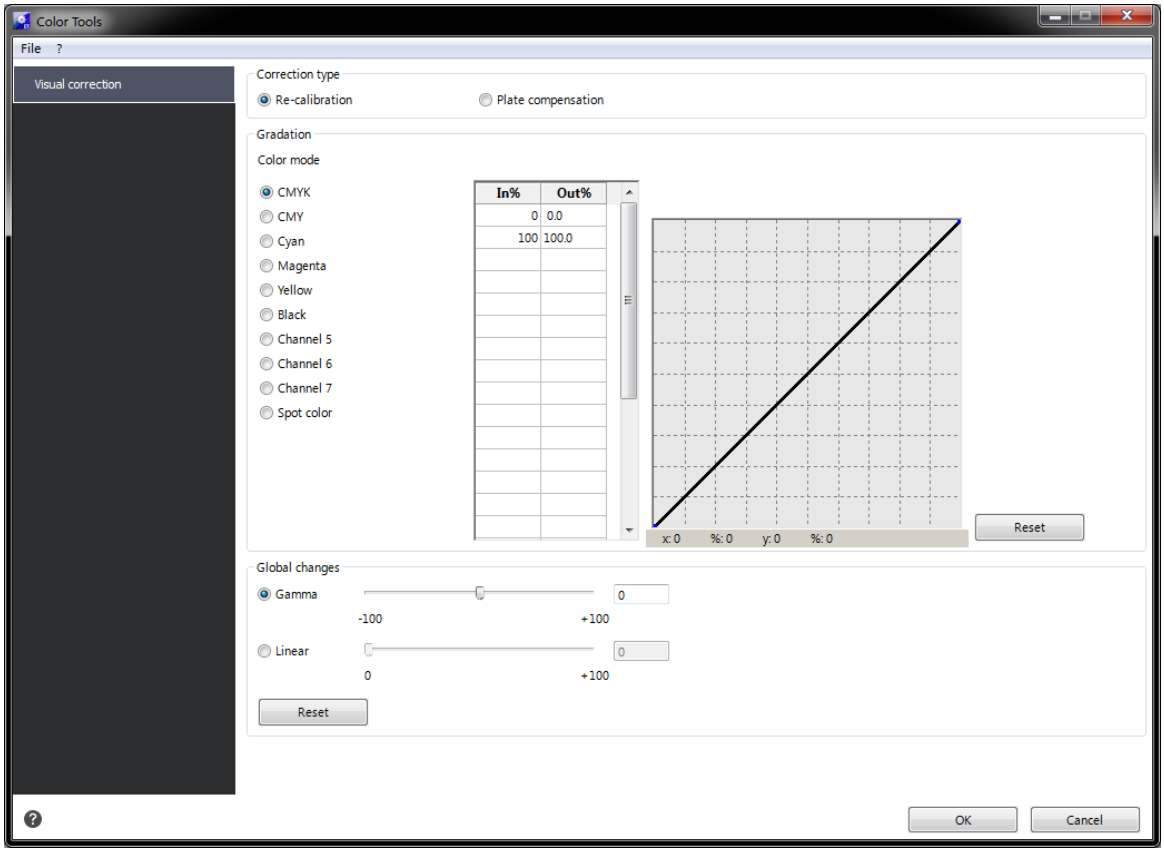
1 Do one of the following:

- On the Printer & Workflow Settings pane for the printer, select the required percentage of white ink coverage. The selected white ink coverage percentage will be applied using the selected print mode.
- Create a visual correction file.

  1 Open Color Tools and click Visual correction.



2 Select “Visual correction”.



3 Select “Spot color” to create a curve that affects white ink, or select individual color channels, as needed.

4 Enter a value for In% and Out%.

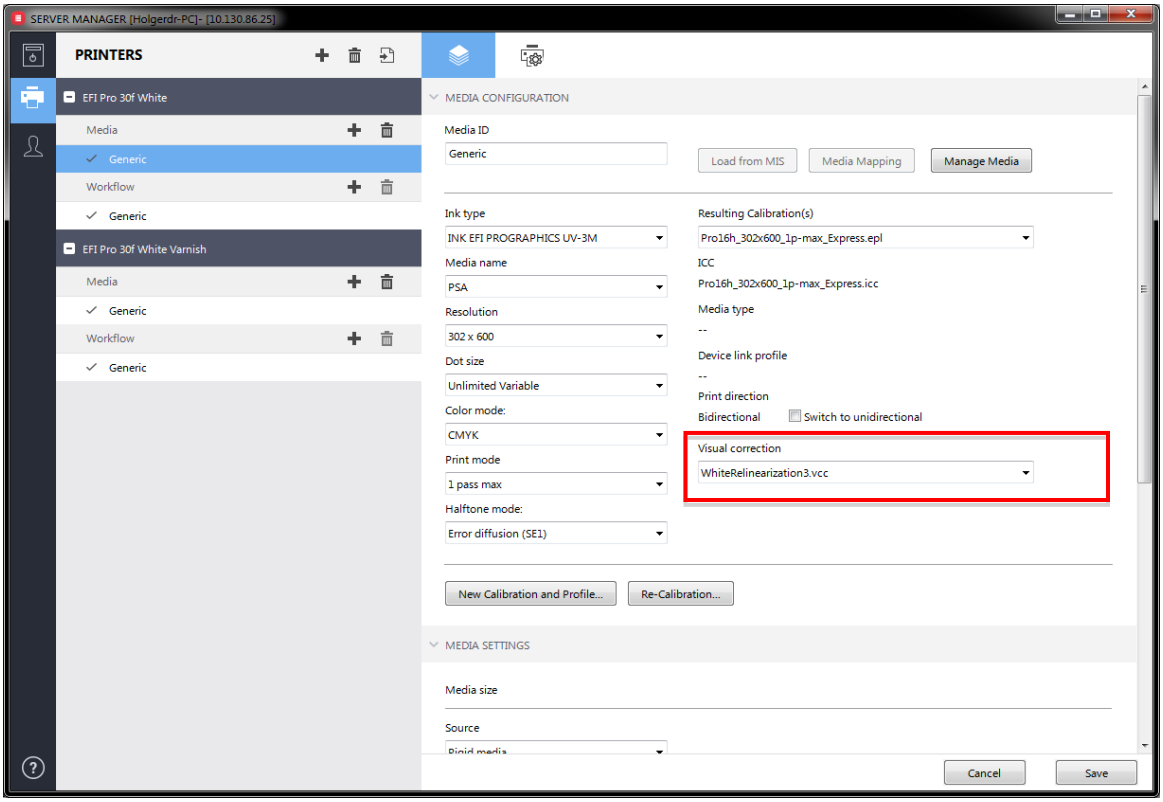
5 Enter the values in the empty row after 100%. Click an empty cell when finished to confirm the new values. Do not make any other changes in this dialog box as it may cause unexpected results.

6 Click OK.

By default, the visual correction file is created in the Working folder, but it can be saved anywhere. You can also edit an existing curve by clicking Load on the File menu.

7 In Server Manager, click the desired printer and then select the desired media.

8 On the Media tab, open the Media Configuration pane. Under “Visual correction”, select the visual correction file.



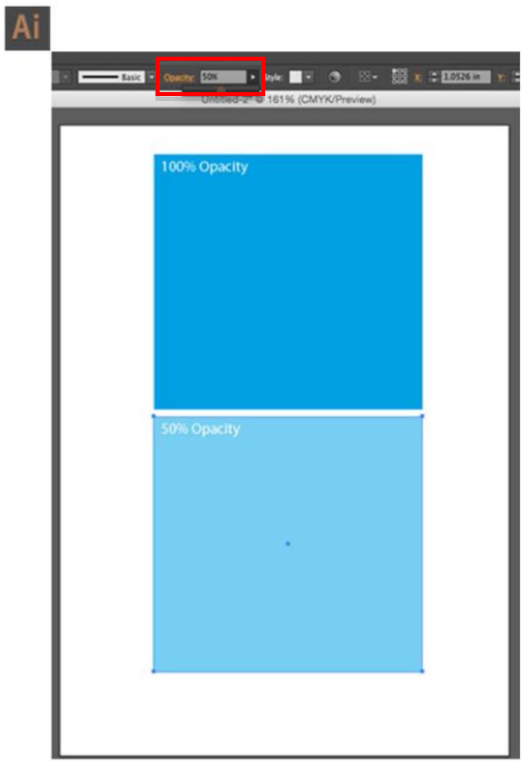
9 Click Save.

10 Repeat for other media as desired.

Note: You can use the same curve with any printer.

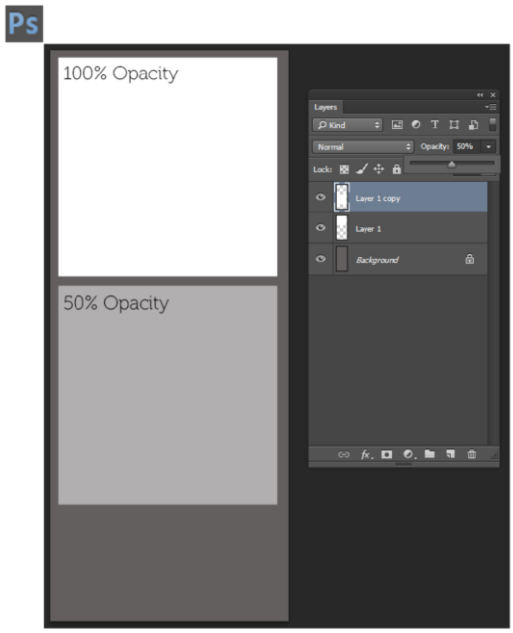
To adjust the white ink coverage in Adobe Illustrator

1. Open the file in Illustrator.
2. Select all areas of spot white.
3. Adjust the opacity as needed.



To adjust the white ink coverage in Adobe Photoshop

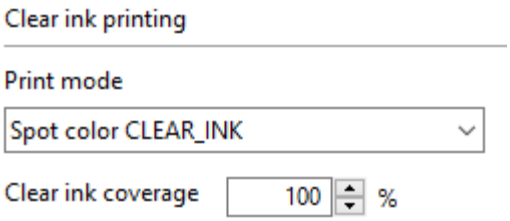
1. Open the file in Photoshop.
2. Select all areas of spot white.
3. Adjust the opacity as needed.



Spread and choke

There is a stark contrast between white and color inks. Even the smallest of registration errors can be visible. A small negative value (choke) reduces the size of white just enough to remove visible white edges. Often a correction of -0.04 mm (1 pixel at 600 dpi) can help. A positive value adds a uniform white border around images.

Printing with Clear ink



To print Clear ink, you must make the appropriate settings on the Printer & Workflow Settings pane for the printer.

Print mode

The options are like the options for White.

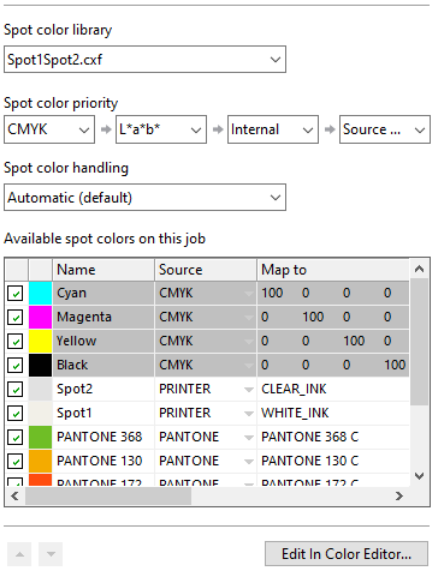
Clear ink coverage

You can control clear ink coverage in Fiery XF using the related printer settings in Server Manager.

Spot color mapping

Although it is convenient to define WHITE_INK and CLEAR_INK as separations in the separated job file (PDS, PS, EPS), you may want to redirect different separation names to those printer channels.

The spot color grid in the Job Editor enables you to map the job's separations. An example setting for this printer is shown here:



The setting redirects Spot1 and Spot2 from the job to the printer-specific channels CLEAR_INK and WHITE_INK, bypassing the color management. Color Editor was used to save this setting as Spot1Spot2.cxf.

The other colors were automatically detected in this case.