

Xerox[®] DocuColor[®] 8080 Digital Press

Calibration and Profiling with ILS on FreeFlow[®] Print Server

The Automated Color Quality Suite (ACQS) on your Xerox[®] DocuColor[®] 8080 Digital Press includes software and an Inline Spectrophotometer (ILS). This suite and the ILS assembly work with your print server to provide unique calibration and profiling capabilities:

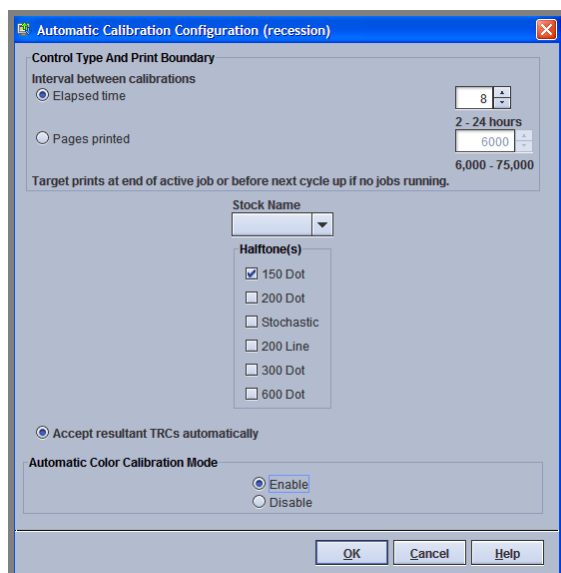
ACQS Function	FreeFlow [®] Print Server
Color Calibration with Inline Spectrophotometer (ILS)	Semi-Automated • Operator initiated • Scans and measures targets automatically without external spectrophotometer • Resets color tables to original values to maintain consistent color Fully Automated Setting • Can automatically calibrate at set time or page intervals without operator intervention • Scans and measures targets automatically without external spectrophotometer • Resets color tables to original values to maintain consistent color
Profiling with ILS	• Operators can create destination profiles without having to scan targets with an external spectrophotometer. The press prints color targets while the ILS measures them. The system then develops a map so that output colors can be produced that accurately replicate a known standard such as GRACoL or SWAP. The mapping is written into a profile for the type of media and line screening used.
Spot Color with ILS	• Once set up, the server detects spot colors in Adobe[®] PDF (Portable Document Format) or PostScript files and automatically calibrates those colors prior to printing a file. (Works only with the Coated PANTONE[®] library)

Setting Automated Color Calibration with ILS

Daily calibration keeps the color consistent over time because a press may drift from its original color output. This happens because of normal use, changes in temperature and humidity, and changes in paper. When you calibrate, you bring the press back to its original high-quality output.

1. From the *Color* drop-down menu select **Calibration**, or click the Calibration shortcut icon, if you have one. The *Calibration* window opens.
2. From the *Device* drop-down menu, select **Inline Sensor**.
3. Click **Configure Auto Calibration**.
The Automatic Calibration Configuration window opens:

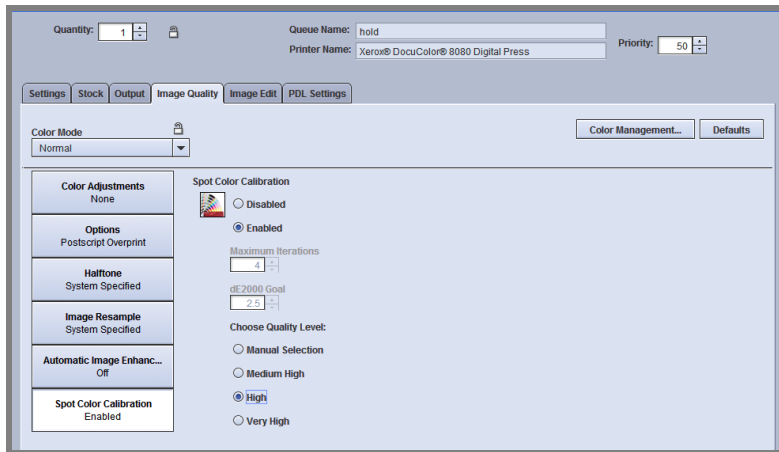
Setting Automated Color Calibration with ILS (continued)



4. At the bottom of the window, select **Enable** for *Automatic Color Calibration Mode*.
5. At the top of the window, select the method for determining when automatic calibrations will occur. The options are either **Elapsed time** (from 2 to 24 hours) or **Pages printed** (from 6,000 to 75,000 pages). When the designated time has elapsed, the system will calibrate the digital press at the end of an active print job, or before the next print cycle, if no jobs are printing. Note that an automatic calibration will not occur until a job is queued to be printed.
6. Enter the specific number of **hours** or printed **pages** between automatic calibrations.
7. Under **Halftone(s)**, select the line screening you want to use. **200 Dot** is a common setting. You can select more than one Halftone setting, but it will take longer to calibrate with multiple settings—about 2 minutes per selected halftone screening.
8. If you want all calculations to be applied automatically without review, select the radio button for **Accept resultant TRCs automatically**. If you want to look at the TRC curves after the automatic calibration, de-select this option. When de-selected, a calibration window will open for you to see the results and either accept them or re-run the calibration.
9. Click **OK**.
10. Make sure the correct stock is loaded at the time the calibration is scheduled to occur. If the appropriate stock is unavailable, a message will display notifying you that the proper stock is not loaded. To continue, load the appropriate paper and select **OK**. The system will then begin the calibration.
11. When a pre-set, fully automated calibration begins, the Calibration window is displayed at the print server User Interface (UI). The window closes and the press returns to normal operation when the calibration is complete.

Setting Automated Spot Color Calibration with ILS

When you enable Spot Color Calibration for a print queue, the calibration is automated and occurs each time a PDF or PostScript file is sent through the queue. The automated process requires no further action on the part of the operator. This feature corrects the print server's formula for all spot colors in the PDF or PostScript file by detecting and adjusting the colors to official PANTONE[®] licensed L*a*b* values. Spot Color Calibration detects, tests and fine tunes up to 32 PANTONE[®] colors in a job. Note that this feature requires a separate license on the server and works only with the Coated PANTONE[®] library.



1. Select **Queue Manager** from the *Queue* drop-down menu, or click the Queue Manager **shortcut icon** if you have one. The Queue Manager window appears.
2. From Queue Manager, double-click the name of the queue on which you want to set Spot Color Calibration. This opens the Queue Properties window.
3. Select the **Image Quality** tab.
4. On the bottom-left, click the **Spot Color Calibration** button.
5. For *Spot Color Calibration*, select Enable.
6. For *Choose Quality Level*, select one of the four options:
 - Manual Selection – Lets you custom set maximum iterations and dE2000 goal
 - Medium High – Sets maximum iterations to 4 and dE2000 goal to 3.0
 - High – Sets maximum iterations to 4 and dE2000 goal to 2.5
 - Very High – Sets maximum iterations to 4 and dE2000 goal to 1.8

Notes:

The dE2000 goal is an acceptable color difference as measured by delta E 2000 (also referred to as: dE2000, ΔE2000 or ΔE00). dE2000 is a standard ΔE formula for Xerox color and is derived from CIE L*a*b* color space. Typically color-critical customers expect to see a difference of less than 2.0 in the printed output. This is the Very High selection for Quality Level. Less color-critical customers may be satisfied with a difference of 3.0 – 4.0 (Medium High) but may expect to see a difference of less than 3.0 for some applications (High).

Maximum Iterations is the maximum number of times the ACQS system may run the calibration process to correct the identified PANTONE[®] colors to achieve the delta E goal. Each iteration may take several minutes. A different number of Maximum Iterations can be set when Quality Level is set to Manual Selection.

7. Click **OK** to save the settings and close the window.
8. Click **Close** again to exit Queue Manager.

Now when a PDF or PostScript file enters the queue, and spot colors are defined in it, the spot color calibration process will run immediately before the job is printed. Adjusted spot color settings are then applied to the job.

Creating Destination Profiles with ILS

Colors can look different when printed on different stocks, especially stocks that have a different gloss or a different color. When a profile is created for each of these different stocks, the system develops a map so that the output colors will match a known standard. The mapping is written into a profile for the type of media and line screening used. Once created, the custom profile can be applied to jobs. The profile automatically adjusts the output color for a job so that the color is accurate for the media being used. Profiles ensure accurate and consistent color across different media as well as the same media used at different times. Because they replicate color from a known standard such as GRACoL or SWAP, they also ensure accurate and consistent color across output from different presses.

1. From the *Color* drop-down menu, select **Associations**.
The Associations window opens.
2. Click to select the **stock** that you want to use for the profile. To ensure color consistency, this should be the same stock that is set for Automated Color Calibration.
3. Right-click the stock and select **Color Profile > New Advanced Profile Family**.
4. The **Color Group**, **Stock Name**, **Type**, and **Color Space** options are automatically filled in with defaults for this stock. From the **Halftone** menu, select the line screening you want to use, if different from **200 Dot (Primary)**. For each halftone in each color group, you must create a new profile for the selected halftone. In other words, create one profile for each halftone to be applied to the specified stock.
5. In the *Profile Name* text box, enter in a **name** for the new profile. Use a name that will be meaningful to other users, such as the date on which the profile was created, or any other descriptors that will help identify the profile. An “ACQ” tag will automatically be appended to the newly created profile name when that profile is displayed in a menu or list.
6. In the *Description* text box, enter a brief description.
7. For the *Print new profile target at:* option, select when you want the profile to print. If no job is currently running, select **Now**.
8. Click **Create Profile**.

If the time elapsed since the last calibration for the selected halftone and Color Group has been longer than eight hours, the server automatically performs an Automatic Color Calibration before starting to create the Advanced Profile.

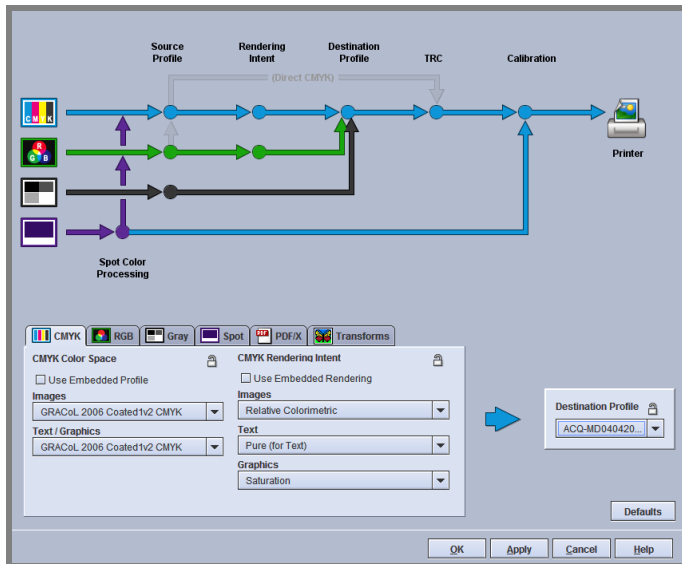
Also, to ensure that the press is warmed up, a 48-page job consisting of color information may first be printed. Then a target is printed consisting of 64 sheets of 8.5 x 11” (216 x 279 mm) paper (32 sheets, if printed on 11 x 17” (279 x 432 mm) or larger size stock). The targets are routed to the top tray of the stacker.

Once the target is printed, the server takes approximately 10 minutes to create the Advanced Profile. During this time, you can process other jobs.

9. When the creation process completes, a dialog box displays asking if you want to “Save Profile?” Click **Yes**.

Applying Destination Profiles

To select the new profile for a job or queue:



1. Select **Queue Manager** from the *Queue* drop-down menu, or click the Queue Manager **shortcut icon** if you have one. The Queue Manager window appears.
2. From Queue Manager, double-click the name of the queue to which you want to apply the profile.
3. Select the **Image Quality** tab.
4. Click the **Color Management** button.
5. For *Destination Profile*, on the right of the window, select the **profile** from the drop-down list. When you create profiles using paper from the Named Stock Library, you should select **Use Stock Profile** from this menu. This selection will automatically associate profiles with the stock, so that any time the stock is used, the correct profile is automatically applied.
6. Click **OK**. A destination profile is now set for this queue. You can also select a profile for a specific job from **Job Properties > Image Quality > Color Management**.