# EFI XF VERSUS STANDARD PRINTER DRIVERS

Many of the settings available in EFI XF are also available in standard printer drivers. This document describes some of the differences and explains how and why, by using a professional software RIP like EFI XF, you can achieve more color-accurate results.

| Feature | EFI XF | Standard printer driver |
|---|---|---|
| Repeatable results | EFI XF applies ICC color management to ensure that color accuracy is maintained during conversion from one color space to another. To do this, it relies on the use of profiles.<br><br>EFI provides many different profiles, for each combination of printer, media, ink and print resolution. These profiles compensate for deviances in color output which can occur due to variable print conditions or media quality.<br><br>EFI XF offers full flexibility in the selection of color management settings, enabling you to experiment until you achieve exactly the result you want. The results are measurable and repeatable. | Standard printer drivers employ a fixed method of printing ink onto the media. There is no way to compensate for different print conditions or fluctuating media quality.<br><br>As such, the results are not repeatable and, in a professional environment, it is extremely difficult to produce an exact copy of an already printed image. |
| Printer linearization | EFI XF uses linearization files which are “patched” to the ICC profiles.<br><br>Linearization files describe a predefined printer status. Certain variables can cause the print quality to change over a period of time. For example, changing humidity or new ink cartridges can easily affect the printer’s color reproduction.<br><br>By performing a simple printer linearization you return the printer to its original state, thus ensuring consistent print quality and repeatability. | Even using different paper stock or a new ink set can affect the print quality. Ordinary printer drivers do not provide a way to return the printer to a predefined state. |

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| Ink coating | The linearization file is also responsible for ensuring that the correct amount of ink is applied to the media.<br><br>Each media has different properties. Some types of paper have a thick coating which repels the ink while other non-coated media absorb it.<br><br>Applying the correct quantity of ink ensures that you achieve the best possible quality on any given media.<br><br>In EFI XF, the add-on module EFI Color Manager enables you to adjust the ink coating, if this should become necessary. | Printer drivers apply a preset ink coating for each type of media. In each case, default values are used which seldom meet the high color requirements of professional photo printing. |
| Paper profiles | EFI provides over a thousand different paper profiles to improve print quality even on difficult media such as gallery board.<br><br>Furthermore, EFI provides a special service for creating customized paper profiles for your specific needs.<br><br>Alternatively, the add-on module EFI Color Manager is available for creating your own paper profiles. | Only a limited number of vendor media is available for selection in the printer driver. It is not possible to use any other media without loss of quality. |
| Simulation profiles | EFI XF provides simulation profiles which simulate different kinds of printing processes, such as offset or gravure printing.<br><br>These profiles enable you to create color-accurate proofs and thus correctly simulate color production of the final print run. | Standard printer drivers offer only a very basic simulation feature. |
| Color separations | Color separation in EFI XF gives you control over the black generation.<br><br>Converting RGB data to CMYK is a critical process — the results can be influenced by many different factors. EFI XF provides detailed editing features to ensure that you achieve exactly the result you require.<br><br>Furthermore, the conversion from RGB to CMYK takes place in EFI XF. The original file remains unaffected by the conversion. | Printer drivers use an internal black box algorithm for color separation. This defines which combination of cyan, magenta, yellow, black and light inks will be used.<br><br>Printer drivers are programmed to receive RGB data. Thus, even incoming CMYK data is treated as if it were in the RGB color space.<br><br>This means that CMYK jobs are processed as RGB data and then converted back to CMYK for output. |