

AdobeSM Customer Services

Working with Slide Film Recorders

The term *film recorder* may refer to one of two types of devices: a slide film recorder or a high-end film recorder.

A slide film recorder outputs instant film (sometimes called *Polaroids*), slides, and transparencies. The film recorder is a black-and-white CRT (cathode-ray tube) attached to a 35mm camera. The larger the CRT, the smaller the spot size, or size of each pixel on the face of the CRT, and the better the quality of the resulting image. Leading vendors of slide film recorders include Agfa® Matrix and ChromaScript®, Lasergraphics, Mirus, GCC Technologies®, and Presentation Technologies.

A high-end film recorder, sometimes called a *laser plotter*, is used to generate output from color prepress systems. These high-resolution devices differ from most PostScript™ imagesetters in the way they generate output and in their output speed—two to twenty times faster than most PostScript imagesetters. Unlike the flatbed design of earlier PostScript imagesetters, all high-quality film recorders use a rotary-drum design. The halftone screening often is generated through built-in proprietary hardware; in many cases the screening algorithms are licensed from Hell® Graphics systems (now merged with Linotype-Hell).

This tech note discusses slide film recorders and some of the issues to be aware of when working with these devices.

QUICKDRAW™ SUPPORT

Most slide film recorders available today support only the Apple® QuickDraw format, not PostScript output, and they support only 35 commonly used fonts. If you download an Encapsulated PostScript (EPS) file to a film recorder that supports only QuickDraw, the film recorder produces only a low-resolution PICT preview associated with the EPS file. The result is a coarse image.

To compensate for the QuickDraw limitation, many vendors incorporate into their recorders the software-based PostScript clone Freedom of Press™ or the driver Professional Output Manager by Visual Business Systems (VBS), which acts as a PostScript-compatible interpreter.

RGB MODE AND GAMMA

Slide film recorders operate only in RGB mode, similar to the RGB mode in Photoshop. You cannot send CMYK images to these devices.

In addition, the gamma of the film used in slide film recorders is much higher than that of a monitor. The gamma of most commercial slide film recorders is 2.2. If you work with images that will be output to a film recorder, for best results, set the gamma in your application to 2.2 to match that of the film recorder. If you do not calibrate your system for the film recorder, output will probably be darker than expected.

A quick and simple way to calibrate your system for the film recorder is to print a slide and use the Gamma CDEV or a similar monitor calibration utility to make the screen look like the slide. (See Chapter 15, “Calibrating Your System and Producing a Separation,” in the *Adobe Photoshop User Guide* for instructions.) The gamma adjustment should improve the image quality by adjusting for overall lightness and darkness.

FILM RECORDER RESOLUTION AND OUTPUT RESOLUTION AND SIZE

Another issue that affects working with film recorders is resolution. Film recorders measure resolution as the size of the image the recorder can output; the image is output as individually colored pixels. The resolution measures the actual number of pixels (height by width) that the film recorder can output. Most film recorders output film with a resolution of at least 4K (4096 by 2732 pixels); more sophisticated film recorders output images with a resolution of 8K (8192 by 5460 pixels) or 16K (16,384 by 10,928 pixels).

Think of the film recorder as having a number of grids, one for each resolution the film recorder can output (2K, 4K, etc.). To be output by the film recorder, the height and width of an image (in pixels) must be smaller than or equal to the height and width of the grid. If the image size is greater than a given resolution, the film recorder will output the image using a finer (higher-resolution) grid, and the resulting image will have to be resized.

For example, an image measuring 2000 pixels by 1350 pixels fits within the 2K grid; however, an image measuring 2000 pixels by 1400 pixels fits the horizontal but not the vertical limits of the grid. As a result, the film recorder will output the image at the next-highest resolution that can accommodate the image, 4K; the resulting image would be scaled to 50 percent to fit on the higher-resolution grid.

As with other types of output, the resolution of the film recorder output directly affects the file size and the quality of the output. The higher the resolution of the output, the better is its quality but the larger the file size and the greater the processing time. A slide with a resolution of 8K can take up to an hour to process. In addition, the advantage of outputting film at a higher resolution is lost if the resolution exceeds that of the film. For example, using a resolution higher than 4K exceeds the resolution of commonly used slide films such as Ektachrome.

Resolution	Pixel count (height x width)	Appropriate file size	Suggested use
2K	2048 x 1366	10 MB	35 mm slides; separations for printing at low and medium resolution
4K	4096 x 2732	35 MB	Up to 4x5-inch slides; near-photographic quality; most workable file size
8K	8192 x 5464	150 MB	Up to 8x10-inch slides; excellent resolution; very large file size
16K	16,384 x 10,928	600 MB	Up to 8x10-inch slides; exceptional resolution, but prohibitive file size

Adobe, the Adobe logo, Adobe Photoshop, and PostScript are trademarks and Adobe is a service mark of Adobe Systems Incorporated, which may be registered in certain jurisdictions. Macintosh is a registered trademark of Apple Computer, Inc. Windows is a trademark of Microsoft Corporation. All other products mentioned in this document are trademarked or copyrighted by their respective owners.
©1994 Adobe Systems Incorporated. All rights reserved.