



SCANNERS

Knowing the ultimate destination of your scan will improve your chances of success.

What's a good scan?...

It's NOT a picture with blinding contrast and saturated colors...in fact, the reverse is probably true. **A somewhat flat-looking scan is usually better**, because it will probably contain the maximum range of raw digital color data your software, printer, or display ultimately needs to produce the truest rendition of the original image.

The scanning software's automatic contrast and color settings that produced those punchy, high-contrast scans probably lost important image detail in the shadows or bright areas; details you might need when adjusting the image later.

Secrets to success...

Illustrations that are strictly black-and-white should be scanned in line art or black-and-white mode. The scanner will simply record whether any given pixel is black or white. There will be no grays inbetween.

For color photographs, scan using the true-color, RGB Color, or 24-bit color setting. For each pixel, the scanner records one of more than 16 million different colors.

Some color illustrations have a relatively small number of colors: several dozen or less. to minimize file size, you may want to scan these originals as 256-color files.

Line art looks best when scanned at the resolution of your output device.

Dye-sublimation and Fuji Pictography printers found in service bureaus can print color as a continuous tone. The output is positively photographic!

Sharpen before JPEG...Apply sharpening BEFORE you save images in JPEG format. If you sharp-en after, little quirks introduced by JPEG compression appear, such as small tiles in the image. To best judge the effects of sharpening, view the image at 100%.

RECOMMENDED SCANNING RESOLUTIONS

Output	Optimal scan resolution (dots per inch)	
	Line Art	Grayscale/Continuous-tone color
LaserJet 5M (600dpi, laser)	600dpi	150dpi - 200dpi
Epson Stylus Color (720dpi, inkjet)	720dpi	180dpi - 240dpi
HP DeskWriter 680C (600dpi B&W, 300dpi color, inkjet)	600dpi	100dpi - 150dpi
Color LaserJet 5M (300dpi)	300dpi	100dpi - 150dpi
Fuji & Dye-sublimation printers (200dpi - 300dpi)	n/a	200dpi images; 300dpi text
Web page (72dpi - 96 dpi)	72dpi or 96dpi	72dpi or 96dpi

Computing Services

The order of the scan...

1. Start with sharp, clear, properly exposed original material.
2. Know the destination of your scan. Where the scanned image ends up will dictate how you scan it.
3. Know the nature of your subject. It will make a difference in how you choose to scan.
4. Based on the previous information, calculate the resolution you'll need to properly produce the desired output. Depending on the situation, you may use this resolution when you scan, or you might scan at the unit's maximum optical resolution and change the resolution later in an image editor.
5. Place your material squarely in the scanner or with the same rotation you want in the final result.
6. Select the correct scanning mode, whether line art, grayscale, or RGB color.
7. Take a preview scan and select only the portion of the image you want in the final scan. This will save time and keep the file size down.
8. If your scanner software allows it, adjust the contrast and brightness using the gamma curve setting. Avoid brightness/contrast sliders.
9. If you can, set the white point and black point.
10. Adjust the separate red, green, or blue color channels to get the right color balance and saturation.
11. Now make the final scan and save the unedited result in your image editor's native format...PSD or TIFF.
12. Made additional adjustments to gamma, white point/black point, and color, in that order, using your image editor.
13. If necessary, adjust the image's resolution. This process is sometimes referred to as downsizing or downsampling.
14. Apply sharpening. If your editing program has it, use the unsharp mask feature.

15. If a small file size is important because the image will be used on a Web page, reduce the number of colors from 24-bit RGB to 8-bit.

16. Save the final image in TIFF format for archive purposes, then save it in the smaller, compressed JPEG format for distribution.

Tricks...

Beware of 256-color mode...You'll get better results -- especially with color photos -- if you scan the image in 24-bit RGB color and then convert it to 256 colors using Photoshop or a similar image editor.

Interpolated resolution...Scanner software often lets you scan above the unit's true optical resolution using an algorithm that estimates the placement and color of the pixels it missed. Interpolated scans, especially with scanner software, can look fuzzy. If you must boost a scan's resolution, use the routines built into Photoshop.

Avoid the brightness and contrast slider bars in scanner and image-editing software. They make linear adjustments which are not consistent with the way brightness and contrast naturally shift in an image. Instead, use the gamma curve feature in your image-editing program, which changes these values in a nonlinear way. Gamma curves work surprisingly well for most scanned grayscale or color images.

Use the pixel-popping dropper...If you can, zoom in on the preview scan when setting the white or black point with the eyedropper tool. You will have a better chance of hitting the value that will serve you best at each extreme.

JPEG...While JPEG compression can easily squash an image file to one-tenth its size without visible degradation, it does lose image data. This can make a difference if you later tweak the file in an image editor. So only use JPEG to distribute final versions of the image.

Online...When downsizing images for online and presentation display, select 96 dpi for the Print size resolution. There are far more PC users surfing the Web, and Mac users won't notice any difference.

Use Unsharp Mask...Ignore the misleading name. This sharpening filter found in PhotoShop lets you control the degree of sharpening. Functions like Sharpen, Sharpen More, or Sharpen Edges don't.

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