

Scanning Basics

Scanning an image that will be printed:

1. Know lines per inch (lpi) of final printed piece.
2. Double that number to get scanning DPI or resolution.
3. Scaling = physical dimensions of your image.
Usually, you should scan an image slightly larger than its final printed size. You may go above original size (i.e., enlarge your image in the scanner software dialogue box to 125%, or 150%, etc.). Even if your scanner software allows you to (e.g., your scanner and sanner software DPI limit is 300 and the lpi of the printed piece will be 150), you cannot enlarge your image.
4. Set your appropriate DPI, Scale, and Mode (Line Art, Gray Scale, Color).
5. Click the Preview button.
6. Crop the preview image as tightly as you can.
7. Click the Scan button.
8. When the image comes into Photoshop, proceed to refine cropping, levels, color balance, etc., as needed.
9. After these image enhancement procedures are done, reduce the image (if necessary) using the Image Size Box (Image Menu).

Scanning an image to place in an existing Photoshop document:

1. Know the dimensions (i.e. 4"x5") of the document and its DPI.
2. Use rulers (Command R) in Photoshop to estimate the space in the document you want the image to fill.
3. Measure the image and calculate how much you'll need to enlarge it.
Never reduce size of image while scanning. See #3 above.
4. Scan image in at same DPI as destination document.
5. Set scanner software to appropriate scanning Mode.
6. Follow steps #5-#8 above.
7. Reduce image after adjustments using the Image Size Box or once it's pasted into its destination using Transform (Command T).

Scanning's Golden Rules:

1. Scan your image at the desired size (or larger).
2. Scan your image at the desired DPI (or greater).
3. You never enlarge the DPI or Scale once the image has been scanned.
4. However, you can always reduce the DPI and/or Scale once the image has been scanned.
5. Know your scanner and hard drive limits.
6. $\text{DPI} = 2 \times \text{LPI}$
7. Scratch Disk* = 3 to 5 times the memory size of the image.
8. Always scan to a hard drive, never removable media.

Special Rules for Scanning in Line Art Mode:

1. 300 DPI is more than enough.
2. Line Art Mode responds better to enlarging (i.e., 200% - 600% scaling) than to high DPI.

Special Rules for Scanning artwork for the Web:

1. Scan all images to the desired size at 100 DPI.
2. Use Image (Image Size) to reduce size, if necessary, and DPI to 72.

Special Rules for Scanning printed imaged (line screened):

1. Experiment with Descreening Filter, if available. If not, follow steps #2 - #4.
2. Experiment with larger than necessary scaling and/or DPI if moireing comes in too heavy.
3. After Gaussian Blur (1pixel), experiment with Sharpen and Unsharp Mask (Filter Menu).
4. Always sample a small area of the image during Filter testing.

* **Scratch Disk:** The drive that is selected under Preferences to be the Virtual Memory access for Photoshop.

Sample File Sizes

Grayscale Images:

dpi	1"x1"	2"x2"	3"x3"	4"x4"	5"x5"	6"x6"	7"x7"	8"x8"	8.5"x11"
72	6k	21k	46k	81k	127k	183k	249k	324k	474k
170	29k	113k	255k	452k	706k	1.01M	1.35M	1.76M	2.58.M
266	70k	277k	622k	1.08M	1.69M	2.43M	3.31M	4.32M	6.31M
300	88k	352k	792k	1.37M	2.15M	3.09M	4.21M	5.49M	8.03M

$$\begin{aligned} \text{RGB} &= x3 \\ \text{CMYK} &= x4 \end{aligned}$$

Scratch Disk must be 3x to 5x file size.

$$\text{DPI} = 2 \times \text{LPI}$$

