VALLEY OFFSET PRINTING, INC.

GRAPHICS GUIDELINES

316.755.0061
VALLEYOFFSET.COM

IMAGE FORMATS

Raster Format

A raster image is a series of dots, called pixels, when viewed up close. Viewed as a whole, they make up a larger image, such as a photo. Raster images need to be high-resolution to print well; 300 dpi (dots per inch) is standard print resolution. Low-resolution or greatly enlarged Raster images look fuzzy or blocky.

Raster images cannot be printed as seperate spot colors. They can print as CMYK, 1-color, or grayscale.

File extension: *.tif, .jpg, .gif, .pict, .png, .bmp, .pdf*, .eps**

Vector Format

Unlike TIF, JPEG, and GIF images, vectors graphics are not made up of a grid of pixels. Instead, vectors are mathematical paths, forming shapes and elements. These paths can be used to create simple graphics or complex diagrams. Colors and shapes can be readily changed or modified. Paths are also used to define the characters of specific typefaces.

Because vector-based images are not made up of pixels, and do not have resolution, they can be enlarged without losing quality. This makes vector graphics ideal for logos, which can be small enough to appear on a business card, but can also be scaled to to poster-size.

Unlike Raster images, Vector images may be separated for printing as specific spot colors, as well as CMYK.

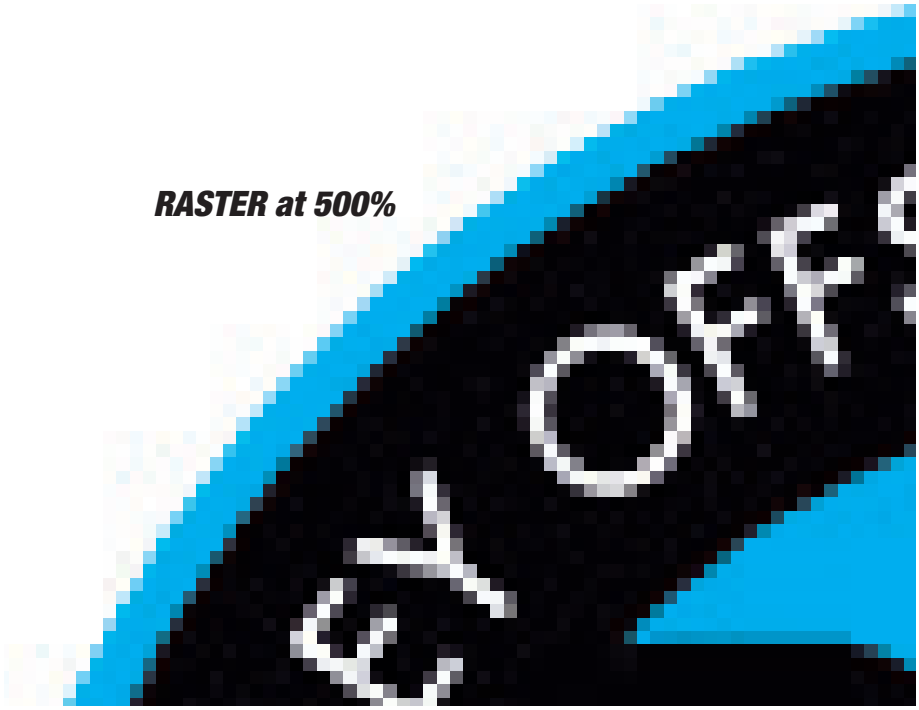
File extensions: *.ai, .eps*, .pdf*, .svg*

****.eps and .pdf files can be VECTOR and/or RASTER, depending on the program they were created in.***

RASTER at 100%

VECTOR at 100%

RASTER at 500%



VECTOR at 500%

IMAGE RESOLUTION

LPI (Lines per Inch) is a measurement of printing resolution in systems that use a Raster halftone screen. Specifically, it is a measure of how close together the lines in a halftone grid are. Higher LPI indicates greater detail and sharpness. It is also called Line Screen.

Jobs that run on newsprint or similar stock use a coarse line screen of 85 LPI. Commercial printing typically uses a much finer screen of 150 LPI. High quality magazines and catalogs often run an even higher quality screen of 200 LPI.

RASTER IMAGE, 300 DPI

DPI (Dots per Inch) measures the resolution of an image both in print and on-screen. DPI measures how many dots/pixels can be placed in a line within the span of 1 inch. A printed image generally must have 1.5 to 2 times as much DPI as it does LPI. 300 DPI is considered standard print resolution in commercial printing.

Enlarging images also reduces resolution, again by a factor of 2. Doubling the size of a 300 DPI photo will effectively reduce the resolution to 150 DPI.

RASTER IMAGE, 72 DPI

When scanning or creating solid art as Line Art, the necessary resolution is 1200 DPI.

Typically, images found on the Internet are low resolution (72 DPI), so are unsuited for printing purposes. Printing that uses low-res images will appear pixelated (blurred or fuzzy).

For printing, Raster images ideally need to be 300 DPI at full size, as we tend to print at 150 LPI. Enlarging a Raster Image will lower it's quality, though one may be enlarged 25-50% without too much degradation of the image, so long as it is a high-resolution file to begin with. Note that Vector graphics do not have DPI or resolution.

IMAGE BACKGROUNDS

When a Raster image is placed or imported into another file, it will typically appear with a white background if placed on top of another image or background. The exception to this are PNGs, GIFs, or specially prepared TIF image containing a clipping path. Adobe PhotoShop files without backgrounds can also be imported into documents.

Vector images, on the other hand, may generally be placed in another file without obscuring the background.

VECTOR IMAGE

RASTER IMAGE

COLOR FORMATS

CMYK Color

CMYK — short for Cyan, Magenta, Yellow, and Key (Black) — often referred to as “Process Color” or “4-Color”, is a color model used in printing, and is also used to describe the printing process itself.

With CMYK printing, tiny dots of each color are printed in a small pattern that the human eye perceives as a color or image. In this way, a wide variety of colors can be produced.

Comparisons between RGB displays and CMYK prints can be difficult, since the color reproduction technologies and properties are different. A computer screen mixes shades of red, green, and blue to create color pictures.

Multi-color Raster Images cannot generally be run as multiple spot colors, but must run as 4-Color Process (CMYK) or simple Grayscale.

RGB files must be converted to CMYK to print correctly on an offset press.

Spot Color

In offset printing, a spot color is any color generated by an ink (pure or mixed) that is printed using a single run. When making a multi-color print with spot colors, every spot color used needs its own lithographic plate.

The standard spot colors we use are PMS COLORS (Pantone Matching System) and include metallic, specialty, pre-mixed, and custom-mixed inks.

Vector-based images can typically be output to run as either Spot Colors or CMYK.

Grayscale

Grayscale is a range of monochromatic shades from black to white. Therefore, a grayscale image contains only shades of gray and no color.

When printed, Grayscale Art may print in any Spot Color.

Line Art

Line Art is created art (vector or raster) or a scanned image (raster) image that is solid black & white without any shades of gray.

When printed, Line Art may print in any Spot Color.

CMYK SEPARATION

CYAN →

MAGENTA →

YELLOW →

BLACK →

SPOT COLORS SEPARATION

PMS 311 BLUE →

BLACK →

GRAYSCALE GRAPHIC

LINE ART GRAPHIC

ART BLEED

What is Bleed?

When artwork is meant to go to the edge of a printed piece, that art needs to extend past the edge of the trimmed size. Standard Bleed is 1/8th of an inch (0.125"). Without this extra art, the final piece may have paper (white) showing at the edge once trimmed, where the printing did not hit perfectly.

CORRECT BLEED:

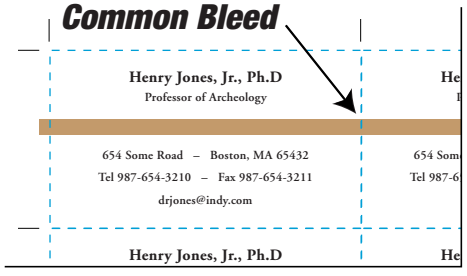
Printed and trimmed with full bleed.

INCORRECT BLEED:

Printed (with slight shift) and trimmed with no bleed.

Common Bleed

When artwork is set up multiple times, such as on Business Cards, if the artwork that bleeds is “common”, such as a solid background or a bar going across the middle of the card, artwork can butt against each other at the trim line.

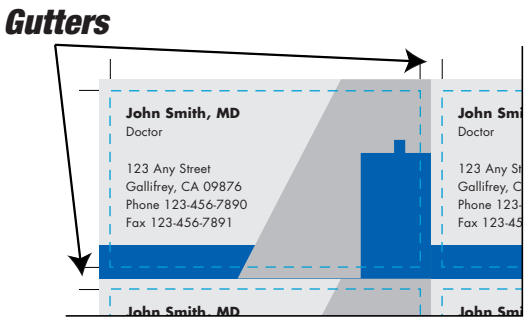


COMMON BLEED:

Common bleeds on both sides do not require gutters.

Full Bleed with Gutters

Again using Business Cards as an example, if the artwork has bleed on only some edges, or the art that bleeds is a photo or similar, then the set-up requires “gutters” between the individual art. Standard gutters are 1/4th of an inch (0.25"). This allows the .125" bleed of one card to butt against the .125" bleed of another.



FULL BLEED:

Different bleeds on all edges make gutters necessary.

PRINT READY PDF FILES

Submitting a print-ready PDF (Portable Document Format) file has many advantages, can avoid common pre-press problems, and speed the processing time of your printing project. It is important, however, to create them correctly.

NOTE: To make a proper print-ready PDF, the art must have correct bleed, margin and the document size set to the final trim dimensions of the printed piece. All professional design programs should provide some built-in method to convert your art to a PDF file, as do Microsoft applications.

- Choose "**Press Quality**" in the Adobe pdf preset. **This should embed fonts and images as well as keep your high-resolution images at 300 dpi.** If you want, change "Downsampling" to "Do not Downsample" for each type of image listed.
- If your file needs to include a bleed, click "**Marks & Bleeds**" to enter a value of .125" for Bleed on all sides. Also under "Marks" choose "Crop Marks" and enter .125" as the offset.

SUPPORTED SOFTWARE

Graphic Design Applications: The following programs are specifically for the purpose of professional design, layout and printing. If submitting a live file for production, please include all fonts, photos, and graphics used in the document.

A Print-Ready PDF can be created from Mac-based applications for submission.

1. Adobe Illustrator
Mac/PC

A drawing program for creating two-dimensional vector graphics.

2. Adobe InDesign
Mac/PC

For creating and editing complex page layouts.

3. Adobe PhotoShop
Mac/PC

Allows for complex raster, photo, and image manipulation.

4. Adobe Acrobat Pro/Pitstop Pro
Mac/PC

For viewing, manipulation, and management of PDF files.

5. Quark XPress
Mac: Versions 7.0

For creating and editing complex page layouts.

6. Macromedia Freehand
Mac: Version 11

A drawing program for creating two-dimensional vector graphics.

Microsoft Office Applications: The following programs are a popular set of desktop applications, for home or office work. Any Microsoft files we receive for offset printing must be adjusted and formatted so they may be properly output. RGB is the standard color setting in Microsoft applications, so conversion to CMYK is generallt required.

If submitting a live file for production, please include all fonts, photos, and graphics used in the document.

PLEASE NOTE: While we can usually produce excellent results from Microsoft files, please remember that these programs have not been created for prefessional printing, but rather for home or office use. Text may re-flow when files are viewed on different computers. Fonts, plus linked graphics need to be included with jobs submitted in these programs, as embedded graphics may print low resolution and color may shift.

A Print-Ready PDF can be created from Microsoft applications for submission.

1. Microsoft Word
PC/Mac

A word processing program for text composition and proofing.

2. Microsoft Excel
PC/Mac

A spreadsheet-creation application.

3. Microsoft Powerpoint
PC/Mac

A presentation program widely used by business people, educators, students, and trainers.

4. Microsoft Publisher
PC

A desktop publishing application for page layout and design.

FILE FORMATS
Vector AND/OR Raster

EPS (Encapsulated PostScript)*

An EPS is a DSC-conforming PostScript document usable as a graphics file format. In other words, EPS files are more-or-less self-contained, reasonably predictable PostScript documents that describe an image or drawing.

File extension: *.eps* ***Image Format:*** *Vector AND/OR Raster*

EPS is a standard graphic format for vector images. However, raster/bitmap images can also be saved as or in EPS files. Keep in mind that such files remain rasters despite the file format. EPS files can also include both vector and raster images within them — but the original raster file should to be included along with the EPS.

PDF (Portable Document Format)*

PDF is a multi-platform file format developed by Adobe Systems. A PDF file captures document text, fonts, images, and formatting of documents from a variety of applications. Email a PDF document to your printer and it ought to look the same on the other end, even across platforms from PC to Mac, or vice versa. Viewing a PDF requires Adobe Reader or similar program.

File extension: *.pdf* ***Image Format:*** *Vector AND/OR Raster*

While PDFs are an excellent format to receive print files in, not all PDFs are created equal. Despite the "universal" qualities of PDF files, color can change or shift, particularly if the original file was Word or another PC-based program. Live fonts should always be "embedded" when saving to this format. Also, depending on how the file was saved, PDFs can be low or high quality.

SVG (Scalable Vector Graphic)

SVG is a file format for describing two-dimensional vector graphics, both static and dynamic (interactive or animated). SVG allows three types of graphic objects: vector, raster, and text. While primarily a vector graphics markup language for the web, the format also hase page description language capabilities, like Adobe's PDF.

File extension: *.svg* ***Image Format:*** *Vector AND/OR Raster*

Generally used for web design; rarely used for printing purposes.

FILE FORMATS
Raster

TIFF (Tagged Image File Format)*

TIFF is a graphics file format created in the 1980's to be the standard image format across multiple computer platforms. The TIFF format can handle color depths ranging from 1-bit to 24-bit.

File Extensions: *.tif, .tiff* ***Image Format:*** *Raster*

TIF files are preferred for highst-quality Raster images, as quality does not degrade when the file is re-saved, as can happen with JPEGs.

JPEG (Joint Photographic Experts Group)

A JPEG is a compressed image file format. JPEG images are not limited to a certain amount of color, like GIF images are. Therefore, the JPEG format is best for compressing photographic images. If you see a large, colorful image on the Internet, it is most likely a JPEG file.

While JPEG images can contain colorful, high-resolution image data, it is a "lossy" format, meaning some quality is lost when the image is compressed, or saved at less than highest quality. Low quality images become fuzzy and detail is lost. Like GIFs, JPEGs are cross platform.

File Extensions: *.jpg, .jpeg* ***Image Format:*** *Raster*

While JPEGs make smaller file sizes, this compression can cause the image to lose quality, so TIFs are a preferred format for printing purposes.

GIF (Graphics Interchange Format)

A GIF is a compressed image file format. GIFs are based on indexed colors, a palette of 256 colors, keeping their file size small. These compressed image files are often seen on websites. GIFs retain transparent backgrounds.

File Extension: *.gif* ***Image Format:*** *Raster*

GIFs make for smaller files, but they do this by using a small color palette, possibly causing colors to change.

PNG (Portable Network Graphic)

This format was designed as an alternative to the GIF. Like GIFs, PNG files are lossless, meaning they don't lose any detail when they are compressed. They support up to 48-bit color or 16-bit grayscale, and compress better than GIF files. PNGs also retain transparent backgrounds.

File extension: *.png* ***Image Format:*** *Raster*

Not a common format for printing purposes, but it is occasionally seen. Generally used for web design.

****EPS, TIF, and PDF are the best file formats for graphics embedded in print files, or sometimes for entire print documents. Native application files will retain their original Extension, such as: .ai for Illustrator, .indd for InDesign, .qxd (5.0 or earlier) or .qxp (6.0 or later) for Quark Xpress, .psd for PhotoShop, .doc for Word, .pub for Publisher, etc.***

SENDING US A FILE

Digital files can be sent to us using CD, DVD, or USB Flash Drive (AKA: Thumb Drive, Memory Stick). Files can also be sent via e-mail or through our FTP site, especially for larger file sizes.

Steps for uploading files via FTP

1. Go to: **www.valleyoffset.com**
2. Click on **"UPLOAD FILES"** located on our home page.
3. Drag files into the window, or click **"MY COMPUTER"** to attach files, attach additionional files as needed, fill out the message field, and click **"UPLOAD"**.

Compressing files (Zip, Stuffit, etc.) before uploading is not required.

LIVE FILE JOB CHECKLIST

When submitting live files for production, rather than PDF's, there are various things that should be included in order for a job to print correctly:

1. **Application Information:** Specify what application, version, and platform (Mac or PC) were used to create your finished files.
2. **Graphic Files:** Include all photo and graphic files imported into your document.
3. **Font Files:** If there are live fonts in your art, be certain to provide both printer and screen font files, or convert the fonts in your document to paths (i.e. vector art); this can be done in programs like Illustrator, InDesign, and Freehand.
4. **Image Resolution:** Resolution of raster images and scans should be a minimum of 300 DPI at the final print size. This is generally not an issue with vector files.
5. **Page Bleed and Crops:** Make sure all bleeds extend 1/8" beyond the edge of the finished document, and that the document includes crop marks to indicate where that edge is.
6. **Correct Color:** If you have a vector file that has been set up as CMYK or RGB and needs to run as spot colors, or if a raster image must match specific colors, please specify what those colors are. A Pantone Color Book is the best thing to refer to, and we have these on-hand.
7. **Hard Copy/Mock-up:** Include a PDF, laser proof, or mock-up of your art file, to serve as a guide for pre-press and printing.

Will my file look the way it does on my screen? *Yes, but...*

Monitors use emissive RGB — red, green and blue phosphors to emit light that creates a screen image — and is used in TV sets and computer monitors. Most monitors have not been calibrated, so color may differ not just from screen to paper but also from computer to computer.

Due to RGB color, computer screens sometimes render colors brighter than on a printed piece. Photographic images may come close but spot color used in custom logos and illustrations often shifts.

Printing presses and digital printers use 4-color process — cyan, magenta, yellow and black inks to create color images. Spot or PMS color inks are simulated in RGB on screen and CMYK on laser prints, so neither medium accurately portrays a solid ink color.

Remember that the paper you select may also alter color. Coated paper will print brighter than uncoated; colored stocks are duller than white.

If precise color matching is critical, we recommend that you use PMS (Pantone) ink colors or order an Epson proof to check color.

JPG, GIF, PDF, EPS? Choosing the Proper Graphic File Formats for Print vs. Web

Using the proper graphic file format and resolution for a print job can mean the difference between a professional-looking document and one that looks blurry or is missing graphics. Graphic file formats for the Internet and offset printing are totally different animals. Do not interchange them!

Graphics File Formats for Offset Printing

Graphics for offset printing require much higher resolution than for websites. If you use a low-resolution graphic (i.e., a logo copied from a website) on an offset printing job, a poor-quality "bitmapped" image can result.

Offset printed graphics can be one of two types: Vector-based or high-resolution raster. Raster images (which are color or grayscale digital photos and scans) must be at least 300 DPI (dots per inch). Your scans of black and white line art (images that do not contain any shades of gray) must be at least 1200 DPI. Be careful not to enlarge your raster graphics, because the pixels will also enlarge and become more noticeable.

Vector-based graphics are made of mathematically defined lines and curves. Because they are not made of pixels, these unique files can be scaled to any size without losing their crisp, smooth edges. Use professional drawing programs such as Adobe Illustrator or Macromedia Freehand to create these types of graphics for printing, saving them in the EPS format.

Color Ink Systems for Printing

Color files for offset printing must be specified with PMS or CMYK inks. Do not use RGB colors unless you are planning to print only to a color laser printer — but remember colors will not be exact.

Graphics File Formats for the Internet

Low-resolution raster graphics are used on the Internet. These graphics are made up of thousands of pixels (squares of color). Internet browsers will read JPG, GIF, PNG and SVG graphics, which are best scanned or sized at 72 LPI (lines per inch). Because of the limits of screen resolution, anything greater will result in larger file sizes and longer download times than necessary. All Internet graphics are limited to a special palette of 256 colors.

Scan your photos using RGB colors and save to the JPG file format. JPG file sizes are very small and compatible with nearly every graphical browser. This format is best suited for photographs and any image that contains a complex mixture of colors.

The GIF format is best suited for images with a limited number of distinct colors and graphics that have sharp, distinct edges (most logos, menus and buttons). A special GIF89a file format gives you the option to make the background transparent so you don't get a white rectangle behind the graphic.