

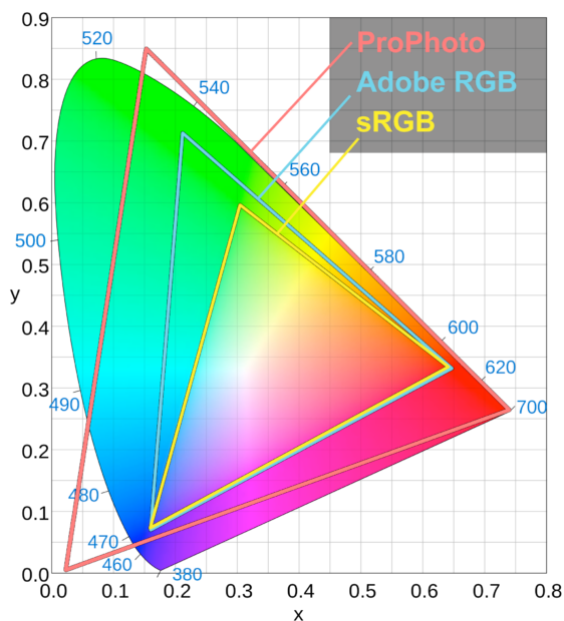
Color Space, File Type, and Bit Depth



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What is a color space?

A color space is the boundary box that defines what colors can be reproduced in an image. It is attached to an image to help define the image. For the best results it needs to be matched to the output device. There are 3 primary color spaces used for scanning and printing: sRGB, Adobe RGB, and ProPhoto.



<https://photographylife.com/>

sRGB

This is the smallest color space. It was created by Microsoft and HP to represent the colors that can be represented on a standard monitor or home printer. It is the color space most amateur cameras use.

Use sRGB for web applications and photo prints printed on 4 color printers. This color space does a good job of capturing most of the colors found in nature, but since it is a smaller color space it will not capture bright vibrant pure colors.

Adobe RGB

This is also known as Adobe 1998. This color space was created by Adobe in 1998 to provide a larger color space than sRGB for professional printing. It is

the most used color space for color printing. When used with 6 (or more) color printers it provides more saturated colors than sRGB. If you use Adobe RGB for web applications, it will cause the colors to look desaturated. Adobe RGB can be converted to sRGB, however once files are in sRGB converting them to Adobe RGB will not result in any gain since the gamut has already been clipped.

ProPhoto RGB

Kodak created this space for high end work. Pro Photo RGB is the largest color space. Due to the large range of colors that it can capture, only high-end printers can reproduce the full gamut of colors it contains. When used with 10 or 12 color printers very saturated colors can be produced. When files are used for printers or monitors not capable of handling this large color space they should be converted to sRGB or Adobe 1998. Robin Imaging uses ProPhoto as our standard for all print products except Photo Prints and Dye Sublimation Metal Prints. Photo Prints can be either sRGB or Adobe 98. Dye Sub must be Adobe 98.

RAW files

A RAW file is the image that the camera records before it is converted to another type of file. It is not a color space, but since it contains the most information in an uncompressed format, it is the ideal format to record the highest quality image. It must be converted to one of the three above color spaces for printing.

Which Color Space should you use?

If you want to get the brightest colors always use the largest color space that your output device will support. However, be careful not to use a color space that exceeds your output device since it will result in very unsaturated colors. When working with Robin Imaging use the following color spaces

sRGB

- Photo Prints
- Cards and Modique prints

Adobe RGB

- Dye Sublimation (metal prints)

ProPhoto

- Fine Art Prints

- Fine art and Wall Décor canvas
- C-Prints
- Acrylic

If your file is already in sRGB there is no advantage in converting it to a larger color space, just leave it as it is.

We cannot print directly from RAW files. You must either convert them before sending, or we can convert them for you for an additional cost.

File Types

There are three primary types of files used for printing:

J-Peg

This is the most common format used to storing non-professional photos. It is a compressed format, but there are various levels of compression. When the highest quality setting is used there is very little loss and will make excellent prints. However, there are some things to be aware of when using J-Peg.

- J-Peg files are a great space saver. They are about 1/3 the size of Tiff files.
- Each time you open a file and then resave it, the file is uncompressed and then recompressed. This results in a slight degradation of the image each time. Think of it as making a copy on a copy machine. The first copy looks pretty good, but if you take that copy and make a copy of it, then keep repeating that process the quality is going to deteriorate with each generation. (Just opening a J-Peg file does not cause a loss. You can open it an infinite number of times with no loss. It is the resaving it that creates the loss.)
- J-Peg files can cause banding or unevenness from the tone compression. This can often be seen in gradated tones such as a sky. When saving files use the “maximum” quality setting.

TIFF

TIFF is the most common format for storing professional photos. Since TIFF does not use any compression, you can open and save a file as many times as you want with no degradation. This is especially important if you are working on a file using an image editing program and make several edits. The only disadvantage to TIFF is that it is a much larger file.

TIFF comes in several varieties

- RGB 8 bit – This is the standard and the one we use the most. It provides 256 levels of gray which is generally enough to create the appearance of continuous tone with no banding. However, if you start manipulating the image a lot using editing software you may begin to get some banding.
- RGB 16-bit – This has 65,536 levels of gray. This can be useful when doing extensive manipulation of an image to prevent banding. This disadvantage of this type of file is that it is twice as large and may have to be converted to 8-bit before it can be used for some applications. Once a file is in 8-bit, converting it to 16-bit will not result in any gain. 16-bit is only needed if there is a wide contrast range with a lot of detail in the shadows or there will be a lot of image manipulation.
- CMYK 4-color – This is a very limited color space and only has 100 levels for each of the 4 colors. It should only be used when going to 4-color printing presses. It is recommended that this color space only be used by printing professionals using 4-color presses.

PDF

PDF allows you to preserve vector information and fonts, so that they can be reproduced sharply regardless of size. Use this format when files are prepared in Illustrator, InDesign, or other programs using vector. When preparing files please remember that we do not have the ability to edit files so they must be prepared correctly.

- Be sure to save the file at the proper output size.
- Be sure to include bleed for any prints that will be mounted to a substrate.
- For the best color accuracy use Pantone Coated Colors for any spot colors. CMYK mixes will not reproduce accurately.
- PDF files can be used for all our products except photo prints.