

LASER PHOTO ENGRAVING

Well-suited versus ill-suited

GOOD VS. POOR CONTRAST

Suitable for photo laser engraving



Good Contrast for Laser

Ill-suited for laser engraving



Poor Contrast for Laser

Laser Processing

The top left image is well-suited for processing through the laser. It shows good contrast, is well exposed and the elements in the image stand out. The top right image is unfavorable for processing through the laser. The image is clear, but it creates a poor contrast for laser engraving. Elements are dark and blend with the background not allowing for the image to stand out. This makes it difficult for details to be perceived and will result in the object or subject being engraved as a single surface. There are software programs that can aid in modifying the picture to create better contrast, but not always does it yield a better laser quality photo for processing.

Color Vs. Grey Scale

When dealing with laser engravers and the availability of different photo software packages, greyscale and color photos can be used with little issue or concern. At Ascoa Woodworking we prefer greyscale over color but there are other key elements as well, meaning that a color photo may be better suited than a greyscale photo based on certain criteria. (See preferences below)

When dealing with laser engraving the contrast and luminance of a photo is paramount to a suitable transfer of the image to the media being engraved. How we perceive color and greyscale are unique and how it transfers is just as unique. Luminance is important in the transference of distinguishing visual features and color does not necessarily identify important outlines or edges due to the various hues and how that can blur an outline when greyscale which is various levels of brightness is able to more clearly define those outlines or edges.



When creating an engraving it usually needs to be processed through a vector graphic editor such as CorelDraw[®] or Adobe Illustrator[®] to convert the colors and images (Bitmap images) into a vector graphic (points, lines and curves that produce a shape). Bitmap or raster image files such as GIF, JPG, TIFF and BMP are rectangular pixels and have a limit to their scalability. Vector images files such as AI, CDR, SVG and PDF are scalable, so one version works for each replication, such as a logo on a pen to the same graphic placed on a billboard. When engraving a photo, you are using these programs to convert the color bitmap (raster) image to a greyscale vector pattern image. Most lasers have a limited color interpretation, they may only have the capability to read 16 colors, (a color photo may have over 16,000,000 hues). The laser would only be able to create 16 areas of engravable surface, greyscale can create 256 areas of engravable surface creating more contrast. Now the eye is not going to be able to distinguish 256 levels of laser engraving power, the average person may notice several levels of discoloration from heat or power generated (engraving power) conversely it can add depth that creates another level of visualization based on the media engraved.

Preference for Photo's

1. Grey scale photos are preferred, color is acceptable.
2. 300 to 400 dpi is preferred (phone pictures are usually between 72 and 132 dpi).
3. Good contrast (as noted in the example).