

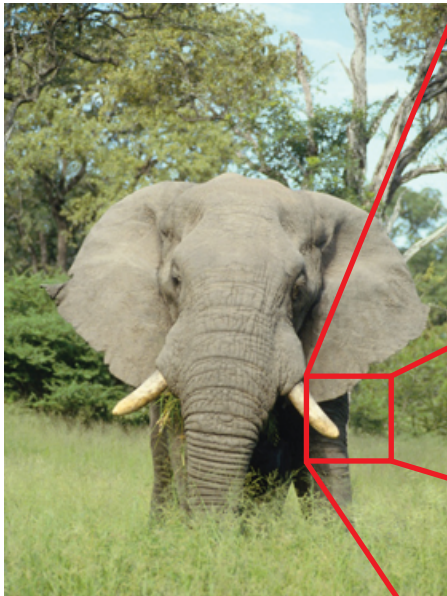
# Raster Images vs. Vector Images

It is very important to understand the difference between a Raster Image and a Vector Image, and which types of processes they are suitable for. The most important thing to consider is whether the image to be reproduced is photographic or object oriented.

## RASTER IMAGES

### Raster Images

Raster images can be generated from a scanner, or created by an illustration program. Raster images can contain millions of different colors, each one represented by a single pixel. Consider the picture of the elephant below. If you zoom in on the end of his tusk, you can see that it is made up of thousands of tiny pixels:



Having enough pixels to effectively reproduce the image is essential. An image needs to have at least 300 pixels per inch, sometimes called 300 d.p.i., in order to be color separated and reproduced with clarity. An image that is not of sufficient resolution will appear 'chunky' as if it were already being viewed close up. Placing a raster image in an illustration program and then writing an EPS file does not magically convert it to vector art, and essentially accomplishes nothing as far as our color separation process is concerned. Raster images are best suited for '4-color-process' which is the process used for sublimation, near photographic decals, and can be used for t-shirt images.

However, raster images can be used as one color designs, but the resolution in this situation would need to be higher than full color situations to assure edge sharpness and detail. Rasterized line art should be at least 600 pixels per inch., while images closer to 1200 pixels per inch will yield greater sharpness when reproduced.

**NOTE: Website graphics are NOT suitable for reproduction.**

While they may look pretty on your screen, they do not contain enough pixels to reproduce with clarity. (this does not apply to those who post vector art on their website specifically for reproduction)  
Raster images that are supplied for a multi-color spot-design will have to be recreated into a vector image for proper color separation.

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### **Vector Images**

Vector images differ from raster images in that they are object based rather than pixel based. Vector images are actually a compilation of mathematically defined areas that can be filled or outlined with color. Vector images suit themselves well to spot color designs, that is designs that have hard color areas and exact uniform color transitions or graduations.



Above is an example of a spot-color design. There are definite areas of blue, grey and black. You can tell by looking at it that it only contains 3 colors, as opposed to a raster that could contain millions of colors. A raster version may look the same to the eye, but digitally they are very different.

Vector images also have an advantage over raster images in that they can be infinitely scaled up or down with zero loss of image definition, and file sizes are a fraction of what raster images are.