

RBG vs. CMYK Color

Red, Green and Blue (RBG) light is used by humans, scanners, and digital cameras to “see” colors. RBG is used to create the colors on your monitor and in digital photographic imaging. In the world of “printed” color, a different set of colors is used. The basic printing ink colors are Cyan, Magenta, Yellow and Black (CYMK).

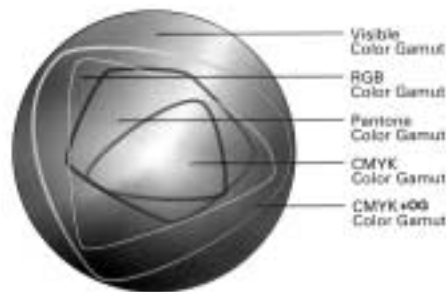
Information to help you get the most from digital imaging

Recent developments in digital imaging have extended the range of reproducible colors. With the addition of light and dark versions of cyan and magenta, as well as, orange and green, more colors can now be reproduced digitally. Using CYMK plus Orange and Green increases the color range to better approximate the colors you see on your monitor.

Understanding Color Space

If all the colors we can visualize were to be enclosed inside of a basketball, then the reproducible set of colors from CMYK inks would be slightly larger than a softball. The illustration below compares several color gamuts.

The larger the color space (gamut)... the wider the range of colors that can be produced by a given color system. Note that RBG has a larger color space than CMYK. A monitor displays color by transmitting Red, Green and Blue (RBG) light into your



eyes. A printer uses existing light to reflect Cyan, Magenta, Yellow and Black (CYMK) light into your eyes. It is virtually impossible to have these two different color models, transmissive (RBG) and reflective (CYMK), match perfectly.

Picking a Color Space... Bigger is Better

In light of the new capabilities of digital imaging it is recommended that you work in the RBG color space. Keep an original archive of the image in RBG format for additional jobs run on different output devices. Once a file is saved in a smaller color space, such as CMYK, the colors outside of that space are lost. Resaving the file in RBG will not replace the missing colors.

Let your service provider modify the color space to best suit your output needs. It's a good idea to contact your service provider and discuss color issues if you have any questions concerning color space requirements.



A service of the
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The Digital Printing & Imaging Association (DPI) is the international trade organization comprised of firms that produce large format graphics using digital output technology. DPI's mission is to promote the efficient and effective use of digital imaging through education.