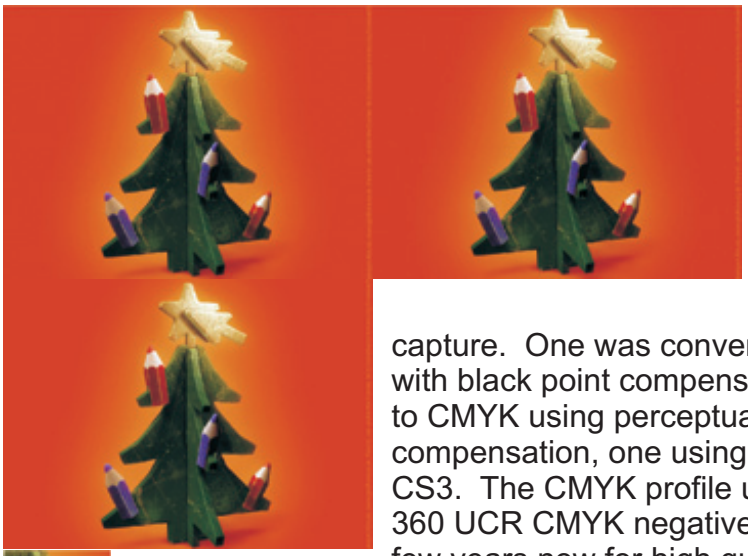
The perceived BS about BPC (Black Point Compensation) Is it Relative to our Conversions?



First I would like to thank Juergen Krausz for not only the use of his image that you see here to the left but for many of his postings on this subject.

The three images seen are screen captures of CMYK conversions of the sRGB original and were all converted to CMYK from a single source and displayed properly for the screen capture. One was converted using relative colorimetric rendering intent with black point compensation turned on. The other two were converted to CMYK using perceptual rendering intent with out black point compensation, one using photo-PAINT X4 and the other using Photoshop CS3. The CMYK profile used for the conversion is a TIC 360 light GCR 360 UCR CMYK negative proofing profile by Kodak that I have used for a few years now for high quality sheet fed gloss or matte paper work.

A document concerning the Adobe application of BPC can be found at this link http://www.color.org/AdobeBPC.pdf . It is a 12 page PDF in which describes the implementation of BPC and the reason why Adobe considered it something that needed done. After using a full search of the ICC (International Color Consortium) specification document I have been unable to find any support for such a standard. So BPC is ONLY AN ADOBE THING!

The one interesting aspect of this document is that page 3 paragraph 6.2 (paraphrased) Color conversion using Perceptual intent ALREADY MAPS SOURCE WHITE TO DESTINATION WHITE AND SOURCE BLACK TO DESTINATION BLACK. Because this mapping preserves the relationships of the shades, it is unlikely that a whole shadow section will be mapped to the same black value. Therefore, BPC should not be necessary. BPC is available, however, for this rendering intent, to be used with malformed profiles.

Well isn't that dandy? Not only is BPC not supported by the ICC even Adobe admits that it should not be necessary. Then they say we can use it for perceptual rendering of malformed profiles.

How about this for a silly option? Remove bad or malformed profiles from your system and stick with perceptual rendering and ICC standards? NAH! Why do that? Let's create something that confuses the entire process even more then it already is!!!

The three CMYK images say it all, and if that's not proof enough image A is a cropped version of all three placed over top of each other at the center of the tree, the center one is the one using BPC. Yes there is a very small difference. Is that enough to abandon the standards that make color management work in the first place?

Let's take a short detour to understand what color management is all about. The concept is such that an image or a file when having its resident source color space identified can be displayed and or output with SIGNIFICANT consistency on multiple calibrated systems. This is the core definition of purpose to which all ICC or any other color specifications are intended to carry out.

The below rendering intent definitions are from my book Color Management in the CorelDRAW Graphics Suite for Professionals, Small Office and Home Office, which is available on the CorelDRAW Pro Book Store site http://www.coreldrawpro.com/AllBookstore.htm.

Absolute Colorimetric	**The conversion of color relative to (attempting to reproduce) the source colors white point with an exact match of the colors of the source that are within the destination profiles gamut. Colors from the source that are out of gamut for the destination are mapped to there nearest equivalent.** Many times use in proofing when trying to match the white point of a magazine or newsprint on a different proofing paper. Will produce a window pane effect on the proofing paper which is caused by the attempt to print what the intent sees as white.
Relative Colorimetric	**The conversion of color with a remapping of the source colors white point to the destinations white point, with an exact match of the colors of the source that are within the destination profiles gamut. Colors from the source that are out of gamut for the destination are mapped to there nearest equivalent.** Most often used in proofing general commercial work and in basic RIP or driver set up.
Perceptual	**The conversion of color that tries to preserve the perceptual relationship of color. All colors in the source, both those that are in and out of gamut for the destination profile are manipulated to maintain the perceptual relationship, (the feel) of the colors from one space to another.** Most often used in images when converting RGB files that significantly out of the CMYK gamut. My choice for all around work.
Saturation	**The conversion of color that tries to preserve the saturation properties (color depth) of color, even at the expense of hue accuracy.** Most often used in signs or the reproduction of maps, the least accurate of the rendering intents but with significant value in some processes.

These are basic text book definitions, and one can see that relative colorimetric by definition is not suited to conversions of a wide gamut to a narrow gamut. The two significant points being that source colors that are in gamut for the destination gamut go UNCHANGED and source colors that are out of gamut for destination colors are MAPPED TO THEIR NEAREST EQUIVALENT. In laymens terms this means by design significant color inaccuracies can occur in the perception of out of gamut color in relation to in gamut color. **Therefore not only will the feel of an image converted improperly with this method be seriously altered but some out of gamut colors may be mapped to the same destination color.** This is an excellent method for proofing or for film and plate setting in controlled environments where very little or no change from source to destination color space is desired.

The worst part of this now is that because of marketing power Corel has had to offer support for the Adobe Color Engine (ACE), which brings along to Corel support for BPC. ACE is available for down load at the Adobe web site . Under the tools menu color management double click the RGB icon and the advanced setting dialog appears and after it is installed ACE will show up as a choice for color engines.

If you so choose or if forced to use BPC to coordinate with Adobe users you can follow these instructions to activate or deactivate BPC. Use these instructions at your own risk!

The installer includes a sample preferences file for controlling BPC and Dither. To control BPC and Dither for all users on the system on Windows XP, copy the file AdobeCMMPrefs.txt, located in the folder \Program Files\Adobe\Adobe Utilities\Adobe CMM,
to

\Documents and Settings\All Users\Application Data\Adobe\Color

On Windows Vista, the location is

\ProgramData\Adobe\Color

To control BPC and Dither only for a specific user on Windows XP, copy the same file to

\Documents and Settings\<current user name>\Application Data\Adobe\Color

On Windows Vista, the location is

\Users\<current user name>\AppData\Roaming\Adobe\Color

When searching for a preferences file, the Adobe CMM checks the specific user location first, before checking the all users location.

To change the BPC or Dither settings:

1. Launch a text editing application, e.g., Notepad: choose Start > All Programs > Accessories > Notepad.

2. Choose File > Open, navigate to the directory where you copied the AdobeCMMPrefs.txt file, and select it.

3. The file will contain text like the following:

[AdobeCMM]
BlackPointCompensation=1
Dither=1

4. To enable BPC or Dither, change the value to the right of the '=' equals sign to 1. To disable BPC or Dither, change the value to the right of the '=' equals sign to 0.

5. Choose File > Save to save your changes.

6. File > Exit to quit Notepad.

You can make your own choice for your private work, I for one will stick with the definitions that the ICC has created for us so we can have uniform color across applications and platforms. However I recognize the power of marketing and when forced I too will use BPC. With that said I sincerely hope that we all now the value of standards and instead of looking for a PATCH FOR A BAD PROFILE and use BPC that we choose quality and standards, then discard that malformed profile and use perceptual rendering as the specification intended.