

## Paper & Print Tones In General

**Paper selection** is how one varies the **tones** of the carbon prints. It also affects the smoothness of the prints.

The Lab B values are the main tonal variables. A positive Lab B is slightly warm-yellow, like the sun. A negative Lab B value indicates a cool, slightly blue print tone. A slightly positive Lab A and B produces a neutral-appearing print.

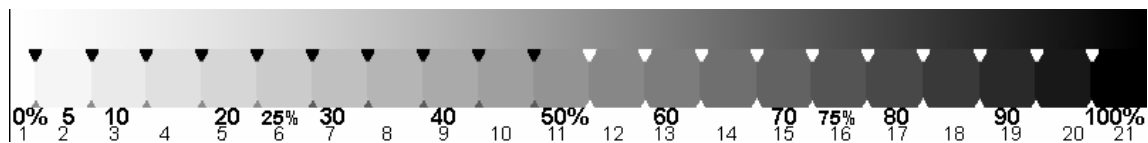
Typical brightened, cool papers often print with warm shadow tones. Some of the most neutral prints are those on papers with no brighteners and a very even tonal distribution.

In general, prints from medium warm to cool can be printed with this approach, without the need for any color pigments.

In terms of peak values, the papers I've tested have a rough tonal range of plus and minus 5 Lab B (yellow-blue) units. Lab A (red-green) stays relatively stable, at about plus 1.5, plus or minus 1. (Spectros differ in how they read the very low Lab A values. The Lab A values all tend to be close enough to the paper to not be a concern.)

Lab B measures in a single paper, from highlights to shadows, can vary from less than 1 Lab unit to almost 7. Most papers have highlights that are cooler than the dark midtones.

**Graphs** of Lab A & B are an easy way to objectively compare the tones of various papers. They also allow B&W service bureaus to exactly match the print tones when larger prints are ordered. These graphs are made in Excel (Insert>Chart>Line). The Lab A & B values were read with PrintFixPro spectro from 21-step test strips, with the paper white on the left, and deepest 100% black on the right.



A copy of the 21-Step test file is at [www.PaulRoark.com/BW-Info/21-Step.jpg](http://www.PaulRoark.com/BW-Info/21-Step.jpg)

The **horizontal axis** numbers are shown at the bottom of the test strip above.

The **vertical axis** shows the **Lab A and B** values. This shows the relative warmth or coolness for test strip shown above. A positive Lab B is warm; a negative Lab B is cool. The higher the graph lines, the warmer the image. The warmest is what I'd call medium warm. A relatively flat line at about 1 to 2 will make a neutral looking print.