# Lab Tonal Distributions

The graphs below show the Lab a* and b* readings for 21-step test strips printed with the 2200 using UT-3D on Hahnemuhle Photo Rag and Crane Silver Rag (top 2), a 2400 with Epson k3 inks on EEM in ABW mode and a 220 with UT-R2 (bottom 2).

The readings were made with a Color Vision Print Fix Pro spectro, which saves measurements as a text file. The files were opened in Excel and a graph (Insert>chart>line) was made of the Lab a* and b* columns. The paper white is at the left of the charts and the dmax is at the right.

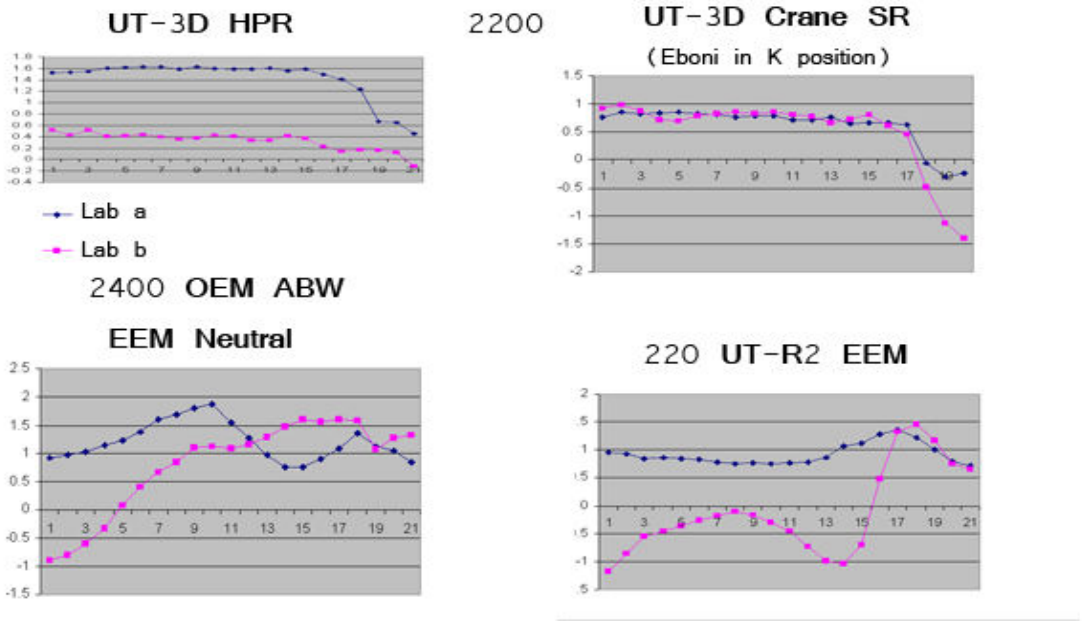
For these UT-3D profiles I followed the paper white readings of the spectro. The goal here was to have the most visibly even distribution of tones. These profiles assume the eye uses the paper white as a reference for judging the other tones.

Alternatively, one could have a straight line from the highlights to the deep shadow tones, or some other distribution. These are just samples to show the degree of control that one can achieve with the inkset and curves.

The eye is much less able to see color changes in the deep shadows. Thus changes in tones there are less noticeable.

On the other hand, a cool black appears darker than a warm black, especially when viewed with warm inside lighting. Thus the inkset is designed to be able to print a cool black on a number of excellent papers. While Eboni is the most neutral (relatively cool) matte black ink, for glossy papers there is some flexibility to control the tone of the shadows, as there is both a pure carbon and cool dark gray that are used. The cool dark gray ink is slightly denser.

In the graphs below the paper white (0%) of the 21-step test strip is on the left of the horizontal axis, and the 100% black is on the right. The vertical axes may have different lines on them but they have all been adjusted to be comparable – a one-unit change is the same distance on all curves.




Paul
[www.PaulRoark.com](http://www.PaulRoark.com)