



Subject: Imaging Standards and Procedures

Project: Free Library of Philadelphia's
Digitization of Medieval Manuscripts

It is the Free Library of Philadelphia's intention to create archival objects as base components for its digital collection. These objects should be of a quality and character that will allow them to be stored, refreshed and migrated to new media or formats as technology and need dictate. These following stipulations specify the minimal qualities for an archival digital file for the digital collection of the Free Library of Philadelphia. For Free Library Digitization Standards see the [FLP Digitization Specifications document](#).

Digital Master File

Resolution:

There is some variety for resolution settings for individual items in the collection. Resolution depends on a number of factors:

Following are *default* resolution values for objects by size be digitized for the Medieval Manuscripts project.

Reflective Material (Leaves, Books, etc.):

11 x 13 or smaller	600 ppi
11 x 14 or larger	400 ppi

In general objects should be captured at the highest bit depth that is allowed by the specific camera. Currently, the scan back camera in the Rare Books Department's scanning lab can capture 16 bit files. Scanning at high bit depth reduces the degradation of the image file during the editing stage. Photoshop CS, a very common photo editing program used in the scanning lab, is capable of handling 16 bit files. The Master Image File should be saved as a 16 bit file.

Color Space:

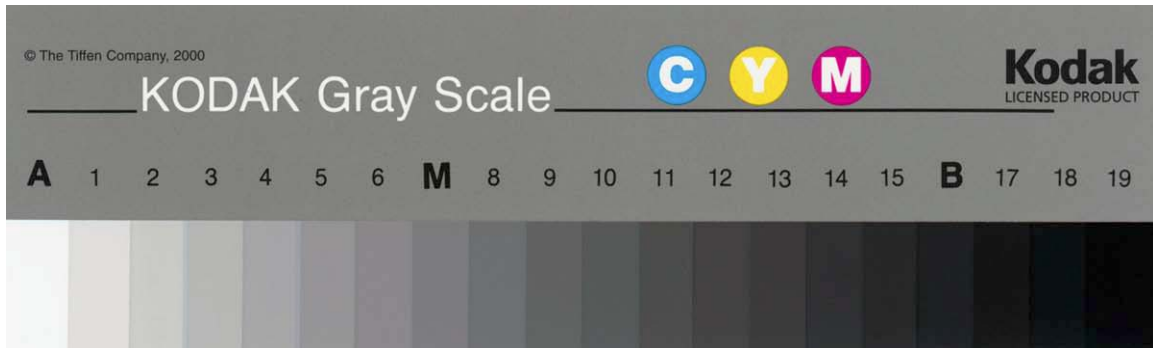
The monitor is calibrated on a monthly basis and the camera has 2 input profiles: one for 600 dpi and one for 400 dpi.

A color model is a mathematical representation of color (such as RGB or CMYK). It is a general system for assigning numbers to color. A color space is an instance of a color model. There are many color spaces such as ProphotoRGB, sRGB, LAB. The important thing to consider in choosing a color space is how wide a gamut it represents and whether it is a well documented model. For this project we will use sRGB. sGB is the default color space of the web and most computers (which is why Photoshop defaults to sRGB). Since these images are intended for the web (as well as being archived) embedding the sRGB profile is okay.

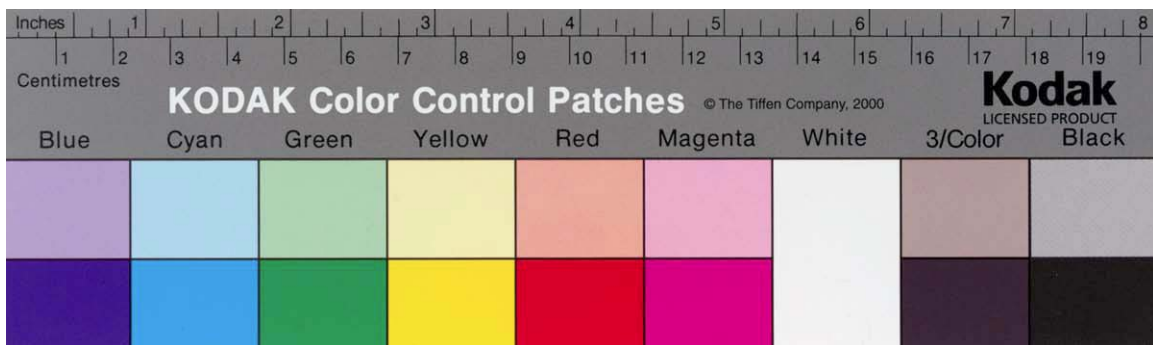
Use of Targets:

Targets (Kodak Q-13) should be used as a reference in the scan and also as a tool to evaluate proper tone reproduction.

The recommended aim points on the Kodak Q13 targets should be used to insure proper tone reproduction when scanning with the Better Light scan back.



Step	Aimpoint	Acceptable Range	%Black
A	242	231-245	5% (3% - 6%)
M	104	100-108	59% (58%-61%)
19	12	8 – 16	95% (94%-97%)
B*	24	20-28	91% (89%-92%)



Step	Aimpoint	Acceptable Range	%Black
White Patch	237	233-241	7% (5-9%)
Gray Background	102	98 – 106	60% (58-62%)
Single Black Patch	23	19 – 27	91% (89-93%)

Generally, but not always, the three aim points correspond to a white-point, a mid-point, and the black-point within a digital image, and they correspond to the lightest patch, a mid-density patch, and the darkest patch on the reference gray scale within the digital image. In addition to adjusting the distribution of the tones (exposure), the three aim points can be used for a three point neutralization of the image to eliminate color biases in the white-point, a mid-point, and the black-point. This is most easily done (pre-capture) in the Better Light software curves or levels tools. This can also be done in Photoshop CS (post-capture) using the eyedropper tool and Color Balance menu [Image – Adjustments – Color Balance]). When using the eyedropper tool it is important that the sample size is set to 5 x 5 pixels for more accurate measurements.

These aim points are guidelines only. It is sometimes necessary to vary from the guidelines and use different values to prevent clipping of image detail or to provide accurate tone and color reproduction. It is important to evaluate the tonalities of the object being scanned in order pick the proper aim points for a specific image.

Technical Metadata:

To facilitate the preservation of the digital files created for this project, technical metadata about the digital files (actual image files) should be recorded. A majority of the basic image information (resolution, color space, bit depth, etc.) is captured in the EXIF (Exchangeable Image File Format) files and can be viewed in Photoshop's *File Browser*.

The Image Production values needs to be recorded as follows (this is for the Better Light scan back):

Host Computer

OS

OS Version

Image Producer

Scanning Back Manufacturer

Scanning Back Model Name

Scanning Back Software

Scene Illuminant

Camera Body

Camera Lens

Target Type

These values are to be recorded as a text file on the desktop. At the start of each session the values can be cut and pasted into the *Info Box* in the Better Light Viewfinder software.

Basic Scanning Procedures:

Better Light

1. Turn on lights and allow to lights to warm up for 20 minutes.
2. Turn on Better Light by flicking the switch on the portable hard drive unit.
3. Click on the Viewfinder icon on the desktop to open the software.
4. Place object to be scanned on the copy stand with the Kodak grayscale and color targets and the Better Light's Focus card.
5. Take scan back out of the camera back and replace with the ground glass. Roughly focus with the 45ei camera. Replace scan back in camera.
6. Take a Preview scan and using the eyedropper tool and Kodak targets check color balance and exposure. Exposure can be adjusted via the aperture on the lens (best to be around f8) or the line time setting in the software.
7. Fine focus is achieved by using the Focus tool and moving the camera up and down in small increments.
8. The ISO sensitivity can be set between 200 and 400. Try to keep it at 200. Keep in mind the lower the ISO the less noise you will potentially have.
9. Enter file resolution. Check to see if 16 bit is set on the software.

10. Enter Filename and for the first scan of the session, cut and paste the "TechMet" file into the Info Box in the software. You can get to the Info Box by clicking on the "i" icon next to the file name box.

11. Remove the Better Light's Focus card and Scan

12. Please fill the Scan Worksheet regarding the specific information of each scan object that will be needed for the database.

13. In Photoshop, please check the quality of the scan.

14. At the end of the session the files are to be burned to CDs.

Evaluation criteria:

As the original TIFF images are created they will be examined by the project staff at 100 percent for:

- Size
- Color mode
- Clarity (not pixilated, sharpened, or dull)
- Brightness and contrast
- Color balance.

They will also be checked to ensure that the images have not been skewed or cropped, that they were captured at the correct resolution, that there has been no loss of detail in highlight or shadows.

Web Development's designer will also examine the TIFFs as well.