binuscan
Spectrophotometer

User’s Manual

binuscan Spectrophotometer

The binuscan Spectrophotometer measures colors through a spectral analyzer. It was manufactured by Gretag Macbeth™ based on binuscan specifications, and works with PhotoRetouch Pro to create monitor and printer calibration profiles.

Monitor Calibration

Connect the binuscan Spectrophotometer to your computer, by means of the USB cable, to a free USB port on your Macintosh or to a USB hub that features a separate power supply. The binuscan Spectrophotometer will not work if it is plugged into the USB Port on your keyboard.

Place the binuscan Spectrophotometer on the white reference of its calibration plate. The plate must lay on a flat, even surface. Make sure the device and the plate are in contact.

Open the “Monitor Calibration” folder and double-click on the “Eye-One Match (Monitor)” application.

Place the binuscan Spectrophotometer on the designated area (the calibration window) of your monitor:

Fig. 1

- either using the CRT holder with the suction cup, if you have a CRT monitor *(Fig. 1)*

- or using the flatscreen holder with the counter weight, if you have a flat display panel *(Fig. 2)*

Fig. 2

Follow the onscreen instructions to create a monitor profile.

Printer Calibration

1. Printing the Reference file

Open the “Printer Calibration” folder. It contains the “binuscan Spectrophotometer” application and two folders:

- *Reference Files:* this folder contains the calibration targets in .tif format, which you are going to print on your printer, and measure using the binuscan Spectrophotometer to create a printer profile in PhotoRetouch Pro.
- *Description Files:* this folder contains the description files, in text format, of the reference targets. You will use the description file matching the type of target you printed, to measure its values using the binuscan spectrophotometer.

In PhotoRetouch Pro, open the Reference file (.tif) matching your printer type:

RGB printer: a single reference file is included with PhotoRetouch Pro. It is made up of 16 rows of 18 patches, and can be printed on an A4 or A3 (US Letter or 11x17 inch) printer.

CMYK printer: you can choose between three reference files:

- for a quick calibration: *CMYK_Printer_Reference.tif.* This target is made up of 7 rows of 9 patches and can be used for an A4 or A3 (US Letter or 11x17 inch) printer.
- for a more accurate calibration, you can use a larger target, made up of 24 rows of 18 patches. On an A4 (US Letter) printer, this target is split into two reference files, which you will print separately on two A4 (US Letter) pages. On an A3 (11x17 inch) printer, this target is available as a single reference file, to be printed on a single A3 (11x17 inch) page.

When opening the reference files in PhotoRetouch Pro, make sure you choose *Don’t color manage* or any other option, but never *Convert to profile...* You must never convert the reference files to another profile.

Refer to the “Calibration” manual to print the reference files with no color management options in the printer driver.

2. Measuring the reference file

Connect the binuscan Spectrophotometer to your computer, by means of the USB cable, to a free USB port on your Macintosh or to a USB hub that features a separate power supply. The binuscan Spectrophotometer will not work if it is plugged into the USB Port on your keyboard.

Fig. 3

Place the binuscan Spectrophotometer on the white reference of the calibration plate. The plate must lay on a flat, even surface. Make sure the device and the plate are in contact. Double-click on the “binuscan Spectrophotometer” application.

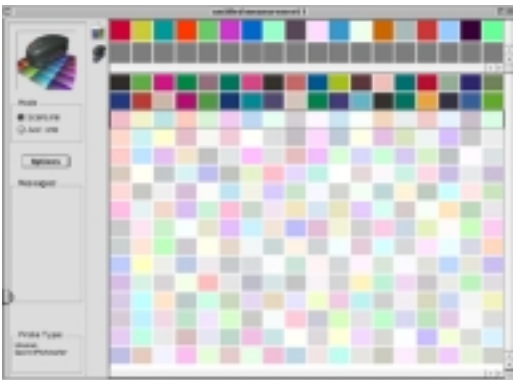
The initialization dialogue box is displayed. *(Fig. 3)*

Before using it, you must always calibrate your spectrophotometer on its calibration plate, which contains a white reference ceramic tile. Place the spectrophotometer on the plate, and make sure they are both stable. This is extremely important to guarantee you will perform accurate measurements. Push the spectrophotometer’s measurement button, and release it immediately. Calibration may take a few seconds.

Once calibration is complete, a file chooser dialogue box is displayed, asking you to load the description file matching the reference file you just printed.

If you chose to print the reference file for an accurate CMYK calibration, you may have a single A3 (11x17 inch) page, or two A4 (US Letter) pages to be measured, but you will use the same, single description file. You simply need to measure the A4 (US Letter) pages one after the other. Load the description file. The measurement window is then displayed. *Fig. 4)*

Fig. 4



The measurement window displays the graphical representation of the description file you loaded. Make sure it corresponds to the reference file you printed (same number of lines, same patch order).

The “binuscan Spectrophotometer” application supports two measuring modes:

- *scanning measurement*: to measure an entire row of patches in a single move.
- *single measurement*: to measure one patch at a time. This is useful for corrections when required.

Your printed reference file must be ready to be measured: the ink must be dry. Place the printed sheet of paper on a flat, even and neutral surface *(Fig. 5)*.

Fig. 5

Make sure the color of the underlying surface cannot be seen through the paper, so it doesn’t interfere with the measurements.Place the ruler on the first row of the printed target *(Fig. 6)*: the ruler groove must be aligned with the black border of the target *(Fig. 7-8)*

Fig. 6

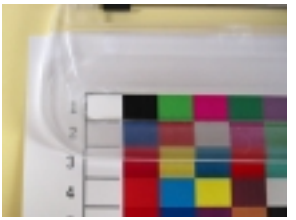


Fig. 7

Fig. 8

Place the spectrophotometer into the ruler groove at the beginning of the row, and click and hold the measurement button until you hear a beep *(Fig. 9)*. While still holding the measurement button, move the spectrophotometer, slowly and steadily, over the color patches *(Fig. 10)*. When you have measured the entire row, release the button *(Fig. 11)*

Fig. 9

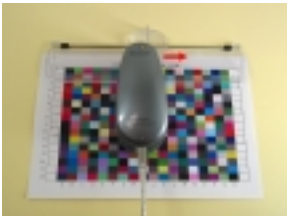


Fig. 10

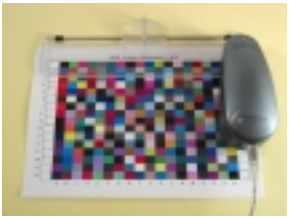


Fig. 11

If you went too fast, or didn't measure the entire row, you can hear two beeps, and the application displays a warning icon and an error message. It does not display the measured row and step to the next row; instead, it prompts you to measure the same row again.

If you successfully measured the row, a single beep can be heard. The row you just measured is displayed, and the application steps to the next row. *(Fig. 12)*

Repeat these steps to measure every row of the printed target.

Fig. 12

If you are not sure of a particular patch, select "Single Measurement" and click on the patch you wish to measure again. Place the positioning target over the patch on thr printed target, *(Fig. 13)* and position the spectrophotometer (*Fig. 14).* Click and hold the measurement button, until you hear a single beep. The newly measured patch is displayed.

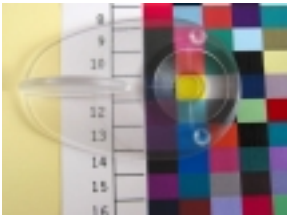


Fig. 13

Fig. 14

When your measure is complete, select *Save Description File* from the File Menu. Name your measurement files, specifying the printer model, its type (RGB or CMYK), and the date.

Refer to the "Calibration" manual to create your printer profile, using the reference file and the measurement file you just saved.