GMB and X-Rite duel for your profiling dollar. Who's got the right product for you?

BY DAN REID

Taking *measure*

MONACO OPTIX[XR], X-RITE PULSE COLORELITE SYSTEM, AND GMB EYE–ONE PRODUCT LINE

In the 1990s, imagers had few options among color measurement devices for reflective (print) color that didn't cost as much as their computer systems. The turn of the century brought the affordable GMB (GretagMacbeth) Eye-One spectrophotometer for pros. This spectrophotometer can measure both emissive (LCD and CRT computer displays) and reflective color.

In fact, GMB holds the patent on dual-use spectrophotometers. That's why X-Rite, another big name in color management, has had to sell the solutions separately as the Monaco Optix[XR] colorimeter and the Pulse ColorElite spectrophotometer. X-Rite asserts that its products do a better job, as each is optimized for its respective use on emissive and reflective measurement—the Monaco Optix[XR] colorimeter for LCD and CRT displays, the Pulse ColorElite system for print color. GMB offers a single device to handle both types of measurement. After testing the products, I believe X-Rite has a competitive solution.

Color is defined not only by you, the observer, but also by the substrate (paper), and the light source, or *illuminant*. Generating ICC profiles for different illuminants is a new trend in ICC profiling.

The X-Rite Pulse ColorElite System allows users to create ICC profiles optimized for D50, illuminant A (tungsten light bulb), and F11 (cool white fluorescent bulbs). As a nice bonus, users also have the option to build ICC profiles with different light source adaptations without re-measuring charts. (*See sidebar, below.*) Simply open a Pulse-generated ICC profile in the ColorElite software to rebuild the ICC profile with a new target white point. Although GMB ProfileMaker 5 offers a similar white point adaptation feature, GMB Eye-One Match 3.1 does not.

Although the GMB Eye-One spectrophotometer *can* measure a light source and photoflash used in conjunction with the Eye-One Share application, which is included, Eye-One Match 3.1 does not use this measurement, only ProfileMaker. X-Rite Pulse does not allow measurement of a light source for custom white point adaptation.

Both the X-Rite Pulse and GMB Eye-One Proof support the CMYK chart issued by the European Committee Initiative, which is the favored standard for ICC profiling. The two solutions do not, however, support the same RGB standard.

The GMB Eye-One Pro can mar a print that's not completely dry if you apply to much pressure as you drag the device across the paper. Worse, doing so might damage the Eye-One device as well. The X-Rite Pulse skirts this problem with the built-in Pathfinder track, which raises the spectrophotometer so it doesn't come in contact with the print.

The Pathfinder's alternating black and white bars assist the Pulse in recognizing color patches, regardless of whether user moves the device quickly or slowly. The GMB Eye-One Match test charts rely instead upon a

TECHNICALLY SPEAKING

Color matching is done assuming a theoretical light source of D50, (L*A*B*, D50 2° observer). To meet this challenge, ICC profiles compliant with version 4 ICC specifications have the calculations from the destination light source harmonized back to D50. Why? Because it's easier to assume a D50 illuminant for conversions than to adapt for a specified light source on the fly in the Color Management Module (CMM).

ICC profiles compliant with v2 ICC specifications allow a white point illuminant other than D50, while v4-compliant ICC profiles require data to be harmonized back to D50. The Adobe CMM is v4 compliant, so technically it could support a pair of v4 ICC profiles, which is necessary for a user to benefit from the v4 clarifications. It is unfortunate that the majority of ICC compliant products today are only v2 compliant, but that should change in time.

randomized patch layout to distinguish each patch in a row, and the software sometimes errs if the user moves the device too quickly or jerkily across the page.

The method of color measurement verification will make a subtle difference to the user. The Eye-One has an audible indicator alone, while the X-Rite Pulse has both sound (when connected via USB) and a visual indicator in the form of

The X-Rite Pulse (DTP20) has audible and visual alerts to indicate the results of the measurement. The red light ring means there's an error; green would indicate success.
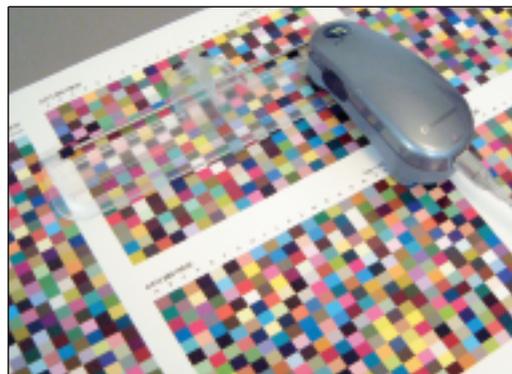
color dial with pulsing light (*below*). The Eye-One audible-only indicator is a somewhat less user-friendly method. It beeps once for an error and twice for a successful read, but the sound itself is the same.

The X-Rite Pulse can measure up to 3,000 patches remotely, which is a huge feature, but from a design aspect, it's also a bug. The Pulse is always powered by the battery, even when it's tethered to a computer with a USB connection. The USB connection allows measurement download and trickle charges the battery. It's disappointing that X-Rite doesn't include a power supply in any Pulse ColorElite bundle, but you can purchase a power supply separately to provide a back-up means for measuring, and a power supply is included in the optional Pulse accessory kit. Charging

the battery from a powered USB port takes up to 7 hours, and will not continue if the computer is shut down or in sleep mode. An optional power supply cuts the charging time in half. Conversely, battery-less GMB Eye-One Pro is powered solely from a USB connection.

The Eye-One Design bundle brings the price of spectrophotometer measurement to less than $1,000. GMB briefly offered the Eye-One Monitor at $600, which was a great bargain for an emissive-only spectrophotometer. The recently announced entry-level Eye-One Design bundle, starting at $895, allows spectrophotometer-based monitor profiling (instead of the Eye-One Display 2 colorimeter), and RGB and CMYK perceptual-only printer ICC profile rendering. This bundle is for imagers who want to reproduce pleasing color, but don't need total color accuracy.

The GMB Eye-One Design printer profiles are generated from measuring just 45 color patches. Those who need perfect translation from source to output will prefer to use the colorimetric rendering intents, relative and absolute, for the accurate conversion of in-gamut

Connecting the X-Rite Pulse to the computer with the ColorElite software automatically opens the Pulse Info window. The top half indicates the missing rows (strips). The bottom half indicates battery charge and calibration status.

The ECI2002 chart is available as four letter-sized documents or two large pages. This is a letter-sized chart. The GMB Eye-One has a small plastic guide to use as you drag the Eye-One device across the chart. Notice how the charts are randomized to assist in color patch recognition.

colors that's needed for proofing. This capability comes in the Eye-One Photo and Eye-One Proof bundles, which provide larger color sampling and better color accuracy. An added feature in these bundles is a software license to calibrate and profile digital projectors, too.

The X-Rite Pulse ColorElite RGB entry bundle, $1,095 without the Monaco Optix^{XR}, is intended for use with manufacturer-supplied print drivers rather than custom RIPs. For an additional $200, you get monitor profiling in the bundle. The X-Rite Pulse ColorElite RGB/CMYK bundle is $1,595, plus $200 for monitor profiling. This bundle includes a basic profile editor, but not the rendering-intent-limited ICC profiles of the Eye-One Design bundle. The Sekonic X-Rite Digital Suite includes Monaco Optix^{XR} and the Sekonic L-558R multi-function light meter; it sells for $699.

X-Rite has resolved some of the shortcomings of the Eye-One spectrophotometer hardware, yet its products lack the maturity and refinement of the Eye-One Match software. Still, X-Rite's offering is a compelling contender, offering ease of use and features not available in the veteran Eye-One package. ■