

SCANNERS

High end image capture for graphics pros looking for size, versatility and speed

LinoColor Circon

BY SHANE STEINMAN

UNTIL RECENTLY THE DISTINCTION BETWEEN HIGH-END AND LOW-END scanning devices has been one of quality.

The manufacturers of drum-based scanning equipment had long maintained that unless a device captured color by means of a photo-multiplier tube (PMT), there was no way to get the sort of resolution and color fidelity that were required for professional imaging work. Less expensive scanners were typified by their use of charge couple devices (CCDs) as a means of collecting image data. However, technology has a way of blurring product lines for which no

amount of sharpening can quite compensate.

In the mid 90s, we witnessed the emergence of a new breed of CCD arrays that offered higher resolutions and a wider dynamic range. PMT scanners accommodated a dRange of about 3.9, while CCD-based machines were hard pressed to show numbers which exceeded 3.0 by any great margin, with the shortfall typically being expressed as a lack of tone or detail when scanning dark originals.

Then came the Scitex 342 and the Linotype-Hell Topaz which tore down existing preconceptions about CCD use in professional environments. Suddenly, here were two devices with

acceptable resolution and respectable dRange numbers in the mid-threes. Now that the distinction between low-end and high-end equipment could no longer be attributed in large measure to the power of PMT over CCD, the door was open for noting the other differences between the two poles. These issues stepped to the forefront of the debate: high-end costs more, has better software to control the process, can usually capture dimensionally-large images as well as originals that are either transparent or reflective.

The degree to which any product addresses all of these issues is likely to determine its market impact.

ORIGINAL SIZE AND TYPE

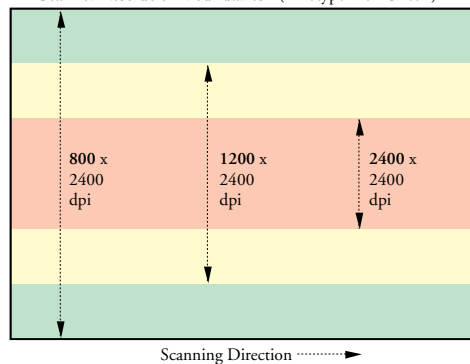
The LinoColor Circon (ELS 5000) is a nice looking piece of machinery. Smooth to the touch and sleek, it insinuated itself into my office and staked out three feet of desk space for its personal comfort. This is a production scanner, so comparisons with drum scanners seemed appropriate.

Drum scanners are available in a variety of input sizes from mini-drums designed for scanning 35mm, 220mm and 4" x 5" transparencies to monster press sheet-sized models on which you can scan almost anything that you can wrap around its curved surface. Most prepress work involves the scanning of originals only up to tabloid format (11" x 17").

The Circon flatbed scanner satisfies this condition, allowing captures up to 12" x 15.7" or 12" x 17" from transparent and reflective sources respectively.

One thing that should be noted about the resolution of the Circon is that, like most CCD-based scanners, the available resolution (how large you will be able to enlarge the image) decreases as you increase the size of the originals being scanned. There are three categories of resolution available: 800x2400, 1200x2400 and 2400x2400. The highest resolution area of the bed is a 4" strip that runs down the middle, with declining primary resolutions as you venture out beyond those borders (see diagram).

Scanner Resolution Boundaries - (Linotype-Hell Circon)



SCANNING SOFTWARE

The Circon ships with LinoColor's award-winning *Elite* software which was adapted for use with desktop systems, but which had its beginnings in the Hell Graphic Systems color labs. This is a highly-developed piece of scanning software, not simply a plug-in that will allow the device to "talk" to your Mac.



LINOCOLOR CIRCON

Image capture engineering: Triple Lens System
 Scanning software: LinoColor Elite
 Bundled software and accessories: ScanOpen ICC Lite, ICC profile, Cumulus desktop image database from Canto, "FontExplorer" CD, IT8 reflective and transparency targets, 35 mm, 6" x 7" and 4" x 5" passe-partouts (1 each)

Density range: 3.7D Bit depth: 42 bit
 Optical resolution: Standard-Res Mode: 800 x 2400 dpi, interpolated 4800 x 4800 dpi; High-Res Mode: 1200 x 2400 dpi, interpolated 7200 x 7200 dpi; Super High-Res Mode: 2400 x 2400 dpi, interpolated 14,400 x 14,400 dpi

Originals: Transparent or reflective, color or black/white, contone or line art, positive or negative

Maximum original format: Reflective: 17" x 12" for 800 dpi; 17" x 8.3" for 1200 dpi; 17" x 4.1" for 2400 dpi. Transparent: 15.7" x 12" for 800 dpi; 15.7" x 8.3" for 1200 dpi; 15.7" x 4.1" for 2400 dpi

Minimum system requirements: Power Macintosh, minimum 32 MB free RAM; minimum 30 MB free hard disk; CD-ROM

List Price: \$23,399 (CDN)

LinoColor embodies color and image editing, masking, extensive import/export functions, ColorSync ICC color support, user-definable scanning profiles, PhotoCD image acquisition and support for a plethora of other capture equipment like digital cameras and various scanners. It directly supports output to digital proofers, imagesetters, image servers and media databases.

With fine control over often-used effects like sharpening, masking, clipping, color separation, and unique capabilities such as advanced color mapping when converting back and forth between color spaces, LinoColor meets the demands of a professional market with relative ease. Now I *did* run into a few problems with my initial testing, but this was later attributed to the beta version of the software that I was using at the time. Subsequent tests with a full release version of the software yielded no unexpected results.

COST

Competitively-featured PMT (drum) scanners may have a dRange which exceeds the mark of 3.4 demonstrated by the Circon, but the price of these drum devices is also an average of three times that of the Circon which has a Canadian suggested list price of \$23,399. At this price, it might seem like the manufacturer is threatening its own successful Topaz product which seems remarkably similar to the Circon yet sells for considerably more money.

Granted, the Topaz is more of a production scanner, capable of generating more scans per shift than its more frugal cousin. However, the price difference is bound to make some smaller prepress and press shops think twice before committing to the more expensive offering. Technically-inclined design shops looking for a quality scanning system to bring house will also have to decide. Hmmmm...

FLEXIBILITY & SPEED

Where the requirements of most scanning situations are met by the available density range, there will be infrequent times when you will consider PMT scanning for certain dark-toned or super-subtle transition originals. On the other hand, there are things that you can put on a flatbed scanner that you would never dream of trying on a fast-spinning drum. How about that expensive oil painting? Maybe that carpet sample? What about that antique book? In today's "borrow from everywhere" society, I can see a definite need for latitude in what a scanner will or won't accept.

Setups are quick and easy, with most scanning jobs getting under way in just a few minutes. Contrast this with the setup time for the average drum scan during which the original must be mounted securely to the surface of the drum with tape. After the initial pre-scan and a check and adjustment of the image numbers, a 200 dpi full bed scan takes only 55 seconds for color and just 19 seconds for grayscale.

At about 65 lbs. total weight, the Circon scanner is al-

most portable compared to the beasts that used to take up an entire room and require weeks of technical testing to achieve a workable install. After approximately 30 minutes of fiddling with SCSI cables, power connections, tape and packing materials, I was ready to install the LinoColor software — which took two minutes. I set aside roughly three hours for calibration and preliminary tests. Then, I started playing hardball with it by offering it some real-world production situations.

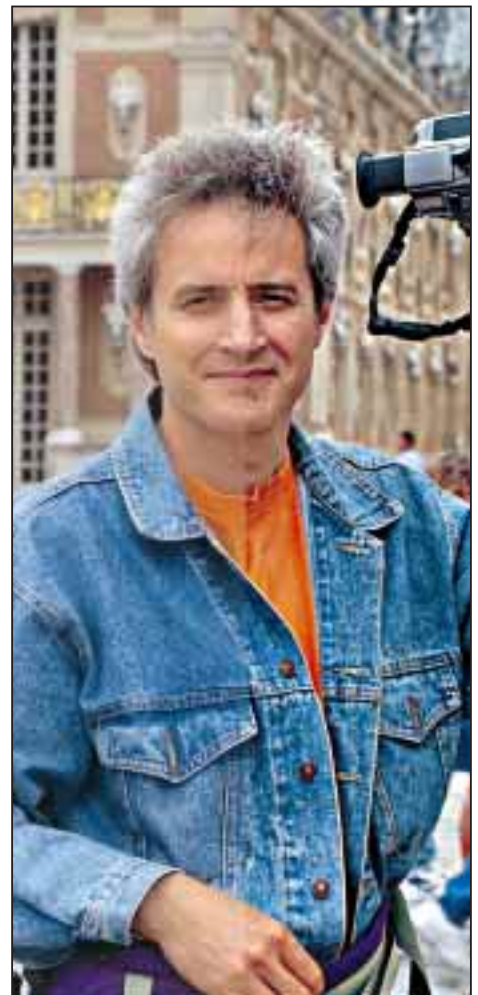
THE TESTS

These may be unconventional tests, but they do serve to demonstrate the ability of the equipment to cope with the often fractured world of design and prepress.

The Itty Bitty Teeny Weeny Tranny Test — B+. This is one test that usually fries CCD pretenders-to-the-PMT-throne. Large scale blowups of detail areas in small transparencies usually fail to some extent because of the comparatively lower resolution matrix of the CCD array versus the PMT method. The tendency by the software is to over-sharpen to try and gain back detail. This often backfires because the additional sharpening enhances natural grain in the film and produces a spotty rendition.

The Circon exhibited some of this trouble, but, in comparison to many other scanners I have reviewed, the impact of the deficiency and the

(below) **The Two Faces of Bob.** You might recognize this pic of resident GRAPHIC EXCHANGE Multimedia Master Bob Connolly from last issue. The left side of the photo was scanned on a ScanView 5000 drum scanner and reveals good detail with minimal sharpening. The subtler tones of the image are preserved and the more saturated colors are not swollen with the primary hue. The right side of the image was scanned on the Circon flatbed scanner; although it displays a slight lack of shadow detail and a pronouncement of the primary hues in saturated tones, it maintains overall color fidelity and depth.



attendant compensation produced a better than average result. Note: The grain enhancement effect occurs in many medium-priced drum scanners as well.

The Bizarre Look-what-the-cat-dragged-in Test — A-. This is where I take dozens of items that are not typically scanned (usually these items are photographed and the photos are scanned) and throw them on the bed to see what happens.

Very good results. I pitted the Circon against the best reflective flatbed results I have had to date (off the significantly less expensive Epson Expression 836XL). The Circon performed well, although on three dimensional objects it fell somewhat short of the Epson's startling crispness. But the Circon was able to see fairly deep into the pile of the carpet sample I tested and also managed to bring out the pattern in several subtle fabric scans.

The Look Mom, No Hands Test — A+. This is where we see how fast we can

go — which is a general rule of thumb in prepress production. Most scanning software these days can batch scan images, but what I wasn't expecting was the additional automation procedures that LinoColor brings to the mix.

In addition to being an extremely competent driver and editor of the scanning process, LinoColor can also be highly automated. It can evoke *Photoshop* to open an image where additional processing is required and it can connect to and communicate with a *Cumulus* image database system.

The kicker was *JobAssistant*, a program that works in conjunction with LinoColor to speedily handle tasks like queuing for scan, image assessment, profile assignation and queuing for print. It makes a highly effective job management tool for the scanner operator and saves time when saving processed images to disk and when preparing pre-scans since it allows for background operation of queued scans.

It goes as far as permitting network

access from other workstations where pre-scans can be tweaked before being released for final capture. This "tag team" approach would be helpful in a busy environment where there's a shortage of full-fledged scanning stations.

Overall Grade — A-. Assessment: If I did not already own several scanners, I would probably buy this one. In other (more mundane) tests, the Circon acquitted itself admirably. This gauntlet included many basic tests; dynamic range verification, resolution and interpolation quality, color fidelity, edge effects and detail rendering. On all accounts, the Circon performed in the upper echelons of its class.

Classy. That's probably the best word to describe this machine.

See www.linocolor.com/news/circpr_frames.htm for full details on the Circon or call Louison-Desonite at 416-441-9911. *

SHANE STEINMAN IS CHIEF TECHNICAL CONSULTANT FOR ARCHANGEL MEDIA INC. OF TORONTO.

FIRST INTERACTIVE

WILL SEE YOU INTO YOUR FUTURE

Register today, limited seating available for Jan. & Feb. '99 courses – 3D Studio Max & Maya. Train for a new career or upgrade your current professional skills in state-of-the-art technology labs with award winning industry instruction.

First Interactive offers students more:

- State-of-the-art technology
- Lab access, 24 hours a day, 7 days a week
- Career placement
- Financial assistance to qualified students

416•504•3614

www.ficc.ca info@ficc.ca

822 Richmond Street West, Toronto, Ontario M6J 1C9

ANIMATION

SPECIAL EFFECTS

ON-AIR GRAPHICS

BROADCAST GRAPHICS

DIGITAL EDITING

COMPOSITING

3D MODELING

First Interactive