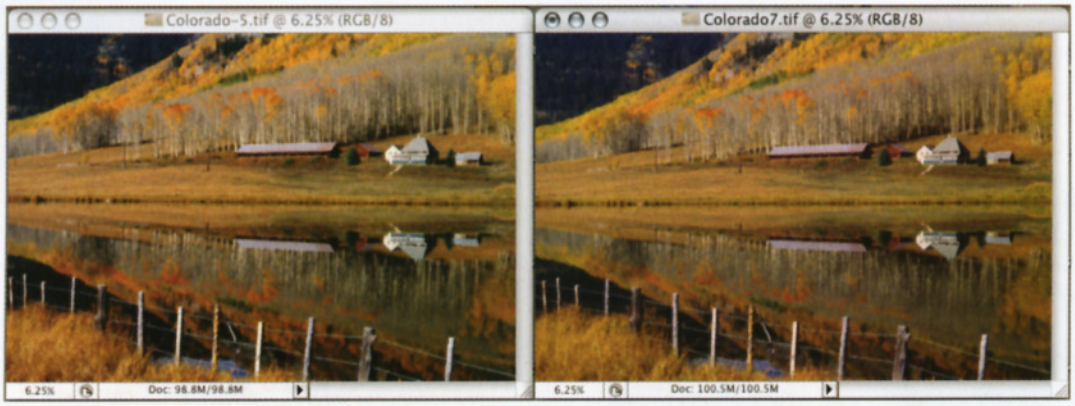
Epson's Perfection V750-M Pro Scanner

by David B. Brooks

Pro Performance From A Flat-Bed

COMPARE EPSON PERFECTION V700 ON LEFT WITH 35MM FILM SCANNER ON RIGHT - BOTH SCANS OUTPUT TO 16X24 INCHES AT 300DPI

Full 35mm scan frame



Enlarged to 8X view

From one of two dozen different slides scanned with both the Epson Perfection V750-M Pro (on left) and the Konica Minolta DiMAGE Scan Elite 5400 II dedicated 35mm scanner (on right), outputting to the same 16x24" by 300dpi file size, the definition and sharpness of detail, as well as density range and color were virtually identical and definitely competitive in quality.

Epson's new Perfection V750-M Pro with SilverFast Ai 6 can scan 12 35mm slides in one batch at a phenomenal 6400dpi. The printing performance from these high-resolution files is as impressive as the files are large.

The new Epson V700 Photo/V750-M Pro Perfection scanners remind me of the very first Epson professional scanner I got to know over 10 years ago. The resemblance, however, is largely superficial. Even though the new V700 and V750 have a shape similar to the Expression of over a decade ago, these new Perfection scanners reflect an entirely different era of scanning performance. While this report will concentrate on the V750 model, you should know that there are two new models from Epson, the V750 and V700. They share the same primary specifications, but the V750 goes a step beyond with a fluid film mounting capability, something new to consumer scanners. It also includes the most advanced LaserSoft SilverFast Ai 6 scanning software as well as MonacoEZcolor.

These new scanners represent a design break from recent Perfection scanners. Epson has foregone styling for a utilitarian shape and configuration with a box-like, straight-sided exterior. They have a slightly concave-sided TPU lid housing the film scanning illuminator that provides more efficient physical handling when making scans.

But it's what's inside that counts. The units support film scanning across most of the scan area, allowing scans of film sizes as large as 8x10", and also as many as 12 35mm slides in mounts, and even more 35mm negatives in strips. Excepting larger than 4x5 sheet film sizes, film scanning is accommodated by a dual lens design that supports a spectacular 6400dpi optical resolution. A full range of clean, noise-free information is read and recorded at the scanners' 48-bit color depth and 4.0 dynamic range, producing much better shadow information in positive transparency scans, and virtually

Medium and large format transparency scans produced by the new Epson Perfection V750-M Pro are clean, exquisitely smooth toned yet distinctly sharp, and will reproduce in large professional quality prints.

(Above): Some years ago I was testing a new 120mm f/4 macro lens for the Rollei 6000-series SLR camera, and shot these ocean bouys piled up at the Long Beach, California, harbor, with camera securely locked down on a heavy Gitzo tripod. The negative on Agfapan 100 is incredibly sharp, and I thought a good selection to test the fluid mount capabilities of the Perfection V750-M Pro scanner. All of the advantages of edge-to-edge sharpness, minimal dust and scratches being scanned, as well as very subdued grain, were readily evident in the 24x24" by 300dpi image file that resulted.

(Left): Large format silver-based film scans have always been a challenge to scan successfully with affordable consumer flat-bed scanners. But with the new Epson Perfection V750-M Pro be prepared to be blown away by the image quality of the scan files. In this image detail of the paint peeling on this meandering ranch fence was sharply defined even though so fine it would be barely visible in a 16x20" print.

eliminating highlight blocking in scans of silver-based black and white negatives. The dual lens design, which provides the higher 6400dpi optical resolution, does so with a larger diameter lens and higher f/stop for a better modulation transfer function, backed up by a high-pass filter and a coated CCD lens with a more efficient mirror in the scan-head assembly.

Physically, film scanning is supported with new film holder designs with pins that assure precise alignment to the scan area, as well as tab adjustments to raise the film holder focus plane to accommodate bowed and droopy film. The new film holders include one for 35mm slide, 35mm filmstrips, 4x5 sheet film, and a 120 medium format holder that holds two strips of film. The latter is of course a compromise, with its shortcoming being poor support for 120 film cut in individual frames. Epson, I think, would be well advised to offer optional 120 holders for each of the standard medium format frame sizes from 6x4.5 through 6x9cm. Even if relatively expensive I am sure many photographers with a library of 120 film would purchase extra cost holders for these specific frame sizes.

Fluid Mounts

The V750-M Pro has a rather unusual capability—a special holder to accommodate a fluid mounting technique that is well established in pro drum scanning. The fluid mount holder is a frame around a piece of optical glass about the same overall size as the other film holders. It has a handle at each side and a loading base with a white grid against black, which marks the scan area and provides grid lines to align film placement. Besides providing a more effective holder to support film cut in individual frames, fluid mounting also assures completely flat support for the film that remains in place during scans. Some of the thinner 120 films in particular are known to "pop," changing focus plane position during a scan, a problem familiar to anyone who has done enlarging in a wet darkroom with glassless film carriers.

The fluid used in this mounting technique used to be a special kind of mineral oil, which was rather messy to clean up afterward. For the V750, Epson recommends a newer scanning fluid made by Kami, as well as the other consumables like Mylar sheeting, wipes, Kami tape, etc., that are distributed by Aztek (13765-F Alton Parkway, Irvine, CA 92618; (800) 472-7455, (949)770-8787; www.aztek.com). The mounting fluid and consumable supplies are not included with the scanner, nor are they available from Epson, but Aztek does offer a starter kit that can be purchased directly if you call in an order or go to their website. Although I had some experience with a drum scanner many years ago, loading a flat surface with film to scan using mounting fluid was really a new experience.

Testing The V750-M Pro Scanner

With such a comprehensive range of capabilities, testing and

On one of my many trips to Italy I happened to be traveling alone and had lots of free time. I took just one camera, an all-time favorite folding, pocket Fuji GS 645, with rolls of 120 black and white in my other jacket pocket, on many long walks exploring several towns and cities like Milan and Savona. Scanning the resulting negatives with the Perfection V750-M Pro I have now an even greater appreciation of what that favorite camera afforded in pictures of what I discovered on those explorations.

evaluating this new Epson Perfection V750-M Pro was going to be a big job. To have a basis for comparison necessitated scanning a lot of photo images I had scanned before with other units. In fact, I even dug out a stack of CD-Rs from 1996 and '97 with stored TIFF files from the first two Expression models I tested, as well as those of more recent models, including the Perfection 4990. I must beg your indulgence if you have seen some of these images before, but it was essential to making an accurate assessment of the performance.

Fortunately, Epson has been consistent, changing only what they could improve while preserving a familiar workflow and approach to scanning. This consistency includes a rich bundle of software options. And this, of course, includes the premium scanner software from LaserSoft, SilverFast, which was introduced for the first time with the first Epson Expression model I used and tested. I used this software for all my scanning tests.

I began with large format transparency film scans as I expected they would yield predictable, high-quality results—and that is exactly what I found. In particular, the ASF Digital ICE dirt and scratch cleaning ran more efficiently and effectively than with previous models, closer to the performance I would expect with a dedicated film scanner.

I moved along to progressively smaller film formats, ending with two dozen 35mm E-6 slides, which I also scanned with my Konica Minolta DiMAGE Scan Elite 5400 II, outputting 16x24" by 300dpi

images with both units. These files provided the basis for an evaluation to answer that often-asked question, can a flat-bed scanner produce comparable results to a dedicated film scanner? (You'll need to read my concluding remarks to get the answer.)

I next undertook a very large set of scans of black and white silver-based film, beginning with 4x5 sheet film and moving progressively to smaller and smaller formats. In the past I've found that software conversion from a negative to a positive image is often insufficiently smooth, usually yielding pronounced transitions between levels of tone and insufficient shadow detail. So I have, for some years, scanned black and white film as if it were a positive. I would output a raw unadjusted 48-bit file which I would then open in Photoshop and gently adjust in stages before and after inverting the image from a negative to a positive. With this latest version of SilverFast Ai 6 and the new Epson V750 scanner I found that with all but a few extremely challenging negatives I could do the conversion and adjustment as a part of the scanning process using SilverFast, and obtain very satisfactory results.

With this positive experience under my belt I now had the confidence to take on some fluid mount scans. I concentrated on silver-based black and white 120 format negatives because it provided the most advantages using the fluid mount technique. The reason for this is that cleaning dust, dirt, and scratches is a problem with black and white scanning unless the film is fresh and in pristine condition. My black and white library is mostly old film material that has already seen a lot of use in a wet darkroom, so "pristine" is not how I'd describe them. Digital ICE takes care of getting clean scans with all E-6 and C-41 process films, and SilverFast's SRD dirt and scratch software cleaning utility does Kodachrome pretty well, but not black and white. That's where the fluid mounting comes in—it fills in scratches in the film base and, through wetting, makes the fine dust virtually transparent. This greatly reduces any cleaning of a scanned image. Plus, as I suggested earlier, with 120 film cut into individual frames the fluid mounting provides support to keep the film securely flat and in the scanner's focus plane.

This is all accomplished by first putting a few drops of Kami mounting fluid on the fluid mount glass support, then placing the film, backing down, on the fluid and pressing out any air bubbles. Then put more fluid on top, the emulsion side, and cover that with a

A low range of tones and limited colors in an image may seem to be easy to reproduce in a scan, but often the opposite is true because it is so easy to overcorrect and lose some of the subtle values. This fashion portrait made in the 1960s on old E-3 Ektachrome scanned with the Epson Perfection V750-M Pro produced so clean and refined a result that it looks like it could have been made yesterday instead of 40 years ago.

Mylar sheet, again forcing out any air bubbles. Finally, tape all four sides of the Mylar at its edges with the tape extending onto the glass. (I used blue painter's masking tape in lieu of the special Kami tape, not having any of the real stuff.) Then place the fluid mount framed glass support on the scanner's scan area like any other film holder and proceed to make a scan in the same way as you'd do any other film scan. This is pretty easy to do, and I'd expect anyone with wet darkroom experience will adapt to it readily. But it does take a careful and disciplined (fastidious) approach to keep everything spotlessly clean to obtain the advantages the method can achieve. At the end of the process of scanning another advantage of the Kami mounting fluid becomes evident. The very thin layer of fluid remaining on the film dries in a few seconds leaving no apparent residue. So being cautious about applying any abrasive wiping to film, as soon as the film frame is dry I just put it back into its protective envelope. Just after writing this I was informed that Aztek, in response to Epson V750-M Pro interest, has produced both an instructional video and an Acrobat PDF file that is available on their website: http://aztek.com/Products/KAMI%20MF.htm.

Evaluating The Scans

The first question is: Is there a

distinguishable difference in a TIFF image file of the same size and resolution made with a dedicated film scanner and the same film image scanned with the Epson Perfection V750-M Pro? If you put both images on screen zoomed in to 100 percent, yes you will notice there are differences. But that is like going to a gallery or museum and examining an Ansel Adams print with a 10x loupe with your nose pressed against the surface of the print. For me, a rational, real-world test is in how that image reproduces in a large print. I made numerous 13x19 test prints with my Epson R2400 of most of the scans I produced with the V750 scanner. On that basis I had to come to the conclusion that it is very hard to distinguish any advantage a dedicated film scanner offers when scanning large and medium format film, and that there are subtle differences when scanning from 35mm film. There is a proviso to that assessment—it only applies to fine-grained ISO 100 and slower 35mm films, as the Epson Perfection V750-M Pro does progressively less well scanning faster, grainier films. The faster the film and the larger the grain the less image sharpness and detail is recorded successfully. I have to assume this is due largely to the fact that dedicated film scanners use three-line CCD sensors and contemporary flat-beds like the new Epsons use a six-line CCD sensor, with quite different optics as well.

As I suggested earlier with color negative and transparency films, excepting Kodachrome, the Digital ICE capability in the Epson Perfection V750-M Pro is now close to par in efficiency and effectiveness with dedicated film scanners. When scanning Kodachrome slides rather effective cleaning can be achieved with SilverFast's SRD utility as part of the scan process. The results scanning black and white silver-based negatives with the fluid mount definitely indicated it does in fact provide a reduction in dust and scratches, as well as less apparent graininess with some fine-grained films. This latter attribute varies between film brands and the film developer used. Kodak's Plus-X and Ilford's FP-4 processed in a high dilution mix of Kodak's HC-110 produced scans with almost no visible grain, while Agfapan 100 and Kodak's Verichrome, both processed in 1:20 Agfa Rodinal, scanned with fine but more apparent graininess. Tri-X processed in Acufine scanned with just about the same very apparent graininess using the fluid mount method as scanning the film dry with the standard film holders.

Conclusions And Recommendations

These are occasions when I really enjoy being proven wrong. In this case I stand corrected in my support of what had become conventional wisdom—that flat-bed consumer scanners do not provide a film scanning capability competitive with dedicated film scanners. The Epson V750-M Pro clearly sets that assumption on its head. With some minor reservations, these new V700 model Epson scanners produce scan performance and quality comparable to what can be achieved with popular dedicated film scanners.

There is, however, even greater significance in this progress in performance and capabilities—the affordable cost and the extended versatility of these units. Many photo enthusiasts, I am sure, would prefer to choose just one scanner at a modest price that will provide a means to perform all of their scanning needs. Should present owners of dedicated film scanners trade in what they have for a Perfection V750-M Pro? There may be some arguments in favor if, for instance, that dedicated film scanner lacks Digital ICE. But, in general, recent dedicated film scanners still provide good and equal service and performance, so no advantage would be gained—unless, of course, that scanner is limited to 35mm film. But the new Epsons provide a very wide range of capabilities for all formats and fairly large print sizes with very little compromise.

The estimated street price of the Perfection V750-M Pro is $799. The estimated street price of the Perfection V700 Photo with SilverFast SE, without fluid mount, is $549.

For more information, contact Epson America, Inc., 3840 Kilroy Airport Way, Long Beach, CA 90806; (800) 463-7766, (562) 981-3840; www.epson.com.

For a full list of Technical Specifications, visit the Instant Links section of our website at: www.shutterbug.com/currentissuelinks/.