

First Look: The Microtek ArtixScan M1

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First Look: The Microtek ArtixScan M1 Scanner

We've finally gotten our hands on Microtek's newest scanner and we've pushed it to its limits. Whitespider.org is one of the first places you'll find a full in depth review. Come see what we think about the most anticipated scanner in years.

Untitled Document The Whitespider First Look at Microtek's New Scanner: The Artixscan M1 Text and Images by Edward Mendes

Originally announced in October of 2006, the story of Microtek's new ArtixScan M1 scanner has been a difficult one to sit through. Plagued by development issues in both the hardware and software sides, anxious photographers have been waiting on the edge of their seats for the now mythical piece of hardware to become a reality for over a year. While the wait has been frustrating at times the features and quality the M1 is rumored to have has grown to somewhat mythical proportions and have kept photographers around the world patiently waiting in the hope the scanner lives up to expectations.

We finally received our unit in Mid-January and didn't waste any time putting it through its paces. Our test unit was the \$649.99 version, which hardware wise is identical to the pro version but includes SilverFast SE Plus scanning software as opposed to the top of the line Ai and only one set of film holders. **UPDATE (6/3/08) **

Microtek has reduced the price of the ArtixScan M1 and M1 Pro to \$599.99 and \$749.99.

What's so special?

The ArtixScan M1 boasts many features that photographers, or anyone in need of a film scanner, can get excited about. One feature is Microtek's E.D.I.T's glassless scanning system; now this feature isn't new to the M1, as it's been used in most of Microtek's high-end flatbed scanners in recent years. It is also similar to the way dedicated film scanners are designed. Instead of placing the film in carriers that ride on top of the scanning glass as other flatbed scanners do, the M1 scans film in a compartment below the reflective scanning bed. By doing this imperfections and hazing on the glass that can arise over the life of the scanner and degrade the quality of your scans are never an issue. The second major feature of the M1 is its autofocus ability. With other flatbed scanners the scanning head is in a locked position and thusly the focus of the scanner is fixed. In theory the film carriers are manufactured to the optimum height, placing the film within the scanner's focus range. The problem is film carriers are rarely, if ever, the perfect height for the best focus for any given piece of film and thusly optimum sharpness is often not captured in scans. This can be fixed with aftermarket third party film carriers but are an expensive and very time consuming process. The M1 addresses this with its autofocus feature. When the scanning process is started the M1 makes multiple scans each with the scanning head at slightly different heights. Each of these scans is then analyzed to determine which has the sharpest focus and the final scan is performed at that position. In addition you can also use a manual focus feature if you feel a particular image needs some fine tuning.

What's In the Box?

- Power Cable
- USB cable
- Film Carriers
- 4x5 carrier (holds 2 sheets)
- 120 carrier (holds 1 strip)
- 35mm mounted carrier (holds 12 mounted slides)
- 35mm carrier (holds 4 strips)
- Glass carrier (for film over 4x5 and odd sizes)
- 10 Microtek vinyl stickers (for adhering film to 4x5 carrier)
- Reflective IT8 Target
- Transparent IT8 Target

- Software
- Adobe Elements
- SilverFast SE Plus
- Microtek's Scan Wizard Pro
- Drivers (for Windows and Mac)
- Manuals/Guides
- Scan Wizard Pro User Guide
- Scanner Quickstart Guide
- Full Scanner Supplement
- Warranty and Tech Support Info

The Numbers

Dimensions (L x W x H): 22.3" x 15.2" x 6.2"
 Weight: 26.4 lbs
 Image Sensor: Sony CCD
 Light Source: Cold-cathode fluorescent lamp

Tech Specs

Optical Resolution: 4800dpi
 Maximum Print size at 300dpi when scanned at 4800dpi
 35mm 15" x 22"
 6x7 37" x 44"
 4x5 64" x 80"
 Optical Density: 4.4 (Dmax)
 Scanning Area: Reflective up to 8.5x14"
 Transparent: up to 8x10"
 Batch Scanning: 35mm slides up to 12 frames
 35mm filmstrip up to 24 frames
 4x5 film up to 2 frames
 120/220 film
 645 up to 4 frames
 6x6 up to 3 frames
 67 up to 3 frames
 6x9 up to 2 frames
 6x17 1 frame
 Focus: Auto
 Scan depth: 8-bit and 48-bit
 Interface: USB 2.0
 Multiple Sampling: 2, 4, 8, 16 times

Installation

After unpacking the M1 the first thing you'll notice is its size, it's big and heavy. Weighing in at a hefty 26 ½ pounds the scanner definitely has the feel of a well made product and could do quite a bit of damage to a small animal or child if it were to fall on one, so be sure it's on a solid foundation. Microtek recommends installing the drivers first so that's what we did. Drivers and scanning software are contained on three (3) CD's and the wizards included in each walk you through the process. Total installation time of everything but Adobe Element (we're already running CS3) was 22 minutes.

Hardware set-up was easy, you simply plug in the power cord and USB cable, unlock the scanning head (via a large screw on the underside of the unit) and turn on the power. After a few minutes Windows should pick up the scanner and you're ready to start scanning. (Note: Windows will pick up the scanner as a 4800, don't worry its correct.)

Creating a Color Profile

Microtek's Scan Wizard

If you head into Microtek's Scan Wizard you'll be prompted to create a color profile for the scanner. If you'd like you can skip this and do it later, but I figured why wait. The process is straight forward; you simply select how often you'll be creating a profile and if the profile you're creating is for reflective or transparent media. Load the correct target into the scanner, according to whether you selected reflective or transparent and go. The unit will start to scan the target.

Awh yes, here it is the first time you get to see the M1 in action. The first thing you'll notice is the uneasy

and thunderous sounds that will soon be coming from your new piece of equipment. While going through the process of warming up, focusing and scanning the scanner will make a wide range of noises. Starting with the uneasy clicking that causes you to question if you unlocked the scanning head correctly and ending with the 747 take-off like re-setting of the scanning head after the scanning process is finished; yes your new baby is a very loud one but don't worry it was made to do that.

When the image of the targets pops up on screen you'll be asked to line up the mouse cursor, which has now changed to a backward 'L', to a matching alignment mark on the screen and click. You'll do this twice more and when you're done, you're done. Name the profile and repeat the process for the reflective or transparent media that you didn't just complete. Microtek has done a good job of making the process quick and easy.

SilverFast

If you jump right into using SilverFast and you have the M1 Pro the unit comes with SilverFast Ai and you can also create custom color profile for the scanner using the included IT8 targets. Unfortunately however, the unit we were sent came only with the stripped down SilverFast Se Plus. While the software is very good it lacks the ability to create custom profiles. However, the canned color profiles provided with the software do a good job.

Let get Scanning

Film Carriers

The M1 comes with either 1 or 2 sets of 5 film carriers, depending on which version you have. The carriers are made of plastic but their nice thick construction gives a little weight to them and they feel fairly well built. The M1's carriers use a horizontal tension (120 and 4x5 film only) to keep them flat, creating a sharper scan. The carriers (except the 35mm) are a two piece construction, with the first piece being the base, which the film is loaded into, and the second being the lid which is closed on top of the film and then slid forward and locked into place. This sliding action is where the film is pulled from left to right to create a flat emulsion for scanning. If you've never loaded a carrier of this sort before it may take a couple of tries to do correctly, but it's really very easy once you get the hang of it. The carrier is then placed into the base and the entire assembly is loaded into the scanner. The carriers do a very good job of holding the film flat, with 120 almost totally so, but you do get a little bow. Large format (4x5) film on the other hand is a different story. Because the width of the film is so large the carriers have a difficult time pulling the film flat and can result in film that still has a bow to it. While the effect can usually be minimized by trying to load it again, I was never able to get a piece of 4x5 films that lay completely flat in the carrier. As for 35mm film strips, the carriers are the regular slide in variety, but because of the extra wide flaps that hold the film right to the image area the film stays in place and flat.

Now you may be thinking the glass carrier could be your solution to this slight warping of 4x5 films, and it was mine as well. However the carrier doesn't have a glass cover on it to smash the film down into wonderfully flat submission. Instead, it uses a single piece of glass as its base to simply act as a clear hard surface for the film to lie on. One side of the film is slid under a small foam lip that goes around the entire perimeter of the holder while the other side of the film is held in place with the one of the vinyl stickers that you didn't know what to do with when you unpacked the scanner. The vinyl stickers are really just used to keep the film from sliding around during the scanning process or while moving it to and from the scanner.

While I would have liked to have seen the glass carrier come with a glass lid to guarantee a flat piece of film to scan I can see why Microtek may have decided to not design it this way. As the glass carrier is designed for odd shaped film, in particularly large formats such as 5x7 etc. These films generally have a much thicker base than their small and medium format family and thusly normally lay completely flat on their own. This reasoning doesn't hold true however for small formats such as APS, 110 or one of the many other formats developed over the years that photographers may want to digitize. So take that for what it's worth, depending on your thinking you may be able to reason your way out of having a top glass lid for the glass carrier but I still would of like to of had one.

Software

No Ice

Many people will notice that the M1 does not include Kodak's digital ICE, which is one of the best tools available for getting rid of dust that cause spots on your film and can litter the surface area of a scanned image even after cleaning. In order for Digital ICE to work a scanner must be able to scan in the Infrared (IR) light range, which the M1 cannot. If you've done your homework you may also know that the M1's European brother the F1 does have this ability and comes with Digital ICE. Unfortunately Microtek couldn't come to a licensing agreement with Kodak for the North American release and thusly no Digital ICE. Because of this Microtek figured IR

scanning isn't needed and therefore it wasn't included. This also means that if Microtek ever were to strike a deal with Kodak for ICE the M1 still wouldn't be able to use it. At least not the current models, BUMMER!

SilverFast SE Plus

This is the scanning software I used for most of the scans within this review. SilverFast is a great piece of software allowing you to get the most of the scanning hardware you have to work with. It offers scanning in both RGB and Grayscale color modes and allows you to work with either 8bit or 16bit modes. Some of the best features of SilverFast is its Multi-Scan feature, by taking multiple scans of an image, up to 16 of them, the software is able to do a great job of removing film grain from all parts of the image. SilverFast also includes its own dust and scratch remover; call SDI, however in my use it seems to be far inferior to Digital ICE and does little more than slightly blur the entire image.

When scanning film, slides or reflective materials choosing your bit depth is perhaps the most important decision you have to make. SilverFast SE Plus gives you the choice of 48-bit scaled down to 24-bit scanning, which is then imported into Photoshop at 8-bit, so I'll call it 8bit, and 48 bit HDR. In the SE version of SilverFast the option to scan in normal 48-bit is grayed out, and that's a real bummer. Here's why, there are a lot of different opinions out there as to how to create a proper scan. Some think you should capture all the information you can in the scan and leave the adjustments to your image editing program, while others believe that minor adjustments to the tonal curve, color balance and sharpening actually helps you get a better image file because you're adjusting for some of the inaccuracies inherit in scanning an image from the outset. With SilverFast SE Plus you have the option of scanning using either of these method, as long as you scan in 8-bit, as all the adjustment options are grayed out when scanning in 48-bit HDR mode. SilverFast does this because they designed the HDR mode to act as a RAW capture mode and as a result the image is scanned to get all the information possible out of the scan. If you also happen to have SilverFast's HDR editing program the image is then imported into it and you can adjust the scan much the same way you would in Adobe RAW converter. If however you haven't purchase this \$299 - \$1099 (depending on options) program your image will open in Photoshop as a raw TIFF file. In my scans I found the 48-bit HDR mode to be by far the best option in terms of scan quality. While you can make very fine adjustments and get your preview looking pretty good in 8-bit mode the finished scans are almost useless, particularly if you have an image in need of shadow and highlight detail and fine color gradients.

This is an issue that could be dealt with by another of SilverFast's features, Multi-Exposure mode. This feature is designed to increase shadow and highlight detail by making two separate scans of an image, one for the highlights and one for shadows, and join this together. In theory this is a great idea as it could increase the tonal range of an image by a few stops. In practice however, this feature is a complete failure. The joined together images are sometimes out of alignment, making the image look unsharp and shadow detail may actually be worsened. After using this, deep shadows are rendered muddy and with tremendously bad cross color and banding problems. More than likely this problem would be helped greatly if the featured is used in 48-bit HDR mode, unfortunately however a program error occurs each and every time the image is being compiled into Photoshop using this method. (Please Note I was using the newest version of SilverFast available at this time, version 6.5.5r4)

MicroTek ScanWizard

This is Microtek's homemade scanning software, it takes a few minutes to get the feel of the interface and find out where everything is, but that's no different than any other software. Plus, Microtek provides you with a nice, and very fat, software manual that details every inch of the software, a nice feature that is normally passed over in favor of a cheaper Acrobat version now days. Overall the software is capable of using the scanner to its fullest abilities; it offers both 8-bit and full 48-bit scanning, RGB and Grayscale color modes, and the ability to adjust the scans curves, color, sharpness etc. before you actually scan. And you can do this with both 8-bit and 48-bit modes.

Feature wise Microtek's ScanWizard can't match SilverFast, however in most cases this fact becomes completely null and void as very few of SilverFast's "advanced features" actually work well if at all. Overall I would pick Microtek's software over SilverFast everyday of the week if it wasn't for one very important feature, the multi-pass scanning. It's very important in reducing film grain in scans and is the one feature in SilverFast that does work well. At first glance I thought, "Oh, no worries, ScanWizard also has the feature (called m-sample)" but disappointingly the feature is nowhere near as effective as the SilverFast version, in fact I'm not even sure it works.

If you want to do batch scanning this is the software for you and the processes is also simple. You'll be using the standalone version and all the image files will be saved into a folder on your system.

At the end of the day picking which scanning software you're going to use is like choosing which birthday

party you were going to go do as a kid. On one had "Billy" tries to lure you to his birthday with the promise of circus animals, rock bands and endless rivers of flowing Mountain Dew only to show up and find out that only the Mountain Dew was real but even that has to be rationed. And "Rickey", the kid that does everything pretty well and is completely upfront with you as to what's going to be at his party, cake and balloons, and you know that if you go the cake will be good and the balloons will be yours to take home. But at the end of the day, it's that darn caffeine addiction that gets you every time and you RSVP for Billy's. At least that how I see it.

Quality

Scan quality can be broken down into three categories: sharpness, grain and highlight/shadow detail. When all three of these things come together you have a great scanner. I've scanned a lot of film with the M1 over the course of the last couple weeks and have had an opportunity to see what it can do. The tests were performed on both 35mm and 120 format (645) color slide and negative film. After careful consideration we choose not to perform test at this time on large format or black and white film for two reasons. First, large format film does not need a very high resolution scan to produce an image file that can be used for large prints. I have routinely scanned 4x5 films at 2400 and with well exposed images with enough resolution to make very large prints, in some cases up to 30x40. This is due to the film's large size, it is generally sharper, has less grain and the degree of enlargement to make larger prints is much smaller than that of 35mm and 120 films. As far as black and white goes, we felt that color film would be a better test of the scanner's overall performance. Part of the grain and detail questions that come to the surface when testing a scanner is how is the color quality in certain low detail and grainy area looks and does the curve for individual colors fall apart when adjusting etc. This can tell a great deal about how a scanner captures and response to each color and something that cannot be determined with black and white film. In the end, if you can get a good scan from a piece of color film you should be able to get an equally good scan from a piece of black and white film as well. That being said however, perhaps it will be something that is addressed in the future.

Some may wonder why we didn't do test on a wider variety of films and the answer is in part one of time. We can spend years digging up different film formats and emulsions to see how each test. However in the end this is a scanner review and seeing how much grain the scanner pickups up on a 30 year old emulsion that was known to be grainy or if the scans of Kodachrome 25 have a slight color cast to them that can be easily fixed later in Photoshop says less about the scanner and more about each individual film emulsion. So without any more explanations let's get to it.

Sharpness

Let's get one thing clear from the start; we have to compare apples to apples. The M1 is a flatbed scanner; it is not a dedicated film scanner and thusly can't be judged side by side with an Imacon/Hasselblad or a drum scanner. Sharpness starts with the capturing of the images and therefore the quality of glass your lens is using along with a number of other factors goes into the sharpness equation. However, with that in mind I was fairly happy with the sharpness of the scans I have been getting with the scanner, the M1 performs at a very high standard. Scans from 35mm are quite sharp straight out of the scanner without any sharpening applied to the image by the scanning software or via image editor. With a little sharpening in post processing the images scanned using the M1 can achieve an even higher standard. Scans of medium format film are also very sharp for a flatbed scanner, yielding acceptably sharp images up to about 16x20 in 35mm and 24x30 in Medium format 645. Of course everyone see things differently and these sizes may change up to 2 sizes on either end of the spectrum depending on how critical you are. Below are scans of both 35mm and medium format 645 color negative film.

Grain

For the most part the M1 handles grain incredibly well. I found that the M1 seldom added anymore grain than is what is in the film. So, if you have grainy film the scan will be grainy, if on the other hand your image doesn't have grain your scan will also lack it. In addition SilverFast's multi-sample feature does a very good job at minimizing any grain that may be in the image. If you want to break the grain quality down between highlight and shadow areas, you're going to see the best quality coming from the shadow parts of the images. Highlight area, particularly those with a color associated with them, bright clouds with a light yellow or orange tone for example can show a good amount of grain particularly with grainier films.

Shadow/highlight detail

I have to admit I didn't know what to expect from this scanner in terms of shadow and highlight detail. Many of the flatbed scanners I've used in the past have been very disappointing in this area with zone 3 to 3 1/2 shadows rendering as black holes and zone 6 1/2 and 7 highlights burning your retinas as though you were nose to nose with a star going super nova. So when I opened the box and read Microtek's claim of a 4.4 Dmax I was more than a little skeptical. Now I have to admit, I have no idea how a Dmax number is calculated. I suppose it can be

found by using a densitometer on high contrast images, but like I said, I don't know. And really, I don't care; because a number can only give a possibility, a possibility of what could be under absolute ideal conditions. If you've ever had the opportunity to hear Photoshop Guru Will Crockett speak you'll remember his mantra; "Show me the print". At the end of the day all this technical stuff about the shape of the curve and the gaps in the curve doesn't mean anything if the print looks great. So, with that said I'm throwing out the Dmax and the densitometer and saying "show me the print".

I like to shoot at sunset and in low light situations, and for some reason I seem to be drawn to black rocks, which for this test is a good thing. I was very impressed with how well the M1 handled shadow detail. Even with some of the darkest shadows I could dig up it did a very good job pulling the detail out of both negative and slide film. However I did find that in some cases when an image has particularly deep shadows with very detailed texture, think tree bark and river rock, with colors such as browns in it the details cause the color(s) to become glumpy when the shadows are taken down to a certain point. Sorry for the word "glumpy"; I'm not sure how else to put it. So far this has only happened in smaller areas of detailed shadow, such as larger scenes with the tree or rocks in question making up 1% to 6% of the overall image. In areas that make up larger sections of detailed shadow this hasn't happened. I have also found that the problem can be fixed by lightening the problem area(s). Take that for what it's worth.

When it comes to highlight detail the M1 also does a very good job but can get a bit grainy even with multi-sampling on. In my tests I've found that highlight detail isn't captured as well as shadow detail but that isn't a big surprise. Overall however from the deeply shadowed foreground to the bright colorful sky the M1 can capture just about everything your film can see.

Speed

I'm going to go ahead and throw this in as I'm sure some people out there may be looking at the M1 as a means to scan a large archive of images. If this is you then the M1 represents the "Best of times and the worst of times"; to borrow a line from Charles Dickens. In terms of producing high quality scans for stock uses the M1 is more than capable and will serve you well. However, if speed is more of your desire then you will want to look elsewhere. The first time you fire up the scanner you will notice one thing very quickly; it's slow, very slow. In the scans I've performed over the last couple of weeks scanning times have been anywhere from 12 minutes 47.5 seconds to over 21 minutes depending on resolution and scanning options. In case you're wondering every scan I've made has been at 4800dpi as I don't see the point of scanning at lower resolution, even if the resolution out weights your needs at this time that may not be the case in the future. Scanning and working with a full resolution file now may cost you some time and disk space now but could save you a lot of both in the future. ****UPDATE****

Since the review was originally published I've had an opportunity to run a few batch scanning tests with the M1 and thought I'd share the results. I did one batch at top quality and one at a more modest quality. The first batch was of 12 - 35mm mounted color slides. The scanner settings were as followed: 4800dpi and 48-bit color depth. At these settings the M1 scanned the 12 slides in 1 hour and 15 minutes. The second set of batch scans were performed at 2400dpi and 8-bit color depth, I feel this will be a popular size for those of us that have many family images or "B" and "C" images in their collection that needs to be archived and available for a 5x7 or perhaps an 8x10 in the future. In this case the M1 scanned the 12 images in 34 minutes and 12 seconds. Overall, the M1 performs batch scans at a fairly fast pace and should be adequate for many photographers with small to medium size image archives. ****UPDATE**** Scanner Throw down During the last couple of weeks I've had some request to show a few comparison scans so people can get a feel of how the M1 stacks up against other scanning options. So, I've dug through some of my old negative and found a couple of images that I think will work well for such a comparison. Below I'll show how the M1 stacks up against a Tango drum scanner and an Imacon/Hasselblad scanner. I choose those two units simply because those are the two I have used in the past and have sample scans for. I've been asked to compare the M1 to the Epson V750 but I've never used the V750 and thusly can't compare the two without major mental interpolation on my part. M1 Vs. Imacon/Hasselblad In terms of sharpness the Imacon/Hasselblad clearly wins, it is able to show detail the M1 simply can't. With that said, the M1 certainly doesn't embarrass itself and shows very good sharpness at full resolution. In terms of grain, the scan from the M1 has virtually none. Some of that has to do with being a softer scan than the Imacon but even with that taken into account, the grainless file is impressive.

M1 vs. Drum Scan What was said of the M1 in relation to the Imacon scan can also be said for the drum scan. ****UPDATE****

Downside

The M1 delivers some very impressive scans for a flatbed scanner but there is one issue that some users are having with the unit, including myself. After making one and sometimes two scans during a scanning session the scans start to get vertical bands through the files. I have contacted Microtek regarding the problem and was told they have been notified of the problem and are work very hard on fixing it. As of this moment they are running tests on multiple scanners hooked up to a number of computers running different hardware set-ups and have been unable to replicate the banning. I was told that the Microtek engineers in Taiwan and at Lasersoft have been told of the problem and are trying to resolve it as soon as possible. Microtek hopes to have more information on the issue sometime next week.

I have found that if you re-start Photoshop after each scan banning doesn't occur. *Note: I have not had a problem with banning during batch scans. Below is an example of the banning issue.

****UPDATE (6/3/08)****

The banning issue seems to have been resolved with the most recently release of SilverFast.

Final Thoughts

The Microtek ArtixScan M1 was a long time coming and the wait was a difficult one to endure for photographers holding off on their scanner purchase to see what it can do. In the development of the M1 Microtek sent out to make a dedicated film scanner that can also scan reflective materials and be affordable. This bang for your buck approach was a worthy goal and the many delays in trying to achieve this goal, while frustrating, should perhaps be viewed as not such a bad thing. Microtek could have easily shipped the M1 with bugs and flaws in both the hardware and software end. Instead, they took some heat and released a product that, while not perfect, performs at or better than anything else on the market in the flatbed category. While the sharpness of scans produced by the M1 aren't at a level of a drum or Imacon/Hasselblad scanner, the included software isn't perfect and its slower than your pet turtle's grandma, the M1 does produce scans that can be called nothing short of very good when compared with any unit on the market and excellent when viewed in the context of other flatbeds. When it's all said and done the M1 is the best flatbed scanner on the market today and should allow prints of very large sizes to be made from all film formats, and really what else can you ask for?****UPDATE****

We had an opportunity to discuss the ArtixScan M1 with Microtek's Parker Plaisted, give it a read .

Still have questions about the M1 or would just like to talk about it? The Whitespider forum M1 Review thread .

Image Gallery

The M1 box just prior to opening

The M1 comes with a well stocked supply of drivers, manuals and software

The M1's film carriers

An overall view of the M1

Another view of the M1