FLAAR Reports
Digital Imaging, Report on Printers, RIPs, Paper, and Inks
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Comments on Digital Cameras Exhibited at PMA 2004

UFM

Contents

Caption for front cover photography: Fuji film booth at PMA 2004 trade show

Introduction

PMA is the largest photography trade show in North America. PMA is about three times larger than PhotoPlus in New York. Photokina is roughly 6 times the size of PMA. Photokina is held only every two years, in Cologne. FLAAR attends all these and other trade shows to pick up information on cameras and accessories.

It is too hectic at PMA to attempt to test the cameras on the spot. Their 200-page instruction booklets do not lend themselves to being understandable when working in haste.

5 to 8 Megapixel Zoom-Lens Cameras

The better point and shoot cameras are now up to 8 megapixels. To separate out the better of the zoom-lens cameras we discuss this class of camera from 5 megapixels onward, but primarily when they have:

- Attachment for external flash
- Capability of producing a TIF file
- Capability of producing an Adobe 1998 RGB color space
- Manual override of automatic functions

These features eliminate most of the entry-level cameras.

Sony was the first company to announce an 8 megapixel camera, the F-828. I even drooled and wanted to buy one myself. But after reading the reviews I lost interest quickly.

Now several other companies including Nikon have 8 megapixel offerings, such as the CoolPix 8700. The advantage of Nikon over Sony is that Nikon has more accessories. Same with Canon; they would tend to have more accessories than Sony.

Nikon booth at PMA 2004 trade show

If it turns out that all the 8 megapixel cameras are premature (if they all have glitches like the Sony F-828), a safe bet would be the 5 megapixel Minolta Dimage A1. Their A2 is their 8 megapixel model. A 5 or 6 megapixel camera that has no image quality defects is better than an 8 megapixel camera with color fringes and noise.

Please be wary of using pseudo-reviews on commercial web sites for infomercials.

If the web site is done by a professional photographer, whose primary job is taking photos, and whose web site is an adjunct, these you can tend to trust.

But if the site is just a commercial site, even if operated by a photographer, then this is a commercial situation dedicated to selling cameras. Nothing wrong with that, other than is this really what you want to read?

Besides, some of the other web sites that claim to “review” cameras are primarily shills for PR releases of the manufacturers. We trust only web sites where the author is a professional photographer, where he uses the camera under discussion in his or her regular photography (and not merely when being paid by

Olympus or some other company). We are dubious of web sites that have direct links to shopping carts of camera dealers.

FLAAR specializes in reading between the lines, and making common sense judgments.

35mm SLR Digital Cameras

Leica's innovative digital solution still is not even in alpha stage. This means that beta test units are not available. Not even the dummy models in their booth were functioning, at all. The Leica was not functioning at PhotoPlus last November either. Yet they hope to have a fully functioning digital camera ready for Photokina the last week of September. We sure hope so, since this would be the only hybrid 35mm camera, and definitely the one with the best lenses.

Canon introduced their EOS-1D Mark II with 8.5 megapixels. But what is more important than megapixel count is its fast operation resulting from having two processors on board. Although this is not a full-frame camera, the sensor is large enough that the lens reduction factor is only 1.3, a real plus. Although this is a CMOS not a CCD sensor, Canon has overcome a majority of the downsides (such as excess digital noise when photographing in low light conditions). Appears to have no TIF option; unless you select JPG you have to shoot in RAW and convert. Shooting in RAW does result in a better eventual file but takes longer due to the necessary conversion.

Realize that the EOS-1D Mark II is made for speed. The speed is needed in sports and action photography, but would be useful also in portrait photography.

We have spoken with many people who have the Canon EOS Digital Rebel. They all like their Rebel very much (especially the price). These are advanced enthusiasts and pro-sumers.

If you do pro photography and your client sees your studio, you need to make a good impression with a fancy brand name camera. But if all your client sees is the results, and does not see what you use to take the photos, an economy camera is okay as long as you use good lenses. Avoid Tamron and cheap lenses of this nature.

Kodak phased out their 14n, bowing to continued poor reviews by pros. In its place Kodak released the DCS Pro SLR/n, with a seemingly unusable ISO of 6. An ISO of 80 was considered the proper shooting ISO with the previous Kodak 14n. For the new model Kodak suggests acceptable results up to ISO 160. Either way, the SLR/n model is surely better in every respect than the ill-fated 14n. It is ironic that the one digital camera that Kodak made that was perfect, their ProBack Plus and ProBack 645, has been discontinued.

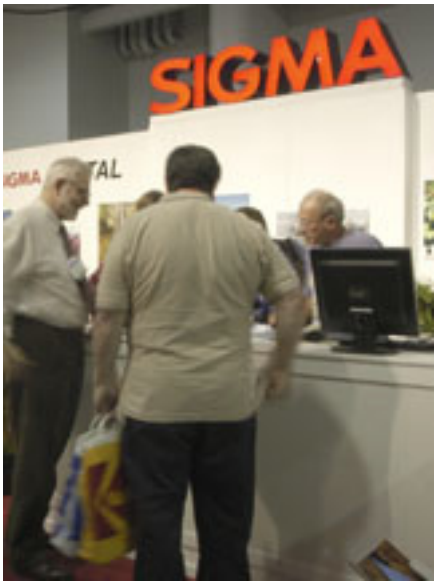
The SLR/n has a current street price of about $4,795.

Nikon has reacted quickly to the Canon Digital Rebel. Since Nikon uses CCD sensors, which are inherently most expensive than the CMOS that Canon features, the Nikon D70 is not as cheap as the Canon. But since the D70 is essentially a second-generation D100, at considerably less cost, I would recommend the Nikon. My only gripe about my D100 is its inability to distinguish between bright white and dark areas. It overexposes the whites or leaves the dark areas too black. The 200 page manual does not make corrections easy to arrange. If another comparable camera offered me a better balance via software, I would abandon Nikon fairly quickly.

I also had a brand new Nikon lens fail, and then they had the gall to say I had to pay for it because it was over warranty period. This is not a clever move to do to a camera reviewer. Otherwise Nikon products are obviously acceptable.

Fuji S3 Pro is probably a good camera, and will surely have its following. But Fuji will need to prove, by an independent testing facility, that its pixel count of using two diodes per pixel really makes any difference when you send the image to a wide format inkjet printer or to an RGB laser imager. Until we can do tests at our university we will be skeptical and rate it only at 6 megapixels, not 12. We are also strict with the Foveon claims. FLAAR is not dependent on funding from any camera manufacturer nor do we receive commissions for camera sales. As a result we can afford to be pithy, frank, and call a 6 megapixel chip 6 instead of 12.

The innovative **Foveon** chip is in the same situation as the initial model four years ago, namely lack of an upgrade model in two years. The chip is stuck at 3.x megapixels. So they are doing their best to make up with improved software. The images they show in their booth are breathtakingly beautiful, especially the pink flower on the cover of the Foveon brochure.



Sigma booth at PMA 2004 trade show

Unfortunately Sigma and Foveon are caught in the crossfire of the megapixel count mania. 3.4 megapixels sounds (and is) insignificant. Thus they don't have much alternative other than caving in and claiming 3 x 3.4, or 10.2. They add up the Red level, Blue level, and Green level wavelengths in their sensor.

So although you do indeed get 100% of RGB (in theory at least) you don't get the physical number of pixels. You only get about 9 megabytes (Nikon D100, 6 megapixels, gives a file size of about 17 megabytes; Kodak 16 megapixel chip results in about 47 megabytes; it's roughly 3 megabytes per megapixel).

So when you go to print, you are stuck with 9 megabytes, albeit very good color, but physically only 9 building blocks, not 17 (the new crop of 8 megapixel point-and-shoot cameras produce perhaps 23 or 24 megabyte files in comparison).

The only way to judge the quality is to take each camera, in the identical studio setting, and shoot the same subject. And then enlarge and otherwise benchmark their quality. This kind of benchmarking is very costly, and hence not accomplished.

The other downside of the small sensor that can't be overcome by multiple layers of Foveon technology is the 1.7 lens reduction factor. You can't get an easy wide-angle shot. You do have a benefit with portraits and telephoto photography, but not with your conventional 28mm, 35mm, or 50mm lenses. We have a camera by camera lens reduction chart as part of the FLAAR course in digital photography.

Large Format Digital

German large format scan back manufacturers Anagramm and Kigamo would not be expected to exhibit in the US. PhaseOne still offers support for its tri-linear scanning backs. Support for OS X will reportedly be available for PhaseOne scan back owners. But since last year Sony no longer makes the chips that Phase One used in their tri-linear backs. Kodak is the main remaining supplier of tri-linear chips at the

high end (used by BetterLight and Cruse). Of course PhaseOne continues in medium format since those chips are available from both Kodak and Dalsa. Dalsa is the successor of Phillips camera chip division. Dalsa made the sensor currently taking photos on Mars.

So the only large format tri-linear scan back manufacturer that we saw at PMA was BetterLight. This time they stressed their panoramic system as well as PanoScan. PanoScan is an independent company but its innards are to some degree from BetterLight. We do not have a PanoScan so are not able to comment from experience.

Although Seitz did not exhibit, Peter Lorber displayed an innovative QTVR solution using an Imacon medium format back on a Seitz turntable.

Reprographic Stand Digital Cameras

Cruse is probably the most successful of all the reprographic stand digital camera-scanner companies. Their camera is so precise it requires a several day install so moving it around to trade shows is not practical. Cruse is presented on the FLAAR web sites so does not do as many trade shows as previously.

Due to the success of the Cruse, not too many other copy stand systems are around, and we did not see any exhibited at PMA.

Medium Format Digital

Kodak has reportedly abandoned making medium format backs. This is unfortunate since Kodak had one of the best backs around and about the only one (other than Leaf) which was totally portable with no tethered computer system. The Kodak solution was also the most economical (about $11,999) as compared with $26,000 and more for other brands. We took a Kodak ProBack Plus to shoot in Guatemala and loved the results.

Kodak indicated they will continue to make the sensors that other companies use, but will not make a back themselves. Instead Kodak wishes to concentrate on 35mm digital cameras. An unusual decision, since Kodak had pretty much the best medium format back but their 35mm 14n has not fared well in reviews (because its good primarily in sunlight; not so good at high ISO needed for less than full light). Furthermore, in the 35mm arena, Nikon and Canon are skilled producers, even more competition then Kodak faced in the medium format field (where no one brand was the size or brand recognition as Nikon or Canon).

Jenoptik makes a great medium format digital back, but did not exhibit. They have other profitable divisions to subsidize a continued adventure in medium format digital backs.

MegaVision still makes medium format backs but primarily for the niche market of portrait photographers using the Camerz Z series, ZII and ZIII. Otherwise, MegaVision is not a serious contender for the 645 medium format digital photography world.

Megavison digital scanning backs

PhaseOne had a modest but informative booth. However with Photokina coming up, it is understandable that perhaps they were saving up for that last week in September. PhaseOne has a desirable brand name, great software, but only a one-shot product. Their current model, however, looks greatly improved in the sense of portability. We hope to give a closer look to their new model shortly.

Imacon had a smaller and more subdued booth than I remember in previous years. They still tout 96 megapixels, which is not the full truth and hence potentially misleading. You get only about 47 megapixels available to print. Imacon can subsidize medium format by surviving on scanner sale for a while. But now Imacon has a new model with a new designation. The portability is better than previous tethered models as well. Imacon medium format backs look like good solid products. Just realize that when you send your file to a printer, the printer can accept only 8 bits, so only 47 megapixels reach the printer, not 96. Yes, Photoshop CS can now support working on 16 bit files, and although Jim Rich states clearly that 16 bit files do not show any visibly meaningful improvements over 8 bit files, many photographers would still prefer the psychological allure of the higher number.

Sinar was alive and well with a vibrant booth, as always. Sinar has a wide enough product range to survive. The new 54 M works with Mac OS X 10.2 and higher and is intended for portable use not attached to a computer. In order to be fully portable, this is 1-shot only. Multi-shot medium format backs so far require a card for a desktop-sized computer, which limits their mobility. However the Sinar solution requires a large external battery (seemingly not included) and what in effect is an ersatz computer, their Sinar Action Module, in other words, a sort of PDA on steroids with action buttons but no keyboard in the normal sense. Evidently there is no monitor on the back itself; actually nothing is on the back other than the sensor and necessary components. This reduces heat; heat causes digital noise, so less heat = less noise.

Sinar Bron camera in action at PMA 2004

Leaf has Creo to subsidize it to some effect.

Hasselblad did not exhibit at all but a senior manager was present at Media Street.

Mamiya not present. They tend to stick with PhotoPlus trade show, and will be present at Photokina. Contax was present in the Kyocera booth.

Rollei had a slightly smaller booth than I remember them.

Linhof (via HP Marketing) was in a slightly smaller booth. Actually I am not even sure an actual Linhof camera was present. In general 4x5 cameras were conspicuous by their absence. This is sad, because the quality of a 4x5 chrome is vastly superior to any 35mm or even medium format. To see the 4x5 cameras you have to go to PhotoPlus or Photokina trade shows.

So for large format, close to zero. For medium format digital: 1 down and out (Kodak), one missing (Jenoptik), three subdued and downsized, Leaf present at par, and one holding up their tradition (Sinar). It is probable that by PMA 2005 at least one of these will barely be hanging on; probably one will go the way of Jobo, Rollei, Heidelberg, all of whom got out of medium format digital due to the development costs, the needs for a software team in-house, and the fact that all sensors are pretty much the same, albeit Dalsa and Kodak CCDs are not identical. The only way to distinguish one brand from another is through software, and advertising claims.

Leaf Valeo 22 and Kodak ProBack were the most portable solutions by far. Sinar has the most options without a computer but their Action Module is in effect a mini-computer (and a $7,000+ maxi-price item). Imacon has a portable solution that is improved over earlier models. All the other portability-packs by other brands verge on being misleading, because they are barely portable and all totally tethered to a computer.

Kodak booth at PMA 2004 trade show

PhaseOne has also learned that photographers won't, can't, put up with a tethered computer. Their earlier attempt at portability required a Sony Vario computer. This combo was deemed inefficient because no LCD computer monitor is visible outside in the sun. The image turns to mush in daylight without a viewing tent. So now PhaseOne has reacted to market desire to produce a truly portable solution. No computer, no pseudo-computer either, so you are not tethered to anything.

Too bad it took three years for these portable situations to catch on. The tethered chain forced many people to jump to 35mm digital SLR cameras. Now the medium format are unchained, but in the meantime point and shoot has reached 8 megapixels at $799, compared to a 6 megapixel medium format which was about $26,000 in its day. The Sinar m model of its 22 megapixel chip dropped in price from $32K to $15K, but you still need a $7K processor from Sinar to run it. The brochure at the PhaseOne booth was for their portable model P 20 with the square 16 megapixel chip.

Digital Camera Software

Pictrographics did not exhibit. SilverFast personnel were in the Microtek scanner booth but had no booth of their own. PhaseOne was perhaps the primary purveyor of sophisticated C1 PRO RAW, which must be the new version of their original award-winning RAW software, then called Capture One DSLR. We discuss all photography software in the software-other-than-Photoshop unit in the course. C1 comes in two versions, PRO and SE (which I am guessing is a lite version).

Wide Angle and Panoramic Cameras

A modified Linhof 6 x 17 cm camera is being sold as a banquet pano system by **Lektra**. This class of camera has an ultra wide flash system intended to capture an entire graduating class, or complete football team with cheerleaders too, all with a single shot and single flash. The camera uses medium format film, and is a one-shot system (not revolving; this is not a slit camera).

Schorlex is a camera brand that I did not notice at Photokina 2002. It was exhibited in the booth of Pro Photo Connection. They appear to be dealers for KST, Seitz, and other comparable panoramic systems. The Schorlex 624 is a film camera, not digital. It reminds me of earlier digital cameras.

Imacon showed an unusual hybrid, an Imacon back on Hasselblad H1 perched atop a Seitz "turntable" pano head. The Seitz software allows you to do overlapping shots. The software stitches them together. It was not clear how many shots were required or whether they had to be 1-shot or could be 4-shot mode. No brochure was available. The system is sold by Peter Lorber, a long-time Seitz dealer in Florida.

Accessories

Tripods and Tripod Heads

Arca-Swiss exhibits only at PhotoPlus and Photokina; not at PMA (although PMA is four times the size of PhotoPlus). So no Arca-Swiss tripod heads at PMA. Main source of good quality heads was in the Bogen Photo booth. They had Gitzo tripods and heads as well as Manfrotto tripods and heads.

Gitzo tripod heads


Lexar and Simpletech storage media booths

Memory, Readers, and Memory Accessories

SanDisk and Lexar are the big names in this industry. Then there are a dozen other companies. Of these additional companies the brand we respect the most is Simple Tech. We have their memory and it works just fine. Simple Tech appears to be an American company with their World Headquarters in California. All their personnel that we have interacted with at trade show booths have been pleasant and knowledgeable. The contact we have is Ken Roberts, kroberts@simpletech.com.

Digital camera memory comes in an increasingly bewildering size and shapes. Capacity has exploded upwards, so 8 GB drives are available today. This lessens the appeal of a micro-drive, which are 1, 2, and 4 GB, and fragile. If you accidentally pinch them pulling out the IBM original, it would fail. It took a month to get IBM-Hitachi to take it back and weeks to get a replacement. Not much help if you are a busy professional. And the IBM replacement was flawed: had a loose seam.

The Epson P-1000, with 10 GB drive, has the best monitor for a digital memory reader bar none. This is because evidently Epson owns the patents on LCD chemistry.

We cover memory, readers, and related accessories in the FLAAR course unit on this subject.

Epson P-1000 digital camera

Books on Photography

Five years ago you could count the books on digital photography on your fingers. Today thousands of books vie for your attention. Indeed so many new books are appearing that it would take hours to type or even copy and paste their authors and titles into this review. We suggest that you consult the on-line catalogs of the following:

- Amherst Media, www.amherstmedia.com
- Amphoto Books, www.amphotobooks.com
- Sterling Publishing Co., www.sterlingpub.com

RotoVision also was listed in the PMA catalog but I never noticed their booth during the five days I was at the trade show. May have walked right by it many times, but did not see any sign or anything. Shows that some trade show booths are poorly designed.

Above: AmherstMedia Books and Amphoto Books. **Below:** Sterling photography books booth

Scanners

Konica Minolta, Canon, and Nikon all sell scanners in addition to cameras. Nikon seems to put the most effort and emphasis into their scanner line but reviews have not been encouraging. You have to rescan the slide a dozen times to get the specs that the ads claim, and that takes forever (true with any other brand of scanner also). The Nikons are not bad scanners, just not as good as they look on the spec sheet. Word on the street is that they produce lots of digital noise. We would have to test in person to know whether that was true.

The best scanner at PMA was the Creo EverSmart Supreme. If you can afford top quality, this is the scanner to ask for.

Imacon is a one-at-a-time scanner. Not efficient for production nor for slide archives. Their attempt to create a "feeder" is not convincing until we can experience it ourselves or otherwise see it in action at a place which is familiar with alternative solutions too. With any good flatbed you can scan 40 slides without a jerry-rigged attachment. Feeders on other scanners are notoriously unreliable. The fact remains, Imacon was designed for one slide at a time. It is also worthwhile comparing the results from Imacon with Creo, which is a true flatbed and thus allows efficient batch scanning. Since we have a Creo scanner in house to test, we can more easily comment on its abilities.

Creo EverSmart scanner

If you have hundreds or thousands of slides to scan, and just want to make simple photo albums for the family or post your slides on the Internet, a really cheap solution is the PacificImage PS3600. If you use SilverFast software, you can achieve acceptable scans using their batch-scanning device. Since this scanner is designed like a slide projector, the batch-scanning device probably actually works. On the Nikon, Imacon,and others, the batch-scanning device is an afterthought and on early Nikons that we tried, and based on serious reviews, the Nikon batch scan device was not successful.

Digital Imaging Software

Since we cover digital imaging software in a comprehensive unit within the FLAAR course, we won't discuss the same subject here. But one software is worth mentioning, and that is PaintShopPro from Jasc-Software. Yes, yes, we know Adobe Photoshop is the de facto world standard, but Adobe Photoshop includes hundreds of features a normal photographer will never need to use. But you are paying for them anyway. With the several other photo imaging softwares, you get what you need (and a lower price).

Miscellaneous Products that we Recommend

If you are a commercial photo lab, and especially if you are in a mall with lots of foot traffic, I recommend you look at the "Photo be a Star" concept on www.photobe.com.

If you would like your photos on a blanket try www.treasureknit.com; contact Richard@treasureknit.com. If you want to learn how to do this yourself, and in full color, get your hands on the FLAAR Report in PDF format on dye sublimation inkjet printing and heat transfer.

Summary

This is the year of 8-megapixel point and shoot cameras. If you want to be on the bleeding edge, try one. If you prefer a more mature yet conservative technology, stick with 6-megapixel in the newest generation (Minolta A1 or Fuji equivalent). Nikon does not have a new generation 5 or 6 megapixel offering; they went straight to 8-megapixels. The CoolPix 5700 is good, but it is over a year behind already.

For 35mm, go for the Nikon D70 at budget level, or Canon Mark II for higher end. Kodak's record for producing a digital camera that works well was tarnished with their 14n, so be wary of the SLR/n until it is proven in daily use. And then, but it only with a gold credit card that allows you to return it if the product does not meet advertising claims or product specs. If you intend to do any large format printing, we are not convinced the Sigma can produce enough true pixels, and watch out for the phony pixel count of Fuji (and of Imacon too).

On the subject of Imacon, the camera back itself is great. Just their advertising is potentially misleading. But the Imacon is far more portable than the Jenoptic. Sinar is now more portable than the last model, but expensive and still tethered to its controller. The PhaseOne, Leaf Valeo, and Kodak Pro Back solutions are the most portable of all.

Too bad it took medium format digital photography manufacturers so long to realize that photographers can't be spontaneous when tethered to a computer. Overall, if you want quality, you get better quality from medium format (whether film or digital) than you do with 35mm. A 22 megapixel Leaf Valeo or 22 megapixel Sinar 54M simply has better software, an easier viewer, and more pixels than any Canon or Kodak. You will achieve a better photo with any Hasselblad than you can with a Nikon F5. And a Fuji 6x8 cm camera will achieve a better image on 120 or 220 film than a Rollei or Hasselblad. Here, with film, size is indeed what counts.

And with 4x5 you can achieve superior results to medium format, but you are not as portable nor spontaneous.

With my 8x10 Linhof I can record a superior image than any digital camera made today, including a large format scanning back. Sorry, but you get greater depth of field. I have an 8x10 Linhof, and have used every size digital camera including a $97,000 studio one here at our university. An 8x10 Linhof will beat any of these. But not in ease of use. Digital is faster and obviously easier to print (no chemical darkroom). I can also achieve better color balance, quicker, and with more repeatability with any good digital camera.

So it depends what you want in your photograph, and how much pain you are willing to go through.