FLAAR Reports updated DECEMBER 2002
Digital Imaging, Report on Printers, RIPs, Paper, and Inks

Photokina Part I

35mm SLR Digital Cameras
Medium Format including digital cameras
4x5 cameras including scan backs
Lenses, Lighting, Accessories and Scanners

Jenoptik Eyelike and other medium format digital backs at Photokina tradeshow

UFM

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Photokina Messe main hall, with twin spires of famous Cologne cathedral in far background. The FLAAR European office is in the suburbs.

Introduction

This report is intended for people seriously interested in professional digital photography.

Intermediate, professional, or beginner. What counts is that you aspire to acquire or improve your knowledge of the basic equipment of the new era in digital photography.

We too come from the world of Nikon, Leica, Hasselblad and Linhof. Still have lots of film frozen in the freezer…for over three years now.

Yes, in the good old days you could take excellent photographs and win prizes with a simple camera if you had an artistic eye for a good camera angle.

Sorry, today if you seek to do that digitally you need the proper equipment.

If you wish to learn more, we have an entire course on digital photography. Available over the Internet; the syllabus is on *www.digital-photography.org*. But as a sample of the depth of information, tips, and experience in that course by Nicholas Hellmuth, here is a report from his five days at Photokina 2002, Cologne, Germany.

Dr Hellmuth maintains an office in Germany and by coincidence it happens to be in Cologne. He has attended Photokina '98, Photokina '00, and the recent Photokina '02.

If you had attended yourself, would have cost about $1,600 in airfare, hotel, and meals. But FLAAR is a non-profit photography research institute, so we enjoy sharing our experience with other photographers.

Besides, we speak Deutsch, so can obtain additional information which is not always available in English.

Basic News on Digital Camera Sensors

Philips is now out of making CCD sensors for medium format digital backs. They sold their CCD business to Dalsa, in Canada.

Dalsa inherited the old 6 megapixel chip from Philips, the chip which was in virtually all medium format cameras until Kodak's square chip walked off with this market.

Then Philips-Dalsa advanced to an 11 megapixel chip. Most older digital backs upgraded to this. In some instances they offered this as an alternative to the 16 megapixel chip from Kodak. After all, rectangular 11 megapixels gives you about the same end result as a square 16 where you have to chop off 20% to turn useless square space into a usable rectangular image. If the 11 megapixel chip is less cost and has other advantages in image quality, the 11 megapixel solution is better.

Hopefully the quality of the Dalsa chip is better than the awful photo on the front cover of their brochure. The photo is distorted, has lousy depth of field, and fails to showcase anything professional.

Design and Layout by
Ma. Renee Ayau & Maru Mayen
contact at FLAARtest@aol.com

Canon 35mm Digital Cameras

EOS-1D is a competitor for the Nikon D1x, primarily for sports and action shots. This is one of the few Canon cameras with a CCD rather than a CMOS. Focal length reduction factor is 1.3x, which is better than 1.5x of other cameras of its generation.

EOS-D60 is a 6 Megapixel CMOS camera. Not yet full-frame sensor, indeed it's a rather poor lens reduction factor of 1.6 (normal for that generation was 1.5).

EOS-1Ds is a full-frame CMOS sensor with 11 megapixels. Big numbers do not make a better camera (this is true for all manufacturers). However image size is a wimpy 11.4 MB. I do not understand why the max image size of the entire range of Canon cameras is so low.

Canon is a reputable company with excellent cameras, copiers, and a great wide format inkjet printer (albeit with only 1% of the market…). However I am not yet convinced of any CMOS sensor. I would need to compare this directly with other year 2003 digital cameras to see whether the output is up to the specs.

Contax, Nikon and Fuji

Since Contax, Nikon and Fuji did not offer anything new at Photokina, I did not visit their booths. Their Nikon D-100 is probably the fastest selling pro-sumer digital camera in America. Although the Foveon chip produces a better focused shot, Nikon came out first with the sub-$2,000 price and won the marketplace.

I have a Nikon D-100 and find the camera's capabilities endless. However depth of field and quality of focus with a zoom lens are pathetic. The resulting pictures are embarrassing. Possible cause is auto-shooting with "P" mode. You must select Aperature priority in order to force the camera to use f 8 or anything better than wide open.

Most people say they prefer the Fuji S2, but they buy the Nikon D-100 because of its lower price.

Contax digital camera has been creamed in reviews. Their camera has been delayed year after year. Then it appeared, and quality was reportedly so-so. In the meantime, Nikon came out with the D-100 and who cares about a full-frame sensor if it has spotty record. We hope Contax can repair their camera, and repair their image as well. However too many other cameras have come out with more megapixels: the Kodak 13 megapixel CMOS camera in 35mm SLR format is but one example.

Foveon chip and Sigma camera

Foveon announced back in February that it had a breakthrough chip. Sigma said it would feature this technology in the SD9 model.

Then eight months of silence. The Foveon web site did not provide any updates. It seemed like vaporware all over again. Yet at Photokina the camera was available; Foveon even offered one for me to try out that very day (I declined as I had to cover the whole tradeshow; I could not allow myself to have fun using a single camera).

Frankly the quality of the sample photographs in the Foveon booth was superior in focus to anything I have yet tweaked out of my Nikon D-100. Has to do with the full-color sensor of the Foveon compared with the 25% red, 25% blue, 50% green of a CCD (which means all the missing data is interpolated). Then the Nikon (and Kodak and Canon and all the others) apply a blur filter to get rid of possible moiré pattern. The result is a fuzzy picture which we are all subjected to just in order to have the ease and quickness of doing digital photography.

At PhotoPlus tradeshow in November, Sigma indicated the camera would be ready in another month. This suggests there are still problems to be resolved.

Kodak

Kodak surprised many people with a 13 megapixel CMOS sensor. Kodak itself manufactures CCD sensors, not CMOS. It is as if CCD is at the end of its technological development. The 13 megapixel size sounds impressive. Remains to be seen whether digital noise can be controlled and whether this system can capture detail in the shadow area. The camera will not be shipping until December or into January ’03. Will learn more at PMA ’03.

Must be tough making a camera where it is not your lens, not your sensor, and probably not much else from Kodak either, other than the marketing.

Point-and-shoot Digital Cameras

FLAAR does not work with entry-level point-and-shoot digital cameras because there are plenty of commercial sites who cover this range. But we do use this kind of camera ourselves, to take snapshots for our web sites.

Thus we occasionally comment on point-and-shoot models. Our typical observation is to beware of misleading advertising.

SLR stands for single lens reflex.

But SLR does not equal one lens cameras. A one-lens camera is a cheap entry level model.

A true SLR means interchangeable lenses, in other words, a multiple-lens camera.

Olympus (Camedia E-20P), and Minolta, use what could be considered misleading terminology, calling their fixed-lens zoom camera a SLR. Furthermore Olympus sub-titles theirs a “professional digital SLR.”

That is not acceptable, definitely not a professional quality system. 4x zoom is also unacceptable, as it is on early Nikon CoolPix (I know, I bought three of them in succession; now have Nikon D-100).

35mm cameras to hold medium format backs

Hybrid medium format – 35mm cameras

The digital era has bred all kinds of hybrid cameras. Since a medium format back has only a 35mm-sized sensor, eventually photographers realized they did not need a large format camera to hold a 35mm sensor. That's because the CCD sensor inside a medium format back is not the size of a Hasselblad mount (6 x 6 cm which is 60 by 60 mm or 2 1/4 inches. Eventually camera manufacturers recognized this situation and began to make bodies using a 35mm Nikon lens to hold a medium format back. The only reason the backs are dubbed medium format is because this extra size was useful to hold the electronics. Besides, these backs were intended for photographers who already had a Hasselblad. But the lens has to cover only the area of a 35mm slide.

Thus a rare hybrid breed has developed with 35mm lens format on the front and Hasselblad (medium format) attachment at the back.

At Photokina '02 more of these hybrid cameras are appearing to at last call attention to the small size of CCD sensors in digital backs. Thus a company called "Photo Know-how" has a camera for Imacon backs. I have never heard of P.K. other than seeing their brochure at Photokina. It looks well built but has no visible viewing apparatus. Accepts Nikon lenses but with electronically controlled shutter. Seems to somehow be allied with Imacon.

The downside of such cameras is that some of these manufacturers are small, have no previous track record in studio camera production. The positive side is the same, the lack of a track record means they can design innovative products. However the PK Precision Wide 35 can take only Nikon, Canon, and Olympus lenses (not any Leica lenses). Also this camera appears to have zero movements. So it is just a holder, like Horseman or the new Sinar m.

It is understandable that photographers wish to use their 35mm lenses. The question is whether these are adequate lenses for digital backs anyway (these lenses offer no movements since the cameras don't have bellows, tilts, swings, or anything of that nature).

Sinar camera

Nonetheless, there seems to be a market for light portable cameras to hold the heavy digital backs. As a result now even Sinar makes a camera which holds a Nikon lens on the front and a digital back at the rear. This Sinar m can even take the Nikon viewing prism on the top. You can also use the lens holder/shutter portion on the front of the new Sinar p3.

Of the various options in the hybrid class your choice is really between Horseman or Sinar. Horseman has been at this the longest, hence I believe their model is already a second generation design.

Comments on hybrid 35mm-medium format cameras

Just be aware that all the above systems merely hold the lens at the front and the digital back at the rear. You have no tilt or swing whatsoever. Silvestri has other models which offer rise and fall shifts, but usually no swing and not usually much or any tilts. The only exception would be the Gottschalt DS 45. Gottschalt cameras appear to be good, but are not widely distributed. However I have never had one to test.

Furthermore, although chips of the era 1999-2001 were smaller than 35mm, and although chips today are mostly at best the size of a full 35mm negative, as soon as you get a larger chip then a 35mm lens is no longer enough. You will need a medium format lens. Thus I am not sure that investing today in a 35mm lens format to hold your backs is a good investment for future growth. Sinar already has the new Kodak chip, whose 38.8 x 50 mm size is already larger than the roughly 36 x 25 mm size of sensors which approximate a traditional 35mm frame size.

Medium Format Cameras to hold digital backs: no movements (no tilts or swings, rise or fall)

At Photokina 2000 Hasselblad announced a joint project with Foveon, the D-finity digital camera. The chip behind this camera never reached the market, and thus ended Hasselblad's sole attempt to go digital.

In the meantime, Agfa was eliminated from the medium format digital camera back market. During the last two years Heidelberg's attempt in the digital camera market fizzled, though a joint project with the excellent Jenoptik EyeLike was shown at tradeshows in 2000. Jenoptik itself is alive and well.

By 2002 Jobo's medium format and large format digital backs were eliminated from the market as well. I am guessing that MegaVision is still alive but did not notice them at Photokina, at least not listed under their own name. I did not notice them in the Calumet booth either, though Calumet was so large they could easily have been there without being easily seen.

Thus Hasselblad is clever not to attempt to produce its own me-too digital back. Arca-Swiss failed already many years ago. Sinar is the only camera manufacturer who has successfully managed to market a medium format digital back (Kodak does not make medium format cameras, only backs, so does not count in this instance).

In effect, the only real survivors in medium-format digital backs are PhaseOne, Jenoptik, Sinar, and Kodak. Imacon is surviving from the same of its scanners; Fuji Luma is kept alive by its other products.

New Hasselblad 645 camera

Although the market for digital backs is tough to enter and more unforgiving to stay in, the market for a camera to hold the backs continues to grow. Thus Hasselblad has now entered this market, albeit with a camera totally lacking in tilts, swings, or any perspective correction possibility. This is clearly a camera for portrait photographers, weddings rather than architecture.

The size of the camera back plate was pre-determined since all medium format digital backs are already standardized on the 6 x 6 cm format of older traditional roll-film Hasselblad backs for the square format. However the rest of the H1 has shrunk to recognize the post-age stamp sized CCD sensors which are in the current generation of digital backs.

Sliding back: one half viewer because a 4x5 or tilt-and-swing view camera has no viewer on its own; then to take the actual photo you slide the digital back (which hold CCD sensor)

The camera, body only (no lens, no digital back) is roughly $6,000. For half that sum you can buy any of the excellent tilt-swing-rise-and-fall cameras such as Linhof 679cc, Rollei Xact, or the new Arca-Swiss medium format view cameras. The only medium format view camera outside this price range might be the Sinar, Cambo, or Horseman.

Of course a view camera is not for doing weddings or spontaneous shooting either. But for architecture, nature, and many kinds of sci-entific photography, a view camera is a better choice.

It would be ironic if CCD manufacturers actually suddenly successfully designed a new sensor the size of the Dicomed BigShot, a full 6 x 6 cm.

But until that happens, frankly I would not spend $6,000 for anything merely to hold my digital back.

But, and here is where you get your money's worth from FLAAR tips, if you get a single-lens reflex system, then you don't need a sliding back. A sliding back costs almost $2,000 on its own.

What is a sliding back? More on that later.

Rollei

Rollei makes great cameras but Hasselblad became chic with the movie "Blow Up." Thus many photog-raphers buy on the basis of name, not features. On a feature by feature basis, a Rollei often surpasses a Hasselblad in capabilities. Rollei also has a wider selection of lenses, namely from Schneider. A Hasselblad is somewhat limited to the Zeiss lenses.

So now Rollei offers an auto-focus medium format camera system with Schneider lenses. This Rollei 6008 AF costs several thousand dollars less than the Hasselblad H1. And, the Rollei offers full 6 x 6 cm, whereas the Hasselblad has shrunk its format down to 6 x 4.5 cm.

If I were starting afresh in medium format, I would start with a Rolleiflex rather than Hasselblad (single lens variety; the twin-lens Rollei was my first medium format camera in 1965).

Fuji GX 680III Professional

The Fuji GX 680III is the most versatile medium format camera ever designed. This is the only medium format camera which totally escapes the wasteful square format of a Hasselblad. How often have you seen a square photograph, a square billboard, or a square magazine? That's right, photos are pub-lished, and exhibited in museums, in rectangular format. So 6 x 6 cm square format of a Hasselblad means you waste film all the time.

6 x 4.5 cm is not an answer since that shrinks your image. 6 x 7 is better than 6 x 6 but is not fully rectangular.

Fuji offers a full 6 x 8 cm image complete with tilts and swings built into the camera. If you are doing studio photography with medium format, or work out in the field, the Fuji GX 680III is more flexible than anything short of a full field camera. The advantage of the GX 680III over such a field camera is that the Fuji can be used hand-held. Tough to hand-hold a 4x5 since you have to push and pull a film holder in and out.

Fuji also sells a medium format back, the Fuji Luma 11. Its postage-stamp sensor size is overkill for a 6 x 8 cm backend, but that is also true with any older Hasselblad.

Medium Format View Cameras (with movements)

In this case view camera means a medium format holder whose body offers tilts and swings. In reality the Fuji GX 680III ought to be included in this class, but in appearance it is a traditional medium format body, so we discuss it in the section with Hasselblad and Mamiya.

Medium format view cameras have come into vogue in order to hold medium-format digital scan backs.

Arca-Swiss

Arca-Swiss introduced a medium format field camera but no brochure was available. Arca-Swiss has not previously had a web site either.

The main feature of their new camera was its portability. This is definitely made for transportability and use outside on location. Unfortunately that led to compromises. When I got out on location, yes, my shoulders ache from carrying a heavy camera, but I actually take a Sinar X or Cambo Ultima (which I have found to be as good if not better than the Sinar). I have a Linhof Technikardan, but the Cambo is better in all respects… in other words, worth the extra weight.

At PhotoPlus a month later it was possible to see the baby Arca-Swiss in more detail. Frankly the Linhof 679 and Rollei X-act both look more versatile.

This is the first Arca-Swiss product that did not excite me.

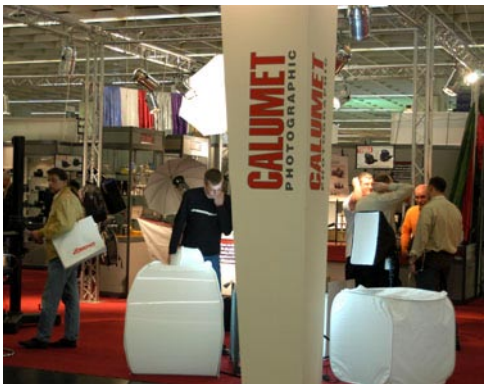
Cambo

I am estimating that the Ultima 23 is a medium format version of the Cambo Ultima. I have two Cambo cameras, the full-sized 4x5 Cambo Ultima and the dedicated Cambo 45-D Repro camera (for use on an upright reprographic stand; we use the Kaiser rePRO stand). I am fully content with my Cambo cameras and recommend them wholeheartedly.


Cambo Ultima 4x5

Previously I had a Sinar, a demo model. Its gears fell apart and overall the camera was so worn down from use that it was a poor ad for the legendary Swiss craftsmanship I had expected. I have lived for 2 years in Zurich and I expected better from Sinar.

The Cambo Ultima 23 has a neat adaptor, the “Multistep Adapter.” This allows for stitching multiple “medium format” shots from backs using 37 x 37 mm chips or 24 x 36 mm chips. No mention is made of which software is necessary.



Cambo is sold exclusively by Calumet. If you wish additional information on this equipment, you might wish to contact scott.price@calumetphoto.com, tel 312 944 2777 ext 2202, fax 312 944 4035

Hasselblad FlexBody

I had thought the FlexBody camera concept had been eliminated years ago due to poor sales. But somehow this body has crept back into the year 2002 Hasselblad catalog.

Be sure to learn about the reality of architectural photography. First, the meager tilts and shift of the FlexBody are not enough. If you need tilts and swings at all, then you need a Linhof, Arca-Swiss, Sinar, or Rollei view camera. Second, besides, the FlexBody can only tilt and shift… it is incapable of swings.

Third, Zeiss lenses are not designed to be used with tilts and shift. So in effect the minimal tilts and shift are inadequate in all respects (distance and lens inability). The other Hasselblad attempt at a pseudo view camera used Rodenstock lenses, but now enough movement was allowed by the system.

If you photograph architecture in medium format, a Fuji 6x8 cm camera gives you a larger size image anyway. But if you are determined to stick with square Hasselblad format, the Rollei Xact, Linhof 679cc, or any Arca-Swiss, Cambo, or Sinar view camera can do a better job than the limited FlexBody.

This is a polite way of saying, skip the FlexBody. It should have stayed deleted from the catalog. I own three Hasselblads; but it is a waste of time, money, and intelligence to jerry-rig a FlexBody. If you need even 1 mm of movement, get a real tilt-and-shift system such as Rollei Act$_2$, not a limited FlexBody.

Horseman

Horseman offers their X-Act-D. The name seems to be almost the same as of the Rollei product. The Horseman version offers a sliding back. I did not see this either at Photokina or PhotoPlus but most likely it was indeed present.


Horseman VH 4x5 camera

Would be interesting to test and compare the X-Act D, the Rollei X-Act$_2$, and the Linhof 679cc. All three are lighter than the Cambo and Sinar, which are full-sized 4x5 cameras just with a smaller front and back end. But the underlying chassis of the Cambo 23 and Sinar p3 appear to be essentially the same substantial bulk as their full 4x5 models. This bulk has advantages (the camera won't wobble as much) but do you want to deal with all the extra levels of movements if you are in a hurry.

Horseman is distributed in the USA by Schneider Optics.

Linhof

Linhof 679cc is the industry standard in terms of having been around the longest and in having full-tilts, swings, shifts, etc. Very impressive looking camera, however I have never had the pleasure of using one. Actually looks more precise than the L-shaped supported Linhof Technikardan 4x5 and the L-shaped supported grand studio 8x10 Linhof Kardan GTL which I still own.

Rollei

Rollei offers their two X-Act medium format camera models to hold digital backs, X-Act$_1$ and X-Act$_2$. Both of these are what Hasselblad should have come out with instead of their inadequate Hasselblad FlexBody and ArcBody. Either of the two Rollei X-Act models is better in every respect from either of the Hasselblad attempts.

Of the two Rollei cameras, the X-Act$_2$ is the model we recommend for maximum flexibility.

Sinar

Today there is more factual information available and traditional photographers realize the mini-CCD sensors do not require a 4x5 camera whatsoever. Linhof realized this first and built its 679 camera. Then Rollei designed their completely new model Xact, and so on. Now Sinar has its p3, a medium format version of the large format p2. Downside is its monster size, same as the Cambo 23. These are really full-sized 4x5 cameras with a smaller frame only at the top.

Comments on view cameras to hold digital backs

It has always been ridiculous to perch a medium format digital back on a 4x5 camera. After all, the sensor itself is the size of a postage stamp. Most medium format sensors are barely the size of a 35mm slide.

However people with no prior experience in digital photography did not understand the technology and it was logical to presume that a 4x5 camera somehow imparted extra quality to the results. Clearly that was not true, but yet people bought $30,000 4x5 studio cameras for medium format photography.

Just realize that these cameras are not intended to be large enough for the 70+ x 90 mm size of a large format tri-linear scanning back. Tri-linear scan backs need a full-sized 4x5 since no 72 x 90 mm large format camera exists.

If your digital system is medium format, unless you already have a 4x5, there is no reason whatsoever to purchase a full-sized studio camera to handle your medium format Leaf, Sinar, Imacon, Jenoptik and comparable back.

The Cambo Ultima 23 appears to be the same as the Ultima 4x5 simply with reduced front and back elements. Sinar p3 looks like an only slightly downsized version of a full-scale Sinar 4x5. So you have the weight and stability of a complete 4x5 camera.

If you don't want to lug around that much weight, your choices are the Rollei or Linhof. For the first time I was not impressed with the Arca-Swiss field camera option. I reserve opinion on the Horseman since it has not been out long enough to learn about its pros and cons.

Just remember, if you have a tri-linear scan back, yes, they physically fit onto some medium format 6x9 cameras but a tri-linear scan back is a 7x9 frame. So by putting it onto a 6x9 medium format camera you cut off an entire centimeter from you image.

Accessories for holding your medium format back onto a view camera

You pay roughly $3,500 for a medium format view camera (Cambo, Rollei, Linhof) give or take a few hundred dollars.

But then you find out you need a sliding back. Surprise, surprise, these cost about $1,800.

What is a sliding back, and why are they needed? Check out the web site for the KaptureGroup. Silvestri also makes a sliding back, as do other companies.

Cambo goes one step further, then offer a multi-step adapter so somehow you can stitch together two adjacent shots to create a wide angle pano view. Sinar offers stitching of a more sophisticated sort with a slightly different arrangement.

If you buy any camera which already has a viewer (such as Hasselblad) then you can escape the extra cost of a sliding back. However a view camera, plus sliding back, is still less money than a single Hasselblad. And with a view camera you get full tilts and swings.

CCD (and one CMOS) backs for medium format cameras

Stationary CCD sensors are the size of a 35mm negative. Actually all the CCD sensors from 1999 until recently were smaller than a 35mm negative.

The reason that tri-linear CCDs cover 7 x 9 cm is because the sensor moves across that field. The actual CCD is only 7 cm high by a hair's width wide. This vertical hair's width of a CCD moves thousands of steps across the 9 cm field to make its picture. It is these thousands of steps which result in the photo taking lots of time.

The following section covers only the "medium format" digital backs.

Kodak

Kodak continues to feature its own 16 megapixel CCD sensor. The 22 megapixel sensor is available exclusively through Sinar.

The advantage of the Kodak medium format DCS ProBack is its true portability. No tethering needed. No pseudo portability-pac. What you see is what you carry other than a battery pack (as a fanny pack).

Downside is only one-shot. If you use the anti-moiré filter the focus is worse than it is already from the Bayer pattern color filters on the photo sites. However we tried out a Kodak ProBack Plus on a Hasselblad 555 ELD recently (after Photokina). Our full report on medium format digital options is now part of the updated digital photography course from FLAAR.

Leaf

Leaf on Plaubel camera

Leaf was an early innovator in medium-format digital backs. In these early years Sinar sold only Leaf backs.

Now Sinar has its own series, including a very innovative new back with portability accessories, the Valeo. Comments on all portability options of all brands has been written up for the FLAAR course on digital photography.

In the meantime, Leaf has its CMOS camera, one of the only medium format CMOS cameras (not that Foveon's CMOS camera no longer exists in medium format). I am not sure if Leaf has updated the 6 megapixel chips in their original cameras. Today that size chip is a bit dated, since you can get comparable size in a Nikon D-100 which costs less than $2,000.

Jenoptik

Jenoptik is a survivor so far. Agfa, Arca-Swiss, Jobo and others dropped out of the medium format market one by one over the last three years (Jobo was the most recent victim).

Jenoptik fits more cameras than any other back I know. For example, Jenoptik is one of the few to fit a Rollei 6001, 6003 and 6008.

Jenoptik is a Mac-oriented digital system.

Whereas PhaseOne and Kodak is only a 1-shot back, Jenoptik offers 1-shot, 4-shot, and 16-shot versatility.

Jenoptik offers the time-proven Philips 6 megapixel sensor (EyeLike M6); the newer 11 Megapixel successor (I am guessing this is the new sensor from Dalsa); and the square 16 megapixel sensor from Kodak.

Jenoptik Eyelike back on Plaubel camera

Megavision

I did not notice Megavision at either Photokina or PhotoPlus. Megavision was not in the main catalog of Photokina (have not yet double-checked the PhotoPlus listing, but sure did not notice them). This does not mean they were absent, it just means I did not happen to find their booth.

It is never a good sign when a camera company needs to save $$$ by not attending the two leading tradeshows of their industry. Megavision was an early adapter, but that does not always insure survival, as Dicomed found out. We wish Megavision good luck, but Jenoptik, Sinar, and Kodak seem to be gaining market share.

PhaseOne

PhaseOne offers 1-shot only. No multi-shot. However PhaseOne software is able to obtain an excellent image out of an H20 one-shot system.

However, if a 1-shot is so good, why not at least have the option of multi-shot too? Hence I personally prefer the versatility of Jenoptik or Sinar options.

The portability pac still requires you be tethered to a computer. Hence we feel that the Kodak Pro Back is a more practical solution if you frequently shoot outside.

Sinar

Sinar is the Rolls Royce of medium format digital backs. Ironically Sinar does not offer a large format scan back. Of course Sinar does purvey large format cameras, which are overkill for a medium format back (whose sensor is the size of a 35mm negative).

Today Sinar finally speaks about its chips as being only 35mm size and even sells a 35mm camera, the Sinar m.

But at least a Sinar 35mm sized chip packs a whallop, 11 megapixels. I am guessing this is the Dalsa ex-Philips chip.

But 11 megapixels is only the start. Sinar trumped all other camera companies by obtaining a one year exclusive on Kodak's new 22 megapixel champion. This chip is 38.8 mm x 50 mm, so larger than any other chip ever made (aside from Dicomed BigShot at true 6 mm x 60 mm full medium format size which, six years ago, failed to function adequately and caused the eventual bankruptcy of Dicomed).

Realize that the data size specs are inflated to 16 bit TIFs, The standard for comparison is 8 bit for RGB (24 bit for all three channels).

Buyer Beware

The international standard for measuring file size is 8 bit RGB, which means 3 channels x 8 bits = 24. The proper method to calculate file size in megabytes is based on RGB.

Yet some brochures pump up the file size by using CMYK, which is a fourth channel, hence a larger number. However your file is no better; it's just a hollow number that an ad agency hopes will hype you into buying their product.

Another way to pump up the pixel count is to give the raw file size at 12 bit or 16 bit (hence up to 48 bit RGB or 48 bit CMYK). But we all know that Adobe Photoshop throws away all those extra bits. Your large format printer RIP wants to be fed 8 bits per channel also. So once more, the giant number of megapixels based on 48 bit files is not seriously going to give you a larger print on a wide format printer. Better, hopefully yes, but better and larger are by no means synonymous.

Claiming that a 16 megapixel chip gives 96 megabyte file size is potentially false and misleading. 96 MB is at 16 bits, which is a pseudo number. The true number that counts is 48 MB, which is three channels (RGB) at 8 bits per channel of 16 megapixels: 3 x 16 = 48 (actually it is closer to 47 MB in reality).

Relative to sensor size: the Kodak sensor is square. By the time you crop your image to rectangular format, you will crop off several million pixels. So your image that you seek to print will be perhaps 38 megapixels, not 48.
FLAAR believes an informed consumer will be happier in the long run. Do companies really want to deceive and trick the customer?

Suggested Warning on cameras which may be inadequate for digital

To hold a large format tri-linear scan back it is recommended to use a 4x5 camera with fully geared movements. An L-shaped camera is not recommended: the weight of the scan back will probably cause sag.

4x5 cameras with brass fixtures (the old-fashioned kind popular since the 19th century) are usually totally inadequate for holding any digital back.

In general avoid any 4x5 camera which uses independent sliding knobs on both sides to hold a rise or fall in place. The usual result is that your camera back is not fully in the identical position on both sides. Cameras with sliding brass fixtures may be the worse.

Another thing to watch out for is “medium format” cameras with 35mm lenses which do not cover the full area of the larger digital backs such as the square Kodak format. Thus the Silvestri Bicam 7000 only covers 24 x 36 aspect of a CCD sensor. If the sensor is larger format, this camera may cut off part.

4 x 5 inch Digital Scan Backs

Last year Anagramm, Jobo, Kigamo, PhaseOne, and BetterLight all offered 70+ x 90+ mm large format tri-linear CCD scanning backs.

PhaseOne lost to BetterLight in a PMA test and evidently did not even attempt to enter at PMA 2002 (where BetterLight soundly beat whoever did enter). Jobo pulled out of all digital markets within the last year, both large format and medium format.

Kigamo was not exhibited under their own name at Photokina, so I have no way to know if they intend to continue or whether they are already extinct. Their web site is still on the air. Since they are a German company it would seem they would exhibit at Photokina.

When I asked for brochures at the PhaseOne booth I got only medium format leaflets, though I am guessing they still continue with their tri-linear backs.

Anagramm exhibited in the Linhof booth. That is primarily a reprographic camera for flat objects, as in flat, thin, and without any relief. Anagramm comes with an adapter for the Linhof 679 camera, but any medium format camera is most likely going to cut off 1 centimeter of the image. Large format scan backs capture 72 x 92+ mm (a bit over 7 x 9 cm). Medium format cameras offer 6x6, 6x7, and up to 6x9. But I do not know any medium format camera which offers 7 x 9.

BetterLight used to exhibit with Calumet and recently with Kodak, but BetterLight is changing distribution channels (and may even sell direct). BetterLight will exhibit at PhotoPlus in November ‘02 and at PMA in ’03. Although BetterLight personnel attended Photokina, they did not have a formal booth, which was unfortunate, since people from all over the world come to Photokina to ask “what should I buy.” I met people from Malta, Mexico, Chile all of whom came to ask me what I recommended. But they also want to see the cameras, meet the people behind the camera, and feel a company experience.

4x5 Cameras, for digital backs

Cambo

The Cambo Ultima offers everything I can possibly need. Albeit not the most portable system in the world, but you don't want a collapsible camera when you are using a CCD chip back.

Frankly I find the Cambo just as good as a Sinar X. I would rate the Cambo as well built as a Mack truck or a Volvo truck.

In most of the world Cambo is sold by Calumet. If you wish additional information on Cambo equipment, you might wish to contact scott.price@calumetphoto.com, tel 312 944 2777 ext 2202, fax 312 944 4035.

CamDynamics

Prior to the advent of the CamDynamics model, Sinar was top name. Today, Sinar holds the top name still, but CamDynamics is the new Rolls Royce of large format cameras.


CamDynamics 4x5 camera

You have to read their specs, *info@camdynamics.de*. I saw the camera in person. Sure evokes instant envy. CamDynamics deserves the FLAAR award for most innovative 4x5 camera at Photokina.

Since we do not have this camera, there is no way to describe what it does. But if we ever do obtain one, will write a special report on it.

Plaubel

I have not noticed Plaubel cameras before, nor have I seen any in a studio that I have inspected over past decades. Their equipment looks okay, but without having used one myself it is best if I do not past judgment.

Plaubel seems to make a wide range of cameras. Just remember that L-shaped camera supports may not be ideal to hold digital backs steady.

Sinar

If you just won the lottery, or if you need to make a professional impression immediately, go for the Sinar p3, quite frankly the first name in 4x5 cameras. Of course the CamDynamics now has a Ferrari version of a 4x5 camera.

Lenses for digital photography

The following comments are for lenses on 4x5 cameras and/or 4x5 lens-types on medium format view cameras.

Several other shift cameras could be seen at Photokina, but Silvestri and Cambo were the larger companies.

Photogrammetric Cameras

Linhof Metrika 4x5

Linhof now makes a photogrammetric 4x5 camera. If you do not needs tilts, swings, or shift of a view camera, this rigid model definitely looks solid, and it is made specifically for photogrammetric photography. It uses interchangeable large format lenses.

The glass réseau plate allows the resultant photos to be analyzed by photogrammetric software available from after-market suppliers.

Since this shoots 4x5 film, I am guessing that it will hold a large format digital scan back such as BetterLight. However I have not seen the back portion of the camera to double-check.

KST EyeScan panoramic camera

KST

KST offers the only digital panoramic photogrammetric camera that I know of. So if photogrammetric is what you need to accomplish, check out the offerings from KST.

Rollei

The Rollei photogrammetric system is the industry standard, especially for traditionalists. However I am guessing it is still film-based.

Reprographic Scanning Cameras

A BetterLight or Anagramm on a repro stand builds a reprographic system from components. Difference is the Cruse is dedicated, a turnkey solution. FLAAR has one of each: one Cruse and one BetterLight. We feel each has positive features; depends on your needs.

METIS, an Italian distributor of digital equipment, showed their DRS reprographic stand. It sure looked like a cheap copy of the Cruse. Since Cruse has a patent on synchron lights it is my understanding they filed a patent infringement suit against METIS. The METIS unit looked like simple sheet metal around a basic structure.

Cruse GmbH showed a unit that had looked solid. Indeed the new Cruse moveable-table repro system wins our award for innovation.

The Cruse CS 185ST features a synchron table. This precision equipment moves the table past a fixed scanning head. You can have a table as long as over two meters (225 cm to be exact). These longer lengths were original designed for scanning hardwood for the veneer industry. But it turned out that the same system was ideal for scanning paintings. By setting the scan head at a 10^0 or 20^0 angle it is possible to capture the topographic details of brushstrokes of an oil painting. Thus when this image is reproduced on an inkjet printer, the three-dimensional effect makes the print appear as if it were the original painting.

The Cruse scanner overhead digital camera system is ideal for archives, museums, libraries, photo studios, and naturally any commercial fine art giclée studio. Since this system is unique, you might wish more detailed information directly from the company: e-mail **cruse-gmbh@t-online.de**. This will also reach their American office.

Cruse scanner systems come in many different sizes and formats, so you might wish to check out their catalog which you can obtain from Mike Lind, malind@msn.com (for years the sales and installation outlet for this company) and/or Kurt Ernst, kurt.ernst@crusedigital.com (managing director of USA office of Cruse GmbH of Germany).

QTVR Tripod Heads

Silvestri entered the market for panorama heads with a motorized version for their BICAM model camera.

I did not notice Kaidan at Photokina. They are the largest designer of entry-level and mid-range QTVR tripod heads in America.

Studio stands vs tripods

Many professional studio photographers prefer a studio stand. Bogen/Manfrotto certainly make a professional model. This is the model we have. Otherwise, since FLAAR does primarily outdoor photography on location, a tripod is more practical for us (we have preferred Gitzo for years).

Manfrotto tripods

Lenses

Schneider introduced a wide range of lenses. The two which looked the most enticing are the Apo-Digitar 5.6/24 XL and the Apo-Digitar 5.6/35 L. The camera I would recommend them for is the Linhof M 679.

Filters

B+W filters

B+W is a division of Schneider lens company. Hence it is safe to say that B+W know camera lenses. Plastic or gel lenses scratch; glass is better. B+W filters are glass.

B+W also make special filter holders, especially for wide angle lenses.

Heliopan is the other large German manufacturer of primarily glass filters.

Lee is a well known international supplier of gelatin filters (slide-in filters which go into their filter holders).

Lighting

Dedolights are great for using with traditional film, but their transformers seemed to cause fluctuation with our digital camera backs, so we had to stop using that particular class of lighting. Thus in all our newer studios for digital photography, we no longer utilize Dedolights.

Fluorescent Lighting

Balcar makes by far the most sophisticated fluorescent lighting I have yet seen.

Kino Flo appear to be distributed in Europe by Dedo Weigert Film. I prefer the more focused kind of lighting from Balcar.

Grigull now also makes fluorescent lighting. It looks good, but Balcar still looks impressive too. What was nice from Grigull, however, was HQI lighting. Their HQI lighting was so new that no brochure was available.

Metal Halide Lighting

Virtually no documentation of any metal halide lighting other than HMI is available, neither on the internet nor in product brochures. However both HQI and HID are cool hot lights, in other words, they are bright but still cool. Tungsten are bright, but very hot. Museum curators (and subjects of your photography, whether animal, vegetable, or mineral) don't like the high temperatures either.

Fluorescent lighting is cool, but not as focused. By the time you put a polarizing filter over the lights there is not enough power left for shooting with a tri-linear scanning back.

Anagramm advertises HQI lights; Grigull was showing a kind of HQI lighting at Photokina, but otherwise you don't see much. We could not find a brochure nor anything on metal halide lighting in the Grigull web site even as late as February 2003. Buhl has a metal halide lighting relative, HID (High Intensity Discharge), but Buhl does not exhibit at photo tradeshows for some reason.

Color Management

We instinctively wish to support any new product, since often new products are more innovative than industry dinosaurs.
But the other side of the coin is that unless you are an industry standard, it may be a waste of time to learn a non-standard product.

Thus it is a dilemma for us to handle a product such as basICColor, **www.basiccolor.de**. Until this is available fully in English and supported in America there is not much incentive to jump from industry standards such as Gretag, or even from Pictographics or Monaco.

The (Gretag)Macbeth ColorChecker is clearly now the international standard for checking your color balance. This Macbeth product has long ago now taken over from the smaller Kodak grayscale and color card. Downside of the Kodak card is its dedication to traditional film and darkroom enlargements. Besides, Gretag is the international leader in color management. Regrettably Kodak has not done well in moving into any leadership role in the digital era. All the smaller more nimble companies ran circles around the old-fashioned giant. But IBM has survived so maybe Kodak well too, though Polaroid is an excellent example of too-little, too late.


GretagMacbeth Eye one tools

Photography Accessories

Novoflex makes all kinds of neat gadgets and gizmos, especially for flash and table top studio photography. Their flat-panel flash unit is a typical example of their innovative design and advanced German technology.

The range of products you ought to peek at is too large to list them here. If you wish specific information on Novaflex products, we highly recommend them; you can get help directly from the company, **mail@novoflex.com**.

Sinar makes the most accessories of any of the 4x5 camera manufacturers. Arca-Swiss has the least, but many Sinar accessories fit Arca-Swiss, Linhof and others.

Cambo also makes some well designed accessories for their professional studio cameras.

Light Meters

A Gossen LunaPro was my first light meter; then for some reason I purchased a Minolta flash meter and then a Minolta color meter. I was and still am totally content with them. They are industry standards for years.

In the meantime, our photo studio at BGSU has been equipped with a Gossen, imported by Bogen Photo. Gossen has a meter for practically every need you would half.

Gossen light meters

Books on Photography

We tend to report primarily on books in English but in some cases books in German offer advantages not yet available in other languages. Since the FLAAR reports are read in 42 lands worldwide, we feel it helpful to review these German books (as soon as we have them; we only saw them briefly at Photokina).

JUERGEN, P.
Date not noted, Blitzpraxis analog-digital.

MARSHESI, Jost J.
200? Photokollegium Digital 1. Verlag Photographie.

MARSHESI, Jost J.
200? Photokollegium Digital 2. Verlag Photographie.

NEUMEYER
Date not noted, Das digitale Fotostudio.

SCHEIBEL, Josel and Robert SCHEIBEL
Date not noted, Fotos digital –Basiswissen

SCHEIBEL, Josel and Robert SCHEIBEL
Date not noted, Fotos digital – Aufnahmepraxis ganz einfach

Scanners

Scanners are dying out. Effectively not a single drum scanner was displayed, at least none that I saw. In distinction, many drum scanners were visible at Photokina two years ago.

Scannova makes 2D and 3D scanners. The results looked rather strange but if you need this kind of unusual scanning, you might want to check them out.

Although LaserSoft Imaging did not have a booth, it was possible to spend an hour with the head of their SilverFast scanner software. Over the past years we have found SilverFast to be superior to Heidelberg, Umax, and Nikon software. I would rate SilverFast as comparable to the quality of CreoScitex scanner software.


Creo iSmart scanner

Awards

Certain products deserve to be singled out as deserving of special attention.

Foveon had by far the most innovative digital camera at Photokina. The quality of the 3 megapixel Foveon images was notably superior to even 6 megapixel cameras with Bayer pattern mosaic 1-shot systems.

SINAR certainly pulled off a major coop with its 22 megapixel chip. To get an exclusive on this chip was even more clever.

FLAAR award for most innovative 4x5 camera at Photokina goes to CamDynamics. For information, info@camdynamics.de.

Nicholas Hellmuth's personal choice for the best reprographic system of all time for fine art giclée goes to the CS 185ST Synchron Table, fine art repro system.

For location photography, PPL makes the most helpful sun-shade for a laptop computer. Nothing else I have tried works. Don't have their laptop tent, but sure looks like a great idea, **www.ppl.de**, email contact is **ppl@ppl.de**. Have no idea if they sell in America.

Best fluorescent lighting, especially for digital photography, is Balcar.

Best lighting technology for digital photography is HQI. It is hard to find, so far we noticed it only at Grigull.

If you need more information about the Cruse scanner systems you might wish to contact Mike Lind, malind@msn.com and/or Kurt Ernst, kurt.ernst@crusedigital.com.

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Cambo camera, Elinchrome Bogen equipment at FLAAR-BGSU studio, Lowel booth.

www.wide-format-printers.org	www.fineartgicleeprinters.org	CLICK HERE TO VIEW EACH FLAAR NETWORK SITE
www.digital-photography.org	www.flatbed-scanner-review.org	
www.laser-printer-reviews.org	www.cameras-scanners-flaar.org	www.large-format-printers.org
www.FLAAR.org	www.ctpid.ufm.edu.gt	www.wide-format-printers.NET

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