



# FLAAR Reports

## FLAAR Medium Format Digital Camera Initiative



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**Front cover photograph:** Mamiya 645 AFD, Mamiya 120mm macro, Leaf Valeo 22, at work in Lake Atitlan, Guatemala.

# Medium Format Digital Camera Initiative

Nicholas Hellmuth, FLAAR at BGSU

July, 2004

Full-page Kodak ads, actually two-page spreads, claim their 35mm SLR/n or /c is of equal quality as a medium format studio camera.

But no documentation is offered, no test results.

At least when Mac claimed their G5 was the world's fastest computer they paid a commercial company to show some tweaked results (with a mid-range PC; they were careful not to show the most powerful PC).



Of course FLAAR had a computer sciences graduate student at the university actually test a Mac G5 against a Dell (both with dual processors), and the Dell was faster in some aspects. In the few features where the Mac G5 (with 8 GB or RAM) was faster, it was just a tad. Overall the PC was even with the Mac G5. This is because our university did not cheat and stack the results in advance.

Same with camera, or inkjet printer benchmarking. Professors and university lab managers are inherently curious. It is tough to buy them off with bribes. So our results tend to be more realistic. This is why over one million readers a year come to FLAAR web sites to find out the true facts about scanners, inkjet printers, laser printers, and digital cameras.

Claiming a 35mm camera is as good as a medium format camera is like Nikon's infamous ads which claimed their entry level scanner was as good as a drum scanner, and since the Nikon cost less, you ought to buy the cheaper Nikon. No actual results were listed, cited, or offered.

Medium format digital photography offers advantages over 35mm and has some benefits over large format digital photography. But since few photographers have had the opportunity to learn of these benefits, some people might believe the dubious ads that claims a 35mm camera offers medium format equivalency. Of course Kodak probably meant their SLR/n was better than a three-year old medium format with 6 megapixels. But today's medium format cameras pack in 22 megapixels. And these pixels are clean... not damaged by digital noise and purple fringing or magenta patches.

Although these ads verge on the ridiculous if you have ever used a drum scanner or used a medium format digital camera, if you come from the world of 35mm or 5, 6, or 8 megapixel zoom-lens cameras, it is easy to be misled by clever advertising.

Thus we felt that to provide a proper balance, it would be useful to provide a positive initiative to explain to photographers why medium format has value in today's digital marketplace.

Nicholas Hellmuth has experience with medium format (he owns three Hasselblad cameras), with large format (has four), and naturally with 35mm (Nikon and Leica). Our favorite is medium format.

We would like to tell the full story of medium format digital photography. Again, we are an appropriate Johnny Appleseed to explain the benefits of medium format digital camera backs. We already have Nikon D100, Nikon CoolPix, and have been beta tester for BetterLight large format digital scan backs since 1997. So we can explain, from direct experience, the pros and cons of each digital format:

- Point-and-shoot, 4-8 megapixel
- 35mm digital, 4-13 megapixel
- **Medium format, 6-22 megapixel**
- Large format, tri-linear digital capture

The reason people come to a FLAAR website to ask what camera or wide format printer or scanner to buy is because readers see all this equipment in daily use at FLAAR: we have over \$600,000 worth of digital imaging hardware and software. The Internet is the best place to provide information on medium format digital cameras because nowadays savvy people buy based on web-based reviews more than on advertising in popular or trade magazines.

Our proposal is to apply our years of experience, and our talented staff of 25, to a medium format digital initiative. Our main advantage is that we have 21 wide format inkjet printers. Thus we can remind photographers that if you want enough resolution for serious inkjet printing, you better start thinking about the medium format advantage.

FLAAR is a non-profit institute dedicated to photography for over 33 years. There is no charge for our services in digital photography (other than providing the equipment). We do not ask for, nor accept, any commission due to increased sales. We welcome and appreciate corporate sponsorship but do not accept ads and do not regurgitate corporate slogans or other commercial public relations releases nor. We do not accept advertising claims unless we can document them on our own.

We know we have written an honest review when the camera manufacturer writes us and tells us, point blank, they are withdrawing their offer to provide another camera because we did not bestow high enough praise on the first model they loaned us. This is a true story; we have it on Kodak letterhead. And we actually liked the camera (medium format Pro Back digital back); it did well in all our assessments. But we did not use the superlatives that other reviewers heaped upon the same camera.

There is also the infamous case of the full-frame 35mm Contax digital N camera. Contax allegedly refused to provide it to reviewers for fear of bad reviews. Kodak became skittish of providing their ill-fated 14n after it was creamed in early reviews. So writing evaluations is a challenge. However the best way is simply to be honest. Ignore the camera's PR department, and let the product manager realize that a single truthful review will sell more cameras in the long run than hype and deception.

One reason we begin our medium format initiative with the Creo Leaf Valeo 22 is because we know Creo products such as the EverSmart Supreme from its beginnings under Scitex. We will scrutinize Leaf ads as we gain more experience with their camera but no flagrant red flags have popped up as was the case with another medium format brand whose ads possibly violate both European Union and US advertising guidelines. Too bad, because the replacement model of that camera is great, indeed it is good enough that it does not need misleading advertising to sell it.

This is our point: if a camera is good, then misleading advertising, ridiculous hype, and bogus claims ought not to be needed. A really good camera should sell itself on the basis of its honest merits.

After shooting with the Leaf Valeo 22 wireless for six weeks, in Guatemala, Greece, and across the US, I can report the crucial results. Indeed two other photography colleagues to whom I loaned the Leaf Valeo 22 (so I could see their faces when they saw the results), both professional photographers made the same comment "the quality of the pixels is extraordinary, the detail the camera shows is awesome. The pixels are so clean."



So let's look at the implications of these positive aspects of medium format digital camera backs.

## Scope of the Medium Format Digital Camera Initiative

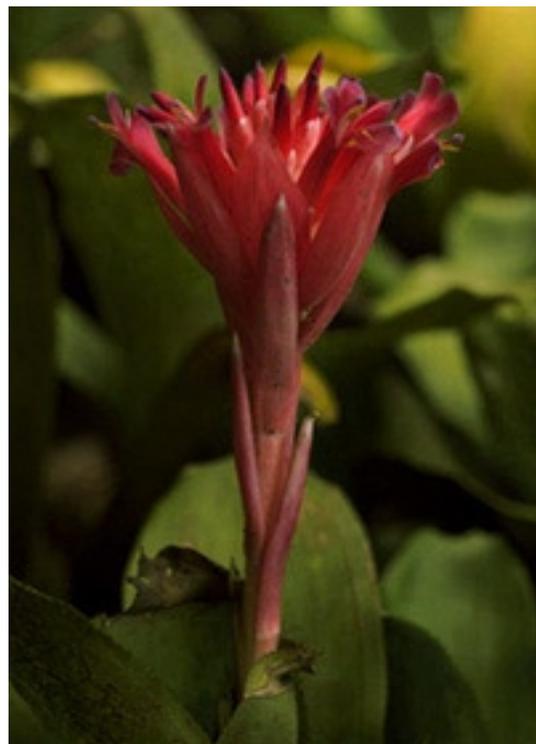
We suggest that an effective medium format digital camera initiative should cover:

- Travel photography
- Photojournalism (including expedition photography such as anthropological, ethnographic, and photography of cultural materials)
- Industrial photography
- Scientific photography (of specimens, because the detail you can record is crucial to documentation for scientists)
- Architectural photography
  - Interior photography
  - Architectural history photography
- Art photography  
(here meaning photography of art objects, not fine art photography)
- Fine art photography  
(separate from and in addition to, photography of art objects)
- Nature photography
  - Landscape photography
    - Panoramic landscape photography
  - Bird photography
  - Insect photography, especially butterflies
  - Flower and garden photography, especially orchids

We understand why all the medium format camera manufacturers have stressed

- Portrait photography
- Wedding photography
- Fashion photography
- Commercial photography

But that focus has resulted in overlooking the 8 other markets we list above.





The present PDF is a first draft. The Leaf back was sent from Israel and arrived at Parrot Digigraphic outside Boston in mid-July. We flew up from Guatemala to receive the helpful 3-hour introduction to the Leaf software from Rick Adshead, Mark Rezzonico, and Kevin Stuts from Leaf America and Mamiya, and the following day returned to Guatemala to begin test shooting.

The photos you see are samples. We are still learning the RAW software (Leaf "Mosaic."). It will be a while before we master the potential of the tone curves and other settings. As we progress we will develop custom ICC color profiles, a challenge in any camera software that was first developed before custom ICC profiles became possible. But in order to get this first bunch of photos out and available, we simply turned them into JPEGs with no minimal software applications. The next edition will have all the proper curves, color balance, and profiles appended.

We had a comparable learning curve with the BetterLight software. The difference is that with BetterLight you essentially apply everything in the convenience of pre-shot software, comfortably on the monitor of your computer. So with the BetterLight your images are close to perfect when they appear, and they appear in TIF, not a challenging RAW format.

Much of this is possible with the Leaf software as well except we prefer to shoot untethered. But even with no computer and no cables, some of the software potential can be activated via the optional portability pack (the Compaq iPAQ PDA and 5 GB hard drive). Indeed setting gray balance with this medium format digital back is so much easier and more intelligent than the convoluted way that Nikon attempts white balance there is almost no comparison.

Downside is that although it is easy to set, it is more a challenge to have the values affect the resulting image.

Our medium format initiative is a long range program. However our plan includes some initial priorities. These will transpire as the wherewithal is available to budget for writers and editors.

**Priority 1:**

Explain, succinctly, why medium format has advantage over 35mm.

Document the cost savings if you already have medium format cameras and lenses.

In portrait photography, extra resolution is a tough sell but that is our challenge: to demonstrate why 16, 17 and 22 megapixels is useful.

Explain with examples, the pros and cons of medium format compared with tri-linear large format. Actually one is not better, and the other is not worse (they are simply different). Indeed both formats offer distinct advantages. We recommend that a successful commercial studio would do well with one of each.

**Priority 2:**

Advantages of medium format for producing large format inkjet prints.

Advantages of medium format for producing LightJet, Durst, and Chromira prints.



### **Priority 3:**

Comparison of 11 Megapixel digital back with 11 Megapixel Canon EOS 1Ds. Since both are the same megapixel count, they beg a direct comparison.

### **One outcome will be**

Realistic counterbalance to potentially misleading ads, such as when ads for a 35mm camera claims their camera is as good if not better than medium format. The way to document superiority of medium format is to show side by side comparisons.

### **Supplementary Report:**

Comparison of 6 Megapixel digital back with Nikon D100 is a project we may tackle in the future. For example, you can use a digital back on a large format camera. A Schneider or Rodenstock lens will blow away any 35mm zoom lens.

### **FLAAR is supplying**

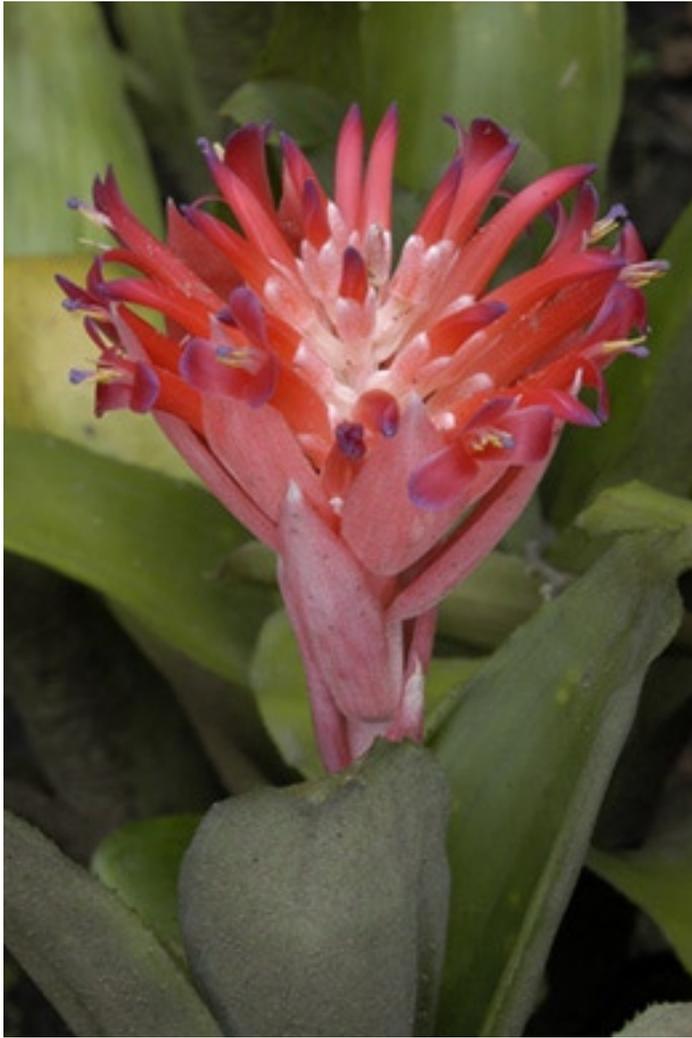
- A substantial amount of large format camera equipment
  - Linhof 4x5 Technikardan,
  - two Cambo Ultimas (one is the repro stand version),
  - full range of Schneider and Rodenstock lenses,
  - BetterLight Super 6K tri-linear back.
- Cruse, a \$75,000 digital camera-repro scanner system.
- Nikon 100D with several lenses.
- Nikon CoolPix for comparison with point and shoot (we have several).
- Sony F828 for comparison with an 8-megapixel camera.
- Hasselblad bellows, macro, 300mm and 50mm Zeiss lenses.
- Five Gitzo tripods and a Manfrotto tripod, along with seven tripod heads. We thank Bogen Imaging for about 75% of these essentially items.
- Lighting of diverse kinds
  - Elinchrome strobes, provided already by Bogen Imaging.
  - Lowel tungsten, provided already by Lowel.
  - Balcar fluorescent, provided already by Balcar in France.
- We will be applying for grants to cover the costs of shooting out on location.

Although we already have two Hasselblad ELX bodies, to showcase a 22 megapixel medium format back it would help to have a:

- Medium format Hasselblad H1 camera with viewer.
- Wide angle, macro, and telephoto lenses for the H1.

The first evaluation is of the Mamiya 645 AFD, with three Mamiya lenses: 35mm wide angle, 120mm macro, 80 mm normal lens. We thank Leaf America for the Mamiya system and a complete Leaf Valeo 22 wireless system. The results are awesome, and are available at no cost by auto-downloads from [www.digital-photography.org](http://www.digital-photography.org) and from [www.wide-format-printers.NET](http://www.wide-format-printers.NET).







## Acknowledgements

For six months (from July 2004 through January 2005) we evaluated a Leaf Valeo 22 on a Mamiya 645 AF camera, provided courtesy of Leaf (Israel), Leaf America (Mamiya America), and Parrot Digigraphic ([www.ParrotColor.com](http://www.ParrotColor.com)). We surprised everyone by issuing an unprecedented quantity of reports on the results of these six months labor.

Then, at PMA in late February, we saw several breakthrough concepts in medium format digital cameras. Several of these vie with the new Leaf Aptus for portability. One of the new cameras, the MegaVision E-Series, offers an unprecedented workflow, an innovative technology, and what may represent the future of professional digital photography at the high end.

Phase One has also improved their portability dramatically, as has Imacon (Hasselblad). Although Sinar is still dedicated to studio photography, their portability is improving since their portability packs of Photokina 2002.

All the new more portable medium format solutions, especially the MegaVision E-series, will usher in growth in the medium format sector.

But Canon is now aiming their mega-billion dollar corporate muscle to convince every owner of a Hasselblad, Contax, Rollei, or Bronica that they should purchase a Canon EOS 1Ds Mark II.

Yes, I too would prefer a Canon EOS 1Ds Mark II over the Nikon D100 that I have.

But, would or could any CMOS sensor, irrespective of which size, come close to the quality of a 22-megapixel CCD? Not really. Seriously, a 22 megapixel 4-shot Sinar and 4-shot Hasselblad (Imacon) can beat any 35mm SLR, especially if you put the Sinar or Hasselblad in 16-shot mode. But even a 1-shot Leaf, MegaVision or Phase One can produce a better image than any 35mm SLR, especially one with a CMOS chip.

FLAAR is one of the few independent professional photography institutes that is genuinely dedicated to documenting the advantages of medium format digital photography. We have a long history of using medium format film (since 1965, using a twin-lens Rollei, while working on a University of Pennsylvania dig in the remote jungles of Guatemala). I still have several Hasselblads and consider the Rollei and Contax admirable competition (though the Hasselblad+Imacon partnership will be impossible for any other brand to beat without either a major technological breakthrough or serious outside assistance with massive PR).

But as of January we no longer have nor use a Leaf Valeo 22, so we will now select another medium format system to concentrate on. FLAAR reviews are based on a crucial component. What does a picky professional photographer (me) use himself? Especially if this photographer is accustomed to large format Linhof 8x10 and 4x5 chromes?

Long ago I started with Leica, and quickly found that Hasselblad 120 and 220 film produced substantially better results. Then I found that 4x5 was better than medium format (no matter what the ads claimed). I then began to shoot 8x10: this blew away all other sizes of film.

I had a comparable progression with digital: I started with 35mm digital SLR, a \$28,000 Kodak DCS 420 at Japan's National Museum of Ethnology, in Osaka (1997). Then I moved to BetterLight, large format. FLAAR also has an 80-megapixel Cruse digital camera. We use the 48-megapixel BetterLight in remote locations as well as in the studio: it produces admirable results. Their new portability pack today is a great improvement over earlier models. And if you see what MegaVision has designed for their own E-system, perhaps in the near future we will have a BetterLight with portability pack that is cable-less: an untethered large format digital dream camera. But even tethered, the BetterLight is the best for panoramic murals and is the best digital solution for museums and archaeologists for circumferential rollouts.

But for portraits, fashion, and for rapid portability, we find medium format to be a good companion for a large format system. It is not one, or the other. A pro studio should have both.

So back to the crux of our FLAAR review system: what medium format camera will we feature during 2005? Please stay tuned. PMA was an eye-opener. If we still had the Leaf Valeo we would have tended automatically to progress to the Leaf Aptus. But now that we momentarily lack a medium format back, we can re-assess the entire field and select the best medium format solution (which for us means best simultaneously in a studio and out on location).

We recommend you check out the contact page for MegaVision, [www.mega-vision.com/contact.htm](http://www.mega-vision.com/contact.htm). Their new camera is not yet pictured on their website, but we saw it at PMA. We have not given up on the Leaf Aptus (Leaf is an excellent high-tech company with vast experience and capable engineers). But Leaf is now owned by Kodak and we are unsure what changes that will bring since Kodak has already shut down their pro digital camera efforts (their medium format proBack Plus and medium format ProBack 645 were the first casualties).

Either way, based on what we saw at PMA 2005, we look forward to updating every one of our medium format reports that we have issued over the last 9 months. Medium format digital is our primary interest (in addition to tri-linear scan back systems), so we will be dedicating considerable moxie, entrepreneurship, and energy to explaining which medium format back we consider as the ideal one for each application.

We feel that medium format digital cameras should be used for more than just portraits, weddings, and fashion photography. If medium format cameras could break out of that traditional rut and bring the advantages of medium format to the attention of other applications, they would not suffer from such low sales. Thus our goal is to showcase medium format

- for architectural photography (including architectural history)
- for photography of art, art history, and archaeology
- for botanical recording
- for zoologists to record specimens
- for recording for biology and ecology
- for fine art photography for printing giclee
- for landscape photography (you can do panos with a Seitz head)

And naturally for

- portraits
- fashion

If you have any comments or suggestions, our fax # is 419 372 8283

**Update, April 2005**