

## ***DRUPA Trade Show Large Format Printers***



ColorGate RIP printing one Nicholas Hellmuth's picture of Tikal at Drupa Trade Show, Dusseldorf, Germany.

Major international trade shows such as DRUPA are favored places to unveil new printers to the public. Thus we spent nine days at this trade show in Duesseldorf taking photographs, notes, and speaking with printer technicians.

**Seiko** Instruments exhibited a new printer with Xaar print heads. The test print they were showing was badly out of focus. Whether this was due to it being a stock photo I have no way of knowing. But if you want to reveal the potential of your printer, better make the effort to select a really nice picture. For this reason F.L.A.A.R. does not use stock photos or clip art in its tests.

The other problem with the Seiko Instruments wide format printer at DRUPA was the cheap paper. It appeared to be totally without gloss, possibly a coated ordinary paper. Again, possibly because no other paper was ready for the new printheads, or possibly because no ICC profiles were ready. Again, not a very clever idea to reveal all the weak points of your new printer.

The pleasant man at the booth indicated the quality mode was "high quality mode," though I am not sure it was 720 at 8-pass printing or 1440 x 720. Actually most Xaar heads can't really print over 360 dpi. Whichever it was, the "quality" was not impressive. It was not bad, or awful, but I saw output at the Encad booth that was much nicer looking and virtually every booth that had an Hewlett-Packard had even nicer output than any Encad. If I remember correctly this printer uses oil-based inks. That, and the Xaar heads, may explain the low dpi.

I checked a nice brochure put out by Xaar itself. Xaar makes an impressive range of popular products, but most are in the low-end consumer arena. Their high-end products are actually low dpi printheads for billboard printers which don't need to be photo realistic at all. 75 to 150 dpi is fine for a billboard. Xaar printheads are 200 or 360 dpi, so this may explain why the Seiko print samples were not as good as an Encad or Hewlett-Packard DesignJet.

Since Seiko Instruments is a capable company with plenty of money, perhaps they will improve the printer before it is put up for sale to the public. Obviously by then hopefully the RIP will be able to handle the media, and hopefully the media will be able to handle the image.

It is so unproductive that these companies attempt to develop their own RIPs, which seldom are very impressive, when there are already outstanding RIPs readily available. Surely a company as large as Seiko could afford to license BEST for its color capabilities and PosterJet for its speed and photo-realistic capabilities. To save having to pay licensing fees they attempt to develop their own RIP or license a lesser RIP. The results show that it would have been better to license a really good RIP.

Unfortunately the samples shown at DRUPA were not only disappointing, the quality was only average. This is a polite way of saying that it was about as good as last year's Encad. Or, more succinctly, the Hewlett-Packard DesignJets produce better quality than even the new generation Seiko Instruments printer.

Part of the problem was that the Seiko Instruments IP-4500 and IP-4010 were clearly unfinished prototypes. At least the company was honest and labeled the machines as prototypes on the product brochure.

**Epson** made the same mistake, showing off an unfinished product (their 7500 and 9500 printers). Although rather quickly people realized they were unfinished prototypes, I am not sure that Epson labeled them as such.

Much to my utter disappointment, the first image I saw was sad. Cyan and yellow was weak and washed out, in my opinion close to unusable. Reds looked okay yet testers reported they were still waiting for Epson's chemistry labs to replace the magenta inks as well. Evidently the RIP engineers were unable to get ICC color management profiles to work on the new



EPSON 7500  
with BEST RIP

inks or the new paper. I did, however, find two RIPs which could handle the new inks, BEST color management RIP and ColorGate. Of these two, the BEST was the most appealing. The third RIP partner of Epson was a failure, though surely they will figure out the chemistry shortly. Virtually all pigmented inks have less range of color than dye-based inks so the basic problem won't go away soon.

I did notice that the new Epson inks were particularly weak on rendering human hair. Hair turns into a solid mass of indistinguishable darkness—kind of rough if any of your photography or fine art includes anyone with hair! Thus I found the advertising of "high chroma" somewhat unrealistic. Of course a plus of any Epson system is that it can take thick artist's media; the downside is the limited kinds of other media. They don't list any cloth, for example, but perhaps the list was not complete.

When a prototype is shown usually the RIPs are often not yet ready. This means no ICC profiles. The results are awful color, especially in the case of some RIPs from less capable companies. The primary RIP at DRUPA, which got good color from the new Epson 7500 and Epson 9500, was BEST color management RIP. ColorGate got good color as well though I did not see as many samples as from BEST. We are inspecting the updated Epson printers at Seybold San Francisco Aug 29-31 and will issue our reports on the expected improvements.



Konica 8-color printer  
1050 and 1055cm.

**Konica** presented a new 8-color printer. Many people hoped these 8 colors could be employed to compete with the ColorSpan and produce fine art prints with more speed and a printer that is not plagued with occasional mechanical problems. But Konica is interested in the market for proofers so the printer was set in that niche. The quality looked nice but not as good as the ColorSpan. I also find the quality of a print from an Epson 9000 at 1440 dpi hard to beat. The difference is that the Konica is faster. So if you need to do proofs, perhaps the Konica is a potential future choice. The printer, however, is not ready for delivery. Besides, you can already get a reliable proofer that is relatively fast, namely the HP DesignJet

**Canon** has been presenting their version of the old Selex printer. I believe the Selex is under the hood of one of their new models. I was told that the print engine is only 300 or 360 dpi which possibly is why this printer may be prone to banding if set at a higher dpi. The capable people at PosterJet, however, said you can minimize the banding if you add more RAM and of course if you use PosterJet RIP. BEST is also becoming available to use on the Canon as a proofer so this is perhaps a printer to watch. However the Canon large format printers have failed to impress me so far. However Canon evidently has a newer printer in the works offering photo-realistic quality, supposedly 1200 dpi. As soon as we get more advance information we will be glad to reveal them.

There was also a prototype of a larger Canon printer but it did not look out of the ordinary. Just a basic printer. This was largely because it was not really ready for show time. At later trade shows this printer really blossomed (Seybold and later).

The **Fuji Hunt** printer was only 320 dpi and its dot pattern was even grainier than that of an Encad at 300 dpi. The Fuji colors looked nice but nowadays so many printers offer a clean photo-realistic look there is no longer much excuse for the old fashioned grainy backgrounds in areas of solid colors. The HP 2xxx and 3xxx series are especially good at rendering beautiful backgrounds with no banding. The Fuji-Hunt printer is the leftover from the earlier Brady printer. This is outdated technology. It makes no sense to buy an obsolete printer.





Conclusion: of the several new printers presented at DRUPA: Canon, Epson 7500/Epson 9500, Konica, and Seiko Instruments, none were finished and ready for actual use. None were any better quality than current printers although in theory the new Epson may get better. The Konica looked a better quality than the Seiko. However if you already are using Encad or Hewlett-Packard, there is certainly no need to change to any of the new printers. If you currently have no printer at all and are shopping for one, there is hardly any need to wait until these "new" printers are finished, since none of them look any better than what the ColorSpan produces at the high end or what the Hewlett-Packard produces at the mid-level. For example the museum-like display of framed fine art giclee prints in the Hahnemuehle fine art paper booth were printed by a Hewlett-Packard DesignJet 2000 or 2500, not by an Iris, a ColorSpan, or even a Roland.

Pros: The new Seiko Instruments and Konica printers, however, do offer speed. If they can improve their print quality they will offer modest competition for other established printers. Speed claims, however, are not always matched in actual use, and the faster the speed the poorer the quality. "Standard mode" is 4-pass printing and probably passable, but "draft mode" is a test print since there is essentially little quality at all at 2-passes. The problem with using "draft mode" is that the image is so bad you can't judge what it would like at full quality. The only utility of a draft is that you can check orientation of the design, spelling, and how the fonts look with the design.



FLAAR image with  
Dicojet on Mimaki

This new Seiko printer uses pigmented inks. The color gamut looked superior to that of the Epson 7500 and 9500. So for outdoor signs this printer may turn out to be a serious contender. If Seiko Instruments can conjure up pigmented inks that look okay, why can't Epson do the same?

The new alternative option on the fine art print horizon is the **DicoJet/Mimaki** combination. At the recent trade show when we fed the DicoJet (ink) Mimaki printer one of my fine art the resulting color gamut was great.

Downside is always the slow speed of anything with an Epson piezo printhead. Of course if you are printing one or two images a day, the slow speed required for high photo-realistic quality is no problem. Thus I feel the Mimaki has considerable potential for all kinds of uses; the same quality of an Epson 9000 yet archival inks better than the Epson 9500. DicoJet is a German ink company. Their main interest is inks for proofing with the Mimaki printer, especially proofing of packaging, including printing on cardboard boxes.

Here in the USA the Mimaki with DicoJet ink has proven itself as a viable fine art printer at Digital Imaging Associates and other locations.

Apparently one of the lead photographers for Sotheby's auction house was using a Mimaki, but people are having trouble ascertaining which is the authentic original and which is his digital copy with DicoJet inks on a Mimaki printer. That kind of fine art quality makes me want one of these printers and ink sets right away. Yet I just got an e-mail from him and he indicated he found the DicoJet gamut too limited and is switching to another ink.



### Large format with thermal printhead technology

At the DRUPA printer trade show I went to the exhibit of fine art prints to see what printer the experienced exhibitor had selected. They had paintings and photographs printed on European art paper with an inkjet printer. The paper people said that one of the artists came to visit their display. The artist saw her own painting in the show and asked where the inkjet copies were.

The art-paper people had to explain to her that the image on the wall was an inkjet copy, not the original. What printer achieved this?

That German fine art company is Hahnemuehle, who made the exclusive fine art papers for Epson, Hewlett-Packard, Roland, and other expensive printers. This German company obviously has enough money and experience to buy any printer they desire. Yet they selected the same identical printer as I use myself (I print photographs as fine art prints). If the quality they achieve and the quality I achieve is what you are looking for, then this is a printer for you to seriously consider. The fine art prints in this exhibit were so good that the printer deserves a shared best of show award perhaps translated as "best mid-range printer for fine art quality, reliability, and speed."

To see additional output from this same printer look at [www.gross-format-drucker.de](http://www.gross-format-drucker.de) then look at [www.large-format-printer.de](http://www.large-format-printer.de) (the exotic women are on canvas)

That is the same printer I do my fine art prints with, an HP DesignJet. I use dye-based inks for indoors but this printer has other archival (UV) inks that are rated for lasting more than a century under museum conditions. Fortunately nowadays these alternatives to Iris are available to do fine art prints. If you need information on Hahnemuehle papers this paper is easy to obtain in the USA as well as in Germany. Telephone in USA is Dia-Nielsen, 856 642-9700.

HP 2500/3500 has an on-board internal RIP, rather slow yet sure. As a result I recommend the HP model 2000 for 36" output (with Version 6 of PosterJet RIP). PosterJet is a very good production software; Kodak and Canon bundle it with their printers, for example. PosterJet offers the most options and also improved quality especially for HP DesignJet printers. PosterJet is also the easiest of all the RIPs to learn how to use. Onyx PosterShop or the Ilford version, RIPStar, are good for production. If you need to do proofing or other color matching, BEST color management RIP is ideal. Contact Richard Dannenberg, [rd@bestcolor.com](mailto:rd@bestcolor.com)

Sorry I don't know the prices of each model; I do not sell printers. It may be a better investment to get a good sturdy printer such as HP rather than some cheaper model that may break down. If you need to do signs or posters, for example, the HP is faster and has good UV pigmented inks to hold up in the sun.

With the 36" series (HP 2xxx) or 54" series (HP 3xxx) you can print multiple copies of each image

across the width of the page and then easily cut them to size. Your PosterJet RIP will nest the images together automatically. If you want to experiment with large format printing by starting off with a really easy printer that is relatively fast, consider the HP 1050 with PosterJet RIP for added speed and quality. Downside is banding defects at the faster speeds. Only dye based inks for indoor are available. Nonetheless I have ordered the 1055 version of this printer and will begin



HP 1055 CM

using it for photo-realistic museum prints next month (I am photographer for several museums in Guatemala, Central America). At DRUPA the PosterJet RIP was showing better images from the HP DesignJet 1055CM than I saw from the most of the newest printers presented at DRUPA.

The feedback we get documents that you are more likely to get better quality in your own home or office after the printer is installed than you will ever achieve in a demo or test print. This is easy because you can learn which modes trigger the photo-realistic quality. Since HP is the printer we have used the most we can more easily provide some tips on how to achieve the same quality with your HP DesignJet that we get with our HP DesignJet (presuming you get the proper RIP, which is the brains of any printer). The 2000, 2500, and 2800 all produce the same quality if linked to the appropriate RIP software.

We also saw what PosterJet RIP software could achieve on the HP DesignJet 1050 and 1055. Although made to do CAD, GIS, 3-D computer generated images, the 1050 and 1055 can

also produce near-photographic quality when coupled with a good RIP (PosterJet, BEST, Onyx PosterShop, etc). Indeed we ordered this printer for our architecture department after seeing what it could accomplish. Be sure to get the aftermarket RIP, as that is what eliminates most of the banding (it's a fast printer and you need the RIP to achieve maximum photo quality). These were the HP DesignJet models shown at DRUPA in May. In September, at Seybold, additional HP large format printers were introduced. These are discussed in the FLAAR report on printers at Seybold trade show.

When all is said and done you should buy the printer that is best for your specific needs. All printers do some jobs better than others, though some more than others. Listing the quirks is to help you make your selection on the basis of actual use of these machines in a work environment. You may prefer to select one printer even if it has a few imperfect features. You don't need to avoid any printer just because it failed to impress us. What is important is that you are satisfied with the speed of the output, that the quality is attractive, and we would presume you want a printer that you can run yourself with ease. We especially liked the RIP that took our 300+ MB file, started to RIP it immediate and the HP printer started printing 7 seconds later! When people then tried to steal these museum quality exhibit prints, we figured that this was the printer to continue using in the F.L.A.A.R. Photo Archive.

Once you actually have your new printer in-house, you may gradually wish for additional information about what paper to feed your new machine, about what inks are best for various purposes, and about laminating equipment. Thus we are working out a program to follow up with news tips from the pertinent companies to send you later this year. Since I am a photographer and art historian myself I too am always looking for new products to produce fine art limited edition prints. But since I don't have a room full of secretaries to handle all the follow-up correspondence, usually it's easier to ask the hardware or software company if they can help out and forward you the information themselves.

### **Drum Scanners**

In the last several years the prices of drum scanners have become more reasonable. The new drum scanner software is easier to use. You don't need advanced training to operate one.

We receive back mixed reports on the Howtek scanner and are not yet convinced it is acceptable in comparison to better drum scanners. Imacon attempts to market their scanner as a drum scanner but obviously it's not. The Imacon is simply an upright CCD flatbed.

The drum scanner we prefer is the ICG. Their office in the USA is ICG USA Inc., 2549 RICHMOND ROAD, SUITE 200, LEXINGTON, KY 40509. TEL: 1 (606) 268-9902 and FAX: 1 (606) 335 9944

### **Various**

We hope you enjoyed our comments and the realization that options are available, options that were not perhaps clear in the PR releases or public advertising of some of the companies.

Between May 2000 (the time of the DRUPA trade show) and now (Feb.2001) substantial improvements have been made in certain printers that were uninspiring at DRUPA. We have fresh reports on all the improvements plus reviews of other large format printers shown at the following recent trade shows. The FLAAR senior editor attended each trade show (which is why we may be late in responding to your e-mail).

Seybold trade show, San Francisco (first appearance of the new HP DesignJet 5000ps, 1200 dpi, six colors compared with countless other large format inkjet printers)

Photokina trade show in Cologne, Germany (all kinds of information), Roland 8 colors, Encad 8 color printers and much more.

And the FLAAR reports on large format printers studied at Big Picture seminars and trade show in California, and then SGIA (sign trade show) combined with PhotoEast trade show in November.

But unless you let us know what you need to print (size, indoor/outdoor, posters or fine art, bus wrap, textiles, plus, what size of printer you need) then we don't know what reports to send you. If you are a beginner, then we have special reports. If you are a seasoned pro who already has a large format printer, then we have other reports, and so on.

Due to popular requests we have an updated separate report on the HP 5000ps, including an upcoming new report on the UV pigmented inks for the HP 5000ps. Includes reports from people who have recently purchased the HP 5000ps as well as results from our own tests of these DesignJet printers with our own FLAAR images at several trade shows. The HP 5000 series was not yet available to the public in May, the date of the DRUPA trade show.

If you are ready for a sophisticated inkjet printer that produces top quality, you can ask for the new FLAAR report on the ColorSpan DisplayMaker XII and ColorSpan Esprit. This review is based on inspections of printers at more than seven trade shows in Germany and the USA plus three days of training at ColorSpan outside Minneapolis. These reports also include feedback from actual ColorSpan owners and operators in sign shops and fine art giclee studios whom we have interviewed.

FLAAR Digital Imaging Technology Center  
 Reports are distributed by the Francisco Marroquin University

<a href="http://www.wide-format-printers.org">www.wide-format-printers.org</a>	<a href="http://www.fineartgicleeprinters.org">www.fineartgicleeprinters.org</a>	<b>CLICK HERE TO VIEW EACH FLAAR NETWORK SITE</b>
<a href="http://www.digital-photography.org">www.digital-photography.org</a>	<a href="http://www.flatbed-scanner-review.org">www.flatbed-scanner-review.org</a>	
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<a href="http://www.FLAAR.org">www.FLAAR.org</a>	<a href="http://www.ctpid.ufm.edu.gt">www.ctpid.ufm.edu.gt</a>	<a href="http://www.wide-format-printers.NET">www.wide-format-printers.NET</a>

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## FLAAR REPORTS ON LARGE FORMAT PRINTERS

### Comparative Reports

*Signs, Posters, Banners: POP and other indoor signs: Which Printers are Best.* A comparative review of Encad, HP, Roland, ColorSpan, Epson and others.

*Large format printers which do the best job of photo-realistic, museum-quality prints.*

*Survey and Comparative Review of various Printers for CAD, GIS, and computer generated drawings.*

*Large format printers for professional fine art giclee printing, for artists, studios, both home, hobby, and commercial. This report covers only 36" and wider.*

*The FLAAR Report on 24" printers for fine art giclee and photo-realistic quality.* If you want only a desktop sized printer, **sorry, we do not cover desktop printers.**

*Scanners: what flatbed scanners and large format digital cameras are best for digitizing your paintings or artwork so you can print them.*

*Scanners for Prepress and comparable professional scanning.*

*Wide Format Sheet Fed Scanners for Drawings and Maps.*

*Proofers: inkjet printers for proofing.*

*Which Large Format Inkjet Printers can Print Directly onto Textiles?*

*Dye sublimation, which Large Format Printers can accept dye sublimation inks for subsequent heat transfer.*

*Used Large Format Printers: pros and cons of buying a used wide format printer.*

*RIP, basic report on RIPs: this version is for people who already have their printer, or already have one printer and are getting ready to buy another printer.*

*RIP+Help: this version is longer and is for newcomers who may have no idea what a RIP is, or does, or why they need one. Covers a variety of other topics that are useful for a beginner to know about.*

*Solvent Ink Printers for outdoor signs without lamination or for vehicle wrap.*

### Specific Reports

"Next Level Reports" are reports you should only read after you have already received and read the First Level Reports. Thus, if you want information on the ColorSpan, then you should first ask for the report on signs-posters, or photo-realistic printers, or fine-art giclee printers (don't ask for all three since you only need one of them. We send only the one that is appropriate based on your description of what you intend to print, your level of experience, and whether it is for home use, studio, office, or commercial).

*Colorspan printer report: DisplayMaker XII and Esprit.* If you want to do photo-realistic prints and/or fine art giclee prints, then you first need "Photo-Realistic Printers" or "Fine Art Giclee Printers". After reading those, if you are interested in the ColorSpan, you can ask for this "next level report."

*HP 5000 and HP 5000ps* (prior to asking for this, you need to read either signs-posters, photo-realistic, or fine art giclee printers). We do not send out Next Level Reports until you have digested the First Level Reports.

*Wide format Media* (media=coated material which accepts inkjet inks)

*Media and Inks: brief, yet comprehensive list of general classes of media for large format inkjet printers for signs, posters, banners, photos, fine art giclee, and CAD-GIS.*

*Media for banners, signs and posters* with some suggested sources of media and inks.

*Media specifically for fine art giclee and photo-realistic museum-quality printing* with some sources for inks as well as the media.

*Media, all 40+ kinds of varied media that are certified to use with HP printers:* the HP Complimentary Media List.

*Backlit film:* problems some printers have producing backlit, work-around, and suggestions for other printer which don't have the problems to begin with.

### Actual-factual, End-User Reports

*Arizona* (a brand of printer in the \$40,000+ range): a report kindly sent by an energetic end user.

*Iris Gprint:* a penetrating report kindly sent by an experienced user. This printer costs about \$58,000, so please don't ask for this report unless you are ready for a serious printer.

*Roland Hi-Fi:* pro's and con's for signs or fine art. Be sure you also ask for one of the Comparative Reports

#### One page fast facts

*Laminating Equipment,* a brief list.

*Lenticular prints:* large format printers, software, and lenses. What and where to buy.

*ColorSpan's Training Program:* a FLAAR Report based on taking this 2 to 3 day training program at ColorSpan headquarters.

*Painting on top of an already printed inkjet surface.*

*Thick material: what printers can print on rigid and/or thick material.*

*Wallpaper:* large format printers for doing custom wallpaper.

*Using an Inkjet Printer to prepare Masters for Screen Printing.*

*Canadian reports:* If you are located in Canada we have a special report for you.

*India:* if you are located in India we have a special report for you.

#### INFORMATIVE LISTS:

FLAAR List of All Known Large Format Printer Manufacturers, Makes and Models.

Comprehensive Inventory of Rips: *Alphabetical list of all hardware PostScript RIP plus all software PostScript RIP.*

*All the kinds of Profitable Things you can Print with a Large Format InkJet.*

*Trade Shows Reports.*