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

Photokina Part II
Wide Format Printers exhibited at Photokina 2002

Also inks, media, and RIPs for Wide Format Printers

Nicholas Hellmuth inspecting a wide format printer

UFM

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Introduction

Photokina is held every two years in Cologne, Germany. This is an immensely popular show with the German public so is crowded with people of all ages and backgrounds.

Since HP and Roland had just introduced their new printers at Seybold tradeshow a few weeks earlier, there were not really any totally new introductions. But several solvent ink printers did appear in the German tradeshow that would be expected for a European venue; models or brand names not sold in the USA.

Cameras are covered in a separate report on Photokina.

Agfa

Agfa owns even fewer patents in wide format than Fuji. At least Fuji had the Brady printer before it became obsolete technology about 1998. Agfa sold ColorSpan printers for a few years and has sold rebranded Mutoh printers since then. The GrandSherpa is simply a Mutoh printer with an Agfa name-plate. You get PosterShop RIP from Oce-Onyx.

The Agfa Mutoh printer was still not quite finished at Photokina. It still had a few issues to be resolved. For example, the printer could not then (and still not at SGIA) take eight inks. It has space for eight but operates only with a single set of six.

Hence Roland and Mimaki offer faster speed with dual six-ink systems. The output from the Agfa version of Mutoh looked attractive but as an overall system clearly it was still a work in progress. Much of the delay appears to be in the software.

The Sherpa 24 is just an Epson 7500 sold by Agfa as a proofer.

ColorSpan

ColorSpan is an international company and the people in the booth covered much of the globe. The Mach 12 is the printer featured at Photokina. We have the Mach 12 at our university and like it very much. This is the only printer in the world which you can outfit with a quad-black inset simultaneously with seven colors to get an 11-color inkset.

The ColorSpan X12 did not appear until two months later at SGIA.

Encad

Encad exhibited in the cavernous Kodak booth. Lots of empty space and not many products. But at least Kodak had a major presence as opposed to Polaroid, which was barely at Photokina.

The Kodak 5260 was featured in an entire area by itself. It seemed to print okay, though it was not running continuously. Problem was the image itself was so badly pixellated there was no way to tell whether the printer could do good quality or not.

The handouts blared out, ”speed without compromise.” Rather falsely prophetic, since two months later this printer line collapsed totally and was removed immediately after SGIA tradeshow in late October. Kodak did not even set the printer up at SGIA; it was totally withdrawn from the Encad web site as well, expunged so thoroughly that not even a search in their archive pulled up any of their former hype on the speed and quality which the printer achieved, just never simultaneously. It got great quality at the slowest speed; or great speed at unusable quality due to perpetual banding.

People now spoke more freely of the defects of the printer mechanism, since clearly something was wrong: the printer had not been shippable or sellable for over a year: “new firmware, new paper path, lots new. 600 dpi 25 sq meters per hour. Dynamic contone is not photo quality.” So even admissions that the fast speed did cause compromise. They who approved the ads that claimed “speed without compromise?”

The printer may have had other defects as well and reportedly only one media worked with its highest speed. Yet someone in the company gave the okay to print a brochure which claimed “wide range of pre-tested Kodak media including Instant Dry Photographic media for immediate lamination.”

Encad printers are good basic workhorses, but the brochure neglects to provide full disclosure. For example, the NovaJet 736 has an “easy to use RIP solution…” but nowhere does the brochure give fair indication to the buyer whether this is an actual full-featured RIP, or only a lite RIP. Roland recently abandoned a comparable lite RIP from the same company (virtually no printer manufacturer makes all their own RIPs; they license them from RIP wholesalers, so to speak, in this case Scanvec-Amiable).

It’s amazing that in the year 2002 Encad is still selling the venerable 300 dpi Encad NovaJet 500. For signs viewed from a distance, this printer is okay as long as your competition does not have a printer of better quality, faster output, and less maintenance.

Epson

The output from a new Epson 7600 printer in the Rauch booth was of exceptional appearance, in part because of the careful selection of the motifs.

Epson itself had a popular booth to show their 7600, 9600, and 10600. I did not check to see if the Stylus Pro 5500 was still being offered. Rumor was that European dealers did not like selling it because so many photographers returned it due to poor color gamut. The 7600, 9600, and 10600, in distinction, should have an attractive palette of colors suitable for artists and photographers alike.

We cover the pros and cons of Epson piezo printheads in the FLAAR Report-SERIES on Survival.

Hewlett-Packard

HP had a large booth, showed all their regular printers as well as the newer HP DesignJet 5500. The output was a tad more colorful than at HP booths in America since HP-Europe encourages RIP venders to show their RIPs inside the HP booth. RIP vendors don't use dull logos; RIP vendors showcase stunning photographs.

Ilford

Ilford had a giant booth; looked very successful. Yet at SGIA they were not present (though listed in the DPI section; if there I did not find them, but I stayed mainly in the SGIA areas). Ilford had only a tiny booth at PhotoPlus.

But in Europe Ilford seems to be doing quite well.

Ilford itself manufactures no printer whatsoever. They relabel Encads. They sell Epson, HP and other printers without rebranding them. Ilford used to sell Vutek but no longer does.

Ilford's strength is its inkjet media.

Ilford's inks are excellent too. I am guessing that they make some of their own ink, such as the Archiva brand. It is presumed this is the source of Encad's long-life dye ink. Encad's pigmented ink used to come from DuPont but now comes from Kodak itself.

Oce

Oce had a large and popular-looking booth. My notes are as following: "Arizona 500, nice quality.

Arizona 90, banding, especially on solid black, however other portions of the picture looked nice.

Arizona T220, very crisp reproduction of text. Yet this solvent-ink flatbed printer is not shipping. Almost all other companies have turned their solvent ink flatbeds into UV curable ink technology. Only Oce and a few others have stayed with solvent ink.

Roland

Roland Hi-Fi Pro II, nice output, no banding. Small blowups very little graininess: very nice. Same picture at larger size was ugly with graininess, possibly film grain from scanning more than dottiness from inkjet grain. This grainy pattern was visible in white and grey areas but the image was otherwise very nice.

Other printers

I missed the booth of Seiko Infotech but saw them at SGIA, so comments are in that report.

Overall nothing really new or exciting at Photokina in the way of printers. All the new models had already been unveiled at Seybold. All the UV cured ink flatbeds were shown at SGIA. Only Zund (in the Sihl booth) and Durst showed at Photokina, though perhaps Vutek had something in their booth at Photokina too. I did not have time to stop there.

The information on the new printers is available in any of the new FLAAR Report-Series, as well as in the reports on SGIA or Seybold tradeshows.

Inkjet Media (Paper, Canvas, Film, etc)

Agfa

Companies such as Kodak, Agfa, Ilford and Fuji were so used to earning billions from selling photographic film and paper for darkroom enlarging, that they were asleep when digital photography swept darkrooms into the dark ages.

So far only Ilford has been able to successfully make a profit from inkjet photo paper. Kodak bumbled for years. Agfa has no way to distinguish their paper from anyone else's. Konica is perhaps one company which is establishing a name for themselves. I frankly don't hear Fuji's name mentioned hardly at all.

The inkjet media business is owned by Rexam (Intelicoat), Sihl, Arkwright, and a host of smaller companies such as IJ Technologies.

Mitsubishi

Mitsubishi offers 2-sided media for postcards, greeting cards. Regular Mitsubishi photo-quality materials are sold in Europe and the USA.

Sihl had a large booth. Felix Schoeller Digital Imaging had a sizeable booth; seemed mainly filled with their own executives and sales reps. I don't know much about R. Rauch but they had the most eye-catching images.

Comments on inkjet textiles

FLAAR has prepared a white paper on the potential of growth in use of inkjet textiles. This report, however, indicates clearly the reasons this growth is stymied, namely lack of information, lack of education, and too much secrecy about the composition of inkjet media and inks. The result is that end users are not willing to buy into a system that has not provided enough help to first-time users.

Thus Nicholas Hellmuth is working with both universities where FLAAR has its facilities, and are finding key players in the inkjet textile world who will join in this program of improving education.

Printers Specifically for Textiles

I did not notice Stork exhibiting. Have not heard too much from them in the last two years, though evidently they still exist.

ColorWings now has an actual printer. Several years previously it was my impression that the printer was still under development. Their current model uses the Lexmark printheads that Encad used to use; the 300 dpi models. It is true that textiles don't require much dpi since the texture of the fabric causes extra dpi to be lost in the weave, so to speak. And no one is going to inspect a flag at close-up distance.

Interesting that they can get disperse dye ink through the Lexmark thermal printheads.

3 P Inkjet Media

3P is a leading European source for paper-backed textile media for Encad, HP, and other water-based ink printers. 3P is now also adding fabrics for printing with solvent ink machines.

This German company, and its energetic president Thomas Poetz, is well known and respected throughout Europe and the USA.

3P coats for reactive dye, so its silk is to be used with that ink, not with acid dye ink. Reactive dye can be used in most Mimaki, many Mutoh, some older Roland and older Encad NovaJet printers as well as the ColorSpan FabriJet.

Tura exhibited but with 14 halls it took several miles to walk back and forth, in addition to getting to the tradeshow area to begin with (the FLAAR office is in a suburb of Cologne). I will next see Tura at PMA in year 2003.

Color Management for Inkjet Printers

The same color measurement tools are used for any kind of color printing. So although this report discusses inkjet printers, it's essentially the same for continuous tone LED laser imagers, or offset printing.

Two giants stand out in color management tools (hardware for measuring colors in printing). These are GretagMacbeth and X-Rite.

Virtually all color management software in the USA, and much of Europe, is geared towards working with Gretag and X-Rite instruments.

This makes it difficult for other color management tool manufacturers to get into the market, because the software does not automatically recognize their instruments.

The FLAAR course on digital photography as input for wide format inkjet printing has a module which lists all the tools that we have found in Europe and America (we are not as familiar with Chinese, Korean, and Japanese instruments). Generally the non Gretag/non X-Rite tools are difficult to find in America or have what is most politely called an unsure upgrade path (meaning you never know if they will continue to be sold, much less if they will continue to be upgraded). Spectrostar products are in this nebulous class. They exhibited at IPEX but if they were at Photokina I did not notice them. I have not noticed them at hardly any American tradeshow either.

Barbieri Electronic is one of only a handful of color management companies whose products may survive, at least in Europe. I am not familiar with them in America. I do not see their brand name listed in compatibility lists, but they had a professional-looking booth at Photokina. I feel Barbieri deserves attention.

Barbieri makes Profile-Xpert color management software tools, and offers both a densitometer as well as a spectrophotometer.

Ink

Lyson was one of the largest displays of after-market inks. Lyson makes inks for fine art, photography, reactive and disperse inks for textiles, as well as solvent ink for grand format.

Solvent Ink Printers

Lyson, Tiara Systems

Lyson makes a “Pentachrome” solvent ink. Their Pentachrome ink features red and blue, to try to achieve corporate logo colors which printers such as Roland might have difficulty with. Evidently ColorGate RIP can handle these Pentachrome inks.

Roland

Roland's SolJet is not a true solvent ink printer. Thus media may be expensive. However output is handsome as long as banding does not occur.

Other solvent ink printers

There is an outbreak of 60 to 83 inch solvent printers. Most come from China or Korea. Some are retrofitted from Seiko or Roland.

Eastech IO 6200, oil-based color. Ugly banding with light thin-line edge.

We wish them well, but tough to recommend a company we don't know.

Will the company be in business 5 years from now to provide spare parts?

Will there be upgrades?

If no one recognizes the brand name, is there any resale value whatsoever?

There is absolutely no way to know whether these printers will hold up one year, one month, or 10 years. Even if based on a Roland chassis, there is no way to know if the adaptation is made with the same care as the original Roland parts.

Some of these models may be available only in Europe.

Astec

Astec SolvenTure II. Based on Roland chassis, probably Epson printheads of the Epson 9000 era. Hence dpi is 180 dpi, coaxed up to 1440 by multiple passes and/or software tricks.

Lizard

Lizard SP8-180, SP8-250. At least they are honest, 180 dpi. Brochure does not indicate whether this is a Chinese, Korean printer, or a redo of a Roland or Mutoh, or what.

Oce, Arizona 500

The Arizona 500 was king of the roost in year 2001. Now, 2002, competition is taking over its market. The prime advantages remaining for the Arizona 500 are

- It is a completely enclosed system, so minimal solvent fumes
- It is a tried and true system, from a known and trusted company (Oce).
- Manual refeeding for duplex printing on appropriate substrates.

Since FLAAR has an entire separate report on solvent ink printers, we are using all the data from Photokina and from SGIA to enhance and update the FLAAR Report on solvent ink printers. The solvent-ink report is part of the series on signs for printers.

Flatbed Printers: for thick and rigid material

FLAAR is updating and expanding its report on flatbed printers. So all information on flatbed printers from year 2002 tradeshows is in that report, which is part of the Sign-Series, the set of reports on wide format printers for signs.

This new FLAAR report on UV cured flatbed printers includes substantial data gathered at SGIA tradeshow, St Louis. Plus there is an installation of a Zund a few miles from the FLAAR facilities in Ohio, so we have first hand experience with that printer's pros and cons.

Most solvent ink flatbed printers have been turned into UV cured flatbed printers.

Continuous Tone LED Printers

The Durst Lambda is a top-of-the-line continuous tone printer which prints on roll-fed photographic paper.

The LightJet from CymbolicSciences (Gretag Imaging, now Oce) is very similar with stellar quality, but prints only on sheets, albeit wide format size.

Both require a developing machine (an automated darkroom) and a cutter. The prints from either is outstanding. Most industry experts rate the LightJet as the best quality; but the Lambda, because it uses roll-fed media, is more productive for a busy lab.

ZBE's Chromira uses a similar yet slightly different technology. Their printers thus cost less. The perceived quality is less also. A print from a Lambda or LightJet are considered the Rolls Royce and Bentley of wide format continuous tone printing. Chromira is a good Ford or Chevy. From 20 feet viewing distance you can't tell the difference.

Same with print from an Iris and an Epson 7600. At 20 feet, or even 10 feet viewing distance, both look beautiful. The Iris printer originally cost in the $80,000 range; an Epson costs under $3,000.

But perceived value? No comparison: an Iris is a desired collector's item.

Same with LightJet and Lambda: these are what professional commercial studios become known for. So if you want that quality, stick with LightJet or Lambda.

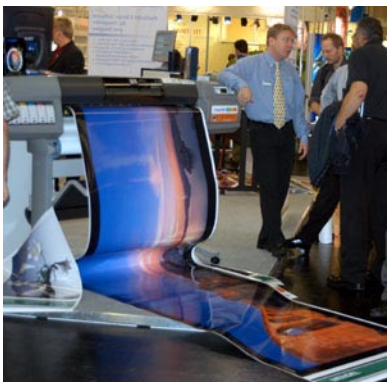
If you want to save money, get a Fuji Pictography (tabloid size), or get a Roland, Mutoh, or Mimaki. Epson is the same quality, just a lesser status brand name (sorry, we don't establish the ranking: Roland has a perceived ranking which is higher, even though the use identical printheads and a Mimaki JV4 is vastly more versatile).

On the subject of Epson and Roland: both have ads claiming continuous tone. That is not true for most images printed with an Epson or Roland. They look like spotty dotty sandy inkjet images no matter what. Depends greatly on the image, and origin of the image (digital or scanned; scanned images are grainy to begin with, from picking up the grain of the film).

Just take the output from a Fuji Pictrography 4500 and compare it with output from an Epson or Roland at the same size (max of tabloid size for the Pictrography). The Fuji is true continuous tone; the Epson or Roland are still obviously done with inkjet drops. Many Roland prints also still have the telltale grainy dotty pattern which tells you it is an inkjet print. I would not have observed this but their ads claim you can't see the inkjet dots on a Roland print. It is not a sure thing that a jury would agree.

RIP, Raster Image Processor software

A RIP is the software which is more sophisticated at running your printer than a mere printer driver.



Aurelon exhibited in the HP booth. Aurelon offers CoCo as plug-in for Photoshop, Aurelon DeskCheck RIP, and Aurelon Signalize! Graphic software for signmaking on large format printers.

BEST continues to be the most successful RIP in Europe; strong in America as well. BEST is for professional users who need sophisticated color management and are willing to take a course to learn it all.

ColorGate had a large and prosperous looking booth. ColorGate can also include color management modules, if you wish to upgrade to those options. What is especially useful is that ColorGate coordinates with EyeOne from Gretag.

PosterJet was headquartered in the Canon booth. PosterJet is fast, RIPs on the fly. PosterJet is easy to use, even for a newbie.

Few other RIPs exhibited other than Aurelon and some others in the HP booth.

BEST and ColorGate are both represented by their own offices in the USA. PosterJet is represented by Scarab Graphics.

FLAAR has a complete series of reports which provide details on what a RIP does.

We also annotate the various companies, suggesting which we recommend. Considering all the detail already in the FLAAR Report-SERIES on RIPs, there is no need to repeat things here, since RIPs are fully covered in this set of reports.

Other products exhibited at Photokina 2002: Staedtler inks, Mutoh and Mimaki printer.