

***ISA TRADE SHOW  
Las Vegas, Nevada (March 2001)  
Large Format Printers, Inks, Media and RIPs***



New Encad NovaJet 750 of 60"

This report covers printers from ColorSpan, Encad, Graphtec, Hewlett-Packard, Roland, Mutoh, Accuplot, Gretag/Arizona, Nur, Vutek, Mimaki, Xerox, Summa, Matan and Scitex.

New printers were presented by Nur, Encad and Matan. These had never been seen at any earlier trade show (that we know of). Some were simultaneously shown at CeBIT trade show held in Hannover precisely the same days as ISA. FLAAR has a separate report on the CeBIT sign trade show (prepared by our senior editor Dr. Nicholas Hellmuth).

In the ISA trade show (International Sign Association) we came across several brands of printers in addition to routers, etchers, etc., used to produce signs, banners, billboards, POP and vehicle graphics. Of course you could find them in the small sizes up to the grand format printers entitle to manufacture large billboards. FLAAR, however, covers thermal, piezo, thermal-transfer, solvent-ink printers, but not vinyl cutters or traditional screen-printing signmaking equipment. Indeed our interest is precisely to assist traditional sign shops to learn about digital printers.

The following FLAAR report covers printers from various different types of technologies, like thermal print heads with pigmented ink or dye sub; thermal transfer systems with the coloring within resin or wax ribbons, electrostatic printers with toner and piezo print heads with dye sub inks, pigmented and even solvent inks. RIPs and laminators were also on display at ISA.

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## RIP's

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**SCANVEC AMIABLE** was one of the bigger presences; they were also situated in most of the printer's booths (HP, Roland, Encad, etc). They offer quite a variety of packages for Sign Making. Their FlexiFamily offers several features including one for easy text manipulation and unlimited effects, like shadows, etc. (Flexi SIGN PRO, PLUS, EXPERT, LETTER and DESIGNER), in Machining (EnRoute Family, one of the most popular in the Trade Show) and in the Color Printing (Photo Print Family this what it was installed in the Encad present in the stand, it looks that this RIP improves the condition and resolution of the original image.) In the booth the Scanvec-Amiable people were very thoughtful; they took the time to they even explained all kinds of basics, such as that most RIPs prefer to receive the data in RGB, not in CMYK.



Scanvec Amiable at Trade Show

*Editor's note: the latest version of Scanvec-Amiable's RIP is available only on certain recent models of the Roland printer. Older Roland models (including models still available), include only an earlier version of this RIP. The earlier versions are judged by end-users, and even by the RIP company itself, as potentially not fully adequate.*

**CAD-LINK**, showed Sign Lab Designers, which can be used to do the management quotes of your sign shop's clients by logging into their web site. This includes the prices and it has an option of choosing the materials in which they want to print or they can

also make proofs of their works. You can also profit from the variety of tools you have from where to choose. Another feature is that it can cut vinyl. Photo Script Six is another RIP used for color management, they didn't emphasize this product much. It looks like the target market was somewhere else, not improving images but rather engraving and routing letters and wrapping texts around images.

**OMEGA**, it's the RIP entitled to work with all the Gerber printers enhancing the images, with this RIP you can manage the text wrapping to the form. You can also work with very small text sizes, making it crisp. And it also has different tools to do color management.

*Editor's note: a RIP from a well-known RIP company usually offers more options than an in-house RIP. This is a polite way of saying be wary of a RIP that comes with the printer. This warning applies to the on-board RIPs from Hewlett-Packard as well as to the RIPs supplied by Roland (which now is much improved over the previous version).*

**WASATCH RIP**, had a little booth I almost missed but since it was in front of a large format printer I stumbled onto it. I guess this is one of the most recognized and mention RIPS, perhaps because it runs so many printers. They introduce the upgrades made to the Soft Rip, including more file formats, color control and faster processing. I estimate this RIP can be very handy if you are making proofs and of course to perk up you digital images.

**ONYX, PosterShop** they also have a big family, the PS, PRO, SERVER, Pro SERVER, each one made to cover the needs of every one. This RIP is a member of Gretag Imaging Group therefore we found them in the Gretag's stand. In the Gretag booth we also saw the images print by the Arizona 1103, and the results were really impressive. Of course this RIP is expected to work with several printers (however no Vutek or Nur). Onyx also offers the AccuQuote "the sales quotation software".

Since RIP companies frequently get bought, sold, or merged, be sure to keep up with this in the trade magazines such as The Big Picture Magazine or Digital Output, which are the two that are the best for large format inkjet printing. ST Publications also has excellent trade magazines for the sign industry and screen-printing industry.

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## INKS AND MEDIA

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**REXAM**, is one of the leading manufactures of media for digital imaging systems, not only thermal and piezo but also electrostatic. In ISA they launched an electro luminescent media, compatible with all printers. They also revealed their DMPC 16 (fire-retardant polyester cloth), friendly with the Epson 7000/9000 and the piezo pigmented models 7500/9500 in addition of the HP dye-based inks (1055,2500/3000) and the HP UV and the EncadGO, but it's not recommended for the Colorspan and the Encad Novajets. Furthermore they manufacture special media for Idanit/Scitex, NUR/Salsa and Vutek. I imagine they are trying to compete with 3M.

In any case if you want more details or you wish to verify if the media your putting in your printer is the right one you can go to [www.magicinkjet.com](http://www.magicinkjet.com).

**3M**, started making special media for their electrostatic printer the 3M Scotchprinter, so

far very popular among the people that produce fleet graphic or billboards, it's not as expensive as the other printers intended to the same target. 3M has a variety of media utilizing their very innovate system, Controltac, used to evacuate the air bubbles that sometimes appear in the print when laminated.

Even 3M recognizes that the electrostatic technology is in the corner. So they made liaisons with several companies to produce special substrates and inks for them, for example HP, Vutek, Arizona (both present in the booth), Gretag and Scitex, to mention a few.

**EVERY**, they have OEM with several brands therefore they have a big variety of compatible media (for floor graphics, photo papers, adhesives, pressure-sensitive films, etc.) They have films proved to last 9 years outdoors. Frankly 3 to 5 years outdoors without lamination is the accepted norm elsewhere. Avery is the main competition for 3M.

**NAZDAR**, is also a big seller of inks for screen-printing and solvent water based inks for Graphtec and RasterGraphic/Arizona. They say they only work with solvent because pigment inks usually clogs the nozzles.

We also found TARA (large manufacturer of canvas), HEXIS (variety of media for cold laminates, photo quality, high resolution and self adhesive vinyl), ORACAL (substrates for water based inkjet printers), INKWARE (inks and coatings for large format printers, Arizona and Nur /Salsa).

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## THERMAL PRINTERS

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### HEWLET PACKARD

In the HP stand the only printer present was the HP 5000ps with pigmented inks. Considering that this model DesignJet is so efficient and relatively economic in comparison to the other equipment that were being exhibited elsewhere, the booth did not really do the printer justice. What amazed me is that when I returned to my office in Guatemala, one of our readers that already had received several of our reports, commented to me that would visit the trade show, the interesting thing is that when he returned he wanted all the necessary information of the HP, our evaluations and the materials used in HP 5000, to obtain better results. Seems that this information was not fully available at the HP booth or from other sources.



HP 5000 ps printer

I believe that in comparison to other printers HP, offers a product of low maintenance, and easy handling. I couldn't notice any banding or much inkjet dot patterns and of course the speed was fairly fast.

**ENCAD**, released their Encad NovaJet 750 (42" and 60") with 4 inks but eight ink containers and eight ink lines. What I liked the most of this printer is that you don't need many tools to exchange inks, dye to pigment, that's an advantage if you wish to print



ENCAD NovaJet printer

indoor and outdoor posters. The photo mode (600 dpi) is much faster than the 700 and they included a new Dynamic Thermal Drying System. I can tell you the images were brighter and had no banding or dithering pattern. Since last trade show I think they improved their quality or used better stock photos or ~~set~~ number of print passes higher.

The Encad booth nicely showed that their printers accomplished what they stress in their brochures, Affordable, Flexible and Productive.

**COLORSPAN**, as always it impressed me the speed and quality of this printer the DisplayMaker XII, whenever I walked by the corridors of the exhibition the booth that called my attention was the Colorspan. How can they possible print a quilt of images in just a short time and with so good quality? I believe that the HP thermal print heads were somehow improved or enhanced making feasible to produce with their twelve inkjets the quality that sells. To me this another good option if you cannot invest the half a million dollars that the other grand format printers cost. The price of ColorSpan DisplayMaker XII is now lower due to the introduction at CeBIT and DPI trade shows of the newer DisplayMaker Mach 12.



Colorspan DisplayMaker XII

## PIEZO HEAD PRINTERS

**ROLAND**, released the Hi-Fi jet Pro-600 with 8 colors or 4 inks dye and 4 inks pigment, when you change the inks you need at least 20 minutes. What people complain the most is the lack of compatibility with other medias. What they are trying to enhance for next models is the speed, which is still quite slow.



**MIMAKI**, they launched the new Inkjet Plotter JV4-130/160/180, it had a lot of banding supposedly caused by an accident occurred during shipping. This plotter works at 1440 dpi (high resolution) and 360 dpi (draft mode), of course when you lower the resolution the speed increases. It takes up to 1" thick media. It has 6 color aqueous pigmented inks. It's intended to print posters, banners, etc. and also screen positives. They also showed the Textile Jet tx-1600S (65"), designed to print on direct fabrics; it handles also flags using acid dye inks (disperse inks for thermal transfer). It works with ErgoSoft, Cad-Link and Wasatch RIP.

**MUTOH**, presented its Falcon Graphic Plus (48"), it also produces color separations. The quality wasn't very sharp and you could see a lot of dots when the resolution was set at 360 dpi (draft mode). It's 6 colors piezoelectric and also handles dye, pigment and fluorescent inks, but the changing process isn't as easy as the Encad, it takes time (30 minutes). It also has an adjustable head accepting cardboard. I think the end users will like if Mutoh will improve the speed.

**ACCULOT (Mile High Engineering Supply Co.)** was also present but they didn't have any innovations from last time at Graphics of the Americas trade show where I was in February. That time what impressed me the most was when they threw a glass of water to the picture and the ink did not run. Another thing that came to my attention is their Mutoh printer that makes screen positives, like the new Mimaki.

**XEROX**, Engineering Systems had the new ColorGrafX X2, piezoelectric expected to print at 720 dpi. They use pigmented inks and if you wish outdoor durability you need to laminate. For RIP they use the PixelCorrect. For comments in the fair I guess they improved their latest model, the Xpress, which was buried hoping people would forget about it.

Editor's note: *the RIPs for XES printers continue to be overpriced when compared with the same RIP for other brands of printers.*

**AZTEC/OMEGA JET 62"**, I think this a new printer because I have never heard about it, it seem rather basic, the prints were full of dots I guess they are still working in their own RIP (Artist). It's 4 colors with Xaar piezoheads and solvent inks, prints at 360 dpi (has no draft mode and only 2 passes). One feature I liked is the incorporated drier and the maintenance station. But besides that I didn't like it much perhaps it's still a work in process.



Editor's note: *I gather the above printer is from a Korean company. At least they are honest and label the dpi as 360, rather than attempting to claim those heads produce 720 (as do other companies using Xaar technology).*

Notably absent was Epson, I wish they were there, but at the same time they were launching at CeBIT trade show their new model 10000 so I guess if you want more information on this printer you can write to us asking for the CeBIT report made by our senior editor Nicholas Hellmuth.



Nur Fresco 3200 printer

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## Grand Format Printers (PIEZO-ELECTRIC INKJETS)

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**NUR**, based on the research to improve their printers they showed the Salsa Ultima 1500 (192" or 16') and the Fresco 3200 (81"), both planned to produce vehicle graphics, pop, outdoor signs of large proportions. The Salsa Ultima has 600 dpi and 8 colors solvent based pigment ink as for the Fresco has 360 dpi CMYK also solvent. The clever feature of this printer is the automatic mesh that has to print on different thick substrates. The print heads they use are made by Spectra Head/MIT using Wasatch RIP, I think that's the reason why the image was spotless in difference of the Blueboard that had a lot of horizontal

banding. Another attribute I liked is that the printers are encapsulated which eliminates much of the unpleasant fumes and vapors. One of the popular features among the users is the versatility of media they can use and also that is reasonable fast. I liked their prints even the spider man that was drying in the carpet it looked real. Direct competition for Vutek.

**VUTEK**, didn't show any new models but with their recent Press Vu (72") offers a printer that can changeover flexible to rigid media in just a few minutes. They were also showing the UltraVu 3360; the images looked very neat and it was rather fast. They use solvent and pigment ink. What I didn't like is that it cannot print unattended. The logo hanging from the booth said "How do you grow your business? Vutek it". I liked this phrase because it gives you an idea of all the things you can do with this printers. What I'm not sure is if they can accomplish the photo realistic quality they claim with just 300 dpi (long distance viewing perhaps).



Vutek 3360 printer

To clean this printer you have to put the group of cartridges in the workstation and then you press the clean button. After that it will expel a little ink and solvent, so you clean it with a dry cloth and afterwards you wrap it with saran plastic, you repeat this operation daily preventing the nozzles from clogging.



Bellise RasterGraphics printer

this printer is that you can leave it printing at night unattended because it has 1-gallon bulk ink reservoir. In addition has an automated vacuum purging of print heads for "on-the-fly-maintenance. To evacuate the solvent vapors and fumes they incorporated a ventilation hood.

**GRETAG**, offers a option for every use, they have the new press Arizona RasterGraphics 1100-3 and the well liked baby sister the Arizona 180, both solvent; the Carolina for textiles and the Bellise with dye based inks.

The Arizona 1100-3, 4 colors and 360 dpi set in photo quality looks eye catching and outdoor durable. The draft mode is only usable for billboards which is the reason of its design, so they accomplished their goal to give the customer a grand format printer at an economical price. Another feature of

The Bellise and Carolina, I never saw them actually printing but a few samples were hanging from the entry slot of each one and they looked nice.

Of course they all worked with Onyx PosterShop RIP since Gretag also owns Onyx PosterShop.

## SCITEX

The quality was not so bad, as you can see almost all these printers have 300 dpi (normal quality) just the necessary to be viewed long distance (it is the least needed if you are making billboards). Imagine having a printer with 10,000 nozzles. Do you think they are many probabilities that one of nozzles clogs? How frequent do you think that's possible? Many times, that's the reason why it is necessary to give it a lot of maintenance, weekly by your personal and monthly by a technician of the company. But of course they do achieve the quality and the speeds that claims, who wouldn't with a multihead system and only 4 colors. They have their own Scitex RIP, but you can also opt to use Cheetah Rip.

The impressive thing of this equipment is the length of its mechanism, since to be able to have the complete device it is necessary to buy, the printer, the cutter and to complete the whole set the drier. When others brands offers you a printer of great proportions but the entire package included. You will need to have a large sign shop to hold a printer like this.



Scitex printer

Something I applaud is that they were honest about the hazardousness of the solvent inks, and for that they develop an environmental friendly equipment called Novo Green, which works with pigmented and water based inks, with two years durability outside.

Another project in which they are working is the EnJet (made by Aprion), a press designed to receive thick materials. A competing flatbed product has already been made by their competition Vutek, so you don't have to wait any longer until they launch the EnJet, you have already other options.

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## PRINTERS MEANT FOR DYE SUBLIMATION

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**SAWGRASS MILL**, it's a store we found where you could find all the matters related to dye sublimation, they even told me that in their web site [www.sublimation.com](http://www.sublimation.com) you can find a dictionary with the meanings of difficult words. To print their jobs they use the Epson Stylus Pro 9000 and the Mutoh Falcon printers and the inks they manufacture are the SubliJet (water based), I didn't see anything printed at the time just saw the catalogs.

Another printer is the Conde (a relabeled Mutoh) with Epson piezoelectric heads (I just saw it in a catalog).

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## THERMAL PRINTERS WITH RIBBONS

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### GERBER

They were showing the Gerber Edge 2, the Maxx and the Orion. When I asked the end users their choice was the Gerber Edge 2, of course there were small or beginners sign shops. To me it was rather tedious to exchange the cartridges once it had finished to print each color (4 toners CMYK), apparently it prints in layers, so you have to replace





Gerber Edge 2

doodle design, no photo museum quality, like they were unfinished. The good thing of this printer is the considerable amount of media and different type of foils to print with, for example you can do metallics, transparent, double side decals, etc...but no thick material. And you don't need to laminate, because they pledge 2 years outdoor durability. Nevertheless if you wish to laminate you have to wait 24 hours.

the colors. To me that means you cannot leave it unattended printing at night. The process is like a serigraphy but without the silk-screen, another disadvantage is that only prints tabloid size, so if you wish to do a Pepsi truck, you know how many joints you have to make? For that reason I think they made the Maxx, since it is supposed to print unattended and also prints a bigger format (32"). The quality was good (no banding and little dot pattern) put the images seemed a little like a

The Gerber Orion is the little sister of the Gretag/Arizona, 64" with solvent inks. It wasn't what I expected. I thought from all the reader's opinions that it was a printer that could challenge the others piezo-electrics in the market, but when I saw the actual output in the stand I saw a lot of dots; the image looked blurry.

All these printers work with the Omega RIP made by Gerber, which can handle color management, small texts, etc.

*Editor's notes: the Orion is very slow. Besides, nowadays there is no need to have such poor output from a solvent ink printer because you can get the Roland retro-fitted with solvent ink capability for half the price. Just contact Lyson inks for more information on the Roland solvent-ink adaptation, Jeff Ball, [jball@lyson.com](mailto:jball@lyson.com).*

*I noted at B.I.G. trade show (Columbus, OH, early May) that the Gerber Maxx prints an incomplete pattern if you attempt to use a low-dpi file and try to get the higher speed. The pattern looks like an off-set press dot structure almost. In other words, it ain't photo-realistic at all. If you wish to do photo-realistic image evidently you need larger file sizes and much slower printing mode.*

*The Gerber Maxx was introduced several months ago but withdrawn from the market in order to make some needed improvements. We commend Gerber for doing the improvements. All too many other companies let buyers be beta testers.*

## **MATAN**

The model launched at ISA, was the SprinterB, limited to 36" media size and 35.5" print size, 4 colors CMYK working with resin ribbon or wax ribbons, the inks are UV and water based and without lamination they guarantee to last outdoors 3 to 5 years (depending in the substrate and the environment. You can also use thick media. It is intended to produce fleet graphics, backlit, floor designs, wallpaper, pool graphics, magnetics, dye sub and reverse laminate prints. I did like this printer over the DuraChrome and Gerber, which use similar technology.

As far as I could understand they explained me that all this technology came from

the same place Israel. Scitex Corporation purchased Matan, including the GrandJet program. So Matan's acquired activities were integrated into Idanit. Following this acquisition Matan remains as an independent company, no ownership was changed and therefore they continue to enhance the Sprinter and to develop new products in the thermal transfer technology. Until recently, Matan products have been sold through an OEM agreement with Nur Technologies, which in return sold the product through the Scitex corporation channel.

So you can anticipate a reasonable quality, but you can also expect a pattern at 400 x 800 dpi, which is not that good since the target products need to be looked at closely, like tiles or t-shirts, banners, etc. Putting that aside it was relatively fast. To enhance the images they used their own RIP or Scanvec Amiable Photo Print. One other feature that has is that can print spots colors, for example it has the Coca Cola red (or at least that's what they claim). So I guess this is a good option if you are in a small production basis. Coca Cola red is tough to obtain with the pigmented inks used on a Roland inkjet (those Roland inks are reportedly from Toyo).

## SUMMAGRAPHICS

**SUMMA/DuraChrome 50"**, when I asked the customers what they will like to purchase they told me this was their option, so I went and examined this printer. To me it seems it has the same system as the Gerber, exchangeable resin ribbons, but with the advantage that has 8 ribbon cassettes and 2 rolls each of CMYK (4 colors). The only difference is that you can leave it unattended printing during nighttime, it also has the same variety of media to print with, reflective, translucent, etc. It prints at 300 dpi and has the same unfinished look as the Gerber Edge2. Nevertheless they achieve without the lamination and the hazardous solvent inks, outdoor durability for 3 to 5 years. It also offers spot colors.

At the SUMMA booth they were also showing a lot of cutters that seemed reliable and the one I liked is the wide format contour cutter, you put the roll of media and then the cutter goes by the outline, a pretty handy feature when you need to cut a lot of labels.



DuraChrome 50" printer

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## SEALERS AND LAMINATORS

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**SEAL of Hunt Corporations**, it's one of the leaders in this technology. They offer several types of sealers, including different formats and kinds of liquid, adhesive and films all created to protect the prints, from a floor design to a billboard or a fleet graphic.

The interesting thing of this process is that you can manage the amount or thickness of liquid sealer to shield your print. Once you put the roll for lamination it comes through the other side laminated and dry, sometimes they recommend you to let it dry for 24

hours to let the inks and sealer cure, before you hang it outdoors. You can find matte and semi-matte finishes. You can also apply the sealer after printing using it as a coater of the media making the inks "anchor" better. It is possible to laminate solvent inks and it even makes the colors brighter and strapping. As for the Matan "wax ribbons" you can also use this process without worrying that it will melt your design.

Between us they told me they were working in two projects: one thick media and the other one-floor graphics, since they can only offer adhesive laminators. Astonishing is when the sales person took one of the corner of the canvas that had just finished to be laminated and he squeeze it and then left it for a second and the canvas return to its original state without wrinkles; good isn't it? When I went to the other booths where they were selling the same products, none of them was laminating, so I guess I found the match of the Duracell's bunny for laminators.



**GBC** offers laminators hot and cold. I think their larger one is 64". It's tough to figure out which laminator is best so FLAAR will begin to evaluate laminators later this year. GBC is (along with Seal) one of the top two-laminator companies in the USA. GBS offers a wide range of lamination equipment.

**USI** offers a variety of OEM laminators. USI has the further advantage that they sell hundreds of products which are useful for graphic designers, sign shops and so on. It's worth getting the USI catalog if you need supplies, accessories, trimmers, in short, everything that you need for your shop. USI's e-mail is [market@usi-corp.com](mailto:market@usi-corp.com).

**TEFLON** had a very unique system, not liquid, sprayed, rolled or brushed on. It's a tough, engineered fluoropolymer film, which can be applied with a cold laminator. It's used to protect vehicle graphics, murals, floor coverings, etc. This product is able to shield the image from vandalism acts. They even did a test of it in front of an audience. They sprayed the area they wrote with markers and then with a cloth with solvent they erase the bulk of the unwanted color.

For further information, ask FLAAR for its fast-facts report on laminators.

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## BOOKS

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ST Publications Inc offered several magazines including Signs of the times, Big Picture and Screen Printing. They also offer books on dye sublimation, graphic design, architecture, etc...



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## FLAAR Philosophy for selecting which printer is best for your needs

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Every printer has at least one or two redeeming features. Each printer, even models with defects, can do one or two things quite well. Thus every printer is worthy of your consideration.

The corollary is also true: even the best of printers are not perfect. And, there is no one single printer that will do everything you need.

Thus most print shops have two or more different printers. Larger commercial sign shops may have three to five different kinds of printers. FLAAR has one set of printers for CAD and another kind of printer for photos and fine art.

When you go through the headache of deciding what printer is best for your needs, be sure to ask other end users. Don't request the printer manufacturer to suggest a place to ask. Instead go to a trade show and talk to end-users (not at the booth). Or just telephone people in your own area who already own various printers.

FLAAR does its best to track down information on as many printers as possible. But we come from a background in photography that demands top quality. For banners viewed from a distance you may not need such photo-realism. Thus don't decide against any printer just because it does not win a FLAAR award for print quality. That printer may be just fine for your needs.

What is important is whether your clients like the output. This may also depend on what printers your competition have available.

Although we are proud that so many people base their decision on the FLAAR reports, in reality these reports should be only one of many sources of information for you. You want to find an actual sweat shop, people with ink on their hands. Ask them how their own printers handle the work at hand.

And when you get this class of information, we always welcome hearing from you so we can share it with other readers.



### Additional FLAAR Reports

*Piezo vs thermal* (printhead technology of large format printers): fact vs fiction, pros and cons of each.

*What large format printers are best for a sign shop?*

*Photo-realistic Quality: which large format printers can do good enough for museum exhibit quality?*

*RIPs + Help*; primer for understanding what RIP software is and how it can help.

**Sources and Resources**

Laminating equipment and supplies, USI, e-mail Tom Smith, [market@usi-corp.com](mailto:market@usi-corp.com), fax (203) 245-7844.

Printers for fine art giclee: [iris@itnh.com](mailto:iris@itnh.com).

ColorSpan printers, [productinfo@colorspan.com](mailto:productinfo@colorspan.com)

**Visiting a Tradeshow with Nicholas Hellmuth as your Guide**



If you would like to visit a tradeshow and get personal consultation from Dr Hellmuth, this service is now available. You can walk the floor with him, meet key people, or have a more leisurely breakfast, lunch, or dinner and learn about printers, RIPs, inks, media, scanners, and/or digital cameras.

One option is just to attend any IMI seminar which Hellmuth may be also attending. Several of the IMI lecture conferences have a small tradeshow area attached. There is no additional charge for meeting and speaking with Professor Hellmuth at any IMI conference (unless you need detailed technical consulting or marketing information or seek his assistance to design new products). IMI seminars are usually attended by between 40 and 70 people; there are plenty of times at breakfast, lunch, cocktail hour, or dinner to meet informally. Indeed that's why these are the best conferences in the industry.

IMI web site is <http://imi.maine.com>. Just ask Al Keene which would be their most appropriate upcoming seminar.

The other option for learning directly from Nicholas Hellmuth is signing up for any of the courses offered by FLAAR at Bowling Green State University or FLAAR at Francisco Marroquin University. These courses are listed on [www.digital-photography.org](http://www.digital-photography.org) as well as [www.wide-format-printers.org](http://www.wide-format-printers.org). Or you can just write [info@FLAAR.org](mailto:info@FLAAR.org) and say, please send me the PDF format syllabus on Dr Hellmuth's training courses.

Most of the courses include the option of a tradeshow visit with Nicholas such as Photokina (photography tradeshow) in Cologne, Germany or PhotoExpo East in New York (early November). It is also possible he will be available during the first two days of SGIA in St Louis the last days of October.

<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>	
<a href="http://www.laser-printer-reviews.org">www.laser-printer-reviews.org</a>	<a href="http://www.cameras-scanners-flaar.org">www.cameras-scanners-flaar.org</a>	<a href="http://www.large-format-printers.org">www.large-format-printers.org</a>
<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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