updated SEPTEMBER 2002

Answers to Frequently Asked Questions on the HEWLETT-PACKARD DESIGNJET 5000 and 5000ps

HP 5000 ps with UV pigmentd Inks

UFM

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Abstract

To answer the increasing number of requests for comments on the newest models of large format inkjet printers we have prepared this comparative report. Since by far the most number of questions are on the six-color 1200 dpi HP DesignJet 5000 and 5000ps, we have continued to gather information on these models. We have updated this report based on additional tests and evaluations in the first week of November and additional testing January 9-11, 2001. In May we finally got our own 5000ps as well as about three different after-market RIPs to evaluate. Prior to this we used the 5000ps at trade shows and borrowed one in Los Angeles (to do the test of the beta-version of the UV inks). Now we have the updated final versions of these colorful pigmented inks.

‘”ps” stands for PostScript RIP software. RIP is explained in our separate FLAAR report. If you don’t already have it, just send in your FLAAR Inquirer # and ask for the report entitled “*RIP + Help*.” The model 5000 is absolutely identical to the model 5000ps other than one has on-board RIP inside; for the other you need to get an after-market RIP. We explain all that later in this report as well as in the longer and hence separate *RIP + Help.*

Brief initial comparisons

We tested our suite of colorful images from the FLAAR Photo Archive on the HP 5000, an Epson 7500, and a Roland Hi-Fi. Actually we had three tests on three different HP machines (all of the 5000 ps series). The tests were done on different occasions over a several month period.

The HP 5000 was by far the fastest of the three. One test print was too red on the Roland, but that could also have been the fault of an after-market RIP. With the HP we used its internal “ps” system. The colors were much better with the HP than with the Roland. Neither of the printer test operators knew the original color.

The Roland media, however, won in all “touch and feel” tests. These are tests where judges look only at the surface appearance, the quality of the presentation so to speak. So far, with every media used, especially PETG, Roland has won, even when the HP print quality was judged as quite high. It is possible that if we had the same media for the HP printer that it would score equally high. These tests are done at the trade shows, so we end up with whatever media the people in the various booths use. Roland tends to use their absolute top media at trade shows, a clever move to showcase the potential of their nice printer. Of course where Roland fails, every time, is in the speed comparison. In fact they always have to drop the print quality down to 720 since printing at 1440 takes too long.

RIPs for the 5000

“ps” in the HP model designation means it has PostScript drivers built in. This is a mini-RIP. If you get the 5000ps this means you do not need at first to buy an aftermarket RIP (Raster Image Processor software, which is the brains that actually runs the printer).

If you are on your own, first-time user, then there are several advantages to having the “ps” model (ease of use being the primary advantage). The RIP is already part of your system so there is nothing else to install. All HP large format DesignJet printers are Macintosh friendly and of course work with

all PCs as well. Our office has about six Macintoshes and five PCs. We tend to print from the Macs. The four HP printers that we have 2800cp, 1055cm, 800ps, and 5000ps all work perfectly from Macintosh. The two Epsons and the ColorSpan and Encad which are in our facilities also work just fine from the Mac.

The ps on the HP 5000ps can be learned in about 15 minutes. The ease of use results from having only basic features. Nonetheless, we found the rotate feature on this internal RIP better than on the more expensive EFI Fiery RIPs we had with previous printers. We do not know what features and options EFI will provide with its newer RIP. The last time we saw EFI at the HP booth the EFI RIP was not yet finished (October, The Big Picture Show). The main disadvantage of all earlier Fiery hardware RIPs is that they could never be updated, you could not even run another printer with them. For these reasons we do not recommend EFI Fiery RIP (we have two of them).

The disadvantages of the on-board ps are: it can run only the HP printer that it is built into. It can't run a second printer. It does not RIP on the fly. The RIP takes about 20 minutes per hundred MB of file size. So if you are printing a large image your file could easily take an hour or more just to RIP. The actual print time, however, is quite speedy.

On the subject of printing large file sizes, you may wish to upgrade your network to 100base T. 10 baseT may not be fast enough. I do not know whether the HP can accept a card for gigabyte ethernet, which is the next speed increase beyond 100base T. If, like us, you do mural-sized prints, avoid the "ps" completely; buy the basic HP 5000 (without the "ps") and add any after-market RIP. Almost anything will be faster with a 500 MB file than the onboard "ps" which can take over three hours to RIP a banner-length file. A full-featured after-market RIP can handle a banner or mural in 10 to 20 minutes. As always, print time only begins after the image is ripped. Print time is relatively fast even in full-photo mode.

Of course if your files are just 40 to 80 MB in size, then the onboard Hewlett-Packard "ps" can handle those in perhaps 10 to 20 minutes.

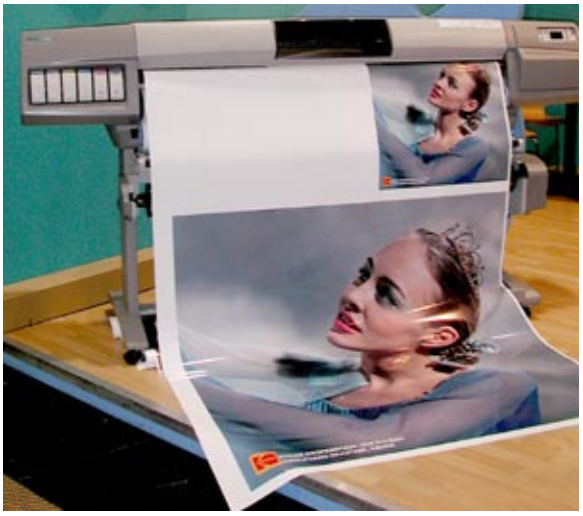
The HP ps RIP accepts files from both PC and Macintosh equally well, since the RIP is inside the printer, and hence is independent of your own computer. If you are a Macintosh user this is thus another advantage of using the ps system from HP, namely you don't have to deal with a PC as a print server. Most, but not all, after-market RIPs are housed in a separate PC as print server. Any PC may get indigestion from the file name structure you are accustomed to with a Macintosh. Often you have to rename every single one of your files just to print them via a PC RIP server. Other aftermarket RIPs do work with a Mac, but these are all considerations you need to take into account. Since these may be facts that the sales rep forgets to discuss with you, you might wish to obtain the *FLAAR Report on RIP+Help*.

If you are in a commercial production environment or if you prefer to tweak your printer's performance, or if you will be doing color proofs (color matching) then we recommend you acquire a separate aftermarket RIP for your Hewlett-Packard printer. In this case the most appropriate model is the HP 5000, since you do not need the "ps" if you subsequently get PostScript in a full-featured aftermarket RIP. But we do need to know what you intend to print, what printers you have or are considering, and your level of experience: beginner, moderate, advanced. You will find the "provisional inquiry form" on all three of our web sites. When this form is received in our offices, the staff then responds by sending out the reports.

If you started off with the HP 5000ps and found its RIP too slow you can always add an after-market software RIP at any time. Downside is that you end up paying for two different RIPs, the one inside the printer and then the after-market software.

Wasatch, ColorGate, BESTColor, PosterJet, and other good RIPs work on the HP 5000 and 5000ps. 3M Cactus finally has a version for the model 5000 but we have demoted our listing of Cactus because 3M does not seem to have it's heart into software development. 3M is definitely not a software company.

If you wish PosterJet RIP, that you can get from Scarab Graphics, (800) 350-1366, fax (805) 684-7090. They also sell the complete line of HP printers. E-mail ken@scarabgraphics.com


HP 5000ps printing solid background

Several years ago most large format printer companies were bamboozled by skillful PR into believing that the EFI Fiery RIP was the way to make extra sales. So in 1997 Encad was still bundling the EFI Fiery RIP. That's how we got stuck with our first Fiery RIP.

Then HP joined forces with EFI and you were stuck with the Fiery RIP for either the HP 2800 or 3800. At least it was better than the slow and featureless on-board RIP of the HP 2500 and 3500.

Most printer manufacturers have gradually learned that software RIP is less expensive and often better than the Fiery so only Canon and XES (Xerox) have stuck with the now antiquated concept of Fiery RIP.

Thus I had to smile when I read the slick press release that stated "Electronics for Imaging (EFI) announced that its Fiery X4-W controller has been chosen to drive HP DesignJet 5000/800/500 large-format printers."

First of all, this insinuates that HP has selected the Fiery over all other RIPs. That is unlikely the case as few users would take that seriously. Second, it's almost a year too late so clearly there were some problems attempting to develop a usable RIP for that new series of printers. Indeed at CeBIT trade show I don't remember even hearing about Fiery in the HP booth.

Since the new Fiery can hardly be as feature-less, slow, and non-upgradable as all its predecessors I am actually curious to try it out. But in the meantime it is far more likely that the PosterJet, Wasatch, or BESTColor RIPs offer more features and definitely more flexibility than any Fiery.

Other information on RIPs in general, how to set them up, is contained in the FLAAR Report "*RIPs + Help*."

The Review Process

To find out about any printer FLAAR uses both internal and outside reviews. The advantage of outside reviewers is that they have no relationship with us, nor with the manufacturer, nor any reseller. The additional benefit is that these reviewers actually use the printers in a functioning large format printing environment.

Since the HP DesignJet 5000ps is so new we are only beginning to get back feedback from users, but it is worth reporting one instance. This photographer dedicated his visit to Seybold trade show to find out what would be the absolutely best printer for his needs (limited edition prints of his professional photographs). He wanted very much to buy the newest Roland, the Pro model with eight colors. Indeed he went so far as to place an order.

But as part of his decision making process he continued to acquire the various FLAAR reviews on all these printers. It's fairly evident from these reviews that the advertisements of the printer companies do not list their principal faults, in this case a propensity for banding defects, inability to print fire engine red which results in an inability to reproduce a red sunset with its pigmented inks.

The photographer had also on his own noticed the tendency for banding and after inspecting all the printers at Seybold trade show he noticed that printers using Epson piezo heads tended to band more than other printers. Furthermore he noted that the several printers at the HP booth were reproducing prints with no visible banding. As a result he canceled his order for Roland and instead ordered the HP 5000ps.

Banding, the Achilles' heel of inkjet printer technology to date

Banding is endemic to most printers and that elimination of the banding depends on many factors. The HP 1050 and 1055 band at high speeds but there is less banding if you use a good aftermarket software PostScript RIP with the settings at photo mode high quality which naturally slow the printing down. Furthermore, in a busy scene, which means with no large areas of solid dark color, there is less likelihood of visible banding on a Roland if set to maximum passes (which means the print takes an hour (Hi-Fi) or two full hours (Pro). "no visible banding" means that the details of the design hide the banding. Almost all printers will band across certain kinds of solid color backgrounds. Then the banding is painfully visible, even on the HP 5000ps. At its fast speeds the HP 5000ps exhibits banding as would be expected. When you set the print modes for higher quality the speed drops and the banding goes away.

The difference is that banding on a piezo printer is caused by other factors in addition to speed. So you can't necessarily have the banding disappear merely by slowing the printer down. Yes, you do get less banding on the Roland at the slow speeds, but halfway into a 2-hour print is precisely when banding may strike on any piezo printhead of this class. HP is a thermal printhead system, so you can eliminate the banding by slowing it down. With HP you can also clean the electrical contacts which may eliminate the banding. With a piezo printhead, the banding is inherent within the printhead when a nozzle gets clogged.

UV pigmented inks for HP 5000ps

At PhotoEast there was noticeable banding on a solid black background (at a Roland dealer's booth, not the Roland booth itself). We pointed this out to the attendant. He turned off the Roland, threw away the print. He then had to clean the heads, and tried again. The white part of the banding disappeared but the banding tracks still remained. This was the newest Roland Hi-Fi Pro, 8 color, set at dual four color to increase speed. The colors themselves looked great; only distraction was that the print was obviously from an inkjet. This is the effect that photographers and artists wish to avoid completely. They want their work to look like a real painting or an actual darkroom photograph, not an inkjet copy.

I am sure that if you used the worst settings, highest speeds, and no after-market RIP you would potentially get banding from any HP printer as well, or indeed any other printer. I saw banding defects from a Mutoh printer on display at Photokina trade show in Germany. But with the proper RIP and settings for photo quality, the HP 5000 produces better images.

This is the main difference, that the HP eliminates banding if you utilize the appropriate settings. With some Roland printers the banding remains. Museum curators and collectors of art do not want their exhibit prints to have banding tracks all across the prints. It makes the print look amateurish. Since FLAAR's headquarters at the university is in association with two museums on campus, we prefer a printer with no banding. This is why we prefer the HP 5000ps. Another advantage is that, being a new printer technology, it won't be obsolete next month. We have no indications that HP intends any new model surprises. They already have the top model with their 5000 and 5000ps.

Roland dealer's booth at PhotoEast showing their quality

The Roland Hi-Fi produces enviable quality. The Roland, Epson 10000 and the ColorSpan are the three printers which can match or beat the HP 5000 in photo-realistic mode. There are, however, several factors to consider. First is a report we got from a photographer who was trying to decide whether to buy a Roland, a Mutoh, or an HP 5000. Here are his own words: "*I have been involved with custom labs for over thirty years, so I try to get the real information before I commit to something new. I kept getting an uneasy feeling with the Roland decision, and I found a few sources that said their Roland Hi-Fi Jet experiences were pretty close to a nightmare! The worst was this owner who was making a hi-res 40 x 60 canvas print and the Roland, about 10% from being done with the image (after more than an hour of printing) suddenly decides to make severe banding, ruining the print. This person also told stories of problems achieving neutrals with the Roland, and this is not even with Hexachrome*!"

We also received another report of a Roland owner who said that also an hour or so into a single image, his printer would occasionally drop a color, that head simply not printing. He complained to Roland and was told this was a known fault and he would have to take account of it when calculating the production costs of his prints. We have on file other comparable reports of color matching problems as well. Does this mean you should not buy the Roland and instead rush off and buy the HP? Not at all. The Roland may have some other feature you prefer. Besides, the quirks listed here occur only in a percentage of the printers. Other Roland users claim they do not experience any difficulties whatsoever; they love their Roland printers and ask why I don't praise it more often (obviously they have not read all the reports I have received about problems). Indeed we continued to get more complaints about banding on Roland printers during June. One person said he decided not to buy such a printer since he needed prints without horizontal tracks ruining the image.

Several people have written to us asking about the Roland and for their needs we recommended the Roland. They ended up very happy with their Roland printer and appreciated our recommendation of it. So it is all a matter of being aware, realistic, and utilize reports of actual end-users rather than on glossy ads that don't show you the features of the printer that cause defects, such as banding which results from piezo-electric printhead systems.

HP 5000 compared with Epson 7500, 9000, 9500, and 10000

Epson tryouts at FLAAR-UFM facilities

Last month we did two test prints with our Epson 7500. The first print began to band 25% into the image and then the printhead clogged totally and that color ceased to print all together.

We then did a manual printhead cleansing purge (evidently the Epson is unable to detect its own problems and unable to fix them on its own).

The next print again resulted in banding after a few inches into the image, but this time the banding left a discoloration across the image in addition to the streaking. We will try better media; the media we were using was what Epson had sent with the printer. It was so bad it bubbled up from the over-saturation of excessive ink (another habit of Epson piezo systems but which can occur with any cheap paper also on any other printer, Encad, HP, etc). Coated bond, coated "presentation paper" are not intended for photographs but only for simply line drawings. Why the printer companies try to sell such junk is tough to fathom. Perhaps when you see how awful the print is you hurry to pay for their more expensive media.

With respect to the Epson 9000, that has been a popular printer but is no longer current technology mainly due to its glacial print speed. Its sole advantage is that the Epson 9000 can take a variety of after-market inks. However if such inks clog your heads you may get banding and color drop-out. Our university bought a used Epson 9000 since it came from a well known Epson dealer in Vermont who specializes in fine art printing. Unfortunately this Epson 9000 failed to print the colors that the art department expected. They have now been stuck with a useless printer for about six months while they attempt (in vain so far) to get their money back. In the meantime the art professors and students have been very interested in the HP 5000 that we installed in the College of Techology. If they need to print thicker media they can use our ColorSpan DisplayMaker XII.

The Epson 9500 is reported to use an excessive quantity of ink which quickly runs up excessive expense. A photographer we knew from months of correspondence had an Epson 9500, so we wrote him to ask if he could write a review of it. He wrote back saying he had gotten rid of it because it was too slow for production and ink cost was too expensive. He said he had replaced the Epson 9500 with a Hewlett-Packard DesignJet 5000 and found the machine terrific for reproducing large size reproductions of his photographs. He is a leading professional photographer.

The Epson 10000 is considered to render a finer image at 5 inch viewing distance. However at that distance you see the grain of the media which disturbs the view. We also noted halos, light banding tracks across dark colors, and a speckled effect at that same 5 inch viewing distance.

At normal viewing distance its tough to tell the difference between the two. Severe banding was noticeable on one out of the two Epson 10000 printers displayed at CeBIT trade show in Hannover, Germany in March. Initial reports suggest that ink usage may have the same expensive rate with the Epson 10000 as with the Epson 9500. We are checking; its hard to find out the facts since so few people have experience with this printer. In terms of specs, however, the model 10000 is improved in

every respect; it's not as slow anymore though our speed test failed because the printer rendered only one line at a time. We don't know whether this was the problem with the Onyx RIP, with the network being slowed down because we were simultaneously printing to another Epson, or whether the large file was at fault (it was a 15 foot long mural). The banding and ink usage pattern, however, suggests that the 10000 still inherits two traits of the Epson 9500.

Backlit (transparent media)

Piezo printheads are notorious for not being able to do backlit media adequately. The following comment from a sign shop says it all: "*I will be primarily be printing on backlit paper using UV inks. I have done some tests on the Epson 9000 and 9500 with fairly poor results. Another test from the HP 2500 proved to be much better. My assumption is that the HP 5000ps UV will be the ticket for my business*." (Jason, #5032).

Actually the HP 5000 will be better than the 2500 on three grounds: the new UV pigmented inks are significantly better for the 5000; the 5000 has continuous ink-feed (something not present in the earlier models); and the 5000 has improved feeder mechanism that can feed backlit material (not present on the HP 2500).

Media for the HP 5000 and 5000ps

Bond, "presentation bond" and other cheap media will not work with the HP 5000 nor on most other HP printers either. Perhaps you can get away with that media for line drawings but definitely not for photos. This cheap bond can't handle the amount of ink needed for full-coverage, in other words, for a photograph. Same problem with our Epson 7500, the bond sent by Epson with the printer failed miserably in the print test.

Samples of media used on HP5000 at FLAAR-BGSU

The inks used for the HP 5000 are completely new and improved over those of the HP DesignJet 2000cp and its relatives in the 3xxx series. Although more different kinds of media will work in an HP than in any piezo printer, there are some kinds of media that really bring out the top quality of the HP 5000.

For example, if you use the new UV pigmented inks with the new HP photo media, you will get top quality.

When you have a laser printer you can run almost any "copier paper" through your machine. If you buy the super expensive coated stock you do get slightly better color image but you can still get an acceptable image with bond paper.

With today's generation of inkjet printers that is not true. You only get top quality on the better media. Furthermore, some media is made specifically for one certain printer. It may work okay in others, but works fabulously only for the one printer that it was blended for. Since Hewlett-Packard is the only company that knows the complete chemical composition of the ink they use it is logical that HP will know what coating will produce absolutely the best images with that ink.

An after-market company will have to work with trial-and-error. Of course they also have plenty of incentive to produce good media as well. We have found that for polyester we got nice results from TAL and also from 3-P; on textiles we got nice results from 3-P again. For water-resistant media that requires no lamination we continued to get great results from IJ Technologies (e-mail liz@ijtechnologies.com). Indeed we did an entire exhibit at the museum on campus with their Dura line of media.

If you want to make people's eyes pop out, and here the oohs and ahhs, however, use the top of the line photo media from Hewlett-Packard with their UV pigmented inks. Quite a spectacular combination.

The pigmented inks for the HP 5000 and 5000ps

FLAAR was already testing the UV pigmented ins for the 5000 long before they were available (two years ago). At PhotoEast trade show in New York (early November of last year) we had already inspected beta prints from HP UV pigmented inks in person. The prints were exhibited at the Hahnemuehle (fine art watercolor paper) exhibit. The pigmented inks looked very nice. You can switch back and forth (not possible with the Epson 7500, Epson 9500, nor the Epson 10000cf…you are stuck with their archival ink).

HP 5000ps with pigmented inks

FLAAR began evaluating the HP UV pigmented inks Jan 8th in Los Angeles, along with a beta set of the software upgrades and the ink switching system (from dye to pigmented, and back to dye again; you switch as often as you wish).

Since two Roland dealers specifically told me that their own Roland printers are incapable of producing fire-engine red, and since other Roland users said they could not produce Coca-Cola red, this was one thing we tested the HP UV inks on, namely reds. If we had a Coca-Cola on a fire engine that would be best, but lacking that we tested a quilt with lots of reds. They came out with an impressive gamut range.

We have been told that pigmented inks for piezo printers (again Roland, Epson and others) have a tough time with cyan and/or blue. So we tested some blue skies, plus the many blues in the Missouri Ozark quilt.

Again, the HP pigmented inks did a wonderful job, especially considered we had only cheap bond paper (this was January before all the new better HP UV media was finished). So today you should be able to get better results with the HP pigmented inks then we could in January especially since new media is now available from HP specifically for the new UV inks.

Be sure to realize that media made for earlier HP printers such as the 2000 series or 3000 series may not work as well with the new UV inks. These newer HP 50000 UV inks have a wider color gamut and last longer as well. The new chemistry requires new surfaces to print on. Most of the after-market media companies do not yet have the proper formula for the HP 5000 and 5000ps.

If you have an older HP 5000 (one manufactured last year) be absolutely sure you update the firmware. Update the ICC profiles as well; the profiles in the beta-set (in January) were much too yellow. We subsequently heard that HP recognized the source of this error and corrected it. To what degree it was in the ICC color profile software, and to what degree in the color sensors (hardware and software) we have no way of knowing.

Since the printer manufacturer knows the inner secrets of its printers it is logical that they have ways to make their own inks work best on their own media. This would be especially true of any new ink, since most of the other media companies would not have the ink available for testing until it is at the stores. Yet the manufacturer has a several month head start and can get all their ICC color profiles ready in advance. Thus we will be evaluating the new inks on HP media to check out how the two products work together.

The pigmented inks worked nicely with regular TAL media. TAL films and papers are on the HP list of media certified for use with earlier models of HP DesignJet printers as well. Contact for TAL is Paige Roberts and/or David Hill, e-mail nainfo@tal-paper.com . The polyester from TAL worked very nicely on the HP 5000 with UV inks. We like polyester because you can handle the media often without getting the creases in the media that ruins the expensive photo papers in seconds of handling.

During July we continued to test the new UV pigmented inks for the HP 5000 and 5000ps. It turned out that these inks are so colorful that we have not needed to switch to the dye inks. Everyone who knows the earlier UV inks for the previous DesignJet 2000, 2500, 2800, 3000, 3500, and 3800cp printer series comment how much the new inks for the 5000 have improved in color gamut over the older generation of inks for the 2xxx and 3xxx series. Unfortunately the new inks for the 5000 are not available for the earlier series of printers.

People often ask about the comparison between the color gamut of the HP 5000 and the new Epson 10000. So we asked a printer manufacturer who knows both printers well to see if he could tell the difference. We showed him the identical image side by side. One on the HP 5000 the other on the Epson 10000. Only difference was that the Epson was on its top quality special media. For the HP we just threw in whatever media happened to be on the front of the shelf. It was some off-brand. Yet the print on that no-name media was so good with the new HP UV inks that the printer manager could not tell the difference of which was the HP image and when on the top Epson media.

Now if you had used the top HP media and compared that with after-market no-name media for the Epson, the results on the Epson would have been worse because Epson printer inks are fixed to work primarily on Epson media.

Later on, as we get our new facility organized at the National Center for the Study of Digital Media we will test other inks as well. A reader just indicated that inks in other piezo printers also had difficulty producing sunset red, so this problem is not restricted to the Roland. This is evidently typical of most piezo inks allegedly produced by Toyo ink company in Japan.

As for longevity, we avoid this morass, but we can report that the current Wilhelm tests are still on-going (which is why there is nothing on the web site; has been nothing since January). It takes a while to get the inks exposed under the testing lamps. But so far the HP UV inks have reached the 150 year point and are still holding up. Of course this is under museum conditions.

Longevity for Photos and Fine Art Giclee: Reality Check

Few professionals pay much attention to the claims of Epson for 200 year achievability. First of all, 200 years is not archival anyway; the traditional definition of archival means over 500 years. Second, there is no earthly way of knowing whether an Epson print will actually last 200 years. Epson cleverly refuses to warranty them (won't even warranty them for 5 years!). Indeed Epson admits (in tiny print) that their media will probably self-destruct before pigments fail.

Furthermore, Epson tells you that your pictures must be framed in glass (it costs between $100 and $200 or more to mat and frame a picture in glass).

What you want is a print that will not fade during your lifetime nor the lifetime of the person, company, or museum who bought your work. Many giclee prints from the much touted Iris giclee printer don't meet any of these requirements whatsoever.

Summary: I print my photos and fine art giclees with HP UV pigmented inks on the HP 5000ps. I am 56 years old and expect these prints to outlast me by several decades. Even if you are a 20 year old artist, it is unlikely you will see your prints fade (unless you put them in the open sunlight).

HP 5000ps with pigmented inks samples of Christmas posters

Warning about hype from lamination claims

Several people have alerted us to some potentially false and misleading ads claiming longevity if you use their lamination. The only legitimate longevity claims that have a reliable warrant are those of 3M and Azon and companies of that stature.

So be careful of "tests" and "longevity" and "warranty" and "money back guarantee." We will try to update our list, but we definitely trust and accept warranties from 3M and Azon.

In general, dye inks do not offer much more than about one year longevity inside and several weeks outside; you want the UV pigmented inks on the HP 5000. These inks are not available for the HP 500 or HP 800 series.

HP 5500 with GBC laminator

Longevity is dependent on the specific media. The same ink on one media may last twice as long as the identical ink on a different media. No, sorry, there is not yet any complete listing since only a few media have been tested so far.

Dye-based Inks for the HP 5000 and 5000ps

In the meantime we would like to present the findings for the HP dye inks for the HP 5000, the inks that are shipped with the printer now. This same printer can be outfitted with the pigmented inks when they are delivered (switching inks takes about 25 minutes once you know how to do it; or a bit longer if this is your first time).

Relative to the dye based inks the following report was sent to us from a user who demands the very best.

From our tests it would appear that an HP 5000 print with dye inks and NO lamination printed on glossy stock can withstand a full week of 100 degree F. sun at 2500 foot elevation with negligible signs of any fading.

It necessitates 10-14 days before any real fading occurs and by that I mean something that the average person can pick up. In technical terms, I would guess that 10% of the image had faded.... mostly the yellow/green colors. "

Our own survey indicates that inside an HP print with dye inks of the previous generation will last six months indoors in a typical office with little noticeable fading and about a year with fading that a normal viewer would barely notice.

Results of the survey

We did some print tests at The Big Picture trade show and conference, Oct 4-7 (with the HP dye based inks). The prints on the Hewlett-Packard looked absolutely fabulous. Detail was outstanding, color was brilliant and true, overall depth of color was impressive. If you do signs, posters, banners, photo realistic prints, these results will definitely win clients and increase your bottom line.

In a nutshell, if you have an HP 5000 your company can outperform many of your competition who uses a lesser printer such as a 600 dpi Encad. Encad is aware of this weak point in their printheads and attempts to claim that 600 dpi is adequate. Unfortunately Encad does not make its own printheads; they are made by Lexmark, a company with a good name in office printing (but definitely not a company known for photo quality or fine art).

The HP 5000 is multiple times faster than any Roland, Epson, Mimaki, or Mutoh. Prints from the Epson 7000 or 9000 fade outdoors in a day or so and even fade inside. The nice Epson 7500 and Epson 9500 are still plagued by several problems resulting from the chemistry of their "new inks" and the new media that is the only kind that works with those unusual inks. The hybrid inks in desktop Epson printers such as the 1270 display discoloration tints on certain papers when viewed in daylight or even certain interior lights. Certain papers have problems with the new inks in the new printers. Some users have suggested that Epson papers may have discoloration defect (the paper itself self-destructs before the inks have time to fade). However that may be a misinterpretation of the unstable chemistry of the inks themselves.

Nonetheless, we still feel that the Epson 7500 warrants further inspection because it is the only 24" printer on the market that can handle pigmented inks at all. We are thus continuing to evaluate this printer. The output we have seen at trade shows so far looks beautiful. Unfortunately the Epson 7500 at Bowling Green State University suffers from a severe case of metamerism. The Epson 7500 at Francisco Marroquin university suffers from banding and head clogging.

The Hewlett-Packard 5000 we have does not have Epson metamerism defect and does not have either piezo banding, piezo head clogging, nor does it drop out colors as do some piezo printheads.

That's how the reviews are done. We plug the printer in, turn it on, and print. Whatever comes out, those are the reports. To make sure our printers are typical we then check among the 800 people who send us an e-mail out of the 12,000 readers a month of our web sites. We also go to trade shows and keep our ears open. It's tough for a defect to escape our notice.

Switching inks

No way to switch inks with the Epson 10000. Same with Epson 7500 and Epson 9500; you are stuck with their proprietary inks. Can't even use dye inks. Their ads are elusive on this respect. Their most recent ads tout 200 year archiveability, plus "photographic dye inks." Yet that is impossible: first, the small-print subsequently admits they don't guarantee any longevity. Second, they cleverly don't tell you up front that the printer is physically incapable of taking the photo inks. With Epson its either one, or the other, never both.

Teaching us how to switch inks

With the Hewlett-Packard 5000 you can switch between dye and pigmented inks any time, and as often as you need to. Back and Forth.

Staedtler already has after-market inks for the HP 2xxx and 3xxx series so its likely that eventually they will offer after-market inks for a printer as popular as the HP 5000. We have not yet used their inks in any HP but hear good reports about their inks for the Encad and Roland printers. Staedtler is a large and reputable ink company in Germany; they have offices and sales outlets in most countries.

New Firmware

Most of the printers come from the factory with the original firmware. That has been totally rewritten as time went on. Why they don't re-install, who knows, but many people are stuck downloading tons of code. There is no excuse for this. The new firmware should come on a CD or should be installed by your HP dealer.

Also check to be sure you have the new yellow sensor. They have been updated to correct for excess yellow. If you have an older model 5000 then HP will come and update the sensor for free.

You will also need the new drivers for the RIP; some compensated for the earlier "yellow" sensor before the sesonrs themselves were updated; who knows if the new drivers corrected for the yellow sensors with excess yellow now mesh with the corrected yellow sensor which no longer has an excess. In other words, an updated RIP will eliminate yellow but if you have the updated sensor there won't be excess yellow to eliminate and who knows, you may get too little yellow. That's all the more reason to get a RIP from a known company who can update their software fast enough.

Plus, don't buy your printer low-bid because then who will have any interest in assisting you. This is again the reason why we recommend a reliable dealer who can help you out, namely Jonathan Knecht, Color DNA.

Our HP 5000 works just fine because we have the ps version so everything is built in. We got the new color sensors installed over the summer. Before the new sensors were installed we just jiggled with Adobe Photoshop to tone down the yellow, but with the new sensors the colors come out better with less need for tweaking.

Whats the difference between the HP 5000 and the earlier HP 2000, 2500, 2800 or 3000, 3500, 3800?

We can answer this easily: "*I am currently using my partner's HP 5000 printer, which we just upgraded to from the HP 2500. What a difference!"*

The UV pigmented inks for the 5000 are a vast improvement over the pigmented inks for the DesignJet 2xxx cp and 3xxx cp series.

Only thing that did not change much is the slowness of the on-board RIP. The new "ps" is indeed easy to use but it is painfully slow. It can take a long time to handle a 100 MB file and many hours to rip a mural-sized file. We have to send to print overnight when we wish to do a single mural. The printer itself, however, is fast once it gets the file ripped.

You can avoid the slowness of the "ps" by not buying that model; buy the basic 5000 not the 5000ps. Just add PosterJet RIP, which you can get from Scarab Graphics, Fax (805) 684-7090.

What's the difference between early production models?

Most printers change between the initial manufacturing run and the actual printer you buy. After the first few months the manufacturer gets so much feedback that they can fine tune the software (it's rare they modify the sheetmetal or innards). But things like sensors and so on, those often get redesigned in mid-stream.

On the HP 5000, if you get one today, you can generally count on it being of recent manufacture. But if the manufacturing date was September 2000, or before, be absolutely sure you have all the new features, mainly software. Even manufacturing dates of November and December 2000 may need updates. Be sure your dealer does the firmware update; it's a time consuming bear if you try to download it yourself unless you have a T1 line or cable connection. Get it on a CD.

You need the absolutely newest firmware updates. You need the new color profiles that remove the overenthusiastic yellow portion of the gamut.

Our HP 5000 arrived in May. It has the excess yellow in the software profiles for the pigmented inks. It is partially a software issue, partially a sensor. An HP technician arrived at no charge and now all were updated. As a result the output looks even better than before.

If you are aware of any minor glitches that we have not yet found on our own machine, please let us know. Almost all the aftermarket RIPs had to be updated (to compensate for the yellow tone and to accommodate the new UV pigmented inks). So be sure your RIP is absolutely the latest updated version.

We also have an HP 1055cm, an HP 800ps, and an earlier HP 2800. The HP 5000 is better in every respect: faster and higher quality. Ease of use is consistent across the whole DesignJet line. That's why we have four of them, since they have to be easy enough for the students at our university to utilize them.

How Soon will my new Printer be Obsolete?

The entire series of HP DesignJet 2000cp, 2500cp, 2800cp, 3xxx series etc are still perfectly good printers (we still have our HP 2800cp). The new HP 5000ps uses better, wider print heads. Six colors allows a higher dpi (hence the 1200 x 600 rating). Kind of tough to get much higher. Keep in mind that the dubious claims to 1440 dpi are, like most ads, just "apparent" dpi. An Epson and Roland printhead is just 720 dpi. The 600 dpi HP thermal printhead can match that quality and run circles around those piezo heads in speed.

The HP 5000 and 5000ps were introduced just in September last year, so this is the current technology. These printers will produce plenty of profit for your company. If you use them at home, then plenty of enjoyment.

This model will not be obsolete, but eventually further speed enhancements will be added. But why wait, you, or your clients, need the nice prints today and tomorrow, not three years from now.

Media for your inkjet printer

Some piezo printers can handle only a limited diversity of media.

None of the trade shows in late 2000 displayed any glossy papers with the Epson "new inks." Instead they use matte paper and laminate it to make it look glossy. We have been asking around to find out why. One experienced large format printing person said it was because of possible "bronzing defect," the likelihood that an encapsulated ink print may reflect light in unexpected ways. By March Epson had released improved papers though their selection is noticeably limited compared with media for Encad, HP, Canon, or Colorspan.


HP5000 different kinds of media

The HP 5000 and 5000ps can print on over 40 kinds of media including silk, cotton, polyester, metal foil, canvas, watercolor paper, backlit media, vinyl, and more other media than I can list.

The professor on campus who is currently evaluating the HP 5000 previously worked with an Epson 7500. He said that he presumed he would find after-market media to make up for the dearth of media offered by Epson. Yet after he already bought the Epson 7500 he learned that after-market media was close to zilch. Same for the Epson 9500 and for the newer Epson 10000.

Then the HP 5000ps gets delivered. Every week extensive shipments of media arrive from all corners of the world, textiles from 3P in Germany, unusual media from Taiwan, and 13 different media from HP (which is only a fraction of what they actually make). So the professor very quickly noticed the difference between the abundance of media for thermal printers in general as opposed to the paucity of media for piezo in general and the Epson encapsulated inks in particular.

The HP DesignJet printers are suitable for fine art. To find out what watercolor papers are best to use with an HP wide format printer, you should contact Hahnemuehle, an elite European fine art paper company. Hahnemuehle/Dia-Nielsen, tel in America, 856 642 9700, email MaryTandourjian@dianielsen.com

If you intend to print signs, posters, and banners. HP itself offers certified media. For signs, posters, and banners we also like the media of IJ Technologies, St Louis, tel 773 7066, Elizabeth A. Gould (president), liz@ijtechnologies.com They make both traditional and unique media. I especially like their waterproof media, no lamination needed. Since our home town is St Louis, we had the opportunity to inspect their facilities. They use HP DesignJet printers (I would guess one of the 2xxx or 3xxx models).

The paucity of media for Epson 7500, 9500, and 10000 is due to their "new inks". Encapsulated Epson inks do not work on most after market media. Epson states you need to use their media, and that is limited to about 16 common kinds with little specialty media. Their really nice media on the 10000 offers a handsome image but that media gets expensive quickly.

However don't give up on Epson printers totally. We have received a roughly equal number of e-mails from fully contented users of the Epson 7000, 7500, 9000, and 9500 as contrasted to displeased users. Most of the defective and deficient Epson products are their infamous model 1520 and 3000. "New ink" problems are surfacing with increasing frequency on the Epson 1270. We hear less about the 2000p. Their desktop models seem to be worse than the large format (Epson large format printers are capably manufactured by Mutoh).

Whether you select an HP, Epson, Roland, I-Jet or ColorSpan to do fine art giclee, realize you will need patience, practice, and a good teacher. FLAAR will begin to offer distance-learning opportunities in how to create top quality input. Each season we will offer a new course so over the years we will cover all the key subjects. Keep tune to our web sites: more announcements later this year. However before then, please realize we can only offer training by pre-arranged course, and only when the courses are announced. We can't (yet) hold your hand by telephone nor by e-mail. Right now we offer only our report series, but don't worry, we expand our services every season. In the meantime, the best sources of training are the people who sell fine art media.

Backlit with your HP 5000

Since most Epson piezo printhead machines can't lay down enough ink on some backlit media, people who own printers with Epson piezo heads (Epson, Roland and even Arizona) say that they have to print two sheets. That's right, print two backlits, somehow mount them in perfect register… So your sign shop has twice the cost and less profit.

In distinction, the HP 5000 handles backlit nicely. There are several backlit solutions for UV; HP Colorlucent Backlit is one of them.

There are also backlit media for dye based inks, as part of the new Specialty Printing Media program of Hewlett-Packard.

Printing on Textiles with your HP 5000

3P offers a wide range of textiles for your inkjet printer. We just got a shipment and as soon as we try them all out we will report back. The new 3P textiles do not absolutely require that you steam them to "pop" the colors. With older inks and older printers you had to steam to textiles after printing to bring out the full color. Now several of the textiles do not require steam treatment which means you no longer have to buy a costly steamer.

3P inkjet textile media for HP 5000

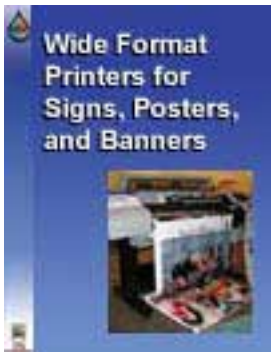
So far we have printed on about four of the textiles from 3P. Some did not even require paper backing. The open-mesh of course came with paper backing so it would feed through the rollers. The results were better than we expected. The theater department on our campus looks forward to using inkjet textiles as backdrops for their productions.

3P offers cotton, polyester, silk, and even wool are now available. Some of these fabrics are flame-retardant.

If you wish to print on textiles you might consider Wasatch RIP as evidently that has color profiles for textiles.

TAL also has an attractive polyester material that worked well with our HP 5000 printer.

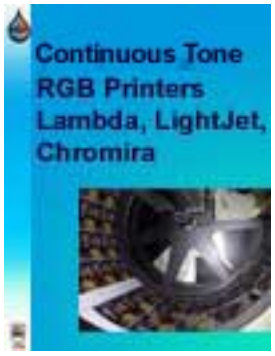
Printing signs and posters



Here at the university there are countless kinds of signs and announcements to print. The HP 5000 will be perfect for all that. FLAAR has an entire comparative report, "*What Inkjet Printers can be used for Signs, Posters, and Banners*…"

Over the course of this year we will be using the 5000 to print stage backdrops, backdrops for the PBS affiliate TV station on campus, to print banners for the football team, and countless other chores in order to test each and every market possibility.

The myth of continuous tone



The biggest mistake Epson made was its ad agency's claim that their printers produced an image comparable to that of the Cymbolic Sciences LightJet. That is unsubstantiated hype that has resulted in a wholesale disbelief in the other claims. The Epson prints (and all other inkjet prints) failed to convince anyone in the FLAAR blind test. Every single judge was able to figure out which was the LightJet continuous image and which were the inkjet prints. The closest to the LightJet were the Roland and HP 5000. We did not happen to have a ColorSpan print available. I suspect the ColorSpan print would have been even closer to the LightJet in quality.

All this said and done, Epson does have the best dithering algorithm which you can see with their new model 10000. This software is what produces the attractive background in light colored areas. Down-side is the propensity for Epson piezo micro-banding in areas of dark color. All it takes is a little bit of banding tracks to ruin even the best dot pattern. If you wish to compare dot patterns, Encad printers up to the last year have the worst. The new 8 color Encad produces a more pleasing result until you try to run at the faster production speeds when the dot pattern comes out noticeably.

What printer does FLAAR itself select for its own use? After all, we have all the insider information, all the evaluation reports, all the results from key international trade shows. FLAAR is dedicated to art historical research (pre-Columbian Mayan art). We work in a museum of Mayan antiquities (Popol Vuh Museum, www.maya-archaeology.org). We also have access to the collections of indigenous Maya art at the adjacent Ixchel Museum. Both are on the university campus where the main FLAAR evaluation studio is situated. We also produce signs and posters for the university.

Thus we would never accept a lousy output. Furthermore, we prefer a printer that is idiot proof since students and all kinds of offices at the university need access to this printer. Our elderly Encad is out of commission because for a two month period we had no technician. Many older models of Encad require someone to pump out the air bubbles by hand and/or suck the ink through the tubes from the reservoirs to the heads, by hand.

Ease of installation; ease of use

To test the ease of installation we installed the new HP 5000 with no dealer or technician to assist us. We had just the instructions sent with the printer. We recorded this process on video. The two professors were definitely impressed with how much effort and design HP had built into the printer and into the packing. HP has countless ways to make the printer easy to use. You just don't get this class of sophistication with an Encad or Epson (we know, we have one of each).

You can often get a lower price if you install the printer yourself. If you are an individual, however, we would recommend that you pay the value-added price and get a technician to install it for you.


Installing HP5000ps at FLAAR-UFM facilities

Students need to use our printers. It takes an average of under an hour to explain how to use it. Better students learn in half an hour. The students then produced prints that are now on display in the archaeology museum on the campus of our university.

Now you know why we prefer Hewlett-Packard printers. We prefer the ease-of-use of the Hewlett-Packard DesignJet printers. We do not restrict ourselves to one brand, but we tend to have more HP printers than other brands. However, if we had to select just one single printer, it would be the HP 5000ps if we needed the best printer that was simultaneously simple to operate (press the GO button and it prints). If we needed a budget printer we would opt for the HP 2000 or 2500, because their prices have dropped considerably. If you are lucky you can find a demo model; they still have HP factory warranties. Ask Color DNA if they have such a demo at steeply discounted price. When we seek a bit of extra umph in our giant photographs, then we opt for the ColorSpan DisplayMaker XII. We have installed one of those alongside the HP 5000ps during June.

Various

We feel that Roland, Mimaki, Mutoh (I-Jet), and the Epson, however, offer viable alternatives that you should consider. Every person will have individual needs that will be met by one or two brands. We present the real-life facts on the various makes and models to ease your decision-making process. The final choice, however, should be what best accomplishes what your hobby or company needs to produce. We are blessed by being in a situation where we do not sell printers. The brand that is best for you is the brand that offers you a solution.

Other sign shops, photo labs, and fine art giclee printer studios prefer one of the three models of ColorSpan. The FLAAR program of public education is to provide the relevant facts so you can reach an informed decision on what is best for you. We get e-mails from ColorSpan owners who mention how much profit they made with a machine of that quality and speed. FLAAR is non-commercial so we have different priorities. We have already reached our own decision on which printer offers the solution we need in our facilities. Actually we have several different brands and look forward to seeing a ColorSpan printer walk in the door in a few weeks.

We reach our own conclusions by listening to what other end-users report about their experiences. Here is another end-user report by someone who read an earlier version of our reports on the HP when it was unveiled at Seybold trade show. He just took delivery of his printer and reported the following to us: "*I did finally take the plunge and purchased the HP 5000ps. My preliminary observation of this printer after about 1200 sq feet of printing is that it performs as well as HP claims in their ads. I also feel that this printer will capture the large format market before this time next year. I also feel that the quality of these prints equal everything I was getting out of the Epson 9000 for art reproduction only at a much faster rate. I wish I had read your reports before making earlier purchases but will always refer to you before any future purchases*."

Another comment we received is from a person whose first printer was an Epson 9000. She then came across campus to use the HP 5000 in the FLAAR facility. Here are her own words:

The quality of the prints were amazing. Great saturated color. I printed on canvas where the color became even more rich. The texture coupled with the thickness of the ink created an overall pleasing final piece. I printed large scale 54x120.

The other large prints I have done have been on the Epson 9000 using water color paper. The ink jet heads caught on the edges of the paper and ruined the print. The FLAAR printers seem to be relieable and allow for greater sizes.

I have these prints on display in the art building if you would like to take a look. They are located near the printmaking department in the hallway.

...Lacie Garnes

What will an HP DesignJet not do?

Early models of the HP 5000 (two years ago) had a defective yellow sensor. That has been corrected more than a year ago.

No HP printer has a paper path which can accept thick stiff material. You need a ColorSpan, a Mimaki JV4, or an Encad NovaJet 880 if you intend to print thick and/or stiff material.

If you use transparent (clear) media, you need the kind from Rexam (InteliCoat) which has a sensor-strip on the edge. HP printers need a sensor-strip so they can measure the size and position of the media.

If you know of any systematic glitch, defect, or deficiency of the HP 5000 or 5500, please let us know. We have two of them (42" at the Francisco Marroquin University and 60" at Bowling Green State University). Both work just fine whereas the Epson 7500 sucks ink, gets clogged, and has less selection of media (and what media there is costs more). The Epson 9000 has been an unsuccessful printer for the art department on campus, since they wanted to use pigmented inks without the restrictions of the 9500.

Maybe now you can see why we prefer some printers and shy away from others. It's called experience.

A good source

Since our readership is national, it's more practical for us to recommend dealers who cover the entire continental USA, such as Color DNA.

At the Big Picture large format printer trade show we inspected the personnel and capabilities of Color DNA, a company that sells HP printers nationally. They are trained also by Heidelberg in Germany and as a result are one of the few licensed sources for the Heidelberg Linoscan flatbed scanners (our favorites since we have two of them).

Some of the questions to ask are whether the "ps" can tile (overlap sections) and whether it can nest (group smaller different images to save paper by optimizing lots of prints across the full width of the paper roll). Tiling is not all that crucial because you can get tiling software later (PosterWorks) and fewer than 1% of users would ever create a billboard-sized image anyway. I have never needed to tile in four years of large format printing. But nesting, that is nice to have.

But you can always add an after market software RIP onto your system later on. It will simply override the mini-RIP on-board and add all the additional features that you will grow into with experience. These are the sorts of questions that you can ask Color DNA about, since they know all HP models inside out.

Yes, of course you can get a cheaper price by buying on the Internet, but then who will help you when you need help? A training course costs between $950 and $1200. FLAAR does not yet have its training program set up; thus we are unable to provide any answers to training questions whatsoever because everything you need to know is available from the people who sell printers, RIPs, media, and inks. Please realize, FLAAR does not sell hardware, software, or supplies.

If you are clever enough to also obtain your scanner or scanner upgrade from the same source, then they can get a color management work flow all set up for you from the beginning. When you buy from some unknown low-bid source, there is no installation, no training (I mean real training by a capable person).

Don't forget, although we here at FLAAR hopefully sound like experts, we are just normal people. We have no desire to waste time with a troublesome printer. We want our printer to print on demand, fast, flawless, and fine art quality. Even if we are doing a sign, poster, or banner, we want it to look like it would be acceptable in a museum (of course we have to achieve this quality since we do all this printing for the two museums on campus). These are the reasons we are ordering a HP 800ps for our entry-level printing and the HP 5000ps for our top quality production needs. The 800ps is also a reflection on our relationship with the architecture department at our university which is about 50 feet from our office. Besides, most of the Photoshop and Macintosh whizzes who work in the FLAAR evaluation center are from our raids on the best people in that architecture department.

Since most people ask for information on the HP 5000ps, here is a report from still another person who e-mailed us, reviewed our evaluations, made a decision to buy the HP 5000ps, and then had the following words to say:

"*I received my 5000PS this week. It is quite a bit different than the 2500CP. It seems like I stepped up from a Ford Pinto to a BMW. The built in web server is interesting - somewhat quirky - but helpful. It gives you a preview in the browser of how the job will print on the loaded media. The usage calculations are also really helpful for costing out prints. I believe having the flat printing area and vacuum to keep the media flat will help eliminate all banding problems I experienced with the 2500CP. What used to take 30 to 45 minutes to rip and print now starts printing in 3-4 minutes. The improvement in speed is amazing. They really juiced up the internal rip. It's almost like sending a file from your PC to a desktop inkjet no more cups of coffee and long walks between prints. It was quite easy to produce several tradeshow prints and laminate in one afternoon. It wasn't possible to scan and prepare to print as fast as the printer - we couldn't keep up. Before we would have several jobs lined up in the queue waiting for the printer to accept the next one*."

Summary: if you are beginning and want to spend your time selling beautiful printed results rather than baby-sitting a moody printer, then the ease-of-use of an HP printer is ideal. If you have considerable technical experience, if you enjoy working with the mechanics and insides of the printer and its electronics, then the ColorSpan might be best for you. If you don't mind waiting two hours for a single print, then the 8 color Roland is a good choice (though the 8 color ColorSpan is much faster and in many aspects better appearance in the print). If you need to do dye sublimation heat transfer then an Epson or Mutoh is what you should buy.

If you wish a single printer, that is versatile enough to do textiles to metal foil, glossy photo paper to canvas and watercolor paper, at a good speed, with minimal banding, high quality, clean sharp lettering for captions, then check out the HP 5000 or 5000ps. You can get brochures by e-mailing the national HP dealer we mentioned previously.

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 myself I too am always looking for cost-effective new products. But since I don't have a room full of secretaries to handle all this, usually it's easier to ask the hardware or software company if they can help out and forward you the information themselves.

If you have experiences with printers, or experiences resulting from a frustrated search on the Internet or with resellers, we welcome your information.

We will have additional tests of HP 5000 and/or 5000ps DesignJet printers every season and after key trade shows. In the meantime, our reports on large format printers and RIPs at Seybold trade show, Photokina trade show, and Big Picture trade show each include additional observations on the HP 5000 series. We interviewed a wide range of end-users at each of these trade shows. After all, the most important aspect of a printer is whether the person who uses the printer finds it acceptable. Pretty quality is one thing, but how easy is that quality to accomplish. Can an ordinary average person run this printer? Can a first time user operate it?

How can you obtain the FLAAR reports about large format printers presented at the Seybold trade show, the FLAAR report on printers at Photokina, and the FLAAR report on the Big Picture trade show?

Send us your own findings

Even the absolute beginner has some feelings about large format printer. For example, what are your opinions of the claims made in ads and on the web sites? What printers have you yourself used, or if new to all this, what printers have you heard about? We are preparing a book on all of this, so if you can provide us your own impressions, we will be glad to send you our reports. The number of reports we send is in direct proportion to the amount of information you send us. We are unable to respond to a "please send Seybold report" because we have no idea what you want to print, whether at home or in a commercial facility, whether GIS, CAD, bus wrap, billboards, banners, for outdoor longevity or only indoor use as trade show. Perhaps you want to print on textiles, on ceramic (yes, you can use an inkjet to transfer the images to ceramic, wood, and even to solid metal of any thickness). We also use comments from e-mails in our review reports and on our website.

Here is another report which a recent buyer of the HP 5000 sent us. He had originally ordered the Roland Hi-Fi 8 color Pro, but cancelled the order after he continued to observe the banding defects on Roland and other Epson piezo printhead printers at a major graphics trade show. He then ordered the HP 5000 because he noted it produced beautiful areas of solid colors with no visible banding. Here are his comments:

"*We got the 5000 PS.... it is amazing. The best thing about it...actually there are several, but the best thing is the way that it calibrates the print heads automatically... the printer does its own linearization, ALL IN ABOUT TEN MINUTES! There is no banding and the, even in the very highest quality print mode, is FAST! We do not regret this purchase in any way, and the price for the printer is so reasonable compared to ones like the Roland. We have you to thank, amongst others, for steering us away from the piezo technology.*

The RIP is pretty fast, I am printing RGB out of Photoshop 5.5 ... I tried converting to CMYK first in PS but found no time difference and the color output from RGB seemed a bit better... slightly fuller color gamut. It nests prints very well, too.

In the highest quality mode the output is gorgeous... completely photographic except that it is better! Better colors, better shadings... the printer will print an IT8 test print almost perfectly... no crossover in the step tablet and you can see every step."

Then last week we got a report from another reader of the FLAAR reviews. He wanted to get an independent opinion based on his own research as well, so he went to PhotoEast trade show (unfortunately we did not run in to him there). Like many artists and photographers he was all excited by the skilled advertising of Roland (note we call it skilled, it is not grossly misleading like ads of other companies). His comments after the trade show: "*I attended the Photo East Show. I specifically wanted to compare the new Roland to the HP 5000 ps. Although the HP arrived new in box the night before the show, they had the 5000 up and running by the time the show opened to the public at 10 a.m… It was clear, even to the untrained eye, the Roland had banding problems. The H.P. had none. I did like the prints from the Colorspan, but at more than twice the cost, and difficulty for a first time user, the HP 5000 ps was a good choice for me…*"

Final Analysis

There is a good reason why corporations tend to buy Hewlett-Packard printers and individuals in their homes tend to buy Epson printers. This is because HP printers are made to hold up to multiple users, many of whom have no experience whatsoever. So HP printers include a variety of sensors which take care of all the calibration and related tasks.

Epson printers tend to require manual assistance. In other words, the models 7000, 7500, 9000 and 9500 can't (or don't) clean themselves. We know this since our Epson 7500 just clogged and ruined the last two prints. The model 10000 is supposed to have added a capability to clean its own printheads. HP has had this capability already for several years.

But when an Epson printer does clean itself (on your manual command), it wastes costly ink. On several occasions our Epson 7500 was so clogged up that it required more than six purges to get it running again. Each purge forces expensive ink through the printheads to unclog them. That is a rather inefficient and costly way to clean a technology which is evidently not reliable relative to clogging and banding.

Late August (2001) we received the following comment from a photographer who had tested Roland, ColorSpan, Encad, and HP. He spent several months on his own tests and evaluations. His final conclusion:

I think that I will not waste any more time and book a 42" 5000PS next week.

Very sturdy machine, beautiful prints and excellent colour gamut, in short all any photographer looks for in his equipment.

This is how many photographers make their choice: here is an easy to use printer that produces attractive photo-realistic print quality. We will issue updates as we find out more about the capability of the model 5000 DesignJet we now have on campus in our evaluation facility. As we receive more information on the Epson 10000 we will report back to see if the Epson engineers can overcome the piezo printhead propensity for banding.

At Seybold 2002 we saw the new HP 5500ps printers. These use the same printheads; their improvements are in speed and connectivity for quick-print, in-house corporate, and other commercial users.

HP5500ps at GOA tradeshow 2003

Our reports on the new piezo printers we inspected at Seybold 2002 and Photokina 2002 in Germany will be issued as soon as possible after those trade shows.

But if you prefer the many advantages of thermal printhead technology, as do we, then the HP DesignJet 5000 is the printer that we really like. Actually based on our experiences with the 5000 at Bowling Green State University we are considering adding a DesignJet 5000 at our other facility (at Francisco Marroquin University) unless we can get the Epson 7500 fixed. We need pigmented UV inks for the tropical light in Latin America. We had hoped the Epson would help us there but too much banding and head clogging. If we get that fixed and if a better media reduces the banding, we will report back.

You can get the FLAAR report on PhotoEast combined with the FLAAR report on large format printers at SGIA sign and graphics trade show that same week.

We have a special report on all the wide format printers displayed at DRUPA, the world's largest international trade show dedicated to printers. Epson 7500 and Epson 9500 were first premiered at DRUPA trade show.

Photokina trade show in Cologne, Germany; the FLAAR report covers large format printers plus what scanners are good for achieving best quality output. Held only every two years, Photokina is the most impressive international photo trade show in the world. The reports are available via e-mail but we don't know which reports to send unless you indicate whether you need to print for indoor, outdoors, for billboards or fine art in museums, posters or photos, what size, etc.??

We now have the FLAAR report which also covers wide format printer RIPs, media, and inks at the recent Big Picture seminars and trade show in California.

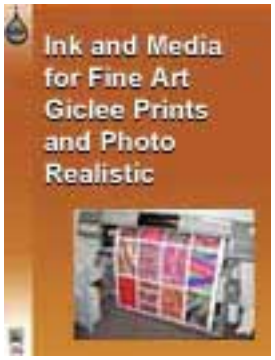
Other Pertinent FLAAR Reports

Crucial for anyone seeking a high quality printer is knowing the differences between a piezo printer and a thermal printer. Thus you might ask for the FLAAR report "*Piezo vs Thermal; fact vs fiction; pros and cons of each kind of Inkjet Printhead*."

As a photographer you will probably sooner or later need a better scanner. Thus ask for the helpful FLAAR Report with tips on "*Scanners for Photo-Realistic Fine Art Quality".*

What computer is best? What RIP software? Be sure to ask for the FLAAR report "*RIP+Help*." No need to waste your hard earned money on an overpriced computer. Prices have dropped dramatically in the last few months.

We also have a more detailed report on the 72" ColorSpan DisplayMaker XII and 52" Esprit: "*Experience with the ColorSpan Esprit and with the ColorSpan DisplayMaker XII*." These printers are a tad more complex, require tender loving care every day, but if properly attended to, these printers respond with outstanding quality at a production speed that can earn your company lots of profit. ColorSpan printers use HP thermal printheads which is why the print quality is photo-realistic.



The other report that will be helpful for your new business will be *"Media and Inks for Fine Art Giclee and Photo-Realistic Quality Large Format Printing on Canvas, Watercolor Paper, Photo Glossy, and Matte."*

Due to the number of requests for additional information, we have prepared a further report on printing photo-realistic quality for museum exhibit. On opening night over 400 people scrutinized the 60 inkjet prints, all at least a minimum of 48 inches in size. Some of the prints were up to 15 feet in length. The exhibit was so successful that the museum Board of Directors asked for it to be made permanent. What printer produced a quality this good? Just ask for the FLAAR Report on "*Which wide format printer is a good choice when you need exhibit-quality photo-realistic prints for an art museum*?"

Each report has different levels and editions depending on whether you need a production printer for a commercial sign shop, a quality printer for a photo or fine art studio, an easy-to-operate printer for an in-house graphics department, or for home, hobby, or second business.

The purpose of the entry-level reports are so you can judge whether you wish to order any of the series of more intense reports. These are sold on the web site www.wide-format-printers.NET by sets. FLAAR Reports are not available from Amazon.com nor any outside source.

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Printers available at FLAAR-BGSU facilities

Reports are distributed by the Francisco Marroquín University.

There is no charge for any entry level report.

Acknowledgements

We thank HP for providing printers, inks, and media so that we could learn the pros and cons of these printers.

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