FLAAR Reports

UV-flatbed
& Roll-to-Roll Printers

at ISA 09

Nicholas Hellmuth

UV-cured printers at ISA 2009, April 16, 2009

- **Agfa:**
  - Anapurna M4F
  - Anapurna M2 new

- **Bergstein**
  - BE-1000UV, flatbed, based on a Mimaki chassis (shown at FESPA Geneva last year).

- **Chin E. Technologies**
  - X-Press, version of a Yishan dedicated flatbed

- **Dilli**
  - Dilli Neo Titan, combo flatbed
  - Dilli Neo Titan UV-1604D, new version, combo flatbed
  - Dilli Neo Venus, combo flatbed

- **Durst**
  - Durst Rho 320R roll to roll
  - Durst Rho 800 combo flatbed

- **EFI Rastek**
  - EFI Rastek H700 combo at Grimco, Nazdar, Pitman, etc.
  - EFI Rastek T660, small flatbed with Toshiba Tec heads instead of original M Class

- **ESS**
  - ESS, Electronic Sign Supply Combo Jet (Shanghai Electric, Human Digital) (Chinese, dedicated flatbed despite misnomer of Combo)

- **Fujifilm Sericol**
  - Fujifilm Sericol, Inca Spyder V
  - Fujifilm Sericol, Acuity Advance (Oce Arizona 350 GT)

- **Gandinnovations**
  - Gandinnovations 3348 JetSpeed 4 color, roll to roll
  - Gandinnovations Nano II (flatbed with Ricoh printheads)

- **Gerber**
  - Gerber Solara ion^x
  - Gerber Solara ion^z, new, 14 picoliter bring head, very nice gloss appearance

- **GCC**
  - GCC StellarJET 183uv

- **HP**
  - HP Designjet H45500 (ColorSpan 5400series), distributors only, three or four
  - HP Scitex FB950, update of former ColorSpan 9840uv, in booth of NuSign Supply

- **Infiniti**
  - Same old (Aeromatix) UV hybrid but now with white

- **Oce Arizona**
  - Oce Arizona 350 XT, extra-large version
  - Oce Arizona 350 GT, regular version

- **Matan**
  - Matan Barak5

- **Mimaki**
  - Mimaki JF-1610 same old flatbed as in past years, with several minor issues
  - Mimaki JFX-1631 (similar bed as before but hopefully to be improved in more ways than just adding LED lamps)
  - Mimaki UJF-160, nice hybrid in Mimaki booth and elsewhere.

- **Roland**
  - LEC-300, two in Roland booth; another(s) in distributor's booth(s)

- **Teckwin**
  - Teckwin, TeckSmart or TeckThunder, roll-to-roll hybrid.
  - Teckwin Teckstorm R, flatbed with full roll system (Teckwin booth)
  - Teckwin Teckstorm flatbed with just basics for roll (Nazdar booth)

- **Triangle**
  - (Anteprima, INX) Milano, hybrid

- **VUTEk**
  - VUTEk QS2000, old combo
  - VUTEk GS3200, new combo
  - VUTEk GS5000, roll to roll

- **WP Digital**
  - WP Digital Virtu 35/48

- **Missing**
  Mutoh Zephyr hybrid and a dozen other brands were also absent

FLAAR Glossary

There are no industry standard definitions. Zund used the word Combi for their model 250, which really was a hybrid. Human Digital in China used the word Combo Jet for what really is a dual-structure flatbed + roll to roll (see below). Half the printers today that are called "hybrid" are really combos. And so on.

To bring order to this total lack of consensus, FLAAR has established a system of classification starting in 2004 and intensified now in 2008-2009 since so many of the names are not precise.

A **"flatbed"** literally means a printer with a bed that is flat. In reality a bed should ideally be the size of the largest board that you and your clients use for signage. In the US and several other countries this size is 4x8'. In Europe the standard size for a rigid board varies (but is usually larger than 4x8 feet). Obviously Europeans measure in the metric system.

A true actual flatbed we call a **dedicated flatbed**. Dedicated flatbeds at ISA '09 include

- Bergstein BE-1000UV
- Chin E Technologies (Yishan)
- EFI Rastek T660
- ESS Combo Jet
- Gandinnovations Jeti Nano II
- Gerber Solara ion X
- Gerber Solara ion Z
- Inca Digital Spyder V
- Mimaki JFX-1631 (new, prototype)
- Mimaki JF-1610
- Oce Arizona 350 GT (and Fujifilm Sericol Acuity Advance version)
- Oce Arizona 350 XT
- WP Digital Virtu 35/48 (yes, this combo also has a dedicated flatbed capability)
- Teckwin TeckStorm (without full roll to roll)
- Teckwin TeckStorm R (with new full roll to roll attached)

A printer that has a true dedicated flatbed table, with a roll-to-roll added on the front or side, we call a **dual structure** concept: flatbed + roll to roll.

- Oce Arizona 250, 350,
- Gerber Solar ion[x]

would be current examples exhibited at ISA 2009.

A **hybrid flatbed** is a regular inkjet printer with pinch rollers acting on top of material being moved by grit rollers under the material. In grand format size a hybrid would probably forgo grit rollers and use a tension roller system. Most hybrid UV printers have their heritage in standard traditional solvent inkjet printer mechanisms for moving substrates. The only change is to add a table at the front and a table at the back to jerry-rig a possibility to handle some flat materials.

The advantage of a hybrid system is you spare the $20,000 to $30,000 cost of a moving transport system. Downside is that pinch and grit rollers can't move thick, slipperly, or heavy materials, and may skip, stutter, or skew on a few materials. But basic foam-cor works okay in most good hybrid systems.

The hybrid flatbed printers at ISA 2009 would be

- Fina (Infiniti) 1.6 meter solvent printer with UV features added.
- GCC StellarJET 183uv is a hybrid also (an end-user in Germany is totally satisfied with his GCC 183uv which is a better report than on other competing brands).
- HP Designjet 45500 (an HP updated version of ColorSpan 5440uv series).
- Mimaki UJV-160
- Teckwin TeckSmart
- Triangle Milano

FLAAR identifies any printer with a moving transport belt as a **Combo**. Combo systems, unless really precise such as Durst Rho and WP Digital Virtu may have slight skew for some large, very heavy or unusual materials. But GCC, Dilli, GRAPO have moving transport systems that are acceptable. I have inspected the factory of GCC for several days (and did a site-visit case study in a printshop of ceramic tiles in Taiwan); I inspected the factory of Dilli separately for several days, and have been to the GRAPO factory three times and have inspected an end-user in Germany (at a screen printing shop).

I also inspected a Raster Printers Daytona H700 combo in a FastSigns franchise sign shop outside Philadelphia. The owner was content with the printer and with tech support from Raster Printers (all this now belongs to EFI).

I have visited the factory of Durst Rho 800 twice and many times I have inspected this printer in a large printshop in Ohio. He made plenty of money with his printer.

The list of combo printers (meaning with a moving transport belt) at ISA is here:

- Agfa M4F and M2
- Dilli (all three exhibited at ISA)
- Durst Rho Rho 800
- EFI Rastek H700
- HP Scitex FB 950
- VUTEk QS2000
- VUTEk GS3200
- WP Digital Virtu RS35,

A **dedicated roll-to-roll** category classification would be exemplified by the

- Durst Rho 320R,
- Gandinnovations JetSpeed
- Matan Barak5,
- VUTEk GS5000, etc.
- Roland LEC-300 (but not grand format at all)

General observations on ISA as a trade show

The attendance and sales trends as commented on by booth managers are given in précis form in the separate TRENDS version that is a separate FLAAR Report.

ISA show authorities should make more effort to require that full-solvent printers do not stink up the entire hall. European trade shows require that solvent printers have at least something like a PAT air cleaner or Island Clean Air system nearby. There were several booths at ISA of pure full-strength solvent printers that polluted the entire trade show hall.

There was one booth that started to play a live drum, a style of drum that made a sound that was piercing, and needlessly loud. Live music, other than perhaps violin or soothing music, should never be allowed during show hours.

Some booths with LED lights made too much blinding light and bothered any booth nearby. But at least no booth at ISA had the distractions as at trade shows held in Germany such as DRUPA or Photokina.

- **Agfa:**

To order this
FLAAR Report

Agfa showed two of their printers the Anapurna M4F and the Anapurna M2. Here you can appreciate their booth.

- **Bergstein**

BE-1000UV, flatbed, based on a Mimaki chassis (shown at FESPA Geneva last year).

- ## Chin E. Technologies

X-Press FK512-8, version of a Yishan dedicated flatbed

- ## Dilli

Dilli Neo Titan, combo flatbed

Dilli Neo Titan UV-1604D, new version, combo flatbed

Dilli Neo Titan UV
UV Flatbed combined with Roll-fed

Dilli Neo-Venus 2506 UV-Curable Flatbed

To get these
FREE FLAAR Reports

Dilli Neo Venus, combo flatbed

- **Durst**

Here is the Durst 320R roll to roll UV-curable printer.

Durst Rho 800, a grand-format printer with a special feed+print option.

- **EFI Rastek**

EFI Rastek H700 combo at Grimco, Nazdar, Pitman, etc

EFI Rastek T660, small flatbed with Toshiba Tec heads instead of original M Class

- **ESS**

ESS, Electronic Sign Supply Combo Jet (Shanghai Electric, Human Digital)
(Chinese, dedicated flatbed despite misnomer of Combo)

- **Fujifilm Sericol**

Fujifilm Sericol, Inca Spyder V

- **Gandinnovations**

Gandinnovations 3348 JetSpeed 4 color, roll to roll

Gandinnovations Nano II (flatbed with Ricoh printheads)

- **Gerber**

Gerber Solara ion^X

**Flatbed UV
with Roll-to-Roll
UV-cured**

Gerber Solara ion

To get this
FLAAR Report
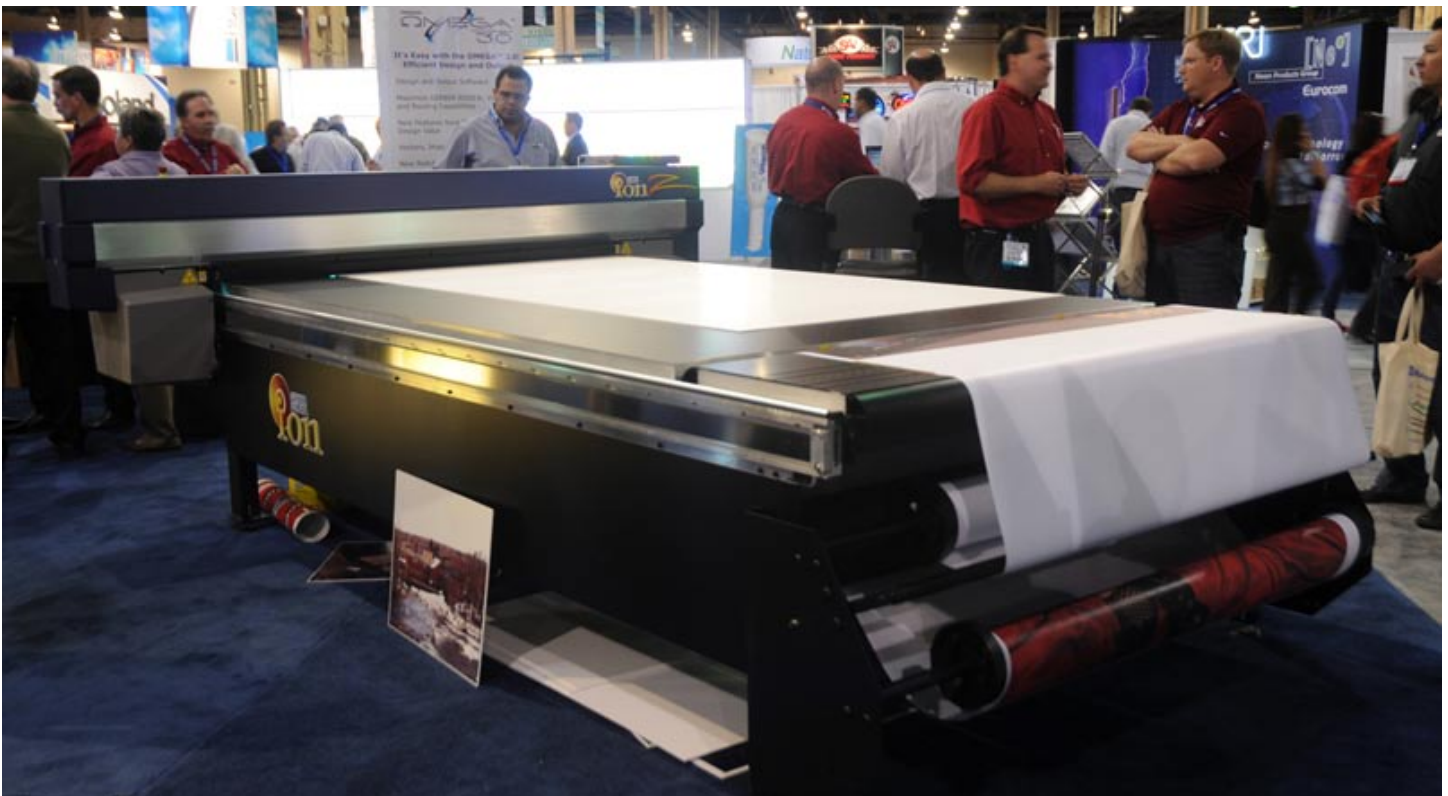
Gerber Solara ion^Z, new, 14 picoliter bring head, very nice gloss appearance

• **HP**

HP Scitex FB950, update of former ColorSpan 9840uv, in booth of NuSign Supply

HP Scitex FB910

Formerly
ColorSpan 9840uv

To order this
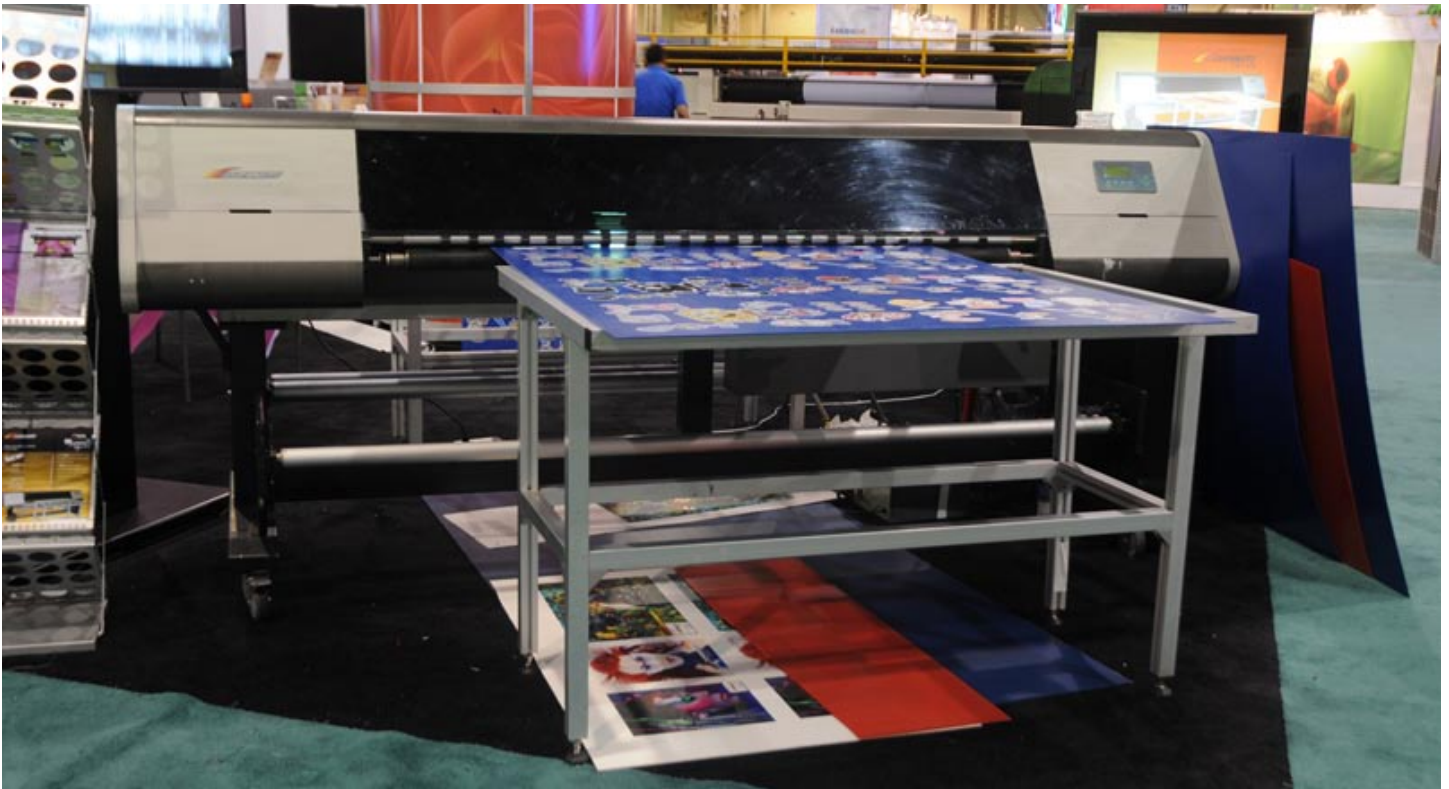**FLAAR Report**

HP H35000 series
HP H45000 series

Formerly
ColorSpan 5440 series

To order this
FLAAR Report

HP Designjet H45500 (ColorSpan 5400series), distributors only, three or four

- **Infiniti**

Same old (Aeromatix) UV hybrid but now with white

- **Oce Arizona**

FLAAR Reports

**FLATBED UV:
MEDIUM PRODUCTION**

Oce Arizona 250GT

To order this
FLAAR Report

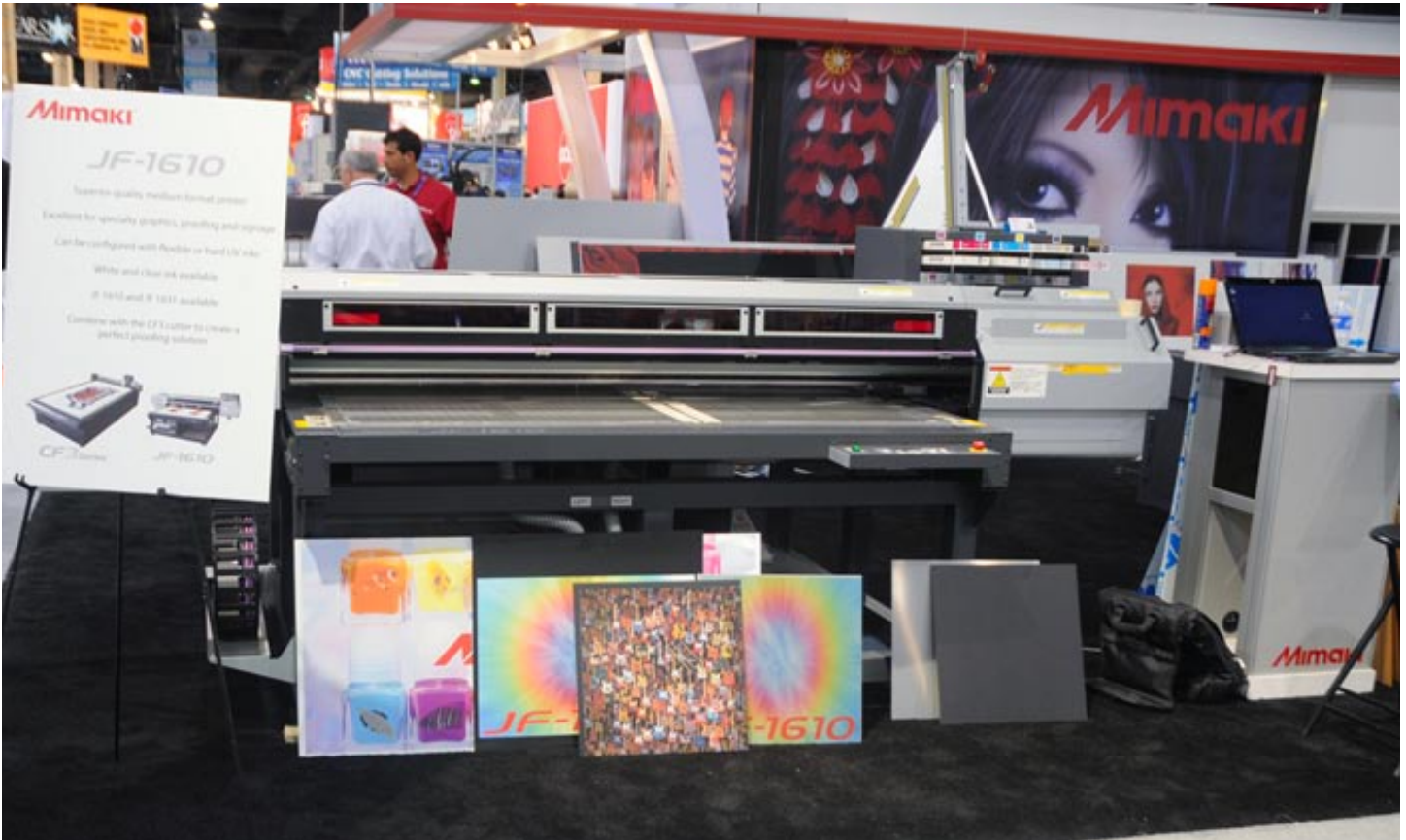*Oce Arizona 350 XT, extra-large version*

Oce Arizona 350 GT, regular version

• **Matan**

*Matan Barak5, a dedicated 5-meter roll-to-roll
with modest hybrid option for some flat material if you add front and back tables.*

- **Mimaki**

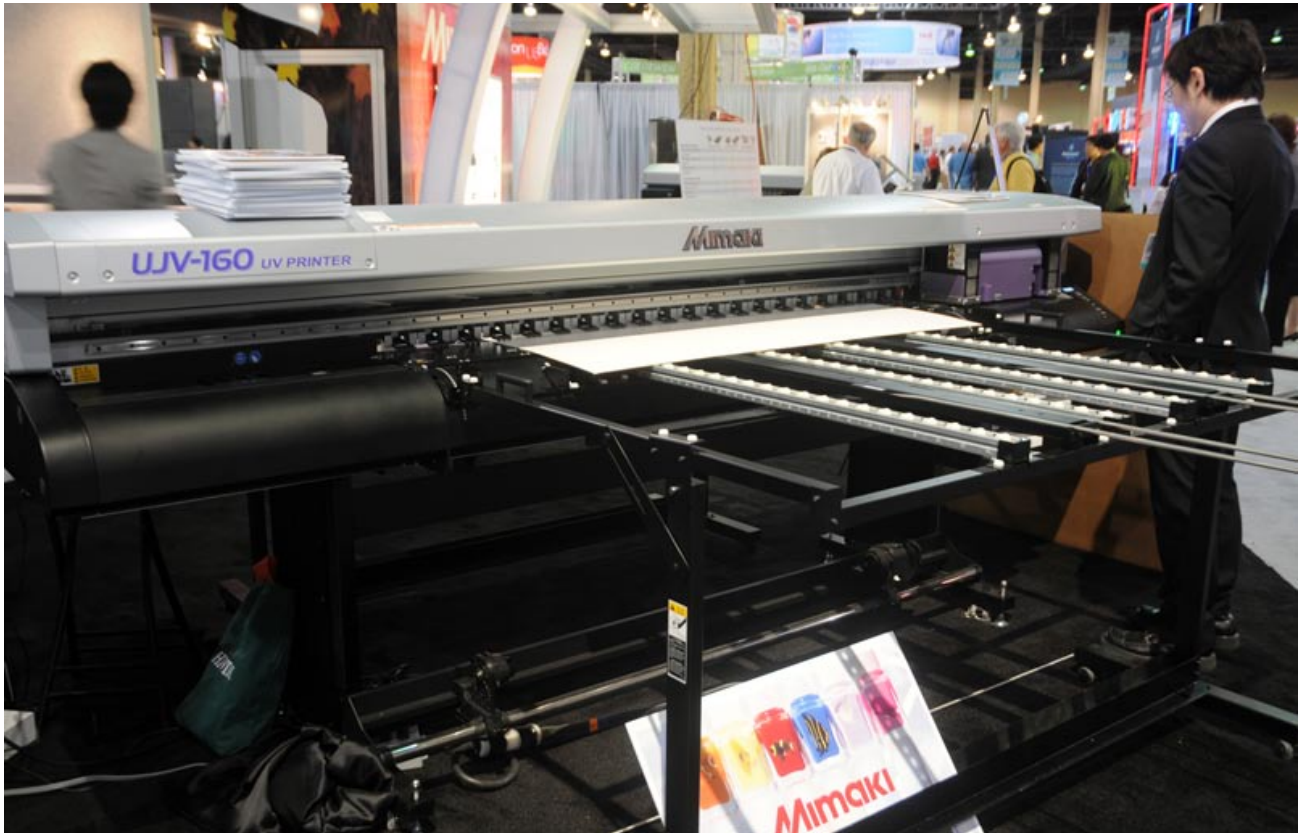*Mimaki JF-1610 same flatbed UV-cured printer since 2007, not yet upgraded to X version.*

FLAAR Reports

**Mimaki
UV-Cured Flatbed
JF-1631, JF-1610**

To order this
FLAAR Report

Mimaki JFX-1631 (similar bed as before but hopefully to be improved in more ways than just adding LED lamps)

Mimaki UJF-160, nice hybrid in Mimaki booth and elsewhere

- **Roland**

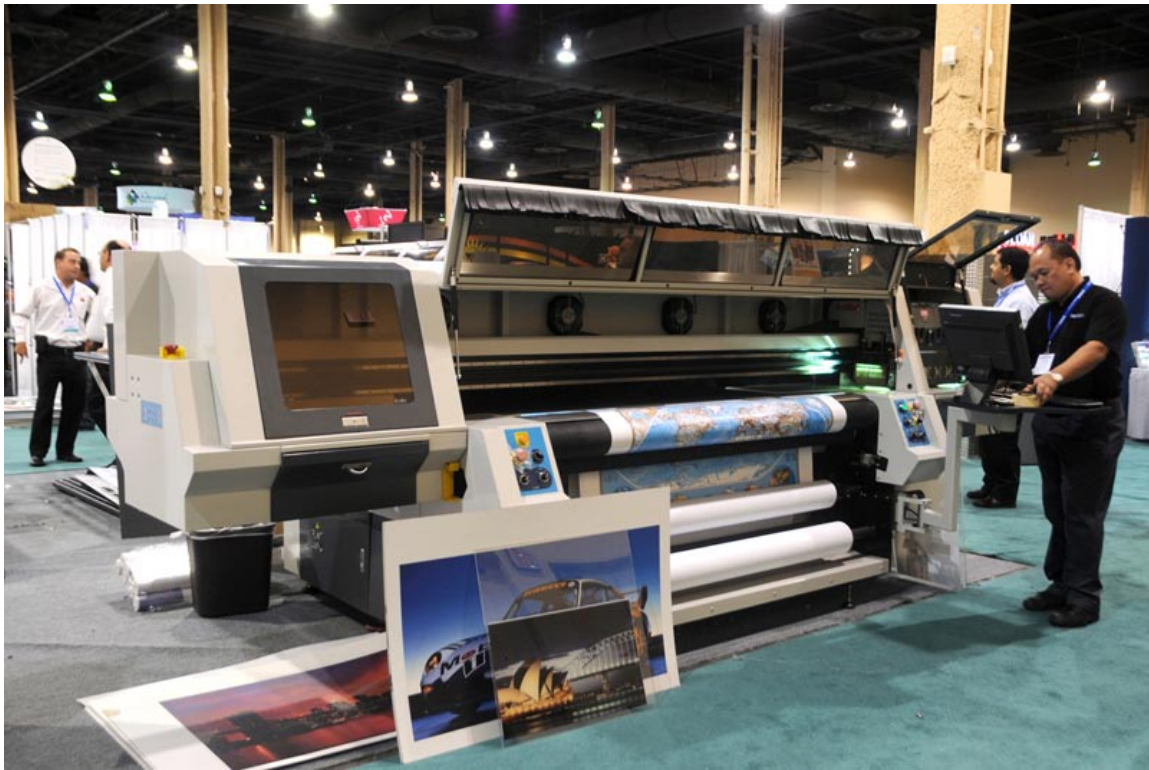*Versa UV LEC-300, two in Roland booth; another(s) in distributor's booth(s)*

- **Teckwin**

Teckwin Teckstorm R, flatbed with full roll system (Teckwin booth)

Teckwin, TeckSmart or TeckThunder, roll-to-roll hybrid.

Teckwin TeckSmart UV1600

To order this
FLAAR Report

- **VUTEk**

VUTEk QS2000, combo from past years. Newer models are the GS3200 and GS5000

VUTEk GS5000, roll to roll

- **WP Digital**

High-End Combo
UV Printer

WP Digital RS25 & RS35

To get this
FLAAR Report

WP Digital Virtu 35/48 high-end combo UV printer.

RIP Software at ISA 2009, April 16, 2009

Wasatch and Caldera are the two RIP software products that I know the best since I visited Wasatch RIP company in Salt Lake City about five years ago, and visited Caldera last year for two days. Each had a booth at ISA 2009 so we feature them on this page. FLAAR will be doing several RIP software evaluation projects during 2009-2010

Here is Nicholas with the President of Wasatch, Mike Ware, in their booth at ISA 2009.

Caldera RIP software booth.

Note:

There are two versions of this report:

- Brief version with one photograph per printer and no descriptions (this free download)
- Full Trends version (can be ordered by credit card or via wire transfer by writing ReaderService@FLAAR.org)

The full Trends version will compare what all the UV printers which were present at ISA '09 with the ones present (or absent) at SGIA 2008 to discuss which brands and models were present or absent at each show. Also, the Trends version will itemize what will be at FESPA in May 2009 and compare with which will be at FESPA in Europe this year but were lacking at ISA '09 in the USA.

The Trends version FLAAR Report will have descriptions and comments on each UV-cured printer and more photographs of pertinent brands and models. Then there will be a discus-

sion of Trends with Chinese UV printers, Trends with Korean UV printers, Trends with UV printers made in Taiwan.

Plus comments on OEM manufacturing: which factories are good, and what to be aware of with other factories or company history.

The full Trends in UV-curable printers FLAAR Report will be available the last days of April or at least by the first week of May.

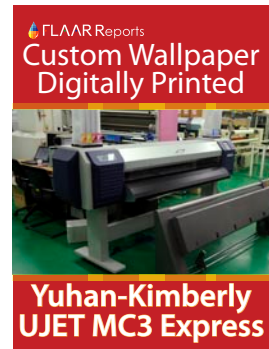If you already have a full subscription to the FLAAR Reports (and if you are a research sponsor for FLAAR projects), this report is included and will be sent to you. If not, you can buy any Trends report individually.

If you have questions about ordering or being invoiced, write FrontDesk@FLAAR.org and we can send you and invoice now and wire-transfer information for any Trends report, past, present, or future.
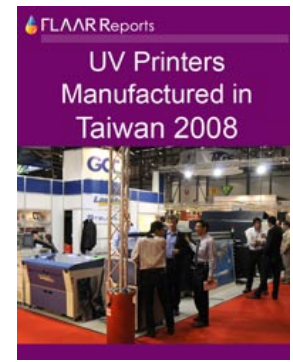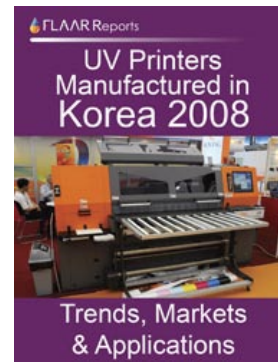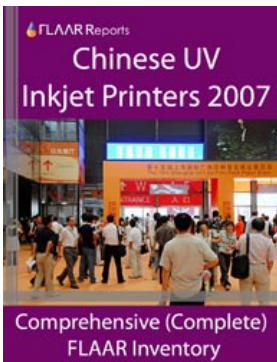
The Trends version will also have crucial information that is not on any of our web pages. Plus, if you purchase three or more Trends reports, you can ask to receive a personal discussion by Dr Nicholas Hellmuth at the next opportunity, most likely FESPA in Amsterdam. In other words, if you order several Trends reports, you get the written report plus yu can ask questions about UV-curable flatbed and roll-to-roll Trends directly and in person. If you prefer you can communicate with him before FESPA by Skype or telephone.

There will also be a separate FLAAR Reports on textile printers at ISA, including a Trends version.

Direct printing on Textiles
DigiFab StampaJet I-64

Wide-Format Printer for Textiles Silk, Cotton, Polyester
Yuhan-Kimberly UJet MC3-Premium

12 Colors, Fast, Wide-Format Print onto **Silk, Cotton, Polyester**
Yuhan-Kimberly Production Textile Printers

Custom Wallpaper Digitally Printed
Yuhan-Kimberly UJET MC3 Express

Direct Digital Printing on Fabrics with Wide Format Inkjets

You can get these reports as free downloads   **Click here**

Fabrics & Soft Signage for Wide-Format Inkjet Printing

Wide-Format Dye Sublimation Printer for Textiles
Gandinnovations Jeti 3324 **AquaJet RTR**

VUTEk 3360
Solvent Printer & Dye Sublimation in One

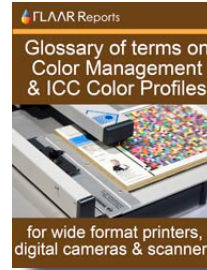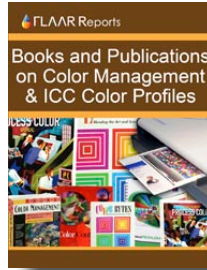Textile Printers at ISA 2009

You can get these reports filling a survey form

Click here

You can order this by credit card

Click here

This version first issued on April 28, 2009. This is the free version provided as a courtesy of the FLAAR Reports.

**Caldera
RIP Software**

**Books and Publications
on Color Management
& ICC Color Profiles**

**Glossary of terms on
Color Management
& ICC Color Profiles**

for wide format printers,
digital cameras & scanners

**Color Management
in the Real World**

Site-Visit Case Study with Grand Format
Solvent and UV-Curable Printers

*These reports on RIP software and Color Management for serious UV printers are free downloads on all FLAAR web sites
(follow the link to 'free downloads')   http://www.wide-format-printers.net/reviews_reports_evaluations/free_download.php*

RIP, COLOR MANAGEMENT, and ICC Color Profiles options

Once you have a serious UV-curable wide-format printer, you may prefer to have an equally serious RIP software and color management equipment.

The RIP software for simple water-based printers such as Canon, Epson, and HP may not be the same RIP software that could be most effective and productive on a UV-curable flatbed or UV-cured roll-to-roll production printer.

I first noticed Caldera RIP on Gandinnovations UV printers several years ago, then I saw Caldera being used at the Mutoh Europe factory demo room in Belgium.

When I was visiting the Durst factories in Europe I again noticed that they were using Caldera RIP software.

So I requested access from Caldera so I could visit their world headquarters in Strasbourg, France, to spend several days learning more about their RIP. As a result there is now a FLAAR Report photo essay on this software.

Most recently I have seen Caldera RIP at the Shanghai printer trade show in China, at DRUPA in Germany, at FESPA DIgital in Geneva, SGIA '08 and Viscom Italy '08.

When I visited a large printshop in Maribor, northern Slovenia, they were using Caldera RIP and the manager of technical services for this company said, "*Caldera does a good job*." This company in Slovenia has about eight UV printers (about five of them from Durst) and an equal number of large solvent printers. They originally used a GretagMacbeth color man-

agement system but switched to BARBIERI because the BARBIERI spectrophotometer can read more efficiently and can handle textiles, backlit, wood and other materials that are either awkward or difficult on other brands of color management instruments. You can learn about the BARBIERI equipment either from their headquarters in Brixen or their distributors worldwide.
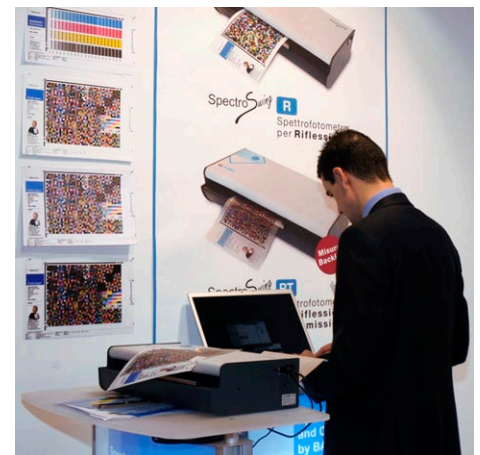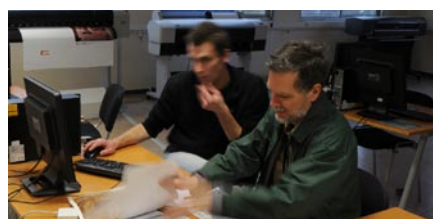
Caldera also offers a highly regarded spectrophotometer from Barbieri, the leading color management company in Italy (they are headquartered in the same city as Durst, the manufacturer of Rho UV-cured printers).

For further information on Caldera
contact Joseph MERGUI
mergui@caldera.fr
If you have questions about color management, if you are in the US you can contact: ImageTech at:
www.ImageTechDigital.com
Mark Spandorf (owner and president),
mark@imagetechdigital.com
or 510 238-8905.
If you are in Europe or the rest of the world you can contact **BARBIERI** directly at: BARBIERI electronic snc,
info@BARBIERIelectronic.com
www.BARBIERIelectronic.com
Tel.: +39 0472 834 024
Fax: +39 0472 833 845

Once you have a UV-curable flatbed, hybrid, combo, or roll-to-roll printer, there are several other components of the workflow that you need:
- RIP software
- an understanding of color management and ICC color profiles
- and an awareness of when and whether you need lamination or top coating

Every printer manufacturer will tend to say that the output with their inks do not require lamination….
- But what about floor graphics ?
- What about vehicle wrap ?

And what about covering over cure-banding and banding from feeding inaccuracy ?
- What about the fact that 75% of UV-cured printers can't produce gloss and some not even satin surface appearance?

Hmmm,
So now you know why FLAAR is evaluating liquid top-coating equipment and studying film laminators and liquid laminators. Indeed one of the several new staff that we hired is an experienced printshop operator with practice on VUTEk solvent printers and Seal brand liquid laminators.

Our first major research project is on the UV-cured liquid top coating system of Drytac. We found a printshop that had bought a the #1 leading brand of coater, found that it did not work to his expectations. So he looked around at several trade shows and then bought a Drytac UV coater.

FLAAR sent Dr Nicholas Hellmuth and one Technical Writer to inspect the liquid coating system, spending two days at the printshop in Illinois. The FLAAR Report is now coming out this week or next week.

So whether you print giclee, or décor, or signage of all sizes, shapes, and materials, you can now look forward to the FLAAR Reports bringing you innovative reports on more than just printers.

If you need information now (since the FLAAR Report will take another week or so to finish) you can contact Drytac for spec sheets and information on applications: toll free (USA) **1-800-975-6336**, Toll free Canada: **1-800-353-2883**

If from elsewhere in the world, write info@drytac.com

To see the FLAAR video on our inspection for the evaluation, click here

Here is Nicholas interviewing the owner of the coater. Previously he had bought the biggest name brand, but their UV coater did not function adequately and he asked them to take it back. Then he spent time checking out every single other brand: he selected the one you see here.

What's next at FLAAR ?

Our report on Caldera RIP is being updated. We are receiving more training on the HP latex ink printers, since more people are writing asking FLAAR about this ink than we anticipated. FLAAR was initially trained on HP latex ink first in Israel and then at the world headquarters of Hewlett-Packard wide-format printers in Barcelona (all before the printer was even released to the public or shown at any trade show).

To meet Nicholas and ask questions directly, you can attend his lecture at Sign Africa in Johannesburg in early September or at Print '09 in Chicago (Sept. 14th). Or you can make a reservation for consulting with him at SGIA in New Orleans.

If you are in Europe, you can make a reservation for consulting with Dr Hellmuth at VISCOM Madrid, VISCOM Dusseldorf or VISCOM Milano.

Here is the printer and coater operator, Jacob Duquenne. Notice that FLAAR actually makes printshop inspections and actually checks out how the equipment performs.

The print shop is a 6-hour round trip drive from the FLAAR office in St Louis, so it was relatively easy to reach. You can also download the FLAAR Reports on the other equipment at this printshop: Seiko ColorPainter H-104s.

And, while we were preparing the Seiko evaluation, we dedided to issue a complete glossary on solvent printers: eco-, mild-, lite-, and bio-solvent.

click here