FLAAR Reports

September 2007

UV Printer Using LED UV Curing & Special UV-Curable Ink

Sun LLC and Sunflower Ink

Nicholas Hellmuth

UV Printer Using LED UV Curing & Special UV-Curable Ink

At a Dubai trade show this spring (Gulf Print/Gulf Pack), I was greatly relieved to find a booth with a UV-curable inkjet printer. I was even more pleased to see that it was a UV printer that I had never seen before, not even at DRUPA or FESPA Digital.

Nicholas and SUN team at FESPA 07

Earlier printer trade shows that I have attended both in Dubai and Turkey last year had only a few UV printers, but nowhere near as many as at FESPA (in Europe), ISA, or SGIA (in the US). UV printer use in Europe varies greatly country by country. UV printers are popular in the UK and in Spain, but not as much in Greece, for example.

Since there was not really much else to inspect at this particular Dubai show, other than Canon's nice water-based photo printers, a few HP printers (the Z6100 was behind a curtain, since officially it did not yet exist at this time), and a few OEM versions of Mutoh Spitfire or Rockhopper, I had a lot of time to wander over to the UV flatbed printer booth. Besides, it was filled with attractive young Russian women, most of whom spoke English. Plus, the tech support personnel and other technical personnel were very knowledgeable.

On top of all this, they showed photos of a new general of UV printers, that used LED lamps for curing. So I spent about an hour every day in the booth learning about this new technology.

Nicholas and SUN team at FESPA 07

At FESPA '07 a few months later in Berlin, the entire Russian team was back. This time they had two of the LED UV curing flatbed printers at work. The tech support people were there, owner, director, managers, and most of the people I had met in Dubai.

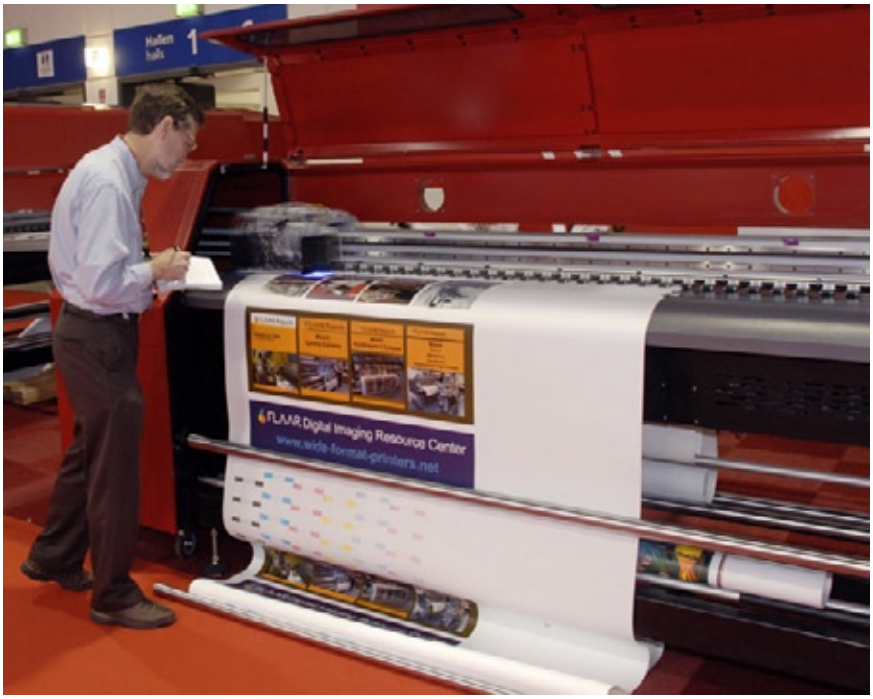
At FESPA everyone else that I spoke with told me that "LED lamps can't cure UV ink; at best they can only pin the ink."

At FESPA the Luscher JetPrint disappeared, as it also had at ISA a few months before. This was an example of trying to use LED lamps that had failed.

The Raster Printers flatbed was trying to use LED lamps to pin their ink. Within a month after FESPA they gave up and returned to using mercury arc lamps.

Although the Inca Spyder 150 has been successfully using LED lamps to first pin (on the printhead carriage) and then cure (a page-width array across the front of the printer gantry), most people either forgot about this or never realized it used LED lamps.

To politely help people understand that LED lamps were functioning just fine in the Sun LLC booth I asked them if they could print my poster for the SIP magazine booth (Verlagshaus Gruber). I also wrote an article for the FESPA Daily News on LED lamps.

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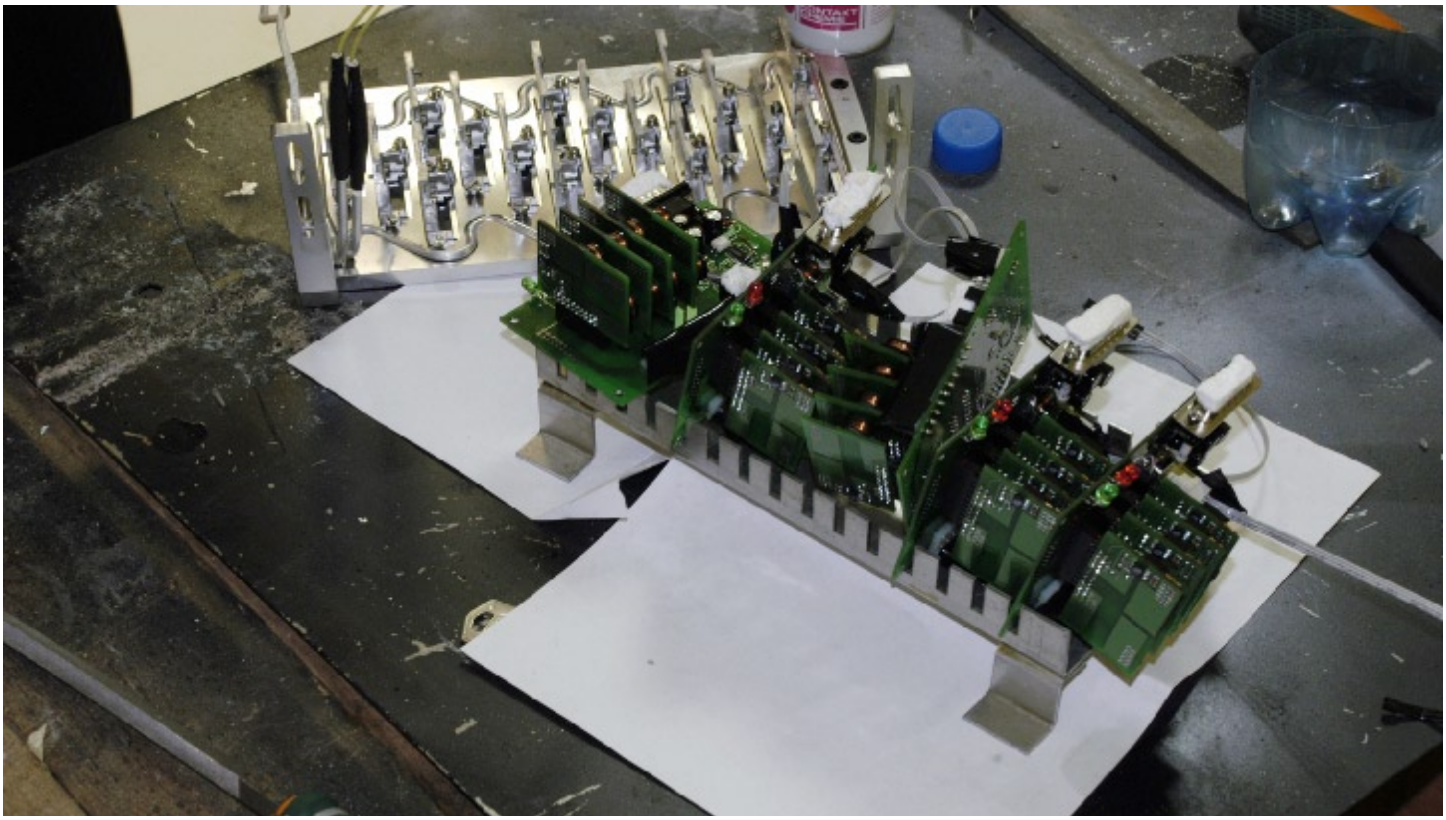
Since officially "LED lamps don't work" I decided to visit the Sun LLC headquarters and factory and also inspect their ink labs and ink production factory in Russia. They kindly hosted me for a week and arranged a 2-day symposium where I presented FLAAR Reports as PowerPoint lectures to an audience of printshop owners from across Russia.

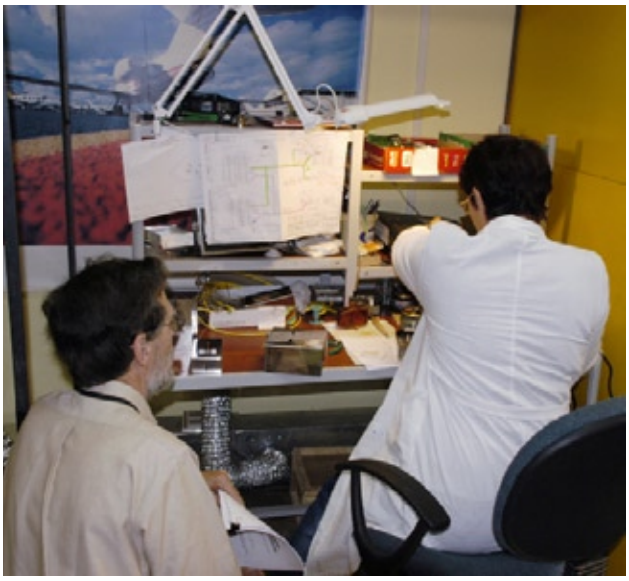
There is a separate FLAAR Reports on the symposium; a separate FLAAR Reports on the LED lamps, and this present FLAAR Report is on the company that stands behind all of this: actually two companies: Sun LLC and Sunflower ink. They are no relationship to Sun Chemical.

For the 2-day symposium the head of ColorGate RIP company came from Germany to provide useful information on RIP software and workflow, as well as two speakers from Xaar. Sun LLC is the Xaar distributor for Russia. The photos here show the tour of the headquarters of Sun arranged for ColorGate and Xaar personnel.

One thing that surprised me was that over 200 people work for Sun + Sunflower Ink. So this is a substantial company.

Since tropical botany is one of my hobbies as well as research activities (Mayan ethno-botany of Guatemala), I enjoyed seeing all the plants in each room.





The printers that used LED lamps in the Dubai show had Xaar printheads. A new generation of NEO LED UV printers was to use KonicaMinolta heads. The chassis of these printers arrived about one day before they had to be up and running at the symposium demo center about 2 hours away. So it was impressive to see how the engineers and factory team assembled all the electronics, printheads, and LED lamp fixtures during around-the-clock labor. These people definitely know all this inside out.

To emphasize the fact that LED curing lamps have effectively no heat, here I am putting my hands directly on the metal housing of the lamp, and directly under the lamp.

My fingers would have melted if this had been a normal UV lamp.

The final five pages of this FLAAR Report show the inside of the Sunflower ink testing labs and manufacturing facilities.

In all the visits we were provided full access, we could ask any and all questions, and I was allowed to photograph anything I wished. They don't exactly worry about industrial spies, since the ink factory is in the middle of a Russian military base.


SL-150


VOLT
AMP
START
STOP

Here is Sergey Belokurov who organized my visit.

Here are samples of Sunflower ink. They make ink for both solvent and UV-curable printers. My primary interest was in learning about their UV ink that can be cured by LED lamps.

Why is this company successful where others have failed?

Very simple: the city of Novosibirsk consists primarily of technical universities and the remains of the heavy industry that Russia moved to be as far east as possible during World War II (out of reach of German bombers). So they have plenty of buildings for factories and plenty of well-educated scientists.

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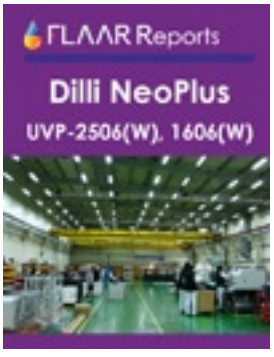

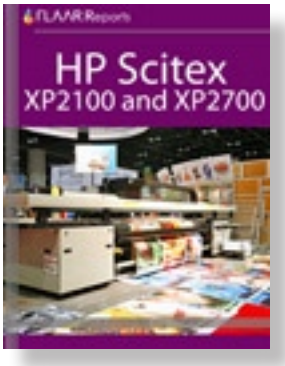

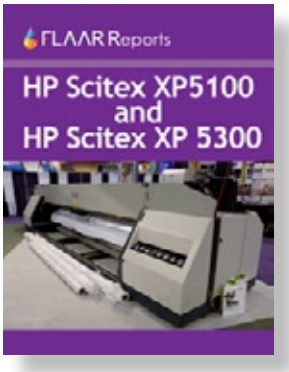

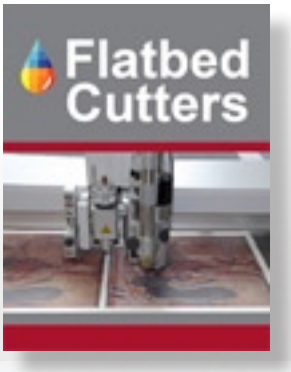

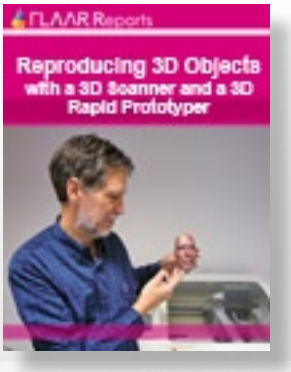

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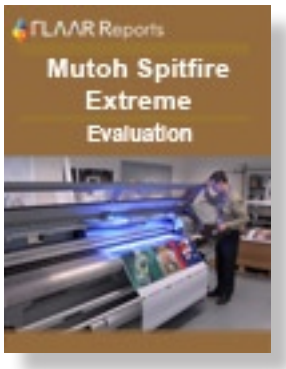

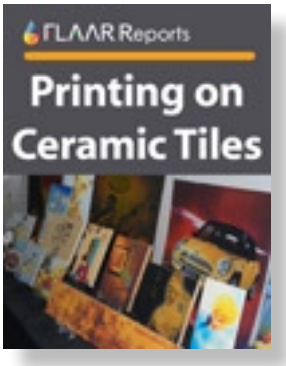

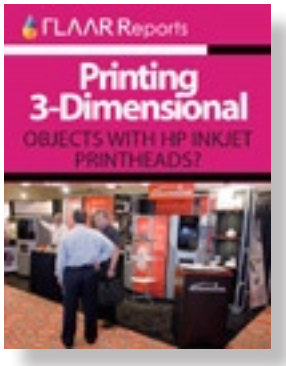

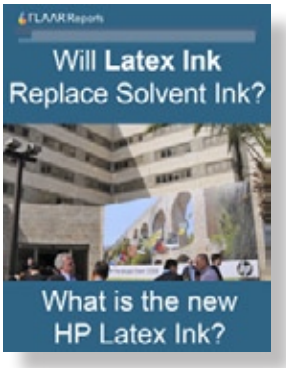

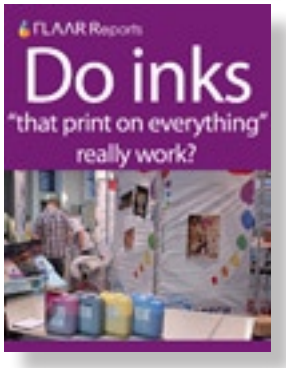

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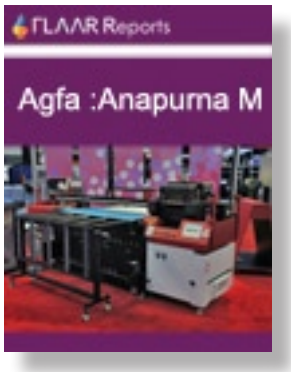

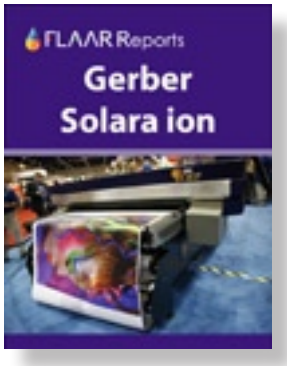

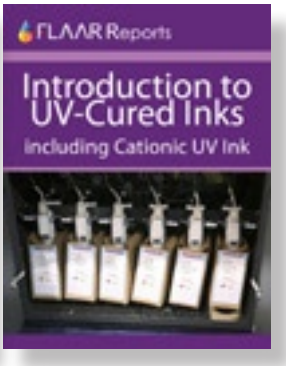

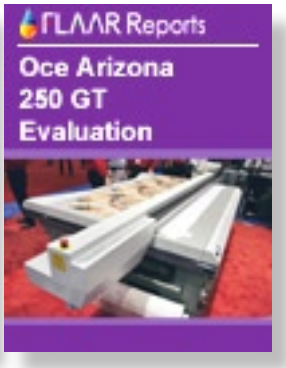

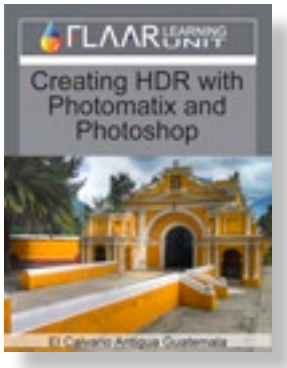

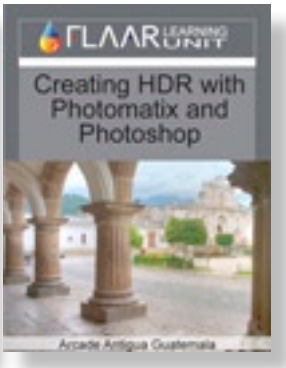

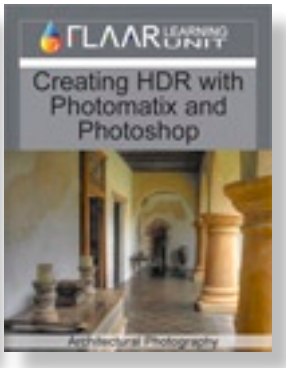

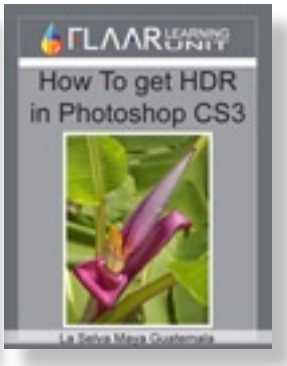

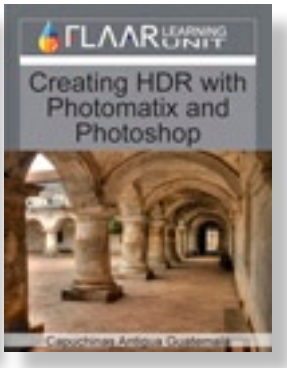

Each month Dr Nicholas Hellmuth travels around the world to investigate and learn more about the new technology.

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