

Technology benchmarking

Comparative testing of thermal and silver CTP technology

With various CTP technologies available from which to choose, claim and counter claim from the different suppliers has been both frequent and, at times, contradictory. Often these claims are not based on fact, rather they are based on the need of suppliers to position their own product range as the most attractive.

Some suppliers claim that **only** thermal plate technology is capable of high quality imaging requirements. Agfa's unique technology position – the only supplier of thermal, silver and photopolymer plates - means that Agfa can independently compare the different plate technologies **in a technically unbiased manner**.

This white paper does just that. Silver (Lithostar Ultra) and thermal plates (Agfa and non-Agfa) are imaged under similar conditions. The high-resolution 200 LPI images on the plates are photographed and compared. The images are then printed; these printed images are photographed and compared. The results are there to judge for yourself – the conclusion you will see is that both thermal technology and silver halide CTP technology deliver printed results of the highest quality.

Tony King

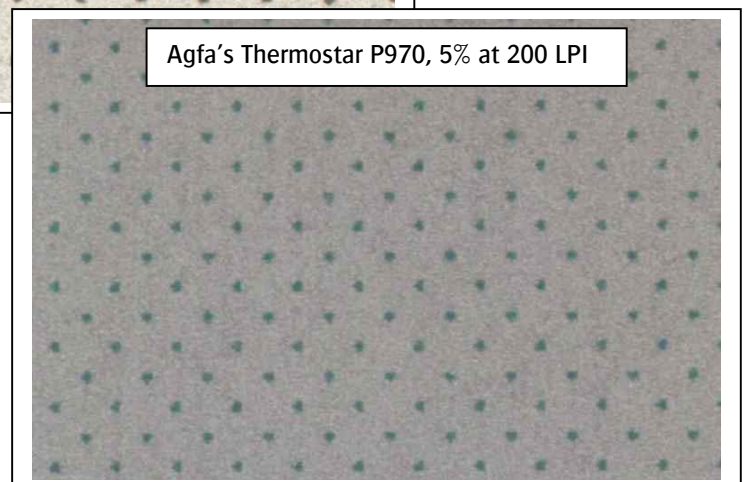
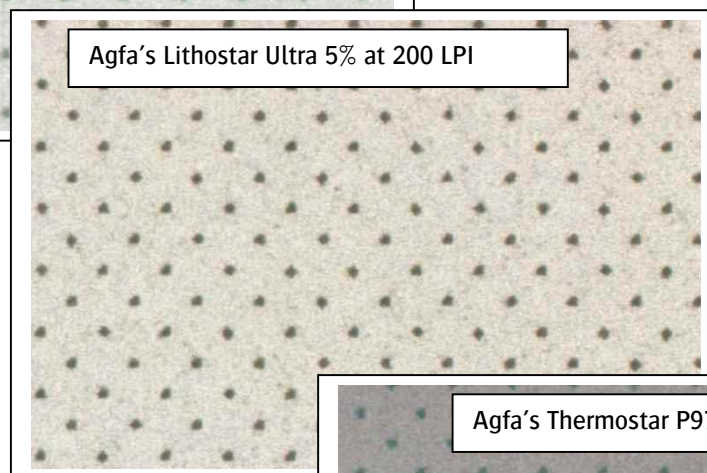
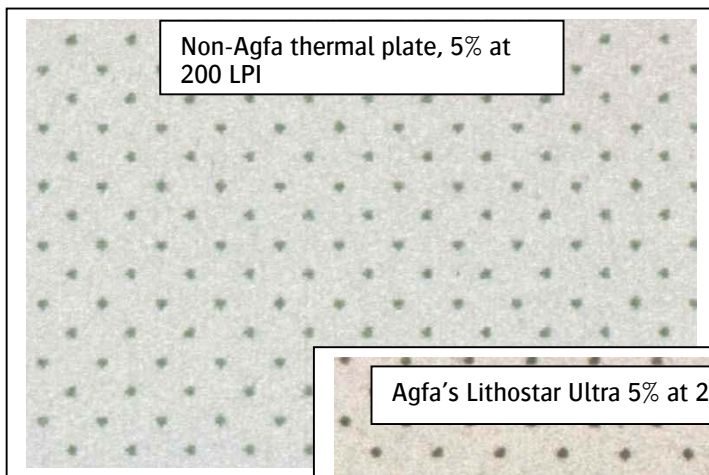
Market Development Manager – Offset Plates

Agfa

1 –Plate images

5% dots imaged at 200 LPI on a non-Agfa thermal plate, Lithostar Ultra, Thermostar P970.

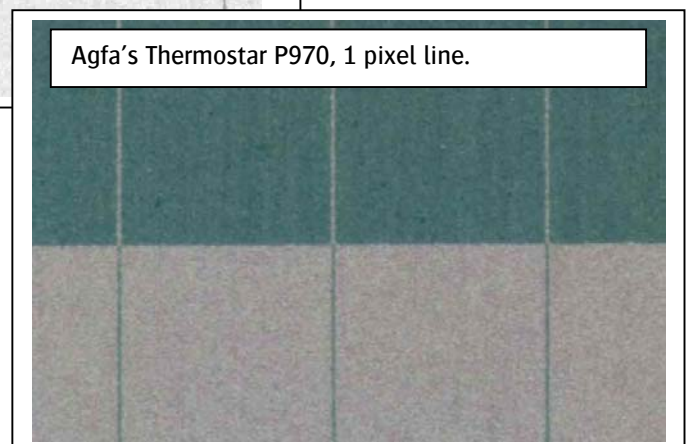
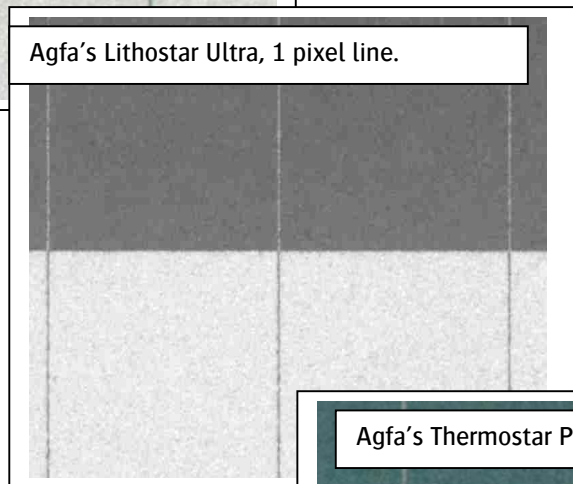
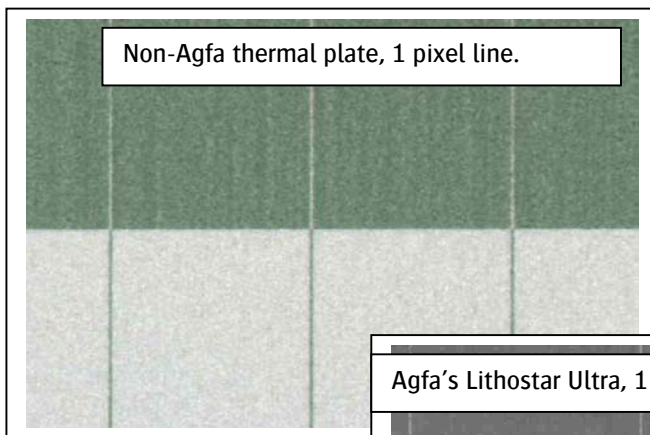
Summary: Both the thermal and the silver halide digital plate technologies show that they are capable of forming well-defined small highlight dots, even at high resolutions. Few printers have any requirements to print beyond this level of detail. The photo's below are image areas approx. 1.5mm x 2.0mm that have been massively enlarged



1 –Plate images

Single pixel vertical lines.

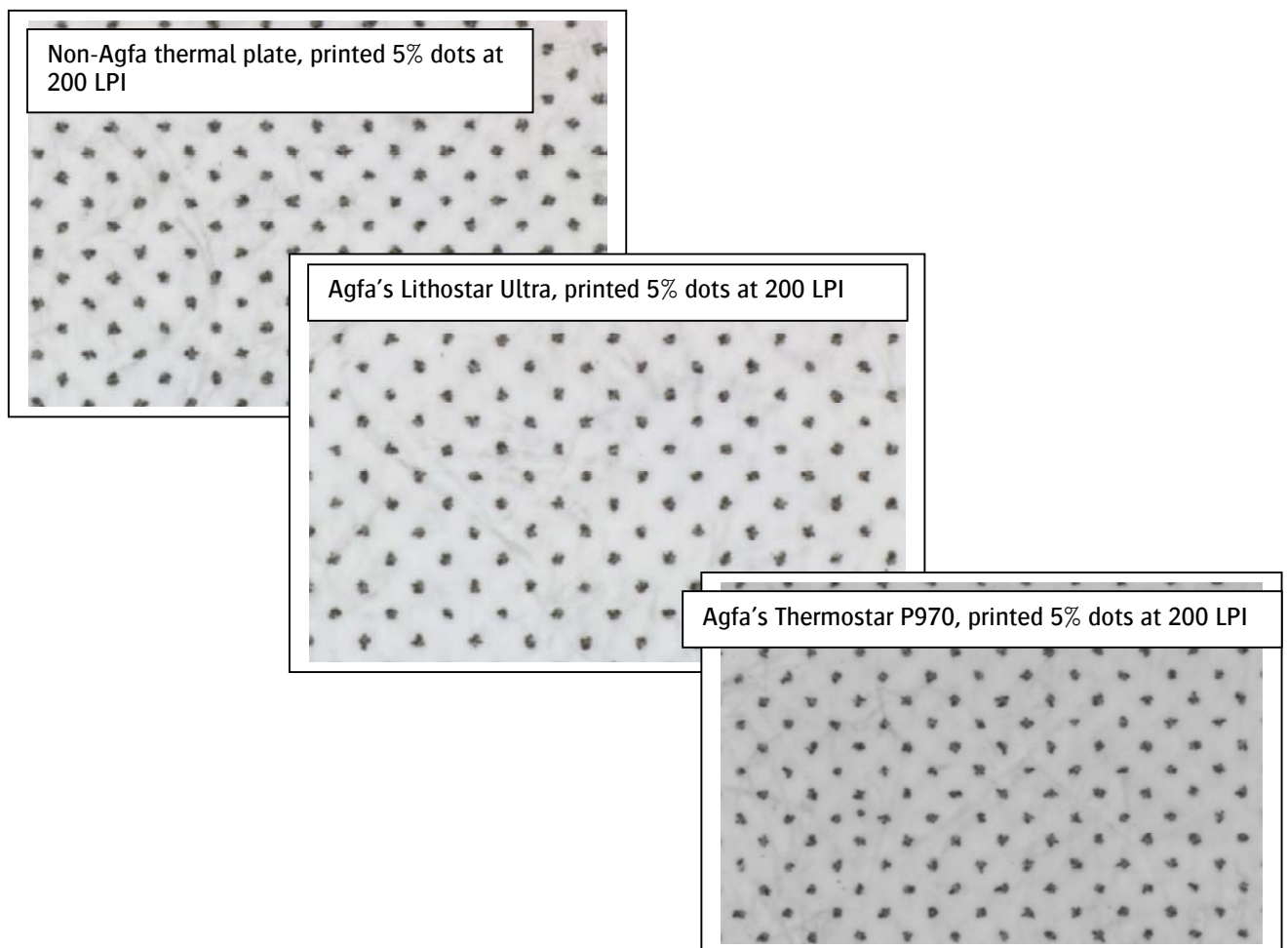
Summary: The image is of a 1 pixel line in negative and positive form. The images shown below are magnified views of a 2.0mm x 1.5 mm area on plate, so the 1 pixel line is microscopically fine. Both thermal and silver plates can resolve 1 pixel detail, which is beyond the practical requirements of most printers.



2 – Printed 5% dots

5% dots imaged at 200 LPI on competitive thermal plate, Agfa's Lithostar Ultra, Agfa's Thermostar P970. Dots printed and photographed

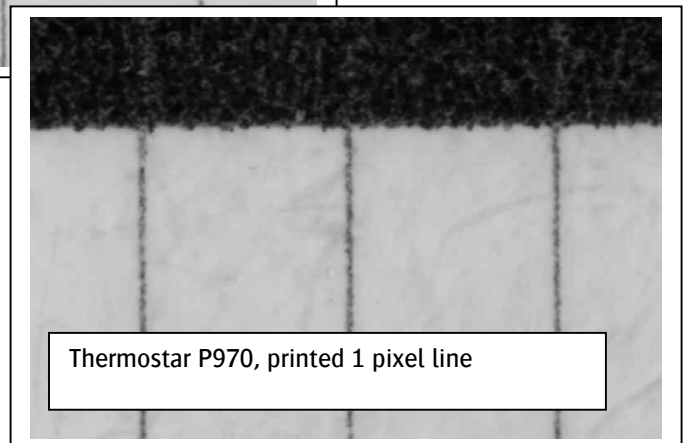
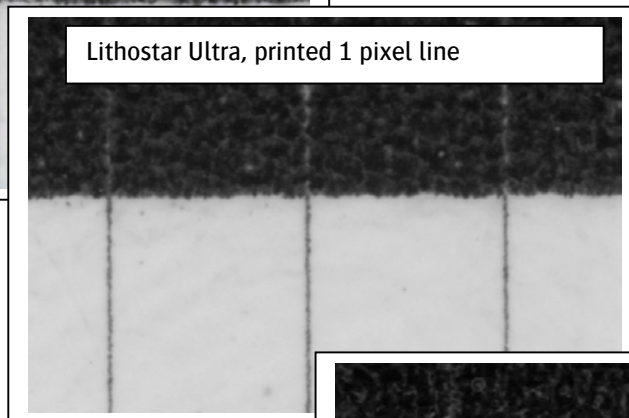
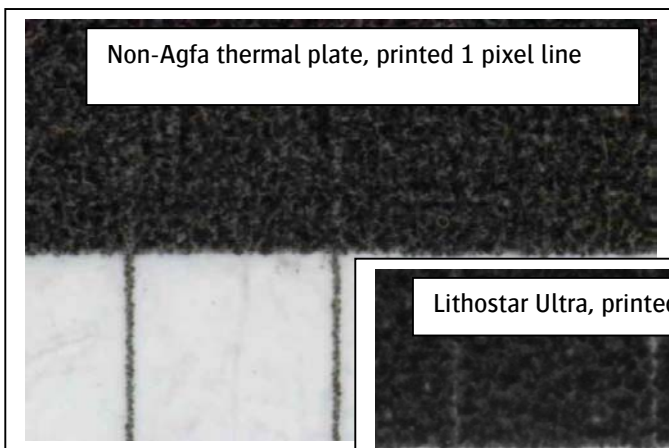
Summary: These enlarged patches (originally 2mm x 1.5 mm) all show the different plate technologies printing the 5% dots well. No differences between the finished printed result, all the technologies give good quality results.



2 – Printed image

1 vertical pixels imaged on the non-Agfa thermal plate, Agfa's Lithostar Ultra & Agfa's Thermostar P970.
Printed sheets photographed.

Summary: The thermal and silver plates show equivalent press performance. Note that, despite the **plate** capability of **resolving** a 1 pixel line, the press used here can't print the same level of detail that the plate holds – see how the ink spreads on contact with the paper in the shadow region. In reality, silver and thermal plates have equal quality and both can hold levels of detail that are, in some cases, beyond the capability of the offset printing process.



Summary

The high-resolution photography over the last few pages has shown that silver and thermal plates can be imaged at high resolution at 200 LPI, giving equally good results.

Printing was performed under highly controlled press conditions using high quality 90 gram/m² matt **coated** paper. Under these “ideal” press conditions any differences – even very minor and insignificant differences – would have been instantly apparent.

The **print** performance of the silver and thermal plate technologies is equivalent.

The level of detail that was analyzed here was beyond the practical limitations of the printing process. The conclusions that can be drawn are very clear.

- Thermal and silver plates are both capable of the highest quality imaging and the highest quality press performance. The large installed base of satisfied users of both thermal and silver plates also tells us that this is true.
- The quality capabilities of these plate technologies is, in some cases, beyond the capabilities of the printing process.
- The claims of some suppliers– that thermal offers higher quality print performance – are untrue.

So the choice between silver and thermal has to be made on factors other than quality.

Such factors will vary from customer to customer but will include run length, plate productivity, CTP purchase cost, cost of ownership, choice of output device etc. Visible light CTP has certain benefits – for example, the violet diode technology offers high speed imaging, long laser lifetime and low cost of ownership. Thermal technology also has benefits – bakeable plates for long run lengths, for example.

The choice of which CTP technology is right for a particular printer depends very much on the specific needs of that printer.

The key to a successful CTP implementation begins with getting technically unbiased advice on the different CTP technologies available – in this respect Agfa is uniquely qualified and offers its services to any printer considering CTP.