

How to produce extra-large sizes in UV offset printing at a low price

UV OFFSET PRINTING. NSL Integrated Print Solutions have invested more than 4 million pounds sterling in super-large UV sheet offset printing. Thanks to their new five-colour printing and varnishing system, the British large-scale print shop can now offer photo quality in sizes similar to canvas screens, even for a variety of print substrates. To achieve that, they are using efficient UV technology.

With large campaigns, too, the trend goes towards short-term planning - particularly in a fast-moving industry such as fashion. This is an advantage for the print shop, which can keep up with the other industries in a flexible way, allowing for large-scale campaigns on the spur of the moment. NSL Integrated Print Solutions, a print shop with more than 100 employees based in Newcastle, Great Britain, know their mainly large-scale market well and have also realised that response rates are an important criterion in competition.

EXTRA-LARGE SIZES. Therefore, as one of the first pioneers, Managing Director Duncan Hesse invested in a KBA 205 with Graftix UV drying - a technical novelty all along the line. Thus, the print

the way we rate our printed POS elements today, because up to now we only had the choice between screen printing and digital printing, depending on the print run.“ You can only picture the extra-large size properly when you are standing next to a press handling 9,000 sheets per hour that are the size of a double bed. This presents the press with extreme challenges, not only regarding the precision of register of the press itself, but also regarding the peripherals engineering, particularly the in-line drying systems - in this case the ink hardening by means of ultraviolet radiation, to be more precise.

UV BRIDGES. Like small bridges, the compact Graftix UV modules span the printing press and harden the UV inks

still no less important is a compact cabinet row placed next to the press, which houses the control and cooling supply for the system. Duncan Hesse talks about his investment: „We are really very happy with our UV dryers. The UV hardening system finally allows us the faster conversion times we require for our customers. This, in turn, gives us the confidence of receiving further orders, particularly on the Continent.“

TURNOVER INCREASED BY 60 %. Even after six months, a hugely positive result is beginning to show: The enterprise NSL, which specialises in outdoor advertising and POS printing materials, was able to increase its turnover by 60 %. Customers such as Woolworth, Dixons Group and Freespirit appreciate their print quality of up to 320 dpi - as well as the fast conversion time, the ink texture and the considerably more competitive price (compared to screen printing). Therefore, NSL was in a position to obtain offset orders for many productions which were distributed in screen printing before. It is true: New technology opens up new markets - this formula works out even in the case of NSL.

UV DRYER CONFIGURATION. NSL use the following Graftix UV dryers:

- 2 UV intermediate dryers
- 5 docking stations for flexible use of the dryers
- 3 UV final dryers

The five-colour sheet offset press has a fully flexible UV dryer configuration which allows - thanks to docking stations - a change-over of the dryers between each of the five printing presses. For depending on the type of ink used, an intermediate drying process may be necessary in different places while, on the other hand, one intermediate drying process after two to three ink applications is sufficient as a rule. The handling of the long but slim units is simplified by a roller guidance and manageable handles. An advantage of this flexible concept is that print shops can achieve a high degree of conversion flexibility with a small investment, including the possibility of using additional special dryers such as the Graftix Deep-UV-Cure opaque white dryers.



The new XXL sheet offset print quality enters into the conventional domain of digital and screen printing. This example is an outdoor advertising product from NSL.

shop also attracted one of its primary customers, Footlocker, a company which is currently undertaking the second POS campaign for several hundred stores with NSL. Danny Zeegers, Footlocker director, comments as follows: „The sheet offset printing quality has changed

on the huge and, in part, extremely heat-sensitive substrates within fractions of a second. This performance is achieved by an efficient yield of the radiation as well as by sophisticated heat management - and all this is provided in the smallest possible space within the machine. Invisible but



Satisfied faces: NSL General Manager Duncan Hesse next to an XXL sheet, and the Technical Manager David Moorhead „aboard“ the large-scale UV sheet offset press.

The three UV final dryers are installed downstream the varnish unit and can be pulled out for lamp replacement. They carry out the final polymerisation of the UV inks and of the UV varnish that was last applied.

Then the print sheets are already completely hardened. The application of powder is only performed for a better and immediate subsequent processing and can thus be reduced to a minimum.

Control of the UV drying system is effected completely via the control panel which recognises automatically where the individual modules are used. The settings of the print jobs can be saved and thus repeated.

UV-HEATMANAGEMENT. NSL work with delicate substrates and therefore need corresponding heat management. Grafix ensures the cold UV application environment by three cooling approaches: 1. a decrease in unwanted but unavoidable IR heat at the location of radiation of the UV lamps; 2. an efficient water cooling system in the drying modules in order to carry off this heat and 3. a supplemental cooling by cool-air blowers on the pressure cylinders opposite the drying modules (optional). The UV dryers are equipped with dichroically coated shutters, on which a thin special coating on the aluminium shutters absorbs the IR radiation and dissipates it to the water cooling of the UV modules. Thus, the UV radiation is reflected free of heat (to a large extent) by the geometrically optimised shutters

UV sheet offset printing

Some advantages • UV inks result in a particularly scratch-free surface, an important aspect especially in POS and outdoor advertising

- The colour depth as a factor of the print quality is considerably more vivid with sheet offset printing than in digital printing
- Until now, the image resolution of up to 320 dpi as another factor of the print quality can only be implemented in a cost-effective way in sheet offset printing
- There are almost no limits to the type of print substrate – vinyl, PVC, polypropylene, paper and cardboard, even corrugated as well as in stronger grades.

and directed at the substrate. The supplemental cooling of the pressure cylinders (optional) cools the sheet from below. This combined principle is easy to adjust and reduces the necessary cooling effort and thus the energy demand.