

nyloflex[®] NExT

High Intensity UV Exposure Technology to create Flat Top Dots and for Surface Screening

requires **NO** additional
CONSUMABLES

nyloflex[®] NExT sets standards in flexo form making

nyloflex[®] NExT, a high intensity UV exposure technology, introduced by Flint Group Flexographic Products, enables precise reproduction of the digital layout onto the finished printing plate.

Exposing flexographic printing plates with UV-A LEDs offers great possibilities to establish a new quality standard for flexo form making. The high level of UV emission leads to a significant improvement in the reproduction of finest relief elements.

The ability to reproduce high resolution surface screenings provides superior print quality with much better ink laydown. The improved mechanical properties and the precisely defined surface of flat top dots ensure a consistent high print quality, also for long print runs.

In comparison to typical digital dots, the physical characteristics of flat top dots enable reduced dot gain tolerances, which are usually caused by varying impression settings.

The nyloflex[®] NExT system can be used with virtually all types of digital plates; there are no limitations regarding plate types, substrates and ink systems.

Two step exposure – Combination of UV-A LEDs with UV-A tubes

In the first step a UV-A exposure is performed by scanning the plate surface with a high emission UV LED line. This results in a very fast crosslinking of the surface, even faster than the oxygen diffusion



Step 1 – High intensity UV surface crosslinking

Step 2 – Through-cure with conventional UV tubes

occurs. Thus, the oxygen effect is suppressed. In a second step, the relief is created by exposure with standard UV-A tubes. In addition to a significantly higher level of UV intensity (up to 20 times), the emission of UV LEDs is much more consistent, and the lifetime is longer compared to conventional UV tubes.

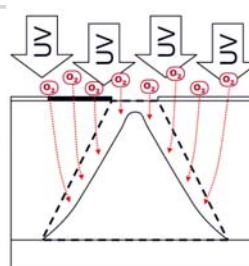
Due to the beneficial characteristics of UV LEDs, which do not reduce their UV intensity over their lifetime in the way conventional UV tubes do, nyloflex[®] NExT substantially enhances production consistency, especially for recurrence orders.

How does oxygen inhibition affect the print result?

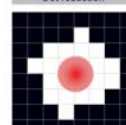
Typical, digitally imaged plates are exposed with UV-A tubes under ambient atmosphere. The oxygen present in the atmosphere acts as an inhibitor during the crosslinking reaction. This leads to a dot reduction during data transfer from the layout to the finished plate.

However, a one-to-one reproduction of the original data would be the ideal case. The question is: How to minimise or avoid the oxygen inhibition? This is presently the most widely discussed topic in the flexo industry. With nyloflex[®] NExT, the high intensity UV exposure accelerates the polymerisation propagation. Due to strong surface curing, the oxygen effect is eliminated.

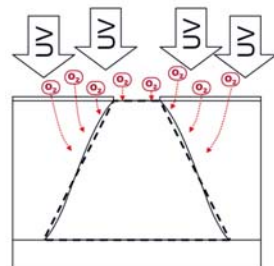
Digitally imaged LAMS layer and exposure with UV-A tubes



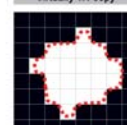
Dot reduction



Digitally imaged LAMS layer and nyloflex[®] NExT exposure technology



Virtually 1:1 copy



Why flat top dots and surface screening?

Compared with round shape dots, from traditionally imaged digital plates, flat top dots, with precisely reproduced surfaces, provide all the benefits linked to this geometry:

- Tremendous improvement of ink transfer and laydown in solids, increase of density up to 25 %
- Extended gamut due to the reproduction of finer highlights
- Low dot gain tolerances – “Flat Top Dots” are less impression sensitive
- Virtually 1:1 image transfer



nyloflex® NExT technology – Products

Processing Equipment

Flint Group has filed a patent application for this innovative technology, a combined exposure with UV LEDs and conventional exposure with UV tubes. To benefit from this new technology two types of nyloflex® NExT Exposure units are available.

- **nyloflex® NExT Exposure F III**
Mid size exposure unit
Format 920 x 1200 mm (36.2" x 47.2")
- **nyloflex® NExT Exposure F V**
Large size exposure unit
Format 1320 x 2032 mm (52" x 80")



Why nyloflex® NExT technology?

In addition to the general benefits of using flat top dots, the nyloflex® NExT technology offers significant advantages:

- nyloflex® NExT can easily be implemented in an existing digital workflow, with no additional processing steps (such as film lamination) necessary
- No additional consumables required (no inert gas, no film), thus avoiding all risks and extra costs
- Compatible with every standard prepress software and HD Flexo
- High level of UV emission improves reproduction of finest relief elements
- Excellent repeatability because of constant UV output, even over a long lifetime
- Suitable for all standard digital plates in all plate formats and all plate thicknesses
- Significant reduction of the fluting effect in corrugated printing
- The combination of UV-LED and UV-tubes allows the definition of various dot shape and shoulder angle of relief elements

Printing Plates

All nyloflex® Digital plates can be used with the nyloflex® NExT technology.

- **nyloflex® printing plates**
High quality solid photopolymer plates for all flexographic applications.
Available in thicknesses from 0.76 mm (0.030") to 6.35 mm (0.250") and formats up to 1270 x 2032 mm (50 x 80").
- **nyloflex® NEF Digital**
High durometer plate for flexible packaging and labels, especially designed for the nyloflex NExT exposure technology. Highest quality combined with improved productivity due to short exposure times.

Available in thicknesses in 1.14 mm (0.045") and 1.70 mm (0.067").



You are welcome to contact us for further information.

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