



SIEGWERK

explicit

Ink Systems for LED-UV

LED-UV – the very latest UV technology

Siegwerk develops ink systems for LED-UV label printing

Siegwerk is the world's first printing ink manufacturer to develop the inks needed for the latest UV technology and put them into production. This pioneering achievement involved **developing UV flexographic printing inks, UV screen printing inks and UV overprint varnishes for the highly specific radiation spectrum of LED-**

UV light that cure fully despite the low energy and are a match for conventional UV inks in terms of drying speed. During tests using a suitably equipped flexoprinting machine, print speeds in excess of 100 m/min were achieved, with the inks curing flawlessly.

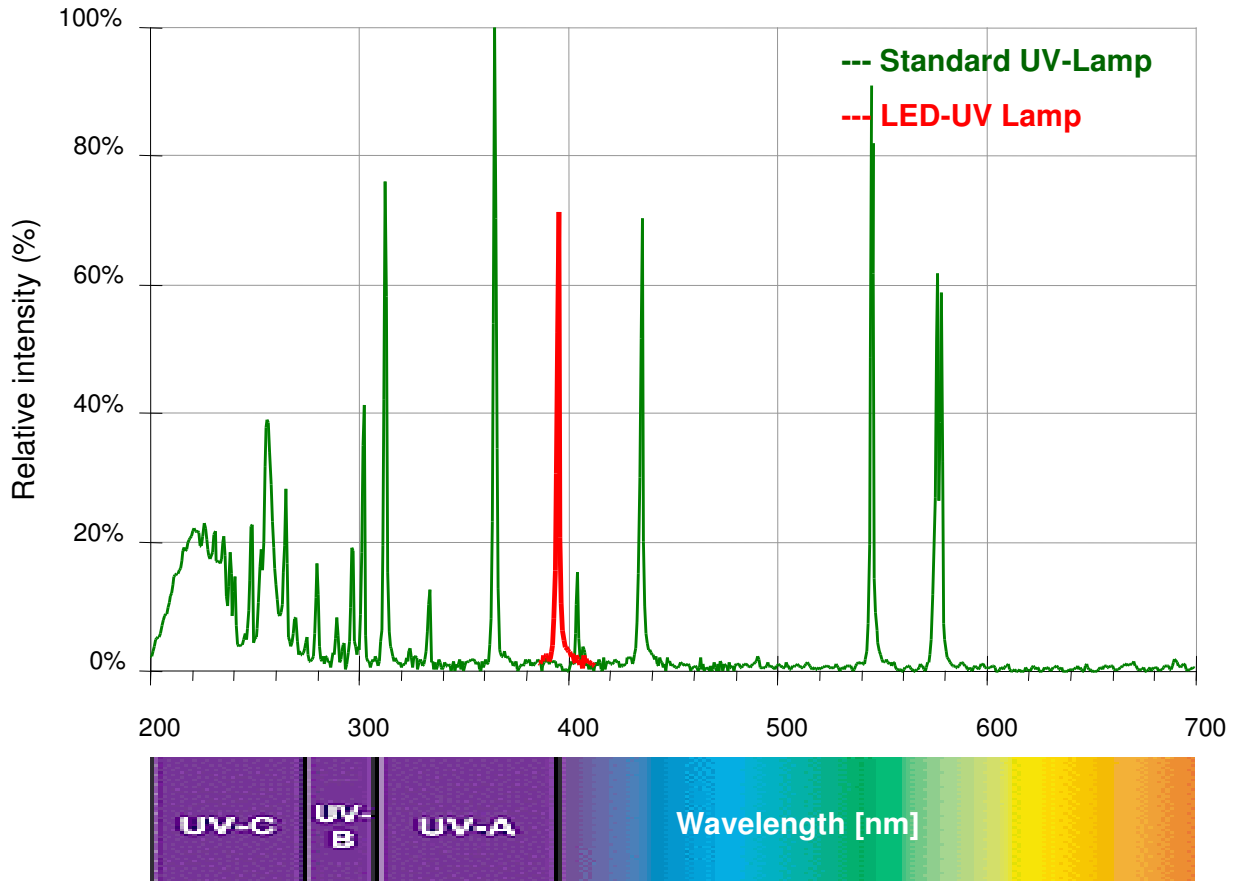


LEDs (light-emitting diodes) are based on the principle of electroluminescence: a tiny semiconductor panel emits light when subjected to an electric current. This light consumes **very little energy**, the diodes have an extremely long working life and they generate **no ozone**. Unlike conventional UV lamps with mercury tubes, the LED-UV lamp built into the label printing machine consists of innumerable small LED panels arranged across the entire width in multiple rows.

The print path can be routed very close to the LED panels since practically **no heat** is generated. While a conventional UV lamp requires a warm-up phase lasting a few minutes, the LED-UV lamp has no waiting time and is **immediately operational** after switch-on.

The LED-UV lamp emits only a small range of the conventional spectrum of UV lamps. **In particular, the high-energy IR radiation and the hazardous UV-B and UV-C radiation are absent.**

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Due to the extremely narrow wavelength window of the LED-UV lamp (peak at 395 nm), conventional UV inks cannot be dried using the new lamp. This makes the new ink systems developed by Siegwirk indispensable for the LED-UV technology.

As with every innovation, the lamps and inks are currently still somewhat more expensive than those for conventional UV drying. The additional cost amounts to about 15% to 20% for the inks. However, the much lower energy consumption (savings of 50% to 80%), the elimination of extraction systems and the greater work safety are powerful arguments that are all clearly in favour of the new LED-UV technology.