

JetScreen! LT for large formats.



Computer-to-screen in the glass industry

Urs Bachofner highlights the latest computer-to-screen developments from Lüscher Technologies to support the decoration of flat and hollow glass.

The finishing of glass by screen printing has become a rapidly growing market in recent years. In addition to purely decorative layers, functional layers are increasingly being applied to glass by this method. The advantages of screen printing are obvious. It is almost independent of format and shape, it allows high colour application with all colour systems and it is characterised by the highest colour brilliance and opacity.

Digital printing technology has also become established in some areas, although it has to contend with certain disadvantages. Unit costs are still too high, especially for large editions and digital printing does not allow a high level of colour application. A maximum of 6-10µ is possible, whereas 60µ or more is feasible with screen printing.

It can be assumed that the availability of film will be further reduced and that eventually, new film exposure systems will no longer be available. As an alternative, inkjet film is available in the market but it cannot meet the high quality level needed for glass decoration, or only at great expense. It is not a question therefore whether stencil production will have to be adapted.

Sooner or later, there will be no choice other than to switch from conventional to digital stencil production.

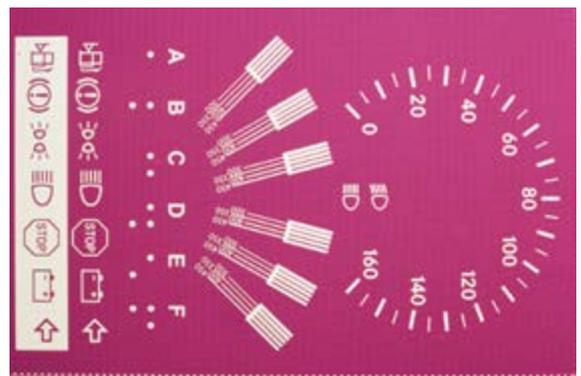
There are basically three types of computer-to-screen technologies. Given below is a brief overview of the processes used:

- **CtS with inkjet:** In this case, an opaque ink or wax is applied to the coated stencil by means of inkjet nozzles. The screen is then exposed by UV lamp, washed out and dried.
- **CtS with DMD exposure:** A DMD (Digital Micromirror Device) chip, as often used in beamers, is exposed to UV light, either using a normal MH lamp or with LEDs. The tiltable mirrors, several hundred thousand of them depending on the chip size, reflect the light via optics onto the coated screen.
- **Laser direct exposure:** The exposure is performed by fibre-coupled laser diodes in the UV range, usually at a wavelength of 405nm. The light-transmitting fibres lead directly into the optics and transfer the light to the screen printing stencil with practically no loss.

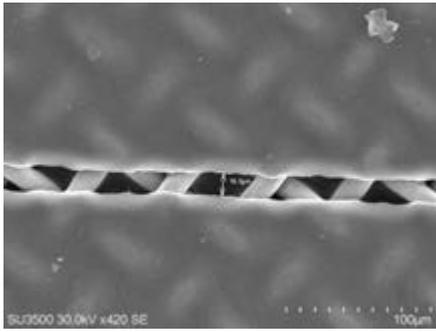
Screen printing on hollow glass and transfer printing for tableware

The steadily growing quality demands from customers has in turn resulted in higher demands on screen printing, especially on the production of stencils. These days, perfume flacons, cosmetic jars and beverage bottles are printed very elaborately and the finest lettering, lines and decorative elements require the highest precision in stencil production.

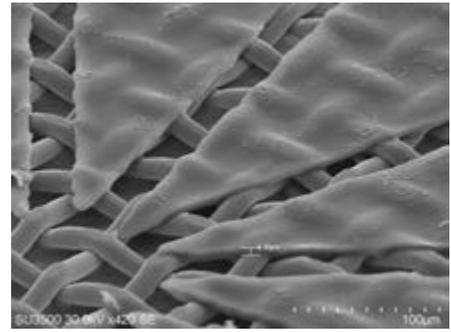
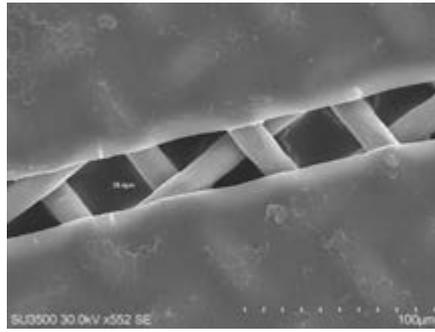
With the MultiDX! line, Lüscher Technologies has developed a system that meets these high demands. As the only manufacturer of such systems, the company relies on an exposure technology based on UV lasers in the 405nm wavelength range. This technology offers sufficient energy reserves to expose even thick emulsions and capillary film and above all, to cure them with the aim of achieving ▶



Car display.



AZOCOL Z177 FL, 10160 dpi. Image: Kissel + Wolf GmbH.



maximum run stability. The laser diodes are characterised by an extremely long lifetime of more than 20,000 exposure hours and guarantee lowest operating costs at highest production reliability. The number of laser diodes, which is decisive for the exposure time, can be configured up to a maximum of 128, depending on requirements and retrofitting on-site is possible at any time.

With resolutions up to 5080 dpi, it is possible to image the finest lines, down to 20µ on suitable tissues and emulsions. The MultiDX! is available in two sizes: MultiDX!

320 with a maximum frame size of 1000mm x 1000mm and MultiDX! 340L, which can process frames up to 1500mm x 1450mm. The Lüscher platesetter is designed as a flatbed system, with the fabric lying stable on a vacuum table. This guarantees a perfect exposure over the entire format, with no 'fluttering' of the fabric possible.

to-screen applications and with the JetScreen! LT series, a different design has been introduced to the market. With a maximum frame format of 5500mm x 3200mm and exposure by laser diodes in the 405nm wavelength range, this system is up to any challenge. Nearly all commercially available emulsions can be exposed and above all, thoroughly hardened. For the first time, due to the Trioptical system, there is a choice of three resolutions to achieve the best quality to speed ratio. The standard resolutions of 635, 1270 and 2540 dpi can be selected at the touch of a button and other resolutions are available on request. ●



High build.

Screen printing on flat glass

The requirements for the decoration of flat glass are many. Whether printed facade glass, shower partitions or other applications, the technical requirements are extremely demanding. Functional layers or pastes are also printed on flat glass using screen printing techniques and place special demands on fabrics and emulsions. Generally in this case, a relatively high application of colour/functional layer is desired and the requirements for through-curing are correspondingly high. Added to this is the fact that printing is sometimes performed in very large formats.

Since 2019, Lüscher has been dedicated to large format computer-

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JetScreen! LT installation at Joh Sprinz.



The MultiDX! System is described as an allrounder.