

LÜSCHER

Lüscher in the early 1990's had the vision to see and understand the developing technology of imaging data directly to plate and eliminating the inefficiencies inherent in creating the image on film and subsequently imposing that image onto the metal plate.

Although Lüscher was a small company, it had experience in developing various innovative and complex machines dealing with the automation of the textile industry including screen printing and the step & repeat mechanization.

With hindsight one can envision the engineering thought process that was going through the minds of this small, but innovative staff, to seize upon the opportunities available with this emerging technology of computer to plate. They obviously studied and analyzed the various processes that were developing in the industry. These were represented first by the internal drum approach used almost universally for imaging film and then secondly by the less prevalent approach utilizing the external drum. In addition, there were efforts by Scitex and Screen towards developing the flatbed approach to imaging plates.

Lüscher's staff obviously studied how they could seize upon the advantages of these various approaches and at the same time eliminate the disadvantages of each. Among the advantages was the ability of the external drum technology to position the laser head within a few millimeters of the media being exposed. However, to accomplish this required the disadvantage of being required to fasten the media to a drum that must rotate at a high speed requiring it to be secured by a complex clamping mechanism adequate to overcome the centrifugal force inherent in the process. The internal drum approach avoided these expensive mechanisms but in the process created an almost unsolvable problem of positioning the laser beam close enough to the media to avoid being locked into the need for a super sensitive media that could not sustain the very long print run required by a large segment of the industry. Although the flatbed approach contained elements that addressed the problems inherent in the drum approach, it contained complex engineering and manufacturing hurdles as well as productivity hurdles.

Lüscher's engineers analyzed the various technologies and reasoned that the internal drum advantages were the foundation to build upon. They further reasoned that if you could somehow rotate the laser mechanism as opposed to rotating a drum with the media adhered to it, you could have the best of the three engineering approaches. This is exactly what they accomplished. It has evolved to be an approach that provides the benefits of all three engineering approaches.

Their solution was to design a precision concave drum similar to the internal drum that was currently in use. The drum was designed to be open and accessible to an operator to easily position and remove the metal plate. They then designed a rotating drum just wide enough to accommodate the laser diode mechanisms which they imbedded in its exterior surface in rows of 8 and placed this mechanism within the confines of the concave drum. This entire mechanism was mounted upon a lead screw similar to that used for traversing the laser across the internal drum of the imagesetter for exposing film. The effect was to move the imaging "drum" across the length of the plate which has previously been positioned by the operator in the cavity of the drum. This allowed the laser to image, with each revolution, as many channels on the plate as there were rows of diodes mounted on the drum. A rotating speed of 250 RPM (as compared to the early 800 - 1,000 RPMs of the PT-Rs and Lotems platesetters) to create imaging speeds competitive with most existing platesetters.

With this innovative approach, they had developed an entirely new approach to imaging plates which took advantage of all the positive benefits of the three competing technologies.

A chronological listing of Lüscher product offerings follows:

Model	Year	Max. & Min. Plate Size		Laser
Xpose! 120	1997	43.3 x 35.4	20.4 x 14.1	830 nm - 32 / 64 diodes
Xpose! 160	1997	53.14 x 64.96	20.4 x 14.1	830 nm - 32 / 64 / 128 diodes
Xpose! 180	2000	80 x 58.5	25.6 x 19.6	830 nm - 32 / 64 diodes
Xpose! 75	n/a	29.9 x 25.6	15.0 x 9.8	830 nm - 32 diodes
Xpose! 80	n/a	31.5 x 25.6	20.4 x 14.1	830 nm - 32 diodes
Xpose! 130	n/a	44.5 x 37.4	19.7 x 14.1	830 nm - 64 diodes
Xpose! 190	2004	74.8 x 58.4	23.8 x 16.1	830nm - 64 / 128 diodes
Xpose! 190L	2004	81.9 x 63	25.7 x 16.1	830 nm - 64 / 128 diodes
Xpose! 190XL	2004	89 x 63	25.7 x 16.1	830 nm - 64 / 128 diodes
Xpose! 230 UV	2007	44.4 x 37.4	16.9 x 14.1	405 nm - 32 / 64 / 128 diodes
Xpose! 260 UV	2007	66.1 x 53.9	21.2 x 14.9	405 nm - 64 / 128 diodes
Xpose! 290	2008	74.8 x 58.4	23.8 x 16.1	405 nm - 64 / 128 diodes
Xpose! 290L UV	2008	81.9 x 63	25.7 x 16.1	405 nm - 64 / 128 diodes
Xpose! 290XL UV	2008	89 x 63	25.7 x 16.1	405 nm - 64 / 128 diodes

See page 39 for the productivity specs.