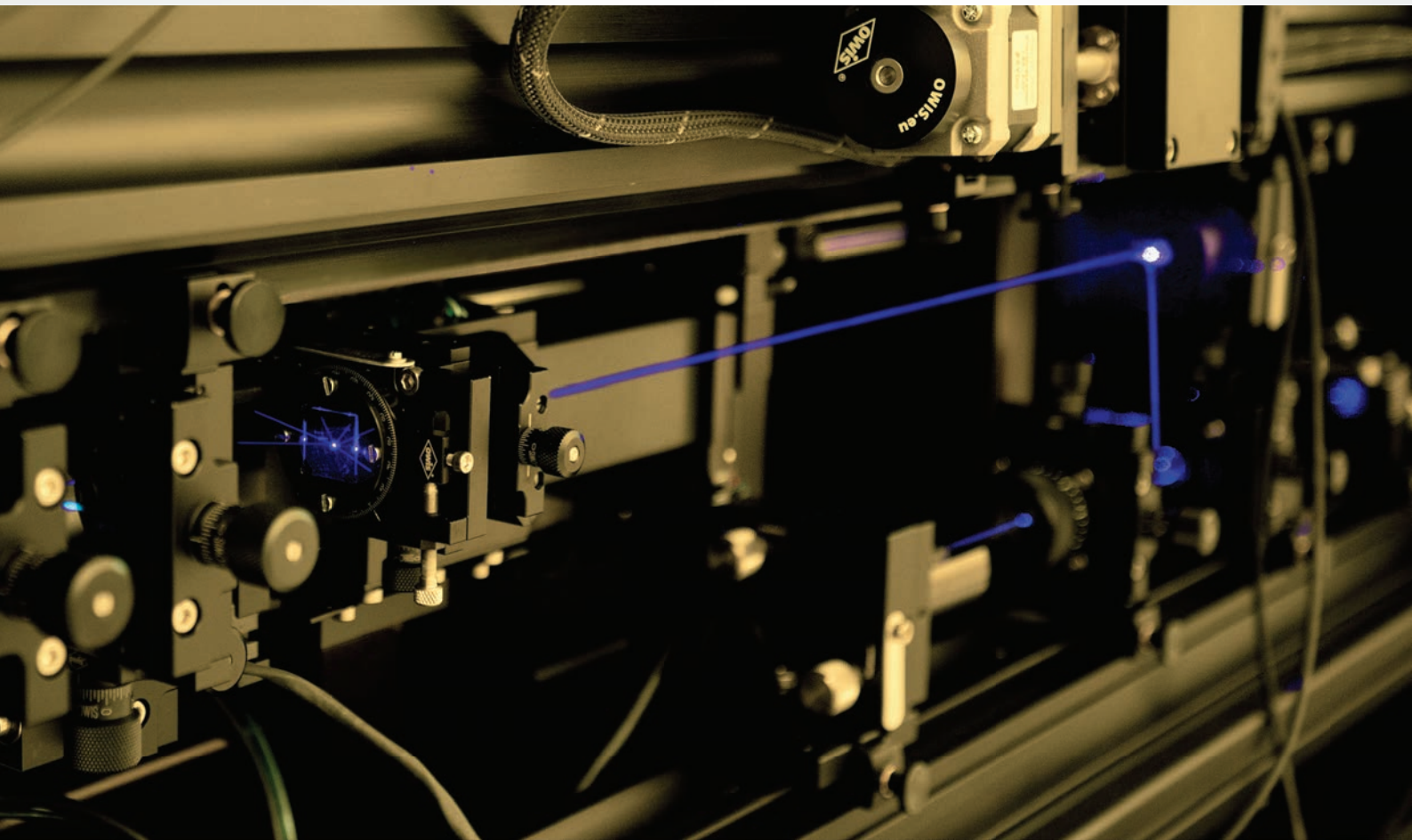

Mycronic Prexision™-80

Enabling production of high end display



MYCRONIC
When passion meets innovation ●

Prexision-80

Higher yield for high resolution displays

As leaders in display pattern generation for more than a decade, Mycronic has been integral to enabling the evolution of display technology. Now, with the new Prexision-80, we're taking image quality and display yield to new heights, thus enabling more cost efficient production for mask shops and display makers.

By enabling utilization of the full sweep length in single-pass writing, the Prexision-80 represents a significant breakthrough in terms of productivity over its predecessors. Depending on the pattern exposed, this means a productivity boost of up to 600% compared to earlier mask writers. The system is equipped with two writing modes: HA mode for high-accuracy applications; and HT mode, when productivity is most important.

IMPROVE MASK SHOP AND DISPLAY MAKER YIELDS

Improving mask writer image quality means that mask shops can meet the increasing demands of mask users at the first attempt. No need for re-exposures or multi-pass printing means increased yield and more cost efficient mask production. The improvement in image quality further boosts yield at the display maker.

ERROR-FREE PLACEMENT

A range of innovative improvements – including a new servo system, new sweep electronics and X-movement – make the Prexision-80 our most accurate platform to date. Thanks to a state-of-the-art X-carriage controlled by glass scales and linear encoders, the platform is more stable and robust, resulting in better placement performance and hence Mura reduction. Regardless of mask flatness and presence of particles, Z-Correction ensures superior performance in written overlay, thus eliminating the dominant source of overlay/registration errors. Another improvement is a flexible overlap capability, making it possible to adjust the overlap area to make sure that pattern stitching occurs where no sensitive pattern is located.



ENHANCED CD CONTROL

To further reduce the risk of Mura, the Prexision-80 includes a new optical head that enhances both focus control and image stability. Together with a new sweep generation board, this means that CD and positioning within the sweep have been significantly improved to meet the industrial roadmap.

FLEXIBLE PRODUCTION PLANNING

The flexible overlap, combined with other improvements in placement and CD uniformity, makes it possible to use the full sweep length, thereby increasing productivity irrespective of pattern. Writing time is predictable regardless of the pattern exposed, which simplifies production planning at the mask shop by making production schedules far easier to control.

RELIABLE PRODUCTION AND SYSTEM OPERATION

In order to guarantee the most reliable system operation, the Prexision-80 laser pattern generators are set up and maintained according to a new scheme. New monitor and tuning patterns are used, and most set-up and tuning measurements are performed using the writer to increase precision and save time.

The new test patterns are designed to capture all existing errors in order to ensure that any pattern can be written inside the presented system specification. These patterns are also used during system acceptance and are therefore reflected in the Prexision-80 specification sheet. The result is a highly robust platform that not only meets tomorrow's image quality standards, but sets a new benchmark in productivity.

KEY SPECIFICATIONS ITEM	HA MODE	HT MODE SPEC.
Minimum lines and spaces (pitch/2)	0.75 μm	1 μm
CD uniformity (3σ)	15 nm	25 nm
CD linearity 1.5–10 μm (p-p)	50 nm	85 nm
Written registration (3σ)	150 nm	200 nm
Written overlay (3σ)	50 nm	70 nm
Mask set overlay (3σ)	75 nm	100 nm
Local placement (3σ)	30 nm	50 nm

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