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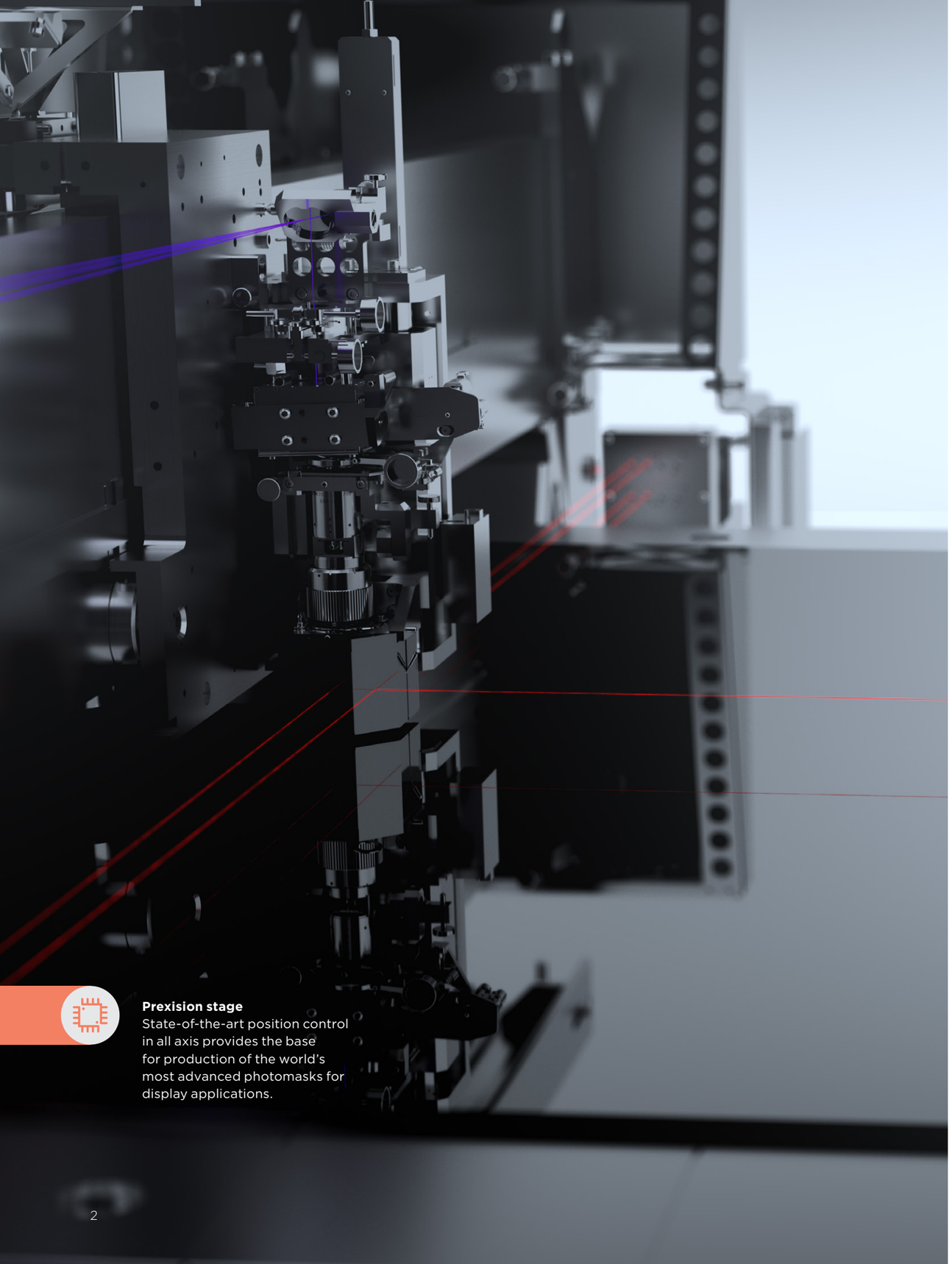
Setting the global **standards for displays**

The Prexision™ Evo series





Remarkable precision for all the world's displays



Prexision stage
State-of-the-art position control in all axis provides the base for production of the world's most advanced photomasks for display applications.

Prexision Evo series

Remarkable precision for all the world's displays

The new generation Prexision series are built on the Evo control platform. Updated with new, innovative software and hardware architecture, it's been designed for the future of production automation, advanced connectivity and big data applications.

IMPROVED STABILITY AND HIGHER UPTIME

New servo board with linear movement, simplified electronics with better performance and modern bus structure provide superior stability and better error handling to create higher system uptime.

SUPPORT FOR HIGHER LEVEL OF FACTORY AUTOMATION WITH VARIOUS LOADER SOLUTIONS

Newly developed PLS (Pre Loading System) and interface supporting communication from factory automation system minimize human interface in order to reduce contamination and human error.

BETTER SUPPORT FOR LOGGING, CONNECTIVITY AND BIG DATA APPLICATIONS

New servo board logs all motions in system which can be analyzed and used for many different purposes. This enables stable system operation and extension to big data applications.

EXTENDABLE WITH NEW FUNCTIONALITY

Built on completely new modern hardware and software architecture, it enables development of new functions to meet customers' future demand.

Prexision 8000 Evo
Unlock the potential of what a display can do, and everything it can become

The quest for improving display performance and consistency never stops putting new demands. Delivering smooth gaming, dazzling contents and emerging near-eye displays put an ever-increasing demand for higher refresh rates, resolution, brightness and contrast with energy consumption considered. These factors have pushed the need for high precision to a new, previously unseen level in display manufacturing.

IMPACT ON DISPLAY PHOTOMASK MANUFACTURING

- Due to increasing in display design complexity, the most advanced display requires over 20 photomask steps
- Contact Hole quality become more critical since more contact holes with smaller size required to connect different layers
- Increasing of critical layers
- Global and Local placement accuracy become more important
- Strong OPCs (Optical Proximity Correction) demand increase to push display exposure system resolution further
- All sums up with yield challenges

THE BEST CHOICE FOR TOP-CRITICAL PHOTOMASK MANUFACTURING

Prexision 8000 Evo is the latest and most advanced mask writer to date. The system is based on long experience in the display photomask industry, combined with new technologies and insights gained from our highly successful return to the semiconductor field delivering higher resolution by 10% compared to previous model, enabling better contact hole fidelity, smaller feature, as well as greater accuracy, for precise placement patterning without sacrificing productivity.

Prexision 8000 Evo system will tackle existing challenges allowing better production yield at the same time, it will support the industry in driving display technology innovation for many years to come.

BENEFITS OF THE PREXISION 8000 EVO

- Increase in resolution by 10% than its predecessor
- Longer microsweep lengths to maintain productivity at higher resolution
- 4th generation software algorithm compensates uneven beam performance in more dimensions
- New interferometer design with lambda reference enables precision placement control regardless of ambient air variance
- New options – Corner Enhancement and Process Equalizer to further improve contact hole fidelity and global CDU performance

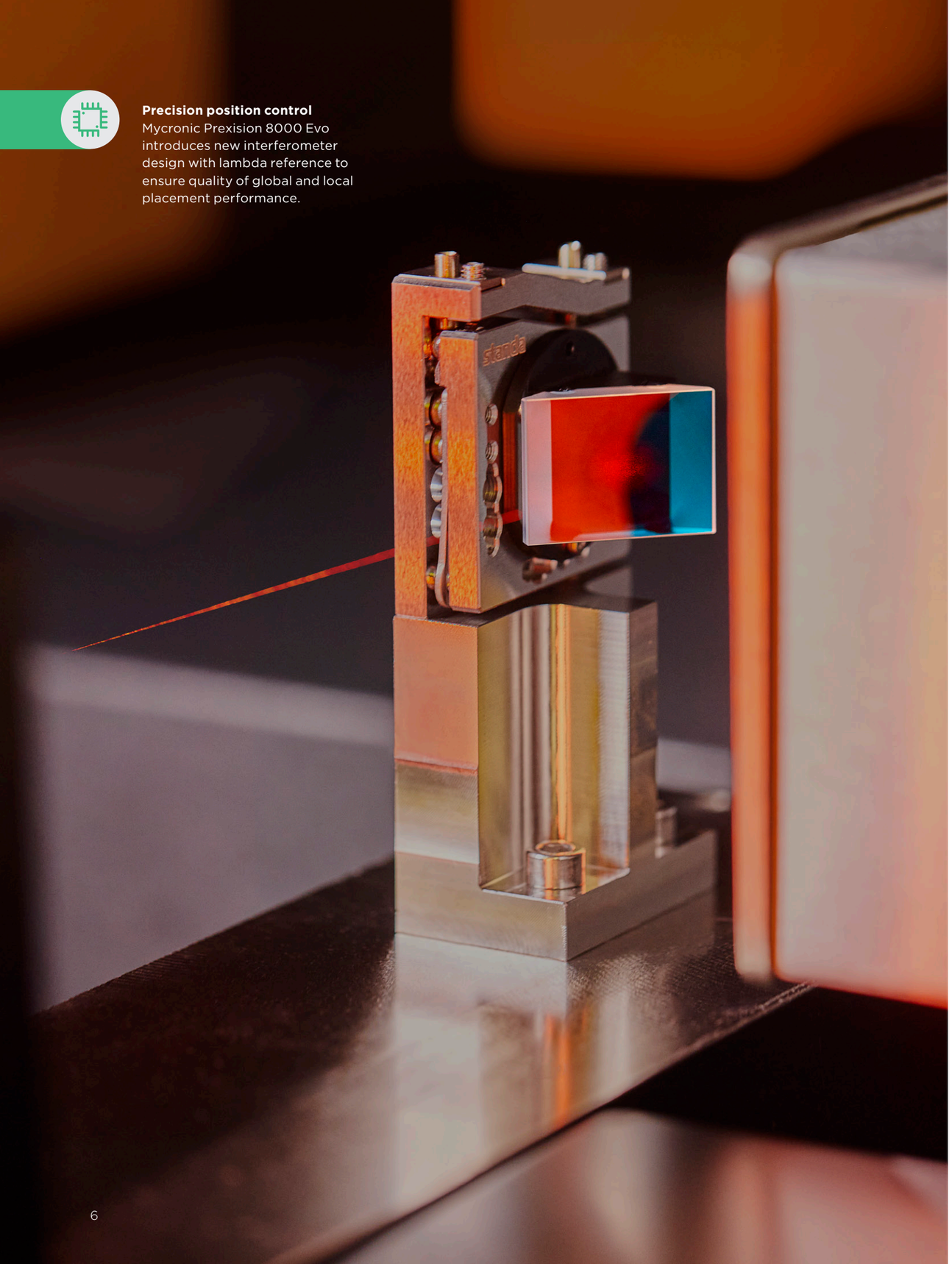
The highest resolution display photomask writer with the utmost exposure quality

NEW OPTIC HEAD

- Higher NA final lens increase resolution by 10%
- New deflector enabling longer micro-sweep to maintain productivity
- New X-carriage and cable design for smoother movement delivering precision placement
- New power efficient pneumatics



Precision position control
Mycronic Prexision 8000 Evo introduces new interferometer design with lambda reference to ensure quality of global and local placement performance.



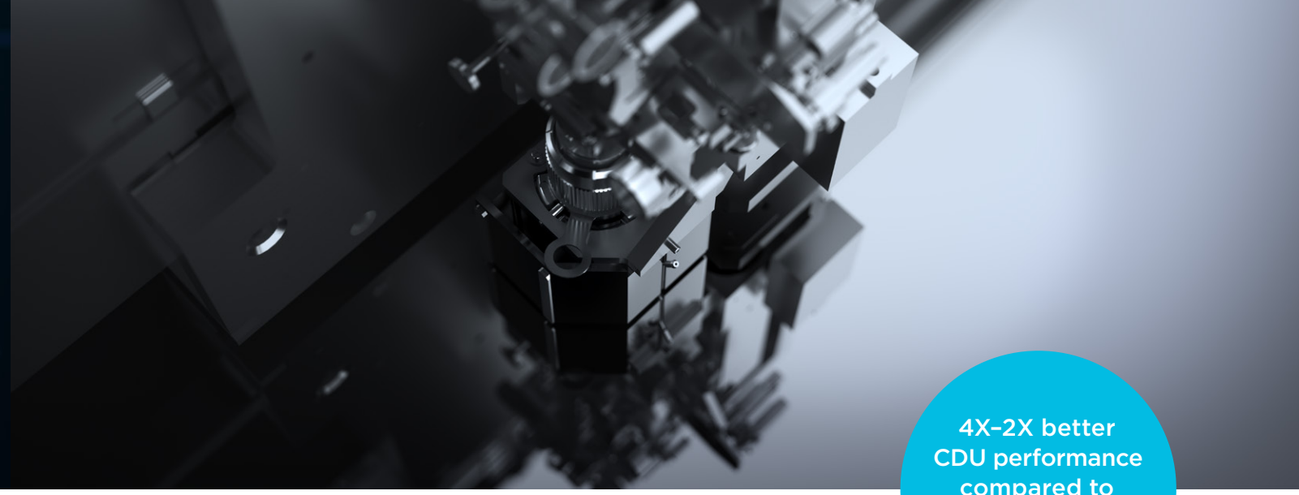


Ensure precision placement regardless of atmospheric variance

PREXISION 8000 EVO

KEY SPECIFICATIONS	HA MODE	HT MODE
Minimum lines and spaces (pitch/2)	500 nm	750 nm
Constituent CD uniformity (3σ)	10 nm	15 nm
CD Linearity 1.0-10 µm (p-p)	50 nm	85 nm
Local placement (3σ)	25 nm	40 nm
Written registration (3σ)	100 nm	150 nm
Written overlay (3σ)	35 nm	45 nm
Mask set overlay (3σ)	65 nm	90 nm





4X–2X better CDU performance compared to Prexision 8 Evo/ Prexision 10

Prexision 800 Evo & Prexision 80 Evo

High yield for high resolution advanced AMOLED displays and LCDs manufacturing

Prexision 800 Evo and Prexision 80 Evo is an advanced display mask writer addressing critical layers used for high-end displays manufacturing.

Prexision 800 Evo is the second advanced mask writer which has improved resolution compared to Prexision 80 Evo. The system is sufficient to print weak OPCs to enhance display exposure system resolution.

Prexision 80 Evo is the first system design to counter “invisible Mura” when AMOLED starts to boost the penetration in display industry.

Both systems are sufficient to produce critical layers for high resolution advanced displays countering most of challenges seen in display manufacturing.

PREXISION 800 EVO KEY HIGHLIGHTS

- 25% resolution increase compared to Prexision 80 Evo
- More beams to maintain productivity
- HT mode specs similar as Prexision 80 Evo HA mode
- New improved software algorithm to compensate uneven beam performance
- Improved lens and mirror quality with stress free optic mounter

PREXISIOIN 80 EVO KEY HIGHLIGHTS

- Software algorithm to compensate uneven beam performance
- 2x better CD Uniformity performance compared to Prexision 8 Evo and Prexision 10
- Z-correction as a standard function

PREXISION 800 EVO

KEY SPECIFICATIONS	HA MODE	HT MODE
Minimum lines and spaces (pitch/2)	0.55 µm	0.85 µm
Constituent CD uniformity (3σ)	10 nm	15 nm
CD linearity 1.0–10 µm (p–p)	50 nm	85 nm
Local placement (3σ)	30 nm	50 nm
Written registration (3σ)	125 nm	175 nm
Written overlay (3σ)	40 nm	50 nm
Mask set overlay (3σ)	75 nm	100 nm

PREXISION 80 EVO

KEY SPECIFICATIONS	HA MODE	HT MODE
Minimum lines and spaces (pitch/2)	0.75 µm	1.0 µm
Constituent CD uniformity (3σ)	15 nm	25 nm
CD linearity 1.5–10 µm (p–p)	50 nm	85 nm
Local placement (3σ)	30 nm	50 nm
Written registration (3σ)	150 nm	175 nm
Written overlay (3σ)	50 nm	70 nm
Mask set overlay (3σ)	75 nm	100 nm

Prexision 8 Evo & Prexision 10

The best fit for volume production of photomasks for advanced LCDs

Prexision 8 has been the display industry standard for a decade, and is now being upgraded to the Prexision 8 Evo.

Prexision 8 Evo is a well-balanced system for users who aim for both performance to meet advanced photomask requirements and productivity which can handle up to generation 8 photomask size. Prexision 10 system can handle up to generation 10 mask size with equivalent performance and productivity as Prexision 8 Evo system.

KEY HIGHLIGHTS

- The most balanced system between performance and volume production of advanced TFT LCD photomask
- New calibration procedures used for advanced mask writer to maintain system performance for Prexision 8 Evo

PREXISION 8 EVO

*Requires Z-correction option

KEY SPECIFICATIONS	HA MODE	HT MODE
Minimum lines and spaces (pitch/2)	0.75 µm	1.0 µm
Constituent CD uniformity (3σ)	20 nm	25 nm
CD linearity 1.5–10 µm (p–p)	50 nm	85 nm
Registration (3σ)	90 nm	90 nm
Written overlay (3σ)	120 (90*) nm	150 (120*) nm
Mask set overlay (3σ)	90 nm	120 nm

PREXISION 10

*Requires Z-correction option

KEY SPECIFICATIONS	HA MODE	HT MODE
Minimum lines and spaces (pitch/2)	0.75 µm	1.0 µm
CD uniformity (3σ)	60 nm	85 nm
CD linearity 1.5–10 µm (p–p)	50 nm	85 nm
Registration (3σ)	90 nm	90 nm
Written overlay (3σ)	120 (90*) nm	150 (120*) nm
Mask set overlay (3σ)	90 nm	120 nm

Prexision 8 Entry Evo & Prexision Lite 8 Evo

A cost-efficient mask writer for low to mid-end display photomasks

Prexision 8 Entry Evo and Prexision Lite 8 Evo is developed and based on solid know-how and experience, paired with new technologies proven from Evo platform to address low to mid-end display photomask manufacturing. Prexision 8 Entry Evo is upgradable to complete Prexision 8 Evo offering a wide range of choices depending on the user's business strategy.

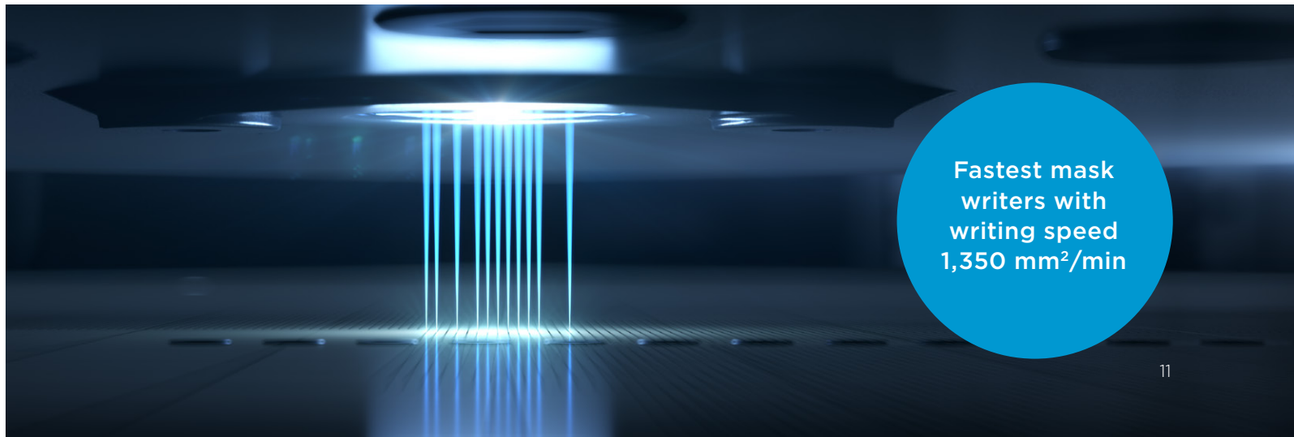
KEY HIGHLIGHTS

- Fastest mask writers with writing speed 1,350 mm^2/min
- Stable datapath to handle increasing data size
- Adoption of improved calibration procedure from advanced mask writers
- Prexision 8 Entry Evo upgradable to complete Prexision 8 Evo to widen addressable market

PREXISION 8 ENTRY EVO & PREXISION LITE 8 EVO

*Requires Z-correction option

KEY SPECIFICATIONS	PREXISION 8 ENTRY EVO	PREXISION LITE 8 EVO
Minimum lines and spaces (pitch/2)	1.2 µm	1.2 µm
Constituent CD uniformity (3σ)	30 nm	30 nm
CD Linearity 2.4–10 µm (p–p)	85 nm	85 nm
Registration (3σ)	90 nm	120 nm
Written overlay (3σ)	150 (120*) nm	300 (250*) nm



Bringing tomorrow's electronics to life

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