

PRESS RELEASE

FOR IMMEDIATE RELEASE

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Redefining Wafer-Level Packaging Production with Heidelberg Instruments Flexible Direct Writing Technology

Heidelberg, Germany – Heidelberg Instruments, a global player in direct write technology and solution provider for the advanced packaging market, is transforming the semiconductor industry with its maskless laser lithography system, the MLA 300. Continuous and repeat orders of MLA 300 systems confirm Heidelberg Instruments' capabilities and customer satisfaction.

MLA 300 is increasing production capacity for wafer-level packaging providers.

Flexible designs, high throughput, uniformity, and yield are the basic requirements in the semiconductor industry. The MLA 300 Maskless Aligner meets all of these requirements and more, with its capability to expose a tailor-made design on each substrate to match the actual die locations. Unlike a fixed mask, the design data can be tailored and augmented before exposure, enabling yield improvements by compensating for line width bias due to processing or loading re-mapped designs that include die shift. In addition, serial number labeling and other dynamically generated, unique patterns can be added to each exposure.

The MLA 300 is optimized for industrial volume production and features distinct benefits such as full automation. The flexibility of maskless lithography allows rapid design customizations, even unique designs on each substrate, which can be updated automatically. This is particularly useful for chip packaging where mounted die shift due to the curing of a reconstituted wafer or panel. The MLA 300 system seamlessly integrates into wafer-level packaging production lines, fully automating production with a resolution down to 2 µm lines and spaces. Customers benefit from reduced production costs and efforts by eliminating mask procurement, verification, and management requirements. Operating costs are reduced by utilizing a long-lifetime exposure laser and fewer consumables. The modularity enables fast maintenance, replacement, or repair. Real-time autofocus compensates substrate warp or corrugations for flawless patterning.

“We are thrilled to witness this cutting-edge technology’s impact on the industry, and we’re excited that many important companies and groups are taking this journey with us. The MLA 300 is a game-changer in maskless lithography,” states Alexander Forozan, Head of Global Sales and Marketing at Heidelberg Instruments Group. “Its revolutionary features transform the production process, delivering unmatched precision and high throughput. So, whether you want to enhance productivity or streamline your operations, the MLA 300 is designed to exceed your expectations.”

Introduced into the market at the end of 2019, the MLA 300 Maskless Aligner is the first direct exposure system specially designed for industrial applications in advanced packaging, wafer-level packaging, electronics components, sensors, MEMS, and many more.

With continuous order intakes from leading wafer-level packaging providers in Asia, the Heidelberg Instruments MLA 300 Maskless Aligner has proven capabilities and customer satisfaction, making the company poised for growth in the demanding and fast-growing high-technology market.

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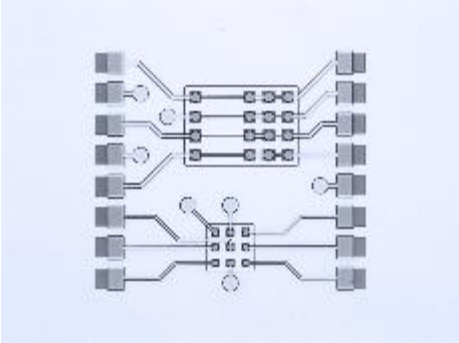

Further information:

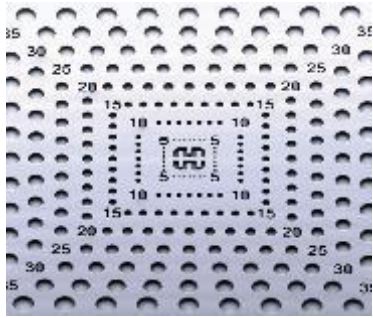
<https://heidelberg-instruments.com/>

About Heidelberg Instruments Mikrotechnik GmbH:

With over 35 years of experience and over 1,300 systems installed worldwide, Heidelberg Instruments is a world leader in designing, developing, and manufacturing high-precision laser lithography systems, maskless aligners, and nanofabrication tools. Industry stakeholders and working groups of renowned universities and research institutes worldwide use Heidelberg Instruments systems for advanced micro- and nanofabrication. Fields of applications include micro-optics and microsystems technology, photonics, electronics, semiconductors/ advanced packaging, quantum computing, MEMS/NEMS, micro-mechanics, biomedical engineering, 2D materials, IoT, and many more. Heidelberg Instruments provides lithography solutions tailored to meet our global customers' micro- and nanofabrication requirements – no matter how challenging.

Selected Images with Captions –

	<p>Heidelberg Instruments' MLA 300 Maskless Aligner offers solutions for advanced wafer-level packaging applications. The MLA 300 is available in a variety of configurations with options like additional optical module to increase the throughput and automatic loaders. Each system will be customized to perfectly suit the customers applications and requirements.</p> <p>Source: Heidelberg Instruments Mikrotechnik GmbH.</p>
	<p>Heidelberg Instruments' MLA 300 enables higher interconnect densities by exposing tailored designs matching the exact position of each die.</p> <p>Source: Heidelberg Instruments Mikrotechnik GmbH.</p>
	<p>Heidelberg Instruments develops customized solutions for the handling of warped wafers. The MLA 300 offers the unique option of exposing the substrates with warpage-dependent pre-distortions, to maximize yield.</p> <p>Source: Heidelberg Instruments Mikrotechnik GmbH.</p>



In addition to the uniformity and the yield of the exposures, the flexibility of maskless lithography allows rapid design customizations, and even unique designs on each substrate.

Source: Heidelberg Instruments Mikrotechnik GmbH.