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PRESS RELEASE
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Mirrorcle Technologies expands volume production capabilities

The world leading manufacturer of MEMS-based optical beam-steering products and system solutions, Mirrorcle Technologies, announces a significant expansion of in-house manufacturing capacity as well as the contracted high-volume manufacture of select MEMS mirror designs. Thanks to ever increasing demand, the company continues to follow a hybrid in-house and contract manufacturing (CM) business model, allowing it to serve both its lower-quantity customers' needs and R&D inquiries as well as meeting the growing volume demand posed by established customers supplying their MEMS-mirror-based products to different industries. As the leading provider of compact dual-axis MEMS mirrors that feature the company's patented gimbal-less design, the company is answering to a steady uptick in demand for its unique scanners and related hardware and system solutions. Catering to a variety of industries, including biomedical, lidar, industrial manufacturing process control and (free space optical) communications, Mirrorcle's established users' needs in terms of device specifications and performance are extremely divers. Thanks to a broad range of available MEMS mirror designs and product customization opportunities and thanks to the modular design of the bonded MEMS mirrors, Mirrorcle Technologies has been able to supply suitable devices and driver electronics and accessories to a solid customer base.

Figure 1. Mirrorcle Technologies' popular 'Standard Development Kit' containing 3 dual-axis MEMS mirrors, a versatile USB-SL MZ Controller, mounting accessories and the Mirrorcle Software Suite..

Investments in manufacturing facilities at company HQ and overseas

The ever increasing demand for its products has prompted Mirrorcle Technologies to invest significantly in its in-house production capacity as well led to the establishment of capable CM partners that are able to produce the company’s unique devices in medium to highest volumes. Assembly of MEMS Mirrors, Scan Modules, and complete Vector Graphics Laser Projectors now includes CM partners in China, Germany, Thailand, and Taiwan. “We envision renewed traction in a variety of automotive industry segments, including lidar, projection signage, ADA solutions and other safety- and/or comfort-related use cases,” commented Dr. Lj Ristic, Business Strategy expert at Mirrorcle Technologies. “With our CM partners and resulting economies of scale that allows us to offer very competitive prices, we now have access to a vastly larger pool of applications which we anticipate will further strengthen our market position and enhance our growth strategies.” Currently, the higher volume of Mirrorcle MEMS is sold into the lidar field, while the steady growth in biomedical imaging and FSOC-related industries further solidify fundamental pillars of healthy company expansion. Higher numbers of employees, increased cleanroom space and volume assembly machinery exemplify the trend of continued expansion and growth.

Figure 2. At Photonics West 2024, Mirrorcle welcomed hundreds of visitors. The team joined existing and potential new customers and participated in fun networking activities throughout the busy show week.

Photonics West exhibition draws crowds to Mirrorcle’s booth

The recent Photonics West conference in San Francisco attracted more than 6,600 technical attendees and almost 10,000 exhibition visitors from around the world. Many of those visited the Mirrorcle booth where the company’s latest demos drew a continuous crowd and triggered fruitful discussions. The company’s integrated scan module, featuring a laser and one of the company’s dual-axis MEMS mirror continuously ran Lissajous pattern onto the same screen on which the company also demonstrated a special 120° raster scan with a green laser as an example of reliable wide-angle scanning. In an adjacent demo, booth visitors were able to control via the touch-screen of a table the movement (or stopping) of a large-diameter MEMS mirror. Here the company demonstrated the unique capability of point-to-point (P2P or quasistatic-quasistatic) optical beam-steering that allows users to address at least 10,0000 discrete angles in both X and Y axes. In another Photonics West demo, the company combined its SyMPL (“Synchronized MEMS Pair Lidar”) lidar system with two compact Playzer vector graphics projectors. The MEMS-based lidar system was detecting human movement and a bright red “STOP” message was displayed onto the booth carpet if a person stepped ‘too close’ to the demo. The idea behind this “PLidar” was to demonstrate how the combination of high-brightness vector graphics laser projection (VGLP) with MEMS-based lidar might be employed in a variety of human-machine interactions, e.g. to communicate between workers and robots in warehouses or industrial manufacturing facilities. Finally, the Mirrorcle team displayed one of its single-axis resonant devices

featuring extremely high-speed resonant line-scans as well as one of the company’s development kits to demonstrate vector graphics and many other modes of operation. As in previous years, Mirrorcle Technologies sponsored the Best Paper Award for the *MOEMS and Miniaturized Systems XXIII* conference.

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About Mirrorcle Technologies, Inc.

Mirrorcle Technologies, Inc., founded in 2005, is a private corporation that commercially provides products and laser systems based on its proprietary optical microelectromechanical system (MEMS) technology. Since its founding, and supported by its continuous investment in R&D, the company has been offering the world's fastest point-to-point (quasi-static) two-axis beam-steering MEMS Mirrors, as well as resonant-type micromirror devices with video rates. Mirrorcle is globally the only provider of tip-tilt MEMS actuators in combination with mirrors from submillimeter to several mm in diameter, offering customers a wide selection of specifications to optimize their paths to successful commercialization. Mirrorcle products can be found today in 3D metrology systems, biomedical imaging systems, solid-state LiDARs, AR/VR prototypes, laser projectors, and classrooms. Mirrorcle’s system solutions include the world’s most compact vector graphics laser projectors and 3D LiDARs.
Mirrorcle maintains multiple cleanroom laboratories at its Richmond, California headquarters, and year-round, 24-7 access to a wafer-based CMOS and MEMS fabrication facility. Beyond its own facilities, the company has established high-volume manufacturing with leading MEMS wafer foundries and qualified opto-mechanical assembly houses.

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