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PRESS RELEASE
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The new A9M12 MEMS Mirror Series Breaks own Figure of Merit World Record in Dual-axis Quasi-static Category

One of many new products unveiled at industry events in early 2026 by Mirrorcle is the A9M12 MEMS mirrors series, a breakthrough in dual-axis integrated quasi-static MEMS Mirrors designed to power the next generation of imaging and scanning solutions. Previously, for nearly a decade, Mirrorcle offered a go-to MEMS Mirror A3I12.2-1200AL in the fast, large-angle quasi-static category to the Mini2P research community, biomedical industry (Thorlabs, Labmaker, ASI Imaging) and industrial automation products such as Perceptron Helix. This MEMS Mirror with 1.2mm diameter, wide bandwidth and angle, continues to be the key enabling component in <3g Miniscopes and other imaging products. The A3I12 total figure of merit of performance (angle x diameter / bandwidth) is still world's highest - nevertheless, as researchers and industry increasingly demand smaller, faster, and more precise optical beam steering, the A9M12 emerges as a faster and larger angle offering. Engineered for high-performance applications, the A9M12 series enables unprecedented innovation in fields ranging from LiDAR and 3D metrology to biomedical imaging and laser projection as well as enabling OCS (Optical Circuit Switching) in data centers.
The A9M12 series is built on Mirrorcle's patented MEMS architecture, offering a superior balance of speed and range within a compact footprint. Working closely with partners in the biomedical community our team released two sub-versions, one focused on largest angle (A9M12.2-1200AL) and one focused on highest speed with large angle (A9M12.3-1200AL).

Key specifications include:
- Die dimensions: A compact 5.2mm x 5.2mm footprint, ideal for integration into space-constrained devices.
- Expansive Tilt Range: The A9M12.2 variant offers a mechanical angle of over ±7.5° mechanical angle (for 30° FoV scans), providing world's widest field of regard in its class. A9M12.3 variant over ±6.75° mechanical angle.
- High-Speed Performance: Optimized resonant frequencies of approximately 2.45 kHz (A9M12.2) and 2.75 kHz (A9M12.3) mean that users have multiple kHz of wide bandwidth response for point-to-point (quasi-static), triangle, sawtooth, or sinusoidal scans at fast rates without compromising stability.
- Integrated Optics: Features a high-quality 1.2mm Aluminum (AL) mirror, providing excellent reflectivity and durability for diverse laser wavelengths, with surface quality and flatness that is unmatched in the industry.
- Streamlined Packaging: Housed in the industry-standard TINY48.4 package, ensuring robust protection and ease of mounting on PCBs, offered for Mini2P customers in low weight and compact LCC20 or FLEX20.1 packages. In Q2 of 2026 the company will be unveiling a much smaller and lower weight package for this MEMS Mirror design.

Enabling Breakthrough Innovations

The wide bandwidth of the A9M12 series' dual-axis capability allows for sophisticated point-to-point positioning and vector scanning. By utilizing a quasi-static design, the actuator provides users with the flexibility to "point and hold" or scan at high speeds, making it an essential component for:

- Mini2P and related multi-photon, confocal, light-sheet microscopes
- Miniaturized LiDAR: Enhancing spatial awareness for robotics and autonomous systems.

(a) (b) (c)

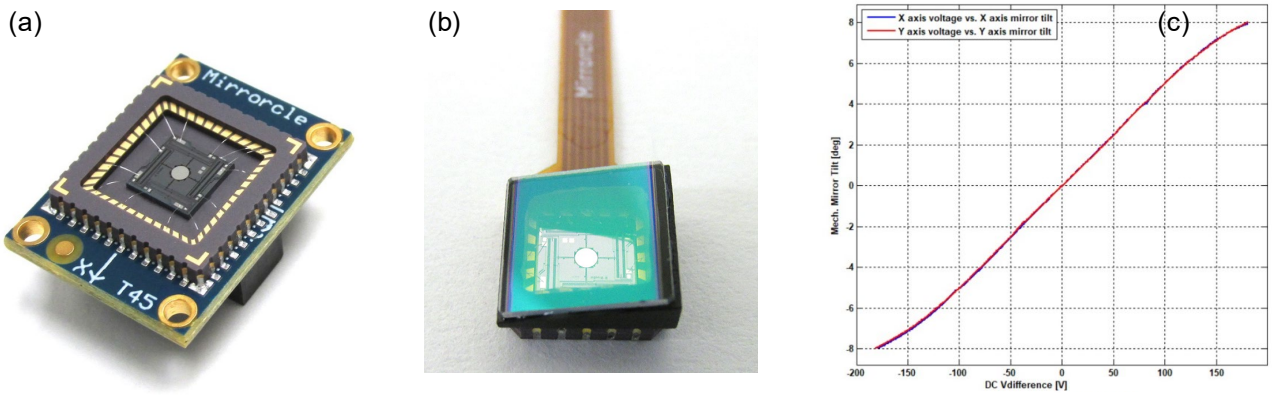

Figure 1: (a) A9M12.2-1200AL-TINY48.4-NW in our standard TINY48.4 package, (b) The A9M12.3-1200AL die in the non-standard FLEX20.1 package for the Mini2P and Miniscope customers, breaking records in a compact and light weight MEMS Mirror and package solution, full P/N A9M12.3-1200AL-FLEX20.1-B/W/TP, (c) Static response of the A9M12.2-1200AL device, showing a highly linear response, reaching ±8° mechanical angle, using our latest driving methodologies

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About Mirrorcle Technologies, Inc.

Mirrorcle Technologies, Inc., founded in 2005, is a private California 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.