

PRESS RELEASE

For immediate publication

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Mirrorcle laser-cuts ribbon on cleanroom facility for volume MEMS mirror production

In a ribbon cutting ceremony Mirrorcle Technologies inaugurated its new cleanroom space at the company's Richmond, CA headquarters. Reflecting the company's core competency of reliable optical beam-steering, the ribbon was cut by one of company's latest products – a laser beam Scan Module which features a powerful 1W, blue (450nm) laser that was developed for the emerging dynamic solid-state lighting (phosphor lighting) market. As the company's founder and CEO, Dr. Veljko Milanovic, dragged his finger on a tablet controlling the battery-powered Scan Module via Bluetooth, the laser beam, which was steered by the company's 1.2mm diameter A3I12.2-1200AL MEMS mirror, cut open access to the new manufacturing space adjacent to the company's established Richmond, California headquarter. The event was lightheartedly named "Facility Expansion and New Cleanroom Opening Ceremony" or FENCOC 2018. The Mirrorcle team, including delegations from its Taiwan and China offices, were joined in its celebration by long-time supporters, vendors, customers, and friends who were welcomed into the newly remodeled, approx. 2000 sq. ft. facility. Dr. Milanovic gave a brief speech on the company's history, dating back to the Adriatic Research Institute founded in 2001 which preceded the establishment of Mirrorcle as a California Corporation in 2005. "This is our sixth facility as we have continually grown since those early days near UC Berkeley's campus." Dr. Milanovic said – "We continue to expand here at Point Isabel surrounded by the waters of the San Francisco Bay which we enjoy viewing from every window."



Figure 1. Mirrorcle laser-cuts ribbon to new cleanroom facility using a new product 1W blue laser (450nm) Scan Module. A crowd of visitors witnesses ribbon-cutting spectacle.

The graph that goes "Up"

After showing graphs of remarkable production and shipment increases and humorously remarking how Mirrorcle also has some nice graphs that go "Up", Dr. Milanovic explained in some more detail the need for expansion of its production specifically for standard serial-production designs: "The opening of our new cleanroom facility significantly expands our in-

house manufacturing capability and supplements our established in-house, as well as outsourced MEMS mirror production. With this new facility, we can confidently offer an increased number of MEMS designs at higher volumes and it also allows us to continue catering to low-quantity highly customized beam-steering solutions as required by some customers for their special applications. While expanding our standard production "Downstairs" we continue to have the flexibility to serve R&D needs "Upstairs."



Figure 2. Mirrorcle CEO Dr. Veljko Milanovic points to a graph of Mirrorcle's MEMS production increase since 2005 – "We have a graph that goes Up"

Opening ceremony full of moving lights

From the foyer of the facility, throughout its hallways, its cleanroom, and even kitchen area, there were laser beams projecting a variety of graphic content and demonstrating some of Mirrorcle's products. A tracking system was ready for any visitor to toss the ping pong ball and watch it being chased by the laser light (P/N "DEMO-01"). A 3D scanning system measured objects continuously presented before it in a manner used by some of Mirrorcle's 3D metrology customers (P/N "DEMO-02"). Dynamic laser phosphor signs were projected on cleanroom walls in pure white light next to scrolling laser displays (P/N "DEMO-03"). A 720p projector for video-rate imaging and displays (P/N "DEMO-04") projected onto a wall in the "Wafer Room". The shown demos were a small selection of the wealth of different applications in which Mirrorcle MEMS mirrors often act as enabling technologies, ranging from displays, 3D metrology and LIDAR over biomedical imaging to free-space optical (FSO) communications. The patented, gimbal-less MEMS design available in Mirrorcle products allows for superior optical beam-steering capabilities that are globally unique and are the foundation of the company's continuous growth.

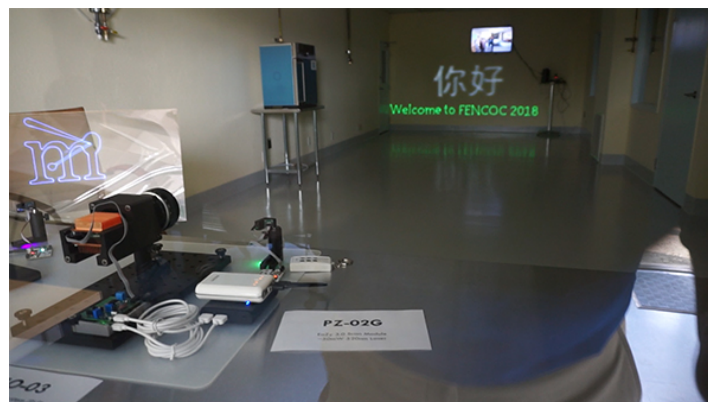


Figure 3. A section of Mirrorcle's new class 10000 cleanroom facility which will house automated MEMS assembly equipment showing a variety of laser projection and dynamic solid-state lighting (DSSL) systems.

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About Mirrorcle Technologies, Inc.

Mirrorcle Technologies, Inc. (MTI), founded in 2005, is a California corporation that commercially provides products and services based on its proprietary optical microelectromechanical system (MEMS) technology. Since its founding, and supported by its continuous investment in R&D, MTI has been offering the world's fastest point-to-point (quasi-static) two-axis beam-steering mirrors, as well as resonating-type micromirror devices with rates up to HD video display. MTI 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.

MTI maintains a laboratory at its headquarters and has year-round, 24-7 access to wafer-based CMOS and MEMS fabrication facilities. MEMS mirror fabrication, wafer-level and die-level testing, packaging and outgoing inspections are all performed in clean-rooms. MTI has an established manufacturing service cooperation with a leading MEMS wafer foundry ensuring streamlined, high-quality volume production.

As a privately held company, MTI is able to act efficiently, offering creative and highly responsive service to customers. The company provides highest-quality products and support to facilitate customers' product development and successful commercialization. The team draws on several decades of combined experience in MEMS design, fabrication, and testing.