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Press Release
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Mirrorcle Technologies Opens New Company Headquarters

The all-new, 7000 square foot facility at 4905 Central Ave., Ste. 200 houses the company's operations, R&D and manufacturing departments, Mirrorcle Technologies, Inc. (MTI) announced today. The move to the new, larger headquarters of the leading manufacturer of gimbal-less microelectromechanical system (MEMS) mirrors was prompted by the significant growth in 2013, by the subsequently expanding engineering and manufacturing teams, and by the continuously increasing customer demand. Steadily rising production volumes and quality operations requirements made it apparent that a move to a larger location was needed. At the same time, this move was also an opportunity to implement an improved and streamlined work flow, which is directly reflected in the layout of the floorplan. "Our positive sales and growth projections facilitated our decision to look for new office and laboratory space," MTI's CEO Dr. Milanovic commented. "Being able to fulfill our goals just next door to our old location was just a big additional bonus. It allowed us to not only remain close to Point Isabel and its shoreline, but it also provided offices and a facility with direct views of the beautiful San Francisco Bay."

Figure 1. Mirrorcle Technologies' new office and manufacturing site (left building). Former facility used to be in the building shown on the right (left image). Picture courtesy of Google Maps. MTI's new HQ.(right)

Fully re-modeled production facility features Class 10,000 and Class 1,000 cleanrooms

During the first visits to the work-site, it was envisioned that a large portion of the available space needed to be transformed from office to a manufacturing cleanroom space, with areas meeting Class 10,000, and one room meeting Class 1,000 requirements. The re-model of this section required a significant financial investment from the company and included installation of appropriate flooring and ceiling panels and specialty wall paint. A gowning room allows for the proper transition of staff from the office to the adjacent cleanroom. When entering this controlled, double-door room, MTI staff and visitors suit up with appropriate laboratory apparel, clean-room coats, hair nets, gloves and designated laboratory footwear. Eight brand-

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new high-efficiency particulate air (HEPA) filters provide a virtually particle-free atmosphere. Positive air pressure and airflow from the cleanrooms pushes filtered air toward the adjacent areas. Additionally, both temperature and humidity are monitored. No material that could potentially shed any particles, dust, or other contamination is permitted in the cleanroom area. “When construction was completed, the move was very challenging as we had to avoid any equipment and delivery down time. With carefully scheduled moving of various production modules we were able to reduce the down time to literally one weekend. Friday evening we were assembling in the old facility and Monday evening we were shipping from the new facility,” Dr. Milanovic said.

Figure 2. Mirrorcle’s new “White Lab” cleanroom with die-attach equipment, wire-bonder, probe station, optical QA capability and storage stations. Over 1600 square feet of MTI’s new facility are Class 10,000 or better cleanroom, with 8 HEPA filters ensuring dust-free air.

Manufacturing facility floorplan reflects Mirrorcle production flow, increases productivity

Once the new location was secured, the opportunity to re-organize and optimize the manufacturing flow became the main focus. The goal was to maintain the ability to deliver highest quality products while meeting both the increasing demand for R&D services as well as meeting volume production commitments. “Due to our limited laboratory space in the old facility, we often had to use individual work stations for multiple orders, overlapping manufacturing steps and even R&D tasks,” Dr. Milanovic explained. “While we were able to continue to deliver high quality products, it became apparent that improvements were needed to allow company growth without any reduction in quality of product or service. The floorplan of our new facility reflects this goal.” During the planning phase, the layout of the manufacturing and test areas were tailored to the company’s production processes, and related documents were adjusted and updated to reflect the new design. One of the keypoints of the new layout and work flow is a clear separation between production and R&D.

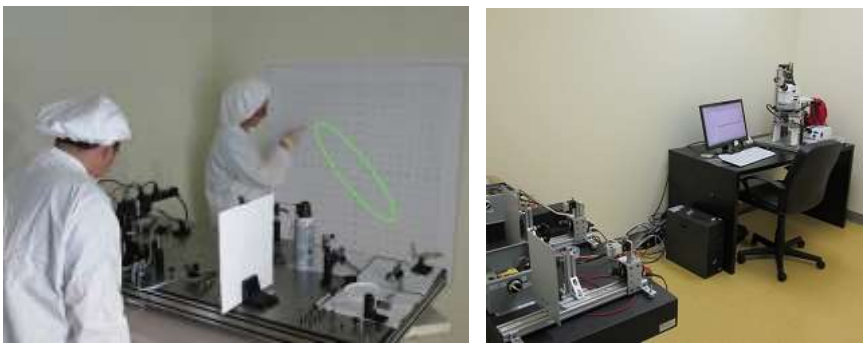

Figure 3. Mirrorcle’s dedicated Quality Assurance test room for optical performance tests where each MEMS mirror receives a characterization datasheet (left image). Designated customer-specific testing facility for volume production MEMS mirror devices (right image).

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New HQ offers improved capabilities for electronics, prototyping and optical experiments

Apart from greatly expanding and improving its MEMS manufacturing and assembly capacities, MTI’s new facility also features expanded electronics design, manufacture and test capabilities, as well as added prototyping means. The electronics engineering department now features a dedicated development kit hardware assembly space and a separate laboratory for testing MTI’s OEM controllers, amplifiers and MiniPCB, among others. These areas can also be used for rework and electronics quality assurance testing on component, PCB or on system levels. Newly procured equipment such as power supplies, oscilloscopes and rework tools enable faster, more reliable and more efficient turnaround. For optical experiments, MTI now has at its disposal a laser beam profiler, a dedicated cleanroom for the company’s established 100% outgoing optical QA inspections, and 36m of unobstructed indoor optical testing capability that is used for e.g. laser tracking experiments. The new 3D printer greatly facilitates and accelerates the company’s prototyping, and it is frequently used to make product-specific parts and to verify inventions and experimental system solutions. And finally, the company’s large Ping-Pong room now allows for even more sportive and exciting competition.

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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 offered the world's fastest point-to-point 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 0.8mm to several mm in diameter, offering customers a wide selection of specifications to optimize their paths to successful commercialization. In addition to a variety of existing designs and in-stock products, MTI also contracts to create specialty designs and fabricate custom units and full system solutions.
In addition to the laboratory at its headquarters, MTI has year-round, 24-7 access to wafer-based CMOS and MEMS fabrication facilities. Micromirror fabrication and wafer-level testing are performed in a clean-room environment. Since 2010, MTI has established a manufacturing service cooperation with a leading MEMS wafer foundry, allowing the company to ramp up volume-production while maintaining highest quality standards.
As a privately held company, MTI is able to act efficiently, offering creative and highly responsive service to its customers. The motivated staff is dedicated to provide highest-quality products and support to facilitate customers’ product development and successful commercialization. It draws on several decades of staff’s combined experience in MEMS design, fabrication, and testing.

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