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Press Release
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Mirrorcle Technologies scanning MEMS mirrors deployed in portable OCT system

Mirrorcle Technologies, Inc. (MTI), a California-based manufacturer of patented, gimbal-less beam-steering MEMS mirrors announces that the company's devices are being used in compact hand-held probes in portable optical coherence tomography (OCT) systems. Santec Corporation, a Japan-based manufacturer of optical components, tunable lasers, optical instruments and OCT systems, chose MTI's MEMS mirrors as the two-axis beam steering element for imaging at high, user-controllable speeds across the sample surface, obtaining of real-time 2D slice images as well as 3D images that consist of n 2D slices. Santec's intuitive "Inner Vision" software allows users to select 2D, 3D or surface preview modes. The easy-to-use GUI interface also features 1D OCT signal graph display, data import / export, and slice viewing in the 3D mode.

Figure 1. World's smallest, robust and light-weight OCT system from Santec Corporation features Mirrorcle Technologies MEMS mirrors.

OCT offers non-invasive 3D imaging of in-vivo, in-vitro and other samples

Optical coherence tomography (OCT) is an emerging technology that allows for non-invasive 3D optical imaging of materials and tissue. It is increasingly used for in-vitro and in-vivo medical and biological imaging, microscopy, in industrial quality assurance and process monitoring applications and also in additional inspection or evaluation applications. OCT is especially popular in the medical and biological fields because it allows for safe, reliable and high-resolution in-vivo and in-vitro 3D-imaging of tissue morphology without the need for excision of the tissue. Also known as optical biopsy, OCT provides a safe, high-resolution

solution at low cost compared to conventional medical technologies such as MRI or computer tomography. The technology does not require advance preparation of samples and works without emitting dangerous ionizing radiation..

OCT, Multiphoton CARS, and other imaging modalities and MTI’s MEMS mirrors

OCT, Multiphoton CARS, and a variety of other imaging modalities have increasingly impressive capabilities for providing instrumental data about biological samples. In most cases the true benefit of these technologies is enabled by the ability to scan their probing laser beam over an area or volume of biological tissue. A wish-list of requirements for a system that would provide physicians with a hand-held and easy to work with toolset includes small size and weight, robustness, low cost of replacement, point-to-point scanning capability and linear raster capability, control of scanning velocity and scanning area (“zoom-in” modes), high optical quality of images, etc. Many of these key requirements are now possible for the first time with the use of Mirrorcle’s MEMS mirror technology. Flat mirrors of up to 4 millimeters in diameter and yet with package size on the order of 1cm, arbitrary control of scan area and beam velocity, small size and low power electronics are some of the key benefits.

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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. 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 for its customers.

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. In 2010, MTI 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.
http://www.mirrorcletech.com

About Santec:

Santec is a global photonics engineering company and a leading manufacturer of Tunable Lasers, Optical Test and Measurement Products, and Advanced Optical Components. Santec is a dynamic venture spirited company established in 1979, celebrating more than 30 years in optical innovations. Santec introduced the world’s first tunable laser based on external cavity structure and semiconductor
laser in 1986. The company is headquartered in Komaki, Japan and has subsidiaries in America, the U.K. and China, serving customers in more than 30 countries.
www.santec.com