



2 Tech Drive, Suite 201
Andover MA 01810
www.mksinst.com

Contact:
Gary Wagner, GM (U.S.)
gary.wagner@us.ophiropt.com

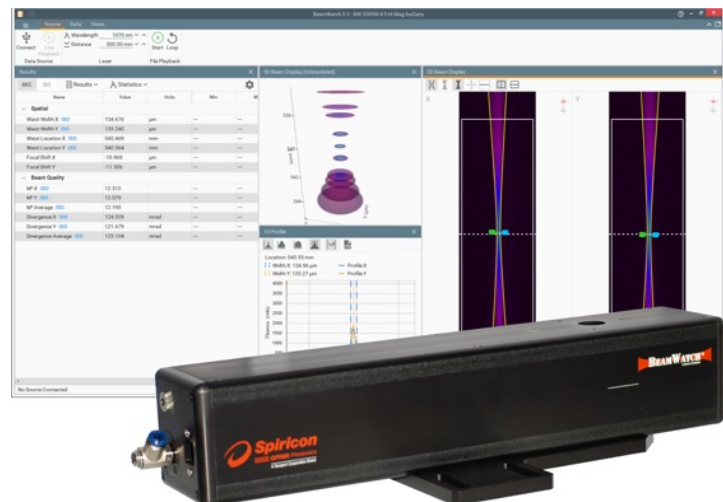
Shari Worthington, PR
sharilee@telesian.com

Ophir® BeamWatch® Non-Contact Beam Monitoring System for Industrial Lasers Now ISO 11146 Compliant

San Francisco, CA – January 31, 2018 – [MKS Instruments, Inc.](http://www.mksinst.com) (NASDAQ: MKSI), a global provider of technologies that enable advanced processes and improve productivity, has announced at Photonics West that **Ophir® BeamWatch®**, the first non-contact beam monitoring system for very high power lasers, is ISO 11146 compliant. BeamWatch provides real-time beam measurements of lasers that are typically too powerful for direct readings. It measures the Rayleigh scatter of a substantial length of the beam all at once. As a result, there is no contact between the instrument and the beam, and the initial determination of focal spot size, beam waist location, divergence angles, and beam propagation ratios (M^2) are easily and almost instantly obtained. Focal spot location can be measured several times per second and indicate if there is any focal spot shift during critical start-up moments. ISO 11146 compliance ensures the accuracy and reproducibility of all measurements.

“BeamWatch delivers real-time non-contact measurements using the Rayleigh-scattering properties of air molecules,” stated Gary Wagner, General Manager, Ophir Photonics (U.S.).

“This is a well-documented technique that delivers consistent results in everything from chemical solution analysis to atmospheric LIDAR studies. By capturing the scattered laser light, BeamWatch avoids contact with the beam, which means no power restrictions, and provides the equivalent of simultaneous measurement slices along the entire FOV of the camera.”



BeamWatch is a compact, easy-to-use system that monitors high power YAG, fiber, and diode lasers in the 980-1080nm range. It charts all beam measurements over time in industrial material processing applications, such as welding and cutting operations in automotive, heavy equipment, and appliance manufacturing, or in oil & gas drilling. BeamWatch measures key beam size, position, and quality parameters, including focus spot size, waist width, and beam propagation parameter (M^2). High magnification optics measure beams with spot sizes down to 55 μ m, allowing for smaller, more precise cuts with less waste of material. BeamWatch also supports dual axis measurement, which lets users see the laser beam from two orthogonal axes, providing detailed information about how the laser is operating. Focal shift can be tracked on both axes. System measurements can be used to determine the roundness of the beam or the presence of astigmatism.

Availability & Pricing

Ophir BeamWatch is available now. OEM prices available on request.

BeamWatch DATA SHEET: <http://ow.ly/OxJvK>

About MKS Instruments

MKS Instruments, Inc. (NASDAQ: MKSI) is a global provider of instruments, subsystems and process control solutions that measure, control, power, monitor, and analyze critical parameters of advanced manufacturing processes to improve process performance and productivity. Our products are derived from our core competencies in pressure measurement and control, flow measurement and control, gas and vapor delivery, gas composition analysis, residual gas analysis, leak detection, control and information technology, ozone generation and delivery, RF & DC power, reactive gas generation, vacuum technology, photonics, sub-micron positioning, vibration isolation and optics. Our primary served markets include semiconductor capital equipment, general industrial, life sciences and research. Additional information can be found at www.mksinst.com.

About the Ophir Brand

With over 40 years of experience, the Ophir brand comprises a complete line of instrumentation, including power and energy meters and beam profilers. Dedicated to continuous innovation in laser and LED measurement, MKS, through its Ophir brand, holds a number of patents, including the R&D 100 award-winning BeamTrack power/position/size meters; BeamWatch®, the industry's first non-contact, focus spot size and position monitor for lasers in material processing; and Spiricon Ultracal™, the baseline correction algorithm that helped establish the ISO 11146-3 standard for beam measurement accuracy. The NanoScan family of scanning-slit

technology products are capable of measuring beam size and position to sub-micron resolution. The Ophir Optics products include high performance IR thermal lenses and optical elements for the defense, security, and commercial markets, as well as high quality optics for high power CO² lasers and 1 micron lasers for cutting, welding, drilling, and 3D printing systems. Ophir is ISO/IEC 17025:2005 accredited for calibration of laser measurement instruments. Their modular, customizable solutions serve manufacturing, medical, military, and research industries throughout the world. For more information, visit <http://www.ophiropt.com/>.

###

Sales Inquiries: sales@us.ophiropt.com

For more information, contact:

Gary Wagner, General Manager
Ophir Business Unit (U.S.)
3050 North 300 West, North Logan, UT 84341
Tel: +1 435-753-3729
E-mail: gary.wagner@us.ophiropt.com
www.ophiropt.com/photonics

Shari Worthington, PR
Telesian Technology
49 Midgley Lane, Worcester, MA 01604
Tel: +1 508-397-6345
E-mail: sharilee@telesian.com