ePulse: Laser Measurement News

June 2017

Welcome to **ePulse: Laser Measurement News**, a review of new developments in laser beam measurements, beam diagnostics, and beam profiling. Each issue contains industry news, product information, and technical tips to help you solve challenging laser measurement and spectral analysis requirements. Please forward to interested colleagues or have them subscribe.

Join us at Laser World of Photonics, June 26-29, 2017, Munich, Hall A2, Booth 209.

Features

Measure Your Speed and Accuracy with this LIDAR Quiz
Anyone who drives a vehicle knows about the speed enforcement devices police use to keep the 'speed demons' in check. But are they accurate? Take a look behind the scenes of LIDAR technology. But first measure your speed and accuracy with our LIDAR Quiz. How Well Do You Know LIDAR?

How to Make Laser Welding and Cutting Affordable and Sustainable
By Chrisian Dini, Director, Global Business Development, Ophir
Only when performing optimally can laser systems guarantee the most cost-effective production of high-quality components. Even the smallest deviations in beam adjustment or focal position may lead to massive cost increases and pollution of the environment in a variety of ways. Laser Welding and Cutting.

Meeting the Optics Needs of Drones
Dr. Nissim Asida, Director, R&D and Engineering, Ophir Optics
Recent UAV system developments have drawn attention to the optical needs of the UAV industry. As detectors become larger in size and smaller in pixel size, UAV optics with higher MTF values and lower F# are the key to maximizing imaging performance. Drones.

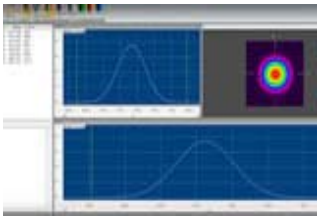
How Ophir Determines the Dynamic Range of Laser Measurement Products
By Kevin Kirkham, Senior Manager, Product Development, Ophir
Dynamic range is meant to characterize the ratio between the highest and lowest measurable signals (i.e. the signal range). Most laser beam profiling systems include dynamic range in their specifications. What exactly does this mean? The complete answer might depend on which type of dynamic range is being referred to. Dynamic Range.

What's New: Laser World of Photonics

Videos of the Month

How a Laser Works
A fun approach to the basics of how lasers work, starting with the terminology. Video: How a Laser Works.

NanoScan Slit Profiler
Production Technician Jason Jones walks us through setup and operation of the NanoScan 2s scanning slit beam profiler. Video: NanoScan 2s.



Laser Puzzle

Try your hand at this month's Laser Puzzle. All submissions will receive an 8GB USB pen drive. The grand prize winner will receive a 16GB iPad. E-mail answers to sales@us.ophiropt.com. Need a hint? E-mail Kevin.kirkham@us.ophiropt.com

Social Media

Blog: Is Your CO^2 Laser Cutting Slowly?
Laser cutting speed is a function of the material type, thickness, and laser power. So as your laser degrades, it's natural to find it performing slowly. It might be time to measure your laser power. Laser Cutting.

Catalogs: Power Meters & Beam

Sneak Peak: What's New at Laser World of Photonics
Join us at Laser World of Photonics, June 26-29, 2017, in Munich, to see our complete line of laser beam profiling and power/energy measurement systems. We'll be in the MKS booth, along with Newport and Spectra-Physics, Hall A2, Booth 209. Here's a sneak peak at several new products that will be introduced at the show. Laser World of Photonics.

StarLab 3.30 is easy-to-use laser measurement software that turns a PC into a multi-channel laser power/energy display station. The new version supports expanded network access via the Ophir EA-1 Ethernet Adapter or Quasar Bluetooth Adapter, user-defined pass/fail limits, and multiple pre-defined startup configurations. StarLab 3.30.

Pyrocam™IV USB is a laser beam profiling camera that allows users to see their laser beam for dynamic alignment and proper operation. It measures both pulsed and CW lasers, from 13 to 355 nm and 1.06 to >3000 µm. The camera features a 320 x 320 pixel pyroelectric array that can profile beams up to 1 inch (25 mm) without the need for reduction optics. It also includes a new USB 3.0 interface that provides a quick and easy connection to PCs for beam analysis, 2D and 3D beam display, as well as trending, data logging, and storage. Pyrocam IV USB.

RM9-THz Radiometer is a low noise, high sensitivity sensor for measuring low power levels of 50nW to 100mW from short pulse or CW lasers in the 0.7 to 10 THz wavelength range. Includes a NIST-calibrated pyroelectric sensor, THz absorber, and 18Hz chopper to measure a wide range of radiation. A digitally synthetized lock-in amplifier reduces external noise to a minimum, allowing the sensor to measure powers as low as 50nW. RM9-THz Radiometer.

BeamCheck® is a new beam profiling system that ensures accurate laser performance in additive manufacturing applications, like selective laser sintering (SLS) and selective laser melting (SLM). BeamCheck is an integrated laser measurement system that measures critical beam parameters in laser-based additive manufacturing: focal spot size, laser power, and laser power density at the build plane, and changes in spot size and power density over time. BeamCheck.

Webinars

Understanding High Power Laser Diodes
No other lasers can match the high efficiency of diode lasers in converting electrical input energy into light output. In this webcast, *Laser Focus World* Senior Editor John Wallace describes the technology and various types of high-power laser diodes, and presents numerous product examples. High Power Laser Diodes.

Right and Wrong Ways to Manager Laser System Variables in Materials Processing
A primary goal in material processing is to maintain consistency across the many variables introduced into the process. When a laser is being used for the production of parts, the laser system has its own set of variables. How are you managing them? This webinar presents real-world case studies of right and wrong ways to approach material processing when variables change during laser welding, cutting, engraving, drilling, etc. Materials Processing.

FAQs

Beam Profiling
How can I make accurate measurements for beam sizes under 10µm? Read the FAQ.

Profiling

Download the new 2017 Ophir Laser Measurement Catalogs today. Tutorials and product specifications for Power Meters and Beam Profiling. Beam Profiling Magalog includes application notes, technology articles, and reference algorithms.

Trade Shows

Laser World of Photonics
June 26-29, 2017
Munich, Germany
Hall A2, Booth 209

Photonics & LED
June 27-29, 2017
Seoul, Korea

SPIE Optics + Photonics
August 6-10, 2017
San Diego, CA

CIOE
September 6-9, 2017
Shenzhen, China

Taipei International Mold & Die Industry Fair
September 6-9, 2017
Taipei, Taiwan

OSA Frontiers in Optics
September 19-20, 2017
Washington, DC

Touch Taiwan
September 20-22, 2017
Taipei, Taiwan

LED Symposium + Expo
September 26-28, 2017
Bregenz, Austria

TCT Show
September 26-28, 2017
Birmingham, UK

Fast Ship Program

Ophir's Fast Ship program provides one-day shipment of the most popular power/energy, beam profiling, and M^2 laser measurement equipment across the U.S.

How to Get a 15% Discount

If you're an end user of our laser equipment, we'd like to know more about how you use it. Provide us with 500 words and a few images. In exchange, we will give you a 15% discount on your Ophir laser measurement equipment. Here's a sample

What is the vocabulary of laser beam measurement? Read the FAQ.

How can I profile very small laser beams? Read the FAQ.

Power/Energy Meters
How can I log power from multiple power sensors? Read the FAQ.

Does measured power depend on distance? Read the FAQ.

How can I zero my Ophir meters? Read the FAQ.

application article to get you started. We'll showcase your application in our ePulse newsletter and you'll get recognition by the industry for your commitment to providing high quality laser services. And you'll get the discount! E-mail kevin.kirkham@us.ophiropt.com

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About Ophir

MKS Instruments, Inc. 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. 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 measurement, the company holds a number of patents, including the **R&D 100** award-winning **BeamTrack** power/position/size meters and Spiricon's **Ultracal™**, the baseline correction algorithm that helped establish the ISO 11146-3 standard for beam measurement accuracy. The Photon family of products includes **NanoScan** scanning-slit technology, which is capable of measuring beam size and position to sub-micron resolution. The company is **ISO/IEC 17025:2005** accredited for calibration of laser measurement instruments. The company's modular, customizable solutions serve manufacturing, medical, military, and research industries throughout the world. An ISO 9001:2008 Registered Company.

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