ePulse: Laser Measurement News

September 2010

Welcome to **ePulse: Laser Measurement News**, a review of new developments in laser analysis, 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.

Business

Scanning Slit Technology Expands Beam Profiling Line
Ophir-Spiricon acquired Photon Inc. for their scanning slit technology. Between camera-based and scanning slit systems, OSI now offers the right beam profiling solution for any application – whatever your power, wavelength, or beam size ... CW or pulsed. Take a look at our new Configuration Matrix to see how to choose the right beam profiler for your laser.

Tutorials

Common Reasons for Pyroelectric Sensor Damage or Out of Tolerance Conditions
A customer asked, "If the sensing head has some visible laser burns on its coating will that affect the measurements?" Surface contamination, overheating of the sensor housing, and localized overheating of the coating can all cause out of tolerance conditions. Find out more about the proper care and maintenance of pyroelectric laser power sensors. Read the article.

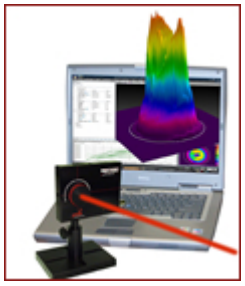
Applications

UC Berkeley Investigates Microscopic Structure of Air/Water Interface with Wireless Laser Connection
The Saykally group at the University of California Berkeley investigates, among other things, air/water interfaces using second harmonic generation, a surface selective nonlinear optical technique. They are interested in the microscopic structure of the air/water interface, as well as the effect of aqueous electrolytes on this interface. Their laser system includes a home built Ti:Sapphire oscillator and a commercial amplifier. Find out how they monitor laser power easily and remotely.

The Use of Ophir Instrumentation in Law Enforcement
The Ophir Nova or Laserstar series power meters, along with the appropriate photodiode sensors, comprise optical instrumentation that is used on a daily basis for technical support and calibration of police lidar devices. Police agencies throughout the word

Video of the Month

Laser Beam Profiling
Is your laser's beam profile shaped correctly for your application? This video teaches the fundamentals of laser beam profiles, differences between various equipment and discusses the benefits of profiling your laser beam. Watch the video.



Laser Puzzle

Try your hand at this issue's Laser Puzzle. All entries will receive a 1GB pen drive. The grand prize winner will receive an iPad 16GB WiFi. E-mail answers to sales@ophir-spiricon.com. Need a hint? E-mail kevin.kirkham@ophir-spiricon.com.

Here are the answers to the last issue's puzzle. The winner was **Marley Kunzler, Sr. Laser Engineer, L-3 Advanced Laser Systems Technology, Inc.** "We use laser energy meters & beam profilers to help develop and produce advanced laser system technologies. These real-time tools are invaluable to L-3 ALST research and production success, and help fulfill the L-3 ALST vision--which is to be the supplier of choice of military laser products for our customers and our war fighters." – Marley Kunzler

Free Laser Measurement

appreciate the pinpoint accuracy and reliability of laser-equipped lidar instruments for vehicle speed enforcement. Find out how they measure the distance between two moving vehicles and withstand court challenges.

Technical Tips

Calibration Method and Estimated Accuracy of Ophir High Power Meters: 1000W / 1500W / 5000W / 8000W
Ophir high power laser power meters are calibrated using relatively low power lasers (~120W CO2 and ~200W YAG). Using such a low power laser to calibrate the instrument vs. the high power at which it is used raises the question of the accuracy of calibration. Read the detailed analysis.

Special Requirements When Measuring 193nm Radiation
193nm excimer laser radiation needs special precautions when measuring because of its strong interaction with ordinary matter. Read the tip.

FAQs

Power/Energy Meters
Is the Nova II meter absolutely necessary for generating an analog output? Does the sensor itself generate an analog output that could be wired directly back to our PLC bypassing the Nova II meter? Read the FAQ.

How long do I fire the laser into the sensor? Do I need to fire the laser more than once? How do I process the information in the PLC to output the correct power measurement to the operator? Read the FAQ.

Is it necessary to continuously cool the power sensor with water? Or can I just cool it right before, during, and after the power measurement sequence? Read the FAQ.

What should I do to prevent damage to the pyroelectric sensor? Read the FAQ.

What does PD300 "Background Subtraction" do? Read the FAQ.

Beam Profiling
This group works with fibers and db measurements are typical to their business. Is there an option in the power measurement values to select db rather than watts? Read the FAQ.

How do I get the ASCII data out of BeamGage? Read the FAQ.

Should I upgrade to the latest version of BeamGage? Read the FAQ.

What's New

New Social Media Sites for Laser Measurement and Applications
Ophir-Spiricon recently launched a new blog, as well as Facebook, Twitter, and LinkedIn accounts to cover the latest in the laser measurement industry. Join in the discussions now at:

Social Media: LinkedIn | Facebook | Twitter

Equipment

That's right. If you're an end user of our laser equipment, let's hear about it and how you use it in your application. You can write the whole article or you can collaborate with our talented writers. In exchange, we can negotiate you receiving one our latest innovative instruments, detectors, or profiling cameras and software to use in your lab. For power/energy meters, e-mail Burt.Mooney@Ophir-Spiricon.com and for beam profilers, e-mail Kevin.Kirkham@Ophir-Spiricon.com. In a few nanoseconds, you'll be telling the laser world about your application using our equipment and a femtosecond or two later you'll be logging your data on our equipment like the Nova II, Vega, Quasar or BeamGage.

2010 Power Meter & Beam Profiling Catalogs

Download the new 2010 Ophir-Spiricon Laser Measurement Catalogs today. Tutorials and products in Power Meters and Beam Profiling.

Fast Ship Program

Ophir-Spiricon's new Fast Ship program provides one-day shipment of the most popular power/energy, beam profiling, and M2 laser measurement equipment.

About Ophir-Spiricon, LLC

Ophir-Spiricon is part of the Ophir Optronics Laser Measurement Group. With over 30 years of experience, the Laser Measurement Group provides a complete line of instrumentation including power and energy meters, beam profilers, spectrum analyzers, and goniometric radiometers. Dedicated to continuous innovation in laser measurement, the company holds a number of patents, including Ultracal™, the baseline correction algorithm that helped establish the ISO 11146-3 standard for beam

Blog: The Ophir Laser Measurement Group

OSI Web Site Now Supports Five Languages
The **Ophir-Spiricon** web site has been updated to support Chinese and Russian content and search functions. This is in addition to English, Japanese, and Dutch. The site is located at: www.ophiropt.com/laser-measurement.

Offline Sensor Finder Application for Laser Power/Energy Meters
A new offline version of **Sensor Finder**, the software application that helps users find the best power/energy sensor for their laser, is designed for users that don't have regular access to the Internet, such as military personnel. Find out more.

StarLab Laser Power/Energy Software Adds Support for Windows 7 64-bit and LabVIEW
StarLab 2.01 laser measurement software converts a PC into a multi-channel laser power/energy station. Now includes Windows 7 64-bit compatibility and **LabVIEW** support for Ophir-Spiricon's **Juno** USB laser sensor to PC interface. Also supports synchronization and display of multiple channels in one window, user-defined and multi-channel calculations, and an easy-to-use configuration panel for all channels. Find out more.

BeamGage® Laser Beam Analysis Software Adds Support for High Resolution InGaAs NIR Cameras
BeamGage®, the company's next generation laser beam analysis software, now supports the **XEVA InGaAs NIR Camera** for demanding applications. XEVA delivers high sensitivity in the NIR spectrum (900-1700 nm) at room temperatures, making it useful for both laboratory and industrial applications. A unique, non-uniformity correction algorithm handles two-point correction plus bad pixel correction to improve image accuracy. Find out more.

Ophir-Spiricon Supports LaserFest
Ophir-Spiricon has joined with the American Physical Society, the Optical Society, and SPIE to celebrate the 50th anniversary of the laser. Find out about activities and events.

measurement accuracy. The recently acquired Photon family of products includes NanoScan scanning-slit technology, which is capable of measuring beam size and position to sub-micron resolution. The company's modular, customizable solutions serve manufacturing, medical, military, and research industries throughout the world.

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