ePulse: Laser Measurement News

May 2013

See us at LASER World of Photonics in Munich: Hall B1, Booth 560

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.

Tutorials

Real-Time Measurement of M^2 Beam Propagation Ratio

An innovative instrument design allows the M^2 beam propagation ratio to be measured in real time at the update rate of a standard CCD camera. This allows lasers from single shot to CW to be measured while the laser cavities are being adjusted, drastically reducing test time. This paper discusses M^2 measurements with various laser types and beam shapes. M^2 Beam Propagation.

Reasons for Thermal Sensor Damage or Out of Tolerance Conditions

This document helps our valued customers with proper care and maintenance of Ophir thermal laser power sensors. This is an update to the original document produced several years ago. Since then, we have seen a 37% decline in sensors returned for repair. Thermal Sensor Damage.

Applications

Beam Profiling: InGaAs vs Standard CCD Cameras

A manufacturer needed to profile and measure diodes that produce a 1300nm CW source in the 10's of mW's. Inspection had to be conducted in seconds, with full accuracy and repeatability as their customer required 100% testing. We analyzed both InGaAs and CCD cameras to determine the best results. InGaAs vs CCD Cameras.

Business News

Ophir-Spiricon Achieves ISO/IEC 17025 Accreditation

Ophir-Spiricon is now ACLASS accredited to ISO/IEC 17025:2005, the international standard that recognizes the technical competence of laboratories to carry out calibrations. The company's accredited calibration process minimizes unit-to-unit variation of the company's laser measurement equipment - thermal, photodiode, and pyroelectric laser sensors and meters - and provides customers with a NIST-traceable series of measurements. ISO/IEC 17025.

Video of the Month

Industrial Profiling for Predictive Maintenance

If your laser isn't performing like new, it's costing you money in quality, scrap, processing time, and setup time. We will send a sales engineer to your plant to measure your laser and provide a report card on its performance. These examinations have saved others thousands of dollars. Find out more in the industrial profiling video.

Laser Puzzle

Try your hand at this month's Laser Puzzle. All entries will receive a 4GB pen drive and the new Ophir Laser Measurement Poster. 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

Here are the answers to the last issue's puzzle. The winner of last issue's puzzle was **Glenn Robb, Software Developer, FUJIFILM VisualSonics, Inc**. "I use multiple Ophir sensors in conjunction with both Pulsar4's and a Vega handheld unit. I find the handheld unit to be extremely durable, with a battery that seems to last forever, and above all, the Vega is reliable. I've also never experienced a quality issue with a Pulsar4 or any of the other sensors. They are exposed to the harsh environment of many lasers and yet always perform exceptionally." - Glenn Robb

From the Blog

How to Measure Broadband Light Beams with Powers on

Experiencing Ophir-Spiricon
The only way to know what customers have to say is to ask them. So we did! In this short video, Ophir-Spiricon customers talk about their experiences with the company and its products and services. Ophir-Spiricon.

New European Office Opens in Germany
Located in Darmstadt, Germany, Ophir Spiricon Europe is dedicated to sales, service, recalibration, and repair of all Ophir power and energy meters and Spiricon and Photon beam analyzers. Ophir-Spiricon Europe.

Technical Tips

Power/Energy Meters
How to Minimize Damage to Sensors or Meters
Damage to sensors or meters is a common occurrence, but can be minimixed with proper care. Find out more. Read the Tech Tip.

Effect of Ambient Conditions on Measurement Instruments
We are often asked how Ophir power/energy sensors and meters are affected by a variety of ambient conditions (temperature, humidity, etc.). We clarify the effects here. Read the Tech Tip.

Beam Profiling
BeamGage Software and Video Graphics Cards
BeamGage® software is designed to use the video graphics card in the computer instead of the main processor for displaying 2D and 3D beam profiles. Specific recommendations are discussed here. Read the Tech Tip.

FAQs

Beam Profiling
What does the ½-inch and 1/1.8-inch CCD spec mean? Is that the size of the sensor? Read the FAQ.

Beam width accuracy: Is blooming ever a problem? Read the FAQ.

Can I use the CCD camera with 193nm lasers? What about 248nm? 266nm? Read the FAQ.

How often should I have my camera sensor cleaned? Read the FAQ.

BEAM PROFILING TECH ALERT
Users of BeamGage have reported camera connection problems with laptops that have an installed webcam. A similar problem can exist on a desktop PC if it also has a third-party webcam installed. See corrective action. BeamGage and Webcams.

Power/Energy Meters
I have multiple sensors. Do I need a specific meter for each sensor or can I use one meter for all of my sensors? Read the FAQ.

What's New

IR Phosphor Viewer Card: 1st 10 Replies Get One FREE
We offer a glass IR phosphor card that allows you to see NIR lasers from 810 – 860 nm, 900-1100 nm, and 1500-1600 nm. The card does not require charging before use. It's excellent for beam alignment and has a large damage threshold compared to

the Order of Nanowatts
Standard photodiode sensors cannot measure broadband light sources as they contain a group of beams with many wavelengths for which sensitivity varies. Ophir has designed a special sensor, the PD300-BB, to measure the power/energy measurement of a source with a spectral spread of wavelengths. Broadband Beams.

2013 Catalogs: Power Meters & Beam Profiling

Download the 2013 Ophir-Spiricon Laser Measurement Catalogs today. Tutorials and products in Power Meters and Beam Profiling.

Trade Shows

LASER World of Photonics
May 13-16, 2013
Munich, Germany
Hall B1, Booth 560

CLEO:2013
June 11-13, 2013
San Jose, CA
Booth 1615

SPIE Optics + Photonics
August 27-29, 2013
San Diego, CA
Booth 1117

Fast Ship Program

Ophir-Spiricon'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.

Free Laser Measurement Equipment

If you're an end user of our laser equipment, let's hear about 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 of our latest innovative instruments, detectors, or profiling cameras and software to use in your lab. E-mail kevin.kirkham@us.ophiropt.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.

others: 1 KW/cm^2 or .5 J/cm^2. We will award one card to the first ten (10) customers who reply. Order part number 7F01235A. Cost is $75 each, after the first ten are given out. E-mail: kenneth.ferree@us.ophiropt.com

Low Cost Laser Power/Energy Meter
StarLite is a laser power / energy meter that provides both digital and analog screen displays. A compact, handheld unit, it displays power, single shot energy, energy and frequency of high repetition rate lasers, and beam size**.** StarLite.

NanoScan™ 2 Scanning Slit Beam Profiler
NanoScan 2 is a NIST-calibrated laser beam profiler that measures CW and pulsed beams across the entire spectral range, from UV to far infrared. A new USB2 interface provides expanded dynamic range up to 35 dB power. An enhanced digital controller improves the accuracy and stability of measurements. The **new M^2 Wizard is a** quick and easy way to determine the M^2 of a laser using the Rayleigh Method. NanoScan 2.

Pyrocam IV Features Larger Array and GigE Interface
Designed for pulsed and CW lasers, the Pyrocam IV beam profiling camera features a larger, 320 x 320 pixel pyroelectric array that can profile beams up to 25 mm without the need for reduction optics. The new electronics control design includes an interface to GigE (Gigabit Ethernet) cameras for high-speed applications. Pyrocam IV.

Multifunction BeamTrack Sensor Measures Power Levels to 250W
The newest member of the BeamTrack family is the FL250A-BB-50-PPS. A multifunction sensor, it measures laser power to 250W. It also measures beam position, size, centering, and wander in a single, compact device. BeamTrack FL250A.

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About Ophir-Spiricon, LLC

With over 30 years of experience, Ophir Photonics, a Newport Corporation brand, 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 the 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. Their modular, customizable solutions serve manufacturing, medical, military, and research industries throughout the world.

An ISO 9001:2008 Registered Company.

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