ePulse: Laser Measurement News November 2016

Welcome to *the newly redesigned* **ePulse: Laser Measurement News**, a review of laser beam measurements, beam diagnostics, and beam profiling. We may have changed our look, but the newsletter still contains all the rich content you're used to: 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. And let us know how you like the new look!

Subscribe

Features

Material Processing: When Laser Measurements Must Be Made

By Kenneth Ferree, Director of Sales Ophir Photonics

Measurements of laser performance can be taken as often as needed. Frequency is determined by such questions as what is sufficient and what measurements should be tracked. There are five times in the lifecycle of a laser when the collection and application of performance measurements are critical.

Material Processing

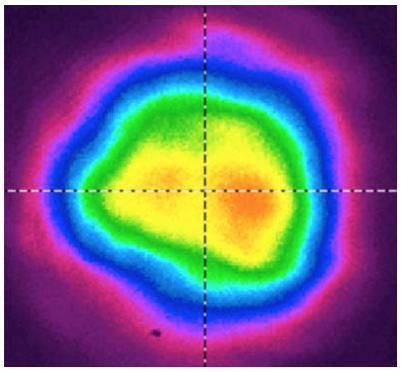
Autofocus for Laser Marking, Welding, Drilling, and Cutting Systems

By Roei Yiftah, Industrial Product Manager, and Moshe Danziger, Application Engineer, Ophir Optronics

Conventional laser marking, welding, drilling, and cutting systems often struggle with focusing the laser precisely on the object's surface. We propose a new measurement method that integrates Optimet's non-contact distance sensors into laser systems and provides autofocus.

Industrial Autofocus

Webinar: A Practical Approach to Solving Laser Consistency Problems in Industrial Applications



By Dan Ford, Southwest Sales Manager, Ophir-Spiricon

In case you missed this, Dan Ford reviews laser-based industrial applications and how others are using laser measurement to solve laser consistency problems. From cutting and curing polymers to 3D printing, this webinar reviews laser performance across a range of applications. A 3-step process is presented for solving laser consistency issues by measuring power/energy, beam profiles, and temporal pulse shape. Specific CO^2 and Nd:YAG examples provided. Hosted by *Industrial Laser Solutions*.

On Demand: Laser Consistency

Videos of the Month

Ensuring Laser Accuracy in 3D Printing

Eric Craven helps a 3D printer manufacturer make sure the laser in each system focuses at the correct spot with the correct profile. This ensures each system correctly melts the material and allows a quality check during production.

VIDEO: 3D Printing

New FluxGage LED Luminaire Test System

LED Luminaires are increasingly popular, but can be difficult to produce to spec consistently. Ophir's FluxGage measures critical performance parameters so production can be controlled and predictable.

VIDEO: FluxGage

Tech Tips

- **Power/Energy Meters:** Sometimes an application requires logging power from multiple power sensors and being able to compare readings from the different sensors. Here's how.

  Tech Tips

- **Power/Energy Meters:** Often we get inquiries for the User Manuals for power/energy sensors. Each sensor includes a data sheet but not a user

manual.

Tech Tips

- **Beam Profiling:** Often we get requests for the Total Optical Path Length when beam splitters are used on our line of 4.5mm recessed CCD cameras.

Tech Tips

What's New

FluxGage, Compact, All-in-One LED Luminaire Measurement System

FluxGage is a compact, all-in-one measurement system for evaluating flux, color, and flicker of LED-based products. The patent-pending, all-in-one photometric test system is three times smaller and lower cost than equivalent integrating sphere products. It uses 2π (two pi) geometry and includes a spectrometer for color measurement of the spectrum, CCT, CRI, Duv, and chromaticity. A fast photodetector measures flicker.

FluxGage

Thermal Laser Power Sensors: Wide Dynamic Range, Low Noise, Fast Response

The F50A-BB-18 thermal power/energy laser measurement sensor is designed for continuous use at higher laser powers. A compact, fan-cooled sensor with a wide dynamic range, it measures powers from 10mW to 50W and energies from 6mJ to 50J. The sensor includes a spectrally flat BB (broadband) coating, usable from far UV to far IR. It has a fast response time of 0.8s and low noise of 0.5mW.

F-50A-BB-18

FAQs

Beam Profiling

- The BeamGage graphical part of the Chart function is not appearing. How can this be fixed?

FAQ

- Will my Ophir-Spiricon/Ophir-Photon beam profiler work on Windows 10?

FAQ

Power/Energy Meters

- For pyroelectric energy sensors, you specify, for example, "Additional error with frequency ±1.5% to 25KHz." What does this mean?

  FAQ

- Will a meter firmware upgrade affect or void the calibration?

  FAQ

- Will the StarBright and StarLite meters work with old pyroelectric sensors that are not the C style?

  FAQ

Social Media

Blog: A Shortcut for Calculating Laser Power Density

Calculating power density is straightforward. By calculating the area of a beam using the radius in cm and dividing the beam's power by that area, the power density in units of W/cm^2 is obtained. However, since beam size is usually given with the beam diameter in terms of millimeters, you need to do some conversions.

Laser Power Density Calculator

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.

Here are the answers to the last issue's puzzle. The winner of last issue's puzzle was **Jeff Floding**, R&D Technician, TE Medical - AdvancedCath. "I work in an R&D environment. We use Ophir energy meters constantly to develop and document new laser processing methods. Ophir measuring equipment allows us to do range finding and duplicate previous setups. We can then develop processes which help our production teams transfer R&D products into volume production."

Catalogs: Power Meters & Beam Profiling

Download the Ophir-Spiricon Laser Measurement Catalogs today. Tutorials and product specifications for Power Meters and Beam Profilers. Beam Profiling Magalog includes

application notes, technology articles, and reference algorithms.

Trade Shows

- FABTECH (SME/FMA), November 16-18, 2016, Las Vegas, NV
- Precisiebeurs (Precision Fair) 2016, November 16-17, 2016, Veldhoven, Netherlands
- LAF2016, 10th Laser Applications Forum, November 23-24, 2016, Bremen, Germany

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 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-Spiricon laser measurement equipment. Here's a sample 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.

About Ophir-Spiricon, LLC

With over 40 years of experience, Ophir Photonics, a Newport company, 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 **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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