ePulse: Laser Measurement News January 2017

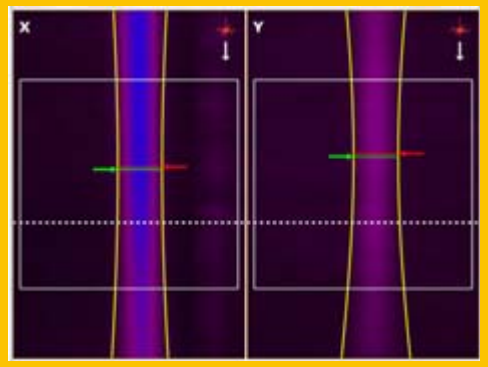
Welcome to **ePulse: Laser Measurement News**, a review of new developments in laser beam measurements, beam diagnostics, and beam profiling. Each issue contains industry news, product information, and technical tips to help you solve challenging laser measurement and spectral analysis requirements.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

40 years of excellence

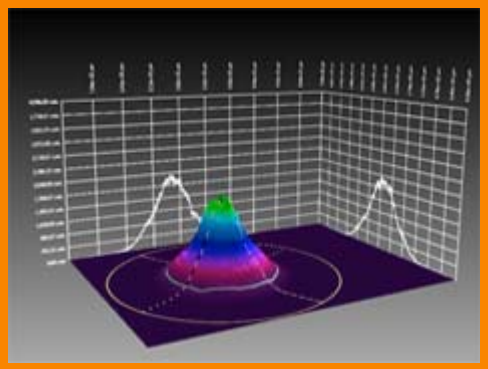
Subscribe

Don't forget to see all our new product demos at SPIE Photonics West, Booth 1400, San Francisco, CA, Jan. 31 - Feb. 2, 2017.

Features



Reducing Production Waste with Laser Profiling and Characterization



Beam Profiling 101: Intro to Laser Measurement

By Mark S. Szorik, Pacific Northwest Regional Sales Manager, Ophir Photonics

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A laser profiling system can characterize and identify which variables affect product quality and waste. But many laser users have never evaluated the quality of the beam beyond the initial delivery. This leads to frequent process adjustments to try to get back to "normal" and frantic calls to outside laser services. Wouldn't it be better to avoid these problems and added expenses?

Laser Characterization

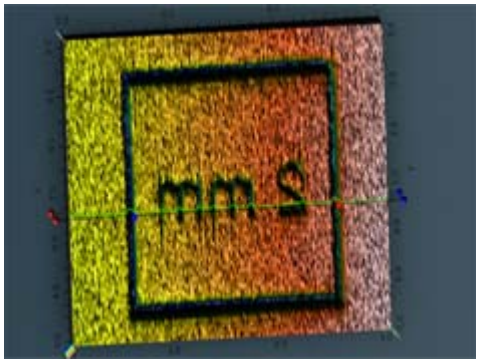
One of the most common questions I am asked is, "Why do I need a beam profiler and what tools and methods do I need to profile my beam?" All industries require specialized tools to be efficient and effective. The laser industry is no different, having evolved from wooden blocks, burn paper, and photographic film to powerful digital tools. Here are the questions you need to ask to find the right profiling tools.

Laser Profiling

Applications

Real-World Laser Measurement Applications

Find out how others have put laser measurement to work in their applications, from quality control to medical devices to industrial materials processing.



Measurement of Laser Engraved Objects

By Roei Yiftah, Industrial Product Manager; Moshe Danziger, Application Engineer, and Shmulik Barzilay, International Sales Manager, Optimet (Ophir Photonics)

Engravers use a hardened steel tool to engrave the design into the

- Quality Control: Dick Rieley
- Medical Devices: Jimmy Green
- Industrial Materials Processing: Derrick Peterman
- Eye Surgery: Jimmy Green

surface. Using Optimet's non-contact distance sensor allows the user to accurately measure the depth of the engraved area. Testing shows that, due to its wide-angle coverage, the Optimet sensor is capable of measuring engraved objects that other sensors cannot.

Laser Engraving Test Results

Videos of the Month

Additive Manufacturing

Additive manufacturing has restructured prototyping, development, and advanced design of mechanical components. Learn which laser parameters should be monitored to ensure consistent processing.

VIDEO: Additive Manufacturing

Smart Sensors & Ethernet Networks

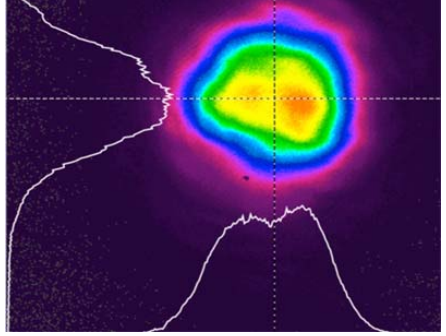
The EA-1 Ethernet adapter enables you to connect an Ophir "Smart Sensor" to your Ethernet network. Here's how to use it to monitor and control your laser remotely.

VIDEO: Ethernet Adapter

Webinar: Identifying Laser Consistency Problems in High Power

Applications

By Dan Ford, Southwest Sales Manager, Ophir Photonics



Maintaining laser consistency can be a constant challenge, especially when working with high power lasers and tight tolerances. In welding, cutting, ablating, and drilling, for instance, small changes in the beam can result in large changes in the beam quality. In this webcast hosted by *Laser Focus World*, we will discuss the equipment and methods needed for achieving and maintaining optimal laser performance.

Webinar: 1/19/2017, 1pm eastern

Tech Tips

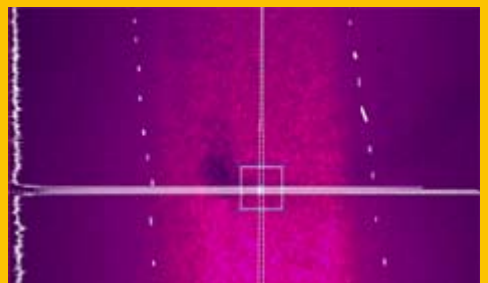
- **Beam Profiling:** Accurate measurements for beam sizes under 10µm are critical for such applications as fiber optic coupling, defect scanning, and optical design. Here's how to overcome the challenges of measuring small-beam MFD.

  Tech Tips

- **Power/Energy Meters:** For measuring high average powers, you need to use a high average power sensor (as in big, heavy, water-cooled, and expensive), right? Well, partly right. Here's what you need to know.

  Tech Tips

What's New



Ophir Wins Awards for Popular Video, Articles

PhotonicsOnline.com has announced that Ophir has won three "Top 10 of 2016" awards from material written by our team. The #1 most popular video of the year was "Why Do I Need to Measure My Laser Beam" by Dan Ford, Southwest Regional Sales Manager. Most popular downloads included "LIDAR Guns, Accuracy, and Speeding Tickets," also by Dan Ford, and "High Power Lasers in Medical Applications" in spots #5 and #6, respectively. Congratulations to all!

Top 10 of 2016

New Training Tools for BeamGage®

"Understanding BeamGage: The BeamGage Training DVD" is a new training tool that provides an in-depth look at how to get the most from your laser using this powerful analysis software. 14 video chapters cover such topics as Ultracal™, the baseline correction algorithm that helped establish the ISO 11146-3 standard for beam measurement accuracy, camera controls, power meter measurements, 2D and 3D profiles, charting and graphing, and statistical measurements.

Understanding BeamGage

FAQs

Power/Energy Meters

- My pyroelectric energy sensor is giving illogical readings. I think the average is over-range, but there is not saturation warning. What should I do?

  FAQ

- Why for some sensors is the damage threshold (max average power density) dependent on beam diameter?

  FAQ

- How can I check the status of my Ophir power meter recalibration?

FAQ

Beam Profiling

- We have recently updated our web site product pages to include product drawings. Here's how to access them.

  FAQ

- What is the correct beam width measurement for my beam profile?

  FAQ

- How do I upgrade my BeamGage® or NanoScan beam profiler software?

  FAQ

Social Media

Easy Way to Measure M-Squared

M-squared is a measure of how well your laser beam focuses, or more accurately, how close it is to a perfect Gaussian beam. Measuring it can be a finicky and slow process. Here's an easier way.

Measuring M-Squared

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 john.mceldowney@us.ophiropt.com.

Here are the answers to the last issue's puzzle. The winner of last issue's puzzle was **Jim Swartos**, Washington Technology Institute. "I teach a two-year Electronics Engineering Technology program at a tech

school in Washington. Lasers and Fiber Optics are covered in the second year where we use Ophir beam splitters, filters, and power measurement tools. The equipment is very good quality, dependable, and durable (which helps, especially when working with students in a lab setting!).

Catalogs: Power Meters & Beam Profiling

Download the Ophir Photonics Group 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

- SPIE Photonics West, Jan 31-Feb 2, 2017, San Francisco, CA
- MD&M West, Feb 7-9, 2017, Anaheim, CA
- Semicon Korea, Feb 8-10, 2017, Seoul, Korea
- LIA LAM, (Laser Additive Manufacturing), Feb 21-22, 2017, Houston, TX
- The LED Show, Feb 28-Mar 2, 2017, Anaheim, CA
- Photonics World of Lasers and Optics, Feb 28-Mar 3, 2017, Moscow, Russia
- Laser World of Photonics China, Mar 14-16, 2017, Shanghai, China
- CREOL Affiliates Day, Mar 17, 2017, CREOL, Orlando, FL
- AMUG, Mar 19-23, 2017, Chicago, IL
- ILSC (International Laser Safety Conference), Mar 20-23, 2017, Atlanta, GA
- OSA OFC/NFOEC, Mar 21-23, 2017, Los Angeles, CA
- German THz Conference 2017, Mar 29-31, 2017, Bochum, Germany

Fast Ship Program

Ophir Photonics' 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-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 Photonics Group

With over 40 years of experience, Ophir Photonics 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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