

ePulse: Laser Measurement News

The true measurement of laser performance



ePulse: Laser Measurement News

January 2019

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](#).



Photonics West

See What's New at Photonics West 2019

We continue to push the boundaries of laser and LED measurement, applying new technologies to create sophisticated yet easy-to-use systems to ensure laser performance and stability. See the latest in beam profiling, power/energy measurement, and IR optics at Booth 927 at Photonics West, February 5-7, 2019:

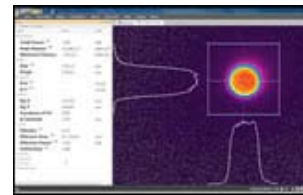


- **BeamWatch® Integrated:** compact, fully-automated, non-contact laser measurement system for measuring critical beam parameters on industrial production lines.
- **BeamWatch® AM:** non-contact system for measuring critical laser beam parameters in laser-based additive manufacturing.
- **Centauri:** compact laser power/energy meter with sophisticated graphical display and advanced math functions.
- **Fast Photo Diode:** high speed, biased PIN photodiode detectors for measuring pulsed lasers.
- **Integrating Spheres:** laser power detectors designed for use with widely diverging sources, such as VCSELs.
- **PD300-MS:** microscope slide power meter for accurate measurements of light emitted from fluorescence microscopes.
- **SP920G:** high-resolution beam profiling camera with GigE interface.
- **SP1201, SP1203:** compact, InGaAs camera-based beam profiling systems for eye-safe military, telecom, and medical laser applications.
- **IR lenses:** optimized for 10-12µm uncooled detectors, single FOV.
- **LightIR™:** lightweight IR continuous zoom lenses.

Videos of the Month

Camera-Based Beam Profiling

Camera-based laser beam profiling allows real time viewing and measuring of a beams spatial uniformity. This video explains why BeamGage is the world's most advanced beam profiling platform and how to select the correct camera to measure your beam. [Video: Camera-Based Beam Profiling.](#)



Thermal Sensors for Measuring Low, Medium, and High Laser Powers

In this short "basics" video, we review the use and selection of thermal sensors for measuring low, medium, and high laser powers. [Video: Thermal Sensors.](#)



Using the Centauri Meter: Overview

This short video will help you learn to use the Centauri, Ophir's new advanced touch-screen Laser Power Meter. [Video: Centauri.](#)



Laser Puzzle

[Try your hand at this month's Laser Puzzle.](#) How about a sparkly test to start the year off? This "word diamond" puzzle is a masterpiece of balance.

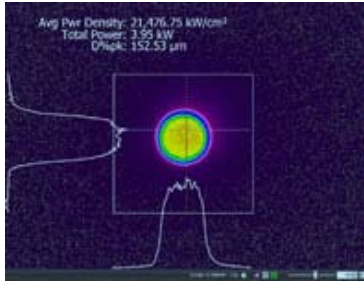
All submissions will receive an 8GB USB pen drive. The grand prize winner will receive a 16GB iPad.

Technical Notes

Analyzing Small, High Power Beams at Focus in Manufacturing Applications

By Derrick Peterman, Northern California Sales Manager, Ophir

Lasers are increasingly deployed in manufacturing applications, being pushed to higher and higher output powers and smaller and smaller beam sizes to work faster and with higher precision. Determining the beam profile at the beam focus of these lasers is critical to verify and improve manufacturing product quality. However, there are enormous challenges that must be overcome to capture the beam profiling data. [High Power Lasers](#).



Innovations in AR Lens Coatings

By Emiliano Ioffe, Process Development and Engineering Manager, IR Line, and Amnon Azran, R&D Coating Developer, Ophir Optronics Solutions

AR coatings must be of a high standard to enable high-power CO₂ lasers to function optimally. They must be able to withstand high levels of energy and provide superior optical performance. Other desired characteristics include transparency for HeNe laser pointers and avoidance of radioactive coatings. To produce such a coating, Ophir researched and developed new technologies and methodologies. This allowed them to create a new lens coating that delivers low absorption and high durability at an affordable cost, while also using a radioactive-free coating. [AR Coatings](#).

Research News

Layer-Edge Device of 2D Hybrid Perovskites

Two dimensional layered organic-inorganic hybrid perovskites are potential candidates for next generation photovoltaic devices. However, fundamental research on transport properties of layer-edge surface is still absent. We observe the electronic and opto-electronic behavior in a layer-edge device of 2D perovskites and fabricate a layer-edge surface device with different inorganic layer thickness. To confirm the size and uniform intensity distribution of the incident light spot, the optical profile was measured by an Ophir SP620U beam profiling camera. [2D Perovskites](#).

Webinars

How to Get the Most Out of Your 1µm Fiber Lasers

During this webinar, we'll do a deep-dive into the details of new technologies and optical elements for laser cutting machines. We'll discuss the design and technology used for annular beams and motorized continuous lenses to provide you with the knowledge that will help you get the best out of your laser system. **January 31, 2019, 11am EST.** [Register here](#).

Laser Beam Propagation Analysis in Material Processing and Additive Manufacturing

Additive manufacturing as well as direct application of Nd:YAG and fiber lasers require stable, well understood laser sources so that the beam that is delivered is the one that has been proven to provide a quality outcome. In this *Laser Focus World* sponsored webinar, you'll learn about the challenges that come with AM laser processing, especially with high power lasers; important laser parameters to measure and why; laser measurement techniques and their differences; and why this is important for AM processes. **On-demand.** [View here](#).

E-mail answers to sales@us.ophiropt.com. Need a hint? E-mail john.mcelandowney@us.ophiropt.com

[Here's the answer to last issue's puzzle](#). Congratulations to the winner of last issue's puzzle - **Alanna Fernandes, BluGlass Ltd.** "I first used Ophir meters and sensors about 20 years ago as a student, and later in different research roles. Their equipment has always been robust and reliable." - *Alanna Fernandes*

Social Media: Blog

Selecting a Laser Measurement Sensor or Laser Power Meter: A Quick Guide

Picking out the appropriate sensor to measure a laser beam (most sensors will measure other types of broadband light, as well) has always been a challenging issue. Let's take a look at a few of the main criteria you should consider when choosing a sensor. [Selecting a Laser Sensor](#).

Catalogs: Power Meters & Beam Profiling

Download the new 2019 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

[ISAM 2019](#)
January 29-31, 2019
Dresden, Germany

[SPIE Photonics West](#)
February 5-7, 2019
San Francisco, CA

[EALA: European Automotive Laser Applications](#)
February 12-13, 2019
Bad Nauheim, Germany

[A&T: Automation & Testing](#)
February 13-15, 2019
Torino, Italy

[LEF 2019](#)
February 26-27, 2019
Furth, Germany

[Strategies in Light](#)
February 27-March 1, 2019
Las Vega, NV

[DPG Frühjahrstagung](#)
March 10-15, 2019
Rostock, Germany

[Additive Manufacturing Forum](#)
March 14-15, 2019
Berlin, Germany

Applications

Applying Laser Measurement in Real-World Applications

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

- [Quality Control: Dick Rieley](#)
- [Medical Devices: Jimmy Green](#)
- [Industrial Materials Processing: Derrick Peterman](#)
- [Eye Surgery: Jimmy Green](#)

What's New

2019 Catalog: Laser Power/Energy Measurement & Laser Beam Analysis

If you have a laser, you need to measure it. Ophir's 2019 catalog covers a wide range of laser power and energy sensors, meters, and laser beam profiling systems for industrial, medical, defense, and research applications. Download your copy today at [2019 Ophir Catalog](#).



FAQs

Power Meters

What's the meaning of "sensitivity to beam size" in the Integrating Sphere data sheets? Does it mean the accuracy will vary based on the beam size? [Read the FAQ](#).

How do the Pyroelectric sensors with the broadband BF absorber behave in the mid IR, between 3-5 μ m? [Read the FAQ](#).

Beam Profiling

We bought a Newport LBP2 series Laser Beam Profiler and now need to use it with automation and other additional features available in BeamGage. How can we get those additional capabilities? [Read the FAQ](#).

I've installed the BeamGage software and connected the associated camera, but I get no image acquisition. What else is required? [Read the FAQ](#).

Fast Ship Program

Ophir's [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 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

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About Ophir

Ophir is a brand within the MKS Instruments Light & Motion division. The Ophir product portfolio consists of laser and LED measurement products, including laser power and energy meters, laser beam profilers measuring femto-watt to hundred-kilowatt lasers, high-performance IR and visible optical elements, IR thermal imaging lenses and zoom lenses for defense and commercial applications, and OEM and replacement high-quality optics and sub-assemblies for CO₂ and high-power fiber laser material processing applications. Dedicated to continuous innovation in laser measurement, the product portfolio includes the **R&D 100** award-winning **BeamTrack** power/position/size meters and Spiricon **Ultracal™**, the baseline correction algorithm that helped establish the ISO 11146-3 standard for beam measurement accuracy. The company is **ISO/IEC 17025:2005** accredited for calibration of laser measurement instruments. The company's modular, customizable solutions serve semiconductor, industrial, life and health sciences, research, and defense industries throughout the world. An ISO 9001:2008 Registered Company.

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