

## ePulse: Laser Measurement News

November 2009

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.

### Tutorials

#### New Low Cost CO<sub>2</sub> Beam Profiler Eliminates the Need for Acrylic Mode Burns

Acrylic Mode Burns have historically been used because they are the lowest cost alternative to the budget-minded end user. This method, however has been cited for producing dangerous, cancer-causing airborne materials, and is not a real time technology. On the other hand, Real-time beam profiling has been historically too expensive for the average user to acquire, but not any more. [Read the article.](#)

### Applications

#### You Just Bought a New Laser. What Beam Shape Did You Get?

What happens when your company's new laser fails to perform according to specifications and your best customers are waiting weeks for delivery? Does the manufacturer send a field service engineer repeatedly to check for problems? What happens when the manufacturer cannot tell you what is wrong after they finally send their corporate, factory-level engineers to investigate? [Read the article.](#)

### Technical Tips

#### When M2 Results are Less Than 1

It has been suggested that if the M2 results are computed to be  $< 1$  we should display a 1 as the answer. However the algorithms in the M2-200/200s software make computations and report results as the input settings and the beam samples dictate. This is done to provide useful information to the operator rather than to try and conceal something. There are two common occurrences when M2 results are less than 1. [Read the tech tip.](#)

### FAQs

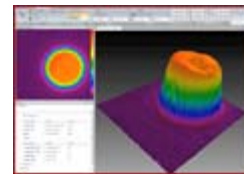
#### Power/Energy Meters

The total error when using a PD-300 head is listed as  $\pm 3\%$ . Is

### Video of the Month

#### BeamMaker

BeamMaker helps engineers, technicians, and researchers understand a beam's modal content by subtracting theoretically generated modes from real beam measurement data. Derive a perfect beam profile by specifying the mode, size, width, height, intensity, angle, and noise content - then comparing it to theoretically derived measurements. The end result is knowledge about how much the real beam varies from the desired beam. [Watch the video.](#)



### Laser Crossword Puzzle

Think you know lasers? [Then try your hand at the Laser Crossword Puzzle.](#) All entries will receive a 1GB pen drive. The grand prize winner will win a netbook. E-mail answers to [sales@ophir-spiricon.com](mailto:sales@ophir-spiricon.com). Need a hint? E-mail [kevin.kirkham@ophir-spiricon.com](mailto:kevin.kirkham@ophir-spiricon.com).

### Free Laser Measurement 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

that the 3% of the reading or 3% of the total range? [Read the FAQ.](#)

I seem to be getting incorrect/illogical readings with my pyroelectric sensor at low energy levels. [Read the FAQ.](#)

Can I use a sensor from the PD300 family to measure average power of pulsed lasers? [Read the FAQ.](#)

### **Beam Profiling**

Will BeamGage work with Windows 7? [Read the FAQ.](#)

### **Customer Service**

Do your products currently work with 64-bit operation systems? [Read the FAQ.](#)

### **What's New**

#### **10KW Power/Energy Sensor Directly Measures Very High Laser Power and Power Density**

The **10KW Power/Energy Sensor** is the first detector to directly measure very high powers and power densities. Designed for material processing applications, such as welding and metal cutting, the 10KW measures YAG and fiber lasers in the 1040-1100 nm range, and CO2 lasers at 10.6 microns. A wide aperture of 45 mm allows for measurement of broad beams. The maximum power for concentrated beams is up to 10KW/cm<sup>2</sup>. The maximum energy density for a 10 ms pulse is up to 150 J/cm<sup>2</sup>. [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.](#)



power/energy meters, e-mail [Burt.Mooney@Ophir-Spiricon.com](mailto:Burt.Mooney@Ophir-Spiricon.com) and for beam profilers, e-mail [Kevin.Kirkham@Ophir-Spiricon.com](mailto:Kevin.Kirkham@Ophir-Spiricon.com). In a few nanoseconds, you'll be telling the laser world about your application using our equipment and in a femtosecond or two later you'll be logging your data on our equipment like the Nova II, Vega, Quasar or BeamGage.

### **2009 Power Meter & Beam Profiling Catalogs**

Download the 2009 Ophir-Spiricon Laser Measurement Catalogs today. Tutorials and new 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.

### **On-Site Seminars**

Ophir-Spiricon has begun conducting a limited number of on-site beam diagnostic seminars for major laboratory facilities and academic institutions focusing on photonic developments. These educational seminars will include such topics as "Power vs energy: Which do you measure and why," "Focused spot analysis: When it makes sense," and "M2 beam propagation analysis." For more information or to schedule a seminar, contact Kevin Kirkham at [Kevin.Kirkham@ophir-spiricon.com](mailto:Kevin.Kirkham@ophir-spiricon.com) or call 435-753-3729.

### **Trade Shows**

#### [SPIE Photonics West](#)

January 27-29, 2010  
Moscone Center,  
San Francisco, California

#### [Medical Design & Manufacturing](#)

February 9-11, 2010  
Anaheim Convention Center,  
Anaheim, California

#### [OFC/NFOEC 2010](#)

March 23-25, 2010  
San Diego Convention Center,  
San Diego, California

## **About Ophir-Spiricon Inc.**

Ophir-Spiricon is part of the Ophir Optronics Laser Measurement Group. The Laser Measurement Group provides a complete line of instrumentation including power and energy sensors, beam profilers, and spectrum analyzers. Wholly focused on laser measurement, the group's modular, customizable solutions serve manufacturing, medical, military, and research industries throughout the world. Since 1978, an unwavering commitment to forward thinking has kept us "the partner of choice" in optoelectronics.

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