

## ePulse: Laser Measurement News

The true measurement of laser performance



### ePulse: Laser Measurement News November 2025

Welcome to **ePulse: Laser Measurement News**, a review of new developments in laser beam measurement, 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](#).

#### Features

##### High Power Laser Measurement: Challenges and Solutions

By Mark Slutzki, Sr. Product Marketing Specialist, Ophir Products, MKS Inc.

The sort of measurement instruments used in advanced, sophisticated applications are by necessity themselves advanced and sophisticated. After helping so many customers deal with avoidable problems, we'd like to also offer guidelines for how to get the best performance and the longest lifetime out of high power laser measurement instruments. Let's take a look at preventing laser damage, keeping the sensor clean, and thermal offset. [High Power Laser Measurement](#).



##### VIDEO: BeamSquared® SP204S Pro M<sup>2</sup> Propagation Analyzer

The Ophir BeamSquared SP204S Pro M<sup>2</sup> propagation analyzer is a compact and fully automated tool for measuring the propagation characteristics of 266 to 1100 nm CW and pulsed laser systems. The longer optical train and patented Ultracal™ calibration makes BeamSquared the most accurate product on the market and is ISO 11146 compliant. Its operational robustness and reliability ensure continuous use applications in industry, science, research and development. [BeamSquared SP204S Pro](#).



#### Applications

##### Directed Energy

Lasers are changing ways that our soldiers and sailors neutralize targets. It is a rapidly emerging technology sector that allows our armies and navies to operate



#### Video of the Month

##### Palm-Sized Industrial Laser Power Meter is Now Even Better

The Ophir Ariel - a palm-sized, robust laser power meter that measures high power industrial lasers of up to 8kW by measuring the energy of a short exposure to this power - has just been made even better. [Ophir Ariel Power Meter](#).



##### Laser Measurement PC Interfaces

If all your laser measurement work involves a laptop or a PC, rather than a stand-alone meter, one of the Ophir direct-to-PC interfaces could be an ideal solution. These are full-fledged laser power and energy meters, but instead of having a separate on-board display, the PC becomes your display. [PC Interfaces](#).



##### How to Use High Power Sensors Correctly and Prevent Problems

When you use high-power laser measurement sensors, there are many avoidable problems that tend to come up repeatedly. Learn the tips and best practices

more efficiently during conflicts. These weapons are precise in their accuracy and can be adjusted for lethal or non-lethal doses. However, because these weapons employ multi-kilowatt laser light, the development and in-field operation of the lasers come with the same challenges that any high-powered laser application comes with, only multiplied. Find out more about laser use in directed energy applications in these white papers, videos, and product data sheets. [Directed Energy](#).



### Life & Health Sciences

Laser beams provide a vehicle for delivering energy in a precisely controlled way, and without physical contact. As a result, the laser has found a lot of use in medical applications - as a surgical tool, cutting through various types of tissue in place of the traditional scalpel, and simultaneously cauterizing blood vessels as it goes, so that bleeding is minimized. As with any precision industrial process, where the results must be tightly controlled and completely predictable, laser-based medical processes must also be controlled and predictable. Not only for quality and profitability, but also to reduce potential risks - direct or indirect - to patients. Find out more about laser use in life and health sciences applications in these white papers, videos, and product data sheets. [Life & Health Sciences](#).



### Service & Calibration

#### How to Prolong the Life of Your Beam Profilers

There are many different types of Ophir beam profilers. In this article we outline some of the major damages we have encountered in our European Service & Calibration Center. Because we are confident of the longevity of our measurement systems when used according to specifications, we want you to be aware of these key points, from water source to alignment and timing to recertification. [Beam Profilers](#).

#### How Can Calibration Help Me?

For many people, it isn't clear why there is a need for calibration of measurement equipment. These laser users are not fully aware what the calibration process entails and how it can save them money, time, and frustration. No matter the application, one thing that remains constant is that when your equipment is properly calibrated, you can detect problems before they impact your customers. This translates to higher quality product produced, more accurate results for testing, and increased customer and patient confidence and loyalty. [Calibration Process](#).



### Calculators & Tools

#### Temperature Rise Calculator for Uncooled Laser Power Sensors

This calculator determines the temperature increase in a block of aluminum (like most Ophir power sensors). The temperature rise depends on the laser power and exposure time, as well as its weight. Use the [Ophir Sensor Finder](#) to determine if a particular sensor is right for you. NOTE: your Ophir sensor shouldn't be allowed to get past 100°

Laser Parameters	
Engineering Sensor Temperature (°C)	Required
Laser Power (W)	Required
Exposure Time (sec)	Required
Aluminum Sensor Characteristics	
Sensor Weight (gms)	Required
OR	
Sensor Volume (cc)	Required

that can help you avoid those problems. [High Power Sensors](#).



#### Meet the Wide Beam Imager: WB-I

The Ophir WB-I SWIR is a wide beam imager accessory for SWIR 900-1700 nm, and the popular 1550 nm wavelength. It's a compact system for measuring the size and power distribution of large and divergent beams of VCSELs, LEDs, and large lasers. It enables the analysis of beams that are too large or divergent for a standard beam profiler. [Wide Beam Imager](#).



### Blog Posts

#### From Welding to 3D Printing: Choosing the Right BeamWatch® Profiler for Your Laser

High-power lasers used in industry for welding, cutting, cladding, or directed energy military applications require beam profiling even more frequently due to harsh environmental conditions and stringent reliability standards. [Beam Profiling](#).

#### New UV Sensors: PD300R-UV-193 and PD10-C-193

Testing in the UV range, especially with prolonged exposure, presents unique challenges. MKS has introduced two new sensors specifically designed for UV applications: PD300R-UV-193 (7Z07151) for laser power measurement and PD10-C-193 (7Z07150) for measuring the energy of individual laser pulses. [UV Sensors](#).

### Catalogs: Power Meters, Beam Profiling, IR Optics

The [Ophir Photonics Q3 2025 Laser Measurement Catalogs](#) include tutorials and product

C. [Temperature Rise Calculator](#).

## What's New

### SupIR 16-80 mm f/1.2 | LWIR Compact SXGA Zoom Lens for 10-12 $\mu\text{m}$ Detectors

The Ophir SupIR 16-80 mm f/1.2 is the first compact continuous zoom lens engineered for SXGA (1280×1024) uncooled LWIR detectors with 10-12  $\mu\text{m}$  pixels. Designed for surveillance, ISR, and defense applications, this rugged, lightweight lens unlocks high-resolution thermal imaging with detection ranges exceeding 8 km - all in a form factor ideal for UAVs and portable systems. Ophir SupIR 16-80 mm SXGA Zoom Lens: [Data Sheet](#) and [Video](#).



### SupIR-X 15-300 mm f/4 MWIR Zoom Lens | Engineered for SXGA 10 $\mu\text{m}$ Detectors

The Ophir SupIR-X 15-300 mm f/4 MWIR Zoom Lens is designed for SXGA 10  $\mu\text{m}$  detectors to deliver exceptional clarity, stability, and long-range performance across air, land, and sea ISR applications. With high spatial resolution, low distortion, and integrated mechanical NUC shutter, the SupIR-X redefines precision MWIR imaging. Extend your reach up to 1200 mm with the compatible SupIR-X extender series and experience next-generation mission readiness. Ophir SupIR-X 15-300 mm MWIR Zoom Lens: [Data Sheet](#) and [Video](#).



## Webinars

### Measuring My Laser... Where Do I Start?

*On Demand*

*By Mark Slutzki, Sr. Product Marketing Specialist, Ophir Products, MKS Inc.*

When you first set up a new laser system, one of the biggest questions is how do I know if it's really doing what I need it to do? In this on-demand webinar, we walk through the fundamentals of laser measurement, a topic that even experienced professionals sometimes overlook, including why measurement matters, key beam parameters, and real-world impact. [Measuring My Laser](#).

### Laser Measurement Accuracy: When, Where, and How

*On Demand*

*By Mark Slutzki, Sr. Product Marketing Specialist, Ophir Products, MKS Inc.*

Accurately measuring a laser's output is fundamental to ensuring that it performs reliably and correctly - from when the laser is first manufactured to its integration into a system, and to its final application. In this session, we discuss when and why absolute calibration accuracy matters (and when it doesn't). We share best practices for maximizing the accuracy of readings, and an overview of how to understand a power meter's accuracy specifications and where the numbers come from. [Measurement Accuracy](#).

## Research News

### Temporal Characterization of Tunable Few-Cycle Vacuum Ultraviolet Pulses

The temporal characterization of few-femtosecond sources in the deep

specifications for laser power meters and beam profiling systems.

The [2025 Ophir IR Optics Thermal Imaging Lenses Catalog](#) includes a wide range of LWIR, MWIR, and SWIR continuous zoom lenses compatible with 5  $\mu\text{m}$ , 10  $\mu\text{m}$  SXGA & 15  $\mu\text{m}$  VGA detectors. Also features a wide selection of 1-FOV and multiple FOV IR lenses. Includes new product specs, extended range of lens DRIs, and detailed H-FOVs charts per detector.

## MKS Newsletters

[Focus on Photonics Newsletter](#) for innovations in lasers, opto-mechanical components, vibration and motion control, and laser characterization.

[Ophir IR Optics Newsletter](#) for the latest developments in thermal imaging optics.

[Center Stage: Newport Motion Newsletter](#) for quarterly spotlights on motion innovation.

[TECHinnovations Newsletter](#) for the latest on vacuum, power solutions, gas delivery and analysis, plasma generation, and ozone solutions for semiconductor and advanced markets.

## Trade Shows

### [Milipol](#)

18-21 November 2025  
Paris, France

### [Formnext](#)

18-21 November 2025  
Frankfurt, Germany

### [SPIE BiOS Expo 2026](#)

17-18 2026  
San Francisco, CA, USA

### [SPIE Photonics West](#)

17-22 January 2026  
San Francisco, CA, USA

### [Laser World of Photonics China 2026](#)

18-20 March 2026  
Shanghai, China

Find more MKS [trade shows here](#).

## Follow Us Online

### Social Media



ultraviolet (4-6 eV, 300-200 nm) and the vacuum ultraviolet (VUV; 6-12 eV, 200-100 nm) spectral regions is challenging. Here the authors fully characterize the temporal shape of microjoule-energy VUV pulses tuned between 160 and 190 nm generated via resonant dispersive wave emission during soliton self-compression in a capillary using frequency-resolved optical gating based on two-photon photoionization in noble gases. Power is measured by a calibrated volume absorber power meter, Ophir 3A-P, placed directly in the vacuum chamber. [Characterizing Vacuum UV Pulses.](#)

### **High Power, Dual SWIR-MIR OPCPA Source for High-Order Harmonics Generation**

Recent advances in laser technology have led to the development of wavelength tunable ultrashort light sources, allowing the study of a wide variety of systems - from complex molecules to condensed matter. However, achieving broad control in key laser parameters - such as wavelength, pulse duration, and peak intensity - remains a significant challenge. The authors present an advanced, optical parametric chirped pulse amplifier (OPCPA) source, pumped by a single Yb:YAG laser at 50 kHz, which generates simultaneous and fully independent outputs in both the short-wave infrared (SWIR) and mid-infrared (MIR). The spatial properties of the pump beam were characterized using an [Ophir BeamSquared](#) M<sup>2</sup> beam propagation analyzer. [OPCPA Source.](#)

#### **Blog**

[The Ophir Laser Measurement Group](#)

#### **Web**

[www.ophiropt.com/photonics](http://www.ophiropt.com/photonics)

## **About Ophir Products**

Ophir is a brand within the MKS Inc. Instruments Photonics Solutions 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, OEM and replacement high-quality optics and sub-assemblies for CO<sub>2</sub> and high-power fiber laser material processing applications. Ophir products enhance our customers' capabilities and productivity in the semiconductor, advanced electronics, and specialty industrial markets. For more information, visit [www.ophiropt.com](http://www.ophiropt.com).

You are receiving this newsletter because you have previously expressed an interest in Ophir products. To let a colleague know about *ePulse: Laser Measurement News*, please forward this e-mail to them or have them [subscribe](#).

© 2025, MKS Inc.  
3050 North 300 West, North Logan, UT 84341  
Tel: +1 435-753-3729  
[www.ophiropt.com/photonics](http://www.ophiropt.com/photonics)