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New Ophir® Laser Power Sensor Measures High Repetition Rate, Short Pulse Industrial Lasers for Micromachining up to 200W

Andover, MA – Feb 23, 2022 – MKS Instruments, Inc. (NASDAQ: MKSI), a global provider of technologies that enable advanced processes and improve productivity, has announced the **Ophir F150(200)A-CM-16** thermal sensor, a state-of-the-art device for measuring high repetition rate lasers with very short pulses in the nano, pico, and femto second ranges. High repetition rate lasers can induce damage to conventional sensor coatings at lower power densities than is often required by users. The F150(200)A-CM-16 is a compact, calibrated, fan cooled sensor that supports high rep very short pulses lasers with average power up to 200W. Such performance is typically only achieved with a diffuser. The new sensor accomplishes this without a diffuser, thus alleviating the problems related to contamination on the diffuser. The F150(200)A-CM-16 sensor can withstand higher power densities and measure continuously average power up to 150W and intermittently up to 200W. This makes the sensor ideally suited for use in material micro-processing, such as semiconductor applications, PCB drilling, advanced flat panel display production, photovoltaic cells, and medical applications.

"We are seeing an increase in output power for ultrashort pulse high repetition lasers in material micro-processing applications, even in challenging niches like UV with pico and femtosecond," said Reuven Silverman, General Manager, Ophir Photonics. "The new Ophir F150(200)A-CM-16 sensor allows measurement of up to 200W with high

sensitivity. This means the sensor can notice very small changes in laser power, exactly what is needed for the precise laser control required by micromachining applications."

The **Ophir F150(200)A-CM-16** sensor is a new addition to the Ophir line of sensors targeting micro materials processing, which includes the F80(120)A-CM-17, 30(150)A-SV-17, and more. The F150(200)A-CM-16 sensor can withstand higher power densities for high repetition rate pulsed lasers than sensors with conventional coatings. The new sensor works with industrial lasers at wavelengths from 248nm – 9.4µm. It measures laser power from 100mW to 150W continuously (up to 200W intermittently). The sensor is fan-cooled with a 16mm aperture. It features a unique absorber that will not be damaged by the ablation usually caused by very short pulses. It can withstand high power densities, for example, 35kW/cm² @20W, 355nm ns pulses, and 7kW/cm² @23W, 355nm ps pulses.

Like all Ophir sensors, the **Ophir F150(200)A-CM-16** sensor includes a "Smart Connector" interface that works with the company's **Centauri**, **StarBright, Vega, Nova II**, and **StarLite** smart displays, **Juno** and **Juno+** compact USB PC interface, and **EA-1** Ethernet adapter**.** Data can be displayed in a variety of formats, including Digital with Bargraph, Line Plot, Pulse Chart, and Real Time Statistics. The displays also feature sophisticated logging of power and energy, statistics, histograms, and more, as well as advanced math functions. Each display is automatically configured and calibrated when plugged into one of the company's laser measurement heads.

Availability & Pricing

The **Ophir F150(200)A-CM-16** laser sensor is available now. OEM prices available on request.

DATA SHEET: https://tinyurl.com/2p87wav3
SALES INQUIRIES: sales.ophir.usa@mksinst.com

About MKS Instruments

MKS Instruments, Inc. (NASDAQ: MKSI), is a global provider of instruments, systems, subsystems and process control solutions that measure, monitor, deliver, analyze, power and control critical parameters of advanced manufacturing processes to improve process performance and productivity for our customers. Our products are derived from our core competencies in pressure measurement and control, flow measurement and control, gas and vapor delivery, gas composition analysis, electronic control technology, reactive gas generation and delivery, power generation and delivery, vacuum technology, lasers, photonics, optics, precision motion control, vibration control and laser-based manufacturing systems solutions. We

also provide services relating to the maintenance and repair of our products, installation services and training. Our primary served markets include semiconductor, industrial technologies, life and health sciences, research and defense. Additional information can be found at www.mksinst.com.

About the Ophir Brand

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, OEM and replacement high-quality optics and sub-assemblies for CO_2 and high-power fiber laser material processing applications. Ophir products enhance our customers' capabilities and productivity in the semiconductor, industrial technologies, life and health sciences, research and defense markets. For more information, visit www.ophiropt.com.

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