



Press Release Photonics West 2013

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Jenoptik introduces new products at Photonics West 2013.

On February 5-7, 2013, Jenoptik will be presenting new products and advanced technologies in the fields of optics, lasers and infrared technology in San Francisco. Furthermore, the Group is the main sponsor of the SPIE Startup Challenge 2013 to support young entrepreneurs.

In the field of laser material processing, Jenoptik will present the femtosecond laser [JenLas® D2.fs](#) with improved parameters. Maintaining stable beam quality, the output power and pulse repetition rate of the laser have been increased to allow for faster material processing in industry and medical technology. In addition, the 1 kilowatt fiber laser [JenLas® fiber cw 1000](#) for application in material processing, in particular for non-contact cutting and welding of metals with high flexibility and speed will be presented.

As one of the world's leading manufacturers of optical systems, Jenoptik will also showcase new ultra-precision optics processed using Ion Beam Figuring (IBF) at Photonics West. The new [F-Theta lens series](#) Silverline complements Jenoptik's portfolio of full fused-silica lenses for micro-processing with high-power fiber and picosecond lasers.

In the field of sensor systems, Jenoptik will introduce the high-definition [thermography camera](#) IR-TCM HD 1024 to the US market. The handheld camera allows for the detailed and precise analysis of temperature distributions, in particular in the case of large objects or large focusing distances.

Jenoptik supports the entrepreneur competition SPIE Startup Challenge.

This year Jenoptik will again be the lead sponsor of the annual entrepreneur competition of SPIE, the international society for optics and photonics. SPIE fellow Jay Kumler, responsible for the U.S. activities of the Jenoptik Optical Systems division, will be judge member for the SPIE Startup Challenge 2013 competition, which serves to support entrepreneurial projects.



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Aspiring entrepreneurs from the field of optical and photonic technologies participating in the SPIE Startup competition will pitch their innovative business ideas to a team of expert judges.

"The SPIE Startup Challenge has become an outstanding opportunity to see early-stage innovation in progress," says Jay Kumler. "Partnering with SPIE as lead sponsor for the past two years is one tool that Jenoptik uses to encourage entrepreneurship in our Group and in our industry. The event fits our values and our culture very well."

The ten finalists will receive sponsorship opportunity to attend the Entrepreneurship Academies organized by the University of California. The top three finalists will also receive a financial prize.

Visit Jenoptik at Photonics West, February 5-7, 2013, Moscone Center, South Hall, Booth # 1214.

Further information on the exhibition of the Jenoptik divisions Lasers & Material Processing, Optical Systems and Defense & Civil Systems is available here: www.jenoptik.com/photonics-west

Jena, January 21st, 2013



Jenoptik's new products at a glance:

Jenoptik's Femtosecond Laser JenLas[®] *D2.fs* for Precise Micro-Processing and Medical Technology.

Jenoptik has improved the laser parameters of the [JenLas[®] *D2.fs*](#). The pulse repetition rate has been increased to over 500 kilohertz and the output power by 25 percent. Thereby the laser has retained its superb pulse and beam characteristics as well as its stability. Furthermore, the advantages of the thin-disk laser are preserved, namely very short pulses combined with high pulse energy. The combination of the higher pulse repetition rate and increased output power means more throughput and faster processing for industrial use. This enhanced productivity provides the user with decisive technological and economical advantages.

Another feature of the diode-pumped JenLas[®] *D2.fs* is the exceptional flexibility of the laser parameters. Variable power levels and pulse repetition rates can be set according to the application requirements. Special attention has been paid to ensure a simple integration of the JenLas[®] *D2.fs* into laser machines and laser systems. This means that, if required, the laser can be parameterized using software or hardware. Before shipping, various tests and checks are performed to ensure reliable functioning of the laser in typical usage, storage, and transport conditions.

Jenoptik's femtosecond laser can be used in micro-processing as well as medical applications, where minimal thermal heat input and excellent cutting quality are of advantage. Examples for such applications are cutting in the stent manufacturing, precision drilling of injectors, and the processing of displays.

Images can be downloaded here: [Link to the image database.](#)



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Cutting and Welding of Metallic Materials with Jenoptik's 1 Kilowatt Fiber Laser.

At Photonics West 2013, Jenoptik shows its [JenLas® fiber cw 1000](#) fiber laser with an output power of 1000 Watt. The introduction of this OEM laser will further expand the range of the outstanding lasers, offered by Jenoptik's Lasers & Material Processing division for use in industrial material processing.

The JenLas® *fiber cw 1000* guarantees high productivity and impressive processing quality, especially during cutting and welding of metallic materials of different thicknesses and geometries. A deep understanding of every level of laser technology combined with a broad experience in the relevant applications guarantees an easy and flexible integration of Jenoptik's lasers into the respective processes of the companies' clients worldwide.

The advantages of laser welding with a fiber laser compared to conventional mechanical or chemical processes such as gluing, soldering, or hot plate welding are flexibility and speed. The welded joints made by fiber lasers are extremely strong and components even with unusual dimensions can be processed quickly and reliably. The non-contact laser cutting and laser welding with JenLas® *fiber cw 1000* offers the operator new possibilities and perspectives.

Images can be downloaded here: [Link to the image database](#).

At Photonics West 2013, a range of other Jenoptik's laser products will also be presented to the show visitors. Those include further developments from the areas of semiconductor materials, diode and solid-state lasers as well as laser machines for plastics, metals, glass and photovoltaic applications.



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Optical Systems with Nanometer Precision for Semiconductor Manufacturing: Ion Beam Figuring for High-Precision Optical Surfaces.

Jenoptik, a leading provider of optical systems, is expanding its portfolio and will be using Ion Beam Figuring (IBF) for highly accurate form correction of optical surfaces. This deterministic process allows for accuracy below one nanometer RMS. This technology was previously provided through cooperation with external partners. Now the company includes IBF technology in its own portfolio to manufacture optical systems and components with more sophisticated surface accuracy.

Precision optical systems can be found in applications such as lithography and inspection in the semiconductor industry. They distinguish themselves through the high-precision form and surface accuracy, and minimal micro-roughness of ion beam processed optics. They guarantee exceptional imaging quality for our customers' optical systems, and therefore highly accurate production results, cost-efficient volume production, and clear competitive advantages.

Flat, spherical, aspherical, and free-formed optical components can be produced in the new IBF plant. They can be made with dimensions of up to 4 inches, using optical materials such as calcium fluoride, fused silica, zerodur, optical glass, germanium, and silicon. The machine uses adjustable beam widths for the optimization of short or long wave deviations. In direct contrast to other local form correction processes, for example, Magneto-Rheological-Finishing (MRF), IBF allows a much more precise adjustment of the tool parameters matched to the required surface. The non-contact manufacturing process corrects form errors with highest precision.

With many years of experience working with leading companies in the semiconductor sector, Jenoptik is the ideal partner for all stages of projects, from development through to series production of customized optical systems.

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Silverline F-Theta Lenses for High-power and Picosecond lasers.

Jenoptik will be presenting its Silverline [F-Theta lens](#) range for high-power fiber laser and picosecond laser applications for the first time at Photonics West. This new range is designed to complete its existing range of full fused-silica lenses for high-performance lasers. As a new member of the product family, the JENar[®] F-Theta lens for 532 nanometers is being introduced with focal lengths of 170 and 250 millimeters for use in high-energy picosecond ranges.

The new JENar[®] lenses 170-532-140 and 255-532-175 are specially designed for use in micro material processing for medium and high performance requirements in multi kilowatt applications. Users of the new generation of devices for laser material processing will benefit from long-term stable systems, for example: micro structuring of glass in micro electronics, micro material processing in the semiconductor industry, cutting and structuring composite fiber materials, the automotive industry, and the removal of tissue during medical treatments.

The Silverline F-Theta lenses offer a range of applications from 1030 to 1080 nanometers and 515 to 540 nanometers. They are minimally-absorbing full fused-silica lenses for high-performance disks and fiber laser applications. Standard and customer-specific options are available. The diffraction-limited lenses provide a high damage threshold and offer exceptionally consistent focusing over the entire scanning area. They manage a beam output power of up to four kilowatts without active cooling, and secure minimal focal shift with high-performance lasers.

In addition, Jenoptik offers classic JENar[®] F-Theta lenses for wavelengths of between 1080 and 355 nanometers. For example, for the micro structuring, marking, and labeling of different materials.

In order to satisfy customer-specific requirements, the company offers complete systems, lenses, and components, with customized design for applications in laser material processing, be it laser beam shaping, beam expansion or beam splitting. The company will provide an active demonstration of laser beam shaping at their trade fair booth.

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Thermal Images in Photo Quality: Jenoptik Launches High-Definition Thermography Camera for System Integration.

The new IR-TCM HD series of [thermography cameras](#) has been designed to supplement the handheld cameras of the VarioCAM® HD series, first introduced at SPIE Defense, Security + Sensing in 2012.

The need to produce precise and detailed analyses of temperature distributions places high demands on the temperature resolution and spatial resolution of thermography cameras, particularly in the case of large objects or large focusing distances. The new cameras in the IR-TCM HD series use an un-cooled infrared detector with 1024 x 768 pixels for image capturing. The IR-TCM HD cameras offer unique performance quality, producing thermograms with a spatial resolution of up to 3.1 megapixels and temperature resolution of up to 50 millikelvins in real time, using the Resolution Enhancement technology of Jenoptik.

Diverse interfaces are available for simple system integration, camera control, and data output, for example, GigE-Vision, DVI-D, C-Video, WLAN, or Bluetooth.

The high-resolution thermography cameras can be used in the areas of Research & Development, Automation Technology, Process Control, and Aerial Photography.

The camera will be launched for the first time in the USA, at Photonics West, exclusively by JENOPTIK Defense, Inc.

Images can be downloaded here: [Link to the image database.](#)



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About Jenoptik

As a comprehensive optoelectronics group, Jenoptik divides its activities into five divisions: Optical Systems, Lasers & Material Processing, Industrial Metrology, Traffic Solutions and Defense & Civil Systems. Its customers around the world mainly include companies in the semiconductor and semiconductor equipment manufacturing industry, automotive and automotive supplier industry, medical technology, security and defense technology as well as the aerospace industry.

In the [Lasers & Material Processing division](#) Jenoptik covers the entire value-added chain of laser material processing and it is one of the leading providers – from components through to complete systems.

The [Optical Systems division](#) provides opto-mechanical and opto-electronic systems, modules and assemblies for highest quality standards and is a development and production partner for optical, micro-optical and coated components – made of optical glass, infrared materials as well as polymer.

The [Defense & Civil Systems division](#) combines optoelectronics with precision mechanics, lasers and infrared sensor systems to complex components, systems and facilities. The focus in the field of sensory systems is among others on industrial control and automation technologies.



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