

# PRESS RELEASES

## LASER World of PHOTONICS – Munich 2015

thermoelectrics, amplifiers, illumination, thermoelectrics, aerospace, capacitors, renewable energies, machine vision, fiber optics, servicing, detectors, consulting, heat, repairing, patch cords, research, training, optics, cabinet coolers, heat exchangers, drivers, LED, laser systems, opto mechanics, lenses, spectroscopy, laser safety, motion control, prototyping, cooling, demonstrating, multiplexers, installing, transceivers, water cooling, defence, medical, cold plates, high voltage components, controllers, security systems, adhesives, photodetectors, solutions, instrumentation, scientific, designing, power supplies, vacuum detec- turnkeying, industrial, beam prof- resistors, acousto, hyperspectral ima- semiconductors, polarizers, light sources, fiber optic cleaning





- Optical Technologies
- Power Technologies
- Thermal Management



AMS Technologies is Europe's leading solution provider and distributor for Optical, Power and Thermal Management Technologies

## WHERE TECHNOLOGIES MEET SOLUTIONS

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**For more than 30 years, we at AMS Technologies have been supporting the European market with leading, innovative technologies and products that have allowed our customers to take prime position in their chosen markets.**

AMS Technologies is a leading solution provider and distributor of high-tech, leading-edge components, systems and equipment, with more than 30 years of experience to date and currently serving more than 2000 European customers.

We are the specialists in both componentry and complete solutions for Optical technology, Thermal Management and Power Technology fields, with access to and long standing relationships with the most advanced manufacturers in each of those fields. Drawing extensively on our experience in each of these differing technologies, and coupling this with our broad system-level competence, we are able to offer seamless and comprehensive solutions incorporating complementary aspects from all three key technology fields.

With an appropriate technical education, an element of entrepreneurial spirit and many years of design and consultancy expertise, our sales engineers can rapidly comprehend system requirements and provide you the customer with a solution that goes way beyond a simple understanding of our product datasheets. We take active involvement in the design cycle, defining and re-defining your specifications, and

leading in many cases to highly specific, customized products and solutions. Helping you to effectively outsource your production line, we can even provide you with the necessary leading turnkey contract manufacturing services in our key competency fields.

AMS Technologies has been delivering solutions into a variety of high-tech markets, including renewable energies, medical, defence & aerospace, research & scientific and various other industrial segments. Our customer base consists of Europe's largest leading technology corporations, a network of universities and research institutes as well as the most promising start-ups.

We thrive by working in a 'customer first' environment. Our pan-European customers are serviced from a network of local offices in Germany, the UK, France, Italy, Spain, Poland and Sweden, with a focused operations and logistics centre located in Munich, Germany.

Our commitment: Identifying the best solution for your project enabling you to become your customers' first choice!

**Your AMS Technologies team**



Optical, Power and Thermal Management Technologies represent the biggest technological challenges facing any engineer.

## OUR SOLUTION APPROACH

**AMS Technologies' solution approach has helped hundreds of customer projects to move from concept to production. Helping you to understand our capabilities, we invite you to browse a list of the many projects that we have successfully completed over a timeframe closely approaching 30 years.**

Our three key competencies Optical, Power and Thermal Management have no logical bits and bytes, nor industry qualification standards. Hence the design of a system and the choice of the right technology, supplier and products can only be based on knowledge and experience in those fields.

There are manifold fields of applications in our key markets

- Medical
- Industrial
- Renewable Energies
- Research & Scientific
- Defence & Aerospace

where we serve

### OEM customers with

- Consulting
- Designing
- Prototyping
- Validating/Testing
- Turnkeying

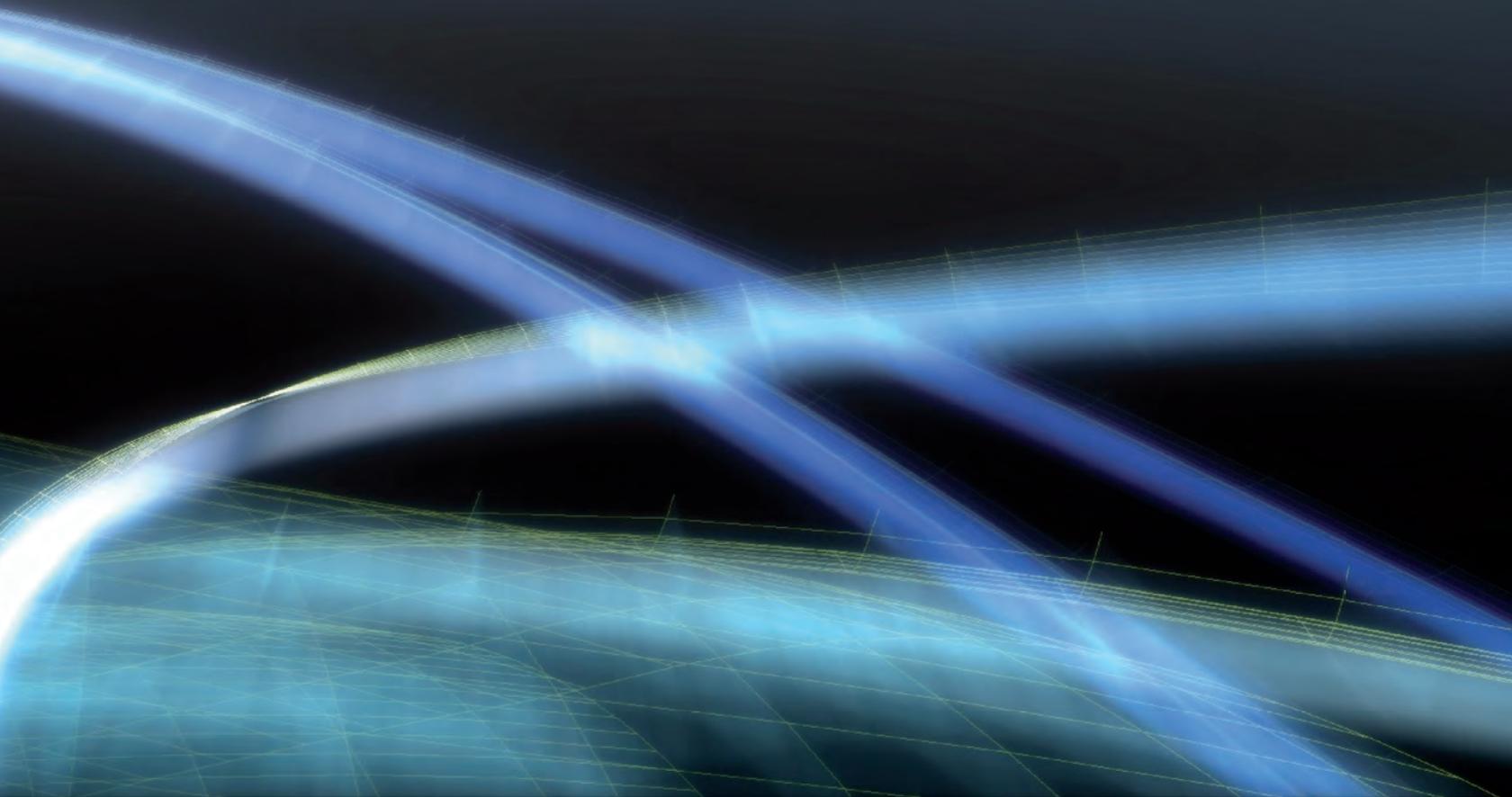
### Endusers B2B with

- Demonstrating
- Installing
- Training
- Servicing
- Repairing

AMS Technologies has built a comprehensive knowledge base in those three key competencies, enabling us to provide customers with complete solutions. Over and above the mere product support for standard products, our solutions can include:

- The development together with the customer of specification sheets for customized components, subsystems, modules and systems, all based on customer needs
- Effective project management of any customized product development
- Higher level design services for system-level prototypes
- Interdisciplinary system-level integrated design comprising all three key competencies:
  - Optical, Power and Thermal Management Technologies
- Appropriate subcontractor selection and production support for system-level integration
- Proper vetting of technologies and suppliers
- Simulations and modeling of system-level designs
- Installation, training and servicing of equipment and instrumentation





# PRESS RELEASE

## AMS Technologies to demonstrate four new Photonics Technologies at LASER World of PHOTONICS

**Martinsried, 10. Juni 2015 – Innovative Solutions for Metrology, Micro Machining, Industrial Illumination and Photonics Cooling to be displayed at the AMS Technologies booth.**

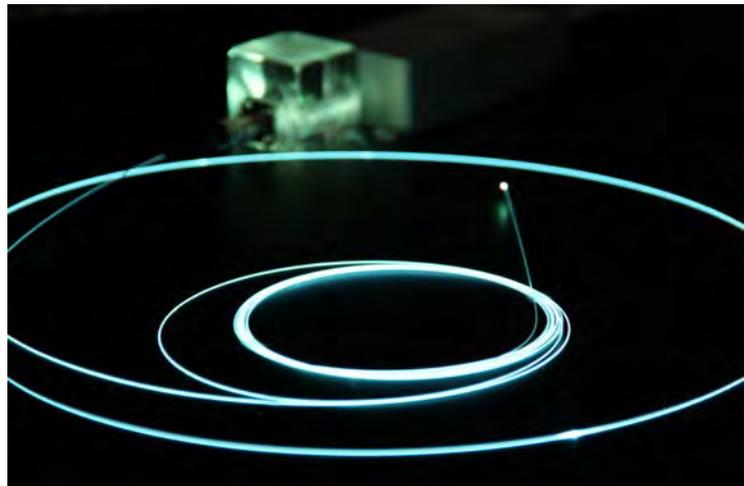
AMS Technologies, Europe's leading solution provider and distributor for Optical, Power and Thermal Management Technologies, today announced several new technology demonstrations to be shown at Laser World of Photonics. These demonstrations include a low cost narrow line width 1550nm solution, a 1064nm ultrashort laser pulse shaping technology, a demonstration of light diffusing fiber and next generation TEC and compressor based very compact Photonics Cooling Solutions.

### ***Narrow Line Width 1550nm Solution***

Based around technologies from its partners Pure Photonics and Lightcomm, AMS will demonstrate a low cost narrow line width, 1550nm solution with a high performance compact amplifier for low noise signals to target various applications in LIDAR, Metrology and Fiber Sensing space.

### ***Ultrafast Laser Pulse Shaping Solution for 1064nm***

Together with AMS' partners Southern Photonics and Finisar, a 1064nm ultrashort fiber laser signal will be shaped and manipulated with a programmable optical filter to target micro machining and bio medical applications. A technical session discussing those techniques will be held on Wednesday 24th of June, interested parties can register for the session on [www.amstechnologies.com](http://www.amstechnologies.com)



### ***Industrial Illuminations (see upper image)***

BlueSkyResearch's multi-wavelength micro lensed laser source and Corning's light diffusing fiber are demonstrated to discuss the use of special illumination solutions. The solution goes where bulky lighting elements cannot, making it the right choice for space constrained applications.

### ***Photonics Cooling***

Comparing the two main cooling technologies used in Photonics Cooling, TECs and Compressors, AMS and its partners Solid State Cooling and Samsung are demonstrating various compact chiller products and prototypes. The need for temperature stability, low noise and vibration, various control and interface methodologies as well as the use of a closed water loop for no-maintenance chillers will be discussed and demonstrated.

We are proud to show you our Turnkey Solutions for Optical, Power and Thermal Management Technologies during Laser World of Photonics Munich – GERMANY, from 22nd to 25th June 2015.

**Meet us on our booth in hall B2.203**

**AMS Technologies – where technologies meet solutions**

# PRESS RELEASE

## **New Enabling Technology for compact Photonics Cooling Applications: Miniature Compressor**

**Martinsried, 8. Juni 2015 – AMS Technologies, one of the leading providers of photonics, power and thermal management technologies presents a new lightweight compressor from Samsung with high efficiency, low vibration and low noise. The technology will be demonstrated at LASER World of PHOTONICS at booth in hall B2.203**

The Mini Compressor with a cooling capacity of up to 500 W is the result of a breakthrough in compressor technology that could be utilized in many Photonics applications from compact recirculating chillers to direct cooling of Laser Diodes.

The product developers of Samsung have reduced the weight and the size of the rotary compressor to about the size of a 250ml soda can, which is one-fourth of the size of a conventional compressor. The new Mini Compressor combines high efficiency motor design technology, compressing technology that minimizes the loss of refrigerant, nano-manufacturing technology and control technology, all of which has resulted in a 35% increase in efficiency while reducing the vibration up to 89% due to its twin pump design.



AMS Technologies provides customers with the necessary expertise to integrate the new mini compressor into custom solutions. From CFD simulations over the dimensioning of the thermal components all the way to complete turn key designs including electronic controllers, AMS Technologies accelerates customer's project design cycles with thermal competence.

Go to [www.amstechnologies.com](http://www.amstechnologies.com) for more information

# PRESS RELEASE

## Infrared Molded Optics for Firefighting Thermal Imaging Cameras

**Martinsried, 12. Juni 2015 – LightPath Technologies announced that its Infrared (“IR”) 40 degree Field of View (“FOV”) molded optical lens assembly has been selected for use in the manufacture of firefighting thermal imaging cameras by a leading supplier of integrated products and technologies for defense departments and federal, state and municipal government agencies worldwide.**

LightPath’s thermal imaging IR product line enables the advancement of firefighting technologies and supports a key objective of reducing line-of-service deaths and burn injuries. The report cites the need for creating an information rich environment for greater situational awareness, which may be attained by incorporating the precision and accuracy available through LightPath’s molded IR optics.



Jim Gaynor, President and Chief Executive Officer of LightPath, commented, “We believe the availability of cutting edge infrared lenses and optical technologies to original equipment manufacturers, including some of the leading defense suppliers in the world, will drive increased adoption of this type of camera that enables fire departments and other first responders to more safely conduct their duties for mission critical success. This is a very large and vital market where increased levels of government spending are being allocated to ensure the safety of both the firefighters and the people they protect.”

A thermographic camera (also called an infrared camera or thermal imaging camera) is a device that forms an image using infrared radiation, similar to a common camera that forms an image using visible light. Instead of the 450–750 nanometer range of the visible light camera, infrared cameras operate in wavelengths as long as 14,000 nm (14  $\mu$ m).

Fire fighters may rely in part on a thermal imaging camera to navigate their way through a burning structure; therefore most imagers employ a wide FOV in the range of 40° to 60°. There are few cases in which a fire fighter would need to focus on an object less than 1 meter away, which encourages the use of relatively robust and lower cost fixed focal length optics that focus from 1 meter to infinity.\* LightPath’s catalog offers an optic products line that meets these and other specifications.

LightPath continues to develop improved capabilities for its IR product line and now offers two types of chalcogenide IR glass materials and several anti-reflective coating options that will cover most requirements in the commercial and military high-volume and small-size application markets.

For further details, please visit [www.amstechnologies.com](http://www.amstechnologies.com)

# PRESS RELEASE

## Optical Adhesive Solutions – Strong bonds to glass, metal, ceramics and plastic

**Martinsried, 16. Juni 2015 – Gluing is an essential technological process in many industrial technologies. The state-of-the-art adhesives are especially designed to meet the wide range of applications, while highly specialized. They are simplifying bonding processes, guaranteeing high processing speed combined with high reliability.**

They are used for bonding of optical components where the adhesive is index matched to the components which has to be glued together. Special glues are developed to fix fiber in v-grooves. The refractive index is precisely controlled and can vary from low to high realizing a perfect optical match of materials.

Another group of adhesives is designed for sealing of optical components. To improve long-term reliability in mechanical protection and moisture prevention, optical devices are housed in protective cases of metal, plastic, etc. The reliability, especially in moisture resistance, of optical parts is greatly influenced by the characteristics of the sealant used for the openings and case junctions of the protective cases in the devices.



Curing conditions can be different, using either heat or UV light to reach the maximum on bonding power. AMS Technologies is distributing the products of two optical adhesives suppliers NORLAND and NTT-AT, covering with their portfolio most of the applications.

All adhesives from AMS Technologies provide

- fast cure
- strong bonds to glass, metal, ceramics and plastics
- low shrinkage
- low stress

AMS Technologies offers a broad range of components, accessories and systems for optic adhesive applications:

- Adhesives for Optical Path Link-up
- Adhesives for Array Assemblies
- High Precision Adhesives
- High/Low Refractive Index Adhesives
- Sealant for Optical Parts
- Optical Waveguide Formation Resin
- Dispensing Solutions

For more information and all available systems please visit <http://www.amstechnologies.com>

**AMS Technologies – where technologies meet solutions**

# PRESS RELEASE

## AMS Technologies Presents World's Smallest Hyperspectral Imager

**Martinsried, 29. Januar 2015 – Our partner BaySpec, a leading provider of miniaturized spectral engines, introduces the OCI-UAV™, a new ultra-compact version of its award winning OCI-Series Hyperspectral Imagers, OCI is a phonetic spelling of “All Seeing Eye”.**

The OCI-UAV™ hyperspectral camera is designed specifically for use on unmanned aerial vehicles/systems (UAV/UAS), remotely operated vehicles (ROV), or anywhere needed. Without compromising performance in this small form factor, the OCI-UAV™ with miniature single-board-computer acquires Visible-Near Infrared VIS-NIR hyperspectral data with continuous spectral and spatial coverage.

### Remote Sensing with $\mu$ UAV (Unmanned Aerial Vehicles)



Remote sensing has a wide range of applications in many different fields, including ground survey and monitoring, precision agriculture, terrestrial characterizing, hazard assessment, natural resource management etc. BaySpec's OCI™-UAV hyperspectral imagers are ultra-compact, easily deployable, high-performance hyperspectral cameras designed specifically for use on small unmanned aerial vehicles (UAVs) or other platforms, to monitor the details of spatial, temporal, and spectral representation of objects.

Unlike conventional hyperspectral imagers, which rely on intensive software efforts for orthorectification, the OCI-UAV-1000™ features innovative “True Push-broom” where the imager can move to scan at random speeds. The OCI-UAV-2000™ is a snapshot multispectral imager that fundamentally eliminating artifacts caused by vibrations in flight. These advancements significantly reduce requirements on UAV/ROV integration.

Operating the OCI-UAV™ is automatic and requires minimal human set-up. The OCI-UAV™ design features signification reduction in size (camera head only 8 cm x 6 cm x 6 cm weighing approximately 0.4 lbs, ~180 g), with a computer, and faster data transfer rate (up to 120 fps) with automatic data capturing and processing.

BaySpec also provides ready-to-fly hyperspectral total solutions. Augmenting the extreme compactness with uncompromised performance, automatic operation and data processing make the OCI-UAV™ a straightforward system for applications, such as: precision agriculture, airborne mini UAV/ROV, remote sensing, ground survey, forest survey, environmental studies, law enforcement, forensics, security and defense, mining and geology, oil and gas exploration, ocean monitoring, among others. **BaySpec will be demonstrating the OCI-UAV at SPIE Photonics West in San Francisco, February 10-12th, booth #711.**

For further details, please visit [www.amstechnologies.com](http://www.amstechnologies.com)

# PRESS RELEASE

## AMS Technologies introduces new Excimer Lasers for Medium-Power Industrial and Scientific Applications

**Martinsried, 16. Juni 2015 – Designed for medium duty cycle operation in an R&D environment, IPEX-700 Series lasers deliver high power ultraviolet laser machining combined with state-of-the-art performance.**

Incorporating LightMachinery's proprietary ICON™ (Integrated Ceramic on Nickel) technology, IPEX lasers offer long gas lifetimes, superior optical stability and precise control of laser operating parameters.

EasyClean automated valves fitted to the optics ports allow the laser chamber to be sealed and the gas fill / passivation to be retained while resonator optics are removed for cleaning and maintenance.

Easy to use, simple to service and economical to operate, IPEX-700 lasers combine the benefits of high precision excimer processing with the lowest total cost of ownership and highest uptime in the market today. IPEX-700 is ideal for applications such as pulsed laser deposition (PLD). The excimer laser can be used as a means of vaporizing target material inside a vacuum chamber and depositing it on a substrate. The process has several advantages over conventional processes including:

- a wide variety of targets can be used; metals, ceramics and oxides
- independent control on the deposition temperature and the background pressure (oxygen, helium, nitrogen...).
- the resulting thin film has the same stoichiometry as the target
- novel coatings such as diamond films can be produced

### IPEX-700 Series Benefits:

- Extended gas lifetime, long replacement intervals, low operating cost
- Simplifies optical maintenance, retains gas fill and passivation
- Delivers 200 microradian pointing stability
- No realignment required after cleaning or replacing optics
- Fast, precise energy stabilization in internal, burst and external trigger modes
- Excellent energy stability, better than 1.0% (KrF).

For further details, please visit [www.amstechnologies.com](http://www.amstechnologies.com)



# PRESS RELEASE

## Advanced Photonic Test and Measurement: New 1 $\mu$ m Programmable Single Polarization Filter

**Martinsried, March 3 2015 – The new WaveShaper 1000/SP 1 $\mu$ m Programmable Single Polarization Filter shapes femtosecond and short picosecond optical pulses in fiber laser systems in applications such as precision micromachining, medical and spectroscopy**

Typical applications include the creation and shaping of short laser pulses in the picosecond and down to the femtosecond regime. The WaveShaper 1000/SP operating around 1  $\mu$ m has been optimized to control the optical signals of Neodymium and Ytterbium fiber lasers; the WaveShaper 1000/SP operating around 1.55  $\mu$ m has been optimized to control the signal of Erbium lasers. The WaveShaper 1000/SP is typically applied in a Master Oscillator Power Amplifier (MOPA) configuration following the seed laser.

The WaveShaper 1000/SP transmits and processes the signal which is launched into the slow axis of the input PM fiber. The signal launched into the fast axis is not transmitted and will be extinguished by more than 20 dB. This instrument is available as a bench-top unit (1000S/SP) as well as an OEM module which can be integrated into systems (1000M/SP). The fiberized setup ensures stable turn-key operation without manual re-adjustments.



### Key-Features

- Based on High Resolution Liquid Crystal on Silicon (LCoS) technology
- Wavelength Switching capability (4000S model)
- Arbitrary Channel Shapes
- Control of Channel Dispersion
- Arbitrary Optical Transfer Function (Phase/Amplitude)
- Supports Band-Pass
- Band-Stop and Optical Comb Filters

# PRESS RELEASE

## Laser Cooling Solutions – When temperature stability is key

**Martinsried, 12. Juni 2015 – For precise temperature control of water or liquid-cooled lasers, our chillers improve performance by keeping wavelength and beam shape constant.**

Comparing the two main cooling technologies used in Photonics Cooling, TECs and Compressors, AMS and its partners Solid State Cooling and Samsung are demonstrating various compact chiller products and prototypes. The need for temperature stability, low noise and vibration, various control and interface methodologies as well as the use of a closed water loop for no-maintenance chillers will be discussed and demonstrated during Laser World of Photonics Munich, from 22nd to 25th June 2015. Meet us on our booth in hall B2.203

AMS Technologies offers the entire range of laser cooling solutions including recirculating chillers from 150 W to 95 kW, a variety of heat sinks for actively and passively cooled light sources as well as cabinet cooling for sensitive equipment.



Thermoelectric recirculating chillers are available from 150W to 950W of cooling capacity and offer precise temperature control to  $\pm 0.05^{\circ}\text{C}$ . These chillers feature whisper-quiet operation, vibration-free operation, world wide power compatibility and a high efficiency variable voltage source that consumes energy only when needed.

Compressor based chillers are available from 300W to 95kW of cooling capacity and are designed to guarantee trouble-free operation of laser equipment. Features include a variety of monitoring and safety options, pump options, different enclosures, fluid compatibility, low noise and low vibrations options.

### AMS Technologies presents online tool for choosing the right cabinet cooler

The tool has been developed to allow users to quickly determine, which cooling technology, such as heat pipes, TEC or compressors can be used for their requirements and chose from a large selection of AMS Technologies' standard cabinet coolers. If none of the standard solutions are suitable, AMS Technologies will be able to design and deliver a turnkey custom cabinet cooling solution. The use of the calculator is free of charge and can be found at <http://cabinet-coolers.amstechnologies.com/>

Go to [www.amstechnologies.com](http://www.amstechnologies.com) for more information

# PRESS RELEASE

## AMS Technologies presents SUltra – OEM Laser Module from QPC Lasers line

**Martinsried, 16. Juni 2015 – Easy Integration into End-User Systems: Complete OEM solution featuring the award-winning Ultra-G® Green laser and Ultra-50 fiber-coupled modules from 532nm to 1908nm with power up to 50W CW or pulsed.**

AMS Technologies introduces the SUltra from Laser Operations LLC QPC. A compact laser module designed for easy integration by OEMs into end-user systems with applications from plastic welding and laser soldering to laser therapy and forensics.

Each module incorporates a BrightLase® or BrightLock® fiber coupled laser module, power supply, thermal management system, and RS-232 interface in a compact (15cm x 16.2cm x 45cm / 0.4 cubic feet) air cooled enclosure.



Options include CW and pulsed operation at powers to 50W, output fiber diameters from 50 to 800  $\mu\text{m}$ , wavelengths ranging from 532 to 1908 nm and an integrated visible aiming beam. Outboard GUI interface modules are also available for integration into end-user systems.

### Key Features:

- High Power Stability
- Fast Rise Time
- CW and Pulsed Operation
- Safety Interlock
- Optional Power Monitoring Control (with integrated MPD)

### Applications:

- Forensics
- Particle Counting
- Solar and LCD Panel Manufacturing
- OEM Medical Equipment
- Laser Pumping
- Materials Processing

For further details, please visit [www.amstechnologies.com](http://www.amstechnologies.com)

# PRESS RELEASE

## Using Lasers to Make Lasers – Vytran’s unique products and technologies enable a broad range of precision applications

**Martinsried, 12. Juni 2015 – Lasers Processing in Fiber laser Production: Improve performance, increase yield, reduce manufacturing costs with OpTek’s Fiber Processing Services**

From the early 1990’s OpTek Systems has been applying its proprietary laser processing technology to the challenges presented in the use of optical fiber. Originally developed to service the rapidly growing demands of the broadband telecommunications industry, OpTek’s LaserCleave processes provided the means to terminate fibers in a range of geometries from simple flat and angled facets, to complex optical lens forms required to optimize diode-to-fiber coupling. At that time the driver for this development was a need to improve optical quality of fiber terminations for long-haul applications, beyond the capabilities of tradition mechanical techniques, coupled with the need for significant increase in volumes and the desire to automate production.



This period saw an exceptional level of investment across the industry, resulting in significant developments in optical fiber systems. Following the crash of the telecom market in the early 2000’s the industry looked to see where else these developments could be exploited and the fiber laser was one obvious candidate. Since this time the industrial fiber laser has gone from strength to strength, with development and diversity in power levels, wavelengths and pulse lengths. The push towards high power, short wavelength, short pulsed laser is great news for applications in materials processing and precision laser micromachining but creates additional demands on the fiber and in particular the terminations or interfaces.

In response to the evolving need of industry, OpTek has adapted and continues to develop the LaserCleave process to accommodate a broad range of fiber processing tasks in a wide range of applications, including fiber laser. Today we are able to address a number of aspects of the fiber laser architecture from stripping coatings, coupling light in and out, combining multiple fibers, creating and attaching a wide variety of end caps and the management of cladding modes.

OpTek Systems offers a range of dedicate optical fiber processing tools with a track record of excellent performance in the production environment. With facilities in Europe, USA and Asia we also provide sub-contract processing services and expert consultancy to assist with new product development, product improvement and volume production requirements.

Go to [www.amstechnologies.com](http://www.amstechnologies.com) for more information

**AMS Technologies – where technologies meet solutions**

# PRESS RELEASE

## Simplify Laser Integration for Optogenetics Microscopy

**Martinsried, 12. Juni 2015 – AMS Technologies presents Siskiyous' new IS-OGP for simple laser integration in microscopy applications.**

The IS-OGP (Optical Gaging Product) provides a simple, complete solution that adds a laser light source to your microscope for optogenetics research.

Specifically, the IS-OGP provides a means to introduce a fiber-coupled laser beam into the infinity space of leading optical microscopes having a trinocular setup (including those from Nikon, Olympus, and Zeiss), and then to position the focused laser stimulation spot (10  $\mu\text{m}$  typical with 20X objective) with sub-micron accuracy, anywhere within the field of view.

It positions a small (10 $\mu\text{m}$  typical with 20X objective) stimulation spot to any location within the field of view. The single-mode FC connectorized fiber optic cable input from your light source, combined with the included FLG-FC/2 optics internal to the IS-OGP (patent pending), creates a collimated input to the rear aperture of the microscope objective.

- Easy microscope mounting
- Simple beam steering
- Uses single-mode connectorized light sources

For further details, please visit [www.amstechnologies.com](http://www.amstechnologies.com)



# PRESS RELEASE

## Detection Thresholds Drop with Low Noise Quantum Cascade Laser Driver

**Martinsried, March 3 2015 – The QCL Driver Laboratory Series Instrument is now available: Electronic noise from Quantum Cascade Laser drivers has long limited the detection threshold of chemical sensors. No longer. Patented<sup>1</sup> low noise technology is now available to both researchers and developers.**

Wavelength Electronics introduces the QCL LAB family of instruments that couple an intuitive touchscreen display with low noise drive electronics that have a proven track record of dropping detection thresholds up to an order of magnitude.

Quantum Cascade Lasers (QCLs) operate with high power at wavelengths suited to detecting molecules significant to humans. Some applications include remote detection of explosive materials, medical diagnosis using the breath, non-invasive glucose testing, emissions & air quality monitoring, petroleum leak detection, methane detection in fracking... The list is growing exponentially as researchers discover new possibilities.



Detection threshold is always a defining characteristic of a sensor. With 0.4  $\mu\text{A}$  RMS noise current and 1nA /  $\sqrt{\text{Hz}}$  average current noise density up to 100kHz, the QCL500 LAB instrument allows the lowest possible detection thresholds. Low electronic noise translates into stable center wavelength, narrow linewidth, and repeatable scans.

Models are available with output currents of 500 mA, 1000 mA, 1500 mA, and 2000 mA in Constant Current mode. Compliance voltage is adjustable up to 20 V with 2-3 MHz analog modulation bandwidth. Operate standalone or via USB or Ethernet (remote operation software included). Application notes and free technical support help you minimize noise in particularly demanding applications. After your testing is complete, compact OEM drivers are available for integration into field-deployable systems. The QCL OEM family noise levels are also the lowest commercially available.

### Key-Features

- Adjustable soft-clamp current limit, with Brick-Wall Never-Exceed circuitry
- Password protection available to lock out a selectable control set
- Key switch, active, and passive interlocks
- Driver over-temperature protection circuit
- Relay shorts output when current is disabled
- AC input and patented power supply filtering
- 2 second turn-on delay — adjustable
- 1.5 msec current ramp

**AMS Technologies – where technologies meet solutions**

# PRESS RELEASE

## Life Test and Burn In System: Remote controlled Laser diode driver for Medium power Butterfly packaged Laser diodes

Martinsried, 16. Juni 2015 – Fibotec Fiberoptics introduced the new modular laser diode driver (LTBiS) at Photonics West this year. Visit us now at LASER World of PHOTONICS at our booth in hall B2.203

The LTBiS is a multi-channel laser diode drive system that can be controlled through a digital electronic interface. The system design is modular, so that up to 10 laser diodes can be controlled independently within one 19"-instrument. Several instruments operated by one PC can be combined in a rack. A rack with the half width that fits with 4 plug-in units is available as an option.



Applications for the LTBiS are laser diode burn-in and laser diode life test. The LTBiS consists of two hardware parts: The 19" mainframe (master) and up to 10 plug-in units (or a 9.5" wide master and up to 4 plug-in units). The master can be easily controlled by user software through the serial interface. The external forward testing photodiode is integrated with the plug-in units and can be connected to the laser by an external fiber loop. Both, photodiode and laser, have a front plate access that is terminated by FC/APC.

Fibotec Fiberoptics GmbH is a highly versatile, leading producer that delivers premium solutions for fiberoptic product requirements in all these market segments: Communications Technology Fiberoptics, Communication Technology Measuring Devices and Fiberoptic products for industrial applications.

Go to [www.amstechnologies.com](http://www.amstechnologies.com) for more information

### AMS Technologies – where technologies meet solutions

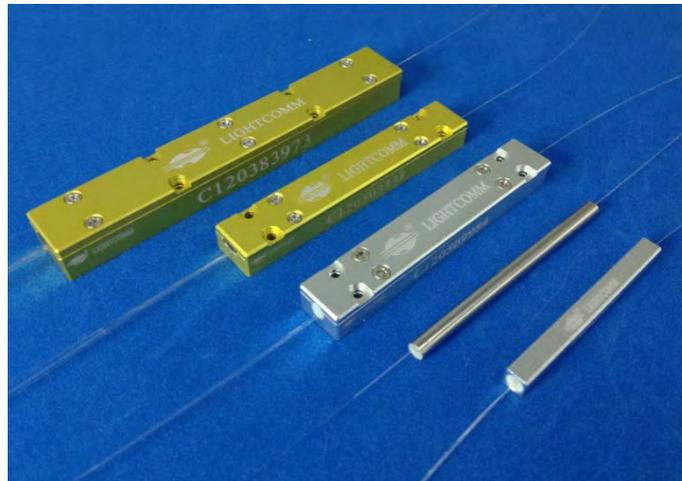
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# PRESS RELEASE

## Reliable High Power Components for Demanding Optical Technologies

**Martinsried, 12. Juni 2015 – AMS Technologies presents LightComm's High Power Pump Combiners, Isolators and Accessories for Fiber Laser & Amplifier Application. Visit us at LASER World of PHOTONICS at our booth in hall B2.203**

LightComm Technology was founded in 2000 by a team of optical component engineers with more than 20 years' experience and is a leading, innovative company of fiber optical components. LightComm provides high reliable but cost effective solutions based on Fused Fiber Technology.



The product portfolio consists of optical fiber components for telecom applications, high power components for fiber laser and fiber amplifier and polarization maintaining components as well as complete EDFY and YDFA products. LightComm is the largest manufacturer of fused fiber coupler in China, and leading company of high power components. The company is ISO 9001 certificated and all of LightComm coupler products are Telcordia 1209 /1221 and RoHS compliant.

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# PRESS RELEASE

## Speciality Fibers for Photonics applications, Power delivery and Sensing

**Martinsried, 12. Juni 2015 – Fiberguide Brings Specialty Optical Fibers and Assemblies to LASER World of PHOTONICS. Visit us at LASER World of PHOTONICS at our booth in hall B2.203**

Fiberguide's range of specialty optical fibers are used for optical sensing and laser power delivery in the industrial, medical, military and research applications. Our partner Fiberguide Industries manufactures over 500 different specialty optical fiber part numbers to meet the needs of our customers.



Customized to user specifications, Fiberguide delivers precision fibers with tight tolerances. Fiber sizes range from 4.3um single mode to 2000um multimode core sizes with temperature capabilities up to 700°C. Optical assemblies are available in single- and multi-legged configurations. Specialty applications include digital laser projection using multi-leg/multi-fiber assemblies and 2D array optical switches for telecomm and datacomm.

For laser light delivery in medical applications, Fiberguide's disposable shaped tip fibers and fiber assemblies provide optimum control. The conical, ball, radiused, chiseled and angular fiber ends are ideal for benign prostatic hyperplasia (BPH), optical-coherence tomography-guided (OCT) and photodynamic therapy (PDT) laser treatments.

Go to [www.amstechnologies.com](http://www.amstechnologies.com) for more information

### AMS Technologies – where technologies meet solutions

AMS Technologies is Europe's leading solution provider and distributor for Optical, Power and Thermal Management Technologies. For more than 30 years, we at AMS Technologies have been supporting the European market with leading, innovative technologies and products that have allowed our customers to take prime position in their chosen markets. AMS Technologies has been delivering solutions into a variety of high-tech markets, including renewable energies, medical, defence & aerospace, research & scientific and various other industrial segments. Our customer base consists of Europe's largest leading technology corporations, a network of universities and research institutes as well as the most promising start-ups. We thrive by working in a 'customer first' environment. Our pan-European customers are serviced from a network of local offices in Germany, the UK, France, Italy, Spain, Poland and Sweden, with a focused operations and logistics centre located in Munich, Germany.

### Visit us at Laser World of PHOTONICS Munich 2015

We are proud to show you our Turnkey Solutions for Optical, Power and Thermal Management Technologies during Laser World of Photonics Munich - GERMANY, from 22nd to 25th June 2015. Meet us on our booth in hall B2.203

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# PRESS RELEASE

## New 128 x 32 Geiger-mode Avalanche Photodiode (GmAPD) Camera

**Martinsried, 12. Juni 2015 – The Princeton Lightwave 128 x 32 Geiger-mode avalanche photodiode (GmAPD) camera is a turn-key system containing a single-photon imaging sensor designed for three-dimensional laser radar (LADAR) imaging with time-of-flight information captured at every pixel in the array. Visit us now at LASER World of PHOTONICS at our booth in hall B2.203**

The GmAPD pixels of this camera provide true single photon sensitivity, with cameras available in two wavelength ranges. The 1.06  $\mu\text{m}$  camera is sensitive in the wavelength range from 920 nm to 1140 nm, including common pulsed laser wavelengths at 1064 nm and 1030 nm. The 1.55  $\mu\text{m}$  camera is sensitive in the wavelength range from 1400 nm to 1610 nm and is ideal for eye-safe illumination sources.

### Features:

- Simple camera operation requiring only low-voltage power supply
- 128 x 32 imaging sensor with Geiger-mode APD pixels
- High-efficiency single-photon sensitivity between 0.92  $\mu\text{m}$  and 1.14  $\mu\text{m}$
- Pixel-level circuitry performs rapid active quenching to minimize crosstalk
- Integrated microlens array for high fill factor
- Very high frame rates (>70 kHz)



Princeton Lightwave Geiger-mode 3D LIDAR cameras are based on a focal-plane array of Indium Gallium Arsenide single-photon sensitive APDs, attached to a custom CMOS readout designed for high-speed time-of-flight ranging. These sensors are available in formats of 32x32 or 32x128 pixels and are optimized either for 1064nm or 1550nm laser sources. This allows both defense and commercial applications of three-dimensional laser radar systems with time-of-flight information captured at every pixel in the array. The 1550nm camera, with lasers operating at eye-safe wavelength, is particularly adapted to applications in the public space such as autonomous driving and short range mapping. Princeton Lightwave is the leader in Geiger-mode LIDAR imagers in the shortwave infrared.

Applications are 3D mapping, ranging, or autonomous driving; single-photon imagers for free space communications or receivers for quantum cryptography.

Go to [www.amstechnologies.com](http://www.amstechnologies.com) for more information

# PRESS RELEASE

## High Precision Automated Dispensing Technology

**Martinsried, 16. Juni 2015 – AMS Technologies is now offering industrial precision dispensing robots and manual dispensing units European wide. The dispensing systems from MUSASHI are used in numerous industrial processes, such as automotive, cable assembly, optical module manufacturing, electronics, solar cell manufacturing and medical technology.**

When handling liquid materials process parameters like stability, flow volume and the curing profile of the used materials are of paramount importance. Permanent monitoring and control of these parameters is essential to ensure stable dispensing during the process, even with self-curing materials. High precision systems optimize the production flow, lower the costs and maximize throughput for electrical and electromechanical manufacturing sequences. When used in medical applications Musashi's solutions ensure absolute even dispensing of UV curing adhesives, silicone, cyanoacrylate adhesives and other liquid materials.

### The SuperΣCMI-Series: Digital Pneumatic Dispensing System with automatic correcting function

The SuperΣCMI-Series digitally controlled dispensing systems feature automatic drop protection, automatic correction of dispensing pressure and built in residual fluid alert. These features ensure a much lower reject rate, compared to systems provided by other manufacturers. The precise dispensing and the minimal fluid loss due to the air pulse dispensing controller leads to significant reduction of maintenance and fluid costs.



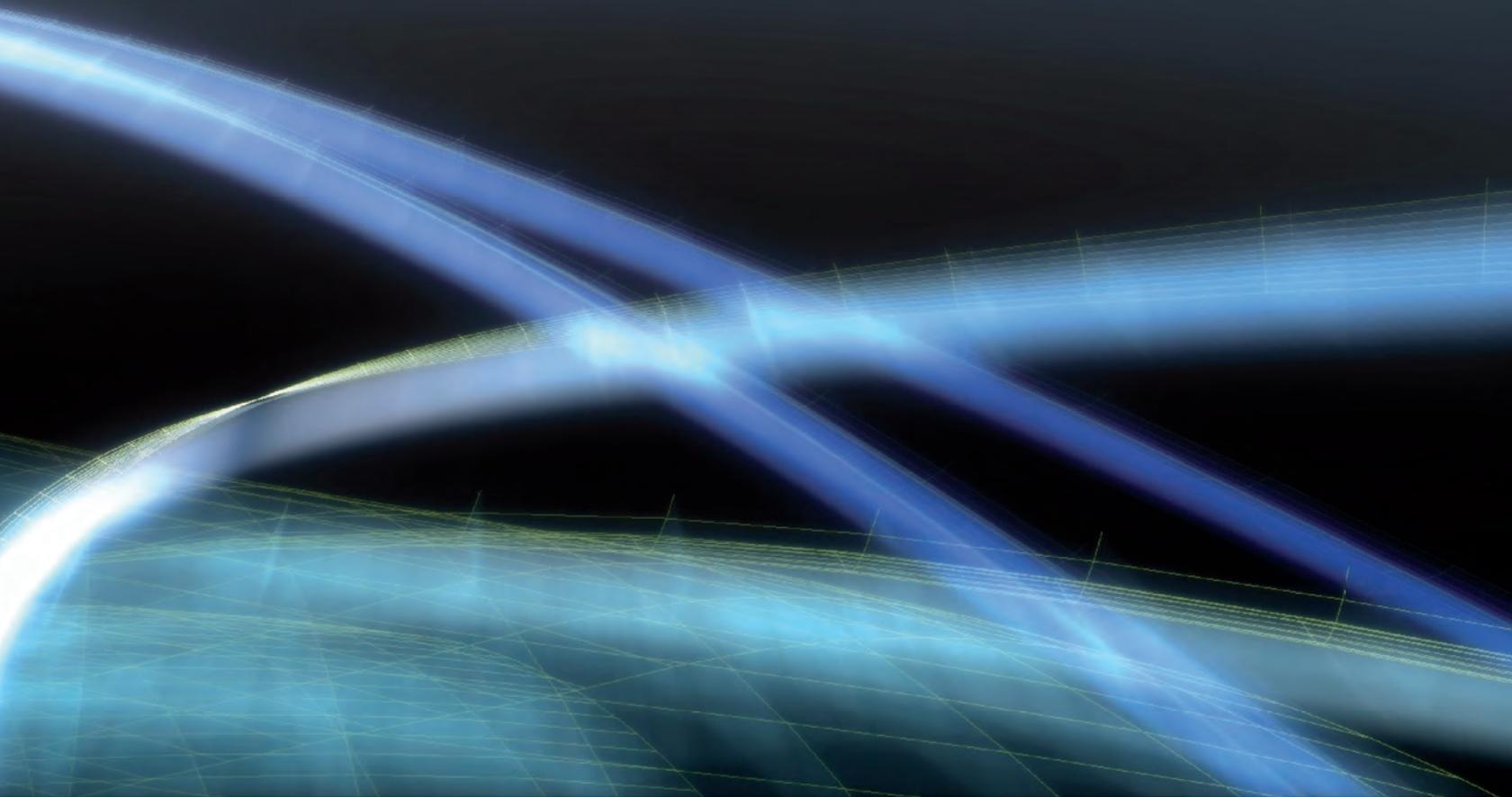
MUSASHI is Japans leading manufacturer of high precision dispensing controllers, used in almost every production process, that demands the application of exact amounts of adhesives, sealants, lubricants and other liquids used for production and installation. A large choice of consumables, like syringes, nozzles and adapter hoses cover all customer needs.

For more information and all available systems please visit <http://www.amstechnologies.com>

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