LASER SYSTEMS FOR INDUSTRY & SCIENTIFIC APPLICATIONS

- Diode Pumped Solid state (DPSS) Lasers
- Fiber Lasers
- Ultra Fast Pulsed Lasers
- Titanium-Sapphire Lasers
- Pulsed high-energy lasers
- Gas Lasers
- Diode Lasers
- Laser Accessories
Diode Pumped Solid state (DPSS) Lasers
Fiber Lasers
Ultra Fast Pulsed Lasers
Titanium-Sapphire Lasers

Pulsed high-energy lasers
Gas Lasers
Diode Lasers
Laser Accessories & Laser Safety
Laser Systems for Scientific Applications

AMS Technologies has a long history of supplying lasers for Scientific Research. These types of lasers are being used for numerous of different applications in Physics, Chemistry, Biology, Medicine etc. We can offer lasers operating in cw and all the way down to fsec pulsed operation.

Our broad knowledge and strong comprehension of the scientific and research community, together with our long-standing presence in the field, allows us to provide our customers with high quality products for specialised applications, for example in the fields of laser atom cooling and trapping, laser-induced breakdown spectroscopy (LIBS), Raman spectrometry, quantum cascade lasers (QCL), matrix-assisted laser desorption/ionization (MALDI), light detection and ranging (LIDAR), optical coherence tomography (OCT), life sciences, nuclear physics and many other innovative applications.

By staying in touch with many different research groups across Europe and by leveraging our involvement in perhaps both similar and diverse experiments at the different institutes, we are able to continually extend and enrich our scientific capability. Should we be confronted with a highly specific problem, for which our standard product lines prove to be inadequate, our sales engineers will be able to access modified standard components or even provide a complete custom solution.

Laser Systems for Industrial Applications

Industrial lasers for material processing are vital in many production environments. AMS Technologies offers a selection of lasers and laser systems for material processing.

We are specialized in advanced micro machining applications, including cutting, welding, drilling and marking. Combined with our long experience this insures that we can help you find the right solution to build your laser processing system. Our breadth of experience in industrial and academic applications for these lasers is unrivalled.

AMS Technologies provides diverse solutions for industrial applications, ranging from gas control systems, to disk storage manufacture and onto control systems for lasers or for glass manufacture, to name but a few. Therefore our specialists possess a wide range of interdisciplinary skills that they can deploy to provide the most appropriate solution to your problems. The market requires robust cost-effective solutions, and we consult closely with our customers to ensure that we meet their specific needs.

By adopting a consultative engineering approach, free of charge, AMS Technologies is able to understand what is really important for a specific application – size, thermal performance, power level, precise control, reliability, robustness, quality, lifetime, price, or a combination thereof, and then propose the best solution. There are also problems for which there might not be an ideal off-the-shelf solution, as these push the performance boundaries of available products and systems. In such cases, AMS Technologies will work with the customer and our partners to develop an appropriate tailored solution.
AMS Technologies’ Laser Systems are developed for industrial applications primarily for use in the materials processing and microelectronics markets for flat panel displays, microelectronics, automotive and aerospace sectors.

With a range of the Highest Average Power (kilowatt) DPSS lasers at 1064nm / 532nm and our new 355nm lasers, AMS Technologies addresses a wide range of industrial laser systems for materials processing applications. Our applications support, as in customer sample runs, collaborations and development work remains the focus for all improvements on our diode pumped solid state Nd:YAG lasers. We also offer a broad range of low power CW Solid State (DPSS) lasers, suited for R&D and OEM applications in metrology, instrumentation, etc.

- **Solid State Laser Systems**
  - 1064 nm DPSS Infra-Red Laser System
  - 532 nm DPSS Green Laser Systems
  - 355 nm DPSS Ultra Violet Laser Systems
  - Broad range of CW Solid State Lasers

AMS Technologies’ high power CO₂ and Excimer lasers offer an unbeatable combination of laser performance, reliability, customer support and value. Our breadth of experience in industrial and academic applications for these lasers is unrivalled. In addition, we provide comprehensive support including installation, service, spare parts and training to new and existing customers. Our range of gas lasers also includes Ion laser systems, used in both scientific and industrial applications, for instance Fiber Gragg Grating exposure.

- **Gas Laser Systems**
  - Visible Gas Ion Lasers (Ar and Kr)
  - Deep UV Gas Ion Lasers
  - High Power Industrial Pulsed CO₂ Lasers
  - High Power or High Energy Excimer Lasers
  - High Duty Cycle Excimer Lasers
  - High Energy Ultra Short Pulse TEA CO₂ Lasers
Diode Laser Systems

Our Laser Systems are based on hermetically sealed and burn-in tested single emitters. The main advantages of our Diode Laser Systems are low operating current since single emitter diodes are operated in series, more precise optical output power control, simpler Diode Laser driver design (low current higher voltage) and higher lifetime due to burn-in testing and screening of the individual laser diodes.

- 808-1064nm Medical Diode Laser System
- Ultra compact Laser Diode Modules
- Laser Diode Management System
- Power Supply for Diode Lasers

Fiber Laser Systems

Ultrafast Fiber lasers, including picosecond lasers, femtosecond lasers and Supercontinuum sources are the focus of AMS Technologies. These ultrafast fiber lasers provide very high peak power and ultrashort pulse duration, which combine to provide access to new realms of laser micromachining unachievable with other type of lasers.

Biophotonics applications such as fluorescence microscopy, imaging and spectroscopy are the primary applications for Supercontinuum sources. The Supercontinuum sources can be optimized for different power levels, as well as different wavelength ranges. Optionally they can be equipped with a tunable filter for wavelength selection.

Medical therapy and ultrafast material processing are some typical applications of the high power and high energy picosecond and femtosecond fiber lasers.

- ps/fs High Power Ultrafast Fiber Laser
- ps/fs High Energy Ultrafast Fiber Laser
- Broadband Supercontinuum Sources
- Quasar High Power uv/green Hybrid Fiber Lasers
- CW, 10W Fiber laser
Service and Maintenance

Factory trained and certified field service
AMS Technologies has a service group with skilled and experienced personnel dedicated to providing the highest quality customer service. We provide service for all types of lasers and electro-optic products that we sell. Our factory trained and certified field service engineers have many years of experience working on laser systems and electro-optic products.

AMS Technologies offers several different Service Agreements to keep your product at peak performance without undue disruption. We offer these Service Packages to simplify your selection:

- **LaserCare**
  This is a service agreement for Spectra Physics lasers that covers all spare parts and labor cost. This service agreement is available for both scientific and industrial users.

- **AdvancedCare**
  This is a service package, suitable for users that are looking for fast service response. We guarantee a service response time within 96 hours.

- **PremiumCare**
  A service package suitable for customers who are looking for high productivity. We have focused on education and preventive maintenance in this package.

- **ValueCare**
  For customers that are looking for low operating cost, this is the ideal service package. The package includes a 15 per cent discount on all spare parts, expendable parts and accessories.

- **IndustrialCare**
  This service package is tailor-made for industrial customers who are looking for fast service response, high accessibility and low operating cost!
Accessories

- Laser Safety
- Drivers
- Controllers
- Fiber Accessories
- Fiber Optic Cleaning Tools

AMS Technologies’ portfolio comprises accessories for a broad range of products and applications. In line with our range of light sources, we supply ultra-stable, high precision drivers and controllers for laser diodes, diode laser modules, LEDs, SLEDs and flashlamps. The controllers for laser diodes and diode laser modules are microprocessor-based and available as PCB versions, modules for OEM integration or complete stand-alone devices. Motion controllers for motorised control of stages and positioners and drivers for piezo actuators complete the product range.

An assortment of different cleaning tools is available for the end-faces and ferrules of fiber optic connectors, as well as for the end-faces of plugged connectors through an adapter. These cleaning tools feature a special microfiber tissue that removes and secures all contaminations.

Protection eyewear, such as laser safety glasses and goggles, are also available.

Cooling Solutions

- Solid State Cooling
- Liquid Cooling
- Air Cooling
- Thermal Design Consultancy

AMS Technologies provides extensive development services for medical equipment, instrumentation, automotive and other applications. We also offer a complete thermoelectric solutions portfolio, including design consultancy and all components for thermoelectric modules, heat sinks, temperature controllers, assemblies air-to-air, plate-to-air, liquid-to-air and others. Furthermore, thermoelectric recirculating chillers are available with extraordinarily high efficiency and quiet operation. Our cooling solutions are available in air-to-air, plate-to-air, air-to-liquid and liquid-to-liquid configurations with cooling capacities ranging from 30 to 650 W. Most of the assemblies we provide are custom or customised solutions. We partner with companies whose special skills in assembling guarantee performance and long life.

Our plate-to-air thermoelectric assemblies are used for laser diode modules or bioreagent cooling. Laser diodes need precise temperature stabilisation at room temperature and higher heat loads. Bioreagents often need to be temperature controlled over a wide temperature range.

The actual air flow inside a cabinet, a limited power supply, space constraints and other special requirements can be met using our portfolio of various heat sinks, cold plates and thermoelectric modules tailored to a custom assembly. Conception and design are made with the help of our in-house thermal design team, while assembly and testing is undertaken by our partners.
WHAT CAN WE DO FOR YOU?

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