Arbetsdokument

PhotonicSweden

The Swedish Technology Platform in Optics and Photonics

Report on Swedish Photonics

Kompetensnav Fotonik

Projektledare: Lennart BM Svensson

Smartare Elektroniksystem för Sverige

Strategiskt Innovationsprogram

Med stöd från:

VINNOVA

Energimyndigheten

formas

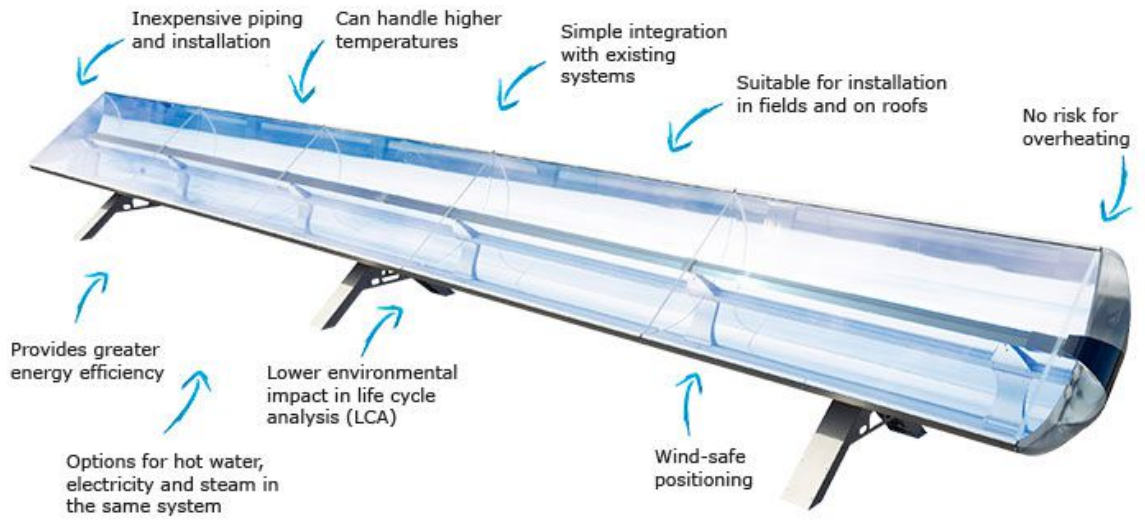
STRATEGISKA INNOVATIONS-OMRÅDEN

ABSOLICON
SOLAR COLLECTOR AB

www.absolicon.com

Solar collectors with solar concentrator technology

Absolicon solar collectors concentrate the suns rays, a technique the provides many unique benefits. We offer three models, but each system installed is tailored to our customer's specific energy needs. We have a lot of experience delivering turnkey solar energy systems that can generate the energy that the purchaser needs, now and in the future. The solar collectors are adapted for larger buildings, industrial applications and businesses with major energy needs all year round.



World leader in solar concentrators.

We can thank the sun for life on earth. Changes in the world's energy consumption are necessary for the survival of the planet and sustainable environmental development. Solar concentrators are part of the solution.

The solar radiation from the surface of the sun for one hour provides enough energy to meet the entire world's energy needs for one year. This provides dizzying opportunities for going from fossil fuels to pure solar energy, and we know how to make use of them.

Absolicon has a unique technology, based on 20 years of research, for extracting energy in different forms using concentrated solar collectors, or solar concentrators. The concentrators help reduce the production costs, while simultaneously providing a high degree of energy efficiency in the form of thermal energy, solar electricity, solar cooling, solar heat and solar steam.

Fossil energy resources are limited. The sun will be shining for a least another 4 billion years. So what are you waiting for? Start the journey to a business that runs on solar energy today.

Business concept

Absolicon will be the world's leading supplier of solar concentrators. By developing, manufacturing and selling solar energy systems that generate renewable energy in various forms, we are helping to solve the world's energy problem.

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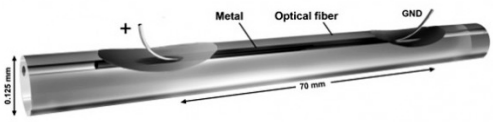
E-mail: info@absolicon.com **Skype:** absoliconsolar
Web: www.absolicon.com

www.acreo.se

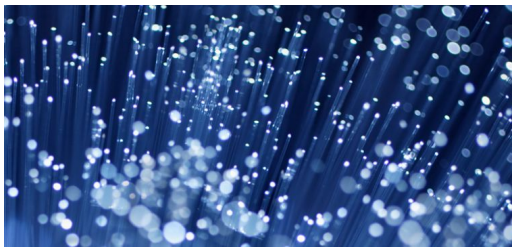
OUR OFFER

Acreo Swedish ICT offers innovative and value-adding ICT solutions – from idea to prototype – for sustainable growth in industry and society. Our strength is hardware. We provide cutting edge resources and technologies within Digital Communication, Life Science, Clean Technologies and Industrial Production.

We provide contract R&D, research based consulting, prototyping, licensing and products and lab infrastructure such as testbeds and demonstrators, collaboration platforms and networks and SME-support. We are always open for new innovation projects and new ideas.



Fiber polarization control



FIBER OPTICS SENSORS AND APPLICATIONS LAB

Acreo has extensive resources and equipment in fiber optics, in particular, we have a well equipped laboratory for research and development of fiber sensors, components and industrial solutions. Acreo has instrumentation for characterization of optical fibers, optical fiber preforms, fiber components and systems.

Fiber optics is mainly known for its use for communication purposes. Process industry, production and life science are other areas where fiber optics makes a difference. Acreo has been active within fiber optics since the early 1990s. Our expertise covers the entire range of Fiber Optic technologies from manufacturing of specialty fiber, through designing and making components and fiber optic sensors, to complete system solutions with fiber optics as an integral part.

EXPERTISE AND LAB FACILITIES AT YOUR DISPOSAL

We run a full fledged Specialty Fiber Laboratory, developing unique optical fibers for diverse applications. In our Fiber Bragg gratings laboratory, we make FBGs from visible wavelengths far up in the near infrared. Our applications labs are well equipped and perfectly suited for challenging R&D.

DO YOU WANT TO KNOW MORE?

Want to know more about Acreo Swedish ICT or have questions about collaborating with us? Welcome to contact us at info@acreo.se.

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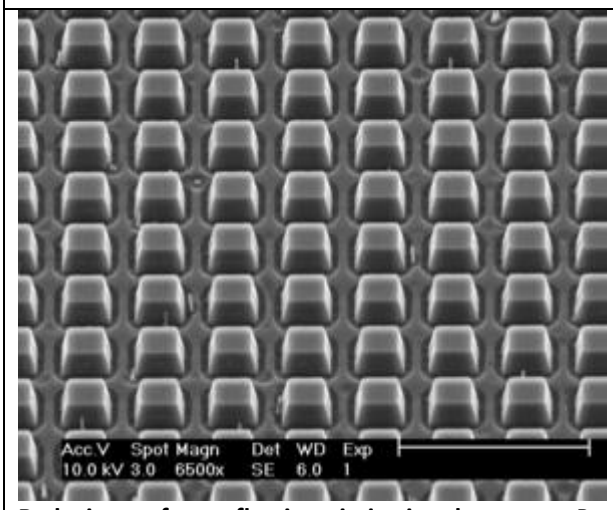
ADAMANTIS

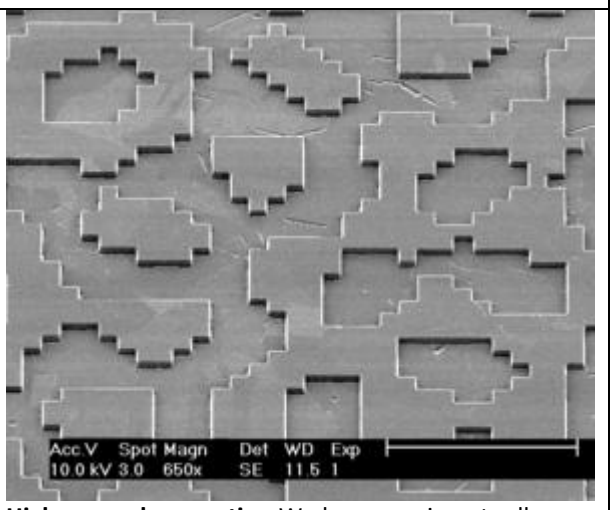
www.adamantis.com

Plasma etching of diamond. Micro- and naostructures in single-crystal, polycrystalline and nanocrystalline diamond. Diffractive optics, subwavelength gratings, life science.

Several years of diamond research at Uppsala University (Sweden), led by Dr. Mikael Karlsson and Dr. Fredrik Nikolajeff, resulted in the start of Adamantis AB in 2003. The first product was diamond substrates with anti-refection structures; these nanostructures could be realized with unique techniques developed at Uppsala University. We are located in Uppsala and we have a close collaboration with Uppsala University. The excellent clean room facilities at the Ångström Laboratory (Uppsala University) are used for the fabrication of the diamond components.



Reducing surface reflection - imitating the nature: By using nanoimprint lithography and plasma etching we offers so-called subwavelength grating in diamond for anti-reflection (AR) treatment. We can AR-treat diamond substrates for wavelengths between 1 and 50 µm.



High power laser optics: We have a unique toolbox for designing and fabrication of diffractive optical elements in diamond for use in high power laser applications (CO2-lasers).

Contact

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Visitors:
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ADOPTICUM

www.adopticum.se

Adopticum är specialister på optisk mätteknik

Vi hjälper till att öka er konkurrenskraft med hjälp av optiska sensorer
Oavsett tillämpningsområde & bransch hjälper vi er med att välja teknisk lösning eller utveckla ett system. Vi driver projekt tillsammans med behovsägare, produktägare och andra specialister. Syftet är att utveckla nya & innovativa tekniska lösningar som ligger i teknikens framkant. Målet är att med vår kompetens bidra till ökad konkurrenskraft till företag verksamma i norra Sverige & ge upphov till nya produkter & tjänster.

Bildbehandling, computer vision och smarta kameror. Eller varför inte datorseende? Samma teknikområde beskrivs med olika ord och på olika sätt i olika tider. Oavsett vad man väljer att kalla det har vi hög kompetens, ett välutrustat optiklabb och ett brett nätverk inom området.

3D kameror

Avsyning/Bildanalys

Belysningssystem

Optisk konstruktion

Klimat/Mekaniska tester

OMIN - Optisk Mätteknik för ett Innovativt Näringsliv - är ett Strukturfondsprojekt som löper under åren 2016-2018. Projektet syftar till att ge företag i Norrbotten & Västerbotten möjlighet att höja sin kompetens inom ett utav Europas hetaste teknikområden och bistå i utvecklingen av innovativa lösningar baserade på optisk mätteknik.

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http://leica-geosystems.com/products/airborne-systems/lidar-sensors www.airbornehydro.com

LiDAR systems

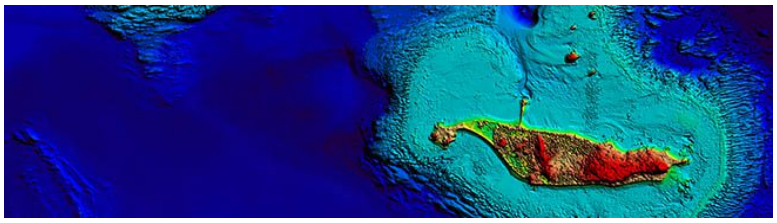
Leica Geosystems – when it has to be right
Revolutionising the world of measurement and survey for nearly 200 years, Leica Geosystems creates complete solutions for professionals across the planet. Known for premium products and innovative solution development, professionals in a diverse mix of industries, such as aerospace and defence, safety and security, construction, and manufacturing, trust Leica Geosystems for all their geospatial needs. With precise and accurate instruments, sophisticated software, and trusted services, Leica Geosystems delivers value every day to those shaping the future of our world. Leica Geosystems is part of Hexagon (Nasdaq Stockholm: HEXA B; hexagon.com), a leading global provider of information technologies that drive quality and productivity improvements across geospatial and industrial enterprise applications.

Airborne Hydrography AB - In October 2013 3D imaging company **Hexagon AB** entered the bathymetry and coastal topography markets through its **Leica Geosystems** business by acquiring Airborne Hydrography AB (AHAB), a manufacturer of airborne lidar systems for hydrographic and topographic surveys. AHAB was founded in 2002 as a spin-off of Sweden's Saab group and now provides hydrographic and topographic surveying software and systems for commercial deep and shallow water mapping and monitoring of land, coastal zones and sea floors.

LiDAR systems
The Leica Geosystems LiDAR sensors offer high accuracy due to best-in-class performance in pulse and scan rate.

Leica HawkEye™ III

Deep water bathymetric sensor collecting seabed data 50m deep.



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Alfa Exx

www.alfaexx.se

Product Development within Applied Optics & Photonics

Welcome to Alfa Exx AB, the development company that will help you take the shortest route from product idea to assembled product.

Optics development company Alfa Exx AB was established in 1997. Alfa Exx provides development and production services within applied optics and photonics. We address companies in need of quick and cost-efficient expansion of their capacity or access to a specific competence by outsourcing resource consultants.

We also address companies without their own product development resources. Let Alfa Exx become your product generating partner. We have access to laboratory facilities and equipment. We provide a team of exceptional employees, who combine solid professional competence with creative joy to invent.

You are welcome to contact us and learn how we can provide added value to your product generation.

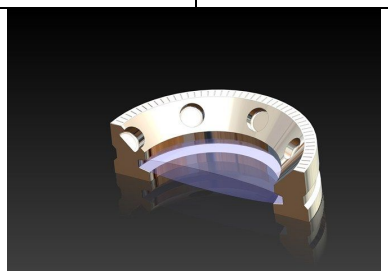
Competence offer

Employees of Alfa Exx invent, design, measure, verify, and construct products within applied optics and photonics.

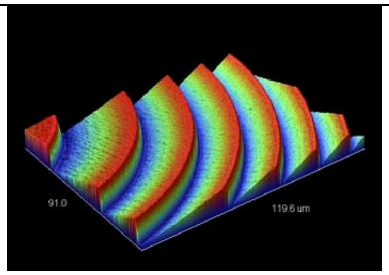
Our competence offer covers a range of competence from idea to production. We invite you to take advantage of our offer, which basically includes:

- Devising intellectual property rights
- Developing technical specifications
- Devising function demonstrators
- Developing product prototypes
- Devising production documentation
- Training production staff

Classic Optics



Mechanics and optomechanics



Wave Optics

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www.axis.com

Constantly breaking new ground

Axis is a Swedish-based photonics company that has been driving the ongoing shift from analog to digital video surveillance. The company has offices in 49 countries around the world and works with a network of more than 80,000 partners in 179 countries. The company was founded in 1984 in the IT sector but today have their core business in network cameras.

Axis is the market leader in network video. Axis invented the world's first network camera back in 1996 and been innovator in video surveillance ever since, increasing the security of millions of people worldwide and helping to meet the growing need for a smarter, safer world. Axis offers a wide portfolio of IP-based products and solutions for security and video surveillance. Axis security cameras, video encoders, accessories and access control products are based on open industry standards. The products integrate easily with Axis' video management software, or with a partner product, to build a complete security or surveillance solution.

Axis Student Web - Master Thesis Program

Axis is now in a strong growth phase and is rapidly recruiting new employees in various areas of expertise. Axis have a constant need for new graduates, curious and hungry people who want to become part of our success. Therefore, Axis contacts within the student world are now more important than ever! All master theses are an important part of Axis' product development and research. These are open only to students affiliated with a Swedish university either directly or via an exchange program. All thesis positions are in Lund, Sweden.

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President & Chief Executive Officer:
Ray Mauritsson

CELLAVISION

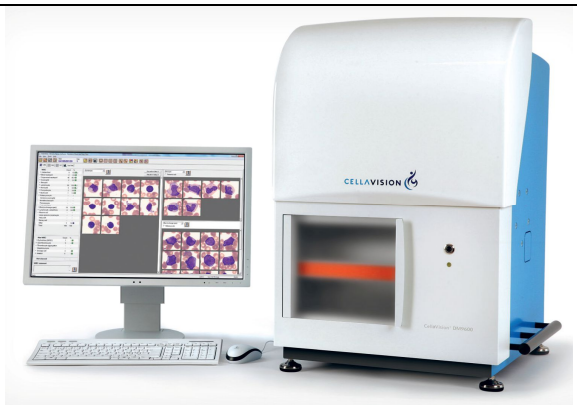
www.cellavision.com

We lead the way in Digital Cell Morphology

CellaVision is the world-leading provider of digital solutions for medical microscopy in the field of hematology. We have made it our business to help hematology laboratories around the world improve and transform the process of analyzing blood and other body fluids.

In today's healthcare economy, hematology laboratories are under increasing pressure to do more with less. They are asked to reduce costs, speed up testing and improve productivity while taking on an increasing number of samples and, despite a widespread shortage of proficient staff, deliver better and more reliable results. CellaVisions business success rests on our ability to effectively address these customer challenges and help laboratories leverage technology in the pursuit of operational efficiency.

CellaVision's products automate and rationalize the work that is traditionally done by laboratory personnel using conventional microscopes. By introducing innovative automation, digital imaging and artificial neural network technology, CellaVision makes the analysis process faster, better and more flexible – creating a more streamlined workflow for the laboratory and improving quality of care for healthcare patients.



Fifteen years ago CellaVision introduced automation and digital imaging to cell morphology, thereby creating what today is known as Digital Cell Morphology. Today, we offer a family of products that form a unique and flexible automation concept that help Laboratory Managers address the key challenges associated with morphological cell analysis. CellaVision's product portfolio consists of analyzers with supporting applications and software, which form a unique concept that replace conventional microscopy.

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VD: Rihter Zlatko

www.clinicallaser.se

Clinical Laserthermia Systems AB

Immunostimulating Interstitial Laser Thermotherapy –
A new, promising treatment in the growing field of cancer immunotherapy.
Our mission is to provide products that improve treatment for cancer patients by offering significant and long-lasting health benefits, while reducing cost-of-care for society. The company was founded based on the results of 20 years of intense research within immunotherapy and thermotherapy.

Clinical Laserthermia Systems (CLS) (publ), which develops and markets Interstitial Laser Thermo Therapy (imILTCLS), a polyclinical hyperthermic (heat-induced) cancer immunotherapy for gentle and effective treatment of most types of solid cancer tumors, announces that the first patient has been treated within the clinical study, regarding imILT-treatment of advanced pancreatic cancer, that the Company carries out.

imILTCLS (immunostimulating Interstitial Laser Thermotherapy by CLS) is a new, promising treatment in the growing field of cancer immunotherapy. The minimally invasive, thermal treatment is performed using the TRANBERGCLS | Cancer Immunotherapy System designed to achieve local tumor destruction and specific anti-tumor immunity. imILTCLS is suited for all types of solid malignant disease that does not involve a hollow organ. Currently, we focus on the following four major types of cancer: breast cancer, liver cancer (primary and metastatic), malignant melanoma and pancreatic cancer. By partnering with leading hospitals and clinics, it is our ambition to optimize, validate and make available our therapeutic interventional protocols for routine clinical use.

Contact

Our head office is located next door to the Lund University Cancer Research Center at Medicon Village in Lund, Sweden.

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Cobolt
a HÜBNER Group company

www.cobolt.se

High Performance Lasers by Cobolt

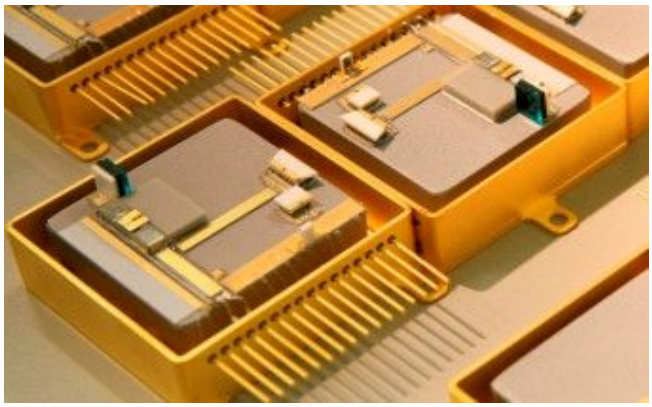
Cobolt develops, manufactures and supplies diode-pumped solid-state lasers (DPSSLs) and Diode Laser Modules in the visible, invisible and near infrared spectral ranges.

CW and Q-switched DPSS lasers, diode laser modules, fiber pigtailed lasers

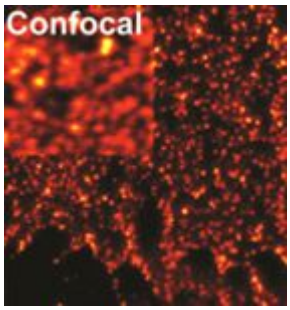
Cobolt is at the very forefront of the industry in the development and manufacture of high performance CW and Q-switched lasers. We provide ultra low noise, CW, single mode solid-state lasers in the UV-Visible-NIR spectral range; Q-switched DPSS lasers with the unique combination of high pulse rates and high pulse energy in the UV-NIR range; as well as tunable mid-IR sources. The lasers are manufactured using our unique and proprietary HTCure™ technology yielding unrivaled robustness and reliability.

The combination of uncompromised optical performance with nonpareil tolerance to demanding environmental conditions has made Cobolt lasers the preferred choice by leading instrument manufacturers and scientists worldwide.

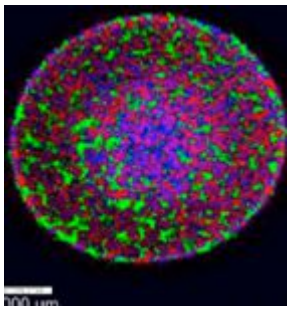
Find the right laser for you – via our wavelength guide, by product series or search by application



Lifescience



Metrology & Sensing



Industrial

Scientific

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www.c-rad.se

Patient Positioning Products

C-RAD develops innovative solutions for use in advanced radiation therapy. The C-RAD group offers products and solutions for patient positioning, tumor localization and radiation treatment systems.

Our mission is global in scope: C-RAD's cutting-edge solutions ensure exceptionally high precision, safety and efficiency in advanced radiation therapy, helping to cure more cancer patients and improve their quality of life. In new advanced radiation therapy techniques, the radiation dose must be delivered to the tumor with extremely high precision and microsecond timing. Our positioning and scanning products assure just that.

C-RAD was founded in 2004. The founders are researchers from Karolinska Institutet and the Royal Institute of Technology in Stockholm, clinics at Karolinska Hospital in Solna and people with extensive industrial experience in the field of radiation therapy. The first product was launched in 2006, when C-RAD introduced the Sentinel™ system, which was based on laser scanning technology and the c4D software platform. The technology has constantly evolved since the first deliveries were made in 2007. In 2011 C-RAD launched the Catalyst™ system, a next-generation optical surface scanning system. Catalyst HD™ was released in December 2013 and in April 2015, C-RAD released a specific version of Catalyst for use in proton and particle therapy. In June 2015, C-RAD also completed its acquisition of the Franco-Belgian Cyrpa group, which added their innovative laser solutions for patient positioning and virtual simulation to the C-RAD portfolio.

C-RAD has sales and support resources in place in North America, Europe and a large part of Asia.

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VD: Tim Turn

Scanflex | Demetech

www.demetech.com

Technological development in osteoporosis diagnosis

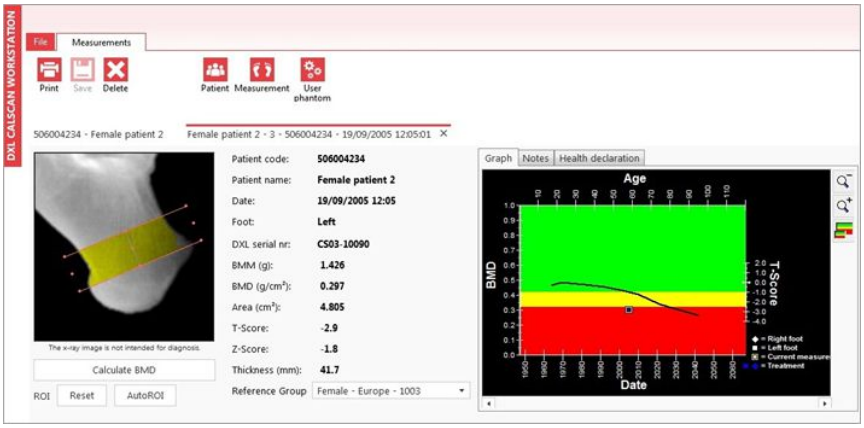
calscan DXL

The DXL Calscan uses our Dual X-ray and Laser technique, which combines traditional DXA with a precise laser measurement of heel thickness to allow better exclusion of adipose tissue than with DXA alone.

Demetech AB has been awarded the Frost & Sullivan Technology Innovation Award for the DXL technique. With over 35 clinical studies published in leading scientific journals around the world, DXL Calscan is a clinically proven tool for any health care center, private physician office or outpatient facility interested in fracture prevention. Calscan also creates an attractive service for your patients, empowering them to take steps that can improve their bone health.

In a hospital environment the DXL Calscan can be used as a stand-alone tool or as an effective complement to axial DXA devices. Scanning all outpatients with fractures before their release can be an effective tool for preventing future hip fractures. Also, many patients with conditions that distort the results of spine or hip scans, such as obesity, scoliosis, vertebral compression fractures, and hip implants can be accurately scanned with the Calscan.

DXL, Dual X-ray and Laser, is the proprietary technology that gives superior reliability through unsurpassed accuracy and precision. DXL Calscan is our first instrument based on this technology. Demetech´s ambition is to lead the technological development in osteoporosis diagnosis through constant innovation and close customer contact. Through this innovation it's now possible to diagnose and categorize patients early, which will ultimately enable prevention of osteoporosis.



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ECLIPSE

www.eclipseoptics.com

Experts in optics

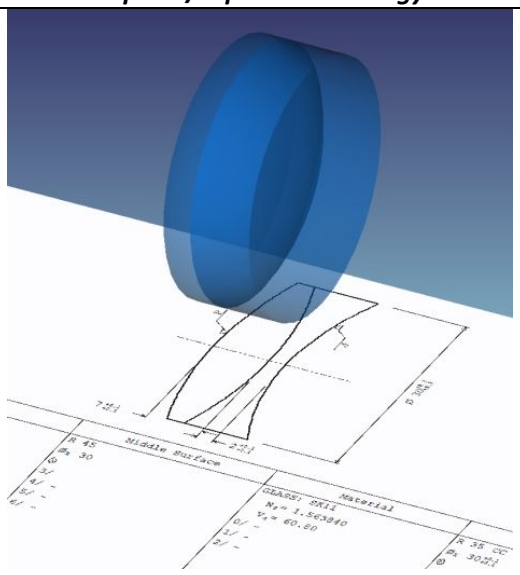
Eclipse is a consultancy company that gathers Sweden's foremost experts in optics. At Eclipse our watchwords are:

Creativity - We want to be involved and make a difference, and we constantly try to create new solutions and find new opportunities. We are driven by our curiosity and by making things move forward. We aim to be in the forefront of the development in our area and we strive to excel in order to inspire.

Cutting-edge - We understand the great importance of quality. That is why the best engineers work at Eclipse and why we are all proud partners. That is also why we can promise really exciting and clever solutions. We like to be challenged, it keeps us sharp and contributes to a constant development of both ourselves and our clients.

Collaboration - At Eclipse, we love what we do, we have a lot of energy and warmth that we would like to share, we welcome diversity and joy is a strong motivator. We like cooperation and enjoy working together with people from other competence areas to generate the best results.

Classical optics / Optical metrology and analysis / Illumination and lighting



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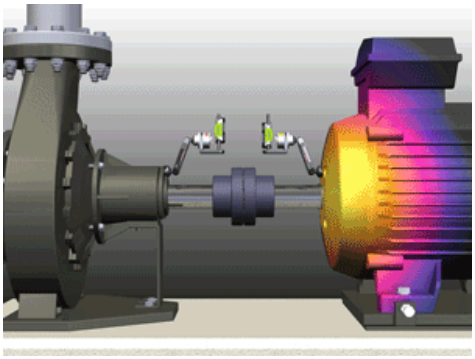
Fixturlaser
Brand of ACOEM

www.fixturlaser.se

Shaft Alignment

Since the very beginning in 1984, ACOEM AB (formerly known as ELOS Fixturlaser AB) has helped industries throughout the world to achieve more profitable and sustainable production. We have reached where we are today by having the courage to think beyond the norm and follow slightly unconventional paths. We have had the courage to make mistakes and find new directions. Through our resolve, ambition and knowledge we have become a global player and a leader in innovative, user-friendly shaft alignment.

With our OmniView function proceed shaft alignment from everywhere around the sensors : the display unit shows you the machine as it is in front of you ! The graphical user interface is shown off on a 6,5” transreflective display screen with icons and symbols to guide you, in other words no text is involved. The adaptive user interface will guide you throughout the measurement and alignment process. We have fitted the Fixturlaser NXA with gyros and can therefore adapt the screen view from the same side that the user is positioned - our OmniView function, i.e. the system knows where it is in relation to the machine.



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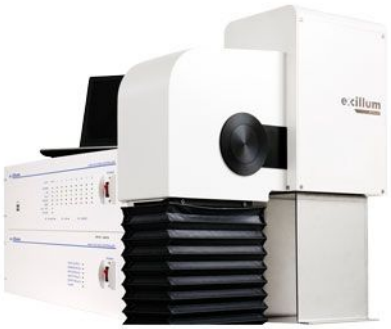
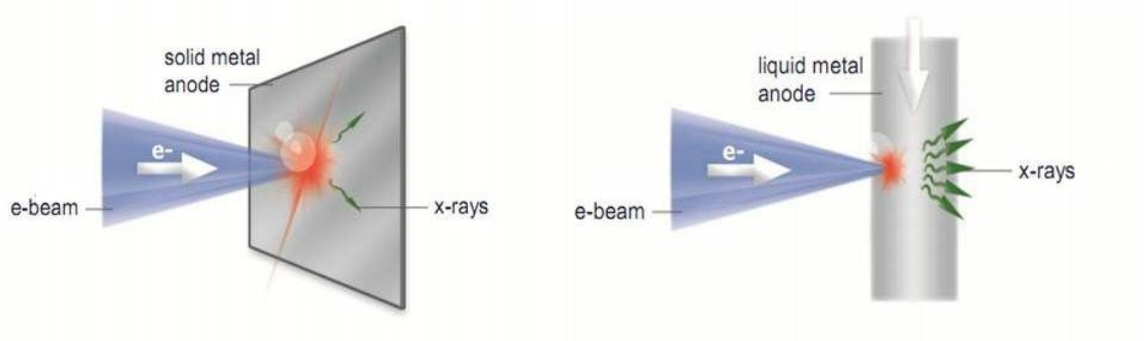
www.excillum.com

MetalJet X-Ray Tube Technology

Excillum is based in Kista, just outside central Stockholm, Sweden, and we are still a fairly small company. Even so we think we have gathered a very competent group of people and that we have a very promising technology - the MetalJet microfocus x-ray source technology. In brief, this technology can generate rougly 10 times the x-ray flux of a conventional solid anode x-ray source from the same source area. After years of development this source technology has been turned into a product range of stable and reliable microfocus x-ray sources. The number of products is initially small, but new versions with higher acceleration voltages and hopefully also further improved power-loading capabilities are under development.

Excillum is an x-ray source company and offer a growing range of x-ray tubes based on our key technologies. Our main focus is the MetalJet platform based on our metal-jet-anode technology, but other products are emerging taking further advantage of our general x-ray tube design knowledge. Apart from our standard products we can of course also engage in different custom project. Please let us know how we can help!





The **MetalJet** x-ray tubes are conventional microfocus tubes with the solid-metal anode replaced by a liquid-metal jet. The metal jet supports higher electron-beam power and can therefore generate higher x-ray flux.

Advanced electron beam technology

The second technological cornerstone of Excillum is the high-brightness electron beam design that was developed to meet the power-loading capability of the metal-jet anode technology. This design is very suitable for micro- and nanofocus x-ray tubes, but can also be applied to other technologies that require a high brightness electron beam.

General Contact

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Björn Hansson, CEO

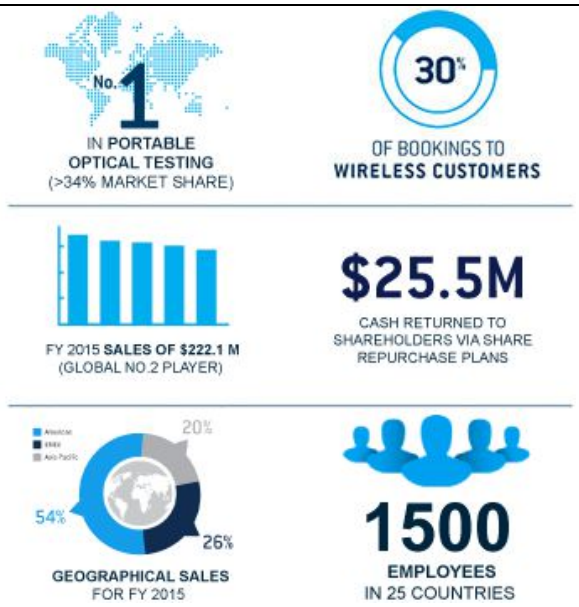
EXFO | Expertise Reaching Out

www.exfo.com

EXFO is a leading provider of next-generation test and service assurance solutions for wireless and wireline network operators and network solution vendors in the global telecom industry.

The company offers innovative solutions for the development, installation, management and maintenance of converged, IP fixed and mobile networks.

EXFO has a staff of approximately 1500 people in 25 countries, supporting more than 2000 telecom customers worldwide.



- Top-two supplier in portable telecom testing
- Intelligent test platform strategy
- Focused on process efficiency and test automation
- Fully integrated active and passive service assurance
- Real-time analytics for end-to-end visibility

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Rolf Carlsson, Business Development Director

www.fiberson.se

Fiberson AB, a company with experience in fiber optics

Fiberson AB was founded in 2003 by former Ericsson employees, with large experience in fiber optic manufacturing, developement and training. The company is located in Hudiksvall, a city on the coast of Gulf of Bothnia 300kms north of Stockholm. Hudiksvall is a growing center for research and development of fiber optics and fiber optic products in Sweden.

Our main business

Fiberson's main fields of operation are:

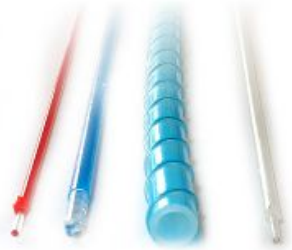
- Fiber Optic Distributed Heat Detection System, fiber optic sensorcable and OTDR-technology
- Training and documentation in fiber optics
- Fiber Optic Consulting
- Development and manufacturing of specialty fibers

Sensor systems

Fiberson develop, manufacture and market line heat detection systems based on our special fiber optic sensorcables.

Specialty fiber

Fiberson collaborate in development and manufacturing of specialty fibers, e.g. high power fibers.



Training, Consulting

Fiberson provide training in fiber optics.

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FIBERSYSTEM

www.fibersystem.se

Leader in Fiber Optic Transmission and IT Security

Based in Stockholm, Sweden, Fibersystem AB is an innovative developer of fiber optic transmission equipment and IT security products. Fibersystem's products are used in various industries and vertical markets globally, including infrastructure, utilities, health care, security and manufacturing.

Fibersystem is a leader in the design and development of fiber optic products mainly within data/media transportation and has a history of more than 30 years back in time working with solutions, using fiber optical technology. Our products can be found installed all over the world. We provide the market leading-edge technologies for improved fiber optical communication.

We advance our mission of providing leading-edge technology for fiberoptical solutions. Our reputation for fiberoptic development excellence is well known across diverse vertical markets. That is why you'll find our products/components installed in medical, security, and industrial applications worldwide, such as hospitals, universities, government labs, and military bases, for large and small organizations alike.

Products and services for improved fiber optical communication

Tempest is a NATO-certification that includes both protection against compromising emanations, and methods to eavesdrop upon others to disclose confidential information. Tempest as a form of protection is normally applied to environments and devices which are considered highly vulnerable. Thus, tempest-certified equipment come with the most severe protection against compromising emanations.

Contact

Fibersystems office is situated in Stockholm, Sweden near Bromma airport (domestic).

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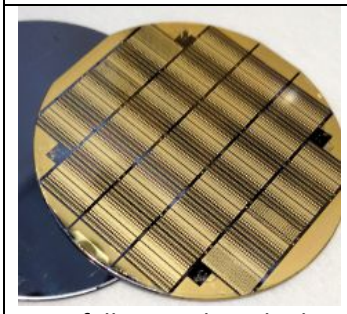
FINISAR

www.finisar.com

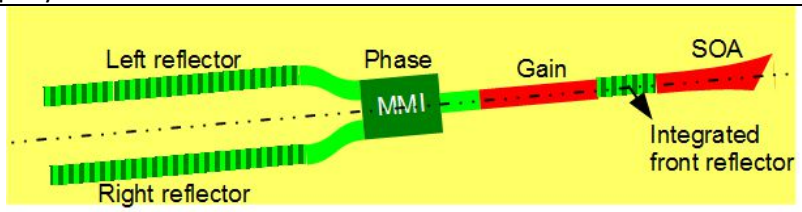
Fiber Optic Solutions for Hight-Speed Networks

Finisar is a global technology leader in optical communications. Our world-class products enable high-speed voice, video and data communications for networking, storage, wireless, and cable TV applications. For 25 years, we have created critical breakthroughs in optics technology and supplied system manufacturers with the production volumes needed to meet the exploding demand for network bandwidth. Finisar's industry-leading products include optical transceivers, optical engines, active optical cables, optical components, optical instrumentation, ROADM & wavelength management, optical amplifiers, and RF-over-Fiber. With approximately 13,000 employees, Finisar has sales, channel, and support offices worldwide. Corporate headquarters are located in Sunnyvale, California (USA), with additional product development and manufacturing facilities located in California. Pennsylvania and Texas (USA), Australia, China, Germany, Israel, Malaysia, Singapore and Sweden.

Finisar Sweden AB was formerly **Syntune AB**. Already at an early stage Syntune AB obtained the exclusive rights to the architecture, developed within the EU project Newton. The patent is owned by the research institute Imec, Ghent University and the British Gayton Photonics. The company's technology has its roots in KTH and Acreos opto research on tunable lasers, conducted in the 1990s and first spun off the company Altitun AB in 1997, bought by ADC in 1999 and closed down in 2002. In 2002 Syntune AB was founded, and bought in 2009 by a Norwegian conglomerate Ignis, and then sold in 2011 to the American company Finisar.



In Järfälla, Sweden, the lasers are manufactured in indium phosphide,or different material combinations of indium phosphide. The discs used is 2 inches. Volumes have now reached over 100,000 chips annually.



The Modulated Grating Y-branch (MGY laser) was designed and fabricated within the IST project NEWTON (New Widely Tunable Lasers for Optical Networks) in 2003 for future WDM networks. A MGY laser has the appearance as a Y, wherein the two parallel legs functions as a respective reflector. Full chip - even waveguides - is built in indium phosphide or variants of the material can be made to guide the light. When they give reflection at the same wavelength get out the light at that particular wavelength. The laser also integrates an optical amplifier (SOA) monolithically.

Finisar Sweden AB

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VD Patrik Evaldsson

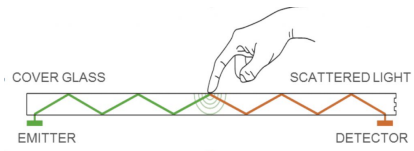
See also artichle in Elektronik Tidningen (only in Swedish):
http://etn.se/index.php/58638

www.flatfrog.com

FlatFrog's mission is to bring to life the exciting new world of multi-touch computing and applications. Designed from inception for volume production, our patented technologies enable unmatched in-glass multi-touch performance for large and flat displays. FlatFrog will deliver the best products, that are timely, innovative, and defect-free, and outstanding customer service, enabling our customers to succeed. FlatFrog was founded by Ola Wassvik and serial entrepreneur Christer Fåhraeus. The company is privately held with headquarters in Lund, Sweden, near the bridge to Copenhagen, Denmark. Our investors include Invus, Sunstone Capital, Intel Capital and Fårö Capital.

NEC adds 55- and 65-inch Ultra High Definition InGlassTM touch displays.

New transparent OLED displays from Eyevis powered by FlatFrog.



Products: InGlass™ technology offers a unique combination of multi-touch-pen-glove and over 1000 pressure levels on a flush edge-to-edge design. InGlass™ technology enables a perfect viewing experience since It has no sensor grid obstructing the visual clarity.

The remarkable multi-touch touch-pen-glove-pressure performance of the F-Series combined with perfect clarity and flat edge design makes it exceptionally suited for AIO PCs, Gaming, Hospitality, Medical, Interactive Monitors, Touch Tables, Interactive Digital Signage, Education and Collaboration.

How InGlass™ technology works

1. Light is injected into a transparent medium and extracted at opposite side
2. The light travels via Total Internal Reflection within the medium
3. An object touching the surface will cause a disturbance, detected on receiver end
4. Advanced signal processing determines all touch coordinates by performing a 1D to 2D reconstruction

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Christer Fåhraeus
Chairman of the Board, Co-founder

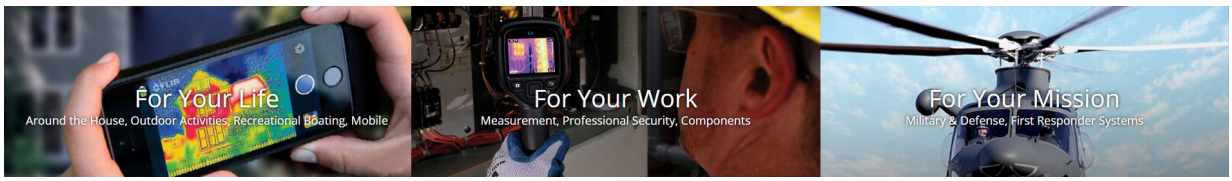
Dhwani Vyas
President and CEO

Ola Wassvik
Co-founder and CTO

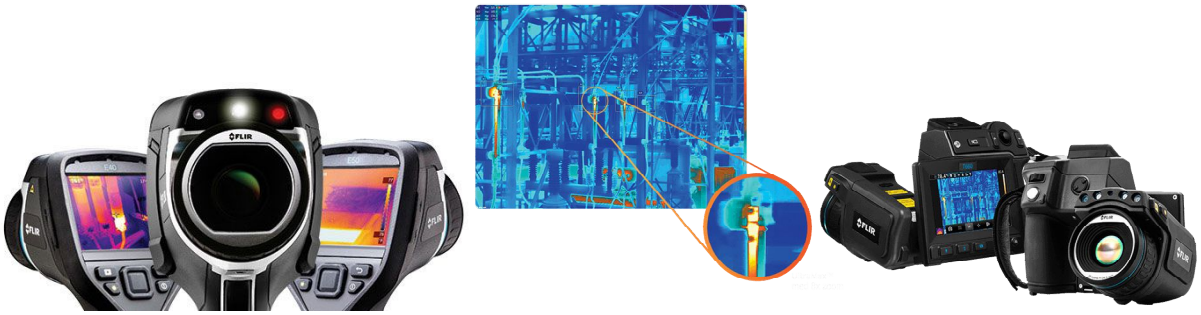
www.flir.se

FLIR - The Global Leader in the Design, Manufacture and Marketing of Thermal Imaging Infrared Cameras

FLIR was established in 1978 to pioneer the development of high-performance, low-cost infrared (thermal) imaging systems for airborne applications. Thermal imaging systems detect the infrared energy (heat) that is emitted by all people, objects and materials. Infrared cameras allow the operator to see in total darkness, adverse weather and through such air pollutants as smoke and haze.



The acquisition of Agema (Sweden) in 1998 and of Inframetrics (Boston, MA) in mid-1999 provided FLIR engineering teams and sales and support infrastructure that accelerated FLIR's success in commercial thermal imaging markets. Together, Agema and Inframetrics represented over 60 years of significant infrared camera development and thermography applications expertise.



Agema Infrared Systems, formerly AGA in Sweden, developed the first commercial infrared scanner, designed for powerline inspections, in 1965, the first battery-operated portable infrared scanner in 1973, the first dual-wavelength system capable of real-time analog recording for R&D markets in 1978, and the first uncooled infrared camera, the Agema 570, and 1997. Inframetrics, also a pioneer in commercial infrared cameras and thermography training, developed the first TV-compatible infrared system in 1975 and the first full-featured camcorder-style focal plane array (FPA) infrared camera in 1995. In 2003, FLIR acquired Indigo Systems, a leading developer and supplier of a wide range of infrared imaging products, including cooled and uncooled infrared detectors, camera cores, and finished cameras. Currently, FLIR operates in many locations around the globe and employs a total of over 2,800 dedicated employees.

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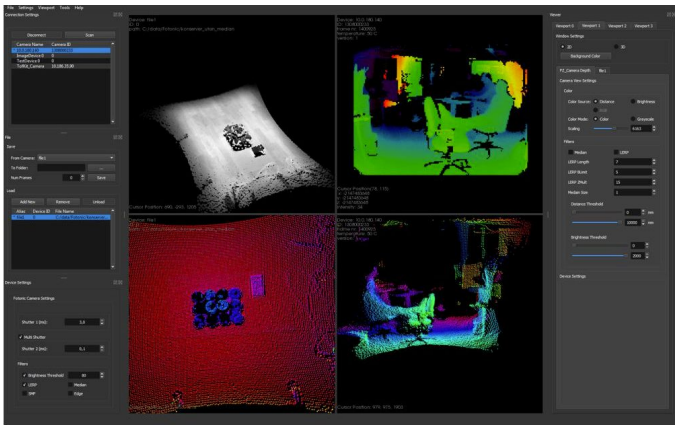
www.fotonic.com

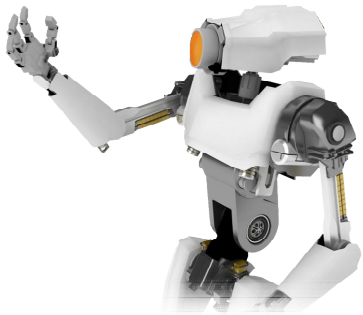
SMART 3D-CAMERAS

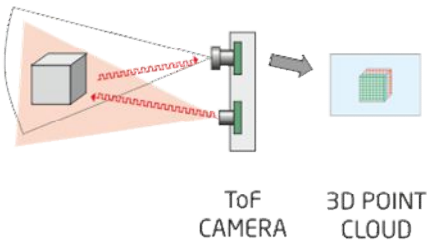
"We believe 3D cameras are the key enabler for new automation and robotics to create a safer and better world"

Fotonic develops, manufactures and markets 3D cameras that meet the highest demands of the industry. Based in Sweden, it employs one of the world's most experienced engineering teams in both 3D camera hardware development as well as real-time image processing software development. Fotonic's time-of-flight and triangulation technology enables new applications and allows for enhancing existing ones. Imaging in 3D significantly simplifies techniques necessary for computer vision.

Time-of-flight (TOF) technology can be explained as radar operating with light. With the technology, the time it takes for a very short light pulse to travel to a certain object is measured, allowing distance to be calculated with great accuracy. Using a unique sensor chip, the distance to each individual pixel in the scene can be measured, creating a complete three-dimensional image.







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GASPOROX
INTELLIGENT LASER SOLUTIONS

www.gasporox.se

Truly Non-Intrusive Gas Monitoring

GASPOROX offers a non-intrusive technology for gas monitoring in food and pharma packages as well as porous materials and food. The packages and content stays intact and measurements can be repeated. This non-destructive method minimizes the waste of package materials, MAP gas and content. GASPOROX AB was founded in April 2005 to develop and commercialize research in laser spectroscopy from the Division of Atomic Physics, Lund University. The company is located in Lund, in southern Sweden.

The GASPOROX technology is based on optical spectroscopy utilizing low-power diode lasers in the near infrared to measure species such as gaseous oxygen, carbon dioxide and water vapour. The gas is sensed by sending laser light through the sample, probing the gas content without any change of the sample. The gas can for example be located in a headspace of a package, inside porous materials or in gas cavities inside the human body. Each molecule absorbs light in a unique way, allowing detection of them using laser absorption spectroscopy. The technique is a widely used laser spectroscopic technique called **TDLAS, Tunable Diode Laser Absorption Spectroscopy**, where the wavelength of the laser is tuned across one of the absorption lines of a gas, while the change in intensity of the light emerging after some distance of travel through the gas is monitored. The gas concentration can then be extracted from this information.

Unique tool for evaluation of packages or products.

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Org nr: 556678-0093

GE Healthcare
Life Sciences

www3.gehealthcare.se/sv-se/about_us/ge_healthcare_in_sweden

The Life Sciences business of GE Healthcare exists to enable and accelerate molecular and precision medicine. We do this by helping our customers discover, make and use new medicines. We enable increasingly accurate diagnoses by providing advanced in vivo imaging agents & in vitro diagnostics.

Cytell Cell Imaging System

The intuitive Cytell Cell Imaging System captures cellular and sub-cellular images in a benchtop unit equipped with on-board data analysis and visualization tools. It streamlines and simplifies routine assays, such as cell cycle and cell viability assays, to save you time and help your research progress more rapidly.

Efficiency: BioApps and ready-to-use optimized kits allow mix-and-read operation, providing image acquisition, data analysis, and report generation of microplates in only 15 minutes.

Simplicity: Intuitive user interface design allows novice users to perform image acquisition and analysis without training.

Flexibility: Open platform design enables cellular & sub-cellular imaging of cells, colonies and tissues. Supports microplates, slides, Petri dishes, and flasks.

Digital Imaging BioApp: Acquire fluorescence and transmitted light images of samples in plates, flasks, Petri dishes, or slides.

Automated Imaging BioApp: Automatically acquire high-quality fluorescence and transmitted light images from an entire microplate in minutes.

Imaging Modes: Epi-fluorescent and transmitted light wide field imaging
Illumination: Solid-state illuminator for fluorescent imaging. LED for transmitted light imaging
Fluorescent Channels: Blue: Ex 390 nm/Em 430 nm, Green: Ex 473 nm/Em 512.5 nm, Orange: Ex 544 nm/Em 588 nm, Red: Ex 631 nm/Em 702 nm
Camera: 2.8 megapixel, 14-bit CCD camera

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Web: www.gelifesciences.com/webapp/wcs/stores/servlet/Home/en/GELifeSciences-se/

www.glo.se

MATERIALS OF THE FUTURE FOR TODAY'S LEDS

glō is a venture-backed company focused on the development and commercialization of advanced LED products using nanotechnology. The unique nanotechnology is based on 11 years of research at Lund University's Nanometer Structure Consortium. Headed by Professor Lars Samuelson, one of the world's leading scientists in this field, who has published more than 500 papers related to this technology. glō currently holds 50+ patents across US, Europe and Asia.

NANOWIRE LED

Nanowires are fabricated columnar structures with diameters in the range of tens of nanometers and lengths on the order of hundreds of nanometers to micrometers. Each nanowire acts basically as an individual light-emitting diode (LED). Any color of the visible spectrum, ranging from deep blue to red, can be realized using nanowire LEDs with industry-standard semiconductor material and manufacturing equipment.

TRUE WHITE LED WITHOUT PHOSPHOR CONVERSION

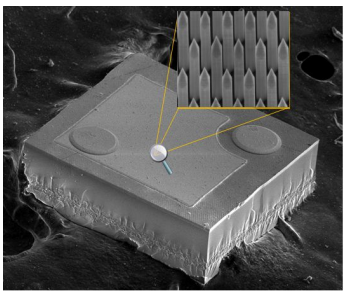
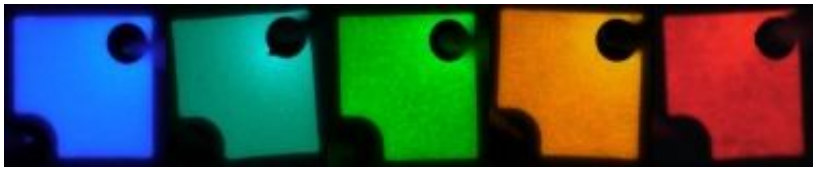
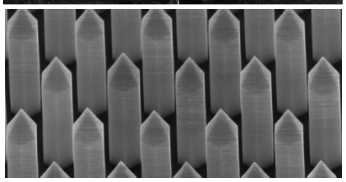
glō's RGB nanowire LEDs (nLEDs) are made using one material system with the active layers grown on the crystallographically-favorable non-polar m-plane. The wavelength shift and efficiency droop that are observed with commercially-available planar LEDs is reduced to a minimum with nLEDs. In the mid-term this will enable a true white RGB (red, green and blue) LED without the need of lossy phosphor conversion, thus achieving the highest CRIs and efficiencies.

EXPERTISE

glō has developed technologies to fabricate defect-free, single-crystal semiconductor structures, with direct control of morphology and chemical composition. The vertical form factor of the nanowire itself promotes efficient light extraction and it can be grown directly on large area silicon wafers with manufacturing techniques already in common use, thus avoiding the high cost of small wafers such as sapphire, SiC and GaN.





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heliospectra

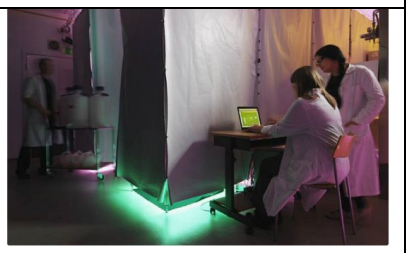
www.heliospectra.com

Heliospectra Provides Smarter LED Grow Lights for Commercial Greenhouses, Indoor Farming and Plant Research

Designed and engineered in Sweden, Heliospectra's industry disrupting LED Grow Lights provide unprecedented efficiency, flexibility, and control. Resulting in the market's premier lighting solution for Commercial Greenhouses, Indoor Farming and Plant Research. Boasting the most intense, uniform light footprint on the market, each diode in a Heliospectra grow light has a distinct optical lens, resulting in superior luminosity and uniformity. Dr. Bruce Bugbee, one of the world's foremost experts on horticulture lighting at Utah State University, stated: *"… this fixture has an efficiency of 1.7 micromoles per joule, which is equal to the best LED and HPS fixtures we tested."*

Commercial Greenhouses

Indoor Grow Facilities



Research Applications

Heliospectra has a team with extensive backgrounds in plant research. We believe in the scientific advantage our products offer because we use them ourselves on a daily basis in our in-house research facilities – over 20 different growth chambers with one or two lamps in each. Combining our own scientific experience and needs with constant market collaborations guides the product design and engineering at Heliospectra.

Our LED light systems make it possible to closely control the intensity of light wavelengths and to accurately match the spectrum to a specific plant. The spectral distribution of our systems (400nm to 735nm) is consistent with the action spectrum of photosynthesis and key photomorphological receptors.

Heliospectra light systems have built-in intelligence and are very modular. This allows for easy integrations with third-party equipment, such as the Ocean Optics Jazz Spectrometer, making it easy to set and maintain the desired light quality. External sensors for temperature, humidity and other environmental parameters can also be integrated, making the control and logging of data even more sophisticated. Also, we collaborate with growth chamber manufacturers in order to design combined, optimized solutions.

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www.hemocue.com

Hemoglobin photometers

"Because when it comes to caring for people, we refuse to compromise"

HemoCue is committed to being a leading global player in the professional point-of-care testing market with products that make significant contributions to health care. HemoCue was founded in 1988, but already in 1974 the inventors Jan Lilja, laboratory engineer, and Sven-Erik Nilsson, computer expert, of the Kristianstad Hospital Clinical Laboratory begin outlining an improved method for measuring hemoglobin. And achieved something remarkable — a point-of-care blood test with tolerances never before thought possible, let alone repeatable with accuracy in tens of millions of cuvettes per year.

Hemoglobin is an important indicator of general health and used as a diagnostic tool for anemia. White blood cell count provides valuable information in the diagnosis or exclusion of an infection. In hematology, we include both hemoglobin testing and white blood cell count (WBC). Hemoglobin testing in combination with WBC count, performed at the point of care, will add information to the clinical evaluation of the primary care patient. By using these two tests, a full CBC ordered from the laboratory would only be required if anemia, an abnormal WBC count is detected or when clinical signs and the patient's history indicate the need for further investigation.

The Microcuvette - a simple yet remarkable innovation

Microcuvette Application

When the tip of a microcuvette touches a drop of sample, it automatically draws the precise amount needed into a tiny mixing cavity. This cavity, dimensioned within thousands of a millimeter, contains dried reagent that dissolves when the liquid reaches it. The microcuvette is then placed in a photometric analyzer, which quickly returns an accurate measurement value. Working with microcuvettes, dried reagents and photometry, it is possible to analyze not just hemoglobin, but almost any substance in a liquid medium. Today we produce microcuvettes for hemoglobin, glucose and urine albumin analysis, and even microcuvettes for specific applications within those categories.

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SE-262 23 Ängelholm
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www.hokinstrument.se

Breath sensor technology for occupational and traffic safety

Founded in 1986, Hök Instrument AB has a highly qualified staff and board, building on decades of successful business activities. A major asset is our experience in taking sensor solutions from conceptual idea, through technological development to product commercialization. Another is our strategic partnership with Autoliv, SenseAir and others. We are innovators with a strong scientific background and network. Our patented solutions for unobtrusive breath analysis are being exploited in a number of applications. We have active projects with market-leading companies in a wide range of industries. Our location is Västerås, Sweden, but our view is global.

With our technology the subject can deliver a short puff of air at 5-10 cm distance to the sensor. By correlation to simultaneous measurement of CO2 the true breath alcohol concentration can be determined by an equation. Both alcohol and CO2 are measured using non-dispersive infrared spectroscopy (NDIR). Our partner SenseAir has built a powerful technology platform for NDIR analyzers. We have developed a flexible user interface enabling a multitude of breath analyzer configurations to be generated.

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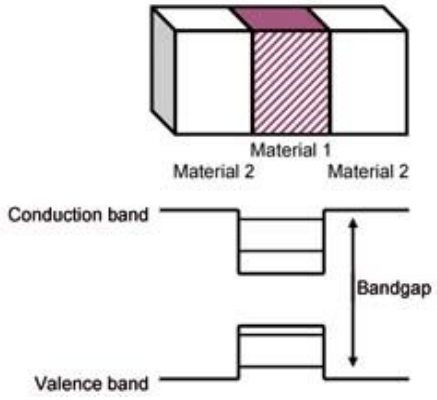
www.ir-nova.se

High-End Cooled Infrared Detectors

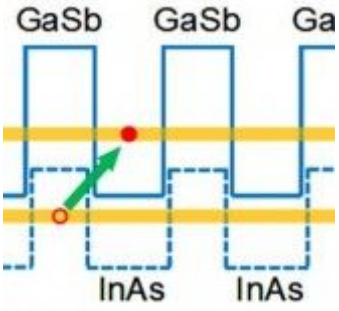
IRnova is a Swedish high-tech company engaged in the development, manufacturing and marketing of high-end cooled infrared detectors and related technology. IRnova is dedicated to providing our customers and OEM partners with leading **QWIP** and **T2SL** based infrared capabilities, giving a clear competitive advantage. IRnova is committed to establishing close and trusting relationships with our suppliers and customers in order to maintain our position as a secure and long term provider of unique infrared technology to the market.

IRnova provides cooled detectors assemblies for both **Long Wave** and **Mid Wave** infrared detection. In the LWIR regime the detectors are based on narrow band **QWIP FPAs** and in the MWIR broad band **T2SL FPAs** are used. A variety of resolutions, f-numbers, ROICs and coolers options are available. Proximity electronics consisting of ADC, pre-amplifier and cooler control are optional when applicable.



Quantum Well Infrared Photon Detectors

QWIPs belong to the category of so called photon detectors; the absorption of an infrared photon results directly in some specific quantum event, such as the photoelectric emission of electrons from a surface, or electronic inter band transitions in semiconductor materials.



Type II Super Lattice detectors

T2SL (Type II Super Lattice) or sometimes also called SLS (Strained Layer Super-lattice) is a material / technology that can be used to make high quality cooled infrared photon detectors with a cut-off wavelength ranging from 2 µm to 30 µm. This covers the SWIR, MWIR, LWIR and VLWIR wavelength bands, loosely defined as 2-3 µm, 3-5 µm, 8 -12 µm and > 12 µm, respectively.

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www.limab.com

Systems and sensors for non-contact measurements of dimensions and defects

LIMAB was founded more than 30 years ago in 1979 and has a long tradition of developing laser sensors and non-contact measuring systems. LIMAB has since then developed into a world leader in laser based sensors and systems for dimension and defect measurements. We specialize in measurement systems and sensors for industrial applications, mainly to support our customers to improve product quality and reduce manufacturing costs. Today we have customers on all continents and are offering state-of-the-art systems to a large variety of applications. We are today focusing on four Business Areas, namely the Metals Industry, the Building Material Industry, the Wood Industry and Road Profiling. Headquarters are based in Gothenburg, Sweden, and we have subsidiaries in United Kingdom, Germany and USA. On other markets we are represented by certified partners for sales and customer support.

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LOW VISION INTERNATIONAL

www.lvi.se

With the mission to make every day easier for people with visual disabilities

LVI is recognized as one of the world´s leading manufacturers of equipment for visually impaired people. Our head office is located in Växjö, Sweden. In 1978, Mr. Bernt Mannesson developed the first Swedish video magnifier: MagniVision. Subsequent to that developmental breakthrough, he was the advocate for the foundation of LVI Low Vision International. The company is going from strength to strength and there are currently 55 people working within the organization. Through our subsidiaries and distributors, we are also well represented worldwide. LVI's subsidiaries are located in Denmark, Finland, Germany, Norway, Belgium and Switzerland. All development and manufacturing takes place in our head office in Sweden. It is a great advantage to have everything within the building, from production to finished product as well as sales and service. New products are developed in close co-operation with users and professionals within the low vision rehabilitation industry. Our products are sold under the registered trademark MagniLink. In the year of 2013, LVI celebrated 35 years in the industry. With a wider product range and strength both nationally and internationally, LVI will work towards even more innovative solutions that will make every day easier for people with visual disabilities.

Candy is a flexible and light electronic magnifier with a wide magnification range. It has a 5 "screen, HD camera that also can be used for distance viewing. Candy is useful when reading menues at the restaurant, price tags in the local store, information on the medicine package and more. The high resolution screen guarantees high performance reading from both near and distance reading.

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www.phasein.com

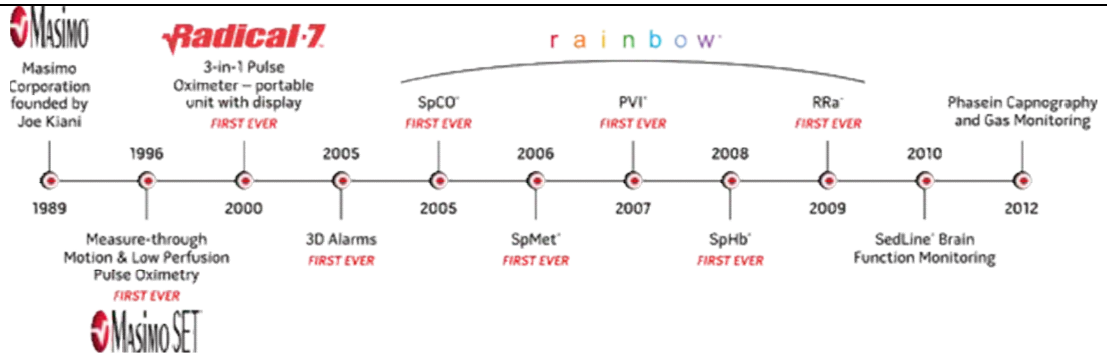
Infrared Capnography and Multi-gas Monitoring Technologies

The acquisition in 2012 of PHASEIN's multigas technologies complements Masimo's breakthrough innovations for patient monitoring with a portfolio of products ranging from OEM solutions for external "plug-in-and-measure" gas analyzers and integrated modules to handheld devices. With multiple measurements delivered through either mainstream or sidestream options, Masimo customers can now benefit from CO2, N2O, O2, and anesthetic agent monitoring in many hospital environments, such as operating rooms, procedural sedations and intensive care units. Phasein AB has officially changed its legal name to Masimo Sweden AB.

SIGMA Multigas Technology™

The SIGMA spectrometer uses the 4 to 10 µm LWIR wavelength band to precisely measure the infrared absorbtion caused by molecules in the gas sample. The LWIR wavelength band contains strong absorbtion peaks for CO2, N2O and the anesthetic agents, with negligible interference from alcohol, acetone, and other gases and vapors that could potentially degrade measurement accuracy. In the multigas version, seven carefully selected narrow band optical filters are used to trace the gas sample composition, while two filters are used for temperature compensation. The precisely tuned optical filter set provides for high signal-to-noise ratio gas measurements, as well as automatic compensation for cross interference and broadening effects caused by oxygen, nitrous oxide, anesthetic agents and for pressure broadening effects.

Although PHASEIN's Micro Optical Rotor-based infrared spectrometer was first developed for use in mainstream applications, its use in an ultra-compact sidestream configuration required further technological developments. The spectrometer was integrated with a small measurement chamber, a zeroing valve, a miniature sample pump and a gas sampling line connector to form a completely integrated sidestream gas analyzer module.



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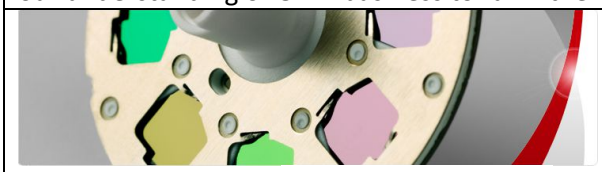
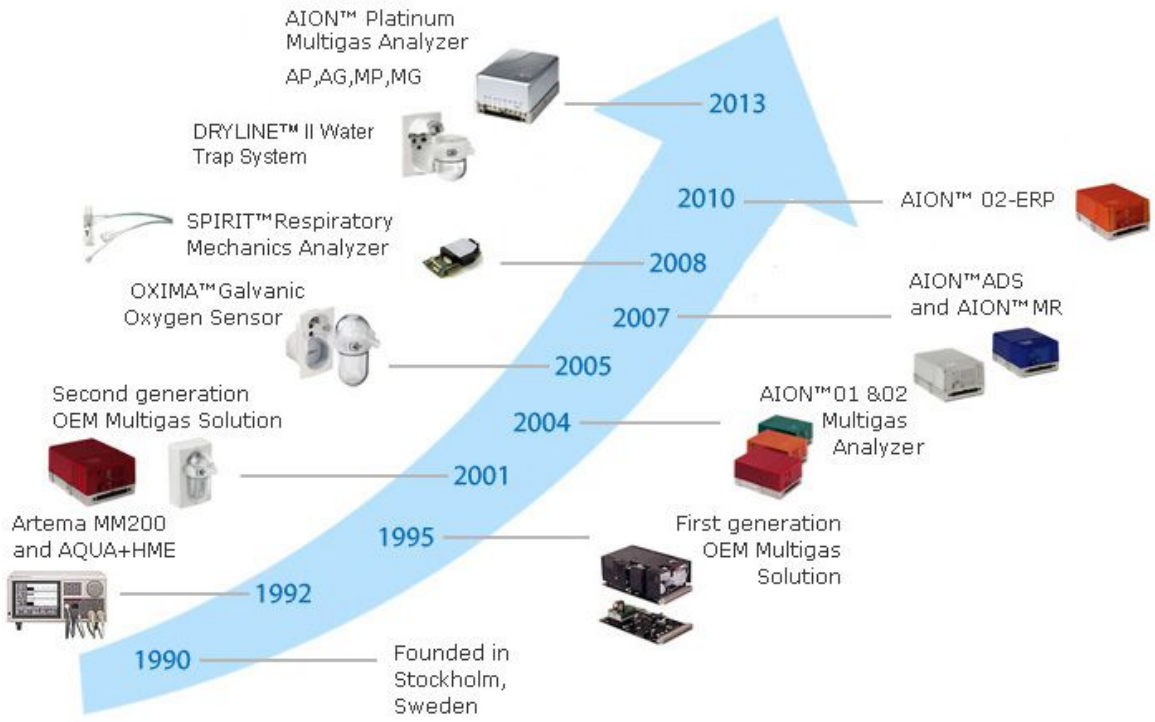
ARTEMA TECHNOLOGY mindray www.mindray.com/artema

Anesthesia Gas Analyzer

Artema was founded in Sweden 1990. Artema Technology® is now the Mindray line brand for OEM respiratory gas measurement technology intended for integration into patient monitors, anesthesia delivery systems and ventilators. We combine our expertise in respiratory gas measurement with our understanding of OEM business to fulfill the needs of the OEM customer.



Artema's proprietary infrared respiratory gas analyzer bench, used in the MM200 Series Monitors, was offered as an OEM respiratory gas analyzer to other high profile monitoring companies. The MGA200 Series Multiparameter Assemblies were availble in a PC board configuration or as a plug in module. The MGA200 Series Multiparameter Assemblies provied the monitor host computer with all relevant respiratory gas real time data (CO2, N2O, AA, AAID, O2) as well all relevant derived parameters (Insp, EndTidal, Breathing Frequency etc) and complete alarm functionality.



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MYCRONIC

www.mycronic.com

JET-Printing Equipments and Display Mask Writers

Mycronic is a Swedish high-tech company that has been active in the electronics industry for more than 30 years. Our global organization with subsidiaries, agents and distributors supports industry leaders in more than 50 countries. Our global footprint ensures that we have a deep market understanding and can provide rapid support for all our customers who rely on an efficient production. In a world driven by extremely fast technological change, Mycronic's innovations enables the electronic industry to be in the forefront. In fact, for producers of advanced flat screen displays, our technology is indispensable. The same holds true for some of the most agile and responsive circuit board manufacturers, who use our machines to produce a wide variety of the most complex boards in the world. Our heavy investments in R&D are just one indication of our commitment to continuous innovation to meet these demands.

Quick facts

- Supplying the electronics industry with world-leading laser mask writers and surface mount technology (SMT) assembly solutions.
- Local presence in more than 50 countries.
- More than 500 employees world-wide.
- More than 450 patents and 25% of the workforce in R&D.
- Subsidiaries in China, France, Germany, Japan, Singapore, South Korea, Taiwan, the Netherlands, the United Kingdom and the United States.

Jet printing makes it possible to handle the latest, most challenging designs and components while getting the most from your existing production line. Where screen printers struggle with broadband technology, board cavities and board stretch, jet printing deliveres perfectly shaped dots with full volume control time and again. The MY600 Jet Printer puts you way ahead of the competition and constitutes a giant leap towards more flexible and profitable production. Jet printing replaces screen printing, and allows you to respond rapidly to your customers' demands and changes while achieving superior accuracy for every solder joint. There's simply no time wasted ordering, changing or storing stencils, and far less risk of human error due to a minimal need for operator intervention. Just import CAD or Gerber data, optimize for individually challenging components, and cut your response time down to hours or minutes instead of days.

On average, the size of LCD displays has been growing one inch every year. Resolution has been increasing, and new product ideas – like curved displays – are entering the market. In a world of constant innovation, you need supreme quality to remain competitive. Your technology must also have a high yield in the LCD panel manufacturing stage of your production. Our Prexision systems are the industry standard for photomasks, used by all the world's photomask manufacturers.

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neonode®

www.neonode.com

Optical Touch Solutions

Neonode develops and licenses the next generation of optical touch solutions for some of the world's largest consumer brands, including Sony®, Volvo®, Barnes & Noble®, Kobo®, Oregon Scientific®, Alpine®, and Amazon®. The Company's business model is based on technology licensing to equipment- and device manufacturers on a global market. Extensive R&D has led to major product offerings for everything from PCs and laptops to watches. To date, Neonode's MultiSensing technology is found in more than 20 million consumer hands world wide.

Neonode (Nasdaq:NEON) is a publicly traded company, headquartered in Stockholm. Our key competitive advantage is our proprietary **zForce technology** based on invisible light, which enables eliminating the fragile and expensive glass overlay required in capacitive solutions. This allows us to offer low production costs, significantly lower power consumption, enhanced user experience such as speed and accuracy, while providing 100% optical transparency for a clear viewing experience. Based of zForce technology, we have continued to develop a variety of competitive and original features that senses any type of object capable of determining its size, its pressure on a surface, the depth (3D), the velocity and even its proximity to any type of surface. This feature-set is bundled and trademarked as the Neonode MultiSensing® technologies. Our MultiSensing technology is suited for any type of consumer and industrial electronic device like mobile phones, tablets and e-readers, toys and gaming consoles, printers, automotive displays, home appliances and wearable tech. It supports unlimited gestures, multi-touch and sweep navigation.



zForce (zero Force) sensing technology is the brand name for Neonode's product line of innovative optical sensing technologies. It provides a number of major advantages over traditional touch and proximity technologies such as capacitive, resistive, infrared or camera based solutions. With zForce technology, any type of display or surface of any shape can be touch enabled, even concave surfaces. It can also be applied to enable touch in mid-air. zForce products work with any type of touch object such as a finger, a stylus, a fingernail, a glove or a ordinary pen. It can be made waterproof and is fully functional even when submerged, compared to capacitive touch that do not work under water. zForce technology has a touch resolution of more than 200 DPI which enables precision writing with thin objects such as a pen or a stylus.

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CEO Thomas Eriksson

NOCILIS MATERIALS

www.nocilismaterials.com

Advanced silicon epitaxy service & substrate engineering

Nocilis Materials is a spin-off from the Swedish Royal Institute of Technology (KTH) founded by Dr. Henry Radamson and Bo Hammarlund in 2011. Nocilis Materials AB provides epitaxy service for advanced Si-Ge-Sn-C alloys for both electronic and photonic applications. The company has also developed products (SiGeOI, GeOI and GeSnOI) for advanced strain engineering.

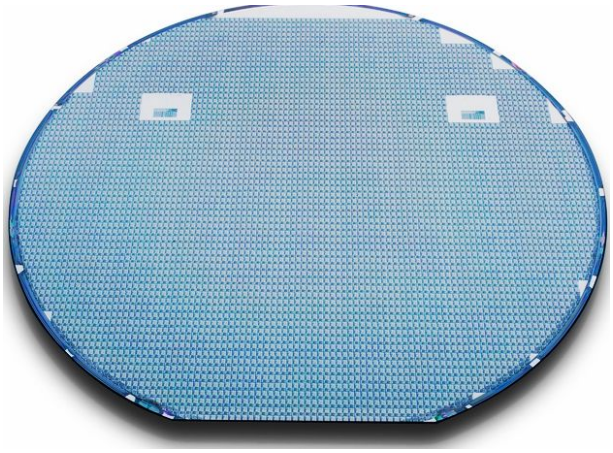
Nocilis Materials offers advanced silicon epitaxy service & substrate engineering.
The growth technique is RPCVD and the epi-layers are provided on 4-, 6,- and 8-inch substrates with the following descriptions:

- P-, As- and B-doped Si and SiGeSnC layers (doping level of 1015-1019 cm-3 in Si but for Si alloys depends on the material design)
- Selective epitaxy of doped and undoped SiGeC layers on patterned substrates
- Multilayer structures (superlattices) of Si-or Ge-based materials
- Ge (unstrained) on Si
- Compressive and tensile strained SiGe layers
- Strained Si on relaxed SiGe layers
- Tensile strained Ge layers
- III-V epitaxy will start in January 2016

Substrate engineering:

- SiGe on-insolater (SGOI) on 4- and 8-inch wafers
- Ge on-insolater (GOI) on 4- and 8-inch (introduced in January 2016)

Our products and epitaxy services are targeted for high carrier mobility and Si photonics.



Background of founders:

- Dr. Henry Radamson has a long experience in semiconductor physics. He has in over 17 years guided a number of Ph. D students through their programs.

- Bo Hammarlund has a background in R&D for electro optical III-V materials. For 10 years he was in charge of international sales and marketing in e.g. Lucent Microelectronics group, Sweden, Multiplex, USA and WaveSplitter Technology, USA. Over the last 12 years, he has co-founded cutting edge technology start-ups such as TranSiC (sold to Fairchild), Scint-X, SenSiC, Sensabues, Ascatron, Epiluvac, Epiclarus , and ReAdapt Vision.

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www.nordiclight.se

High-performance, energy-efficient display lighting fixtures

Nordic Light designs, manufactures and markets a complete range of high-performance, energy-efficient display lighting fixtures. Our headquarters are located in Skellefteå, Sweden. Our own factories, located in China, deliver cost-effective production for the procurement and worldwide distribution of our components and products. We aim to continually work with product development, staying as far ahead as possible in terms of user-friendliness and dependability. Good design, low cost and low environmental impact are other characteristics we value highly. Combined, these qualities make a typical Nordic Light product.

Nordic Light was established 1980 under the name AARAB Belysning initially. Already from the initial start exhibition lighting was the market aimed for and this gradually developed further during first part of the 1990´s into development of shop lighting fixtures. Both fields had and still have a demand for lighting to work in selling and marketing environments. Higher demands for colour rendering also applies and is natural in these fields. Combining good quality, efficient pricing strategy and after-sales responsibility means for the client control of TCO (total cost of ownership) and ROI (return of the invested capital). Today, 30 years later, Nordic Light's products are sold around the world. Production mostly takes place in China, while company headquarters and product development operations are based in Sweden. Since September 2011 Nordic light is a part of ITAB Shop Concept. www.itab.se



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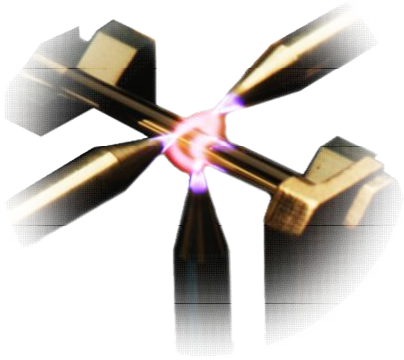
Org/VAT No: SE556203-516101

www.northlabphotonics.com

Fiber Optics Processing Equipment

The world-class innovation and patented technologies offered by NorthLab Photonics meet the demanding requirements of many specialized markets including medical, high power fiber laser, aerospace & defense, telecommunications, oil& gas, and HD broadcasting. NorthLab's team, together with our partners 3SAE Technologies and FITEL, boasts over 20 years of experience working with the world's premier photonics companies resulting in the development of the highly advanced customer driven optical fiber processing equipment. We offer both specialized off the shelf and customized products for fiber cleaving and preparation, fusion splicing, and optical glass fiber processing products. Our products are used worldwide for everything from high-strength fiber splicing for standard and large diameter fibers to specialty splicing systems needed for creating fiber tapers and mode field adapters (MFA's), fiber bundling, optical fiber combining, and end cap splicing.

- Tapering, bundling and splicing with Thermally Stabilized Plasma™.
- The ProCleave SD is an easy to use electronic fiber cleaver for fibers up to 230 µm designed for manufacturing lines and R&D.
- NORIA – a complete FBG manufacturing solution.
- The new NorthLab ProCleave LD for cleaving of fibers from 125 – 550 um cladding diameter.
- Products and solutions for advanced fiber splicing/processing, cleaving, tapering, combiners and much more… From standard to large diameter fibers



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CEO Per Karlsson

NYFORS™

www.nyfors.com

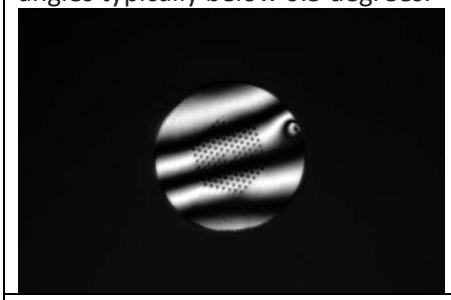
Fiber Optics Processing Equipment

NYFORS is an innovative supplier of advanced glass processing and optical fiber preparation equipment for high strength and specialty splicing operations. All NYFORS products are developed with the user in mind for comfortable and easy operation in production and laboratory environment. A common feature, found in many products, is the automated fiber processing, intended to give consistent results and high production yield in volume production of optical fiber components. The product portfolio is continuously expanded to cover wider and more challenging customer applications. It currently includes: CO2 laser splicing and glass shaping equipment, automatic systems for fiber preparation and window stripping, high precision cleavers and optical fiber recoaters as well as proof testers and cleave check interferometers. NYFORS also provides custom solutions for production applications such as volume manufacturing of fiber optical gyroscopes.

Our product range are:

- Glass processing and tapering
- End cap splicing
- Automatic fiber preparation
- Automatic fiber cleaving
- Portable fiber cleaving
- Optical fiber recoating
- Optical fiber proof testing
- Cleave quality inspection
- Custom engineering
- Consulting

NYFORS TEKNOLOGI AB introduces its new portable optical fiber cleaver – the MINICLEAVER. The battery-operated cleaver is perfect for field splicing or in environments with limited space. It is compatible with most common factory and field splicers and produces cleave angles typically below 0.5 degrees.



The SMARTSPLICER™ is an advanced laser fusion splicing and glass processing system designed for the production of high power and sensitive photonics components of various kinds. It features a powerful and clean laser heat source which enables completely contamination free glass shaping with low maintenance requirements and no need for consumables such as process gas, filaments or electrodes.

Interferograms showing the typical cleaving performance of the AutoCleaver LDF.

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Optical sensors

www.opticalsensors.se

Design of Optical Sensor Applications

We have in several cases made embedded solutions or sold our technology to be integrated into our customer's design. In those cases the products has been produced by the customer or their partner. Air eye has been integrated in a road weather station, and technology and production rights are licenced. We have trained the engineers to handle product maintenance and quality assured the production to be able to run the production with high yield. We have a support agreement in place where Optical Sensors add expertise when needed. We have also made technology transfer of visibility sensor technology to an off shore company that needed a fog sensor to fullfil unique environmental conditions. Our high performing and cost efficient technology is ideally suited to integrate into various solutions and we are committed to support our business partners in the best possible way.

〉 Embedded Solutions

Our technology can be integrated on different level from complete module to components in the customers design. The technology is licenced (including patents) and different support and training options are available.

〉 Manufacturing

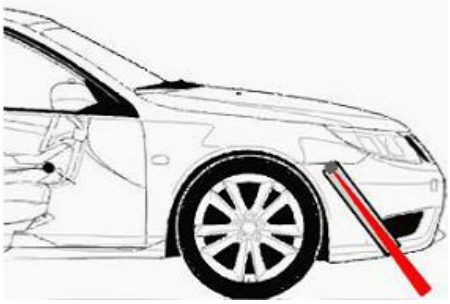
Our products can be manufactured under licence and depending on integration level different manufacturing options are available. Production is licenced and different support and training options are available.

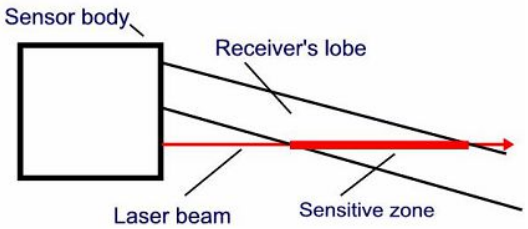
〉 Technology

The patents, product ownership and know-how for specific applications could be subject for a deeper relation or special arrangements to secure the customers application or need for exclusivity.

Sensor Applications

- Detecting and monitoring slippery road conditions
- Why measure visibility?
- How to measure visibility New generation of Road Weather Stations
- How to reduce the number of serial car collisions in fog





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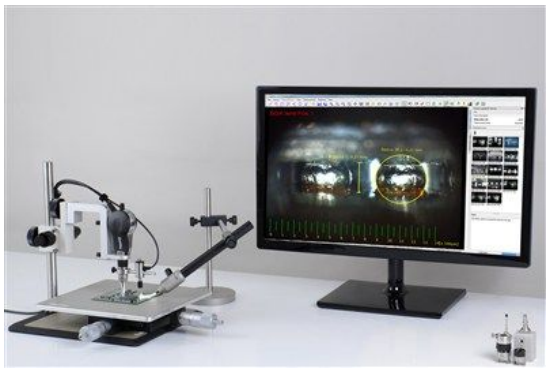
Empowers your vision

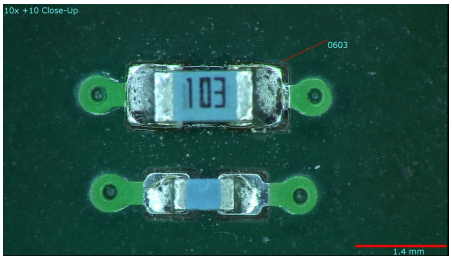
www.optilia.eu

Developing the future's microscopes

Optilia Instruments is a hallmark for quality in terms of visual inspection instruments. With our own R & D and in-house manufacturing, we are able to develop new products that are continually driving technological development forward. Where others see problems we see opportunities. Since its foundation in 2002 Optilia has been located in the outskirts of Stockholm, Sweden and has enjoyed steady growth in the following years. Today we are an organization with departments in product development, production, sales and technical support with a cohesive team that thrives on close dialogue with our customers and dealers. At Optilia we always want to be at the forefront when it comes to technical solutions. Our video microscopes and inspection systems incorporate the latest technologies to offer you the maximum benefits regarding inspection time, cost and reliability. When you buy an instrument from Optilia you get the assurance of a Swedish made product where performance and quality come first.

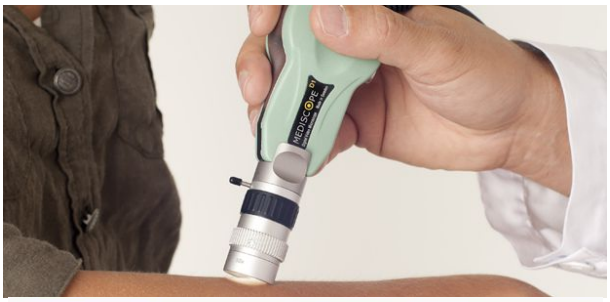
Industrial

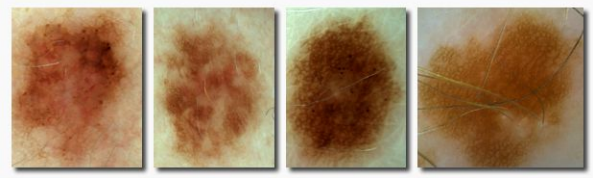




By installing an Optilia Inline HD system after solder paste printing, component placement or soldering it is easy to discover and prevent failures early and reduce wastage and downtime. Accordingly, there are real financial advantages by using such systems because the sooner a failure can be detected the easier it can be addressed.

Medical





An increasing number of melanoma diagnoses are being observed in many parts of the world. About 160 000 cases of melanoma are reported yearly. By using a dermatoscope, further characteristics of lesions patterns can be identified which improves the diagnostic accuracy.

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Industrial applications: www.optiliaindustrial.eu

Medical applications: www.optiliamedical.eu

www.optoga.com

LED lighting solutions

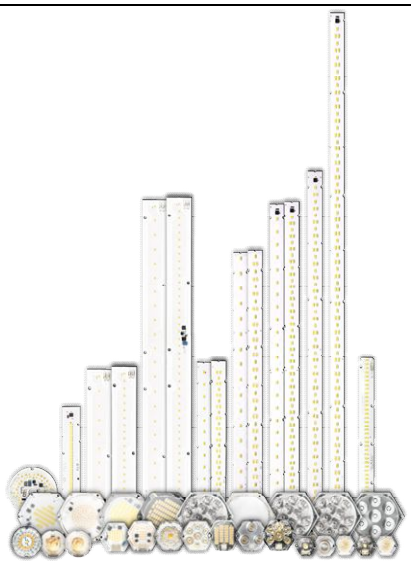
Optoga was founded in November 2004 and the company staff has over 40 years experience in the lighting and electrical industry. The company develops and supplies LED lighting solutions for worldwide distribution into a range of industries including minor surgery, vehicle and telecommunication. Optoga also research and develop products that have integrated LEDs with Driver electronics, as well as initiating the replacement of traditional lighting sources such as fluorescent and incandescent. The vision is to create the most pleasant lighting possible with state of the art technology.Optoga develops and produces LED-modules that are easy to mount and nicely designed. All to give a fantastic light and feeling to the fixtures where they are used. Optoga is a market leading company that demanding customers should want to work with in order to get innovative business solutions and high end products. We constantly work hard to improve the quality of our products in order to be able to provide the best products available on the market.

Medical LED modules in Minor Surgery and Examination Light applications.

The differences between Halogen and LED are huge but in the end they are to create the same solution. Halogen get the heat out by IR emission and the LED by convection (air flow). With the LED you only have light coming out in the direction of the light and no heat (no IR). This gives the advantage that the light will not dry out the open wound and therefore it will not be any convection from the surgical cut and create humidity on the LED Light fittings. With cleaner light fitting it will be less problems with the bacteria growth environment. Just a smarter solution.

The OptoDrive module

All the OptoDrive™ LED-modules are dimmable and have various configuration possibilities for lenses and drivers. The modules are available in a huge variety of shapes and sizes, still with a consistent formfactor over time. The connectors and lenses have the same formfactor over the years and our oldest module is still a bestseller.



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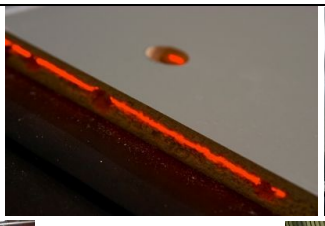
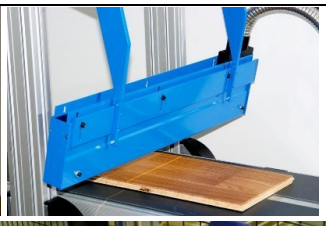
www.optonova.se

Automatic Inspection Systems for Manufacturing Industries

OptoNova is a leading international supplier of automatic inspection systems for manufacturing industries. We also offer a broad range of services within vision technology and optics – from business and technical consultancy to project development and hiring out of specialist resources. OptoNova's aim is to lead the field in vision technology and optics, which is why the company's level of expertise is so high. It is also the reason that we have engineers who specialise in systems engineering, mechanics, optics, electronics and software development.

Automatic inspection and product monitoring are particularly applicable in the following areas:

- **Surface inspection**: Operating in real time on the production line, OptoNova's inspection systems can measure surface properties and identify defects with the help of vision systems – an 'electronic eye' that is fast, durable and accurate in its decisions
- **Checking surface properties:** Gloss, finish, colour, surface structure (e.g. 'orange peel'), shade/tone, pattern, transparency, opacity, roughness
- **Detecting surface defects:** Scratches, cracks, holes, impurities, dirt, inclusions, tears, wrinkles, print defects, smeared decoration, dents, paint damage, marks, stains, pores, graininess, chipping
- **Measuring dimension, position and orientation:** OptoNova is a pioneer in the area of high-speed 3D measurements to check dimensions, position etc. Examples of what optical metrology can measure: Length, width, height, diameter, squareness, flatness, profile and 3D shape. Position and orientation: X, Y, Z position and angles.
- **Non-destructive testing:** Checking functional requirements. Optical and vision technology are increasingly being used for non-destructive checks off-line in the lab as well as in-line on the production lines. Within this area it is also possible to use vision technology with invisible light (x-ray, UV and IR) to better focus on what needs to be checked.

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www.optonyx.com

Photonic Components and Systems

OPTONYX was formed in 2006 to sharpen the focus on photonic components and systems, used by industrial and research customers in Scandinavia. We are an established photonics supplier for both the OEM and R&D market. Optonyx provides components, assemblies and systems from five different product ranges, Spectrometers, Optics, Filters, Lasers and Positioning. We can supply catalog parts, adapted parts and parts completely designed based on your specification, depending on your requirements.

- Optonyx offers design and manufacturing of high performance mid and long wave infrared aspherical optical lenses and elements utilizing and technologies.
- Optonyx can provide focus tunable lenses for diverse applications. Whether electrically or mechanically actuated, the advantages of tunable lenses over traditional optics are striking.
- Optonyx can offer optical components and optical assemblies.
- Optonyx have access to specialists with the expertise required for the calculation, design, production and manufacture of your assemblies.

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OPTOSKAND™

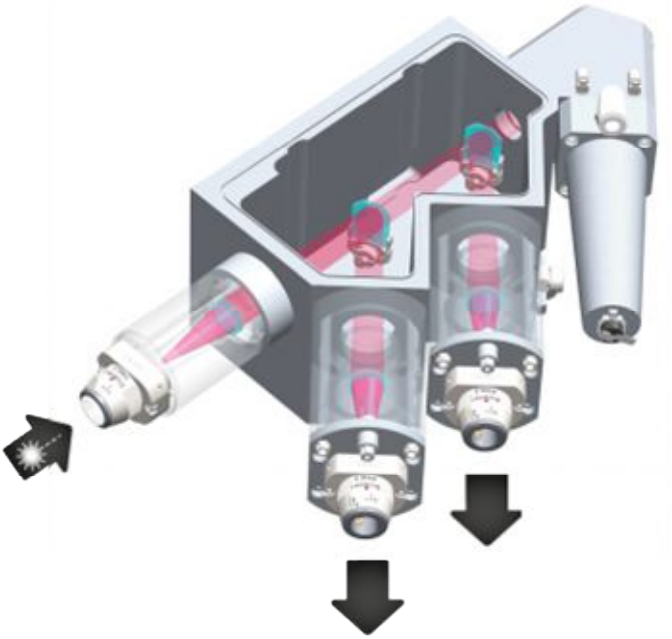
OPTIMIZE YOUR LASER

www.optoskand.se

High-Power Laser Fiber Optics Cables & Couplings

Our goal is to optimize the beam delivery from your high-power laser to the work piece. Since our customers demand high performance, flexible solutions and no loss of power or time, we continuously work to improve and increase the possibilities of laser transmission technology. We have developed and manufactured a wide range of beam delivery products for high power lasers for our customers: Fiber optics cables, incoupling optics and external optics. Many of these products are patented and certified, which is a testament of the skill of our innovative R&D engineers. Our safe and reliable high technology products have only one goal: to optimize your laser!

When using an optical fiber for high power transmission, one of the main topics is to handle power losses due to misalignment, back reflections or damaged optics in the beam path. Generally the main weak points in the fiber itself are the entrance and exit surfaces, and the area where the buffer and jacket enter the fiber. The basic principle in fiber-to-fiber coupling is simply to reimage the fiber end surface from the emitting feeding fiber towards the receiving process fiber. Using an optimized system, losses will be kept low both regarding power and beam quality (BPP). The unsurpassed performances of the Optoskand fiber optic cables make them the most efficient on the market.



Coupling the laser light from the feeding fiber to any of the process fibers in an Optoskand Fiber to Fiber Optic Switch (FFS).

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www.optronic.se

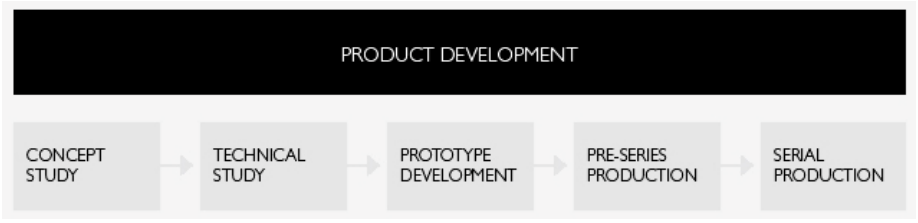
Reliable experts in product development and manufacturing

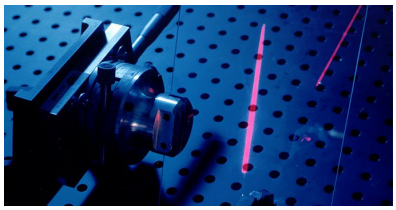
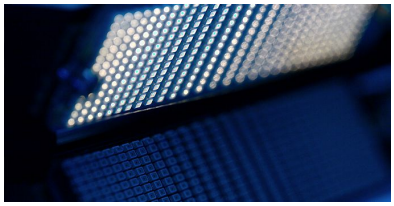
We are a leading service provider in the field of optical sensors and optoelectronic technologies. By developing state-of-the-art customised optical sensors, our team of experts helps companies facilitate development and manufacturing, resulting in competitive advantages for products and applications. We are recognized within the industry for our reliability in quality, delivery accuracy and strong customer focus. We also have established close co-operations with research communities and universities, securing quick access to cutting-edge technologies and developments within our field. The company was founded in 1974 when the Aga Geotronics started production of a series of new instruments in Skelleftea. In 1987 the company moved to its current owners. Optronic also has offices in Stockholm and Munich.

Optronic is a leading service provider in the field of optical sensors and optoelectronic technologies facilitating development and manufacturing to companies seeking competitive edge in their products by using state-of-the-art customized optical sensors and vision systems.

The rapid development of optoelectronic and optical sensor technology available for industry makes it an area where companies can explore new possibilities and go beyond their ordinary limits. The object is often to increase reliability in performance, efficiency or boost applications with a whole new range of possibilities made available by new technology.

We provide expert solutions, from development to production of customized and application specific optical sensors, to meet our customer's demands and help them boost applications.




References:

- Spectroscopic Laboratory Instrument
- High resolution camera
- Handheld Raman spectroscopy
- Shape inspection
- Distance measurement
- High speed camera for pick –and –place
- Optical gas analyzer
- Optical navigation sensor
- Optical positioning sensor
- Biometric data collection
- Online spectroscopic quality control
- Illumination design
- Stereo vision
- Digital Holography
- Time-of-flight camera

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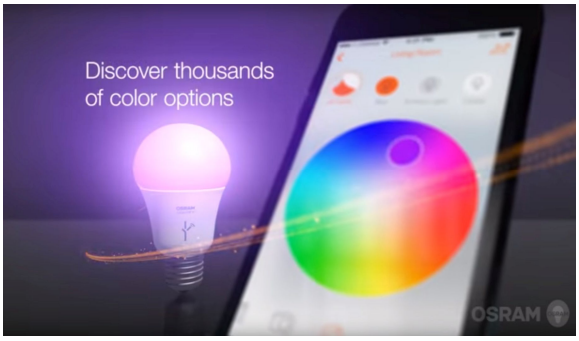
www.osram.se

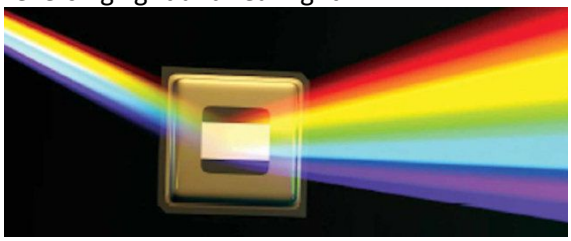
Lighting Technology Provider

OSRAM Licht AG since July 2013 an independent, publicly listed German group and one of the world's largest manufacturer of light bulbs and lighting systems. OSRAM GmbH was founded in Germany in 1919 and was owned by Siemens until the IPO in July 2013. Osram's core values are shaped by over a century of company history, during which we have played a key role in driving forward lighting technology. In the past, we have developed new products and established applications - such as automotive lighting or projection - based for example on filament, halogen, or high-pressure discharge technologies. The global lighting market's transition toward semiconductor-based products is continuing Trends in the Lighting Market. In the future, technology - and innovation-led applications will be based on semiconductor technologies. The technology shift has been increasingly impacting and disrupting the lighting value chain. This trend will split the lighting industry markets going forward: on the one hand into volume-driven markets, where consistently high quality and cost efficiency are the crucial competitive factors, and on the other hand into technology markets for professional applications that are characterized by innovation, customer-specific solutions and sustainable growth. We have decided to shift our strategic focus and move from being an integrated light manufacturer to a dedicated lighting technology provider. In line with this, we plan both to expand our expertise in chip production and to further enhance conversion of our innovative strength in the area of new applications in the visible and invisible light spectrum - such as laser lights in automotive lighting or light-based sensors in security technology - into business success in the future.

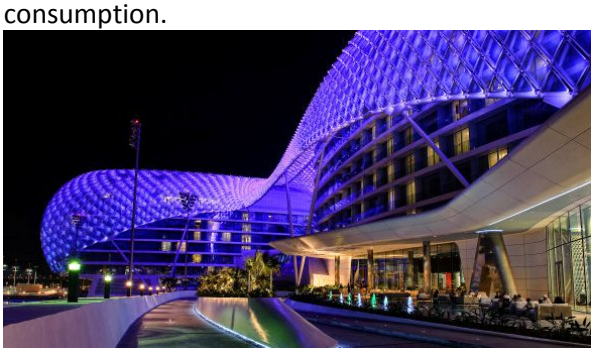
LED/OLED rear light automotive demonstrator showcasing four lighting functions – brake light, turn indicator, reversing light and rear light.



LIGHTIFY - the connected future of light
LIGHTIFY - lighting has never been as much fun as this! Light controlled by a mobile app. Connected lighting that adapts at all times to your desires and lifestyle. More flexibility, color, excitement and emotion. A greater feeling of safety. And less power consumption.



OSRAM Opto Semiconductors, one of the leaders in LEDs for projector applications, offers a series of LED products suitable for all projection systems and categories.



Impressive façade lighting

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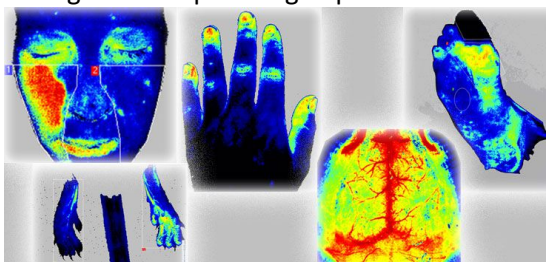
www.perimed-instruments.com

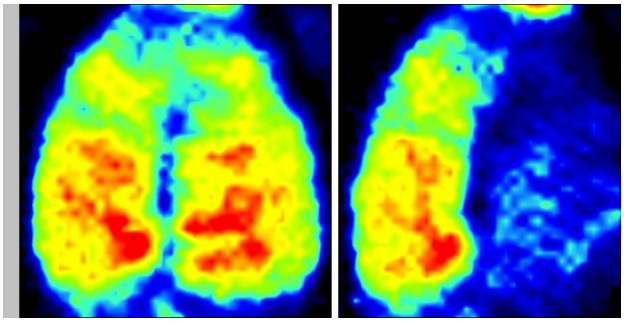
Peripherqal Vascular Diagnosis made Intelligent

To improve the quality of life for people suffering from vascular diseases, Perimed provides instruments, software and expertise for precise and convenient measurement of vascular function and diseases. Perimed AB, established in 1981 and headquartered just outside Stockholm, is the world leader in developing, manufacturing and marketing state-of-the-art equipment for microvascular diagnosis. With customers in more than 80 countries, Perimed also actively participates in a wide range of research projects together with leading universities to deepen our understanding of diseases related to blood perfusion and microvascular functions. Perimed has subsidiaries in the UK, United States, France, Italy, Germany, Mainland China and Hong Kong.

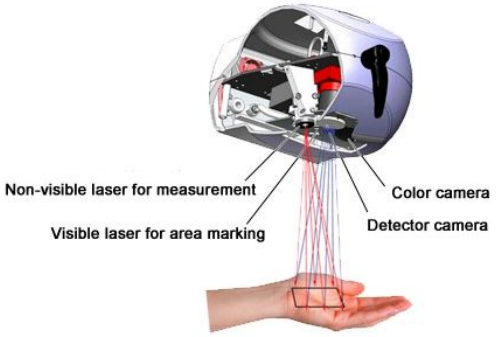
We utilize Laser Doppler, Laser speckle (LASCA) and transcutaneous oxygen (tcpO2 or TCOM), to accurately monitor and quantify blood perfusion and tissue oxygenation in real-time. Our modular PeriFlux System 5000 and PeriFlux 6000, the latest generation of our PeriFlux System, are excellent choices for diagnosing Peripheral Arterial Disease (PAD) and Critical Limb Ischemia (CLI) or for assessing wound healing potential in your vascular patients. Our blood perfusion imagers PeriScan PIM 3 System and PeriCam PSI System, allow you to investigate spatial distribution, for example during cortical spreading depression.



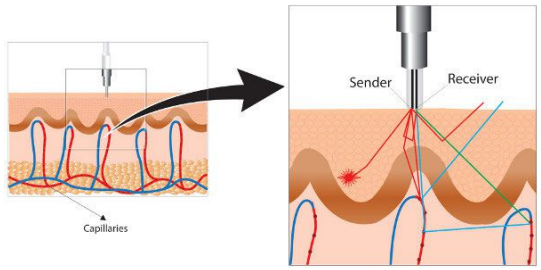
Laser Speckle Contrast Imaging



Laser Doppler Imaging



The PeriCam PSI System uses a 785 nm invisible laser for blood perfusion measure-ments. The beam is spread over the measurement area by a diffuser creating a speckle pattern.



Laser Doppler Monitoring

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Research & Development Manager
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PERMANOVA
Lasersystem ab

www.permanova.se

Laser Process Production Equipment for Sheet Metal Manufacturing

We offer laser materials processing production equipment to sheet metal using manufacturing industries. The core consists of robotised laser systems, increasing productivity, product quality and profitability for our customers. Our business is based on a deep knowledge of the technology and a thorough understanding of our customers' needs. Permanova's employees are all dedicated to serve our customers with the best possible equipment and service. Most of the people at our company are today very experienced in the laser field after many years in more than 150 customer production projects. We have delivered laser process tools and turnkey laser systems to the industry for more than 20 years. When we design and produce our tools and systems, we always keep in mind that these products should be able to run in an automotive factory. Most of our tools and systems have been delivered to car producers and fulfill the high demands on function and uptime that these customers have. This is of course beneficial for our typical workshop customer also.

Main products summary:

- Turn-key systems with industrial laser, fiber, laser process tool and robot, for laser welding, 3D cutting, hybrid welding, cladding, hardening and marking.
- Laser service, spare parts
- Laser training, laser safety, consulting
- Feasibility studies, laser process development in our lab with 6 kW laser and robot

Process Tools are the tools closest to the process, normally mounted on the robot. Permanova has a great knowledge and a long experience of laser materials processing, industrial equipment and high power optics. Our process tools are made for laser processes such as welding, cutting, brazing and laser hybrid welding. The tools include beam-shaping optics, but may also include essential process related functions such as height control, pressure device and seam tracking. Calibration tools, monitoring equipment and accessories are also part of our product offer.

Laser Process Tools

Laser Cladding Tools

Laser Welding Tool System

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www.perten.com

Specialists in quality control of grain, flour, food and feed

For over 50 years Perten has been a leading supplier of advanced analytical instruments to the agricultural industries. The company was founded in 1962 by Mr. Harald Perten. We serve some of the largest companies as well as smaller specialized operations and the research institutes which support the industry. Today Perten is a part of PerkinElmer. Our presence is worldwide through Perten offices and distributors, and in total we are active in 100 countries. The Perten Instruments Group headquarters are located in Stockholm, Sweden, and we have local offices in the USA, China, Germany, France, Italy, Australia, Spain, Russia and Thailand.

Perten Instruments invented **the Falling Number method** and **the Glutomatic method**, and continues to invest heavily in R&D. We have worked with NIR since the beginning of the 1980s and offer the most advanced, modern NIR instruments today. The acquisition of Newport Scientific in 2007 expanded our product range to cover instruments for rheological testing and dough characterization. In December 2014 Perten was acquired by PerkinElmer Inc and we are now a PerkinElmer company.

The Falling Number® System measures the alpha-amylase enzyme activity in grains and flour to detect sprout damage, optimise flour enzyme activity and guarantee soundness of traded grain. Alpha-amylase activity is crucial for final product quality of bread, pasta, noodles and malt. Anyone handling wheat, barley, rye or sorghum intended for these applications will benefit from the Falling Number system.

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CEO Sven Erik Holmlund

Phase Holographic Imaging

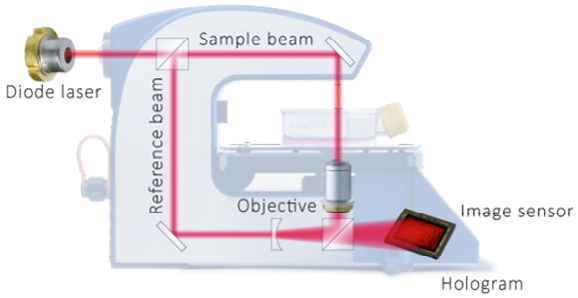
www.phiab.se

Non-destructive test method for cell therapies by time-lapse cytometry

Headquartered in Lund, Sweden, PHI trades through a network of international distributors. Committed to promoting the science and practice of time-lapse cytometry, PHI is actively expanding its customer base and scientific collaborations in cancer research, inflammatory and autoimmune diseases, stem cell biology, gene therapy, regenerative medicine and toxicological studies.

Modern drug research is based on experi-ments performed on cultured cells. These are treated and analyzed with a variety of established methods. Common to these methods is that they are destructive to the cell. This is a consequence of that living cells are trans-lucent and therefore difficult to see in an ordinary light micro-scope. This has curiously led to that life's smallest building block – the cell – in general is studied when it is dead.

To view how cells change over time, scientists image living cells over several days, using a microscope. These images are later viewed at a greater pace to observe the slow changes. This method is known as **time-lapse microscopy**. Scientists measure cells in a cytometer. However, when measuring cells with a cytometer, the cells must be removed from the cell culture container and destructively stained with toxic stains. This makes conventional cytometers unsuitable to measure cellular development over time. PHI leads the ground-breaking development of time-lapse cytometry instrumentation and software. With the first instrument introduced in 2011, the company today offers a range of products for long-term quantitative analysis of living cell dynamics that circumvent the drawbacks of traditional methods requiring toxic stains.



DIGITAL HOLOGRAPHY

Modern image sensors allow holograms to be digitally recorded. Instead of physically recreating the imprinted sample beam and the final image, the image creation process is simulated by a computer. A holographic microscope like **the HoloMonitor** differs from a traditional microscope in that the illuminating light is split into a sample beam and a reference beam by a beam splitter (above). After the sample beam has illuminated the sample, it is re-joined with the reference beam by a beam combiner to create the hologram. Another distinction from a traditional microscope is that a holographic micro-scope records the information needed to create image, not the image itself. The tradi-tional image creating lens is replaced by a computer algorithm – a digital lens.

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CEO Peter Egelberg

PHILIPS www.philips.se/healthcare/solutions/mammography

Digital Microdose Mammography

Philips Digital Mammography Sweden AB (formerly Sectra Mamea AB) is part of Philips Healthcare that develops, produces and sells digital mammography equipment for hospitals. The strategy is to provide integrated solutions for breast cancer care. In 2011 Philips acquired the full field digital mammography (FFDM) equiment product line from Sectra, Sectra MicroDose Mammography. With this acquisition Philips broaden its Women's Healthcare product portfolio with a unique digital mammography solution that enables breast screening with less burden to women in terms of X-ray radiation dose. The product portfolio consists of a unique digital mammography solution with excellent image quality, which makes it possible to perform mammograms with significantly lower radiation dose for women. We are located in Solna, Linköping and has 50 employees.

History:

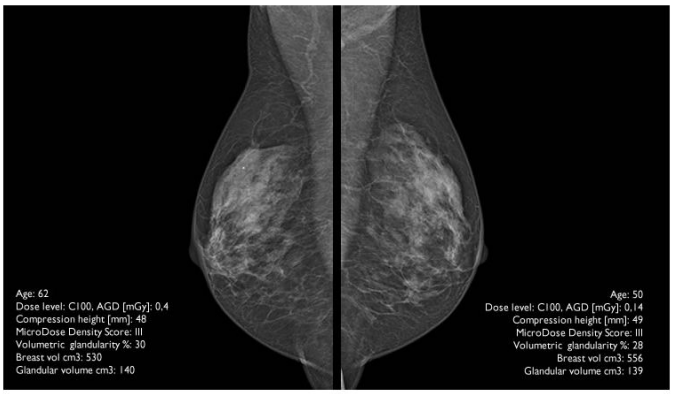
1993: Sectra digitizes radiology operations in Mjölby, making it the first in Sweden and among the first in the world with totally film-free radiology. Today, more than 1,700 hospitals use Sectra's system.

2002: Sectra launches the unique mammography system, **Sectra MicroDose Mammography**. Based on revolutionary **photon-counting technology**, the system has the lowest radiation dose on the market. To date, the system has been sold to customers in 15 countries.

2011: Sectra is selling the vast majority of its mammography division to Philips Healthcare for 57.5 million euros ($82 million U.S.)

MicroDose SI - Digital low dose spectral mammography

Philips MicroDose mammography SI with single-shot spectral imaging delivers proven dose efficiency, outstanding image quality, and non-invasive spectral applications in one fast and comfortable mammogram and is designed to be the platform for future advanced applications such as spectral tomosynthesis.



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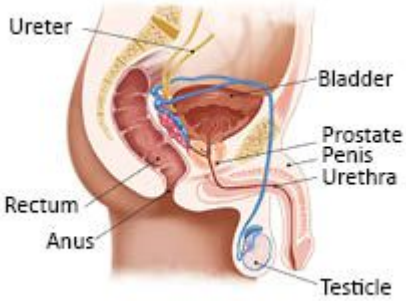
www.prostalund.com

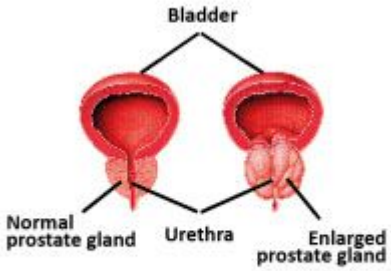
Thermotherapy Therapy for BPH treatment

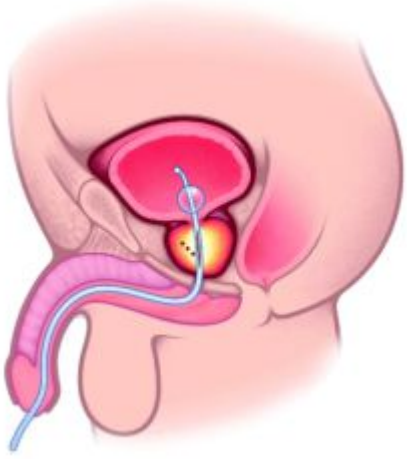
ProstaLund is a Swedish medtech company and a leading developer and manufacturer of innovative urological devices and treatments. CoreTherm is a patented Thermotherapy treatment method for BPH which can be tailored to suit the needs of each individual patient. CoreTherm is used today in hospitals and clinics in Sweden and worldwide.

What is CoreTherm®?

CoreTherm, earlier known as ProstaLund Feedback Treatment (PLFT) represents a further development of thermotherapy Therapy for BPH treatment. The medical literature refers to this minimally invasive method as (HE)TUMT (Transurethral Microwave Thermotherapy). A catheter equipped with an antenna that emits microwaves is inserted through the urethra. The microwaves heat the prostate tissue adjacent to the urethra causing cell/tissue death.







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PROXIMION www.proximion.com

Optical Fiber Bragg Gratings

Proximion was founded in 1993 with offices in Sweden, the U.S., and in Hong Kong. Proximion is the world leader in design and manufacturing of advanced Fiber Bragg Gratings (FBGs). We improve our customers' products and systems by bringing this versatile technology to challenging applications within telecommunications, heavy industry and aerospace. All around the globe, our customers benefit from our state of the art dispersion compensation technologies as well as advanced Fiber Bragg Gratings (FBG). We are readily available through our world wide sales channels to serve your request. As a fully owned subsidiary within the Hexatronic Group we offer our customers the stability and transparency of being listed at NASDAQ, combined with the immediacy and agility of an entrepreneurial company that provides innovative subsystems to market leaders within various industries.

State of the Art

Proximion offers the world's only FBG-based continuous Dispersion Compensation Modules (DCMs). Tens of thousands of units are deployed in networks worldwide, today compensating for dispersion in links that spans more than six laps around the globe. Our FBGs can be perfectly tailored to any customer requirement. Within telecommunication our products and solutions are today shipped in volume to the majority of the ten leading system vendors, which represent approximately 90 percent of the telecommunication market.

Loading of submarine cable at the port in Hudiksvall, Sweden.

We design, develop and manufacture products and systems within our three business areas:

- **Dispersion Compensation**
- **Optical Layer Monitoring**
- **Fiber Sensing**

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www.qlinea.com

Protein and Nucleic Acid Analysis

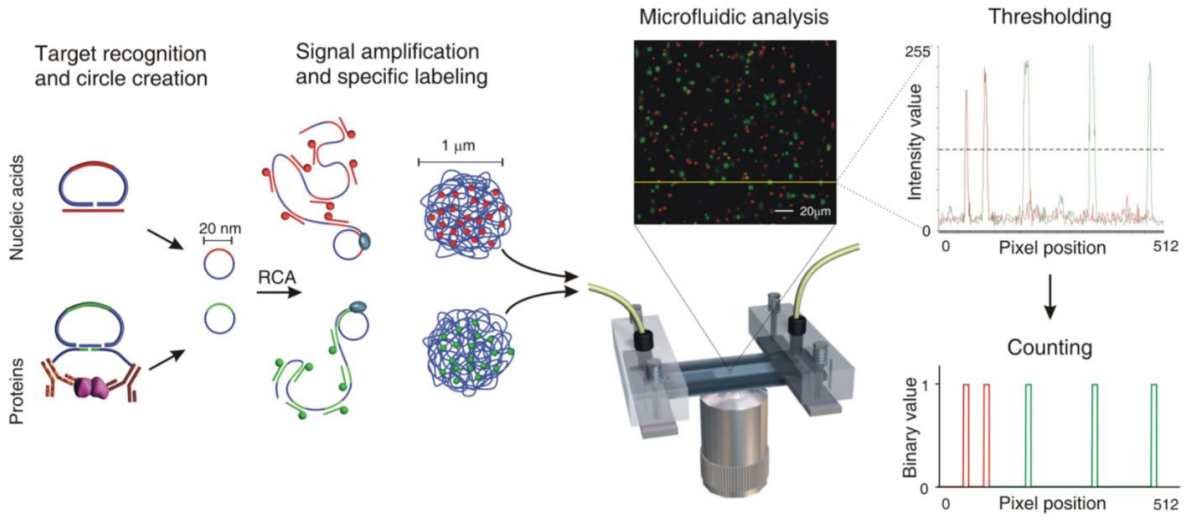
Q-linea was founded in April 2008 by scientists from the Rudbeck laboratory at Uppsala University, together with Olink AB and the Uppsala University holding company, UUAB. Since 2012 the company partnered with nxt2b, an Uppsala-based Investment Company founded by Bengt Ågerup. Dr. Ågerup is a well-known Swedish entrepreneur who previously founded Q-Med.Q-linea develops procedures, instruments, and systems for protein and nucleic acid analysis, particularly with applications in the field of microorganism detection and identification and for in vitro diagnostics.

Technology base

For biosecurity applications we have developed a technology system based on a universal platform for molecular sample analysis, offering detection of both proteins and nucleic acids. The molecular technologies are based on a solid scientific foundation described in > 200 scientific publications including Science, Nature Genetics, Nature Biotechnology, Nature Methods and PNAS among others.

Identification of nucleic acids is enabled by the padlock probe (PLP) technology, which combines high selectivity with quantitative response even in a high background of irrelevant nucleic acids. These virtues, together with the ability of the technology to enable highly multiplexed analyses paired with a limit of detection similar to that of PCR (polymerase chain reaction), makes it a powerful molecular tool compared to competing technologies. The technology is further suitable for random access type sample flow, enabling a high throughput platform occupying a small footprint.

In contrast to many other molecular diagnostic technologies, Q-linea's Aquila 1000 system uses a single end-point measurement. This means that each sample occupies the detection unit for a short time only. Therefore, the footprint of the instrument can be kept small while allowing a high sample throughput.



Contact:
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QUALISYS
Motion Capture Systems

www.qualisys.com

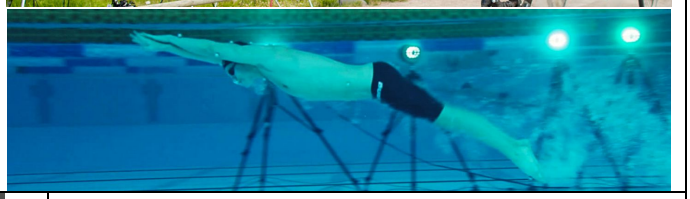
Optical Motion Capture Technology

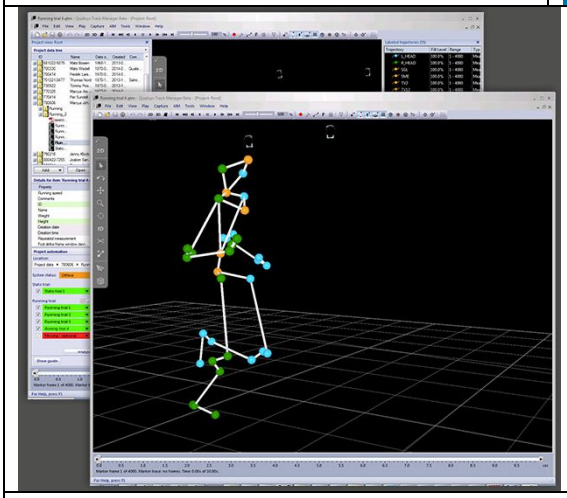
Qualisys is a leading provider of motion capture technology and has a long history of supplying research, engineering and sports facilities with high-end camera systems and expertise in capturing and analyzing movements. Qualisys offers a wide range of products and services and has offices in Gothenburg, Chicago and Shanghai. Our customers are found in the biomechanical research, sports biomechanics and medical sectors. Our systems are also used for engineering and specialized industrial purposes. Qualisys is certified according to ISO 9001:2015 and compliant with Medical Device Directive 93/42/EEC, which demonstrates our commitment to provide high quality products and services to our customers. The certifications reflect our ongoing investment in technology, process and people.

Our optical tracking technology, also known as optical motion capture, makes it possible to measure the position of very fast moving objects with extremely high accuracy. The technology consists of motion capture cameras, software and other hardware, designed and produced by our team of experienced engineers. Our technology is used by researchers, biomechanists, physicians and engineers from all over the world. However, anyone that's interested in getting objective information about how things move can benefit from our technology. For example, our motion capture systems can be used to find and prevent injuries, improve performance in biomechanics and help engineers build better products and increase production efficiency.

Qualisys Track Manager

- 2D / 3D / 6DOF data tracking
- Marker / High-speed video data
- Real-time streaming & SDK
- AIM - Automatic Marker Identification
- Marker masking
- Passive & Active markers
- 3D Video overlay
- Site license





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Phone: +46 (0)31 336 94 00
Fax: +46 (0)31 336 94 20
E-mail: sales@qualisys.com

High Performance Fibers for Fiber Laser Applications

RAYBIUM is a supplier of rare-earth (RE) doped fibers for fiber laser applications. Our core competence is development of high performance RE-doped silica fibers for e.g. OEM integration. RAYBIUM now offers a new type of ytterbium doped silica fibers meeting high demands on efficiency and reliability (high photodarkening resistance). The fibers are available in several standard dimensions including both PM- and non-PM versions. We also provide other RE-doped fibers on request (erbium, thulium).

RB980 Fiber Laser at 978nm wavelength at 5W.
www.raybium.com/downloads/Fiber_Laser_RB980_1001.pdf

RAYBIUM now offers a new type of Yb doped fibers for fiber lasers. All Yb doped fibers are based on aluminosilicate glass which are known for its:

- Good mechanical strength and thermal properties
- High absorption and emission x-sections
- Low background loss
- High efficiency

Yb-doped fibers for high power laser applications in the 1030-1100 nm range.

A new series of Yb-doped fibers for short wavelength applications 975-1010 nm are scheduled to introduced later this fall.

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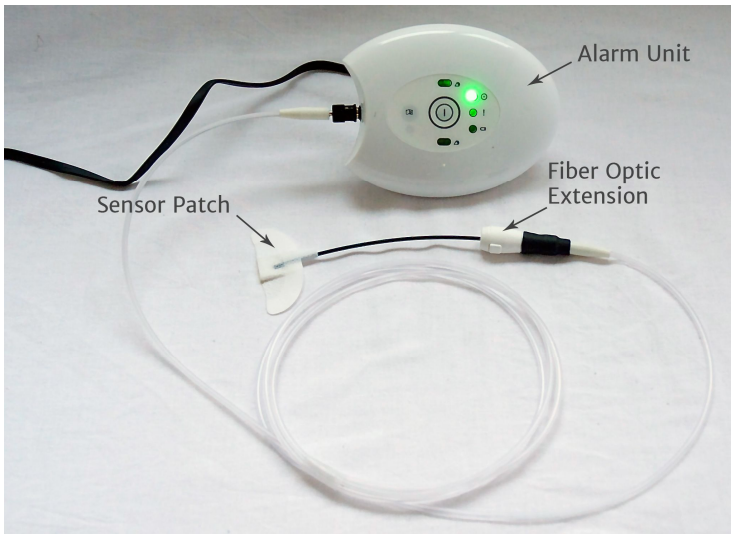
SE-851 70 Sundsvall, Sweden
E-mail: info@raybium.com

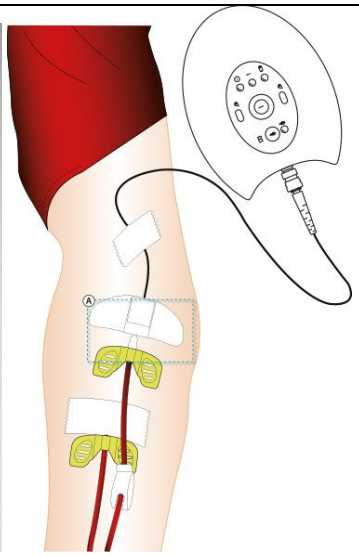
REDSENSE medical

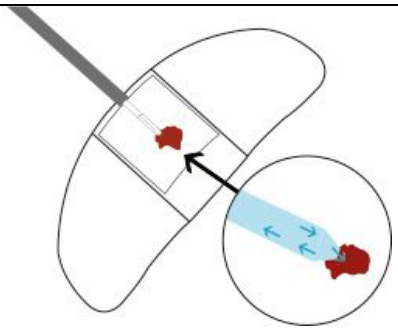
www.redsensemedical.com

Fiber Optics Blood Loss Detection

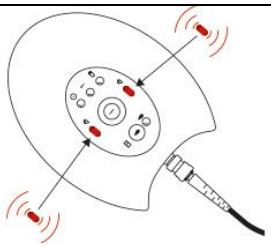
Redsense Medical began as a project in 2000 with the goal of developing the first monitoring system for venous needle dislodgement during HD, and in 2006 it was incorporated into the legal entity Redsense Medical AB. The Company was founded as a spin-off from the Swedish company Innovation Team, which is a well-established design company within the medical device sector, to develop and commercialize its proprietary technology. Our vision is to save lives by detecting blood loss, using a core technology that utilizes fiber optics. Our main objective within the field of hemodialysis is to save lives by improving the safety for the patients and caregivers, by raising awareness about the issue of unnoticed blood loss and to provide Redsense as a solution - a blood loss detection device that is designed to alarm on blood leakage from the venous blood access. The concept of using an optical sensor to detect bleeding is one with many applications. For this reason, Redsense is patented as a method of detecting blood loss from the human body not just for hemodialysis. Redsense Medical has a broad patent portfolio.







The Alarm Unit sends light through the optical fiber, to the tip of the sensor and back again. The sensor patch is placed directly over the puncture hole where the venous needle returns purified blood to the patient from the dialysis machine.



Light leaks from the fiber end. The leakage of light increases if blood comes into contact with the fiber end. Redsense will alarm on contact with blood onto the fiber optic end at the tip of the sensor. The Alarm Unit measures the returning level of light. If the level of light is suddenly reduced, the Alarm Unit sounds the alarm immediately.

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Web: www.redsensemedical.com

ROLLING OPTICS

www.rollingoptics.com

Micro optics a new level of security for the protection of brands

Founded in 2002 (although officially unveiled in 2005) Rolling Optics is the world-leader in developing innovative 3D micro-optical substrates for application or integration into packaging primarily as converted labels. Rolling Optics was born when co-founder and inventor Axel Lundvall (Co-founder and today CEO) was a research scientist at the Ångström laboratory at Uppsala University. It took 10 years of research & development to reach today's full scale production. We combine exceptional skills within design (packaging, graphic, industrial, experiential), micro-printing, chemistry and high-tech manufacturing to produce our unique micro printed 3D foils at our secure site here in Stockholm, Sweden.

Imagine real 3D within a thin flexible printed polypropylene. An optical material in high resolution, with a clarity and depth unmatched in the world today. That's Rolling Optics technology, a unique firm that blends ultra-high precision printing technology with world-class design capability.

Instant recognition: Our features are instantly recognized by anyone. This is the main advantage compared to other technologies requiring no specific lights, angles or tools to verify.

Design as security feature: Great design flexibility allows for combining aesthetically superior solutions and high levels security in one simple package. Added levels of security can be added both at the overt, covert and forensic level to fit the final application.

Emerging technology and disruptive innovation: Our technology has been developed over 15 years with cutting edge laboratory research leveraging a range of scientific & technical disciplines. This creates an effective barrier to counterfeiters.

Unique & closed access to manufacturing technology: Our proprietary production system is located at our own secure premises in Stockholm, Sweden.

Unique knowledge of specialist disciplines: We understand the requirements for creating a complete secure solution and can combine elements of security and design to produce the optimal solution.

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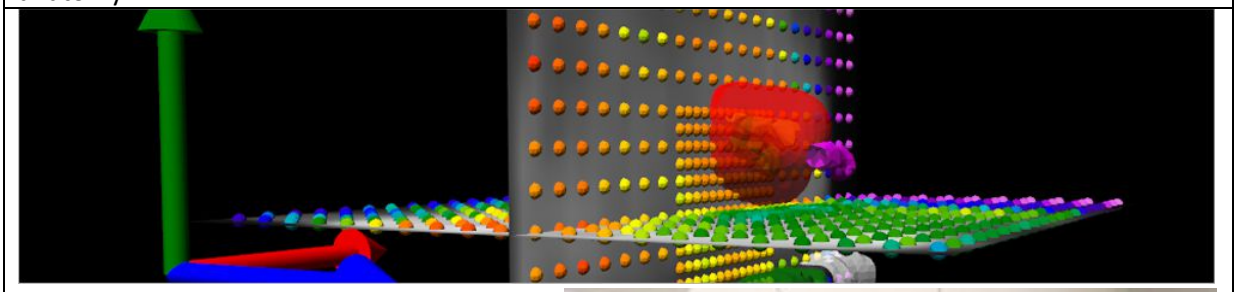
ScandiDos

www.scandidos.com

QA and Dosimetry for the modern Radiation Therapy

ScandiDos - headquartered in Uppsala, Sweden and with offices in Madison (WI, USA) and in Beijing (China) - is the world leader in QA and Dosimetry for the modern Radiation Therapy. The company provides unique measurement systems and software that are designed for the requirements for QA and validation of the new dynamic and modulated treatments that is being implemented in clinics around the world. ScandiDos shall improve the treatment of patients with cancer worldwide by reinforcing the confidence in radiotherapy clinics using innovative solutions that further individualize the radiation treatment, making the process safe and efficient.

Until now it has been very hard to perform on-line dosimetry (patient dosimetry or InVivo dosimetry) with a decent quality level in the advanced RT but now ScandiDos has the unique solution in the Delta4 Discover system. The **Delta4 Phantom+** system offers the most accurate and most efficent verification of your IMRT, VMAT and TomoTherapy plans. The Delta4 Phantom+ system is the only system that actually measures the dose distribution in the isocentric region. You can thereby instantly approve the plans as you know how much dose that is delivered in the target and the OAR's. The Delta4 Family is the complete solution for both Pre Treatment and At Treatment dose verification covering all modern treatment technologies VMAT, IMRT, SBRT, 4D-RT and TomoTherapy. With all QA based on real measurements you can be confident that the dose delivered to your patient also is what you had planned. During 2015 we released our new version of **Delta4DVH anatomy**, a software that makes it possible to view the measured data in patient anatomy.



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E-mail: info@scandidos.com

CEO and founder Görgen Nilsson

Visiting address:
Dag Hammarskjölds väg 52A
752 37 Uppsala, Sweden

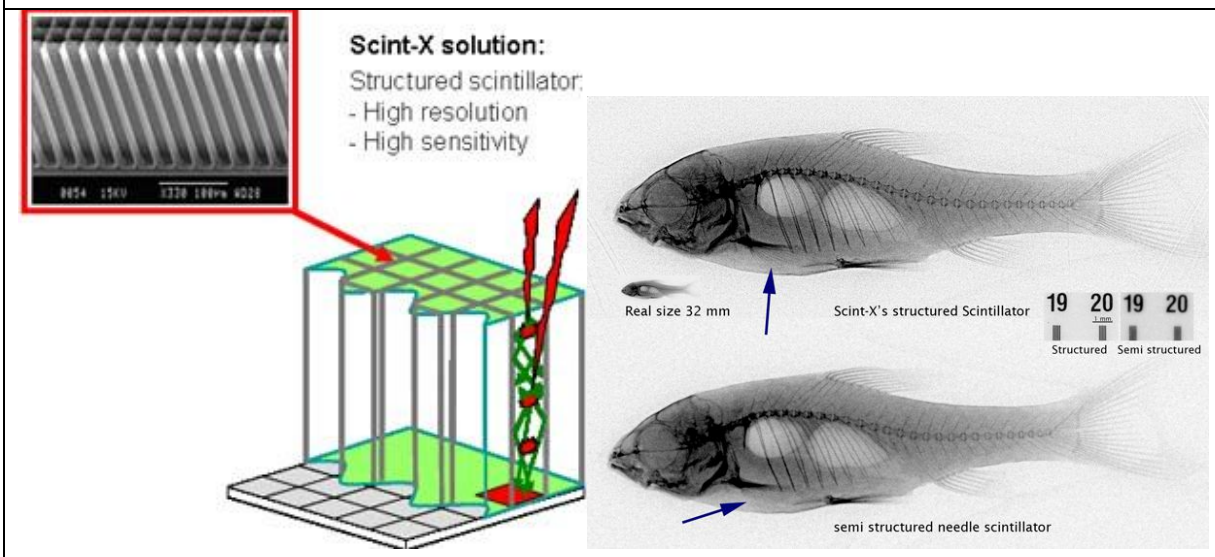
SCINT-X
STRUCTURED SCINTILLATORS

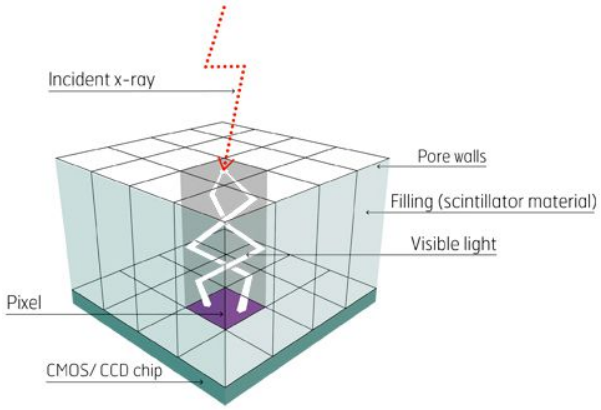
www.scint-x.com

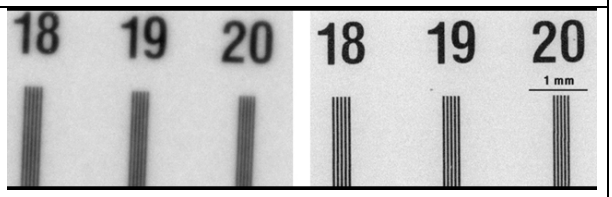
Structured Scintillators for Digital X-Ray Detectors

Scint-X offers cutting-edge structured scintillators that enable digital x-ray detectors to produce images with 4x the resolution and double the contrast; an unprecedented level of quality. No other scintillator technologies on the market can make the same claim. The uniqueness of the structured scintillators made by Scint-X is unmatched. Scint-X was founded in January 2007, and our technology was developed and patented at The Royal Institute of Technology (KTH) in Stockholm, Sweden.

X-ray imaging is used as an important tool in many applications, for example in medical examinations and industrial radiology. Digital X-ray sensors are replacing photographic film, offering higher sensitivity and a much more efficient way of handling and processing image content. As a conventional detector (CCD, CMOS or TFT) only detects visible light, a scintillator is needed to convert the X-ray signal into one that is detectable by the sensor. Scint-X has a unique and patented way of fabricating a structured scintillator, which significantly improves detector performance.







The images above show a line pair grating with up to 20 line pairs per mm. It clearly illustrates the difference in image resolution and contrast captured with two different scintillators: a semistructured needle scintillator (left) and a structured scintillator from Scint-X (right).

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E-**mail**: info@scint-x.com

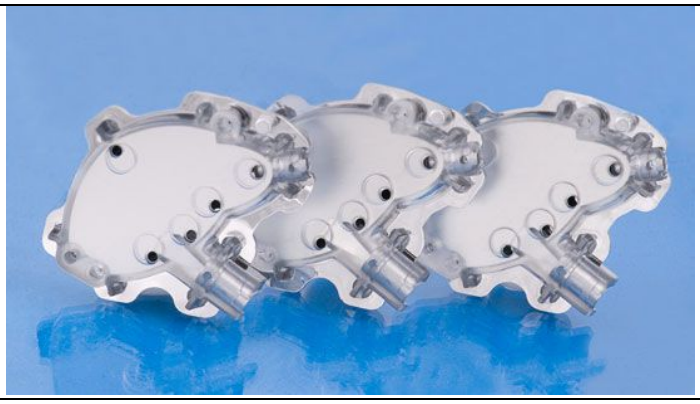
CEO James Quinn

www.senseair.com

IR Gas Sensors

SenseAir is an innovation-based sensor company and a world-leading manufacturer of infrared carbon dioxide (CO2) sensors and controllers. One of our major markets is building automation where SenseAir sensors control individual fans, dampers, valves etc. In addition, complete air-handling and air-conditioning units help us create a better indoor environment and energy savings. SenseAir is a centre of excellence for all kinds of IR gas measurements. Started in 1993 with over 20 years' experience SenseAir has become a world leader in the field of infrared gas measurement technology. The measuring cell has been improved and is based on cost-effective production technique. SenseAir holds a great number of patents relating to its proprietary measurement technique. SenseAir´s Quality Management System is certified with ISO 9001: 2008 and the Environmental Management System is certified with ISO 14001:2004. SenseAir has today sales & technical support offices in Sweden, China and the USA. The head office is located in Delsbo, Sweden where production and quality control is carried out.

CO2 Engine introduced in 2003, constitutes an example of SenseAir's new diretion of development, which is: extreme cost optimized sensors tailor-made for high volume built-in applications in a varietyc of different kinds of consumer oriented products. In 2005 a new slimmed high volume production line was started up, with a capacity of more than 8000 sensors a day, for producing Kerosene heater fresh air safety valves. This was the first successful example worldwide of producing advanced and precise IR gas sensors at very high numbers for an extremely cost sensitive application. Consequently, in order to meet the demand, SenseAir is constantly expanding the production capacity and the company is currently growing very fast.



The unique SenseAir Technology is based on the principle of **infrared (IR) absorption of radiation**, called the **non-dispersive infrared (NDIR) technique**. Gas molecules are absorbing radiation (electromagnetic energy) at spectral regions where the radiated wavelength matches internal molecular energy levels. By detecting the amount of IR radiation absorbed within a narrow band, one gets a measure of the number of gas molecules, free from interference of other species. SenseAir has a long experience in CO2 measurements. Nowadays, we are also targeting other gases.

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SERSTECH
Chemical intelligence solutions

www.serstech.com

Chemical Identification by Nanotechnology and Spectroscopy Techniques

Serstech combines cutting-edge nanotechnology and spectroscopy techniques with advanced algorithm know-how to bring convenient chemical identification to customers around the world. Our instruments are robust, compact and portable, and can be used without special skills or training. Leveraging our cloud solutions for data sharing, Serstech users can join forces and build banks of data that will transform the work of chemical professionals globally. It all began in 2002 at the Technical University of Denmark where an extremely small spectrometer was developed by a team led by Prof. Jörg Hübner in the Department of Nanotechnology. Jörg met a team of Swedish entrepreneurs and together they started Serstech in 2006 with a vision of making spectrometer sensors as common as smoke detectors.

Jörg Hübner, who miniaturised the spectrometer said *"One day, I hope spectrometers will be as common as smoke detectors."*

Serstech's **Raman Indicator** is a state-of-the-art handheld analytical instrument very convenient for on-spot identification and verification of Chemical Weapon Convention related chemicals, explosives and contraband drugs, amongst other materials. Small dimensions, robust outfit and quick response make it the choice when challenging environments are anticipated. With the new on-line system, ChemDash, the users can collaborate in a much smarter way, which is needed to keep up with the ever evolving threats.

Explosives

Rapidly discover the presence of explosives or the precursors used to make explosives. We make a difference on the crime scene:

- Easy setup and instrument connectivity
- You can rapidly discover the presence of explosives or the precursors used to make explosives.
- ChemDash make it possible to analyse and share information with colleagues.
- It's easier to brief on the status and it provides an overwiev of evidence provided.

Fielding analysis capability with the front-line inspectors

- Gives capability to identify chemical substances directly to the men and women with the qualitative method to search for drugs.
- Reduces the time it takes to make a decision, such as whether or not to clear a shipment, seize goods, or arrest someone.
- Helps to maximize the flow of goods and people.

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Phone: +46 46 255 112
E-**mail**: info@serstech.com

www.silexmicrosystems.com

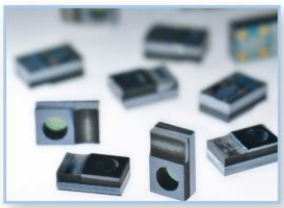
Experts in MEMS Manufacturing

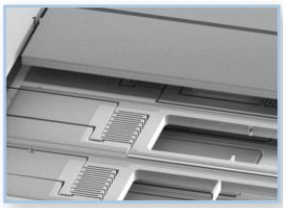
Silex Microsystems is the world's leading pure play MEMS foundry. **MEMS** is an acronym for **Micro Electro Mechanical Systems**, which are complex mechanical and electrical systems built in micro scale on one single chip. There are three main categories of MEMS: sensors, actuators and basic three-dimensional structures. Sensor based MEMS that determine pressure, speed, direction, position, temperature and light, are used in the automotive, life sciences and consumer electronics industries. Actuators work through movement and are found in optical switches, RF switches and micro robots. And typical applications for static three-dimensional MEMS structures are micro-needles and lab-on-chip products. Since our beginnings in 2000, Silex has been a dedicated manufacturer of customized MEMS products, operating as an independent MEMS foundry. We offer unparalleled processing power in the world's first dedicated eight-inch pure play MEMS foundry fab. The investment holding company GAE Ltd has acquired 98% of the shares in Silex Microsystems. The transaction took place July 13th 2015 when the former major shareholders CapMan, Priveq, Northzone and Startupfactory agreed to sell 100% of their respective holdings in Silex Microsystems. GAE Ltd is a Hong Kong based investment holding company set out to invest primarily in the semiconductor industry.

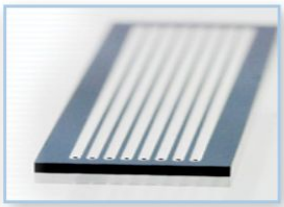
Our goal is to be the industry's most advanced and efficient provider of MEMS foundry services.

By leading the way in technology and offering truly cost effective manufacturing, we help customers take the full advantage of MEMS. Our superior knowledge of MEMS processing and our advanced production technology are key to serving our customers and contributing to their successful products. Silex is the first pure-play MEMS foundry to offer its customers a Class 1-10 200mm fab, with state of the art equipment and capabilities.

Accelerometers
Gyros
Pressure Sensors
Cantilevers
Touch Membranes
Flow Sensors
Humidity Sensors
Filter Structures
CMOS Interposers
Needles
uBatteries
RF Switches







IR Sensors
Microfluidics
Micro Sieves
Microphones
Lab-on-Chips
Print Heads
Drug Delivery Devices
Mirrors
Optical Benches
Optical Accels
Resonators
Oscillators

Headquarters
Silex Microsystems AB
P.O. Box 595
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SE-175 26 Järfälla, Sweden
Phone: +46 (0)8 580 249 00
Fax: +46 (0)8 580 249 01

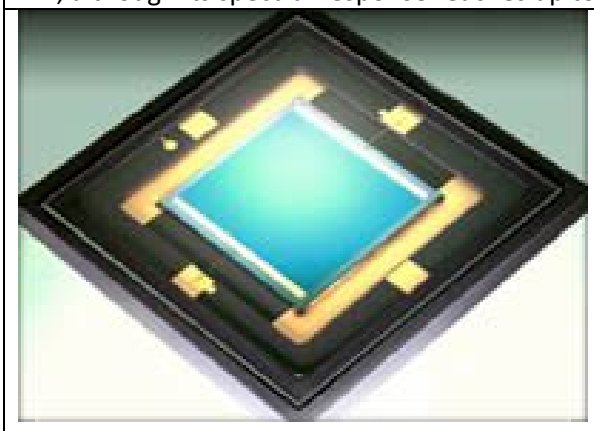
CEO Edvard Kalvesten

www.sitek.se

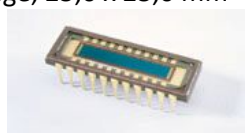
Position Sensing Detectors (PSDs)

SiTek Electro Optics designs, manufactures and sells state-of-the-art position sensing detectors (PSDs) of the highest value and quality, with the focus on the customer. The discovery of the lateral photo effect by Prof. J.T Wallmark and the development of the Position Sensing Detectors (PSD) during the sixties led to the foundation of SiTek Laboratories AB in 1976, with the aim of exploring commercial applications for the technology. Foundation took place at the Chalmers University of Technology in Gothenburg, Sweden and in the beginning production was carried out by the founders working part time at the university's Institute of Solid State Electronics. Today, more than 25 years later and in a constantly expanding market, SiTek has gained a worldwide reputation as a constantly developing manufacturer of advanced PSDs. Outstanding linearity, high resolution, high speed and excellent product quality are the main features of the SiTek products, valued indeed by top-range optronics customers. Important year in the history of SiTek was 1984. The founding company was bought by an investment group and moved to modern facilities in Partille - a suburb to Gothenburg - where a new cleanroom, together with all other necessary equipment for production and development of PSDs was based.

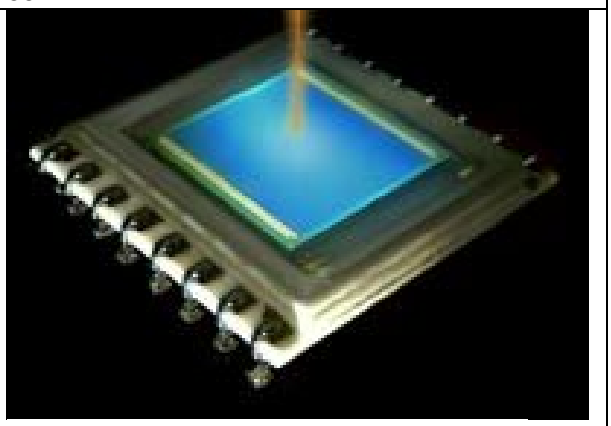
The SiTek Standard PSD (Position Sensing Detector) has high resolution, fast response and outstanding linearity. It is used in a wide variety of applications, most of them utilizing light sources in the visible or near-infrared part of the spectrum. The spectral range covers the region 400 - 1100 nm. Thanks to SiTek's proprietary AR-coating, optimized around 860 nm, a reflection loss of only 2% is achieved around the responsivity peak. Most of the detectors have a cover window to avoid handling damages. The UV PSD is a detector optimized for use in the UV wavelength region 200-400 nm, although its spectral response reaches up to 1100 nm.



A standard Two-dimensional PSD with 4-pin ceramic package, 25,0 x 25,0 mm



A standard One-dimensional PSD with 22-pin DIL-package, 31,8 x 9,9 mm



SiTek SPC-PSD (Signal Processing Circuit) In order to facilitate the operation of our PSDs, we have developed a dedicated signal processing circuit. All components necessary to obtain the sum and difference signals from a two- or one-dimensional PSD have been concentrated on a 20,5 x 20,5 mm^2 thick film substrat.

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Contact person:
CEO Conny Nordin

smartoptics

www.smartoptics.com

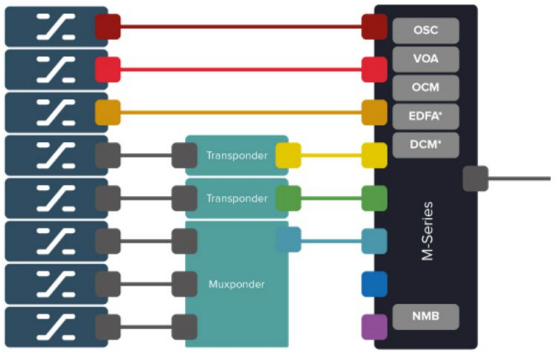
Optical Network Solutions

Smartoptics designs and enhances existing optical fiber optic networks through CWDM and DWDM based solutions. WDM stands for “Wavelength Division Multiplexing”, Coarse or Dense depending on the amount of data. CWDM allows up to 18 traffic channels, DWDM allows up to 80 with capability of longer distances. It’s a technology that increases bandwidth by sending different data streams at different frequencies over a single dark fiber network. Our solutions focus on providing simple and cost effective enterprise grade solutions instead of complicated telecom grade solutions that are over the top in terms of price and complexity.

Transporting huge chunks of data over a dark fiber is expensive and complex right? Wrong. Smartoptics has a plug and play solution for all network scenarios. No matter how big. Or small. Many channels. Or few channels. Our solutions are ideal for corporate data centers, campuses and the enterprise in general: Easy to buy. Easy to install. Easy to maintain.

From airlines to hospitals. Banks to governmental organizations. Smartoptics helps organizations large and small keep up with the expanding demand of data flow. Our multi-channel optical fiber transmission solutions are the technology of choice in a range of sectors. That’s because they are simple, cost effective, scalable and future proof. And enable huge amounts of data traffic to be transported over a dark fiber network. Smartoptics solutions are simple to design and install lowering both capital and operating costs.

DCP-101 is a low power 100G transponder with front to back or back to front cooling. It has a QSFP28 client port that accepts all standard transceiver types including DAC (Copper) cables. Copper cables on the input remove much of the transceiver and cabling costs as well as dirty connector problems. The line uplink is a coherent CFP; one interface for metro and long haul applications.



True open line networking. Any combination of transponders, muxponders and embedded DWDM transceivers. Existing fiber optical networks can be easily upgraded with new services instead of building new systems from scratch. 40 and 100G services can easily be added to existing CWDM or DWDM networks previously optimized for 10G traffic.

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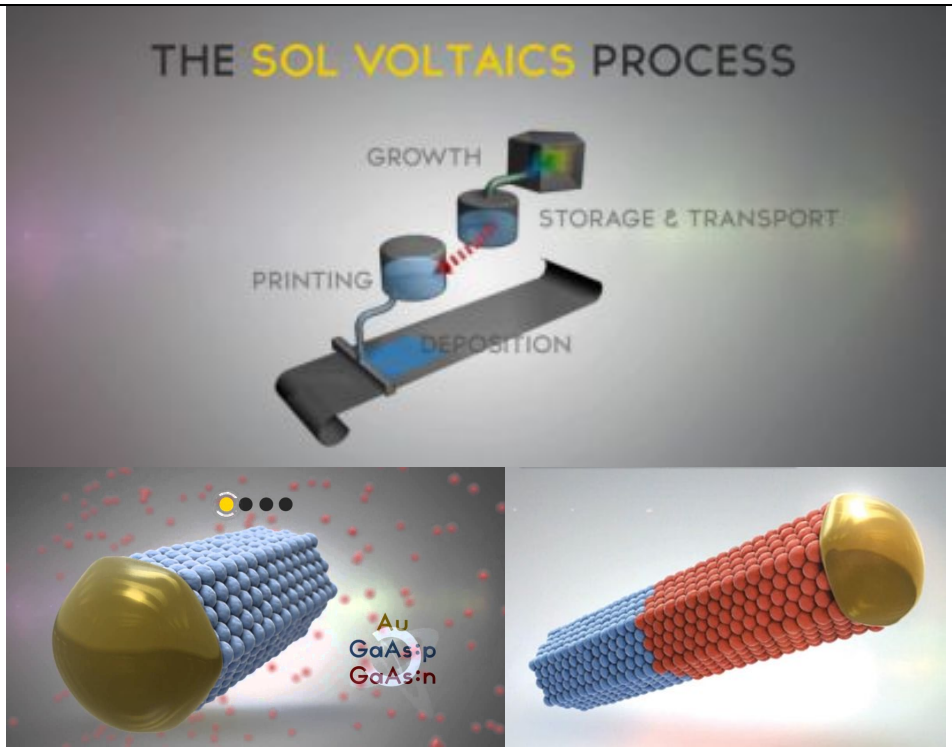
Nanowire Film for Solar Panels

Sol Voltaics AB was founded 2008 by world renowned nanotechnology expert Lars Samuelson in Lund Sweden with the focus to improve the efficiency of energy capture, generation and storage using miniscule amounts of novel nanomaterials. Sol Voltaics pioneering nanowire technology has been developed at the Nanometer Structure Consortium where we enjoy a uniquely close cooperation with scientists at Lund University. Sol Voltaics is a spinout of QuNano AB, a company created for commercialize research from Lund University. The solar market is the first focus of Sol Voltaics which has taken the seeds of basic nanotechnology research and applying it to dramatically improve the efficiency of solar panels at prices competitive to crystalline silicon.

Nanowire researchers along with Sol Voltaics engineers demonstrated Wave Concentrated Photovoltaics (WCPV) in 2012. This concentrates the light waves by guiding those waves into the nanowires for absorption, with no mechanical or optical assistance. Sol Voltaics engineers then focused on the development of materials and processes for mass production of these high-performance nanowires. The result is high efficiency GaAs based nanowire films that will boost efficiencies of solar modules by greater than 50% at highly competitive costs. Gallium arsenide has been used in performance-category solar modules for years because of its high conversion efficiencies. The challenge has always been its high cost relative to other solar materials. The photonic effect of our nanowires and the low cost of Aerotaxy production of Solfilm™ minimizes the cost by dramatically reducing the amount of gallium arsenide and other expensive materials required to generate electricity. The gallium arsenide nanowires in Solfilm™ consist of only a small number of atoms, but are fully-functioning solar cells. Sol Voltaics is commercializing the process technology and materials to realize the promise of much better price-performance solar cells and panels, where all parts of the business can prosper while promoting a clean, solar energy future.



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SOLIBRO

A Hanergy Company

www.solibro-solar.com

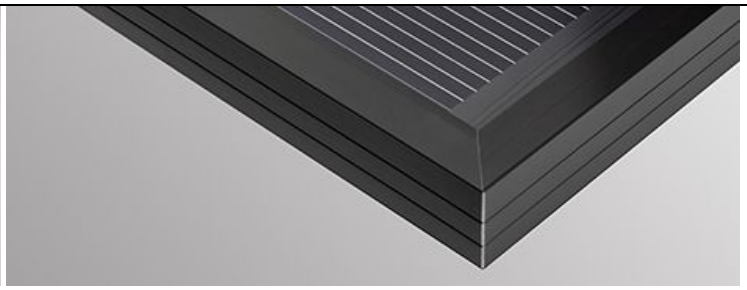
CIGS Solar-Cells

The solar cell company Solibro Research AB offers research and development of system design of solar modules. Solibro has made the long journey from academic research through a start-up company to being a part of a big multinational industrial group. As of September 2, 2013, Solibro Research AB operates as a subsidiary of Apollo Precision (Kunming) Yuanhong Limited. Apollo Precision (Kunming) Yuanhong Limited manufactures equipment and turnkey production lines for thin films solar modules. The company is based in China, and operates as a subsidiary of Hanergy Solar Group Limited.

Solibro Research remains based in Uppsala with some thirty employees. Solibro AB was founded in 2003 by Professor Lars Stolt and some of his coworkers at Uppsala University's Ångström Solar Center. Their goal was to commercialize a special technology for the development and manufacturing of solar cells based on a material called CIGS – Copper Indium Gallium Selenide. The CIGS modules are composed of layers of very thin films applied on glass.

SL2-F - THE FRAMED PANEL FOR ROOFTOP INSTALLATIONS

Efficiency	Up to 14.8%
Power	Up to 135 Wp
Dimensions	1196.6 mm x 796.1 mm x 30 mm
Weight	18.1 kg
Front cover	4 mm tempered low iron glass with AR coating
Back cover	3 mm float glass
Frame	Aluminum frame, black



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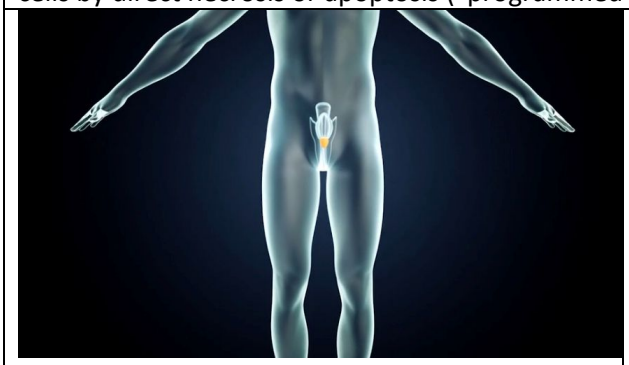
SPECTRACURE

www.spectracure.com

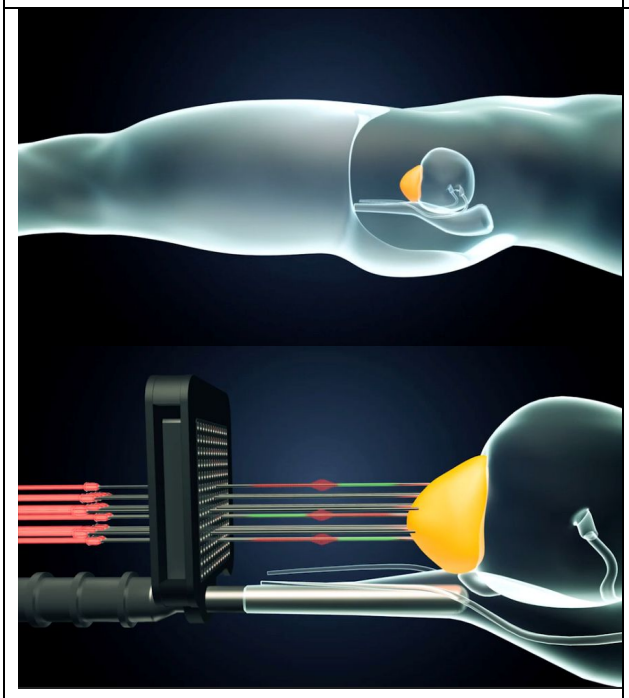
Cancer Treatment by Interstitial Photodynamic Therapy (PDT)

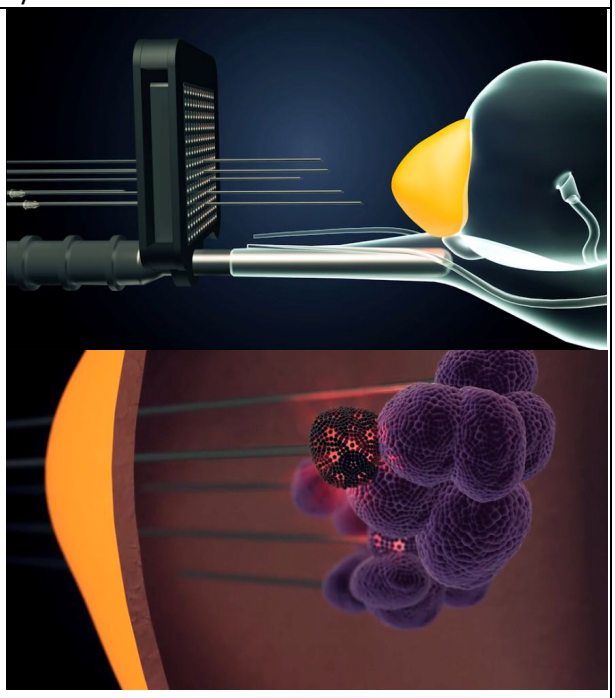
SpectraCure was founded in 2003 as a start-up from the Department of Atomic Physics and the Lund Medical Laser Centre at Lund University, Sweden. The founders, professor Stefan Andersson-Engels, professor Sune Svanberg and professor Katarina Svanberg, now serve on the board of directors. SpectraCure's technology is based on more than 25 years of scientific research in photodynamic therapy (PDT), combined with clinical experience from more than 2,700 PDT treatments of superficial cancer lesions at Lund University Hospital.

SpectraCure focuses on cancer treatment using medical laser devices, in combination with photo-reactive drugs – photosensitizers. The method is called interstitial PDT. Interstitial PDT can be used for solid tumors in internal organs, such as cancer in the prostate, pancreas, and the head and neck area. The proprietary dose control software IDOSE® provides safe, precise and efficient PDT treatment of tumors in internal organs. When the photosensitizer is activated by the laser light, in the presence of oxygen in the tissue, highly reactive, short-lived singlet oxygen and other oxygen radicals are formed. Singlet oxygen quickly reacts with biomolecules. These reactions destroy cancer cells by direct necrosis or apoptosis ("programmed cell death").



Several research groups in USA, Canada and Europe have pursued research in PDT treatment of cancer in internal organs, such as prostate. A few hundred prostate cancer patients have been treated using PDT at various university hospitals with promising results. Widespread clinical adoption of the method has been hampered by the difficulty of exposing the cancer tumor to the correct light dose to achieve sufficient effect. SpectraCure has developed the dose planning system IDOSE® to this end.





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Irradia®
Kirurgiska och medicinska lasrar

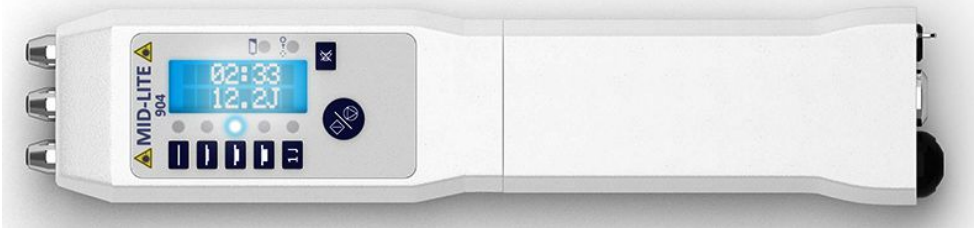
www.irradia.nu

Medical Laser Equipment and LLLT (Low Level Laser Therapy)

Irradia AB is a Swedish medical – technical company that specializes in medical laser equipment and LLLT (Low Level Laser Therapy). We have over 30 years of experience and our devices are developed and manufactured in Sweden, by Irradia. Medical lasers can be used to, for example, reduce swelling, inflammation and promote healing. The treatment is non-invasive, as the laser is applied exclusively to the surface of the skin. Irradia's medical lasers are professional instruments, developed to deliver optimal treatment results. They are designed to be safe and easy to operate, allowing for simple journal keeping.

MID-LASER - Stationary laser suitable for clinic use

MID-LASER It consists of a table unit (base unit) to which different laser handsets (laser probes) are connected. The base unit controls the system's drift function while treatment is performed with the laser handset. MID-LASER has four control buttons which are used to control the laser energy input when treating superficial to deep-lying problems (e.g. skin/sores, tendons or joints and muscles). Laser settings can be set individually for each connected laser handset. Using both displays, it is simple to keep journals stating what has been used in treatment, as well as wavelengths, energy effect, time and joule.



MID-LITE – Hand-held battery-powered unit. Small and easy to carry. MID-LITE is a professional medical laser, developed to be easily used and transportable. It is easy to take with you when working out of doors, when visiting patients or even in the clinic. MID-LITE has four control buttons which are used to set the amount of laser energy needed when treating superficial to deep lying problems (e.g. skin/sores, tendons or joints and muscles). MID-LITE has two or three laser diodes, which provide quicker treatments when compared to other battery driven lasers with only one diode.

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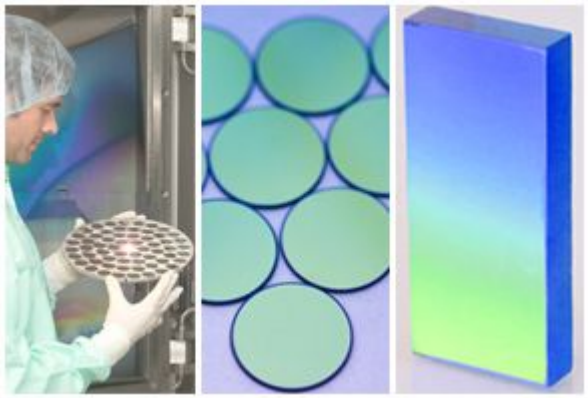
SPECTROGON
Optical filters • Coatings • Gratings

www.spectrogon.com

Spectrogon manufactures and develops optical filters, thin film coatings, and holographic diffraction gratings. The company continuously improves production techniques and craftsmanship in order to supply our customers with state of the art products. Spectrogon derives its origin partly from research conducted at the Royal Institute of Technology, a leading Swedish technical university, and partly from research and development projects at AGA AB, a former major Swedish industrial group. In 1980 we became AGA Optical, which eventually became Spectrogon in 1984. Spectrogon AB became an independent company on June 28, 1991. Spectrogon has established operating businesses in three different countries:
Spectrogon AB headquartered in Täby, Sweden, is housed on two sites totaling 3,600 square meters modern manufacturing facilities for thin film and grating products employing 67 persons for R&D, production, sales and marketing in Europe, Asia and Australia
Spectrogon UK, Ltd., in Scotland, UK, is a wholly owned subsidiary employing three persons for sales and marketing in Great Britain, Ireland, France, Netherlands and Belgium
Spectrogon US, Inc., in New Jersey, USA, is a wholly owned subsidiary and employs four persons for sales and marketing to the American photonics market.

Spectrogon's basic business concept is: "to provide competitive state-of-the-art optical components and sub-systems based on interference and/or diffraction for controlling light, primarily in measurement applications."

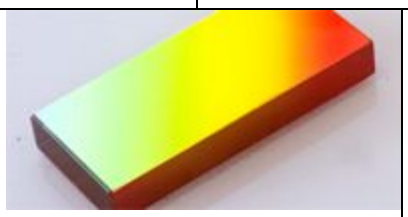


Optical filters

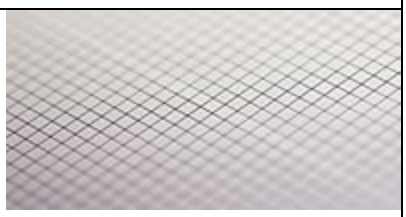
Holographic Gratings

Optical Coatings

We design and manufacture optical interference filters employing state of the art deposition technology and the most advanced design criteria available.



Applications in spectroscopy, telecom, and ultra-fast laser systems, our high efficiency diffraction gratings exceed our customers´ expectations.



Our coating service capabilities range from 193 nm to 20,000 nm includes: Antireflection coatings – High reflective coatings – Laser diode coatings – Beam splitter coatings

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www.agaria.se

Laser-Cleaning Equipment and Services

Agaria have more than 30 years of experience in developing methods and provide equipment for surface treatment of plastic and metal and of plastic welding industry in Scandinavia. We introduce new technologies that improve, enhance quality and streamline your production in the fields below.

- Partial cleaning with lasers, CO2 snow and atmospheric plasma.
- Pretreatment / surface activation / treating of plastic and metal with corona, atmospheric and low pressure plasma prior to adhesive bonding, marking, coating.
- Welding equipment for plastics, ultrasonic, thermal, vibrational, rotational, hot air and laser.
- Fire Technology - high pressure units for efficient fire gas cooling and extinguishing with water and foam injection.

We strive for a high level of service and can perform lab tests and various trials and tests. In our commitments are also offer service contracts, spare parts, training and financing. We work with customized solutions in close cooperation with our market-leading vendors and with the recently developed methods to assist our customers with the most optimal technology solutions.

CleanLasers laser cleaning / ablation provides powerful, very short, fast and variable laser pulses that create micro-plasma bursts, shock waves, and the thermal pressure resulting in the sublimation / vaporization of the layer that absorbs the laser beam. Metal surfaces are well suited for many laser cleaning tasks such as oxide removal, cleaning tools and cleaning of welds. Only coating residues or oxide targeted for removal is affected because the laser beam is precisely adjusted to not react with the underlying metal surface. This laser system is battery powered and can clean, remove paint or mark, even in small spaces. The system has a diode pumped laser source with an output of 20 watts. A comfortable backpack unit with frame makes it easy to work longer hours with laser cleaning.

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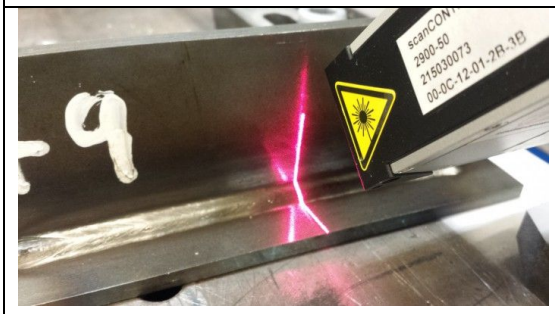
swerea KIMAB

www.swerea.se/kimab

Scientific Work for Industrial Use

Swerea is the Swedish Research Institute for Industrial Renewal and Sustainable Growth. Swerea KIMAB develops and improves solutions for materials and corrosion. We perform applied research with the focus on customer benefit. Swerea KIMAB is the oldest industrial research institute in Sweden, founded in 1921. Carl Benedicks and Axel Wahlberg, the director of the Materials Testing Laboratory (Materialprovningsanstalt), were commissioned by the Swedish Iron Masters' Association (Jernkontoret) to seek contributions from individual firms to set up an institute of metallography. In less than a year they collected 1,050,000 Swedish kronor with which to establish the institute. The largest contributions came from Uddeholm, Stora Kopparberg, SKF and Sandviken. The money was not sufficient, and the Riksdag, the Swedish Parliament, resolved at the suggestion of His Majesty The King "to provide the premises made available by the Materials Testing Laboratory of the Institute of Technology". In this way the Institute became a predecessor of the sector research institute in the 1940s. July 2004 saw the first step being taken towards the merger between Sweden's Corrosion & Metals Research Institute (KIMAB) and the Swedish Corrosion Institute to form a corporate operation. At the end of 2005, we took the second step by bringing both operations together into one company. Swerea KIMAB is a member of the Swerea Group.

At our new laboratories in Stockholm we can provide testbeds and demonstrators for developing and verifying production processes for optimized material performance. We have laboratories for modelling and simulation of manufacturing processes for advanced metallic materials as well as for for joining of materials. Process analytical monitoring is another area in which we have invested considerable effort in recent years, in both Sweden and France. Our virtual laboratory is a valuable resource for modelling and simulating manufacturing processes. One of our strengths is that we are able to verify experimental results in our own premises.



A new laser-based measurement system quality-assures welds online in production. The system reduces rejects and time spent on post inspections, and even increases opportunities for using high-strength steels where welds have previously been the weak points. Swerea and the Royal Institute of Technology, in collaboration with Swedish industry, have developed a new measurement system for quality-assuring welded constructions. With the new system, the complete weld geometry can be quality-assured both quickly and objectively.

Laser-Induced Breakdown Spectroscopy
Swerea KIMAB has developed a laser based technique (LIBS). LIBS is a rapid method for determining the elemental composition of various materials. It is a surface analysis method that requires no sample preparation. With a short laser focused onto the sample a small plasma is created that atomizes and ionizes a very small volume of material. The spark generated by the laser pulse emits element-characteristic light, that is collected and analyzed spectroscopically to determine the elemental composition.

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www.te.com

Connectivity and Sensor Solutions

TE Connectivity Ltd. designs and manufactures connectivity and sensor solutions for a variety of industries including automotive, industrial equipment, data communication systems, aerospace, defense, oil and gas, consumer electronics, energy and subsea communications. TE Connectivity (NYSE: TEL) is a $12 billion global technology leader. Our connectivity and sensor solutions are essential in today's increasingly connected world. We collaborate with engineers to transform their concepts into creations – redefining what's possible using intelligent, efficient and high-performing TE products and solutions proven in harsh environments. Our 72,000 people, including over 7,000 engineers, partner with customers in over 150 countries across a wide range of industries. We believe EVERY CONNECTION COUNTS –www.TE.com. In 2011, Tyco Electronics Ltd. changed its name to TE Connectivity.

TE Connectivity's products are a crucial part of an increasingly connected world. We can sense and connect data, power or signals moving through just about anything. We're delivering power and data more efficiently and allowing technology to more accurately react to the environment around it – no matter how challenging. And we're expanding the possibilities and promise of the Internet of Things, advancing the connectivity of devices, systems and services.

Heat, vibration, pressure, miniaturization, weight and other extremes are no match for our products. TE products are built to thrive in the toughest, harshest environments created by humans and nature. What we make works in severe conditions, from factories operating at full capacity to the crushing pressure of the deep sea. Well over half of our revenue comes from components made for harsh environments.

DIGITIZING FACTORIES FOR THE FUTURE

Today's factories are entering the digital era. But older equipment can be expensive to upgrade or replace. So we're working on a flexible solution that connects a machine to a network, enabling pieces of equipment to communicate with each other and with operators.

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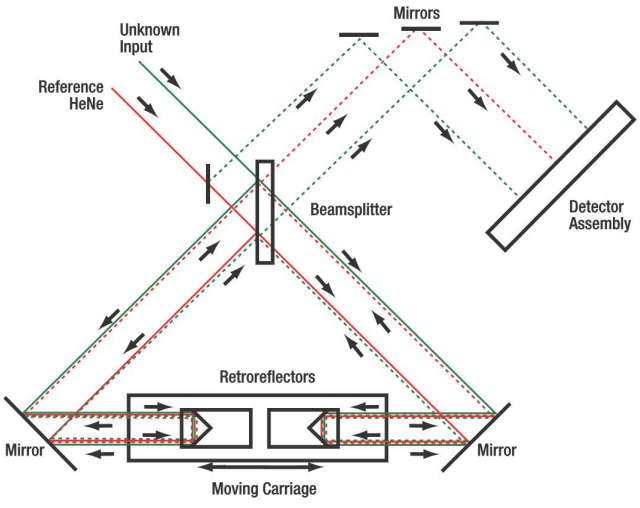
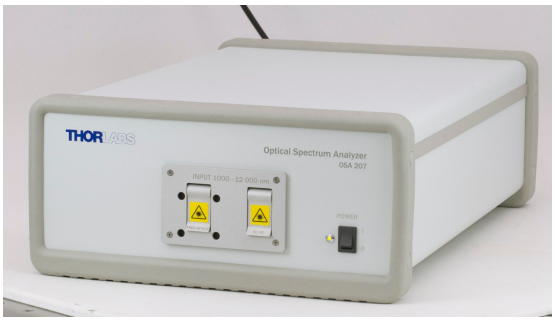
www.thorlabs.se

Founded in 1989, Thorlabs has its headquarters in Newton, New Jersey. This location is also home to our mechanics, optics, fiber, advanced systems technology, and advanced applications teams as well as one of our three distribution warehouses. On-site manufacturing allows us to customize our products quickly and efficiently to meet specialized customer requests. Our technical support team, call center, marketing, and web development teams make their homes in Newton as well, and are dedicated to providing comprehensive customer support and services. An international company with over 650 employees, Thorlabs has manufacturing and sales offices in the United States, United Kingdom, Germany, France, Sweden, Japan, and China. Founder, Alex Cable, worked at Bell Labs early in his career as a technician/engineer. In 1989, Alex left Bell Labs and formally founded Thorlabs. The Thorlabs catalog offers over 15,000 products to our broad based photonics customer base, 95% of those products are manufactured in one of the Thorlabs entities. 70% of the Thorlabs products are manufactured in the United States.

Thorlabs Sweden AB has extensive experience designing and manufacturing optical systems such as Objectives, Scan Lenses, Beam Expanders, Collimators, Spectrometers, and Fabry-Perot Interferometers. The team frequently collaborates with researchers and OEM customers alike to produce custom optical system designs and subsystems tailored to the individual's needs.

Broadband Spectrometer and Wavelength Meter in One - Visible, NIR, and MIR Spectral Analysis
Thorlabs' Optical Spectrum Analyzers obtain highly accurate measurements of the spectra of unknown light sources. They are continuously self-calibrated using a built-in stabilized reference HeNe laser and internal temperature and pressure sensors, ensuring repeatable, reliable results across time and differing lab environments.





Compact Interferometer with Precision Design.

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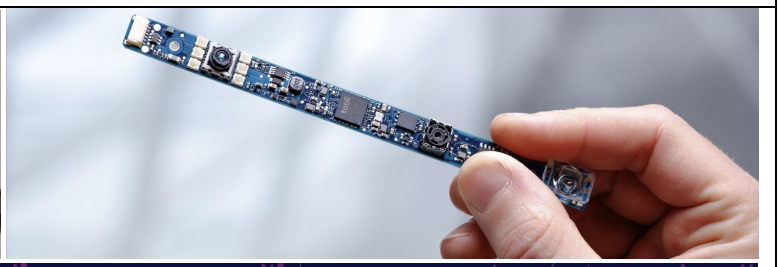
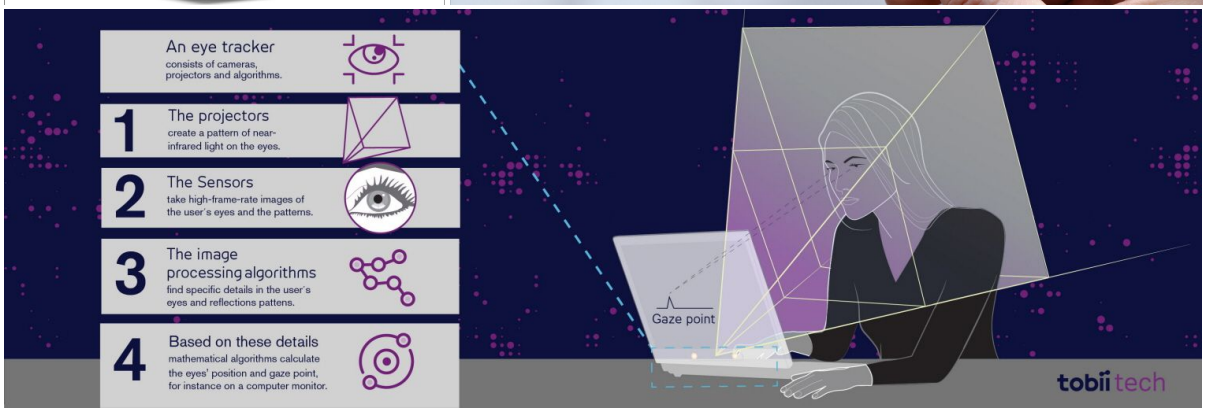
Eye Tracking

Tobii is the world leader in eye tracking. We transform industries and lives through humanized technology, using eye tracking as our core. Our vision is a world where all technology works in harmony with natural human behavior. Since opening its doors in 2001, Tobii has gone from a small Swedish 'garage' startup to the world leader in eye tracking. Today, listed on Nasdaq Stockholm and employing some 600 great Tobiians, we have come a long way, but not half as far as we will go. In 2007 Tobii acquired Viking Software AS, strengthening its position with industry-leading communication software for the assistive technology market, and in 2008 acquired Assistive Technology Inc., which strengthens its position in the North American assistive technology market. Tobii acquires DynaVox Systems LLC in 2014, which significantly strengthens Tobii's presence in the North American assistive technology market and adds touchscreen-based communication devices and market-leading special-education software to its product portfolio. In 2015 Ubisoft and Avalanche Studios are among the first large game studios to integrate Tobii eye tracking into major game titles such as Assassin's Creed Rogue PC and theHunter.

We are changing the way people interact with computers on a daily basis, and making advancements some people don't even dream of. Tobii has reached an exciting phase and is doing things that drive real change in everyday life. Innovation is the driving force at Tobii. We invent and develop high-technology products that literally change the world for many people. Tobii develops eye tracking technology, but outside our exquisite R&D teams, we have a whole worldwide team with many opportunities to explore.





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CEO Henrik Eskilsson

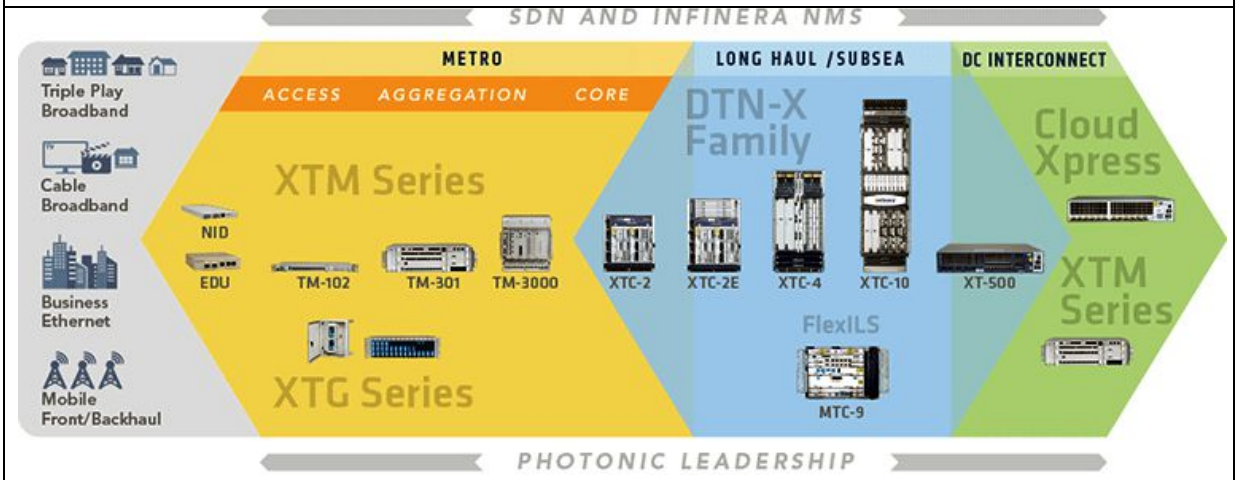
Org. No.: 556613-9654

TRANSMODE, AN INFINERA COMPANY

www.infinera.com

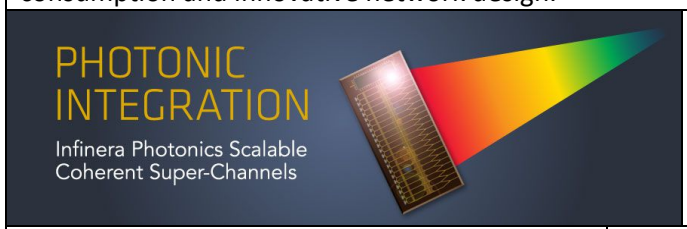
WDM Optical Network Solutions

Infinera – Redefining Optical Networking. As of August 20, 2015, **Transmode Systems AB** is part of **Infinera**. Infinera empowers network operators to scale bandwidth while accelerating service innovation and simplifying optical network operations. Service providers, cloud operators, governments and enterprises across the globe rely on Infinera Intelligent Transport Networks to create rich end-user experiences based on efficient, high-bandwidth optical networks. Infinera was founded with the vision of enabling an infinite pool of intelligent bandwidth that the next communications infrastructure is built upon. Infinera offers an end-to-end portfolio of packet-optical solutions for the long-haul, metro, and cloud. We believe that when our customers win, we win. Meeting customers' specific deployment needs and providing industry-leading customer support is in our DNA. Our business makes it possible to cost effectively address the capacity needs created by the rapid growth in video and data traffic. We are a contender in the global telecom market and work with hardware design, embedded software and Java-based management system.



Infinera's Intelligent Transport Network Portfolio

Founded in 2000, **Transmode Systems AB** is a young, vibrant technology company that enables the transmission of data and video traffic – all at the speed of light. Transmode's solutions make it possible to send multiple data streams in parallel on different wavelengths using the same optical fiber. As a result, the capacity of each optical fiber can be increased by up to 80 times. Transmode's solutions are based on **Wavelength Division Multiplexing (WDM)** and packet optical transport technologies that give key advantages to customers, such as ultra-low latency, low power consumption and innovative network design.



Infinera is the leader in large-scale photonic integrated circuits (PICs). Infinera is introducing the application-optimized oPIC-100 which provides 100 gigabits per second (100G) of bandwidth in metro and regional networks.

Infinera Corp.
Transmode Systems AB
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Phone: +46 8 410 88 000
Fax: +46 8 527 675 99

CEO Dave Welch, Ph.D (HQ).

VD Karl Thedéen (Sweden)

www.trimble.com

Advanced Location-Based Solutions

Trimble founded in 1978 by Charles Trimble and two partners from Hewlett Packard, is a leading provider of advanced location-based solutions that maximize productivity and enhance profitability. The Company integrates its positioning expertise in GPS, laser, optical and inertial technologies with application software, wireless communications, and services to provide complete commercial solutions. Trimble serves a variety of industries including agriculture, engineering and construction, transportation and wireless communications infrastructure. The Company's portfolio of over 1,100 patents is the basis for the broadest positioning solutions portfolio in the industry. Trimble has offices in 35 countries.

Trimble's industry-specific solutions integrate our advanced capabilities in three core areas:

- **Information** including applications for task management, analytics and 3D modeling.
- **Positioning**, **measurement and sensing**, such as systems to track the orientation of objects in a room, building or anywhere in the world.
- **Connectivity solutions** to enhance collaboration across dispersed networks and workers.

Geodimeter: The Swedish company AGA (Aktiebolaget Gas Accumulator) developed the AGA Geodimeter (Geodetic Distance Metre) in 1953, which was originally an electro-optical length gauge. AGA sold this technology to Spectra Precision Group, a leading provider of positioning solutions for the construction, surveying and agricultural markets. In 2000 Trimble acquired the Spectra Precision Group.


The evolution of Geodimeters to Total Stations. Geodimeter is an instrument designed to measure distances by means of the time required for electromagnetic waves in the optical or infrared regions of the spectrum to cover the distance. There are both pulse and phase-comparison Geodimeters. **The pulse type Geodimeter** measures distance according to the time between the distance to an object and back again. **The phase-comparison type Geodimeter** makes measurements according to the phase difference between the sinusoidally modulated radiation that is transmitted and the reflected radiation that is received.

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Phone: +46-(0)8-622 10 00

Org.nr:5565509782

Prediktera.

www.prediktera.se

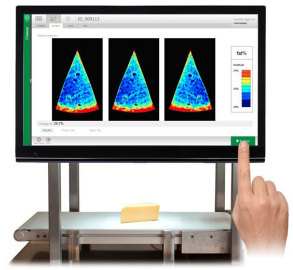
Hyperspectral Imaging Software- Combining Imaging and Spectroscopy

Prediktera provides user-friendly and intuitive software solutions for multivariate image and data analysis applied to research, application development and routine analysis. By collaborating with different partners that provide analysis systems, we help them offer solutions with higher value to the end user, solving real-world problems and creating real value to the customer.

The Prediktera software can be used with hyperspectral Imaging, a technology that combines imaging and spectroscopy, to offer a fast and non-destructive analysis method that provides both spatial and chemical information by scanning a surface in just a few seconds. This flexible and powerful technology can be applied for research and routine analysis applications in laboratories or production and it has found applications in many different areas such as food, agricultural, plastics, forensics and pharmaceuticals.

Product workflow.

Record. Analyse. Predict.

Use Breeze to scan samples and enter reference information like sample name or other data. Preview and clean up the collected images and do a quick initial exploration of chemical differences. *Products involved: Breeze*	Use Evince for in-depth exploratory analysis and interpretation and use Breeze to develop routine applications such as a quantification (e.g. calibration for % of fat in cheese) or classification (e.g. drug type A, B or C in tablets). *Products involved: Evince, Breeze*	Use the "Play" mode in Breeze to use the developed applications for fast and easy routine testing and prediction of new unknown samples, or run the applications for continuous product testing using the RealTime software. *Products involved: Breeze, Real Time*
		
Breeze	***Evince***	***Real Time***

Prediktera Evince is the ultimate software for exploring the huge data sets of hyperspectral images, e.g. from NIR and SWIR cameras. Prediktera Evince lets you classify and quantify the content of the image per pixel using multivariate techniques.

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CEO Andreas Vidman andreas@prediktera.se

Developer Oskar Jonsson oskar@prediktera.se

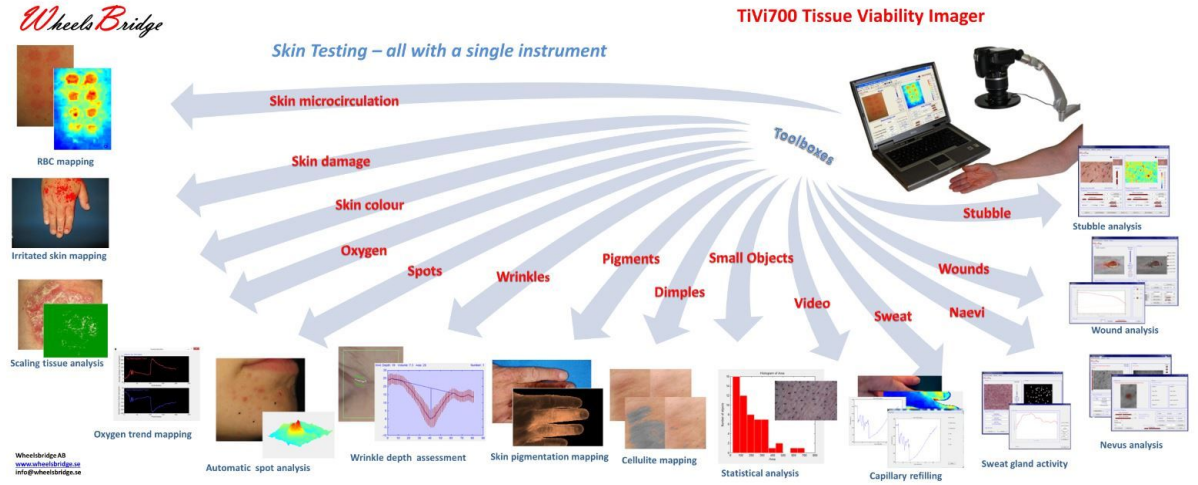
Org.no: 556938-7664

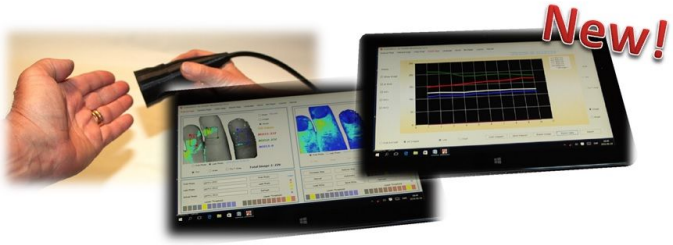
www.wheelsbridge.se

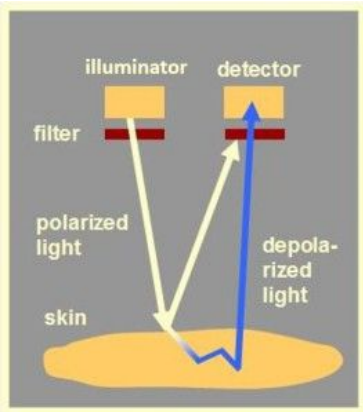
Imaging Systems for Skin Assessment

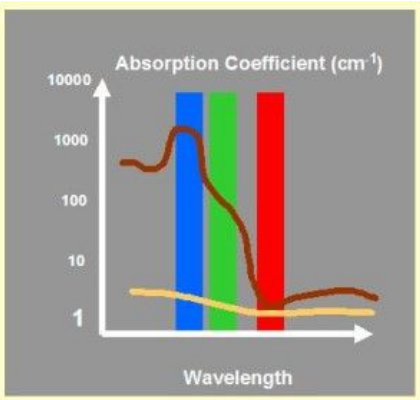
We develop, manufacture and bring to market innovative systems for skin assessment. We further work in close collaboration with our clients in product development projects.

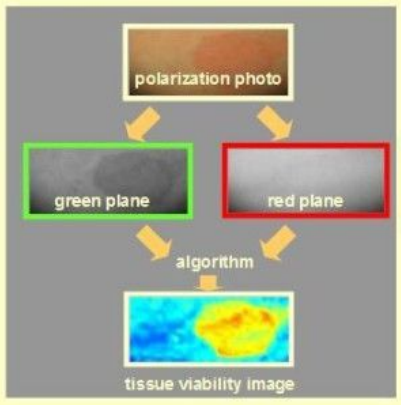
Tissue Viability Imager (TiVi) quantifies what can be observed by the naked eye and takes subjectivity out of skin testing. The patented TiVi700 technology combines polarization spectroscopy with advanced image processing but is still versatile and easy to use. Whether you work with skin care, cosmetics, textiles, drug development, microvascular research, occupational medicine or medical research, the TiVi700 Tissue Viability Imager will increase your productivity by automatically visualizing and quantifying skin erythema and blanching as well as many other important skin parameters.











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VD Gert Nilsson

Org.no. 556669-0912

HASSELBLAD

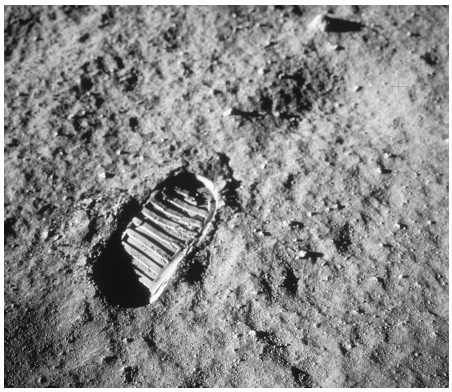
CREATE TO INSPIRE

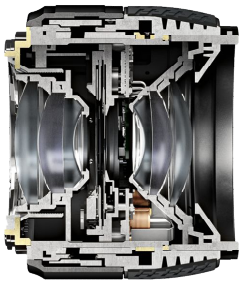
www.hasselblad.com

Photographic Equipment & Supplies

Victor Hasselblad AB is a private held company founded in Gothenburg, Sweden, 1941 with 180 employees. Hasselblad is the leading manufacturer of medium format cameras and lenses. Handmade in Sweden, Hasselblad cameras are renowned for their iconic ergonomic design, uncompromising image quality, Swedish craftsmanship and high performance. For 75 years Hasselblad cameras have captured some of the world's most iconic images – including the first landing on the moon – and helped shape the way we look at the world through genuine photographic artistry. Trusted by NASA and used by the greatest photographers in the world, Hasselblad continues to create products with uncompromising image quality that inspire. Headquartered in Gothenburg, Sweden, where the cameras are handmade, Hasselblad is a global brand with offices in New York, London, Tokyo, Paris, Copenhagen and Hamburg with distributors throughout the world.

The Hasselblad H Camera System with its professional lens family and unique advancements is widely acknowledged as the most comprehensive digital camera system of its kind available today. Recently Hasselblad was the first to launch the fully integrated medium format camera system incorporating the latest in CMOS sensor technology: the H5D-50c. The latest CMOS-based product launches also include the CFV-50c digital back for V System photographers and a 200MP Multi-Shot camera, the H5D-200c MS. In 2016 Hasselblad launched the all new H6D-50c and H6D-100c.





Hasselblad in Space - Small steps. Giant leaps. There are few achievements in the history of man that rival our explorations into space. And few images as unifying, moving, and widely recognized as those photographs taken during these journeys. Photos that have changed the way we see our world and ourselves. Photos taken with Hasselblad cameras.

X1D-50C & H6D-100c - X1D with mirror less technology to digital medium format for the first time ever, and for the photographer who demands nothing less than the best from their digital camera, we present the H6D-100c. It's large sensor offers an almost full field-of-view from our HC & HCD wide angle lenses and is capable of recording breathtaking detail, even in poor lighting conditions.

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FAX: +46 31 13 50 74
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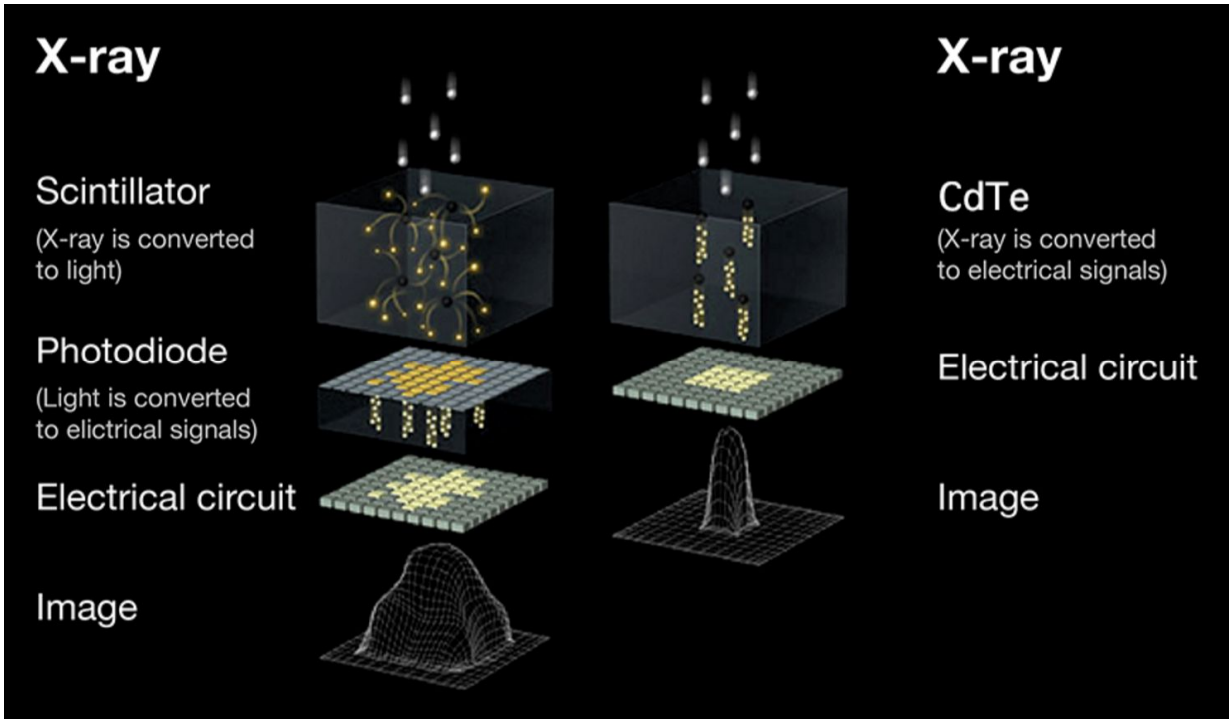
CEO Perry Oosting

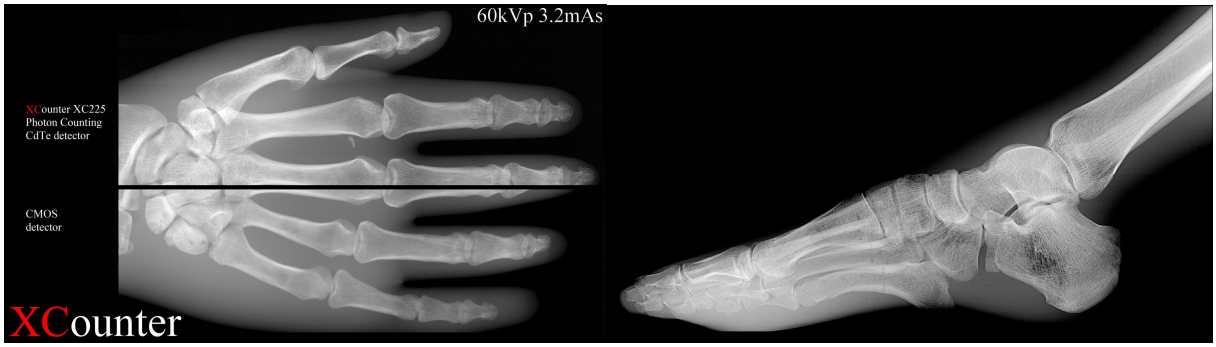
XCounter

www.xcounter.com

X-Ray Cadmium Telluride Photon Counting Detectors

Our customers demand the best image for the lowest possible X-ray dose. XCounter detectors capture virtually every photon, meaning that the absolute minimum levels of radiation will generate excellent images. Headquartered near Stockholm, Sweden with production facilities in the UK and Finland, the XCounter group is the largest manufacturer of Cadmium Telluride detectors in the world. XCounter, founded 1997, has over the years provided detectors into imaging systems that are used across the globe by a broad range of customers; systems used by dentists, radiographers, surgeons, engineers, food scientists, nuclear technologists, the list of our customers continues to grow.
The detector is a critical, key component in any X-ray imaging system. At the heart of all XCounter detectors is direct conversion CdTe photon counting technology, which provides unparalleled image quality. All of our products deliver market leading MTF and DQE. We provide two families of Flite products; fixed (FX series) and scanning (X series), then we have the smaller PDT-25DE product and the super fast Hydra FX-series. In addition to our off the shelf product we provide custom solutions for OEM.





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CEO Spencer Gunn

CTO Christer Ullberg

www.acalbfi.com/se

Photonics solutions from Acal BFi - Carefully selected photonics products with expert local support
Photonics solutions from Acal BFi Acal BFi have been active in photonics since 1973 and offer a full range of products and services for the Photonics industry. From light generation (lasers, diodes, LEDs) handling (optical components, scanners/galvanometers and modulators) to light detection (from simple photodiodes to sophisticated spectroscopy or photometry devices), photons are at the heart of our expertise. Our technical experts will work closely with you to help you meet your key technical and commercial objectives. Our duty is to understand your requirements and then recommend, and deliver, the optimum solution for your specific application at the optimum cost.

Acal BFi have the team, expertise and suppliers to help scientists to build state of the art experiments, integrators to optimise their system performance and manufacturing, and end users to get quick access to the data or performance they need. All our customers benefit from our strong local and/or central support, including calibration and repair services ensure you get the most from your instruments, and your investment. We work with leading research and manufacturing organisations to create leading-edge and cost-effective solutions and reduce development time.

Our range of photonics products:

- Adaptive optics and Wavefront sensors
- Integrating spheres
- Laser diodes
- Laser safety
- Laser spectral analysis
- Lasers and accessories
- Light shaping diffusers
- Optical components
- Photometry
- Scanners and Galvanometers
- Spectroscopy
- Terahertz (THz)

Our range of imaging products cover Thermal cameras, Thermal lenses and Video stabilization.Acal BFi provide design, engineering and after-sales support to OEM customers operating in the imaging market. Our experts have been successfully supporting customers to deliver solutions they can trust for over 20 years.

Acal BFi Nordic AB
PO Box 3002
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Phone: +46 (0) 1856 5830
Fax: +46 (0) 1869 6666
Email: info@acalbfi.se

Autoliv

www.autoliv.com

The world's largest automotive safety supplier

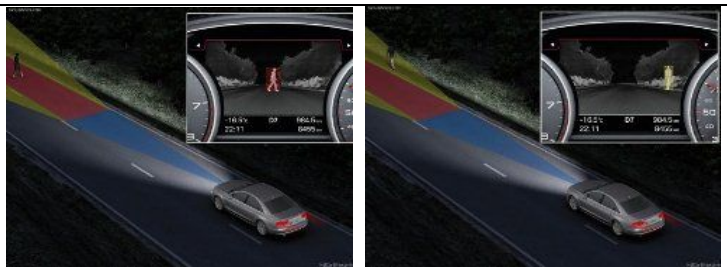
Autoliv Inc., with its joint ventures, has around 80 facilities in 27 countries. The Company has also several technical centers and 20 crash test tracks, more than any other automotive safety supplier. Incorporated in the state of Delaware, Autoliv Inc. is the result of a merger in 1997 of the Swedish company Autoliv AB and the U.S. company Morton ASP, the leading airbag manufacturer in North America and Asia. The Swedish company Lindblads Autoservice AB was founded in 1953 and launched the first seatbelt in 1956. In 1968 the company name was changed to Autoliv AB.

Active Safety for crash prevention

With the introduction of active safety systems, many accidents and collisions will become avoidable or at least less severe by reducing the speed of impact. We have developed our radar and vision technologies to make driving easier and safer by monitoring the environment around the vehicle, giving our active safety systems a chance to adjust engine output, steering or braking to avoid a crash. At Autoliv, it's not enough to help people survive a collision – we want to help them avoid accidents altogether. This means taking action before accidents occur. Future automotive safety technology will need to recognize potentially dangerous situations before they happen, and then react quickly and intelligently. Using our leading market position in radar and vision technology, our aim is to provide:

- early warnings to drivers, so they can take appropriate action;
- intelligent systems that affect the vehicle's motion using braking and steering, helping the driver avoid the hazard; and
- improved restraint systems that combine hazard information with traditional crash sensing methods, in case a collision is unavoidable.

The Night Vision sensor is typically mounted in the grille as seen in the image to the left.



The Night Vision system will warn the driver if a pedestrian is present in the danger zone (marked in red) in front of the vehicle. The width and length of the danger-zone are dynamic and depend on speed of the vehicle. (Image credit: Audi).

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Vårgårda , Sweden
Phone: +46 (0)322 - 62 62 00

Chairman, CEO & President Jan Carlson
Org.no: 556036-1981

VD Dan Axel Persson
Org.no: 556080-7173

Biolin Scientific

www.biolinscientific.com

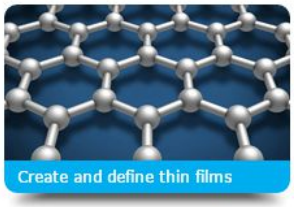
Instrumentation for pharmaceuticals, energy, chemicals, and advanced materials

Biolin Scientific Ab founded 1984 is a leading Nordic instrumentation company with roots in Sweden, Denmark and Finland. Our customers include companies working with pharmaceuticals, energy, chemicals, and advanced materials, as well as academic and governmental research institutes. Our precision instruments help discover better drugs faster, develop better solutions for energy and materials, and perform research at the frontiers of science and technology. Biolin Scientific proprietary systems are based on nanotechnology and advanced measurement techniques. They have earned leadership in several industries through our commitment to scientific excellence and continuous product development. Our commitment to customer service and application support is a key feature of our operations. We focus on working together with customers and building long-standing relations. Today, Biolin Scientific provides products and services in more than 70 countries around the world, and has 140 employees globally. Headquarter is in Stockholm, Sweden, and R&D and manufacturing are placed in Sweden, Denmark and Finland.

Attension

Attension contact angle meters and tensiometers enable precise surface measurements for industrial R&D and academic research.

KSV NIMA



KSV NIMA Langmuir Blodgett instrumentation enables cutting edge innovation in thin film fabrication and characterization.

Q-Sense

Q-Sense QCM-D technology and instrumentation enable analysis of molecular interactions and surface properties.

Sophion

Sophion patch clamp solutions offer next generation characterization of live cells.

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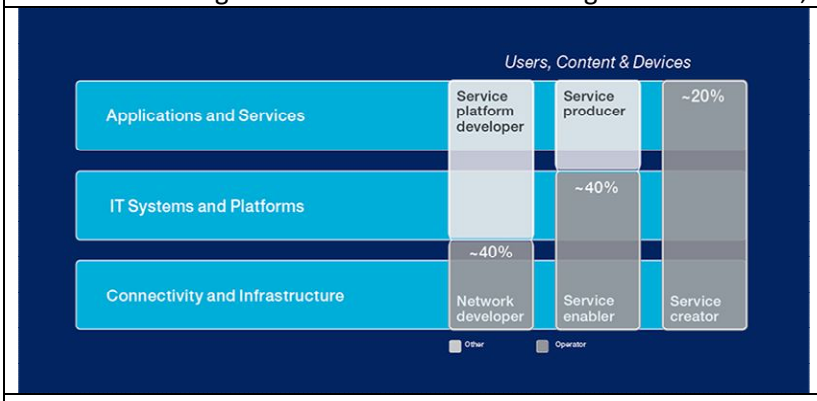
ERICSSON

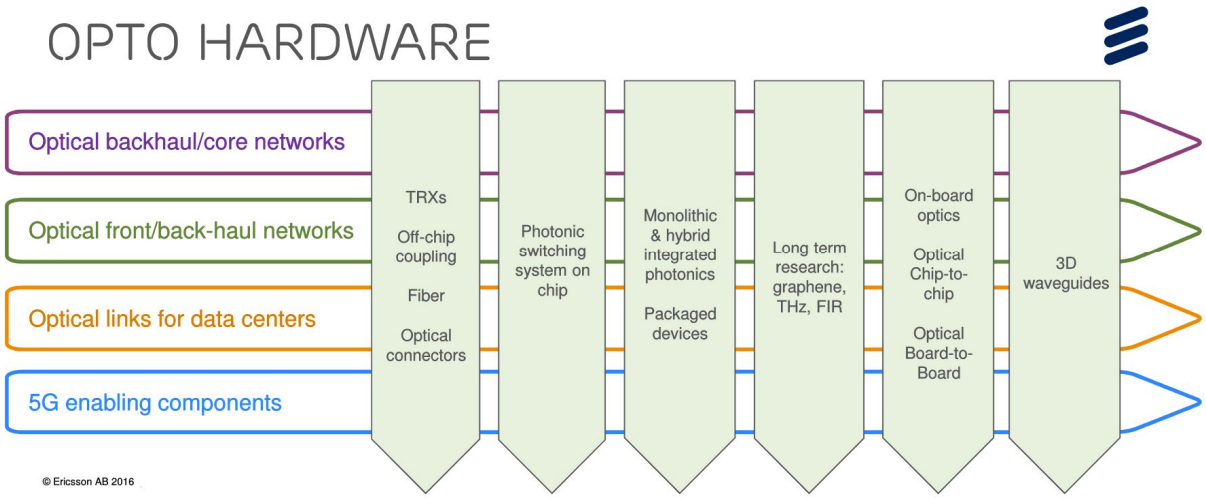
www.ericsson.com/se

Enabling the Networked Society

For 140 years, innovation has kept the Swedish company Ericsson at the forefront of our industry. Since the creation of a single trumpet telephone at the end of the 19th century, our innovations have made a significant impact on the way we live our lives and communicate with each other around the world. By enabling the Networked Society, we make a real difference to people's lives, and the world we live in. Today Ericsson has 116.281 employees, where 23.689 are R&D employees (Dec 31,2015). Net sales full year 2015 was SEK 246.9 billion. To continue to advance technology, patents play an active role through standardization and licensing. Ericsson has 39,000 patents & licensing.



The market transformation is driven by **5G, Cloud** and **IoT** (Internet of Things) in combination with changing user behavior and consumer demands. There are three strategic operator segments. The largest share of total network investments is in the Service creator segment.



Ericsson-backed research project breaks new ground in silicon photonic integration. The Ericsson-led IRIS EU-project has produced a silicon photonics switch designed for housing thousands of optical circuits on a single chip. The first chip is now in the test and characterization phase, and if successful the outcome will be major breakthrough for the industry, paving the way for a new generation of optical systems integrated in a single device. Silicon photonics uses silicon as a miniaturized optical medium for transmitting and switching data at very high speeds, which reduces power consumption and footprint and increases capacity, which combined will lead to lower operational costs. Such a chip will enable network operators to enhance the network performance, increasing node capacity as required by future **5G networks** and **Cloud**.

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Senior specialist in optical hardware
Gemma Vall-Llosera
gemma.vall-llosera@ericsson.com

Org.no: 556016-0680

gammadata

www.gammadatainstrument.se

Tools, Instrument and Solution Supplier – Applying Physics is our Business

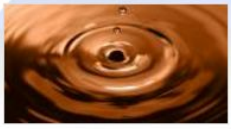
In the Scandinavian region, Gammadata Instrument AB, founded in 1987, is the leading supplier of equipment and tailor-made solutions for analytical instrumentation, optical spectroscopy, radiation analysis and protection, material characterisation, laser science, optoelectronics as well as for natural science education.

Education

We supply equipment for science education, biology, chemistry, physics, technology and earth science. Our equipment is used in both elementary and primary schools, high schools and universities.


Elemental Analysis

Gammadata provides a wide range of analytical techniques for elemental analysis, comprising techniques for elements in solution and solids, as well as bulk analysis, micro analysis, standards and sample preparation equipment.

Materials Characterisation

Our Materials Characterisation instruments provide a full toolkit for techniques to investigate properties of materials. Whether characterisation is materials, physical property, chemical or elemental analysis we have equipment to suit your needs.


Laser Solutions and Light Detection

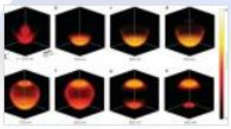
Provided are a range of scientific and industrial lasers as well as anti-vibration tables to place them on. We furthermore provide measurement instructions to control and test your laser beams. Laser safety equipment is also available.


Radiation Detection

We provide products which have become the industry standard for active dosimeters, passive dosimetry, surface contamination monitors, counting laboratory systems, on-line monitoring systems and related service and maintenance.

Microscopy and Spectroscopy

Spectroscopy components like Detectors, Monochromators, Raman Microscopes, Fluorescence instruments can be found here. Also available are two-photon microscopes to provide you with some of the most innovative instruments on the market.

Thermal Analysis | Forensic

Research | Hospital Physics | Life Science | Food & Ingredients | Military & Security | Radon & Geophysics

Nuclear Industry | Steel, Recycling & Mineral | Nano | Energy & Energy Storage | Oil & Paper Industry | Material Processing

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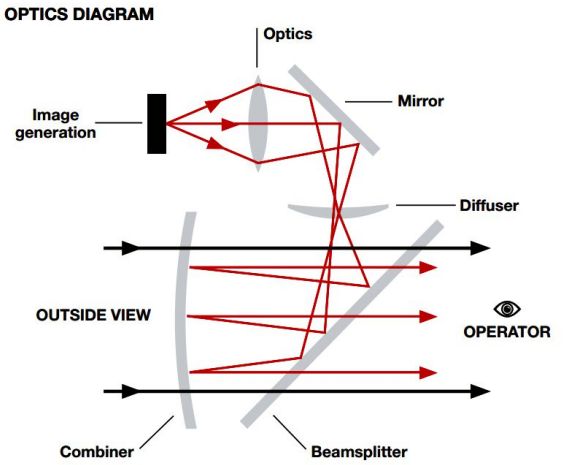
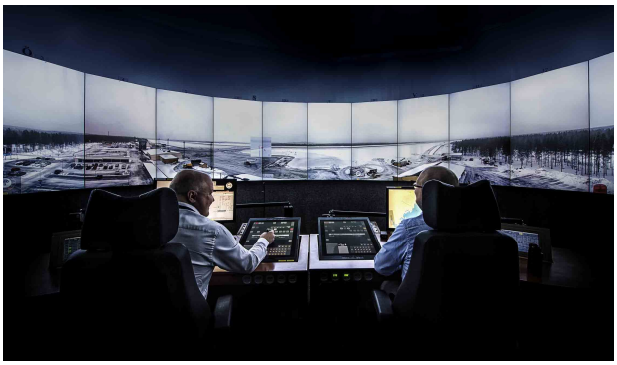
www.saabgroup.com

Military Defence and Civil Security

Saab founde in 1937 serves the global market with world-leading products, services and solutions from military defence to civil security. With operations on every continent, Saab continuously develops, adapts and improves new technology to meet customers' changing needs. Saab has 14,685 employees (Dec 31, 2015). Annual sales amount to around SEK 27 billion, of which research and development account for about 20% of sales.

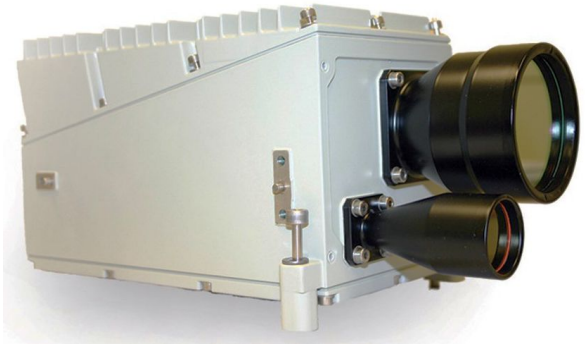


On-axis projection provides superior image quality and generous eye-box



THE FUTURE OF AIRPORTS IS DIGITAL. Saab's Digital Tower Solution is the first remote and digital air traffic solution in operation in the world. Saab is the first supplier in the world to offer a certified remote and digital air traffic management solution; to date, it has accumulated over 4000 hours in operation.

AVIGUIDE HEAD UP DISPLAY. With AviGuide Head Up Display (HUD) the pilots aviate and navigate head up and eyes out for increased safety and control with faster decisions and situational awareness. The HUD can be interfaced with Enhanced Flight Vision Sensors (EFVS) and flight guidance computers and it is fully compatible with enhanced vision system (EVS) sensors.



G-FREJ LASER RANGEFINDER High-repetition class 1M laser rangefinder. The G-Frej is a compact lightweight and modular configuration of a laser rangefinder, designed for easy integration with electro-optical systems for various applications. The laser is eye-safe for the unaided human eye, with a range capability up to 20 km.

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Specialist in Optics: Henrik Ludwigs
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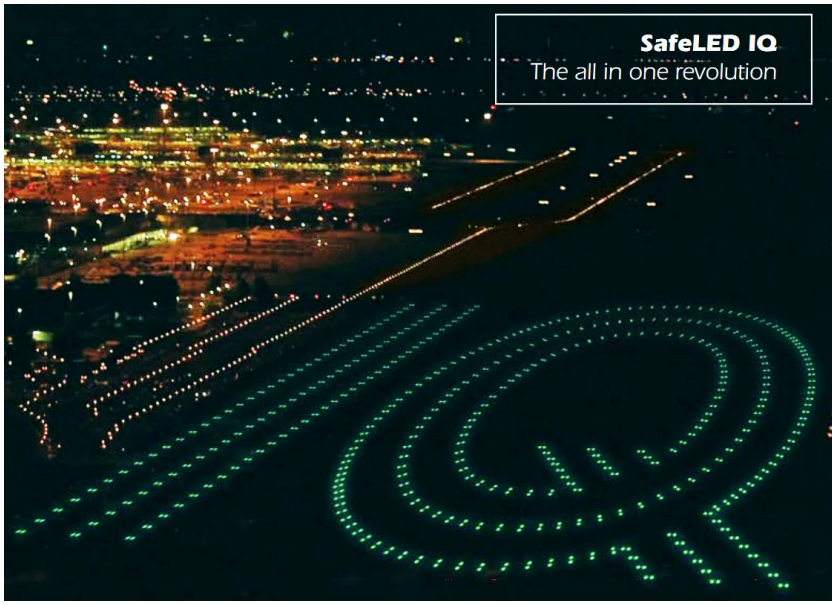
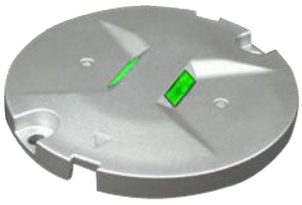
Sales Manager – Product Area Laser:
Stellan Wickström
stellan.wickstrom@saabgroup.com

www.safegate.com

Founded in 1973, Safegate Group is a global company offering a complete range of solutions for increased safety, efficiency and environmental benefits to airports worldwide. By 2029, airport traffic is expected to double*. This will involve large investments by all of the world's airports in order to maintain traffic efficiency and safety. Safegate Group works with system solutions that improve operations and ensure safety within the airport. We know that an integrated airport is an intelligent airport. With world-leading airport solutions on one seamless platform connecting all parts of the airport, you are supported to handle more and safer aircraft movements. With 40 years of experience from the world's busiest airports, Safegate Group is your one contact point for a complete solution guaranteeing your airport performance. We deliver airport performance, from approach to departure, to more than 1300 airports. With our headquarters in Malmö, Sweden, representatives in more than 75 countries and Safegate offices around the world, Safegate Group is a truly global company. Made up of more than 300 highly specialised professionals all over the globe, from Engineers to Project Managers, Safegate Group's experts partner with airports large and small to find the right solutions. In addition, we work with a network of over 70 representatives around the world, helping us to bring customized, local service to every corner of the globe. These representatives are specialised in product installation, customer support and service and spare part distribution, meaning you're never far away from a Safegate Group expert.



A modern airport is a highly efficient operation, with a huge amount of actions that all have to work smoothly and according to time schedule every day. Saving money in an airport is all about details – many, many details. If a little money can be saved on every single operation, the result will be great savings on a yearly basis.



SafeLED IQ

Visual Docking Guidance System: Safedock A-VDGS

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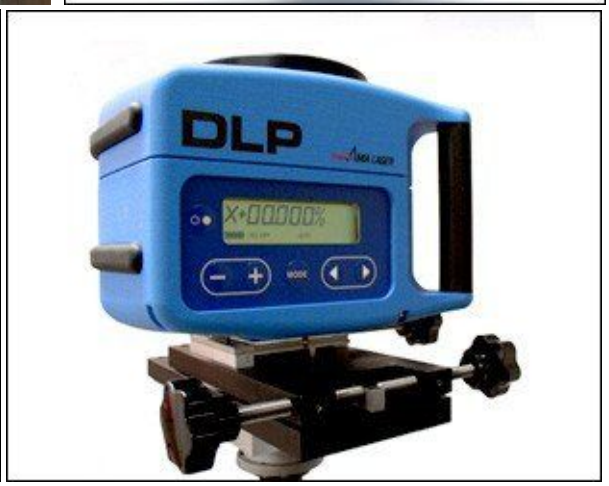
Parent Company:
Fairford Holdings Private AB
Org.no: 556606-7566

www.amalaser.com

Construction Laser Instruments

AMA Laser AB is an independent manufacturer of construction lasers. Our instruments are built to the highest quality, robust and reliable. Built for the most demanding applications. We are a manufacturer of high quality lasers for infrastructure construction. Main applications include: Roads, grading, tunnels, pipe laying and pylons/slip forming. The robust all-aluminium design of our products make them prime choices for hire companies and larger contractors. AMA Lasers started distributing construction lasers in 1975. The first AMA-designed instruments were introduced around 1980. Earlier products include the SL87 Combi Laser, the SLP Pipe Laser, the RPc Red Plane Interior Laser, the T-810 Tunnel Laser, the LD5 Detector, the DL150 Laser Level and the ML Multilaser range. We are based in Stockholm, Sweden. Our design philosophy: Robustness, Long life, User friendliness, High specifications. Our instruments can be bought through distributors all over the world with the majority of our sales in the western world.



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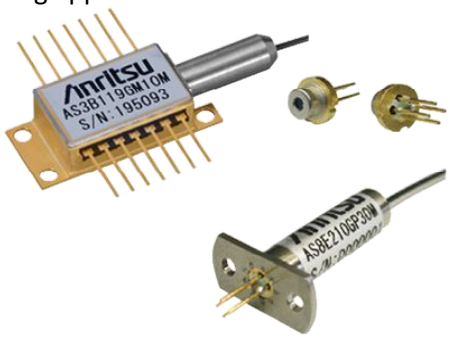
www.anritsu.com

Quality Inspection in Food and Pharmaceuticals industries

Anritsu Infivis is a member of the established Anritsu Group, which boasts a history spanning over 120 years. Since the start of food industrialization in 1965, we have been working together with our customers in the foodstuffs and pharmaceuticals industries and cultivating advanced technical and on-site capabilities in quality inspection for over half a century.

Optical Devices. A complete line of optoelectronic components for optical communication systems and fibre optic sensing applications.



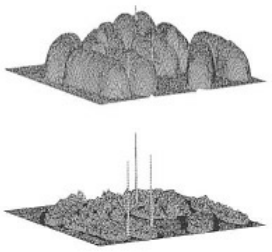
Superluminescent Diodes bridge the gap between Laser Diodes and Light Emitting Diodes. Like an LD, the SLD provides a high optical output power. Anritsu's SLD feature broadband spectrum characteristics, typically found only in LEDs, and a low coherence. Our SLD features a low coherence length having a high intensity at a narrow radiation angle. This makes the SLD much easier to couple to a fiber for a broad range of applications. SLDs are ideal for Optical Coherence Tomography, fiber sensors such as temperature and strain gauges as well as applications in test and measurement instrumentation.

Fabry-Perot type Laser Diode. The AF4B Series are 1.48 µm high power pumping laser diode modules designed for Er-doped optical amplifiers. Each laser is packaged in a 14-pin butterfly package with optical isolator, monitor photodiode, and thermo-electric cooler.

X-ray Inspection System. High accuracy detection technology detects a 0.2 diameter metal sphere. Suitable for soft contaminants that are of low-density, such as bone and plastics, as well as for minute metal particles.

Contaminant inspection - Image Processing Technology. Anritsu's superior expertise in image processing and electronics open new horizons in high-sensitivity detection and fine customization. Before signal processing, X-ray images tend to suffer from considerable noise, deriving from the shape, consistency and other characteristics of the product. Moreover, because we develop all our products in-house, we know the details of our products inside and out, so we can precisely tune each component to each customer' s needs.

Solutions for Contaminant Detection. Anritsu has developed metal detectors using magnetic sensing technology in 1981. Since then, we manufactures metal detectors for over 30 years and its cumulative sales have reached over 40,000 units (as of March 2013).



The top image is the unprocessed image; the image below shows the 3D image rendered after image processing. Different image filters highlight different contaminants.

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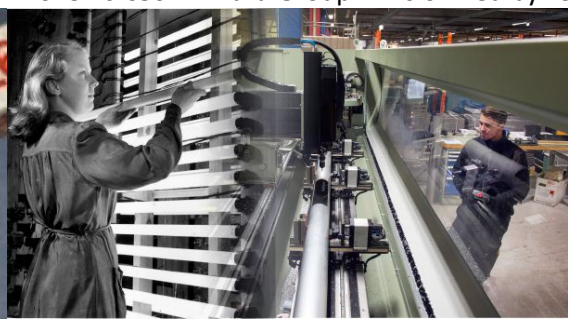
AURA LIGHT

www.auralight.com

Aura Light – A timeline of innovation from LUMA to LED

Made in Sweden, Aura Light was established in 1930 as **Lumalampan**. In 1924 a lighting cartel was established by the major light bulb manufacturers, called the **Phoebus cartel**, which aimed to raise prices and reduce lamp lifetime by 50% to 1000 hours. It is the first documented example of planned obsolescence, where new products are designed with a shorter lifespan than the previous versions. Fed up with high prices and products with short lifetime, the Swedish Co-operative Union (Kooperativa Förbundet) decides to produce its own light bulbs in 1930's to guarantee Swedish consumers longer-lasting light bulbs at a fair price. To open a light-bulb factory so, the union strikes an agreement with the Phoebus cartel and establishes the **Luma** brand. In 1994 the Swedish Co-operative Union sells LUMA, and the company is called **Aura Light**. We continue to work hard to live up to our legacy. To stay at the forefront, Aura Light continues to develop sustainable lighting solutions available to all through passion, design and the relentless pursuit of innovation.

Head Office is in Stockholm, Sweden, and our production facilities are placed in Karlskrona and Vimmerby, Sweden, where we among all produce our Aura LED light sources. We have subsidiaries in Sweden, Denmark, Finland, Norway, Germany, France, Italy, Portugal, Spain, UK, China and USA. Besides the subsidiaries there are local sales teams active in several countries like Austria and Switzerland and we have a partner network around the world. Our workforce consists approx 300 lighting specialists. The turn-over is €80 M. Aura Group AB is owned by FSN Capital.




In 2012 Aura Light's first modular LED tube was introduced, the Aura UltiLED Long Life, guaranteed to last 58,000 hours /eight years. The same year Aura Light acquires IQ Sensortech, a leading supplier of lighting control systems, and expands its range with sensors. These sensors enable higher energy efficiency through improved control. In 2014 Aura Light opens a U.S. subsidiary with the main office in California and warehouse locations and service areas in California, Texas, Indiana, Pennsylvania and Florida. This opened a new untapped market for the company. In keeping with its strategy to become a total lighting solutions partner, Aura Light acquires in 2015 the Swedish luminaire company Zobra, including the outdoor lighting brand Noral, strengthening Aura Light's position as a complete provider of energy efficient lighting solutions. This is also the year when Aura Light's **Lunaria LED panel** becomes the world's most energy efficient LED panel according to SEAD. With Aura Lunaria's **Tunable White** you can now depending on your circadian rhythm, control color temperature from 2700K to 6000K.

zobra
Aura Light group
noral
Aura Light group

TUNABLE WHITE

2015
GLOBAL EFFICIENCY MEDAL
SEAD

Aura Light has been awarded the Global Efficiency Medal by the high-level global forum **The Clean Energy Ministerial (CEM)**. The company received the prize for the world's most energy-efficient lighting in the category **Commercial Planar Luminaires** with their **LED panel Aura Lunaria**. The award ceremony took place in San Francisco 2 June, 2016.

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www.azpect-photonics.com

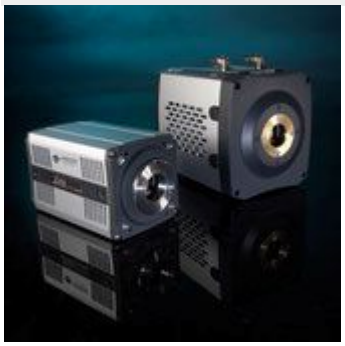
Supplier of Photonics Equipments and Solutions

Azpect Photonics AB was founded in 1994 and is today the largest and leading supplier of photonics equipment to the Nordic market. We deliver Lasers, Spectroscopy products, Instruments, Optics, OEM components and other peripheral products for Industrial, R&D and Scientific applications to customers in all the Nordic countries: Denmark, Finland, Iceland, Norway and Sweden. AMS Technologies AG, Germany, accquired in 2012 Sweden based Azpect Photonics AB, and we are now a leading solution provider and distributor for Optical, Power and Thermal Management Technologies. Our company brochure gives you an insight into the AMS Technologies world. Our product portfolio extends from standard to customized, and from component to system level in our key competencies. Azpects vision is to further grow as a supplier of Photonics equipment and to maintain its position as the first and foremost distributor and agent of photonic products in the Nordic countries, vouching our customers that we represent the leading and most competent manufacturers.

Laser Systems

Supply of lasers for Industry and Scientific Research. Azpect offers a selection of lasers and laser systems for material processing.

Spectroscopy



From simple lab-grade manual monochromators imaging spectrographs with multiple gratings

Optics, Mechanics & Accessories

High-precision holders and positioners for tiny movements as well as platforms and stages for simple and flexible mounting of holders.

OEM Business

Supply of Photonics OEM components (lasers, detectors, optics, mechanics etc.) to the Industry.

Service

We provide service for all type of lasers and electro-optic products that we sell. Our factory trained and certified field service engineers have years of experience working on laser systems and electro-optic products.

AMS Technologies Nordic

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www.amstechnologies.com

BioOptico

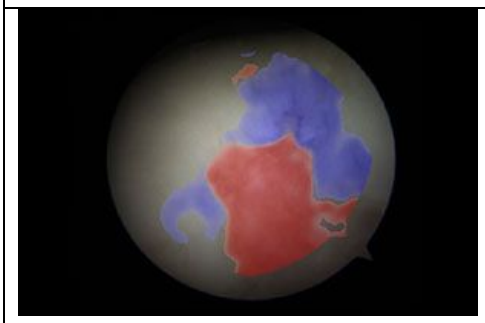
www.biooptico.com

Augmented Reality Tools for Endoscopic Video Enhancement

BioOptico develops unique augmented reality tools for endoscopy and other video applications in medicine. BioOptico's approach is based on extracting and enhancing clinically important features of tissues under investigation, then visualizing them directly into the real-time video stream. The underlying algorithms are based on spectral, texture and other tissue characteristics. BioOptico has been in the forefront of endoscopic video enhancement for the last 15 years and collaborates with endoscopy manufacturers, clinicians and scientists in various technical and clinical disciplines.

Spectral enhancement Spectral information (color) is gathered frame by frame and pixel by pixel. By calibrating or learning the algorithm, various tissue conditions can be recognized, objectively mapped and/or visually enhanced. The output is shown as a color coded overlay in the real-time video. Typical applications include recognizing blood perfusion of tissues, quantifying the composition of mixed tissues and deriving the thickness of a tissue layer on top of another.

Texture enhancement Texture information (derived as local intensity variation) is gathered frame by frame and pixel by pixel. Similar to spectral enhancement, the surface or the bulk structure of tissues in various situations is recognized, mapped, enhanced and visually presented. Typical applications include recognizing rough surfaces caused by cellular degeneration, quantifying turbidity of body fluids and deriving fibrillated degeneration states of tissues.



Augmented Arthroscopy

Normal cartilage, degenerated cartilage and subchondral bone vary in optical properties as well as in texture properties. In arthroscopy we enhance and visualize these tissue states and regions in the live arthroscopy video stream. The resulting video is used for assisting in diagnosis, treatment and follow-up surgery, as well as in patient communication.

Augmented Otoscopy

A normal tympanic membrane varies in color and shape to a tympanic membrane seen in acute otitis media or serous otitis, due to factors such as blood content, membrane thickness, pressure and effusion in the middle ear. In otoscopy we enhance and visualize these tissue characteristics in the live otoscopy stream. The resulting video is used for assisting in differentiating the three conditions, for instance to aid in antibiotic prescription.

New Directions

We are constantly working with and looking for new augmented reality applications in medicine. In addition to more classical endoscopy we are pioneering augmented reality in medicine using smartphones and augmented/virtual reality platforms. Contact us to take part in this exciting journey!

BioOptico AB
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SE-582 73 Linköping, Sweden
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VD Anders Johansson

Best choice.

www.bystronic.se

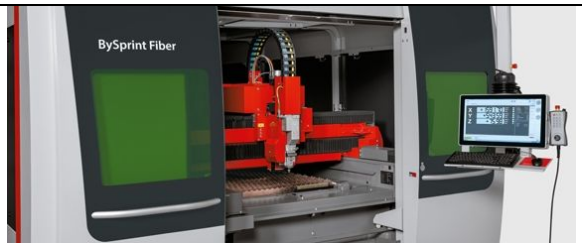
Supplier of Laser-Cutting & Waterjet Machines for Sheet Metal Working.

Bystronic is a leading global supplier of solutions for sheet metal working. We offer a comprehensive range of high technology machines and systems, which enable the best conditions for an efficient and profitable production. The name Bystronic first appeared in 1964, when Bystronic Maschinen AG was founded in Bützberg. The company specialized in glass processing. The company's name is a combination of the names of its three founders Byland, Schneider, and Trösch. In the early 1980s, Bystronic Maschinen AG engineers began developing a laser cutting system, and in 1984, the Bylas was launched. The number of machines sold increased quickly and Bystronic Maschinen AG ran out of space. They transferred the laser business to Niederönz and in early 1986, founded Bystronic Laser AG. In 1988, only two years later, Bystronic developed their first waterjet cutting system: Byjet. Bystronic Scandinavia AB was founded in 1989 and is a subsidiary of Swiss Bystronic Laser AG, which in turn is part of Conzzeta Holding. Bystronic Scandinavia AB is the group's sales and service for the Nordic and Baltic countries. A wide selection of various, powerful laser sources is one of Bystronic's trademarks. All lasers are high-quality and highly energy efficient, not least because of their high efficiency. The portfolio contains both CO_2 and fiber lasers.

ByAutonom A high degree of autonomy thanks to Collision Detection, lens-cassette changer, nozzle changer, and automatic nozzle alignment.

ByJin 4400 watts of laser power for a wide scope of different applications with all materials and for sheet thickness up to 25 mm.

BySmart Fiber Intuitive operation enables a fast entry into fiber laser technology



BySprint Fiber Additional functions (Power Cut Fiber, Cut Control Fiber, Nozzle Changer, Detection Eye) and automation options increase the application scope to a maximum

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www.cepa.pl/sv

Industrial Sub-Contractor in Laser Machining

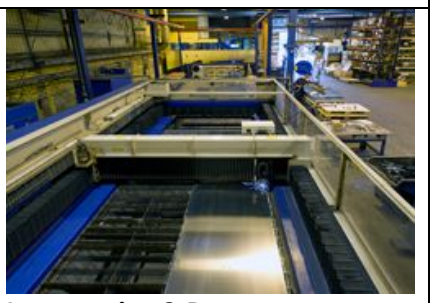
Cepa is a sub-contractor for the engineering industry and is a subsidiary of Stockforsa Invest AB, www.stockforsa.com , with about 140 employees working in a 17,000 m2 production facility located in Höör/Sweden and Bykow/Poland. Both are certified according to ISO 9001 and ISO 14001. Our major customers include Alfa Laval, ABB, Volvo, Jötul, Hasselblad, Getinge and Alstom. We focus on our specialist competence in the fields of laser machining, deep drawing and automatic pressing. Our sheet metal components are mainly supplied to engineering companies in Europe. We intend to met customer requests and expectations with the aid of our modern technology and competent manufacturing processes in sheet metal forming, and a flexible and efficient organisation.

Laserwelding 3-D

Laser welding is a fast and precise technology with many advantages over TIG/MIG. The low heat level minimises deformation and creates very precise dimensions. Little after-treatment required, or none at all. The technology is highly suitable for automation, and has great potential. In overall financial terms the welding technology is an excellent solution that provides better quality at the same cost or more cheaply.

Lasercutting 3-D

3-D laser is an effective way to cut a hole or a contour of shaped parts. Well suited when the requirement to tight tolerances, difficult materials, volumes of non-conforming tool investments or products with high change propensity.



Lasercutting 2-D

We have high capacity in the field of laser cutting, handling plates at up to 6000 x 2000 mm. We have a Trumpf bed laser which can cut up to 6000 x 2000 mm. It can cut up to 25 mm in mild steel, 20 mm stainless och 8 mm aluminium alloy.

Laser welding

We have Trumpf 5-axis laser welders which both cut and weld. The work area can be as large as 3000 x 1500 x 750 mm. These are equipped with a round spindle which is suitable for processing round workpieces.

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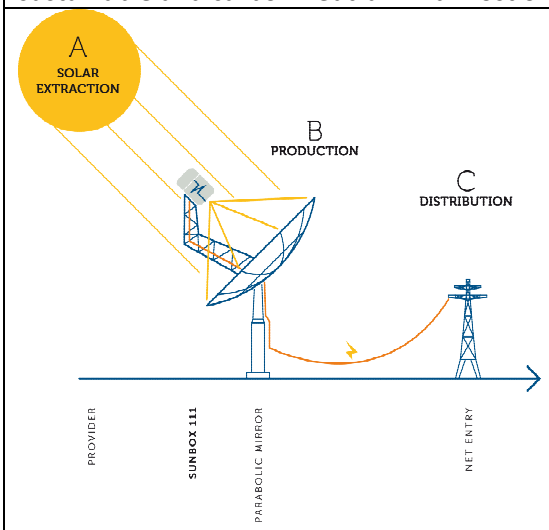
www.cleanergy.com

Supplier of Sustainable Energy Solutions based on the Stirling Engine

Cleanergy is the world's leading supplier of sustainable energy solutions based on the stirling engine. Our Combined Heat & Power (CHP) and Concentrated Solar Power (CSP) systems are today benefitting customers from Inner Mongolia to the UK, enabling them to generate gas and solar-based energy more sustainably; more efficiently; and more profitably. It's all thanks to an engine system invented nearly 200 years ago that has been reinvented for the 21st century to run on solar heat and (otherwise) wasted gas. Cleanergy was founded in 2008 when we acquired the rights of the V 161 stirling engine from Solo Kleinmotoren GmbH of Germany. Fortunately, we not only acquired the technology, but also the veteran team behind it. Thanks to our unique blend of knowledge, materials and processing expertise we are now poised to make sustainable stirling energy solutions a major, lasting part of global energy generation. From landfill sites to solar parks, our engines are today installed at more than 100 locations around the world and have accrued some two million operating hours and counting. All of which makes us the undisputed leader in stirling energy solutions for solar and gas. Our high-volume production facility in Uddevalla, Western Sweden was formerly owned by Volvo. It's built around the latest lean manufacturing principles and is supported by a network of automotive-grade suppliers and partners. For our customers this guarantees quality, reliability, consistency – and security of supply. Further afield we have offices across Northern Europe and have been established 'on the ground' in China since 2011 – as well as a strategic partner network that covers not just China, but Russia, Canada, US, and many European countries.

The stirling engine is unique in its ability to provide incredibly efficient conversion of thermal energy – be it gas or solar – into heat and electricity. So unlike internal combustion engines, our stirling engines don't run on traditional fossil fuels – they run on heat. Mounted on top of a parabolic dish that tracks the sun, the SunBox is an autonomous and fexible stirling engine unit. From landfill sites to solar parks, the Cleanergy team is uniquely placed to help customers exploit the burgeoning opportunities of this technology. Our association with stirling technology innovation stretches back some 25 years. Our knowledge and insight is the best in the industry. Our technology is effective. It's sustainable and carbon neutral. And most of all: it's proven.



Stirling CSP System™ in Inner Mongolia.
The Cleanergy SunBox is unique in its ability to generate power from solar energy at grid parity levels – twice as efficiently as traditional Photovoltaic (PV) technology. Power output is capped at 11kW per SunBox unit.

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CEO & President Jonas Eklind
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Detectus AB

www.detectus.se

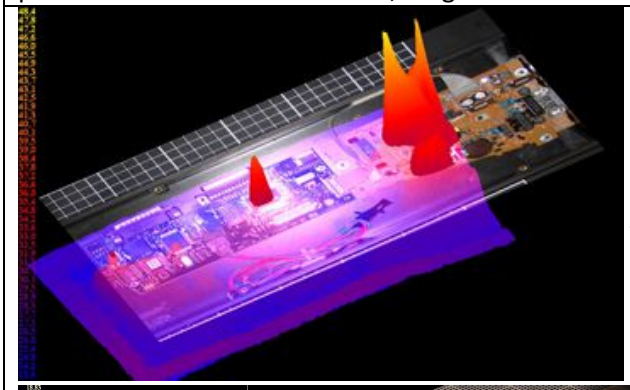
EMC test systems

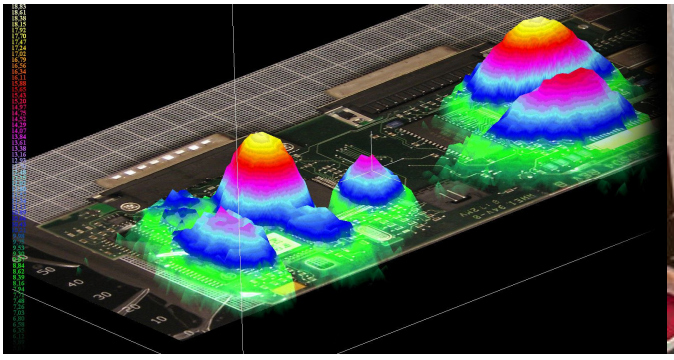
Detectus AB is a Swedish company that develops, manufactures and sells EMC test systems directly and through distributors worldwide. At Detectus, we're dedicated to provide market leading EMC scanning technology to the electronics industry in general and the cell phone industry in particular. Our goal is to improve the search for emission sources for developers and electronic designers worldwide. The idea came from real needs when one of the founders was working as an engineer at Ericsson in the early 80's. In 1994 the company was founded and the first scanner were sold in 1996. As of today, Detectus is still run by two of the founders Jan Eriksson and Anders Eriksson.

Using the EMC Scanner during the early stages of design enables you to detect potential emission problems before they become integrated into the product and expensive to correct.

High Resolution Heat Scanner: Detect heat problems early in the design stage through continual measurements. Heat scanner is a high-resolution measuring system for anyone wishing to measure temperature accurately and inexpensively. The measurements are presented graphically as either two or three-dimensional images. Spectral response of the IR-sensor is 8 - 14 µm with temperature range 0-150°C and a resolution of +-0,3°C.

IC option: The new high resolution real time inspection camera shows a microscopic view of the probe tip and the test object. The resolution of the image is better than 10µm/pixel. The inspection camera will allow you to define your measuring path very accurately and to examine measurement result with accuracy and confidence. To complete the IC-option there are three high resolution probes to choose from: electric, magnetic with horizontal loop and magnetic with vertical loop.





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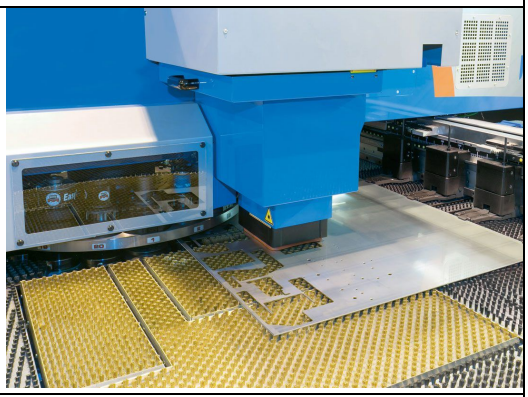
E-mail: info@detectus.com

DIN MASKIN

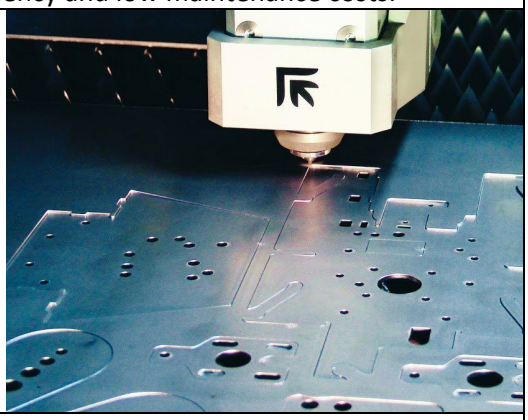
www.dinmaskin.se

Vendor of Laser Cutting Machines for Sheet Metal Manufacturing

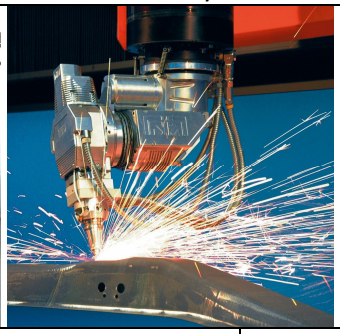
Din Maskin's operations primarily consist of resolving manufacturing problems in sheet metal working. We feel more like a partner than a vendor to our customers. Din Maskin provides expertise and product knowledge used in the analysis of a manufacturing problem. The goal is to find the best technical and economical solution. We want you to come to us with your thoughts on how a sheet metal part to be manufactured so that together we can find a suitable solution. With our combined experience, we can surely find a machine manufacturer that specializes in the manufacture of machines just for your products.



Combining laser punching machine benefits where one can punch, laser cutting, shaping, thread and perform minor bending pace with fiber laser's energy efficiency and low maintenance costs.



Laser Genius: Lightning fast. With clockwork precision. Ideal for complex jobs. With superior performance through extraordinary speed and accuracy.



Large 3D laser for all types of production. CO2 laser source up to 5kW power. The largest 3D machine. Perfect for prototypes and serial production of medium and large components. Working volume (X, Y, Z): 4,5m x 2,5m x 1,0m.

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Org nr: 556470-5282

DUROC LASER COATING www.duroc.com/lasercoating

Laser Cladding Services and Powder Manufacturing

Duroc Laser Coating is the leading company in Sweden in laser welding and we continue to drive development forward.Duroc Laser Coating is a complete partner for surface-coated mechanical components. We have the experience of a large number of projects in the most problematic areas where components are subjected to extreme friction, wear or corrosion. We offer both the renovation and upgrading of products manufacture of customer-specific full- or semi-finished products. It may be renovation or restoration of the original geometry of worn machine parts such as axles, shafts, rollers or bearing positions.

Laser hardening - hardening method with high precision: The primary advantage of laser hardening over traditional curing methods, to parts with very high precision can be cured in selected areas. The method can be used on components made in so-called thermosetting materials such as cast iron and tool steel.

Laser Cladding: Laser Cladding used to rebuild worn machine components such as bearing positions, axles, shafts, feed or in new manufacturing when all or part of component requires specially adapted wear, friction and corrosion properties.

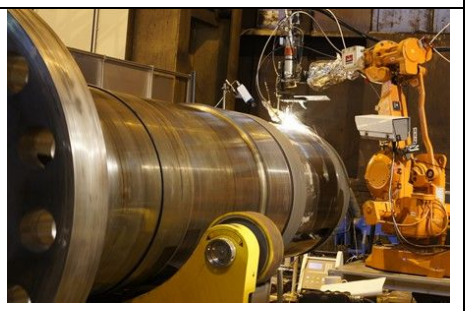
Laser impregnation for extreme wear resistance: Laser impregnation is our toughest method for creating extreme surface characteristics. The surface of the base material is melted by laser and ceramics is pushed into the molten surface. The method provides an extreme abrasion resistance of metallic material that has no equivalent in traditional methods.

Designing the optimal component: We design bimetallic solutions for example, we can combine steel with other metals. By combining different materials we can customize component properties with our laser technology.

Corrosion Protective layer for the offshore industry: Stainless steel surface welded with the laser on components exposed to corrosive environments such as salt water. Stainless steel coating on a non-stainless steel body is a cost effective solution because it avoids making the whole piece of stainless steel. The layer eliminates such corrosion problems that can occur on hard-chromed components where there are micro cracks in the chromium layer that allows the surface to corrode and chromium to finally loosen.

Roller grooves rebuilt by Laser Cladding. The welding material is wear resistant tool steel mixed with hard, wear-resistant ceramic and particles.

Details that need to be partially cured. Pictured tool part where wear exposed radii are laser hardened.



Laser cladding. Metal structure with the help of laser technology allows for increased product performance and meet the demands of extreme surface and function of the characteristics of friction, corrosion, wear, etc.

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ELEKTA

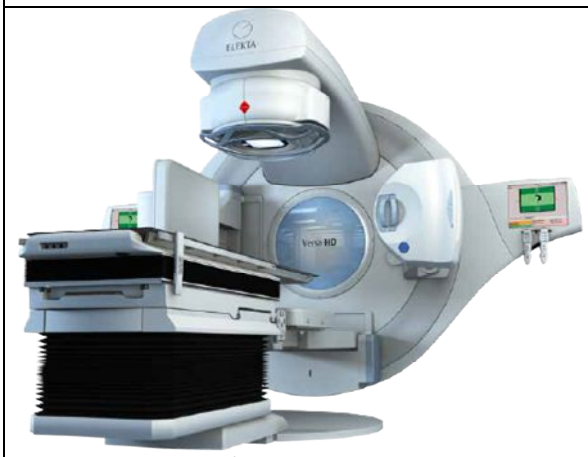
www.elekta.com

Manufacturer of Radiation Therapy and Neurologic Disease Equipment

Elekta is a human care company pioneering significant innovations and clinical solutions for treating cancer and brain disorders. The company develops state-of-the-art tools and treatment planning systems for **radiation therapy**, including **brachytherapy** and **radiosurgery**, as well as workflow enhancing software systems across the spectrum of cancer care. Today, Gamma Knife surgery is performed in hundreds of leading hospitals and clinics around the world. Around 70,000 patients undergo Gamma Knife surgery every year, and this unique procedure has an impressive scientific track record with thousands of peer-reviewed articles. No other non-invasive treatment method in this field has greater clinical acceptance. Stretching the boundaries of science and technology, providing intelligent and resource-efficient solutions that offer confidence to both health care providers and patients, Elekta aims to improve, prolong and save patient lives. We are at the forefront of science and technology, delivering clinical advances and improved patient outcome. Elekta's vision is to pioneer cutting-edge cancer care and become the number one partner for the entire spectrum of care in oncology and neurosurgery. Elekta's corporate headquarters are located in Stockholm, Sweden and the company is listed on the Nordic Stock Exchange under the ticker EKTAb.

Linear accelerator (LINAC) machines use X-rays (photons) to treat cancerous and noncancerous abnormalities in the brain and other parts of the body. These machines can perform SRS in a single session or over three to five sessions for larger tumors, which is called fractionated stereotactic radiotherapy.

Gamma Knife machines use 192 or 201 small beams of gamma rays to target and treat cancerous and noncancerous brain abnormalities. Gamma Knife machines are less common than LINAC machines and are used primarily for small to medium tumors and lesions in the brain associated with a variety of conditions.



Versa HD™ Elekta's most advanced linear accelerator capable of delivering exquisite dose conformance for an expanded range of targets, plus ground-breaking innovations designed to improve efficiency. Ideal for stereotactic treatment techniques.

Leksell Gamma Knife® Perfexion™ Leksell Gamma Knife Perfexion is preferred for its extreme accuracy, efficiency and outstanding therapeutic response. Today, cranial radiosurgery with Perfexion is performed in hundreds of leading hospitals and clinics around the world.

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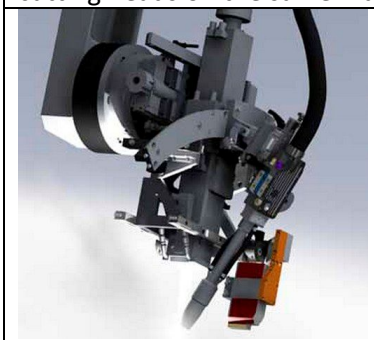
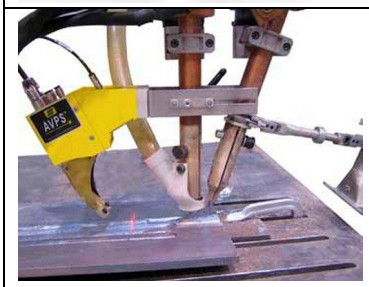
Manufacturer of Welding Products and Advanced Cutting Systems

The story of ESAB is the story of welding. When our founder Oscar Kjellberg developed the world's first coated welding electrode in 1904, he launched a company whose innovation and uncompromising standards have helped create the history of welding itself. For more than 110 years, ESAB has been powered by the will to continuously seek new and improved ways of serving our customers. This has made ESAB a world leader in welding products and advanced cutting systems. In 2012, ESAB was acquired by Colfax Corporation, one of the world's leading diversified industrial manufacturing companies. Colfax, like ESAB, is a solidly customer-focused company that places strong emphasis on constant innovation and improvement.

Laser Cutting Laser cutting of carbon steel with thickness from under one micron to about 1.25 inches. Over 25 mm, everything must match exactly for this to work reliably, including materials (steel, laser-quality), gas purity, nozzle shape and beam quality. The laser is not a very fast process, as it is essentially just a combustion process of carbon steel using the extremely high temperature in a focused laser beam in place of a preheating flame. Therefore, the speed is limited by the rate of the chemical reaction between iron and oxygen. However, the laser is a very precise process. It provides very narrow cut, which means that it can cut very precisely contoured and small holes with good accuracy. Edge quality is usually very, very high, with extremely small and insignificant grooving cut lines, very sharp edges and little or no slag. The other major advantage of laser cutting is reliability. The wear parts have a very long life and it is easy to automate the process, which means that laser cutting can run when no one is there. Imagine placeing a sheet, 3 x 12 m of 12 mm steel, on the table, press the start button and go home for the day. When you come back the next morning, you can have hundreds of details precut and ready to be loaded out. Depending on the beam generated modeling complexity, it is not possible to use carbon dioxide laser with multiple cutting heads on the same machine. The fiber laser can be used for cutting with multiple heads.



ESABs Hybrio™ hybrid laser welding technology combines the deep weld penetration and low heat input associated with laser welding with the excellent weld properties and superior gap tolerance of gas metal arc welding (GMAW). Using gas metal arc welding (GMAW) in combination with a laser, the Hybrio™ process overcomes the limitations of laser-only welding with its ability to produce quality welds in joints with less-than-perfect fitup between parts. This enables a widened, more robust process envelope by a factor of three compared to a conventional laser-only process.



AVPS Laser Seam Tracking System Improves the productivity and quality of circumferential, longitudinal welding processes. Laser vision sensing improves the productivity and quality of circumferential, longitudinal welding processes as typically found in wind tower manufacturing. Servo-Robots intelligent seam tracking technology, combined with ESABs GMH joint tracking system and pendant control, maintains precise wire position both in the joint and with respect to the vertical direction ensuring a consistent wire stick out.

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