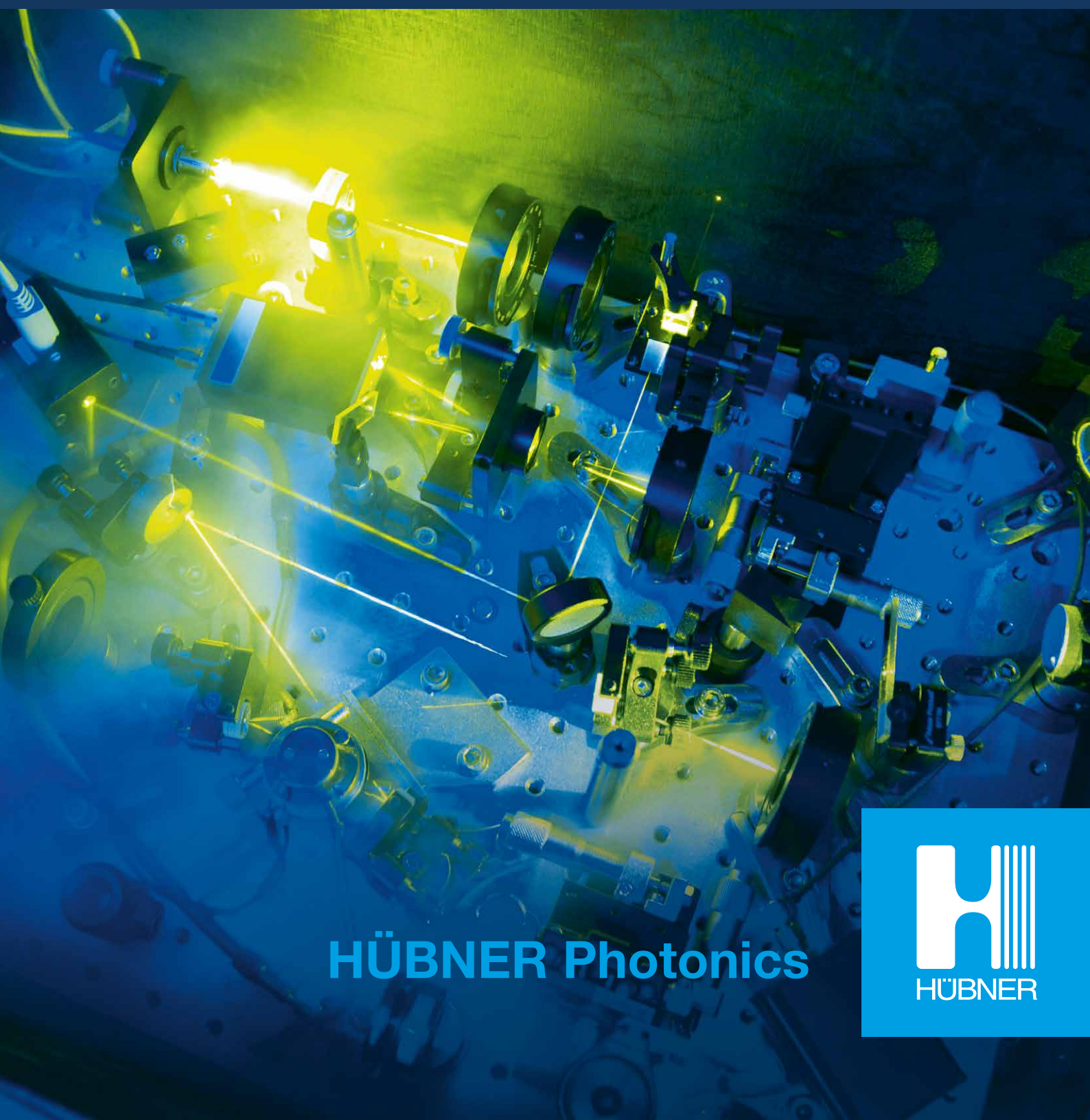


Laser and Terahertz Technology

HÜBNER Photonics | Coherence matters.



HÜBNER Photonics



Mobility. Materials. Photonics. | united by passion.

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HÜBNER Group

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united by passion.

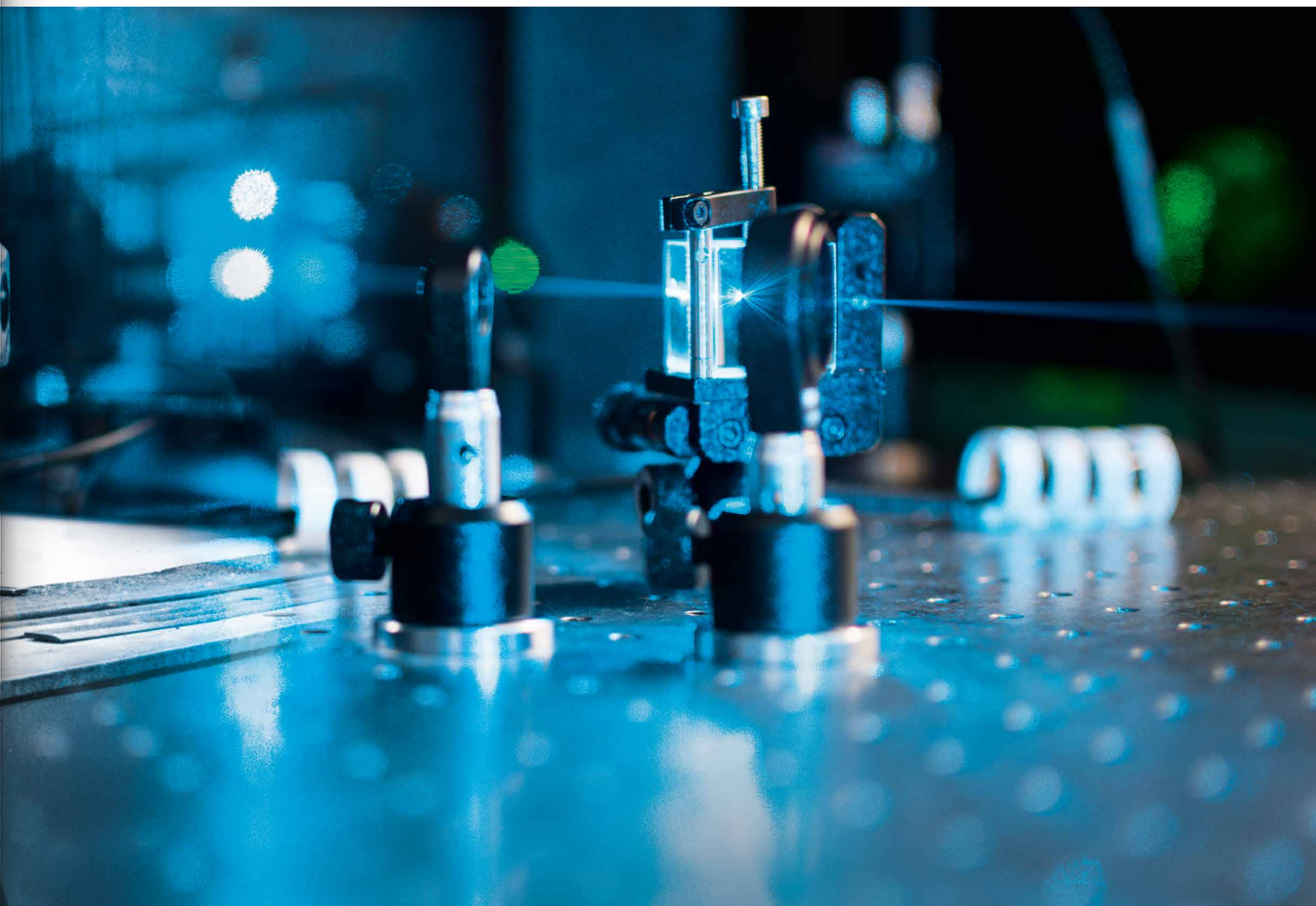


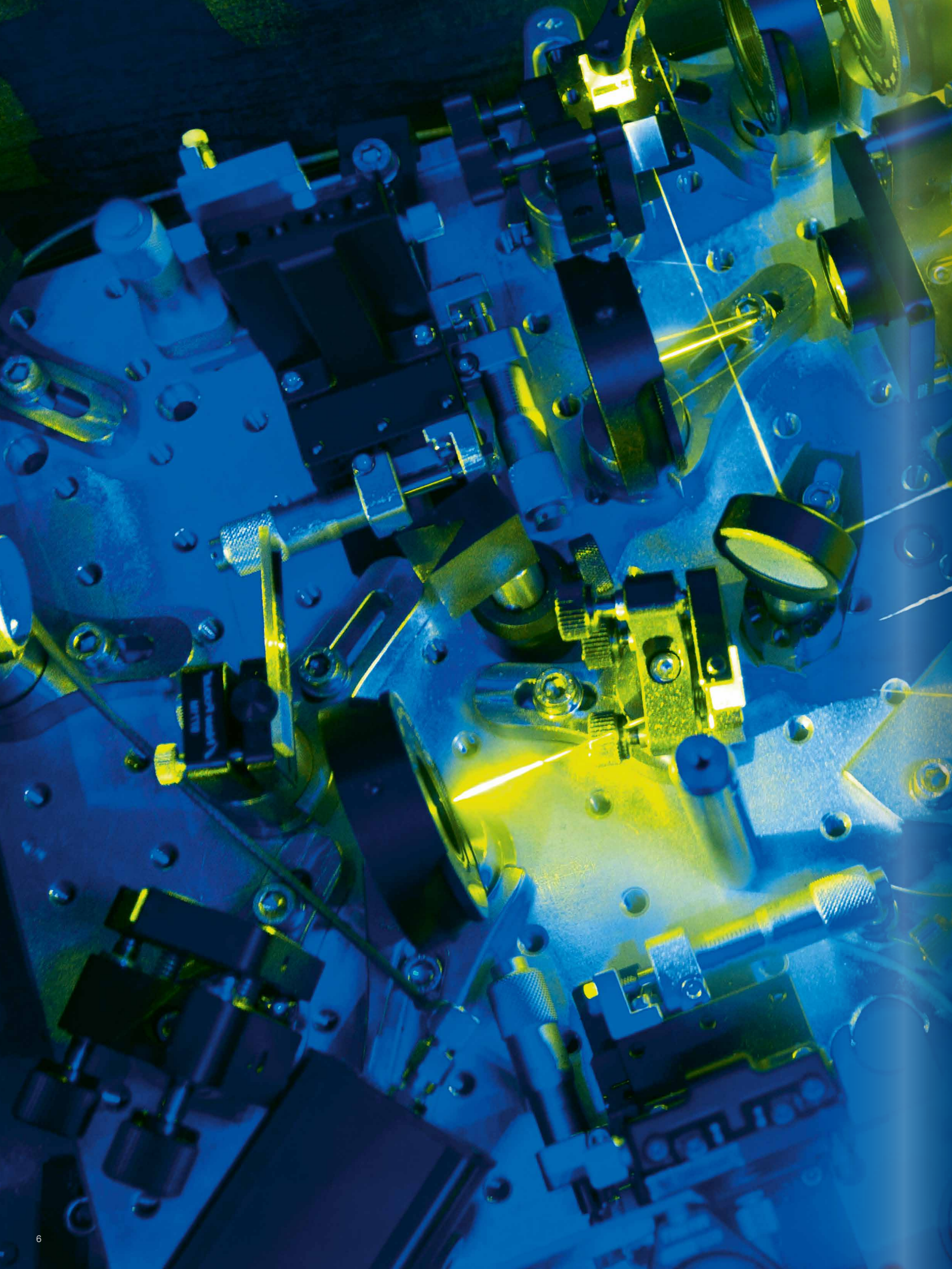
Since the beginning in 1946 when Kurt Hübner founded the company, HÜBNER has been shaped by a spirit of enterprise, inventiveness and innovation. Today it continues to be this same passion for new solutions that drives the company and its employees. Again and again over the years, new concepts for new products and new markets have been developed and implemented.

It is on this basis that HÜBNER has become the company that it is today: A comprehensive system supplier for transportation technology and the worldwide leader for gangway systems (Mobility), a well-recognized specialist for sophisticated elastomer solutions and products, insulation and composite materials (Material Solutions), as well as an up-and-coming company in the field of laser and terahertz technologies (Photonics).

Today the HÜBNER Group consists of more than 30 different companies and has more than 3,500 employees around the world. And HÜBNER products continue to stand out with their high-quality workmanship, their superior convenience and their distinctive durability. This high level of quality is to be found in all of the Group's business sectors and throughout the entire product range.

This all comes together in our company slogan:
Mobility. Materials. Photonics. | united by passion.







HÜBNER Photonics | Coherence matters.

“Two wave sources are perfectly coherent if they have a constant phase difference and the same frequency.” In a way, this condition sums up everything HÜBNER Photonics stands for.

We not only make game-changing lasers and light sources, but also rethink all kinds of other wave technologies including terahertz imaging and spectroscopy. The proven corporate values of the HÜBNER Group are brought together with innovative ideas and top-notch technologies.

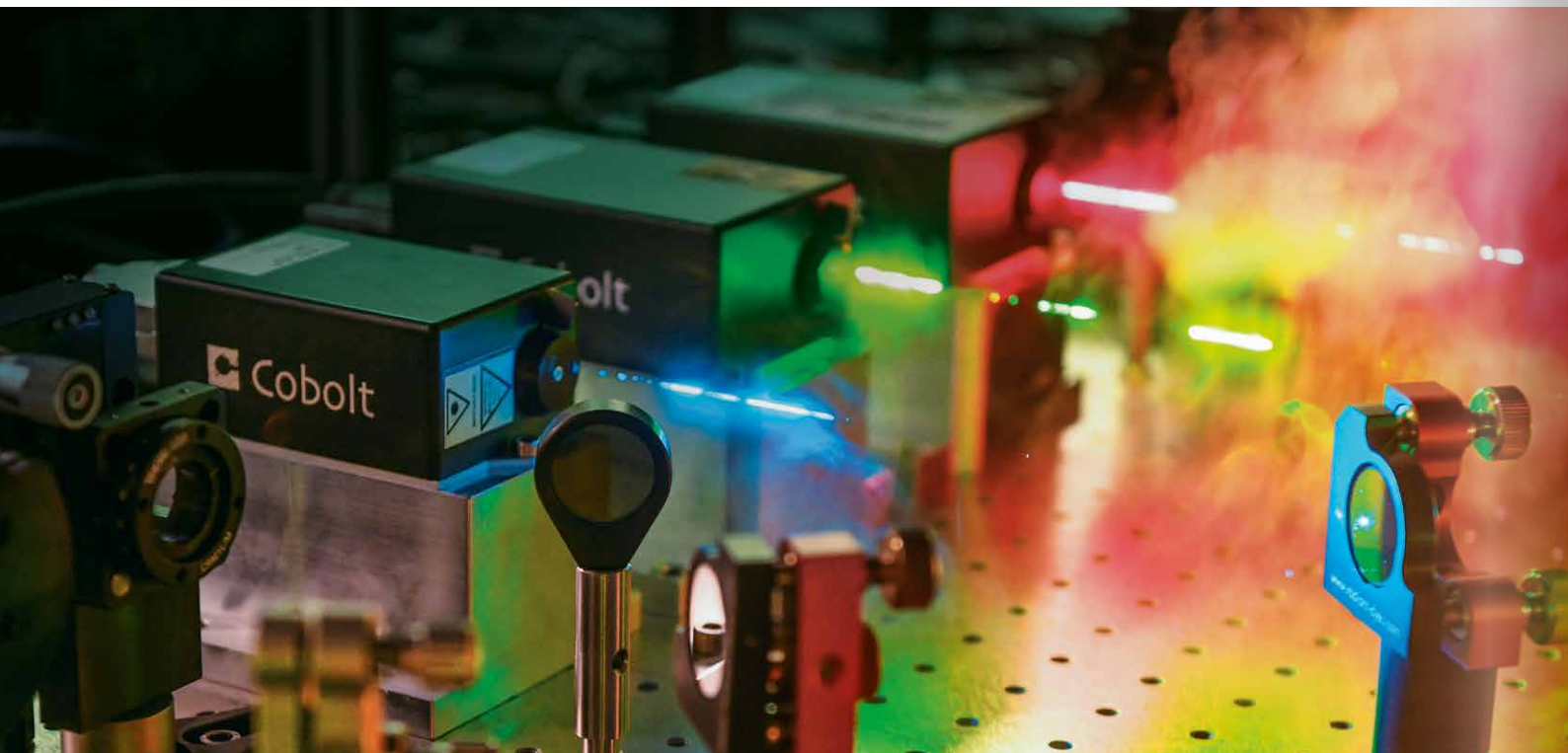
Coherence for us is far more than the perfect interaction of waves. It is the basis of our daily work and the fundament on which we build our business and our relations within our company and with our partners.

Coherence matters for our products – since we are committed to supplying reliable, innovative high performance photonics solutions.

Coherence matters in our attitude – our teams are built up by world-leading expertise in photonics, moving as one.

Coherence matters in our customer relations – we operate in phase with our customers' needs and therefore stand out by maximizing customer value.

Coherence matters is in our genes and our spirit – all day, every day.



TERAHERTZ TECHNOLOGY

Terahertz technology

An innovative tool for the detection, analysis and imaging of materials

Outstanding ease of use, extremely compact and entirely safe for persons and materials – these are the characteristics of the terahertz systems developed by HÜBNER Photonics on the basis of cutting edge research. Using terahertz waves, the new devices make it possible to visualize concealed contents in various situations. For example, in letters and packages suspicious substances and objects can be detected immediately and analyzed and visualized with hyperspectral imaging within seconds. The HÜBNER Photonics imagers and spectrometers are therefore especially well suited for use in mailrooms and other settings where security can be an issue. The devices also offer unique capabilities for non-destructive quality control in connection with industrial production.



LASER TECHNOLOGY

Laser technology

High-performance lasers for science and industry

HÜBNER Photonics offers a wide assortment of high performance laser products which meet the ever increasing opportunities for lasers in science and industry. This portfolio includes compact single frequency CW lasers, single frequency tunable CW lasers, multi-line lasers, diode lasers, Q-switched lasers and laser combiners covering the full UV-Visible-MidIR spectrum. Main application markets are to be found in spectroscopy, holography, quantum optics and many others. The combination of competencies across the HÜBNER Photonics division facilitates volume manufacturing of exceptional laser designs with unparalleled reliability. This means that life science and analytical instrument manufacturers now have a supplier they can really rely on and research scientists have a reputable source for lasers to meet their needs.



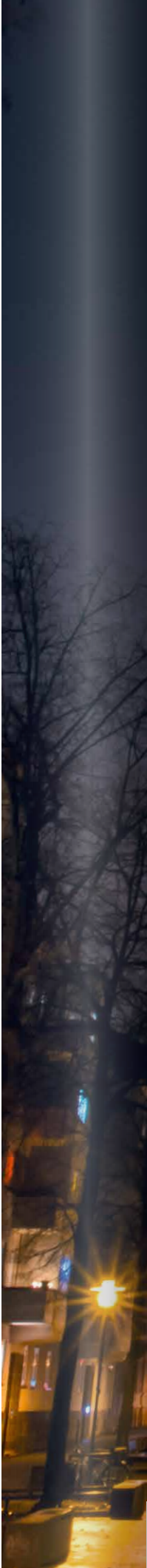
History A bright way into the future

Again and again, HÜBNER has been a driving force for technological progress. The family-owned company places a high priority on the innovative value and quality of its products and concepts – from the initial idea to the market-ready product.

In the field of laser and terahertz technologies, HÜBNER made a commitment to basic research early on and began to cooperate with leading scientific institutes. The company secured further know-how through its integration of the Swedish laser manufacturer Cobolt in 2015.

Even before the company's activities had been combined into the new business segment HÜBNER Photonics, two in-house developments received the renowned photonics Prism Award – the tunable laser C-WAVE as well as the terahertz spectrometer T-COGNITION.

In addition to its involvement in basic research, HÜBNER Photonics is also committed to ensuring the utility of its developments for customers in the real world. Many products and solutions are developed in close cooperation with industrial customers and with an eye on their specific needs. And these products also undergo continual enhancement and improvement based on the demands of commercial use. In addition, all customers benefit from the wide cross-industry know-how of the HÜBNER Group.



Acquisition of
VALO Innovations GmbH 2021

2019 Expansion of clean-room facilities
in Kassel and Stockholm

Introduction of Cobolt Skyra™
and C-FLEX 2017

2016 Formation of new division
HÜBNER Photonics, encompassing
laser and terahertz technology

Acquisition of Cobolt AB 2015

2014 Prism Award for C-WAVE
and T-COGNITION™

Diversification into laser technology
in collaboration with Fraunhofer Institute 2012

2008 Introduction of HTCure™ process
by Cobolt

Diversification from HÜBNER
into terahertz technology in collaboration
with Fraunhofer Institute 2006

2000 Founding of Cobolt AB

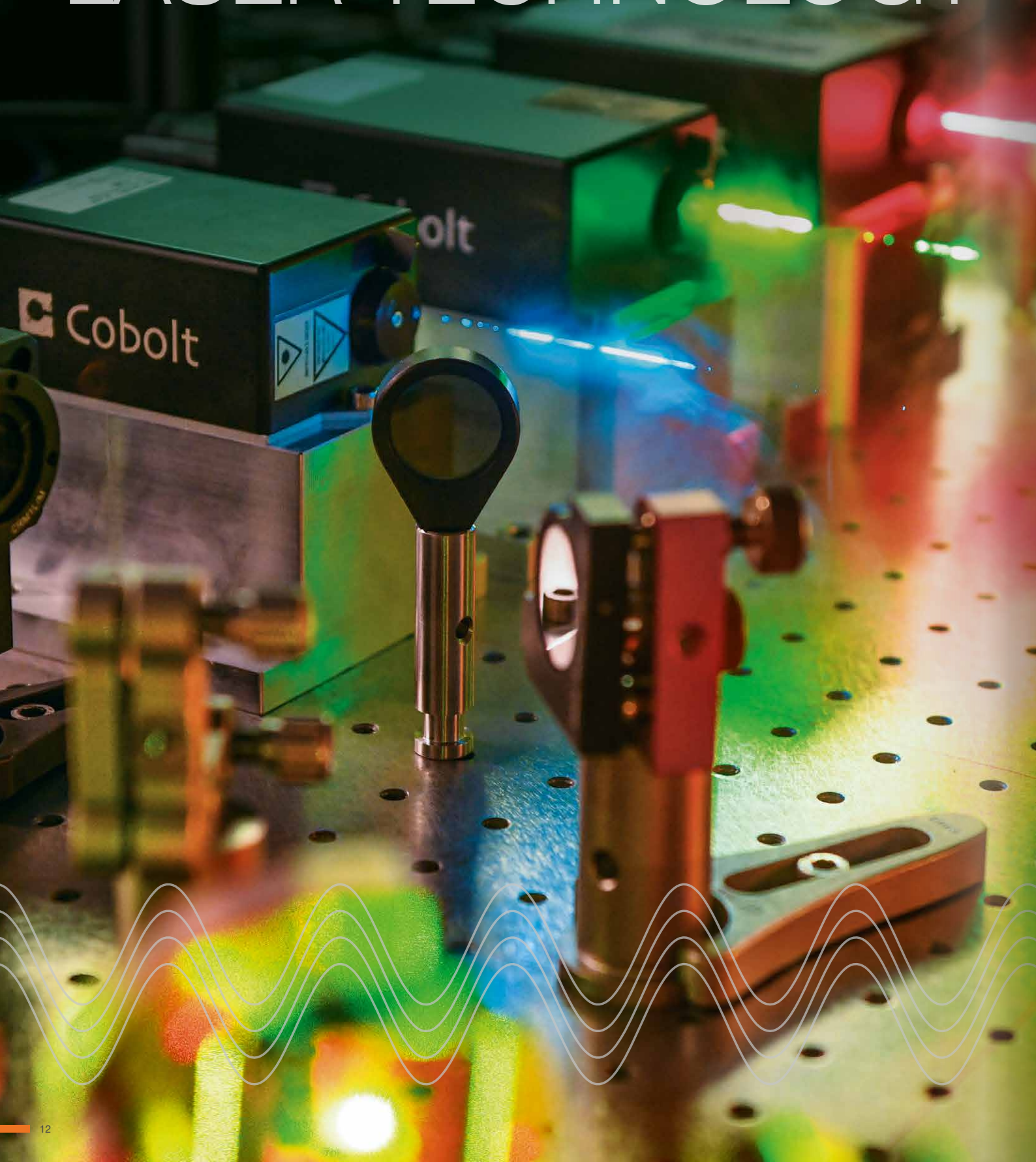
Production of rubber tubing connections as
gangways for railway passenger cars of
the Deutsch Bahn and production of the
folding bellows for articulated buses 1952

1946 Founding of the company by Kurt Hübner
in Kassel, Germany.
Start of rubber production activities

Lasers have long played a special role in Kassel,
where the HÜBNER headquarters is located. For
more than 40 years, green laser lines have marked
the night sky of the city. Kassel's "Laserscape",
created for the Documenta exhibition in 1977, is
the world's first permanent laser light artwork.

Laser technology

LASER TECHNOLOGY



High performance lasers

A wide array of laser sources

Laser technology has come to have an indispensable role in scientific and medical research, in industrial production and even in many everyday applications from cosmetics to autonomous vehicles. At HÜBNER Photonics, our laser technology is offered in 3 product lines:



Cobolt – Single and multi-line lasers

Through the well-known Swedish laser manufacturer Cobolt, a proven supplier of high performance lasers of more than 15 years, HÜBNER Photonics offers one of the industry's broadest ranges of compact single-frequency CW lasers, diode lasers and Q-switched lasers across the full UV-Visible-MidIR spectrum. Using proprietary HTCure™ laser manufacturing technology, the Cobolt lasers are associated with outstanding reliability and product lifetime. The patented HTCure™ process is a technology for high precision mounting of optics that works with exceedingly high temperatures to provide outstanding durability in a highly compact design.



C-WAVE – Tunable laser

Complementing Cobolt's broad portfolio of compact lasers, the tunable lasers developed by HÜBNER Photonics cover an unusually wide spectrum and have gained a strong reputation throughout the industry. C-WAVE is one of the most unique kinds of lasers on the market – a single-frequency, CW, frequency doubled OPO (optical parametric oscillator), providing broadly tunable emission across the visible (and NIR) spectrum at the click of a button.



C-FLEX – Laser combiner

With the trend towards simplicity and user friendliness, the C-FLEX laser combiners offer the flexibility of combining any lasers from the extensive range of high performance lasers from Cobolt.



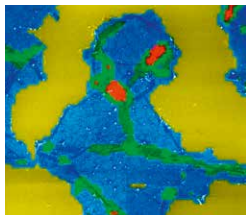
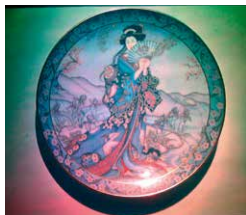
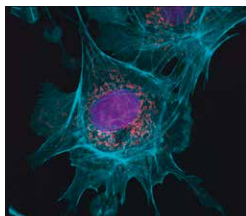
Cobolt – Single and multi-line lasers

Innovative laser solutions with high output power, stable singlemode operation and large wavelength flexibility in the UV-Visible-MidIR spectral range.

Cobolt lasers have become a preferred choice by leading instrument manufacturers and scientists in some of the most challenging applications in the fields of biomedical research, on-line quality and process control, clinical diagnosis, material research, particle analysis and semiconductor metrology. Our commitment is to increase the availability of laser-based equipment that can contribute to improving the quality of life and a better environment.

A combination of sophisticated laser designs and the HTCure™ Technology for advanced laser manufacturing allows Cobolt to provide lasers in compact formats with the performance and reliability required by the most demanding applications and for use in industrial environments.

Applications



- Fluorescence microscopy
- Super-resolution microscopy
- DNA sequencing and analysis
- Raman spectroscopy
- Flow cytometry
- Interferometry
- Semiconductor metrology
- Gas detection
- Materials processing
- Optogenetics
- Optical tweezers
- Holography
- LIBS
- LIDAR
- Dynamic light scattering

Cobolt

CW and pulsed lasers

Compact single-frequency CW lasers, diode lasers and Q-switched lasers across the full UV-visible-MidIR spectrum. Using proprietary HTCure™ laser manufacturing technology, Cobolt lasers are associated with outstanding reliability and lifetime.



	Cobolt 04-01 / 05-01 Series	Cobolt 06-01 Series	Cobolt 08-01 Series	Cobolt Skyra™	Cobolt Odin™ Series	Cobolt Tor™ Series	Cobolt Rogue™	max. power level
CW lasers	●	●	●	●			●	3000 mW
Pulsed lasers					●	●		1000 mW
Single frequency	●		●					3000 mW
Modulated lasers		●		●				300 mW
Narrow linewidth			●					500 mW
Tunable lasers					●			80 mW
Multiline lasers				●				100 mW
Fiber coupled/pigtailed	●	●	●	●				

CW lasers

Cobolt 04-01 Series and 05-01 Series



Powerful single frequency CW diode pumped lasers

- 320 – 1064 nm up to 3 W
- < 0.1 % rms noise, in a perfect TEM00 beam
- < 1 MHz linewidth, superior spectral purity and wavelength stability

Cobolt 06-01 Series



Plug & play modulatable CW lasers

- 375 – 975 nm up to 400 mW
- Modulated laser diode (MLD) and diode pumped lasers (DPL) with fully integrated electronics
- Fast and deep modulation, fiber pigtailed option

Cobolt 08-01 Series



Compact narrow-linewidth lasers

- 405 – 1064 nm up to 500 mW
- SLM diode pumped lasers (DPL) and frequency stabilized diode lasers (NLD)
- Integrated optical isolators/filters

Cobolt Skyra™



Multi-line laser

- Up to 4 laser lines, 405 – 660 nm
- Permanently aligned in a single beam
- Fully integrated electronics
- Fiber coupled option

Pulsed lasers

Cobolt Rogue™ Series



High power, CW diode pumped lasers

- 640 nm, up to 1 W
- <150 GHz spectral bandwidth

Cobolt Tor™ Series



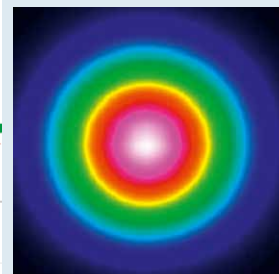
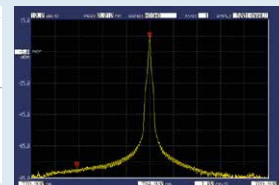
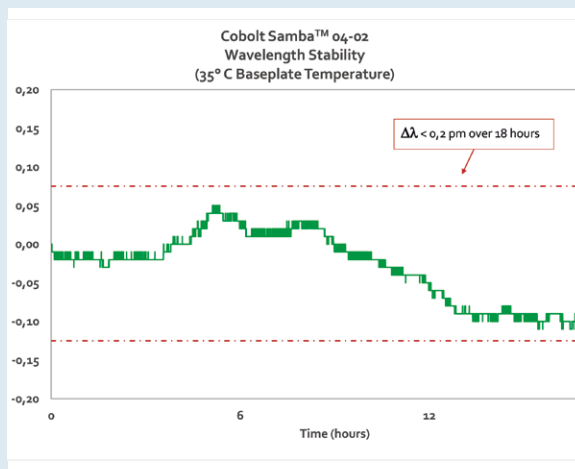
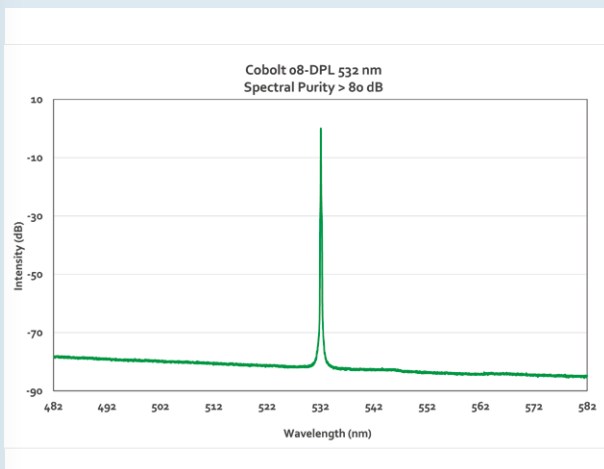
High performance Q-switched lasers

- 355 nm, 532 nm, 1064 nm
- <5 ns, >7 kHz free running
- Single shot to 1 kHz triggerable
- up to 0.5 mJ/pulse

Cobolt Odin™ Series

Compact, tunable Mid-IR OPOs

- Wavelength selectable 3,1 μm – 4,6 μm
- Tunable up to 50 nm, narrow linewidth option
- Up to 80 mW at 10 kHz



Outstanding from start to finish



Pioneer with a patent

The Swedish company Cobolt arose from a research project in the year 2000. Today as part of HÜBNER Photonics, it is one of the world's leading developers and producers of high-performance lasers. The product portfolio encompasses innovative laser solutions with high output power and stable single-mode operation. In the UV-Visible-MidIR spectrum range, the products offer exceptional flexibility in wavelength adjustment.

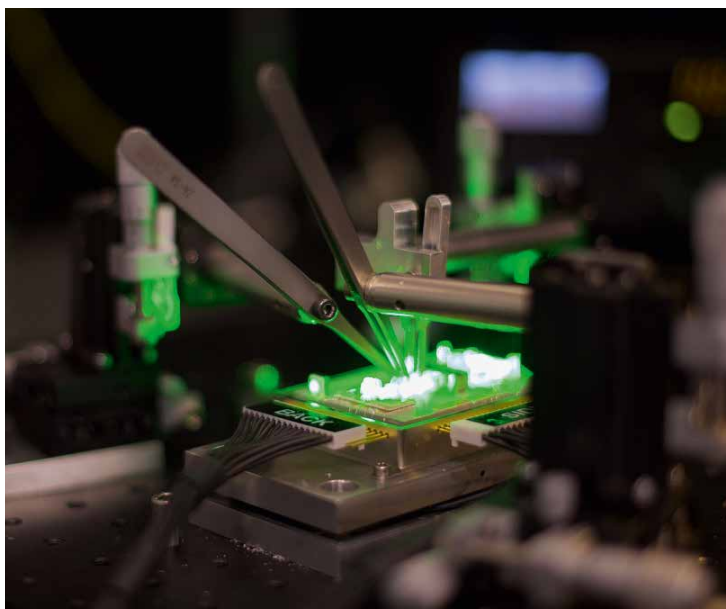
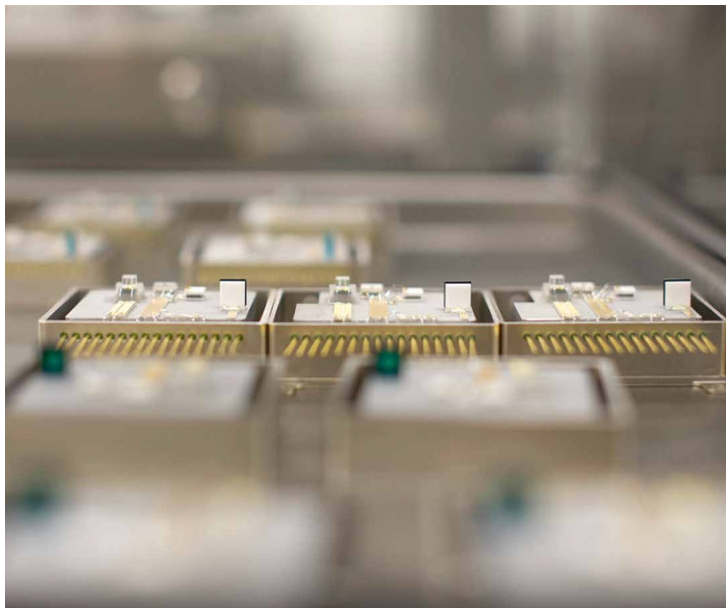
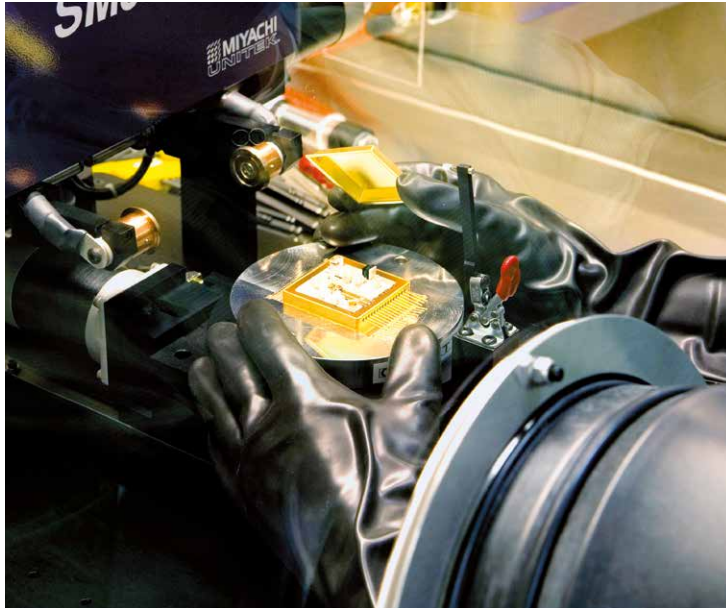
Thanks to the sophisticated cavity designs and patented HTCure™ production technology, Cobolt can produce compact lasers for a wide range of applications as well as for industrial use. Providing dependable, reliable, long-lasting laser technology for better quality of life and improved environmental protection – that's the aim of our company.

The HTCure™ process

HTCure™ is a high-temperature curing process developed by Cobolt as part of the laser production process. It allows for a very high degree of reliability in the curing process, exceptional optical performance and unparalleled stability.

In the HTCure™ process, all of the components of the assembly are selected for their thermomechanical stability and the lasers are packaged in a hermetically sealed sub-housing. As a result, during the production the complete laser unit may be heated to over 100 degrees Celsius for several hours and in various steps without losing its alignment or suffering any damage.

This thermal curing step ensures an extremely rigid and at the same time robust solution so displacements do not occur later on.



C-WAVE

The **tunable laser** light source



C-WAVE is the tunable laser light source for continuous-wave (cw) emission in the visible and near-infrared wavelength range. Its technology is based on optical parametric oscillation (OPO) and it is fully computer controlled. Thus, it allows you to tune from blue to red and into the near-infrared without any change of dyes or optical components. This makes C-WAVE a flexible and user-friendly laser for your applications.

Change the way you work

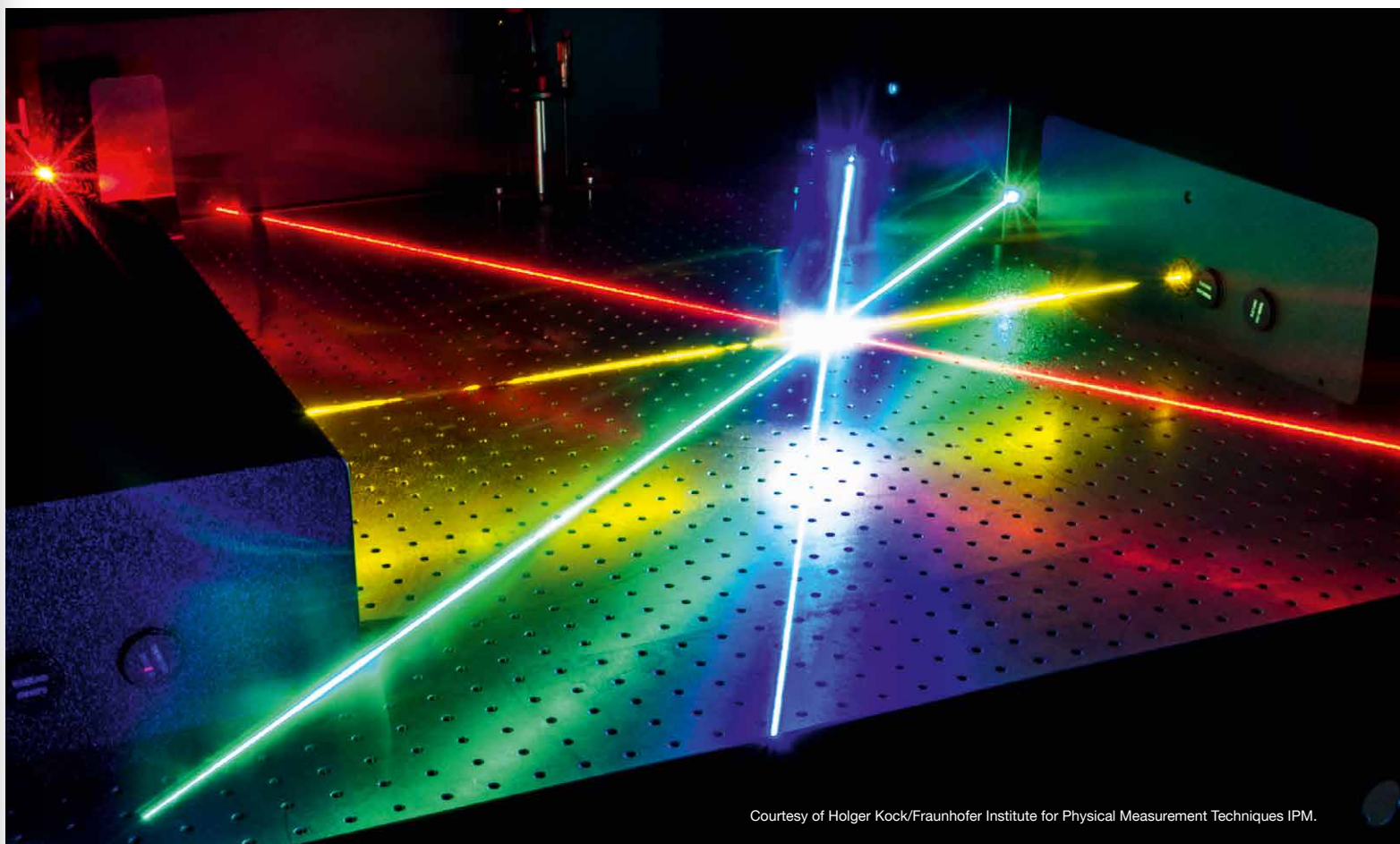
Visible, widely tunable, continuous-wave – for a long time this meant handling of toxic dyes, changing laser media or resonator mirrors and often a restricted narrow tuning range. C-WAVE is a solid state system that has no consumable components such as dyes. The wavelength can be simply set at the computer.

C-WAVE tunes itself automatically and guarantees superior beam quality as well as output stability across the whole tuning range – offering both high flexibility and precision at the same time. It provides single frequency operation, narrow spectral linewidth and options for frequency stabilization combined with an unprecedented spectral coverage.

Focus on your research, not on laser handling: C-WAVE helps you free your mind for your main tasks.

Applications

- Quantum optics
- Holography
- Nanophotonics
- Atomic physics
- Metrology
- High resolution spectroscopy
- Biophotonics
- Photochemistry
- Interferometry
- Raman spectroscopy



Courtesy of Holger Kock/Fraunhofer Institute for Physical Measurement Techniques IPM.

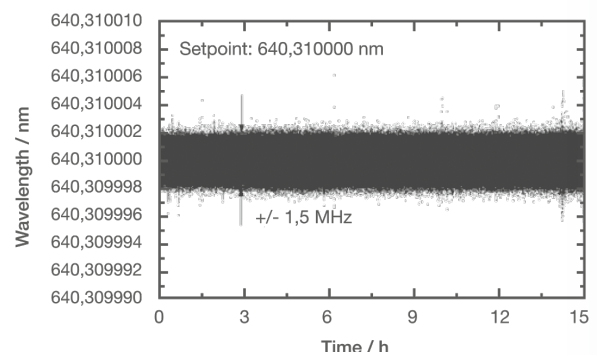
C-WAVE

Flexibility – with precision



AbsoluteLambda™

External wavelength measurement device (wavemeter) and software package to provide enhanced absolute wavelength accuracy as well as precise frequency stabilization for C-WAVE.



Exemplary measurement of stabilized wavelength using AbsoluteLambda.

Operation principle

C-WAVE combines two nonlinear processes to achieve its outstanding spectral coverage: In the first step (OPO), a fixed frequency laser pumps a nonlinear periodically poled crystal. Signal and idler photons with tunable frequencies in the near-infrared wavelength regime are generated.

Subsequent second harmonic generation (SHG) using a frequency doubling crystal leads to conversion of the tunable infrared light into the visible wavelength range.

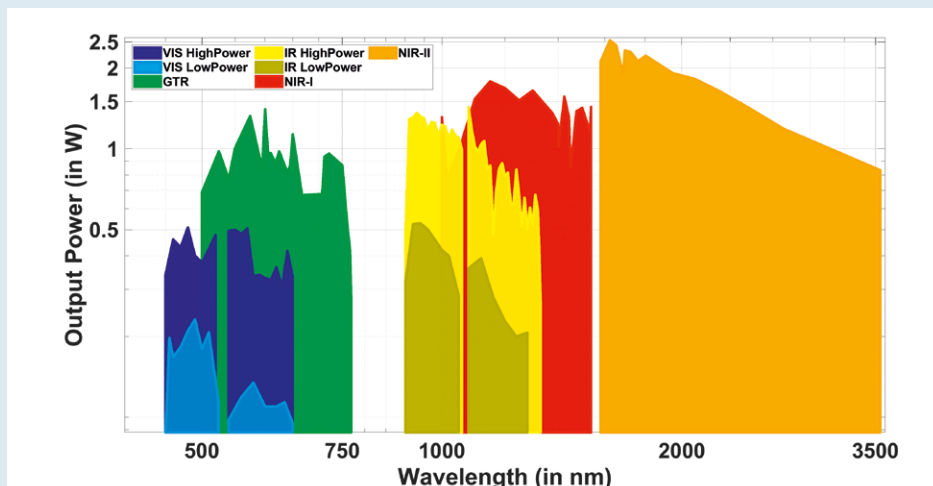
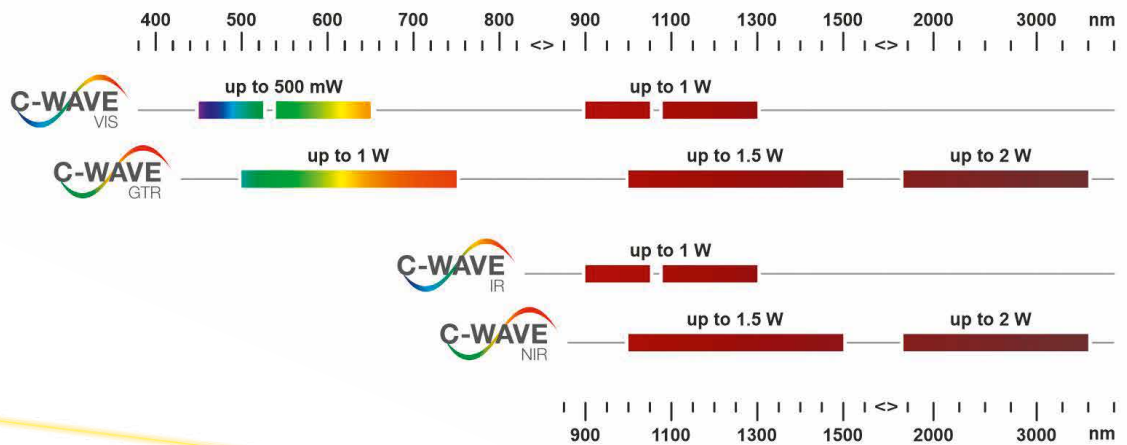
The modular design of C-WAVE enables you to choose the color ranges that you require!

Wide tunability – choose your colors

The concept of C-WAVE allows the user to build laser-light sources for tunable continuous-wave emission from the near UV to the infrared.

Output power – tailored to your needs

Depending on the required output power level, C-WAVE is either pumped by an external single-frequency laser or comes with an integrated laser, making operation and application even easier for you.



Typical output power of different C-WAVE models

375 nm	●
405 nm	●
415 nm	●
425 nm	●
445 nm	●
457 nm	●
473 nm	●
488 nm	●
491 nm	●
505 nm	●
515 nm	●
532 nm	●
553 nm	●
561 nm	●
594 nm	●
633 nm	●
638 nm	●
647 nm	●
660 nm	●
685 nm	●
730 nm	●
760 nm	●
785 nm	●
808 nm	●
830 nm	●
940 nm	●
975 nm	●
1064 nm	●

C-FLEX

Laser combiners

Choose your colors

The C-FLEX laser combiner harnesses the quality and reliability of the Cobolt high performance lasers. The C-FLEX laser combiners are available in three platform sizes (C4, C6, and C8) and can be equipped with up to 4, 6, or 8 Cobolt lasers. C-FLEX can be fully customized, or is available as application-specific configurations. The design allows for full flexibility in the choice of laser technology, ranging from plug and play diode lasers to high power, single frequency diode pumped lasers.

The way setups are meant to be

C-FLEX features a common power supply and common interlock (key switch plus remote interlock) for all lasers. It is field upgradeable and customizable. The compact and robust design of the C-FLEX provides excellent long-term stability and outstanding flexibility for your application.

Highest flexibility

- 375 nm to 1064 nm, up to 1000 mW
- Easy to install and field upgradeable
- High speed modulation, optional AOM (acousto-optical modulators) for fast modulation of DPSS lasers and power regulation
- Fiber coupling with options for multiple outputs
- Optional electromechanical aperture shutters
- User friendly software interface

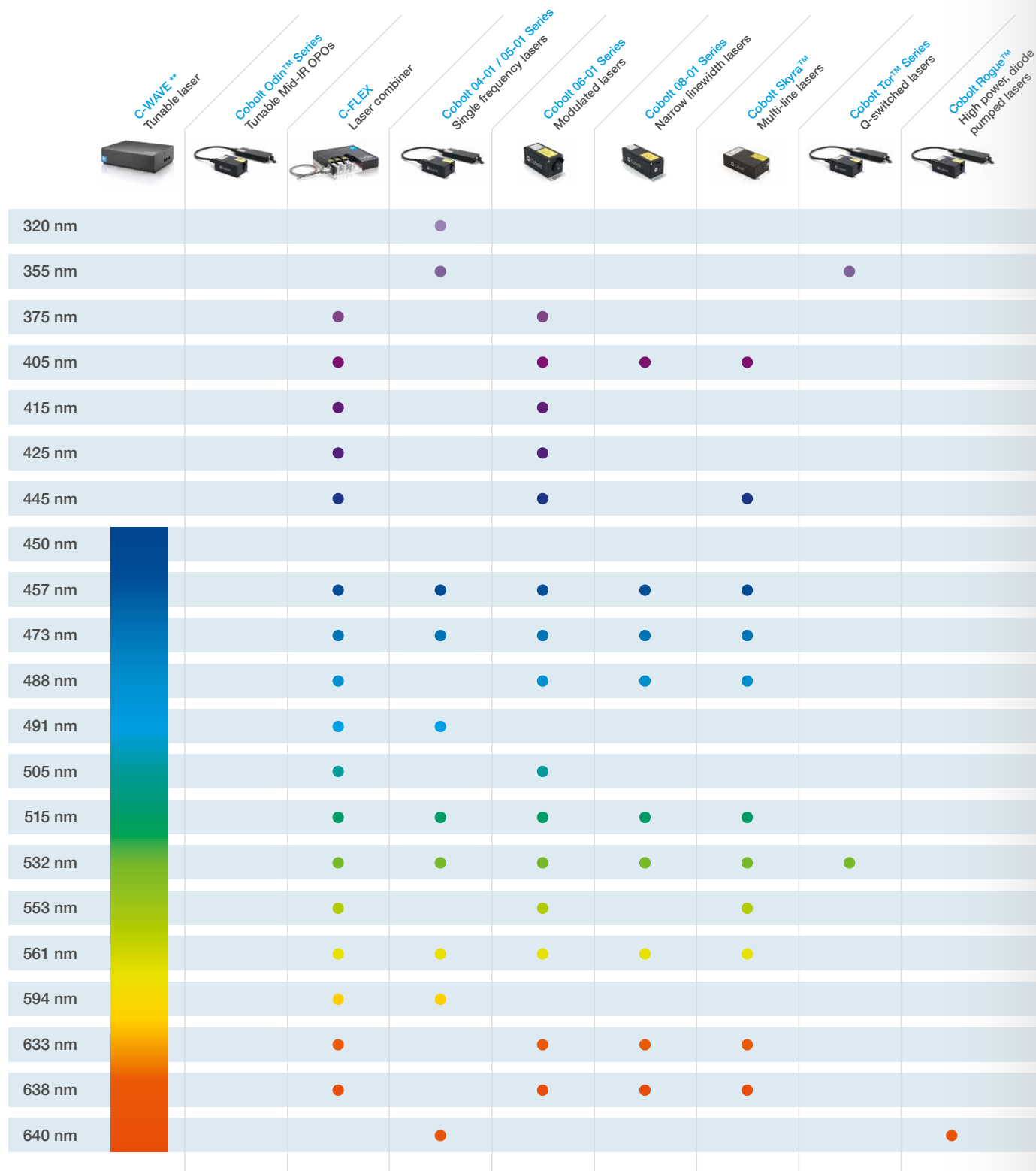


Applications

- Fluorescence microscopy
- Flow cytometry
- Raman spectroscopy
- Optogenetics
- Photochemistry
- Holography
- Argon-Ion replacement
- Custom Solutions

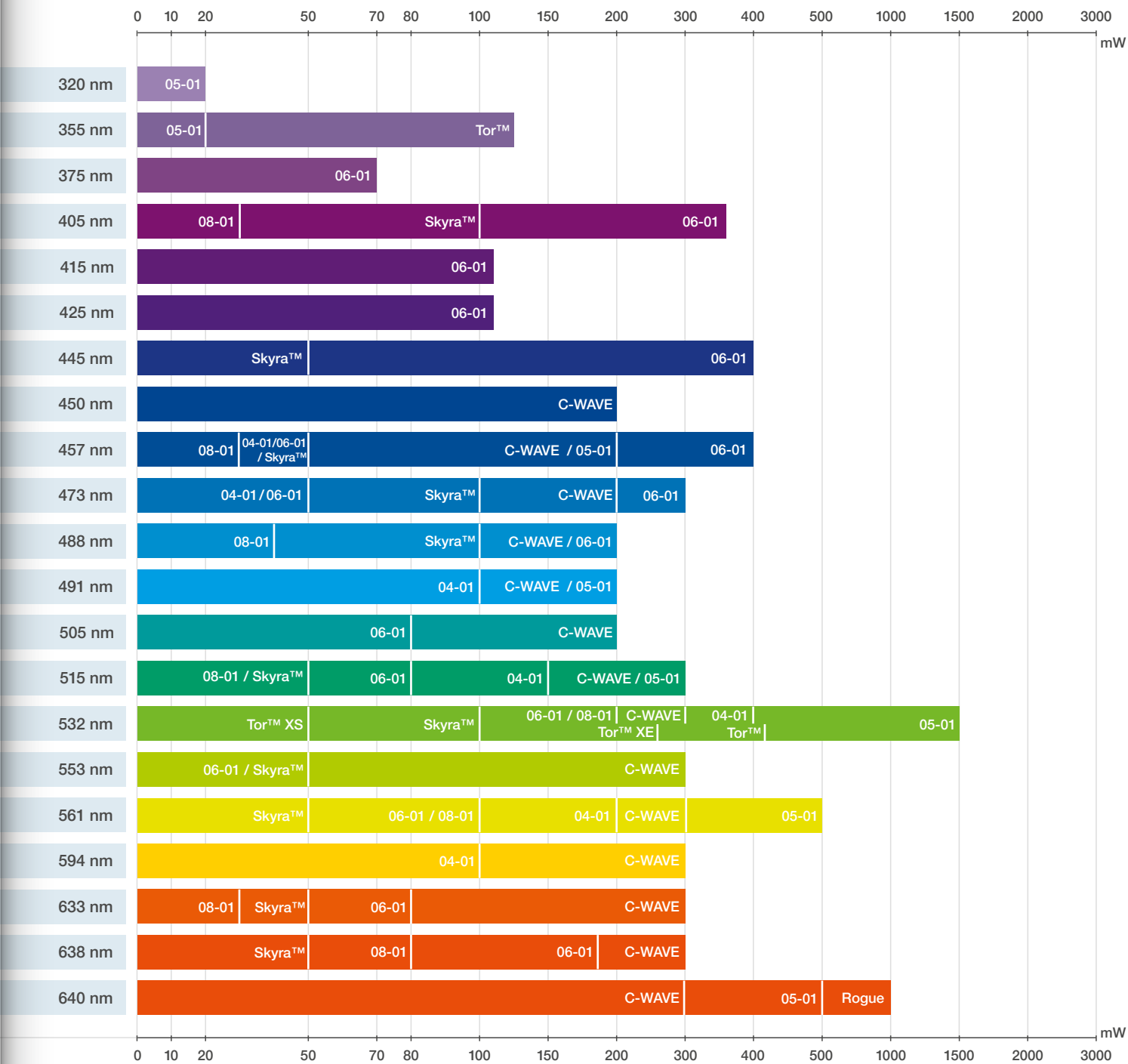


Our laser technology products – A wide array of light sources

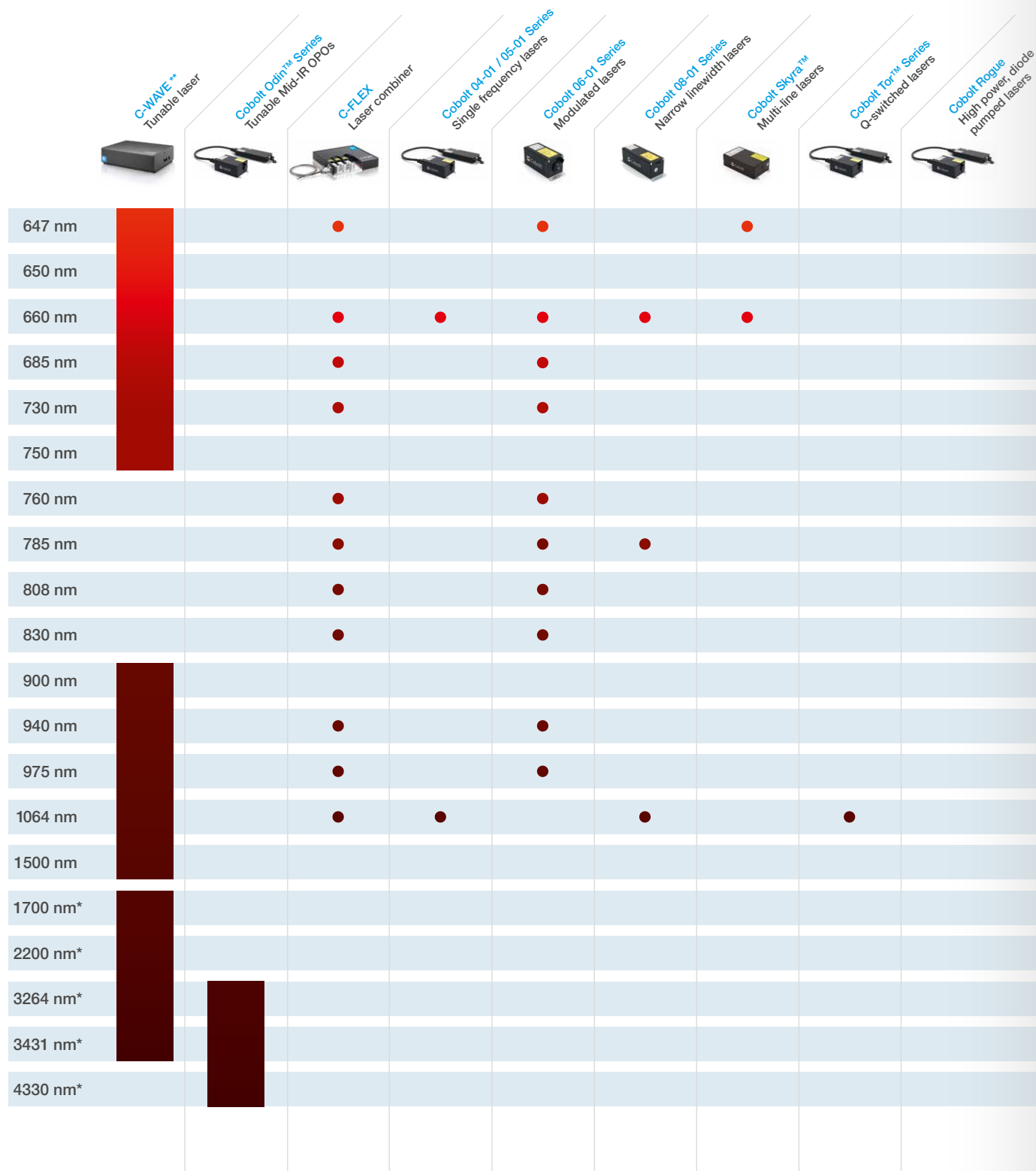


* Center wavelength selectable between 2-5µm, tunable 50nm.

** C-WAVE typical powers can reach up to Watt-level in the visible and infrared wavelength range. Compare with typical tuning curve for more details.

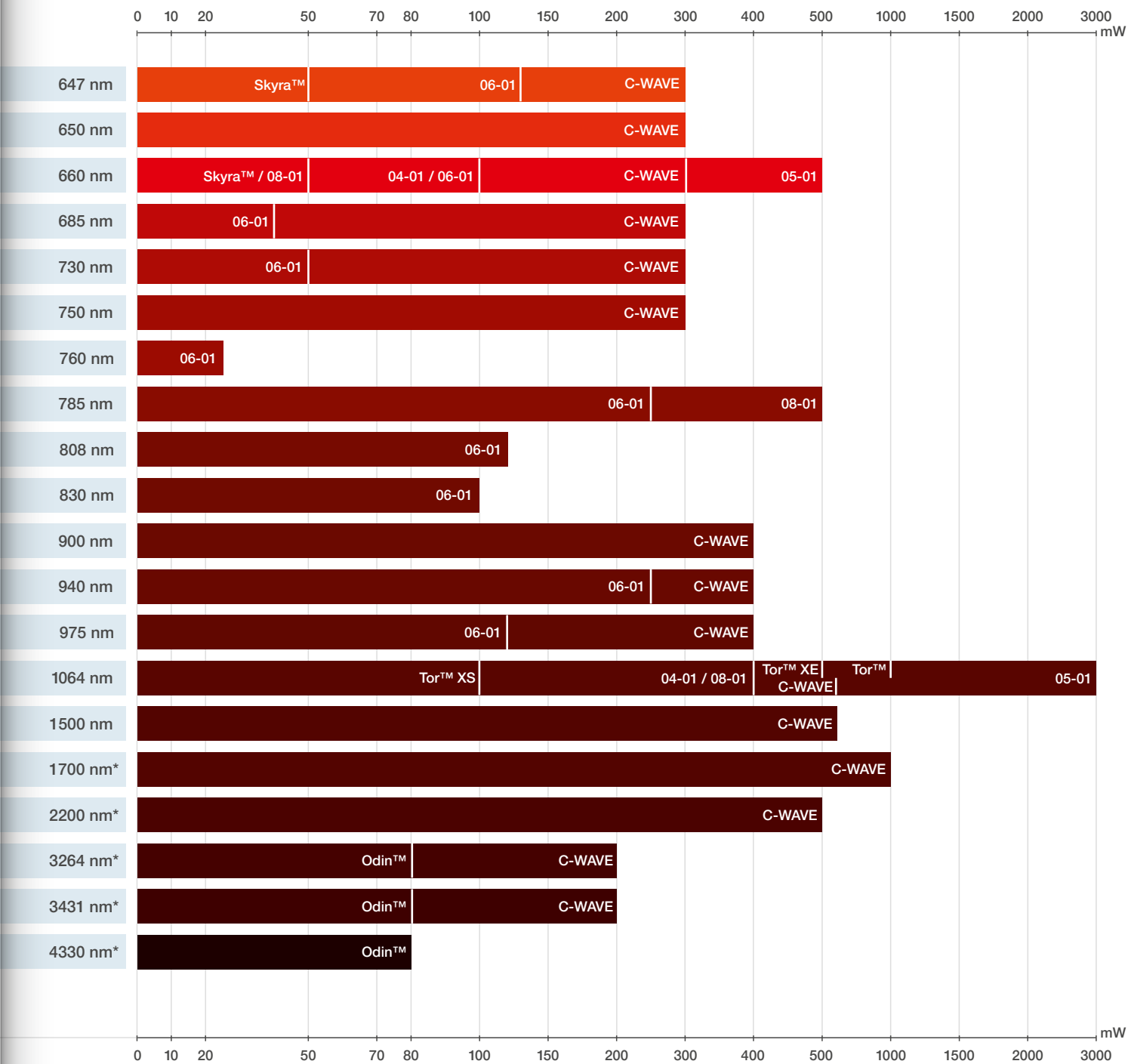


Our laser technology products – A wide array of light sources

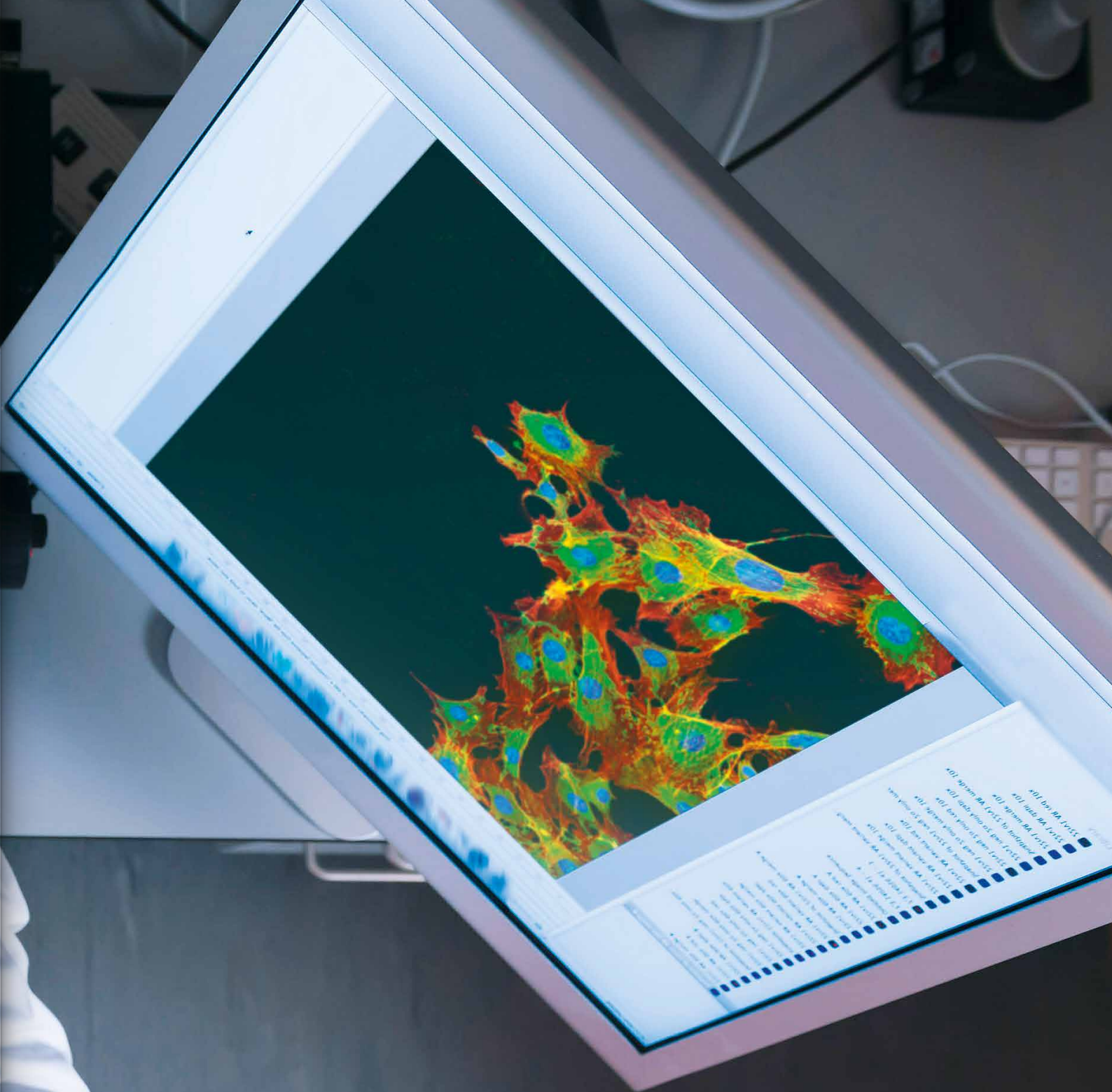


* Center wavelength selectable between 2-5µm, tunable 50nm.

** C-WAVE typical powers can reach up to Watt-level in the visible and infrared wavelength range. Compare with typical tuning curve for more details.







APPLICATIONS

Applications

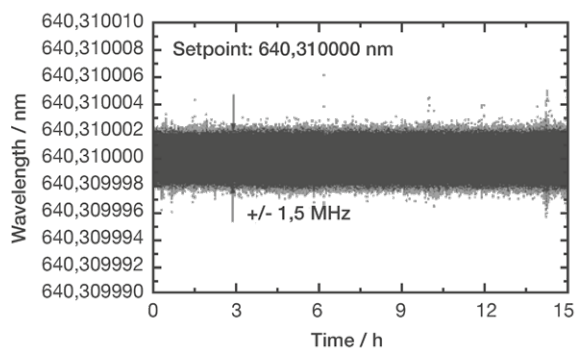
Applications

Lasers for Quantum Optics

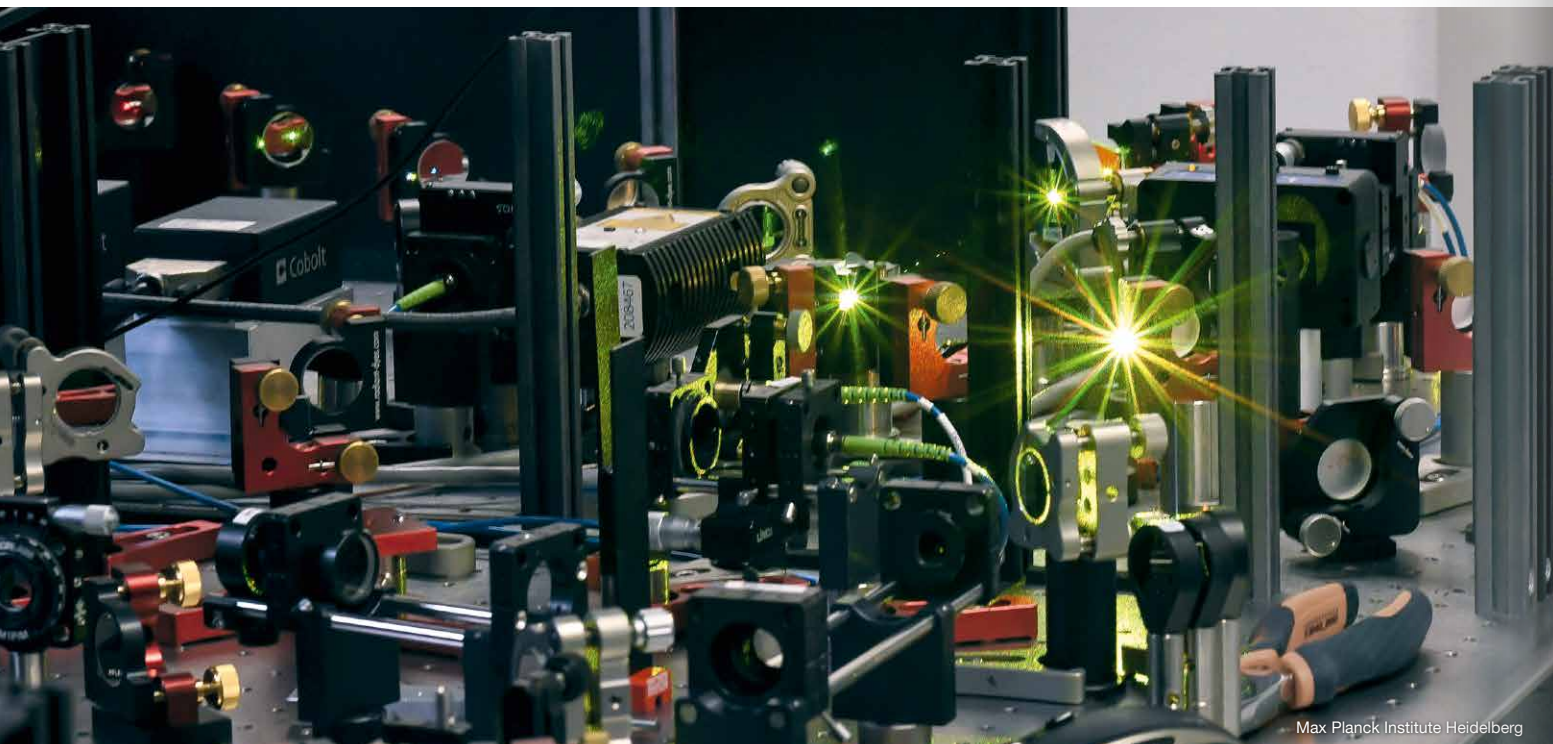
The field of quantum optics deals with the interactions of light and matter. In this still young discipline, photons or “light quanta” – the smallest particles of light – are investigated. The aim of this type of research is to gain an understanding of the overall behavior of electromagnetic waves.

The laser sources produced by HÜBNER Photonics play an important role in quantum optics research. This is especially the case with the tunable C-WAVE laser and Cobolt lasers with their high spectral purity and excellent wavelength stability. They provide exactly the flexibility and the precision that are essential for basic research applications.

- C-WAVE – Tunable laser, single frequency
- Cobolt – Modulated diode and single frequency lasers



Exemplary measurement of stabilized wavelength using AbsoluteLambda™.



Max Planck Institute Heidelberg

Applications

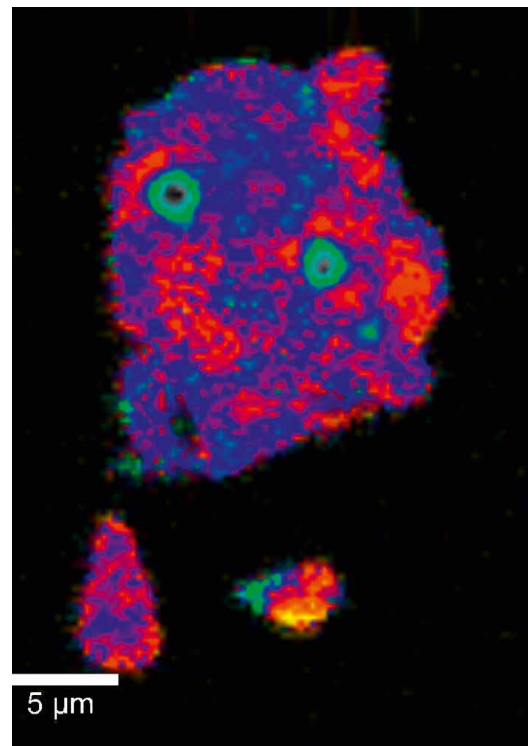
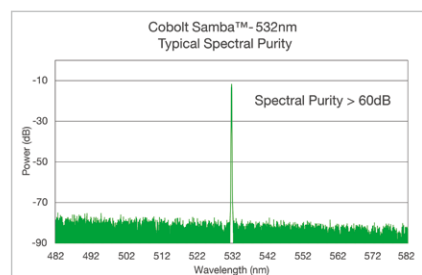
Lasers for Raman Spectroscopy

The “inelastic scattering of light” was first observed and identified by C.V. Raman in 1928. In 1930, he received the Nobel Prize in Physics for this work. But only in more recent times has it become possible to make use of the so-called Raman effect by which the frequency of light changes when it is deflected by molecules. In the past two decades, Raman spectroscopy has developed as a widely applicable method of examination – for fields ranging from material analysis to life sciences applications to point-of-care diagnostics. This has been made possible through the development of compact laser sources, highly sensitive cameras and compact high-resolution spectrometers.

With the lasers from Cobolt, HÜBNER Photonics has one of the widest ranges of products on the market for Raman spectroscopy applications. The Cobolt 08-01 Series of lasers, for example, has been specially developed for Raman applications with integrated Raman filters and optional isolators. Individual lasers can be com-

bined with the C-FLEX laser combiner for added user friendliness. For applications requiring a tunable, single-frequency laser in the visible range, the C-WAVE laser is especially well suited.

- Cobolt – Single frequency and narrow linewidth lasers
- C-WAVE – Tunable laser, single frequency
- C-FLEX – Laser combiner



Applications

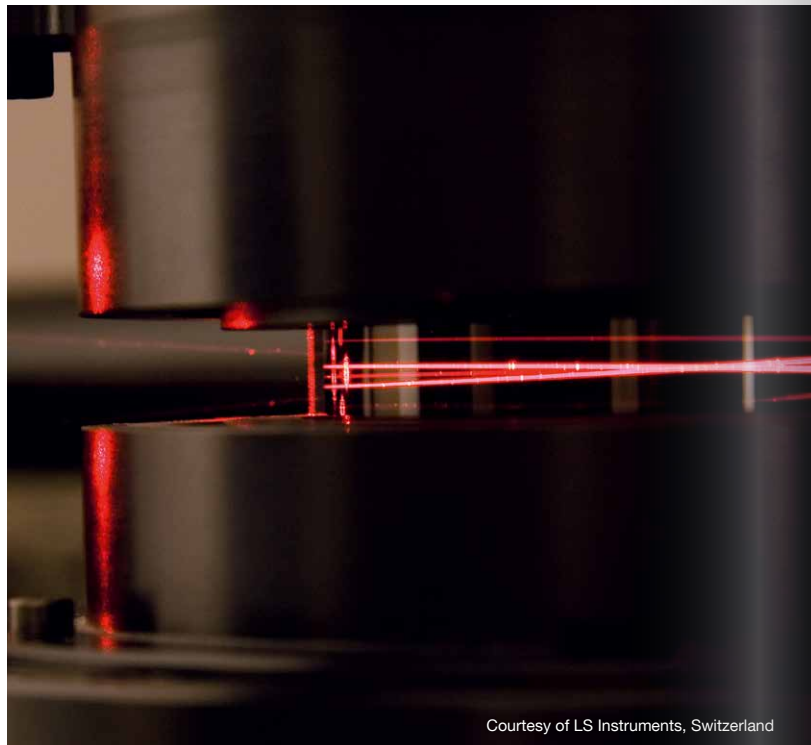
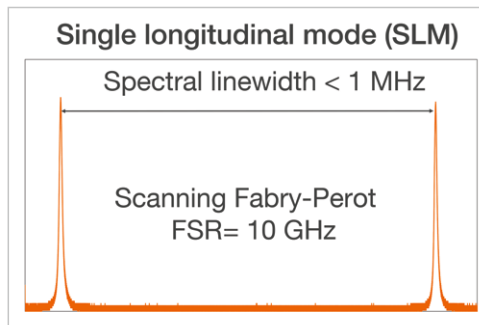
Lasers for Interferometric Applications

The term interferometry derives from the word interference. Interference is a phenomenon that occurs when two waves of any kind come together at the same time and place. Interferometry makes use of interference phenomena for measurement purposes, for example investigation of the flatness of an optical surface.

Even though there are many different types of interferometric based applications, all of them basically operate on the same principle. Two beams are separated and then combined so that they interfere with each other. In order to get interference a highly coherent laser source is required. The more coherent the laser beam, or the longer the coherence length, the finer the detail that can be resolved.

HÜBNER Photonics has one of the widest ranges of single frequency lasers in the industry for interferometric techniques, including holography, Doppler velocimetry and dynamic light scattering.

- Cobolt – Single frequency lasers
- C-FLEX – Laser combiner
- C-WAVE – Tunable laser, single frequency



Courtesy of LS Instruments, Switzerland

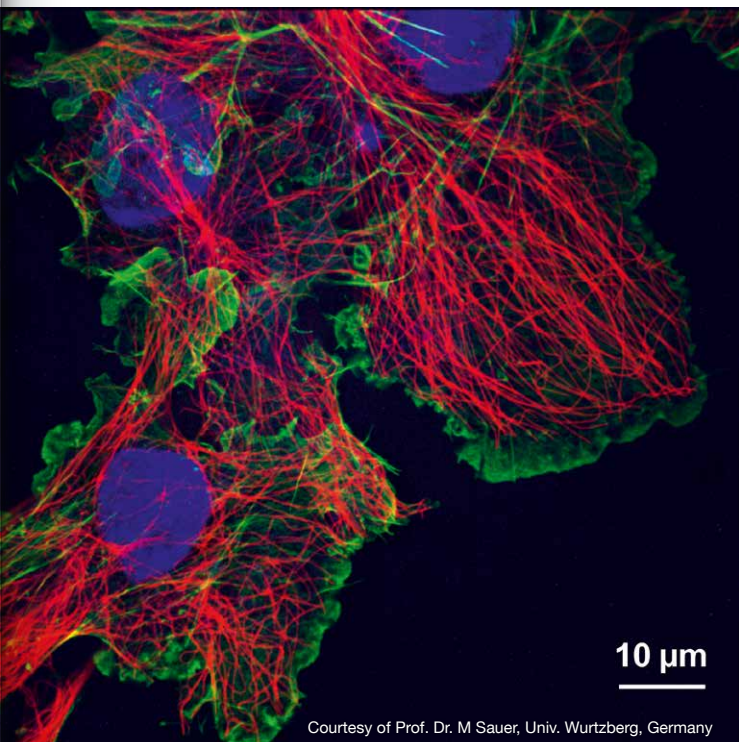
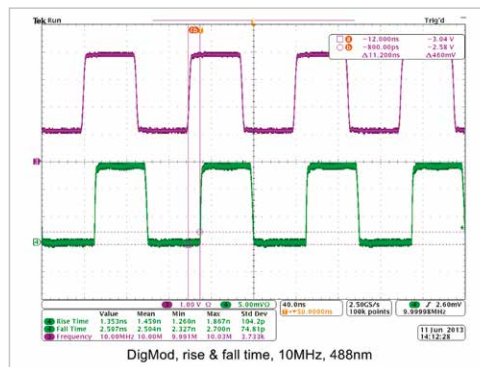
Applications

Lasers for Life Science

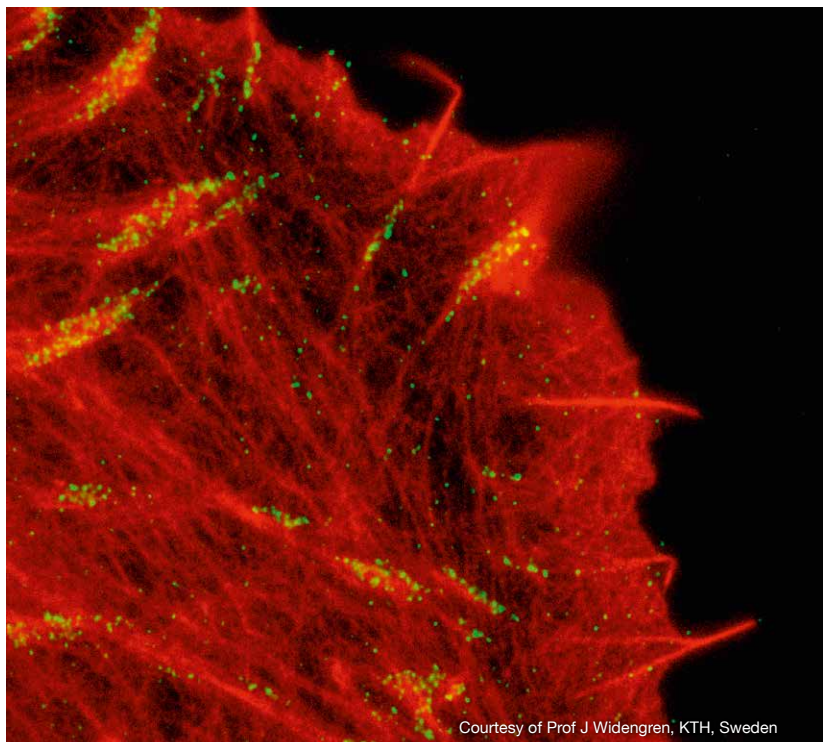
Significant applications in life science requiring CW lasers in the visible include fluorescence microscopy, flow cytometry and DNA sequencing. In all of these applications the fluorescence of specific fluorophores or biomarkers is detected, counted or imaged, leading to a deeper understanding of biochemistry.

With the lasers produced by Cobolt, HÜBNER Photonics can provide a broad portfolio of high-performance lasers for fluorescence microscopy applications. Not only do these lasers feature a standard integrated clean-up filter, at >70 dB they have one of the best modulation-extinction ratios in the industry. For greater convenience and ease of use, the individual lasers can be combined using the C-FLEX laser combiner.

- Cobolt – Modulated lasers
- Cobolt Skyra™– Multi-line laser
- C-FLEX – Laser combiner



Courtesy of Prof. Dr. M Sauer, Univ. Wurtzburg, Germany



Courtesy of Prof J Widengren, KTH, Sweden

TERAHERTZ TECHNOLOGY

Terahertz technology

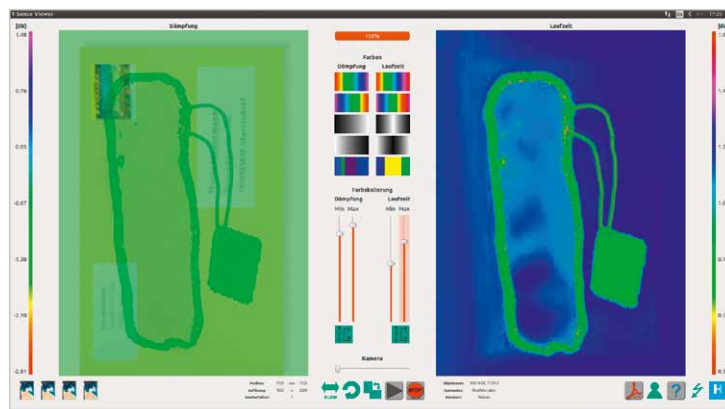
Visualizing the invisible

Terahertz (THz) waves penetrate paper, clothing, plastics and many other materials without causing any damage – contact-free and in seconds. This makes THz technology a unique tool for the detection, analysis and hyperspectral imaging of materials. On the basis of the latest research, HÜBNER Photonics is developing highly compact systems for various applications, ranging from mail inspection to industrial quality control. With their plug-and-play features and intuitive user interfaces, HÜBNER Photonics products also deliver outstanding ease of operation. Due to its non-invasive and non-ionizing properties, THz waves are completely harmless for human tissue. Thus, no expensive safety precautions are required for operation.

With the THz imager T-SENSE, small packages and letters can be scanned and hidden contents can be visualized. This makes it possible to detect dangerous materials such as drugs or explosives before opening the mail.

The Prism Award winning THz spectrometer T-COGNITION has been developed in cooperation with the Fraunhofer Institute for Physical Measurement Technique (IPM) and is an advanced system for the automated identification of hidden drugs or explosives inside letters or small parcels within seconds on the basis of their characteristic spectroscopic fingerprints. The systems help to improve security in mailrooms, at customs stations or at official offices – without any health risk for the users.

The T-SPECTRALYZER product family comprises turn-key THz spectrometers for scientific research as well as industrial non-destructive testing (NDT) applications. The variety of available options provides highest flexibility to make the T-SPECTRALYZER fit to the customers' individual applications.

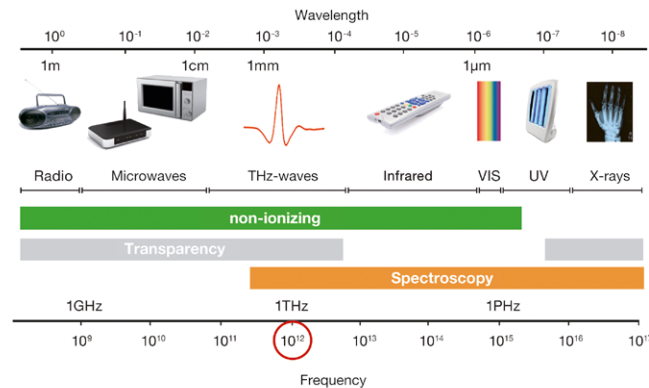


T-SENSE user interface with different filters side by side. All parameters are intuitively customizable.



THz waves – Combining characteristics

THz waves are a part of the electromagnetic spectrum in the frequency range of 0.1 THz to 10 THz. Many non-conductive materials such as plastics or PVC, ceramics, paper or clothing are nearly transparent in the THz frequency range, a characteristic feature known from GHz waves. At the same time, THz waves are absorbed at varying degrees by substances such as drugs, explosives and many other materials, providing spectroscopic information about the sample material, similar to a spectrum produced using optical wavelengths. These absorption characteristics can be used to produce a sort of spectroscopic fingerprint, making it possible to identify various substances, even when they are concealed in a letter or parcel, for example.



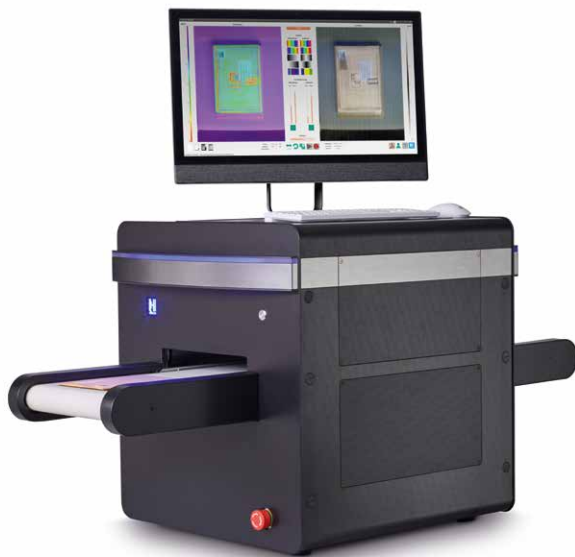
Applications

Public security

- Mail inspection by hyperspectral imaging for detection of hazardous goods
- Identification of drugs and explosives using Time-Domain-Spectroscopy (TDS)

Non-destructive testing (NDT)

- Detection of defects and cavities in components (hyperspectral imaging)
- Identification of substances through plastic pipes or tubing and other types of packaging using Time-Domain-Spectroscopy (TDS)
- Determination of the thickness of layers of multi-layered systems for identification purposes
- Analysis of substances in powder and tablet form
- Analysis of gases
- Investigation of moisture distribution
- Distinction between crystal and amorphous structures



T-SENSE

The THz imager for safe and secure mail inspection

Mailrooms in companies and in public agencies are particularly vulnerable to attacks via postal deliveries. Often the personnel at these facilities are not protected against the dangers of such attacks. To reduce these risks, HÜBNER Photonics has developed an innovative table-top device for the inspection of letters and small packages. The THz imager T-SENSE visualizes objects and hazardous substances that may be concealed in postal items.

Unlike x-rays, there is no health risk with the THz imager T-SENSE. Typical safety precautions for conventional imaging devices are not needed. And thanks to its intuitive graphic user interface, the systems are very simple to operate. T-SENSE facilitates effective and safe postal inspection, helping to keep people safe and secure.



T-COGNITION

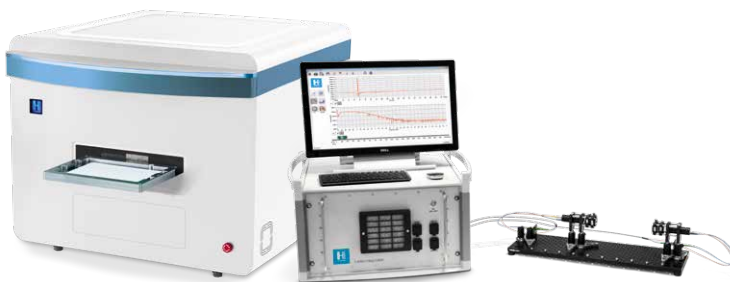
Identifying hazardous substances

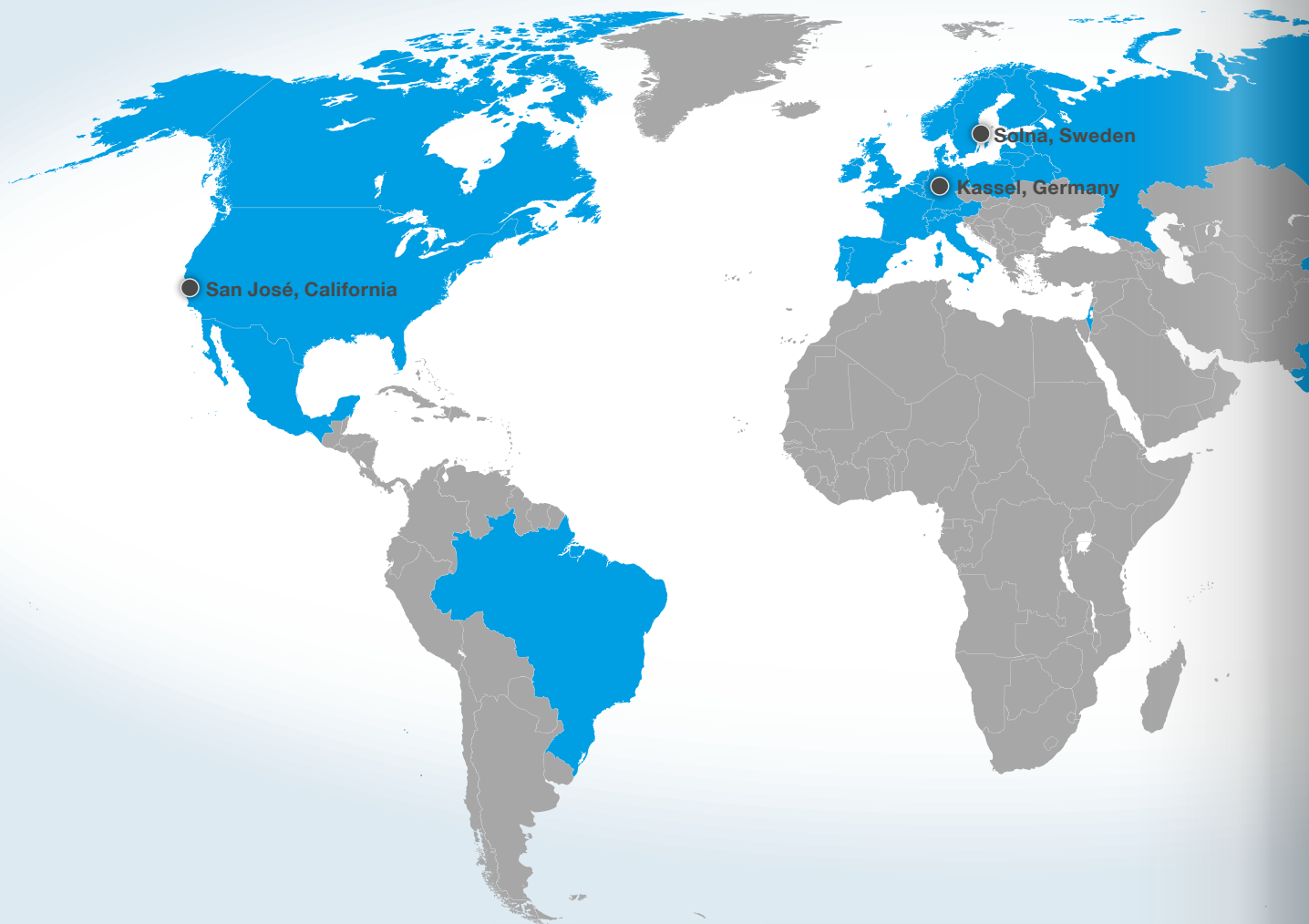
The THz spectrometer T-COGNITION is an extremely effective security technology. With reliability and precision, it identifies hidden drugs and explosives in letters and small packages without the necessity of handling or opening the item in question. Within seconds, T-COGNITION identifies the spectroscopic fingerprint of the hazardous substance or material by comparing the data with its own database. This system enhances work safety in prisons, at custom controls, at authorities, in companies and embassies, to name but a few.

T-SPECTRALYZER

The all-round spectrometer

The T-SPECTRALYZER products have been developed for quick use applications and for routine measurements in daily analytical work. The product family comprises turn-key systems operating either in transmission or reflection geometry or both simultaneously as well as fiber-coupled solutions, which provide full flexibility to adapt the spectrometer to the customer's application. The systems only require a normal mains connection and are ready for use without any additional infrastructure. Thanks to the most modern technology, the THz spectrometers function without any additional cooling or external gas supply. This allows for quiet and very economical operation. Individual add-on modules and the intuitive user interface support the recording, processing and export of measurement results. Not least, the automatic user-configurable report functionality makes T-SPECTRALYZER the most user-friendly THz spectrometer.







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