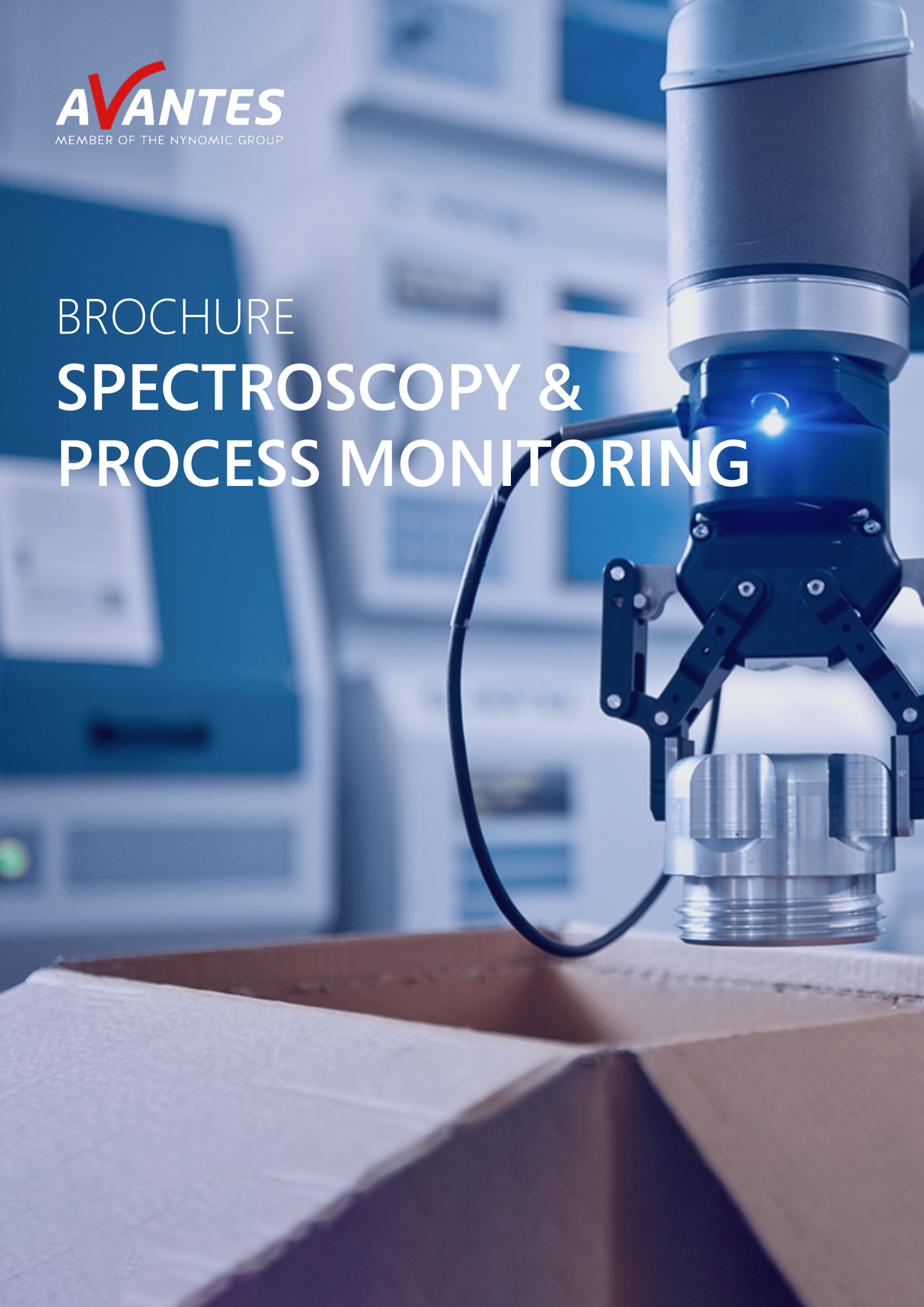


BROCHURE
**SPECTROSCOPY &
PROCESS MONITORING**





ABOUT AVANTES

We are Avantes, a leading player in the compact spectrometer industry. We operate in various industries; from (bio)medical and agriculture to semiconductor and consumer electronics. Our instruments are found in world-class research laboratories, are embedded in devices, or play a crucial part in quality control during production.

With a long history of consulting with clients across diverse industries and applications, Avantes is an experienced partner, equipped to guide customers who want a solution tailored to their application and research needs. Through our headquarters in the Netherlands and offices in the USA and China, our sales engineers work closely with our customers to find the most ideal measurement solution. In addition to our direct offices, Avantes has a worldwide network of distributors in over 35 countries who are ready to assist you. All of our products are made in our own production facility in the Netherlands.

Curious how our solutions can empower your application? Visit our website or contact our technical support. We are happy to help you!

Click [here](#) to contact us directly

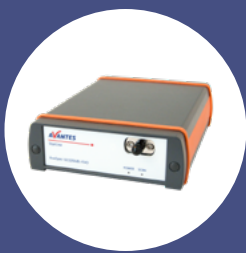
SPECTROMETERS

Since spectroscopy is used for numerous applications, we have defined our spectrometers in different lines:



CompactLine

Compact
Easy integration
CMOS detector
2048 or 4096 detector
200-1100 nm
NIR-version available
900-1750 nm
USB powered



StarLine

High-performance
General applications
Stray light rejection
2048 or 4096 detector
200-1100 nm
High resolution
Improved sensitivity
USB powered



SensLine

High-sensitivity
Demanding applications
Low noise
Ultra-high resolution
200-1160 nm
Stray light rejection
High stability
Thermo cooled



NIRLine

High-performance
Cooled & uncooled
Cooling to -25 °C
For harsh environments
900-1750 nm
Enhanced stability
Low noise
Compact option available

Click [here](#) to see all available products.

PRODUCT PORTFOLIO

Beside spectrometers, we offer a wide range of products to complete your measurement setup.

Light Sources

Avantes' light source options include deuterium, tungsten halogen, and LED for spectral ranges from 190nm – 2500 nm. The AvaLight line consists of several calibration sources for irradiance and spectral line calibrations. All light sources are fiber optic coupled with SMA connectors.

Fiber Optics

We offer an extensive line of fiber optic cables, bundles, and probes. Our in-house production facility manufactures fiber optics for deep UV, UV/VIS, and VIS/NIR applications using high-quality silica fibers. Custom configurations for fiberoptic reflection, absorption, and fluorescence probes are always negotiable.

Software

AvaSoft software is a 32 and 64-bit compatible application-oriented software package that enables complete control over our spectrometers. Application-specific software solutions are available. Our in-house engineers can work with customers to support standard and custom application needs (DDL).

Accessories

We offer a wide range of fiber optic coupled sampling accessories such as cuvette holders, integrating spheres, filters, filter holders, and flow cells. In addition, Avantes offers a variety of fiber optic accessories, including collimating lenses, cosine correctors, and vacuum feedthroughs.



OEM CUSTOMERS

We take pride in collaborating with our customers to supply the right solution, on time. Whether you need a **custom configured** optical bench or a specialized fiber-optic probe, we have the experience and dedication to make it happen. While we gladly develop custom-made devices, we also offer **several modular and highly configurable** OEM options.

Our **partnership approach** to working with original equipment manufacturers (OEM) is at the core of our success and philosophy as a business. To fully utilize the vast possibilities of our spectrometer systems, sales engineers work closely together with you to fulfill your every need. Our state-of-the-art design center then creates the tailor-made solution as discussed. After extensive testing, a prototype is made. We will start production, only when your needs perfectly align with our design.

Every spectrometer that leaves our premises undergoes a very thorough **testing phase** before it is shipped. Only the spectrometers those that fall within the accurate bandwidth of desired specifications are the ones we consider good for you.

Click [here](#) to read more.

AVAMATION: FUTURE-PROOF MANUFACTURING

There is a worldwide increasing demand for spectrometers. More and more customers purchase in large volumes, which means that the performance of each spectrometer must be exactly the same.

CompactLine spectrometers are manufactured using AvaMation, our semi-automated manufacturing process. We decided to innovate this process to increase our efficiency and precision so we are ready for a future with an increasing demand of spectrometers.

This new way of manufacturing not only benefits Avantes when it comes to efficiency, but also yields the following benefits for its customers:

WHAT'S IN IT FOR YOU?



Scalable manufacturing capabilities

From small, up to very high volume orders, with AvaMation we are very flexible when it comes to customizing orders.



Superior inter-instrument reproducibility

Through AvaMation we not only take quality assurance to a higher level, but also provide more manufacturing precision and speed.

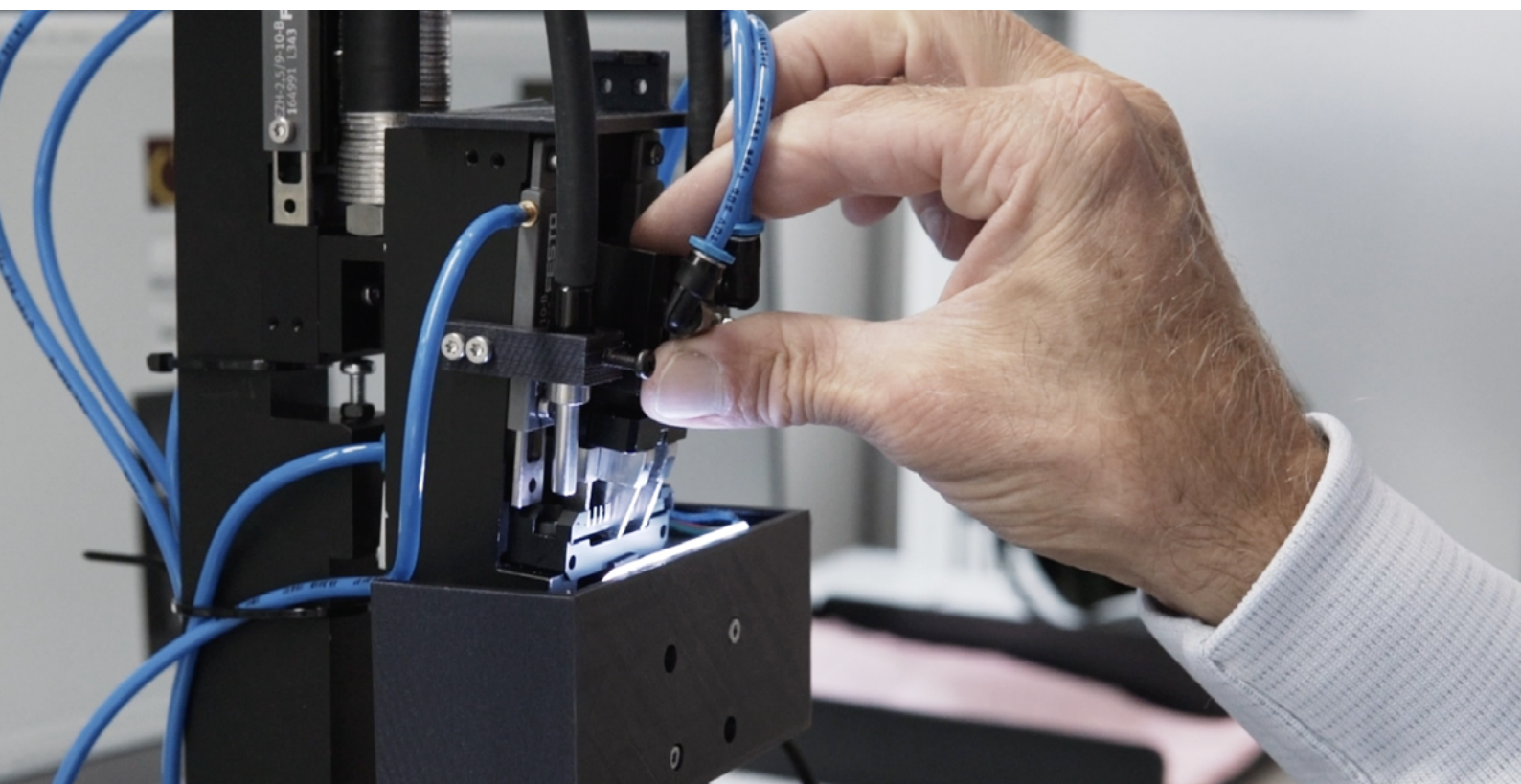


Enabling data analysis

By collecting data from the manufacturing process, we can continue to innovate and make product improvements in the future.

More information

Do you want to know more about AvaMation?
Click [here](#) to read all about it.



INDUSTRIES SERVED

Spectroscopy is used in hundreds of applications across dozens of industries, with new uses found every day. You find spectrometers measuring light in the lab, on the manufacturing floor, and out in the field; anywhere that light exists, you can measure it.

Avantes spectrometers, light sources and fiber-optic sampling accessories provide the technology for spectroscopy and material characterizations in these and many other industries and applications:



Agriculture & Food

Applications:

- Fruit sorting
- Leaf measurement
- Plant health
- Grain analysis
- Dairy control
- Fertilizer automation



(Bio)Medical

Applications:

- Blood Analysis
- Endoscopy
- Dermal reflection
- Protein detection
- Cancer detection
- Medicine production



Chemistry

Applications:

- Raman spectroscopy
- Atmospheric chemistry
- Nanoparticle reactions
- Humidity detection
- Material science



Environmental

Applications:

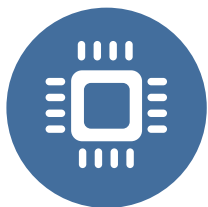
- Contamination Monitoring
- Recycling
- Pollution Monitoring
- Deep ocean analysis
- Wildfire detection



Lighting

Applications:

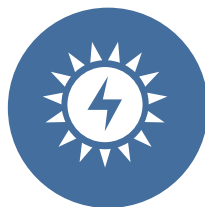
- Quality control
- Radiometry
- Photometry
- LED calibration
- Color identification



Semiconductor

Applications:

- Plasma diagnostics
- End-point detection
- Wafer inspection
- Thin-film measuring
- Coating deposition
- Quality control



Solar Energy

Applications:

- Production of solar panels
- Test photo-voltaic arrays with solar simulators
- Process control
- Plasma monitoring



Original Equipment Manufacturer (OEM)

- Project management
- Custom products when needed
- Bench only
- Custom software when needed

More information

Click [here](#) to read more application examples.

YOUR CHALLENGE, OUR SOLUTION

Optical benches

The AvaBench line of optical benches offers a robust selection of designs and configurations to meet every application's form factor and technical specifications. Our AvaBench is configurable to meet your needs with several configurations and standard detector options. Independent optics and electronics offer greater flexibility and modularity.

Our innovative **ultra-low-stray light (ULS) optical bench** provides superior stray light rejection in a design with superb thermal and structural stability. Our **high-sensitivity (HS) optical bench** is designed for superior throughput and sensitivity with a full 0.22 numerical aperture.

Avantes also offers **miniature spectrometers**, manufactured with our semi-automated production process, Avamation. This process provides **superior unit-to-unit reproducibility**, which results in ideal spectrometers for OEM applications and portable handheld devices.

The AvaBench optical benches are available separately for integration with your electronics or in conjunction with our AS-5216 USB2 electronics or the AS-7010 USB3 and Gigabit Ethernet electronics. These benches are available with the industry-standard SMA-905 or FC/PC connectors, but custom-made, non-fiber-optic entrances can be implemented if necessary.

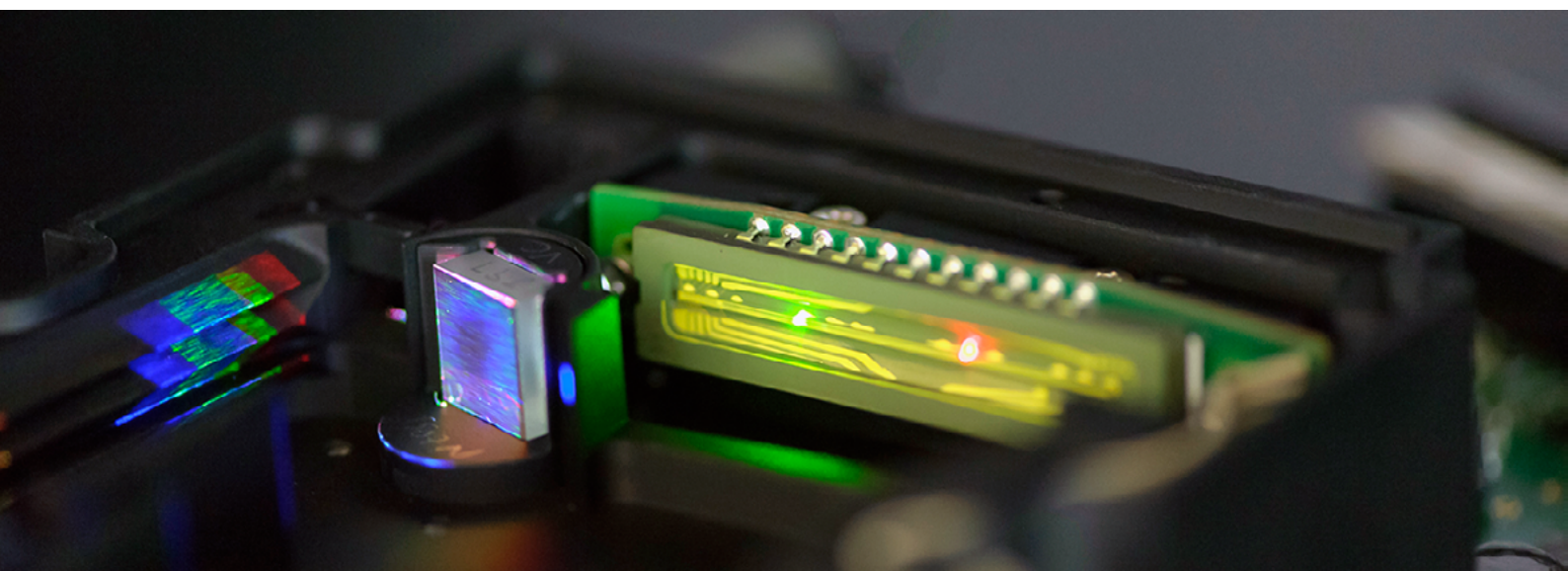
Software

Avantes instruments can be controlled via our **proprietary AvaSoft software**, an easy-to-use Windows application to perform spectroscopic measurements. However, most OEM customers prefer to develop their own controlling software, which is why we offer a 2-bit and native 64-bit dynamic link library (DLL), also known as SDK or API, for Microsoft Windows and interface packages for Linux. This Windows library comes with several sample programs in LabView, C#, C++, Qt, Visual Basic .NET, MatLab and Delphi to get you started with controlling your spectrometers. We also have a Linux API with sample programs for customers working with open-source board PCs. For our OEM customers who are interested in addressing our instruments at a more fundamental level (USB or RS-232), we offer a low-level interface protocol description.

Our software engineers are experienced in **developing customer-specific application software** and can assist you with the implementation of your software.

MORE INFORMATION

Click [here](#) to read more about our OEM products.



DISCOVER OUR EBOOKS

Avantes makes an impact with spectroscopy technology all over the world. You can encounter our technology in the agricultural sector, in the medical sector, and also in the solar energy and semiconductor market. Every market demands a different approach. But in every market, we contribute to science and enable our partners to make huge strides in quality, efficiency, and research.

We conducted four eBooks containing application examples, experiments and product information to showcase the endless possibilities spectroscopy offers in these markets. **Click on the titles to download our free eBooks.**



Chemistry
eBook



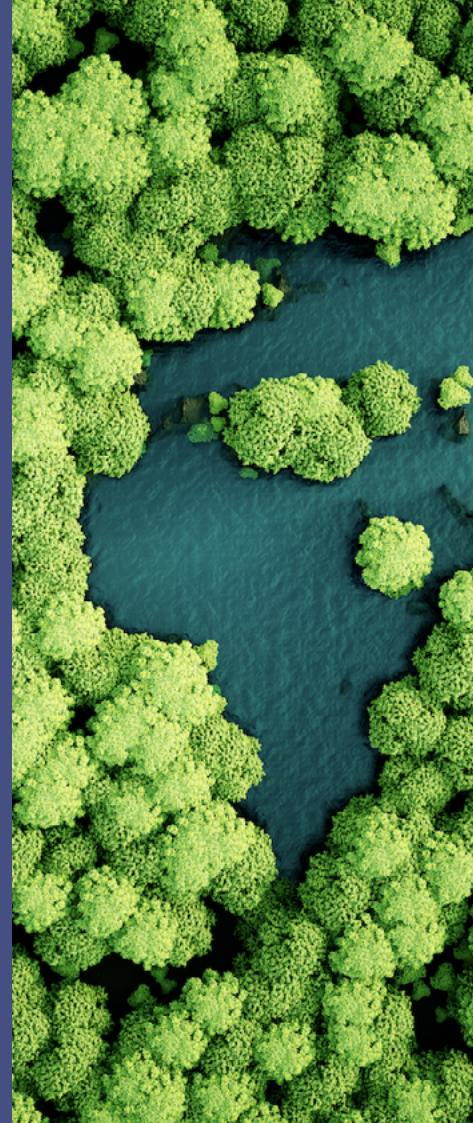
Environmental
eBook



Agriculture
eBook



Medical
eBook



SUPPORT & ADVICE

Providing high-quality equipment is only part of what we do. The other equally important factor is the high level of service we deliver. Our organization includes various specializations to provide you with the best service and advice:

Feasibility studies

Our sales engineers perform free feasibility studies to find your most ideal measurement setup.

Support team

Our support team never sleeps and provides you with the best possible service.

Demo program

Our demo program allows you to try our products for free to ensure you find the perfect solution.

MyAvantes

Personal platform where you'll find AvaSoft Software and other helpful material for you to download.

Online support

Helpful documents and tutorial videos for extra help with your products.

Curious what we can do for your application?

Click [here](#) to contact us directly.

CONTACT

WE'RE HAPPY TO HELP

Curious how spectroscopy can help you reveal answers by measuring all kind of materials, in-line, at your production facility, in a lab or even in the field? Please visit our website or contact one of our technical experts, we're happy to help you.

Avantes Headquarters

Phone: +31 (0) 313 670 170
Email: info@avantes.com
Website: www.avantes.com

Avantes Inc.

Phone: +1 (303) 410 866 8
Email: infousa@avantes.com
Website: www.avantesUSA.com

Avantes China

Phone: +86 (0) 108 457 404 5
Email: info@avantes.com.cn
Website: www.avantes.cn

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