

Quality comes from control

Consistently produce the best products



**The new seal of approval for dairy products:
ZEISS in-line inspection**

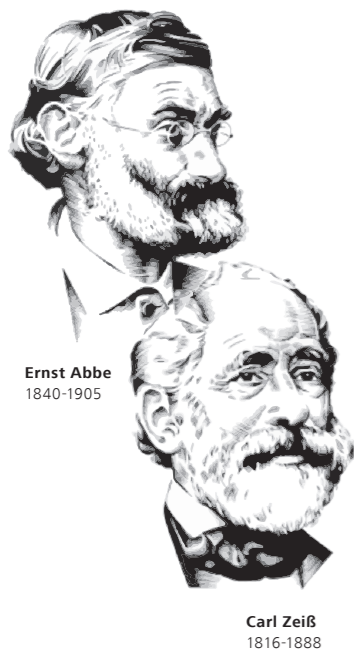


Seeing beyond

A broad spectrum of quality

ZEISS – over 140 years of experience in spectroscopy

In Jena in 1874, Ernst Abbe developed the world's first spectrometer for a company that Carl Zeiss founded 28 years earlier. Today, over 140 years after Abbe's spectrometer, ZEISS is one of the world's leading technology companies in the optical and optoelectrical industry with over 30,000 employees in nearly 50 countries and around 120 distribution, service, production and development facilities.

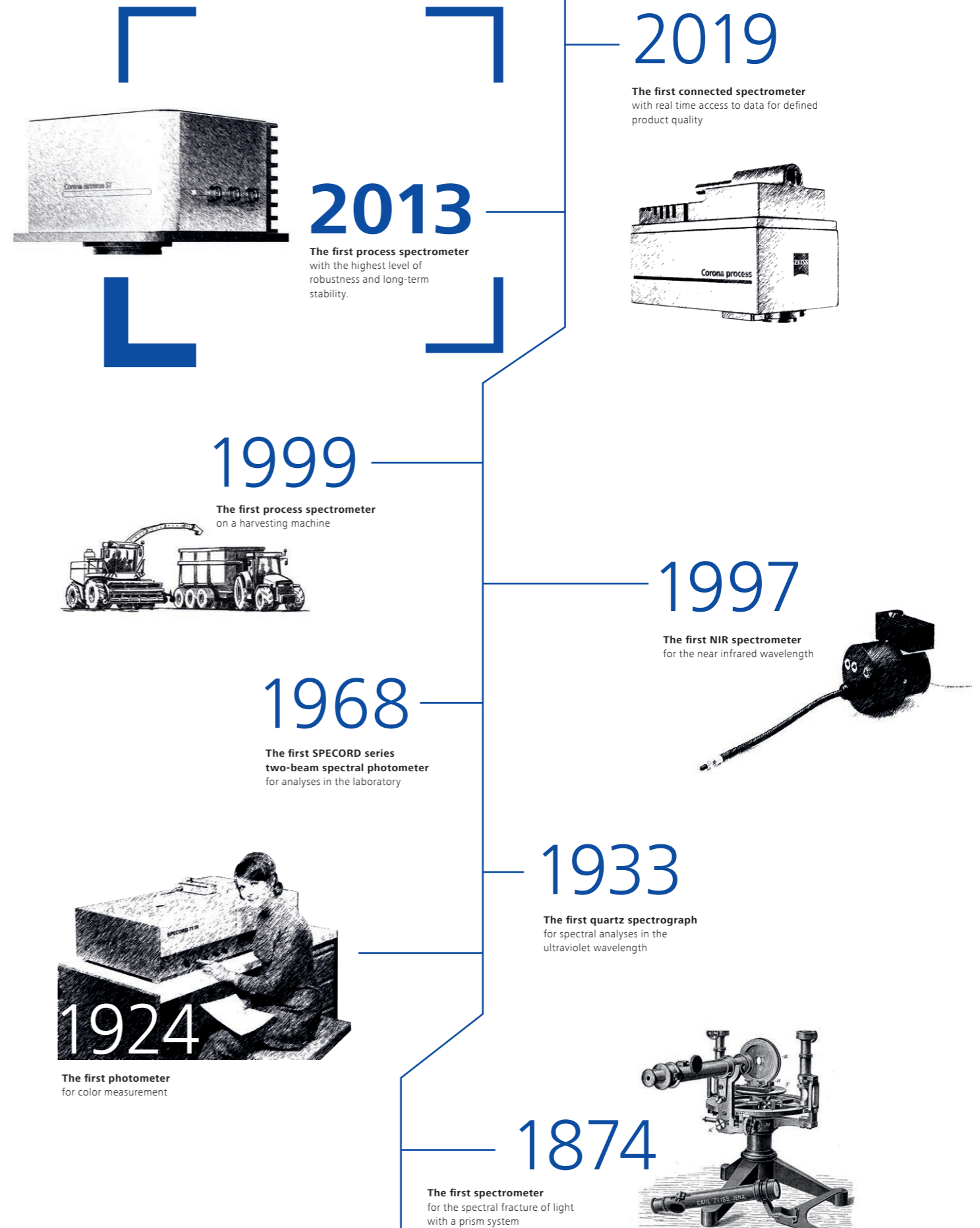


From the beginning, the name ZEISS has stood for continuity and foresight as well as for passion and responsibility. Most importantly of all, the name has stood for globally leading optical measurement technology. Our vision is the perfection of spectroscopy solutions for process and quality control. We've always been the first to bring high-quality technology to the marketplace. Like in 1924, when we developed a photometer that allowed us to measure colors. Or in 1968, when we created the SPECORD series of two-beam spectral photometers for laboratory analyses. Or in 1999, when we set new standards for the agricultural industry with an NIR spectrometer mounted onto a harvester.

Throughout our history, we have always developed new technology that has made processes reproducible and minimized production losses. By fulfilling the quality expectations for products "Made in Germany", we've helped our clients to fulfill their promises to their own customers. This has led to the development of a business area specializing in material analysis, spectroscopy and process analytics, which now plays a key role in the company's global success.

As a reliable partner for consistently high-quality food production (such as dairy products, for example), we develop powerful and extremely robust solutions for industrial applications, laboratories and agriculture.

Our solutions are not only sought after in the food industry and agriculture, but also in space: our high-performance gratings are used in satellites that monitor the air quality on earth, for example. Regardless of whether it's food production, harvesting or space travel, the use of ZEISS equipment provides a technological edge. This is also what drives us every day: maximum efficiency and sustainability as well as long-term success and satisfaction for our customers.



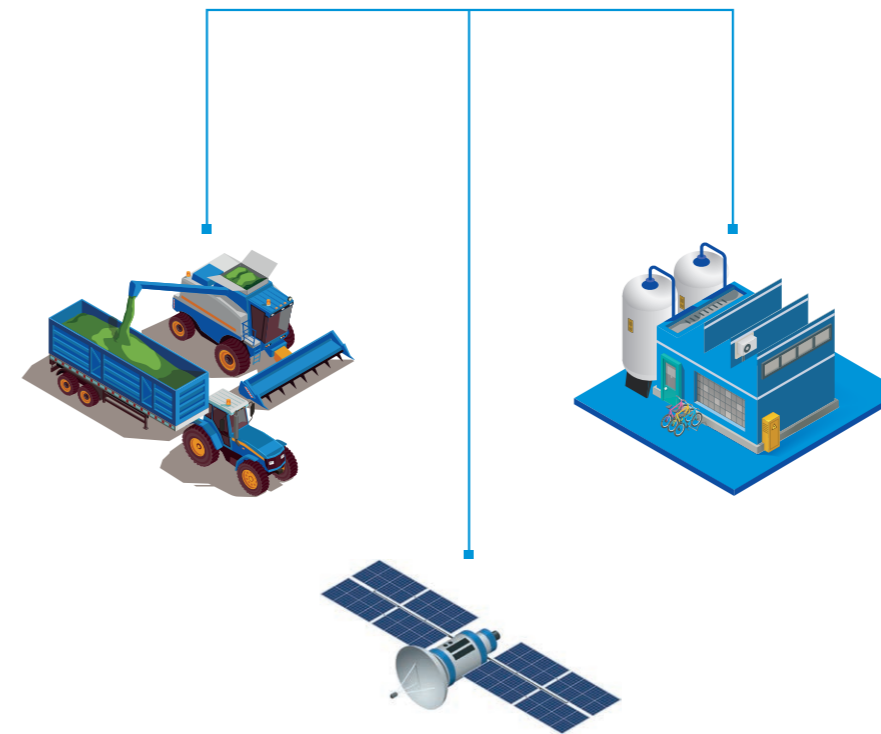
Keeping a constant eye on quality

ZEISS Corona[®] extreme

Optimal production thanks to real-time control:

The ZEISS Corona[®] extreme full-scale spectrometer delivers constant measurement results – even under the most challenging conditions. This allows you to determine the perfect process end point, exact product composition and the desired product consistency and quality. To achieve that, analytical values need to be delivered quickly, accurately and on a regular basis. Speed allows you to immediately adjust the process. Accuracy allows you to make adjustments to target values at any time. Regularity allows you to react effectively to sudden changes in values. ZEISS Corona[®] extreme fulfills these three requirements for successful production to the highest degree. For example, when producing fresh cheese, more accurate

control of total solid content can significantly increase profits. At the same time, improved product consistency can give you an advantage in the marketplace. In short: your production costs are reduced and your competitive advantage is increased. Another example: fat content is always important when it comes to producing butter. ZEISS Corona[®] extreme provides you with measurement values in real time throughout the production process, so that you can compare and adjust them with target values at any time and comply with legal regulations. ZEISS Corona[®] extreme plays an integral part in our relationship with our clients: you've made a promise to your own customers and ZEISS is the right partner to help you fulfill it.

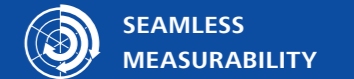


The ZEISS Corona[®] extreme full-scale spectrometer: exceedingly robust

ZEISS Corona[®] extreme is characterized by precise measurement results AND well-established robustness that has been proven for decades. Therefore, it should come as no surprise that the core technology in our spectrometers is not just used in outer space, but also perfectly suited for harvesters on earth. Operating temperatures from -15 to 50 °C and shock resistance up to 50 G are no problem for Corona[®] extreme. As a full-scale spectrometer, it can measure various parameters such as fat, dry matter, and protein content in the 950 to 1,650 wavelength range at the same time. That guarantees fast and precise inspection of all important quality parameters at the same time and in real time. This optimizes production costs, shortens production processes and saves energy.



Various quality parameters are measured in real time. This allows you to make important decisions directly when you need to and intervene in your process as necessary.



You have a continuously available wavelength range of 950 to 1,650 nm at your disposal, where various parameters such as moisture, fat, protein and many more are measurable.



The spectrometer minimizes waste and maximizes your production yield. This provides more efficiency and allows you to conserve raw materials, water and energy.



The system is integrated into your production process, takes measurement values directly from your production line and instantly makes them available. This gives you access to data and insights in real time, allowing you to reach the desired product quality even more efficiently.



The sensor supports you in optimizing the operation of your production line. The device is easy to use, documents everything completely, is easily integrated into the production environment and allows for data to be quickly and efficiently allocated to its source.

Measures everything that's measurable

Reliable quality control for your production



Regardless of whether they are of animal or plant-based origin, natural raw materials are always subject to variations. Yet the goal of every production process is to end up with a product that provides consistently high quality. That's exactly what ZEISS Corona® extreme provides. It also delivers measurement data quickly, accurately and on a regular basis, so that you have complete control over your production throughout the entire process. This reliability is one of the ZEISS quality promises and ensures that every minimum legal requirement can be set and met with ZEISS Corona® extreme. Our spectrometer doesn't just take care of the production process, it also preserves resources and helps you reduce your CO₂ footprint – through less waste. That's a big win for the environment as well as for you. And if you do want to change something in your production, individual specifications are no problem at all with ZEISS Corona® extreme.



ZEISS solutions for the dairy industry



Curd/Cream Cheese

Measuring Point	Measuring Parameters
At the separator	Fat, moisture/dry matter, protein

Butter

Measuring Point	Measuring Parameters
At the end of the churn	Fat, moisture/dry matter

Yoghurt

Measuring Point	Measuring Parameters
At the separator	Fat, moisture/dry matter, protein

Ice Cream

Measuring Point	Measuring Parameters
At the end product	Fat, moisture, sugar content

Whey and Milk Powder

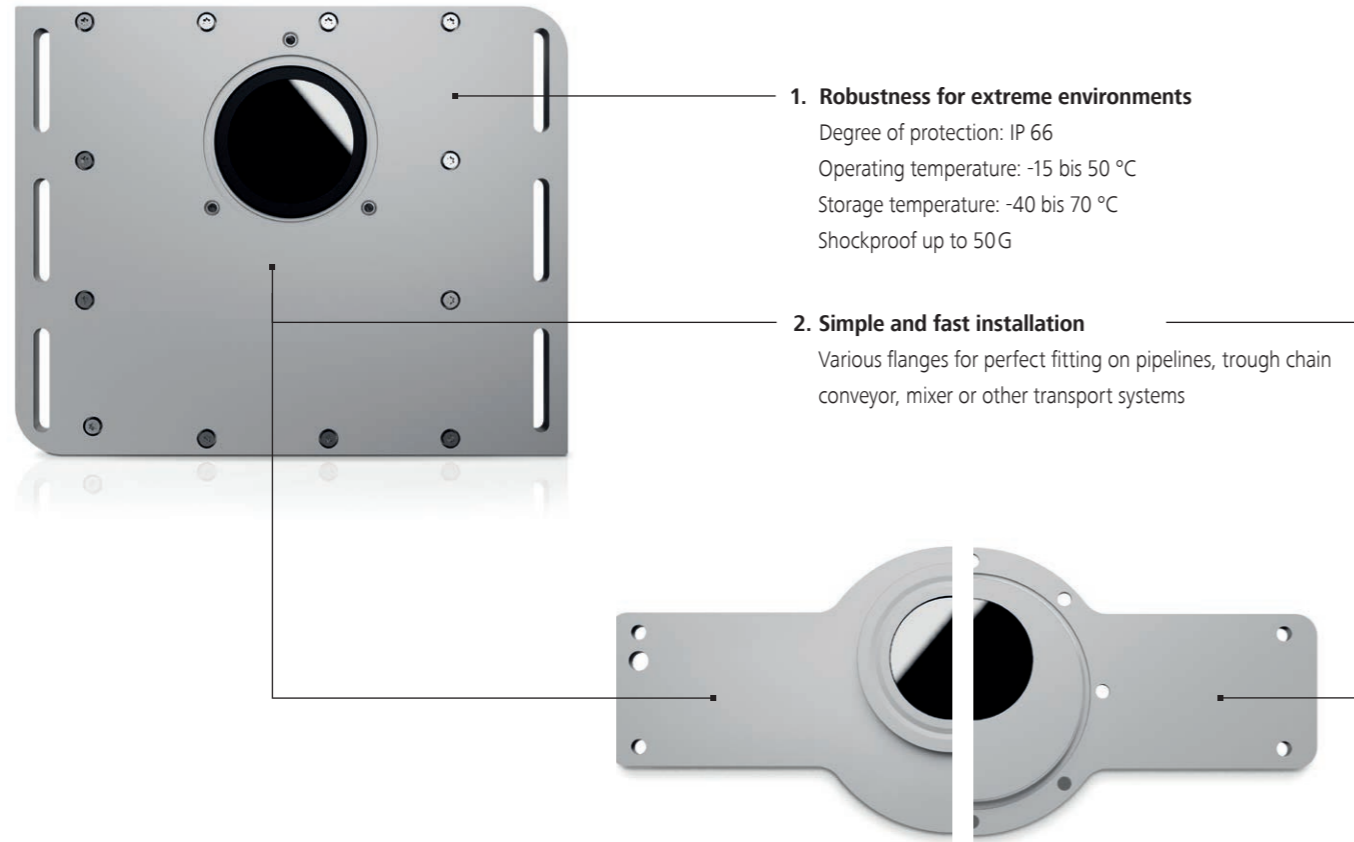
Measuring Point	Measuring Parameters
After the evaporator	Moisture, protein, dry matter, lactose

Mozzarella

Measuring Point	Measuring Parameters
After cooking	Fat, moisture, protein

The Hardware

Robust in any position



3. LED status display for operational readiness

Comfortable monitoring of functional activity

4. Full-scale spectrometer system made by ZEISS

Coverage of a wide wavelength range from 950 to 1,650 nm for fast in-line measurements and for calculating constituents

5. Easy integration into the client network

Numerous connections and industry standards are available: OPC UA and DA, Profinet, Profibus, EtherNet/IP, analogue and digital I/Os, Modbus, SQL-Database, Socket



The software

Intuitive, arranged neatly, user friendly

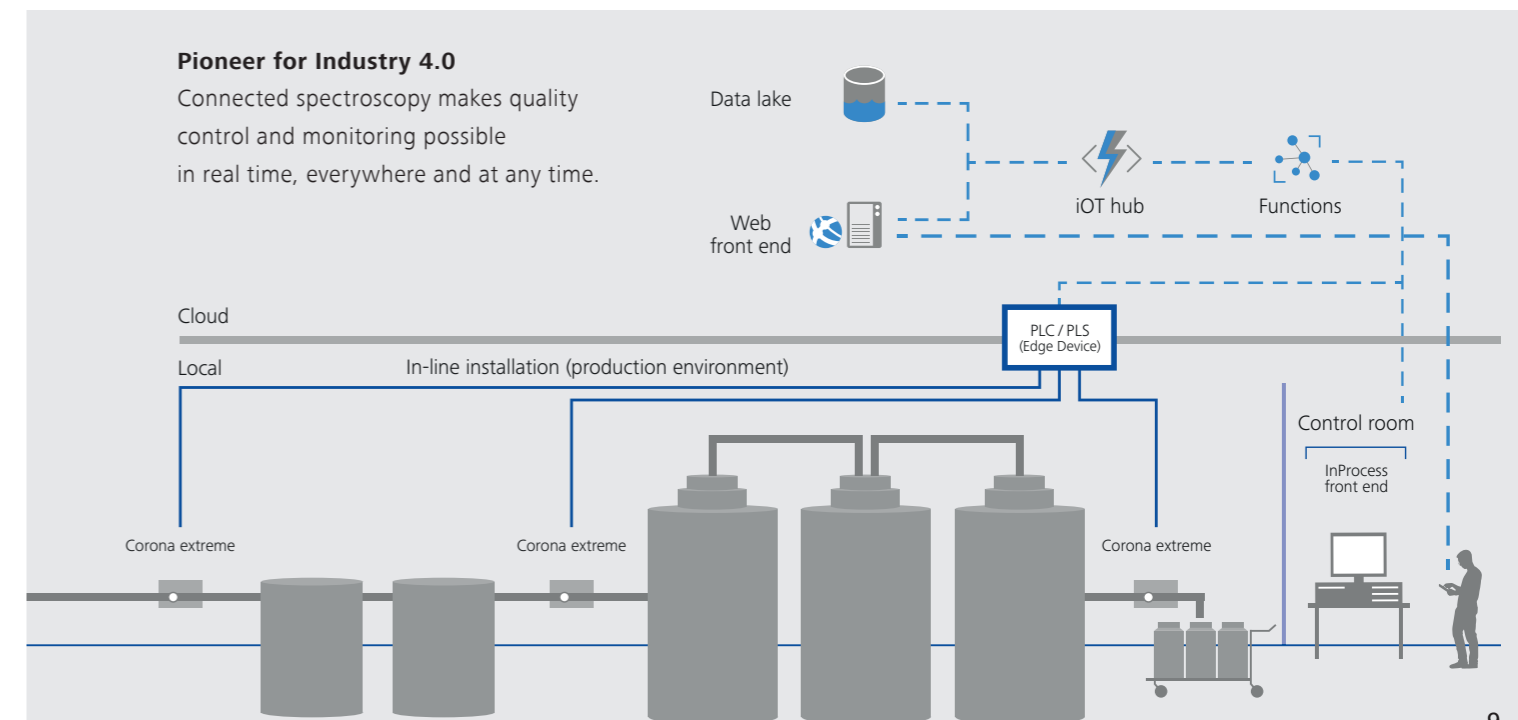
InProcess software enables an easy integration into production lines and intuitive usage. It can be configured according to the client-specific requirements.



- **Calibration:** support for common chemometrics software such as GRAMS IQ™, Aspen Unscrambler™, UCal™ or SL Predictor
- **Control:** management of more than one spectrometer is possible – with just one piece of software
- **User management:** creation of dedicated user groups with different access levels
- **Measurement:** display as spectrum, value or trend, automatic warning when limit values are exceeded, automatic start of measurement and elimination of implausible spectra
- **Integration:** communication with all established field bus systems and industrial standards
- **History:** access to all past measurement and reference results as well as data export of spectra, measured values and sample information
- **Diagnosis:** monitoring of spectrometer functionality with self-testing, important service information at the push of a button

Pioneer for Industry 4.0

Connected spectroscopy makes quality control and monitoring possible in real time, everywhere and at any time.



Quality = Service²

We're there for you –
for the lifetime of a device

For us, service means not just being there for you around the clock but being there for you for a device's lifetime. That's why we're by your side from first contact to final purchase and see you primarily as a partner – throughout the entire life cycle of the product.



That's our claim and that's what the ZEISS name stands for. A claim that we fulfill every day. Not just in terms of our technological solutions, but also in terms of our client-specific service conditions. This means that we don't offer you a prefabricated service contract, but rather develop an individual service package with you that's tailored to your project.

You can rely on our global distribution and service network as well. Regardless of whether it's gratings, modules, spectrometers or solutions, hardware, software or calibration, we're the only ones who develop and offer all spectrometer components. Exclusive service packages guarantee optimal performance, increase service life and provide many years of reliable and precise results. The best thing about it: digitalization makes our distance maintenance service particularly user friendly, as there are no waiting times and we are able to provide location-independent solutions quickly. And if something does need to be repaired on site, then our service technicians are already on their way.

Our expert service at a glance:

- Installation of equipment and software
- Application support for the whole product lifetime
- Preventive maintenance
- Customer-specific maintenance contracts
- On-site and in-house repairs
- Remote diagnostics, maintenance and repair



We understand our customers and what makes them successful!

Optimal control and perfect product quality are the main reasons for successful production. ZEISS Corona[®] extreme ensures that products are measured in real time and quality issues can be dealt with almost immediately. This not only efficiently optimizes production, but also conserves resources. For Tnuva, the largest and leading food group in Israel with over 6,500 employees, this is of crucial importance. After all, around seven million products are delivered every day, each and every single one of which has to meet the high quality standards of the Tnuva Group.

» ZEISS Corona[®] extreme is an ideal solution to optimize our processes and fulfil the demands of our clients at a highest level. Thanks to the reliable and precise operation we have already purchased additional units and integrated them into our production processes. «

Shay Carmi,
Professional Manager of Laboratories Tnuva



Scan now to find
out more about
ZEISS Corona[®]
extreme

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