Performance
in every extreme

The most dependable results in the most demanding conditions: Corona® extreme from ZEISS

ZEISS

Seeing beyond

www.zeiss.com/corona-extreme

A broad spectrum of quality

ZEISS – over 140 years of experience in spectroscopy

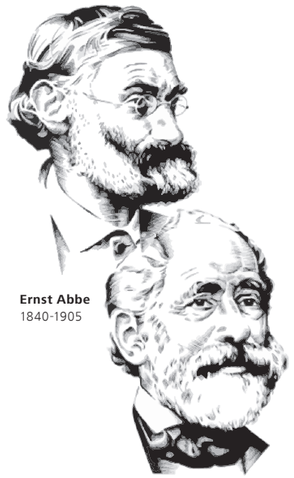
In Jena in 1874, Ernst Abbe developed the world's first spectrometer for a company that Carl Zeiss founded 28 years earlier. Today, over 140 years after Abbe's spectrometer, ZEISS is one of the world's leading technology companies in the optical and optoelectrical industry with over 30,000 employees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

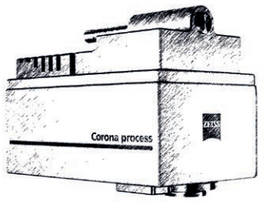
As a reliable partner for consistently high-quality food production (such as snacks, for example), we develop powerful and extremely robust solutions for industrial applications, laboratories and agriculture. We are currently the only ones who can measure snacks just seasoned with salt or the color and Agtron value of snacks.

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.



Ernst Abbe
1840-1905

Carl Zeiß
1816-1888



2019

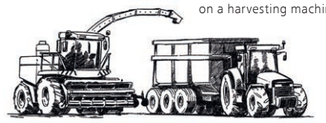
The first connected spectrometer
with real time access to data for defined product quality

2013

The first process spectrometer
with the highest level of robustness and long-term stability

1997

The first NIR spectrometer
for the near infrared wavelength

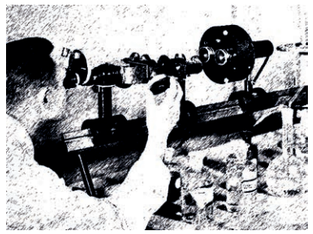


1999

The first process spectrometer
on a harvesting machine

1968

The first SPECORD series two-beam spectral photometer
for analyses in the laboratory

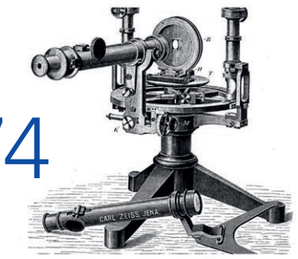


1933

The first quartz spectrograph
for spectral analyses in the ultraviolet wavelength

1924

The first photometer
for color measurement



1874

The first spectrometer
for the spectral fracture of light with a prism system

When the going gets tough, Corona® extreme from ZEISS

Even though our spectrometers are highly sensitive precision instruments, they must be able to function perfectly in extremely tough environments.
That's exactly what makes Corona® extreme so special: exceedingly accurate measurements results are achieved under the most challenging conditions. From operating temperatures of -15 °C to 50 °C and shocks of up to 50 times the force of gravity, Corona® extreme is at home in the hardest environments. On top of that, the results provided can be reproduced over and over again. This means that you benefit not just from industry-leading performance and measurement, but also from a robust, high-quality instrument that just gets on with it, no matter how tough the going gets.

Corona® extreme can be used just about anywhere.
From applications where the device needs to be in direct contact with samples, such as in closed transport systems for agricultural produce or food production lines and laboratories, Corona® extreme is designed for full flexibility. It can also be easily integrated into the widest variety of spaces, from pipelines to trough chain conveyors. Regardless of whether you need measurements in the lab or in-line and under constantly variable conditions, Corona® extreme allows you to optimize your processes and maximize efficiency thanks to consistent and accurate, real-time results.

Corona® extreme mounted to a downpipe using a power flange at a feed mill

A few extremely good arguments

Integrating Corona® extreme into your process provides you with a wide range of benefits and flexible options. For example, you can:

- Measure fat, dry mass, protein and more in the 950 to 1,650 nm wavelength range
- Measure in direct contact with the sample without damaging it
- Use Corona® extreme in the most challenging conditions, from -15 °C to 50 °C and 50 G
- React quickly to process variations and make adjustments in real time
- Optimize product quality constantly by using accurate results in your decision making
- Reduce operating costs and increase profit margins thanks to greater efficiency
- Install Corona® extreme in the widest variety of spaces and processes
- Get exact, reliable and consistent results, time and time again
- Easily integrate Corona® extreme into your existing networks
- Use Corona® extreme directly at the process line, thanks to IP protection level 66

Count on Corona® extreme

Peak performance in all measurement environments

It doesn't matter if your application environment is extremely hot, cold, or subject to high levels of shock, vibration, dust or debris, Corona® extreme provides full-scale spectrometer measurement in a wide range of wavelengths. The robust, rugged and intelligently conceptualized design is intended to work around you and can be tailored to your exact process and production. Every aspect of Corona® extreme's hardware has been conceived to provide the robustness you need with the quality of measurement you expect from ZEISS.

Corona® extreme technical specifications

Spectrometer	Diode array spectrometer
Usable spectral range	950 – 1.650 nm
Light source	Halogen
Lamp lifetime	> 20,000 h
Protection level	IP66
Housing size (w x h x d)	(256 x 190,5 x 253) mm³
Weight	10 kg
Operating temperature range	– 15 °C to 50 °C
Power supply voltage	9 – 36 V SELV

Hardware that's seriously hard wearing

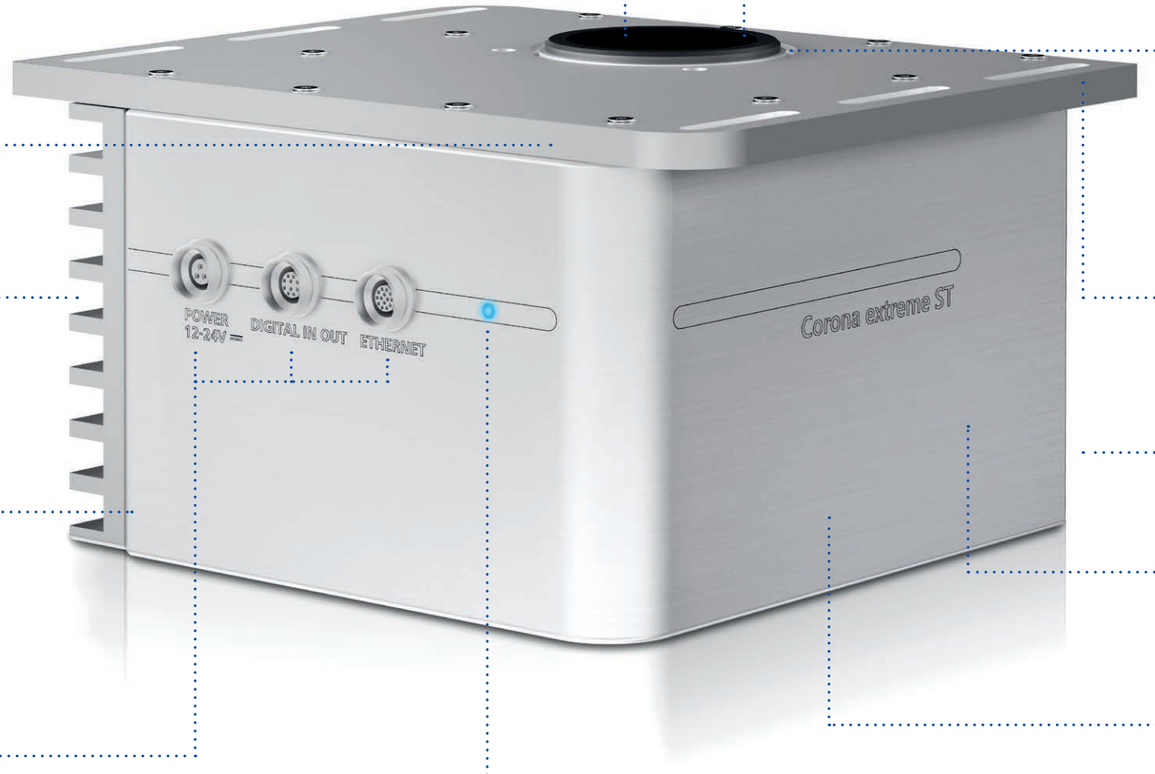
Specially developed halogen lamp
for long-term use in the spectrometer (20,000 h)

Solid, stable base plate
for the housing and protection of optical components

Cooling fins providing permanent passive cooling
for consistently precise measurement results even at high temperatures

Robust quality for extreme environments
Degree of protection: IP66 Operating temperature: -15 °C to 50 °C Storage temperature: -40 °C to 70 °C Shock resistance up to 50 G

Robust Lemo contacts with IP66 protection
Perfectly protected for demanding applications in the food industry



LED status display
for constant operational readiness and convenient monitoring of functional activity

Optical interface to the sample
Many flange variants are available for quick and easy installation at different measuring locations

Internal reference
for constantly precise measurement results, irrespective of external factors such as temperature variations

Simple and quick installation
Various flanges for mounting on to pipelines, trough chain conveyors, mixers and other transport systems

Robust, food grade housing
made from stainless steel

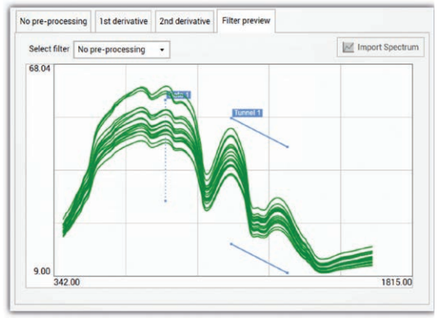
Full-scale spectrometer made by ZEISS
to cover a wide wavelength range between 950 nm and 1,650 nm with quick and accurate measurement in-line

Proven ZEISS free beam optics
for very fast and precise measurement results that can be achieved over and over, regardless of external influences, such as shock and vibration

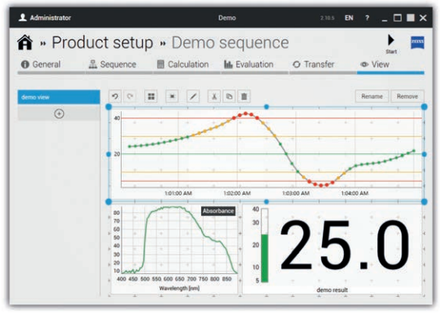
Software to make sense
of hard data

Good software should be as powerful and versatile as it is intuitive and easy to use. Our InProcess software is designed not just to provide you with all the information you need quickly and easily, but also to fit around your specific needs, thanks to a range of customization options. InProcess is also ready for Industry 4.0 and provides the ideal platform to profit from connected spectroscopy and access your measurements from anywhere, at any time, thanks to easy cloud integration.

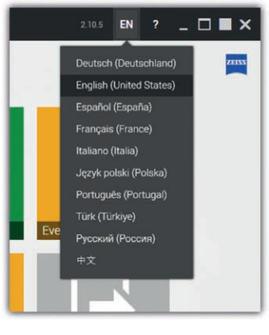
Measurement
Results can be displayed as a spectrum, value, or trend. For more automation, you can set up automatic measurement starts, alerts for when limit values are exceeded and the elimination of implausible spectra.

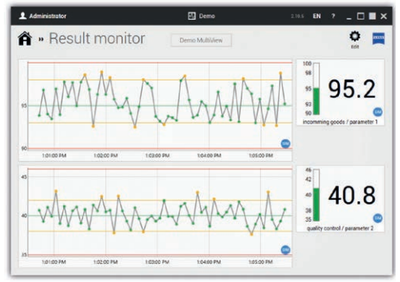


Product Setup
InProcess allows you to individually configure measurement behavior, calculation results and representation graphs and tailor these to your specific needs. Calibration can be performed with the support of common chemometrics software, such as GRAMS IQ™, Aspen Unscrambler™, SL Calibration Wizard or UCal™.



System Settings
Create and manage groups of users with various levels of access and use InProcess in many different languages. The software also communicates with common fieldbus systems and industry standards, such as OPC UA, DA, Modbus, Profinet, Profibus, Ethernet/ IP and more.

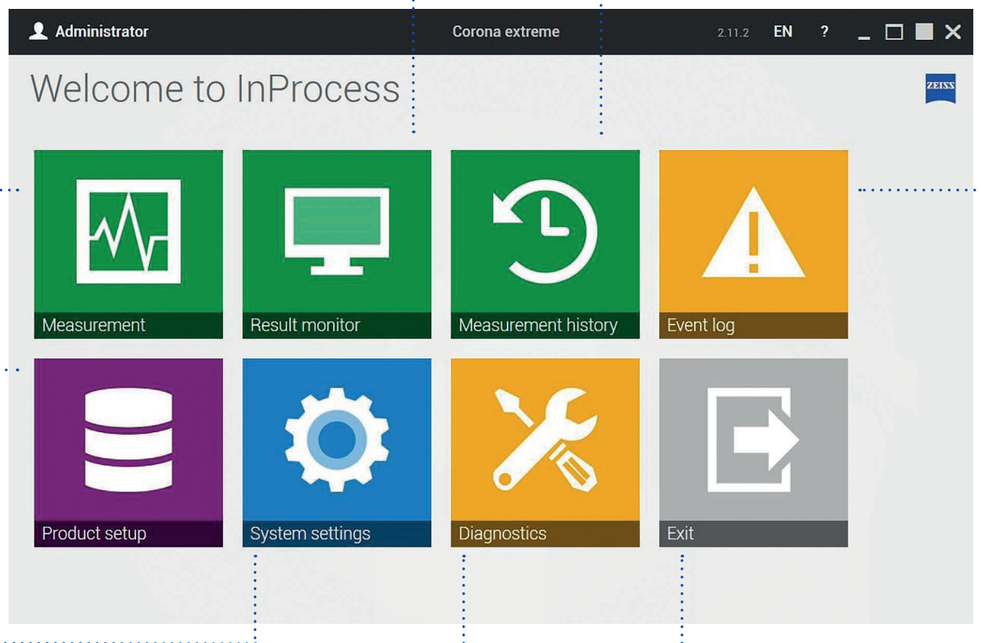




Measurement History
Access all previous measurements and results as well as spectrum data exports, measurement values and sample information.

Result Monitor
Control more than one spectrometer with just one piece of software. See measurement results from several device groups or various products in real time in one view.

Event log
See all the events that have occurred while InProcess has been in use and access all the relevant information, filtered by text search, levels and the state of the device.



Diagnostics
Spectrometer functionality can be verified with a self-test and important service information is available at the touch of a button and can instantly be sent to ZEISS Service for evaluation.

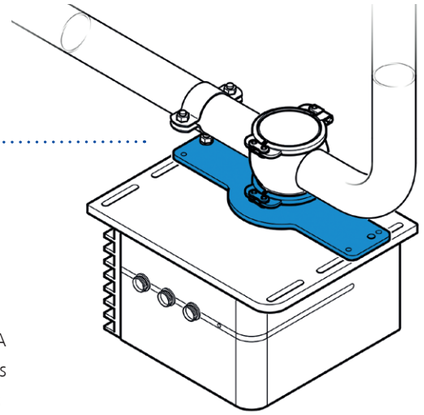
Exit
Software can be shut down when performing revision or maintenance work as well as during planned downtimes to conserve energy and resources.

Augmenting ability
Accessories for Corona® extreme

Corona® extreme is designed to provide high levels of measurement performance and robust reliability in the widest variety of applications. We have all the accessories and upgrades you need to maintain that performance and give you more application options.

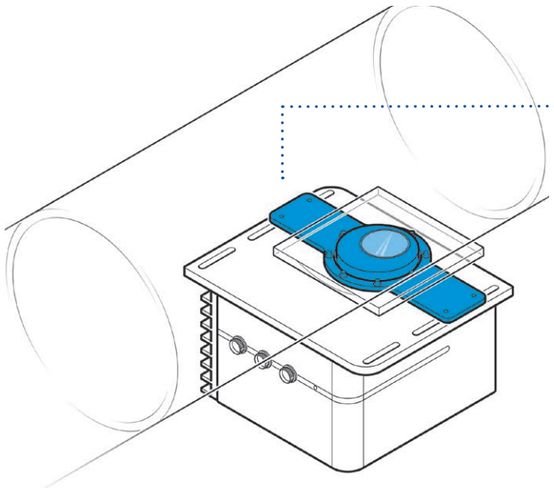
Flanges

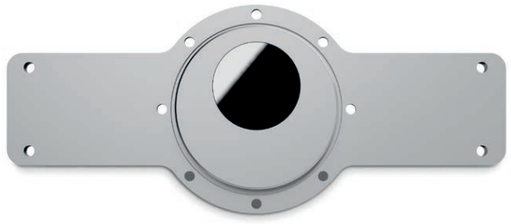
We have a wide range of different flanges, adapted to various application areas and installation situations. From trough chain conveyors to closed transport systems and pipelines, our custom flanges are ideal for in-process applications.



Flange for GEA VARINLINE housings

These are ideal for easy installation on pipelines with GEA VARINLINE Type N housings and provide a perfect fit. This accessory allows for the accurate measurement of liquids as well as pulpy samples during production.





Power flanges

Power flanges enable the simple and safe installation of Corona® extreme on closed transport systems, such as downpipes or trough chain conveyors. This makes it easy to measure bulk materials and solids reliably and accurately during production.

Corona® extreme + TURNSTEP ST + Sample Bowls

Corona® extreme is ideal for use in-line, next to the production line or in the lab, especially when combined with TURNSTEP ST. Tailor made to fit snugly onto Corona® extreme, TURNSTEP ST rotates samples during measurement to allow for greater quantities to be analyzed and more representative results. On top of that, movement can be simulated, allowing the calibration development in the laboratory or next to the production line without prior installation of Corona® extreme in the process.

Industrial Power Supply Unit

To ensure that Corona® extreme is even safer in demanding environments, we offer an industrial power supply unit. With IP67 levels of protection, it can be mounted close to the system, like on a wall, for example, meaning that cables don't get in the way.

Sample Button

With our sampling probe, samples can be marked during measurement, allowing for filtering at a later stage. This is ideal for checking calibrations or creating new ones.

HMI

Integration into existing customer networks and process control software is one of the keys to unlocking Corona® extreme's full potential. That's why we have custom HMI systems for various communication interfaces and protocols. In addition to connection via Profibus or EtherNet/IP, measurement values and trends can be displayed directly on site as well. This allows you to monitor, control and optimize your production efficiently and effectively, with seamless integration into your infrastructure.

Quality is measured by service. And vice versa.

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

Good quality goes beyond product performance – it's about the level of service you receive as well. We're more than just a provider to our clients, we're partners, which is why the service we offer is as important to us as the product we manufacture. We're with you every step of the way, from first consultation to final purchase and then for the entire life cycle of the product.

We also understand that every client is different, which is why we can develop individual service packages that are tailored to your company, facility, process, or specific project. That's what we mean by partnership and service quality: a relationship based on trust and a detailed understanding of individual needs and circumstances.

Furthermore, you can rely on our global distribution and service network. 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 from a single source. Exclusive service packages guarantee optimal performance, increase service life and provide many years of reliable and precise results. You can also profit from our digital maintenance services, which provide you with user-friendly, location-independent solutions with no waiting times. And if something does need to be repaired on site, then our service technicians can be with you in next to no time.

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

The measure of your success

Corona® extreme is the ideal solution to consistently control your production in even the most challenging environments. Accurate measurement results are imperative when it comes to optimizing costs and streamlining processes.

That's why American animal rendering specialist The Dupps Company relies on Corona® extreme to achieve its mission in providing superior quality products, solutions and services to the rendering industry.

Scan now to find out more about Corona® extreme from ZEISS

»We design, manufacture and service process systems and equipment for many of today's vital protein recycling and renewables industries. That's why we need to rely on accurate, consistent results and equipment that works as hard as we do.

Corona® extreme from ZEISS plays a key role in our complete, high-performance systems and ensures that our solutions never let our clients down, no matter how hard the challenge.«

Richard Weeks, Director of Sales
The Dupps Company

One measurement device, almost immeasurable opportunities

Corona® process full-scale spectrometer

Corona® process from ZEISS gives you an almost unlimited number of measurement possibilities and can simultaneously evaluate the vast quantity of information that exists in the 380 to 1,650 nm wavelength range. With other forms of measurement, the filter or even the device itself needs to be changed, whereas our spectrometer can measure fat, color, salt, dry mass and spices precisely, consistently and irrespective of measurement distance. Ideal for use in the food industry, Corona® process allows you to monitor important quality parameters in real time, so that you can optimize production quality, while saving costs and energy.

Product highlights

- **Full-scale in-line** spectrometer that covers both **visible and NIR wavelength ranges**
- Measure several **important quality parameters** at the same time, in real time, such as **fat, moisture, protein, sugar and color**
- **Two lamps** with automatic switching provides for **high levels of process security** and **no unplanned downtime**
- **Real time results** thanks to high measurement frequency
- Ideal for the measurement of **food products** on open transport systems, such as **conveyor belts** thanks to **hygienic design**

Scan now to find out more about Corona® process from ZEISS

Performance in the palm of your hand

AURA® handheld NIR spectrometer

As a portable, agile and convenient spectroscopy solution, AURA® handheld NIR from ZEISS allows you to get up close to samples in just about any weather conditions. And its long-lasting battery, integrated computer, intuitive software and large touch-screen display means it's easy to use and completely portable, regardless of whether you need to measure out in the field, in stables or just about anywhere else you'd need a spectrometer. When it comes to ultimate flexibility in getting accurate measurements, the power is in your hands.

Product highlights

- **Completely portable** and easy to use
- **Take measurements up close** and in direct contact with samples
- **Includes complete software** for comprehensive measurement results on **the move**
- **Rugged and reliable** in almost all conditions
- **Available with a range** of convenient accessories
- **Practical carrying case** included for ideal portability

Scan now to find out more about AURA® handheld NIR from ZEISS

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