

SECOPTA

Fast. Precise. Robust.



MineralLIBS SP

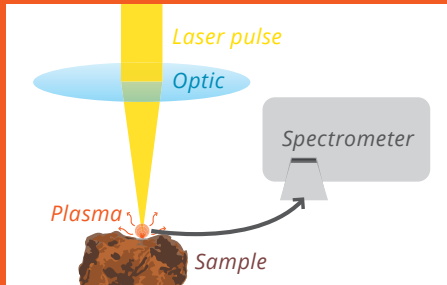
Reach a new level of process stability with inline elemental analysis

- › Reliable detection of:
 - › Material mixup
 - › Trend and short time internal variation
 - › Batch inhomogeneity and handling error
- › Applicable for particle sizes from 100 µm to 10mm

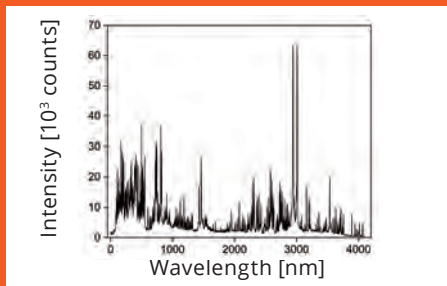


What is LIBS?

LIBS (laser-induced breakdown spectroscopy) is a real-time, non-destructive and contactless method to analyze the multi-element composition of materials.



The principle of LIBS



Exemplary sinter spectrum

A laser beam is focused on the surface of a sample. The energy input leads to a sublimation and ablation of a small amount of material (μg) which is transformed into a plasma. The plasma emits characteristic light depending on the sample composition and is detected by a spectrometer.

For each measured position, the information of multiple elements is available immediately. Based on a calibration with matrix-matching reference samples, the detected emission intensities can be converted to quantitative values.

All elements can be analyzed simultaneously with one laser shot and without sample preparation for most of the applications.

Only an optical access to the sample is needed for the LIBS measurements. The topology of the sample does not impact the LIBS measurements as the sample shape can be considered using a laser distance sensor.

**Fastest process feedback
allows reacting on time
to reajust and maximise
resource efficiency**

A new level of process insights

The current standard procedure for monitoring industrial processes is the manual sampling and analysis of samples. This well-established method has three important disadvantages that lead to high inaccuracies.

1) Even with correct sampling, sampling errors occur which can lead to significant deviations between material taken from the process and the actual element concentration of the total.

2) Sometimes significant trends and changes between two samples cannot be detected.

3) The processing of samples from sampling to sample transport to sample preparation and analysis takes a very long time. Depending on the degree of automation, active process control is no longer possible with these long analysis times.

The LIBS technology can help here, due to its contactless measurement of up to 1000 times per second and its suitability for inline applications.

It can analyze virtually all elements, even light elements, without sample preparation. At a fraction of the cost of a radiometric inline measuring system and without radioactive radiation.

The MineralLIBS SP in your process

The SECOPTA MineralLIBS SP is an industry-proven analysis system adapted to the specific needs of elemental analysis on the conveyor belt.

Equipped with a maintenance-free laser, a robust system and spectrometer setup, a sophisticated calibration and software package, it delivers reliable results ensuring a maximum stability.

Due to the modular design and the at least 100,000 hours laser lifetime, the MineralLIBS SP is perfectly suitable for 24/7 operation even in very harsh environments with a minimum of maintenance effort.

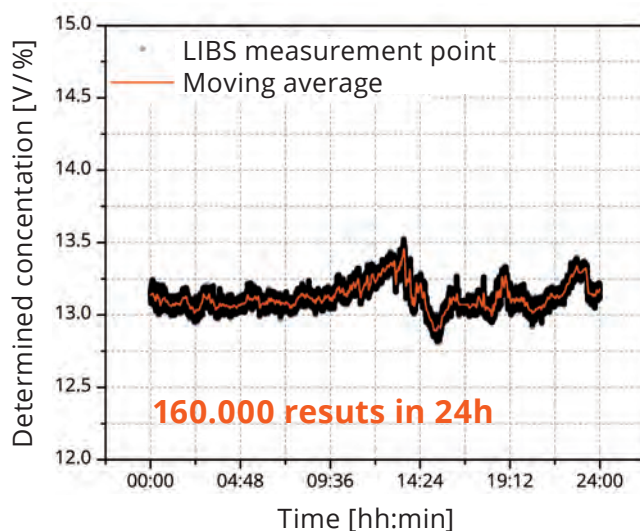
For all customers who want to focus on their core business, SECOPTA offers tailor-made calibrations as a service.

Together with direct level 2 communication, the MineralLIBS SP is a powerful tool for active process control.

This makes your sensor stable in the long term and even if your material composition changes, SECOPTA can update your calibration together with the remote service.

In addition, for quality assurance purposes control charts can be automatically constructed with your process data ensuring continuous proof of the stability and if applicable, the process capability of the sensor. Thus, out-of-control situations can be immediately identified and reacted upon.

Furthermore, light elements such as H, Na or Mg can also be measured inline.



LIBS inline analysis allows permanent monitoring of trends to ensure quality and fast detection of exceeding the limits to intervene



Laser safety housing (optional) and industrial control cabinet

Your advantages with the MineralLIBS SP

- › Installed directly above the conveyor belt
- › Made for 24/7 use with low operating cost
- › All elements within a second
- › No ionizing radiation
- › No sampling and sample preparation error
- › No drift in calibration parameters
- › Software package with versatile functionality
- › Compatible with Manufacturing Execution Systems (MES)

Technical specifications MineralLIBS SP

Control unit dimension (WxLxH)	600 mm x 850 mm x 1750 mm
Measuring head dimension (WxLxH)	203mm x 270mm x 630mm
Weight (control unit)	150 kg
Weight (measuring head)	30 kg
Cable length	4,2 m
Laser class	4 (Laser class 1 possible with additional laser safety housing)
Protection class	IP 56, IP 65 measuring head
Temperature range	+5 °C to +40 °C
Communication interface	Profinet, Ethernet/IP, EtherCat, Modbus TCP, TCP/IP, UDP, OPC UA, SQL (other industrial protocols and field-bus system possible on request)
Detectable elements	All elements from H on

Available soft- and hardware options

Remote service	The fastest option to bring your system back on track
Remote calibration	Adapt your system to new requirements to a minimum of effort
Spectrometer flexibility	Additional spectrometer incorporation onsite (to include additional elements into the existing calibration)
Module spare parts	On-site quick-change of modules → Reduce down time to a minimum
Laser safety on measurement position	Development of safety concept Design and delivery of laser safety housing
CE Certification	Easy implementation of the sensor into existing production lines
Measuring device monitoring	Monitoring of sensor and process stability → For audits and certification processes

SECOPTA analytics GmbH
Rheinstr. 15B
14513 Teltow
Telefon: +49 3328 - 35 40 300
E-Mail: info@secopta.de

www.secopta.de

Discover more!

