



When results matter

SPECTROLAB^{LAVM12}

Stationary Metal Analyzer

**Ultimate performance for the
next generation of metal analysis**



AMETEK[®]
MATERIALS ANALYSIS DIVISION

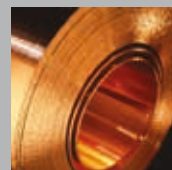
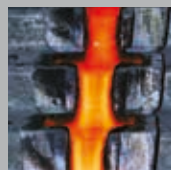
SPECTROLAB

HIGH-PERFORMANCE ARC/SPARK OPTICAL
EMISSION SPECTROMETRY (OES) ANALYZERS

The new standard of excellence
for research and process control



The new generation of SPECTROLAB OES analyzers delivers the greatest innovation in elemental analysis yet. Stability, flexibility, and analytical functionality combine in a high-performance package that other spectrometer manufacturers can't match. The hybrid PMT/CCD analyzer sets a new standard for R&D and process/quality control. SPECTRO has spent more than 30 years developing the world's leading OES instruments. A host of improvements, enhancements, and groundbreaking technological innovations make its new spectrometer the ideal analytical answer for primary metal producers and other critical applications. Today, when time, precision, and flexibility are critical, choose SPECTROLAB.



SPECTROLAB

All the advantages of unparalleled performance

Performance Meets Flexibility

SPECTROLAB offers an innovative approach for high-performance OES. The unique hybrid optic combines two technologies — analog photomultiplier tube (PMT) detectors and digital charge coupled device (CCD) sensors — to present an ultra-accurate simultaneous measurement. With its outstanding performance and flexibility, it is well suited to routine analysis in process control, to monitoring predetermined specifications during quality control, to conducting special assignments in research and development as well as many other applications in the metal producing, processing and recycling industries.

Ultimate elemental flexibility

Forget time-wasting, cash-consuming delays to add new elements via extensive hardware modifications. In most cases, SPECTROLAB can eliminate hardware reconfigurations. Optional software-extendable configuration lets users change the instrument's elemental setup without having to measure standard samples for calibration.

Ultra-low limits of detection

The unit offers a new low in limits of detection, thanks to innovations such as improved background correction. Depending on application and analytes, SPECTROLAB can easily ascertain trace values in single parts per million (ppm).

Ultra-high speed of measurement

SPECTROLAB's designers took every opportunity to meet the metal market's need for speed. For example, a high-energy plasma generator is coupled with SPECTRO's unique dynamic preburn process, which shortens measurement time on better-quality samples. Results: lightning-fast setup, accelerated sample throughput, and extremely low time to measurement in many applications.



Spectacular stability

Metal producers can't afford unreliable results. Inconsistent analyses yield spoiled batches and costly, time-consuming rework. Fortunately, SPECTROLAB provides stability without compromise. Unlike conventional models, its sealed, no-purge optical system maximizes light transmission stability, even in the far UV. Its software utilizes sophisticated online drift correction measures. And the instrument's designers chose the optimum correlation between analytical and reference lines — for the most stable measurement approach possible.

Affordable cost of ownership

UV-PLUS purification eliminates expensive argon purging or vacuum pumps. Component relocations, advanced diagnostics, and other improvements make maintenance easier and prevent expensive unplanned downtime. SPECTROLAB brings new levels of savings to high-performance spectroscopy.

Excellent ease of use

Even for less experienced personnel, SPECTRO's new user interface takes effortless operation to a new level. Instead of multiple dialog boxes, a simplified operator view presents clear choices via dedicated toolbar buttons. And instead of complicated method development, new application profiles are tailored to predetermined user requirements.

Easy access and maintenance

For this SPECTROLAB generation, many components — including the readout system, other electronics, and the power supplies — are located in a separate compartment on top of the instrument. Thus temperature control is made even simpler, while easy access for service is ensured.



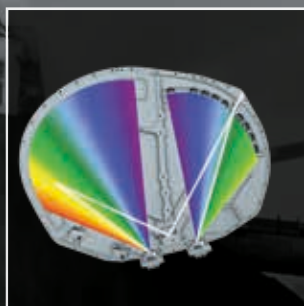
Standard-setting technology

SPECTROLAB established new benchmarks with the introduction of a pioneering hybrid PMT/CCD optical system in 2007. SPECTRO has continuously improved both technologies since.

An innovative optical approaches

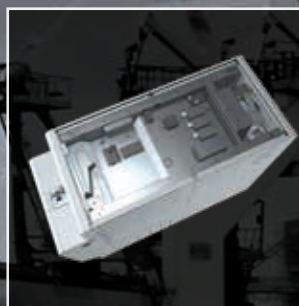
The third-generation hybrid SPECTROLAB model offers excellent optical performance for metals industry applications. It provides outstanding precision, flexibility, and stability for specialized R&D laboratories. It's especially suitable for routine analysis in process control, for monitoring predetermined specifications during quality control, for conducting special assignments in research and development as well as many other applications in the metal producing, processing and recycling industries. And SPECTROLAB's patented* capability to determine carbon content in nodular cast iron minimizes the need for costly combustion analyzers.





HYBRID OPTICS

In the hybrid optic, the PMT segment has a wavelength range of 170-500 nm, with second order coverage for O_2 , H_2 , and N_2 . The CCD segment has a range of 120-320 nm; in addition, an optional CCD optic has a range of 230-766 nm.



IMPROVED ENVIRONMENTAL CONTROL

Advanced insulation and software-controlled air cooling stabilize the optical system atmosphere at 20° C (68° F) for reliable operation and accuracy. Electronic components, power supplies, and the readout system are isolated atop the chassis, and separately cooled, thus preventing negative temperature effects.

A complete spectrum of innovation

1] Rapid readout system

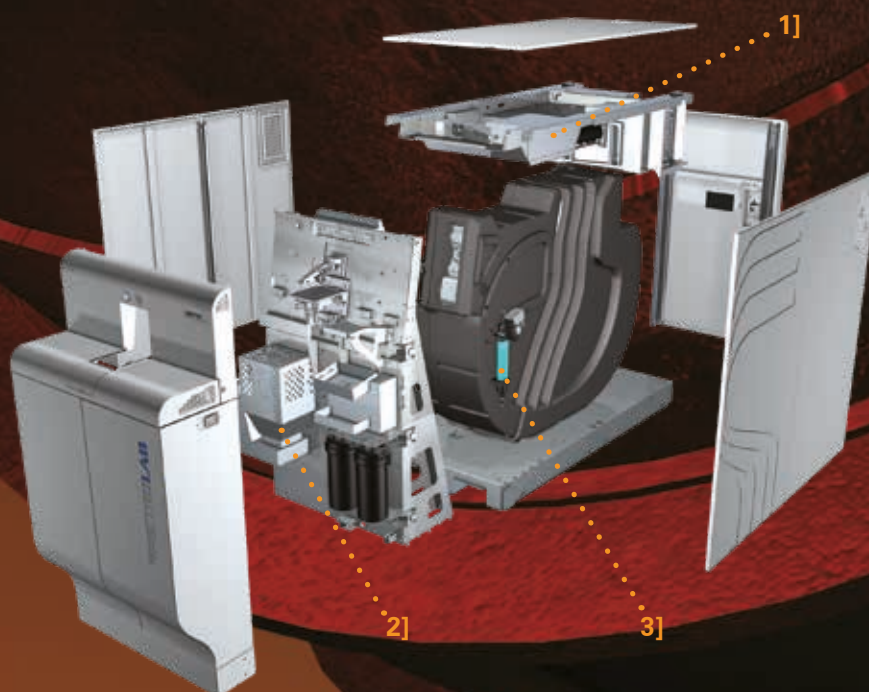
This redesigned feature offers high-speed, even more flexible data transmission to support SPECTROLAB's superlative analytical performance. Users may choose regions-of-interest-only measurements for the fastest possible results. For R&D and unknowns analyses, the system also offers complete wavelength scans. The advanced single spark evaluation (SSE) capability lets it deliver unprecedented precision in inclusions analyses, for applications such as precise determination of steel quality.

2] Powerful plasma generator & ignition board

The exceptionally robust, high-energy plasma generator produces an extremely stable discharge for sample excitation. Digitally guided control of plasma conditions provides impressive resolution, high fidelity, and accelerated results. To avoid high-voltage interference, the generator and ignition board are sited near the spark stand. The system creates ideal plasma conditions for optimum analytical performance.

3] Cost-saving UV-PLUS purification

SPECTROLAB incorporates a newly modified version of SPECTRO's proven UV-PLUS sealed gas purification technology. Utilizing an exclusive long-lasting filter cartridge, it eliminates expensive argon purging. It also avoids outside contamination of the optical system. Result: assurance of optimum measurement conditions.



Superior user experience

Clearly intuitive operation

The unit's new Spark Analyzer Pro software presents a revolutionary new level of operator interface simplicity. The program includes straightforward, self-explanatory icons and a familiar, ergonomic approach with little learning curve. Only authorized users can access the method development / knowledge base module for more complex tasks.



Efficient diagnostics, timely reminders, M2M

SPECTROLAB maximizes instrument availability with a new, improved diagnostic system. Enabled by automatic logging and monitoring features, handy maintenance reminders can flag everything from optical system pressure and temperature to voltage supply, and more. Optional machine-to-machine (M2M) remote diagnosis makes possible fast, responsive issue resolution.

Ultra-flexible configuration

When specifications change or new elements must be measured, traditional spectrometers demand physical alterations to their detectors — an expensive and time-consuming proposition. So new configurations can often be activated via software alone. It's another way SPECTROLAB delivers unheard-of flexibility.





Advanced analysis from the full SPECTRO family

The latest generation of flagship SPECTROLAB instruments leads today's most comprehensive suite of advanced elemental analyzers. These include SPECTROMAXx, the benchmark device for workhorse metals analysis, as well as the SPECTROTEST mobile metals analyzer and SPECTRO xSORT handheld XRF spectrometer. Whatever the product, SPECTRO's more than 30 years of experience in elemental analysis and unparalleled record of technological innovation ensure the best results in the business.

Superior support with comprehensive AMECARE services

For metal producers, productivity depends on continued availability of analysis. The AMECARE Performance Services program maximizes uptime for SPECTROLAB and other SPECTRO Analytical products.

The program is staffed by more than 200 experienced service engineers in 50 countries. They provide high-value, customized services designed to ensure optimum performance plus the longest possible equipment life. Ask about AMECARE proactive performance maintenance, performance upgrades, applications solutions, consultation, targeted training, and ongoing support.



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* US Patent No.: US 8,976,350 B2