



SPECTROMAXx LMX05

**Metal Analysis without
Compromise**





SPECTROMAXx

Metal Analysis without Compromise



The SPECTROMAXx is the specialist for the rapid analysis of all of the normal elements in foundries, for multiple matrix applications in incoming and outgoing inspection in metal processing companies as well as for the demanding applications in the automotive and aerospace industries.

The SPECTROMAXx is the most successful product in the history of SPECTRO and simultaneously probably the most successful metal analyzer in its class on the market. In its fifth generation, the new SPECTROMAXx once again offers improved performance and unconditionally efficient routine operation with minimal operating costs.

The SPECTROMAXx is available as a benchtop or floor unit in three different versions that vary in the available wavelength ranges and thus in the analytical capacities. All of the important elements required in the metal industry can be determined with this analyzer,

including traces of carbon, phosphorous, sulfur and nitrogen. Pre-defined calibration modules are available for the relevant bases, such as Fe, Al, Cu, Ni, Co, Ti, Mg, Zn, Sn and Pb. These encompass the complete palette of relevant elements and can be adjusted to fit individual requirements.

Devised for the trouble-free execution of even the highest sample volumes, the SPECTROMAXx offers high reliability with minimal maintenance requirements in addition to simple operation and outstanding analytical performance.

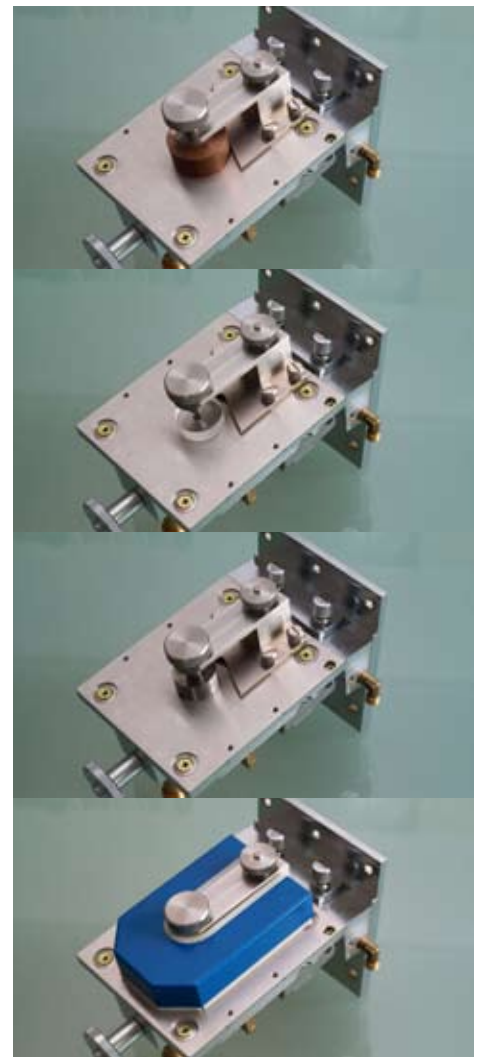


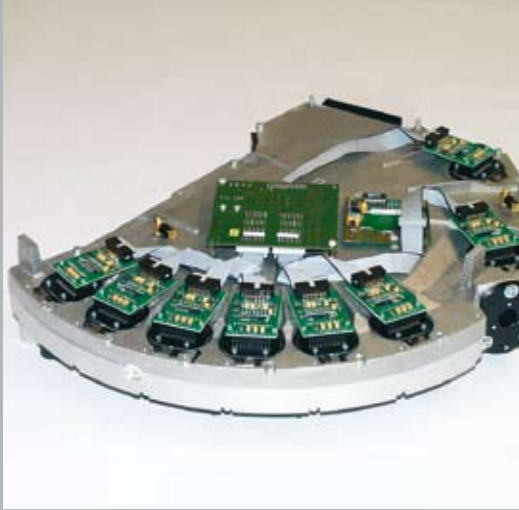
- **Uncompromising; developed for high analytical performance and low operating costs with minimal maintenance requirements**
- **Precise excitation with completely digital plasma generator**
- **Robust special optic with high performance readout system**
- **Records the complete spectrum in the available wavelength range**
- **Small part adapter with ready to analyze calibrations**
- **Argon saving module for zero consumption during long work breaks**
- **Diagnosis system with innovative visualization functions**

Spark Stand

A greatly reduced inner volume combined with an optimized argon flow reduces the argon consumption in the spark stand by about a factor of two while simultaneously reducing the amount of condensate. A further, drastic decrease in the argon required is possible using the new argon saving module. The argon flow can be stopped completely for longer work breaks. The SPECTROMAXx automatically begins to flush the spark stand on time for the start of work – for example, the next morning, or at the beginning of the week or after vacation. When personnel arrive to begin work, the instrument is ready to start analyzing. Maintenance work must be performed rarely due to the low degree of contamination. The window to the optical system can be quickly changed without tools if necessary.

The sample clamp can be swiveled to both sides and has an integrated safety circuit; enabling rapid sample changes. Widely varying sample formats can be easily analyzed. Special adapters are available for the analysis of small pieces. These are delivered with ready to analyze methods and can be used immediately without any further calibration effort. These pre-defined methods can be adapted to individual requirements as necessary.





The ergonomic design of the SPECTROMAXx enables a productive working rhythm. Storage possibilities are available for the necessary tools. The functional, vertically adjustable PC table with swiveling keyboard, USB interfaces and dust-protected computer cabinet is, in many cases, a sensible supplement.

Excitation with Plasma Generator

The innovative plasma generator for excitation of the sample is the basis for the accuracy of the SPECTROMAXx. The completely digital control enables exact definition of the energy in the plasma. Reproducible excitation conditions and precise analytical results using reduced measuring times are the result.

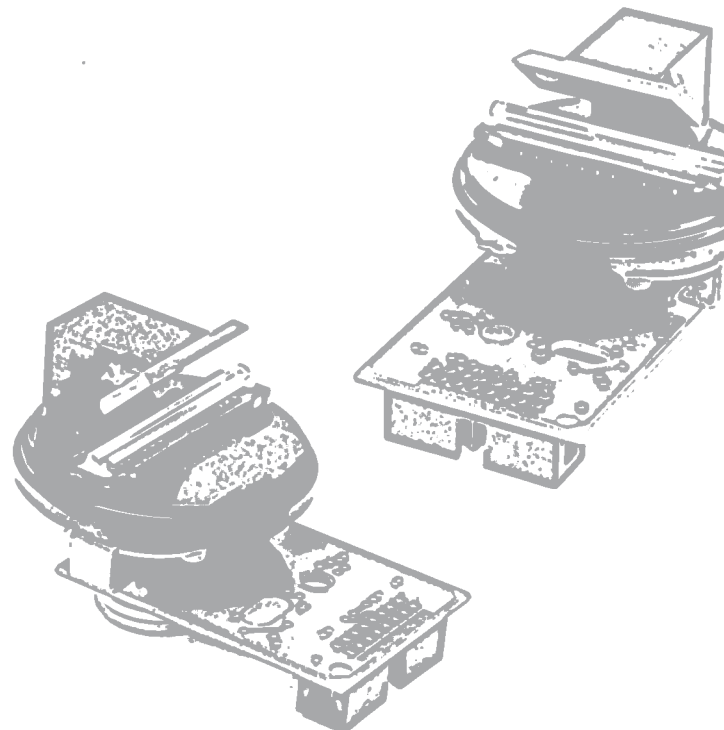
Optical System


The special optic in the SPECTROMAXx is accommodated together with the accompanying components, in a closed housing that effectively protects it from dust. The SPECTROMAXx uses the wavelength range from 140 to 670 nm. The applicable and configured wavelength range is based on the customer's application requirements.

ICAL

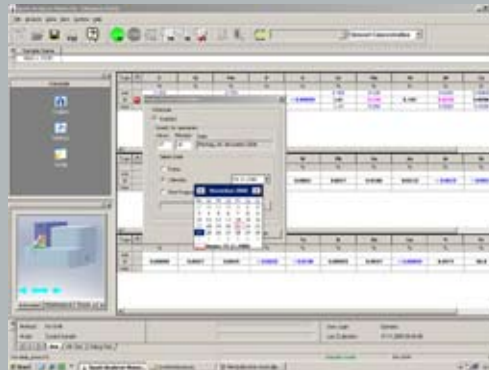
A revised version of the unique, proprietary ICAL logic system for the compensation of unavoidable fluctuations in instrument specific parameters is utilized in this analyzer. Depending on the application, it can lead to a time savings of 30 minutes or more per day, because ICAL, instead of recalibrating with numerous reference samples like conventional spectrometers, enables standardization of the SPECTROMAXx by the measurement of a single control sample.

ICAL Sample
The ICAL sample is, according to the user's standard preparation procedure for other samples, either ground or milled.





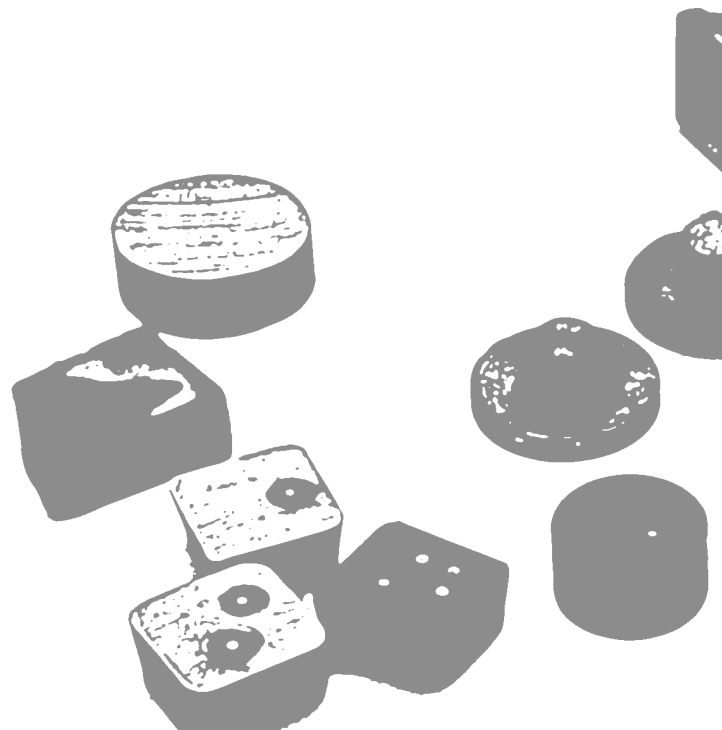
Software: Three main program sections can be reached using the navigation bar: Analysis, Method and Configuration. The measuring window makes it possible to display multiple measurements and averages. Measurement results and the data belonging to them can be quickly and easily transferred to other applications and there further processed and evaluated.



Spark Analyzer Vision Software

The Windows Spark Analyzer Vision instrument software from the SPECTROLAB high performance spectrometer is now also used in the SPECTROMAXx. It provides a simple, intuitive interface with numerous functions for the setting of instrument parameters, for data exchange with external computers and for the printing and evaluation of results based on an integrated SQL databank.

A comprehensive diagnosis system monitors and continuously documents the satisfactory operational state of the system. Any malfunctions can be localized, identified and displayed in a schematic view of the instrument. The regular measurement of control samples at a pre-set time can be managed using the diagnosis system.



SPECTROMAXx



CCD Optics

- High resolution CCD Multi detectors
- Stabilized against fluctuations in temperature
- Effective wavelength range: 140-670 nm, the applicable and configured wavelength range is based on the customer's application requirements
- Automated profiling

Analysis Modules

- Freely selectable analysis modules
- Optimized to customer requirements
- Expansion of additional modules on-site possible

Spark Stand

- Open spark stand for high sample throughput and various kinds of sample geometrics
- Minimized Argon consumption with Argon Saver Module
- Optimized Argon flow
- Reduced cleaning intervals
- Spark stand plate easily exchangeable
- Temperature absorbent design without water cooling
- Integrated shutter system for optimum plasma viewing

Excitation System

- Fully digitalized plasma generator with digital discharge definition, digital pulse generation and digital offline pulse control
- 32 MHz micro-controller
- Energy resolution: 125 mW in 0.5 μ s steps
- Max. spark duration: 4000 μ s
- Max. spark power 4 KW

Readout System

- High Speed 12 Bit ADC
- DSP-Controller with 66 MHz
- Serial Source Interface
- 16 inputs for 16 CCDs

Spectrometer PC

- External, state of the art computer system with Windows operating system
- Keyboard and mouse
- Monitor
- Printer

Software

- SPECTRO Spark Analyzer Vision Software for analytical operation and calibration
- Continuous automatic hardware diagnosis in the background
- Automatic alloy/grade verification and identification
- Result Manager

Environmental Conditions

- Room temperature: 15-35°C (59-95°F)
- Relative Humidity: < 80 % non-condensing
- Atmosphere: free of corrosive vapors and high dust pollution

Spectrometer Data

- 115 or 230 V + 10 %/-15 %, 50/60 Hz
- max. 400 VA during sparking
- Fuse: 16 A slow-blow
- Version:

Benchtop	Floor model
Depth: 730 mm/29"	730 mm/29"
Width: 615 mm/23"	615 mm/23"
Height: 480 mm/19"	1370 mm/54"
- Weight: approx. 70kg/154.3lbs 115kg/253.5lbs



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