



# SPECTRO MIDEX

*With micro-focus X-ray tubes and optimized collimators, the*  
**Micro X-Ray Fluorescence Spectrometers for**

*SPECTRO MIDEX micro X-ray fluorescence spectrometers*  
**Elemental Analysis: Small Spot, Line Scanning and Mapping**  
*are specialized for the rapid, non-destructive analysis of*

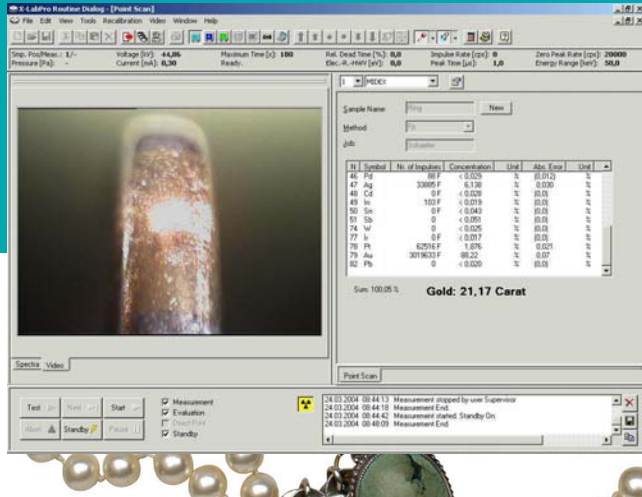
*small areas and surfaces without the necessity of time-consuming sample preparation.*



# SPECTRO MIDEX

Micro X-Ray Fluorescence Spectrometers for Elemental Analysis: Small Spot, Line Scanning and Mapping

*Analysis of a gold ring with the SPECTRO MIDEX. Operation is simple, straightforward and easy to learn. The online help system is available for support when necessary. All important information is available at a glance in the routine operation window.*



## SPECTRO MIDEX

- Easy and precise analysis of small samples
- Fundamental Parameters program for metal alloys, especially precious metals
- Integrated video camera system for exact sample positioning
- Measuring spot size: 0.7 mm; alternative: 2 mm

The SPECTRO MIDEX micro X-Ray Fluorescence spectrometers are meticulously designed for the wide-ranging analytical tasks requiring a non-destructive highly sensitive measurement system for small spot analysis. This innovative technology results in short measuring times and simple operation coupled with extreme versatility and flexibility.

## Excitation

For focused point sample excitation, the SPECTRO MIDEX and the even more talented SPECTRO MIDEX M utilize an air-cooled low power X-ray tube with micro-focus. The size of the measuring spot is 0.7 mm for the SPECTRO MIDEX; the lateral resolution is either 0.2 mm, 0.6 mm, 1 mm or 2 mm for the SPECTRO MIDEX M with its four integrated - software controlled – collimators, enabling it to be optimized for many different tasks.

## Sample Presentation

The SPECTRO MIDEX has a uniquely spacious sample chamber with an adjustable sample stand. The exact measuring position can be determined precisely using the internal 20x zoom video camera. In the SPECTRO MIDEX M, a motor driven xyz-table enables line

scanning and mapping of sample surfaces up to 190 x 260 mm (7.5" x 10"). The large sample chamber – 600 mm (23.6") deep, 540 mm (21.3") wide – offers virtually obstruction-free viewing from three sides. The xyz-sample table can be pulled out of the sample chamber in order to better position a sample. The SPECTRO MIDEX M is equipped with a second video system to facilitate optimal selection of the measuring point.

## Detector

The high resolution detection system (Si drift chamber detector with Peltier cooling) processes up to 100,000 pulses per second, making it twice as fast as instruments using conventional detector technology. A screening analysis of an unknown sample - including the determination of all of the elements

between sodium and uranium - can be conducted in less than two minutes; extensive mapping examinations in just a few hours.

## Operation

The instrument software is quick to learn and easy to use. The online help system is available for support when necessary. All important information is visible at a glance in the routine operation window. All measurement data can be archived automatically, making it available for post-processing.



## SPECTRO MIDEX M

- Small spot analysis, line scanning and mapping of solids, powders and liquids
- Pull-out sample table and double video system facilitate exact sample positioning
- Software controlled collimator selection for high flexibility
- Software controlled measuring spot size: 0.2 mm, 0.6 mm, 1 mm and 2 mm

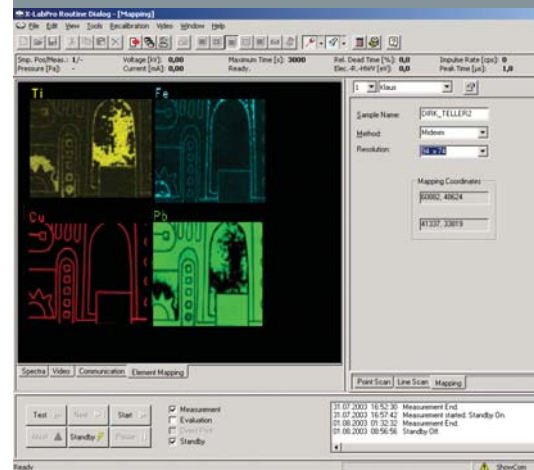


*An unobstructed view: The large SPECTRO MIDEX M sample chamber with three-sided sample viewing, 600 mm (23.6") deep and 540 mm (21.3") wide.*

## Application

The SPECTRO MIDEX instruments are designed for the examination of very small samples and for the analysis of small surfaces on larger samples. The range of applications encompasses everything from the examination of small electronic components, cable insulation and other components in the electronics industry for RoHS compliance, identification of inclusions in metallic components and other testing tasks where only a relatively small sample is available. SPECTRO's fundamental parameters program FP+ is utilized when measuring predominantly metallic samples. For the analysis of gold in precious metals, for example, this method achieves an accuracy of 0.15% or better.

With the electrically operated xyz-table, the SPECTRO MIDEX M is able to conduct line scanning and mapping on large sample surfaces. The software helps create element distribution charts of the sample. This function can also be used to locate areas of the sample with high concentrations of certain elements and then to quantitatively analyze individual points within these areas. The xyz-table can be utilized as an autosampler for a larger number of small spot analyses. Selection of the appropriate software controlled collimator in the SPECTRO MIDEX M allows adjustment of the measuring spot size to match the properties of the sample or to achieve the highest possible mapping speed.



*Elemental mapping of artwork with the SPECTRO MIDEX M. The software helps create element distribution charts of the sample.*

# Technical Specifications

	SPECTRO MIDEX	SPECTRO MIDEX M		SPECTRO MIDEX	SPECTRO MIDEX	
<b>Excitation</b>	X-ray tube with Mo anode, max. power: 30 W, max. voltage: 50 kV	•	•			
	Measurement spot size: 0.7 mm	•	—			
	Measurement spot size: 2 mm alternative	*	—			
	Collimators 0.2, 0.6, 1, and 2 mm software controlled selectable	—	•			
<b>Sample chamber</b>	WxDxH in mm	520x310x160	540x600x250			
	Video system with display of sample	•	—			
	Double video system with display of sample on the PC monitor	—	•			
	He flush for the improvement of the analysis of the elements Mg-Cl	*	•			
	Manually adjustable sample table for simple sample positioning	•	—			
	Motor-driven xyz precision table with a maximum travel path of 300x300x150 mm (11.8x11.8x6") at a resolution of 2.5 $\mu$ m	—	•			
<b>Evaluation computer</b>	External Pentium-based computer system, Windows™ operating system, Keyboard, mouse, monitor, printer	•	•			
	Menu-based software for control of spectrometer functions, evaluation of data and display of element distribution images	•	•			
• included, — not included, * Option <sup>1)</sup> for SPECTRO MIDEX not in combination with the alternative spot size of 2 mm <sup>2)</sup> for SPECTRO MIDEX not in combination with the spot size of 0.7 mm			<b>Detection system</b>	Si drift chamber detector with Peltier cooling	•	•
<b>Spectrometer data</b>	Energy resolution: FWHM < 170 eV, measured at the Mn K $\alpha$ line with an input count rate of 10,000 pulses	•		•		
	Microprocessor control for detector and read-out electronics	•		•		
	Pulse rate up to 100,000 cps	•		•		
	Connection: 100-127, 200-240 V, 50/60 Hz, 2,6/1,0 A	•	•			
<b>Analysis</b>	Power consumption spectrometer: 500 VA	•	•			
	Dimensions WxDxH in mm	540x420x560	612x720x790			
		21x16.5x22"	24x28x31"			
<b>Environment</b>	Footprint WxD in mm	540x360/21x14"	612x640/24x25"			
	Weight	40kg/88lbs	80 kg/176lbs			
	Fundamental Parameters Program FP+ for element analysis <sup>1)</sup>	•	•			
			<b>Analysis</b>	Calibration for analysis according RoHS <sup>2)</sup>	*	*
				<b>Environment</b>	Ambient temperature: 5-30°C/41-85°F, specified instrument performance at 20-25°C / 68-77°F	•
					Rel. humidity at 25°C (77°F): 10-80 % not condensed, free of corrosive vapor and high dust pollution	•



[www.spectro.com](http://www.spectro.com)

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**AMETEK**  
SPECTRO ANALYTICAL INSTRUMENTS

## GERMANY

SPECTRO A. I. GmbH & Co. KG  
 Boschstrasse 10  
 D-47533 Kleve  
 Tel: +49.2821.8.92.21.02  
 Fax: +49.2821.8.92.22.02  
[info@spectro.com](mailto:info@spectro.com)

## ROMÂNIA

Reprezentanța locală  
**SPECTRO SERVICE ROMANIA**  
 Str. Ec. Teodoroiu nr. 10, bl. A1,  
 sc. A, ap. 6, 105600 - Câmpina  
 Tel: 0244 373 278  
 Fax: 0244 374 093  
[office@spectro.ro](mailto:office@spectro.ro)

