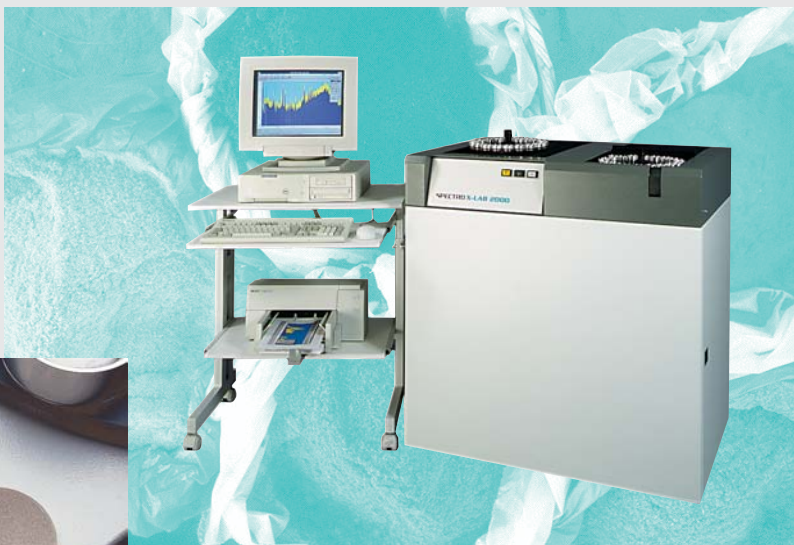


# SPECTRO X-LAB 2000

## High performance X-ray fluorescence spectrometer



SPECTRO has years of experience in the use of polarized X-rays in elemental analysis. This has led to many innovative advances and the development of the SPECTRO X-LAB<sup>®</sup> 2000, an instrument which, for the first time, uses crystals to produce the polarization (BRAGG). This improves the analytical properties of the instrument and hence makes possible:

- General analysis of Na - U in 100 seconds
- Detection limits in the sub-ppm range by optimized polarization targets for special groups of elements
- Excellent sensitivities for the previously critical elements Na, Mg, Al, P, S and Cl; excitation using BRAGG polarized Pd-L radiation or selective excitation of elements with secondary targets.

The instrument's high X-ray intensity also permits the quantitative analysis of elements in the ng-range.

The customer-specific optimization of the excitation system produces analytical performances which correspond to those of a wavelength dispersive spectrometer, providing an excellent price-to-performance ratio. The simultaneous detection of fluorescence radiation in 4000 channels ranging from 0.4 - 50 keV, and the Si(Li) detector with excellent energy resolution and high pulse transmission are together responsible for the excellent spectrometric results of the SPECTRO X-LAB 2000. It can deal with a wide range of concentrations, ranging from a few 0.1 mg/g to 100 %, and inflicts only a low thermal load on the sample. The instrument is available pre-calibrated for either rapid general analyses or customer-specific applications. The analysis parameters are similarly pre-programmed so that the customer's own methods can be created quickly and easily.

# Technical Data

## Excitation

- X-ray end-window tube with Pd anode
- Internal oil cooling
- Max. power 400 W
- Max. voltage 55 kV
- HOPG, Mo, and Al<sub>2</sub>O<sub>3</sub> target for optimized excitation
- additional polarization and secondary targets available (Co, Zr Pd, Ge, Zn)
- Up to 8 programmable targets

## Sample Chamber

- Sample trays for 32 mm (20 positions) and 40 mm (12 positions) samples
- Control of sample changer and target changer via PC
- Vacuum system with gauge (optional)
- Gas flush (optional)

## Detector

- Si(Li) detector (12 mm<sup>2</sup> active area, 3 mm effective thickness)
- 8 mm Moxtek Dura-Beryllium™ radiation entrance window
- Energy resolution < 154eV, measured at the Mn K $\alpha$  line with an input count rate of 10<sup>4</sup> pulses
- Peak to background better 10000:1
- Instrument dewar with a LN<sub>2</sub> supply for at least 14 days
- Nitrogen level control system

## Digital Pulse Processor

- Digital pulse processing
- High throughput
- High voltage supply for detector
- Exceptional pulse pile up rejection

## Personal Computer

- External Pentium-based computer system
- Windows™ operating system
- Keyboard and mouse
- Monitor
- Printer

## Software

- Menu-based X-LAB Pro software for control of spectrometer functions and for evaluation of data

## Spectrometer Data

- 230 V  $\pm$  10 %, 50/60 Hz
- Power consumption  
max: 1500 W  
stand-by: 400 W
- Height: 1060 mm (42")
- Width: 950 mm (38")
- Depth: 710 mm (28")
- Weight:  
max. 200 kg (440 lbs)
- Full protection in accordance with the German X-ray Regulations §3

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

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**AMETEK**  
SPECTRO ANALYTICAL INSTRUMENTS

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