

BENCHTOP SEQUENTIAL WDX SPECTROMETER - ZSXmini -

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X-ray fluorescence analysis has become indispensable for every market. It is utilized in new markets such as environmental and waste material analysis as well as traditional markets such as quality control in factories and R&D with extending applications. Better cost-effective instruments have been required, where a benchtop XRF spectrometer is used for a specific application with a few analyzed element or primary screening analysis because of its advantages of low price, 110 volt, no cooling water, and small footprint.

ZSXmini is the benchtop sequential WD (wavelength-dispersive) XRF spectrometer. ZSXmini requires no liquid nitrogen owing to a WD type, and no cooling water because of a small X-ray tube, and also has high angular resolution, which enables to perform highly accurate analysis for a bench top system.

ZSXmini is suitable for quantitative analysis of sulfur, nickel, and vanadium in oils, because of a tube-below type and a high peak/background ratio. In terms of exhaust controls, sulfur content in diesel oil is controlled less than 50 ppm. In this range of sulfur content in diesel oil, good quantitative results were achieved with ZSXmini. A tube-below type ZSXmini easily handles liquid samples.

Light element analysis is achievable with ZSXmini because it is a WD system. Good calibration curves were obtained for MgO and SO₃ as well as CaO, SiO₂, Al₂O₃, and Fe₂O₃ in cement. There is no overlapping problem in glass analysis for Al₂O₃ and it is possible to analyze a percentage range of Na₂O and F.

ZSXmini is suitable for quantitative analysis of Si coating on polymer film because of a high peak/background ratio. Si coatings with a range to 2000 mg/m² and with LLD is under 1 mg/m² are possible.

The ZSXmini is effective for metal analysis. In the analysis of alloys containing elements ranging from Cr to Zn, ZSXmini have no significant overlapping problems. For example, it is possible to observe the peaks of Co-K and Mn-K spectra in stainless steel.

The advantages of a benchtop WD XRF spectrometer ZSXmini and its application data are introduced.