



# M1 MISTRAL

- Tabletop Micro-XRF Spectrometer

# M1 MISTRAL – Fast and accurate Micro-XRF



The M1 MISTRAL is a compact spectrometer for the analysis of bulk materials and layers using X-ray fluorescence technology. It allows non-destructive measurements on a wide range of sample sizes without the need for sample preparation.

Areas of application include electronics, jewelry, RoHS, automotive and many more.

## Analyze arbitrarily shaped samples without need for preparation

The M1 MISTRAL is a spectrometer for the accurate Micro-XRF analysis of bulk materials and layers. It allows to investigate a wide range of different materials, such as metals, alloys and metallic layers, including multi-layer systems.

Specimens up to a size of 100 x 100 x 100 mm can be placed directly on the sample stage and analyzed without further preparation. As the measurement is contactless and from above arbitrarily shaped specimens – like finely wrought jewelry or materials of varying thickness – can be analyzed easily.

## Measure exactly at the position you desire

The micro focus X-ray tubes of the M1 MISTRAL generate sufficient intensity for spot sizes even down to 100  $\mu\text{m}$ , depending on the collimator used. Together with the video microscope for exact sample positioning, this ensures that measurement takes place at the desired spot.

Additional functionality can be added with the optional computer-controlled stage motorization and auto focus function.



## Technical Specifications

Parameter	M1 MISTRAL <sup>SDD</sup>
Excitation	High performance micro focus tube with W or Rh target
High voltage	50 kV, 50 W
Detector	Peltier cooled, 30 mm <sup>2</sup> high performance silicon drift detector, < 150 eV energy resolution at Mn K $\alpha$
Element range	Default: from Ti (Z=22) with W target, optional: from Al (Z=13) with Rh target
Spot size	Collimator changer for 0.1 mm and larger
Sample view	Color CCTV high resolution camera system, magnification ~ 30 x
Sample stage	1) Motorized Z stage with auto focus, max. travel 120 mm 2) Motorized XYZ stage with auto focus and EasyLoad function, max. travel 200 mm x 175 mm x 80 mm max. weight load of 1.8 kg (for both stages)
Quantification	Bulk analysis: standard-based empirical and standardless models Coatings: FP-based models
Power supply	110 to 230 V AC; 50/60 Hz, max. 150 W
Dimensions (W x D x H)	550 mm x 680 mm x 430 mm
Instrument weight	50 kg

## XSpect Pro Analytical Software Suite

The software provides the following functionality:

- Instrument control, data acquisition and management
- User selectable touch screen user interface
- Stage control and programming
- Analysis of metallic multi-layers regarding layer thickness and composition
- Quantitative composition analysis, standardless and standard-based empirical models
- Spectrum viewer with automatic peak identification
- Statistical process control (SPC) trendline and data
- Report generator
- Result archive

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