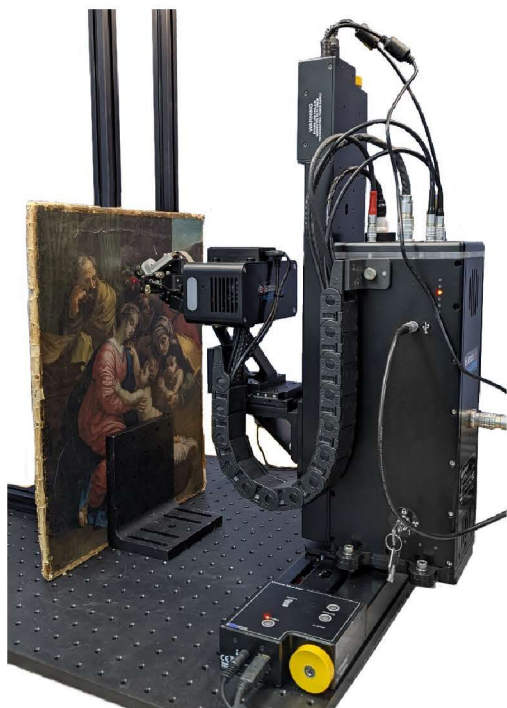


microScanix

portable micro-XRF mapping for Cultural Heritage



microScanix is a micro X-Ray Fluorescence (μ XRF) imaging instrument designed for field and laboratory work, with an emphasis on portability, high resolution and high throughput.

microScanix is intended for scientists seeking a portable solution for μ XRF analysis and elemental mapping without compromising on performance.

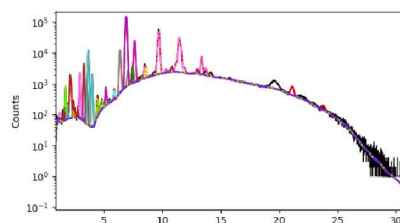
microScanix allows collecting spatially resolved XRF data down to 55 μ m resolution, and acquire elemental composition maps by raster-scanning the measurement pixel by pixel with its XY stage.

- The instrument head hosts an air-cooled microfocused X-ray tube combined to a polycapillary optic to illuminate a spot on the sample as small as 55 μ m.
- A high-resolution SDD collects the X-ray fluorescence signal.
- Two lasers and a miniature color camera allow precise focusing on the sample.
- High-precision motorized XY (or XYZ) stages with ranges of 150 mm or 300 mm.

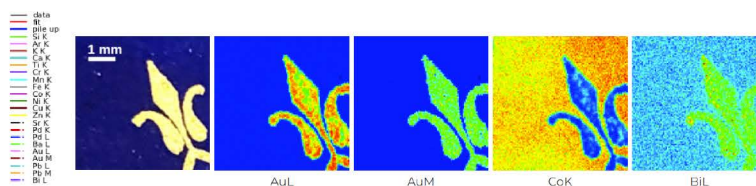


Like with other eXaminArt products, the technology at the base of **microScanix** derives from NASA planetary instrument developments programs, and brings unprecedented miniaturization and ruggedness to Cultural Heritage Research.

Analysis of a Sèvres porcelain plate, with gold decoration on dark blue background, XIXth century



Integral spectrum fundamental parameter fit (PyMCA)



More info: <https://examinart.com/>

microScanix specifications

X-ray sensor	SDD 25mm ² (70 mm ² optional), <125 eV FWHM at 5.9 keV, max count rate 1,000,000 cps.
X-ray tube	ceramic-metal construction, grounded cathode, 25 kV nominal, 10 W max (kV and current adjustable), forced air cooling. Target material: customer specified Rh, Ag, Pd, Mo, W, Au, etc.
X-ray optic	micro-focusing polycapillary bundle (full lens).
Sample viewing and positioning	dual laser, embedded color camera ⁽¹⁾
XRF range	1.5 to 25 keV.
Spatial resolution	down to 55 µm. Spot size on sample adjustable by changing working distance.
Typical dwell time	0.1 to 1 s per pixel, more for single spot analysis.
Power input	30 W, 12-24 Vdc from AC adapter or optional Li batteries.
Head size and mass	25 (d) x 14 (w) x 8(h) cm, <1.6 kg.
Control PC	high-performance 15" laptop (provided), USB connection to instrument, Linux and Windows available.
Control software	proprietary software with GUI for control, data viewing and preliminary data interpretation.
Data interpretation software	PyMCA recommended (ESRF's Open Source application for XRF analysis).
File format export	MCA, EDF, HDF5, and any ASCII format requested.
Scanning	Precision XY motorized stages Range 150 x 150 mm ² (300 x 300 mm ² optional). Manual Z stage for focusing. Additional motorized Z stage optional ⁽¹⁾
Transportation	Ground and air shipping in rugged transport cases provided, checked airline luggage compatible.

(1) microScanix is auto-focus and focus-tracking ready (upcoming option requiring motorized Z stage).

Designed and manufactured in California.

Contact: info@examinart.com

<https://examinart.com/>

Case study:

Application of **microScaniX** to mid 19th century painting by Jules Breton.

- X-ray tube set at 30kV and 100μA (3W)
- 200 μm and 0.5 s per point
- 132 seconds per line (50 mm wide)
- 183 lines (36.6 mm high)
- total time <7hrs
- 15,000 cps on 70mm² SDD



Images courtesy of Dr. P. Walter, LAMS (Sorbonne Université-CNRS).

