

Fenix

Miniature benchtop XRD/XRF



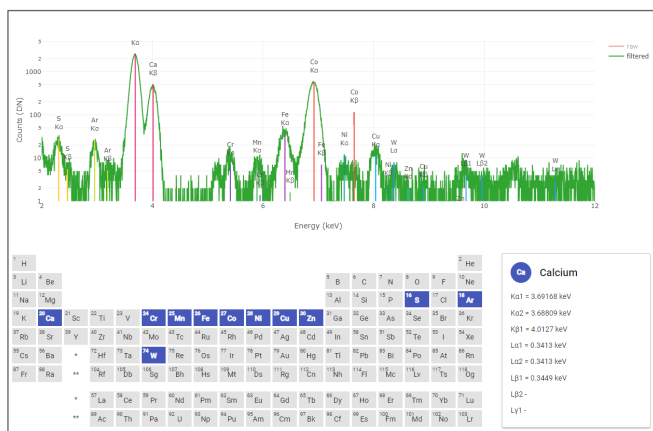
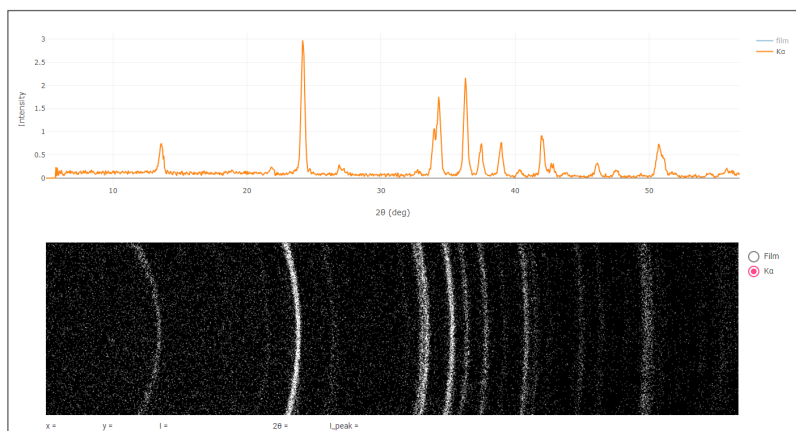
Fenix is a NextGen miniature benchtop X-ray diffraction (XRD) and X-ray fluorescence (XRF) instrument for fast and easy characterization of powdered samples.

The **Fenix** technology traces its lineage to the XRD/XRF instrument deployed on Mars in the NASA Curiosity rover. It brings unprecedented miniaturization and ruggedness to the analytical instrument market.

For routine analyses, **Fenix** offers unique advantages over conventional XRD instruments: small footprint for benchtop use, transportability, low power, user friendliness.

Fenix is equally at home in a conventional laboratory, in a mobile laboratory, or in the field. Power is provided by a laptop style AC adapter or an optional Lithium power station when AC is not available.

A PC (Windows or Linux) connected via USB provides all controls with a new intuitive application.



KEY FEATURES

SPACE HERITAGE

Fenix uses technology deployed on Mars in the NASA Curiosity rover and showcases improvements developed for future space flight missions.

MINIATURIZATION

Measuring 44 cm deep x 19 cm wide, and only 13 kg, **Fenix** is the smallest benchtop XRD instrument on the market.

X-RAY SOURCE

A robust ceramic/metal X-ray tube is powered by an internal HVPS and new proprietary control electronics.

X-RAY DETECTION

A state-of-the-art sealed vacuum X-ray CCD detector improves speed and energy resolution while reducing power.

SAMPLE HANDLING

Fenix can be provided with a sample spinner or a sample vibrator demonstrated for over a decade on Mars and on Earth.

USER FRIENDLY

Fenix is very simple to use thanks to its easy sample preparation and loading, and its minimalist hardware interface.

INTUITIVE SOFTWARE

Fenix new software offers advanced controls and data processing with an intuitive, dynamic and user-friendly graphic interface.

LOW POWER

Requiring a mere 45W in operation, **Fenix** can run all day using the optional battery power station.

Fenix specifications

X-ray sensor	photon-counting deep-depleted CCD, 1024 x 256, 26 μm pixel, -45 °C (Peltier), sealed vacuum, forced air cooling.
X-ray tube	ceramic-metal construction, grounded cathode, 30 kV nominal (adjustable), 10 W max (adjustable), air cooled. Target material: Co (Cu upon request).
X-ray filter	K β filter default.
XRD range and resolution	5 to 55 °2 θ , 0.28 - 0.3 °2 θ FWHM ⁽¹⁾
XRF range and resolution	3 to 20 keV, <200 eV FWHM at 5.7 keV
Typical analysis time	5 to 30 min ⁽²⁾
Ambient Temperature	0 to 30 °C
Power input	45 W, 12-24 Vdc from AC adapter or optional Li batteries.
Size and mass	44 (L) x 19 (W) x 29 (H) cm, 13 kg
System requirement	laptop or desktop PC with Windows 10-11 or Linux.
PC interface	USB 2.0 or 3.0
Control software	proprietary software with GUI for control, data viewing and automated preliminary interpretation.
Data interpretation software	PC-based 3 rd party software options offered. eXaminart's web-app QAnalyze.com available at no cost.
File format export	txt, csv, xy, plv, mdi, ... and any ASCII format requested.
Transportation	ground and air shipping in rugged transport case provided, checked airline luggage compatible.

(1) varies with 2 θ . Practical FWHM varies with sample nature, grain size, etc.

(2) most simple compositions can be identified in a few minutes. Data is shown in real time, acquisitions can be stopped when sufficient S/N is observed.

Designed in California, assembled in USA and Europe.

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<https://examinart.com>