



SciAps PowerHouse X Geochemistry

The Groundbreaking Portable Benchtop XRF

- First ever portable XRF with an 80kV X-ray tube
- Measure Heavy REEs Tb, Dy, Ho, Er, Yb
- Battery Powered, Fully Shielded and Safety Interlocked

Unprecedented LOD

Utilizing an 80kV miniature X-ray tube, the PowerHouse X can efficiently excite the K-shell emission lines for both light and heavy rare earth elements (REEs). By analyzing these high-energy K-lines, the complicated spectral overlaps with common metals are avoided completely, yielding unprecedented limits of detection and superior performance compared to any other portable XRF.

Geochem App

Launching with the PowerHouse X, the Geochem App offers exceptional versatility with three beams designed to cover a wide range of elements. This includes rare earth elements (REEs), base metals like iron, zinc, and copper, and light elements such as aluminum, silicon, phosphorus, and sulfur. By combining fundamental parameters with empirical calibrations, the app ensures accurate results across the entire elemental range.

In terms of performance, the PowerHouse X with the Geochem App excels in REE analysis while delivering results comparable to top handheld analyzers for other elements. It also detects lower PPM levels, providing measured concentrations with uncertainty when detected, or indicating ND (not detected) with detection limits when not.

- Light REEs: La, Ce, Pr, Nd, Sm, Eu; Heavy REEs: Gd, Tb, Dy, Ho, Er, Yb, Lu
- Transition/pathfinder elements Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Se, Sr, Rb, Zr, Nb, Mo, Ag, Cd, Sn, Sb, Ba
- Heavy metals Ta, W, Hg, Pb, Bi, U

A new performance standard

With multiple excitation parameters, the Powerhouse measures a wide range of elements just like other portable XRFs including transition metals, common pathfinders and other economically important elements.

Portable, battery powered, and easily transported from site to site. Running on the familiar and intuitive SciAps user interface, the data is easy to acquire, easy to record and easy to share with built in Wi-Fi, Bluetooth and GPS.

Android platform, SciAps Cloud Services

Familiar Android operating system and app-based software assure quality testing by every operator. Global connectivity with on-board camera, Wi-Fi, and Bluetooth, with GPS capability for full-featured reporting. Easily manage operations from anywhere with SciAps Cloud Services.



For more information, or to
schedule a demonstration:

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SciAps



SciAps PowerHouse X Specifications

80 kV XRF for REEs



SciAps PowerHouse X

A compact, robust, portable system for easy testing of hand samples, small cores, powders or even liquids prepared into bags or XRF cups. Battery powered, fully shielded and safety interlocked.

Weight	24.4lb (11.1kg) without batteries
Dimensions	10.1" x 13.8" x 13.4" (256 x 350 x 340mm)
Excitation Source	10 W X-ray Tube. Max 80kV, 200uA, W anode
Detector	70mm ² silicon drift detector (active area). < 140eV resolution FWHM at 5.95keV Mn K-alpha line
Available Apps	Geochem, Soil, Empirical. New apps are added regularly, please check with company or website
X-ray Filtering	6 position filter wheel for beam optimization
Environmental Temperature Range	14° to 122° F (-10° to 50° C)
Analytical Range	49 elements standard in Geochem, specific elements vary by app. Additional elements may be added upon user request
Processing Electronics and Host Processing	1.2 GHz quad ARM Cortex A53 64/32-bit; RAM: 2 GB LP-DDR3; Storage:16 GB eMMC (storage)
Pulse Processor	12 bit with digitization rate of 80 MSPS 8K channel CA USB 2.0 for high-speed data transfer to host processor. Digital filtering implemented in FPGA for high throughput pulse processing, 20 nS - 24 uS peaking time
Power	2 on-board rechargeable Li-ion batteries, rechargeable inside device or with external charger, AC power, hot-swap capability (one battery at a time)
Display	7-inch color capacitive touchscreen — 400 MHz Qualcomm Adreno 306 2D/3D graphics accelerator
Comms/Data Transfer	Wi-Fi, Bluetooth, USB connectivity to most devices, including SciAps Profile Builder PC Software
Calibration	Fundamental Parameters and Empirical (Compton Normalization), varies by mode
Calibration Check	External tungsten alloy check standard for calibration verification and energy scale validation
Sample Viewing	Internal high-resolution camera for sample viewing and targeting. Second macro-camera for photo documentation, reading and storing 2D/3D barcodes and QR codes.
Security	Password protected usage (user level) and internal settings (admin)
Regulatory	CE, RoHS, USFDA registered, Canada RED Act.