



NAPCO MARK-600M Series

Handheld Mining Analyzer

Gain Fast Accurate Onsite Geochemical Analysis — **Anywhere Anytime**



INTRODUCTION

Napco Mark series Handheld XRF Analyzers are a fast and accurate tool for all applications of mining, exploration and geoscience. It is based on XRF technology, with lab-quality results immediately on-site with nearly no sample preparation. Simple to use and durable enough to withstand the harsh environments in mining exploration, minerals extraction facilities, Mark-600M Handheld Mining analyzer will determine the presence of rare earth elements and key oxides from raw material to final products.

With SDD detector which offers count rates and resolution far superior to alternative SiPin detector technology, it takes only few seconds to make typical mining analysis. Beside this, the improved resolution and count rates means lower detection limits for all elements analyzed. Combine that with FP method which can be used for all mining sample types and you have one of the most powerful handheld instrument for mineral analysis at hand.

With significant financial investments on the line, it is imperative for mining endeavors to promptly detect and reclaim the most economically feasible resources. Amid a commodities market that undergoes rapid fluctuations and encounters financial and safety hurdles, there exists an immense urgency for mining operations to elevate their efficiency, sustainability, and productivity. Miners are actively pursuing solutions that empower them to pinpoint drill locations, enhance the rate of discoveries, facilitate on-site determinations, and identify strategic areas within the grid. Mark-600 handheld mining analyzers offer elemental analysis that aids in directing geochemical choices.



- **Simplified design, powerful function**
Ergonomic design, light weight, small size, good holding balance; tapered test head, easy to detect bends or corners; 5-inch color touch screen, can display clearly even under strong outdoor light; intelligent operating system, easy to operate, easy to use; customize the brand library, with functions such as element top, element correction, over-standard display, humidity correction, fingerprint spectrum and other functions.
- **Low maintenance cost**
It is sturdy and durable, with dustproof and waterproof performance reaching IP54 standard. It can work continuously and normally in the temperature range of -10°C ~ 50°C , and can easily cope with the extreme environmental challenges of field operations.
- **Innovative functional design**
The PC software can control the instrument through WiFi and USB connections and display it simultaneously; it can view and print data and reports easily (company logo, information, etc. can be added).

FEATURES

- **Excellent analytical performance**
It uses high-performance micro X-ray tubes and intelligent multi-position filters, which are specially optimized for key elements.
- **Fast analysis and wide range**
One-click measurement can obtain stable measurement values and analyze 43 elements simultaneously without complicated sample preparation.

BENEFICIARY

Laboratory Level Performance

Napco Mark analyzers come equipped with an optimal blend of cutting-edge hardware and software to elevate your analytical capabilities. Whether you're addressing challenges in the initial phases of exploration or during mineral processing, our analyzers are up to the task. Their exceptional sensitivity enables you to measure concentrations at levels equal to or even lower than the typical naturally occurring values in the Earth's crust, ensuring the detection of even the most subtle geochemical irregularities. Our handheld XRF analyzer boasts a 5W x-ray tube and an industry-leading detector featuring a graphene window, guaranteeing the most minimal detection thresholds for both heavy and light elements.

Revolutionary Exploration Efficiency

Mining exploration undeniably comes with a hefty price tag. However, with the Mark-600M, you can significantly reduce the duration of your exploration campaigns by pinpointing areas of interest swiftly. The rapid identification of significant findings translates into substantial time and resource savings, ensuring an optimal return on investment. Napco analyzers facilitate prompt geochemical analysis of outcrops and soils, empowering you to map uncharted territories. By eliminating the waiting time for test results and conducting pre-screening of samples, you'll save not only days and weeks but also reduce expenses associated with external lab tests.

Enhanced Productivity and Sustainability

Time is of the essence, and Mark handheld XRF analyzers are designed to help you maximize it. Now, you can conduct swift qualitative screenings directly in the field. This allows for the clear demarcation of ore and waste boundaries, minimizing the unpredictability of excavation. You can acquire reliable data while minimizing the necessity of outsourcing samples to external testing labs. Napco Mark-600M analyzers offer rapid assays for optimizing drill locations, guiding extraction processes, and determining ore grade. By relying on our field technologies, you can boost your confidence, reduce turnaround times, and cut down on laboratory expenses.



Intelligent Software

Napco analyzers are your key to working smarter, not harder. Our intelligent and user-friendly software solutions feature a straightforward application interface. You have the flexibility to tailor data fields and user profiles to create workflow solutions customized for your business needs. What's more, our exclusive PC software allows you to remotely operate the analyzer from the convenience of your computer. Additionally, our premier analyzers come equipped with WiFi capability, enabling the seamless transfer and remote viewing of sample readings.

APPLICATIONS

- Core Analyzers for Exploration Drilling
- Mineral Exploration
- Geochemical Testing and Mapping
- Mine Face or Pit-Face
- Waste Processing and Metal Recovery
- Ore grade control
- Silver ore mining
- Mineral Lab Alternative

Rare Earth Elements Analysis

REE encompass the 15 lanthanides along with scandium (Sc) and yttrium (Y). These elements possess distinct optical and magnetic properties, making them indispensable components in various consumer electronics, catalytic converters, and rechargeable batteries. They are seldom found in their pure form, typically existing in combination with other minerals, each demanding specific extraction techniques and processing protocols. Napco Mark hand-held XRF analyzers offer the capability for real-time, on-site assessment of REEs as well as other elements.



Assessing Industrial Minerals

Accurate measurement of the composition of industrial minerals like limestone and phosphates is vital to maintain product quality in industries such as cement and fertilizers. Mark handheld analyzers are gaining prominence as the preferred instruments for in-quarry exploration and assessing the makeup of raw materials, including phosphate, potash, gypsum, and limestone. With Napco Mark analyzers, you can:

- Identify hazardous elements
- Examine blends and categorize raw materials
- Distinguish between grade, sub-grade, and waste materials to prevent unnecessary disposal.

Hardrock Mining Analysis

When it comes to hardrock mining, Mark handheld analyzers emerge as a dependable means of scrutinizing ore samples, be it in open pits or deep within underground mines. These analyzers deliver the precision needed to furnish reliable data for overseeing processes, ensuring quality, and making crucial operational decisions, such as maintaining grade control. The combination of swift analytics and a well-honed sampling strategy holds the potential for substantial cost reductions and additional advantages for mining operations. Mark handheld XRF analyzers enable real-time grade control.

Employ Napco Mark-600M analyzers to:

- Evaluate the feasibility of lower grade resources and identify localized high-grade enrichments.
- Clearly define the boundaries between ore and waste.
- Appraise rock cuts and provide guidance for blasting, excavation, and ore handling operations.
- Enhance the management of run-of-mine stockpiles, ensuring consistent blending and mill feed quality.



SPECIFICATIONS

Model	600M
Excitation	Ceramic packaged microfocus X-ray tube, Ag Anode 50kV
Detector	Optimized SDD detector (with Graphene window)
Resolution	129eV FWHM
Filter	Multi position automatic filter changer
Window	Kapton with anti-puncture window design optional
Battery	7.2V Li-ion battery, 6800mAh
Display	Capacitive touch screen (5 inch 720P)
CPU	i.MX 8M Mini quad core 1.8GHz
Signal Processor	4096-pixel multi-channel detector/80 MHz ADC digital signal processor
Data Storage	Over 100,000 data storage
Data transfer	WiFi, USB
Structure design	Unique structure design, effectively increase the heat dissipation of the X ray tube
Radiation safety	Safety Guard induction device, when there is no sample in the test area, the source will shut, providing maximum safety protection. Password-protected user security
Camera (optional)	Integrated CCD camera with autofocus lens for positioning and recording measuring point positions
Elements	Mo, Nb, Zr, Bi, Pb, Se, W, Zn, Cu, Ni, Co, Fe, Mn, Cr, V, Ti, As, Rb, Sr, K, Ca, Ba, Cd, Hg, Br, Sb, Sn, Cs, Te, Ag, Y, U, Th, Sc, Pd, Re, Ta, Hf, Mg, Al, Si, P, S
Environment	Temp: -10°C~50°C Humidity 0%~80%
Weight	Approx. 1.5kg (3.3lbs) including battery
Dimensions	L x W x H: 220mm*91mm*276mm
Optional	With the innovatively designed mobile application, data can be viewed, shared, and printed in real time, and functions such as sample photo, GPS positioning, barcode scanning, and data archiving can be supported. Optional data cloud service function support uploading the test results to a secure and encrypted cloud server, and perform efficient statistics, query and analysis of large-scale analysis data.
Special Accessories	In addition to conventional accessories, optional: welding mask, hot surface adapter. It can detect high temperature surfaces and vibrating surfaces without contact.

ACCESSORIES

Napco Mark-600M series handheld alloy analyzers can be equipped with uniquely designed bench-top test stand, portable test stand, etc., which can greatly simplify the customer's test work; carbon fiber puncture-proof windows can be quickly replaced to avoid detector damage.



Bench-top Test Stand

Allows hands-free measurement of samples. Completely shielded to protect the operator from any scattered radiation.



Portable Test Stand,

Folds up for easy transport and portability. Allows hands-free measurement of samples. Completely shielded to protect the operator from any scattered radiation.



Backscatter Shield

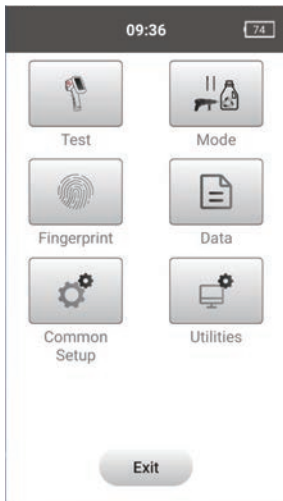
A flexible and robust shield attaches to the analyzer's cone, protecting the operator from any backscattered x ray during analysis.



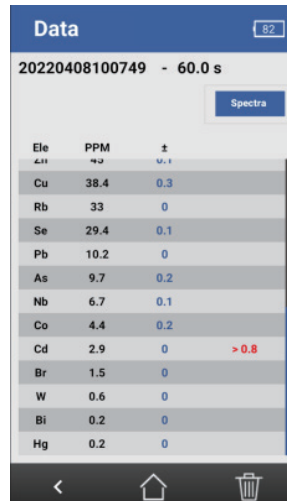
Carbon Fiber Anti-Puncture Window

Carbon fiber anti-puncture windows can be used to effectively protect the window film from damage by irregular samples testing.

SOFTWARE



Simple and easy-to-use software interface



Intuitive and accurate results



About Napco

Napco is a high-tech manufacturer focusing on the development and application of X-ray technology products. It is committed to becoming a world-class supplier of X-ray industrial inspection solutions. We keep serving customers in the fields of machinery manufacturing, metal processing, aerospace, petrochemical, mining and geology, food safety, environmental protection, scientific research and etc.

Napco keeps improving product performance and user experience with R&D advantages and innovative designs, and continues to provide global users with reliable X-ray measure solutions to solve various challenges from routine testing tasks to complex customized measure requirements.

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