



HANDHELD XRF

Mineral Exploration and Mining

TITAN – Power over the elements, wherever the geology takes you

In mineral exploration and mining, fast geochemical data is essential for guiding decisions in the field. The TITAN handheld XRF analyzer provides immediate, on-site elemental analysis that helps geologists map anomalies, identify target zones, and optimize drilling programs.

Built for rough realities, TITAN's ergonomic and well-balanced design is made to survive hot, cold, dusty, and wet environments while delivering stable results. Its rugged design ensures reliable operation from early exploration to grade control and ore processing.

With an intuitive touchscreen operation, smart workflows, and connectivity features, TITAN is made for every operator, from field geologists to core logging teams. Matrix-matched calibrations enable accurate quantification of the geochemical composition of soils, sediments, pulps, drill chips, and drill cores. Whether correlating the litho-geochemistry of drill holes or examining drill chips in real time, TITAN delivers consistent data that increases efficiency and reduces laboratory dependency.

The TITAN XRF gun helps teams accelerate exploration timelines, reduce sampling costs, and improve decision quality – giving you power over the elements despite challenging field conditions.

Key features and benefits

- Light, ergonomic design for all-day field use
- Designed to withstand harsh conditions, with a rugged, sealed, shock-resistant housing
- Advanced ingress protection and patented TITAN Detector Shield™
- State-of-the-art XRF engine for ultrafast analyses and rapid results
- Intuitive touchscreen with guided measurement and smart workflows
- Reliable quantification using matrix-matched geological calibrations
- Seamless documentation and connectivity via Wi-Fi, BT, USB-C, μ SD, GPS

Characterization of Drillholes

Accurate characterization of drill core and chips is essential for building the reliable ore deposit models that guide ongoing exploration decisions. The TITAN handheld XRF analyzer delivers fast, accurate geochemical data supporting lithological logging, confirmation of alteration and ore mineralogy, and even identification of subtle or cryptic mineralization trends. Its advanced detector and aiming camera allow precise analysis of veins, textures, and alteration zones. Seamless integration with digital logging platforms and databases ensures results are smoothly integrated in deposit modeling software.

By increasing data density while reducing laboratory dependence, TITAN helps refine interpretations in real time and accelerates geological understanding at all stages of a drilling campaign.

Surface Sample Analysis

Efficient exploration relies on rapid decision making. The TITAN handheld XRF analyzer enables fast, reliable and accurate analysis of soil, sediment, and rock samples, directly in the field, reducing wait times for accurate geochemistry, and allowing improved vectoring towards mineralized zones. Optimized calibrations ensure dependable results even on variable or unconsolidated materials. Overall, TITAN streamlines early-stage evaluation and helps teams reduce delays and sampling costs. The table below lists the quantification results of a standard geological sample, demonstrating the excellent repeatability of the measurements.



TITAN analyzing drill cores

Analytical results for a geological standard sample							
Measurement	Concentration in %						
	Al ₂ O ₃	K ₂ O	Ca	Mn	Fe	Cu	Pb
1	4.58	1.45	0.171	0.046	0.49	0.018	0.079
2	4.62	1.45	0.171	0.047	0.49	0.019	0.078
3	4.67	1.46	0.172	0.047	0.49	0.018	0.079
4	4.60	1.46	0.172	0.046	0.49	0.018	0.078
5	4.57	1.45	0.171	0.046	0.49	0.018	0.078
6	4.57	1.46	0.175	0.046	0.49	0.018	0.079
7	4.60	1.46	0.172	0.046	0.49	0.018	0.079
8	4.62	1.45	0.173	0.047	0.49	0.018	0.077
9	4.61	1.45	0.172	0.045	0.49	0.018	0.080
10	4.64	1.45	0.175	0.046	0.49	0.018	0.077
Average meas. value	4.61	1.45	0.172	0.046	0.49	0.0182	0.0783
Stand. deviation	0.031	0.002	0.001	0.001	0.002	0.0003	0.0009
Rel. standard deviation	0.7 %	0.1 %	0.8 %	1.3 %	0.4 %	1.7 %	1.2 %

