A New Generation, The Leader of Handheld XRF

EXPLORER 5000
Handheld XRF analyzer for precious metals fast scaning

EXPLORER 5000 Precious Metal Analyzer is designed for on-site composition identification, featuring small, light, precise, rapid, beautiful, safe, convenient, waterproof and long-standby time. Equipped with digital multi-channel technology, it greatly improves the detection limit and stability of the instrument, expanding the application fields.
This product has passed strict testing and inspection, and all index are accorded with the related technological requirements, reaching the international advanced level.

Performance Advantage

01 Perfect performance as desktop

Small power integral end-window miniature X-ray tube, large dimensional beryllium window Silicon Drift Detector (SDD, the best detector in the world), and miniature digital signal multi-channel processor, greatly reduce the testing time and testing deviation, and improve the testing precision, requiring similar performance as the desktop.

02 Small & light body, easy for carry

Small body. Easy to carry. Convenient for wild work. Can operate on-site and in-situ analysis at anytime or anywhere.

03 Rapid & nondestructive detection

1-2secs for rapid detection,More than 10secs for precise detection, whose results are similar to the results gotten in lab, No destruction to samples.

04 Detection of light elements

Helium-charging system (optional) greatly expands measurable range (analyze elements from Mg), satisfying the requirements of customers for light elements detection.

05 Direct testing

It can directly analyze on the surface of the analytes, without needing of preparing samples.

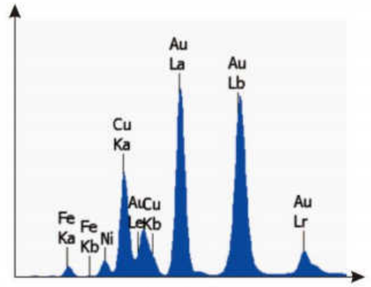
An Introduction to Precious Metals Analysis

Precious metals refer to the eight metal elements Au, Ag and Ru, Rh, Pd, Os, Ir, Pt in Pt family. Most of these metals have beautiful colors. They are normally unreactive as they have strong resistance to chemicals. They are usually made into jewelries or souvenirs and have wide industrial application.

EXPLORER 5000 can test grades and purity of the precious metals, identify grades of gemstones and conduct routine physical, compositional and structural analysis of jewelries.

EXPLORER 5000 tests precious metal fineness for gold, silver, platinum, palladium, etc. in accordance with National Standard GB 11887 Jewelry--Fineness of Precious Metal Alloys and Designation and GB/T 18043 Precious Metals Jewelries Content Non-destructive Test Method X-ray Fluorescence Spectrometry.

▲Jewelry test example



Spectral analysis

Major constituents of this jewelry are: Au, Zn, Ni, Ag and Cu; Au content is 74.495%

Element	Intensity	Content
Au	0.484258	74.492227
Cu	0.196015	15.420389
Ni	0.122583	6.225294
Fe	0.090834	1.902314
Zn	0.080972	1.535448
Ag	0.012456	0.316642

Corresponding Jewelry Type

18k gold

Name of the precious metals jewelry	Types of jewelry	Content of metal elements	Type identifier
Au jewelry	18k gold	Au≥750‰	18K、G18K、G750、Au750
	Pure gold	Au≥990‰	Pure gold、G990、Au990
	Gold999	Au≥999‰	Gold999、G999、Au999
Ag jewelry	925 silver	Ag≥925‰	S925、Ag925
	puresilver	Ag≥990‰	S990、Ag990
Pt jewelry	Pt900	Pt≥900‰	Pt900
	Pt950	Pt≥950‰	Pt950
	Pt990	Pt≥990‰	Pt990
Pd jewelry	Pd950	Pd≥950‰	Pd950
	Pd990	Pd≥990‰	Pd990

▲Precious metals jewelries currently sold on the market

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EXPLORER 5000 Handheld Alloy Analyzer

EXPLORER 5000 can make accurate and nondestructive detection on a variety of precious metal alloys, low alloy steel, stainless steel, tool steel, chrome / molybdenum steel, nickel alloys, cobalt alloys, nickel / cobalt-resistant alloys, titanium, copper alloy, bronze, zinc alloy, tungsten alloy, etc. Knowing the materials composition and alloy kind in one second. Rapid detection on aluminum and magnesium alloy grades is possible and it allows to make reliable identification and confirmation of the material (PMI) and precisely control the materials quality.

EXPLORER 5000

Rapid and accurate on-site analysis of alloy kinds and elements

Based on ten-year research and development experiences of portable instruments, EXPLORER handheld XRF adopt photoelectron, microelectronics, semiconductor, computer and many other technology and develop the new generation of handheld XRF with Independent Property Rights. EXPLORER 5000 handheld alloy analyzer is the first to use large-screen, high-resolution LCD and the new digital signal processor. The minimum detection limits make its performance as great as the desktop. With small size and light weight, EXPLORER is portable for testing and suitable for analyzing different kinds of alloy.

Application Field

- Precious metal alloy
- Iron and steel smelting
- Waste metal recycling
- Machinery manufacturing and processing
- Boiler pressure vessel
- Aerospace industry
- Shipbuilding
- .....

Raw materials testing

Reliable identification of materials

In the process of alloy materials production and machinery manufacturing and processing, elements detection can't work without the identification of materials. EXPLORER 5000 professional and nondestructive detection can effectively prevent the mix of raw material and avoid unnecessary loss.

Quality control on industrial products

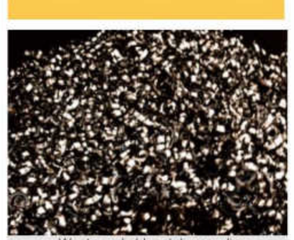
Quality assurance and control

Quality control in industrial production

EXPLORER 5000 professional and nondestructive detection can be used for quality control and management in the manufacturing process of steel smelting, boiler industry and other high-temperature and high-pressure industries to ensure the materials quality; identification of alloy composition in shipbuilding, aerospace and other high-tech industries in order to ensure product quality and safety; identification on the quality of the spare parts in electric power plants and other industries related to people's livelihood to guarantee the equipment safety.

Waste metals recycling and reuse

In waste metal recycling and reuse industry, EXPLORER 5000 can make on-site detection and rapid classification of scrap metals; recycle overstocked steel in the warehouse; classify metals in salvage station; recycle the turning scraps and cuttings. It' s a powerful tool to make metal and steel identification in waste metals recycling industry.



Waste and old metals recycling

Six Advantages

Easier Operating


Exclusive instrument bumper

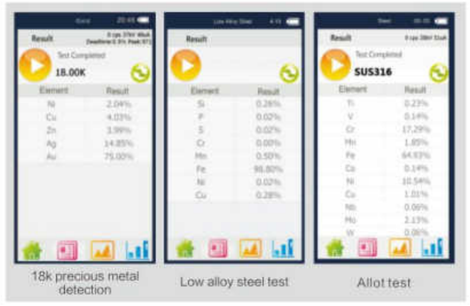

Water proof and dust proof


360° rotatable high-definition screen


Portable test bench

- Light weight, small size, ergonomic handle design, equipped with a special instrument case, which is easier to grasp and more convenient to use in the field.
- 5 inch high-definition screen with 360 degree rotation, multiple points operating, can display clearly at any lights.
- Integrated design of Seal type, with waterproof and dustproof function, can be used continuously in harsh environments.
- No need for sample preparation, can directly measure and analysis the surface of goods which need to tested. The instrument can do a quick measurement by its handheld benefit and accurately test the samples for a long time by its test block.

Better Performance


18k precious metal detection | Low alloy steel test | Allot test

- Rapid nondestructive detection and quick measurement by aiming, report results within one second. The performance is comparable to the bench-top's performance and detection result is fast and accurate.
- Simultaneous detection of Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Ga, Ge, Zr, Nb, Mo, Ru, Rh, Pd, Ag, In, Sn, Sb, Hf, Ta, W, Re, Pt, Au, Pb, Bi, Mg, Al, Si, P, S, and it can add elements that customized for customer's needs.
- Instrument can run without helium by the ultra near optical path design, and can detect the light elements from the beginning of Mg that fully meets the needs of specific users.

Stronger Battery

- Large lithium battery at 27000mAh could be as a selected configuration; the battery duration working time is up to three days, and it equipped with communicator and car charger to ensure power supply.
- A Built-in memory battery can continue replace the battery power.

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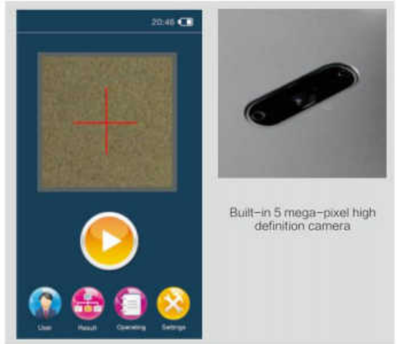
Higher Configuration


Built-in 5 mega-pixel high definition camera

- Four core parts which are Miniature X-ray tube, Fast-SDD detector (the world's best detector), digital signal processor and micro multichannel intelligent analysis module, can achieve the accuracy as good as bench-top's.
- Large data storage is by ultra-high frequency memory and mass storage space. Our new independent research and development Digital multi-channel technology ensure effective mining spectral counts per second is up to 500K cps.
- Collimation filter system, its combination can reach to the limit of 12 groups, to meet the testing requirements of different customers.
- A built-in 500W pixels high definition camera, can observe sample's testing position at any time that makes the measurement more accurate.

Safer Protection


Green light while power on | Red light while working | Yellow light while breakdown


Rubber radiation shields | Safety linkage locking device

- Intelligent- tricolor- early -warning -system: 360 degrees without dead angle display by LED three-color lamp led design. Instrument status tells by different colors, Green light means power on, red flushing means testing, and yellow flushing means fault of equipment.
- Triple safety protection function:
  a: Automatic induction, instrument does not work without sample, no leakage radiation.
  b: Thicken – preventing – testing – wall can effectively prevent the scattering.
  c: Safety – protection – cover can prevent the surrounding light matrix scattering.
- Security- linkage- locking device protects your security; it can guard the final checkpoint if the software is unable to control the instrument turn off.

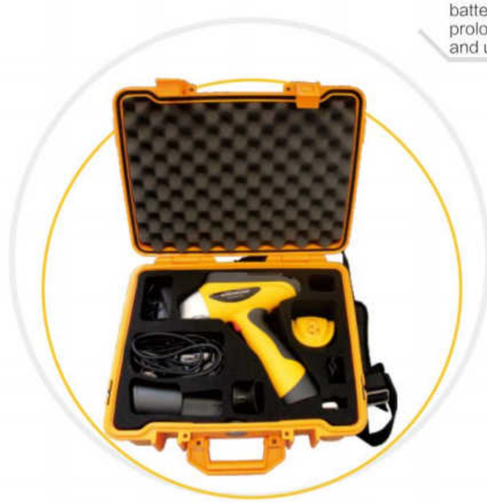
More Intelligent Software

- EXPLORER 5000 alloy analyzer is equipped with professional application software, specifically for alloy industry; the feature is intelligent, high sensitivity, short testing time, and easy operation.
- Brand new knowledge-ware is one key operation with dual mode design (user mode and expert mode). User mode uses for recognizing categories of sample by one key operation; Expert mode uses for increasing the elements and increasing the specific in-depth analysis of the operation curve.
- Internal intensity correction method can correct deviation caused by uneven sample of different geometrics, densities and structures.

Performance Technical Data

Analytical Method	Energy dispersive X ray fluorescence analytical Method
Elements Measuring Range	Atomic number from 12 to 92 [elements from magnesium(Mg) to uranium (U)] can be measured
Simultaneous detector elements	Simultaneous analysis 40 elements
Microcomputer system	Customized system; CPU: 1G ; system memory: 1G ; extended stored maximum support 32G ; standard 4G for mass storage data
The content range	ppm ~ 99.99%
The detection time	1 ~ 60 seconds (a second report results)
A built-in system	GPS, WIFI, Bluetooth
Power Supply	Rechargeable lithium battery, standard is 9000mAh, sustainable work up to 12 hours; optional is 27000mAh superbattery with wide voltage 110V ~ 220V universal adapter for recharging power supply
Detection Objective	Solid, liquid, powder
Detector	SDD detector or Fast-SDD detector (optional)
Detector resolution	Minimum can reach 128eV
The excitation source	50KV/200uA- silver target end window integrated miniature X ray tube and high voltage power supply
Collimator and filter	Collimator diameters are 4.0mm and 2.0mm, 6 kinds of filters with automatic switching functions
Video system	500W pixel high resolution camera
Display screen	Brand new 5 inch transflective LCD touch screen, the resolution is 1080 × 720
Detection limit	The minimum detection limits at 1 ~ 500 ppm
Safety	Multiple safety protection, no tests, no radiation, radiation levels at work are far below the international safety standards, and has no sample telemetry, automatic shut X light tube function. Standard radiation shields, thickened wall alloy test instrument
Specialty	Ore special edition analysis software, using intelligent one key test
Convenience of application	Key intelligent matching the best curve that no need to select curve
Data transmission	Digital multi-channel technology, SPI data transmission, quick analysis, the high count rate; waterproof mini USB, and can be connected with a desktop computer
Operating ambient humidity	≤90%
Operating environmental temperature	-20℃ ~ +50℃
Instrument dimension	244mm (Length) x 90mm (Width) x 330mm (Height)
Instrument weight	1.7Kg
Intelligent warning signalsIndicator system	Green light means power on, red flushing means testing and yellow flushing means the problems
Accessories	Three-military-protection-box is compression, waterproof and shock absorption. Universal charger and car charger, 4G SD memory card and card reader Two lithium battery and charger, PDA accessories, radiation shield. Optional accessories: the large battery, seat type test support, Bluetooth printer, mill, manual pressure machine, and other options can to choosen...

Exclusive Accessories



Military grade high strength protective box, has good moisture-proof shockproof pressure three functions, an emergency situation can be used as a rescue tool.

A horseshoe shaped battery: battery capacity at 27000mAh, prolonging test time 3 times, and use as the seat stent.

To achieve on-site printing data by portable Bluetooth printers.

Four into one car charger can extent charging times in the field.

Optional of portable and seat type can provide customers to have more choices.