Designing/Development/Manufacturing/Sale/Service

Skyray Instrument

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Skyray Instrument

EDX-Pocket-Ⅲ

Handheld X-ray Fluorescence Spectrometer

Precision Instruments, Skyray Elaborates

EDX-Pocket-Ⅲ

Handheld X-ray Fluorescence Spectrometer

Skyray Skyray Instrument

Company Profile

Established in 1992, Skyray Instrument Inc specializes in the development, manufacture, sales and support of X-ray Fluorescence Spectrometers. XRF technology is characterized as rapid, accurate and non-destructive. XRF analyzers can be used in areas requiring elemental analysis from Na to U, e.g., electronic and electric appliances (RoHS), jewelries and ornaments (precious metals, plating thickness), toy safety (EN71-3), building materials (cement, glass, ceramic), metallurgy (steel, non-ferrous metals), petroleum (trace elements S, Pb, etc), chemistry, geography, commodity inspection, quality control and even human body trace elements analysis. Up to now Skyray has won two World's No.1 titles: No. 1 in Sales Amount and No. 1 in Product Categories.

EDX-Pocket-Ⅲ

Handheld X-ray Fluorescence Spectrometer

The 3rd and 4th generation of Handheld X-ray Fluorescence Spectrometers i.e. EDX-Pocket-III and EDX-Pocket-IV are to be put on the market soon. They are improved on basis of the 2nd generation. They have the features of more functions, better accuracy and simpler operation. Their introduction makes on-site elemental analysis practical and feasible.

EDX-Pocket-Ⅲ Handheld X-ray Fluorescence Spectrometer Application Fields:

EDX-Pocket-Ⅲ Handheld X-ray Fluorescence Spectrometer Specifications:

- Working principle: XRF analysis using X-ray fluorescence Spectrometry
- Measurable elements: Ti-Bi
- Detector: advanced electric-cooling Si-PIN semiconductor X-ray detector with high performance and high energy resolution
- Excitation source: mini 40kV/50μA X-ray tube, Ag anode
- Data display: high definition and high resolution PDA (Personal Digital Assistant), Windows CE operating system, Bluetooth communication, personal data handling and e-mail sending.
- Data storage: Large capacity SD card and SD card reader enable the data to store on PC and print out
- Power supply: operating time of two fully-charged Lithium batteries is 8 hours
- Weight: 1.35 kg
- Overall size: 260×25×25mm（L×H×W）
- Ambient environment: temperature -20℃-50℃; humidity <85%
- Safety: both PDA and software operations require passwords. Unauthorized people are not allowed to operate.
- Standard accessories: shock, pressure & water-proof carrying case with padlocks, 110v/220v general-purpose charger, large capacity SD memory card, SD card reader, two 4000mAh Lithium batteries, Lithium battery charger, PDA accessories, lab test stand (optional), etc.

EDX-Pocket-Ⅲ Handheld X-ray Fluorescence Spectrometer Main characteristics:

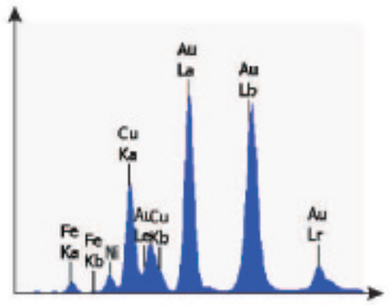
- The instrument is small, light and portable, providing rapid and non-destructive analysis of the tested samples on the site.
- Figurative interface, flexible software operation, intuitive spectrum display and definite results
- Several working curves are provided in the software, which can even be edited and renewed upon test requirements.
- Optional GPS helps locate the tested sample when mining or surveying in the field.
- SD card with super large capacity is available. There is no limit of data storage.
- Attractive design and comfortable feel when held in hand
- The carrying case has high strength and high sealing capacity, drop and shock proof as well.
- Faster analysis and better accuracy, delivering lab-quality results
- Measurable elements: Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Zr, Nb, Mo, Sn, Hf, Ta, W, Re, Pb, Bi, Se, Sb, Pb, Au and Hg
- Application fields: RoHS screening; full-element analysis; analyzing alloy steel, stainless steel, tool steel, Chrome-Molybdenum Steel, Nickel alloy, Cobalt alloy, Nickel-Cobalt heat-resistant alloy, Titanium alloy, Copper alloy, Bronze, Zinc alloy and Tungsten alloy; Grade identification of light Aluminum and Magnesium alloys by measuring other alloy elements.

EDX Pocket III
Test Example and Analysis

An Introduction to Precious Metals Analysis

EDX Pocket III tests precious metal fineness for gold, silver, platinum, palladium, etc in accordance with National Standard GB 1887 *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

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	0.316842

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

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	Ag jewelry	Ag≥925‰	S925, Ag925
	925 silver	Ag≥900‰	S990, Ag990
Pt jewelry	Pt950	Pt≥950‰	Pt950
	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

Name of the imitation jewelries	*Remarks*
Gold filled	*gold-filled jewelry is usually composed of a layer of thin gold leaf bonded to base metals such as brass, silver, zinc and nickel. Some gold-filled pieces have the look and feel of the gold. Jewelries of this kind are usually stamped with 14kf or 18kf.*
Gold plating	*gold plating is to deposit a thin layer of gold with thickness of about 10 micrometer onto the surface of another base metal (most often copper, silver, zinc, nickel or their alloys) by electrolyzing means. Jewelries of this kind are usually stamped with 18KGP and 24KS.*
Pinchbeck	*pinchbeck is a gold imitation material made by brass, most often plated with gold on the surface.*
Rare-earth gold	*rare-earth gold does not contain gold. It is an alloy composed of copper, nickel and a small amount of rare earth elements.*
Ti gold	*Ti gold is also an imitation jewelry and is seldom seen on the market. The base metal is usually coated with Ti to form a new substance TiN.*

▲Imitation jewelries currently sold on the market

EDX Pocket III
Application fields

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 un-reactive as they have strong resistance to chemicals. They are usually made into jewelries or souvenirs. They also have wide industrial application.

Skyray EDX Pocket III Handheld X-ray Fluorescence Spectrometer can test grades and purity of the precious metals, identify grades of gemstones and conduct routine physical, compositional and structural analysis of jewelries.

▲Gems and jewelries shops

▲Test institutes of precious metals jewelries

Applied to:

- Measure concentration of precious metals Au, Pt,Ag and other jewelries
- Precious metals and jewelries processing industries
- Jewelry shops and test institutes
- Banks and electro plating industry