

TO BE A WORLD-LEADING ANALYTICAL TESTING SOLUTIONS PROVIDER !

The new generational Genius 7000XRF series are designed according to the applications of on-site X-ray analysis in the wild, featuring small and light body, which can be held in hands by common people when measuring. It is super small, super light, super beautiful, super safe, super convenient, super long standby time, super waterproof, super precise and super fast. Digital multi-channel technology make the instrument have better detection limit, better stability, and wider application fields.

This series of products has passed strict testing and inspection, and all index are accorded with the related technological requirements, reaching the international advanced level.

### Technology specification

Model	The 4 th generation EDX analyzer-Genius XRF series
Measurable range	Mg to U
Processor and RAM	CUP: 667MHz RAM:256M Maximum expanded storage: 32G Standard configuration: 2G , for storage of large amounts of data.
Content range	ppm~99.99%
Testing time	3-30 seconds
GPS、WIFI	Built-in system of GPS & WIFI
Battery time	Chargeable lithium battery, with capacity of 7800mAH, continuously providing 8 working hours ; Equip with wide voltage (110V-220V) general adapter
Testing object	Solid, liquid , powder
Detector	25mm <sup>2</sup> 0.3mil,SDD detector
Detector resolution	Minimum resolution:139eV
Excitation source	Target: Ag High voltage: 5-40kv Tube current: 1-100 uA
Collimator and filter	Collimator kinds: 2 (4.0 mm and 2.0mm diameter) Filter types: 6 Automatic switch: YES
Video system	HD CMOS camera
Screen	TFT-LCD touch screen resolution 640*480
Detection limit	Detection limit: ppm level
Safety	Self-contained password manager mode
Gas charging system	Optional: Helium charging at ordinary pressure
Operational environment	Humidity ≤90% Temperature -20℃~+50℃
Size	234×306×82mm (L×H×W)
Weight	Net weight:1.6kg Battery weight: 0.3kg

**Hotline:** 800-9993-800  
400-7102-888

#### China Jianguo Skyray Instrument Co., Ltd.

Add: 1888, West Zhonghuayuan Rd., Yushan, Kunshan, Jiangsu Province

Fax: +86-512-57017261

Website: www.skyray-instrument.com

E-mail: sales@skyray-instrument.com

Test data in this manual, if not noted, is our company's test data.  
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Rapid | Accurate | Non-destructive

# Genius 7000 XRF

## Handheld Mineral Analyzer



Super small | Super light | Super beautiful | Super safe | Super convenient

Super long standby time | Super waterproof | Super precise | Super fast



Portable and handheld , convenient for testing !

Up to now , there are 99 countries and regions choosing Skyray Instrument

The ISO 9001:2008 international quality certification system is adopted by our company

www.skyray-instrument.com

## Performance Advantage

### 01 Perfect performance as desktop

Introducing three core technology of small power window integrated miniature X-ray tube, large dimension beryllium window electric-cooling SDD detector(the best detector in the world), and miniature digital signal multi-channel processor, they greatly reduce the testing time and test deviation, and improve the detection precision, which make it have the similar performance as the desktop.

### 02 Small body, easy to carry and operate

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

### 03 Nondestructive detection

No destruction to samples

### 04 Fast detection

Instrument not only can operate fast detection with handheld type within 1-2 seconds, but also can operate longtime precise detection with desktop type(plus a pedestal).Test for 10 seconds, it will have the similar precision tested in lab.

### 05 Newly added light elements detection function

Compared to handheld X-ray fluorescence analyzer of the third generation ,it is added the gas charging system, which can charge helium at ordinary pressure .Thus it can detect the elements from Mg, greatly expanded the detecting range of elements, satisfying the requirements of customers for light elements detection.

### 06 HD camera, more accurate testing

Built-in HD camera, can observe the testing position at any time, which is very important in mineral detection.

### 07 Direct testing

It can detect the objects directly, no need of samples. It can analyze various kinds of samples, including electronic products, alloy, geology and mining, soil, rock, residues, small solid particles, liquid sediments etc.

### 08 Easy for calibration of deviation

Multi-testing modes and free adding of infinite modes, coordinated with automatic testing mode matching functions, it achieves the easy test with one key pressing. Built-in intensify calibration methods, it can calibrate the deviation caused by different geometry shapes and inhomogeneous structure density.

### 09 Professional software, easy to operate

Professional software of mineral analyzer. Brand new software interface and core, combined FP with EC software, it has wider application fields.

### 10 The collimator filter, improving 3 times of efficiency

On the basis of the combination of collimator with filter, the instrument increase them from 4 groups to 12 groups, thus increasing 3 times of efficiency.

### 11 Faster data transmission

Embedded Window CE system, HD touch screen (resolution 640\*480), digital multi-channel technology, and SPI data transmission, effectively improve the data transmission ability and counting ability, mastering testing data in every environment.

### 12 Radiation protection, care for health

Triple safety protection function, automatic sensation, automatically shut-down of X light pipe within 2 seconds with no sample in testing; The radiation level is far lower than the international safety standard when working, with no radiation leakage; accompanied with test safety cover.

### 13 Strong power, convenient to charge

Lithium battery, with maximum capacity of 7800mAH, can continuously work for 8 hours, whose endurance are 2 times longer compared to last three generations .And equip with wide voltage ac charger or vehicular charger ,which ensure the test at any place or any time.

### 14 Warning instructions prevent for mistaken operation

Equipped with warning instruction system, green light flashes when the power is on and the yellow light flashed when testing, which prevent for mistaken operation.

### 15 Multiple protection and durable

The instrument has waterproof and dustproof function and can continuously work under high temperature and humidity. Its protection boxes are manufactured with high strength military material, which enjoy with well moistureproof, shockproof, and pressure resistant functions.



## Application Case in Geology and Mineral Industry

### • Geological soil detect:

Simply trigger the instrument, knowing the trace metal element content.

### • Application of finding ores in the wide

Can quickly on-spot follow the abnormalities of mineralization and circle the boundary of ore body .According to the low grade industrial requirements, it can simply get the grade conclusion of boundary. It also can scan and analyze the rock core samples.

### • Mine project analysis

The fourth generational handheld Genius 7000 can circle the core mineral vein in very short time for key mining and can quickly tell the grades of ores, subprime ores, and non-ores .It also can improve the productive rate of the mine and greatly reduce the expenses of chemical examination and transportation.

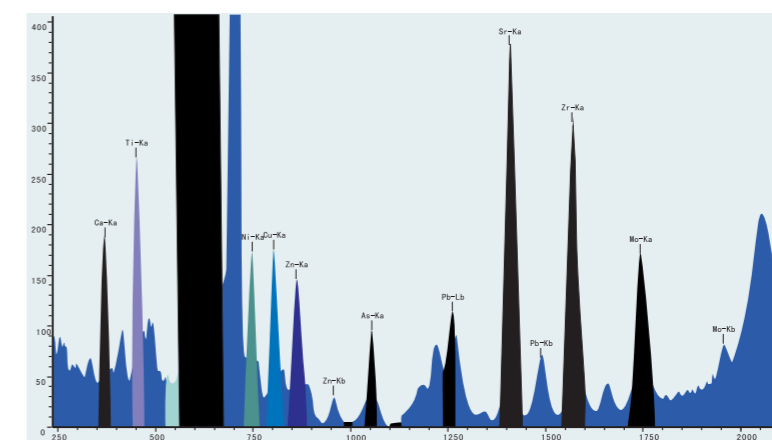
## Analytical Precision

Measuring Precision of the Main Elements in International Polymetallic Nodule Sample Testing for 30 Seconds

Sample	Ti	V	Mn	Fe	Co	Ni	Cu
07249_1	1.027	0.055	20.85	18.75	0.352	0.347	0.267
07249_2	1.052	0.053	20.85	18.76	0.351	0.350	0.249
07249_3	1.066	0.055	20.89	18.72	0.347	0.354	0.265
07249_4	1.024	0.054	20.89	18.74	0.347	0.337	0.280
07249_5	1.035	0.058	20.85	18.71	0.359	0.346	0.261
07249_6	1.032	0.053	20.86	18.76	0.350	0.344	0.273
07249_7	1.056	0.057	20.85	18.70	0.353	0.353	0.275
Average Value	1.042	0.055	20.862	18.734	0.351	0.347	0.267
Standard Deviation	0.0161	0.0018	0.0195	0.0244	0.0039	0.0059	0.0104
RSD/%	1.55	3.35	0.09	0.13	1.12	1.71	3.88

Sample	Zn	As	Pb	Ca	Sr	Zr	Mo
07249_1	0.056	0.018	0.097	2.020	0.122	0.064	0.037
07249_2	0.056	0.018	0.096	2.063	0.122	0.064	0.037
07249_3	0.055	0.018	0.097	2.050	0.123	0.064	0.037
07249_4	0.054	0.018	0.100	2.074	0.121	0.065	0.038
07249_5	0.055	0.018	0.098	2.040	0.120	0.063	0.037
07249_6	0.055	0.018	0.096	2.062	0.122	0.064	0.037
07249_7	0.056	0.017	0.083	2.072	0.122	0.063	0.037
Average Value	0.055	0.018	0.095	2.054	0.122	0.064	0.037
Standard Deviation	0.0007	0.0003	0.0058	0.0193	0.0010	0.0005	0.0005
RSD/%	1.29	1.89	6.05	0.94	0.80	0.79	1.45

Figure as follows



## Mineral testing advantage

- Quick category of ore samples. Auto multi-element qualitative and quantitative analysis. Various ore samples choosing and free adding of infinite samples
- Built-in intensified calibration methods, can calibrate the deviation caused by different geometric states and uneven structure density.
- With GPS function, applied in geological exploration and mineral in-situ testing, it can record the data into GPS. In the wild, it can search the satellite signal at any time, recording the longitude, latitude, altitude, and satellite number when testing, and save these data accompanied with the test report.
- It can quickly test a big range of mining area, effectively detect the land belt mode, and survey and map the distribution of ores and mines, doing help for mining rich mineral area in primary.
- Test raw ore, concentrate, and tails when washing the ores.
- Determination of the raw ores and concentrates when purchasing
- Determination of light elements, such as Mg, Al, Si, P, S etc
- Equipped with HD camera, can directly visual requested detection of mineral vein and mineralized points.

Genius 7000 XRF  
Handheld Mineral Analyzer

