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HX-5

HAND-HELD XRF

HANDHELD X-RAY FLUORESCENCE SPECTROMETER

HX-5

HANDHELD X-RAY
FLUORESCENCE SPECTROMETER



HX-5

ELEMENTS CONCENTRATION ANALYSIS



FAST

Quickly check material grades



ACCURATE

Accurate detection of the elemental content of the material

The HX-5 uses the latest X-ray excitation and detection technology to deliver outstanding analytical performance that is not only comparable to bench-top XRF instruments, but also less cost to purchase. Users can obtain fast and accurate results over the entire analysis range. The HX-5 Hand-Held X-Ray Fluorescence Spectrometer allows for rapid inspection of samples directly at the material placement site, without the need to move the sample. The HX-5 hand-Held spectrometer is a highly flexible analytical tool for a variety of specialized applications such as stainless steel, alloy steel, aluminum alloys, brass, ternary catalysts, soils, ores, silver plating on copper, and more. With these application features, users can quickly improve the reliability and production quality of the materials produced.

FEATURES

- 01 Low cost , portable detection
- 02 Long battery life, simple battery replacement
- 03 Qualitative analysis of unknown samples
- 04 Compared with other analytical techniques, XRF has excellent analytical accuracy and flexibility
- 05 Sample pre-treatment is very simple, most samples can be directly detected without processing
- 06 Can detect a variety of sample types: powder, solids, liquids



FUNDAMENTAL PARAMETER METHOD AND STANDLESS ANALYSIS

THE BASIC PARAMETER METHOD WITH DIFFERENT COEFFICIENTS IS USED FOR DIFFERENT MATERIALS.

Since different materials have different elements, mass attenuation coefficients, fluorescence yields, absorption leap ratios, intensity ratios of different elemental analysis lines, elemental absorption traps and emission lines, these physical parameters determine the results obtained by the algorithm. We set different physical parameters for different materials, and this finer algorithm design gives more accurate results than using only the same parameters. In order to ensure the execution of powerful algorithms, HX-5 adopts as many as four CPUs as the computing cores of the instrument, three of which are used only for the hardware work of the instrument and the only one Qualcomm Xiaolong CPU is used for the high-speed calculation of the basic parameter method. As a high-performance CPU capable of running Android OS, the 14nm Qualcomm Snapdragon not only meets the high-speed iterative needs of complex physical parameters the built-in GPU also supports the high-speed spectral comparison required by the basic parametric method.

Computational power is productivity!

de Jongh

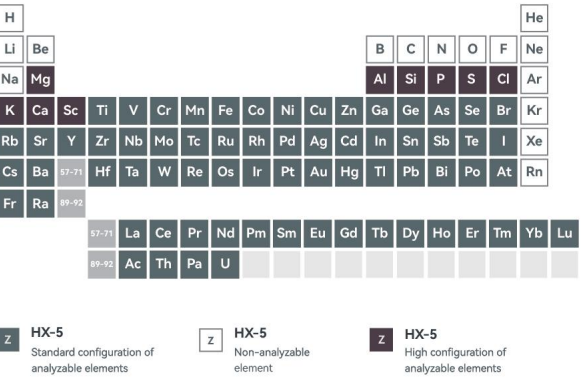
$$W_i = E_i R_i \left[1 + \sum_{j=1}^n \alpha_{ij} W_j \right]$$

TESTING ANY SAMPLE WITHOUT STANDARD SAMPLES.

In many cases, the user of the instrument is analyzing a completely unknown sample, or a sample that we consider to be a failure is also an unknown sample. In cases where a specimen matching a specific sample is not available, standardless analysis is the preferred solution. The HX-5 is extremely flexible and easy to use, allowing the user to analyze, identify, screen out, or compare different materials without a standard sample by using the Basic Parameter Method. Users can perform fast and reliable quantitative analysis of samples directly from the machine, and have full access to the data collected for review, troubleshooting, and comparative analysis.

HX-5 test results of stainless steel 316 without standard sample

Elememt	Measured Concentration (wt%)	Certified Concentration (wt%)
Fe	69.11	69.12
Cr	16.41	16.40
Ni	10.32	10.32
Mo	2.03	2.04
Mn	1.16	1.15
Cu	0.162	0.164
Co	0.234	0.238
Nb	0.112	0.117
V	0.109	0.106





ENTERPRISE VISION

Our vision is to make the HX-5 as an important part of the process of creating added value for the user

CREATING BENEFITS FOR OUR USERS IS WHAT DRIVES US:

- 01 Accurate and fast material analysis
- 02 Portable operation, easy to carry for testing
- 03 Multi-CPU system to ensure system stability
- 04 Targeted basic parameter method algorithm
- 05 Customized APP in Android system
- 06 Long endurance and easy battery replacement
- 07 Low cost

3+1 CPU

HX-5 COMPUTER ARCHITECTURE DESIGN

"Redundant" design for more reliable systems

DEDICATED CPU, DEDICATED FUNCTION

The HX-5 system architecture consists of four CPUs, each with its own independent memory, which means that the HX-5 control system is composed of four independent computers. Compared to the traditional single CPU that handles all the functions of the instrument, the 3+1 CPU design not only ensures that each CPU focuses on its own independent computing system, but also enables the comparison of the processing results of multiple CPUs to determine whether the instrument is operating properly. This "redundant" design, learned from Space-X, can greatly improve the quality and reliability of the entire instrument.

HX-5 CPU FUNCTION DISTINCTION

- 01 X-ray fluorescence spectrogram processing
- 02 Instrument part control system
- 03 Android system + basic parameter algorithm
- 04 Power management

ANDROID OS + APP

For users, it is no different from using a cell phone. Our custom Android operating system removes most of the APPs that come with the system, and only retains a limited number of initial applications and instrument operation APPs. as in the case of developing an Android APP, we used the same development platform to develop the instrument operation APP, which ensures that the controls in this APP are familiar to the user, making it easy to get started quickly.

HX-5 adopts a customized version of Android, like major cell phone manufacturers, we designed this Android from the bottom hardware driver to the top APP, and any hardware function can be realized by one click in the APP. Such as the power on/off of the X-ray light tube. Due to the high mastery of operating system and application software, any software problems encountered during the use of HX-5 will be supported by our software engineers.

SOFTWARE FUNCTIONS

- 01 Display of measurement results
- 02 Grade identification
- 03 Printing and transmission of reports
- 04 Compound display
- 05 Bilingual



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ABOUT US

Scensor Instruments is a start-up Chinese analytical instrument R&D and manufacturing company. It is a research-based enterprise focusing on integrating computer technology with X-ray fundamental parametric method technology. The R&D team includes computer hardware design experts with years of research experience, hardware underlying driver design engineers, Android system engineers, software front-end design engineers, X-ray fluorescence technology application experts, fundamental parametric method algorithm designers, instrument design architects, circuit design engineers, etc.

Scensor Instruments was introduced to Shanghai Zizhu Hi-Tech Industrial Zone in 2018. Zizhu High-Tech Industrial Zone is a national industrial development zone backed by Shanghai Jiaotong University and East China Normal University with integrated circuits and software, aviation, new materials and life sciences as the leading industries. The zone has introduced more than 30 international and domestic famous high-powered R&D centers such as Intel Global R&D Center, Microsoft Asia-Pacific R&D Headquarters, HP Global Software Center and STMicroelectronics, Omron, Toray, Yamaha and Kao.

SERVICE & SUPPORT

Scensor Instruments provides the on-site and remote training, service and support that users need to continue to help them with their analytical problems at the highest level. We are ready to help you get a return on your investment in your instrument and ensure consistent service and support as your instrument grows in use.

Our team of experts adds value to our customers' products by ensuring the proper operation of the instruments through their application expertise and quick response.

01 Local and remote support

02 Comprehensive and flexible service agreements

03 Compliant and professional technical support

04 On-site installation and training

05 Online learning training classes and webinars

06 Sample analysis and application consulting