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FRINGE CLASS
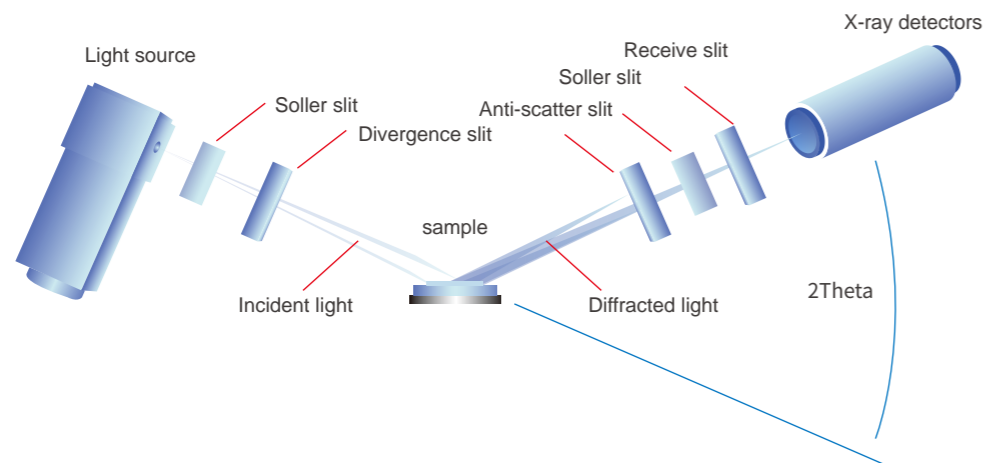## Benchtop X-ray Diffractometer

LANScientific CO., LTD.

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Tel: 86 512-69376270 Fax: 86 512-69376270
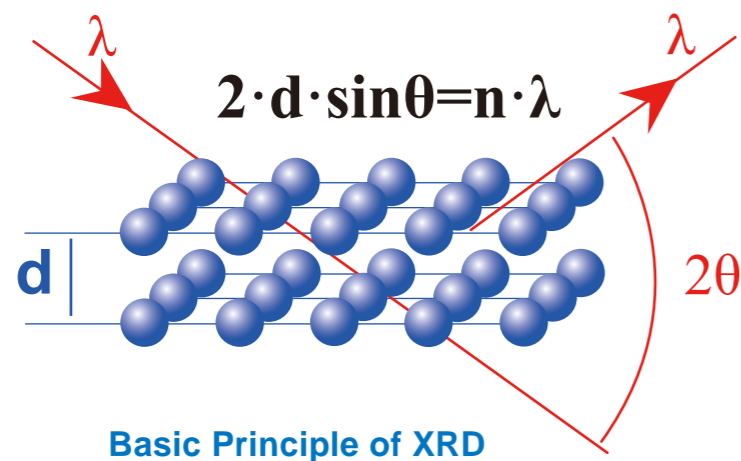Web: en.lanscientific.com

FOR THE PACKET LAB

Product Description

Benchtop X-ray diffractometer is a desktop X-ray diffractometer independently developed by LANScientific Co., LTD., which integrates XRD, XRF, computer software and other technologies. It can quickly conduct qualitative and quantitative analysis, crystal structure analysis, material structure analysis and crystallinity determination for powder, block or thin film and other forms of samples. It has the characteristics of high precision, high accuracy, good stability, wide application range, simple operation and intelligence. For materials research, universities and research institutes, building materials, metals, minerals, plastics, pharmaceuticals, semiconductors and many other fields provide high precision analysis.

One-button plug, just need to prepare a standard power outlet, needn't voltage conversion

One-button operation of the entire analysis process takes only a few seconds to complete, simple operation without training, even non-technical personnel can easily master the method of use

The Principle of X-ray Diffractometer

When a monochromatic X-ray is incident to the crystal, because the crystal is composed of unit cells arranged by atoms, the distance between the atoms arranged in these rules is the same order of magnitude as the incident X-ray wavelength, therefore, the X-rays scattered by different atoms interfere with each other, producing strong X-ray diffraction in some special directions. And the orientation and intensity of the diffraction in space are closely related to the crystal structure, which is the basic principle of X-ray diffraction.

$$2 \cdot d \cdot \sin\theta = n \cdot \lambda$$

Basic Principle of XRD

Integrated water tank
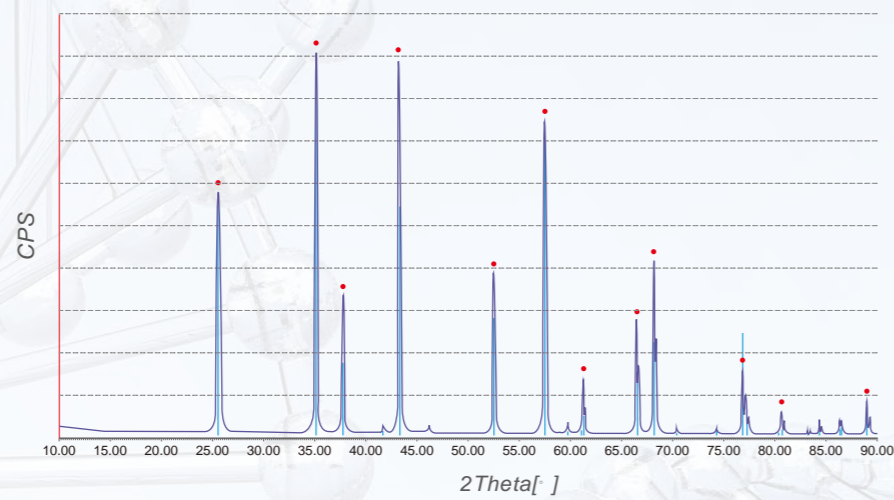Built-in water circulation cooling system

One-button to stop gives the operator full flexibility to minimize scanning time and increase scan resolution
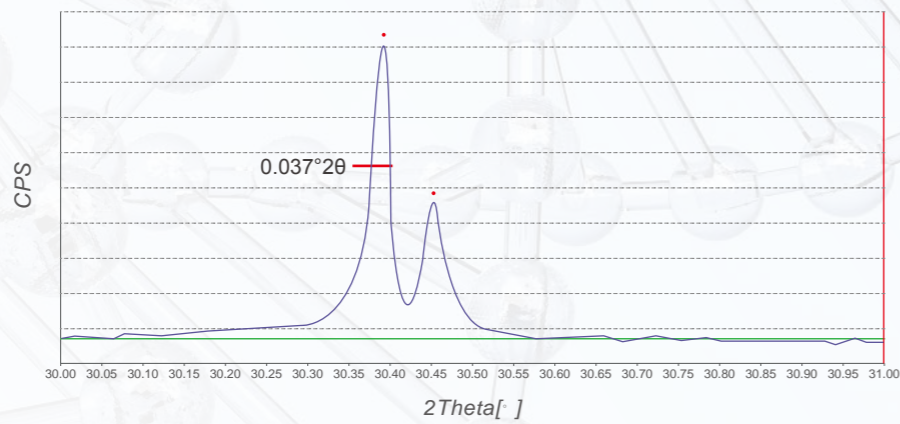
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Performance characteristics

FRINGE CLASS—high stability, high precision, high efficiency

Excellent linearity

When using the national standard sample for on-site detection, the 2θ angle deviation of all peaks in the whole spectrum range ±0.02° within the diffraction angle measurement range, showing excellent angular deviation linearity
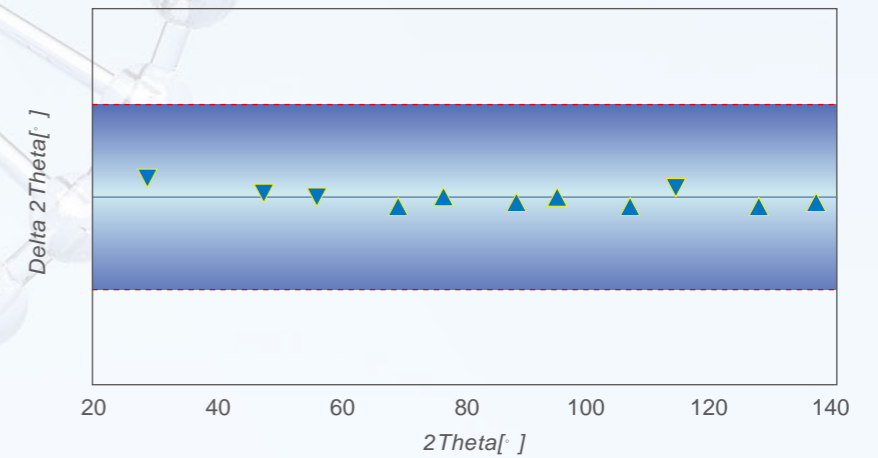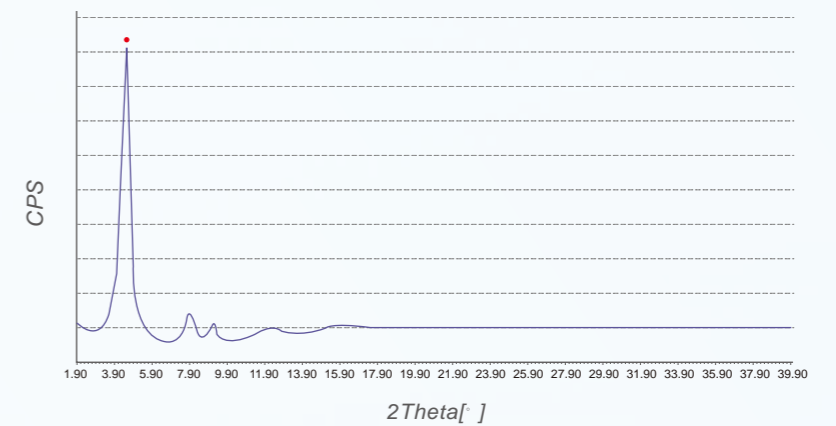

The national standard LaB$_6$ with high-performance detector and high-resolution mode is displayed by the measurement as FWHM<0.04°2θ
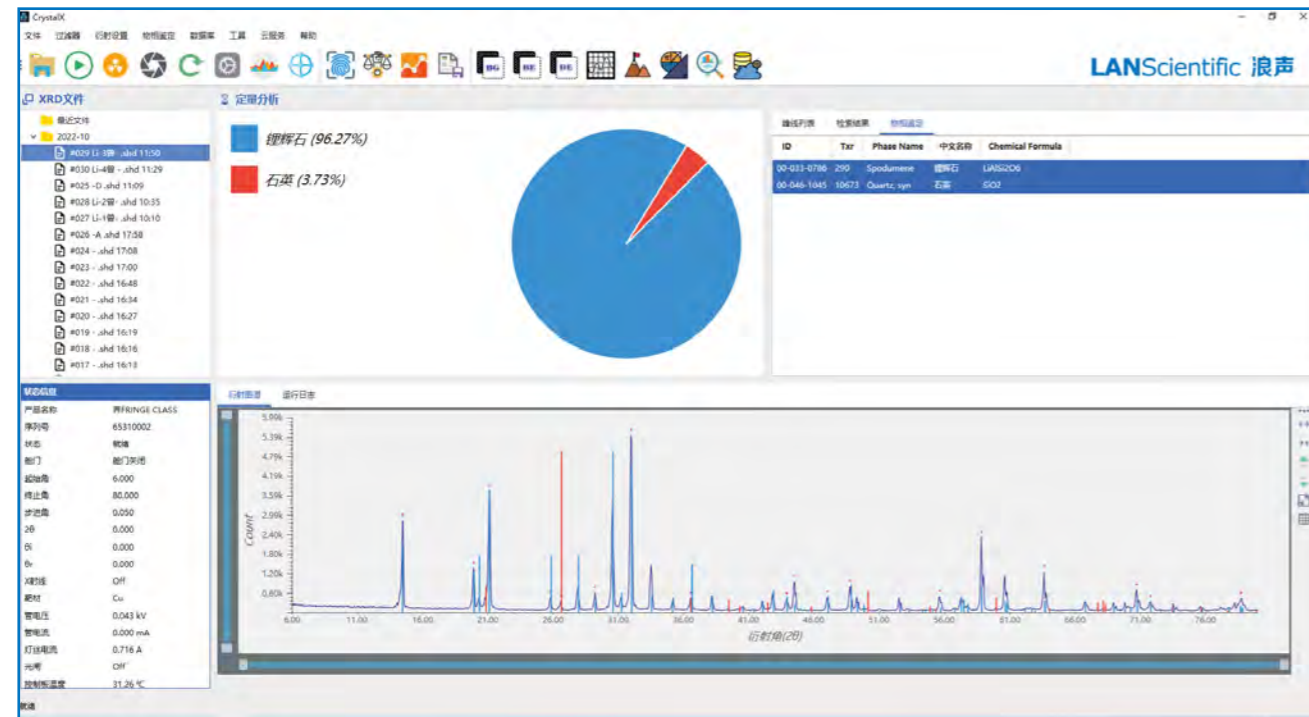
Unmatched resolution

0.037°2θ

Excellent low-angle performance

Diffraction patterns show excellent low-angle performance for metal framework materials (MOF materials) analysis.

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Software Advantages

LANScientific has developed a special crystal analysis software CrystalX for FRINGE CLASS. After obtaining diffraction data, CrystalX automatically conduct phase analysis, and give the percentage of each component of the phase, greatly reducing the requirements of the user, no manual retrieval, no need to buckle the background, no need to smooth, no need to manually peak, just need to click "start testing", the rest to the CrystalX software!

One-button intelligent operation
One-button start, just press the test button to quickly test and analyze, simple operation without training, even non-technical personnel can easily master the method of use.

Safety
It has a professional multi-protective radiation treatment. The X-ray protective door is automatically forbidden to open during sample measurement, which can protect the operator from scattering radiation under any circumstances.
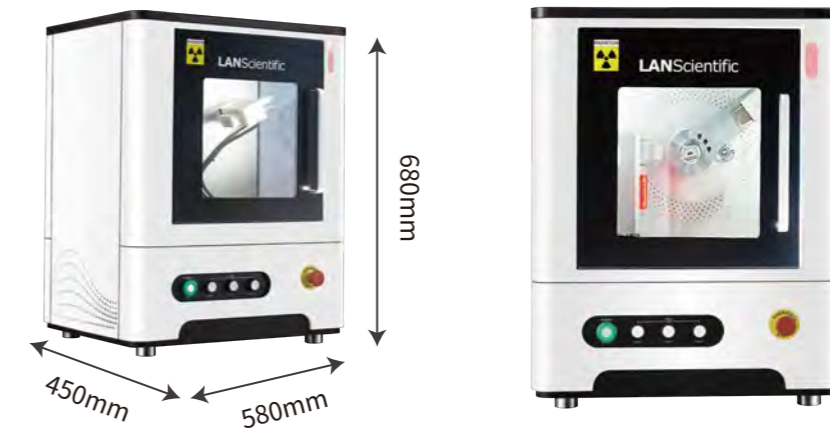
Multi-channel analysis
Digital multi-channel analysis technology can distinguish diffraction peak and fluorescence interference without monochromator, and improve diffraction intensity.

Intelligent
The equipment is equipped with analysis software to help analyze measurement, view data and transform data, but also can transmit and manage, easily realize the system data docking and sharing.

User management
Support the creation of individual user accounts, allowing users to freely adjust the detection configuration to meet their specific needs, and save the configuration and batch programming.

Health diagnosis
Real-time temperature and flow monitoring, multiple safety protection design, effectively improve instrument maintenance methods, reduce instrument maintenance costs, prolong the service life of the instrument.
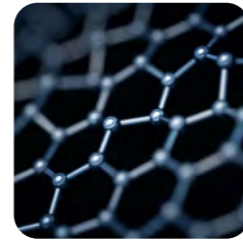
Technical parameter

project	parameter
Goniometer	θ-2θ vertical goniometer, diffractive circle radius 150mm
Angle measuring range of Angle meter	-3° - +150°
Precision	The deviation of ＜±0.02° in the full spectrum
FWHM	<0.04°2θ
Sola slit	The integrated sora slits, without any motion-adjustable parts, increase the reliability of the goniometer system, allowing the FRINGE desktop XRD to be installed on in-vehicle laboratory platforms
X-ray tube	Cermet X-ray tube, focus: 1 x 10 mm, default configuration cu target, optional Co, Cr, Mo target
X-ray tube power	600W
Size	580 x 450x 680mm （L×W×H）
Weight	120KG
Power Supply	220V±10V, 50Hz, the whole power is 1000W
Detector	DPPC detector
Heat dissipation	FRINGE CLASS has a built-in water circulation cooling system, no need to add additional chillers. The software can display the water temperature, flow rate and other information in the X-ray tube in real time
Interface	The compact home wall plug provides power, and the USB interface connects to the PC for controlling the XRD
Air source	A 2-way air supply interface is available for in-situ analysis or atmosphere protection
Cloud service capabilities	FRINGE CLASS uses a synchronizable mobile APP service to support card management of diffraction data and access to knowledge management systems
Security	The FRINGE CLASS has an air spring large window lift door, which can observe the in-situ analysis process without dead angle, and can effectively shield X-rays. It has a protection and safety interlock device that automatically cuts off during thetest process. The operation interface has the function of closing the sample compartment

Titanium dioxide   **Alumina powder**   **Graphitization degree**   **Ceramic material**   **Asbestos material**   **Cement**   **Pharmaceutical analysis**   **Talc**   **Other fields**

Infinite Fringe,
make the world
more clear

ABOUT US

LANScientific Co., Ltd. is a provincial high-tech enterprise specializing in r&d, production and sales of high-end analytical instruments. It is a scientific and technological entity integrating product design, development, manufacturing, sales and service.

Company main product is applied to the analysis above Na to the fields of U element or compound ingredients, involved in industries including aerospace, petrochemical, environmental protection, metal materials, mineral exploration, such as the instrument consists of X-ray fluorescence analyzer (Xrf), on-line monitoring X-ray spectrometer, X-ray diffraction, Raman spectrometer, four series, It can be used in multiple scenarios.

Europe

Asia

North America

Beijing
Zhengzhou   Cangzhou
Linyi   Suzhou
chongqing   Ningbo
Changsha
Shenzhen   Wenzhou

Africa

South America

Oceania

SERVICES

LANScientific is committed to providing customers with the most optimized solutions. We aim to help customers improve testing efficiency by cooperating with customers to provide solutions tailored to meet their needs and provide fast, safe and reliable support.

In order to meet the needs of customers in the application of analysis technology,LANScientific has established a comprehensive customer support system to provide customers with analysis consulting, demonstration analysis, training, etc., and constantly develop new analysis technology, analysis methods, technical exchanges with users, quickly provide cost-effective, high-quality solutions.

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LANScientific products have been exported to the United States, Dubai, Russia, Brazil, India and other more than 50 countries and regions, agents all over the world. In the future, we will continue to expand business territory with better products and more intimate service, so that domestic instruments to the world!