

LANScientific



FRINGE

Benchtop X-ray Diffractometer

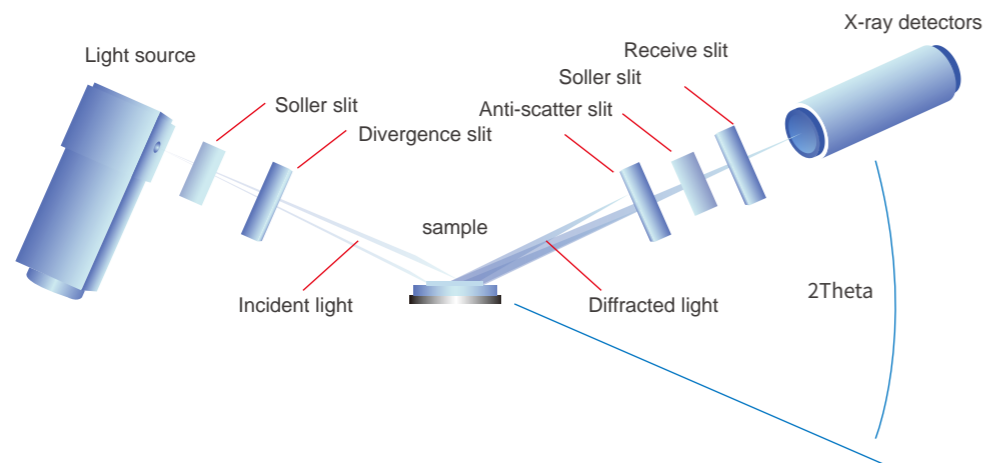
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FOR THE PACKET LAB

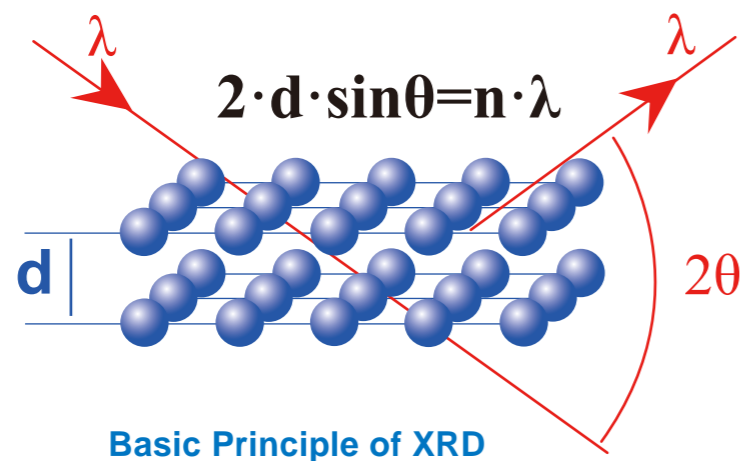
Product Description

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.



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.



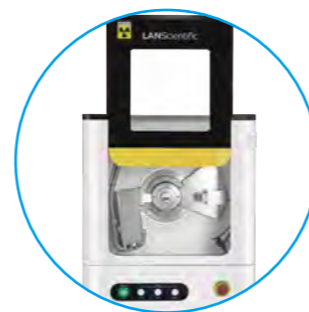
One-button plug, just need to prepare a standard power outlet, needn't voltage conversion



One-button operation, simple operation without training, even non-technical personnel can easily master the method of use



Integrated water tank Built-in water circulation cooling system



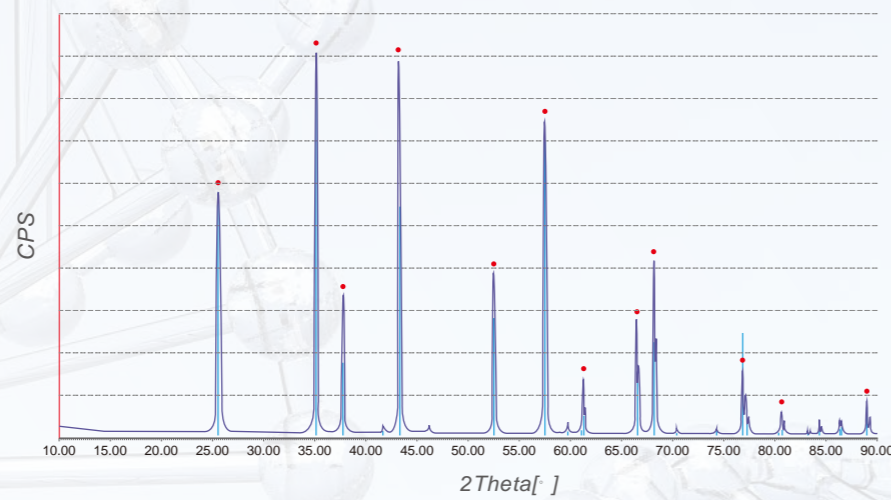
Air spring large window lift door
Save desktop space
Fits every desk
Effectively improve space utilization

One-button to stop gives the operator full flexibility



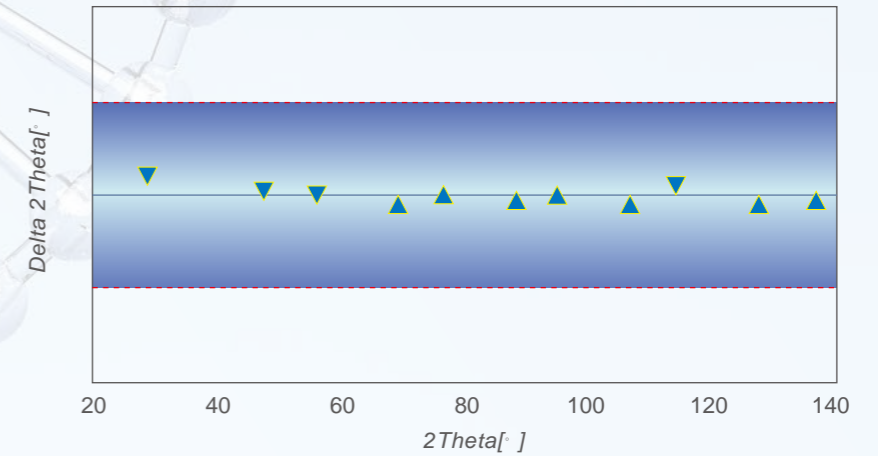
Performance characteristics

FRINGE—high stability, high precision, high efficiency



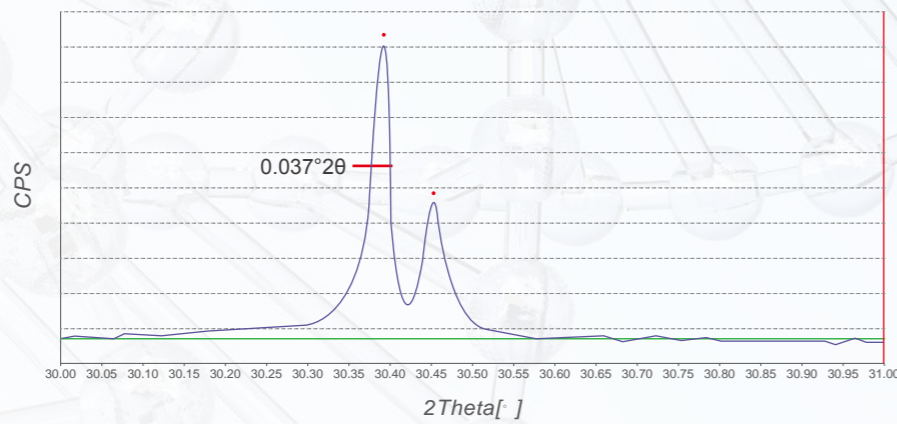
When using the national standard sample for on-site detection, the 2θ angle deviation of all peaks in the whole spectrum range $\pm 0.02^\circ$ within the diffraction angle measurement range, showing excellent angular deviation linearity

Excellent linearity



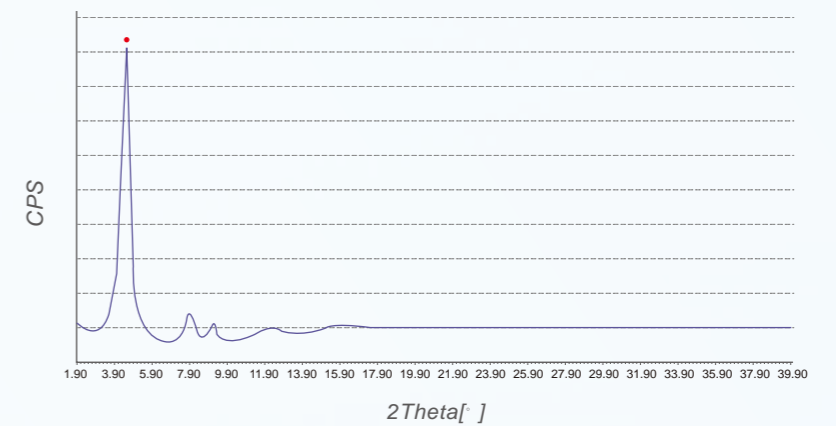
The national standard LaB_6 with high-performance detector and high-resolution mode is displayed by the measurement as $\text{FWHM} < 0.04^\circ 2\theta$

Unmatched resolution



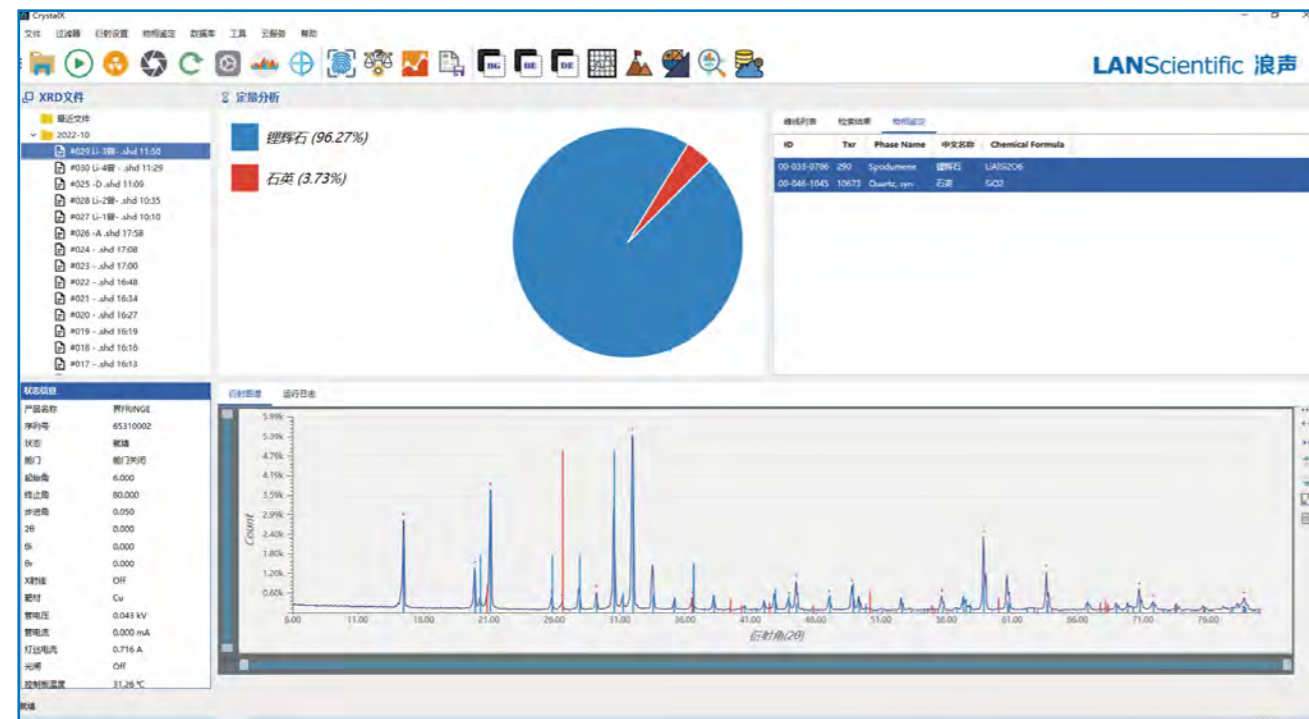
Excellent low-angle performance

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



Software Advantages

LANScientific has developed a special crystal analysis software CrystalX for FRINGE. 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.

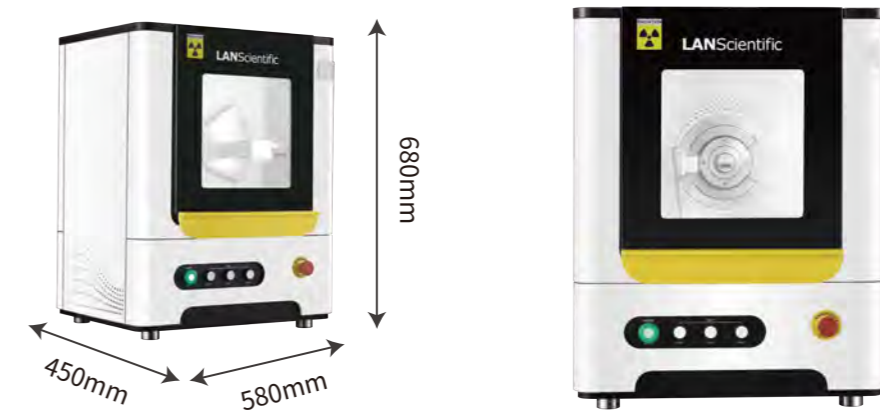
Multi-channel analysis
Digital multi-channel analysis technology can distinguish diffraction peak and fluorescence interference without monochromator, and improve diffraction intensity.

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-θ vertical goniometer, diffractive circle radius 150mm
2θ angle range	-3° - +150°
2θ angle accuracy	The deviation of $\pm 0.02^\circ$ in the full spectrum
Resolution	<math>< 0.04^\circ 2\theta</math> Half-peak wide FWHM
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: 1x10 mm, default configuration cu target, optional Co, Cr, Mo target
High Voltage Generator Power	600W
Instrument dimensions	580 x 450x 680mm (LxWxH)
Weight	120KG
Power Supply	220V±10V, 50Hz, the whole power is 1000W
Cooling	FRINGE 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
Detector	DPPC detector
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 uses a synchronizable mobile APP service to support card management of diffraction data and access to knowledge management systems.



Geology and Survey



Ceramic Industry



Chemistry and Catalysts



Research and Education



Pharmaceutical Industry



Environmental Monitoring



Metal Material

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.

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!