

XRD-3027

Desktop XRD



EPCC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

Analytical Technologies Limited

An ISO 9001 Certified Company

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It is designed for commercial process and quality control. It is a concentration of advanced technology of XRD production, with multi-function and miniaturization. It can do qualitative analysis, quantitative analysis and crystal structure analysis on metal and nonmetal sample, especially for catalyst, titanium dioxide, cement and pharmacy industries.

►► **Equipment Performance:**

- High frequency high voltage X-ray generator has greater stability, so it guarantees the repeatability of the data. System future upgradable for max 500°C temperature
- Goniometer θ_s , θ_d arm adopts servo motor drive and optical encoder control technology, so the goniometer rotates more smoothly, the diffraction angle measuring is more accurate and linearity is better. Within the diffraction angle range, the diffraction linearity <0.02 .
- The scattered ray protective device is safer and more reliable. When it is measuring samples, the protective door will be auto-locked to avoid the radiation to the people.
- XRD-3027 adopts the most advanced metal ceramic X-ray tube, it has long service life (3000 hours); the automatic 6-sample changer can improve the sample measuring speed and convenient for the operator.
- The compact structure can installed onto the platform without special laboratory environment. It is easy for operation and maintenance.

►► **Application :**

XRD-3027 can do qualitative and quantitative analysis on polycrystalline material. During qualitative analysis, it will identify the unknown structure by comparing the measuring data with known phase data base. During quantitative analysis, it can describe the characteristics of the solid mixture, so that to confirm relative content of the crystalline compounds or un-crystallized phase.

►► **Application :**

Service rating (Tube voltage, tube current)	600W(40kV,15mA) or Increment of 1kv and 1mA) 1200W(40kV,30mA),HT Stability:0.005%, Mains Stability: $\pm 10\%$
X-ray tube	Metal-ceramic X-ray tube, Cu target, Power 2.4kW, Focus size:1 x 10 mm Air cooling or water cooling (water flow rate > 1L/min)
Goniometer	θ_s - θ_d , diffraction radius 150mm with High Precision, vertical type
Measuring method	Continuous, stepping, Ω mg
Angular measurement range	During leakage time, θ_s/θ_d is $-3^\circ \sim 150^\circ$
Minimum step width	0.0001°
Angular reproducibility	0.0001°
Drive mode	servo motor drive + optical encoder control
scanning speed	1500°/min
Counter	Closed Proportional detector or High speed silicon strip 1D detector (also fluorescence reduction mode available)

Energy spectrum resolution	<25%	
Max. linear counting rate	$\geq 5 \times 10^5$ cps (Proportional), $\geq 1 \times 10^7$ cps	
Sollar slit:	(incident receiving) 2.5deg	
Incident height limiting slit	(DHL) 10mm	
Software	Controlling software	Windows 7 operating system; control the tube voltage, tube current, shutter of the X-ray generator and do aging training automatically; Control the goniometer continuous or stepping scanning and diffraction data collection; do routine processing: automatic peak-seeking, manual peaking-seeking, integrated intensity, peak height, core, background deduction, smoothness, Peak shape amplification and spectrogram comparison, etc.
	Data processing software	Qualitative and quantitative analysis of material phases, $K\alpha_1$, α_2 peeling, Full spectrum fitting, peak fitting, half-width and grain size calculation, crystal cell measuring, second kind stress calculation, diffraction line indexation, multiple plotting, 3D plotting, diffraction data calibration, background subtraction, quantitative analysis without standards, full spectral image fitting (WPF), XRD diffraction image simulation, etc. also available Facilities for peak search, peak match, and pattern treatment such as data smoothing, background subtraction, 2θ correction, 3D multiple pattern display, $K\alpha_2$ calculation and removal, integrated intensity calculation, relative intensity ratio (RIR) quantitative analysis and crystallite size
Scattered radiation protection	Lead+ lead glass protection, shutter windows and protective guard linkage, the scattered radiation dose not exceeding $1 \mu\text{Sv/h}$.	
Instrument Comprehensive regulation	$\leq 1\%$	
Sample quantity of one-time loading	Auto sample changer, 8 samples can be put one time.	
Overall dimension	600×410×670 (w×d×h) mm	

Regulatory compliances



Corporate Social Responsibility



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1. Research & Innovation Scientist's awards/QC Professional Award : Quality life is possible by innovation only and the innovation is possible by research only, hence ANALYTICAL FOUNDATION is committed to identify such personalities for their contributions across various field of Science and Technology and awarding them yearly. To participate for award, send us your details of research / testing / publication at Info@analyticalfoundation.org
2. Improving quality of life by offering YOGA Training courses, Work shops/Seminars etc.
3. ANALYTICAL FOUNDATION aims to DETOXIFY human minds,souls and body by means of yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Camps etc.

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