

AXRD[®]-HR

Customizable High-Resolution Diffractometers



IMPROVE
YOUR
SCIENCE™

X-ray Diffraction
Systems & Services

PROTO

FEATURES & OPTIONS

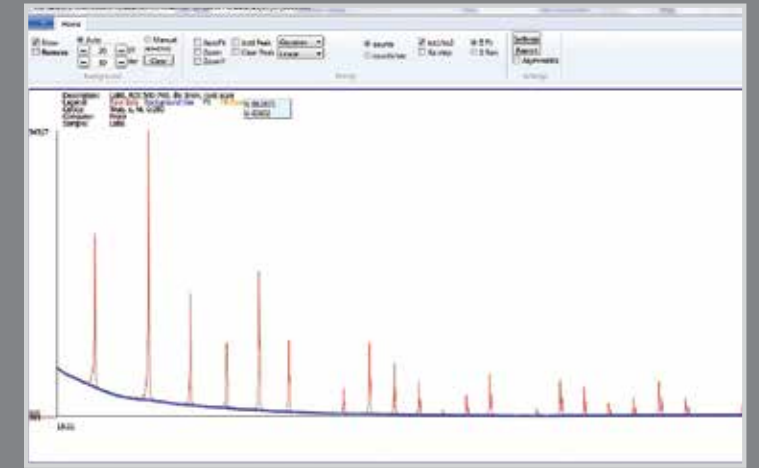
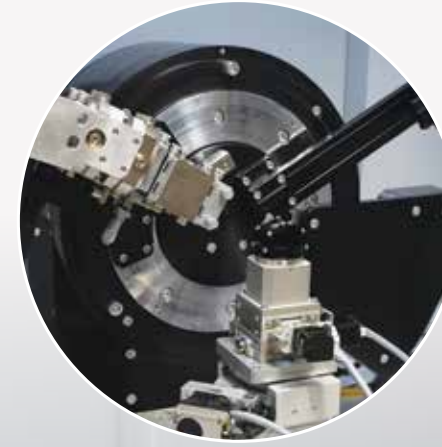
APPLICATIONS

- X-RAY REFLECTIVITY (XRR)
- ROCKING CURVES
- RECIPROCAL SPACE MAPPING

OPTIONS

- Parallel beam multilayer mirror
- 2-bounce & 4-bounce Germanium monochromators

- X,Y sample stage
- Rx, Ry tilt stage
- Eulerian cradle with phi rotation stage
- In-plane detector scanning arm
- Automated variable divergence slit
- Auto-alignment system – easily change between different x-ray beam setups
- Environmental cells
- Air-sensitive sample holders



XRDWIN PD SOFTWARE

Our complete x-ray diffraction software package for both data collection and analysis of powder patterns is the perfect solution for qualitative and quantitative analysis. Some of XRDWIN's unique features include: instrument warm-up and control, flexible data collection options including segmented and batch mode collection, pressure, humidity and temperature environmental cell control, peak search, profile analysis including crystallite size and strain, crystallinity, intensity ratio method, spike methods, and Rietveld refinement. Search/match for ICDD PDF databases and the COD database. MDI Jade interface also available.

HIGH-PRECISION GONIOMETER

PHOTON-COUNTING DETECTORS

- 1280 channel high-speed solid state linear detector
- Simultaneous multiple channel collection enables collection times up to 100 times faster than a scintillation counter
- Direct detection of x-rays using silicon strip technology
- Global count rate of 10^9 counts/s
- High speed collection times
- 64 mm x 8 mm sensor area
- Excellent signal-to-noise ratio and very high dynamic range
- Fluorescence suppression mode



MAIN OFFICES

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Geometry	Vertical θ/θ
Goniometer Radius	Variable radius 200-300 mm
Measurement Configuration Options	Bragg-Brentano Focusing, Glancing Incidence (GID), X-ray Reflectivity (XRR), Thin-Film, Texture, Stress, High-Resolution (HR)
Max. Usable Angular Range	Standard range -2 to 80 deg θ , Range can be customized depending on application
Scanning Speed	0.0001° ~ 100°/min (2θ)
Motor Step Resolution	0.0001°
Accuracy	$< \pm 0.01^\circ 2\theta$
X-ray Beam	Focusing mirror, parallel beam mirror, Johansson K-alpha1 Ge monochromator, 2 bounce monochromators
Slits	Divergence, Antiscatter, Soller slits, Receiving All sizes customizable per customers requirement and detector selection.
Achievable peak Width	Standard $< 0.04^\circ 2\theta$ Width. Other widths depending on which x-ray beam optics installed
X-ray Tube	Standard: Long Fine, Fine, Normal or Broad focus ceramic x-ray tubes Anodes: Cu, Cr, Co, Mn, Mo
X-ray Tube Cooling	External self-contained recirculating liquid-to-air water chiller.
X-ray Power Supply	1200W or 3000W
Detectors	DECTRIS Mythen2 Linear Detector, DECTRIS Pilatus3 100K Area Detector Silicon Point Detector (SPD)
Standards and Safety	Compliant with CE, ANSI N43.2, Interlocked enclosure door for auto x-ray off.
Reference Sample	LaB ₆ powder
Dimensions (W x D x H)	1440 x 920 x 1950 mm (56 x 36 x 76 in)
Environmental Cells	Temperature, Pressure, Low and High Vacuum
Power Requirements	200-240VAC, 50/60 Hz, 25A

PROTO engages in continuous research and development, therefore specifications in this publication are subject to change. Please call for details. Various items and methods in this brochure are covered by patents or patents pending.

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