

AXRD[®]-LPD

Powder Diffraction Measurement System



TECHNOLOGY
THAT DELIVERS
ACCURATE
RESULTS™

High-power, accuracy and flexibility
in a laboratory configuration

PROTO

FEATURES & OPTIONS

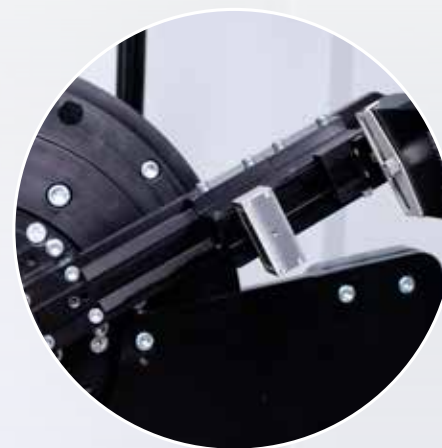
Flexibility and Customization for Your Applications



X-RAY OPTICS. Multilayer x-ray optics (Parallel or focusing), Johansson Kalphal, 2 bounce Ge crystal.

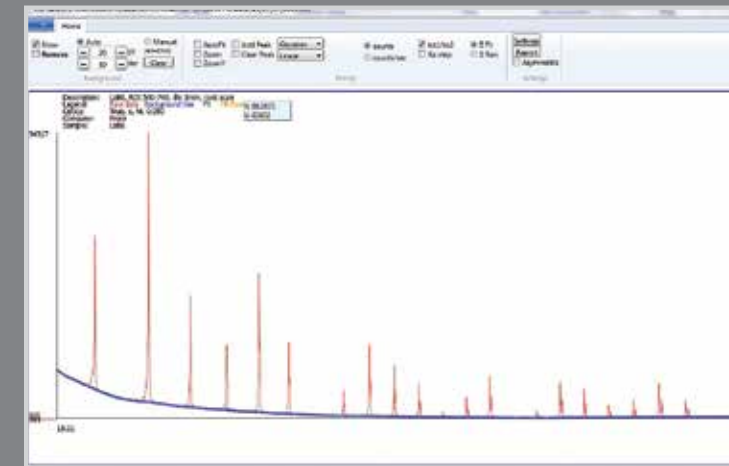


CHAMBERS
High-temperature, pressure, low-vacuum and high-vacuum options.



ACCESSORIES
Eulerian cradle, X,Y sample stage, in-plane detector scanning arm, Rotating phi stage for Eulerian cradle, Rx, Ry tilt stage.

FLEXIBLE X-RAY SOURCES. 3000 Watts (60 kV / 50 mA), Cu, Cr, Co, Mn, Mo xray tube options.



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 and temperature environmental cell control, peak search, profile analysis including peak, 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.

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 1×10^9 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
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 $< 0.05^\circ 2\theta$ 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	Internal water cooling radiator and tank
X-ray Power Supply	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.
Sample Holders	6 standard sample holders 25 mm diameter
Reference Sample	LaB ₆ powder
Dimensions (W x D x H)	1435 x 915 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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