

Modern Detector Technologies – The Next Generation

- No defective areas
- Fixed scan mode operation without missing data points
- Highly uniform active area, highest data quality

Bruker AXS' one and two dimensional detectors currently revolutionize X-ray powder diffraction analysis in all application areas. This is not only due to a gain in measurement speed of a factor of up to 2000 compared to point detectors (dependent on the 1D/2D detector type). Even more important is the ability to obtain a data quality, which is comparable to point detectors in terms of both resolution and line profile shape.

The major break-through achieved by the Bruker AXS' new detector technologies relates to a most notable boost in manufacturing quality. **In contrast to conventional 1D/2D solid state detectors, neither the LYNXEYE™ nor the VANTEC™ detectors have any defective or even dead areas.** This unique property of both detector types, together with a factory-made calibration, makes them particularly suited for fixed mode measurements including detection of very weak signals.

No defective areas – only with detectors from Bruker AXS

If the measurement software of your supplier does not offer measurement modes with fixed detector, this feature is most likely disabled or even not implemented due to defective areas in your detector.

LYNXEYE™: 1D detector based on Bruker AXS' **compound silicon strip technology**



VANTEC-1™ (right) and VANTEC-2000™ (bottom): 1D and 2D detectors featuring Bruker AXS' unique and patented **MikroGap™ technology**



Bruker AXS – The Detector Company

Both the underlying VÅNTEC and LYNXEYE technologies are the result of continuous detector development by the globally leading X-ray diffraction equipment manufacturer. Since decades X-ray analyses in single crystal and powder diffraction have been revolutionized by Bruker AXS as e.g. can be seen from this impressive milestone list:

1982	First scanning linear PSD for X-ray diffraction
1984	HI-STAR – multiwire 2-dimensional detector
1991	GADDS – the first general diffraction system with 2D detector (winner of R&D 100 award)
1993	SMART – the first CCD detector system (winner of R&D 100 award)
1999	SMART APEX – the first direct imaging (1:1) CCD detector system
2001	PROTEUM 300 – lens coupled CCD (Winner of R&D 100 award)
2001	SOL-X – energy-dispersive detector with large 4 x 15 mm active area
2004	SUPER SPEED VÅNTEC-1™ 1D detector with 50 x 16 mm active area, based on Bruker AXS' patented MikroGap™ technology
2004	APEX™ II – the first 4K CCD detector
2004	PLATINUM 135 – 4K CCD detector (16 Mega-Pixels) coupled to a 135 mm fiber-optic taper
2005	SUPER SPEED LYNXEYE™ detector with 100 million cps count rate capability, based on Bruker AXS' compound silicon strip technology
2005	SUPER SPEED VÅNTEC-2000™ 2D detector with 14 x 14 cm active area, based on MikroGap™ technology (winner of R&D 100 award)
2005	AXIOM – detector with 200 mm Ø active area, based on MikroGap™ technology
2009	SOL-XE – 2nd generation energy-dispersive detector

All configurations and specifications are subject to change without notice. Order No. DOC-H88-EXS016 V2.
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