HIGH ENERGY FAST SDD®

1 mm thick

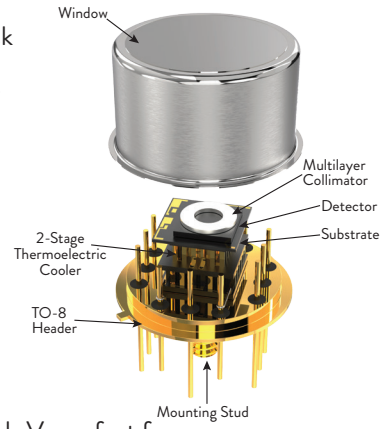
AMPTEK'S NEXT-GEN XRF DETECTORS



UNMATCHED PERFORMANCE, MAXIMUM SENSITIVITY & ULTIMATE RELIABILITY

Amptek's latest innovation in XRF detectors: 1mm thick FAST SDD® detectors takes your X-ray analysis to the next level. With double the detection efficiency for high-energy X-rays (>15 keV), these detectors deliver faster, more accurate and more reliable results than ever before.

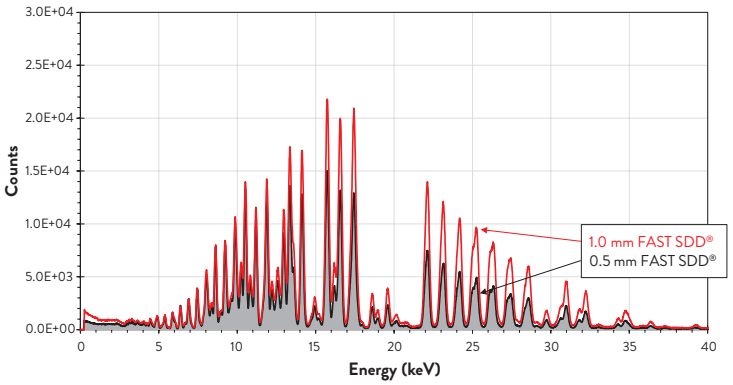
Whether you're pushing the limits of research or demanding precision in industrial applications, the 1mm FAST SDD® is your ultimate partner.



Why Choose 1mm FAST SDD®?

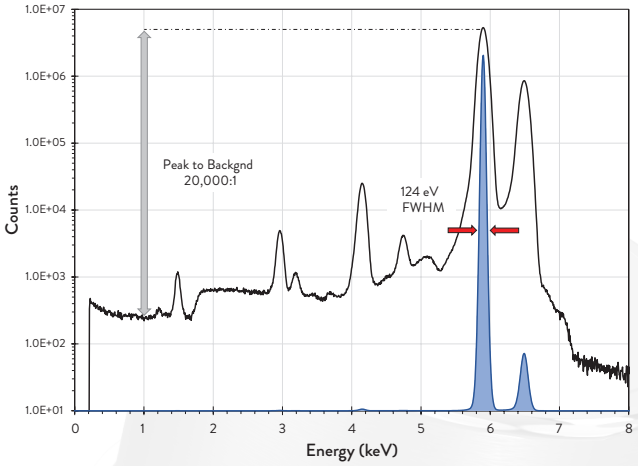
- **Improved Detection Efficiency:**
  2X higher detection efficiency for X-rays above 15 keV- perfect for high-energy X-rays sensitivity.
- **Unmatched Energy Resolution:**
  With energy resolution as low as 121 eV for Fe-55 (near the Fano limit), these detectors deliver exceptional precision in X-ray spectroscopy.
- **Blazing Fast Count Rate Capability:**
  The detectors can operate at count rates exceeding 1,000,000 counts per second (CPS), ensuring fast and accurate data collection even in high-intensity environments.
- **Superior Peak-to-Background Ratio:**
  A peak-to-background ratio of 20,000:1 (for Be window) ensures clean, high-quality spectra with minimal noise, enhancing analytical accuracy.
- **Compact and Versatile Design:**
  Available in 25 mm^2 and 70 mm^2 active areas, and packaged in a TO-8 format, these detectors are compatible with Amptek's existing systems and configurations, making them easy to integrate.
- **Advanced Cooling and Stability:**
  With cooling ΔT > 75 K and gain stability of <20 ppm/°C, the detectors maintain consistent performance even under varying operating conditions.
- **Proven Reliability:**
  Built with Amptek's reliable FAST SDD® technology, these detectors offer a typical lifetime of 5-10 years, ensuring long-term dependability.

Parameters	Hardware Specifications
Detector Type	Silicon Drift Detector (SDD) with CMOS preamplifer
Detector Size	25 mm^2 - collimated to 17 mm^2 70 mm^2 - collimated to 45 mm^2
Silicon Thickness	1000 µm
Collimator	Internal Multilayer Collimator (ML)
Energy Resolution@ 5.9 keV (55Fe)	25 mm^2 : 131 eV FWHM(@4µs Tpeak) 70 mm^2 : 135 eV FWHM(@4µs Tpeak)
Peak to Background	20,000 : 1 for Be window (typical) 13,000 : 1 for C1 window (typical)
Detector Window Option	25 mm^2 with 12.5 µm Be; 70 mm^2 with 12.5 um Be or C1 window
Charge Sensitive Preamplifier	CMOS
Gain Stability	<20 ppm/°C (typical)
Size Detector Module	TO-8 package (0.66 in. high including pins, 0.600 in. diameter)
Weight Detector Module	0.14 oz (4.1 g)
Total Power	<2 Watt
Warranty Period	1 Year
Device Lifetime	Typical 5 to 10 years, depending on use
Operation Condition	-35°C to +80°C (Operation is guaranteed to 80°C. Performance depends on detector temperature rather than ambient.)
Bias Voltage	-400 to -450V (note standard FAST is -135V)

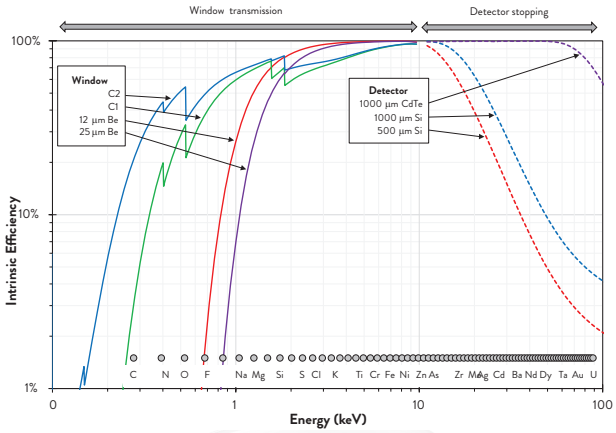


XRF DETECTORS: Where Innovation Meets Performance

Typical ^{55}Fe spectra for 1 mm thick 25 mm² FAST SDD detector.mar



Compound Attenuation Plot: *Transmission rates of different windows + Stopping Power of 1 mm thick detector vs standard 0.5 mm thick*



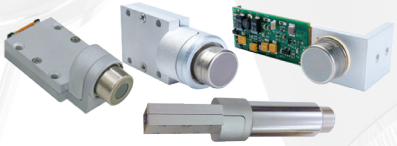
Choose Your Perfect Setup:-

X-123 FAST SDD® – THE COMPLETE SPECTROMETER:



- 1 Silicon Drift Detector (SDD) with preamplifier
- Digital Pulse Processor with MCA
- Power Supply

OEM FAST SDD® –CUSTOMIZABLE FOR YOUR NEEDS



Ideal for integrating into your own systems:

- FAST SDD® Detector with preamplifier
- Multiple configurations to fit your unique requirements

XR-100 FAST SDD® – COMPACT AND EFFICIENT



A streamlined solution for X-ray detection:

FAST SDD® X-Ray Detector paired with a Digital Pulse Processor and MCA

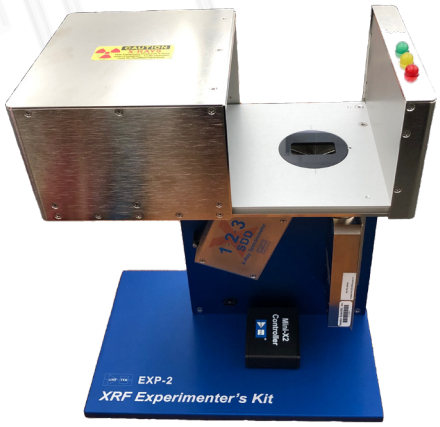
FAST SDD® VACUUM APPLICATION



EXPERIMENTER'S XRF KIT WITH FAST SDD®

Complete XRF system includes:

- X-123 FAST SDD® Complete Spectrometer
- Mini-X USB-Controlled X-Ray Tube
- XRF-FP2 Quantitative Analysis Software
- Test Stand with shielding and sampling



Why Wait? Build Your Ideal XRF Solution Today!

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No. AMT-A00005 - January 2025