

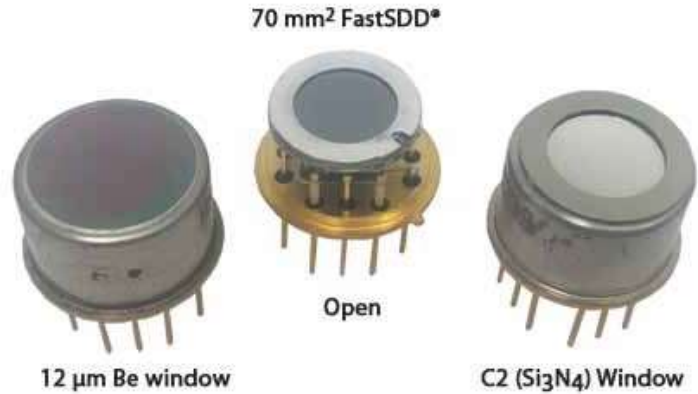
# The True State-of-the-Art!

## 25 mm<sup>2</sup> x 1mm thick FAST SDD®

Amptek has developed a 25 mm<sup>2</sup> x 1mm thick FAST SDD® Detector in a TO-8 package. This is the same package that is used with all Amptek detectors. This makes the 25mm<sup>2</sup> x 1mm thick a drop-in replacement (same package, same pin-out, same voltages). Greater efficiency at energies over 15keV with the same great performance.

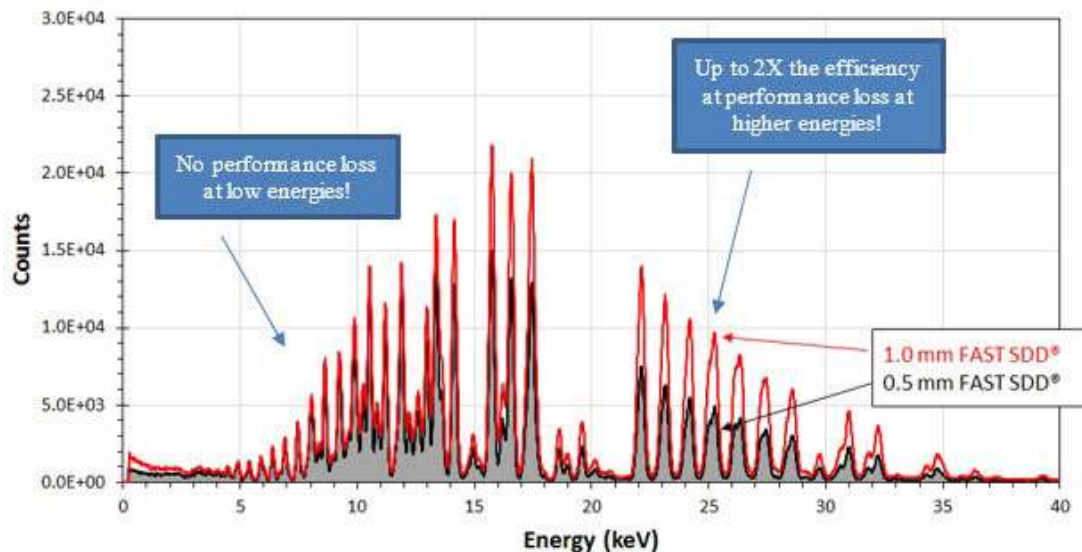
### Features

- 25 mm<sup>2</sup> active area collimated to 17 mm<sup>2</sup>
- 123 eV FWHM Resolution @ 5.9 keV
- Count rates >2,000,000 CPS
- High Peak-to-Background Ratio - 26,000:1
- Signal Rise Time <60 ns
- Windows: Be (0.5 mil) 12.5 µm
- Radiation hard
- Detector thickness 1000 µm
- TO-8 Package
- Cooling ΔT>85°K
- Multilayer Collimator

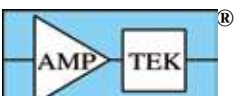


### Applications

- Ultra-fast benchtop and handheld XRF analyzers
- Scanning/mapping of samples in an SEM as part of an EDS system
- On-line process control
- X-Ray Sorting Machines
- OEM



OEM's #1 Choice




AMPTEK INC. Amptek.sales@ametek.com www.amptek.com

AMETEK®  
MATERIALS ANALYSIS DIVISION

## FastSDD-25mm<sup>2</sup> x 1mm thick Specifications

General	
Detector Type	Silicon Drift Detector (SDD)
Detector Size	25 mm <sup>2</sup> - collimated to 17 mm <sup>2</sup>
Silicon Thickness	1000 μm
Energy Resolution @ 5.9 keV ( <sup>55</sup> Fe)	123 - 135 eV FWHM at 4 μs peaking Time
Peak to Back-ground	>20,000:1 (ratio of counts from 5.9 keV to 1 keV)
Detector Window Options	Beryllium (Be): 0.5 mil (12.5 μm)
Collimator	Internal MultiLayer Collimator (ML)
Charge Sensitive Preamplifier	CMOS
Gain Stability	<20 ppm/°C (typical)
Case Size XR-100FastSDD-70	3.00 x 1.75 x 1.13 in (7.6 x 4.4 x 2.9 cm)
Weight XR-100FastSDD-70	4.4 ounces (125 g)
Total Power XR-100FastSDD-70	<2 Watt
Warranty Period	1 Year
Device Lifetime	Typical 5 to 10 years, depending on use

	TUV Certification Certificate #: CU 72072412 02 Tested to: UL 61010-1: 2004 R7 .05 CAN/CSA-C22.2 61010-1: 2004
Inputs	
Preamp Power XR-100FastSDD-70	±8 V @ 15 mA with no more than 50 mV peak-to-peak noise
OEM configuration	PA210/230 or X-123: ±5 V
Detector Power XR-100FastSDD-70	-400 V @ 25 μA, typical
Cooler Power	Current 450 mA maximum Voltage 3.5 V maximum with <100 mV peak-to-peak noise
<i>Note: The XR-100FastSDD-25mm<sup>2</sup> x 1mm thick includes its own temperature controller</i>	
Outputs	
Preamplifier Sensitivity	3.6 mV/keV typical (may vary for different detectors)
Polarity	Positive signal output (1 kΩ max. load)
Output Rise Time	<60ns
Feedback	Reset
Temperature Monitor Sensitivity	Varies with configuration When used with PX5, DP5, or X-123: direct reading in Kelvin through software.

## FastSDD-25mm<sup>2</sup> x 1mm Thick Available in ALL Amptek Configurations

Detector System



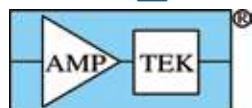
Complete X-Ray Spectrometer



OEM Examples



OEM's #1 Choice



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