

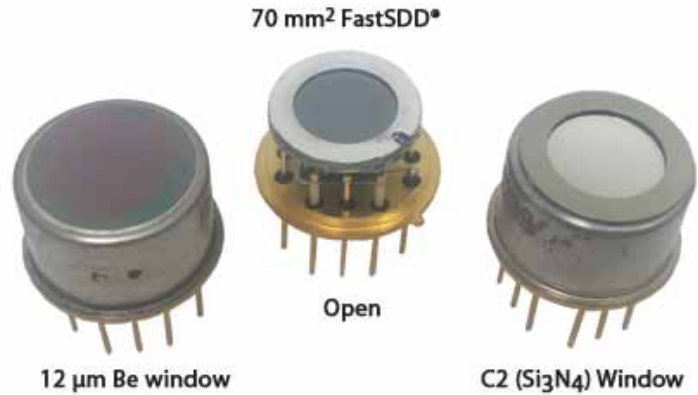
The True State-of-the-Art!

70 mm² FAST SDD[®]

Amptek has developed a 70 mm² FAST SDD[®] Detector in a TO-8 package. This is the same package that is used with all Amptek detectors. This makes the 70 mm² a drop-in replacement (same package, same pin-out, same voltages). Triple the count rate vs. the 25 mm² SDD with the same performance.

Features

- 70 mm² active area collimated to 50 mm²
- 123 eV FWHM Resolution @ 5.9 keV
- Count rates >2,000,000 CPS
- High Peak-to-Background Ratio - 26,000:1
- Preamplifier Rise Time <60 ns
- Windows: Be (0.5 mil) 12.5 μm or C2 (Si₃N₄)
- Radiation hard
- Detector thickness 500 μm
- TO-8 Package
- Cooling ΔT>85°K
- Multilayer Collimator

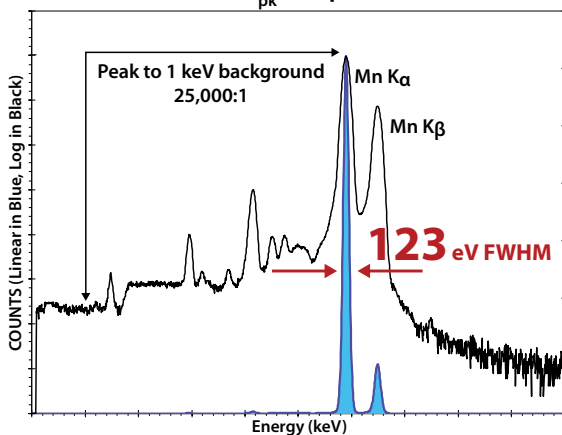


Applications

- 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

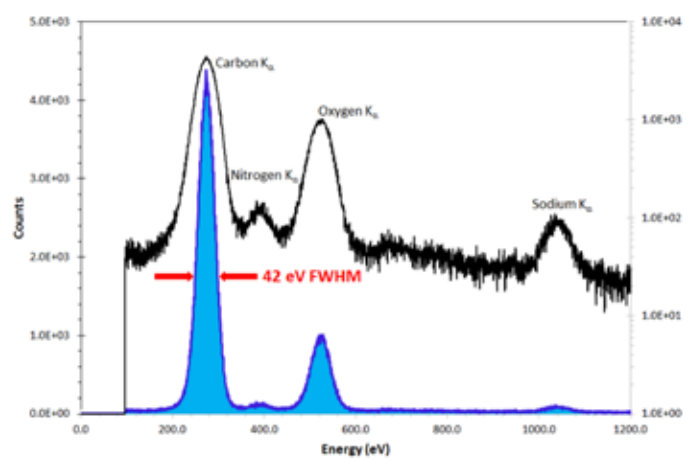
70 mm² FAST SDD[®] with Be Window

$T_{pk} = 4 \mu s$

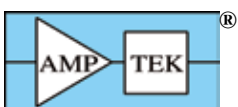


70 mm² FAST SDD[®] with C2 Window

EDS in SEM



OEM's #1 Choice




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

AMETEK[®]
MATERIALS ANALYSIS DIVISION

FastSDD-70 Specifications

General	
Detector Type	Silicon Drift Detector (SDD)
Detector Size	70 mm ² - collimated to 50 mm ²
Silicon Thickness	500 μm
Energy Resolution @ 5.9 keV (⁵⁵ 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) or C2 (Si3N4)
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
Storage & Shipping	Long-term Storage: 10+ years in dry environment Typical Storage & Shipping: -40°C to +85°C, 10 to 90% humidity noncondensing
Operation conditions	-35°C to +80°C

 <small>TÜVRheinland c US</small>	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 OEM configuration	±8 V @ 15 mA with no more than 50 mV peak-to-peak noise PA210/230 or X-123: ±5 V
Detector Power XR-100FastSDD-70	-100 to -180 V @ 25 μA, very stable <0.1% variation
Cooler Power Current Voltage	450 mA maximum 3.5 V maximum with <100 mV peak-to-peak noise <i>Note: The XR-100FastSDD-70 includes its own temperature controller</i>
Outputs	
Preamplifier Sensitivity Polarity Output Rise Time Feedback	3.6 mV/keV typical (may vary for different detectors) Positive signal output (1 kΩ max. load) <60 ns Reset
Temperature Monitor Sensitivity	Varies with configuration When used with PX5, DP5, or X-123: direct reading in Kelvin through software.

FastSDD-70 Available in ALL Amptek Configurations

Detector System



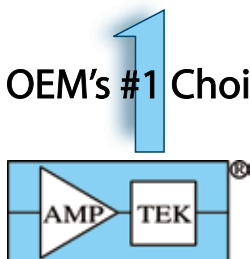
Complete X-Ray Spectrometer



OEM Examples



OEM's #1 Choice



Amptek, Inc. 14 DeAngelo Drive, Bedford MA 01730
 Amptek.sales@ametek.com www.amptek.com

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