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XR-100 Selection Guide

In selecting a detector, the user should consider resolution, area, thickness, and peak to background.

Detector Type Detector Area / Thickness Be Window Thickness	Guaranteed Energy Resolution eV FWHM @ 5.9 keV* Peak to Background Ratio**	XR-100 Part Number (must also order PX4 to be complete system)	X-123 Part Number (complete system)
<i>The following detectors are fully depleted and contain a Multi-layer (ML) Internal Collimator.</i>			
Si-PIN 6 mm ² / 500 μm 0.5 or 1.0 mil Be	145 - 170 eV 32 μs Peaking Time P/B Ratio: 6200/1	XY-FSG32MD-G3SP (1 mil Be) XY-FSG32MD-E2SP (0.5 mil Be)	ZY-FSG32MD-G3SP (1 mil Be) ZY-FSG32MD-E2SP (0.5 mil Be)
SDD 7 mm ² / 450 μm 0.5 or 1.0 mil Be	135 - 150 eV 9.6 μs Peaking Time P/B Ratio: 7000/1	XY-GS13AMD-G3SP (1 mil Be) XY-GS13AMD-E2SP (0.5 mil Be)	ZY-GS13AMD-G3SP (1 mil Be) ZY-GS13AMD-E2SP (0.5 mil Be)
Si-PIN 13 mm ² / 500 μm 1.0 mil Be	180 - 210 eV 32 μs Peaking Time P/B Ratio: 4100/1	XY-FS432MD-G3SP	ZY-FS432MD-G3SP
Si-PIN 25 mm ² / 500 μm 1.0 mil Be	190 - 230 eV 32 μs Peaking Time P/B Ratio: 2000/1	XY-FSJ32MD-G3SP	ZY-FSJ32MD-G3SP
Super SDD 25 mm ² / 500 μm 0.5 mil Be	127 - 140 eV 11.2 μs Peaking Time P/B Ratio: 8000/1	XY-GSJ3AMD-G2SP	ZY-GSJ32AMD-G2SP
<i>The following detectors are partially depleted and contain no internal collimator. Recommended for use between 1.5 and 8 keV.</i>			
Si-PIN 7 mm ² / 300 μm 1.0 mil Be	165 - 185 eV 44.8 μs Peaking Time P/B Ratio: 250/1 (5000/1 with external collimator)	XY-FS1120D-G3SP	ZY-FS1120D-G3SP
Si-PIN 13 mm ² / 300 μm 1.0 mil Be	200 - 220 eV 44.8 μs Peaking Time P/B Ratio: 550/1 (4000/1 with external collimator)	XY-FS4120D-G3SP	ZY-FS4120D-G3SP
*Peaking Time is approximately 2.4x shaping time. **The Peak to Background (P/B) Ratio is the ratio of the counts from 5.9 keV to 2 keV.			

Amptek Detector Comparison: Resolution Range (FWHM)

