



X-Ray Detector Selection Guide

X 射线探测器选购指南

All Amptek x-ray detector elements are available in either the [XR100](#) or [X-123](#) configuration. The XR100 configuration includes the detector and preamplifier only and must be paired with the [PX5](#) digital pulse processor, MCA, and power supply to be a complete system. The X-123 includes the digital pulse processor, MCA, and power supply and is a complete system. The XR100/PX5 combination is the most flexible and is designed for laboratory use. The PX5 can be used with other detectors, including other manufacturer's. The X-123 configuration is ideal for [OEM](#) and custom applications where size and portability are considerations.

[XR100](#) 或 [X-123](#) 型号中都配有所有的 Amptek X 射线探测器元件。XR100 型号中仅仅包括探测器和前置放大器, 而且必须配套使用 [PX5](#) 数字脉冲处理器, 多道分析器和电源才是一个完整的系统。X-123 是一个完整的系统, 它已经包含有数字脉冲处理器, 多道分析器和电源。XR100/PX5 是最灵活的一个组合, 专为实验室使用设计的。PX5 可以和其他探测器一起使用, 包括其他厂家生产的探测器。X-123 专为 [OEM](#) 设计, 并且更多考虑到用户使用时的尺寸以及轻便。

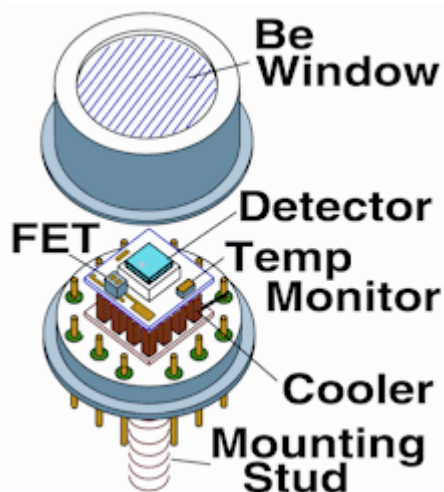


Figure 1. X-ray detector element.

图 1. X 射线探测器元器件.

[Click here](#) for specially priced systems.

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Figure 2. The [XR100/PX5](#) configuration.
图 2. [XR100/PX5](#) 配置



Figure 3. The [X-123](#) configuration.
图 3. [X-123](#) 配置

Detector Type Detector Area/Thickness Be Window Thickness Options 探测器类型 探测器面积/厚度 Be 窗厚度 可选项	Guaranteed Energy Resolution eV FWHM @ 5.9 keV* Peak to Background Ratio* 有保证的能量分辨率 eV FWHM @ 5.9 keV* 峰本比	XR100 Part Number (must also order PX5 to be complete system) XR100 零件登记号 (必须订购 PX5 才能组成完 整系统)	X-123 Part Number (complete system) X-123 零件登记 号(完整系统)
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The following detectors are fully depleted and contain an internal [Multi-Layer \(ML\) Collimator](#)
 下列的探测器属于完全耗尽的, 而且内部包含有多层准直器

Si-PIN 6mm ² /500μm 0.5 or 1.0 mil Be	145 - 165 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)
Si-PIN 13mm ² /500μm 1.0 mil Be	180 - 205 eV 32 μs Peaking Time P/B Ratio: 4100/1	XY-FS432MD-G3SP (1 mil Be)	ZY-FS432MD- G3SP (1 mil Be)
Si-PIN 25mm ² /500μm 1.0 mil Be	190 - 225 eV 32 μs Peaking Time P/B Ratio: 2000/1	XY-FSJ32MD-G3SP (1 mil Be)	ZY-FSJ32MD- G3SP (1 mil Be)
SUPER SDD 25mm ² /500μm 0.5 Be	125 - 140 eV 11.2 μs Peaking Time P/B Ratio: 8200/1	XY-GSJ3AMD-G2SP (0.5 mil Be)	ZY-GSJ3AMD- G2SP (0.5 mil Be)

The following detectors are partially depleted and contain [no internal collimator](#). Recommended for use
 下列的探测器属于部分耗尽的, 而且内部不包含多层准直器. 建议在 1.5 和 8 keV 之间使用.

Si-PIN 7mm ² /300μm 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 (1 mil Be)	ZY-FS1120D- G3SP (1 mil Be)
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Si-PIN 13mm ² /300μm 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 (1 mil Be)	ZY-FS4120D- G3SP (1 mil Be)
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*Peaking time is approximately 2.4 x shaping time.

*The Peak to Background (P/B) Ratio is the ratio of counts from 5.9 keV to 2 keV.

*峰化时间约是 2.4 倍的成形时间。

*峰本比 (P/B) 是 5.9 keV 和 2 keV 能量处的计数率之比。

Amptek Detector Comparison: Resolution Range (FWHM)

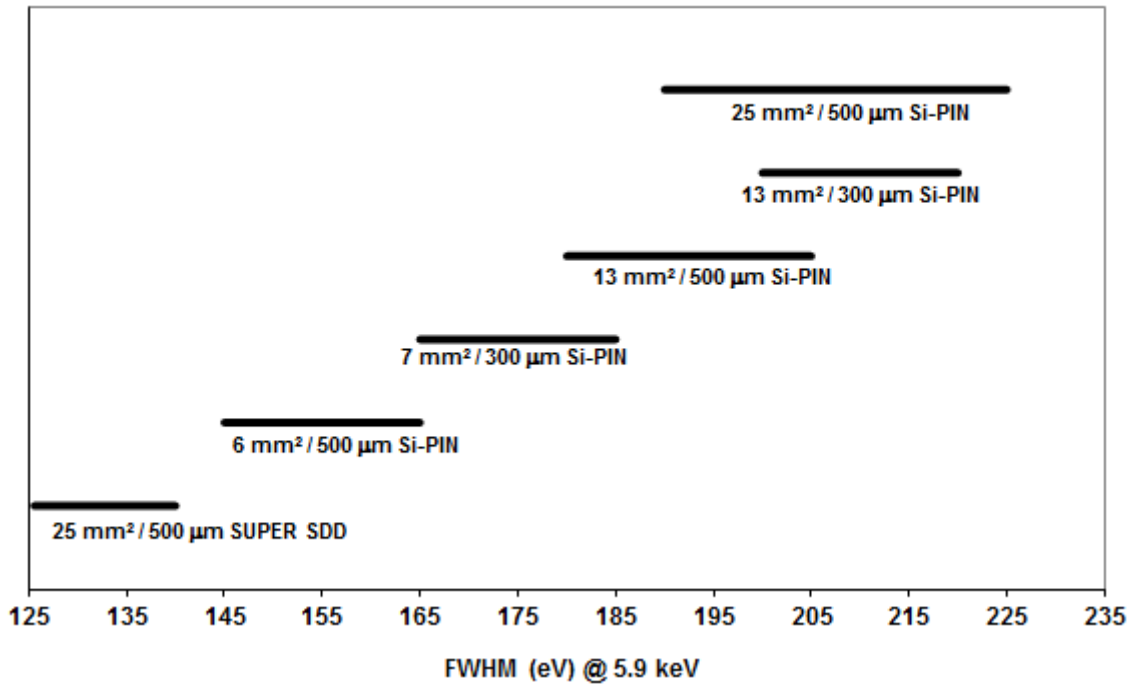


Figure 4. Amptek Detector Resolution Ranges. The user should not only consider resolution in selecting a detector, but also area, thickness, and peak to background.

图 4. Amptek 探测器的能量分辨率范围. 用户在选购探测器时, 不仅要考虑探测器的能量分辨率, 还要考虑探测面积, 厚度, 以及峰本比.

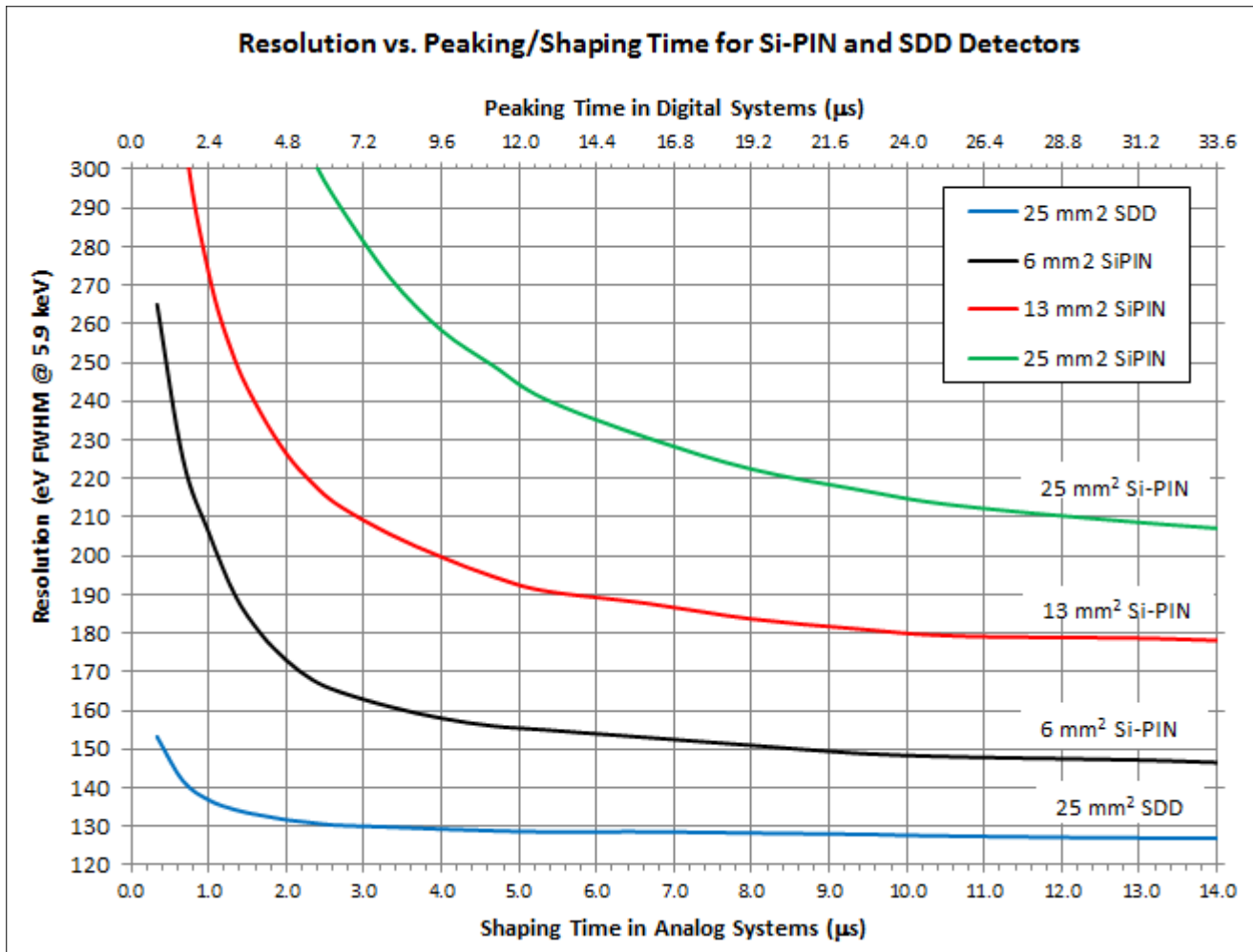


Figure 5. Resolution vs. Peaking/Shaping Time for Si-PIN and SDD Detectors.

图 5. Si-PIN 和 SDD 探测器的能量分辨率对峰化/成形时间。

[Selection chart in PDF format \(74 k\)](#)

[PDF 格式的选购表格 \(74 k\)](#)

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