

Sydor X-ray Strip Detector



The Sydor X-ray Strip Detector is a one dimensional array detector with excellent dynamic range that delivers high resolution, low noise measurements for time resolved low energy experiments. The detector utilizes a TEC cooled, fully depleted silicon sensor to reduce noise and increase sensitivity. It operates in the 3-30keV range with a resolution down to 350eV. The detector has an integrated dead-time calibration module and supports three channels per pixel with independent thresholds enabling highly accurate acquisition of signals within different energy ranges simultaneously.

SYDOR X-RAY STRIP DETECTOR	KEY PERFORMANCE PARAMETERS
SENSOR	
Type	Reverse-biased silicon diode array
Operating Temperature	Cooled to -30°C
Active area	4 x 80 mm ²
Sensor thickness	400 μm
Format	Single row of 640 pixels
Pixel size	75 x 4000 μm ² – (125 μm pitch)
ELECTRONICS	
Detection Method	Single Photon Counting
Maximum Counting Rate Per Pixel	1x10 ⁵ cps
Energy range	3-30 keV
Energy Resolution	~ 350 eV at 5.9 keV
Noise (dark count)	< 1 count per minute at 9 keV
Dynamic range	3 Separate 24 bit counters per pixel with 5 independent thresholds (2 windows +1 threshold)
Readout time	~ 1 ms
Framing rate	>500 Hz (24bit)
MECHANICAL	
Cooling	TEC cooled in sealed chamber with heat removal fan
Dimensions Detector (WHD)	150 mm x 118 mm x 188 mm
Weight	6 kg
SOFTWARE / CONTROL	
Software interface	Embedded EPICS IOC
User Controls	MEDM GUI with full detector control
Computer interface	Ethernet (10BASE-T)

Specifications subject to change at any time