

# rayonix SX165

**High-performance, high-resolution CCD X-ray detector**

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*for synchrotron or rotating anode sources*





The Rayonix sx165 is fully compatible with the mardtb automated goniostat and the marcsa automated sample changer.

**rayonix**  
**sx165**

## Technical Specifications

<b>Type</b>	Single CCD; single fiber-optic taper		
<b>X-ray Sensitive Surface</b>	Round, 165mm diameter (21,000mm <sup>2</sup> )		
<b>DQE (Detective Quantum Efficiency)</b>	Up to 0.8 for 8keV to 12keV radiation		
<b>PSF (Point Spread Function)</b>	FWHM = 100μm; FW 1%M = 300μm		
<b>Gain</b>	8 e <sup>-</sup> /12keV photon		
<b>Read Noise</b>	9 e <sup>-</sup> /pixel @ 3.5 sec. readout; 13 e <sup>-</sup> /pixel @ 2.5 sec. readout		
<b>Dark Current</b>	<0.01 e <sup>-</sup> /pixel/sec. @ 2048 × 2048 pixels		
<b>Full Well Capacity</b>	360,000 e <sup>-</sup> /pixel = 45,000 12keV photons/pixel @ 2048 × 2048 pixels		
<b>Dynamic Range</b>	16 bits		
<b>Fiber-optic Taper</b>	2.7:1 demagnification ratio		
<b>CCD Chip</b>	61mm × 61mm; 4096 × 4096 15μm pixels		
<b>CCD Operating Temperature</b>	-70° C		
<b>Cooling</b>	Closed-cycle refrigeration		
<b>Readout Electronics</b>	4-channel readout; 16-bit ADCs		
<b>Readout Options (Software Selectable):</b>			
	<b>On-chip Binning</b>	<b>Pixel Size</b>	<b>Readout Time</b>
	2 × 2	80μm	2.5 sec.
	4 × 4	160μm	1.0 sec.
	8 × 8	320μm	0.5 sec.
			<b>Number of Pixels in Image</b>
			2048 × 2048
			1024 × 1024
			512 × 512
<b>Computer Interface</b>	Proprietary PCI full-frame DMA; single fiber-optic cable		
<b>Physical Dimensions:</b>			
<b>Detector Head</b>	21.5cm diameter × 34cm; weight: approx. 18kg		
<b>Power Supply/Cooling Assembly</b>	70cm × 57cm × 65cm; weight: approx. 60kg		

**Frameshift software option available**  
for time-resolved imaging in milliseconds

**rayonix**  
**High-performance X-ray technology**

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