

rayonix

# LX series

HS

High-speed WAXS X-ray detector designed for simultaneous SAXS/WAXS

Exclusive Frame-Transfer Technology for high speed X-ray data collection without compromising resolution or data quality

- One millisecond dead time
- Configurable imaging options
- Excellent quantum efficiency
- Superb quality control



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High-performance X-ray technology

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In order to allow SAXS to pass through while measuring WAXS, scientists have been asking for an X-ray detector with a hole in the middle. The resulting LX series has a long rectangular detecting surface, engineered with a notch to allow the direct beam and SAXS data to pass through. Designed with the new, exclusive Rayonix chip utilizing Frame Transfer Technology.

## User-Configurable Imaging Parameters

On-Chip Binning	frames/sec	pixel size in micron
1 × 1	2.5	44
2 × 2 (standard)	10	89
3 × 3	20	133
4 × 4	40	177
5 × 5	55	220
6 × 6	75	266
8 × 8	100	354
10 × 10	140	440
<b>Noise</b>	High Speed mode: 8 e <sup>-</sup> /pixel	Low Noise mode: 4 e <sup>-</sup> /pixel



View of the Rayonix LX170 HS showing the exclusive notch to allow small angle data to pass through to a SAXS X-ray detector.

## Technical Specifications

<b>Sensors</b>	Proprietary Rayonix Frame-Transfer CCD
<b>Dead Time</b>	1 millisecond
<b>Full Well Capacity (standard 2 × 2 binning)</b>	400k e <sup>-</sup> /pixel
<b>Dark Current</b>	0.003 e <sup>-</sup> /pixel/second or 0.0004 photons/pixel/second (12keV)
<b>Electro-optical Gain</b>	7e <sup>-</sup> /12keV photon
<b>Standard Phosphor</b>	40 micron thick , many custom options available
<b>PSF, FWHM</b>	100µm with 40µm thick phosphor, 65µm with 25µm thick phosphor
<b>Sensor Operating Temperature</b>	-80° C
<b>Fiber-optic Taper Demagnification Ratio</b>	2.92:1
<b>Cooling</b>	Closed-cycle refrigeration
Real-time data collection, correction and storage; High volume data storage solutions also available.	

## LXHS Model-specific Technical Specifications

		rayonix LX170 HS	rayonix LX255 HS
<b>FT-CCDs bonded to Fiber-optic Tapers</b>		<b>2 modules</b> <b>7.4 MegaPixels</b>	<b>3 modules</b> <b>11 MegaPixels</b>
<b>Active Imaging Surface</b>		85 mm × 170 mm, 14400 mm <sup>2</sup>	85 mm × 255 mm, 21600 mm <sup>2</sup>
<b>Readout electronics</b>	16 channels per FT-CCD	32 channels	48 channels
<b>Physical Dimensions:</b>			
Detector Head	Height × Width × Depth	34 cm × 22 cm × 30 cm	37 cm × 30 cm × 26 cm
	Approximate Weight	20 kg	30 kg
Electronics/ Cooling Assembly	Height × Width × Depth	175 cm × 64 cm × 64 cm	175 cm × 64 cm × 64 cm
	Approximate Weight	215 kg	215 kg