

rayonix SX series



High speed, single module X-ray detectors



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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With the implementation of Frame Transfer Technology, any number of high speed single-module configurations are possible. Currently Rayonix is offering the sx30 and sx85, both based on this new technology. Special combinations of fiber-optic taper ratios and sizes as well as phosphor options are easily accommodated.



User-Configurable Imaging Parameters

| | | rayonix SX30  | rayonix SX85  |
|------------------|--|---|--|
| On-Chip Binning | frames/sec | pixel size in micron | |
| 1 × 1 | 2.5 | 16 | 44 |
| 2 × 2 (standard) | 10 | 32 | 89 |
| 3 × 3 | 20 | 48 | 133 |
| 4 × 4 | 40 | 64 | 177 |
| 5 × 5 | 55 | 80 | 220 |
| 6 × 6 | 75 | 96 | 266 |
| 8 × 8 | 100 | 128 | 354 |
| 10 × 10 | 140 | 160 | 440 |
| Noise | High Speed mode: 8 e ⁻ /pixel | | Low Noise mode: 4 e ⁻ /pixel |

Technical Specifications

| | |
|---|---|
| Sensor | Proprietary Rayonix Frame-Transfer CCD, bonded to fiber-optic taper |
| Dead Time | 1 millisecond |
| Readout | 16 channels |
| Resolution | 1920 x 1920, 3.7 MegaPixel |
| Full Well Capacity (standard 2 × 2 binning) | 400k e ⁻ /pixel |
| Phosphor | 40µm thick standard, custom options available |
| Sensor Operating Temperature | -80° C |
| Cooling | Closed-cycle refrigeration |
| Real-time data collection, correction and storage; High volume data storage solutions also available. | |

SX HS Model-specific Technical Specifications

| | | rayonix SX30  | rayonix SX85  |
|--|------------------------|---|--|
| Active Imaging Surface | | 30 mm × 30 mm, 900 mm ² | 85 mm × 85 mm, 7225 mm ² |
| Fiber-optic Taper Demagnification Ratio | | 1:1 | 2.92:1 |
| PSF, FWHM | | 100µm with standard phosphor, ~25µm with high resolution custom phosphor | 100µm with standard phosphor, ~65µm with high resolution custom phosphor |
| Electro-optical Gain | | 70e ⁻ /12KeV photon | 9e ⁻ /12keV photon |
| Dark Current | | 0.003 e ⁻ /pixel/second or 0.00004 photons/pixel/second (12keV) | 0.003 e ⁻ /pixel/second or 0.0003 photons/pixel/second (12keV) |
| Physical Dimensions: | | | |
| Detector Head | Height × Width × Depth | 33 cm × 18cm × 40cm | 33 cm × 27cm × 40cm |
| | Approximate Weight | 15kg | 17kg |
| Electronics/ Cooling Assembly | Height × Width × Depth | Rolling cabinet, 70 cm × 57 cm × 65 cm | Rolling cabinet, 70 cm × 57 cm × 65 cm |
| | Approximate Weight | 60 kg | 60 kg |