X-ray Electron Multiplied cameras

PSL has supplied X-Ray Electron Multiplied cameras for the last 4 years to end users and OEMs. Fibre optic coupling enables optimum photonic transmission down to EMCCD sensors and best possible signal to noise ratio. Special gating options down to 1 ms, combined with time delay integration , allows fast digital acquisition of transcient and/or low light level events.

Applications:

- Fluoroscopy imaging
- Low dose X-ray imaging
- 2 dimensional photon counting
- X-ray nano CT
- Coherent Diffraction Imaging
- 2 dimensional X-ray light element analysis
- X-ray microscopy
- High sensitivity X-ray scanning
- Screening of small proteins crystals

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Photonic Science Ltd

Information / products and services

Scientific detector systems

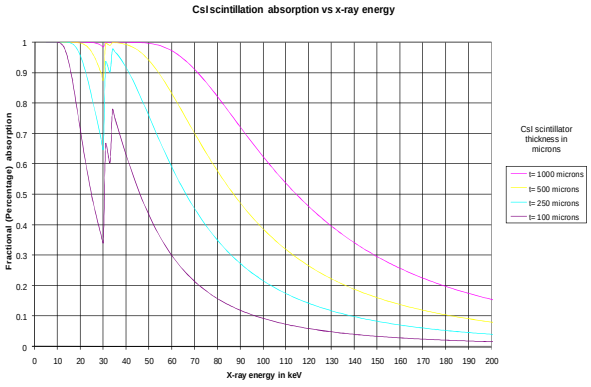
X-ray EMCCD cameras

Photonic Science Ltd selects premium grade EMCCDs with :

- 8 microns pixel size
- photon counting sensitivity with up to 2,000 amplification gain
- Input size varies from 11mm up to 34mm diagonal
- Beryllium and fibre optic input windows
- High quantum efficiency giving single photon detection capability
- 2D fast readout up to 15 fps at megapixel resolution
- 1D scanning mode
- Time delay integration for enhanced sensitivity
- Photon counting sensitivity with real time acquisition
- High spatial resolution down to < 15 microns

XEM CCD cameras

- 1002 (h) x 1004 (v) CCD array
- Input pixel size : 8 x 8, 24 x 24 microns
- Active area : 8 x 8 mm, 24 x 24 mm
- 15 fps at full resolution @ 17.5 MHz
- Readout noise: < 1 electron @ with on chip CCD gain
- Full well capacity: 30,000 electrons in binning 1x1
- Dark current : 1 electron / pixel / second
- Full vertical binning for 1D scanning at 1kHz
- Time Delay intergation option for enhanced sensitivity / dynamic range
- 12-bit digitisation
- Photon counting acquisition mode with 32-bit frame accumulation
- GdOS:Tb scintillator for operation from 5-55 keV with minimum feature recognition of 20 lp / mm : typically 14 microns for the smallest input size up to 50 microns for the largest input size
- CsI:Tl structured scintillator for operation from 30-100 keV
- Camera link / GigE interface
- Multiplexed acquisition with multi camera systems
- Synchronisation / control : via TTL pulse



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