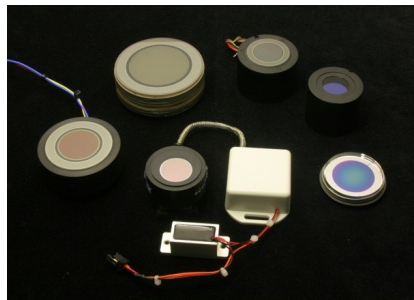


## X-ray intensified high resolution CCD cameras

PSL has supplied X-ray intensified high resolution CCD cameras for the last 7 years to end users and OEMs. A selection of high responsivity CCDs, combined with low noise characteristics, enables optimum photonic collection with best possible signal to noise ratio. Special read whilst expose mode allows 100% shutterless duty cycle and high sensitivity operation in low light level conditions.



## Applications:

- Microdiffraction
- X-ray imaging
- X-ray micro CT
- Laue imaging
- Protein crystallography at up to 50 keV
- Gisaxs
- Powder Diffraction
- Non Destructive Testing
- Phase Contrast Imaging
- Small animal imaging
- Small Angle X-ray Scattering

## Photonic Science

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## Photonic Science

## Information / products and services

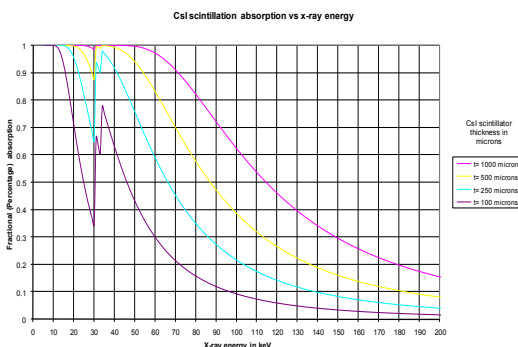


Scientific detector  
systems

## X-ray intensified HR cameras

Photonic Science Ltd selects premium grade intensifiers, CCD sensors and fibre optic bundles:

- Small pixel size less < 45 microns pixel size at the detector input
- Intensifier gain range up to 8,000 giving photon counting sensitivity
- Very high resolution micro channel plate with up to 55 lp/mm resolution
- Fast decay phosphor screens enabling gated experiments
- Software switchable 10 and 20MHz scanning frequencies
- Small area sensor with taper input varying 5.6mm up to 66mm diagonal
- Gating time down to 100 ns
- Simultaneous integration / readout enabling 100% duty cycle acquisition
- GdOS polycrystalline or structured CsI scintillators
- Camera link and GigE digital interface
- Low profile electronics



## X-ray intensified megapixel HR CCD camera

- 1392 (h) x 1040 (v) CCD array
- Input pixel size : available from 5.2 x 5.2; 10.37 x 10.37; 14.4 x 14.4; 28.8 x 28.8 and up to 40.31 x 40.31 microns
- Input size : available from 7.3 x 5.4 mm; 14.4 x 10.8 mm; 20.5 x 14.9 mm; 40.1 x 30 mm and 56.11 x 41.92 mm respectively
- High resolution intensifier with 55 lp/mm resolution
- 11 fps at full resolution @ 20 MHz and 5 fps @ 10 MHz
- Full well capacity : 13,000 electrons in binning 1x1; 22,000 electrons in binning 2x2
- Readout noise : 5-7 electrons @ 10 MHz with interpolation noise reduction
- 12-bit digitisation
- 16-bit extended dynamic range
- GdOS:Tb scintillator for operation from 5-55 keV with minimum feature recognition of 10 lp / mm : typically 12 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
- Synchronisation / control : via TTL pulse

## X-ray intensified 4 megapixel HR CCD camera

- 2048 (h) x 2048 (v) CCD array
- Input pixel size : available from 7.4 x 7.4; 17.3 x 17.3; 25.9 x 25.9 microns
- 20.5 x 14.9 mm; 40.1 x 30 mm and 56.11 x 41.92 mm respectively
- High resolution intensifier with 55 lp / mm resolution
- 2 fps at full resolution @ 12 MHz
- 3.5 fps in binning 2x2 @ 1024 x 1024 resolution
- Readout noise : 7-9 electrons @ 12 MHz with interpolation noise reduction
- Full well capacity : 40,000 electrons in binning 1x1 - 80,000 electrons in binning 2x2
- 16-bit extended dynamic range
- USB 2.0 interface
- Synchronisation / control : via TTL pulse

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