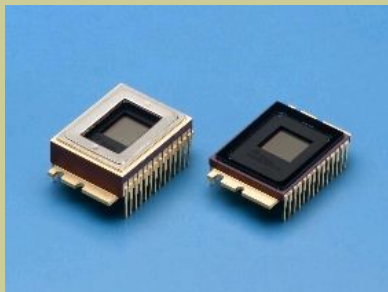


Cooled frame transfer EMCCD cameras

PSL has supplied cooled frame transfer EMCCD cameras for the last 5 years to end users and OEMs. A selection of high responsivity CCDs, combined with low noise high built EM gain characteristics, enables optimum photonic collection with best possible signal to noise ratio. Special read whilst expose mode allows 100% duty cycle and high sensitivity operation in low light level conditions.



Applications:

- Fluorescence imaging
- Astronomy
- TIRF microscopy
- Confocal microscopy / cell screening
- Chemiluminescence
- Spectroscopy
- Single molecule imaging
- Cell motility / live cell recording
- Solar panel characterisation
- Electron microscopy
- Biochip reader
- Raman spectroscopy

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Photonic Science Ltd

*Information /
products and
services*



Scientific detector
systems

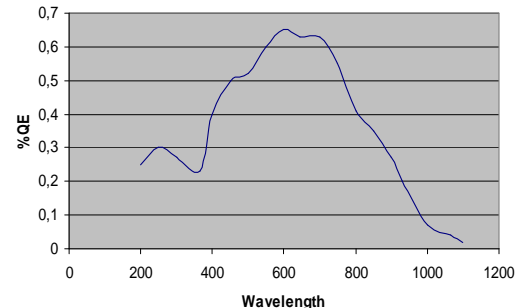
Cooled EMCCD cameras

Photonic Science Ltd selects premium grade EMCCD sensors :

- Small pixel size less < 10 microns pixel size
- Cooled CCD sensor with 55 degrees C delta T
- 17.5 MHz frequency
- Sensor size from 6 and 11 mm diagonal
- Quartz, glass and or fibre optic input windows
- Very low readout noise < 25 electrons
- High EM gain : up to > 2000 enabling sub electron readout noise with near single photon counting detection capability
- EM gain calibration and gain compensation for quantitative measurements
- Very low dark current with less than 0.5 electrons per pixel per second (cooling options for further noise reduction)
- Simultaneous integration / readout enabling 100% duty cycle acquisition
- Kinetic mode allowing fast time delay integration mode at 1KHz max frequency
- On chip binning
- Full vertical binning option
- Detector synchronisation : pixel locked for dual channel acquisition
- Camera link and GigE digital interface
- Peltier / fan cut off option
- Low profile electronics
- Air cooled / water cooled option

Cooled megapixel EMCCD camera

- 1002 (h) x 1004 (v) CCD array
- Input pixel size : 8 x 8 microns
- 11 mm diagonal
- 15 fps at full resolution @ 17.5 MHz
- 30 fps in binning 2x2 @ 17.5 MHz
- Readout noise : 22-25 electrons @ 17.5 MHz with no EM gain
- 1.5 electron with x 40 absolute EM Gain
- Calibrated EM gain range up to > 2,000 with no ageing effects
- Temperature gain compensation down to < 1% accuracy
- Full well capacity : 40,000 electrons in binning 1x1
- Dark current : < 0,5 electrons / pixel / second
- Full vertical binning for 1D spectroscopy with 1ms transfer time
- 12-bit digitisation
- Camera link / GigE interface
- Synchronisation / control : via TTL pulse or pixel clock



Cooled Colour VGA EMCCD cameras

- 658 (h) x 496 (v) CCD array
- Input pixel size : 10 x 10 microns
- 8.24 mm diagonal
- 25 fps at full resolution @ 12.5 MHz
- Maximum frame rate >200 Hz with 1/8th ROI
- Readout noise : 25-30 electrons @ 12.5 MHz
- < 1 electron readout noise with EM gain
- Full well capacity : 28,000 electrons
- Dark current : 1 electron / pixel / second
- 3x12 bit digitisation RGB
- Camera link / GigE interface
- Synchronisation / control : via TTL pulse or pixel clock

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