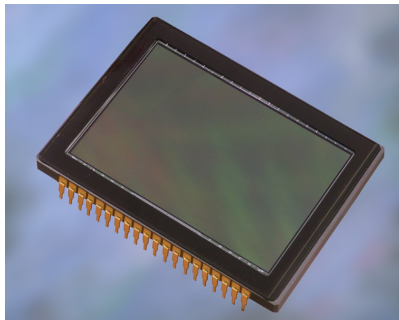


## Cooled interline transfer CCD 11 and 16 megapixel cameras

PSL has supplied cooled Very High Resolution CCD cameras for the last 5 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:

- Fluorescence imaging
- Particle Image Velocimetry (PIV)
- Spray imaging
- Confocal microscopy / cell screening
- Chemiluminescence
- Spectroscopy
- Single molecule imaging
- Cell motility / live cell recording
- Solar panel characterisation
- Electron microscopy
- Biochip reader
- Laser induced fluorescence

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Photonic Science



**Information /  
products and  
services**



Scientific detector  
systems

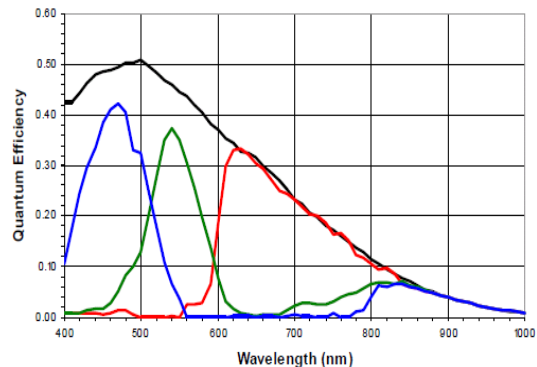
## Cooled interline VHR cameras

Photonic Science Ltd selects premium grade CCD sensors:

- Small pixel size less < 10 microns pixel size
- Cooled CCD sensor with 55 degree C delta T
- 20MHz scanning frequency
- Large area sensor size from 43.3 mm diagonal
- Quartz, glass and or fibre optic input windows
- Low read out noise < 15 electrons with noise interpolation reduction
- Very low dark current with less than 0.05 electron per pixel per second (cooling options for further noise reduction)
- Gating time from microseconds to > 30 minutes
- Simultaneous integration / readout enabling 100% duty cycle acquisition
- Dual tap read out for fast acquisition
- On chip binning
- 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 11 megapixel CCD camera

- 4008 (h) x 2672 (v) CCD array
- Input pixel size: 9 x 9 microns
- 43.3 mm diagonal
- 1.8 fps at full resolution @ 20 MHz
- 5 fps in binning 4 x 4 @ 1002 x 668 resolution
- Readout noise: 14-18 electrons @ 20 MHz with interpolation noise reduction
- Full well capacity: 45,000 electrons in binning 1x1; 90,000 electrons in binning 2x2
- Dark current: <0,05 electrons / pixel / second
- 12-bit digitisation
- 16-bit extended dynamic range
- Camera link / GigE interface
- Synchronisation / control : via TTL pulse or pixel clock



## Cooled 16 megapixel CCD cameras

- 4872 (h) x 3248 (v) CCD array
- Input pixel size : 7.4 x 7.4 microns
- 43.3 mm diagonal
- 1.1 fps at full resolution @ 20 MHz
- 3 fps in binning 4 x 4 @ 1218 x 812 resolution
- Readout noise : 12-16 electrons @ 20 MHz with interpolation noise reduction
- Full well capacity : 25,000 electrons
- Dark current: 0,05 electrons / pixel / second
- 12-bit digitisation
- 16-bit extended dynamic range
- Camera link / GigE interface
- Synchronisation / control : via TTL pulse or pixel clock

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