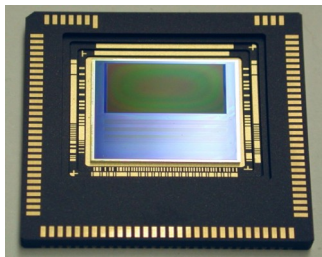


## Cooled sCMOS cameras

PSL is starting to develop cooled sCMOS cameras to end users and OEMs. A selection of high responsivity sCMOS, sensors with intrinsic noise floor down to Single Electron enables optimum photonic collection with best possible signal to noise ratio up to 16-bit dynamic range. Special read whilst expose mode allows 100% duty cycle and high sensitivity operation in low light level conditions.



## Applications

- Fluorescence imaging
- Astronomy
- TIRF / Super resolution microscopy
- Confocal microscopy / cell screening
- Chemiluminescence
- Spectroscopy
- Single molecule imaging
- Cell motility / live cell recording
- Hyper spectral imaging
- Electron microscopy
- Biochip reader
- Raman spectroscopy

## Photonic Science

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## Photonic Science



## Information / products and services



Scientific detector  
systems

## Cooled sCMOS cameras

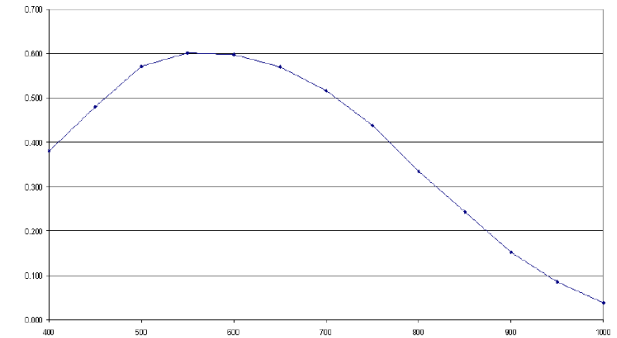
Photonic Science Ltd selects premium grade sCMOS sensors :

- Sensor size 14,31 mm diagonal
- Quartz, glass and or fibre optic input window
- Small pixel size: 6.5microns pixel size
- Cooled sensor with 40 degrees C delta T
- 100MHz global frequency (200 MHz maximum rate, option to be discussed ARO)
- Parallel column bus read out
- Single slope 11bit ADC allowing simultaneous sensitivity and dynamic range
- Very low readout noise ~2 electrons in rolling shutter mode
- Dynamic range: up to 15,000:1
- 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 in hardware triggered mode
- Peltier / fan cut off option
- Low profile electronics
- Air cooled / water cooled option

## Cooled two megapixel sCMOS camera

- 1920 (h) x 1080 (v) sCMOS array
- Input pixel size : 6.5 x 6.5 microns
- 12.48mm x 7.02mm
- 18 fps at full resolution in rolling shutter mode 16-bit dynamic range (dual high and low gain channels multiplexed), 37 fps in rolling shutter 12-bit dynamic range (single channel high or low gain mode) @ 100MHz with Gigabit Ethernet interface
- Readout noise : ~2 electrons in rolling shutter
- High gain channel: 10x to 30x
- Low gain channel: 1x to 2x
- Full well capacity : 30,000 electrons at full résolution
- Dark current : < 0,5 electrons / pixel / second
- Peak Quantum efficiency: > 50% @ 600nm
- On chip multiplexing up to 22-bit
- ROI read out allowing faster frame rate: ie 50fps single channel (low or high gain) with 1392x1080 resolution
- Gigabyte Ethernet
- Single / full base camera link interface for faster version (to be discussed ARO)
- Synchronisation / control : via TTL pulse

## Quantum Efficiency



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