

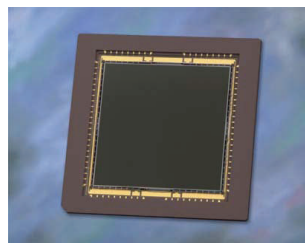


## Full frame back illuminated CCD detectors

**Spectroscopy detectors allow near single photon counting sensitivity thanks to back illuminated CCDs.**

### **Direct detection from X-ray to Near Infra Red**

- 90% QE in the visible range, 30% in the NIR, 50% in DUV , XUV  
With up to 100,000 electrons full well capacity.
- 1024 x 1024, 2048 x 2048 and 4096 x 4096 format, 13 to 15 microns pixel size, vacuum operation.
- 0.05 electrons / pixel / sec dark current with 7 electrons read out noise.
- Virtual shutter driver allowing shutterless operation with frame shift smear removable when short integration periods are used.
- Ethernet / USB class drivers.

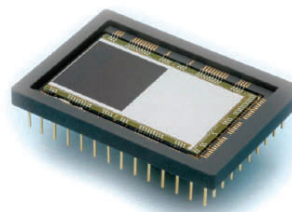


## Frame transfer EM CCD detectors

**Imaging detectors achieve single photon counting sensitivity thanks to back illuminated CCDs.**

### **DUV to Near Infra Red detection with integrated shutter**

- Virtual phase megapixel CCD allowing high quantum efficiency up to 65% in the visible, 20% in the NIR with up to 40,000 electrons full well capacity and high anti blooming suppression: up to x100.
- 1002 x 1004, 640 x 480 format, 8 to 10 microns pixel size.
- Deep cooling enabling on chip EM CCD gain up to 2,000:1 with less than 1 electron read out noise for single photon detection.
- Gain linearization enabling repeatable acquisition.
- 1 dimensional acquisition with full vertical binning and time delay integration.
- Ethernet / camera link class drivers.

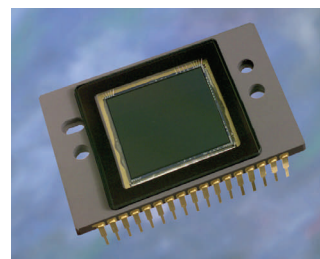


## Very high resolution interline transfer CCD & CMOS detectors

**Imaging detectors achieve very high resolution and very low noise at high frame rate operation.**

### **UV to Near Infra Red detection with fast integrated shutter**

- High responsivity CCD/ CMOS with high quantum efficiency up to 65% with very high antiblooming suppression: up to 300x.
- 1392 x 1042, 2048 x 2048, 4008 x 2672 format, 6.45 to 9 microns pixel size.
- Dual scanning frequency allowing fast and low noise acquisition.
- 0.005 electrons / pixel/ sec with 5 electrons read out noise.
- Optimised high vertical binning for fast frame rate acquisition with 100% duty cycle / continuous acquisition.
- Ethernet / firewire class drivers.



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