

HIGH SPEED LOW LIGHT LOW NOISE SCIENTIFIC CAMERA



SCIENTIFIC CAMERA FOR VISIBLE IMAGING



0.4 – 0.9
 μm



2067 FPS



Subelectron
RON



EMCCD
240x240

MAIN FEATURES

- Photon counting
- 24 μm pixel pitch
- Ultra-low latency Camera Link[®] Full interface : 43 μs

FASTEST EMCCD FOR HIGH SPEED AND LOW LIGHT APPLICATIONS

APPLICATIONS

ASTRONOMY:

Adaptive Optics for Astronomy
Space Debris Tracking
Speckle Interferometry
Secure laser communications
(long distance, space to ground)
Long range surveillance and Tracking

LIFE SCIENCES:

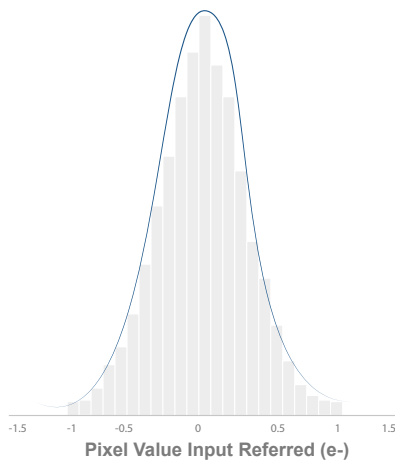
Cellular Microscopy
Fluorescence Microscopy

OCAM²K PERFORMANCES

| TEST MEASUREMENT | Result | Unit |
|--|---------|--|
| Maximum speed Full Frame | 2067 | FPS |
| Readout noise at 2000 FPS and multiplication gain ~600 | 0.3 | e- |
| Dark signal at 2000 FPS at -45°C | <0.01 | e- pixel ⁻¹ frame ⁻¹ |
| Quantization | 14 | bit |
| Detector Operating Temperature | -45 | °C |
| Peak Quantum Efficiency at 650nm | 95 | % |
| Linearity at gain x1000 from 10 e- to 150 e- | < 3 | % |
| Linearity at gain x1 from 15,000 e- to 150,000 e- | < 3 | % |
| Image Full Well capacity at gain x1 | 270 000 | e- |
| Ultra low latency Camera Link® Full interface | 43 | µs |
| Maximum speed in 2 x 2 binning mode | 3700 | FPS |

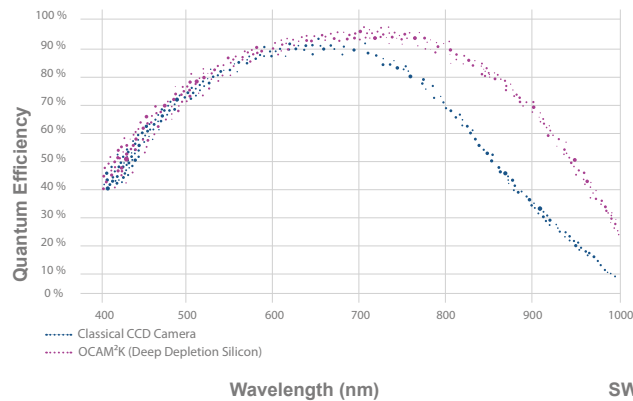
| ADDITIONAL FEATURES |
|--|
| Output : Camera Link® Full |
| Optical Interface : C-Mount |
| 14 bits precision A/D converter |
| Integrated cooling temperature controller |
| Fully sealed resistant aluminum body with low thermal gradient |
| Clock & Trigger input/output for synchronous operation |
| Custom design and Read Out modes available upon request |

NOISE HISTOGRAM FOR GAIN X 1000



TYPICAL QUANTUM EFFICIENCY, NO WINDOW, AT 228°K

CDD220 QE at -45°C Basic ER1



SWaP : H175 x W76 x L242.4 mm, 4.2 kg, up to 90 W typical with cooling

WAVEFRONT SENSOR OPTION

| MICROLENS ARRAY SPECIFICATIONS (standard proposal, customizable on request) | Result | Unit |
|--|----------|------|
| Focal length (distance to maximum intensity) @ 633nm | 22 | mm |
| Number of sub-apertures | 20 x 20 | N/A |
| Lens shape | Square | N/A |
| Lens pitch | 288 | µm |
| Lens clear aperture | >286 | µm |
| Lens array position on substrate | Centered | N/A |
| Fill factor | >98 | % |

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