

## HIGH SPEED LOW NOISE ELECTRONIC SHUTTERED SCIENTIFIC CAMERA



SCIENTIFIC CAMERA FOR VISIBLE IMAGING



0.4 – 0.9  
 $\mu\text{m}$



2067 FPS



Subelectron  
RON



EMCCD  
240x240

### MAIN FEATURES

- Photon counting
- 24  $\mu\text{m}$  pixel pitch
- Ultra-low latency Camera Link® Full interface : 43  $\mu\text{s}$
- Embedded Electronic Shutter < 0.05  $\mu\text{s}$

FASTEST EMCCD FOR HIGH SPEED LOW LIGHT SHUTTERED APPLICATIONS

### APPLICATIONS

#### ASTRONOMY:

Laser guide star adaptive optics

#### LIFE SCIENCES:

Cellular Microscopy  
Fluorescence Microscopy

#### LASERS:

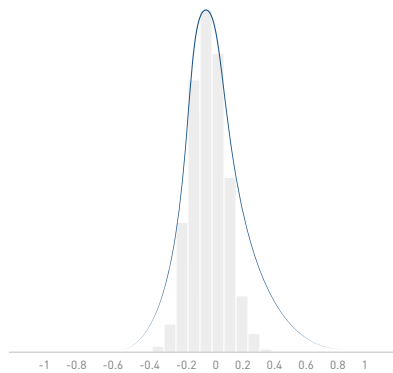
Laser Pulsed applications

# OCAM<sup>2</sup>S 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 <sup>-1</sup> frame <sup>-1</sup>
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
Shutter resolution	< 0.05	µs

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
Internal or External Trigger modes
Single, Burst, Sweep triggering

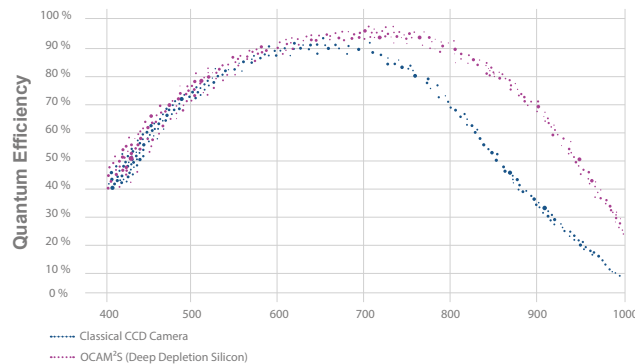
NOISE HISTOGRAM FOR GAIN X 1000



Pixel Value Input Referred (e-)

TYPICAL QUANTUM EFFICIENCY, NO WINDOW, AT 228°K

CCD219 QE at -45°C Basic ER1



Wavelength (nm)



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	%

First Light Imaging SAS  
 Europarc Sainte Victoire Bât 6, Route de Valbrillant, Le Canet 13590  
 Meyreuil FRANCE  
 Tel.: + 33 4 42 61 29 20  
[www.first-light-imaging.com](http://www.first-light-imaging.com)  
[contact@first-light.fr](mailto:contact@first-light.fr)

First Light Imaging Corp.  
 185 Alewife Brook Parkway, Suite 210, Cambridge, MA 02138 USA  
[www.first-light.us](http://www.first-light.us)

