

HIGH SPEED GLOBAL SHUTTER SCIENTIFIC CMOS CAMERA



VISIBLE
400 - 1000 nm



Very high speed






Very low noise



Optimized size/speed/pitch
CMOS Monochrome sensors
with HDR



SDK compatible with μ Manager,
LabVIEW, MatLab, , , 

AVAILABLE IN 3 VERSIONS:
0.5 MP, 1.7 MP OR 7.1 MP
IN GLOBAL SHUTTER



APPLICATIONS

LGS WAVEFRONT SENSING:

Space Debris Tracking
AO assisted Satellite tracking
Ground based space
situational awareness

ASTRONOMY:

Adaptive Optics
Solar astronomy

HIGH END INDUSTRY:

Particle velocimetry
Rayleigh thermometry

LIFE SCIENCES:

Fluorescence microscopy
Super resolution microscopy
Cell motility studies
Ion imaging / Physiology

C-BLUE One PERFORMANCES

| TEST MEASUREMENT* | C-BLUE One 0.5 MP | C-BLUE One 1.7 MP | C-BLUE One 7.1 MP | Unit |
|---|-------------------|-------------------|-------------------|---------------------|
| Sensor size | 816 x 624 | 1608 x 1104 | 3216 x 2208 | Pixels |
| Pixel pitch | 9 | 9 | 4.5 | µm |
| Maximum speed Full Frame in GLOBAL SHUTTER (in 8 bits) | 1 594 | 662 | 207 | FPS |
| Maximum speed Full Frame in GLOBAL SHUTTER (in 12 bits) | 941 | 481 | 134 | FPS |
| Readout Noise* (in 12 bits, High gain, 24 dB, @ 50µs) | 2.35 | 2.33 | 1.38 | e ⁻ |
| Dark Current* (High gain, 24 dB) | 1.39 | 0.96 | 0.24 | e ⁻ /p/s |
| Quantization | 8, 12 | 8, 12 | 8, 12 | bit |
| Quantization with HDR (High Dynamic Range) | 16 | 16 | 16 | bit |
| Shutter Architecture | global | global | global | n/a |
| Minimum integration time in 8 bits | 5.81 | 6.16 | 7.07 | µs |
| Minimum integration time in 12 bits | 6.43 | 6.64 | 8.23 | µs |
| Image Full well capacity (Low gain, 0 dB) | 94 | 94 | 23 | ke ⁻ |
| Maximum speed (in 8 bits, 16 lines) | 7 366 | 3 997 | 3 545 | FPS |

*Average values observed

ADDITIONAL FEATURES

Outputs: • CoaXPress 2.0 - CXP10x2 connection
• 10 Gigabit Ethernet/Fiber with SFP+ module (available Q2 2022)

GigE Vision **GigE**
V.I.S.I.O.N

GenICam compatible

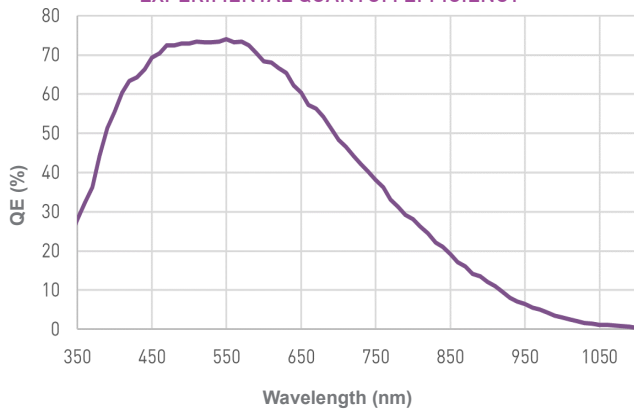
Optical interface: C-Mount / CS-Mount

Sensor thermal stabilization down to 10°C (air)

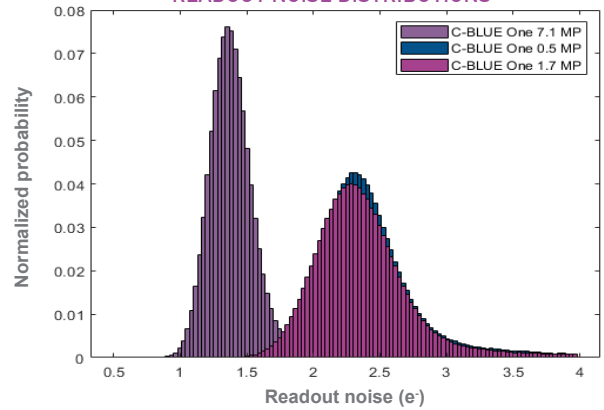
Liquid cooling optional with cooling plate for optimized performances

Software: **Graphical User Interface:** First Light Vision - **Software Development Kit:** (C, C++, Python, MatLab) / LabVIEW / µManager

EXPERIMENTAL QUANTUM EFFICIENCY



READOUT NOISE DISTRIBUTIONS



FRAME RATE TABLE IN 8 AND 12 BITS

| | | Quantization | | | | | |
|-------|------|------------------|---------|------------------|---------|------------------|---------|
| | | C-BLUE One 0.5MP | | C-BLUE One 1.7MP | | C-BLUE One 7.1MP | |
| | | 8 bits | 12 bits | 8 bits | 12 bits | 8 bits | 12 bits |
| Lines | 16 | 7366 | 5150 | 3 997 | 3 457 | 3545 | 2864 |
| | 32 | 6725 | 4608 | 3 721 | 3 169 | 3171 | 2494 |
| | 64 | 5729 | 3806 | 3 270 | 2 716 | 2620 | 1983 |
| | 128 | 4419 | 2824 | 2 632 | 2 113 | 1944 | 1406 |
| | 256 | 3033 | 1862 | 1 893 | 1 463 | 1282 | 889 |
| | 512 | 1863 | 1108 | 1 212 | 905 | 762 | 512 |
| | 624 | 1594 | 941 | 1047 | 776 | 648 | 432 |
| | 1104 | - | - | 662 | 481 | 393 | 258 |
| | 2208 | - | - | - | - | 207 | 134 |

Cropping granularity: 16 lines & 8 columns
(The number of columns does not affect acquisition speed)



Size and Weight : H64.1 x W76.2 x L154.3 mm, 1.1 kg, 15W max
SFP+ module 10Gb - available Q2 2022

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