

Aries 16

The Aries 16 is a new generation of BSI sCMOS camera developed exclusively by Tucsen Photonics. With sensitivity which matches EMCCD and surpasses binned sCMOS combined with high full well capacity normally observed in large format CCD cameras, the Aries 16 provides a fantastic solution for both low-light detection and high-dynamic range imaging.



Key Features

Benefits

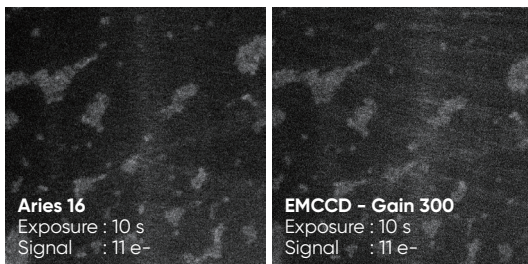
BSI –sCMOS Technology	16µm large pixels, 0.8e ⁻ readout noise, and up to 90% QE. ^[1]
Advanced Cooling Technology	To reduce the thermal noise, ensuring high SNR imaging and stable measurement results.
74ke ⁻ Well Capacity	High dynamic range to capture strong and weak signals simultaneously.
HDR & Low Noise Modes	Double modes provide flexibility for high dynamic and low-light applications.

Typical Applications

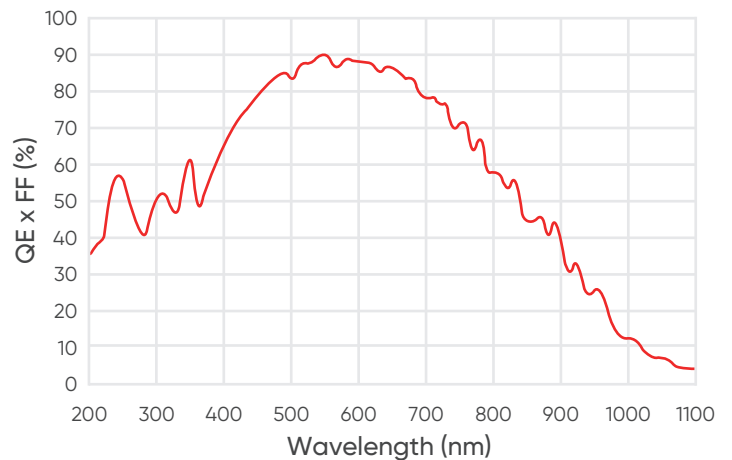
- Cold Atoms
- Quantum Physics
- Super Resolution
- FRET
- FCS
- TIRF
- Bioluminescence
- Chemiluminescence

Noted Examples

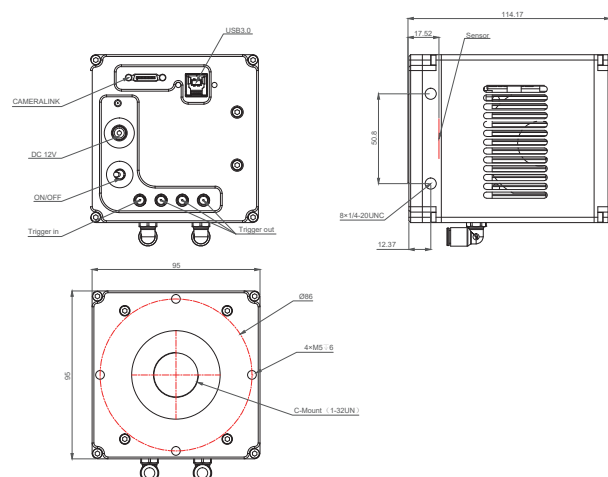
[1] Aries 16 can replace EMCCD in extreme signal detection fields such as Bioluminescence, and the imaging quality is equivalent.



Quantum Efficiency



Dimensions (unit : mm)



Model	Aries 16
Color / Mono	Mono
Peak QE	90.7 % @ 550 nm
Resolution	800 (H) × 600 (V)
Pixel Size	16 μm x 16 μm
Effective area	12.8 mm x 9.6 mm
Full well capacity	73 ke- (Typ.)
Readout rate	60 fps @ HDR mode, 25 fps @ Low noise mode
Readout noise	Typ. : 1.6 e- @ HDR mode, 0.8 e- @ Low noise mode
Shutter Mode	Rolling / Global reset
Exposure Time	26 μs ~ 60 s
DSNU	0.3 e-
PRNU	0.30 %
Cooling Temperature	Air: 50 °C below ambient, Liquid: 60 °C below ambient
Dark current	<0.2 e- / pixel / s
Binning	2 x 2, 4 x 4, Free binning
ROI	Support
Trigger Mode	Hardware, Software
Output Trigger Signals	Exposure start, Global, Readout end
Trigger Interface	SMA
Timestamp	Support
Data Interface	USB3.0 & Cameralink
SDK	Support
Bit Depth	12bit & 16bit
Optical Interface	C-mount
Power	12V / 6A
Power Consumption	38 W
Dimensions	95 x 95 x 114 mm
Software	Mosaic 3.0 / Samplepro / Labview / Matlab / Micro-Manager
Operating System	Windows
Operating Environment	Temperature 0 ~ 40 °C, Humidity 10 ~ 85 %