

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

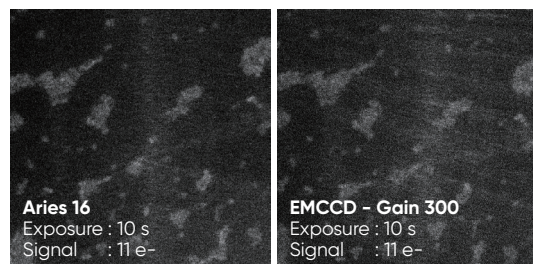
| | |
|---------------------------------|--|
| BSI –sCMOS Technology | 16µm large pixels, 0.9 e ⁻ readout noise, and up to 90% QE. ^[1] |
| Advanced Cooling Technology | To reduce the thermal noise, ensuring high SNR imaging and stable measurement results. |
| 74ke ⁻ Well Capacity | High dynamic range to capture strong and weak signals simultaneously. |
| HDR & Low Noise Modes | Double modes provide flexibility for high dynamic and low-light applications. |

Typical Applications

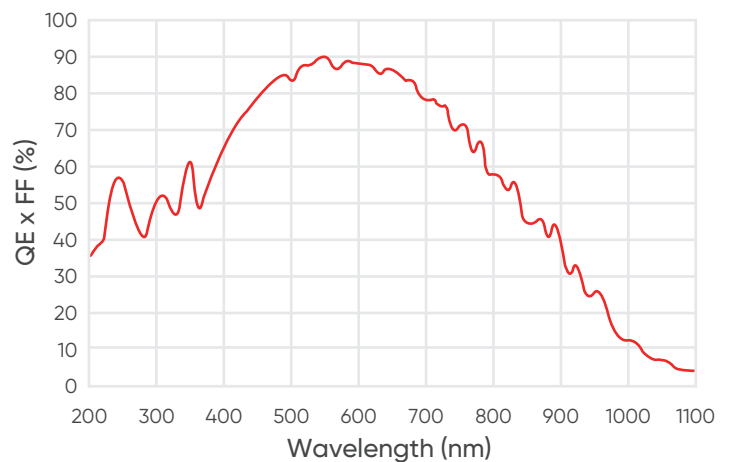
- Cold Atoms
- Quantum Physics
- Super Resolution
- FRET
- FCS
- TIRF
- Bioluminescence
- Chemiluminescence

Noted Examples

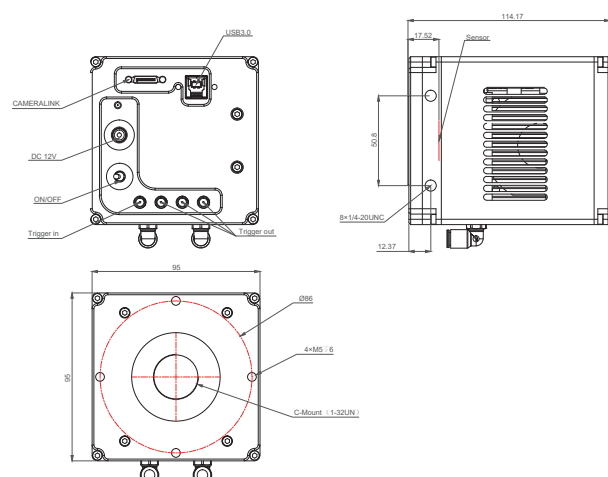
[1] Aries 16 can replace EMCCD in extreme signal detection fields such as Bioluminescence, and the imaging quality is equivalent.



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, 0.9 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, High level, Low level |
| Trigger Interface | SMA |
| Timestamp | Support |
| Data Interface | USB 3.0 & Cameralink |
| SDK | C , C++ , C# , Python |
| Bit Depth | 12bit & 16bit |
| Optical Interface | C-mount |
| Power | 12V / 6A |
| Power Consumption | ~38 W |
| Dimensions | 95 mm x 95 mm x 114 mm |
| Software | Mosaic 3.0 , SamplePro , LabVIEW , MATLAB , Micro-Manager2.0 |
| Operating System | Windows |
| Operating Environment | Temperature 0 ~ 40 °C, Humidity 10 ~ 85 % |