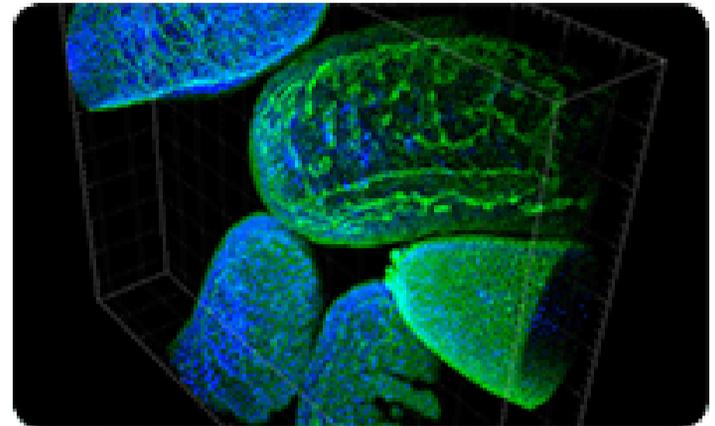


Zyla - The Biologist's Choice

Technical Article

Zyla sCMOS has proven a superb camera choice for the biologist and microscopist. Many simply see the Zyla as an amazing value, superb price/performance 'workhorse' camera with which to replace their existing interline CCD and upgrade the performance of their fluorescence microscope. Others are driven by distinct application performance criteria that only sCMOS can answer.



Quality, throughput, performance, accessibility

- **High Sensitivity & Wide Dynamic Range** – quantify very weak and very bright structures with one image.
- **Superb Image Quality** – high resolution and uniform backgrounds for publication quality imaging.
- **Developmental / Embryo** – The large field of view and high pixel resolution of Zyla is very suited to embryo imaging. Furthermore, Andor sCMOS cameras have been at the forefront of innovative Light Sheet Microscopy development.
- **Capture Everything** – the larger field of view matches that of modern microscopes. Achieve better statistics and higher throughput in high content experiments.
- **Blazingly Fast** – more and more studies of cell processes require greater temporal resolution.
- **Ease of use** – Designed to get you up and imaging with minimal fuss.
- **Flexible** – Fast or slow, big or small, weak or bright...Zyla is adaptable all of your imaging challenges.

Example areas of application...

- **Developmental / Embryo** – The large field of view and high pixel resolution of Zyla is very suited to embryo imaging. Furthermore, Andor sCMOS cameras have been at the forefront of innovative Light Sheet Microscopy development.
- **Physiology / Ion Imaging** – The fast frame rate and excellent sensitivity of Zyla is ideally suited to the particular needs of ion signalling microscopy. Zyla 4.2 offers superlative sensitivity at speed, but electrophysiology may require the Global Shutter exposure mode of Zyla 5.5 to ensure temporal correlation across the whole image.
- **Super Resolution Microscopy** – The high QE, low noise and speed capability of Zyla 4.2 (USB 3.0 and Camera Link) is well suited to the particular detection criteria of single molecule based 'pointillist' super-resolution microscopy approaches (e.g. STORM, PALM), and is used by some as an alternative to EMCCDs for this purpose. Note, this should be considered distinct from the general needs of single molecule microscopy, which are best served by back-illuminated EMCCD cameras (see [Andor iXon EMCCD](#) range). Also benefit from capability to switch off interpolative filtering and provision of custom blemish maps.
- **High Content Screening** – Zyla sCMOS yields markedly improved throughput and statistical validity of data in high content analysis. For example, a larger field of view results in analysis of more cells per image, wider dynamic range means a field of variable intensity cells can be quantified in only one acquisition, and higher sensitivity results in reduced acquisition times. For further information, view this article: <https://www.highcontentreview.com/scmos>
- **Cell Motility** – The motile cell is captured extremely well by the speed and resolution of the Zyla. Generally, the rolling shutter of Zyla 4.2 is suited, but care must be taken of distortive effects if the cell is moving particularly fast. For example, it has been noted that the Zyla 5.5 in global shutter mode was required to image motile sperm cells.
- **TIRF Microscopy** – The Zyla's fine pixel resolution, great sensitivity, large field of view and fast imaging speed offers a fine choice of platform for following/tracking fast processes at the cell membrane. Multi-wavelength TIRF may benefit from Zyla 5.5 in global shutter.

Other biological applications include...Neuroscience, Vesicle Transport, Parasitology, Blood Flow, Ophthalmology.