

ORCA-Flash4.0 V2: A high speed sCMOS camera for demanding life science applications

When it comes to life science imaging, faster is often better. Not only does this allow for the opportunity to capture highly dynamic biological events, but being able to image fast opens up a wide variety of different imaging modalities. Spinning-disc confocal, light-sheet and STORM/PALM super-resolution microscopy are just some of the many cutting-edge techniques which rely heavily on the availability of a fast and extremely sensitive camera.

Therefore, Hamamatsu have designed the ORCA-Flash4.0 sCMOS camera with speed in mind, allowing up to 100 full-frame (4.2MP) images to be captured every second. However, to obtain useful data fast imaging speeds alone are not enough, so in addition the camera combines extremely low noise performance (1.6 electrons rms), high quantum efficiency (72% peak), a huge dynamic range (1:37,000) and a wide field of view to create an exceptionally sensitive and versatile imaging tool.

In fact, the ORCA-Flash4.0 is so sensitive that it can be used instead of EMCCD technology for the majority of applications, especially for applications when high-speed image acquisition is crucial.

This workshop will focus on the advantages that sCMOS technology and the ORCA-Flash4.0 can bring to your research and how high speed imaging is enabling researchers to gain new insights into biological questions using light microscopy.