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Agilent enhances BioTek Cytation C10 Confocal Imaging Reader with innovative water immersion technology

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Empowering researchers with superior imaging performance for cutting-edge live-cell and three-dimensional applications



Agilent Technologies Inc. has announced the addition of water immersion and new confocal spinning disk technology to the BioTek Cytation C10 confocal imaging reader. These features improve image quality and results by reducing deleterious effects on live-cell samples and enhancing clarity for thicker samples such as tissues and 3-D spheroids.

In light microscopy, water immersion technology automatically and consistently places a layer of water between the objective lens and the sample. The higher refractive index of water, as compared to air, effectively increases the numerical aperture of the objective lens; this reduces z-axis distortion, resulting in higher image quality and a more true-to-life representation of thick and three-dimensional cell models. Water immersion also benefits researchers who are increasingly turning to physiologically relevant live-cell (as opposed to fixed-cell) applications by reducing exposure times, thus lowering the phototoxic effects traditionally associated with these experiments.

Spinning disk confocal technology improves microscopic images by blocking out-of-focus light from reaching the image sensor. The new deep-sectioning spinning disk (DSD), now available as an option on the Cytation C10, allows researchers to look deeper into thick samples with less out-of-focus blur. The clearer images that result are particularly beneficial in quantitative analysis applications.

Designed as an affordable, high-performance confocal microscopy system, the Cytation C10 employs high-quality components, including a Hamamatsu scientific CMOS (sCMOS) camera, Olympus objectives, and laser-based illumination. Onboard environmental controls, widefield fluorescence, brightfield, and phase contrast optics further enhance the system's capabilities. Additionally, integrating it with the Agilent BioTek BioSpa 8 automated incubator enables efficient multi-plate live-cell analysis.