

# **Press Release**

April 18, 2005: For Immediate Release

## **New EMCCD Camera Provides Deep Cooling and Lifetime Vacuum for Bioscience**

Tucson, AZ — Photometrics® (www.photomet.com), the premier designer and manufacturer of high-performance CCD and EMCCD cameras for the life sciences, is pleased to introduce the Cascade® II product series. The first Cascade II camera to be released to market, the Cascade II:512, breaks new ground as the only EMCCD microscopy camera in the world that offers -80°C cooling without using water or liquid nitrogen! By eliminating the need for a bulky chilled-water circulator or cryogenic compressor, both of which are prone to leaks, blockages, and condensation, the Photometrics Cascade II:512 affords maximum, long-term convenience.

The Cascade II:512's deep cooling provides ultrahigh gain and extremely low dark noise, enabling the 16-bit, high-resolution camera to satisfy even the most demanding sensitivity requirements for applications such as low-light fluorescence, TIRFM, single-molecule fluorescence, spectral imaging, and luminescence. The camera can be operated at 10 MHz for high-speed image visualization or more slowly for high-precision photometry. Supravideo frame rates are achievable via subregion readout.

Thanks to exclusive vacuum technology so robust it carries a lifetime guarantee, the Cascade II:512 delivers the deepest thermoelectric air cooling available for an EMCCD-based platform. Its stainless-steel vacuum chamber (with all-metal seals) houses an e2v CCD97 — the same high-QE, back-illuminated, frame-transfer detector used in Photometrics' immensely popular Cascade:512B camera.

Two independent readout amplifiers allow the Cascade II:512 to be operated either as a high-performance EMCCD camera (with on-chip multiplication gain) for unparalleled low-light-level sensitivity or as a traditional, non-electron-multiplying CCD camera for the most precise measurement of small signal variations.

The Cascade II:512 features Photometrics' world-renowned PVCAM® application programming interface (API), which offers plug-and-play compatibility with dozens of third-party software packages across all major operating systems. The PVCAM API also facilitates seamless integration within larger OEM systems. Furthermore, hardware device streaming and sequencing are supported, letting users streamline and optimize experiments with ease. A standard C-mount configuration allows quick attachment to microscopes, standard lenses, or other optical equipment.

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