



## **BiOS 2009**

### **Xenics Features Cheetah and XEVA-640 Cameras for OCT, and XEVA LIN for Spectroscopy**

*San Jose, California, 24 January 2009 --- Xenics, Europe's leading developer and manufacturer of advanced infrared detectors and customized imaging solutions from the LWIR to the visible realm, presents its Cheetah and XEVA-FPA-640 camera models for optical coherence tomography (OCT) as well as its XEVA-LIN system for spectroscopy at BiOS 2009, booth 8231. The annual launchpad event for advanced technologies is part of Photonics West and is taking place from 24 to 29 January 2009 at the San Jose Convention Center.*

At the world's premier biomedical optics exhibition and technical forum for related technologies and applications, Xenics is focusing on the latest OCT (optical coherence tomography) applications of its proven digital Cheetah camera, which features a high-speed/high-resolution 2D InGaAs array detector. Covering the SWIR spectral band 0.9. to 1.7  $\mu\text{m}$ , Cheetah offers a 640 x 512 pixel resolution at a 20 $\mu\text{m}$  pixel pitch. Fast data transfer is feasible via double CameraLink connections. The camera is fully software-configurable; it combines the TE-cooled InGaAs FPA detector head with control and communications circuitry in a convection-cooled housing.

With its frame rate of 1,730fps at a full 640 x 512 pixel resolution, Cheetah sets a world-record for InGaAs cameras. It features 14-bit digitization to capture and display 14-bit optical data for high-speed imaging. The camera's 16 outputs provide 14 bit each at a 40MHz pixel clock. Pixel operability is >99 percent. A graphical user interface provides direct access to various camera settings such as ROI, integration time, sensor temperature and ADC.



Spectral-domain OCT (optical coherence tomography) is a very promising, non-invasive biomedical diagnostic tool to enable optical (or living) biopsies without the need for removing living cells for an inspection whether cancerous or other malignant changes have occurred, for instance in the retinal tissue of the eye. SD-OCT investigates the capillary blood flow near the tissue to be examined for cellular changes indicating cancerous and pre-cancerous lesions. The preferred wavelength for OCT, due to low tissue absorption, is at  $1.3\mu\text{m}$  - well in the operational domain of Cheetah.

Another highlight of Xenics' presentation at BIOS 2009 is the fully digital, software-configurable, NIR image capture system XEVA-FPA-640. This camera is based on a thermoelectrically cooled InGaAs sensor array featuring  $640 \times 512$  pixels and fitted in a compact housing together with all control and communication electronics.

XEVA-FPA-640 covers the standard wavelength range of  $0.9 - 1.7 \mu\text{m}$ . The pixel pitch is  $20\mu\text{m}$  with a pixel operability of  $>99\%$ . The camera comes with a C-mount for standard optics as well as spectrometer fixation holes. With its anti-condensing construction, the camera can be operated either uncooled, or with TE1 cooling down to  $263\text{K}$ .

Xenics delivers the XEVA-FPA-640 with optional frame rates of 25Hz or 90Hz. For monitoring applications, subframes can be read out at frequencies of up to 930Hz. The digital output word is 14 bits wide; signal/noise ratio is 69dB.

For spectroscopy applications, Xenics is also presenting the XEVA-LIN camera at BIOS 2009. As a digital line-scan (up to 9kHz) camera, XEVA-LIN is well suited for a multitude of spectroscopy and imaging applications.



With an optional Peltier cooler and 128, 256 or 512 pixel resolution, XEVA-LIN can be fitted with a wide variety of linear detector arrays offering a low dark current. Cut-off wavelength is 1.7 $\mu$ m. A/D conversion is at 12 or 16-bits. The camera offers a USB 2.0 or CameraLink interface.

**About Xenics:**

Xenics is the leading developer of innovative infrared detection solutions for a wide range of applications. Xenics designs, manufactures and sells infrared detectors and cameras, both line-scan and 2-D, covering the infrared wavelength ranges from 0.4 to 14 micrometers. In addition, Xenics delivers custom products according to the agreed specification and planning. As a European vendor with a worldwide service and distributor network, Xenics is strategically placed to serve global markets with highly innovative products drawing on a strong science and technology background.

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