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Flexible sensor solution for near infrared with higher resolution: Digital InGaAs camera XEVA-FPA-640 from Xenics

Xenics, Europe's leading developer of innovative infrared image sensors, is extending its product line of NIR image capture systems to include the fully digital, software-configurable camera XEVA-FPA-640. The device is based on a thermoelectrically cooled InGaAs sensor array with 640 x 512 pixels, which fits into a compact housing together with the control and communication electronics.

With its focal-plane array in InGaAs technology (640 x 512 pixels), the new NIR digital camera XEVA-FPA-640 covers the standard wavelength range of 0.9 – 1.7 μm . Its pixel pitch is 20 μm with a pixel operability of over 98%. It is equipped with a C-mount for standard optics as well as spectrometer fixation holes. Depending on the application, the camera, which has an anti-condensing construction, can be used uncooled, with TE1 cooling down to 263 K, or with TE3 cooling down to 223 K.

The camera is available in three speed versions: 15Hz, 25Hz and 90Hz frame rate. An optional analog interface based on a PAL or NTSC standard is also available. With all types the digital output word is 14 bits wide and the signal/noise ratio is 69dB. For particularly flexible use, subframes can be read out at a higher frequency of up to 930Hz. This can be used, for example, in monitoring systems for keeping a large area in view and then, if objects of interest are spotted, switching to rapid tracking of these.

For this purpose, the camera is controlled with the graphical user interface X-Control via a USB 2.0 interface, allowing you to select the integration time, the position and size of subframes as well as other camera parameters and calibration functions, such as two-point correction of uniformity and bad-pixel replacement.

For the transfer of image data, three alternative methods are provided: USB 2.0, Cameralink, or parallel LVDS bus. The fast 90Hz version works with a special PCI-CL frame-grabber card or communicates with the standard NI-1428 card. For LVDS cameras, a separate PCI-LVDS frame grabber or a connection to the standard types NI-1422 or NI-1424 is likewise provided. XenicsA unified graphical user interface X-Control is available for all camera versions. These allow you to control various displays of the image, histogram, line profile, and spot meter as well as conversion into graphic file formats and storage of video sequences on memory or hard disk.

The camera can be used for a variety of applications, such as hyperspectral image capture and laser beam profiling, vision enhancement in automotive and airborne applications, semiconductor inspection, thermal imaging in the range of 200°C – 800°C, online process control, and medical electronics.

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 2D, covering the infrared wavelength ranges from 1 to 14 micrometers. In addition, Xenics delivers custom products according to the agreed specification and planning.

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