
Talking Line Scan Imaging

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ALRAD IMAGING is one of the foremost suppliers of line scan imaging products in the UK.
If you would like more information on any of the items featured in this application brief or any advice on line scan imaging either telephone **01635 30345** or email **sales@alrad.co.uk**

AViVA EM1, The fastest GigE Vision Line Scan Camera with a new generation of sensors offering improved spectral response

EM1 is the perfect candidate for applications requiring both the ease of use, the multi cast capabilities, and the overall system cost perspectives of the Gigabit Ethernet interface and the highest electro optical and line rate performances. Based on the latest generation of e2v sensors, EM1 features unmatched electro optical performances. The camera embeds an advanced GPIO that meets with the latest Genicam standard and SNFC v1.2.1 in order to bring to the user the most versatile solution and the needed interoperability to deal with peripheral components such as trigger signal generators. A user friendly software package is also released with the camera and includes iPORT PureGEV suite from Pleora as well as standard/high performance drivers.



AViVA EM2, The highest performances using 80MHz data rate standard at a competitive price

The EM2 is the newest member of the AViVA family of line scan cameras. It is designed to be the best choice for mid-range applications, with resolution from 0.5k to 4k pixels. The brand new electronics and CCD design give excellent results in term of image quality and signal to noise ratio. Coupled to a rich feature set, such as automatic FFC, LUT, or automatic tap balance, it is an ideal choice for demanding inspection applications. The EM2 benefits from e2v's long experience in imaging, and the proven qualities of the AViVA family: Ease-of-use, reliability, and high precision mechanical design. A specific rectangular-pixels sensor version (BA9) is dedicated to specific applications such as Optical Coherence Tomography (OCT) or Spectrometry.



ELiXA 3V Colour cameras offer value for money colour line scan applications

The ELiXA 4096 pixel camera is the ideal candidate for the most demanding of applications requiring high acquisition. Using e2v's unique technology, the CCD sensor features unmatched performance: - line rate up to 54 KHz, row spacing of two pixels centre between the three lines and enhanced response with the back side illumination technology. The camera features easy calibration (automatic tap balance and flat field correction, line balance), and versatile implementation (trigger modes, output modes, bidirectional scanning). Other versions of the ELiXA camera are available offering different line rates, enhanced blue and improved NIR response.



DiViINA LM1 the cost effective line scan camera from e2v

DiViINA has been specifically designed to provide the best answer to machine vision system integrators that are under cost reduction pressure and at the same time are eager to maintain high liner CCD performance in a 1k, 2k and 4k pixel format. Offering a Gigabit Ethernet interface gives further cost reduction perspectives at the machine vision system level and therefore makes DiViINA LM1 an outstanding choice for mid-range machine vision applications. The simple functionalities of DiViINA LM1 coupled with a user friendly software package including complete SDK, software tools, sample applications and documentation make the integration in any system very easy.



AViVA EM4, The highest performances using 160MHz data rate standard

The AViVA EM4 sets new standards for line scan cameras in term of speed and image quality. With resolutions of up to 4096 pixels, and the design of new CCD image sensors, it delivers state of the art performance, without compromise. Its comprehensive built-in feature, including automatic FCC, LUT or automatic tap balance, are positioning it as the perfect choice for high demanding machine vision applications. The EM4 benefits from e2v's long experience in imaging, and the proven qualities of the AViVA family: performance, reliability and high precision mechanical design.



ISG LIGHTWISE Line scan cameras offer a cost effective solution for line scan imaging with FireWire IEEE-1394 Interfacing



The LightWise line scan cameras are excellent solutions for low-cost, high-speed applications. These cameras are designed for the OEM in mind and are provided in a small footprint for requirements with tight space constraints. The FireWire™ standard is compliant with the IEEE-1394 IIDC DCAM Specification Version 1.3, and each unit has external opto-isolated programmable I/O for trigger/strobe functions. The 1024 pixel version offers rates up to 10K lines per second at 14-bit resolution and is ideal for not only machine vision but also spectroscopy and bar code reading requirements. The 2048 pixel unit can perform at a rate up to 60 MHz at 12-bit resolution strongly suited for machine vision and edge detection. User-programmable controls include integration time, gain adjustments, offset, bit depth and data rate. Typical applications include bar code reading, encoding and positioning, metrology, and high-speed scanning. *Each camera is packaged with driver software and a user's manual.*

All cameras are compatible with National Instruments IMAQ IEEE-1394 driver, Vision Assistant, Vision Builder for Automated Inspection, and the Compact Vision System (CVS).

TVI Vision manufactures colour digital line scan cameras for the demanding industrial machine vision applications.

The colour Line Scan Camera utilizes a prism beam splitter that diverts light into three different spectral bands. Three CCD linear sensors are bonded to the respective colour output ports of the prism enabling independent detection of red, green and blue signals. The colour signal is digitally converted to 10 or 12 bits per channel output. The camera has 3 x 512, 1024 or 2048 pixel resolution. The 512 pixel model outputs at a blazing maximum scan rate of 65000 lines/second.

All our colour line scan cameras are enclosed in a compact, rugged aluminium cases. The cameras I/O can be connected to commercially available frame grabbers or application specific interface boards.

Applications for the TVI Vision colour line scan camera include high performance colour detection and imaging, document and film scanning, non contact measurement, process control and monitoring, and many other industrial and scientific applications.



One of many frame grabbers offer by Alrad for line scan imaging



Karbon-CL is the world's first four-camera PCI Express frame grabber. It can simultaneously acquire from up to four Base CL cameras or two Full CL cameras (including 10-tap CL). It is built on top of BitFlow's FlowThru technology, which provides zero latency access to data, super low CPU usage, and unlimited DMA destination size. The Karbon-CL is the first member of BitFlow's Karbon family, a platform that will host a wide variety of virtual frame grabbers. These virtual frame grabbers can be customized to meet your specific needs.

The Karbon-CL has been designed with two main applications in mind. First, in situations where more than one camera is needed, the Karbon-CL can reduce both the system cost and the hardware footprint by its ability to acquire from up to four cameras. Second, in situations where extremely high data rates and/or frame rates are required, the Karbon-CL has been designed to acquire up to 160 bits at 85 MHz pixel clock rate and DMA at data rates up to 2.0 GB/S. For example, the Karbon-CL can acquire simultaneously from two 10-tap CL cameras.

NEW: 43,3mm Line Scan Lenses



Kowa expand its wide portfolio of lenses for industrial vision applications by a new Large Format series for 43,3mm sensor size. The new LF-Series includes 3 different models with focal length of 28mm, 35mm and 50mm. All lenses are optimized for extra high resolution and contrast from the centre to the edge with only little distortion. Due to a minimum focusing distance of less than 30cm all 3 models are suitable for close-up applications. All lenses are especially designed for industrial applications with manual focus and iris equipped with locking screws. A special lens construction in a metal housing is taking the harsh environmental requirements for industrial applications into account.

NEW: 1" SWIR lens series!

The 1" SWIR lenses are designed for the new generation of NIR/SWIR cameras with high sensitivity at wavelength between 800nm – 2000 nm. The series is named HC-SW and different models with focal length of 25mm, 35mm and 50mm are available. Kowa succeeded to manufacture this high quality SWIR lenses by using a special coating technology and unique glass material.



Pentax offer 35mm and 50 mm lenses for line scan cameras

C52893F 50 mm, f/2.8 K-Mount Line-Scan Camera Lens, 45 mm Imager Format, Manual Iris and Focus

C52915F 35 mm, f/2.8 F-Mount Line-Scan Camera Lens, 45mm Imager Format, Manual Iris and Focus

Both lenses have close-focus for line-scan cameras. These lenses are for F-mount cameras. The lens provides a 64° angle of view and can focus down to about 7 inches with excellent depth of field control. K-mount versions of the lenses are also available.

High intensity LED light line for Line scan camera applications

The Volpi DRAGONLINE® high-intense LED light line provides the perfect solution for line scan camera applications that require very high luminosity. For an easy replacement in existing installations DRAGONLINE® features the same footprint of existing fibre optic light lines. The unit offers user benefits in longer life than the fibre optic versions and there are no bulb changes required.



The DRAGONLINE® gives extremely high light intensity, bright and homogenous line illumination. The light line uses high intensity white LEDs. An optional optical rod lens is available. The operating voltage is 24VDC. The standard light line length is 300mm. The light line is ideal for many machine vision and industrial imaging applications particularly web inspection applications.

EFFI-Line is the range of line scan illuminator for web inspection and optical sorting applications developed by EFFILUX.



The high illumination level on the line associated with a uniform lighting make EFFI-Line the perfect product for **high speed applications with linear cameras**. Applications of EFFI-Line include heavy Industry (steel, metal sheets, paper, foil, fabric, glass, plastic film...), production line with linear camera (semiconductors, any flat panel displays...), optical sorting (fruit sorting, recycling solutions...), embedded systems (Road surfaces control, rails defect detection...). The benefits include quality lighting (powerful lighting, uniform lighting...), adaptable to your needs (any colour from UV to IR, adjustable length and working distance...), easy to use (USB control of LEDs, automatic thermal regulation, standard mounting...), resistant (waterproof, resistant to high temperatures...) and low power consumption (less energy consumption, less heat dissipation...).

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