

# ELiXA<sup>®</sup> UC4/UC8

Line scan camera



Capturing all, even hidden colours

## Key features

- Sensor – 4 x 4096 pixels 10 x 10µm
- Quadriline – red, green, blue and either monochrome or near infra-red
- Rows spacing of 2 pixels (centre to centre)
- Boosted blue response
- Line rate of 18 kHz
- Bi-directional scanning
- Camera Link<sup>®</sup> interface (dual base, medium)
- Automated white balance, flat field correction
- Tunable spatial correction

## Typical applications

- Web inspection – printing, currency
- High-end inspection – food, pharmaceutical, medical, packaging
- Surface inspection – ceramic tiles, wood, printed circuit board
- Scanning – high-end document process, film scanning, postal sorting

## ELiIXA UC<sub>4</sub>/UC<sub>8</sub> Line scan camera

The ELiIXA 4096 pixel camera is the ideal candidate for the most demanding applications requiring multi-wavelength detection (including NIR). Using e2v's unique technology, the CCD sensor features unmatched performance: line rate of 18 KHz, row spacing of two pixels centre to centre, enhanced blue response and four lines (RGB and fourth line either monochrome or NIR). The camera package is designed to increase efficiency and save cost at vision system level:

- Easy calibration (test pattern, flat field correction, white balance, excellent mechanical alignment)
- Versatile implementation (trigger modes, output modes, bi-directional scanning, spatial correction)
- Optimal mechanical design (70 mm width) and with an all-in-one approach, a single ELiIXA camera can replace a two camera system of a conventional colour camera and a monochrome or NIR camera.

### Detailed specification

Sensor characteristics at maximum pixel rate		
Resolution	pixels	4 x 4096
Pixel size (square)	µm	10 x 10
Spacing between rows	µm	20 (centre to centre)
Line length	mm	41
Max line rate	kHz	18
Functionalities (programmable via control interface)		
Gain	up to 33dB (0.035dB Steps)	
Offset	-4096 to +4096 LSB	
White balance	automatic or manual	
Flat field correction	automatic or manual	
Spatial correction	tunable, up to 7 lines	
Scan direction	reverse and forward	
Trigger mode	free run, external trigger	
Output format		
- Dual base Camera Link	3 channels (RGB) 8 bits 1 channel (BW or NIR) 8 to 12 bits	
- Medium Camera Link	4 channels 8/10/12 bits	
Regulatory	CE, FCC and RoHS compliant	

Radiometric performance at maximum pixel rate		
Bit depth	bits	8, 10 or 12
Spectral range	nm	
- If fourth line monochrome		BW: 250 - 1100 Red: 580 - 850
- If fourth line near infrared		NIR: 800 - 1100 Red: 580 - 650 Green: 500 - 580 Blue: 250 - 500
- For both versions		
Non-linearity	%	+/- 1
Dynamic range	dB	62
Mechanical and electrical interface		
Size (w x h x l)	mm	70 x 76 x 54
Lens mount		F, T <sub>2</sub> , M <sub>4</sub> 2 x 1
Sensor alignment	µm	better than +/-100
Sensor flatness	µm	better than +/-35
Power supply	V	single 12 to 24
Power dissipation	W	< 15
Operating temperature	°C	0 to 65 (front face)
Storage temperature	°C	-40 to 70

### Overview of e2v's line scan camera range

Commercial name	M/C	Max data rate M pixels/s	Interface	Resolution	Bit depth
AViVA EM1	Monochrome	120	GigE	512 to 4096	up to 12 bits
AViVA EM2	Monochrome	80	CL	512 to 4096	up to 12 bits
AViVA EM4	Monochrome	160	CL	512 to 4096	up to 12 bits
AViVA UM4	Monochrome	160	CL	8192	up to 12 bits
AViVA UM8	Monochrome	320	CL	12 288	up to 12 bits
AViVA SC2	Colour	60	CL/LVDS	4096	up to 12 bits
AViVA UC2	Colour	62	GigE	4096	up to 12 bits
DiViNA LM1	Monochrome	40	GigE	1024 to 4096	8 bits
DiViNA LM2	Monochrome	40	CL	1024 to 4096	8 bits
ELiIXA UC <sub>4</sub> /UC <sub>8</sub>	Colour	320	CL	4 x 4096	up to 12 bits
ELiIXA 3V	Monochrome	320	CL	3 x 4096	up to 12 bits
ELiIXA 4S	Monochrome	80	CL	4 x 4096	up to 12 bits
ELiIXA+ 16k	Monochrome	819	CL	16384	up to 12 bits
ELiIXA+ 16k	Monochrome	1638	CXP	16384	up to 12 bits

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