

# AViVA<sup>®</sup> EM1

GigE Vision line scan camera



Easy, accurate and fast, quite simple

## Key features

- New generation of sensors – 512 pixels 14 $\mu$ m, 1024 pixels 14 $\mu$ m, 2048 pixels 14 $\mu$ m, 4096 pixels 10 $\mu$ m
- Excellent dynamic range – 68dB
- High sensitivity CCD sensor
- Interface – high reliability Gigabit Ethernet
- Interoperability – GigE Vision and GenICam fully compliant
- Advanced GPIO
- Line rate – up to 175 kHz
- Bit depth – up to 12 bits
- Mechanics – 93 x 56 x 49 mm (w,h,l)

## Typical applications

- Web inspection – metallurgy, wood, paper, textile ...
- Process control – pick and place, positioning
- Print inspection
- Sorting – food, postal, parcel, checks ...
- Surface inspection – wafers, PCB ...
- Document archiving, data archiving
- OCR and barcode reading

# AViiVA EM1 GigE Vision line scan camera

e2v's AViiVA cameras have been leaders in the field of line scan imaging for over 10 years, largely due to their unique sensor technology. e2v has now developed a new generation of line scan sensors, with resolution up to 4k pixels with various pitches. These sensors feature unmatched performance in terms of sensitivity, dynamic range and PRNU and are embedded in the new EM1 GigE series of cameras.

Coupled with an advanced Gigabit Ethernet interface and an easy-to-use software package, EM1 is the ideal candidate for the most demanding of inspection applications.

## Detailed specification

Sensor characteristics					
Resolution	pixels	512	1024	2048	4096
Pixel size (square)	µm	14	14	14	10
Maximum line rate	kHz	175	102	55	28
Functionalities (programmable by control interface)					
Gain		up to 32dB			
Offset (contrast expansion)		-4096 to +4096 LSB			
Trigger mode		Free run or external trigger			
Flat field correction		Auto			
GPIO		3 inputs 2 outputs TTL, RS422, RS644 general purpose counters and timers			
Radiometric performances					
Bit depth	bits	8.12			
Spectral range	nm	250 - 1100			
Non-linearity	%	< 1			
Dynamic range	dB	68			

Mechanical and electrical interface		
Size (w x h x l)	mm	60 x 56 x 49 without heat sinks
Optional lens mount		F, T2, M42 x 1, C
Sensor alignment	µm	±100
Power supply	V	single 12 to 24
Power dissipation	W	< 11
Operating temperature	°C	0 to 55 (front face)
Storage temperature	°C	-40 to 70
Regulatory		RoHS, CE and FCC compliant
Connectors		
Power		HR10 6-pins
Inputs/outputs		HR10 12-pins
Gigabit Ethernet		RJ45
Networking features		
GigE-based		1Gb/s, long reach: 100m point-to-point Effective data rate up to 122.5 MB/s with 8kB packet size
GigE Vision protocol		Zero-loss packet resend technology, delivery of all packets Comprehensive data transfer diagnostics Multicast capabilities
Software package		
eBUS driver suite		eBUS universal driver (filter driver) eBUS optimal driver Driver installation tool
iPORT PureGEV suite		SDKs Software tools Documentation Sample applications

## Overview of e2v's line scan camera range

Commercial name	M/C	Max data rate M pixels/s	Interface	Resolution	Bit depth
AViiVA EM1	Monochrome	120	GigE	512 to 4096	up to 12 bits
AViiVA EM2	Monochrome	80	CL	512 to 4096	up to 12 bits
AViiVA EM4	Monochrome	160	CL	512 to 4096	up to 12 bits
AViiVA UM4	Monochrome	160	CL	8192	up to 12 bits
AViiVA UM8	Monochrome	320	CL	12 288	up to 12 bits
AViiVA SC2	Colour	60	CL/LVDS	4096	up to 12 bits
AViiVA UC2	Colour	62	GigE	4096	up to 12 bits
DiViINA LM1	Monochrome	40	GigE	1024 to 4096	8 bits
DiViINA LM2	Monochrome	40	CL	1024 to 4096	8 bits
ELiIXA UC4/UC8	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

Contact us online at:  
**e2v.com/imaging**

Issue 2 03/12



### European regional sales offices

e2v 106 Waterhouse Lane Chelmsford Essex CM1 2QU England T +44 (0)1245 493493 F +44 (0)1245 492492	e2v 16 Burospace 91572 Bievres Cedex France T +33 (0)1 6019 5500 F +33 (0)1 6019 5529	e2v Industriestraße 29 82194 Gröbenzell Germany T +49 (0)8142 41057 0 F +49 (0)8142 284547
----------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------

### Americas

e2v  
520 White Plains Road  
Suite 450  
Tarrytown NY 10591  
USA  
T +1 914 592 6050 or  
T +1 800 342 5338  
F +1 914 592 5148

### Asia Pacific

e2v  
11th Floor Onfem Tower  
29 Wyndham Street  
Central  
Hong Kong  
T +852 3679 3648/9  
F +852 3583 1084

### Product contact

e2v  
Avenue de Rochepleine  
BP 123  
38521 Saint-Egreve Cedex  
France  
T +33 (0)4 7658 3000  
F +33 (0)4 7658 3480