

## AViiVA EM4 Line Scan Camera



# The precision instrument for high speed inspection

### Key Features

- Sensor range: 2048 pixels 14  $\mu\text{m}$  or 4096 10  $\mu\text{m}$
- Excellent dynamic range >66dB
- High sensitivity CCD sensor
- Up to 12 bits depth
- Line rate up to 70 klines/s
- Flat field correction
- Easy configuration
- Interface: CameraLink
- Mechanics: Compact and accurate, compatible with all the AViiVA range

### 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

## AViVA EM4 Line Scan Camera

e2v

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.

### Detailed Specifications

| Sensor Characteristics |        |      |      |
|------------------------|--------|------|------|
| Resolution             | pixels | 2048 | 4096 |
| Pixel Size (square)    | µm     | 14   | 10   |
| Maximum Line Rate      | kHz    | 70   | 37   |

| Functionalities (Programmable by Control Interface) |                            |
|-----------------------------------------------------|----------------------------|
| Gain range                                          | 32 dB                      |
| Offset                                              | -4096 to 4096 LSB          |
| Exposure Time                                       | Up to 6.55 ms              |
| Trigger Mode                                        | Free Run, External Trigger |
| Regulatory                                          | RoHS, CE and FCC compliant |

| Radiometric Performances |      |             |
|--------------------------|------|-------------|
| Bit Depth                | bits | 8, 10 or 12 |
| Spectral Range           | nm   | 250 - 1100  |
| Non-linearity            | %    | < +/- 1     |
| Dynamic Range            | dB   | > 66        |

| Mechanical and Electrical Interface |    |                      |
|-------------------------------------|----|----------------------|
| Size (w x h x l)                    | mm | 56 x 60 x 43         |
| Lens Mount                          |    | C, F, T2, M42 x 1    |
| Sensor Alignment                    | µm | Better than ± 100    |
| Power Supply                        | V  | Single 12 to 24      |
| Power Dissipation                   | W  | < 11                 |
| Operating Temperature               | °C | 0 to 60 (front face) |
| Storage Temperature                 | °C | -40 to 70            |

| Connectors                 |            |
|----------------------------|------------|
| Power                      | HR10 6-pin |
| Control & Data: CameraLink | MDR 26-pin |



### Overview of e2v's Line Scan Camera offer

| Commercial Name | M/C        | Max Data Rate<br>M Pixels/s | Interface | Resolution   | Bit Depth     |
|-----------------|------------|-----------------------------|-----------|--------------|---------------|
| AViVA SM2       | Monochrome | 60                          | CL/LVDS   | 512 to 4096  | up to 12 bits |
| AViVA SC2       | Colour     | 60                          | CL/LVDS   | 4096         | up to 12 bits |
| AViVA UM2       | Monochrome | 62                          | GigE      | 512 to 4096  | up to 12 bits |
| AViVA UC2       | Colour     | 62                          | GigE      | 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 |
| ELiXA UC4/UC8   | Colour     | 320                         | CL        | 4 x 4096     | up to 12 bits |
| ELiXA 3V        | Monochrome | 320                         | CL        | 3 x 4096     | up to 12 bits |
| ELiXA 4S        | Monochrome | 80                          | CL        | 4 x 4096     | up to 12 bits |
| DIVINA LM2      | Monochrome | 40                          | CL        | 1024 to 4096 | 8 bits        |
| AViVA EM2       | Monochrome | 80                          | CL        | 2048 to 4096 | up to 12 bits |
| AViVA EM4       | Monochrome | 160                         | CL        | 2048 to 4096 | up to 12 bits |

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