This datasheet describes the specification according to the standard 1288 for Characterization and Presentation of Specification Data for Image Sensors and Cameras of the European Machine Vision Association (EMVA) (see www.standard1288.org). The measurements were performed with an AEON ACC3 RGB Release 3, 20.01.2104, SN 0005(). The performance parameters and estimated accuracy of the measurements are described in the technical report for the instrument, its calibration in the corresponding calibration report.

<table>
<thead>
<tr>
<th>Vendor</th>
<th>MATRIX VISION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>mvBlueFOX3-2032C</td>
</tr>
<tr>
<td>Serial number</td>
<td>FF000177</td>
</tr>
<tr>
<td>Sensor diagonal</td>
<td>8.89 mm</td>
</tr>
<tr>
<td>Lens category</td>
<td>C-Mount</td>
</tr>
<tr>
<td>Resolution</td>
<td>$2064 \times 1544,\ 12\ \text{bit}$</td>
</tr>
<tr>
<td>Pixel size</td>
<td>$3.45\ \mu m \times 3.45\ \mu m$</td>
</tr>
<tr>
<td>Sensor type</td>
<td>CMOS</td>
</tr>
<tr>
<td>Shutter type</td>
<td>Global</td>
</tr>
<tr>
<td>Overlap capabilities</td>
<td>Overlapping</td>
</tr>
<tr>
<td>Maximum frame rate</td>
<td>56.0 Hz</td>
</tr>
<tr>
<td>Interface type</td>
<td>USB3 Vision</td>
</tr>
</tbody>
</table>

**Type of data presented** Single

**Operation point 1, (page 5)**
- Wavelength centroid: 467.3 nm
- Wavelength FWHM: 20.5 nm
- Gain, Offset: Gain = 0 dB, Offset = 0.1

**Operation point 2, (page 17)**
- Wavelength centroid: 534.2 nm
- Wavelength FWHM: 30.9 nm
- Gain, Offset: Gain = 0 dB, Offset = 0.1

**Operation point 3, (page 29)**
- Wavelength centroid: 629.5 nm
- Wavelength FWHM: 13.1 nm
- Gain, Offset: Gain = 0 dB, Offset = 0.1

**Optional data measured**
- None

---

**Spectral sensitivity m0482, 17.11.2015**

- blue data
- green1 data
- red data
- green2 data

---

*© copyright AEON, 2015 1 of 41*
EMVA 1288 Summary Sheet for Operating Point 1

<table>
<thead>
<tr>
<th>Type of data</th>
<th>Single</th>
<th>Gain, offset</th>
<th>Gain = 0dB, Offset = 0.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
<td>1.3 ms</td>
<td>Environmental</td>
<td>25.7°C</td>
</tr>
<tr>
<td>Frame rate</td>
<td>0.0 Hz</td>
<td>temperature</td>
<td>38.8°C</td>
</tr>
<tr>
<td>Data transfer mode</td>
<td>BayerRG12</td>
<td>Camera temperature</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wavelength, centr.,</td>
<td>467 nm, 20.5 nm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FWHM</td>
<td></td>
</tr>
</tbody>
</table>

Quantum efficiency

\[ \eta = 0.459 \]

Gain

\[ K \ (DN/e) = 0.369 \]
\[ 1/K \ (e/DN) = 2.706 \]

Dark noise & DSNU

\[ \sigma_d \ (DN) = 0.86 \]
\[ \sigma_0 \ (e) = 2.2 \]
\[ DSNU_{1288} \ (DN) = 0.37 \]
\[ DSNU_{1288} \ (e) = 1.01 \]

Signal-to-noise ratio & PRNU

\[ \text{SNR}_{\text{max}} = 103 \]
\[ \text{SNR}_{\text{max}} \ (dB) = 40.3 \]
\[ \text{SNR}_{\text{max}} \ (bits) = 6.7 \]
\[ 1/\text{SNR}_{\text{max}} \ (%) = 0.97 \]
\[ \text{PRNU}_{1288} \ (%) = 0.530 \]

Nonlinearity

\[ \text{LE} \ (%) = 0.21 \]

Sensitivity & saturation

\[ \mu_{p,\text{min}} \ (p) = 6.3 \]
\[ \mu_{e,\text{min}} \ (e) = 2.9 \]
\[ \mu_{p,\text{sat}} \ (p) = 23295 \]
\[ \mu_{e,\text{sat}} \ (e) = 10698 \]

Dynamic range

\[ \text{DR} = 3712 \]
\[ \text{DR} \ (dB) = 71.4 \]
\[ \text{DR} \ (bit) = 11.9 \]

Dark current

\[ \mu_{c,\text{mean}} \ (DN/s) = 3.18 \]
\[ \mu_{c,\text{mean}} \ (e/s) = 8.60 \]
\[ \mu_{c,\text{var}} \ (e/s) = 7.92 \]
EMVA 1288 Summary Sheet for Operating Point 2

<table>
<thead>
<tr>
<th>Type of data</th>
<th>Single</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
<td>1.3 ms</td>
</tr>
<tr>
<td>Frame rate</td>
<td>0.0 Hz</td>
</tr>
<tr>
<td>Data transfer mode</td>
<td>BayerRG12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gain, offset</th>
<th>Gain = 0dB, Offset = 0.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental temperature</td>
<td>25.7°C</td>
</tr>
<tr>
<td>Camera temperature</td>
<td>38.8°C</td>
</tr>
<tr>
<td>Wavelength, centr., FWHM</td>
<td>534 nm, 30.9 nm</td>
</tr>
</tbody>
</table>

### Photon transfer

<table>
<thead>
<tr>
<th>Photon transfer m0482, 534nm, 17.11.2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>green1 data</td>
</tr>
<tr>
<td>green2 data</td>
</tr>
<tr>
<td>green1 fit</td>
</tr>
<tr>
<td>green2 fit</td>
</tr>
</tbody>
</table>

![Graph showing photon transfer]

### SNR

<table>
<thead>
<tr>
<th>SNR m0482, 534nm, 17.11.2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>green1 data</td>
</tr>
<tr>
<td>green2 data</td>
</tr>
<tr>
<td>green1 fit</td>
</tr>
<tr>
<td>green2 fit</td>
</tr>
</tbody>
</table>

![Graph showing signal-to-noise ratio]

### Quantum efficiency

\[ \eta = 0.579 \]

### Gain

\[ K \text{ (DN/e)} = 0.370 \]
\[ 1/K \text{ (e/DN)} = 2.704 \]

### Dark noise & DSNU

\[ \sigma_d \text{ (DN)} = 0.86 \]
\[ \sigma_0 \text{ (e)} = 2.2 \]
\[ \text{DSNU}_{1288} \text{ (DN)} = 0.37 \]
\[ \text{DSNU}_{1288} \text{ (e)} = 0.99 \]

### Signal-to-noise ratio & PRNU

\[ \text{SNR}_{\text{max}} = 103 \]
\[ \text{SNR}_{\text{max}} \text{ (dB)} = 40.3 \]
\[ \text{SNR}_{\text{max}} \text{ (bits)} = 6.7 \]
\[ 1/\text{SNR}_{\text{max}} \text{ (%)} = 0.97 \]
\[ \text{PRNU}_{1288} \text{ (%)} = 0.540 \]

### Nonlinearity

\[ \text{LE} \text{ (%)} = 0.22 \]

### Sensitivity & saturation

\[ \mu_{p,\text{min}} \text{ (p)} = 5.0 \]
\[ \mu_{e,\text{min}} \text{ (e)} = 2.9 \]
\[ \mu_{p,\text{sat}} \text{ (p)} = 18474 \]
\[ \mu_{e,\text{sat}} \text{ (e)} = 10698 \]

### Dynamic range

\[ \text{DR} = 3701 \]
\[ \text{DR (dB)} = 71.4 \]
\[ \text{DR (bit)} = 11.9 \]

### Dark current

\[ \mu_{c,\text{mean}} \text{ (DN/s)} = 3.15 \]
\[ \mu_{c,\text{mean}} \text{ (e/s)} = 8.53 \]
\[ \mu_{c,\text{var}} \text{ (e/s)} = 8.14 \]

---

© copyright AEON, 2015
**EMVA 1288 Summary Sheet for Operating Point 3**

<table>
<thead>
<tr>
<th>Type of data</th>
<th>Single</th>
<th>Gain, offset</th>
<th>Gain = 0dB, Offset = 0.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
<td>1.3 ms</td>
<td>Environmental temperature</td>
<td>25.7°C</td>
</tr>
<tr>
<td>Frame rate</td>
<td>0.0 Hz</td>
<td>Camera temperature</td>
<td>38.8°C</td>
</tr>
<tr>
<td>Data transfer mode</td>
<td>BayerRG12</td>
<td>Wavelength, centr., 630 nm, 13.1 nm FWHM</td>
<td></td>
</tr>
</tbody>
</table>

### Photon Transfer m0482, 630nm, 17.11.2015

**Quantum efficiency**

\[ \eta = 0.461 \]

**Gain**

\[ K \text{ (DN/e)} = 0.372 \]

\[ 1/K \text{ (e/DN)} = 2.691 \]

**Dark noise & DSNU**

\[ \sigma_d \text{ (DN)} = 0.86 \]

\[ \sigma_0 \text{ (e)} = 2.2 \]

\[ \text{DSNU}_{1288} \text{ (DN)} = 0.32 \]

\[ \text{DSNU}_{1288} \text{ (e)} = 0.87 \]

**Signal-to-noise ratio & PRNU**

\[ \text{SNR}_{\text{max}} = 103 \]

\[ \text{SNR}_{\text{max}} \text{ (dB)} = 40.3 \]

\[ \text{SNR}_{\text{max}} \text{ (bits)} = 6.7 \]

\[ 1/\text{SNR}_{\text{max}} \text{ (%)} = 0.97 \]

\[ \text{PRNU}_{1288} \text{ (%)} = 0.588 \]

**Nonlinearity**

\[ \text{LE} \text{ (%)} = 0.28 \]

**Sensitivity & saturation**

\[ \mu_{p,\text{min}} \text{ (p)} = 6.2 \]

\[ \mu_{e,\text{min}} \text{ (e)} = 2.9 \]

\[ \mu_{p,\text{sat}} \text{ (p)} = 23197 \]

\[ \mu_{e,\text{sat}} \text{ (e)} = 10691 \]

**Dynamic range**

\[ \text{DR} = 3722 \]

\[ \text{DR (dB)} = 71.4 \]

\[ \text{DR (bit)} = 11.9 \]

**Dark current**

\[ \mu_{c,\text{mean}} \text{ (DN/s)} = 3.34 \]

\[ \mu_{c,\text{mean}} \text{ (e/s)} = 9.00 \]

\[ \mu_{c,\text{var}} \text{ (e/s)} = 8.39 \]