EMVA 1288 Data Sheet m0749

This datasheet describes the specification according to the standard 1288 release 3.1 for "Characterization and Presentation of Specification Data for Image Sensors and Cameras" issued on December 30, 2016 by the European Machine Vision Association (EMVA), published at www.standard1288.org and the zenodo EMVA 1288 community with proprietary extensions from AEON. The measurements were performed with the AEON ACC3 Release 6, 26.11.2016, SN 0005(MatrixVision).

Measurements performed by T.Renner, Matrix Vision GmbH

<table>
<thead>
<tr>
<th>Vendor</th>
<th>MATRIX VISION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>mvBlueCOUGAR-X102nG</td>
</tr>
<tr>
<td>Serial number</td>
<td>GX025382</td>
</tr>
<tr>
<td>Sensor diagonal</td>
<td>9.25 mm</td>
</tr>
<tr>
<td>Lens category</td>
<td>C-Mount</td>
</tr>
<tr>
<td>Resolution</td>
<td>1632 × 1248, 12 bit</td>
</tr>
<tr>
<td>Pixel size</td>
<td>4.50 µm × 4.50 µm</td>
</tr>
<tr>
<td>Sensor type</td>
<td>IMX430</td>
</tr>
<tr>
<td>Shutter type</td>
<td>Global</td>
</tr>
<tr>
<td>Overlap cap.</td>
<td>Overlapping</td>
</tr>
<tr>
<td>Max. frame rate</td>
<td>29.3 Hz</td>
</tr>
<tr>
<td>Interface type</td>
<td>GigE Vision</td>
</tr>
</tbody>
</table>

Type of data presented: Single

Operation point 1 (page 3)
- Wavelength centroid: 536.0 nm
- Wavelength FWHM: 31.0 nm
- Gain, black-level: 0dB, 0.1

Optional data measured: None

![Quantum Efficiency Graph](image)
Summary Sheet for Operation Point 1 at a Wavelength of 536 nm

- **Type of data**: Single
- **Exposure control**: By irradiance
- **Exposure time**: 18.00 ms
- **Frame rate**: 28.0 Hz
- **Data transfer mode**: Mono12

- **Gain, black-level**: 0dB, 0.1
- **Environmental temperature**: 25.7°C
- **Camera body temperature**: 35.6°C
- **Internal temperature(s)**: —

### Photon Transfer

- **Photon transfer m0749, 536 nm, 07.12.2018**

### Signal-to-Noise Ratio

- **SNR m0749, 536 nm, 07.12.2018**

### Quantum efficiency

- \( \eta = 70.1\% \)

### Overall system gain

- \( K = 0.164 \) DN/e\(^{-}\)
- \( 1/K = 6.083 e^+7 /DN \)

### Temporal dark noise

- \( \sigma_d = 5.44 e^- \)
- \( \sigma_y . dark = 0.94 DN \)

### Signal-to-noise ratio

- \( SNR_{max} = 156 \)
- \( 43.9 dB \)
- \( 7.3 \) bit
- \( 1/SNR_{max} = 0.64 \% \)

### Absolute sensitivity threshold

- \( \mu_{p.min} = 8.91 p \)
- \( \mu_{p.min.area} = 0.440 p/\mu m^2 \)
- \( \mu_{e.min} = 6.24 e^- \)
- \( \mu_{e.min.area} = 0.308 e^-/\mu m^2 \)

### Saturation capacity

- \( \mu_{p.sat} = 34669 p \)
- \( \mu_{p.sat.area} = 1712 p/\mu m^2 \)
- \( \mu_{e.sat} = 24298 e^- \)
- \( \mu_{e.sat.area} = 1200 e^-/\mu m^2 \)

### Dynamic range

- \( DR = 3892 \)
- \( 71.8 dB \)
- \( 11.9 \) bit

### Spatial nonuniformities

- \( DSNU_{1288} = 0.88 e^- \)
- \( 0.14 DN \)
- \( PRNU_{1288} = 0.55 \% \)

### Linearity error

- \( LE_{min} = -0.33\% \)
- \( LE_{max} = 0.62\% \)

### Dark current

- \( \mu_{c.mean} = -16.2 \pm 6.4 e^-/s \)
- \( -2.66 DN/s \)
- \( \mu_{c.var} = 4.7 \pm 1.7 e^-/s \)
- \( T_d = — ^°C \)