EMVA 1288 Data Sheet m0802

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-XD107bG</td>
</tr>
<tr>
<td>Serial number</td>
<td>GX210724</td>
</tr>
<tr>
<td>Sensor diagonal</td>
<td>17.55 mm</td>
</tr>
<tr>
<td>Lens category</td>
<td>C-Mount</td>
</tr>
<tr>
<td>Resolution</td>
<td>3216 × 2208, 12 bit</td>
</tr>
<tr>
<td>Pixel size (h×v)</td>
<td>4.50 µm × 4.50 µm</td>
</tr>
<tr>
<td>Sensor type</td>
<td>IMX428</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>16.8 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 535.0 nm
Wavelength FWHM 31.0 nm
Gain, black-level 0dB, 0.1

Optional data measured None

© Copyright Matrix Vision, 2019
Summary Sheet for Operation Point 1 at a Wavelength of 535 nm

Type of data: Single
Exposure control: By irradiance
Exposure time: 18.00 ms
Frame rate: 16.0 Hz
Data transfer mode: Mono12

Gain, black-level: 0dB, 0.1
Environmental temperature: 25.1°C
Camera body temperature: 38.4°C
Internal temperature(s): —

Wavelength, centr., FWHM: 535 nm, 31.0 nm

---

Photon Transfer

Photon transfer m0802, 535 nm, 02.05.2019

Signal-to-Noise Ratio

SNR m0802, 535 nm, 02.05.2019

Quantum efficiency
\( \eta \) 69.8%

Overall system gain
\( K \) 0.162 DN/e^-
\( 1/K \) 6.189 e^-/DN

Temporal dark noise
\( \sigma_d \) 5.58 e^-
\( \sigma_y,\text{dark} \) 0.95 DN

Signal-to-noise ratio
\( \text{SNR}_{\text{max}} \) 157
43.9 dB
7.3 bit
\( 1/\text{SNR}_{\text{max}} \) 0.64%

Absolute sensitivity threshold
\( \mu,p,\text{min} \) 9.14 p
\( \mu,p,\text{min.area} \) 0.451 p/\( \mu \text{m}^2 \)
\( \mu,e,\text{min} \) 6.38 e^-
\( \mu,e,\text{min.area} \) 0.315 e^-/\( \mu \text{m}^2 \)

Saturation capacity
\( \mu,p,\text{sat} \) 35318 p
\( \mu,p,\text{sat.area} \) 1744 p/\( \mu \text{m}^2 \)
\( \mu,e,\text{sat} \) 24664 e^-
\( \mu,e,\text{sat.area} \) 1218 e^-/\( \mu \text{m}^2 \)

Dynamic range
DR 3864
71.7 dB
11.9 bit

Spatial nonuniformities
DSNU_{1288} 1.07 e^-
0.17 DN
PRNU_{1288} 0.81%

Linearity error
\( \text{LE}_{\text{min}} \) -0.24%
\( \text{LE}_{\text{max}} \) 0.77%

Dark current
\( \mu,c,\text{mean} \) -20.5 ± 6.2 e^-/s
-3.31 DN/s
\( \mu,c,\text{var} \) 6.2 ± 1.4 e^-/s
\( T_d \) — °C