EMVA 1288 Data Sheet m0809

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>mvBlueFOX3-2071G</td>
</tr>
<tr>
<td>Serial number</td>
<td>FF003912</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>$3216 \times 2208$, 12 bit</td>
</tr>
<tr>
<td>Pixel size (h×v)</td>
<td>4.50 µm × 4.50 µm</td>
</tr>
<tr>
<td>Sensor</td>
<td>IMX420</td>
</tr>
<tr>
<td>Sensor type</td>
<td>CMOS</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>26.7 Hz</td>
</tr>
<tr>
<td>Interface type</td>
<td>USB3 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

![Graph](wavelength_x_quantum_efficiency.png)
Summary Sheet for Operation Point 1 at a Wavelength of 535 nm

<table>
<thead>
<tr>
<th>Type of data</th>
<th>Single</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure control</td>
<td>By irradiance</td>
</tr>
<tr>
<td>Exposure time</td>
<td>17.00 ms</td>
</tr>
<tr>
<td>Frame rate</td>
<td>26.7 Hz</td>
</tr>
<tr>
<td>Data transfer mode</td>
<td>Mono12</td>
</tr>
</tbody>
</table>

Gain, black-level: 0dB, 0.1

Environmental temperature: 24.4°C
Camera body temperature: 38.6°C
Internal temperature(s): —
Wavelength, centr., FWHM: 535 nm, 31.0 nm

Photon Transfer

Signal-to-Noise Ratio

Quantum efficiency: η = 68.8%
Overall system gain: K = 0.165 DN/e−
1/K = 6.075 e−/DN

Temporal dark noise:
σ_d = 5.52 e−
σ_y,dark = 0.95 DN

Signal-to-noise ratio
SNR_{max} = 155
43.8 dB
7.3 bit
1/SNR_{max} = 0.64 %

Absolute sensitivity threshold
μ_p.min = 9.18 p
μ_p.min.area = 0.453 p/μm²
μ_e.min = 6.31 e−
μ_e.min.area = 0.312 e−/μm²

Saturation capacity
μ_p.sat = 35124 p
μ_p.sat.area = 1735 p/μm²
μ_e.sat = 24152 e−
μ_e.sat.area = 1193 e−/μm²

Dynamic range
DR = 3825
71.7 dB
11.9 bit

Spatial nonuniformities
DSNU_{1288} = 1.45 e−
0.24 DN
PRNU_{1288} = 0.74 %

Linearity error
LE_{min} = -0.19%
LE_{max} = 0.27%

Dark current
μ_c.mean = -22.36 ± 5.63 e−/s
-3.68 DN/s
μ_c.var = -0.56 ± 2.64 e−/s
T_d = — °C