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.

Vendor: MATRIX VISION  
Model: mvBlueCOUGAR-X102eC  
Serial number: GX005374  
Sensor diagonal: 8.69 mm  
Lens category: C-Mount  
Resolution: 1280 x 1024, 10 bit  
Pixel size: 5.30 \mu m \times 5.30 \mu m  
Sensor type: CMOS  
Shutter type: global  
Overlap capabilities: pipelined  
Maximum frame rate: 45.5 Hz  
Interface type: GigE Vision  

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 = 15.0  

**Operation point 2, (page 17)**  
Wavelength centroid: 534.2 nm  
Wavelength FWHM: 30.9 nm  
Gain, offset: Gain = 0 dB, Offset = 15.0  

**Operation point 3, (page 29)**  
Wavelength centroid: 629.5 nm  
Wavelength FWHM: 13.1 nm  
Gain, offset: Gain = 0 dB, Offset = 15.0  

Optional data measured: None

---

**Spectral sensitivity m0387, 19.06.2015**

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

---

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

Type of data | Single
--- | ---
Exposure time | 8.0 ms
Frame rate | 0.0 Hz
Data transfer mode | BayerGR10

Gain, offset
Gain = 0 dB, Offset = 15.0

Environmental temperature
25.8°C

Camera temperature
36.3°C

Wavelength, centr., FWHM
467 nm, 20.5 nm

---

**Photon transfer**

$m0387, 467nm, 19.06.2015$

**Gain**

$K$ (DN/e) = 0.099
$1/K$ (e/DN) = 10.145

**Dark noise & DSNU**

$\sigma_d$ (DN) = 2.54
$\sigma_0$ (e) = 25.6
DSNU$_{1288}$ (DN) = 6.64
DSNU$_{1288}$ (e) = 67.31

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

$SNR_{max}$ = 98
$SNR_{max}$ (dB) = 39.8
$SNR_{max}$ (bits) = 6.6
$1/SNR_{max}$ (%) = 1.03
PRNU$_{1288}$ (%) = 1.377

**Nonlinearity**

LE (%) = 0.45

**Sensitivity & saturation**

$\mu_{p, \text{min}}$ (p) = 61.2
$\mu_{e, \text{min}}$ (e) = 26.3
$\mu_{p, \text{sat}}$ (p) = 22109
$\mu_{e, \text{sat}}$ (e) = 9516

**Dynamic range**

DR = 362
DR (dB) = 51.2
DR (bit) = 8.5

**Dark current**

$\mu_{c, \text{mean}}$ (DN/s) = 95.60
$\mu_{c, \text{mean}}$ (e/s) = 969.81
$\mu_{c, \text{var}}$ (e/s) = -84.52
EMVA 1288 Summary Sheet for Operating Point 2

Type of data: Single
Exposure time: 8.0 ms
Frame rate: 0.0 Hz
Data transfer mode: BayerGR10

Gain, offset: Gain = 0dB, Offset = 15.0

Environmental temperature: 25.8°C
Camera temperature: 36.3°C
Wavelength, centr., FWHM: 534 nm, 30.9 nm

Photon transfer

green1: \text{var(dark)} = 6.51 \text{DN}^2, K = 0.098 \pm 0.2%  
green2: \text{var(dark)} = 6.51 \text{DN}^2, K = 0.098 \pm 0.2%

Saturation

SNR

\text{SNR}_{\text{max}} = 99  
\text{SNR}_{\text{max}} (\text{dB}) = 39.9  
\text{SNR}_{\text{max}} (\text{bits}) = 6.6  
1/\text{SNR}_{\text{max}} (%) = 1.01  
\text{PRNU}_{1288} (%) = 1.650

Nonlinearity
LE (%) = 0.61

Sensitivity & saturation
\mu_{p,\text{min}} (\text{p}) = 60.0  
\mu_{e,\text{min}} (\text{e}) = 26.5  
\mu_{p,\text{sat}} (\text{p}) = 22281  
\mu_{e,\text{sat}} (\text{e}) = 9837

Dynamic range
DR = 371  
DR (dB) = 51.4  
DR (bit) = 8.5

Dark current
\mu_{c,\text{mean}} (\text{DN/s}) = 95.67  
\mu_{c,\text{mean}} (\text{e/s}) = 975.17  
\mu_{c,\text{var}} (\text{e/s}) = 24.52
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 = 15.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
<td>8.0 ms</td>
<td>Environmental</td>
<td>25.8°C</td>
</tr>
<tr>
<td>Frame rate</td>
<td>0.0 Hz</td>
<td>temperature</td>
<td>36.3°C</td>
</tr>
<tr>
<td>Data transfer mode</td>
<td>BayerGR10</td>
<td>Camera temperature</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wavelength, centr., FWHM</td>
<td>630 nm, 13.1 nm</td>
</tr>
</tbody>
</table>

### Photon transfer m0387, 630nm, 19.06.2015

- **Gain**
  - $K$ (DN/e) = 0.097
  - $1/K$ (e/DN) = 10.297

- **Dark noise & DSNU**
  - $\sigma_d$ (DN) = 2.55
  - $\sigma_0$ (e) = 26.1
  - DSNU_{1288} (DN) = 6.69
  - DSNU_{1288} (e) = 68.89

- **Signal-to-noise ratio & PRNU**
  - $\text{SNR}_{\text{max}}$ = 99
  - $\text{SNR}_{\text{max}}$ (dB) = 39.9
  - $\text{SNR}_{\text{max}}$ (bits) = 6.6
  - $1/\text{SNR}_{\text{max}}$ (%) = 1.01
  - PRNU_{1288} (%) = 2.350

- **Nonlinearity**
  - LE (%) = 0.64

- **Sensitivity & saturation**
  - $\mu_{p,\text{min}}$ (p) = 63.1
  - $\mu_{e,\text{min}}$ (e) = 26.8
  - $\mu_{p,\text{sat}}$ (p) = 23186
  - $\mu_{e,\text{sat}}$ (e) = 9832

- **Dynamic range**
  - DR = 367
  - DR (dB) = 51.3
  - DR (bit) = 8.5

- **Dark current**
  - $\mu_{c,\text{mean}}$ (DN/s) = 95.99
  - $\mu_{c,\text{mean}}$ (e/s) = 988.40
  - $\mu_{c,\text{var}}$ (e/s) = 99.58