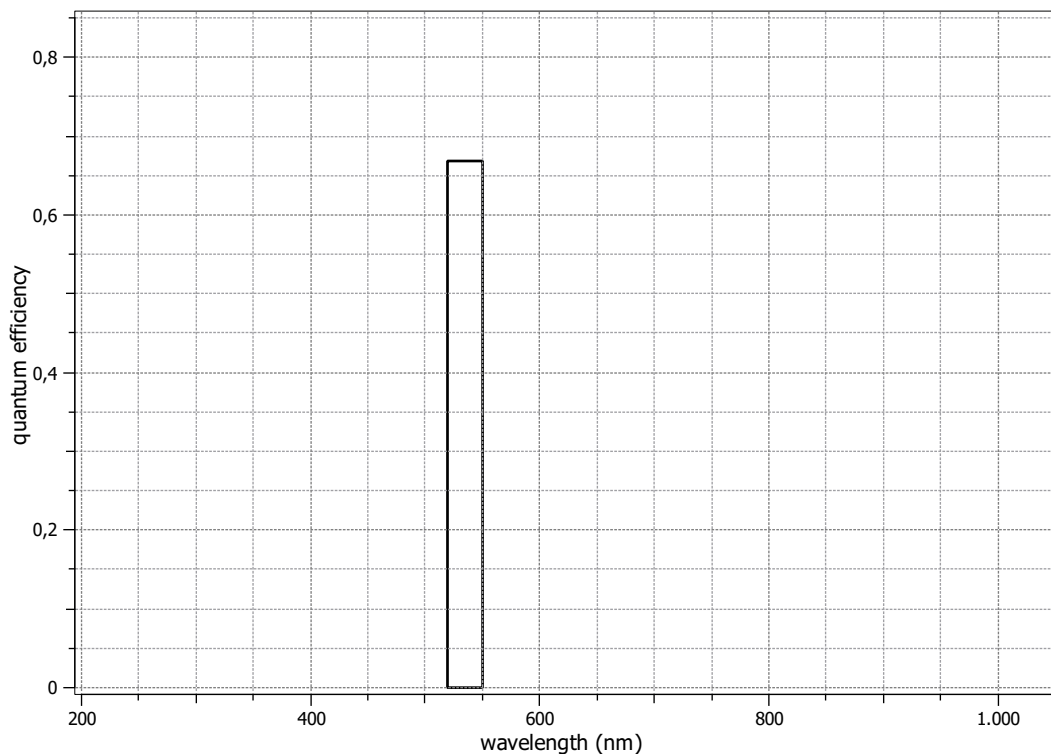


## EMVA 1288 Data Sheet m0888

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](http://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

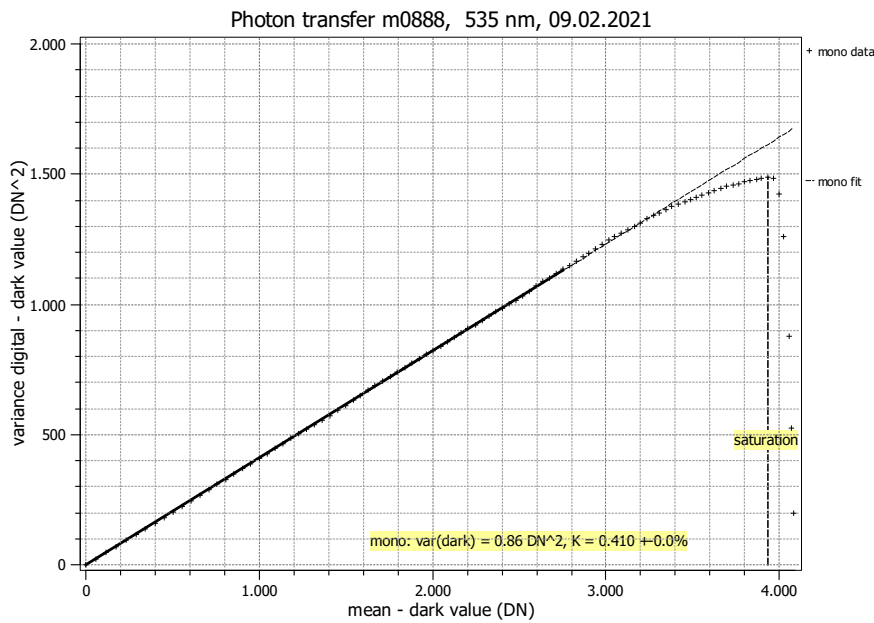
Vendor	MATRIX VISION	Type of data presented	Single
Model	mvBlueCOUGAR-XD1020aG	<b>Operation point 1 (page 3)</b>	
Serial number	GX222410	Wavelength centroid	535.0 nm
Sensor diagonal	17.48 mm	Wavelength FWHM	31.0 nm
Lens category	C-Mount	Gain, black-level	0dB, 0.01
Resolution	4512 × 4512, 12 bit	<b>Optional data measured</b>	
Pixel size (h×v)	2.74 μm × 2.74 μm	None	
Sensor	IMX541		
Sensor type	CMOS		
Shutter type	Global		
Overlap cap.	Overlapping		
Max. frame rate	5.9 Hz		
Interface type	GigE Vision		



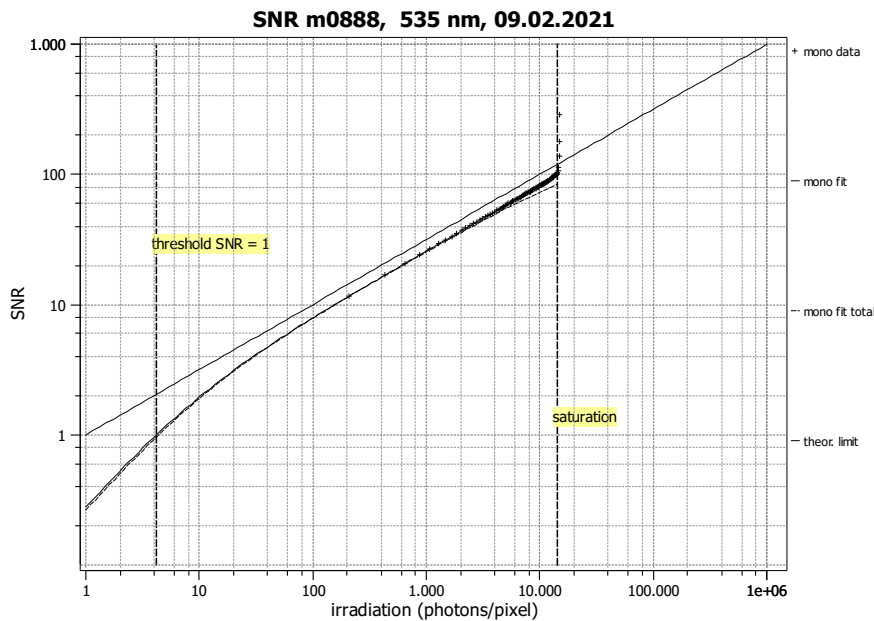
## Summary Sheet for Operation Point 1 at a Wavelength of 535 nm

Type of data	Single	Gain, black-level	0dB, 0.01
Exposure control	By irradiance	Environmental temperature	21.2°C
Exposure time	1.00 ms	Camera body temperature	37.3°C
Frame rate	5.0 Hz	Internal temperature(s)	—
Data transfer mode	Mono12	Wavelength, centr., FWHM	535 nm, 31.0 nm

### Photon Transfer



### Signal-to-Noise Ratio



#### Quantum efficiency

$\eta$  66.8%

#### Overall system gain

$K$  0.410 DN/e<sup>-</sup>

$1/K$  2.437 e<sup>-</sup>/DN

#### Temporal dark noise

$\sigma_d$  2.14 e<sup>-</sup>

$\sigma_{y,\text{dark}}$  0.93 DN

#### Signal-to-noise ratio

SNR<sub>max</sub> 98

39.8 dB

6.6 bit

$1/\text{SNR}_{\text{max}}$  1.02 %

#### Absolute sensitivity threshold

$\mu_{p,\text{min}}$  4.20 p

$\mu_{p,\text{min,area}}$  0.560 p/μm<sup>2</sup>

$\mu_{e,\text{min}}$  2.81 e<sup>-</sup>

$\mu_{e,\text{min,area}}$  0.374 e<sup>-</sup>/μm<sup>2</sup>

#### Saturation capacity

$\mu_{p,\text{sat}}$  14327 p

$\mu_{p,\text{sat,area}}$  1908 p/μm<sup>2</sup>

$\mu_{e,\text{sat}}$  9577 e<sup>-</sup>

$\mu_{e,\text{sat,area}}$  1276 e<sup>-</sup>/μm<sup>2</sup>

#### Dynamic range

DR 3408

70.6 dB

11.7 bit

#### Spatial nonuniformities

DSNU<sub>1288</sub> 0.81 e<sup>-</sup>

0.33 DN

PRNU<sub>1288</sub> 0.62 %

#### Linearity error

LE<sub>min</sub> -0.46%

LE<sub>max</sub> 1.09%

#### Dark current

$\mu_{c,\text{mean}}$  1.2 ± 0.0 e<sup>-</sup>/s

0.50 DN/s

$\mu_{c,\text{var}}$  1.2 ± 0.0 e<sup>-</sup>/s

$T_d$  — °C