

EMVA 1288 Data Sheet m1319

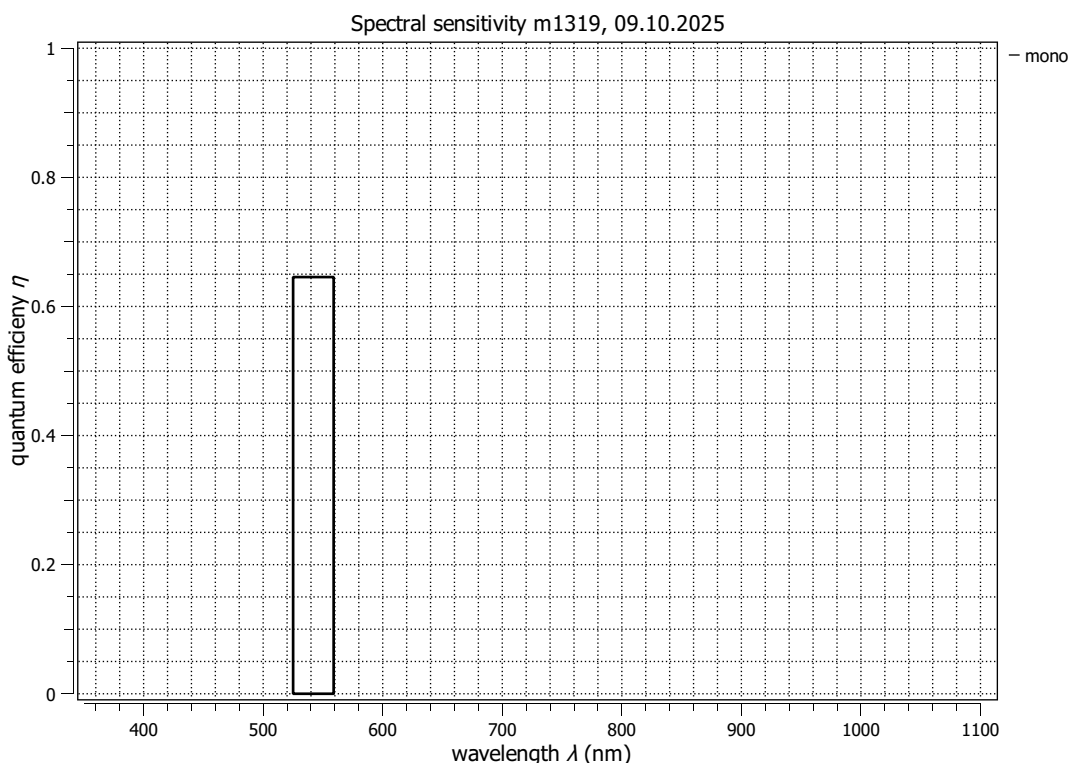
This data sheet describes the specification according to the standard 1288 Release 4.0 Linear issued on 21 June 2021 for "Characterization and Presentation of Specification Data for Image Sensors and Cameras" by the European Machine Vision Association (EMVA), published at <https://www.emva.org/standards-technology/emva-1288/> with proprietary extensions from AEON. The measurements were performed with the AEON ACC2b 14x1 color, Release 9, 13.11.2020, SN 0066(Balluff), software version 3.2.

Measurements performed by Product Development Vision, Balluff GmbH

Type of data presented	Single
Vendor	Balluff GmbH
Model	BVS CA-GW1-0051BG
Serial number	GW000019
Sensor diagonal	8.81 mm
Lens category	C-Mount
Resolution	2464 × 2064, 12 bit
Offset/size channels	0 × 0/ 2464 × 2064
Pixel size (h×v)	2.74 μm × 2.74 μm
Sensor	IMX537
Sensor type	CMOS
Shutter type	Global
Overlap cap.	Overlapping
Max. frame rate	0.0 Hz
Interface type	GigEVision

Nr.	Centroid/FWHM	Gain, blacklevel	t_{exp} (ms)
1	542.0/33.9 nm	0.0dB, 0.1	2.00

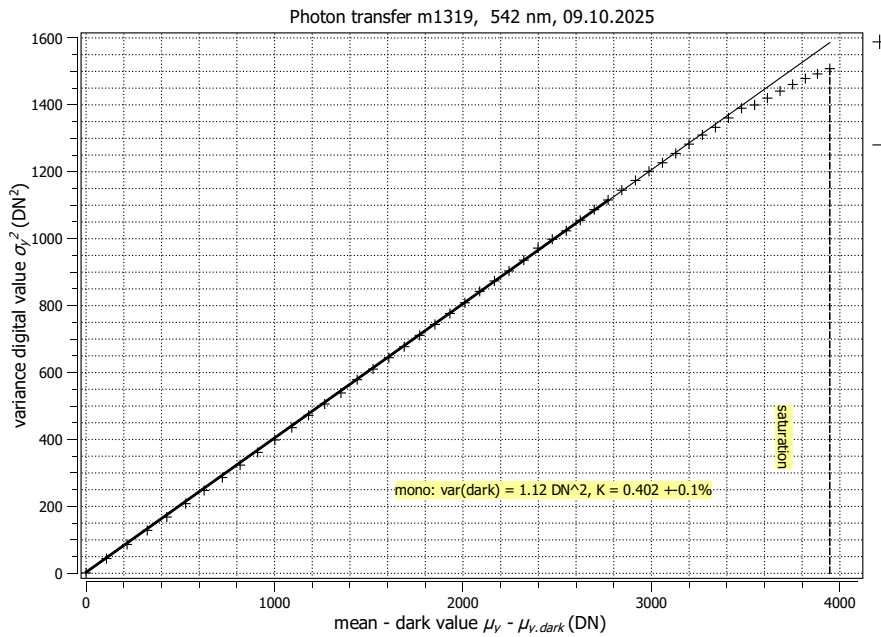
Optional data measured: None



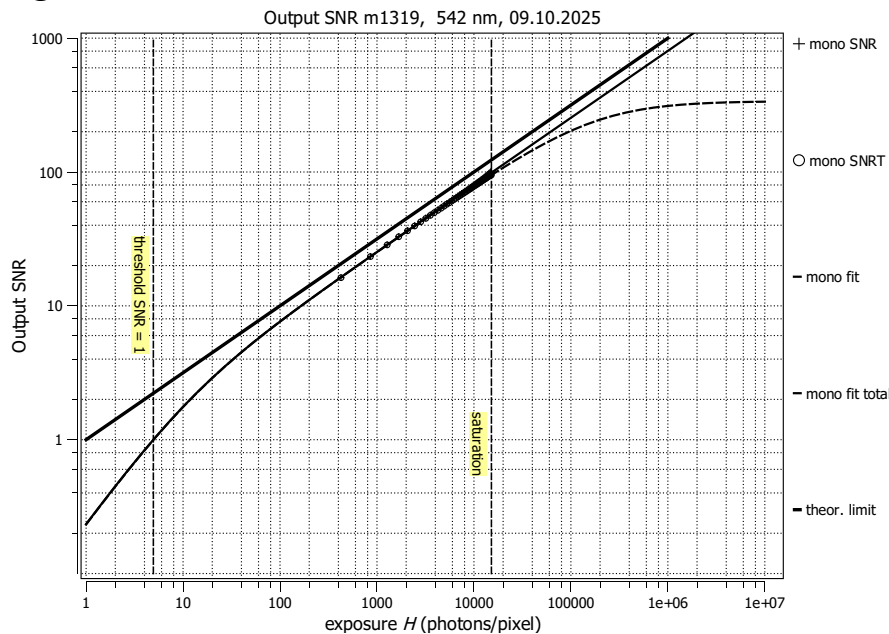
Summary Sheet for Operation Point 1 at a Wavelength of 542 nm

Type of data	Single	Gain, black-level	0.0dB, 0.1
Exposure control	By irradiance	Environmental temperature	22.9°C
Exposure time	2.000 ms	Camera body temperature	36.3°C
Frame rate	172.4 Hz	Internal temperature(s)	48.0°C, 39.0°C
Data transfer mode	Mono12p	Wavelength, centr., FWHM	542 nm, 33.9 nm

Photon Transfer



Signal-to-Noise Ratio



Quantum efficiency

η 64.6%

Overall system gain

K 0.4016 DN/e⁻

$1/K$ 2.490 e⁻/DN

Temporal dark noise

σ_d 2.54 e⁻

$\sigma_{y, \text{dark}}$ 1.06 DN

Signal-to-noise ratio

SNR_{max} 98.9

39.9 dB

$1/\text{SNR}_{\text{max}}$ 1.011 %

Absolute sensitivity threshold

$\mu_{e, \text{min}}$ 3.19 e⁻

$\mu_{e, \text{min, area}}$ 0.425 e⁻/μm²

Saturation capacity

$\mu_{e, \text{sat}}$ 9775 e⁻

$\mu_{e, \text{sat, area}}$ 1302 e⁻/μm²

Dynamic range

DR 3066

69.73 dB

Spatial nonuniformities

DSNU₁₂₈₈ 0.271 e⁻

DSNU_{1288, col} 0.049 e⁻

DSNU_{1288, row} 0.011 e⁻

DSNU_{1288, pix} 0.266 e⁻

PRNU₁₂₈₈ 0.296 %

PRNU_{1288, col} 0.026 %

PRNU_{1288, row} 0.027 %

PRNU_{1288, pix} 0.293 %

Linearity error

LE 0.31%

Dark current

$\mu_{c, \text{mean}}$ 1.36E+00 e⁻/s

$\mu_{c, \text{var}}$ 2.05E+00 e⁻/s