

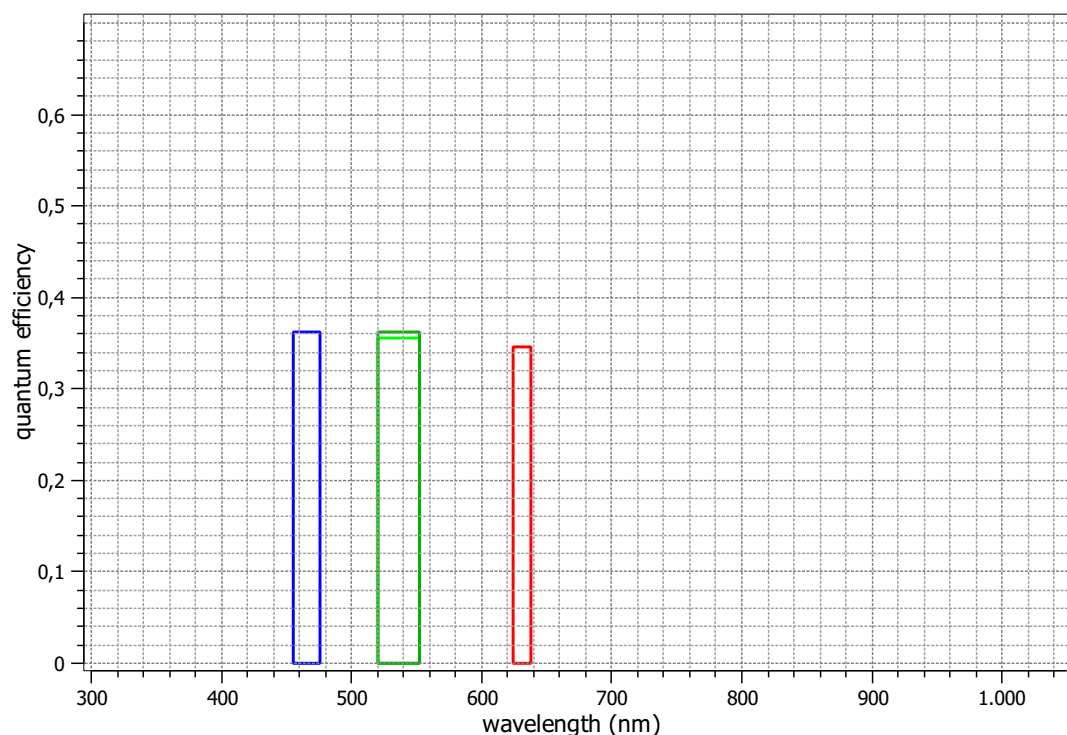
EMVA 1288 Summary Sheet

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 or the *Zenodo EMVA 1288 community*) release 3.0 with proprietary extensions from AEON. The measurements were performed with the AEON ACC3 RGB Release 3, 15.08.2015, SN 0001(Baumer) . The performance parameters and estimated accuracy of the measurements are described in the technical report for the instrument, its calibration in the corresponding specification and calibration report.

Measurements performed by Technical and Application Support Center, Baumer Optronic GmbH.

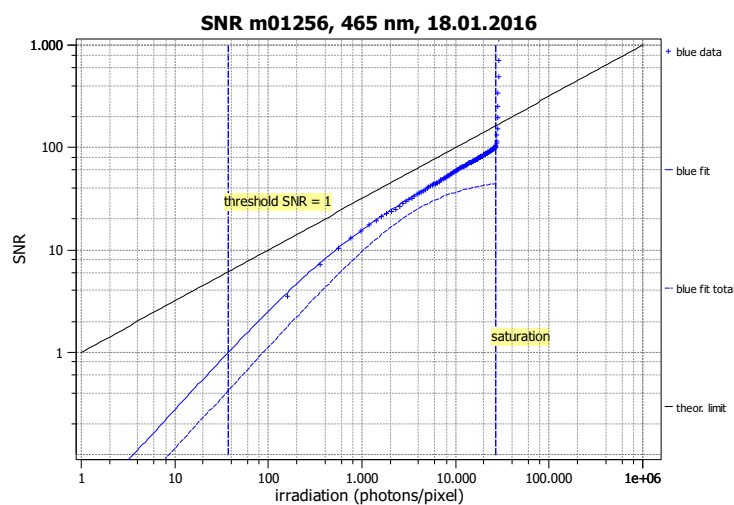
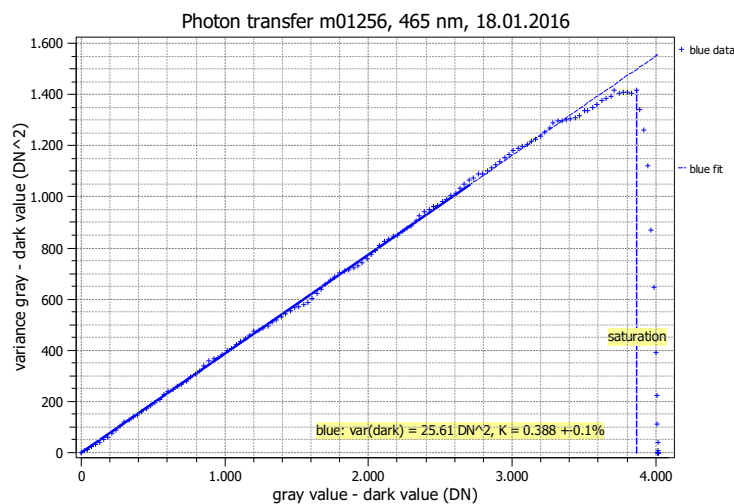
Vendor	Baumer
Model	LXG-120C
Serial number	0592661315
Sensor diagonal	28.16 mm
Lens category	F-Mount
Resolution	4096 × 3072, 12 bit
Pixel size	5.50 μm × 5.50 μm
Sensor	CMOSIS CMV12000
Sensor type	CMOS
Shutter type	Global shutter
Overlap capabilities	Overlapped
Maximum frame rate	0.0 Hz
Interface type	GEV

Type of data presented	Single
Operation point 1	
Wavelength centroid	465.3 nm
Wavelength FWHM	20.7 nm
Gain, offset	BlackLevel = 101
Operation point 2	
Wavelength centroid	535.8 nm
Wavelength FWHM	32.0 nm
Gain, offset	BlackLevel = 101
Operation point 3	
Wavelength centroid	631.0 nm
Wavelength FWHM	13.4 nm
Gain, offset	BlackLevel = 101
Optional data measured	
None	



EMVA 1288 Summary Sheet for Operating Point 1

Type of data	Single	Gain, offset	BlackLevel = 101
Exposure time	825.00 μ s	Environmental temperature	26.2°C
Frame rate	10.0 Hz	Camera body temperature	37.1°C
Data transfer mode	BayerGB12	Intern temperature(s)	—
		Wavelength, centr., FWHM	465 nm, 20.7 nm



Results

Quantum efficiency η 36.3%

Overall system gain

K 0.388 DN/e⁻
 $1/K$ 2.581 e⁻/DN

Temporal dark noise & DSNU

$\sigma_{y,\text{dark}}$ 5.06 DN
 DSNU₁₂₈₈ 11.20 DN
 σ_d 13.04 e⁻
 DSNU₁₂₈₈ 28.89 e⁻

Signal-to-noise ratio & PRNU

SNR_{max} 99
 SNR_{max} 39.9 dB
 SNR_{max} 6.6 bit
 $1/\text{SNR}_{\text{max}}$ 1.01 %
 PRNU₁₂₈₈ 1.99 %

Nonlinearity

LE (%) 0.58

Sensitivity & saturation

$\mu_{p,\text{min}}$ 37.4 p
 1.24 p/ μm^2
 $\mu_{p,\text{sat}}$ 26895 p
 889 p/ μm^2
 $\mu_{e,\text{min}}$ 13.6 e⁻
 0.45 e⁻/ μm^2
 $\mu_{e,\text{sat}}$ 9753 e⁻
 322 e⁻/ μm^2

Dynamic range

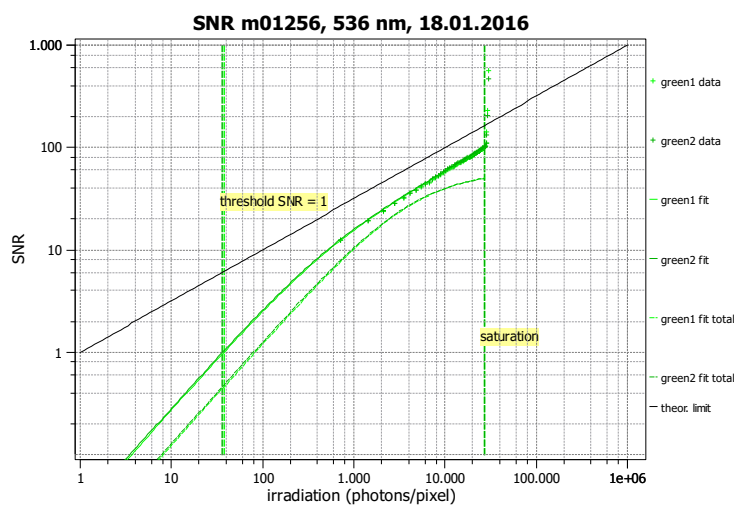
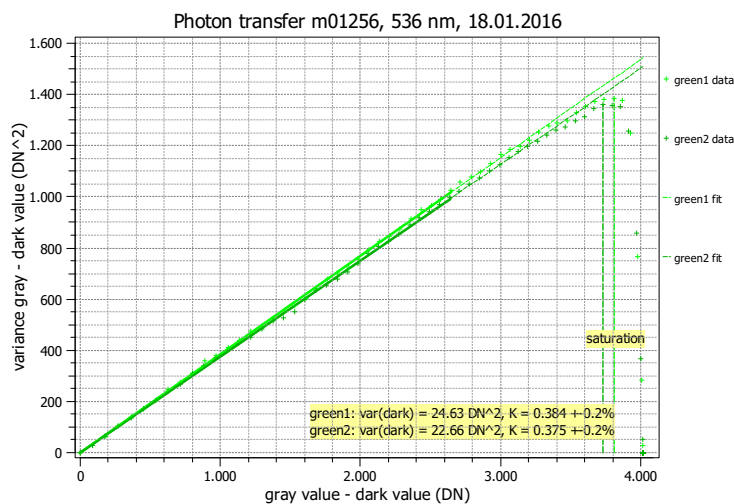
DR 719
 DR 57.1 dB
 DR 9.5 bit

Dark current

$\mu_{c,\text{mean}}$ 116.7 DN/s
 $\mu_{c,\text{mean}}$ 301.3 e⁻/s
 $\mu_{c,\text{var}}$ 154.4 e⁻/s

EMVA 1288 Summary Sheet for Operating Point 2

Type of data	Single	Gain, offset	BlackLevel = 101
Exposure time	825.00 μ s	Environmental temperature	26.2°C
Frame rate	10.0 Hz	Camera body temperature	37.1°C
Data transfer mode	BayerGB12	Intern temperature(s)	—
		Wavelength, centr., FWHM	536 nm, 32.0 nm



Results

Quantum efficiency η 35.5%

Overall system gain

K 0.384 DN/e⁻
 $1/K$ 2.602 e⁻/DN

Temporal dark noise & DSNU

$\sigma_{y,\text{dark}}$ 4.96 DN
 DSNU₁₂₈₈ 9.98 DN
 σ_d 12.89 e⁻
 DSNU₁₂₈₈ 25.96 e⁻

Signal-to-noise ratio & PRNU

SNR_{max} 99
 SNR_{max} 39.9 dB
 SNR_{max} 6.6 bit
 $1/\text{SNR}_{\text{max}}$ 1.01 %
 PRNU₁₂₈₈ 1.70 %

Nonlinearity

LE (%) 0.48

Sensitivity & saturation

$\mu_{p,\text{min}}$ 37.8 p
 1.25 p/ μ m²
 $\mu_{p,\text{sat}}$ 27393 p
 906 p/ μ m²
 $\mu_{e,\text{min}}$ 13.4 e⁻
 0.44 e⁻/ μ m²
 $\mu_{e,\text{sat}}$ 9730 e⁻
 322 e⁻/ μ m²

Dynamic range

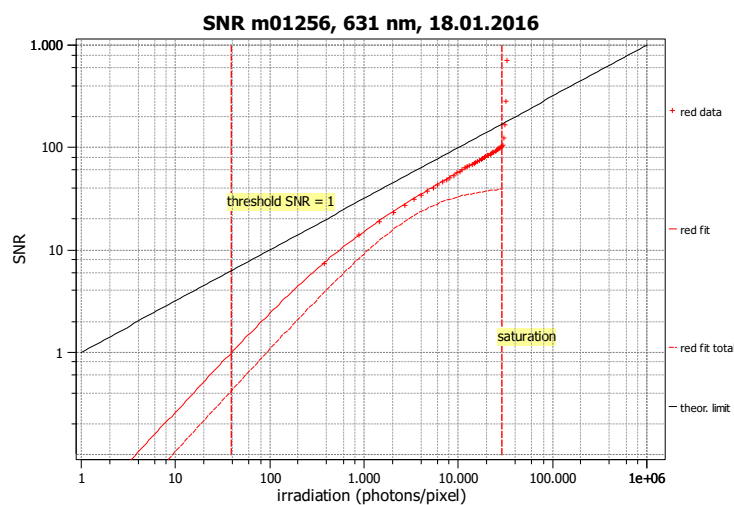
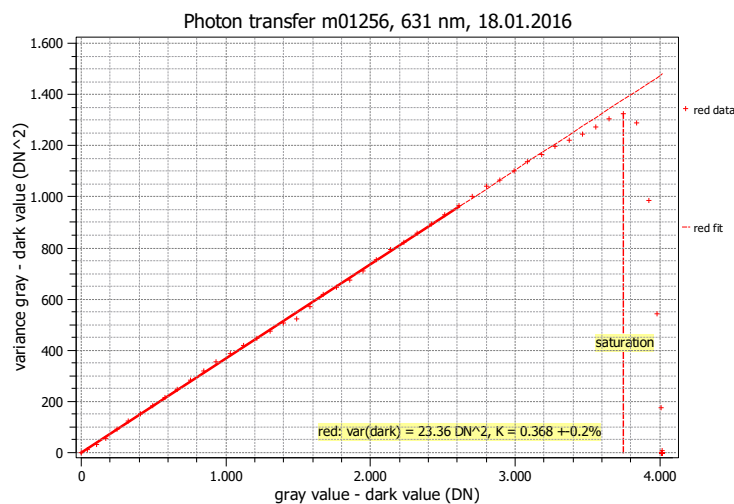
DR 725
 DR 57.2 dB
 DR 9.5 bit

Dark current

$\mu_{c,\text{mean}}$ 116.8 DN/s
 $\mu_{c,\text{mean}}$ 303.8 e⁻/s
 $\mu_{c,\text{var}}$ 157.2 e⁻/s

EMVA 1288 Summary Sheet for Operating Point 3

Type of data	Single	Gain, offset	BlackLevel = 101
Exposure time	825.00 μ s	Environmental temperature	26.2°C
Frame rate	10.0 Hz	Camera body temperature	37.1°C
Data transfer mode	BayerGB12	Intern temperature(s)	—
		Wavelength, centr., FWHM	631 nm, 13.4 nm



Results

Quantum efficiency η 34.5%

Overall system gain

K 0.368 DN/e⁻
 $1/K$ 2.716 e⁻/DN

Temporal dark noise & DSNU

$\sigma_{y,\text{dark}}$ 4.83 DN
 DSNU₁₂₈₈ 10.66 DN
 σ_d 13.10 e⁻
 DSNU₁₂₈₈ 28.96 e⁻

Signal-to-noise ratio & PRNU

SNR_{max} 100
 SNR_{max} 40.0 dB
 SNR_{max} 6.6 bit
 $1/\text{SNR}_{\text{max}}$ 1.00 %
 PRNU₁₂₈₈ 2.33 %

Nonlinearity

LE (%) 0.30

Sensitivity & saturation

$\mu_{p,\text{min}}$ 39.5 p
 1.31 p/ μm^2
 $\mu_{p,\text{sat}}$ 29141 p
 963 p/ μm^2
 $\mu_{e,\text{min}}$ 13.6 e⁻
 0.45 e⁻/ μm^2
 $\mu_{e,\text{sat}}$ 10058 e⁻
 333 e⁻/ μm^2

Dynamic range

DR 738
 DR 57.4 dB
 DR 9.5 bit

Dark current

$\mu_{c,\text{mean}}$ 115.5 DN/s
 $\mu_{c,\text{mean}}$ 313.6 e⁻/s
 $\mu_{c,\text{var}}$ 162.0 e⁻/s