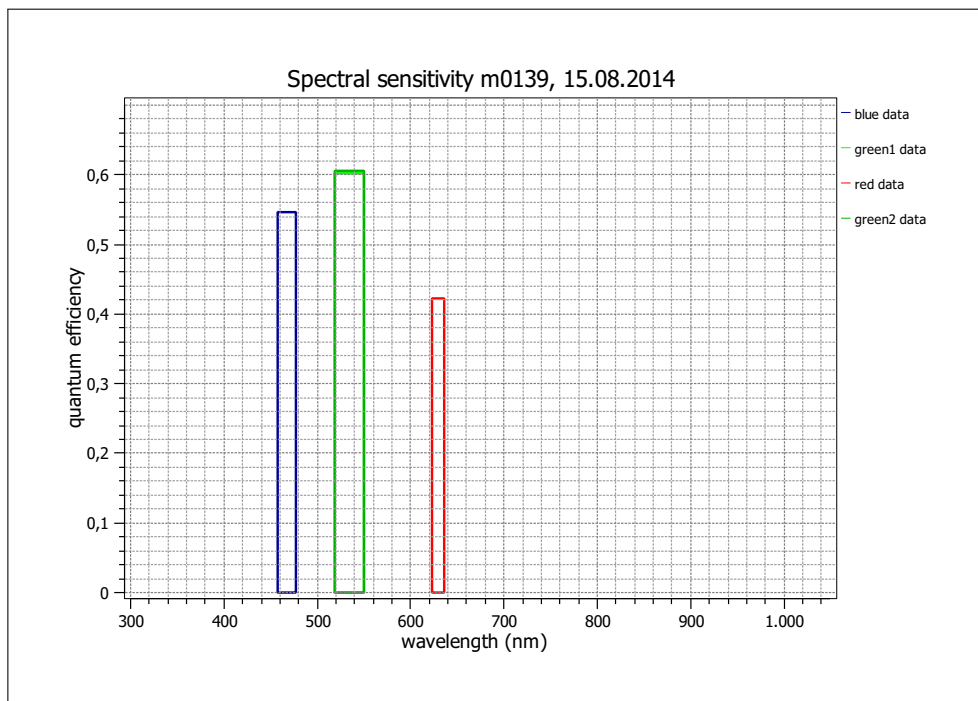


EMVA 1288 Summary Sheet

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). 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.

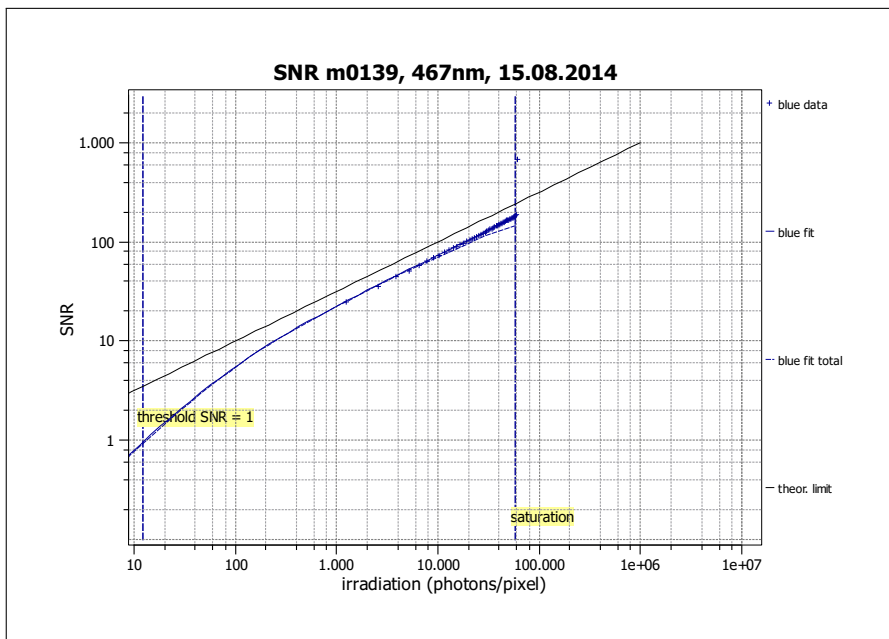
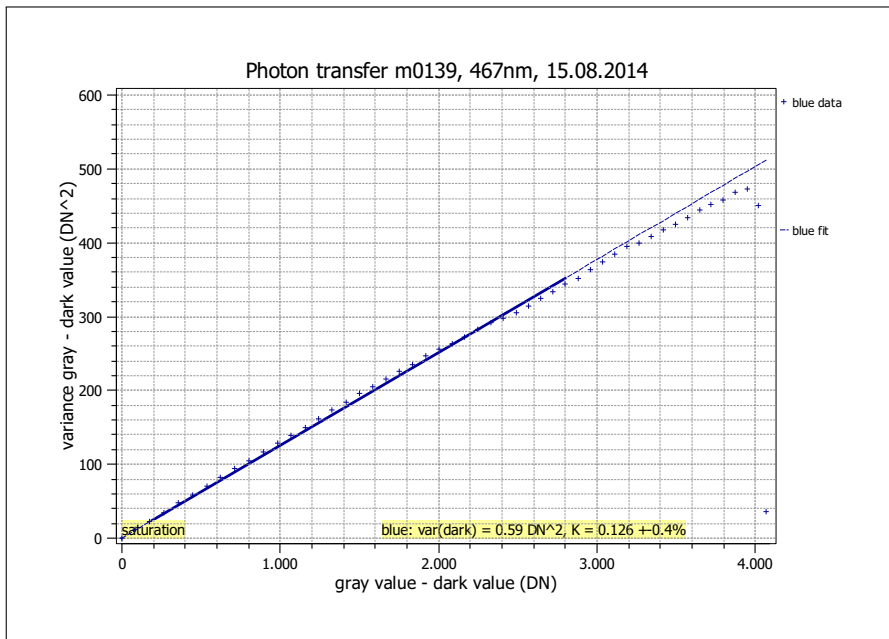
Vendor	MATRIX VISION
Model	mvBlueCOUGAR-XD104dC
Serial number	GX200429
Sensor diagonal	13.39 mm
Lens category	C-Mount
Resolution	1936 × 1214, 12 bit
Pixel size	5.86 μm × 5.86 μm
Sensor type	CMOS
Shutter type	Global
Overlap capabilities	Overlapping
Maximum frame rate	33.8 Hz
Interface type	GigE Vision

Type of data presented	Single
Operation point 1, (page 5)	
Wavelength centroid	467.3 nm
Wavelength FWHM	20.5 nm
Gain, offset	Gain = 0dB, Offset = -0.2
Operation point 2, (page 17)	
Wavelength centroid	534.2 nm
Wavelength FWHM	30.9 nm
Gain, offset	Gain = 0dB, Offset = -0.2
Operation point 3, (page 29)	
Wavelength centroid	629.5 nm
Wavelength FWHM	13.1 nm
Gain, offset	Gain = 0dB, Offset = -0.2
Optional data measured	
None	



EMVA 1288 Summary Sheet for Operating Point 1

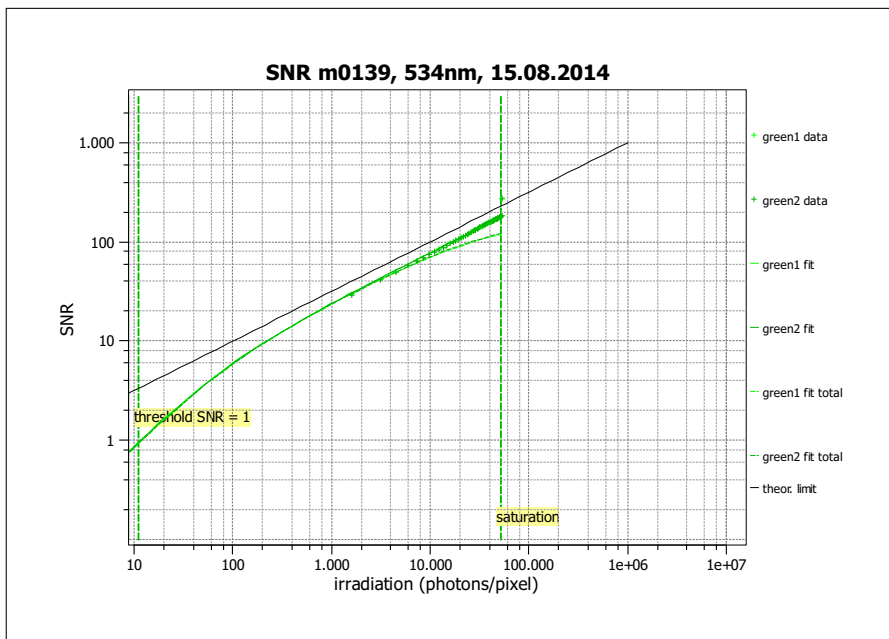
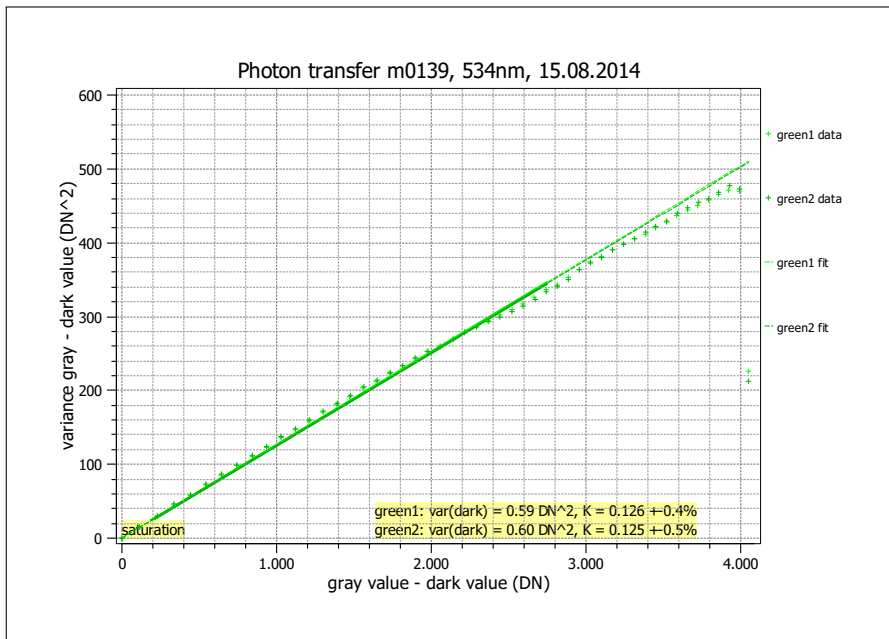
Type of data	Single	Gain, offset	Gain = 0dB, Offset = -0.2
Exposure time	1.0 ms	Environmental temperature	23.8°C
Frame rate	0.0 Hz	Camera temperature	40.2°C
Data transfer mode	BayerRG12	Wavelength, centr., FWHM	467 nm, 20.5 nm



Quantum efficiency	
η	0.546
Gain	
K (DN/e)	0.126
$1/K$ (e/DN)	7.946
Dark noise & DSNU	
σ_d (DN)	0.77
σ_0 (e)	5.6
DSNU ₁₂₈₈ (DN)	0.25
DSNU ₁₂₈₈ (e)	1.99
Signal-to-noise ratio & PRNU	
SNR _{max}	178
SNR _{max} (dB)	45.0
SNR _{max} (bits)	7.5
$1/\text{SNR}_{\text{max}}$ (%)	0.56
PRNU ₁₂₈₈ (%)	0.385
Nonlinearity	
LE (%)	0.39
Sensitivity & saturation	
$\mu_{p,\text{min}}$ (p)	12.1
$\mu_{e,\text{min}}$ (e)	6.6
$\mu_{p,\text{sat}}$ (p)	58217
$\mu_{e,\text{sat}}$ (e)	31776
Dynamic range	
DR	4806
DR (dB)	73.6
DR (bit)	12.2
Dark current	
$\mu_{c,\text{mean}}$ (DN/s)	3.70
$\mu_{c,\text{mean}}$ (e/s)	29.42
$\mu_{c,\text{var}}$ (e/s)	-59.52

EMVA 1288 Summary Sheet for Operating Point 2

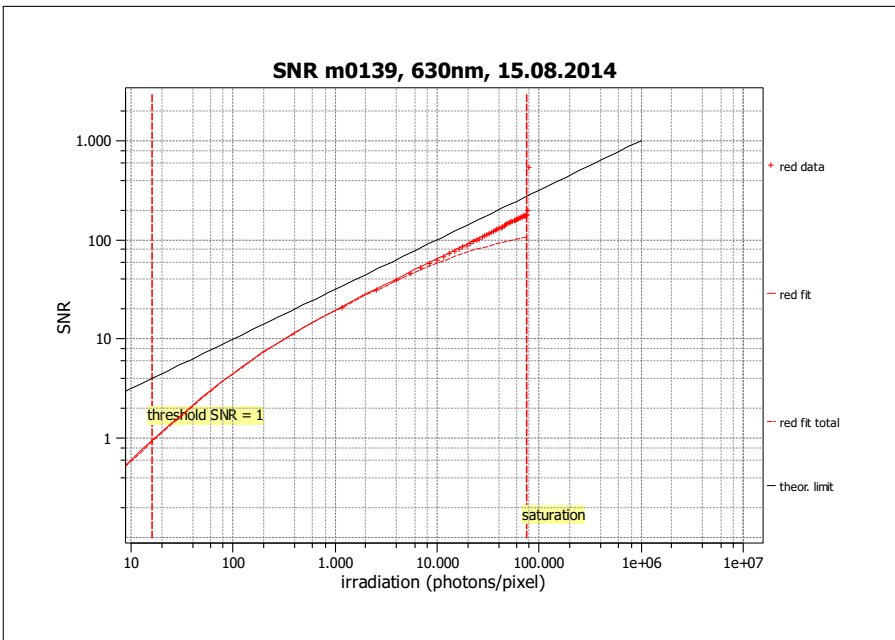
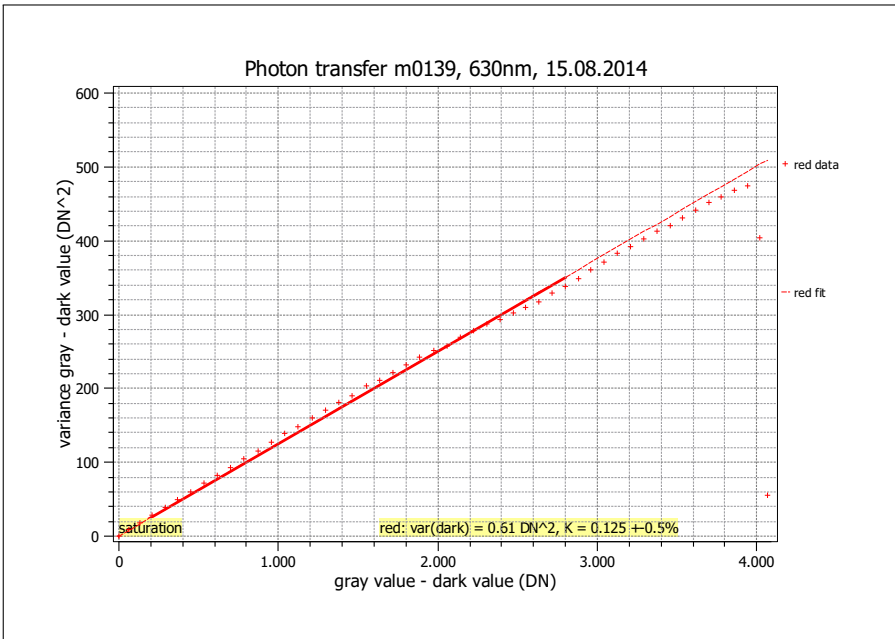
Type of data	Single	Gain, offset	Gain = 0dB, Offset = -0.2
Exposure time	1.0 ms	Environmental temperature	23.8°C
Frame rate	0.0 Hz	Camera temperature	40.2°C
Data transfer mode	BayerRG12	Wavelength, centr., FWHM	534 nm, 30.9 nm



Quantum efficiency	
η	0.602
Gain	
K (DN/e)	0.126
$1/K$ (e/DN)	7.934
Dark noise & DSNU	
σ_d (DN)	0.77
σ_0 (e)	5.6
DSNU ₁₂₈₈ (DN)	0.20
DSNU ₁₂₈₈ (e)	1.55
Signal-to-noise ratio & PRNU	
SNR _{max}	177
SNR _{max} (dB)	45.0
SNR _{max} (bits)	7.5
$1/\text{SNR}_{\text{max}}$ (%)	0.56
PRNU ₁₂₈₈ (%)	0.625
Nonlinearity	
LE (%)	0.29
Sensitivity & saturation	
$\mu_{p,\text{min}}$ (p)	11.0
$\mu_{e,\text{min}}$ (e)	6.6
$\mu_{p,\text{sat}}$ (p)	52115
$\mu_{e,\text{sat}}$ (e)	31379
Dynamic range	
DR	4748
DR (dB)	73.5
DR (bit)	12.2
Dark current	
$\mu_{c,\text{mean}}$ (DN/s)	4.12
$\mu_{c,\text{mean}}$ (e/s)	32.67
$\mu_{c,\text{var}}$ (e/s)	-31.21

EMVA 1288 Summary Sheet for Operating Point 3

Type of data	Single	Gain, offset	Gain = 0dB, Offset = -0.2
Exposure time	1.0 ms	Environmental temperature	23.8°C
Frame rate	0.0 Hz	Camera temperature	40.2°C
Data transfer mode	BayerRG12	Wavelength, centr., FWHM	630 nm, 13.1 nm



Quantum efficiency	
η	0.422
Gain	
K (DN/e)	0.125
$1/K$ (e/DN)	7.982
Dark noise & DSNU	
σ_d (DN)	0.78
σ_0 (e)	5.8
DSNU ₁₂₈₈ (DN)	0.22
DSNU ₁₂₈₈ (e)	1.73
Signal-to-noise ratio & PRNU	
SNR _{max}	179
SNR _{max} (dB)	45.1
SNR _{max} (bits)	7.5
$1/\text{SNR}_{\text{max}}$ (%)	0.56
PRNU ₁₂₈₈ (%)	0.756
Nonlinearity	
LE (%)	0.58
Sensitivity & saturation	
$\mu_{p,\text{min}}$ (p)	16.0
$\mu_{e,\text{min}}$ (e)	6.7
$\mu_{p,\text{sat}}$ (p)	76129
$\mu_{e,\text{sat}}$ (e)	32134
Dynamic range	
DR	4766
DR (dB)	73.6
DR (bit)	12.2
Dark current	
$\mu_{c,\text{mean}}$ (DN/s)	4.03
$\mu_{c,\text{mean}}$ (e/s)	32.15
$\mu_{c,\text{var}}$ (e/s)	40.65