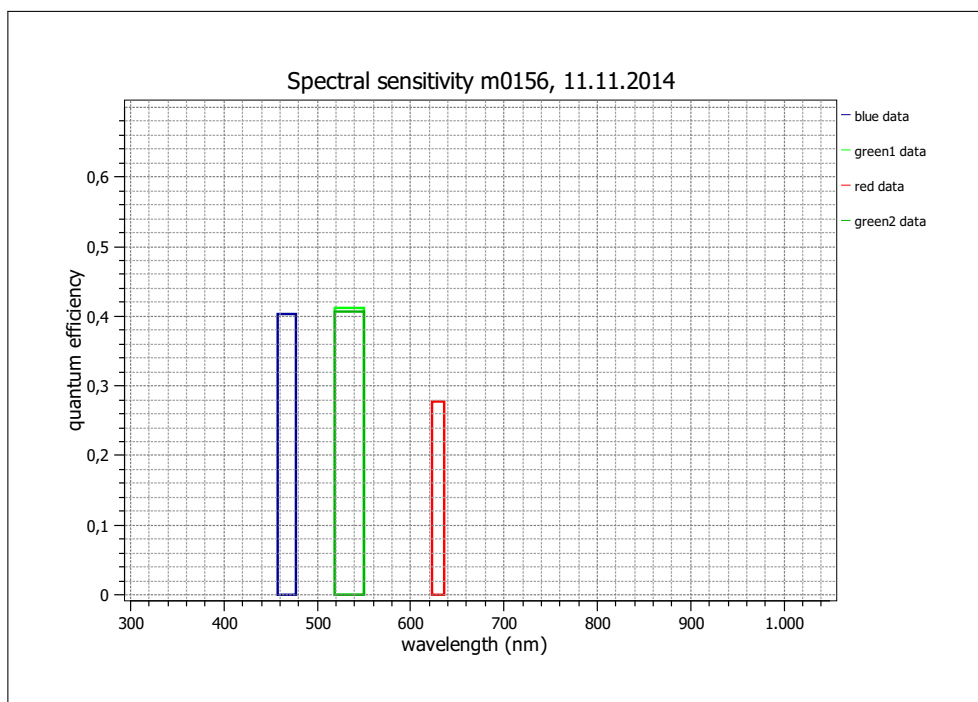


EMVA 1288 Summary Sheet

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-X105C
Serial number	GX008114
Sensor diagonal	7.13 mm
Lens category	C-Mount
Resolution	2592 × 1944, 12 bit
Pixel size	2.20 μm × 2.20 μm
Sensor type	CMOS
Shutter type	Rolling
Overlap capabilities	Pipelined
Maximum frame rate	11.7 Hz
Interface type	GigE Vision

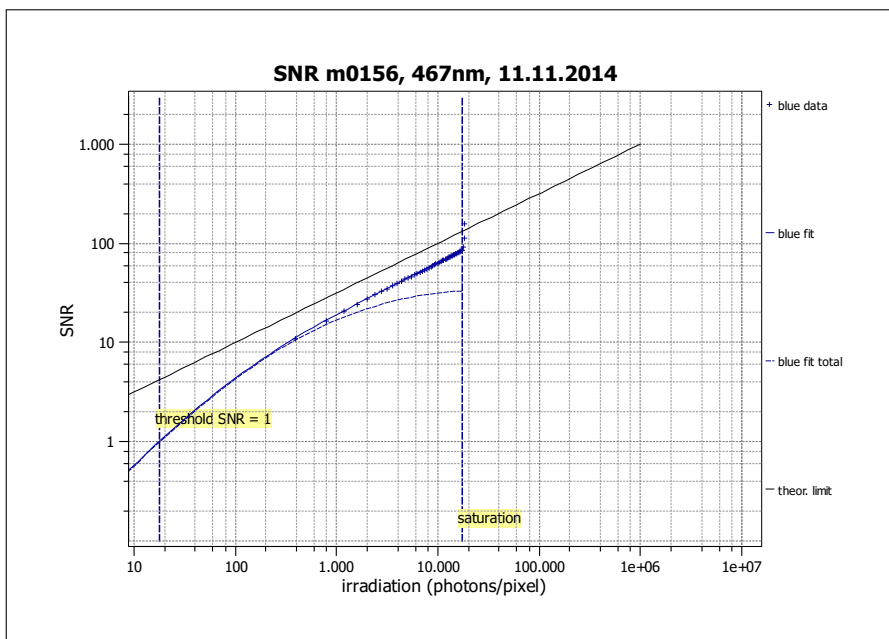
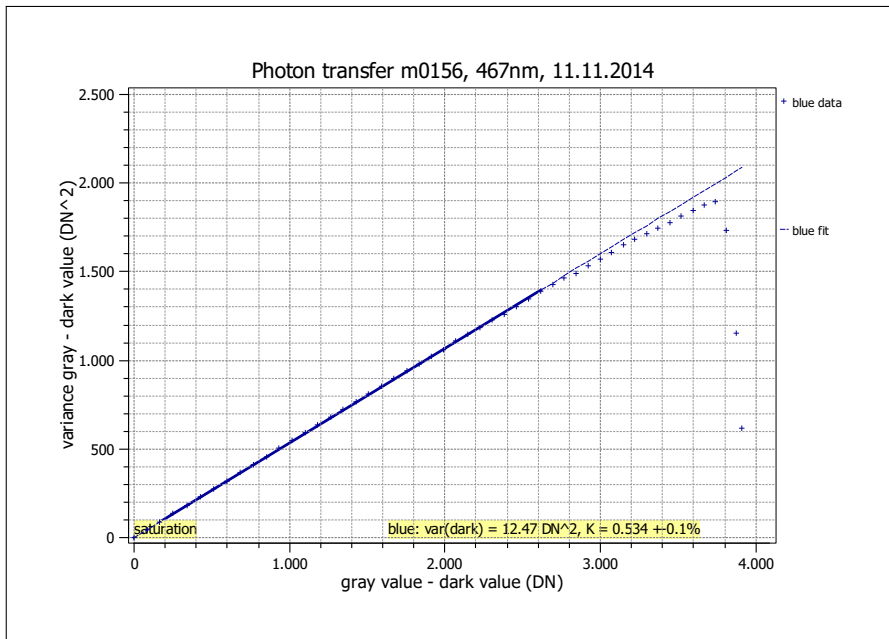
Type of data presented	Single
Operation point 1, (page 5)	
Wavelength centroid	467.3 nm
Wavelength FWHM	20.5 nm
Gain, offset	Gain = 0dB, Offset = 0
Operation point 2, (page 17)	
Wavelength centroid	534.2 nm
Wavelength FWHM	30.9 nm
Gain, offset	Gain = 0dB, Offset = 0
Operation point 3, (page 29)	
Wavelength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





EMVA 1288 Summary Sheet for Operating Point 1

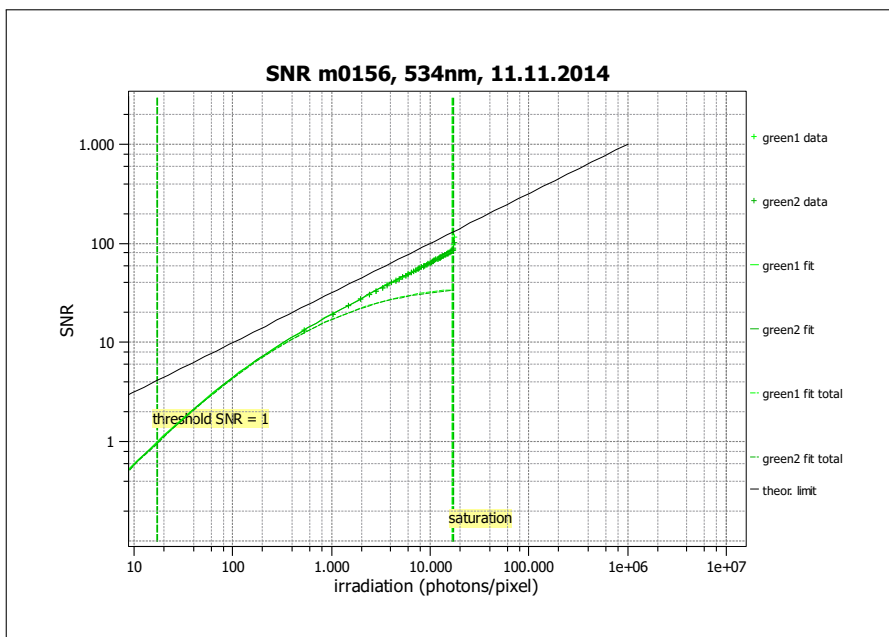
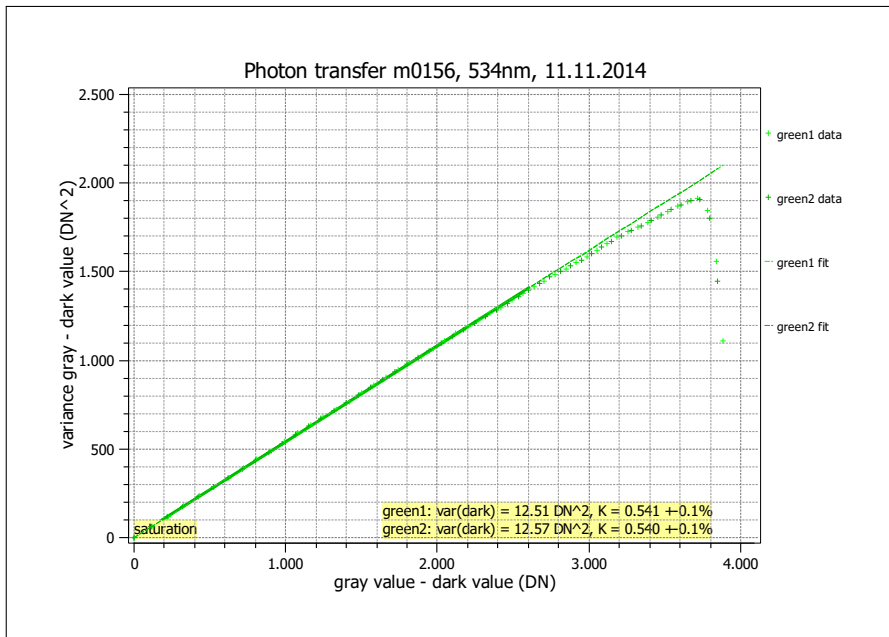
Type of data	Single	Gain, offset	Gain = 0dB, Offset = 0
Exposure time	2.0 ms	Environmental temperature	23.6°C
Frame rate	0.0 Hz	Camera temperature	34.7°C
Data transfer mode	BayerGR12	Wavelength, centr., FWHM	467 nm, 20.5 nm



Quantum efficiency	
η	0.403
Gain	
K (DN/e)	0.534
$1/K$ (e/DN)	1.874
Dark noise & DSNU	
σ_d (DN)	3.53
σ_0 (e)	6.6
DSNU ₁₂₈₈ (DN)	0.78
DSNU ₁₂₈₈ (e)	1.47
Signal-to-noise ratio & PRNU	
SNR _{max}	84
SNR _{max} (dB)	38.5
SNR _{max} (bits)	6.4
$1/\text{SNR}_{\text{max}}$ (%)	1.19
PRNU ₁₂₈₈ (%)	2.759
Nonlinearity	
LE (%)	0.07
Sensitivity & saturation	
$\mu_{p,\text{min}}$ (p)	17.7
$\mu_{e,\text{min}}$ (e)	7.1
$\mu_{p,\text{sat}}$ (p)	17398
$\mu_{e,\text{sat}}$ (e)	7020
Dynamic range	
DR	983
DR (dB)	59.9
DR (bit)	9.9
Dark current	
$\mu_{c,\text{mean}}$ (DN/s)	140.63
$\mu_{c,\text{mean}}$ (e/s)	263.57
$\mu_{c,\text{var}}$ (e/s)	22.16

EMVA 1288 Summary Sheet for Operating Point 2

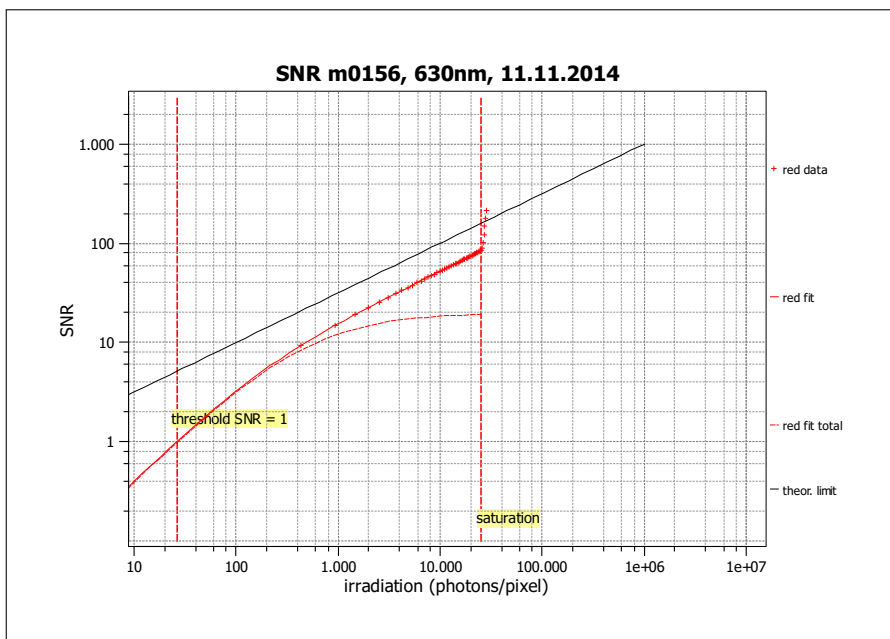
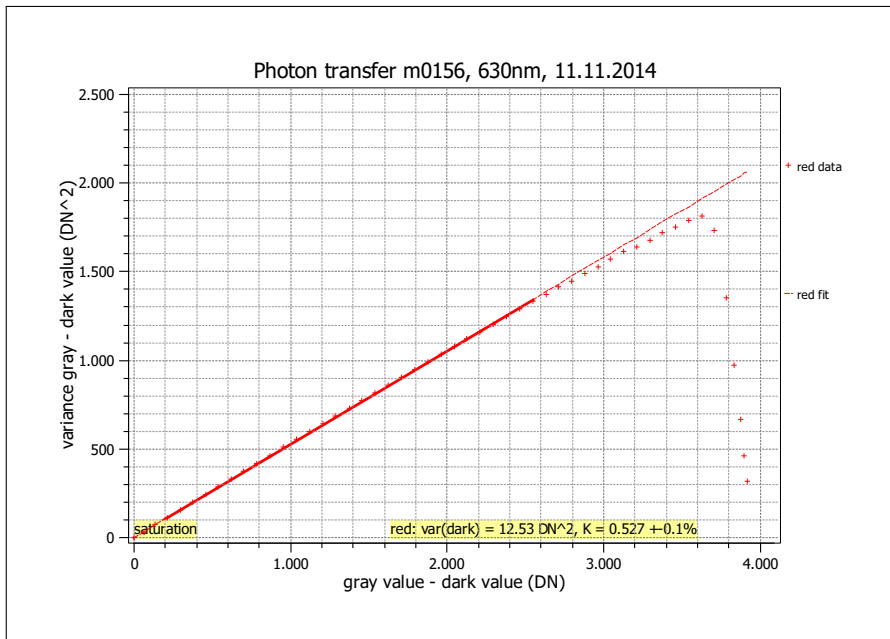
Type of data	Single	Gain, offset	Gain = 0dB, Offset = 0
Exposure time	2.0 ms	Environmental temperature	23.6°C
Frame rate	0.0 Hz	Camera temperature	34.7°C
Data transfer mode	BayerGR12	Wavelength, centr., FWHM	534 nm, 30.9 nm



Quantum efficiency	
η	0.411
Gain	
K (DN/e)	0.541
$1/K$ (e/DN)	1.849
Dark noise & DSNU	
σ_d (DN)	3.54
σ_0 (e)	6.5
DSNU ₁₂₈₈ (DN)	0.81
DSNU ₁₂₈₈ (e)	1.50
Signal-to-noise ratio & PRNU	
SNR _{max}	83
SNR _{max} (dB)	38.4
SNR _{max} (bits)	6.4
$1/\text{SNR}_{\text{max}}$ (%)	1.21
PRNU ₁₂₈₈ (%)	2.674
Nonlinearity	
LE (%)	0.10
Sensitivity & saturation	
$\mu_{p,\text{min}}$ (p)	17.2
$\mu_{e,\text{min}}$ (e)	7.1
$\mu_{p,\text{sat}}$ (p)	16702
$\mu_{e,\text{sat}}$ (e)	6870
Dynamic range	
DR	973
DR (dB)	59.8
DR (bit)	9.9
Dark current	
$\mu_{c,\text{mean}}$ (DN/s)	-27.38
$\mu_{c,\text{mean}}$ (e/s)	-50.64
$\mu_{c,\text{var}}$ (e/s)	86.81

EMVA 1288 Summary Sheet for Operating Point 3

Type of data	Single	Gain, offset	Gain = 0dB, Offset = 0
Exposure time	2.0 ms	Environmental temperature	23.6°C
Frame rate	0.0 Hz	Camera temperature	34.7°C
Data transfer mode	BayerGR12	Wavelength, centr., FWHM	630 nm, 13.1 nm



Quantum efficiency	
η	0.277
Gain	
K (DN/e)	0.527
$1/K$ (e/DN)	1.897
Dark noise & DSNU	
σ_d (DN)	3.54
σ_0 (e)	6.7
DSNU ₁₂₈₈ (DN)	0.80
DSNU ₁₂₈₈ (e)	1.52
Signal-to-noise ratio & PRNU	
SNR _{max}	83
SNR _{max} (dB)	38.4
SNR _{max} (bits)	6.4
$1/\text{SNR}_{\text{max}}$ (%)	1.20
PRNU ₁₂₈₈ (%)	5.080
Nonlinearity	
LE (%)	0.24
Sensitivity & saturation	
$\mu_{p,\text{min}}$ (p)	26.1
$\mu_{e,\text{min}}$ (e)	7.2
$\mu_{p,\text{sat}}$ (p)	25106
$\mu_{e,\text{sat}}$ (e)	6949
Dynamic range	
DR	960
DR (dB)	59.6
DR (bit)	9.9
Dark current	
$\mu_{c,\text{mean}}$ (DN/s)	-67.80
$\mu_{c,\text{mean}}$ (e/s)	-128.65
$\mu_{c,\text{var}}$ (e/s)	-16.79