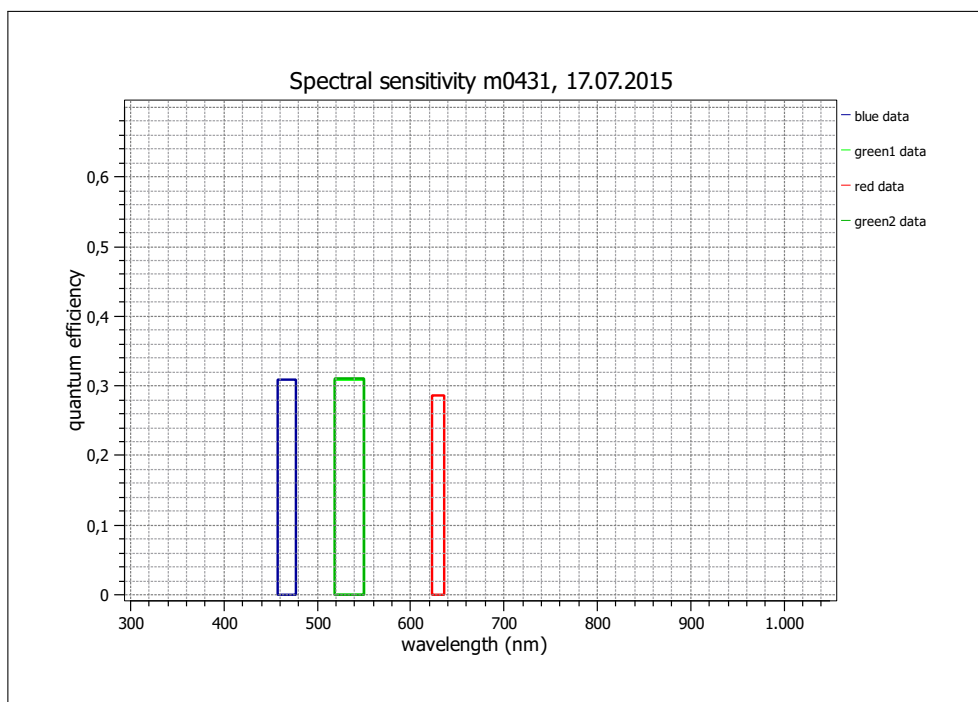


EMVA 1288 Summary Sheet

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.

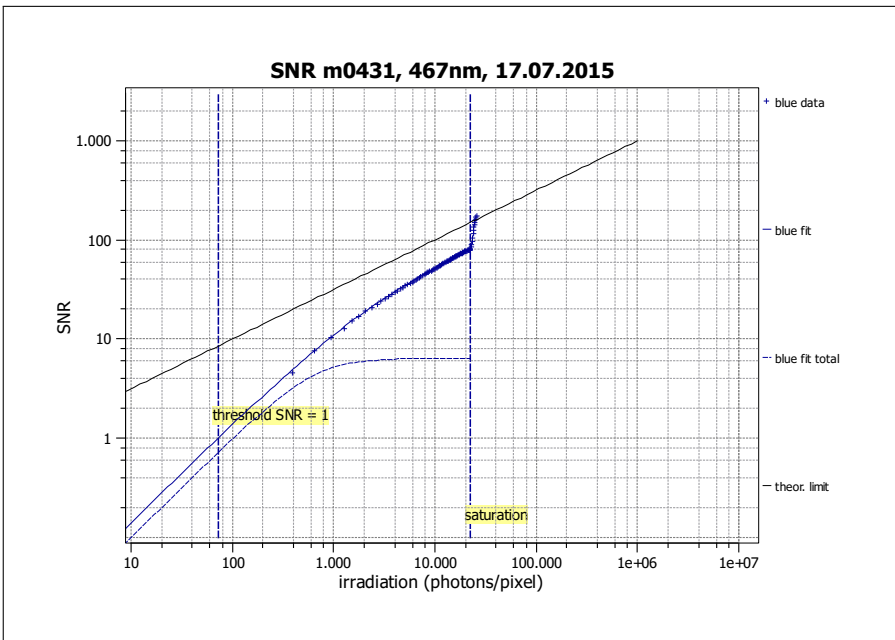
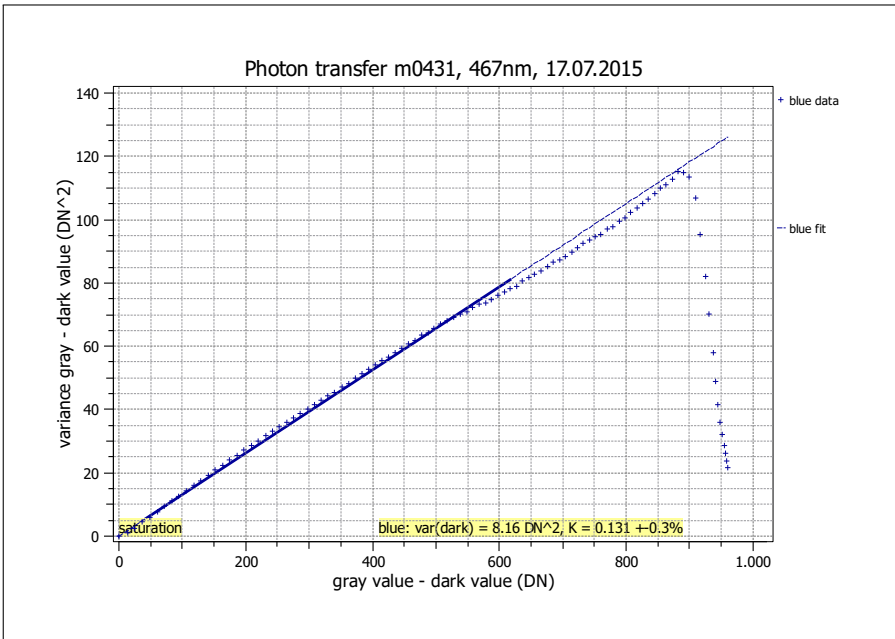
Vendor	MATRIX VISION
Model	mvBlueCOUGAR-X104eC
Serial number	GX007969
Sensor diagonal	9.00 mm
Lens category	C-Mount
Resolution	1600 × 1200, 10 bit
Pixel size	4.50 μm × 4.50 μm
Sensor type	CMOS
Shutter type	Global
Overlap capabilities	Overlapping
Maximum frame rate	20.7 Hz
Interface type	GigE Vision

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 = 21.0
Operation point 2, (page 17)	
Wavelength centroid	534.2 nm
Wavelength FWHM	30.9 nm
Gain, offset	Gain = 0dB, Offset = 21.0
Operation point 3, (page 29)	
Wavelength centroid	629.5 nm
Wavelength FWHM	13.1 nm
Gain, offset	Gain = 0dB, Offset = 21.0
Optional data measured	
None	



EMVA 1288 Summary Sheet for Operating Point 1

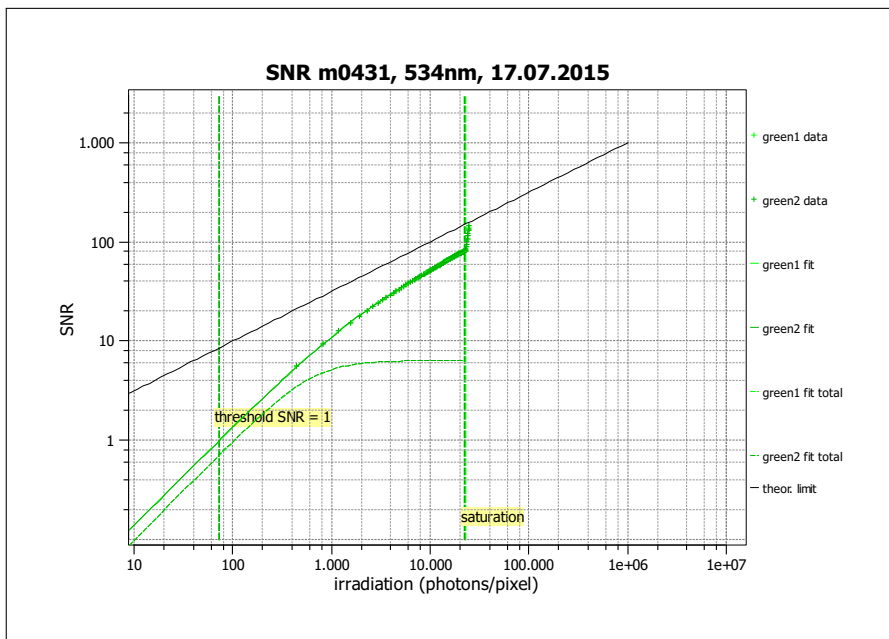
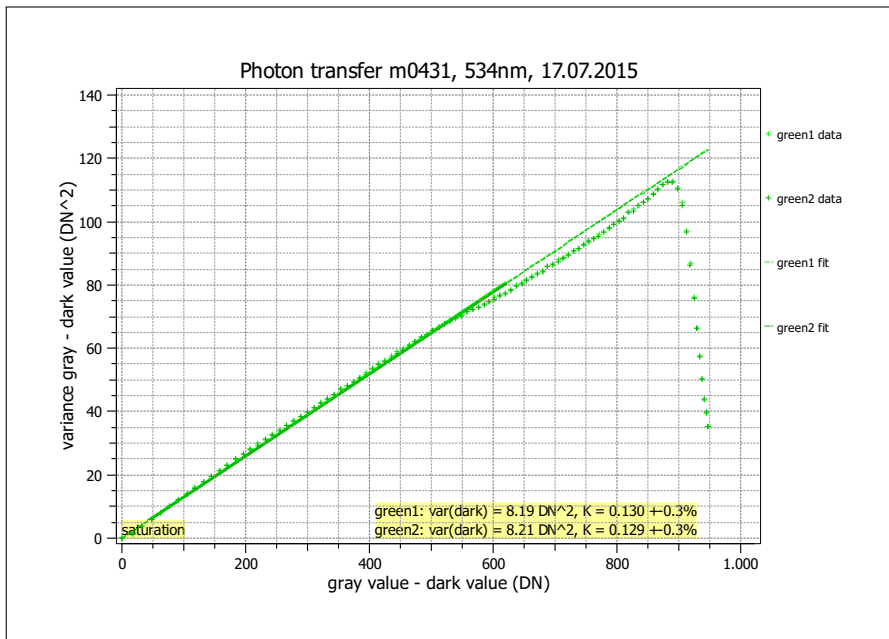
Type of data	Single	Gain, offset	Gain = 0dB, Offset = 21.0
Exposure time	12.0 ms	Environmental temperature	28.6°C
Frame rate	0.0 Hz	Camera temperature	38.2°C
Data transfer mode	BayerGR10	Wavelength, centr., FWHM	467 nm, 20.5 nm



Quantum efficiency	
η	0.309
Gain	
K (DN/e)	0.131
$1/K$ (e/DN)	7.615
Dark noise & DSNU	
σ_d (DN)	2.86
σ_0 (e)	21.6
DSNU ₁₂₈₈ (DN)	2.86
DSNU ₁₂₈₈ (e)	21.75
Signal-to-noise ratio & PRNU	
SNR _{max}	83
SNR _{max} (dB)	38.3
SNR _{max} (bits)	6.4
$1/\text{SNR}_{\text{max}}$ (%)	1.21
PRNU ₁₂₈₈ (%)	15.481
Nonlinearity	
LE (%)	0.75
Sensitivity & saturation	
$\mu_{p,\text{min}}$ (p)	72.0
$\mu_{e,\text{min}}$ (e)	22.3
$\mu_{p,\text{sat}}$ (p)	22120
$\mu_{e,\text{sat}}$ (e)	6835
Dynamic range	
DR	307
DR (dB)	49.7
DR (bit)	8.3
Dark current	
$\mu_{c,\text{mean}}$ (DN/s)	123.56
$\mu_{c,\text{mean}}$ (e/s)	940.88
$\mu_{c,\text{var}}$ (e/s)	5670.52

EMVA 1288 Summary Sheet for Operating Point 2

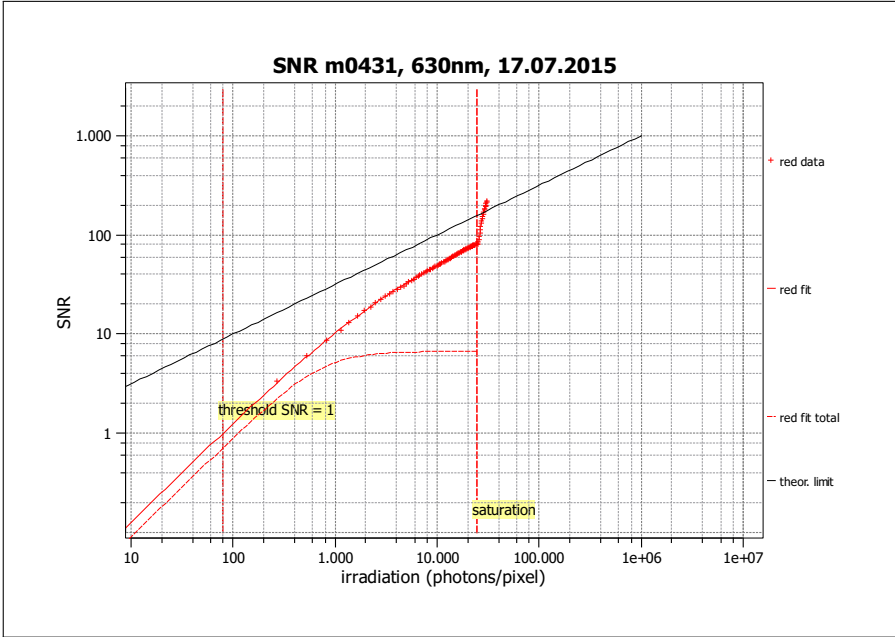
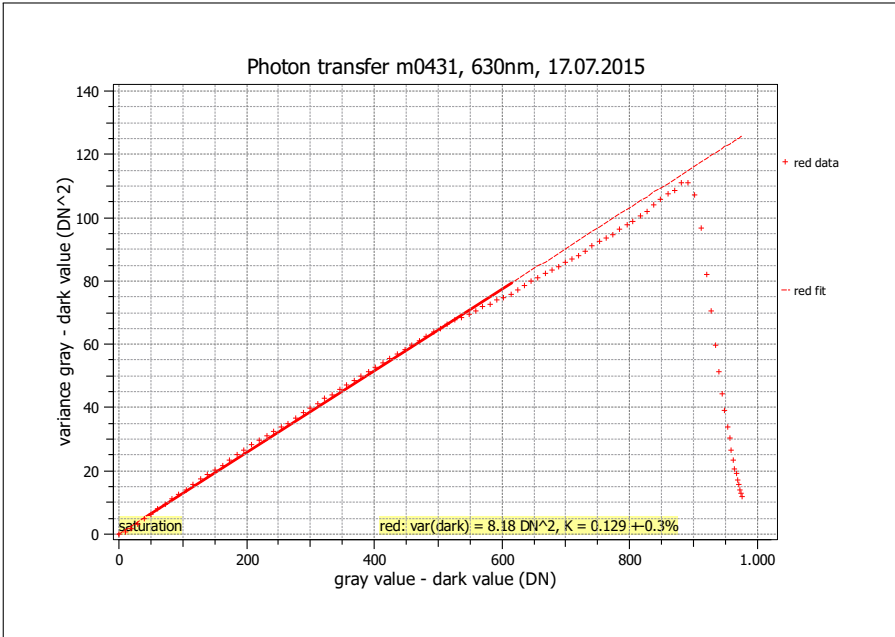
Type of data	Single	Gain, offset	Gain = 0dB, Offset = 21.0
Exposure time	12.0 ms	Environmental temperature	28.6°C
Frame rate	0.0 Hz	Camera temperature	38.2°C
Data transfer mode	BayerGR10	Wavelength, centr., FWHM	534 nm, 30.9 nm



Quantum efficiency	
η	0.310
Gain	
K (DN/e)	0.130
$1/K$ (e/DN)	7.699
Dark noise & DSNU	
σ_d (DN)	2.86
σ_0 (e)	21.9
DSNU ₁₂₈₈ (DN)	2.90
DSNU ₁₂₈₈ (e)	22.31
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 (%)	15.564
Nonlinearity	
LE (%)	0.77
Sensitivity & saturation	
$\mu_{p,\text{min}}$ (p)	72.8
$\mu_{e,\text{min}}$ (e)	22.5
$\mu_{p,\text{sat}}$ (p)	22659
$\mu_{e,\text{sat}}$ (e)	7014
Dynamic range	
DR	311
DR (dB)	49.9
DR (bit)	8.3
Dark current	
$\mu_{c,\text{mean}}$ (DN/s)	122.83
$\mu_{c,\text{mean}}$ (e/s)	945.71
$\mu_{c,\text{var}}$ (e/s)	5823.15

EMVA 1288 Summary Sheet for Operating Point 3

Type of data	Single	Gain, offset	Gain = 0dB, Offset = 21.0
Exposure time	12.0 ms	Environmental temperature	28.6°C
Frame rate	0.0 Hz	Camera temperature	38.2°C
Data transfer mode	BayerGR10	Wavelength, centr., FWHM	630 nm, 13.1 nm



Quantum efficiency	
η	0.286
Gain	
K (DN/e)	0.129
$1/K$ (e/DN)	7.756
Dark noise & DSNU	
σ_d (DN)	2.86
σ_0 (e)	22.1
DSNU ₁₂₈₈ (DN)	2.85
DSNU ₁₂₈₈ (e)	22.07
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 (%)	14.853
Nonlinearity	
LE (%)	0.92
Sensitivity & saturation	
$\mu_{p,\text{min}}$ (p)	79.3
$\mu_{e,\text{min}}$ (e)	22.7
$\mu_{p,\text{sat}}$ (p)	24612
$\mu_{e,\text{sat}}$ (e)	7044
Dynamic range	
DR	311
DR (dB)	49.8
DR (bit)	8.3
Dark current	
$\mu_{c,\text{mean}}$ (DN/s)	123.28
$\mu_{c,\text{mean}}$ (e/s)	956.22
$\mu_{c,\text{var}}$ (e/s)	5935.06