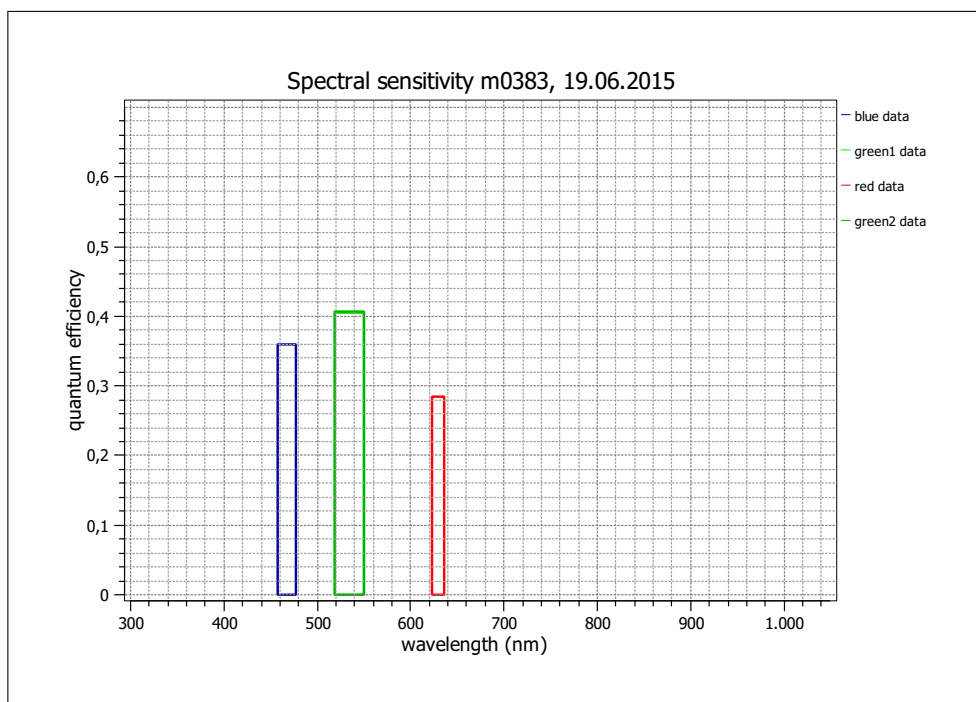


EMVA 1288 Summary Sheet

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.

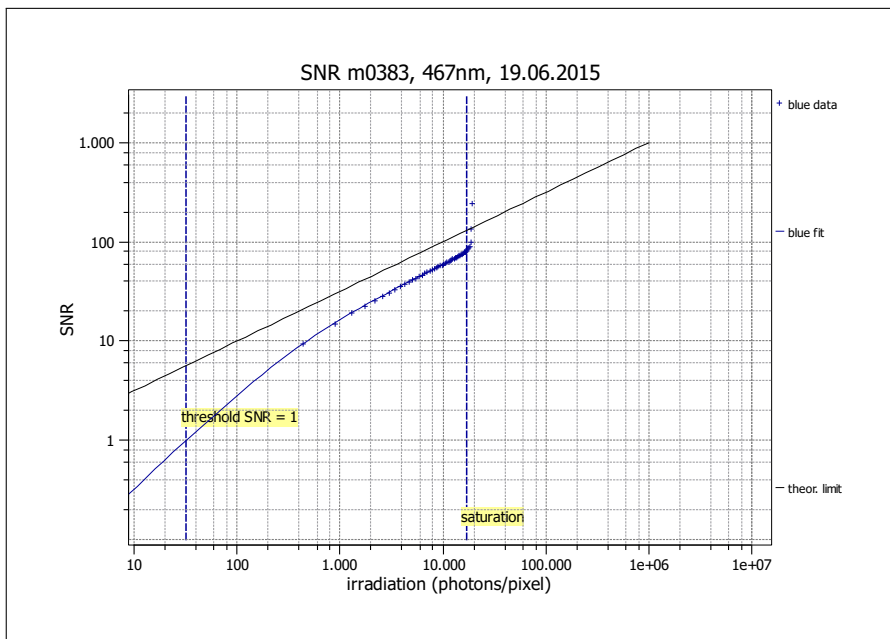
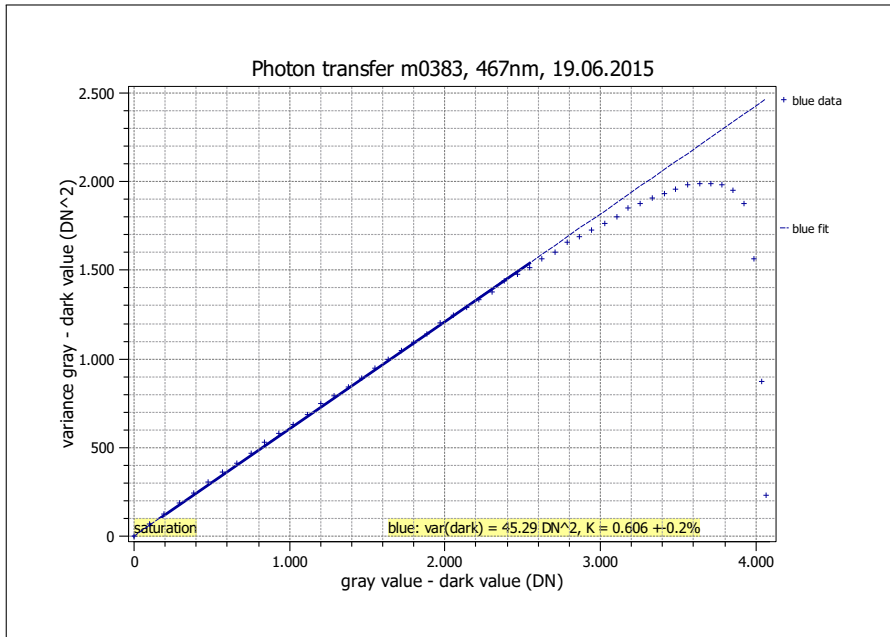
Vendor	MATRIX VISION
Model	mvBlueCOUGAR-X225C
Serial number	GX010005
Sensor diagonal	11.02 mm
Lens category	C-Mount
Resolution	2448 × 2050, 12 bit
Pixel size	3.45 μm × 3.45 μm
Sensor type	CCD
Readout type	Progressive
Transfer type	Interline
Maximum frame rate	11.8 Hz
Interface type	GigE Vision

Type of data presented	Single
Operation point 1, (page 5)	
Wavelength centroid	467.3 nm
Wavelength FWHM	20.5 nm
Gain, offset	Gain = -6dB, Offset = 0.15
Operation point 2, (page 10)	
Wavelength centroid	534.2 nm
Wavelength FWHM	30.9 nm
Gain, offset	Gain = -6dB, Offset = 0.15
Operation point 3, (page 15)	
Wavelength centroid	629.5 nm
Wavelength FWHM	13.1 nm
Gain, offset	Gain = -6dB, Offset = 0.15
Optional data measured	
None	



EMVA 1288 Summary Sheet for Operating Point 1

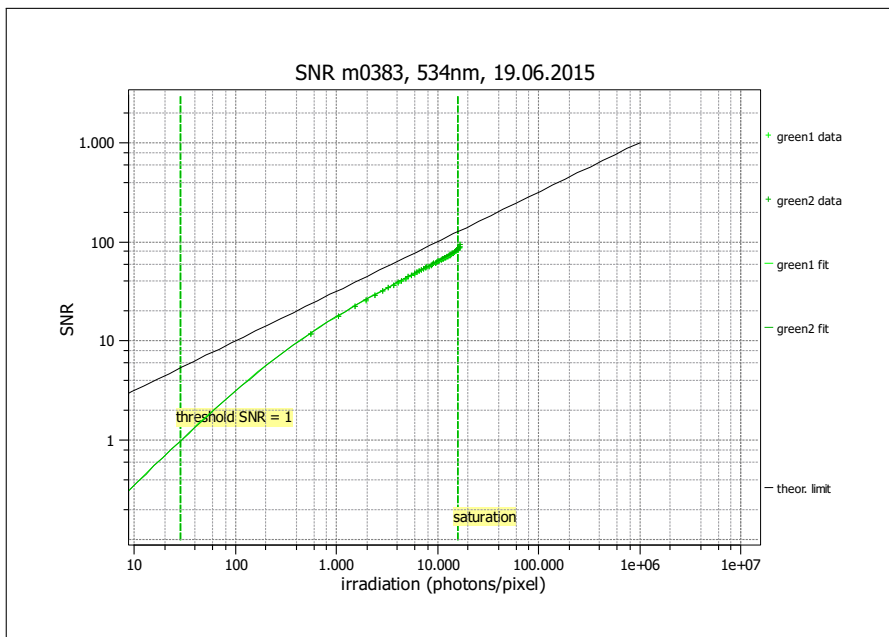
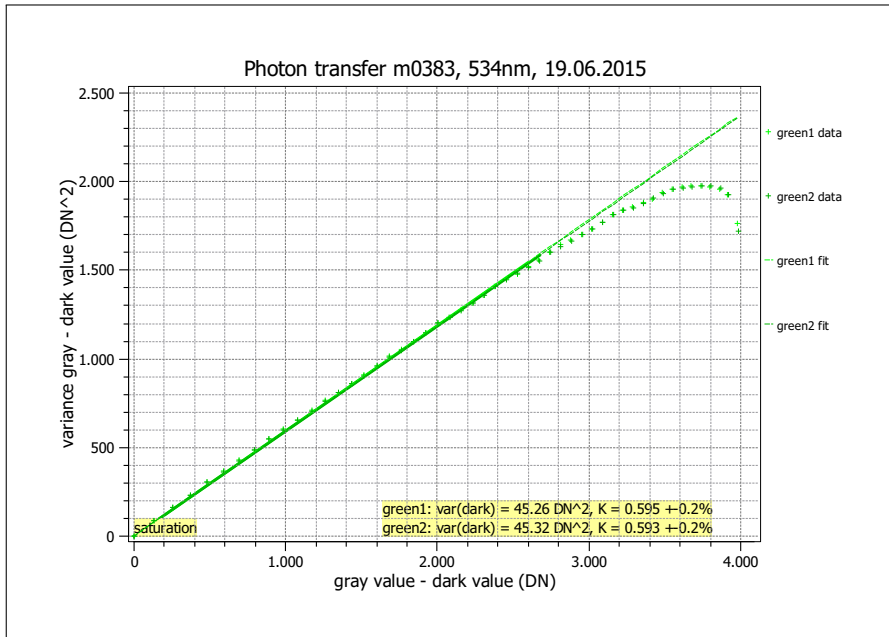
Type of data	Single	Gain, offset	Gain = -6dB, Offset = 0.15
Exposure time	14.0 ms	Environmental temperature	24.7°C
Frame rate	0.0 Hz	Camera temperature	46.2°C
Data transfer mode	BayerRG12	Wavelength, centr., FWHM	467 nm, 20.5 nm



Quantum efficiency	
η	0.360
Gain	
K (DN/e)	0.606
$1/K$ (e/DN)	1.650
Dark noise & DSNU	
σ_d (DN)	6.73
σ_0 (e)	11.1
DSNU ₁₂₈₈ (DN)	—
DSNU ₁₂₈₈ (e)	—
Signal-to-noise ratio & PRNU	
SNR _{max}	78
SNR _{max} (dB)	37.8
SNR _{max} (bits)	6.3
$1/\text{SNR}_{\text{max}}$ (%)	1.29
PRNU ₁₂₈₈ (%)	—
Nonlinearity	
LE (%)	0.24
Sensitivity & saturation	
$\mu_{p,\text{min}}$ (p)	32.3
$\mu_{e,\text{min}}$ (e)	11.6
$\mu_{p,\text{sat}}$ (p)	16830
$\mu_{e,\text{sat}}$ (e)	6054
Dynamic range	
DR	521
DR (dB)	54.3
DR (bit)	9.0
Dark current	
$\mu_{c,\text{mean}}$ (DN/s)	—
$\mu_{c,\text{mean}}$ (e/s)	—
$\mu_{c,\text{var}}$ (e/s)	—

EMVA 1288 Summary Sheet for Operating Point 2

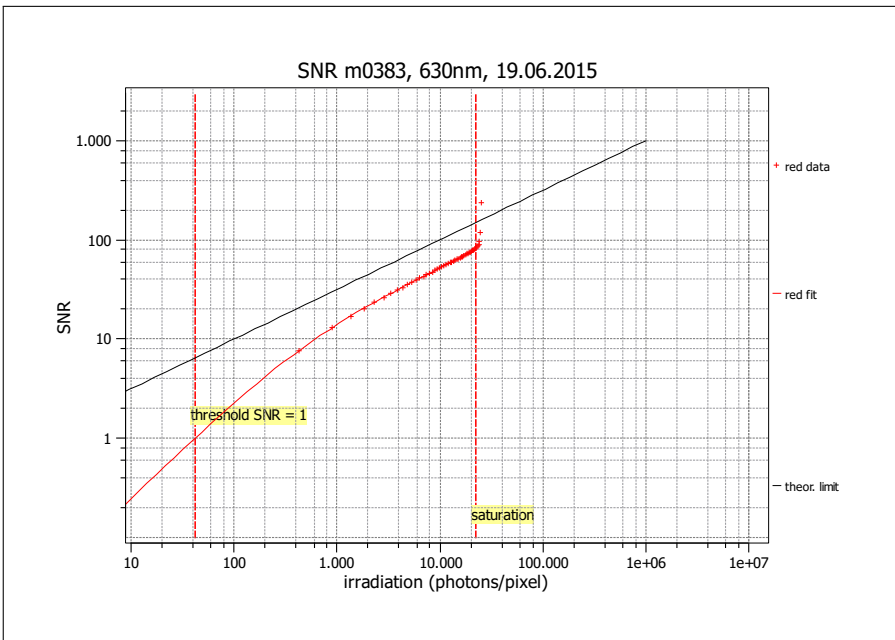
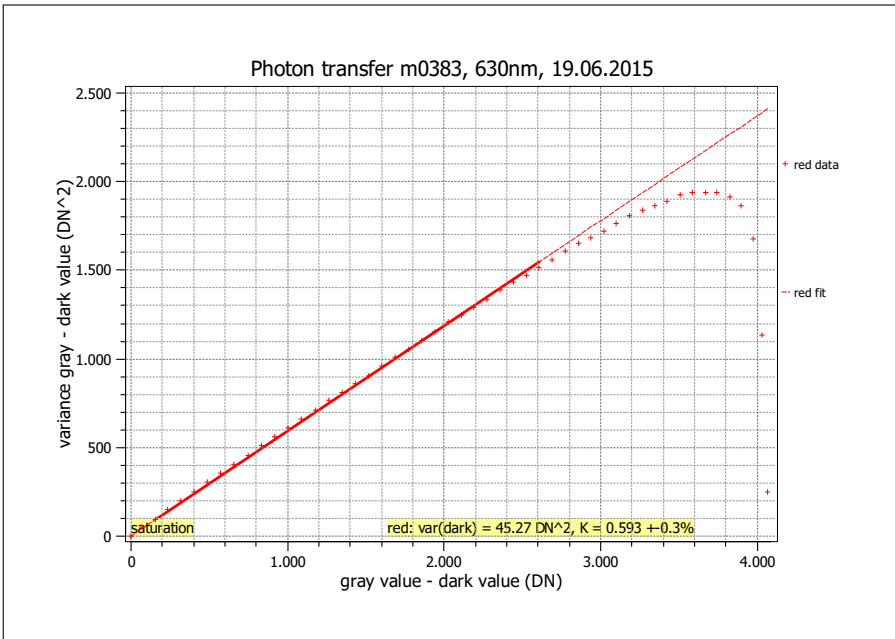
Type of data	Single	Gain, offset	Gain = -6dB, Offset = 0.15
Exposure time	14.0 ms	Environmental temperature	24.7°C
Frame rate	0.0 Hz	Camera temperature	46.2°C
Data transfer mode	BayerRG12	Wavelength, centr., FWHM	534 nm, 30.9 nm



Quantum efficiency	
η	0.406
Gain	
K (DN/e)	0.595
$1/K$ (e/DN)	1.681
Dark noise & DSNU	
σ_d (DN)	6.73
σ_0 (e)	11.3
DSNU ₁₂₈₈ (DN)	—
DSNU ₁₂₈₈ (e)	—
Signal-to-noise ratio & PRNU	
SNR _{max}	80
SNR _{max} (dB)	38.1
SNR _{max} (bits)	6.3
$1/\text{SNR}_{\text{max}}$ (%)	1.25
PRNU ₁₂₈₈ (%)	—
Nonlinearity	
LE (%)	0.43
Sensitivity & saturation	
$\mu_{p,\text{min}}$ (p)	29.1
$\mu_{e,\text{min}}$ (e)	11.8
$\mu_{p,\text{sat}}$ (p)	15739
$\mu_{e,\text{sat}}$ (e)	6384
Dynamic range	
DR	540
DR (dB)	54.7
DR (bit)	9.1
Dark current	
$\mu_{c,\text{mean}}$ (DN/s)	—
$\mu_{c,\text{mean}}$ (e/s)	—
$\mu_{c,\text{var}}$ (e/s)	—

EMVA 1288 Summary Sheet for Operating Point 3

Type of data	Single	Gain, offset	Gain = -6dB, Offset = 0.15
Exposure time	14.0 ms	Environmental temperature	24.7°C
Frame rate	0.0 Hz	Camera temperature	46.2°C
Data transfer mode	BayerRG12	Wavelength, centr., FWHM	630 nm, 13.1 nm



Quantum efficiency	
η	0.284
Gain	
K (DN/e)	0.593
$1/K$ (e/DN)	1.687
Dark noise & DSNU	
σ_d (DN)	6.73
σ_0 (e)	11.3
DSNU ₁₂₈₈ (DN)	—
DSNU ₁₂₈₈ (e)	—
Signal-to-noise ratio & PRNU	
SNR _{max}	80
SNR _{max} (dB)	38.0
SNR _{max} (bits)	6.3
$1/\text{SNR}_{\text{max}}$ (%)	1.26
PRNU ₁₂₈₈ (%)	—
Nonlinearity	
LE (%)	0.59
Sensitivity & saturation	
$\mu_{p,\text{min}}$ (p)	41.7
$\mu_{e,\text{min}}$ (e)	11.9
$\mu_{p,\text{sat}}$ (p)	22295
$\mu_{e,\text{sat}}$ (e)	6336
Dynamic range	
DR	534
DR (dB)	54.6
DR (bit)	9.1
Dark current	
$\mu_{c,\text{mean}}$ (DN/s)	—
$\mu_{c,\text{mean}}$ (e/s)	—
$\mu_{c,\text{var}}$ (e/s)	—