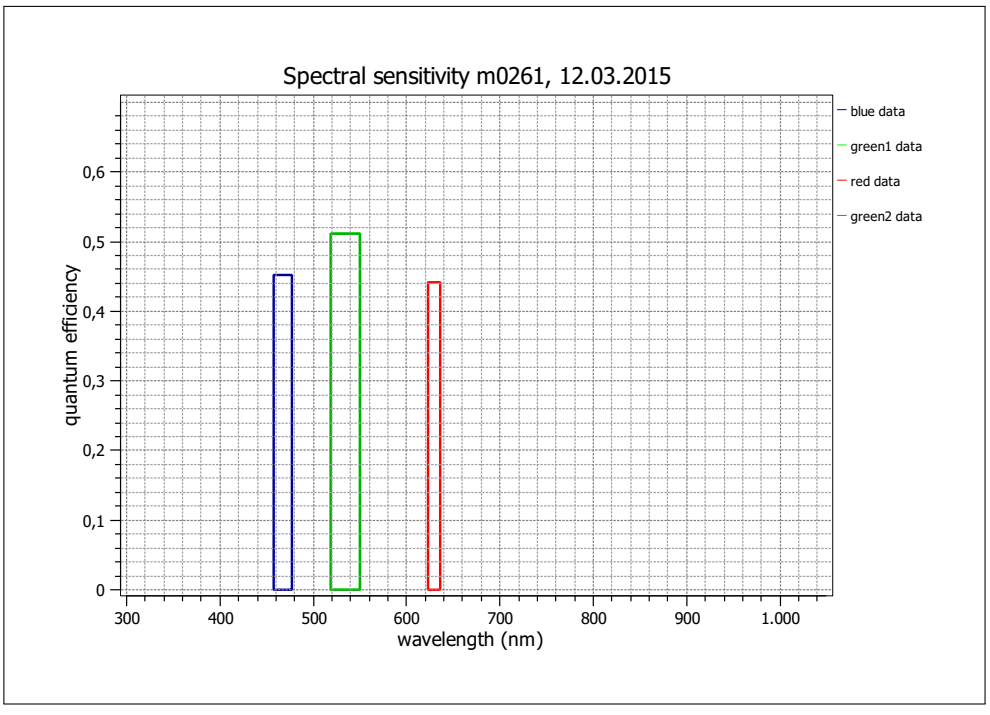
EMVA 1288 Summary Sheet

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.

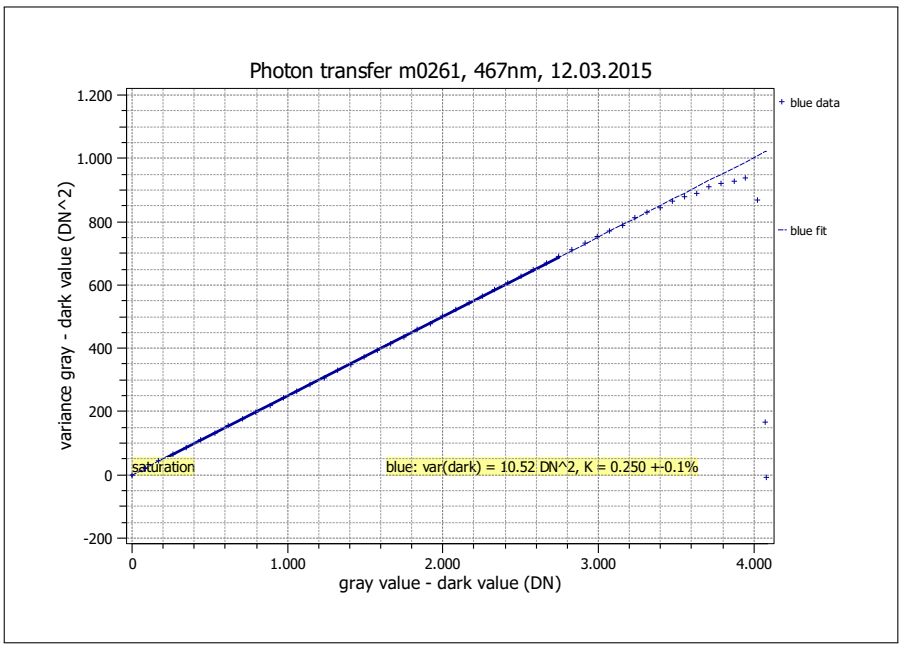
Vendor	MATRIX VISION
Model	mvBlueCOUGAR-XD126C
Serial number	GX201645
Sensor diagonal	16.02 mm
Lens category	C-Mount
Resolution	2752 × 2208, 12 bit
Pixel size	4.54 μm × 4.54 μm
Sensor type	CCD
Readout type	Progressive
Transfer type	Interline
Maximum frame rate	19.6 Hz
Interface type	GigE Vision

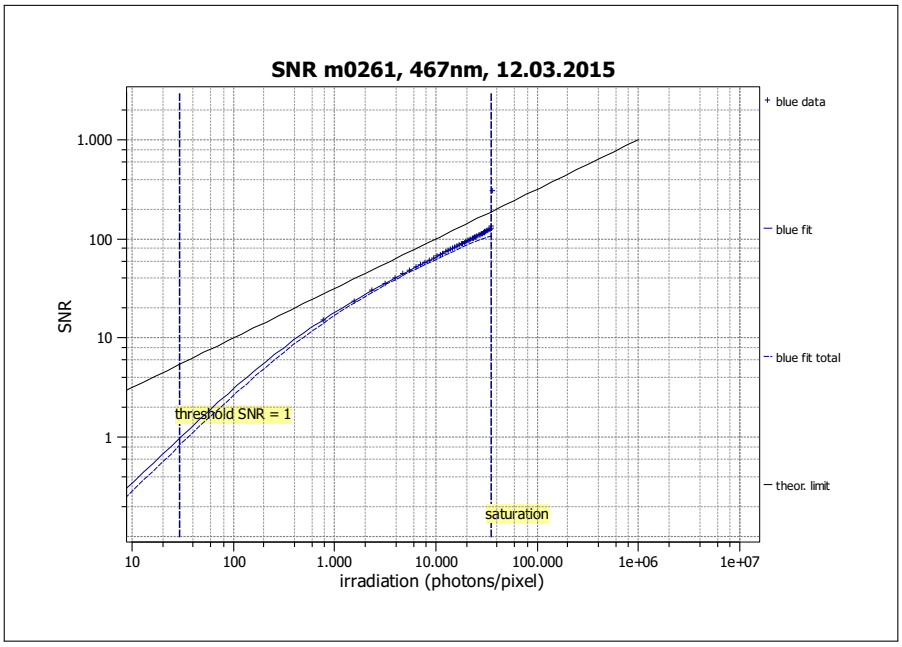
Type of data presented	Single
Operation point 1, (page 5)	
Wavelength centroid	467.3 nm
Wavelength FWHM	20.5 nm
Gain, offset	Gain = -6dB, Offset = 0,1
Operation point 2, (page 15)	
Wavelength centroid	534.2 nm
Wavelength FWHM	30.9 nm
Gain, offset	Gain = -6dB, Offset = 0,1
Operation point 3, (page 25)	
Wavelength centroid	629.5 nm
Wavelength FWHM	13.1 nm
Gain, offset	Gain = -6dB, Offset = 0,1
Optional data measured	
None	



EMVA 1288 Summary Sheet for Operating Point 1

Type of data	Single	Gain, offset	Gain = -6dB, Offset = 0,1
Exposure time	1.0 ms	Environmental temperature	27.6°C
Frame rate	0.0 Hz		
Data transfer mode	BayerGR12	Camera temperature	53.5°C
		Wavelength, centr., FWHM	467 nm, 20.5 nm

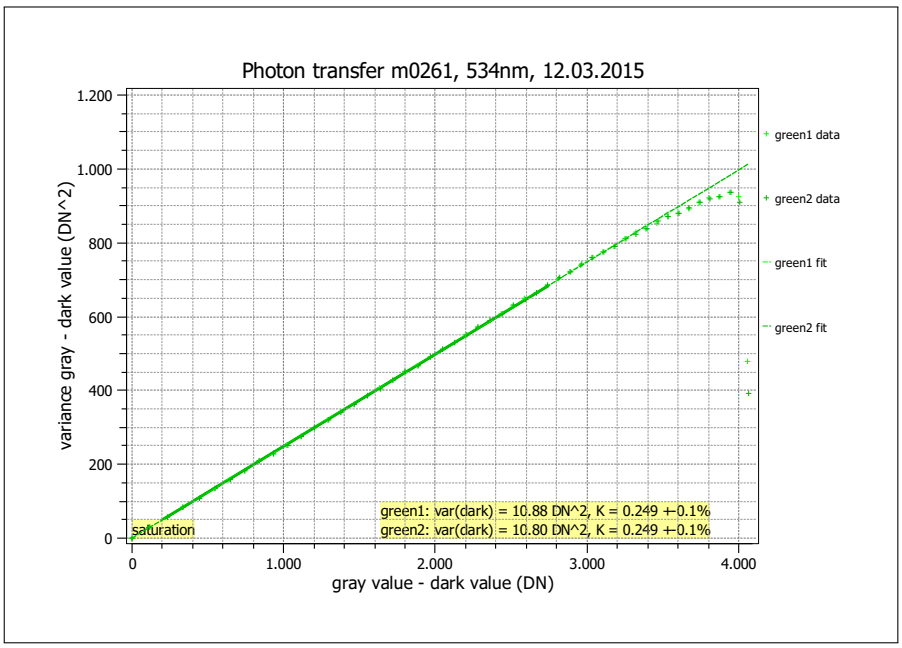


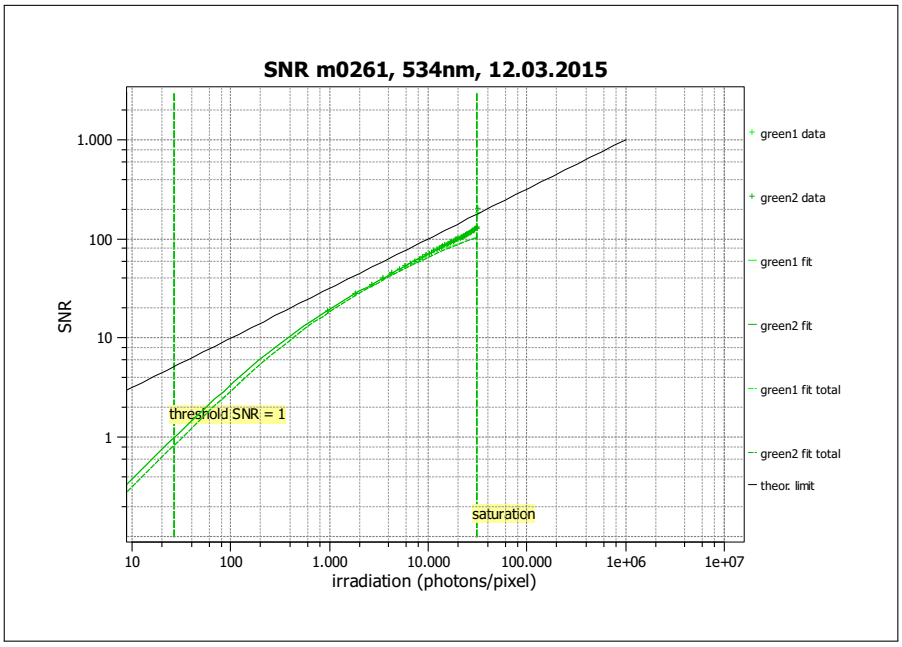


Quantum efficiency	
η	0.452
Gain	
K (DN/e)	0.250
$1/K$ (e/DN)	3.992
Dark noise & DSNU	
σ_d (DN)	3.24
σ_0 (e)	12.9
$DSNU_{1288}$ (DN)	2.20
$DSNU_{1288}$ (e)	8.80
Signal-to-noise ratio & PRNU	
SNR_{max}	125
SNR_{max} (dB)	42.0
SNR_{max} (bits)	7.0
$1/SNR_{max}$ (%)	0.80
$PRNU_{1288}$ (%)	0.458
Nonlinearity	
LE (%)	0.18
Sensitivity & saturation	
$\mu_{p,min}$ (p)	29.8
$\mu_{e,min}$ (e)	13.5
$\mu_{p,sat}$ (p)	34696
$\mu_{e,sat}$ (e)	15685
Dynamic range	
DR	1165
DR (dB)	61.3
DR (bit)	10.2
Dark current	
$\mu_{c,mean}$ (DN/s)	—
$\mu_{c,mean}$ (e/s)	—
$\mu_{c,var}$ (e/s)	—

EMVA 1288 Summary Sheet for Operating Point 2

Type of data	Single	Gain, offset	Gain = -6dB, Offset = 0,1
Exposure time	1.0 ms	Environmental temperature	27.6°C
Frame rate	0.0 Hz		
Data transfer mode	BayerGR12	Camera temperature	53.5°C
		Wavelength, centr., FWHM	534 nm, 30.9 nm

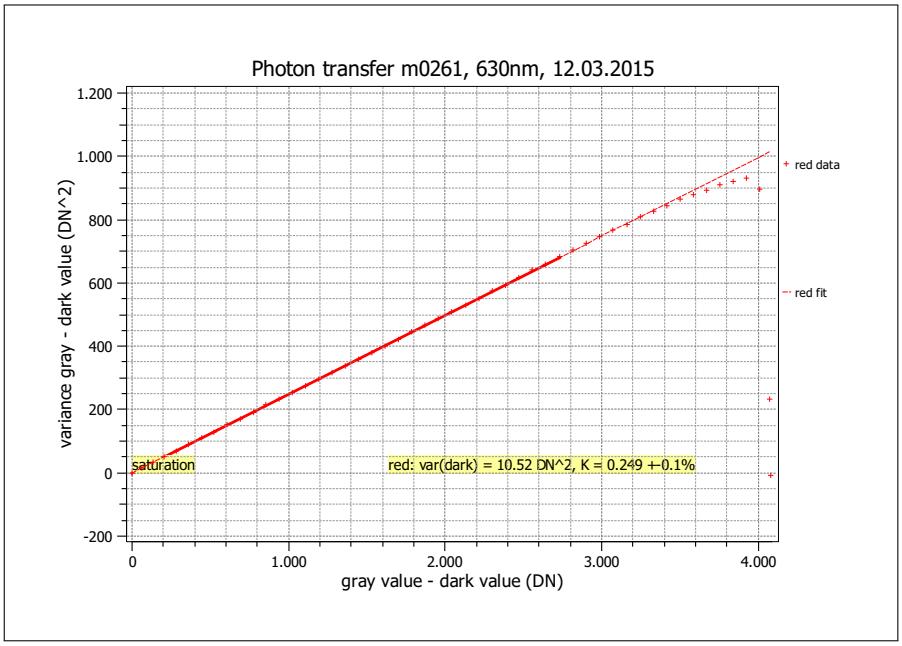


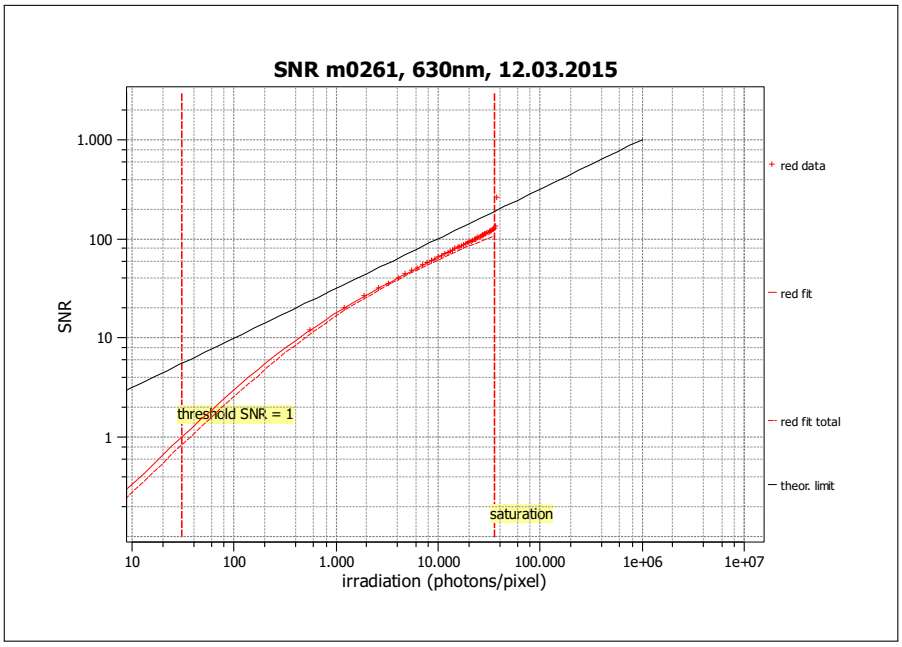


Quantum efficiency	
η	0.511
Gain	
K (DN/e)	0.249
$1/K$ (e/DN)	4.011
Dark noise & DSNU	
σ_d (DN)	3.30
σ_0 (e)	13.2
$DSNU_{1288}$ (DN)	2.21
$DSNU_{1288}$ (e)	8.88
Signal-to-noise ratio & PRNU	
SNR_{max}	126
SNR_{max} (dB)	42.0
SNR_{max} (bits)	7.0
$1/SNR_{max}$ (%)	0.80
$PRNU_{1288}$ (%)	0.509
Nonlinearity	
LE (%)	0.08
Sensitivity & saturation	
$\mu_{p,min}$ (p)	26.9
$\mu_{e,min}$ (e)	13.7
$\mu_{p,sat}$ (p)	30892
$\mu_{e,sat}$ (e)	15791
Dynamic range	
DR	1149
DR (dB)	61.2
DR (bit)	10.2
Dark current	
$\mu_{c,mean}$ (DN/s)	—
$\mu_{c,mean}$ (e/s)	—
$\mu_{c,var}$ (e/s)	—

EMVA 1288 Summary Sheet for Operating Point 3

Type of data	Single	Gain, offset	Gain = -6dB, Offset = 0,1
Exposure time	1.0 ms	Environmental temperature	27.6°C
Frame rate	0.0 Hz		
Data transfer mode	BayerGR12	Camera temperature	53.5°C
		Wavelength, centr., FWHM	630 nm, 13.1 nm





Quantum efficiency	
η	0.441
Gain	
K (DN/e)	0.249
$1/K$ (e/DN)	4.015
Dark noise & DSNU	
σ_d (DN)	3.24
σ_0 (e)	13.0
$DSNU_{1288}$ (DN)	2.21
$DSNU_{1288}$ (e)	8.86
Signal-to-noise ratio & PRNU	
SNR_{max}	126
SNR_{max} (dB)	42.0
SNR_{max} (bits)	7.0
$1/SNR_{max}$ (%)	0.80
$PRNU_{1288}$ (%)	0.495
Nonlinearity	
LE (%)	0.06
Sensitivity & saturation	
$\mu_{p,min}$ (p)	30.7
$\mu_{e,min}$ (e)	13.5
$\mu_{p,sat}$ (p)	35834
$\mu_{e,sat}$ (e)	15814
Dynamic range	
DR	1169
DR (dB)	61.4
DR (bit)	10.2
Dark current	
$\mu_{c,mean}$ (DN/s)	—
$\mu_{c,mean}$ (e/s)	—
$\mu_{c,var}$ (e/s)	—