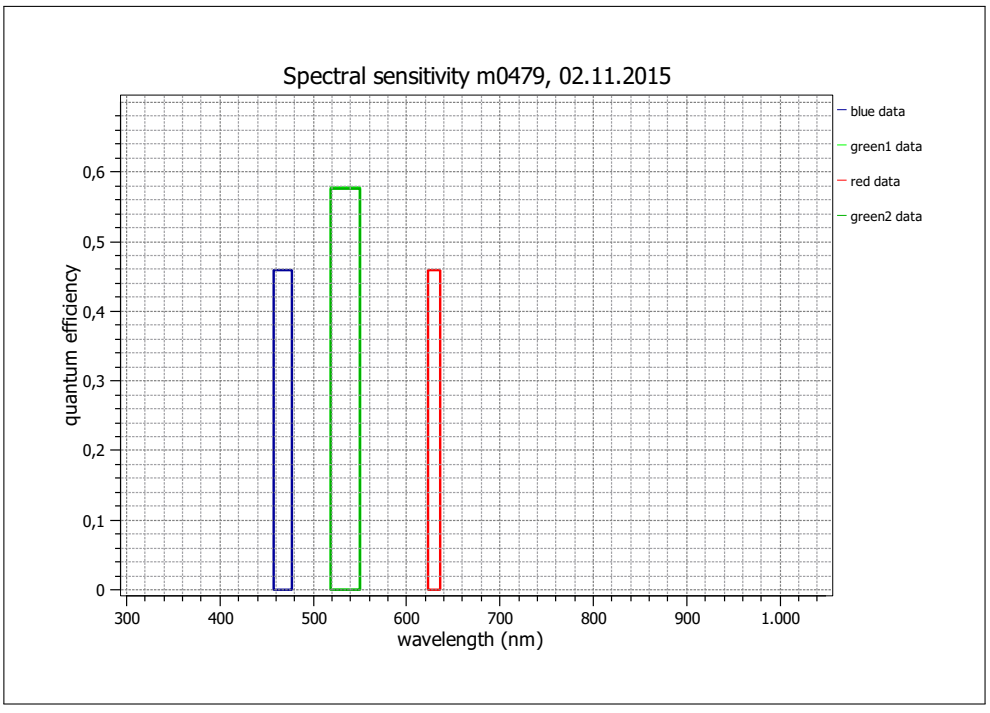
EMVA 1288 Summary Sheet

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	mvBlueFOX3-2051C
Serial number	FF000169
Sensor diagonal	11.07 mm
Lens category	C-Mount
Resolution	2464 × 2056, 12 bit
Pixel size	3.45 μm × 3.45 μm
Sensor type	CMOS
Shutter type	Global
Overlap capabilities	Overlapping
Maximum frame rate	35.0 Hz
Interface type	USB3 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 = 0.1
Operation point 2, (page 17)	
Wavelength centroid	534.2 nm
Wavelength FWHM	30.9 nm
Gain, offset	Gain = 0dB, Offset = 0.1
Operation point 3, (page 29)	
Wavelength centroid	629.5 nm
Wavelength FWHM	13.1 nm
Gain, offset	Gain = 0dB, Offset = 0.1
Optional data measured	
None	



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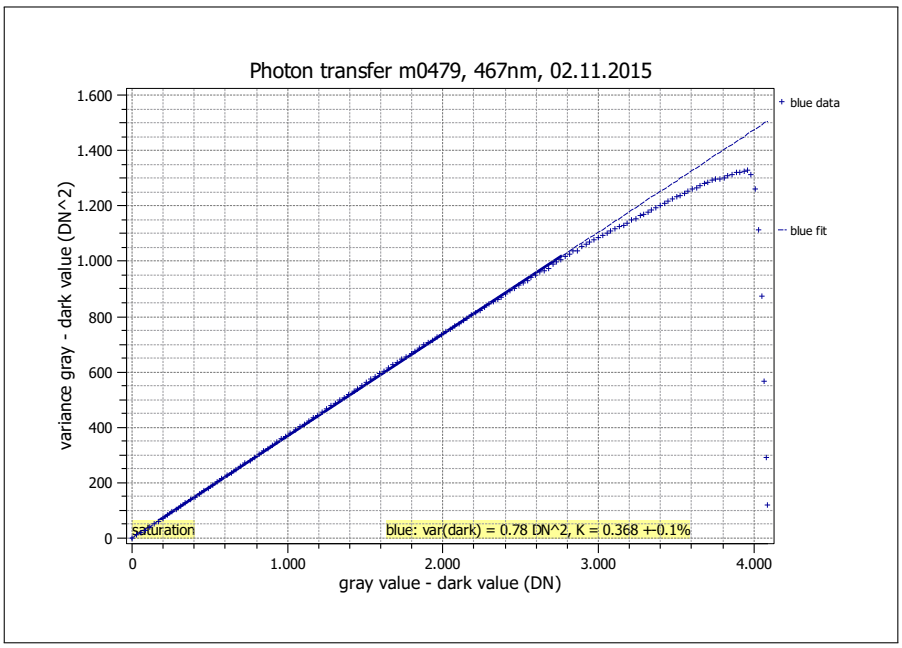
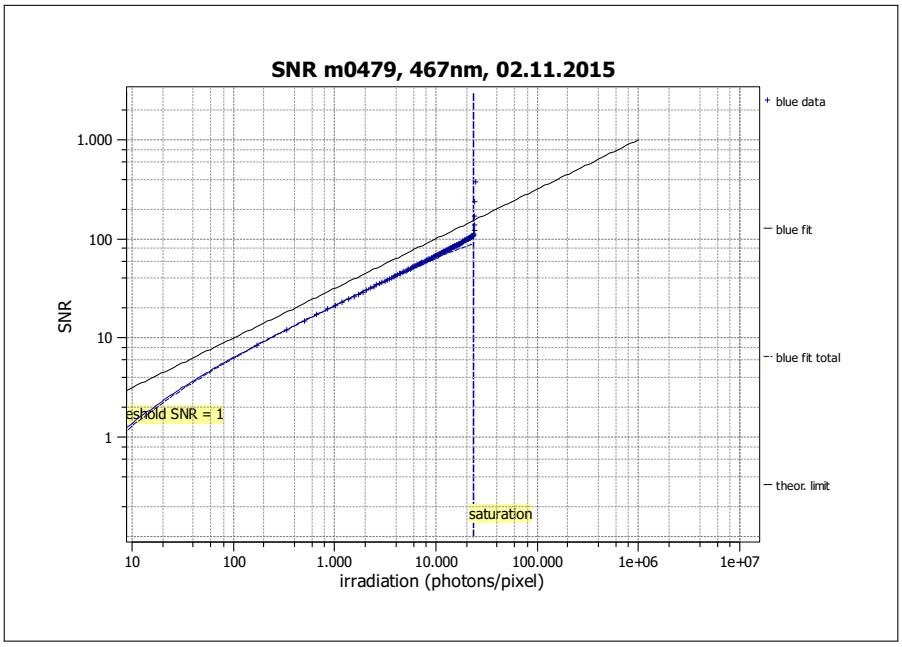
EMVA 1288 Summary Sheet for Operating Point 1

Type of data	Single	Gain, offset	Gain = 0dB, Offset = 0.1
Exposure time	1.3 ms	Environmental temperature	25.7°C
Frame rate	0.0 Hz		
Data transfer mode	BayerRG12	Camera temperature	37.4°C
		Wavelength, centr., FWHM	467 nm, 20.5 nm





Quantum efficiency	
η	0.459
Gain	
K (DN/e)	0.368
$1/K$ (e/DN)	2.715
Dark noise & DSNU	
σ_d (DN)	0.88
σ_0 (e)	2.3
$DSNU_{1288}$ (DN)	0.48
$DSNU_{1288}$ (e)	1.30
Signal-to-noise ratio & PRNU	
SNR_{max}	104
SNR_{max} (dB)	40.3
SNR_{max} (bits)	6.7
$1/SNR_{max}$ (%)	0.96
$PRNU_{1288}$ (%)	0.549
Nonlinearity	
LE (%)	0.17
Sensitivity & saturation	
$\mu_{p,min}$ (p)	6.4
$\mu_{e,min}$ (e)	2.9
$\mu_{p,sat}$ (p)	23457
$\mu_{e,sat}$ (e)	10772
Dynamic range	
DR	3656
DR (dB)	71.3
DR (bit)	11.8
Dark current	
$\mu_{c,mean}$ (DN/s)	4.50
$\mu_{c,mean}$ (e/s)	12.23
$\mu_{c,var}$ (e/s)	12.81

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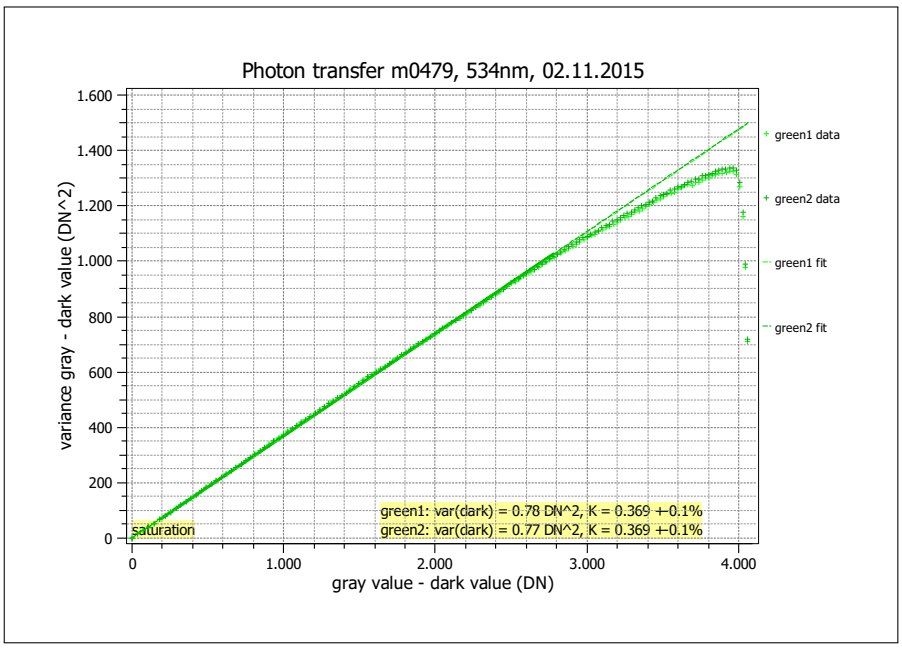
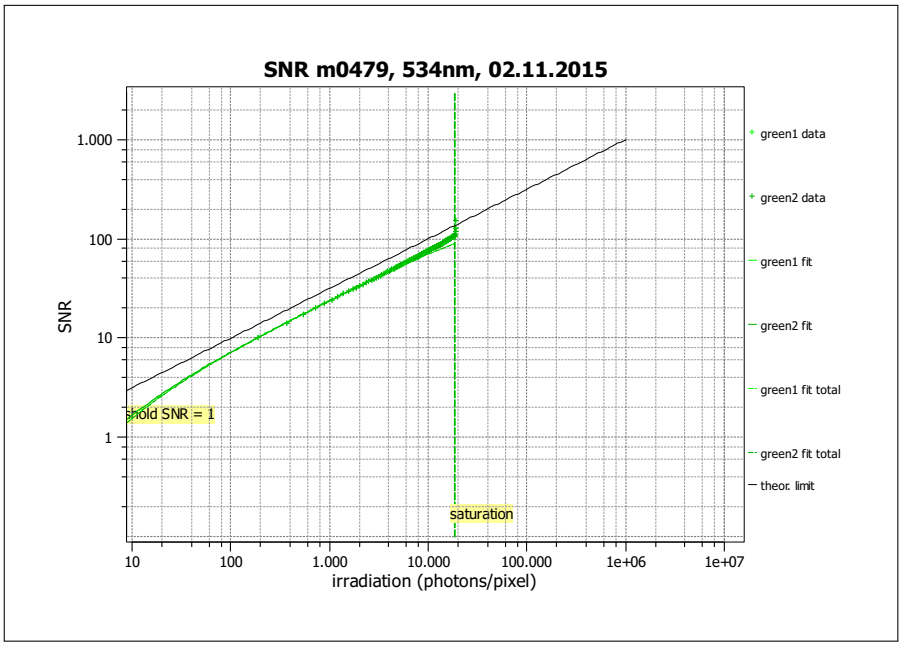
EMVA 1288 Summary Sheet for Operating Point 2

Type of data	Single	Gain, offset	Gain = 0dB, Offset = 0.1
Exposure time	1.3 ms	Environmental temperature	25.7°C
Frame rate	0.0 Hz		
Data transfer mode	BayerRG12	Camera temperature	37.4°C
		Wavelength, centr., FWHM	534 nm, 30.9 nm





Quantum efficiency	
η	0.578
Gain	
K (DN/e)	0.369
$1/K$ (e/DN)	2.713
Dark noise & DSNU	
σ_d (DN)	0.88
σ_0 (e)	2.3
$DSNU_{1288}$ (DN)	0.48
$DSNU_{1288}$ (e)	1.29
Signal-to-noise ratio & PRNU	
SNR_{max}	103
SNR_{max} (dB)	40.3
SNR_{max} (bits)	6.7
$1/SNR_{max}$ (%)	0.97
$PRNU_{1288}$ (%)	0.554
Nonlinearity	
LE (%)	0.20
Sensitivity & saturation	
$\mu_{p,min}$ (p)	5.1
$\mu_{e,min}$ (e)	2.9
$\mu_{p,sat}$ (p)	18478
$\mu_{e,sat}$ (e)	10680
Dynamic range	
DR	3624
DR (dB)	71.2
DR (bit)	11.8
Dark current	
$\mu_{c,mean}$ (DN/s)	4.45
$\mu_{c,mean}$ (e/s)	12.07
$\mu_{c,var}$ (e/s)	12.64

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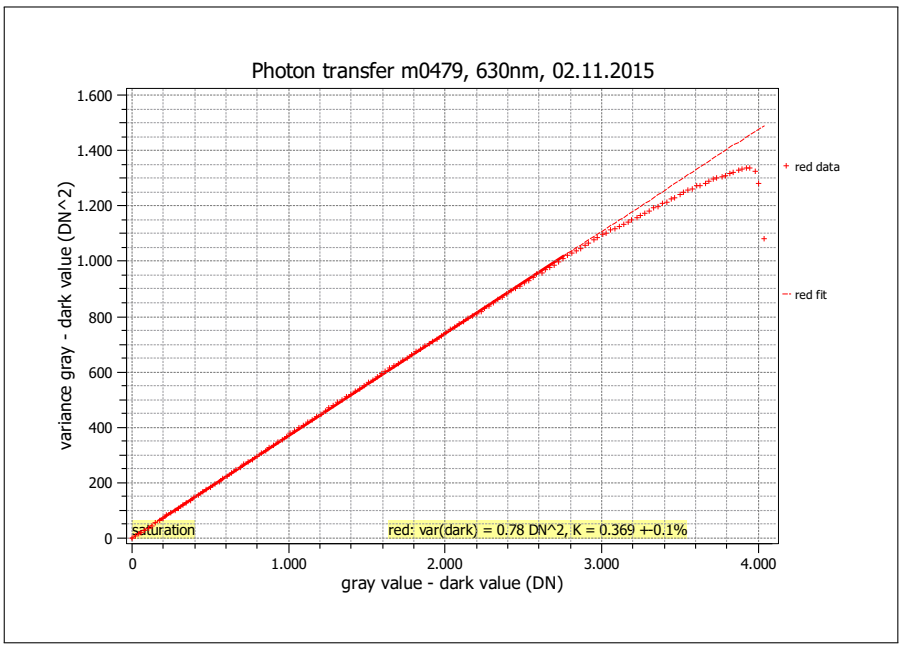
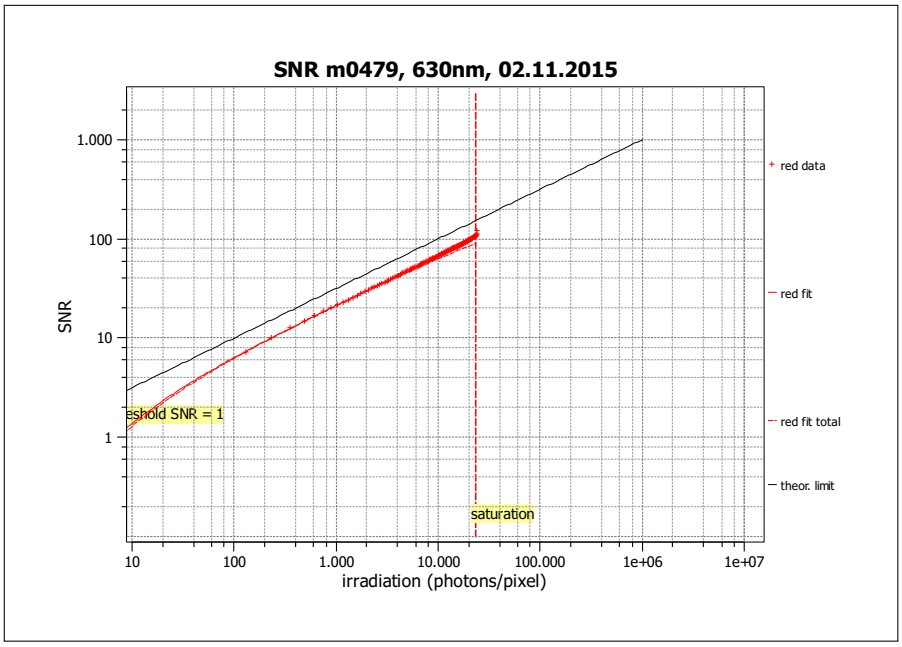
EMVA 1288 Summary Sheet for Operating Point 3

Type of data	Single	Gain, offset	Gain = 0dB, Offset = 0.1
Exposure time	1.3 ms	Environmental temperature	25.7°C
Frame rate	0.0 Hz		
Data transfer mode	BayerRG12	Camera temperature	37.4°C
		Wavelength, centr., FWHM	630 nm, 13.1 nm





Quantum efficiency	
η	0.459
Gain	
K (DN/e)	0.369
$1/K$ (e/DN)	2.710
Dark noise & DSNU	
σ_d (DN)	0.88
σ_0 (e)	2.3
$DSNU_{1288}$ (DN)	0.49
$DSNU_{1288}$ (e)	1.32
Signal-to-noise ratio & PRNU	
SNR_{max}	104
SNR_{max} (dB)	40.3
SNR_{max} (bits)	6.7
$1/SNR_{max}$ (%)	0.97
$PRNU_{1288}$ (%)	0.578
Nonlinearity	
LE (%)	0.28
Sensitivity & saturation	
$\mu_{p,min}$ (p)	6.4
$\mu_{e,min}$ (e)	2.9
$\mu_{p,sat}$ (p)	23387
$\mu_{e,sat}$ (e)	10725
Dynamic range	
DR	3643
DR (dB)	71.2
DR (bit)	11.8
Dark current	
$\mu_{c,mean}$ (DN/s)	4.58
$\mu_{c,mean}$ (e/s)	12.40
$\mu_{c,var}$ (e/s)	12.64

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