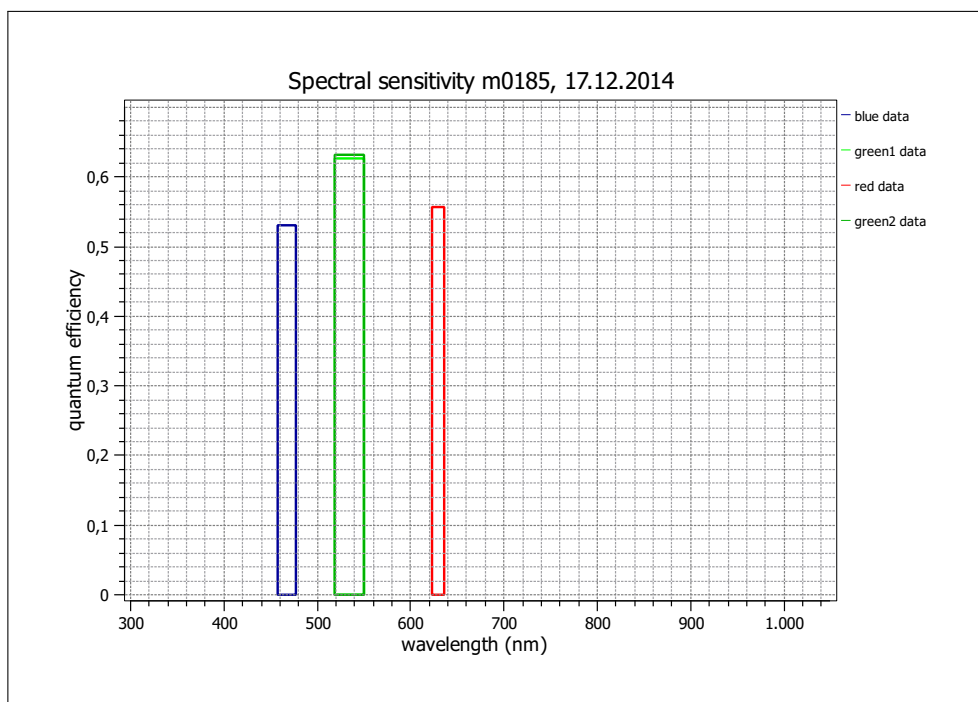


## EMVA 1288 Summary Sheet

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](http://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.

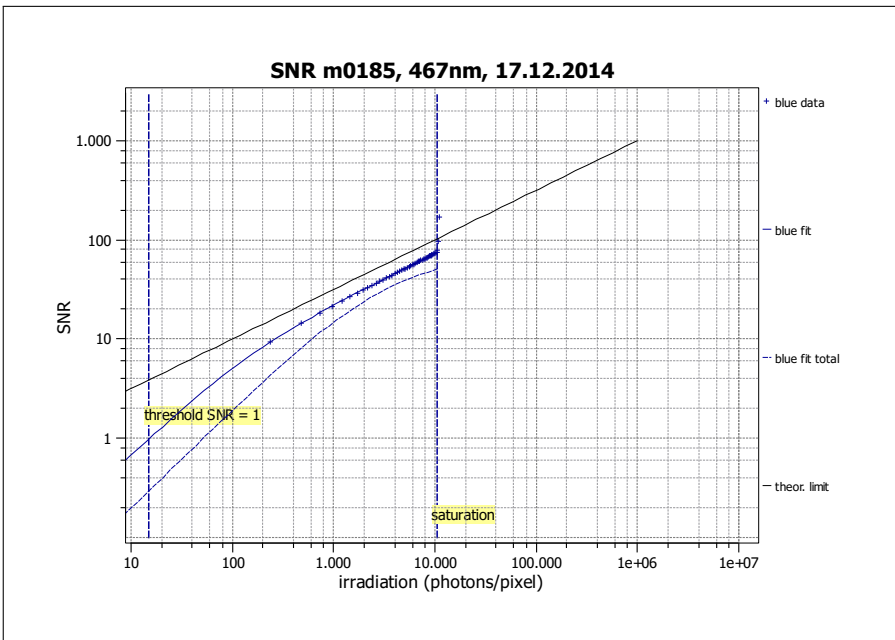
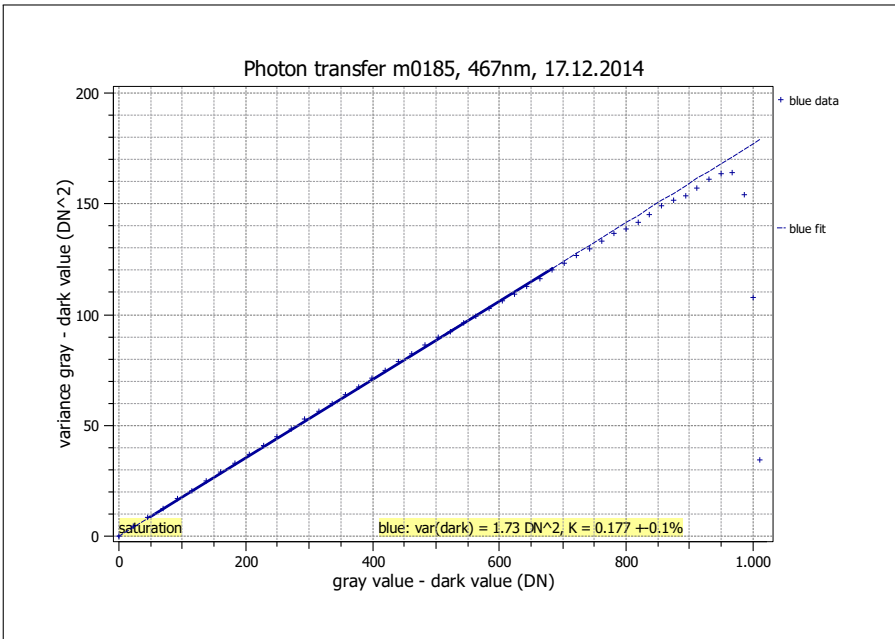
Vendor	MATRIX VISION
Model	mvBlueCougar-X102bC
Serial number	GX007254
Sensor diagonal	6.00 mm
Lens category	C-Mount
Resolution	1280 × 960, 10 bit
Pixel size	3.75 μm × 3.75 μm
Sensor type	CMOS
Shutter type	global
Overlap capabilities	pipelined
Maximum frame rate	24.6 Hz
Interface type	GigE Vision

Type of data presented	Single
<b>Operation point 1, (page 5)</b>	
Wavelength centroid	467.3 nm
Wavelength FWHM	20.5 nm
Gain, offset	Gain = 0dB, Offset = 0.8
<b>Operation point 2, (page 17)</b>	
Wavelength centroid	534.2 nm
Wavelength FWHM	30.9 nm
Gain, offset	Gain = 0dB, Offset = 0.8
<b>Operation point 3, (page 29)</b>	
Wavelength centroid	629.5 nm
Wavelength FWHM	13.1 nm
Gain, offset	Gain = 0dB, Offset = 0.8
<b>Optional data measured</b>	
None	



## EMVA 1288 Summary Sheet for Operating Point 1

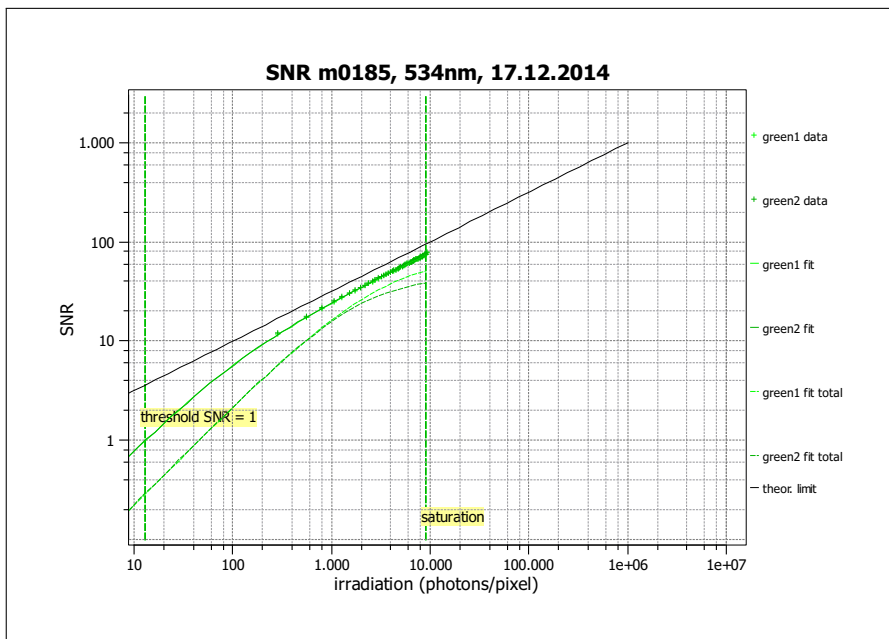
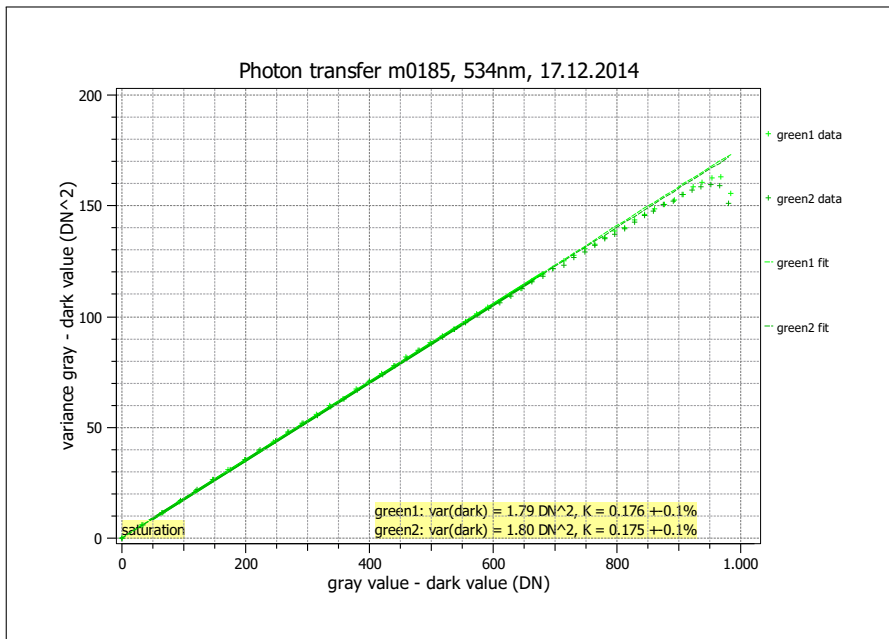
Type of data	Single	Gain, offset	Gain = 0dB, Offset = 0.8
Exposure time	300.0 $\mu$ s	Environmental temperature	25.6°C
Frame rate	0.0 Hz	Camera temperature	36.3°C
Data transfer mode	BayerGR10	Wavelength, centr., FWHM	467 nm, 20.5 nm



Quantum efficiency	
$\eta$	0.531
Gain	
$K$ (DN/e)	0.177
$1/K$ (e/DN)	5.652
Dark noise & DSNU	
$\sigma_d$ (DN)	1.32
$\sigma_0$ (e)	7.3
DSNU <sub>1288</sub> (DN)	4.54
DSNU <sub>1288</sub> (e)	25.68
Signal-to-noise ratio & PRNU	
SNR <sub>max</sub>	74
SNR <sub>max</sub> (dB)	37.4
SNR <sub>max</sub> (bits)	6.2
$1/\text{SNR}_{\text{max}}$ (%)	1.35
PRNU <sub>1288</sub> (%)	1.365
Nonlinearity	
LE (%)	0.23
Sensitivity & saturation	
$\mu_{p,\text{min}}$ (p)	15.0
$\mu_{e,\text{min}}$ (e)	8.0
$\mu_{p,\text{sat}}$ (p)	10385
$\mu_{e,\text{sat}}$ (e)	5519
Dynamic range	
DR	693
DR (dB)	56.8
DR (bit)	9.4
Dark current	
$\mu_{c,\text{mean}}$ (DN/s)	32.12
$\mu_{c,\text{mean}}$ (e/s)	181.56
$\mu_{c,\text{var}}$ (e/s)	-2789.34

## EMVA 1288 Summary Sheet for Operating Point 2

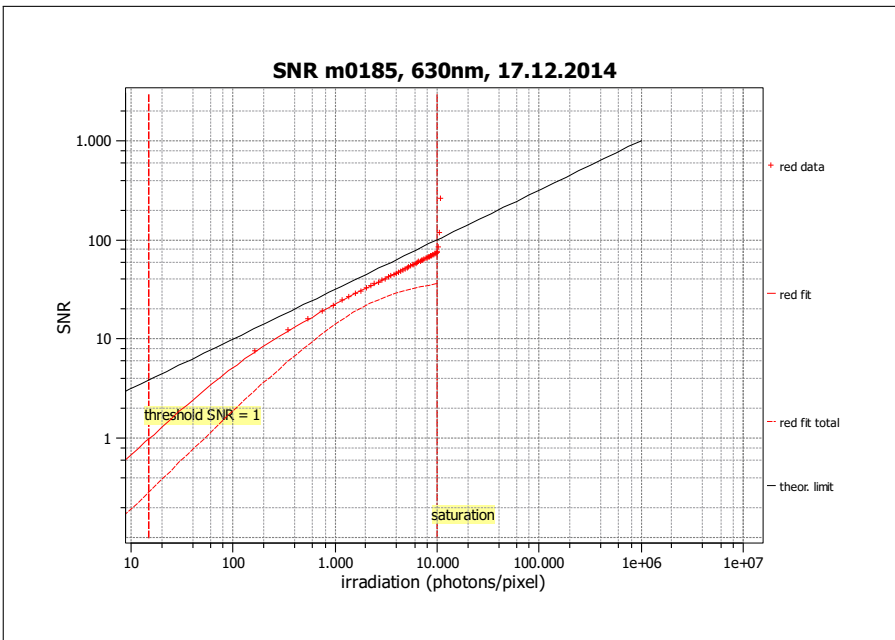
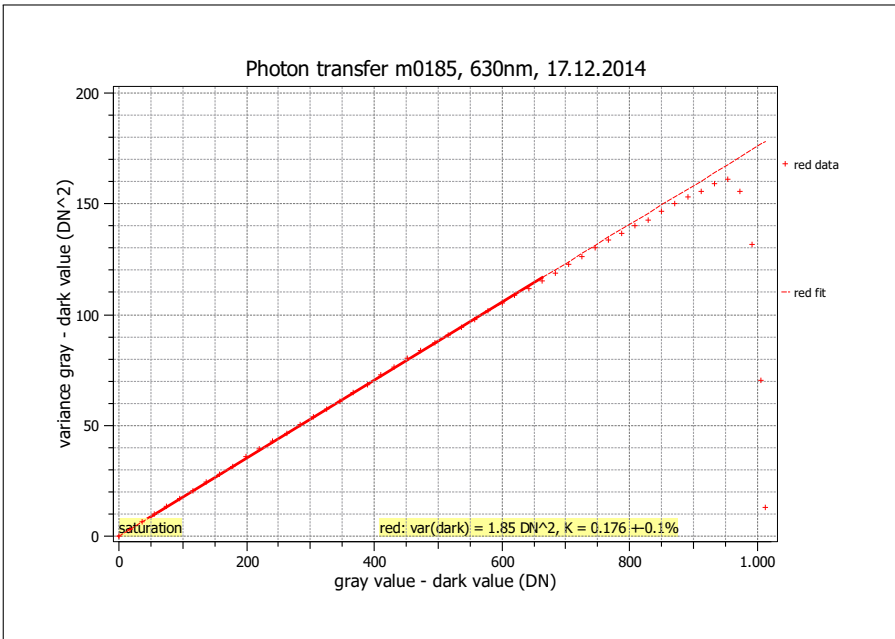
Type of data	Single	Gain, offset	Gain = 0dB, Offset = 0.8
Exposure time	300.0 $\mu$ s	Environmental temperature	25.6°C
Frame rate	0.0 Hz	Camera temperature	36.3°C
Data transfer mode	BayerGR10	Wavelength, centr., FWHM	534 nm, 30.9 nm



Quantum efficiency	
$\eta$	0.627
Gain	
$K$ (DN/e)	0.176
$1/K$ (e/DN)	5.673
Dark noise & DSNU	
$\sigma_d$ (DN)	1.34
$\sigma_0$ (e)	7.4
DSNU <sub>1288</sub> (DN)	4.78
DSNU <sub>1288</sub> (e)	27.14
Signal-to-noise ratio & PRNU	
SNR <sub>max</sub>	75
SNR <sub>max</sub> (dB)	37.5
SNR <sub>max</sub> (bits)	6.2
$1/\text{SNR}_{\text{max}}$ (%)	1.33
PRNU <sub>1288</sub> (%)	1.337
Nonlinearity	
LE (%)	0.84
Sensitivity & saturation	
$\mu_{p,\text{min}}$ (p)	12.9
$\mu_{e,\text{min}}$ (e)	8.1
$\mu_{p,\text{sat}}$ (p)	9063
$\mu_{e,\text{sat}}$ (e)	5683
Dynamic range	
DR	701
DR (dB)	56.9
DR (bit)	9.5
Dark current	
$\mu_{c,\text{mean}}$ (DN/s)	23.98
$\mu_{c,\text{mean}}$ (e/s)	136.06
$\mu_{c,\text{var}}$ (e/s)	-2185.16

### EMVA 1288 Summary Sheet for Operating Point 3

Type of data	Single	Gain, offset	Gain = 0dB, Offset = 0.8
Exposure time	300.0 $\mu$ s	Environmental temperature	25.6°C
Frame rate	0.0 Hz	Camera temperature	36.3°C
Data transfer mode	BayerGR10	Wavelength, centr., FWHM	630 nm, 13.1 nm



Quantum efficiency	
$\eta$	0.556
Gain	
$K$ (DN/e)	0.176
$1/K$ (e/DN)	5.688
Dark noise & DSNU	
$\sigma_d$ (DN)	1.36
$\sigma_0$ (e)	7.6
DSNU <sub>1288</sub> (DN)	4.84
DSNU <sub>1288</sub> (e)	27.51
Signal-to-noise ratio & PRNU	
SNR <sub>max</sub>	74
SNR <sub>max</sub> (dB)	37.4
SNR <sub>max</sub> (bits)	6.2
$1/\text{SNR}_{\text{max}}$ (%)	1.35
PRNU <sub>1288</sub> (%)	2.358
Nonlinearity	
LE (%)	0.34
Sensitivity & saturation	
$\mu_{p,\text{min}}$ (p)	14.8
$\mu_{e,\text{min}}$ (e)	8.2
$\mu_{p,\text{sat}}$ (p)	9901
$\mu_{e,\text{sat}}$ (e)	5509
Dynamic range	
DR	668
DR (dB)	56.5
DR (bit)	9.4
Dark current	
$\mu_{c,\text{mean}}$ (DN/s)	-6.89
$\mu_{c,\text{mean}}$ (e/s)	-39.17
$\mu_{c,\text{var}}$ (e/s)	-4383.00