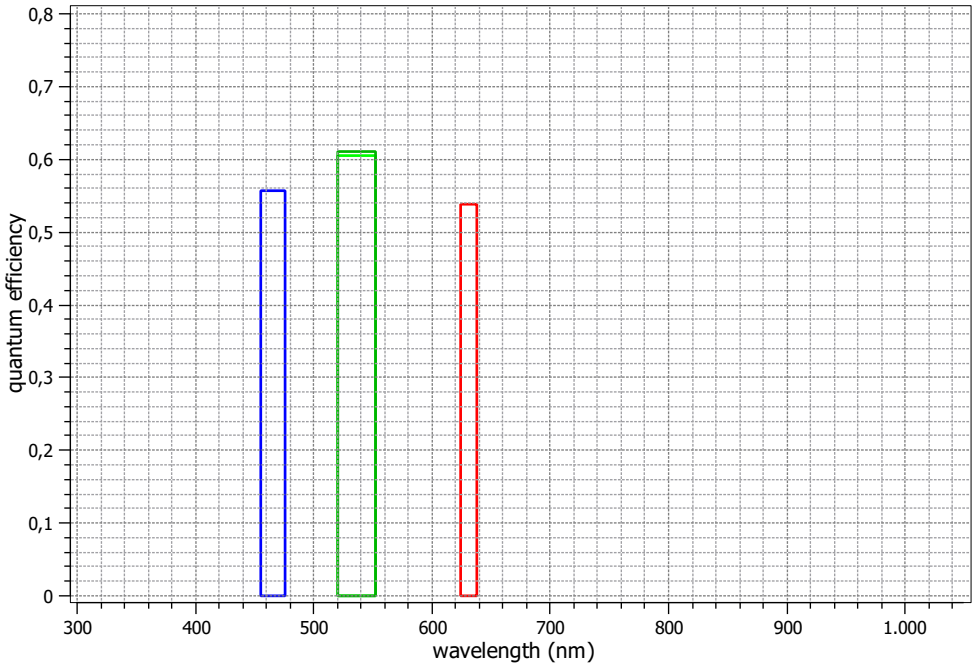
EMVA 1288 Summary Sheet

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` or the *Zenodo EMVA 1288 community*) release 3.0 with proprietary extensions from AEON. The measurements were performed with the AEON ACC3 RGB Release 3, 15.08.2015, SN 0001(Baumer) . The performance parameters and estimated accuracy of the measurements are described in the technical report for the instrument, its calibration in the corresponding specification and calibration report.

Measurements performed by Technical and Application Support Center, Baumer Optronic GmbH.

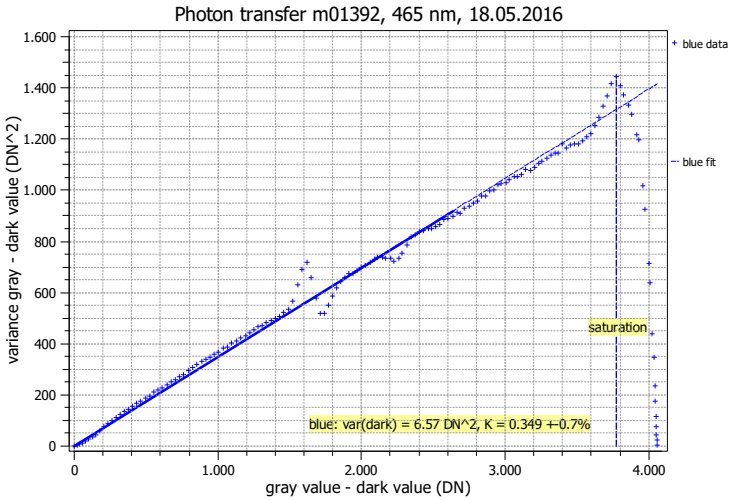
Vendor	Baumer
Model	LXC-200C
Serial number	0031832016
Sensor diagonal	29.51 mm
Lens category	F-Mount
Resolution	4288 × 3224, 12 bit
Pixel size	5.50 μm × 5.50 μm
Sensor	CMOSIS CMV20000
Sensor type	CCD
Readout type	Progressive
Transfer type	Interline
Maximum frame rate	0.0 Hz
Interface type	CL

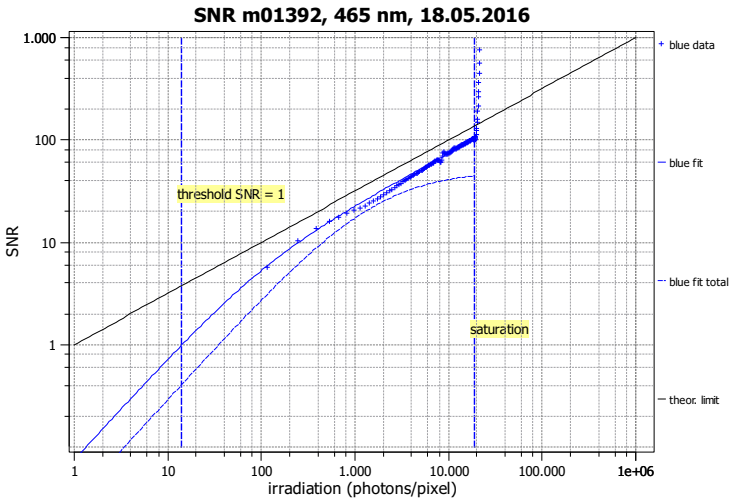
Type of data presented	Single
Operation point 1	
Wavelength centroid	465.3 nm
Wavelength FWHM	20.7 nm
Gain / BlackLevel	1.0 / 51
Operation point 2	
Wavelength centroid	535.8 nm
Wavelength FWHM	32.0 nm
Gain / BlackLevel	1.0 / 51
Operation point 3	
Wavelength centroid	631.0 nm
Wavelength FWHM	13.4 nm
Gain / BlackLevel	1.0 / 51
Optional data measured	
None	



EMVA 1288 Summary Sheet for Operating Point 1

Type of data	Single	Gain / BlackLevel	1.0 / 51
Exposure control	By irradiance	Environmental temperature	26.6°C
Exposure time	486.00 μs	Camera body temperature	34.8°C
Frame rate	10.0 Hz	Internal temperature(s)	—
Data transfer mode	BayerRG12	Wavelength, centr., FWHM	465 nm, 20.7 nm





Quantum efficiency

η	55.7%

Overall system gain

K	0.349 DN/e$^-$
$1/K$	2.867 e$^-$/DN

Temporal dark noise & DSNU

$\sigma_{y.dark}$	2.56 DN
$DSNU_{1288}$	6.12 DN
σ_d	7.30 e$^-$
$DSNU_{1288}$	17.54 e$^-$

Signal-to-noise ratio & PRNU

SNR_{max}	103
	40.2 dB
	6.7 bit
$1/SNR_{max}$	0.97 %
$PRNU_{1288}$	2.00 %

Nonlinearity

LE	0.35%
LE_{min}	-0.21%
LE_{max}	0.48%

Sensitivity & saturation

$\mu_{p,min}$	14.13 p
	0.467 p/μm^2
$\mu_{p,sat}$	19014 p
	629 p/μm^2
$\mu_{e,min}$	7.87 e$^-$
	0.260 e$^-$/μm^2
$\mu_{e,sat}$	10589 e$^-$
	350 e$^-$/μm^2

Dynamic range

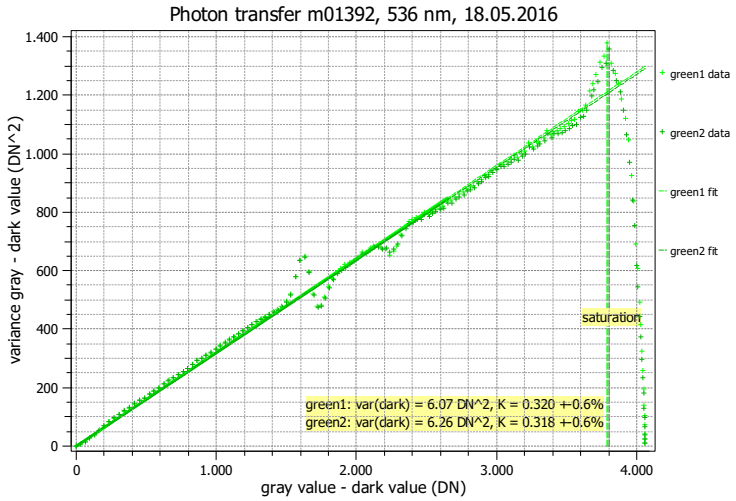
DR	1346
	62.6 dB
	10.4 bit

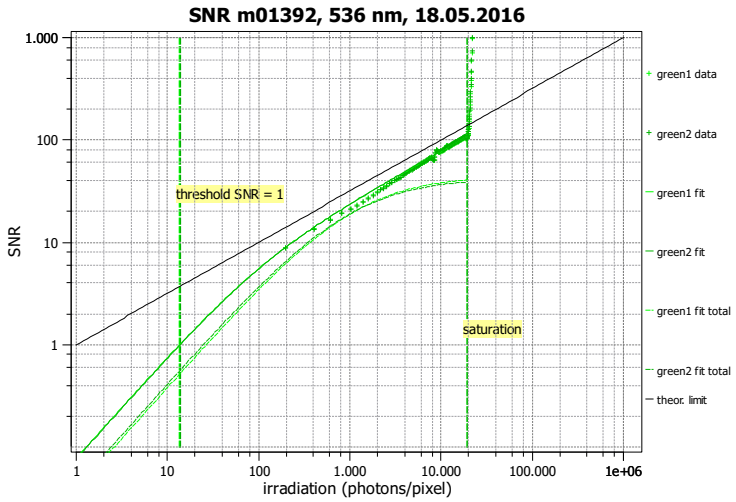
Dark current

$\mu_{c,mean}$	102.6 DN/s
$\mu_{c,mean}$	294.3 e$^-$/s
$\mu_{c,var}$	134.0 e$^-$/s

EMVA 1288 Summary Sheet for Operating Point 2

Type of data	Single	Gain / BlackLevel	1.0 / 51
Exposure control	By irradiance	Environmental temperature	26.6°C
Exposure time	486.00 µs	Camera body temperature	34.8°C
Frame rate	10.0 Hz	Internal temperature(s)	—
Data transfer mode	BayerRG12	Wavelength, centr., FWHM	536 nm, 32.0 nm





Quantum efficiency

η	60.5%

Overall system gain

K	0.320 DN/e$^-$
$1/K$	3.124 e$^-$/DN

Temporal dark noise & DSNU

$\sigma_{y.dark}$	2.46 DN
$DSNU_{1288}$	4.39 DN
σ_d	7.64 e$^-$
$DSNU_{1288}$	13.70 e$^-$

Signal-to-noise ratio & PRNU

SNR_{max}	108
	40.7 dB
	6.8 bit
$1/SNR_{max}$	0.93 %
$PRNU_{1288}$	2.27 %

Nonlinearity

LE	0.28%
LE_{min}	-0.19%
LE_{max}	0.37%

Sensitivity & saturation

$\mu_{p,min}$	13.57 p
	0.449 p/µm^2
$\mu_{p,sat}$	19297 p
	638 p/µm^2
$\mu_{e,min}$	8.21 e$^-$
	0.271 e$^-$/µm^2
$\mu_{e,sat}$	11673 e$^-$
	386 e$^-$/µm^2

Dynamic range

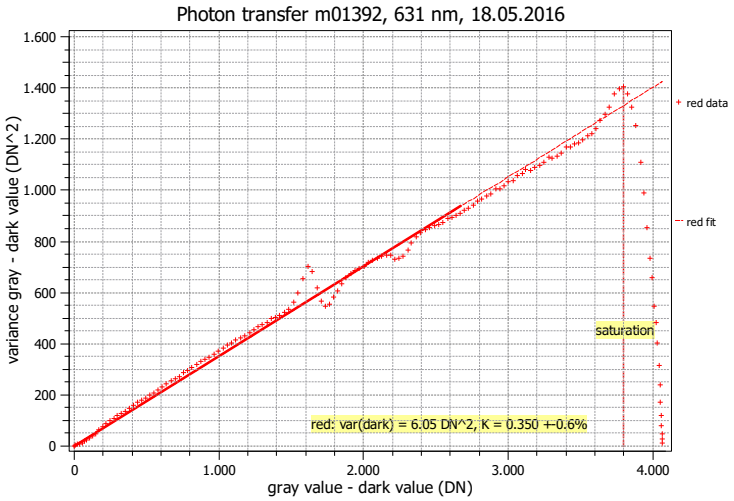
DR	1422
	63.1 dB
	10.5 bit

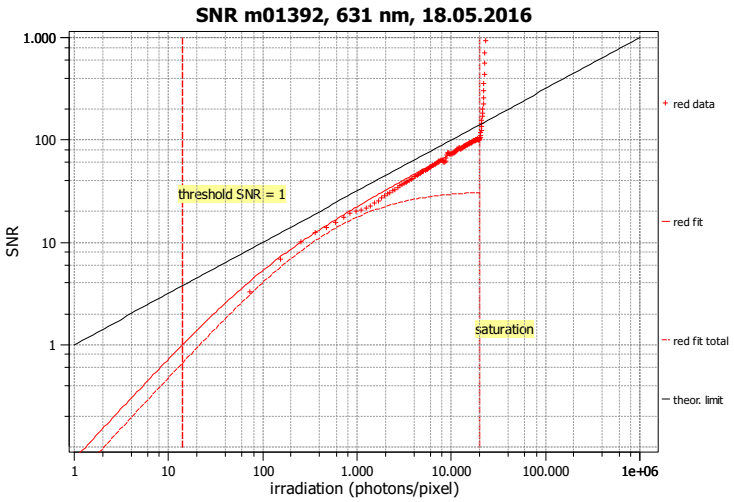
Dark current

$\mu_{c,mean}$	105.6 DN/s
$\mu_{c,mean}$	330.0 e$^-$/s
$\mu_{c,var}$	164.6 e$^-$/s

EMVA 1288 Summary Sheet for Operating Point 3

Type of data	Single	Gain / BlackLevel	1.0 / 51
Exposure control	By irradiance	Environmental temperature	26.6°C
Exposure time	486.00 μs	Camera body temperature	34.8°C
Frame rate	10.0 Hz	Internal temperature(s)	—
Data transfer mode	BayerRG12	Wavelength, centr., FWHM	631 nm, 13.4 nm





Quantum efficiency

η	53.9%

Overall system gain

K	0.350 DN/e$^-$
$1/K$	2.854 e$^-$/DN

Temporal dark noise & DSNU

$\sigma_{y.dark}$	2.46 DN
$DSNU_{1288}$	2.98 DN
σ_d	6.97 e$^-$
$DSNU_{1288}$	8.51 e$^-$

Signal-to-noise ratio & PRNU

SNR_{max}	104
	40.3 dB
	6.7 bit
$1/SNR_{max}$	0.97 %
$PRNU_{1288}$	3.10 %

Nonlinearity

LE	0.41%
LE_{min}	-0.38%
LE_{max}	0.44%

Sensitivity & saturation

$\mu_{p,min}$	13.98 p
	0.462 p/μm^2
$\mu_{p,sat}$	19910 p
	658 p/μm^2
$\mu_{e,min}$	7.54 e$^-$
	0.249 e$^-$/μm^2
$\mu_{e,sat}$	10733 e$^-$
	355 e$^-$/μm^2

Dynamic range

DR	1424
	63.1 dB
	10.5 bit

Dark current

$\mu_{c,mean}$	106.4 DN/s
$\mu_{c,mean}$	303.7 e$^-$/s
$\mu_{c,var}$	141.2 e$^-$/s