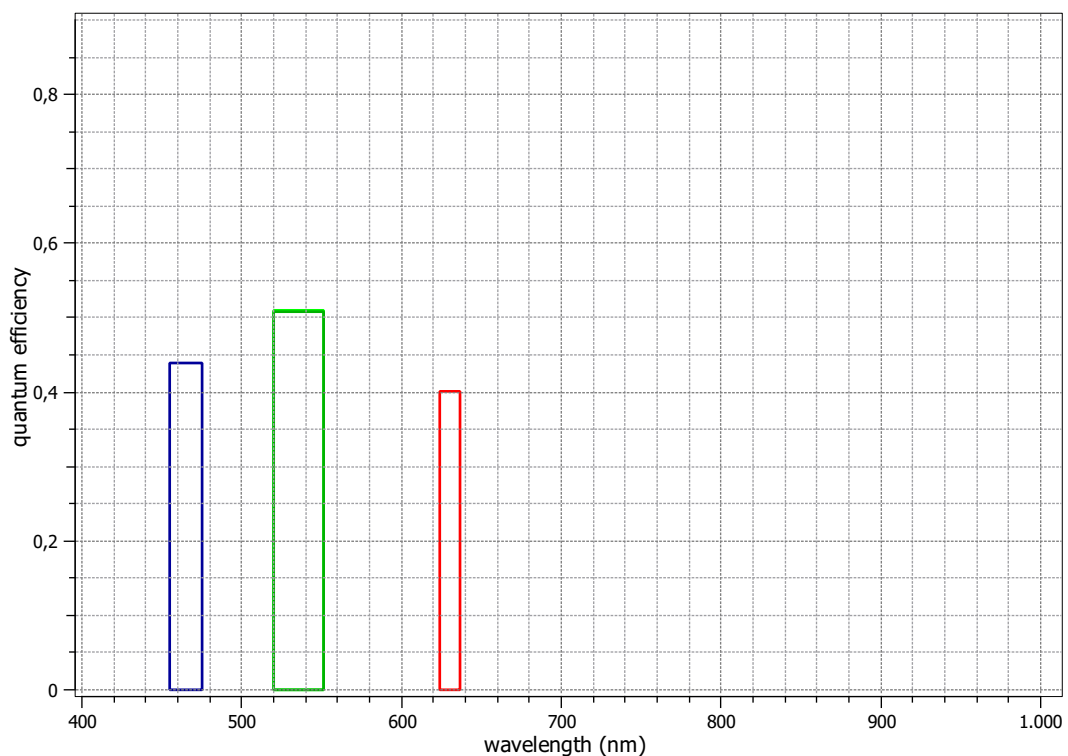


EMVA 1288 Summary Sheet

This datasheet describes the specification according to the standard 1288 release 3.1 for "Characterization and Presentation of Specification Data for Image Sensors and Cameras" issued on December 30, 2016 by the European Machine Vision Association (EMVA), published at www.standard1288.org and the *zenodo EMVA 1288 community* with proprietary extensions from AEON. The measurements were performed with the AEON ACC3 RGB Release 7, 21.08.2018, SN 0001(Baumer).

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

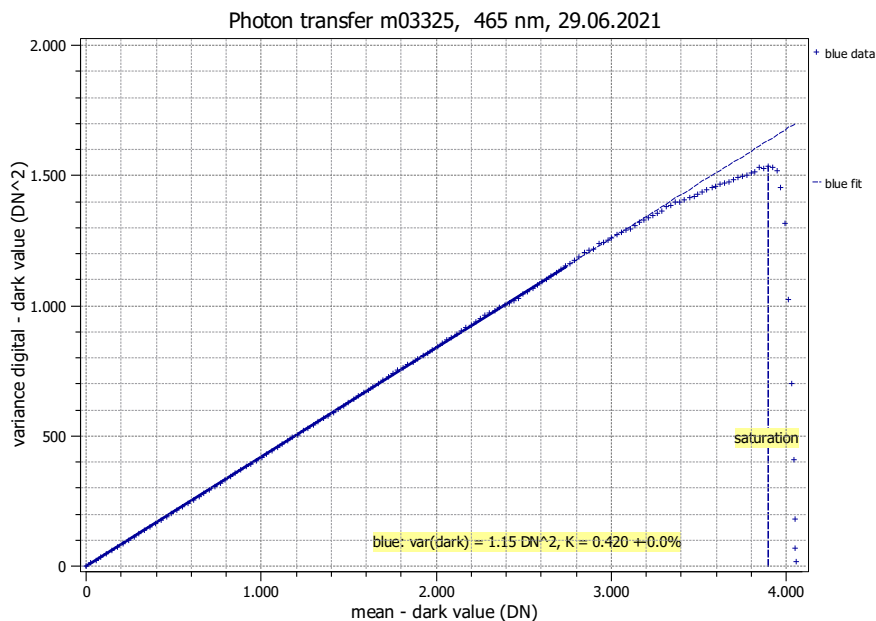
Vendor	Baumer	Type of data presented	Single
Model	VCXG-82C	Operation point 1	
Serial number	700006774919	Wavelength centroid	465.1 nm
Sensor diagonal	11.00 mm	Wavelength FWHM	20.5 nm
Lens category	C-Mount	Gain, black-level	1.0 / 39.0
Resolution	2848 × 2832, 12 bit	Operation point 2	
Pixel size (h×v)	2.74 μm × 2.74 μm	Wavelength centroid	535.7 nm
Sensor	Sony IMX546	Wavelength FWHM	31.9 nm
Sensor type	CMOS	Gain, black-level	1.0 / 39.0
Shutter type	Global shutter	Operation point 3	
Overlap cap.	Overlapped	Wavelength centroid	630.3 nm
Max. frame rate	0.0 Hz	Wavelength FWHM	13.2 nm
Interface type	GEV	Gain, black-level	1.0 / 39.0
		Optional data measured	
		None	



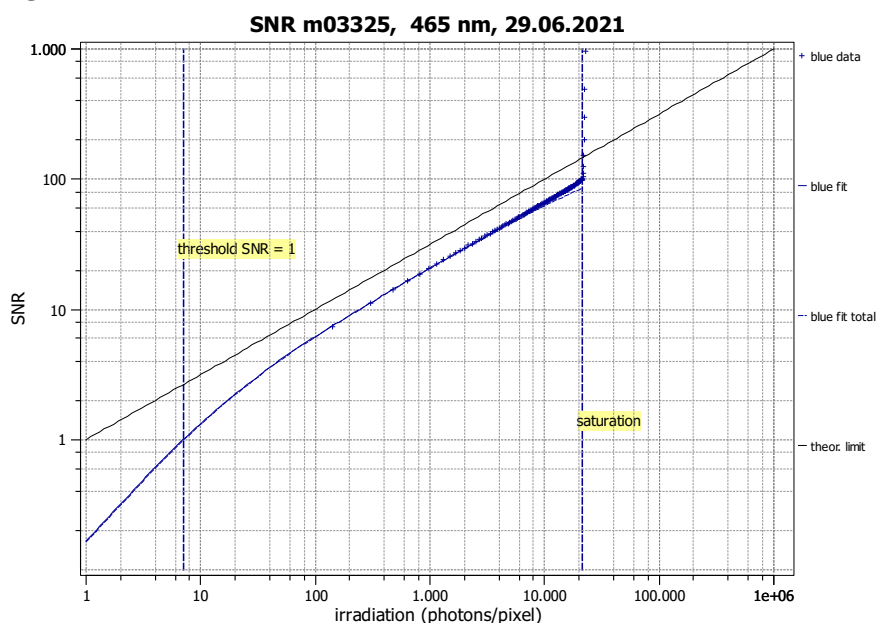
Summary Sheet for Operation Point 1 at a Wavelength of 465 nm

Type of data	Single	Gain, black-level	1.0 / 39.0
Exposure control	By irradiance	Environmental temperature	26.7°C
Exposure time	804.00 μ s	Camera body temperature	34.7°C
Frame rate	10.0 Hz	Internal temperature(s)	—
Data transfer mode	BayerRG12	Wavelength, centr., FWHM	465 nm, 20.5 nm

Photon Transfer



Signal-to-Noise Ratio



Quantum efficiency

 η 43.9%

Overall system gain

 K 0.420 DN/e⁻
 $1/K$ 2.384 e⁻/DN

Temporal dark noise

 σ_d 2.46 e⁻
 $\sigma_{y,\text{dark}}$ 1.07 DN

Signal-to-noise ratio

 SNR_{max} 96

39.7 dB

6.6 bit

 $1/\text{SNR}_{\text{max}}$ 1.04 %

Absolute sensitivity threshold

 $\mu_{p,\text{min}}$ 7.07 p

 $\mu_{p,\text{min},\text{area}}$ 0.942 p/ μm^2
 $\mu_{e,\text{min}}$ 3.10 e⁻
 $\mu_{e,\text{min},\text{area}}$ 0.413 e⁻/ μm^2

Saturation capacity

 $\mu_{p,\text{sat}}$ 21232 p

 $\mu_{p,\text{sat},\text{area}}$ 2828 p/ μm^2
 $\mu_{e,\text{sat}}$ 9310 e⁻
 $\mu_{e,\text{sat},\text{area}}$ 1240 e⁻/ μm^2

Dynamic range

DR 3001

69.5 dB

11.6 bit

Spatial nonuniformities

 DSNU_{1288} 0.55 e⁻

0.23 DN

 PRNU_{1288} 0.55 %

Linearity error

 LE_{min} -0.24%

 LE_{max} 0.35%

Dark current

 $\mu_{c,\text{mean}}$ 0.1 ± 0.0 e⁻/s

0.06 DN/s

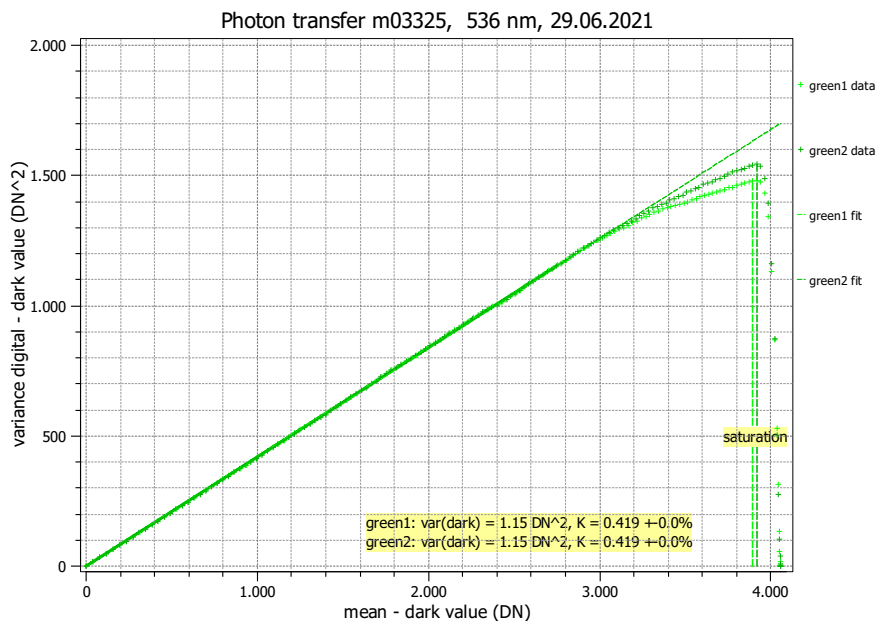
 $\mu_{c,\text{var}}$ 9.3 ± 0.5 e⁻/s

 T_d — °C

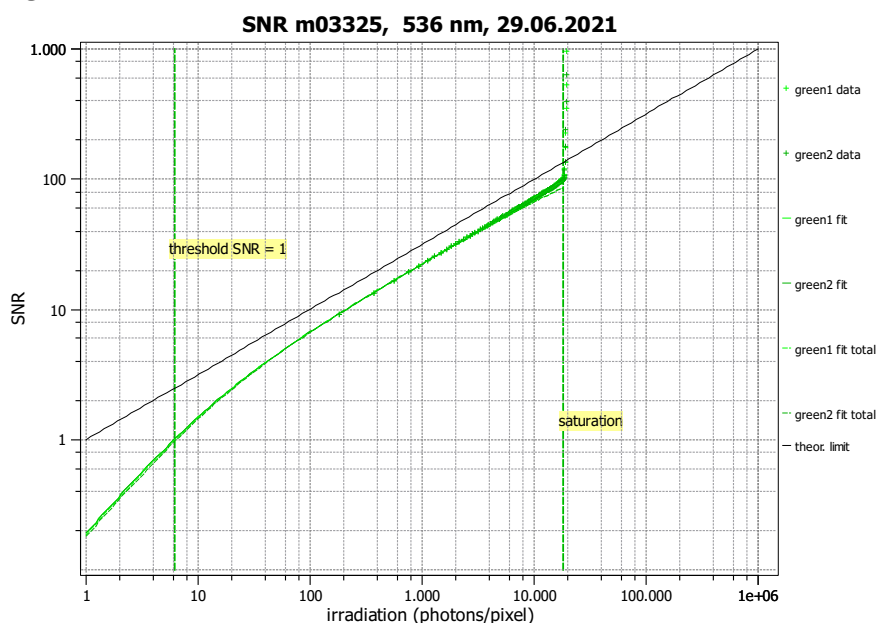
Summary Sheet for Operation Point 2 at a Wavelength of 536 nm

Type of data	Single	Gain, black-level	1.0 / 39.0
Exposure control	By irradiance	Environmental temperature	27.1 °C
Exposure time	1.59 ms	Camera body temperature	35.4 °C
Frame rate	10.0 Hz	Internal temperature(s)	—
Data transfer mode	BayerRG12	Wavelength, centr., FWHM	536 nm, 31.9 nm

Photon Transfer



Signal-to-Noise Ratio



Quantum efficiency

 η 50.9%

Overall system gain

 K 0.419 DN/e⁻
 $1/K$ 2.385 e⁻/DN

Temporal dark noise

 σ_d 2.47 e⁻
 $\sigma_{y,\text{dark}}$ 1.07 DN

Signal-to-noise ratio

 SNR_{max} 96

39.7 dB

6.6 bit

 $1/\text{SNR}_{\text{max}}$ 1.04 %

Absolute sensitivity threshold

 $\mu_{p,\text{min}}$ 6.10 p

 $\mu_{p,\text{min,area}}$ 0.813 p/μm²
 $\mu_{e,\text{min}}$ 3.11 e⁻
 $\mu_{e,\text{min,area}}$ 0.414 e⁻/μm²

Saturation capacity

 $\mu_{p,\text{sat}}$ 18268 p

 $\mu_{p,\text{sat,area}}$ 2433 p/μm²
 $\mu_{e,\text{sat}}$ 9303 e⁻
 $\mu_{e,\text{sat,area}}$ 1239 e⁻/μm²

Dynamic range

DR 2993

69.5 dB

11.5 bit

Spatial nonuniformities

 DSNU_{1288} 0.65 e⁻

0.27 DN

 PRNU_{1288} 0.51 %

Linearity error

 LE_{min} -0.38%

 LE_{max} 0.77%

Dark current

 $\mu_{c,\text{mean}}$ 0.2 ± 0.0 e⁻/s

0.08 DN/s

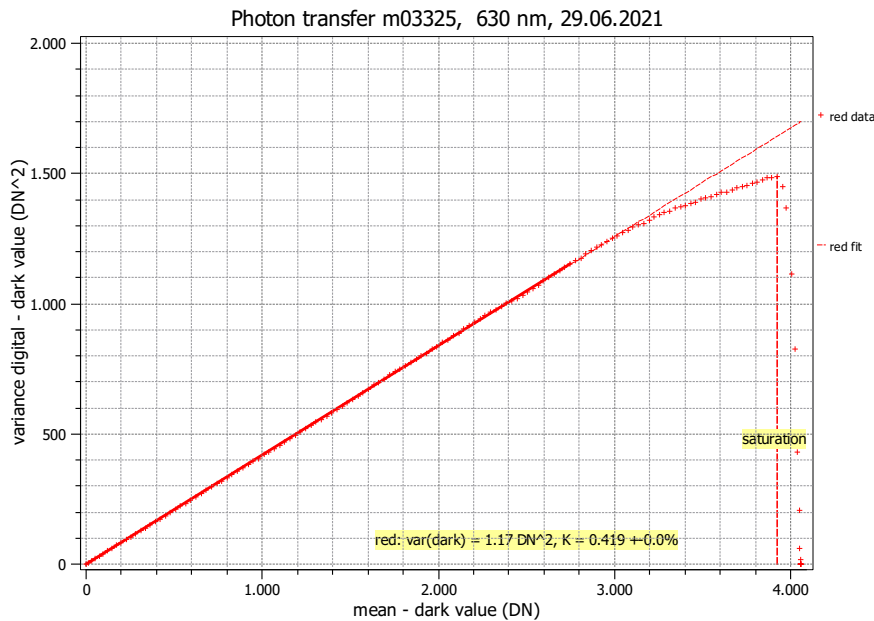
 $\mu_{c,\text{var}}$ 9.5 ± 0.7 e⁻/s

 T_d — °C

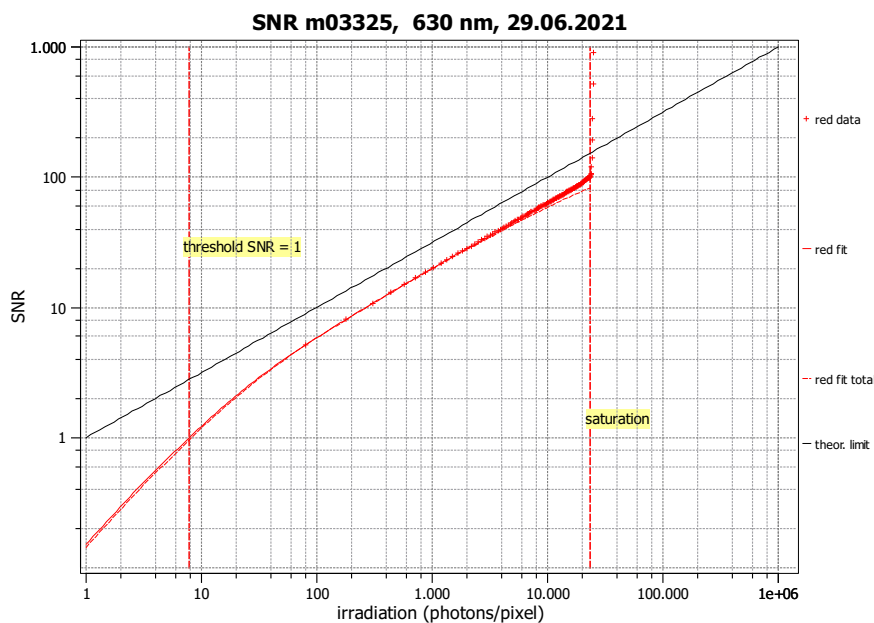
Summary Sheet for Operation Point 3 at a Wavelength of 630 nm

Type of data	Single	Gain, black-level	1.0 / 39.0
Exposure control	By irradiance	Environmental temperature	27.4 °C
Exposure time	1.59 ms	Camera body temperature	35.7 °C
Frame rate	10.0 Hz	Internal temperature(s)	—
Data transfer mode	BayerRG12	Wavelength, centr., FWHM	630 nm, 13.2 nm

Photon Transfer



Signal-to-Noise Ratio



Quantum efficiency

 η 40.2%

Overall system gain

 K 0.419 DN/e⁻
 $1/K$ 2.387 e⁻/DN

Temporal dark noise

 σ_d 2.48 e⁻
 $\sigma_{y,\text{dark}}$ 1.08 DN

Signal-to-noise ratio

 SNR_{max} 97

39.8 dB

6.6 bit

 $1/\text{SNR}_{\text{max}}$ 1.03 %

Absolute sensitivity threshold

 $\mu_{p,\text{min}}$ 7.78 p

 $\mu_{p,\text{min},\text{area}}$ 1.036 p/μm²
 $\mu_{e,\text{min}}$ 3.13 e⁻
 $\mu_{e,\text{min},\text{area}}$ 0.416 e⁻/μm²

Saturation capacity

 $\mu_{p,\text{sat}}$ 23515 p

 $\mu_{p,\text{sat},\text{area}}$ 3132 p/μm²
 $\mu_{e,\text{sat}}$ 9448 e⁻
 $\mu_{e,\text{sat},\text{area}}$ 1258 e⁻/μm²

Dynamic range

DR 3023

69.6 dB

11.6 bit

Spatial nonuniformities

 DSNU_{1288} 0.88 e⁻

0.37 DN

 PRNU_{1288} 0.63 %

Linearity error

 LE_{min} -0.49%

 LE_{max} 0.19%

Dark current

 $\mu_{c,\text{mean}}$ 0.1 ± 0.0 e⁻/s

0.05 DN/s

 $\mu_{c,\text{var}}$ 8.5 ± 0.4 e⁻/s

 T_d — °C