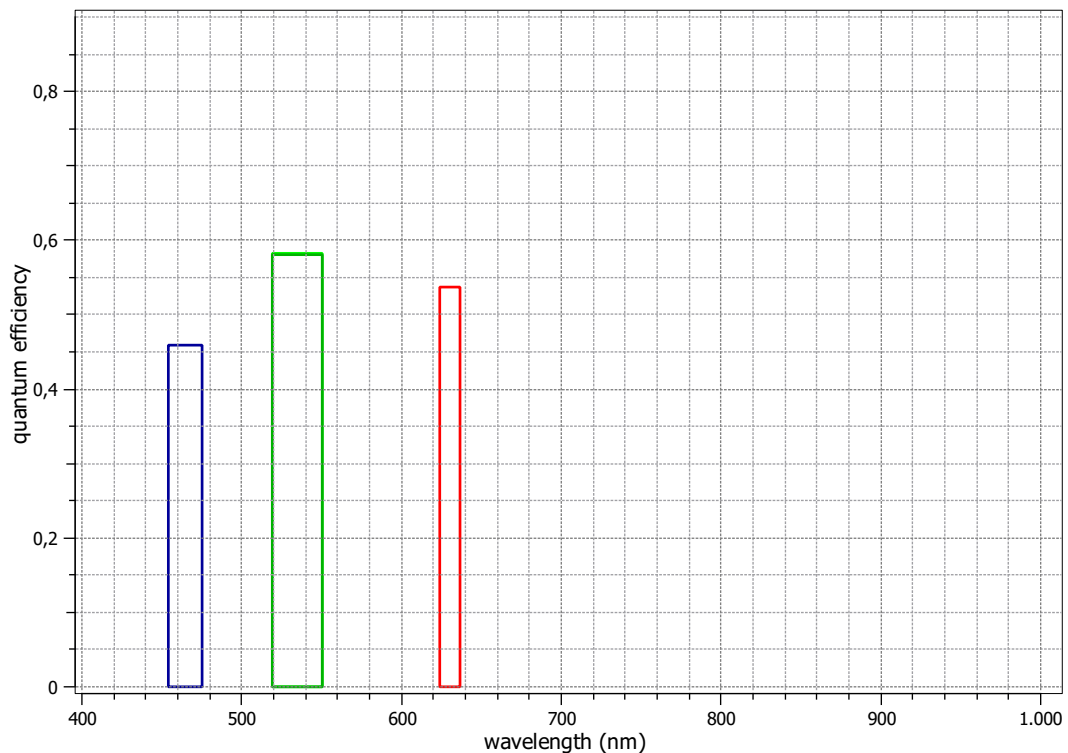


EMVA 1288 Summary Sheet

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	VAX-50C.I.NVX	Operation point 1	
Serial number	700006710670	Wavelength centroid	464.6 nm
Sensor diagonal	11.01 mm	Wavelength FWHM	20.6 nm
Lens category	C-Mount	Gain, black-level	1.0 / 39.0
Resolution	2448 × 2048, 12 bit	Operation point 2	
Pixel size (h×v)	3.45 μm × 3.45 μm	Wavelength centroid	534.9 nm
Sensor	Sony IMX250	Wavelength FWHM	31.8 nm
Sensor type	CMOS	Gain, black-level	1.0 / 39.0
Shutter type	Global shutter	Operation point 3	
Overlap cap.	Overlapped	Wavelength centroid	630.5 nm
Max. frame rate	0.0 Hz	Wavelength FWHM	12.9 nm
Interface type	GEV	Gain, black-level	1.0 / 39.0
		Optional data measured	
		None	

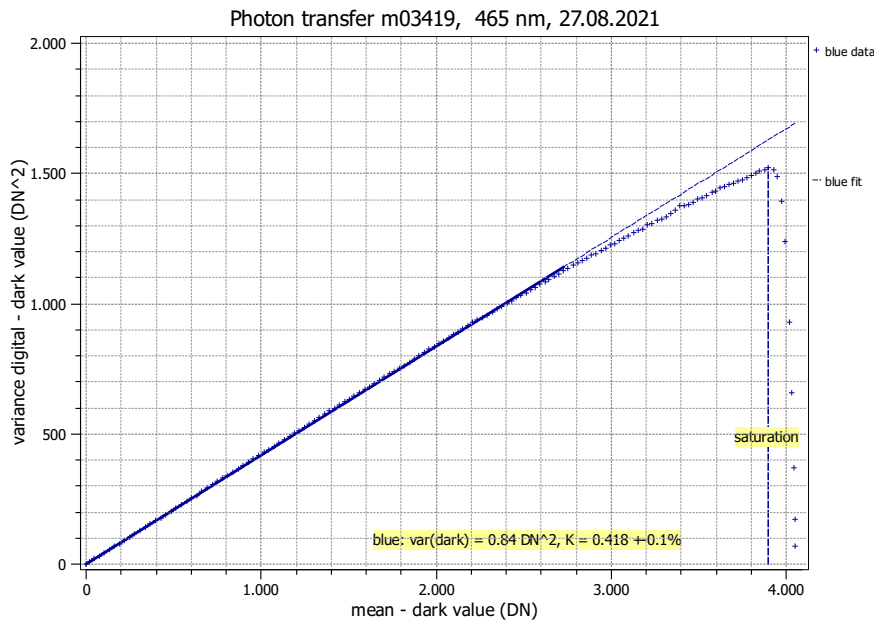




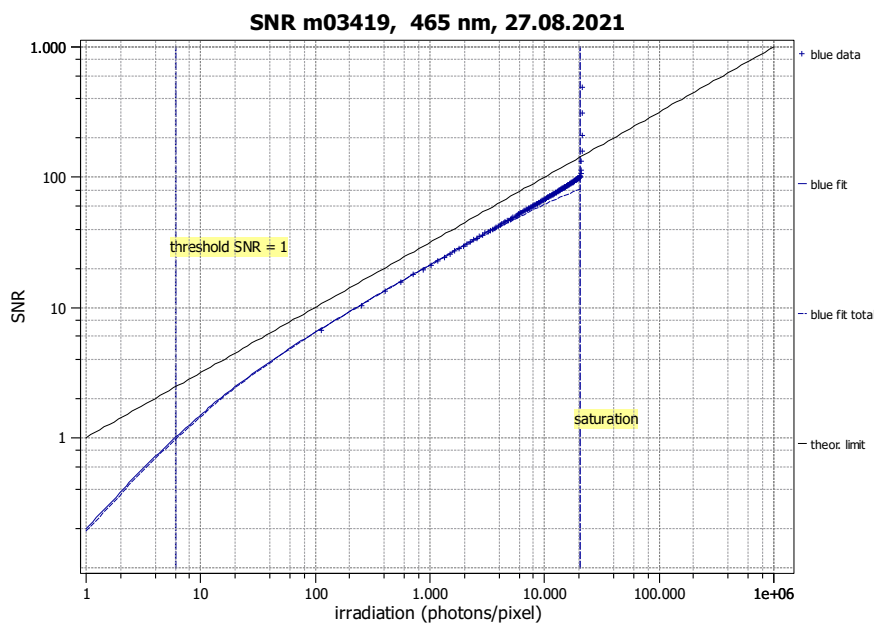
Summary Sheet for Operation Point 1 at a Wavelength of 465 nm

Type of data	Single	Gain, black-level	1.0 / 39.0
Exposure control	By irradiance	Environmental temperature	23.1 °C
Exposure time	796.00 μs	Camera body temperature	30.9 °C
Frame rate	10.0 Hz	Internal temperature(s)	—
Data transfer mode	BayerRG12	Wavelength, centr., FWHM	465 nm, 20.6 nm

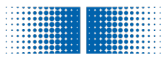
Photon Transfer



Signal-to-Noise Ratio



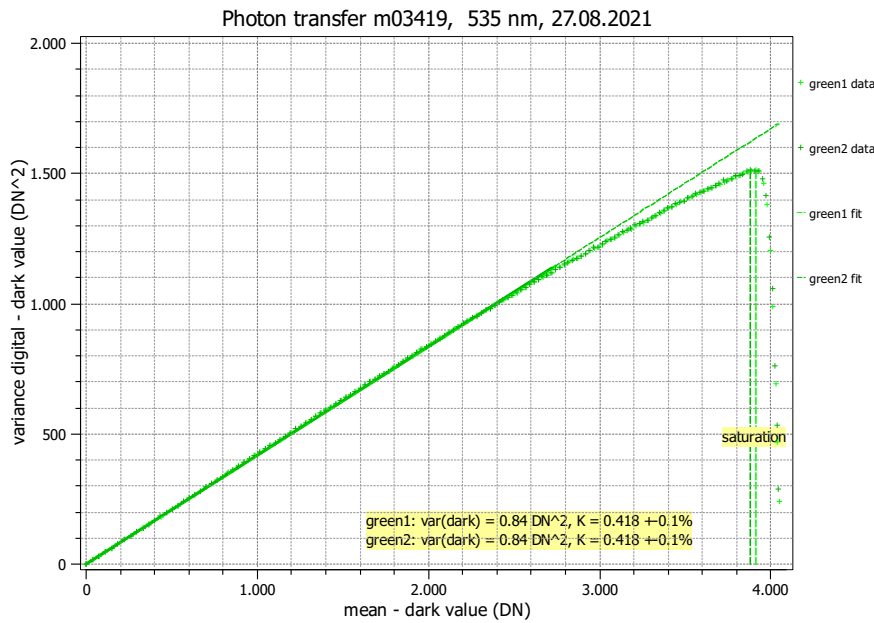
Quantum efficiency	η	45.9%
Overall system gain	K	0.418 DN/e ⁻
	$1/K$	2.392 e ⁻ /DN
Temporal dark noise	σ_d	2.08 e ⁻
	$\sigma_{y,\text{dark}}$	0.92 DN
Signal-to-noise ratio	SNR_{max}	97
		39.7 dB
		6.6 bit
	$1/\text{SNR}_{\text{max}}$	1.04 %
Absolute sensitivity threshold	$\mu_{p,\text{min}}$	5.99 p
	$\mu_{p,\text{min,area}}$	0.503 p/μm ²
	$\mu_{e,\text{min}}$	2.75 e ⁻
	$\mu_{e,\text{min,area}}$	0.231 e ⁻ /μm ²
Saturation capacity	$\mu_{p,\text{sat}}$	20333 p
	$\mu_{p,\text{sat,area}}$	1708 p/μm ²
	$\mu_{e,\text{sat}}$	9332 e ⁻
	$\mu_{e,\text{sat,area}}$	784 e ⁻ /μm ²
Dynamic range	DR	3394
		70.6 dB
		11.7 bit
Spatial nonuniformities	DSNU ₁₂₈₈	0.72 e ⁻
		0.30 DN
	PRNU ₁₂₈₈	0.67 %
Linearity error	LE _{min}	-0.50%
	LE _{max}	1.30%
Dark current	$\mu_{c,\text{mean}}$	-0.97 ± 0.21 e ⁻ /s
		-0.41 DN/s
	$\mu_{c,\text{var}}$	0.97 ± 0.28 e ⁻ /s
	T_d	— °C



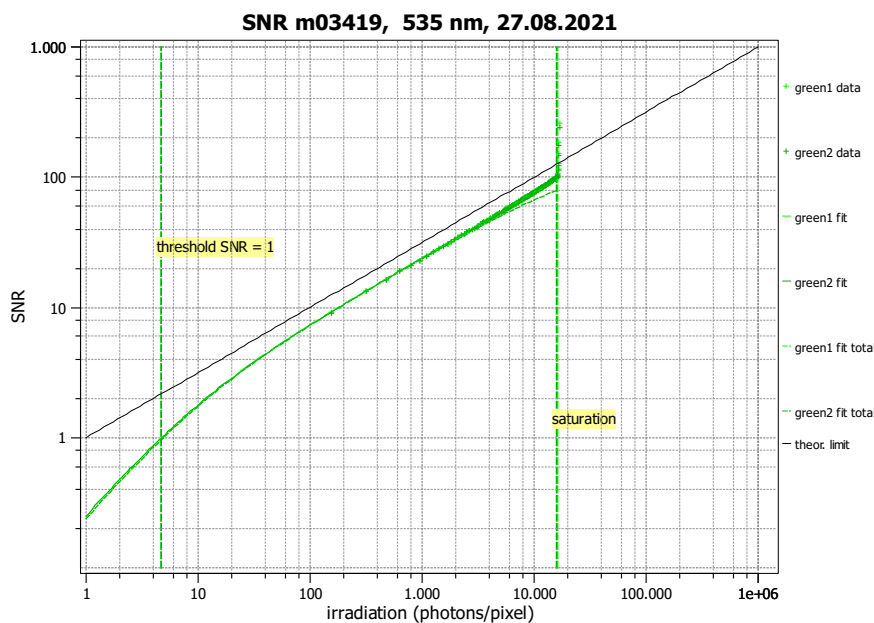
Summary Sheet for Operation Point 2 at a Wavelength of 535 nm

Type of data	Single	Gain, black-level	1.0 / 39.0
Exposure control	By irradiance	Environmental temperature	24.0°C
Exposure time	796.00 μs	Camera body temperature	33.1°C
Frame rate	10.0 Hz	Internal temperature(s)	—
Data transfer mode	BayerRG12	Wavelength, centr., FWHM	535 nm, 31.8 nm

Photon Transfer



Signal-to-Noise Ratio



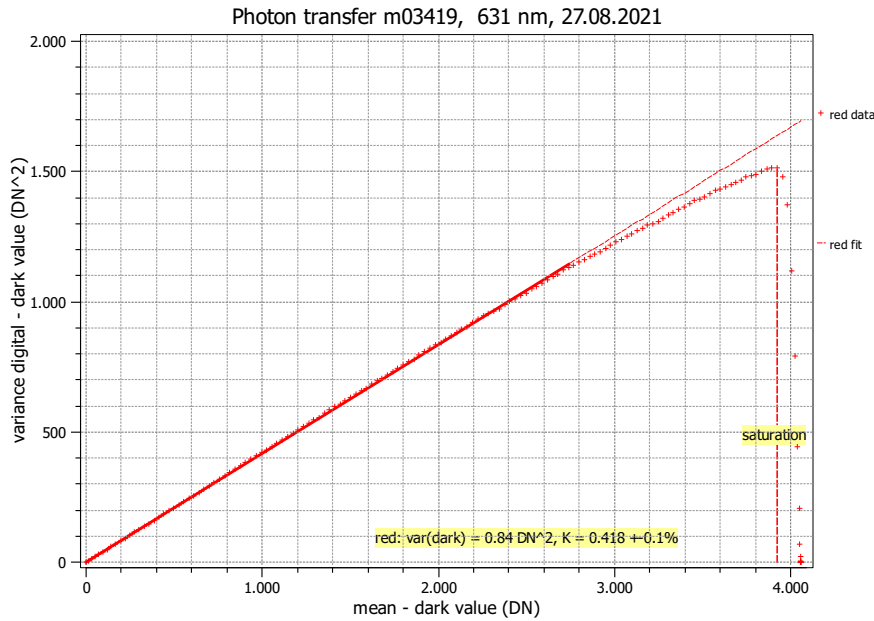
Quantum efficiency	η	58.2%
Overall system gain	K	0.418 DN/e ⁻
	$1/K$	2.394 e ⁻ /DN
Temporal dark noise	σ_d	2.08 e ⁻
	$\sigma_{y,\text{dark}}$	0.92 DN
Signal-to-noise ratio	SNR_{max}	97
		39.7 dB
		6.6 bit
	$1/\text{SNR}_{\text{max}}$	1.03%
Absolute sensitivity threshold	$\mu_{p,\text{min}}$	4.72 p
	$\mu_{p,\text{min,area}}$	0.397 p/μm ²
	$\mu_{e,\text{min}}$	2.75 e ⁻
	$\mu_{e,\text{min,area}}$	0.231 e ⁻ /μm ²
Saturation capacity	$\mu_{p,\text{sat}}$	16081 p
	$\mu_{p,\text{sat,area}}$	1351 p/μm ²
	$\mu_{e,\text{sat}}$	9360 e ⁻
	$\mu_{e,\text{sat,area}}$	786 e ⁻ /μm ²
Dynamic range	DR	3404
		70.6 dB
		11.7 bit
Spatial nonuniformities	DSNU_{1288}	0.73 e ⁻
		0.30 DN
	PRNU_{1288}	0.72%
Linearity error	LE_{min}	-0.61%
	LE_{max}	1.49%
Dark current	$\mu_{c,\text{mean}}$	-0.98 ± 0.21 e ⁻ /s
		-0.41 DN/s
	$\mu_{c,\text{var}}$	0.95 ± 0.27 e ⁻ /s
	T_d	— °C



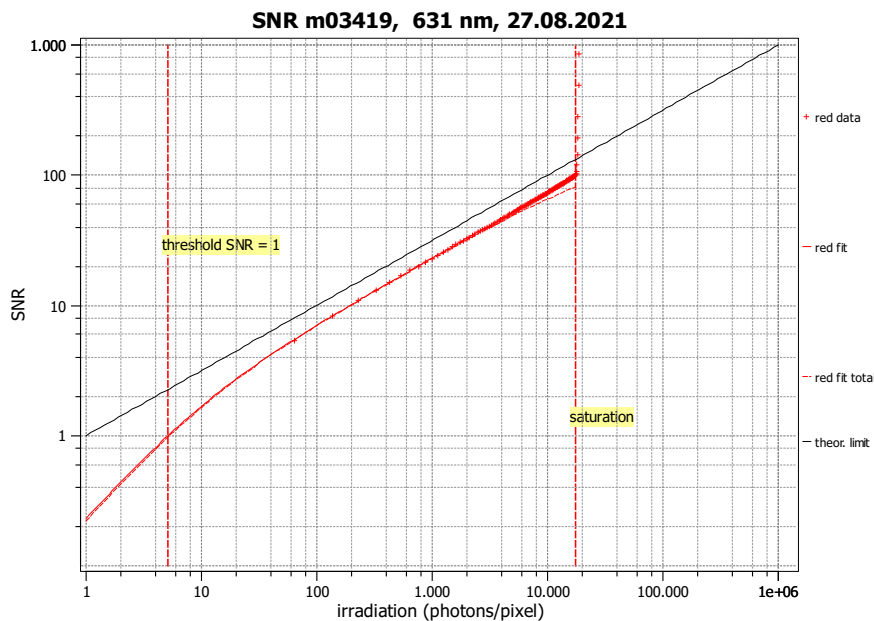
Summary Sheet for Operation Point 3 at a Wavelength of 631 nm

Type of data	Single	Gain, black-level	1.0 / 39.0
Exposure control	By irradiance	Environmental temperature	24.9°C
Exposure time	796.00 μs	Camera body temperature	33.9°C
Frame rate	10.0 Hz	Internal temperature(s)	—
Data transfer mode	BayerRG12	Wavelength, centr., FWHM	631 nm, 12.9 nm

Photon Transfer



Signal-to-Noise Ratio



Quantum efficiency	η	53.8%
Overall system gain	K	0.418 DN/e ⁻
	1/K	2.395 e ⁻ /DN
Temporal dark noise	σ_d	2.09 e ⁻
	$\sigma_{y,dark}$	0.92 DN
Signal-to-noise ratio	SNR _{max}	97
		39.7 dB
		6.6 bit
	1/SNR _{max}	1.03%
Absolute sensitivity threshold	$\mu_{p,min}$	5.13 p
	$\mu_{p,min,area}$	0.431 p/μm ²
	$\mu_{e,min}$	2.76 e ⁻
	$\mu_{e,min,area}$	0.232 e ⁻ /μm ²
Saturation capacity	$\mu_{p,sat}$	17546 p
	$\mu_{p,sat,area}$	1474 p/μm ²
	$\mu_{e,sat}$	9431 e ⁻
	$\mu_{e,sat,area}$	792 e ⁻ /μm ²
Dynamic range	DR	3422
		70.7 dB
		11.7 bit
Spatial nonuniformities	DSNU ₁₂₈₈	0.70 e ⁻
		0.29 DN
	PRNU ₁₂₈₈	0.68%
Linearity error	LE _{min}	-0.30%
	LE _{max}	0.54%
Dark current	$\mu_{c,mean}$	-1.00 ± 0.22 e ⁻ /s
		-0.42 DN/s
	$\mu_{c,var}$	0.97 ± 0.24 e ⁻ /s
	T_d	— °C