

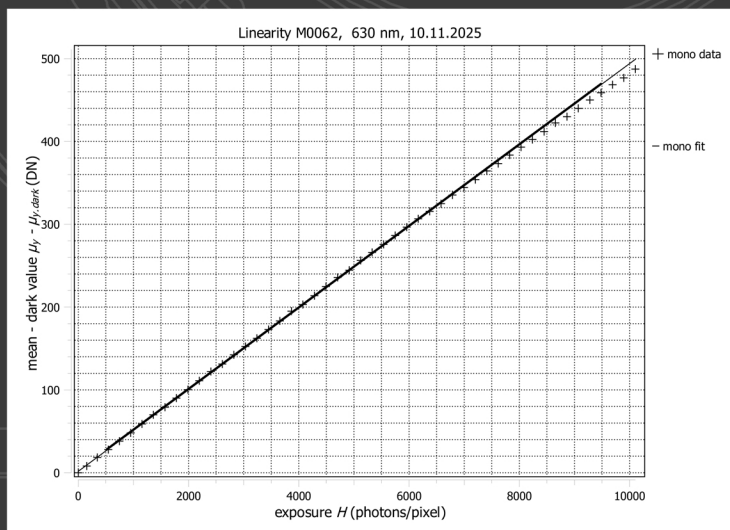
PHARSIGHTED E9•S SERIES



Sensor Characterization Report in compliance with EMVA 1288 Release 4.0 Linear standard

Applicable to
monochrome models:

E9•50S
E9•80S
E9•100S
E9•150S



Key Metrics:

AST: $\mu\text{e.min.area}$ 0.00811 $e^-/\mu\text{m}^2$
Dynamic Range: 49.94 dB (8.3 stops)
Temporal Dark Noise: 1.57 DN
 $1/\text{SNR}_{\text{max}}$: 1.205%
Linearity Error: 0.93%

EMVA 1288 Data Sheet M0062

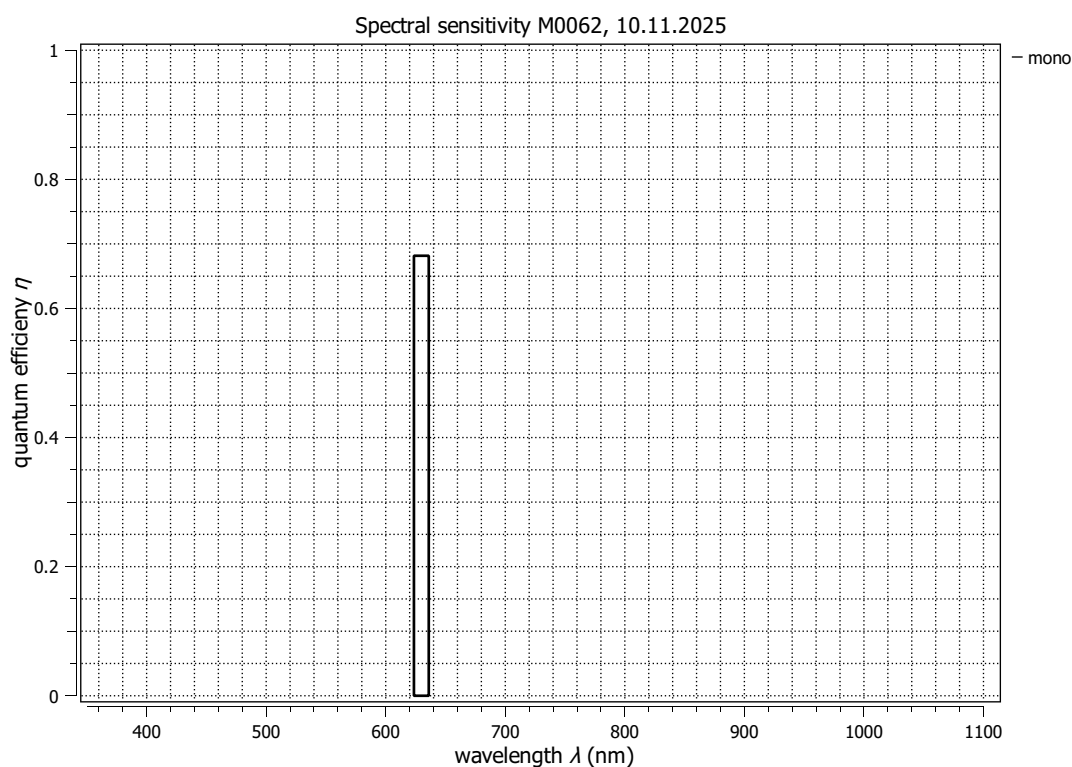
This data sheet describes the specification according to the standard 1288 Release 4.0 Linear issued on 21 June 2021 for "Characterization and Presentation of Specification Data for Image Sensors and Cameras" by the European Machine Vision Association (EMVA), published at <https://www.emva.org/standards-technology/emva-1288/> with proprietary extensions from AEON. The measurements were performed with the AEON ACC2b 6x1 color, Release 9, 05.05.2024, SN 0071(Pharsighted), software version 3.0.

Measurements performed by Pharsighted.

Type of data presented	Single
Vendor	Pharsighted
Model	E9 • 100S
Serial number	YTDHAX
Sensor diagonal	41.60 mm
Lens category	Nikon-F
Resolution	640 × 480, 9 bit
Offset/Size used	0 × 0/ 640 × 480
Pixel size (h×v)	52.00 μm × 52.00 μm
Sensor	Pharsighted Proprietary
Sensor type	CMOS
Shutter type	Global
Overlap cap.	Overlapping
Max. frame rate	326923.0 Hz
Dark current compensation	Compensated
Interface type	10GbE

Nr.	Centroid/FWHM	Gain, blacklevel	t_{exp} (ms)
1	629.8/12.4 nm	0.0 dB, 4 DN	0.0005

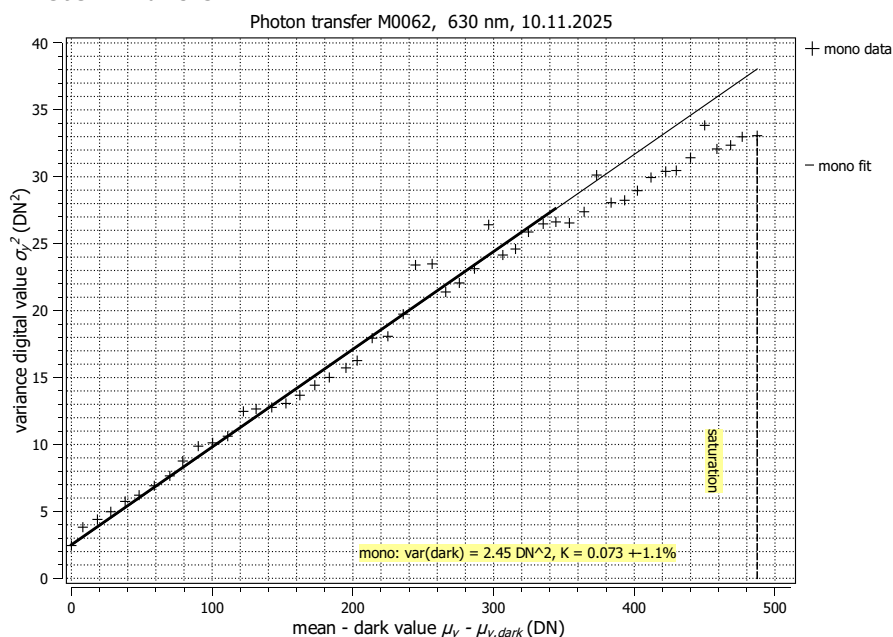
Optional data measured: None



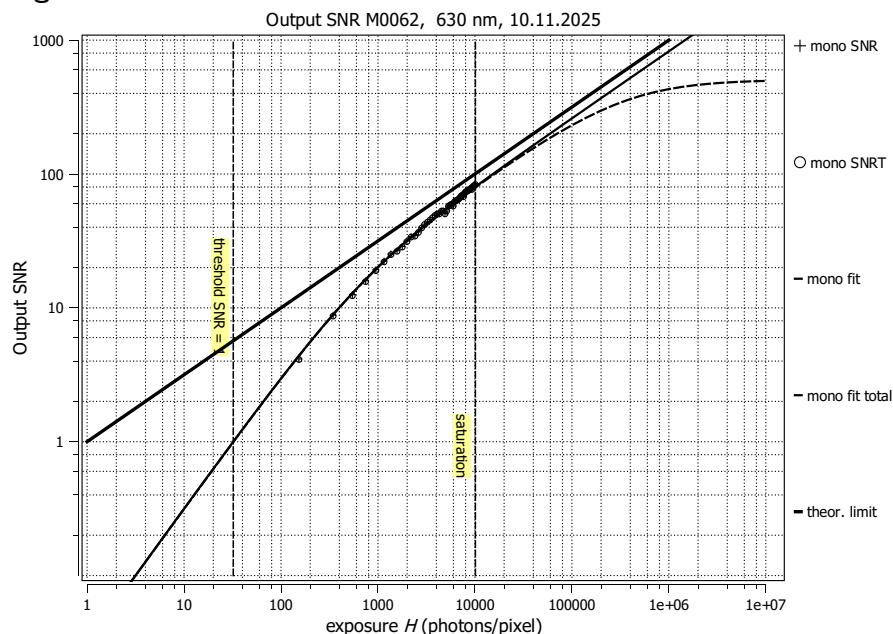
Summary Sheet for Operation Point 1 at a Wavelength of 630 nm

Type of data	Single	Gain, black-level	0.0 dB, 4 DN
Exposure control	By irradiance	Environmental temperature	20.5°C
Exposure time	0.539 μ s	Camera body temperature	23.6°C
Frame rate	100000.0 Hz	Internal temperature(s)	—
Data transfer mode	Mono 9	Wavelength, centr., FWHM	630 nm, 12.4 nm

Photon Transfer



Signal-to-Noise Ratio



Quantum efficiency

η 68.2%

Overall system gain

K 0.07306 DN/e⁻

$1/K$ 13.69 e⁻/DN

Temporal dark noise

σ_d 21.1 e⁻

$\sigma_{y, \text{dark}}$ 1.57 DN

Signal-to-noise ratio

SNR_{max} 83.0

38.4 dB

$1/\text{SNR}_{\text{max}}$ 1.205 %

Absolute sensitivity threshold

$\mu_{e, \text{min}}$ 21.9 e⁻

$\mu_{e, \text{min, area}}$ 0.00811 e⁻/μm²

Saturation capacity

$\mu_{e, \text{sat}}$ 6888 e⁻

$\mu_{e, \text{sat, area}}$ 3 e⁻/μm²

Dynamic range

DR 314

49.94 dB

Spatial nonuniformities

DSNU₁₂₈₈ 2.20 e⁻

DSNU_{1288, col} 0.39 e⁻

DSNU_{1288, row} 0.57 e⁻

DSNU_{1288, pix} 2.09 e⁻

PRNU₁₂₈₈ 0.198 %

PRNU_{1288, col} 0.027 %

PRNU_{1288, row} 0.020 %

PRNU_{1288, pix} 0.195 %

Linearity error

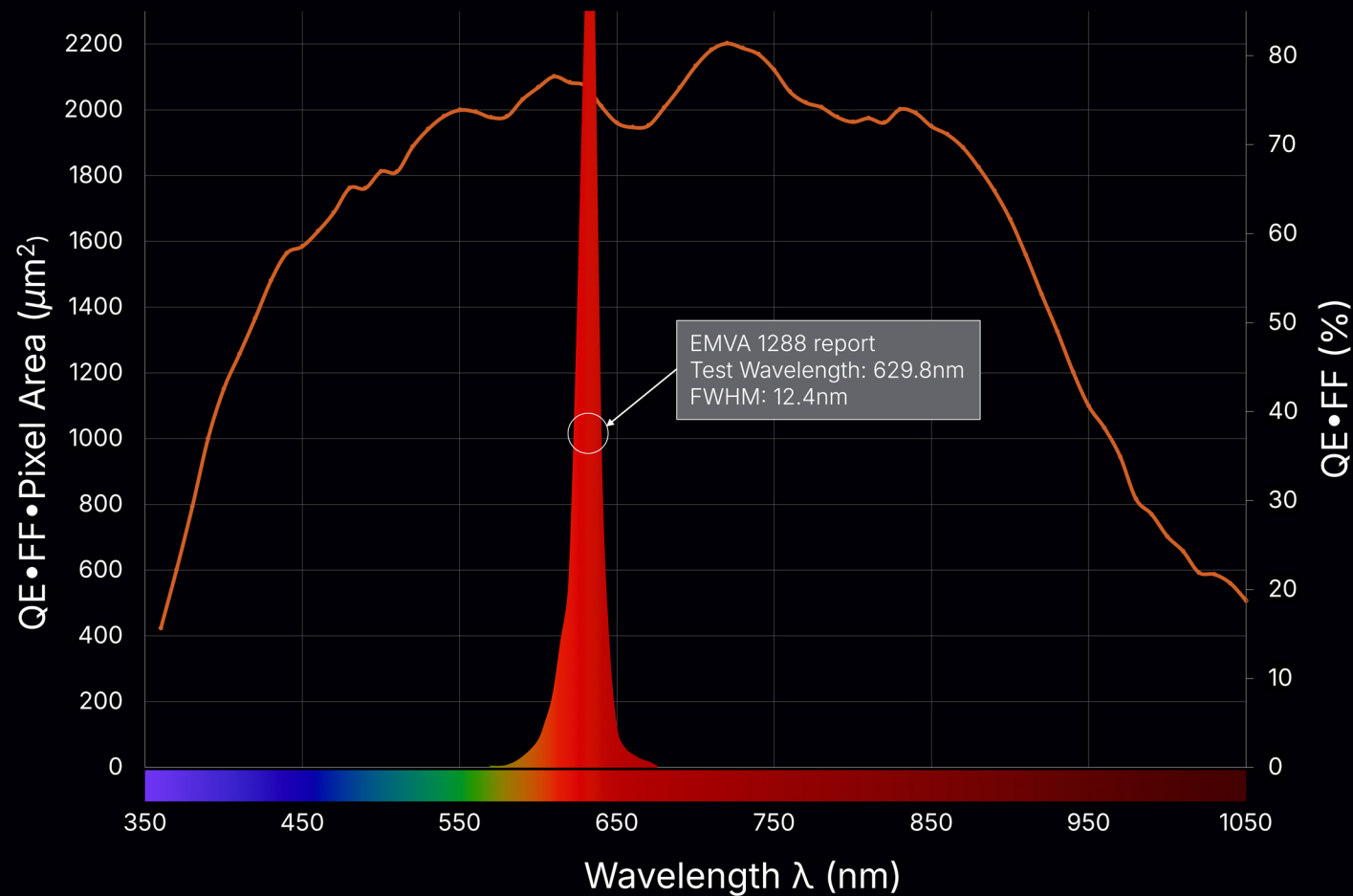
LE 0.93%

Dark current

$\mu_{c, \text{mean}}$ 0.116 e⁻/μs

$\mu_{c, \text{var}}$ 7.51 e⁻/μs

E9•S SERIES Spectral Response & EMVA 1288 Test Wavelength



Data supplementary to EMVA 1288 report

PHARSIGHTED