

EMVA 1288 Datasheet

This datasheet describes the specification according to the standard 1288 Standard for Characterization and Presentation of Specification Data for Image Sensors and Cameras of European Machine Vision Association (EMVA) (See www.standard1288.org).

Vendor	KAYA Instruments	Sensor diagonal	15.2mm
Model	Iron2518-M	Sensor	GMAX2518
Camera type	Monochrome	Sensor type	CMOS
Date	28-Feb-2023 13:41:40	Shutter type	Global
Data type	Single	Overlap capabilities	Overlapping
Sensor type	CMOS	Frame rate	43 Hz
Lens category	C-Mount	Exposure control	by irradiance
Resolution	4504 x 4096 ,12 bits	Exposure time	2250.45 μ s
Pixel size	2.5 μ m x 2.5 μ m	Illumination	Variable with constant exposure time
Maximum readout rate	64 fps	Irradiation Steps	50
Dark current compensation	No	Irradiation calibration accuracy	-
Interface type	CXP-12	Irradiation measurement error	-
Serial number	2305070	Standart version	4.0 Linear
Firmware version	2.2.2-2023.2.27	Light source	Integrating Sphere

International Distributor



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Summary Sheet for Operation Point 1 at a Wavelength of 520 nm

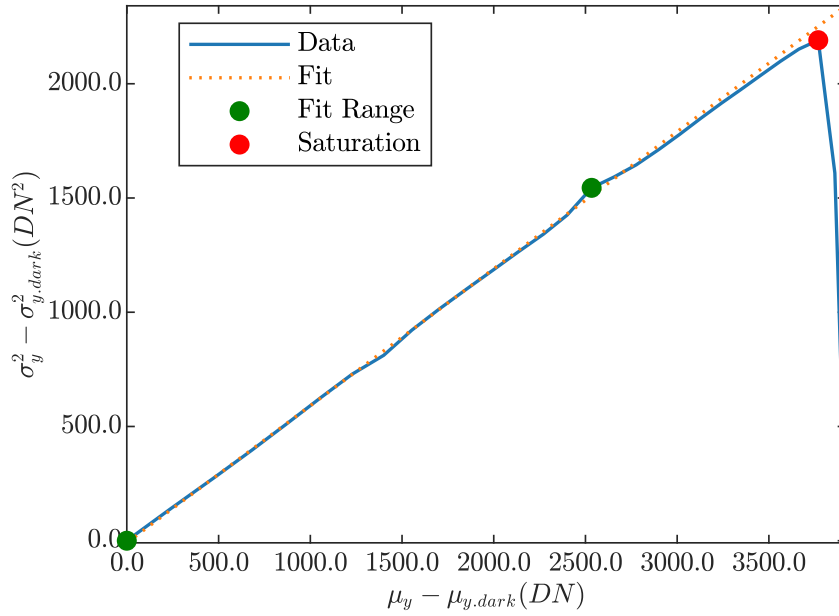
Camera setting

Gain	1.75
Black level	-1032

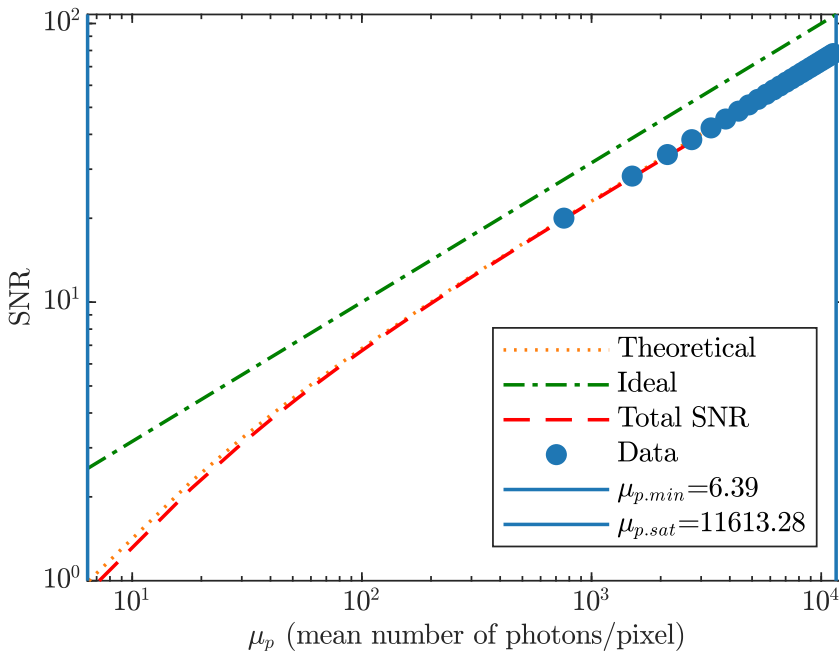
Operation point parameters

Environmental temperature	23.31
Camera body temperature	43.93
Sensor temperature	57
Processor temperature	57

Photon Transfer



Signal-to-Noise Ratio



Performance

Quantum efficiency

η	53.9832	%
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System gain

K	0.59971	DN/e ⁻
1/K	1.6675	e ⁻ /DN

Temporal dark noise

σ_d	2.912	e ⁻
$\sigma_{y,dark}$	1.77	DN

Signal-to-noise ratio

SNR _{max}	79.1784	
	37.9721	dB
	6.307	bit
1/SNR _{max}	1.263	%

Absolute sensitivity threshold

$\mu_{e,min}$	3.4515	e ⁻
$\mu_{e,min,area}$	0.55224	e ⁻ /μm ²

Saturation capacity

$\mu_{e,sat}$	6269.2167	e ⁻
$\mu_{e,sat,area}$	1003.0747	e ⁻ /μm ²

Dynamic range

DR	1816.3723	
	65.1841	dB
	10.8268	bit

Spatial nonuniformities

DSNU ₁₂₈₈	1.5114	e ⁻
DSNU _{1288,col}	0.49169	e ⁻
DSNU _{1288,row}	0.34459	e ⁻
DSNU _{1288,pix}	1.3871	e ⁻
PRNU ₁₂₈₈	0.48437	%
PRNU _{1288,col}	0.15761	%
PRNU _{1288,row}	0.10015	%
PRNU _{1288,pix}	0.44693	%

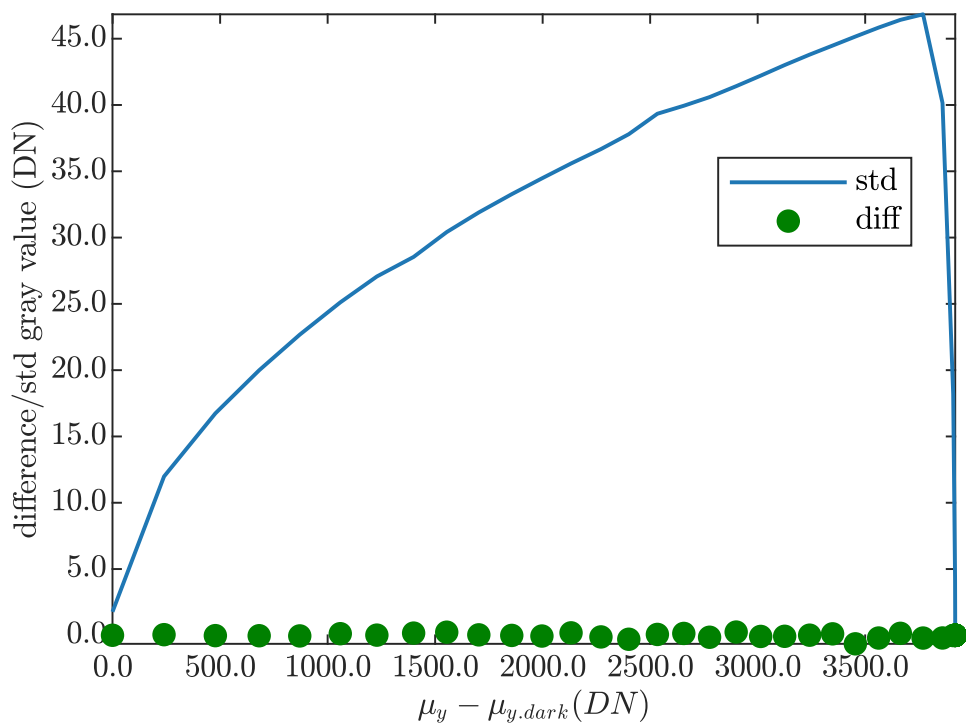
Linearity error

LE	0.0029628	%
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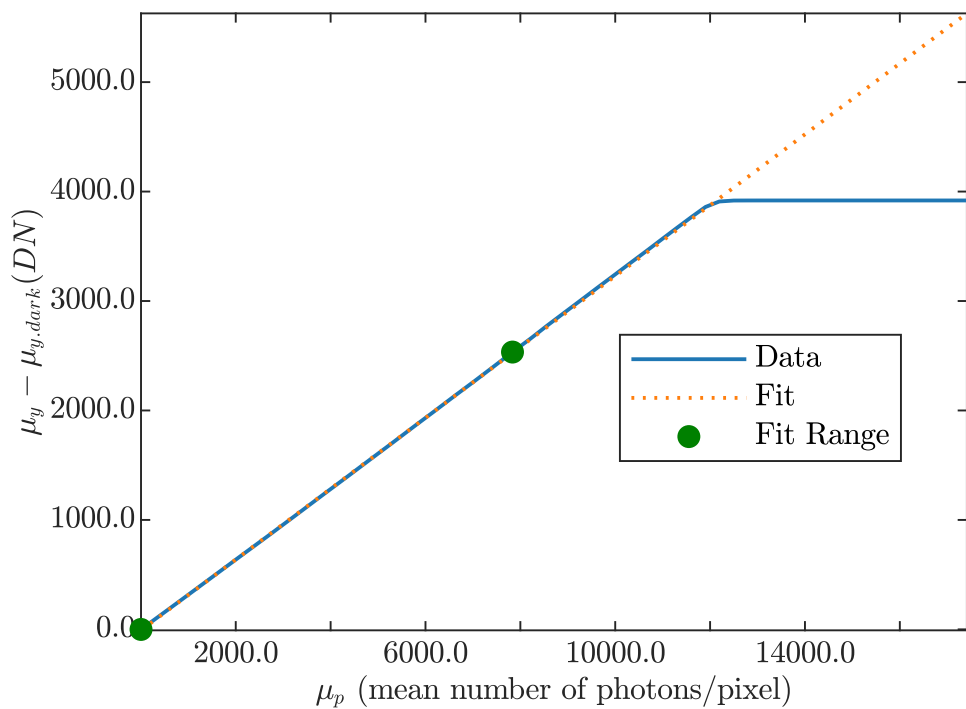
Dark current

$\mu_{l,mean}$	58.162	e ⁻ /s
$\mu_{l,var}$	12.8739	e ⁻ /s

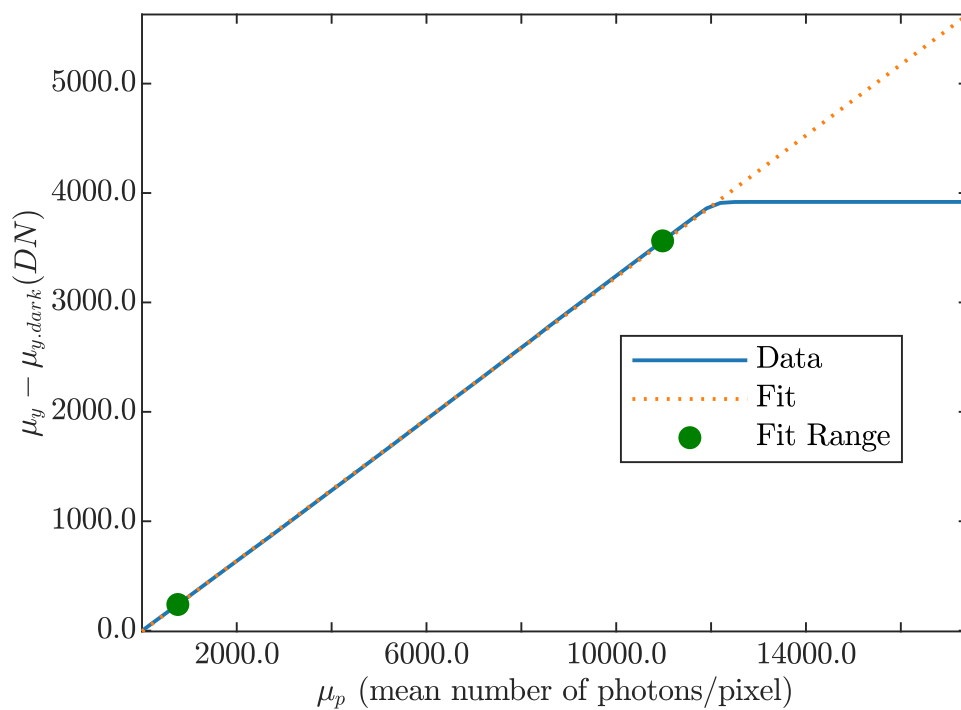
Stability check



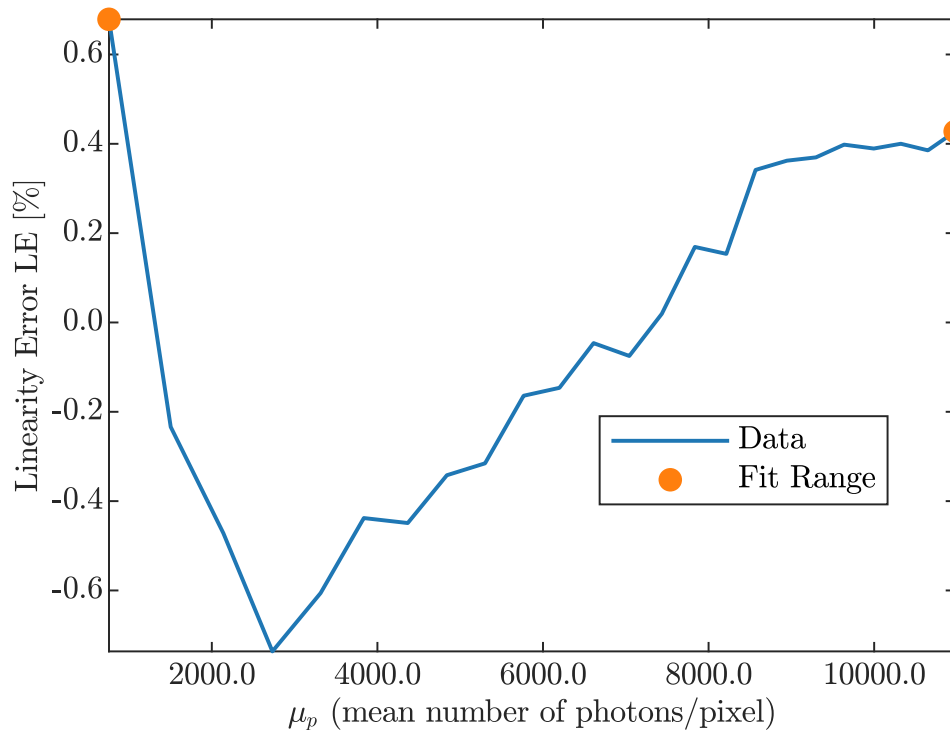
Sensitivity



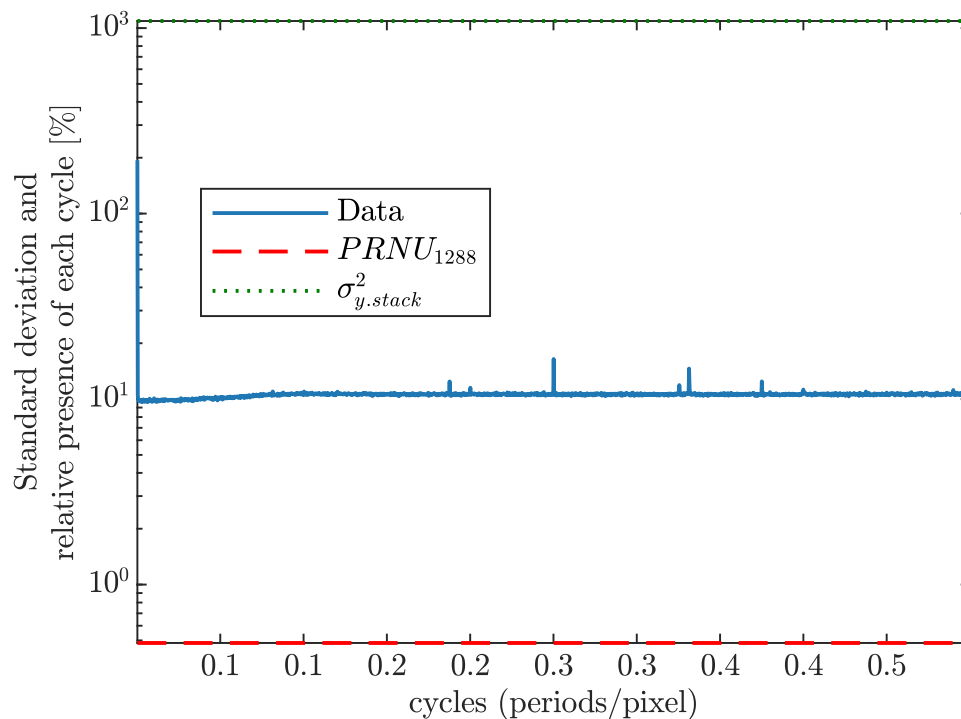
Linearity



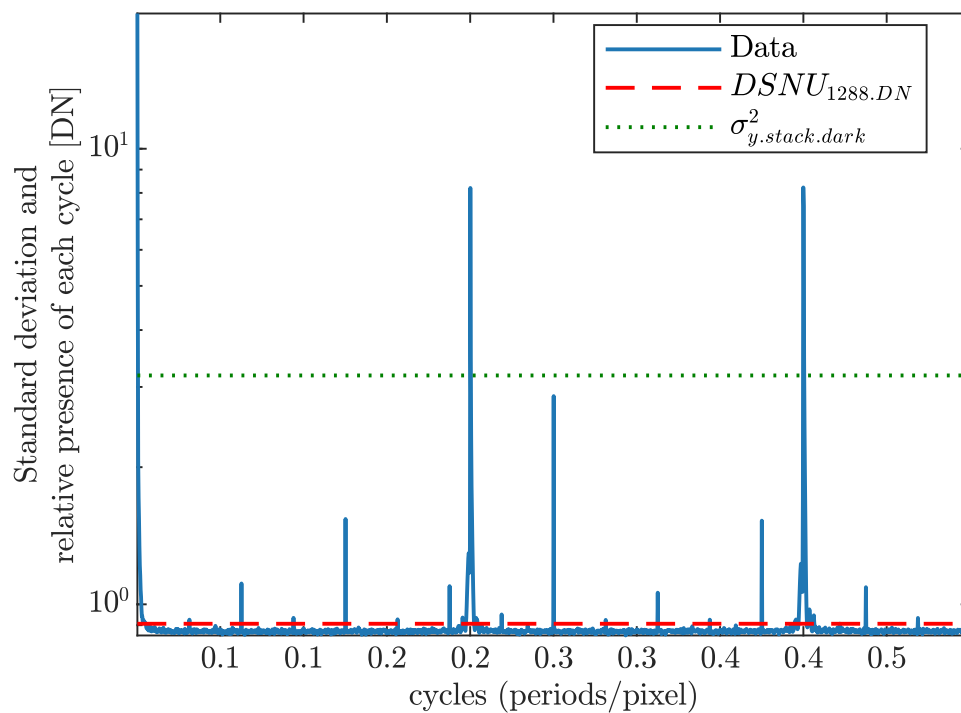
Deviation Linearity



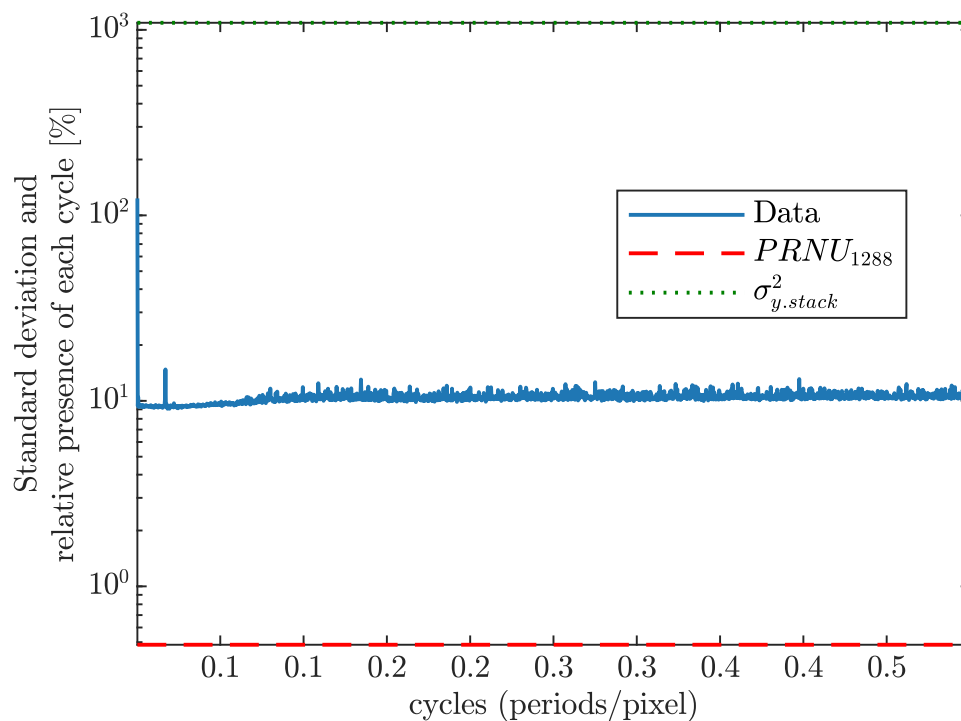
Horizontal Spectrogram PRNU



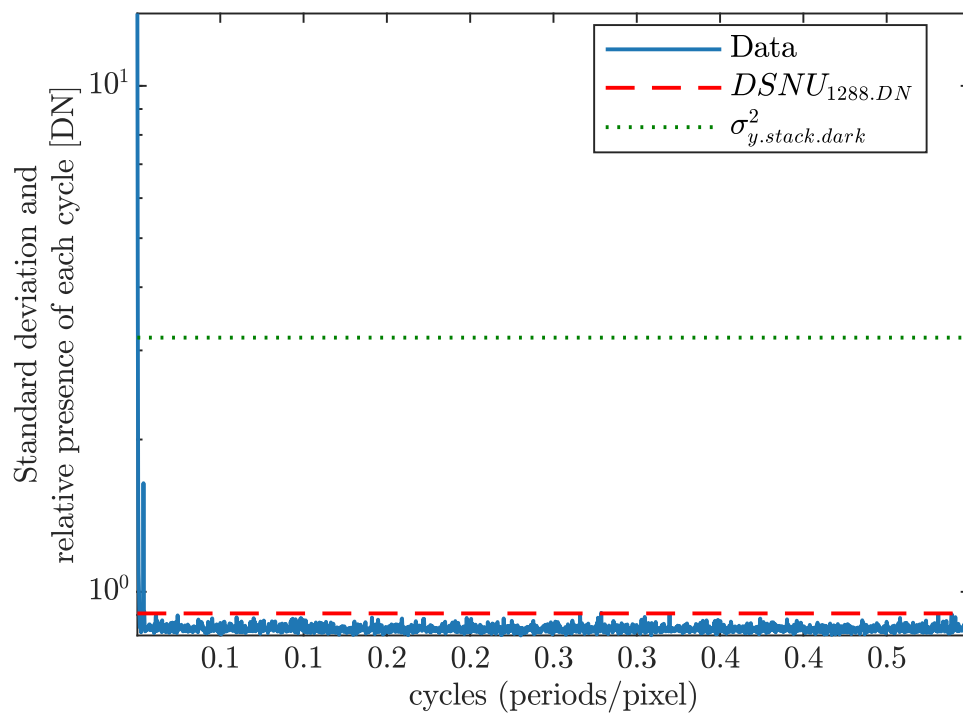
Horizontal Spectrogram DSNU



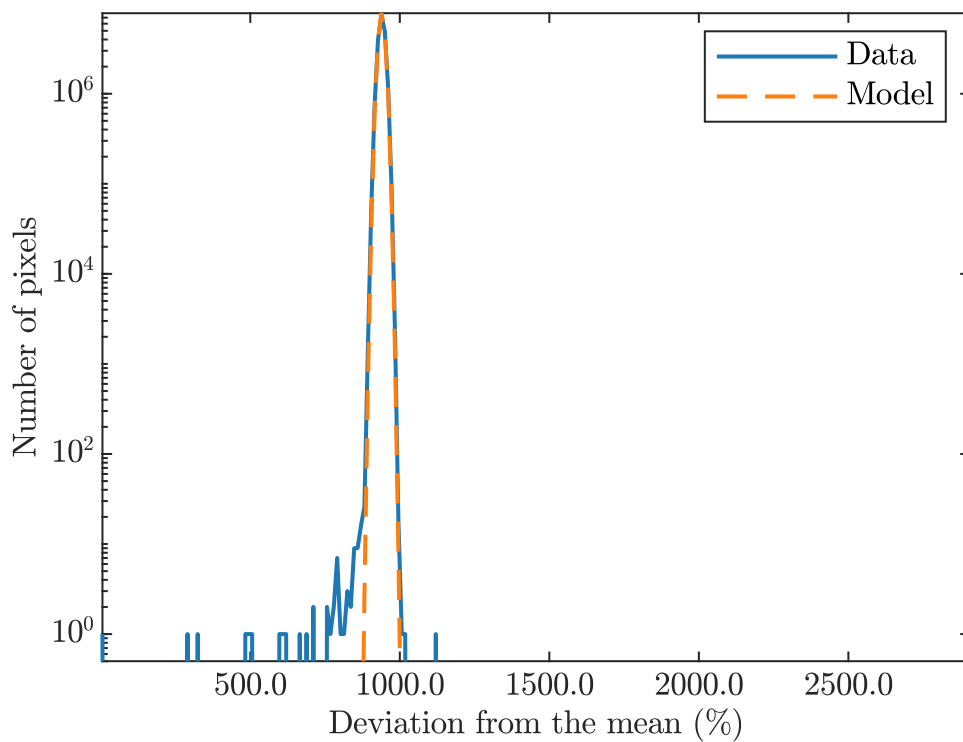
Vertical Spectrogram PRNU



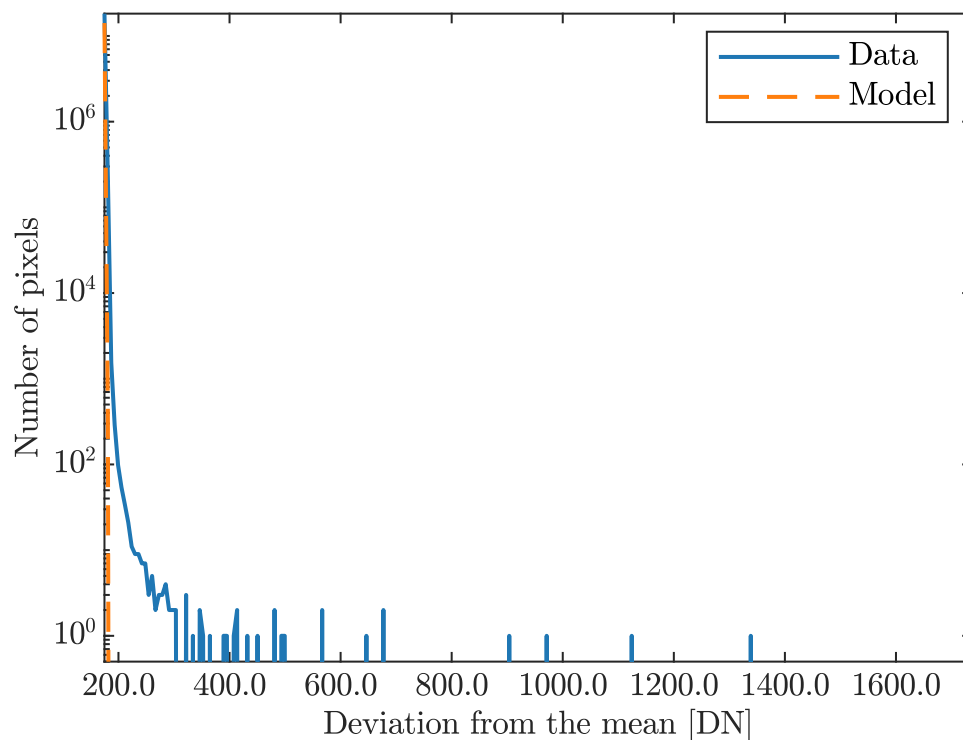
Vertical Spectrogram DSNU



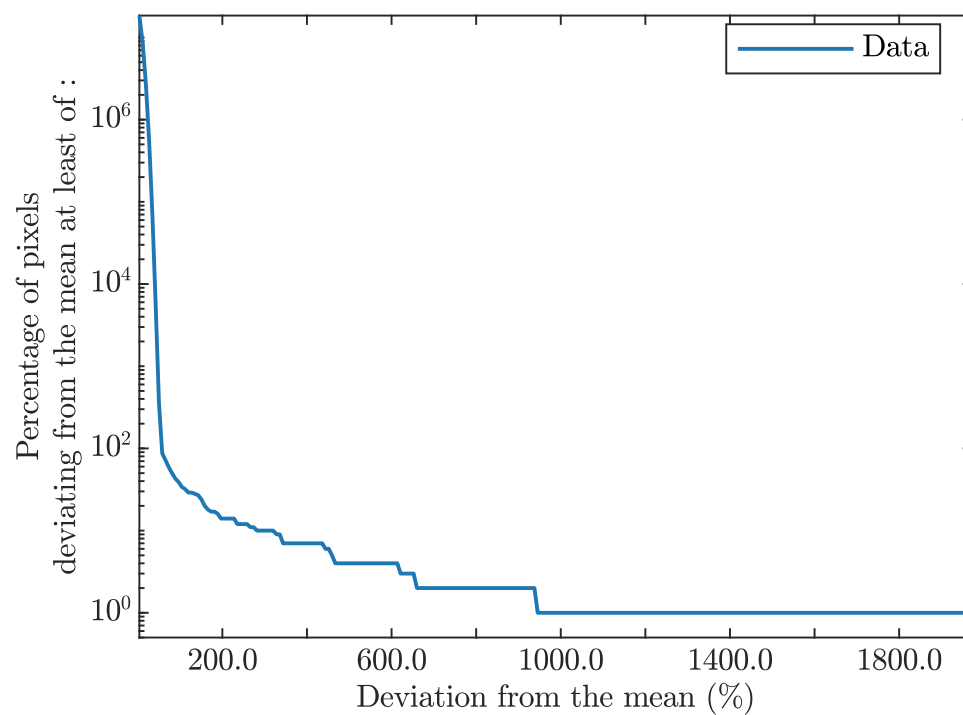
Logarithmic Histogram PRNU



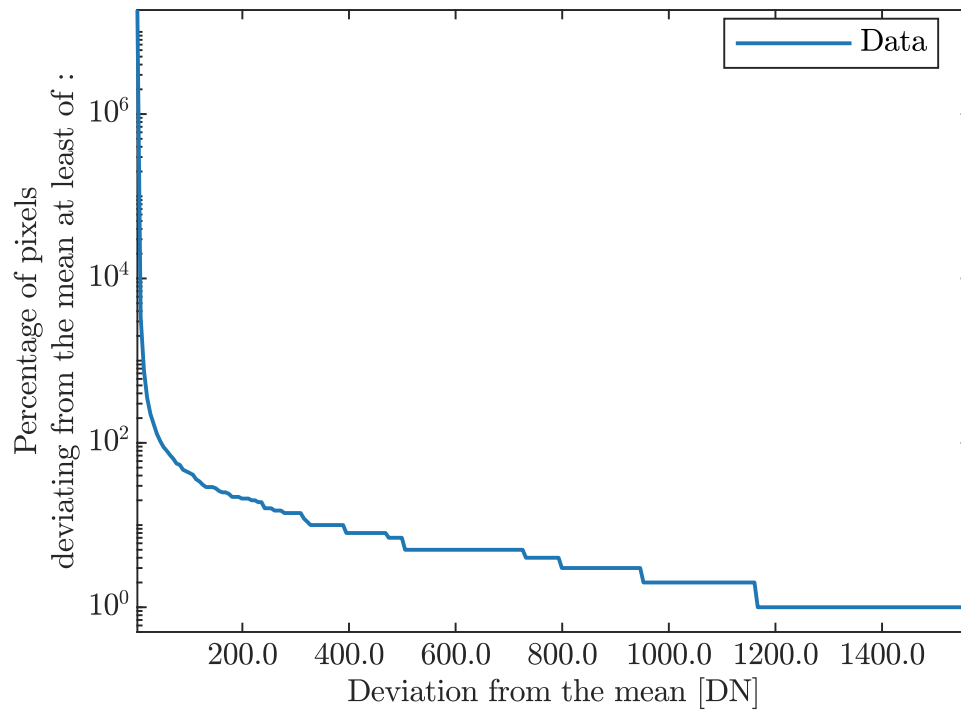
Logarithmic Histogram DSNU



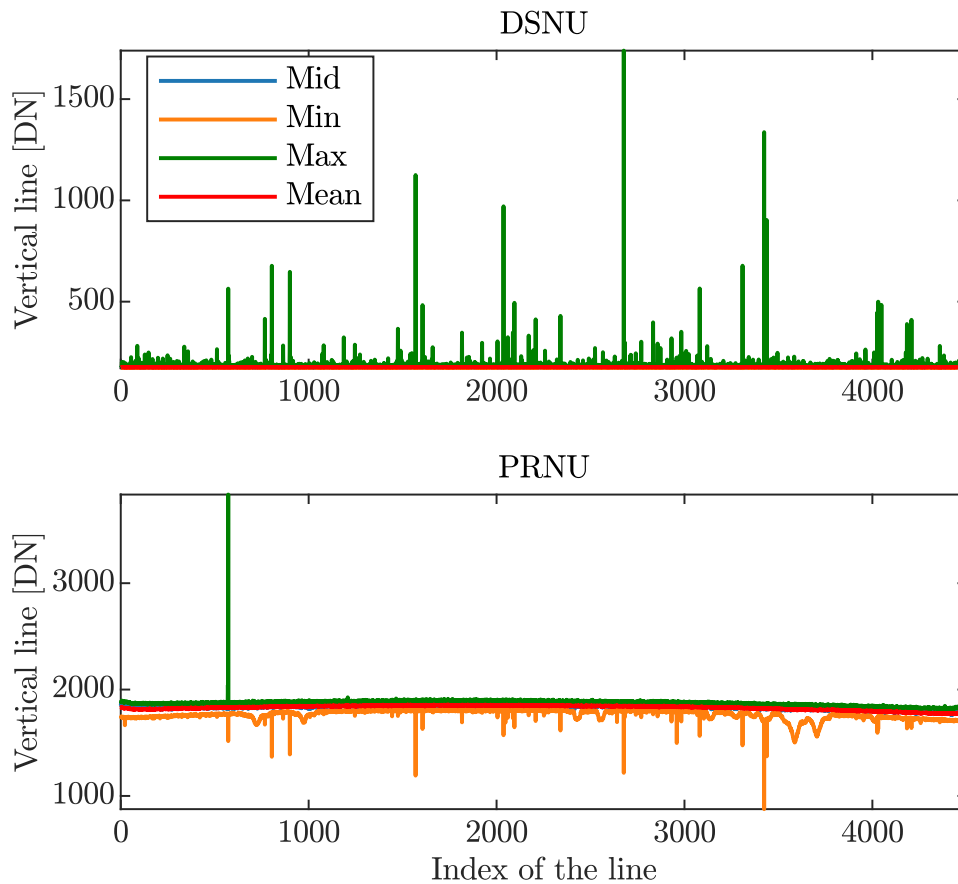
Accumulated Log Histogram PRNU



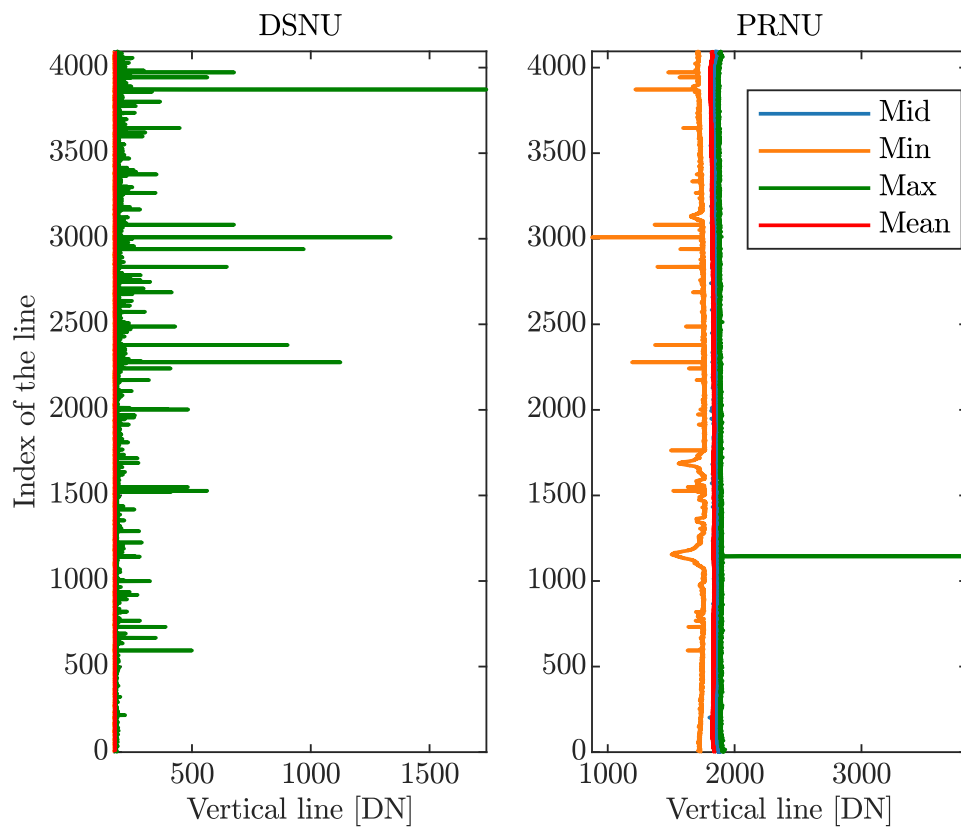
Accumulated Log Histogram DSNU



Horizontal Profile

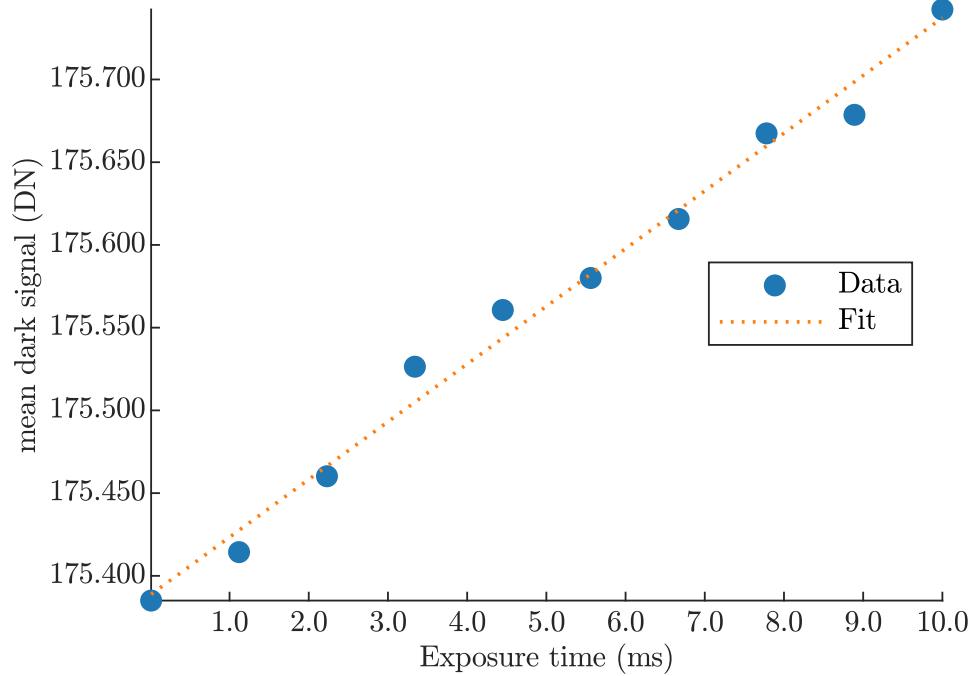


Vertical Profile

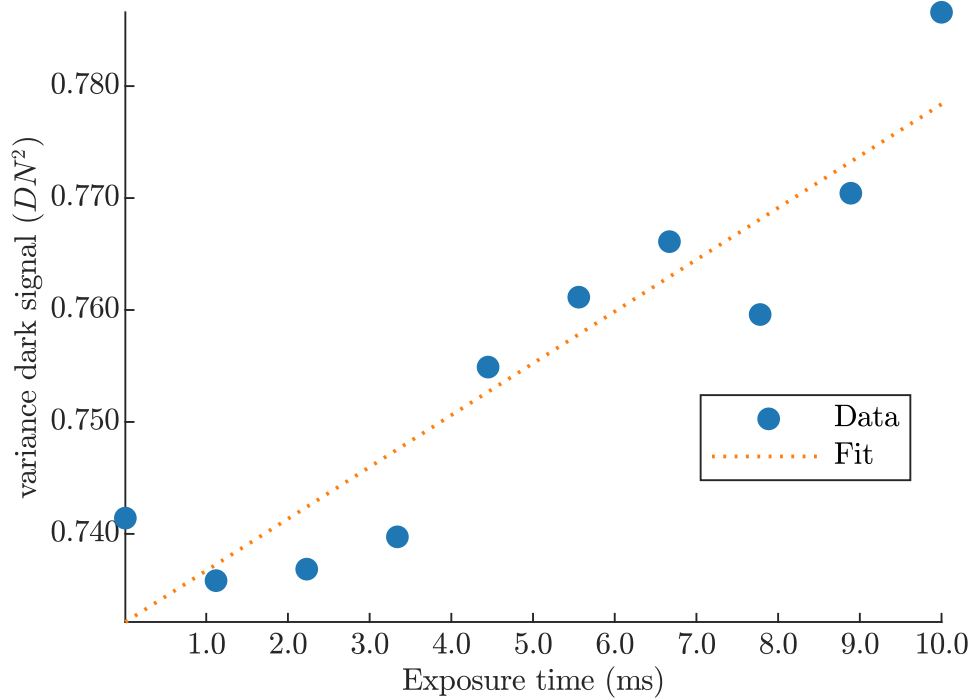


Dark Current

Dark Current from Mean



Dark Current from Variance



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microsystems

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