

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	11.8mm
Model	Iron2509HS-M	Sensor	GMAX2509
Camera type	Monochrome	Sensor type	CMOS
Date	28-Feb-2023 11:42:26	Shutter type	Global
Data type	Single	Overlap capabilities	Overlapping
Sensor type	CMOS	Frame rate	100 Hz
Lens category	C-Mount	Exposure control	by irradiance
Resolution	4200 x 2160 ,10 bits	Exposure time	2250.239 μ s
Pixel size	2.5 μ m x 2.5 μ m	Illumination	Variable with constant exposure time
Maximum readout rate	286 fps	Irradiation Steps	50
Dark current compensation	No	Irradiation calibration accuracy	-
Interface type	CXP-12	Irradiation measurement error	-
Serial number	2305042	Standart version	4.0 Linear
Firmware version	2.2.2-2023.2.27	Light source	Integrating Sphere

International Distributor

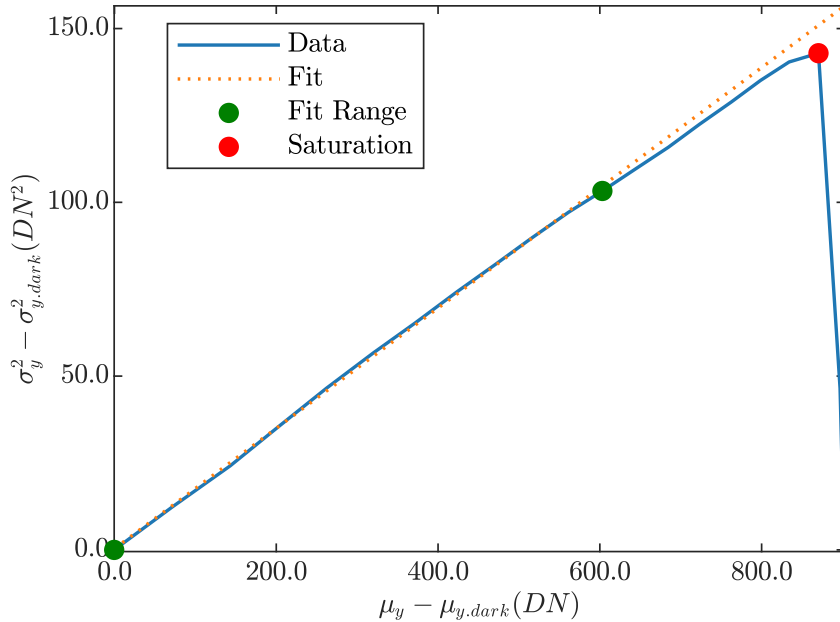


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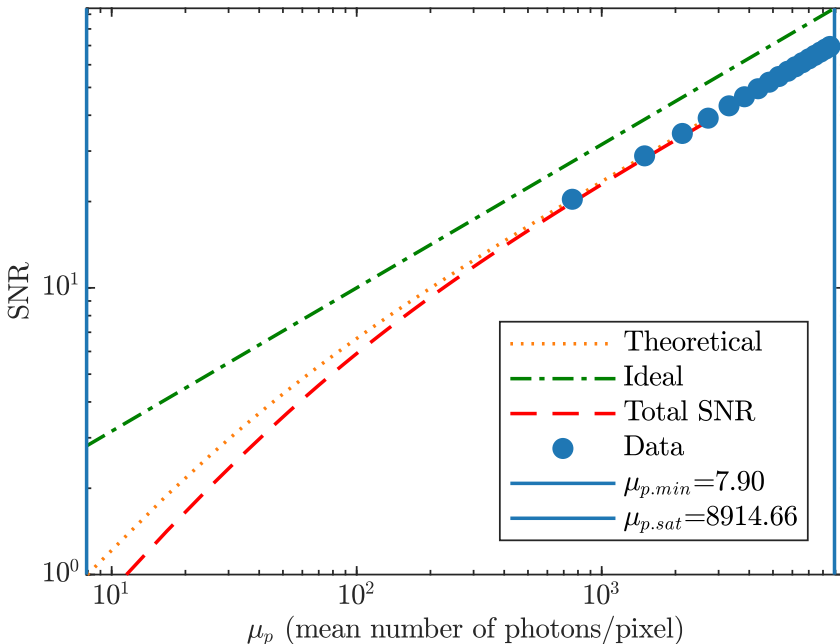
Summary Sheet for Operation Point 1 at a Wavelength of 520 nm

Camera setting		Operation point parameters	
Gain	2	Environmental temperature	23
Black level	-500	Camera body temperature	41.75
		Sensor temperature	52
		Processor temperature	53

Photon Transfer



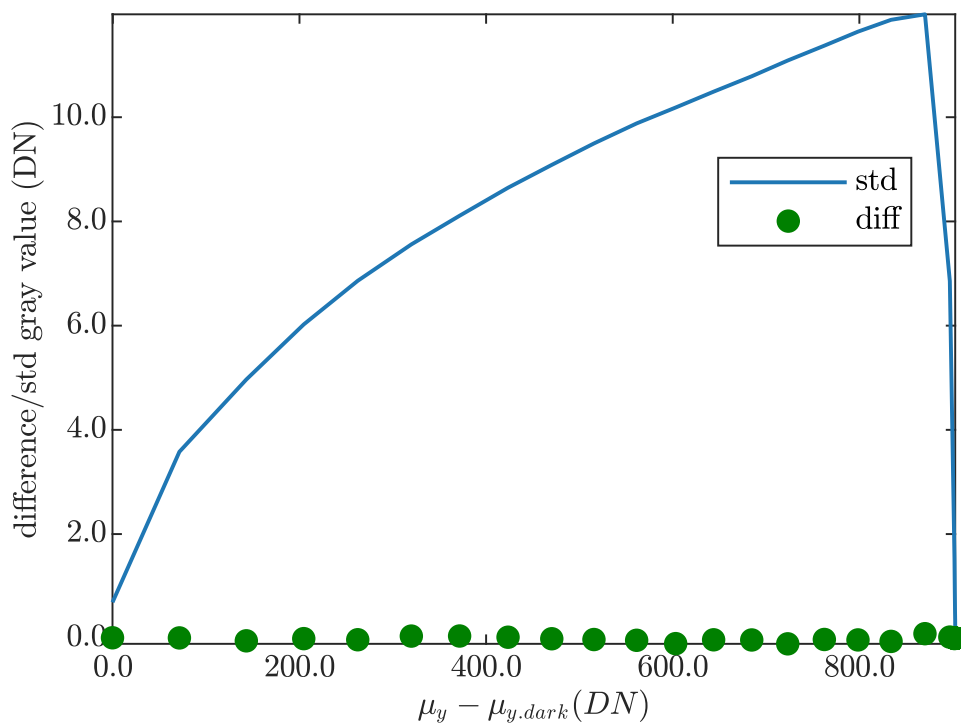
Signal-to-Noise Ratio



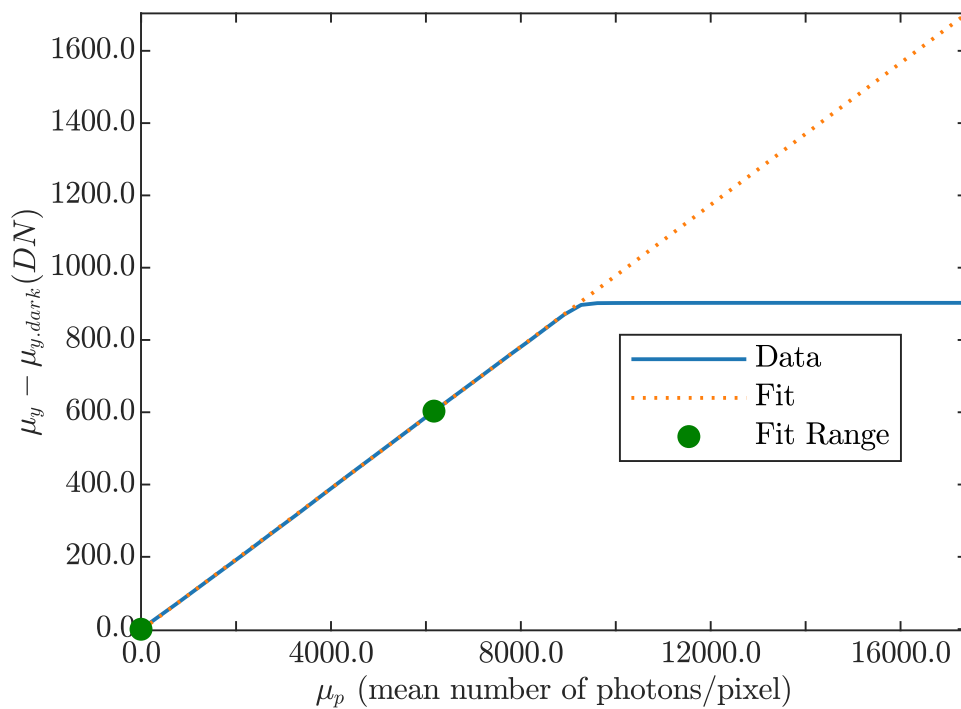
Performance

Quantum efficiency		
η	56.7075	%
System gain		
K	0.17299	DN/e ⁻
1/K	5.7808	e ⁻ /DN
Temporal dark noise		
σ_d	3.6138	e ⁻
$\sigma_{y,dark}$	0.68858	DN
Signal-to-noise ratio		
SNR _{max}	71.1005	
	37.0375	dB
	6.1518	bit
1/SNR _{max}	1.4065	%
Absolute sensitivity threshold		
$\mu_{e,min}$	4.4805	e ⁻
$\mu_{e,min,area}$	0.71688	e ⁻ /μm ²
Saturation capacity		
$\mu_{e,sat}$	5055.2857	e ⁻
$\mu_{e,sat,area}$	808.8457	e ⁻ /μm ²
Dynamic range		
DR	1128.2816	
	61.0483	dB
	10.1399	bit
Spatial nonuniformities		
DSNU ₁₂₈₈	4.4438	e ⁻
DSNU _{1288,col}	0.87518	e ⁻
DSNU _{1288,row}	2.6593	e ⁻
DSNU _{1288,pix}	3.4511	e ⁻
PRNU ₁₂₈₈	0.4883	%
PRNU _{1288,col}	0.087903	%
PRNU _{1288,row}	0.063473	%
PRNU _{1288,pix}	0.47611	%
Linearity error		
LE	0.0014114	%
Dark current		
$\mu_{l,mean}$	115.6262	e ⁻ /s
$\mu_{l,var}$	NaN	e ⁻ /s

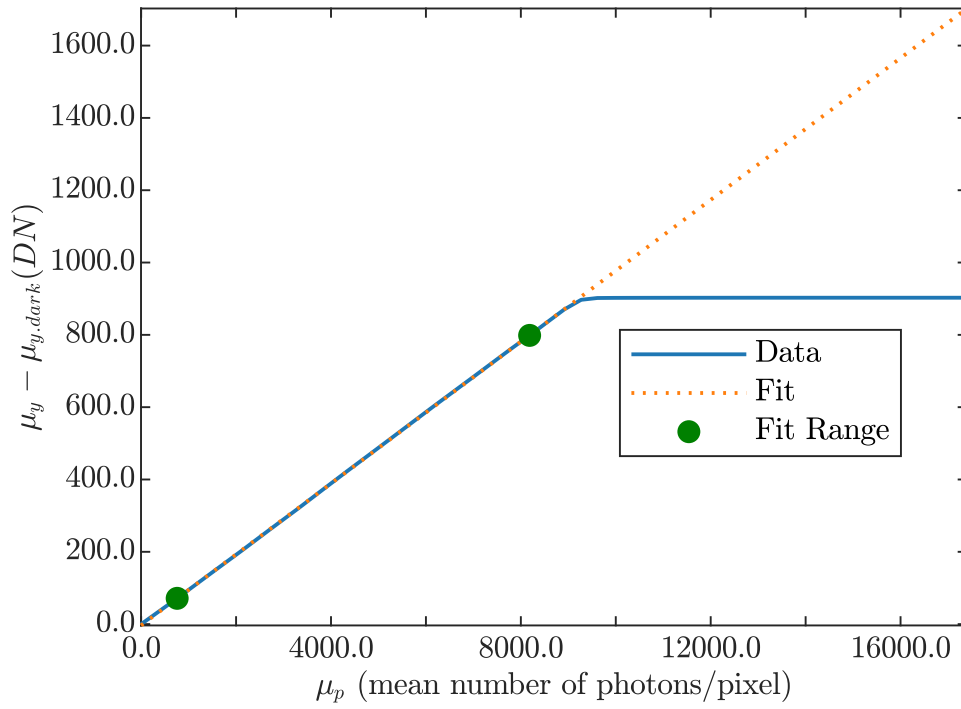
Stability check



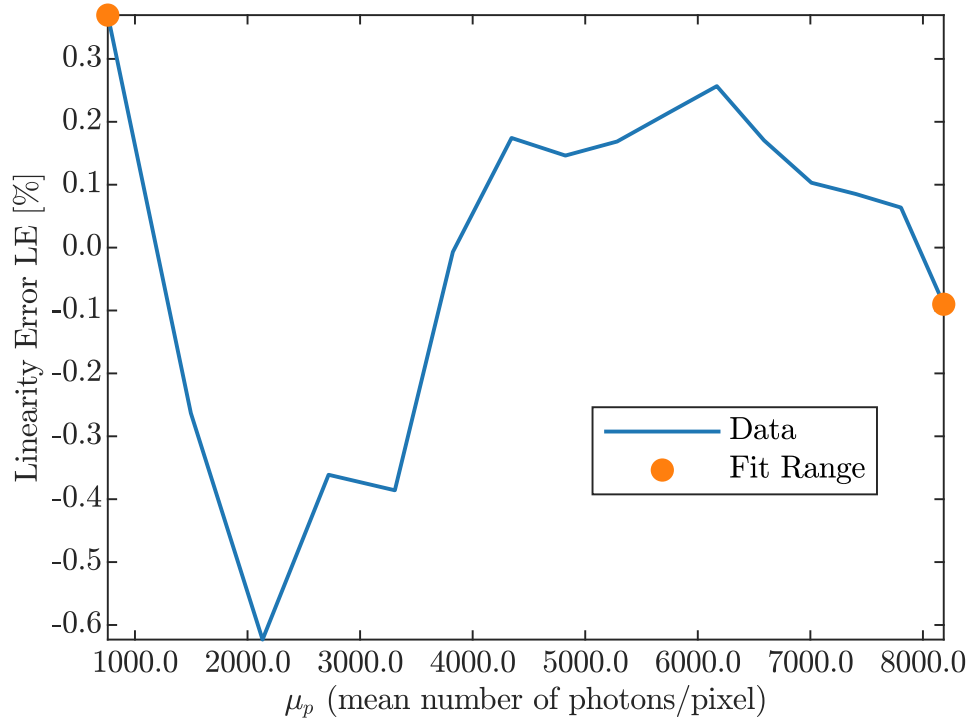
Sensitivity



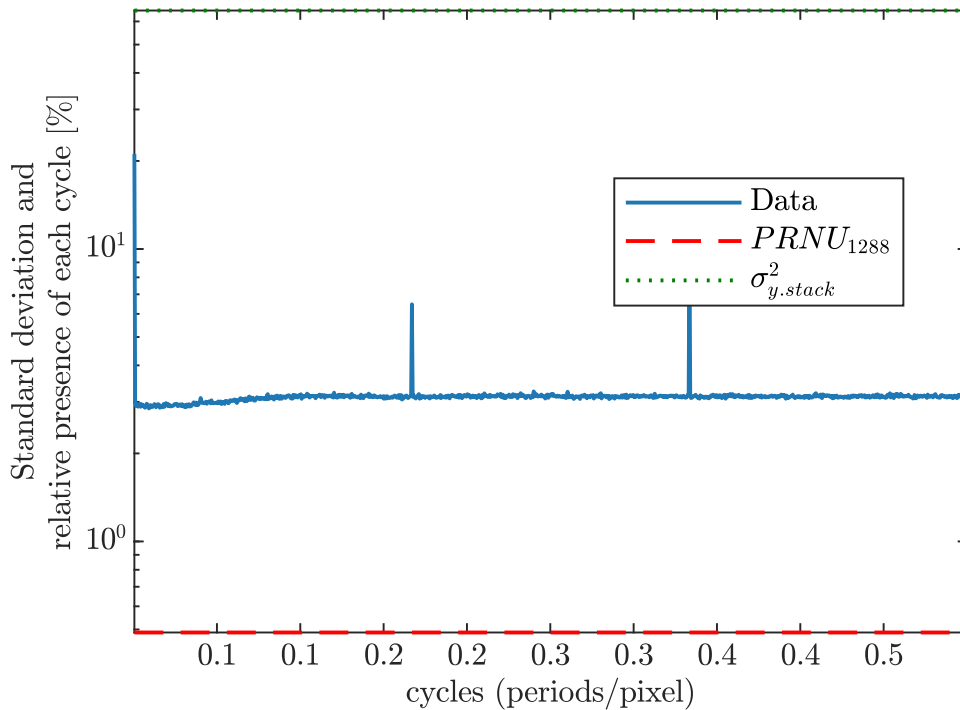
Linearity



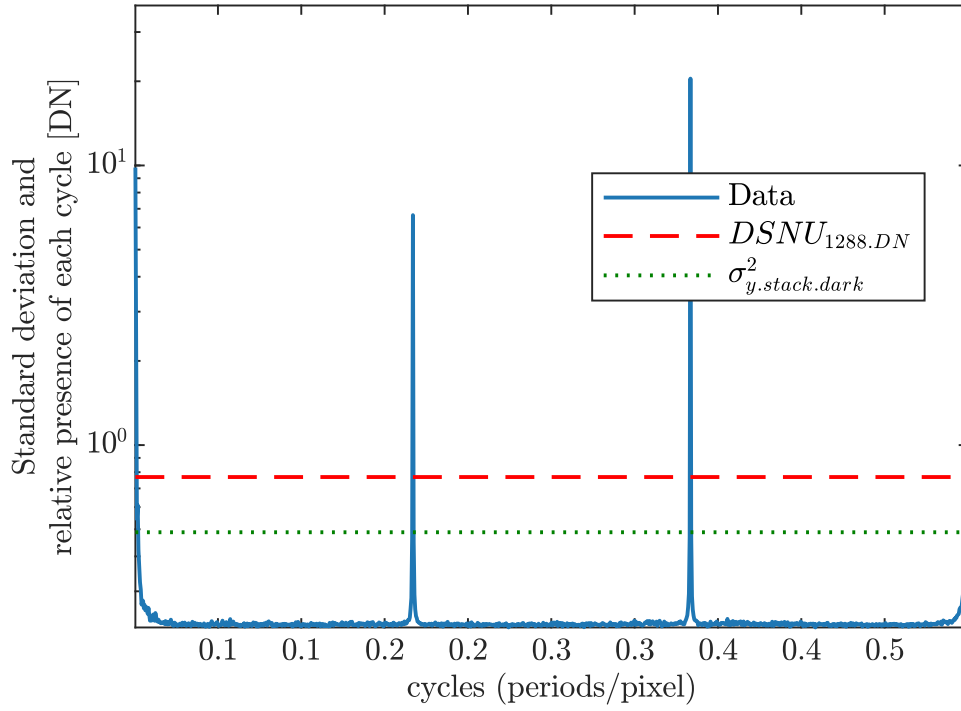
Deviation Linearity



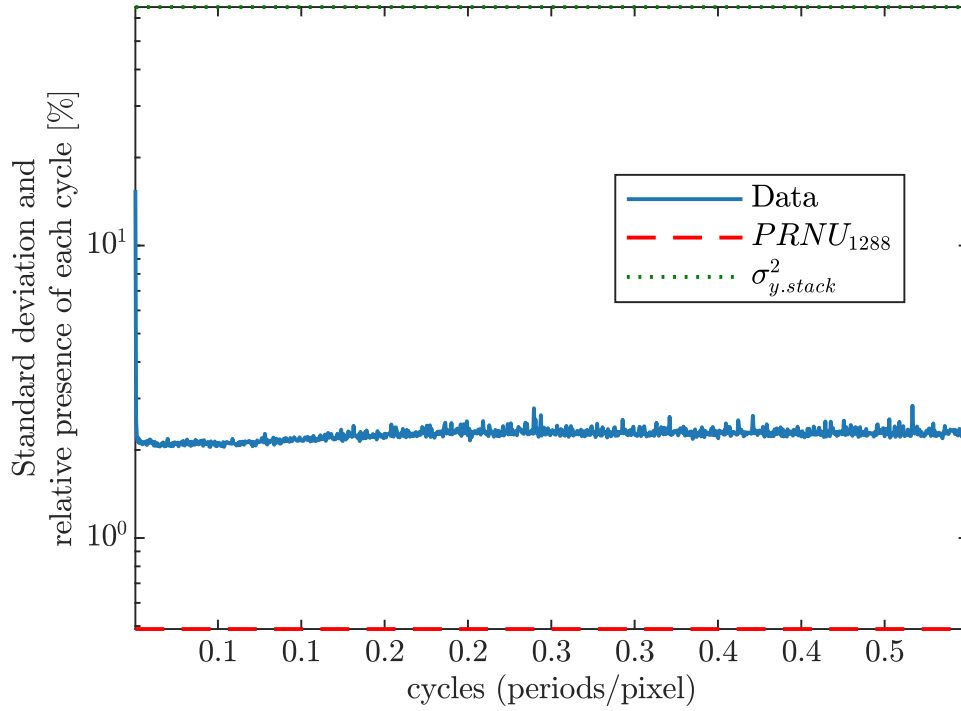
Horizontal Spectrogram PRNU



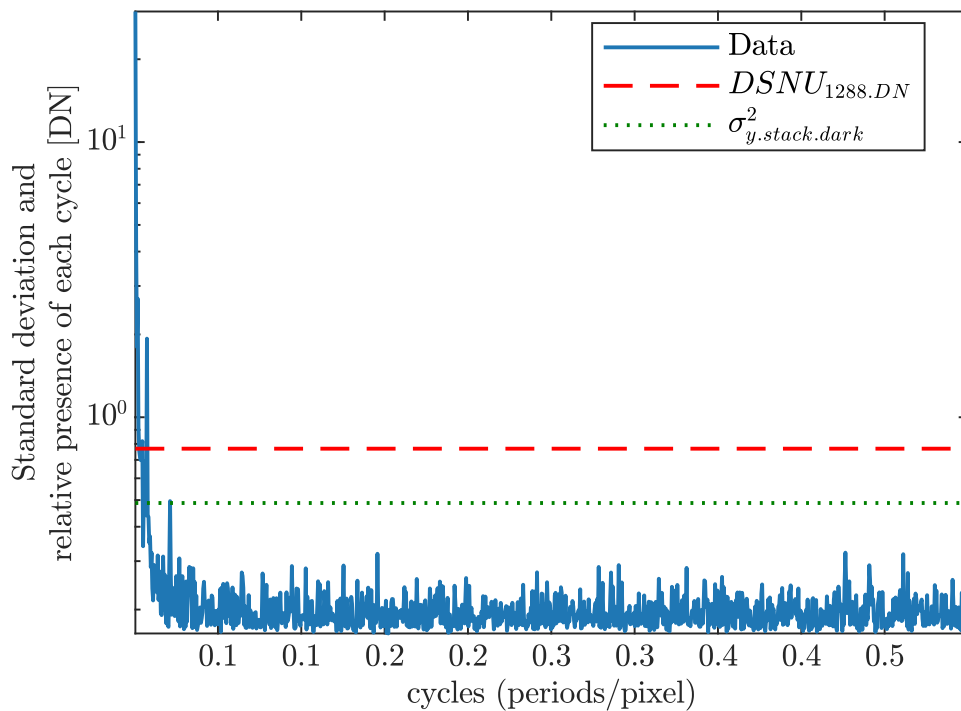
Horizontal Spectrogram DSNU



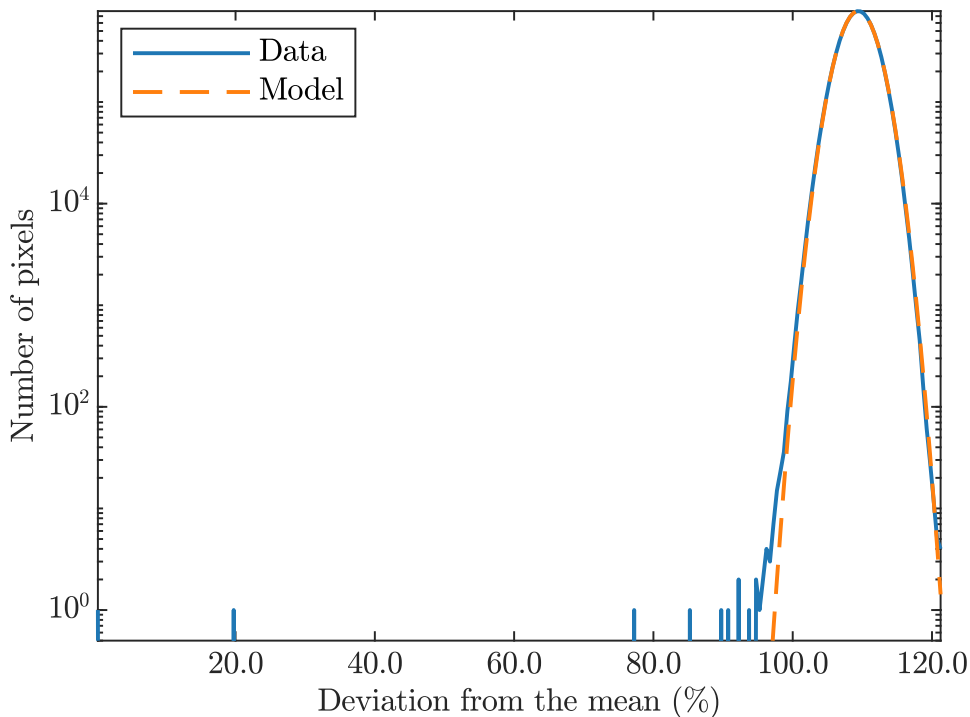
Vertical Spectrogram PRNU



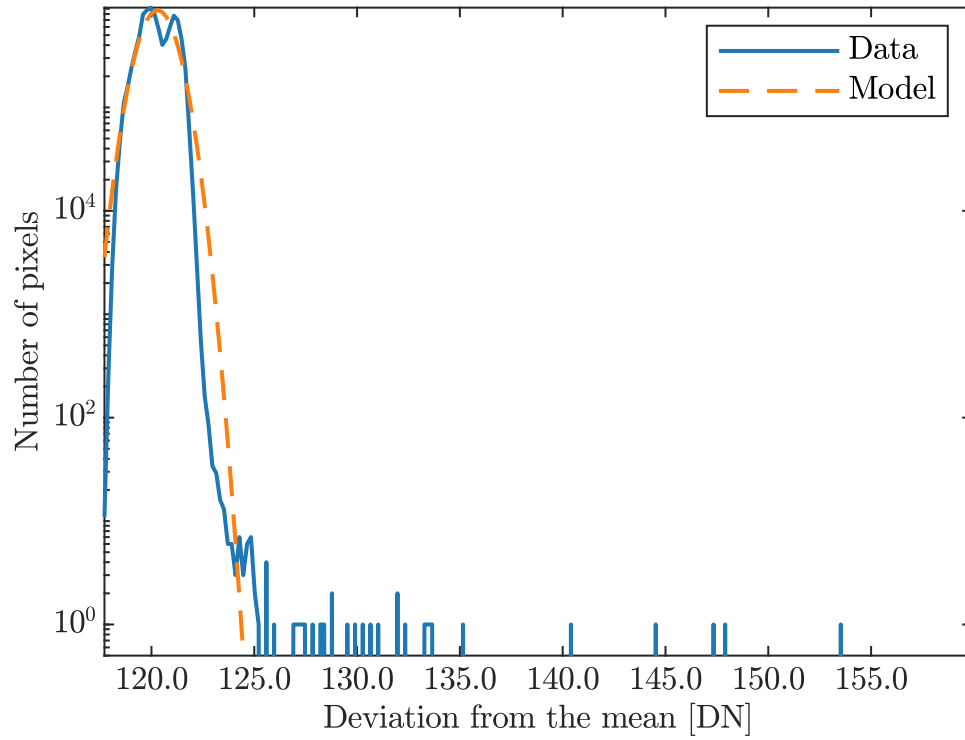
Vertical Spectrogram DSNU



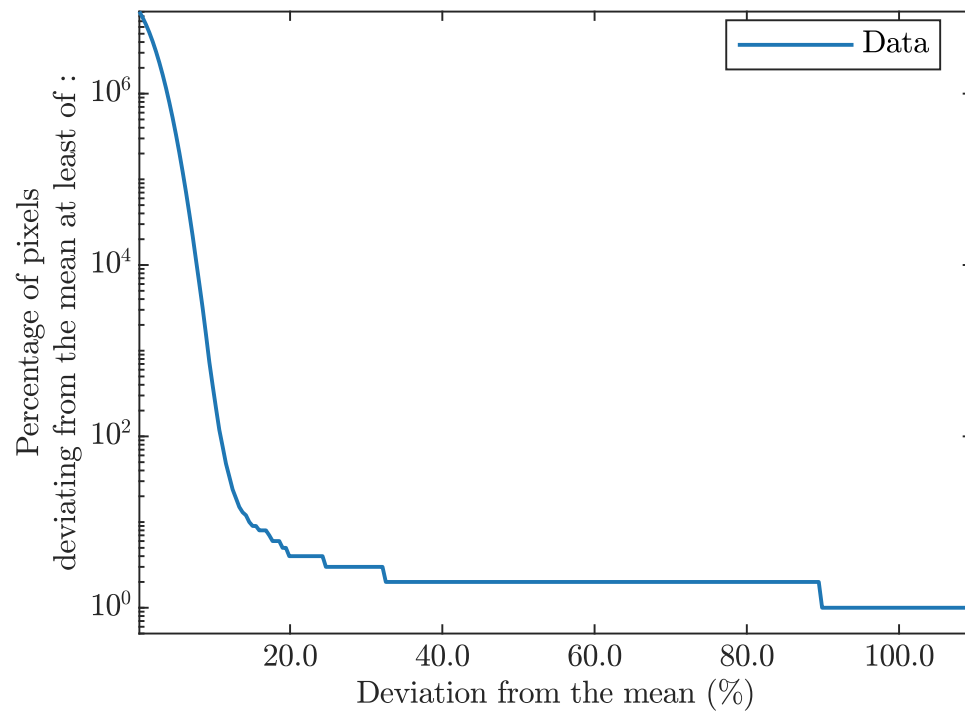
Logarithmic Histogram PRNU



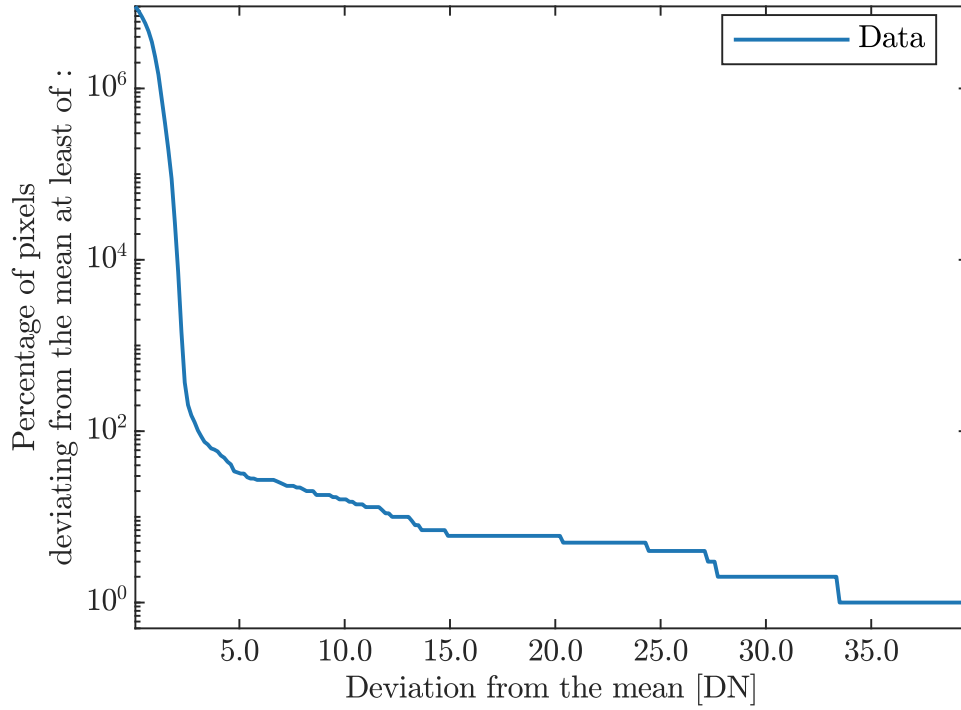
Logarithmic Histogram DSNU



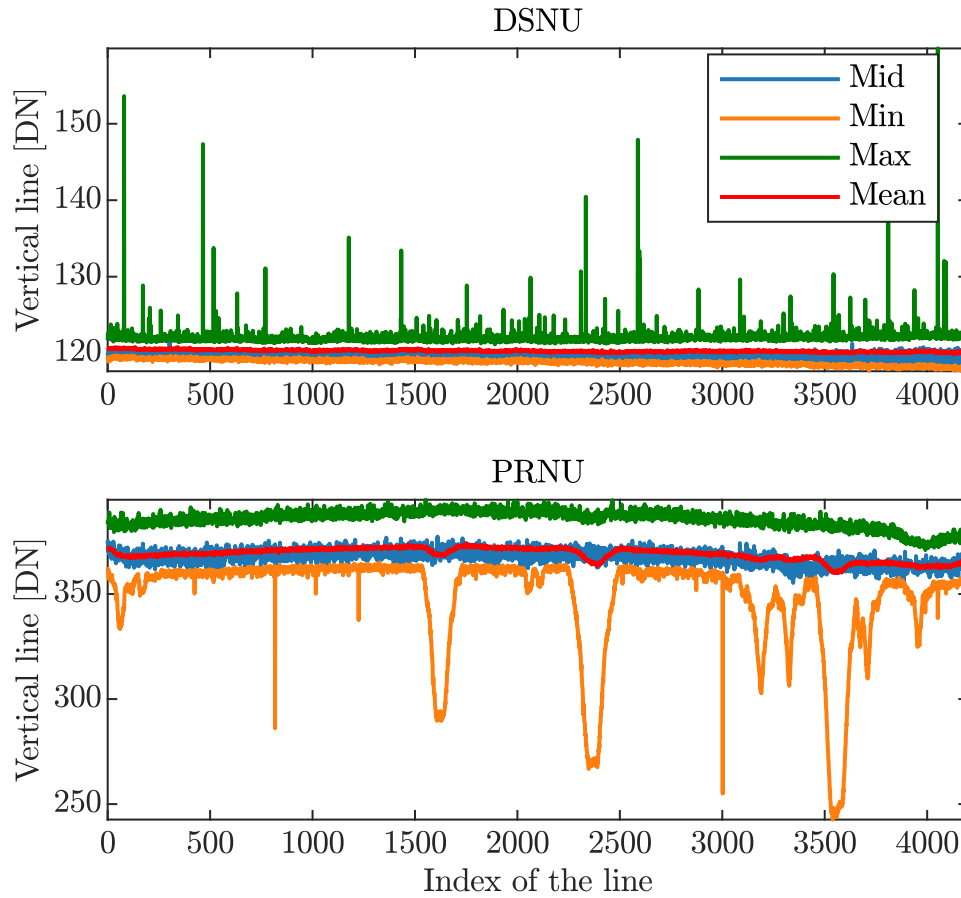
Accumulated Log Histogram PRNU



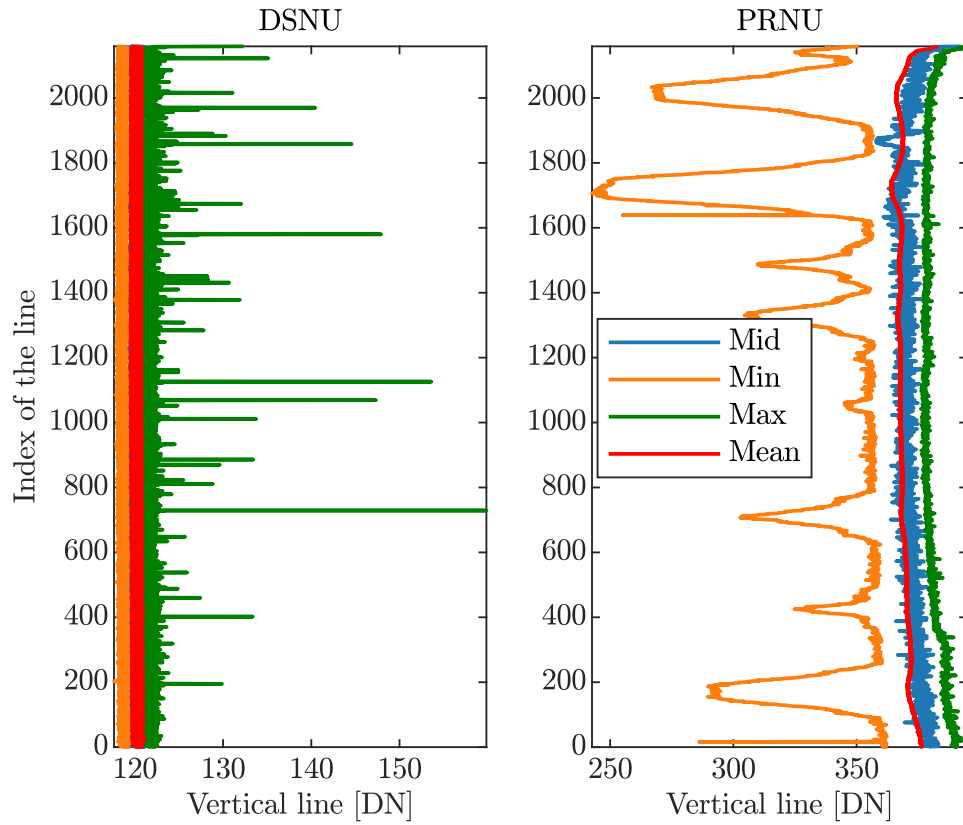
Accumulated Log Histogram DSNU



Horizontal Profile

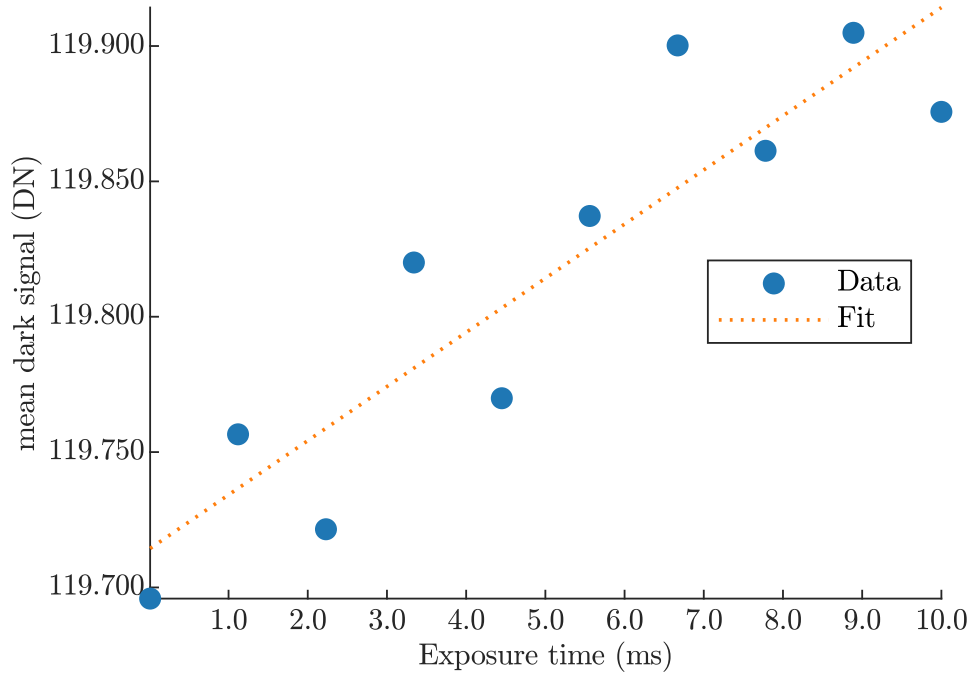


Vertical Profile

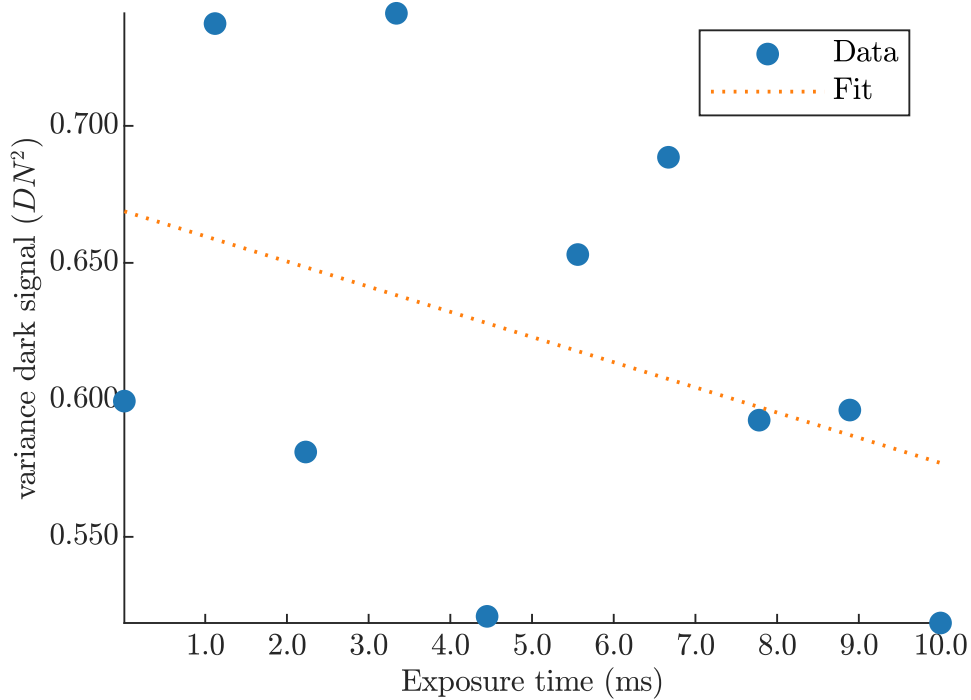


Dark Current

Dark Current from Mean



Dark Current from Variance



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