

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	6.4mm
Model	Iron462C	Sensor	IMX462
Camera type	Color	Sensor type	CMOS
Date	24-Aug-2022 12:18:09	Shutter type	Rolling
Data type	Single	Overlap capabilities	Overlapping
Sensor type	CMOS	Frame rate	60 Hz
Lens category	C-Mount	Exposure control	by irradiance
Resolution	1920 x 1080 ,12 bits	Exposure time	9007.407 μ s
Pixel size	2.9 μ m x 2.9 μ m	Illumination	Variable with constant exposure time
Maximum readout rate	128 fps	Irradiation Steps	50
Dark current compensation	No	Irradiation calibration accuracy	-
Interface type	CXP-6	Irradiation measurement error	-
Serial number	0	Standart version	4.0 Linear
Firmware version	2.2.1-2022.8.10	Light source	Integrating Sphere

International Distributor

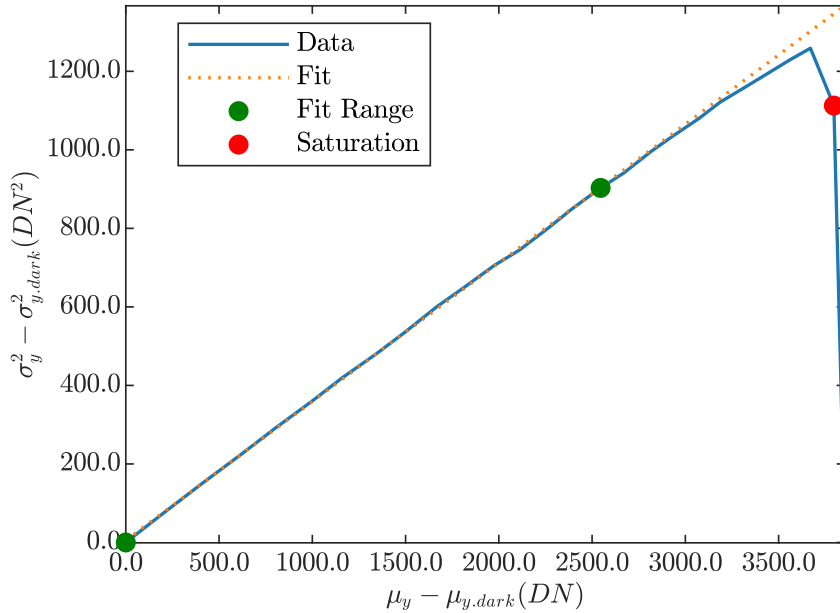


Sky Blue Microsystems GmbH
Geisenhausenerstr. 18
81379 Munich, Germany
+49 89 780 2970, info@skyblue.de
www.skyblue.de

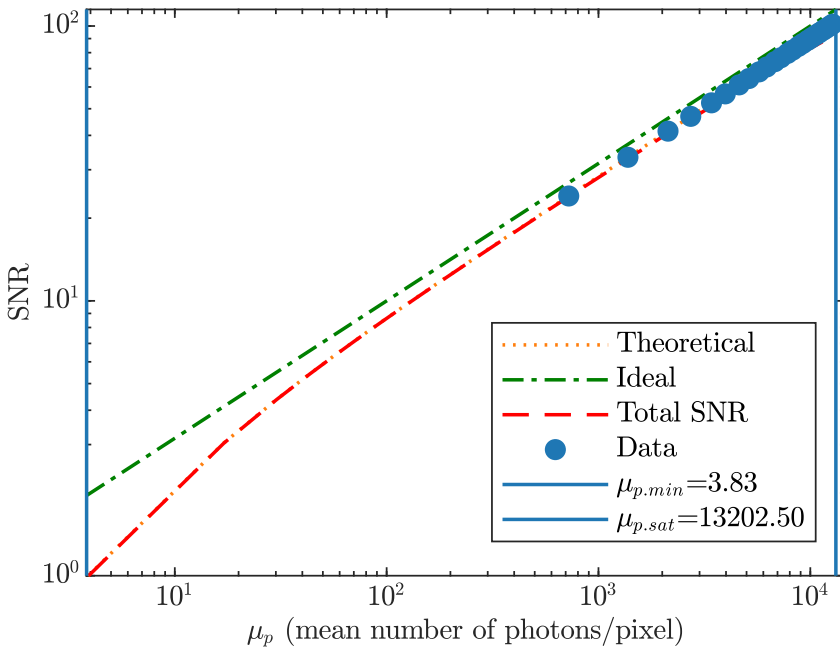
Summary Sheet for Operation Point 1 at a Wavelength of 520 nm

Camera setting		Operation point parameters	
Gain	GainLevel1	Environmental temperature	24.31
Black level	240	Camera body temperature	36.62
		Sensor temperature	46
		Processor temperature	46

Photon Transfer

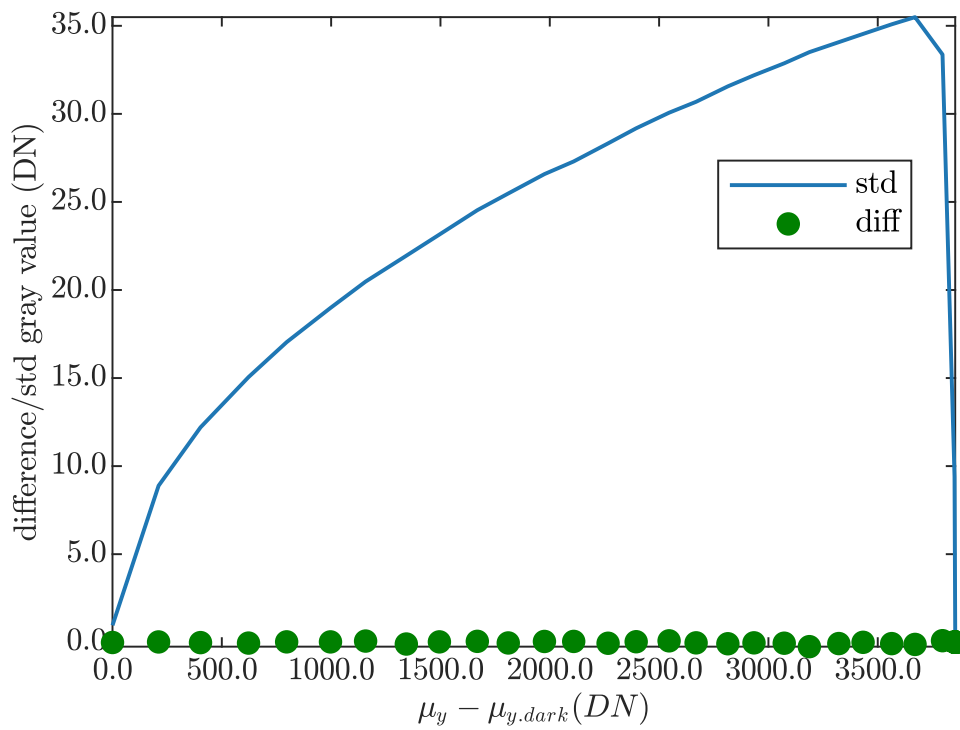


Signal-to-Noise Ratio

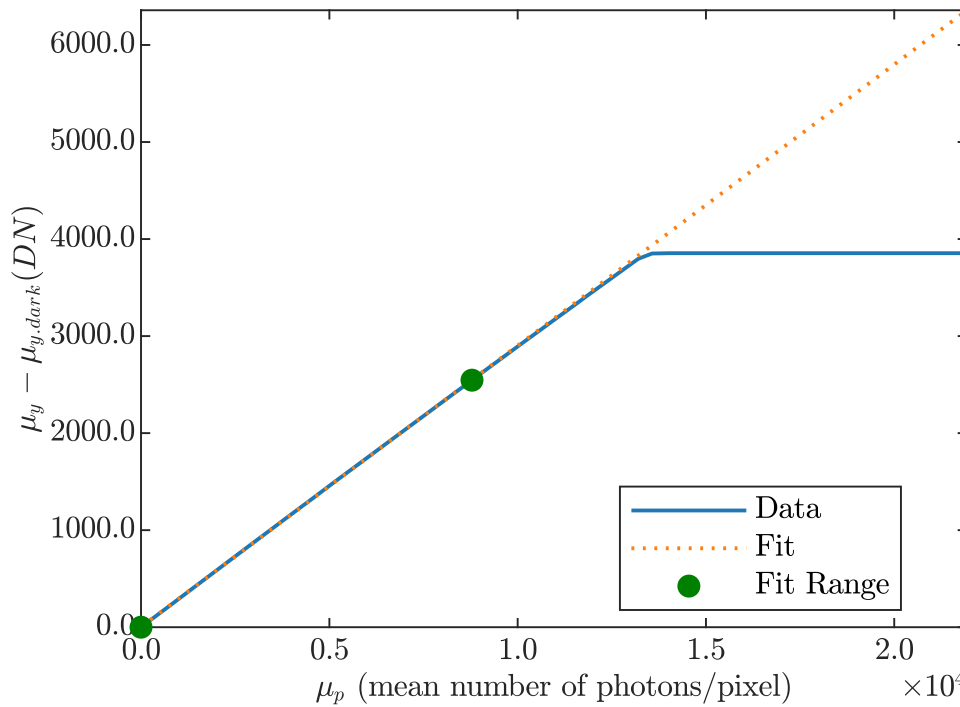


Performance		
Quantum efficiency		
η	80.9892	%
System gain		
K	0.36038	DN/e ⁻
1/K	2.7749	e ⁻ /DN
Temporal dark noise		
σ_d	2.479	e ⁻
$\sigma_{y,dark}$	0.93887	DN
Signal-to-noise ratio		
SNR _{max}	103.405	
	40.2908	dB
	6.6922	bit
1/SNR _{max}	0.96707	%
Absolute sensitivity threshold		
$\mu_{e,min}$	3.1052	e ⁻
$\mu_{e,min,area}$	0.36923	e ⁻ /μm ²
Saturation capacity		
$\mu_{e,sat}$	10692.6025	e ⁻
$\mu_{e,sat,area}$	1271.4153	e ⁻ /μm ²
Dynamic range		
DR	3443.415	
	70.7398	dB
	11.7496	bit
Spatial nonuniformities		
DSNU ₁₂₈₈	0.28364	e ⁻
DSNU _{1288,col}	0.047627	e ⁻
DSNU _{1288,row}	0.13997	e ⁻
DSNU _{1288,pix}	0.24205	e ⁻
PRNU ₁₂₈₈	0.46885	%
PRNU _{1288,col}	0.18654	%
PRNU _{1288,row}	0+0.015509i	%
PRNU _{1288,pix}	0.43042	%
Linearity error		
LE	0.0029155	%
Dark current		
$\mu_{l,mean}$	NaN	e ⁻ /s
$\mu_{l,var}$	6.1238	e ⁻ /s

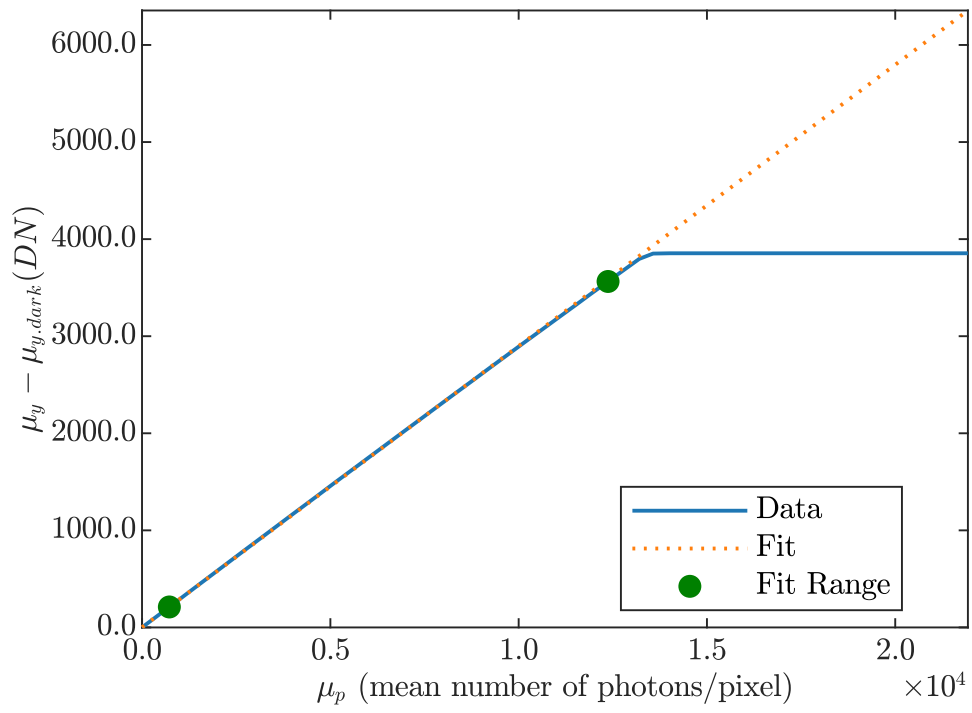
Stability check



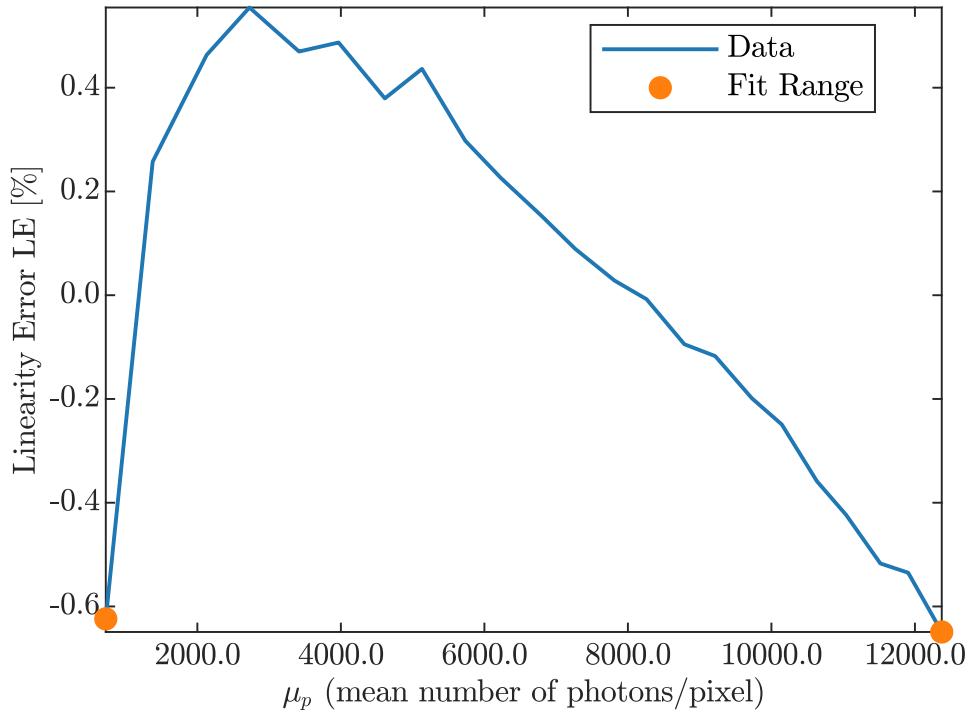
Sensitivity



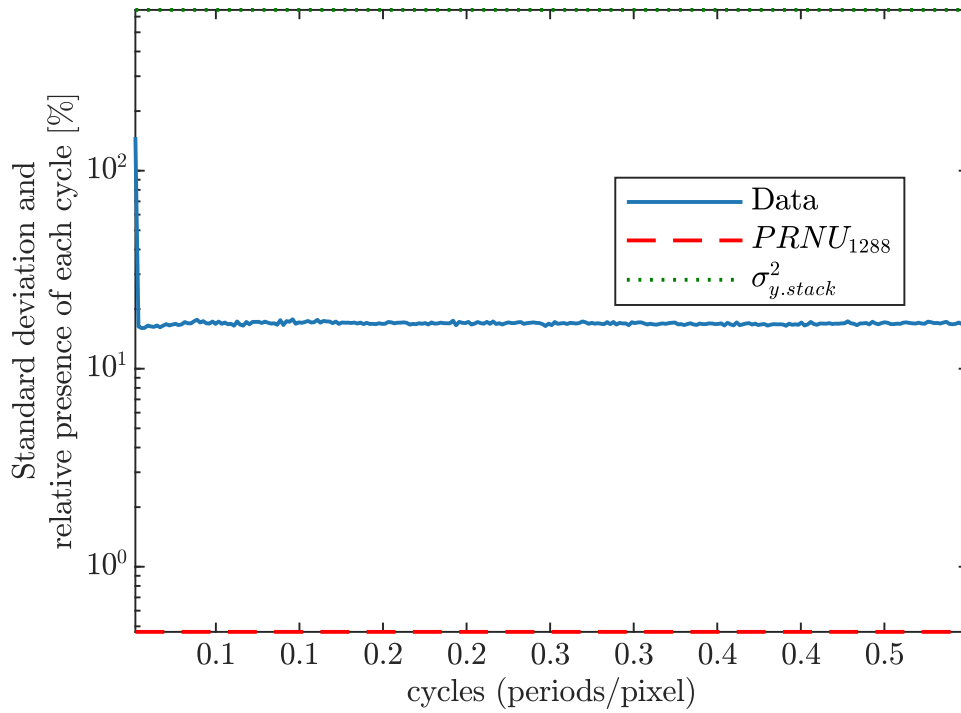
Linearity



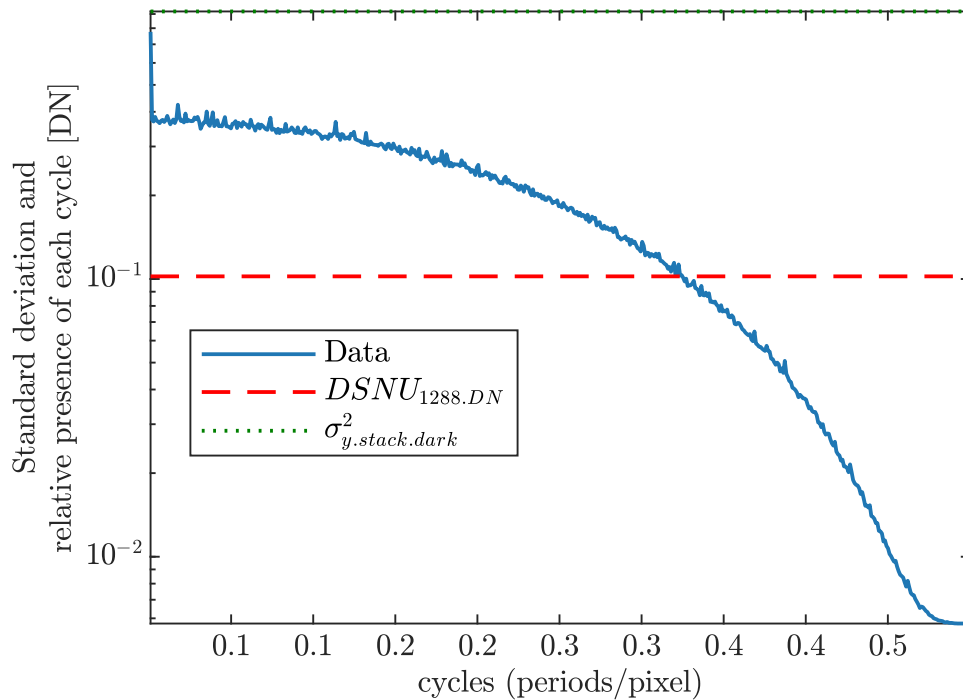
Deviation Linearity



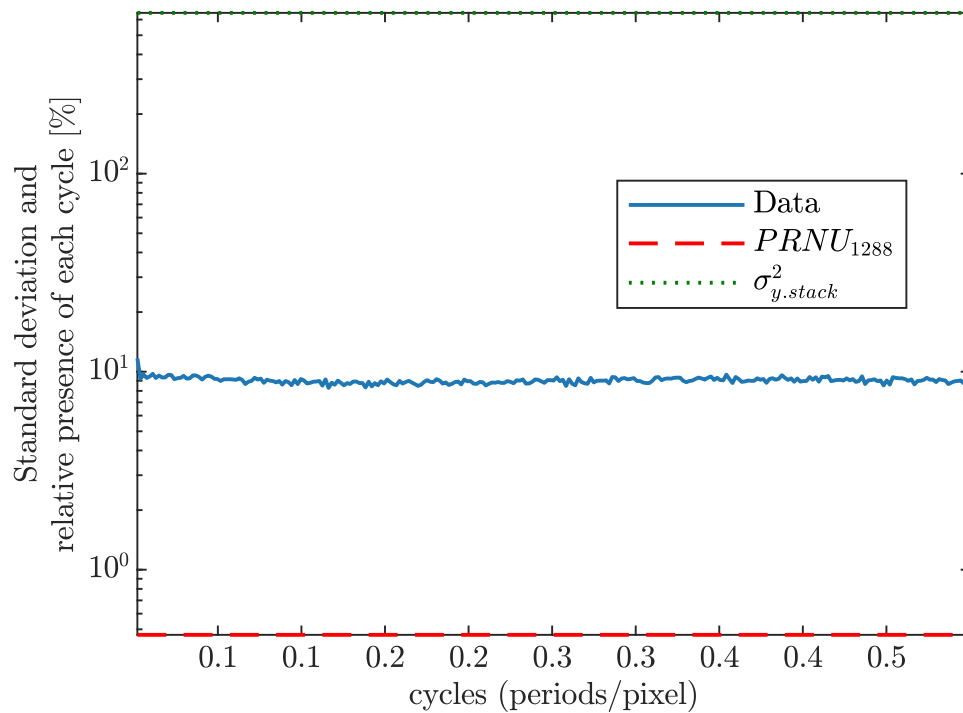
Horizontal Spectrogram PRNU



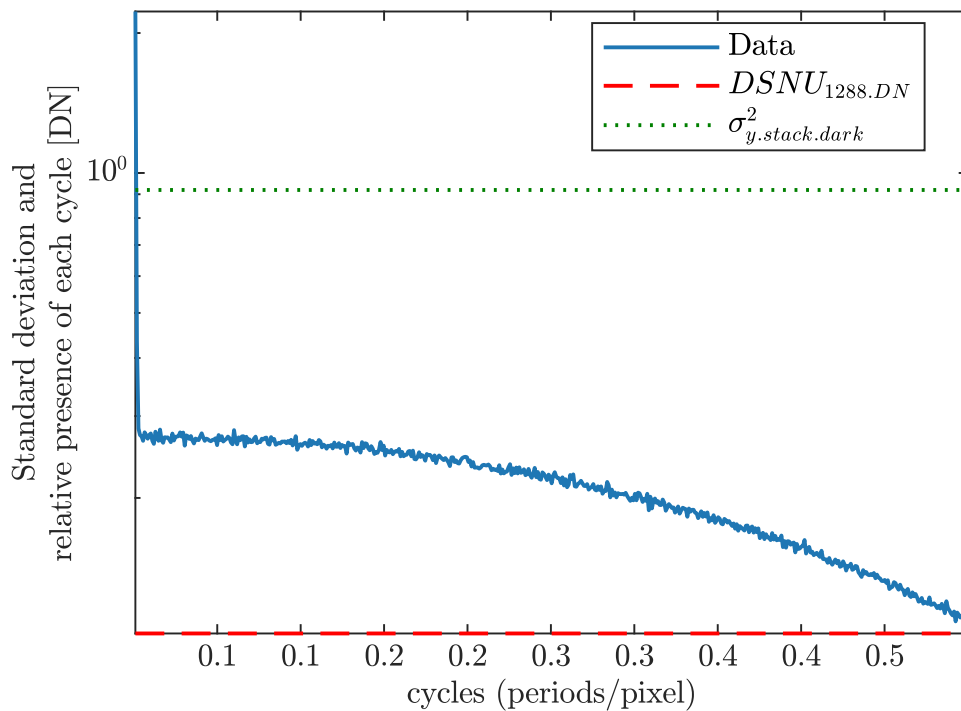
Horizontal Spectrogram DSNU



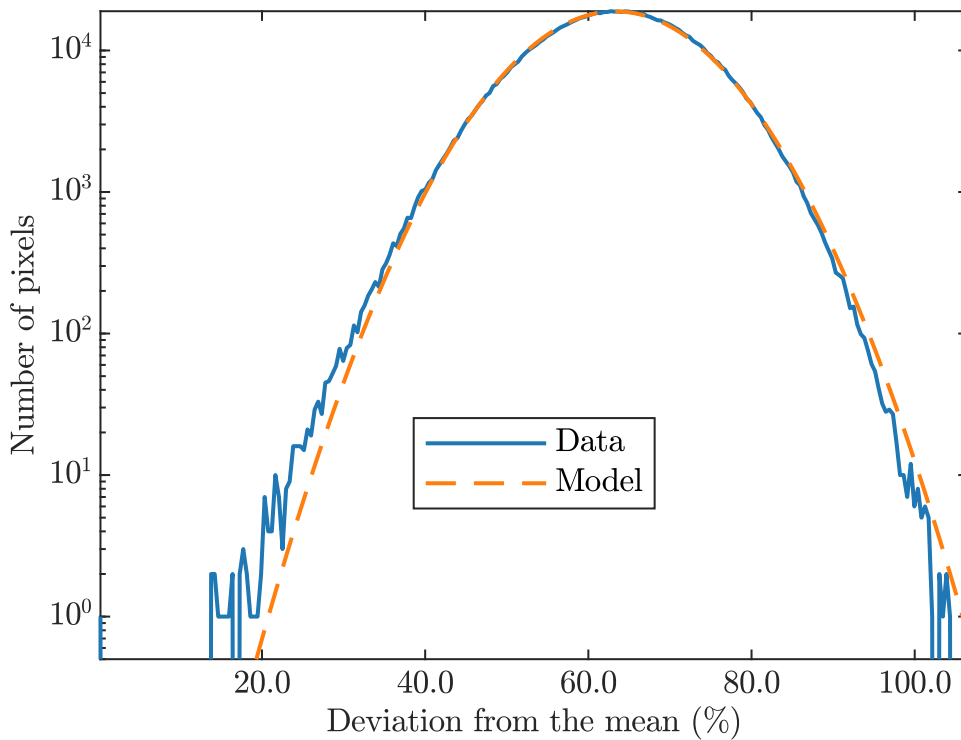
Vertical Spectrogram PRNU



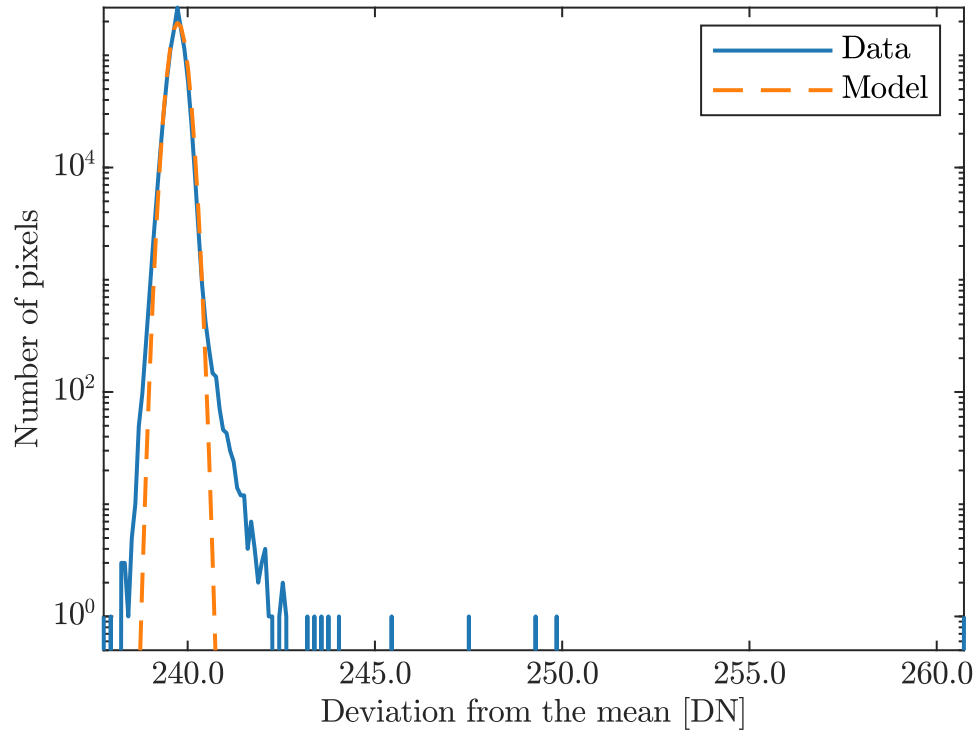
Vertical Spectrogram DSNU



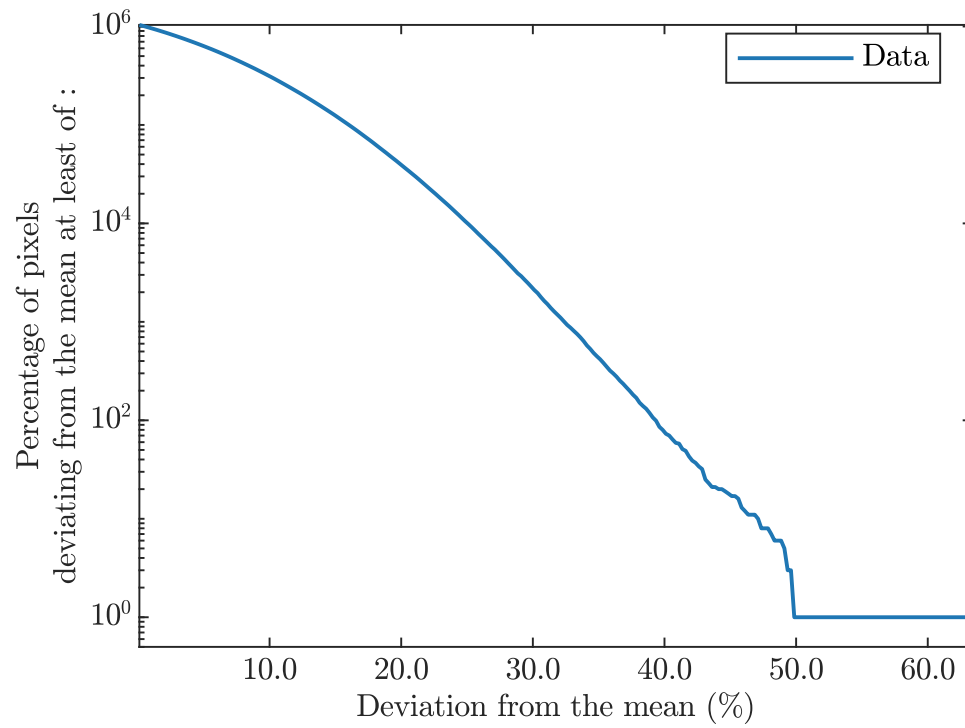
Logarithmic Histogram PRNU



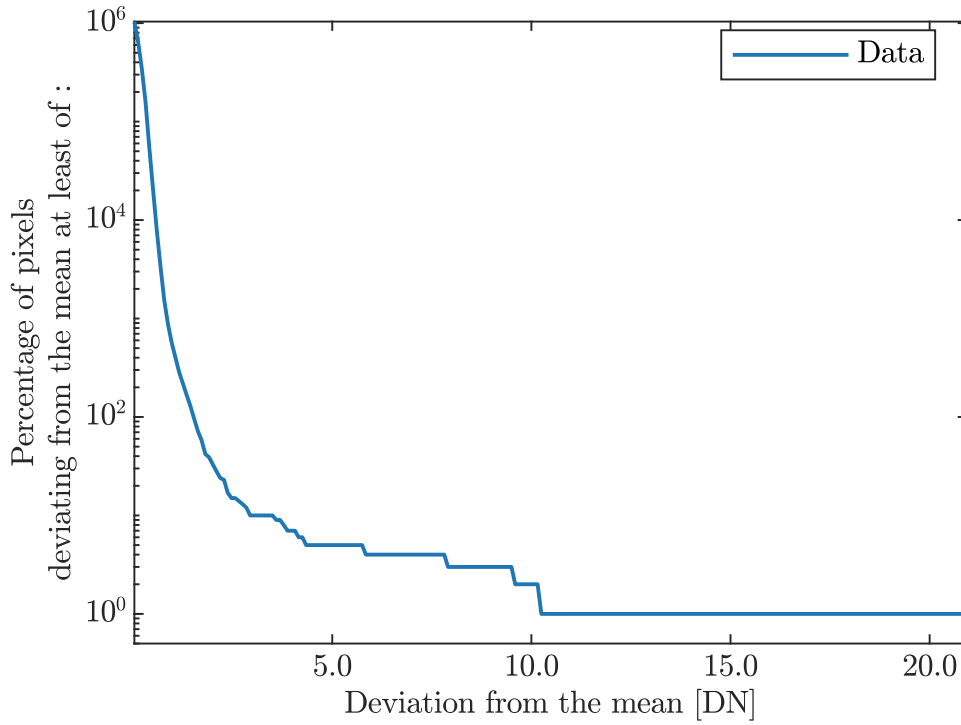
Logarithmic Histogram DSNU



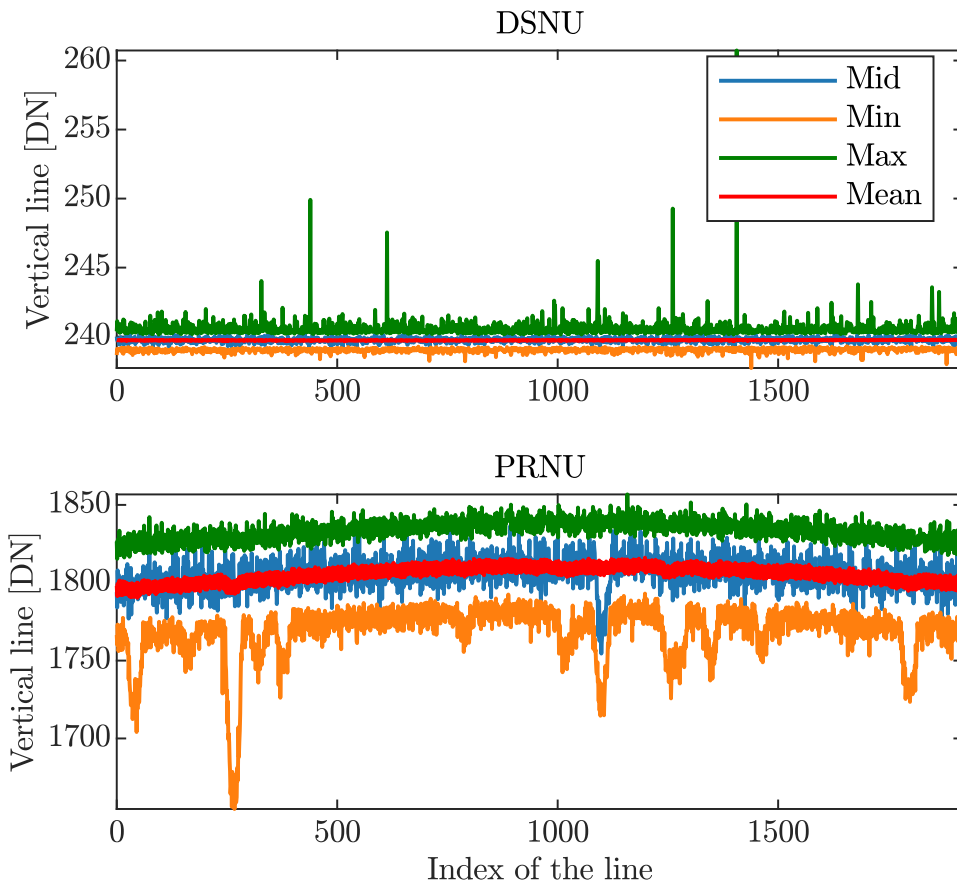
Accumulated Log Histogram PRNU



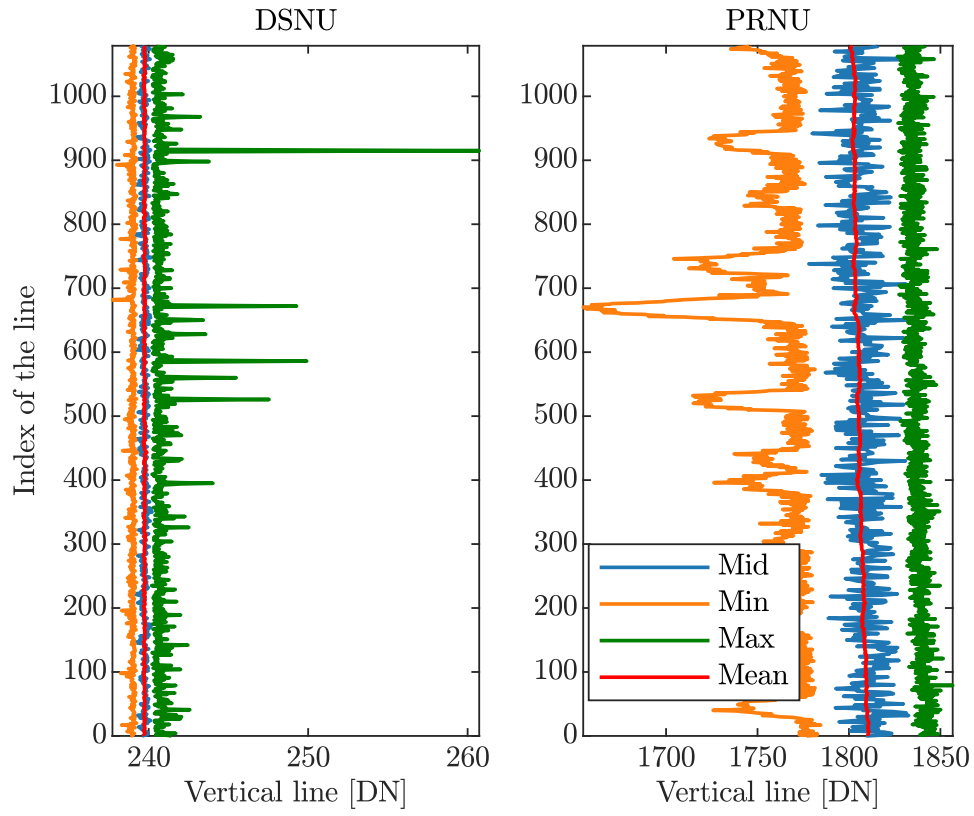
Accumulated Log Histogram DSNU



Horizontal Profile



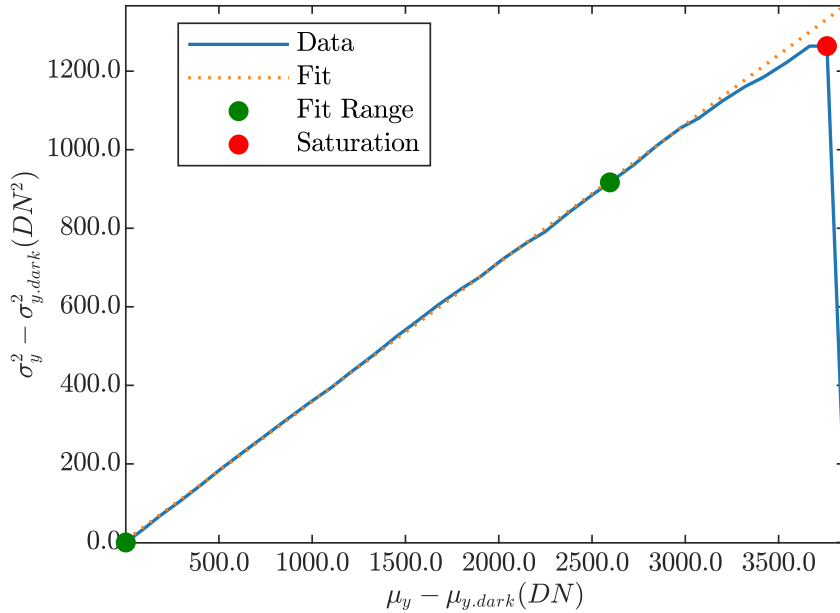
Vertical Profile



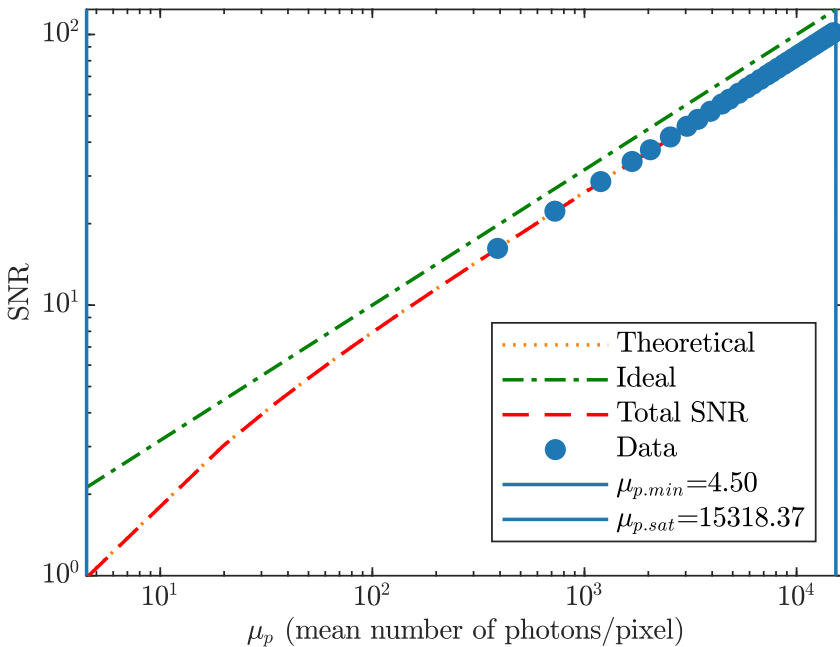
Summary Sheet for Operation Point 2 at a Wavelength of 632 nm

Camera setting		Operation point parameters	
Gain	GainLevel1	Environmental temperature	23.81
Black level	240	Camera body temperature	36.75
		Sensor temperature	44
		Processor temperature	44

Photon Transfer

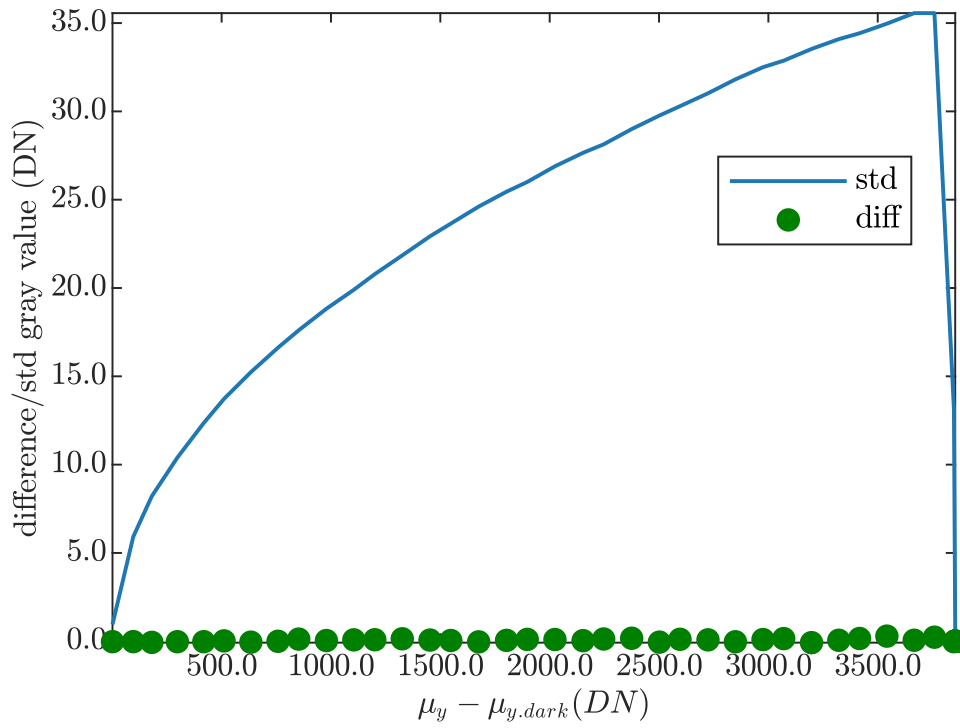


Signal-to-Noise Ratio

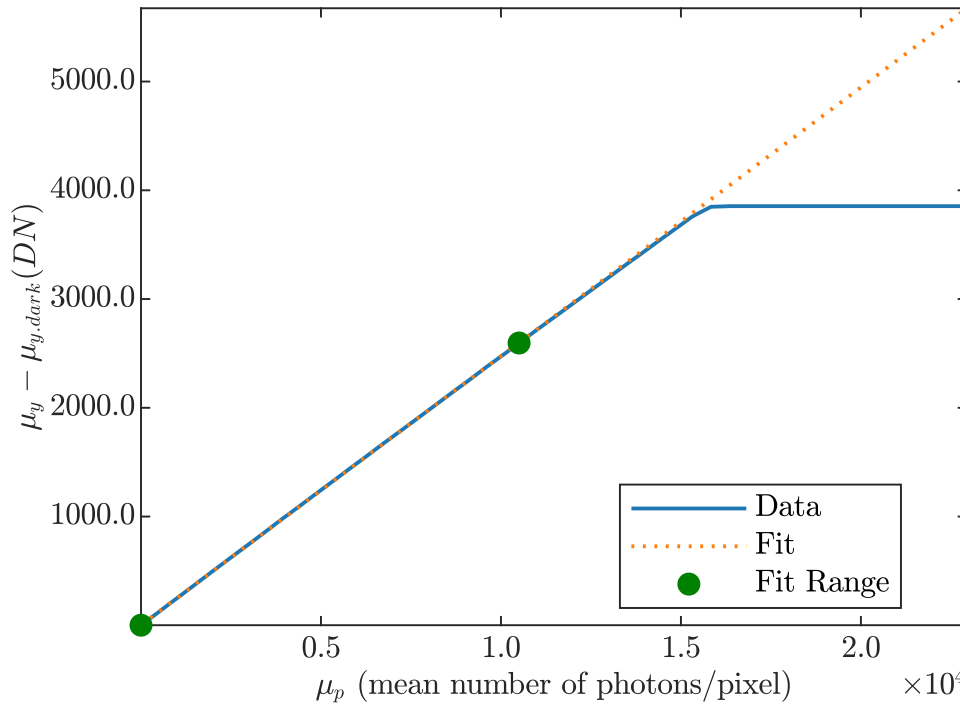


Performance		
Quantum efficiency		
η	69.1043	%
System gain		
K	0.3602	DN/e ⁻
1/K	2.7762	e ⁻ /DN
Temporal dark noise		
σ_d	2.4802	e ⁻
$\sigma_{y.dark}$	0.93887	DN
Signal-to-noise ratio		
SNR _{max}	102.8866	
	40.2472	dB
	6.6849	bit
1/SNR _{max}	0.97194	%
Absolute sensitivity threshold		
$\mu_{e.min}$	3.1065	e ⁻
$\mu_{e.min.area}$	0.36938	e ⁻ /μm ²
Saturation capacity		
$\mu_{e.sat}$	10585.6555	e ⁻
$\mu_{e.sat.area}$	1258.6986	e ⁻ /μm ²
Dynamic range		
DR	3407.5732	
	70.6489	dB
	11.7345	bit
Spatial nonuniformities		
DSNU ₁₂₈₈	0.26749	e ⁻
DSNU _{1288.col}	0.046887	e ⁻
DSNU _{1288.row}	0.13803	e ⁻
DSNU _{1288.pix}	0.22428	e ⁻
PRNU ₁₂₈₈	0.40353	%
PRNU _{1288.col}	0.041088	%
PRNU _{1288.row}	0+0.0038346i	%
PRNU _{1288.pix}	0.40145	%
Linearity error		
LE	0.0019034	%
Dark current		
$\mu_{l.mean}$	NaN	e ⁻ /s
$\mu_{l.var}$	6.1238	e ⁻ /s

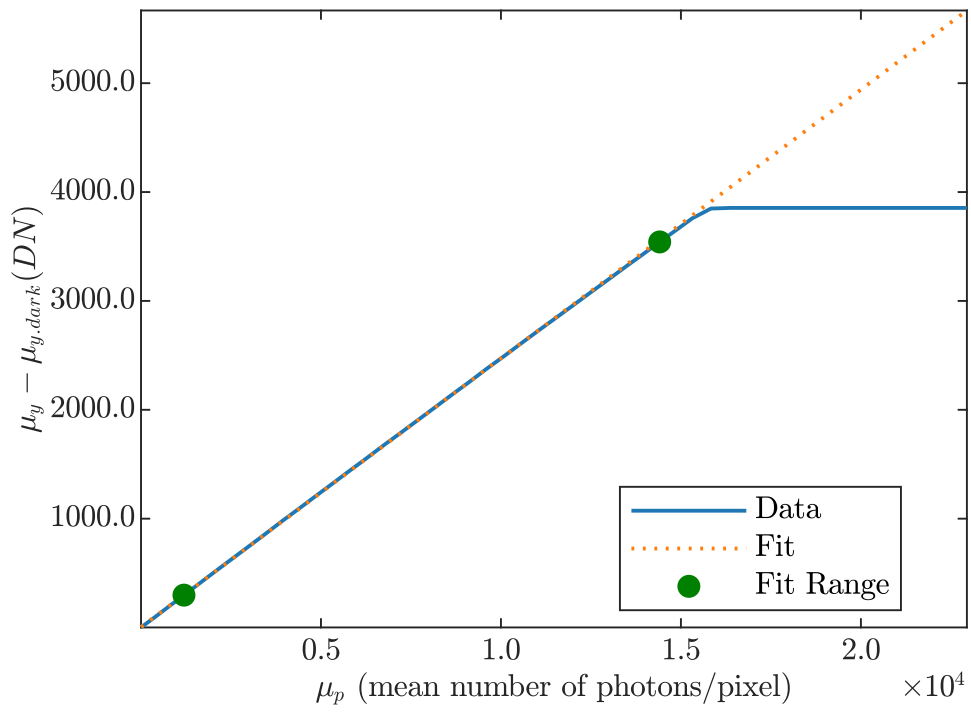
Stability check



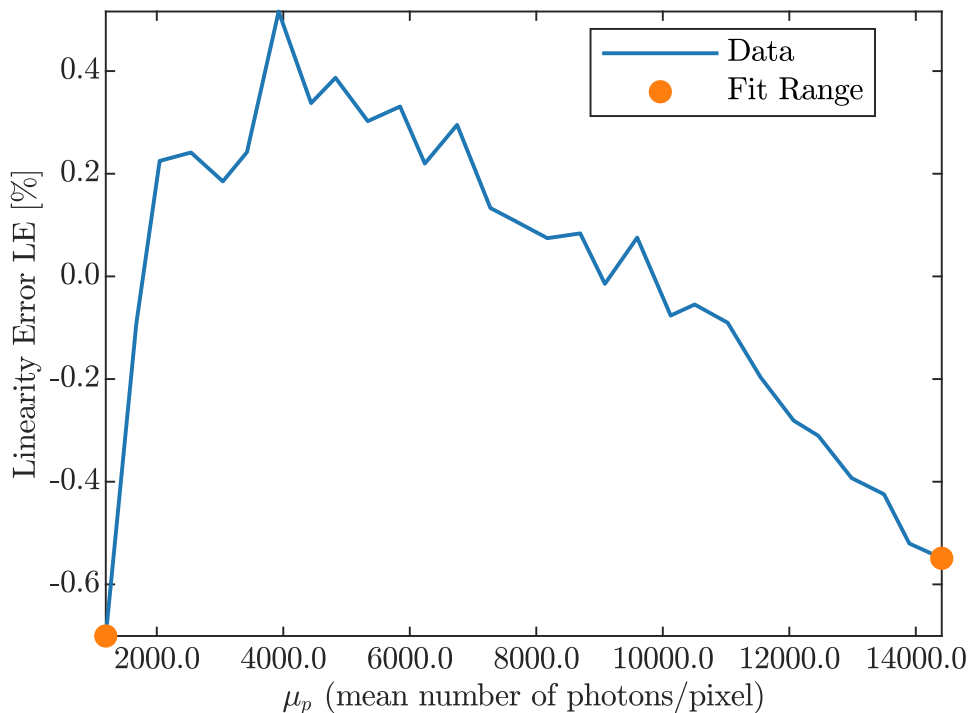
Sensitivity



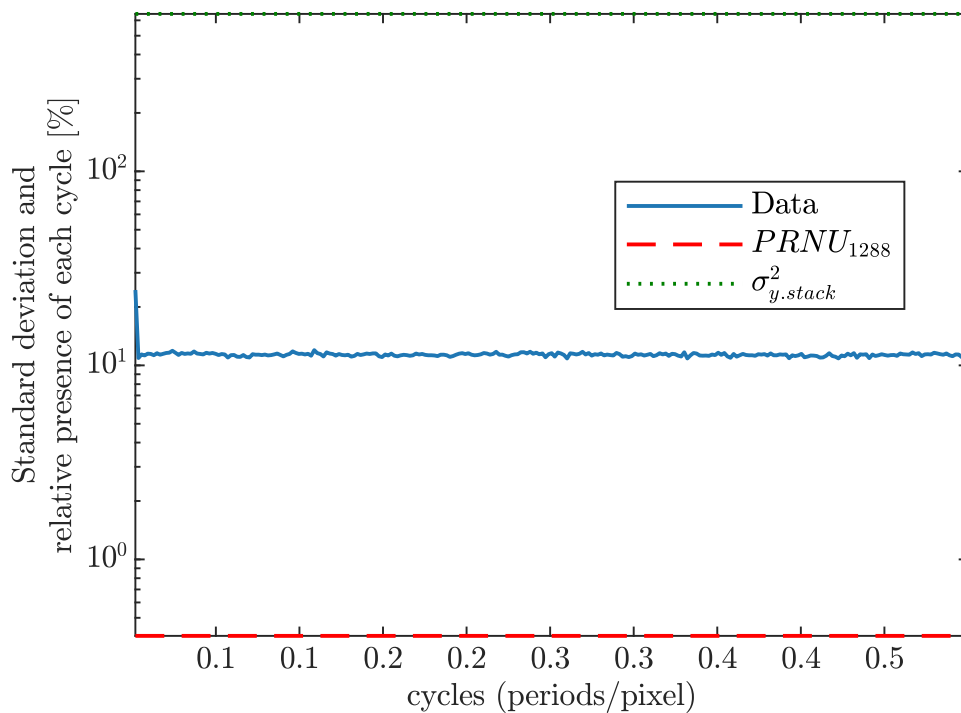
Linearity



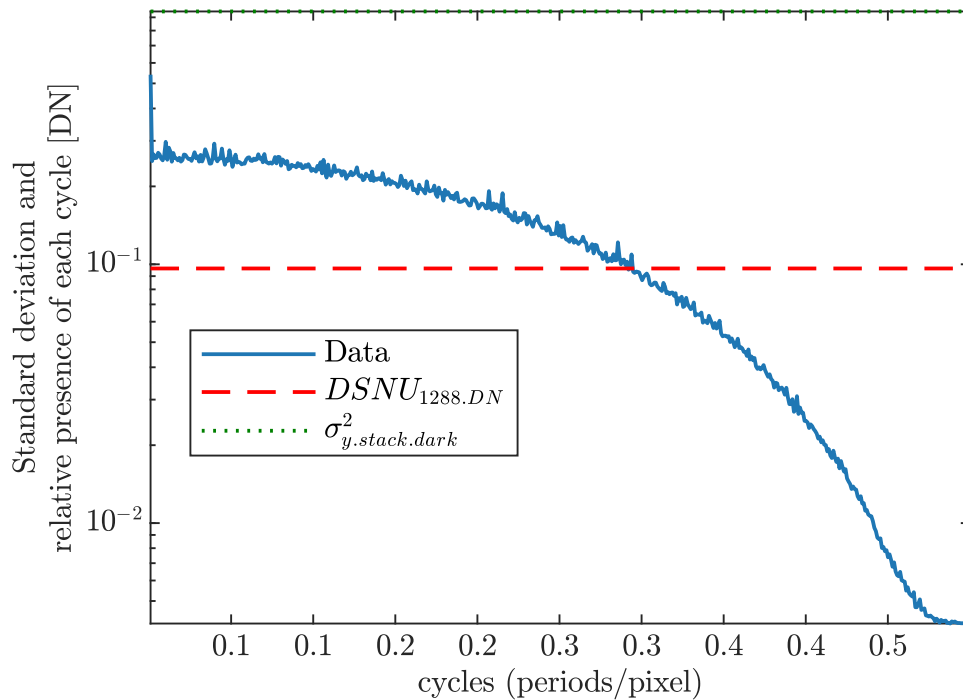
Deviation Linearity



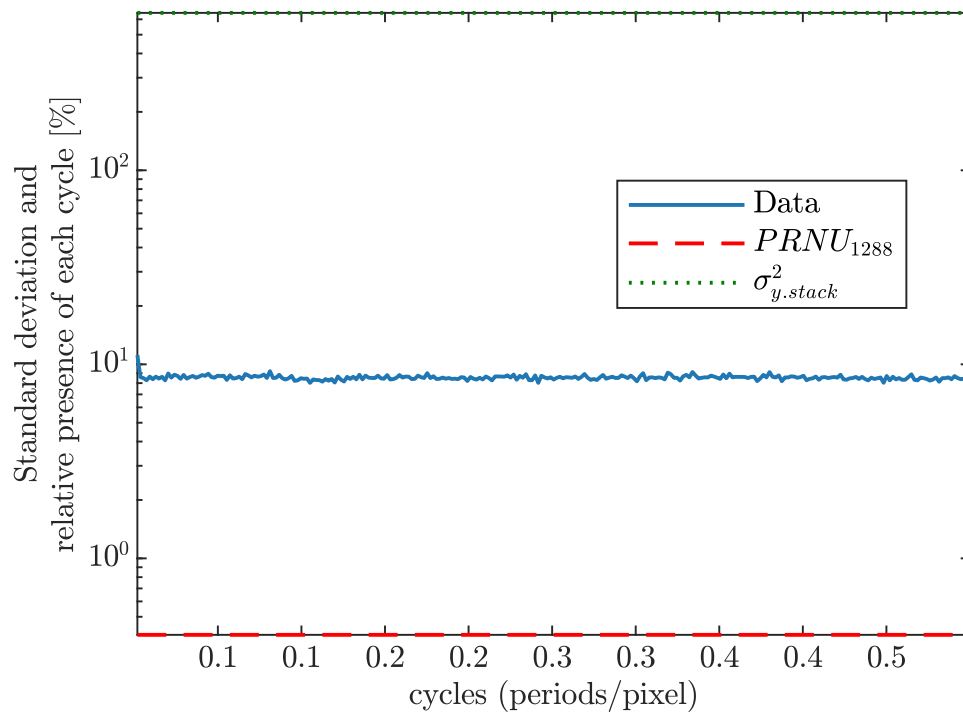
Horizontal Spectrogram PRNU



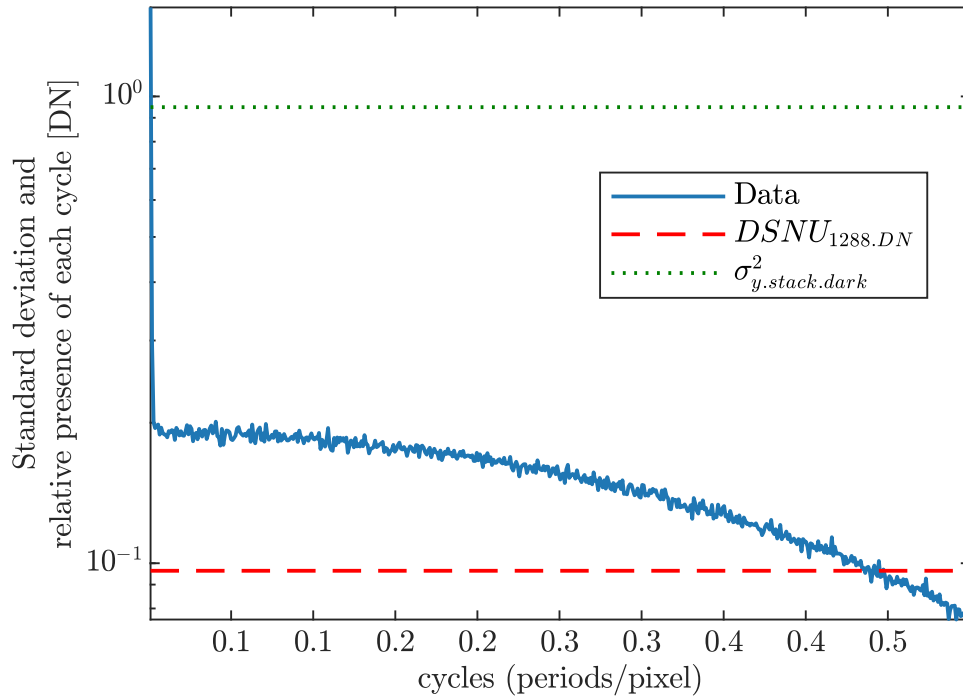
Horizontal Spectrogram DSNU



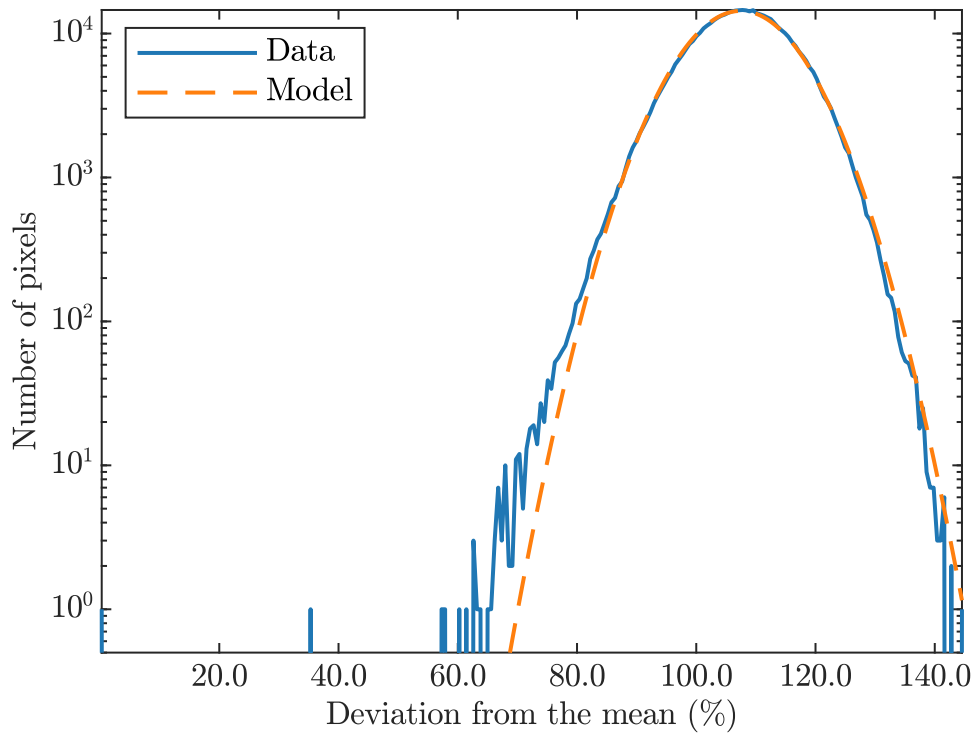
Vertical Spectrogram PRNU



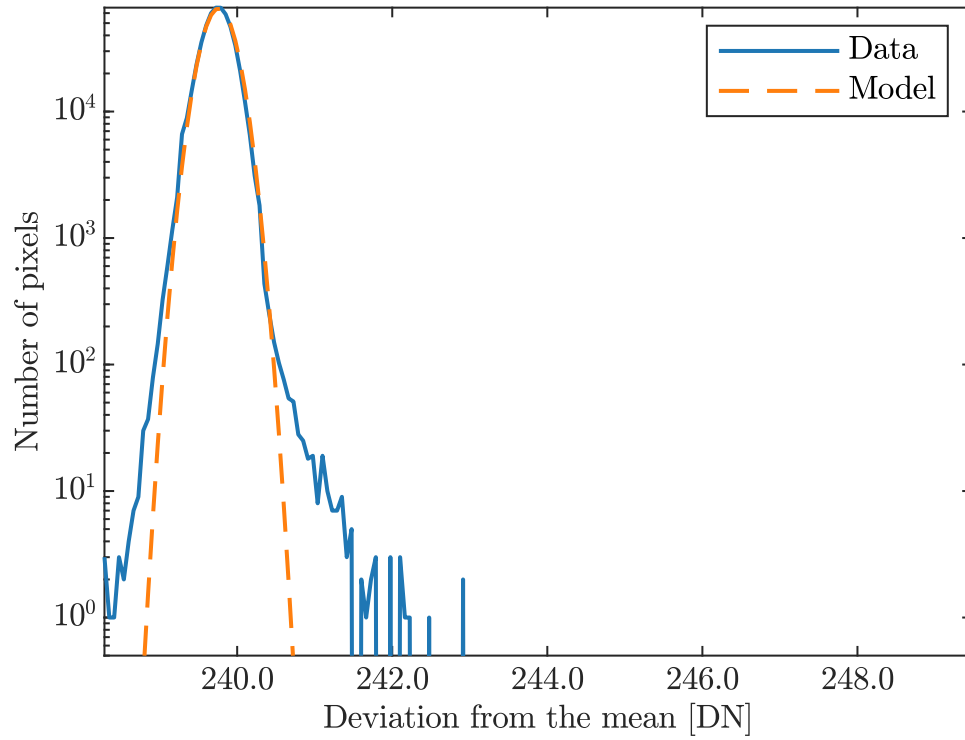
Vertical Spectrogram DSNU



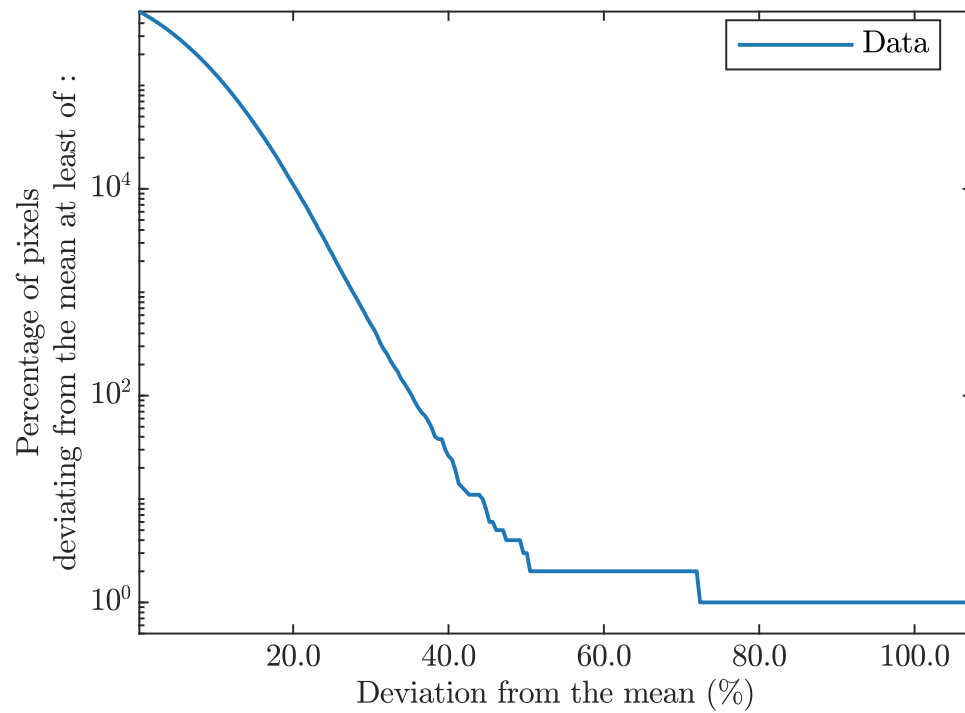
Logarithmic Histogram PRNU



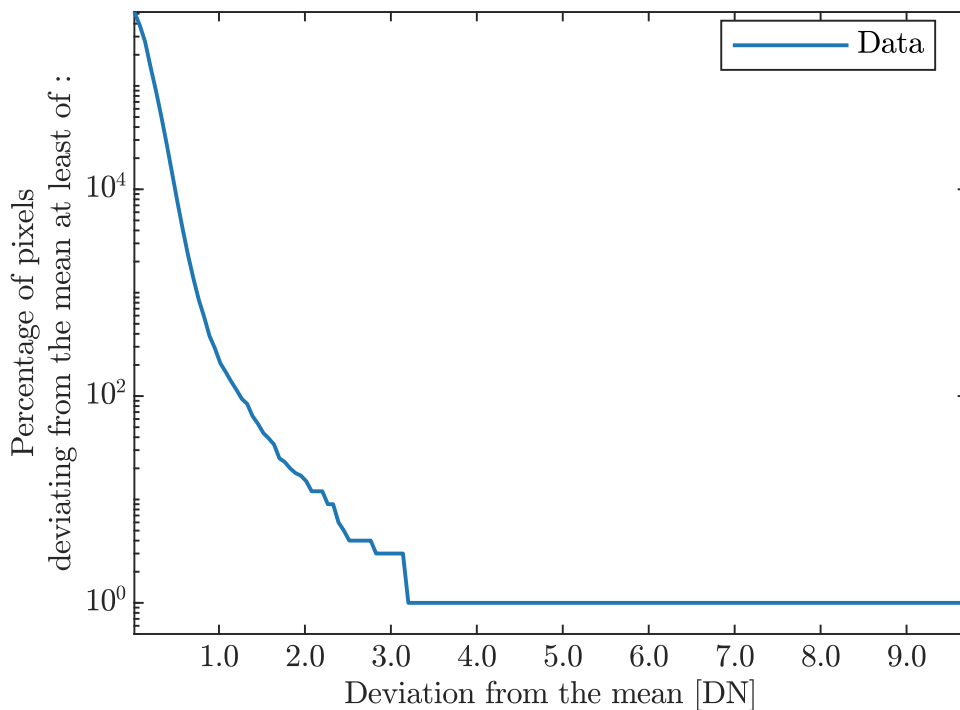
Logarithmic Histogram DSNU



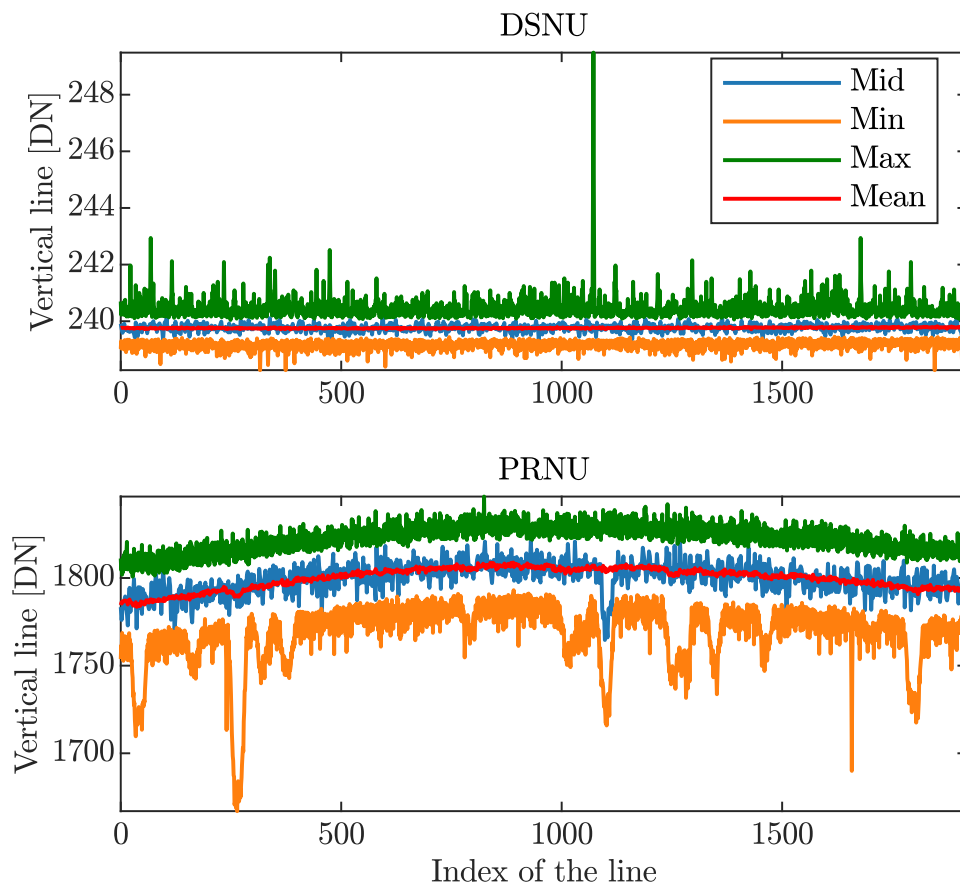
Accumulated Log Histogram PRNU



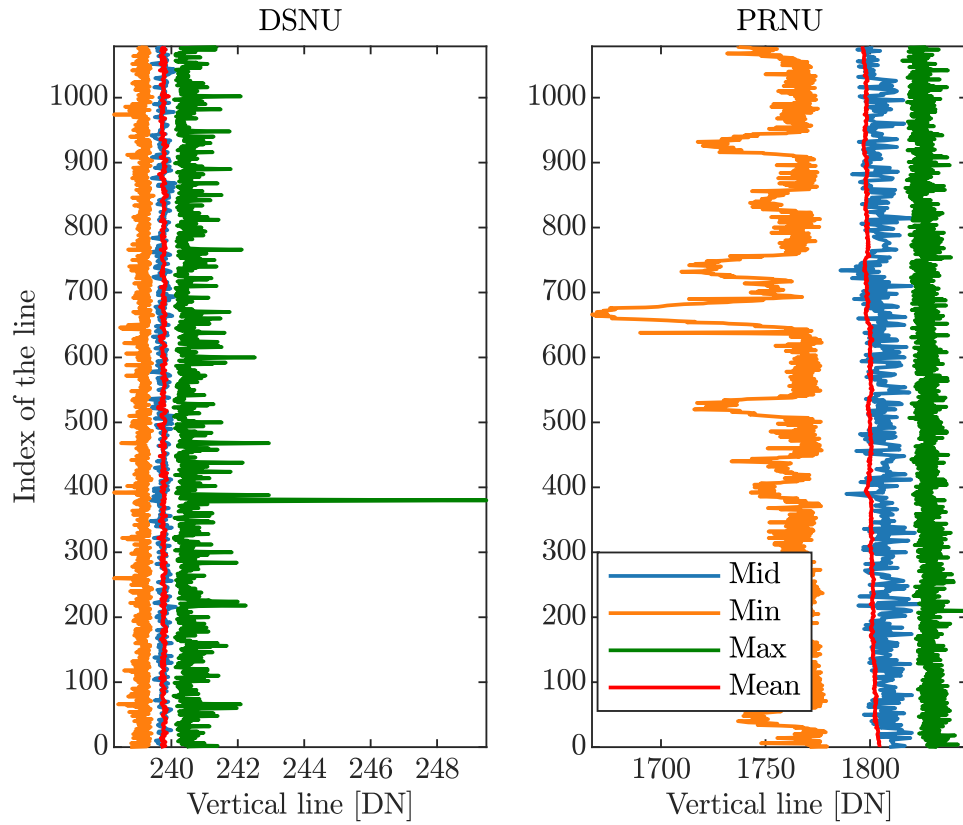
Accumulated Log Histogram DSNU



Horizontal Profile



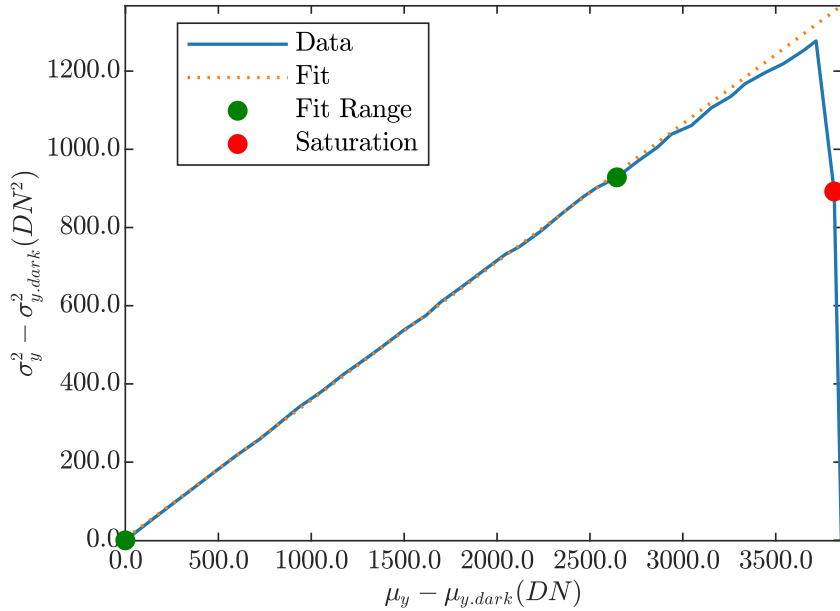
Vertical Profile



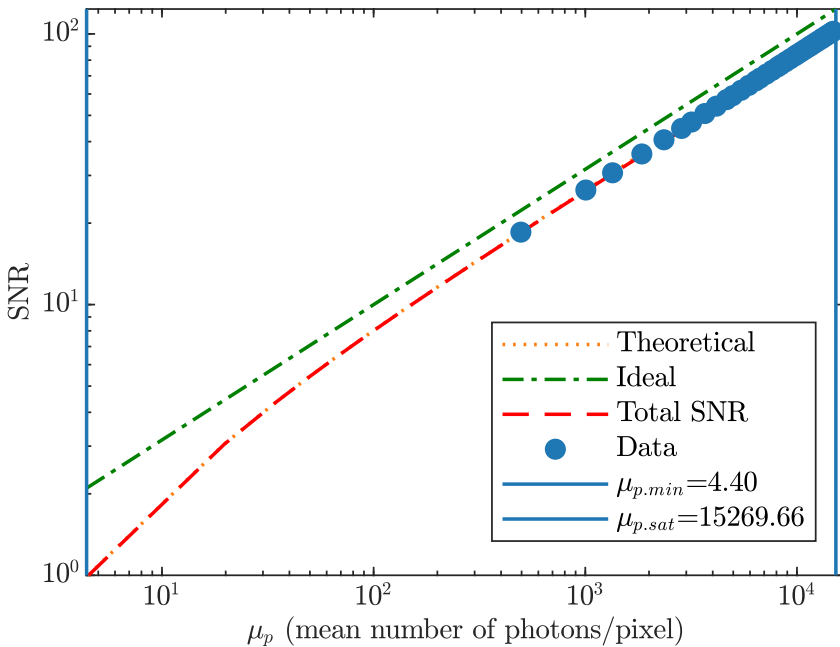
Summary Sheet for Operation Point 3 at a Wavelength of 448 nm

Camera setting		Operation point parameters	
Gain	GainLevelx1	Environmental temperature	23.5
Black level	240	Camera body temperature	36.68
		Sensor temperature	44
		Processor temperature	44

Photon Transfer

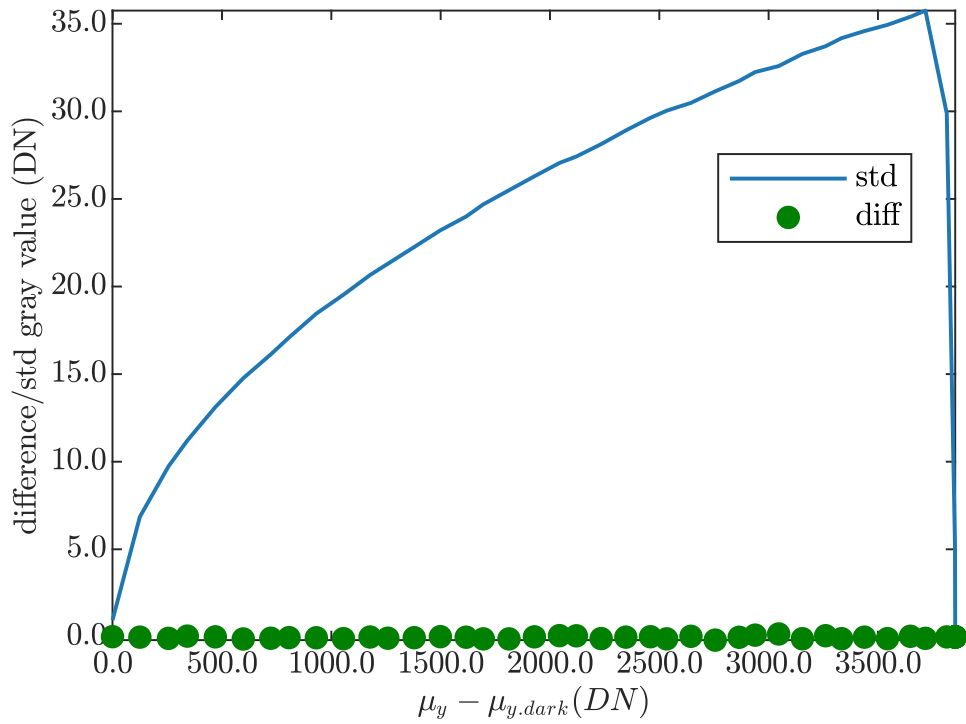


Signal-to-Noise Ratio

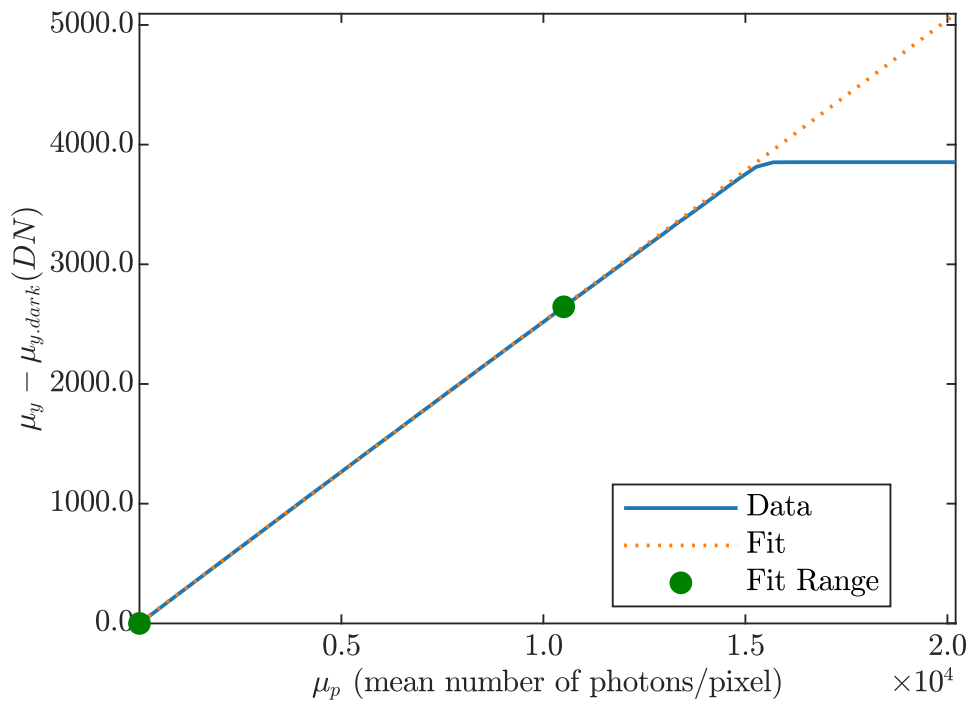


Performance		
Quantum efficiency		
η	70.4865	%
System gain		
K	0.36043	DN/e ⁻
1/K	2.7745	e ⁻ /DN
Temporal dark noise		
σ_d	2.4787	e ⁻
$\sigma_{y,dark}$	0.93887	DN
Signal-to-noise ratio		
SNR _{max}	103.7451	
	40.3194	dB
	6.6969	bit
1/SNR _{max}	0.9639	%
Absolute sensitivity threshold		
$\mu_{e,min}$	3.1048	e ⁻
$\mu_{e,min,area}$	0.36918	e ⁻ /μm ²
Saturation capacity		
$\mu_{e,sat}$	10763.0454	e ⁻
$\mu_{e,sat,area}$	1279.7914	e ⁻ /μm ²
Dynamic range		
DR	3466.5359	
	70.7979	dB
	11.7593	bit
Spatial nonuniformities		
DSNU ₁₂₈₈	0.26012	e ⁻
DSNU _{1288,col}	0.048309	e ⁻
DSNU _{1288,row}	0.1362	e ⁻
DSNU _{1288,pix}	0.21628	e ⁻
PRNU ₁₂₈₈	0.43096	%
PRNU _{1288,col}	0.040067	%
PRNU _{1288,row}	0+0.011027i	%
PRNU _{1288,pix}	0.42923	%
Linearity error		
LE	0.0018902	%
Dark current		
$\mu_{l,mean}$	NaN	e ⁻ /s
$\mu_{l,var}$	6.1238	e ⁻ /s

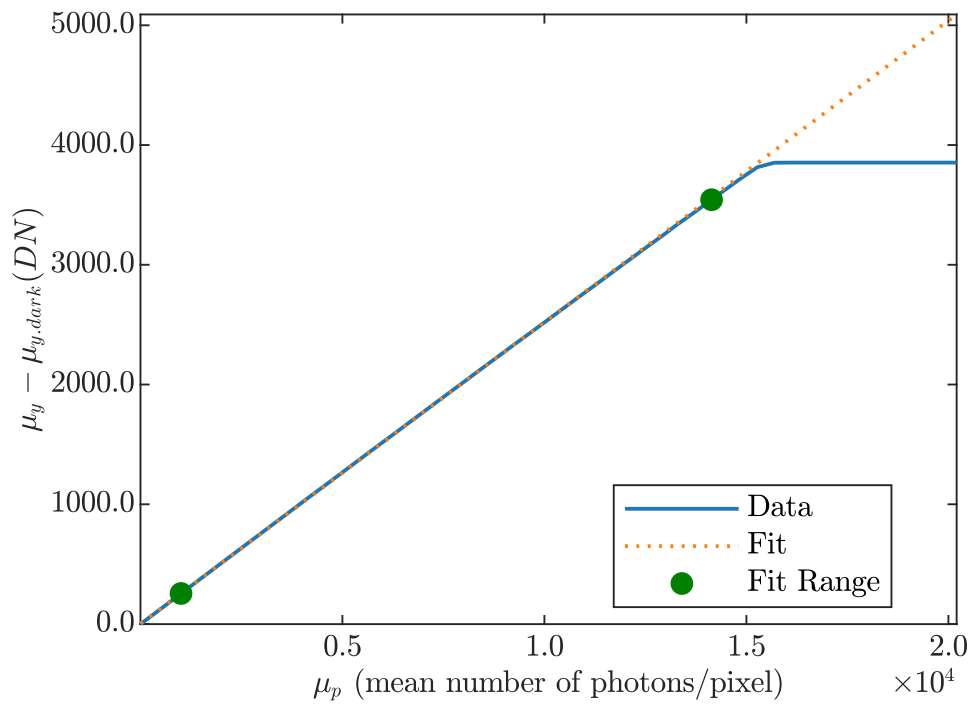
Stability check



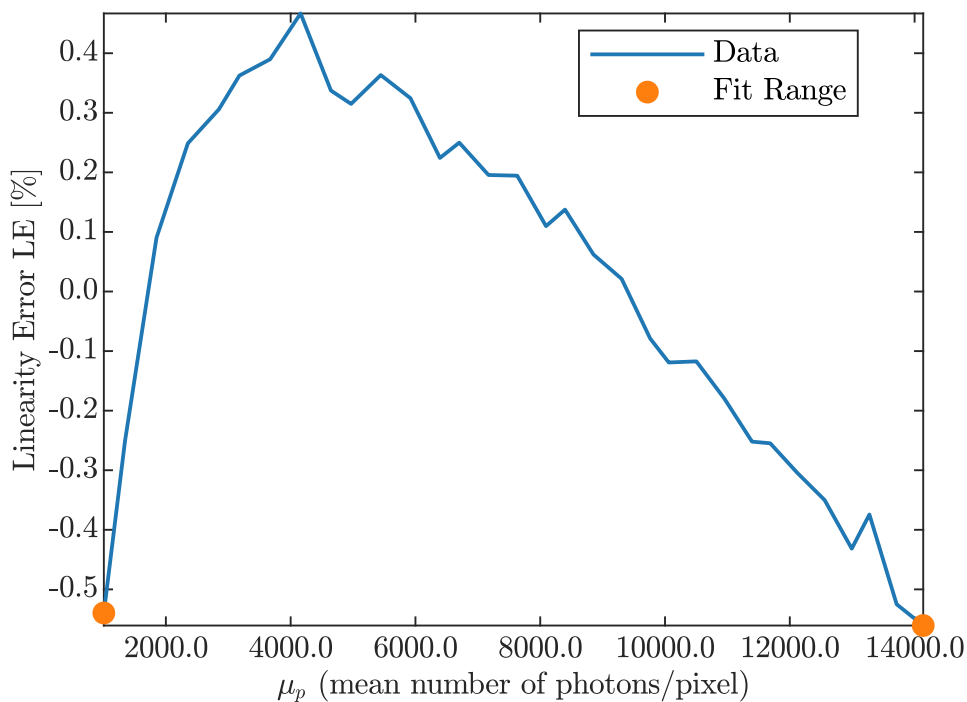
Sensitivity



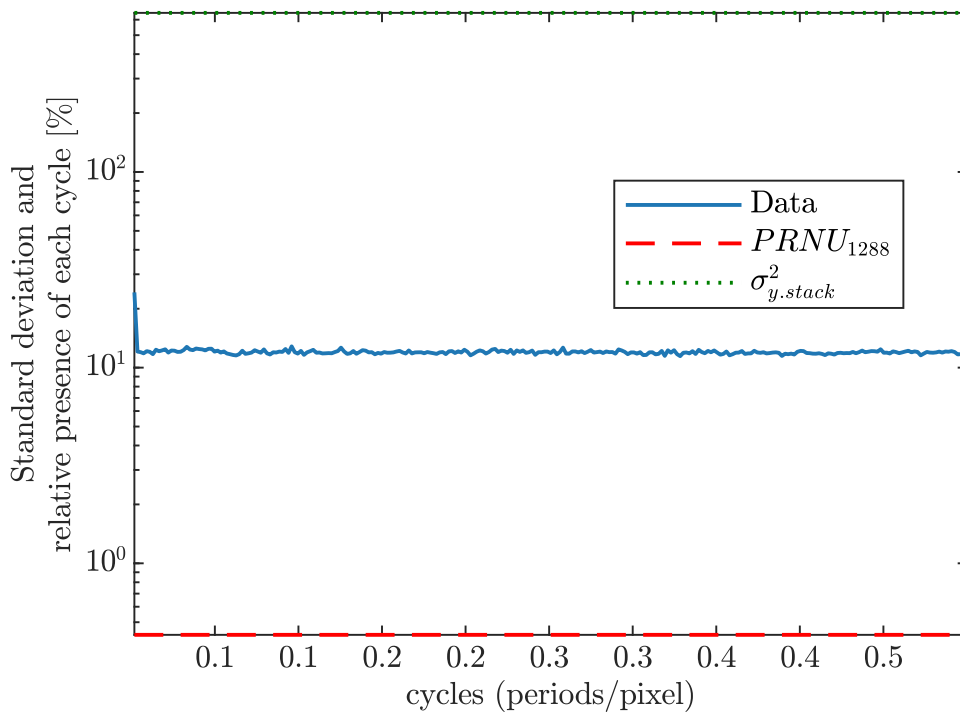
Linearity



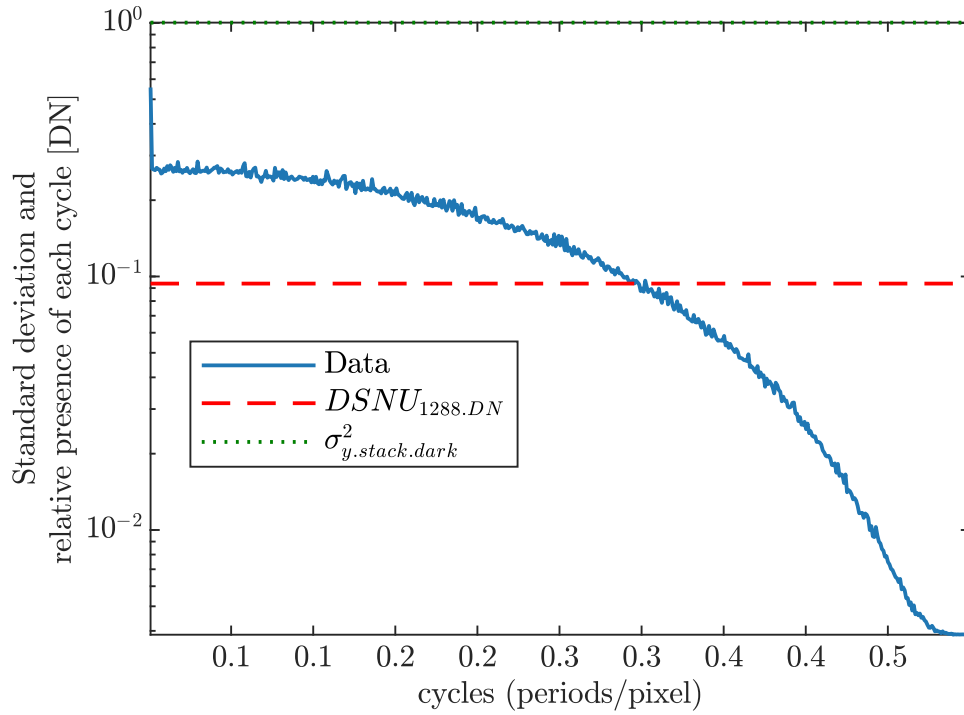
Deviation Linearity



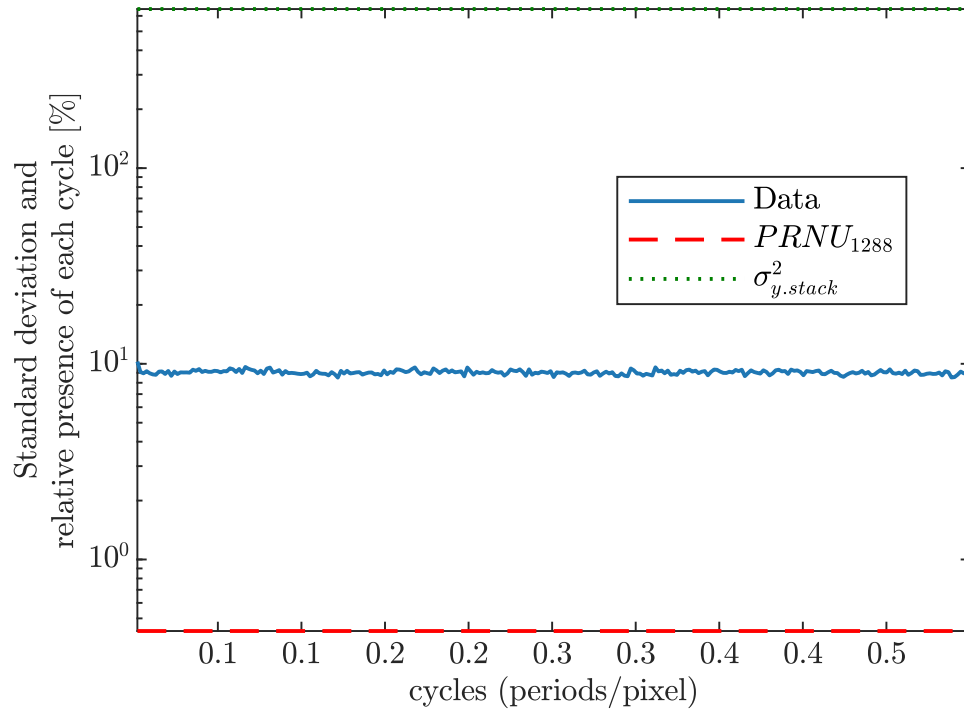
Horizontal Spectrogram PRNU



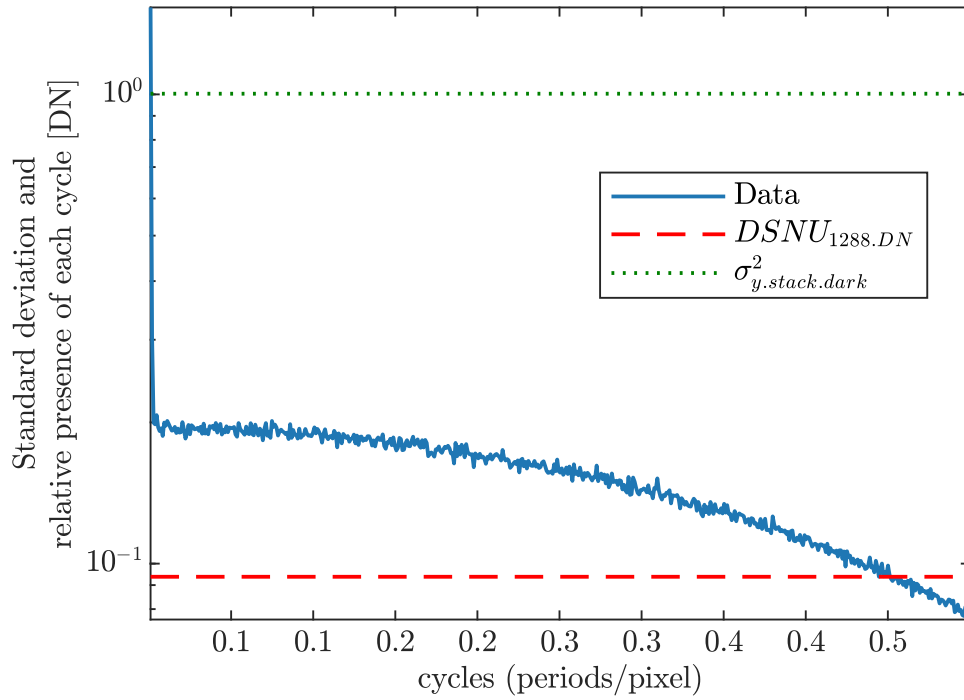
Horizontal Spectrogram DSNU



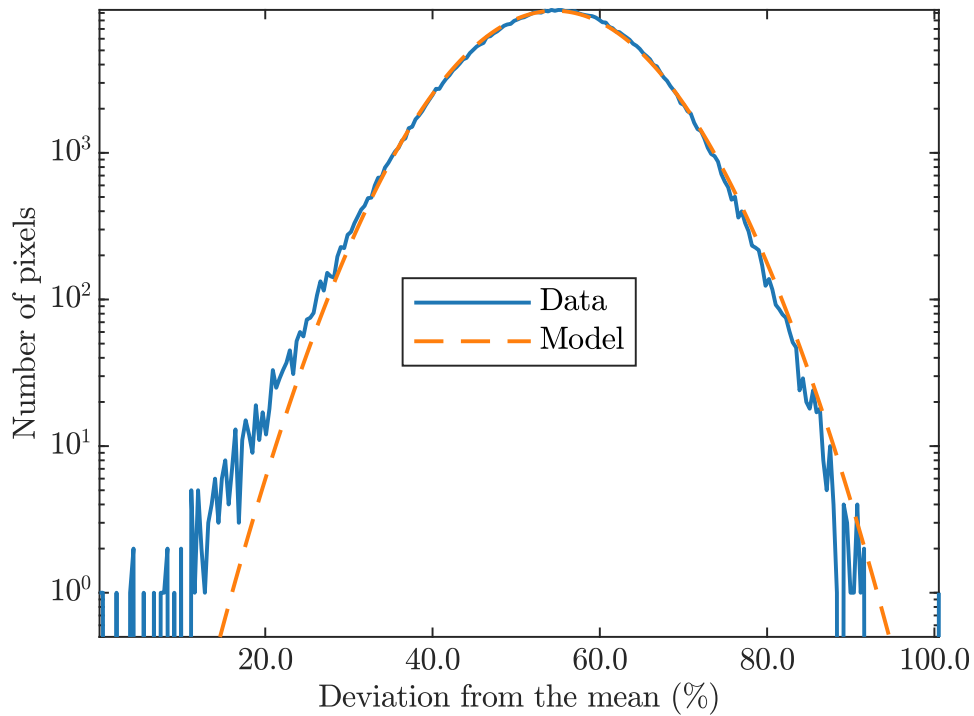
Vertical Spectrogram PRNU



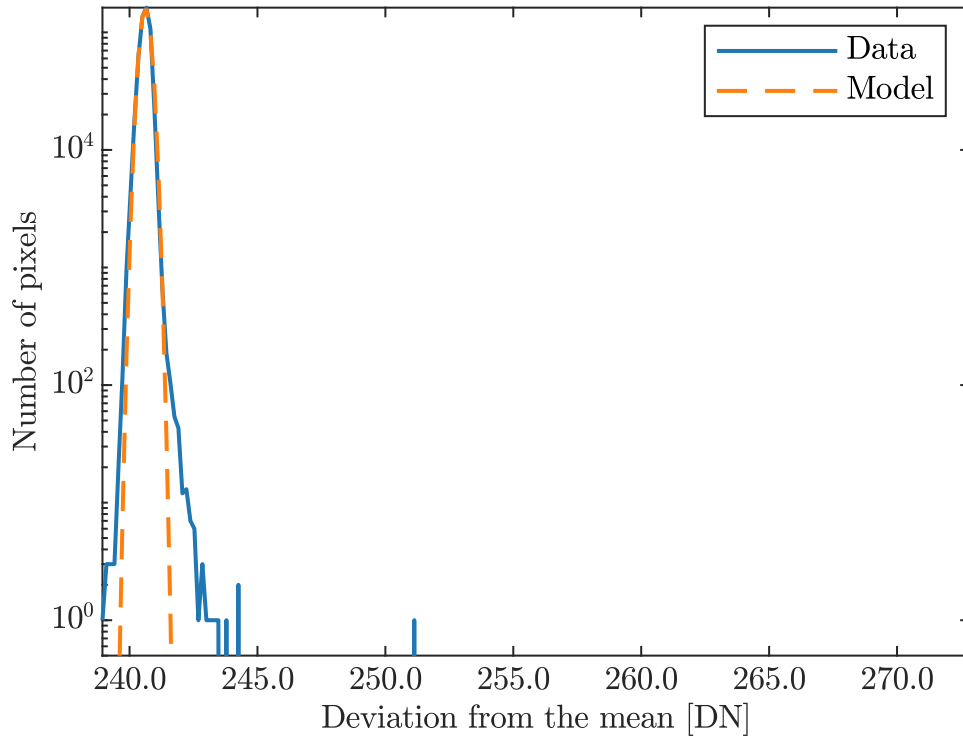
Vertical Spectrogram DSNU



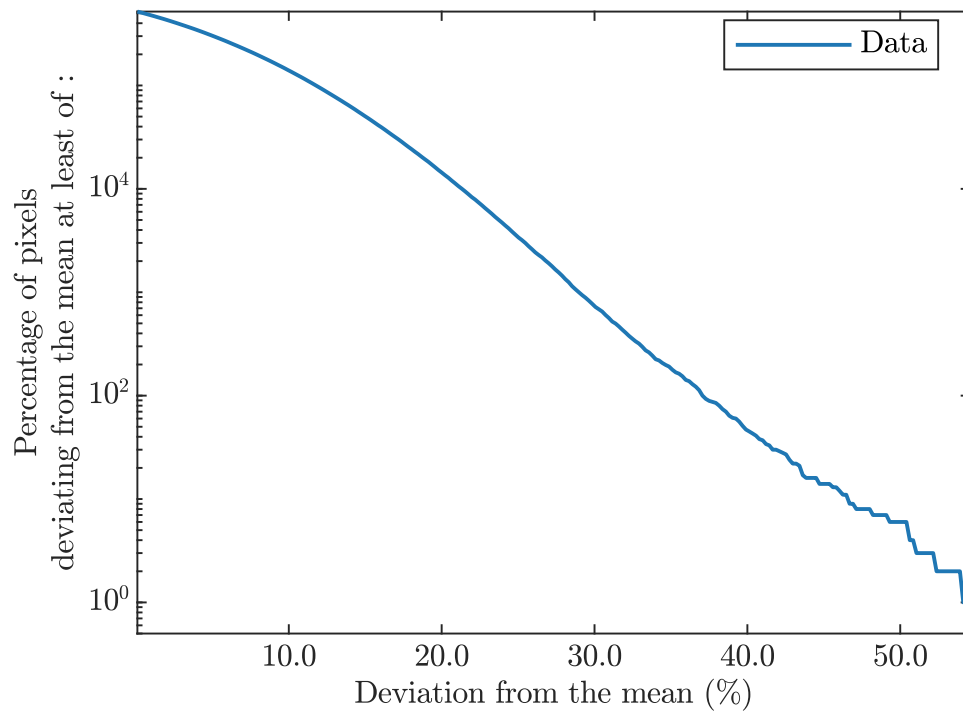
Logarithmic Histogram PRNU



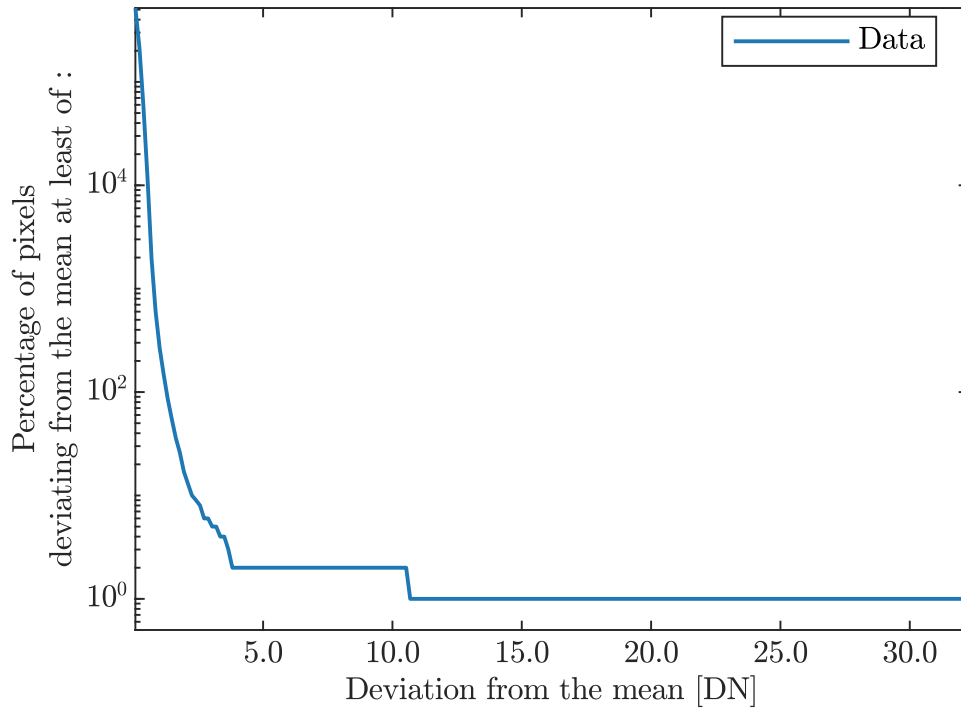
Logarithmic Histogram DSNU



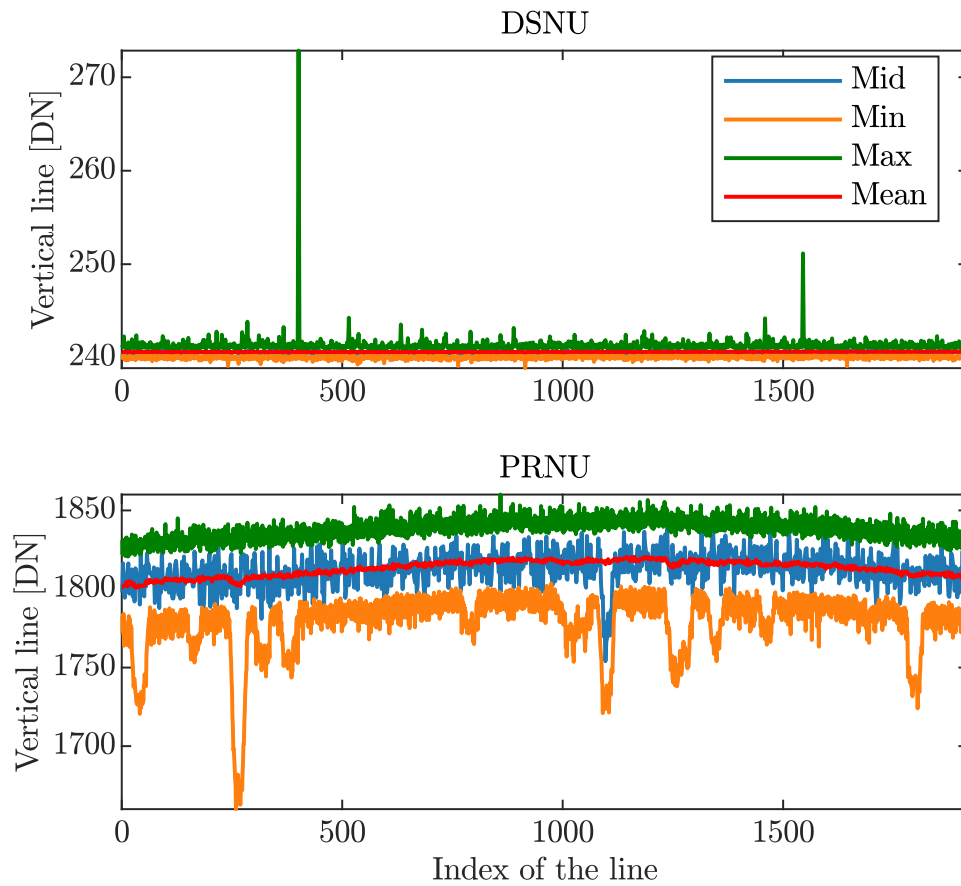
Accumulated Log Histogram PRNU



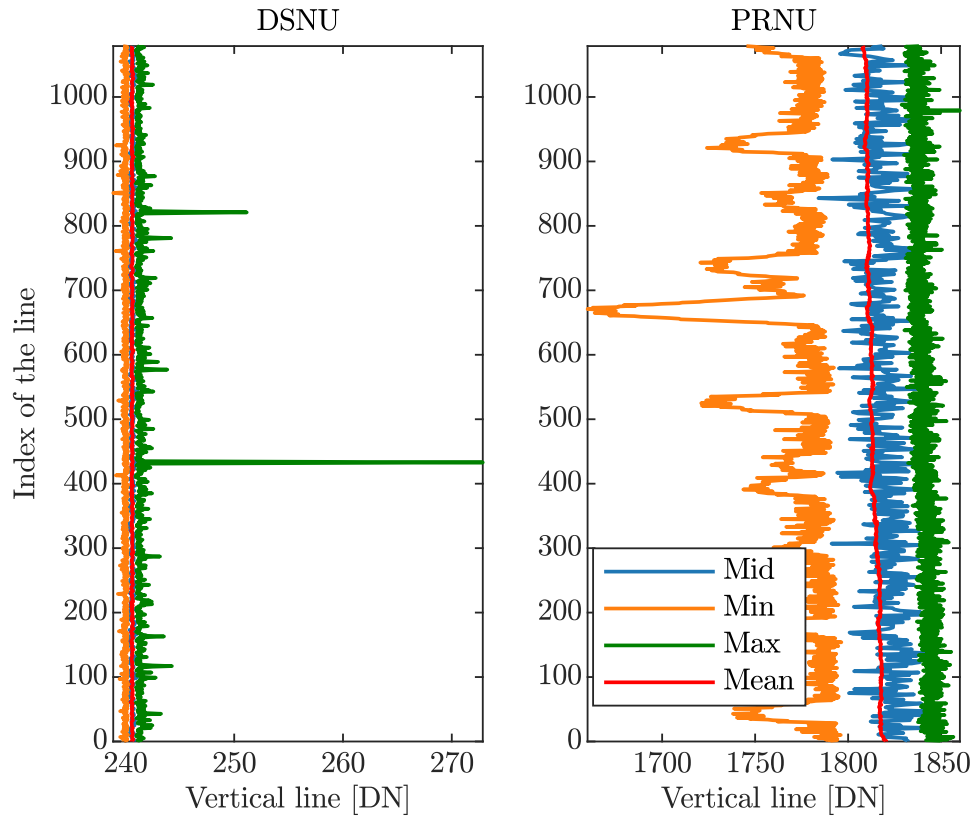
Accumulated Log Histogram DSNU



Horizontal Profile

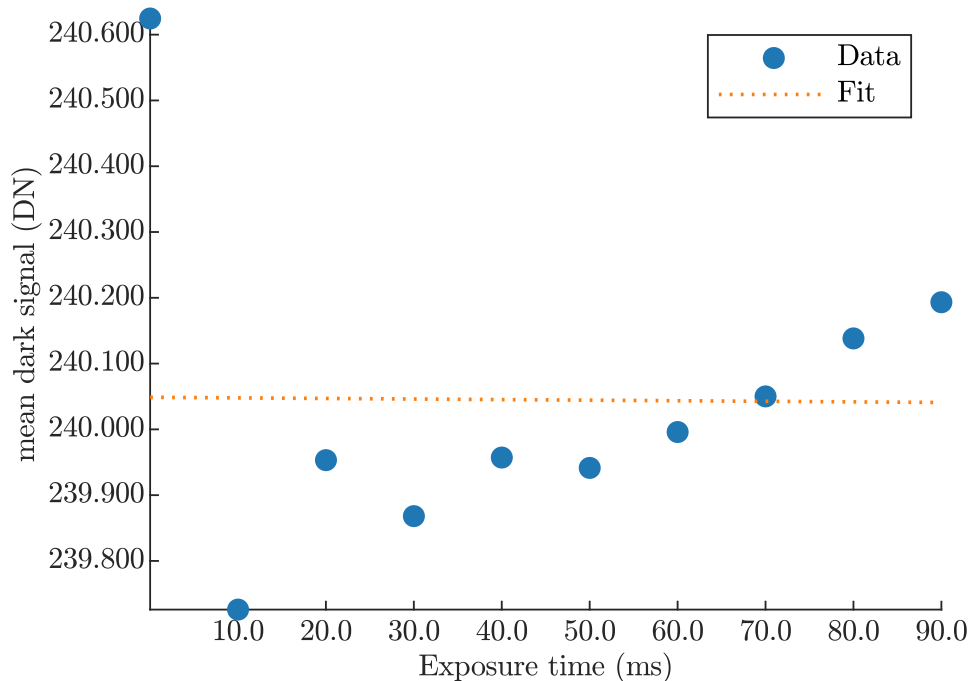


Vertical Profile

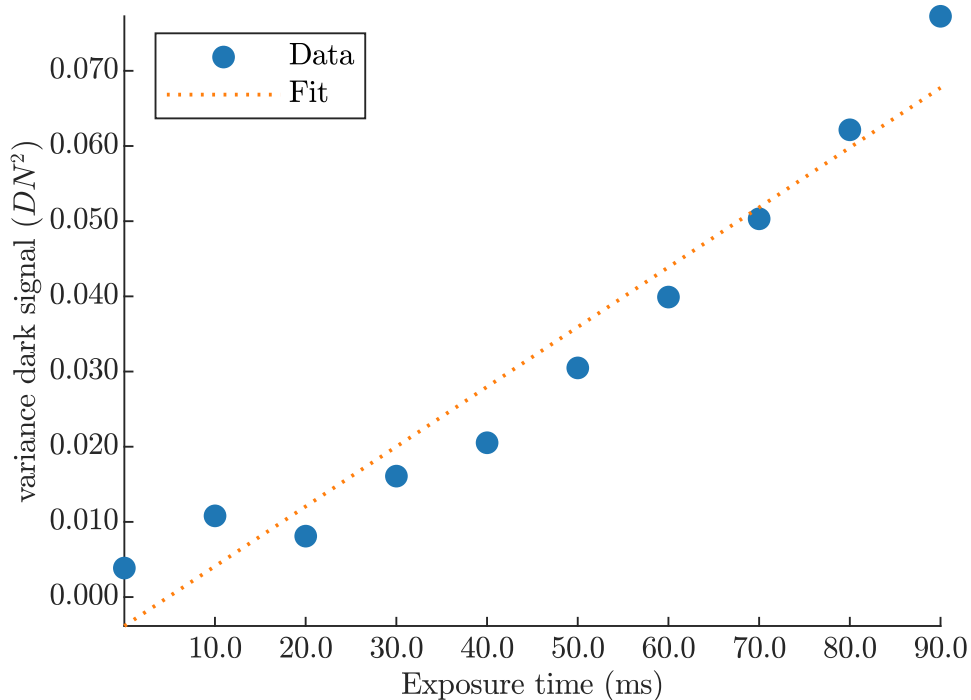


Dark Current

Dark Current from Mean



Dark Current from Variance



International Distributor



Sky Blue Microsystems GmbH
Geisenhausenerstr. 18
81379 Munich, Germany
+49 89 780 2970, info@skyblue.de
www.skyblue.de