

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	Lucid Vision Labs	Pixel size	2.40x2.40 μm
Model	TRT200S-M	Shutter type	Rolling with global reset
Data type	Single camera	Interface type	2.5GBASE-T / 1000BASE-T M12 (8-Pin X-Coded), PoE
Sensor	Sony IMX183	Framerate	9 FPS @ 20 MP
Sensor type	CMOS	Light source	LED, integrating sphere
Diagonal	15.86 mm (Type 1")	Irradiation calibration accuracy	$\pm 3\%$ (440 – 980nm)
Lens category	C-Mount	Standard version	3.1
Resolution	5472x3648 pixels		

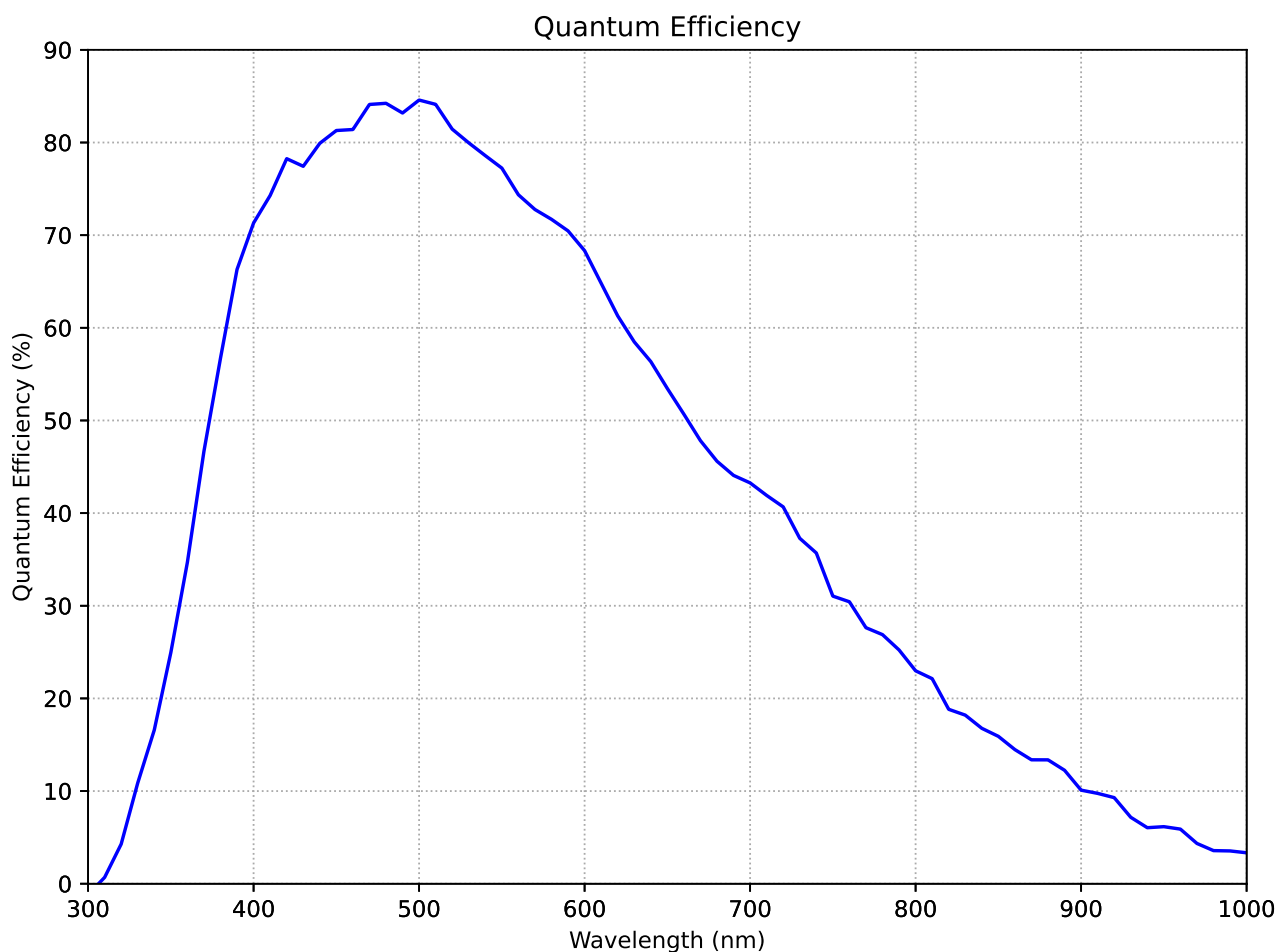
Operation Point: Green LED (Page 2)

Camera setting

Gain	0.0 dB
Black level	1.0%
Bit depth	12 bits

Operation point parameters

Illumination	Constant with variable exposure time
Irradiation steps	50
Wavelength	527.5 nm



Summary sheet for Operation Point: **Green LED** (@527.5 nm wavelength)

Camera setting

Gain	0.0 dB
Black level	1.0%
Bit depth	12 bits

Operation point parameters

Illumination	Constant with variable exposure time
Irradiation steps	50
Wavelength	527.5 nm

Performance

Quantum efficiency

η	82.76 %
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System gain

K	0.264 DN/ e^-
1/K	3.793 e^- /DN

Temporal dark noise

σ_d	3.180 e^-
$\sigma_{y.dark}$	0.887 DN

Signal-to-Noise Ratio

SNR_{max}	122
	41.74 dB
	6.9 bit
SNR_{max}^{-1}	0.819 %

Absolute sensitivity threshold

$\mu_{p.min}$	4.669 p
$\mu_{p.min.area}$	0.811 p/ μm^2
$\mu_{e.min}$	3.864 e^-
$\mu_{e.min.area}$	0.671 $e^-/\mu m^2$

Saturation Capacity

$\mu_{p.sat}$	18025 p
$\mu_{p.sat.area}$	3129 p/ μm^2
$\mu_{e.sat}$	14916 e^-
$\mu_{e.sat.area}$	2590 $e^-/\mu m^2$

Dynamic Range

DR	3861
	71.7 dB
	11.9 bit

Spatial Nonuniformities

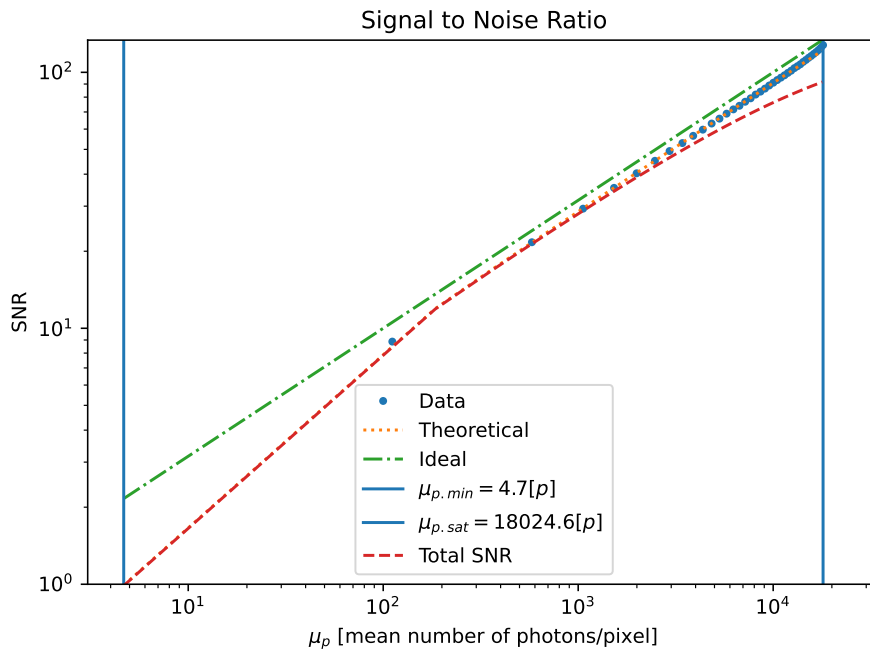
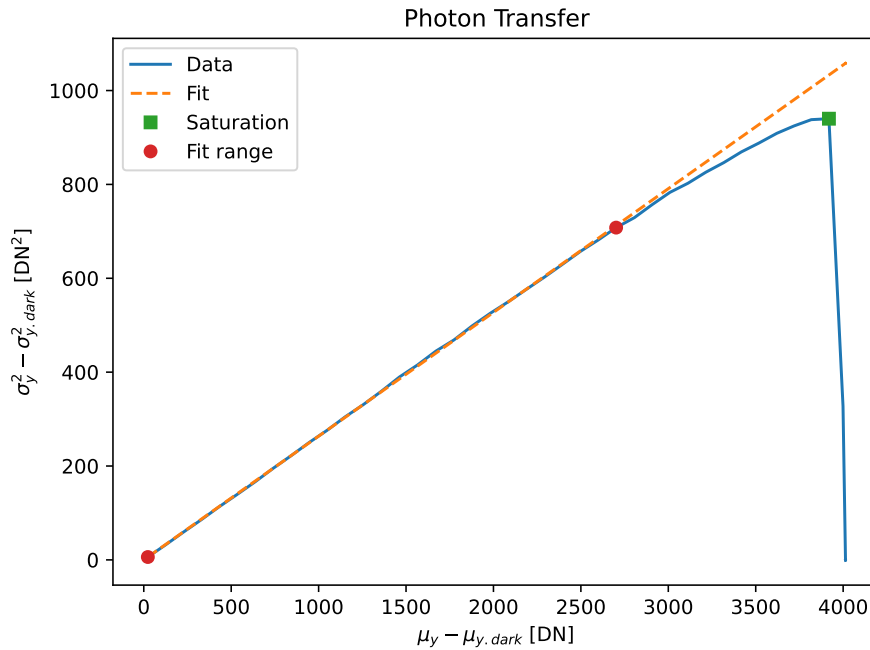
$DSNU_{1288}$	0.4 e^-
	0.1 DN
$PRNU_{1288}$	0.7 %

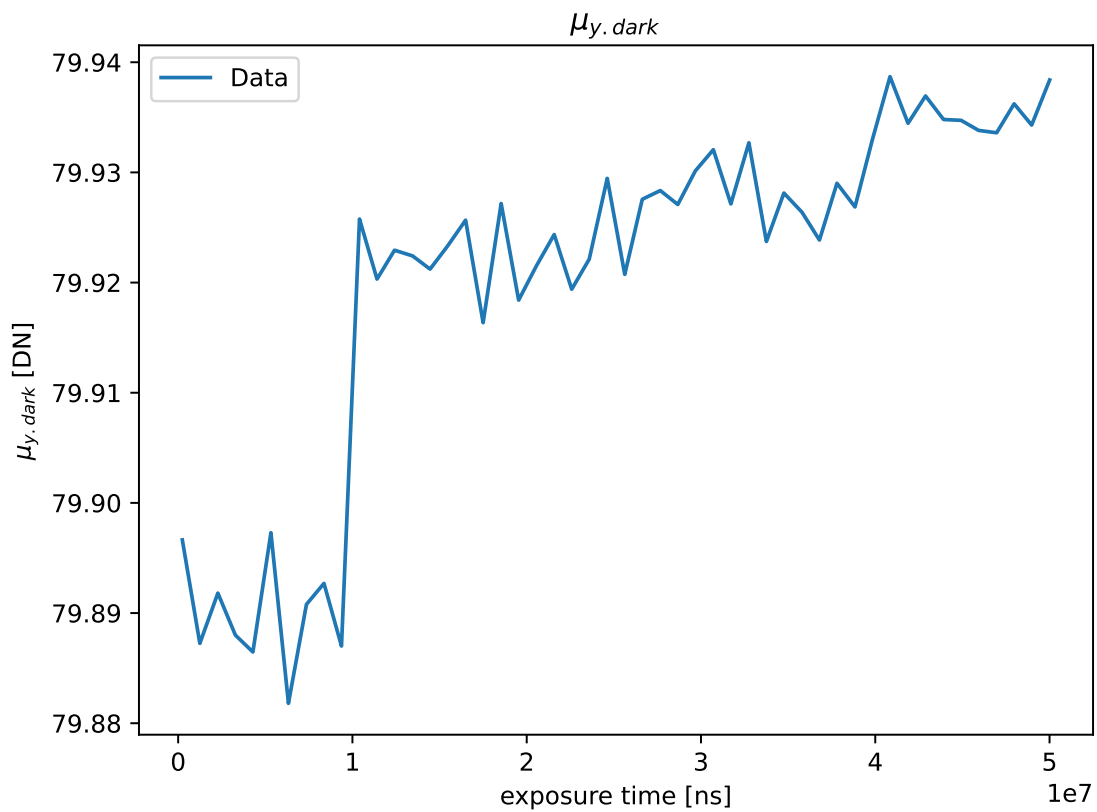
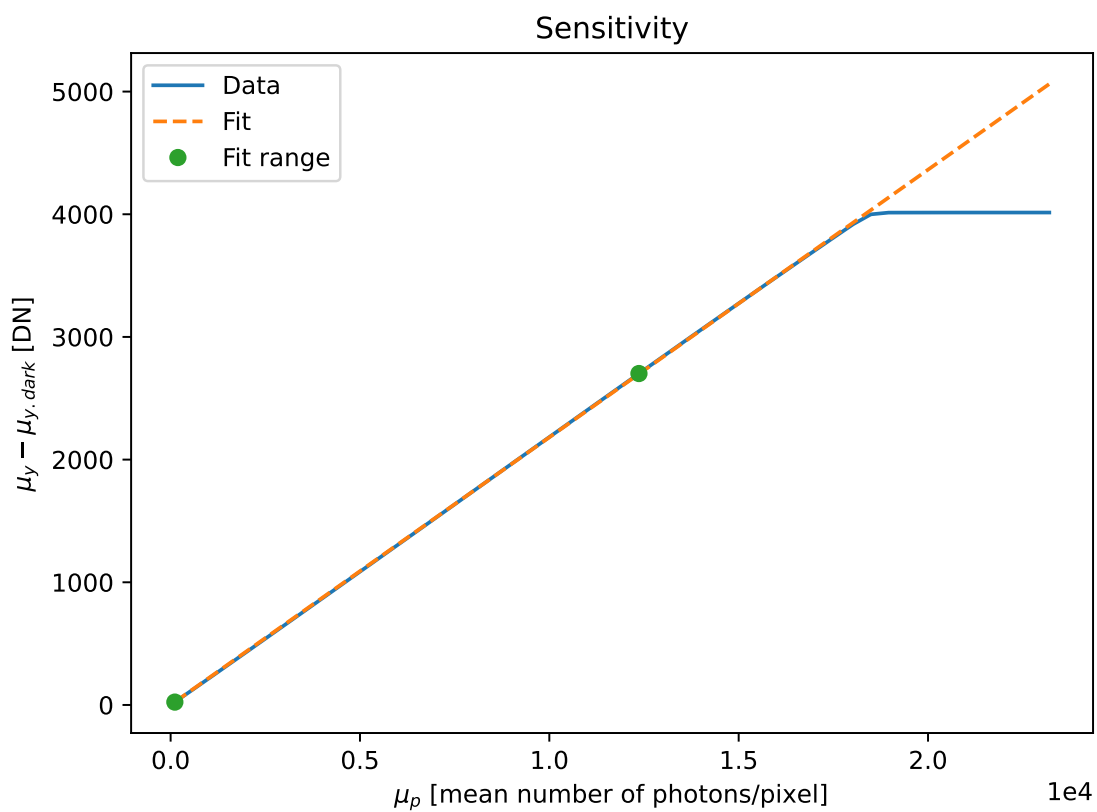
Linearity error

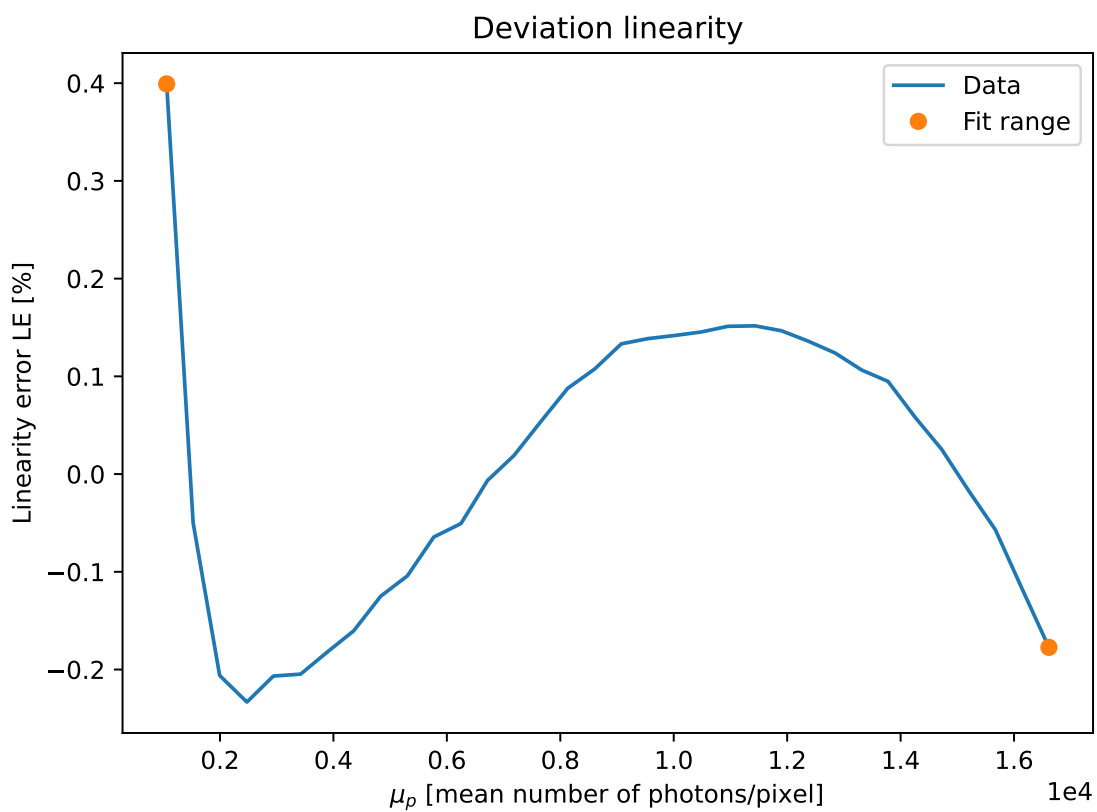
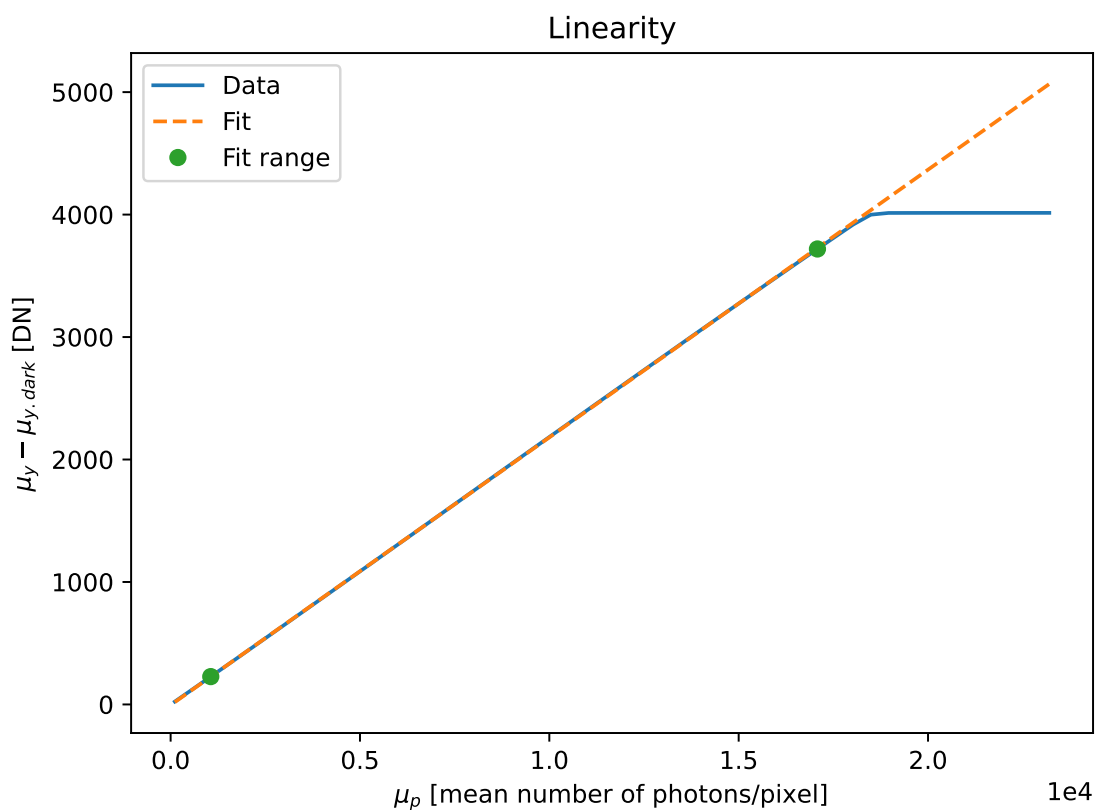
LE_{min}	-0.244 %
LE_{max}	0.399 %

Dark current

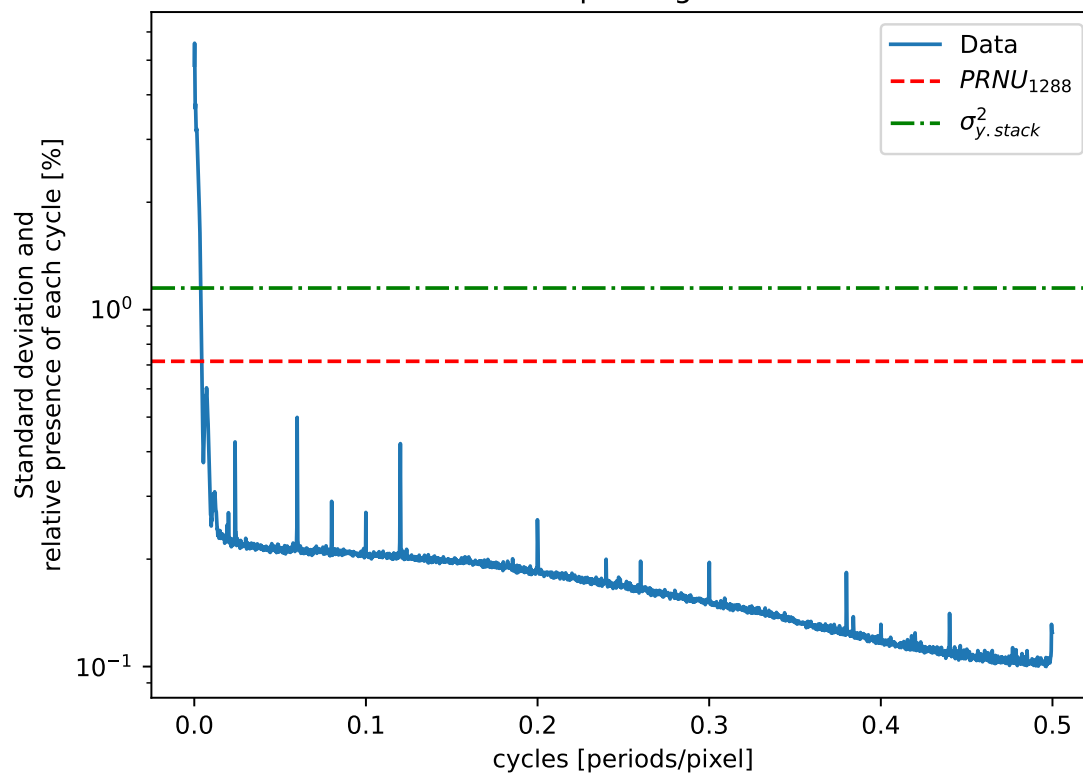
$\mu_{I.mean}$	3.490 e^-/s
	0.920 DN/s
$\mu_{I.var}$	1.392 e^-/s
	0.367 DN/s



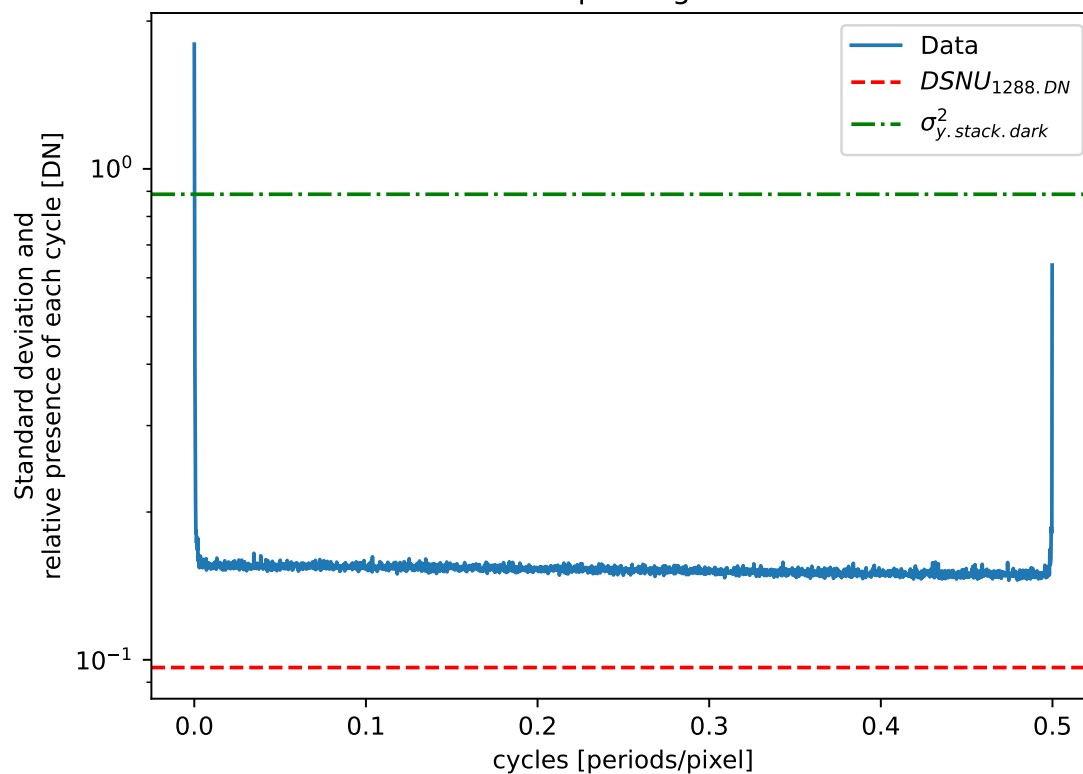


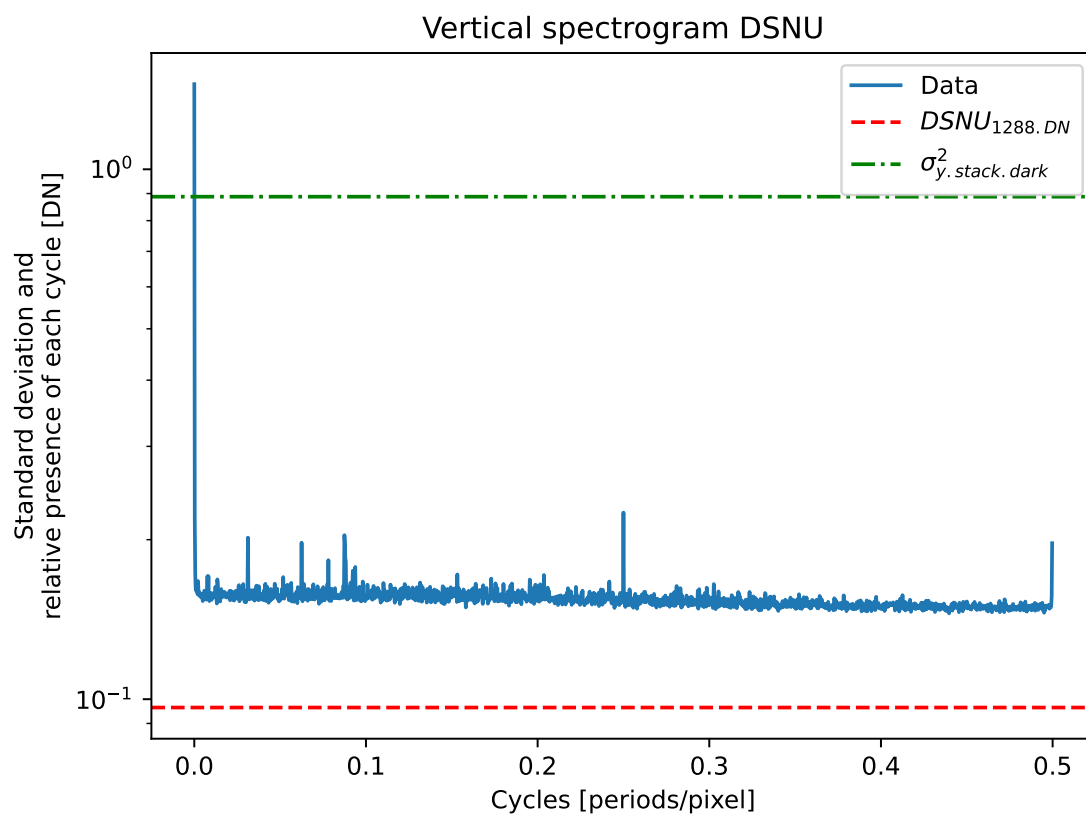
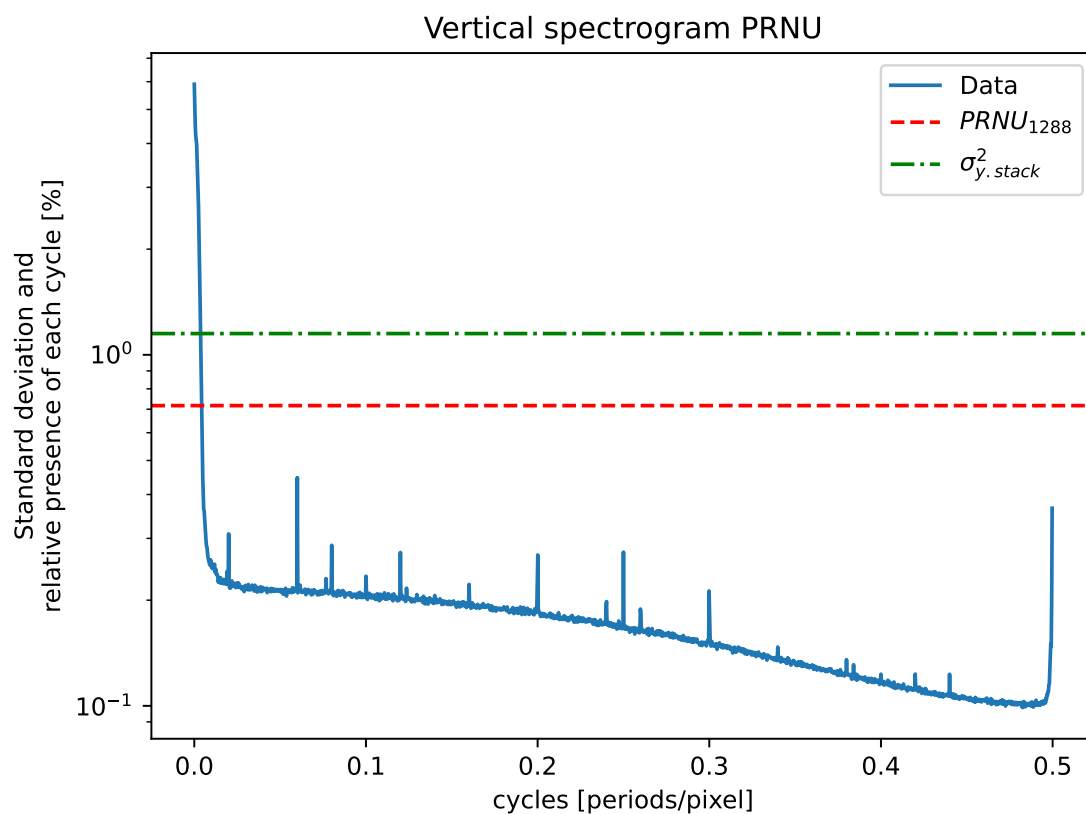


Horizontal spectrogram PRNU

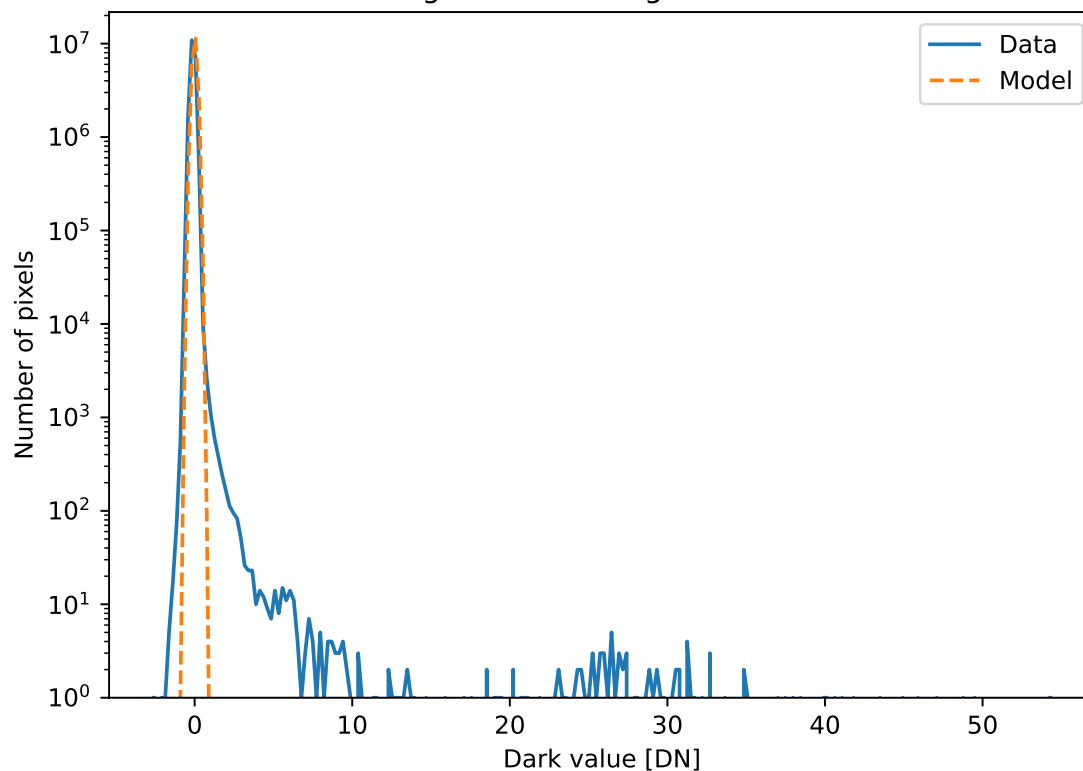


Horizontal spectrogram DSNU

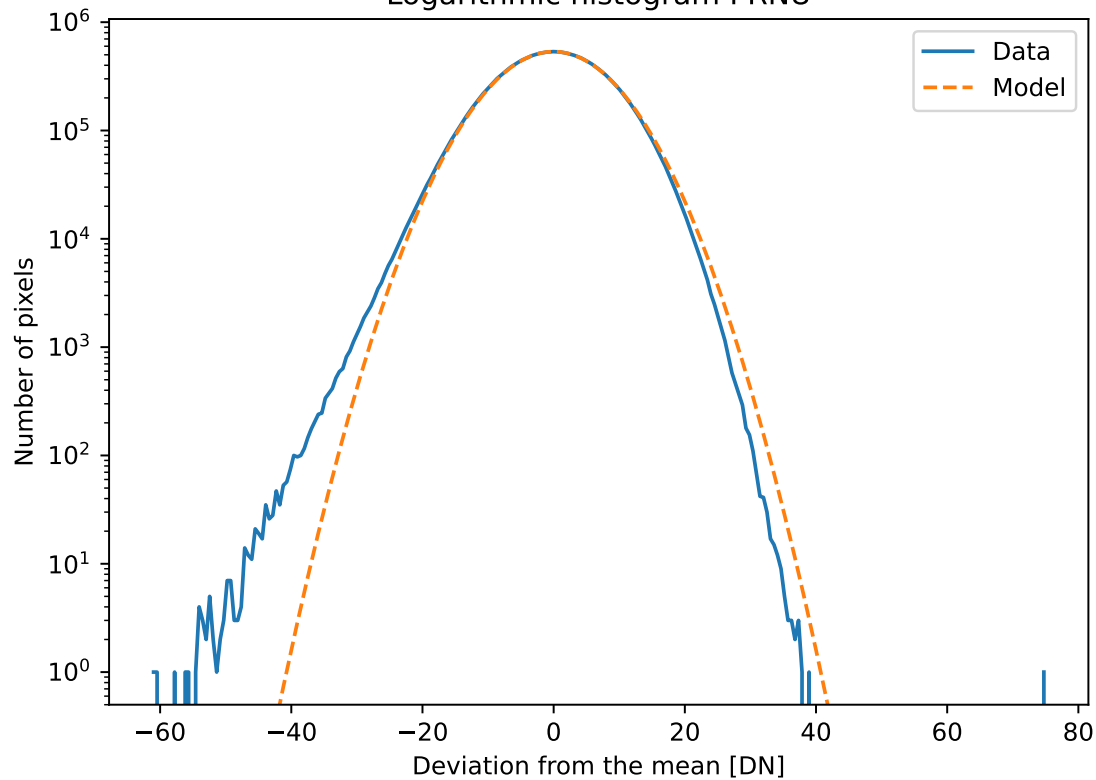




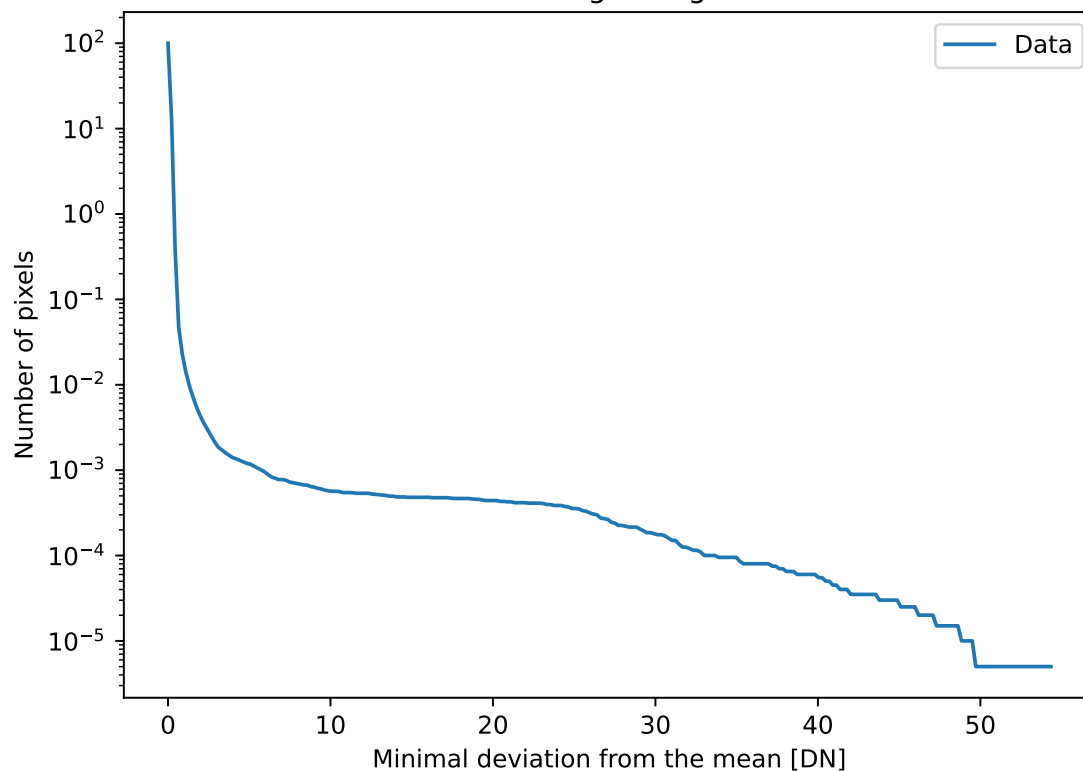
Logarithmic histogram DSNU



Logarithmic histogram PRNU



Accumulated log histogram DSNU



Accumulated log histogram PRNU

