

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	2.74x2.74 μm
Model	TRT204S-M	Shutter type	Global
Data type	Single camera	Interface type	2.5GBASE-T / 1000BASE-T M12 (8-Pin X-Coded), PoE
Sensor	Sony IMX541 CMOS	Framerate	13.5 FPS @ 20.4 MP
Sensor type	CMOS	Light source	LED, integrating sphere
Diagonal	17.5mm (Type 1.1")	Irradiation calibration accuracy	$\pm 3\%$ (440 – 980nm)
Lens category	C-Mount	Standard version	3.1
Resolution	4504x4504 pixels		

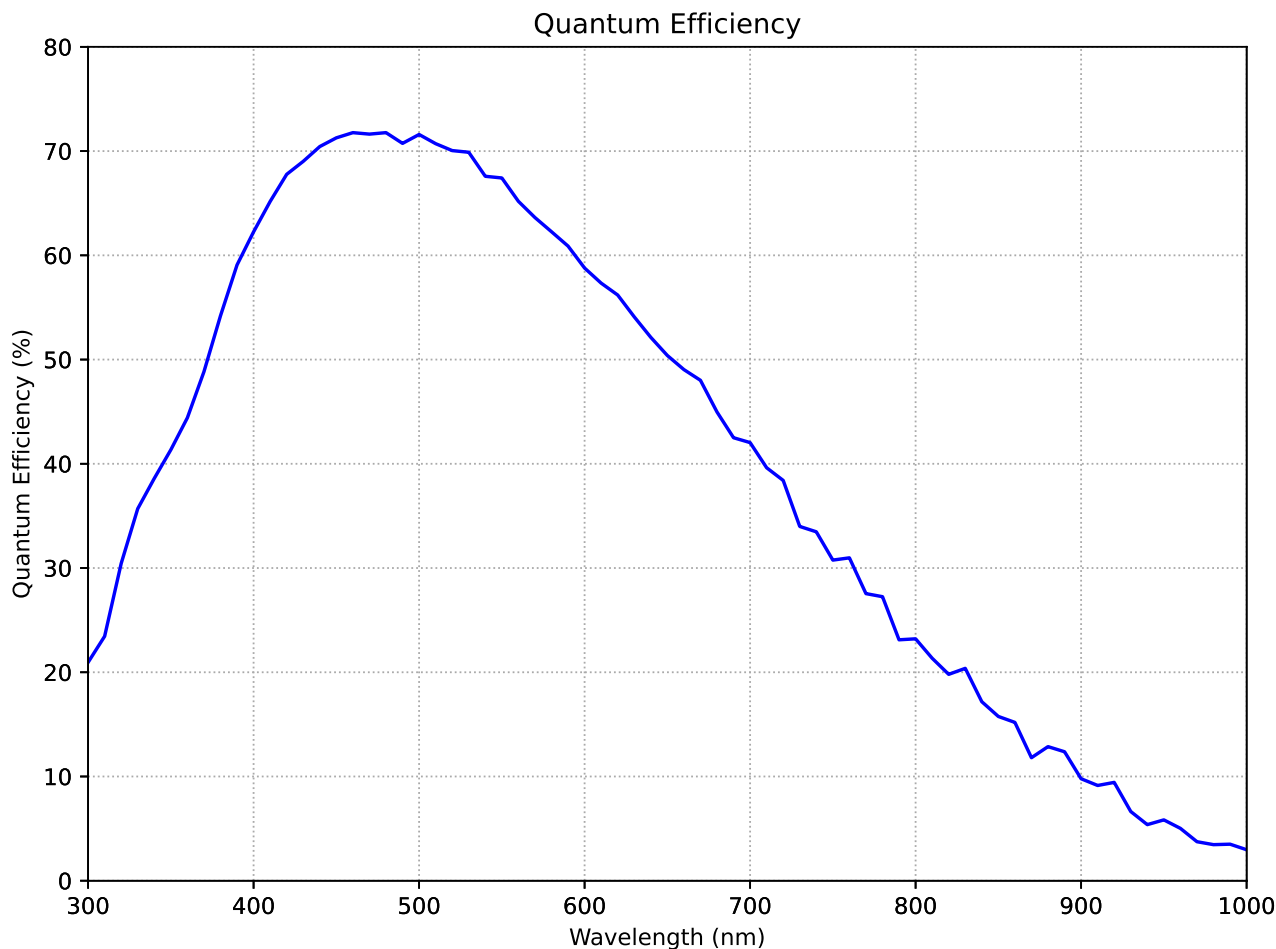
Operation Point: **Green LED** (Page ??)

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



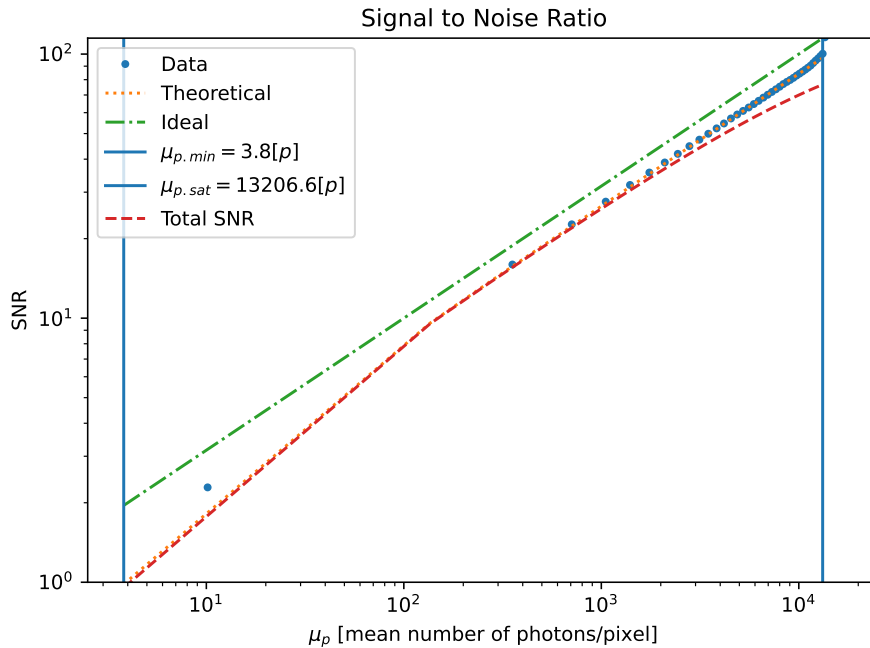
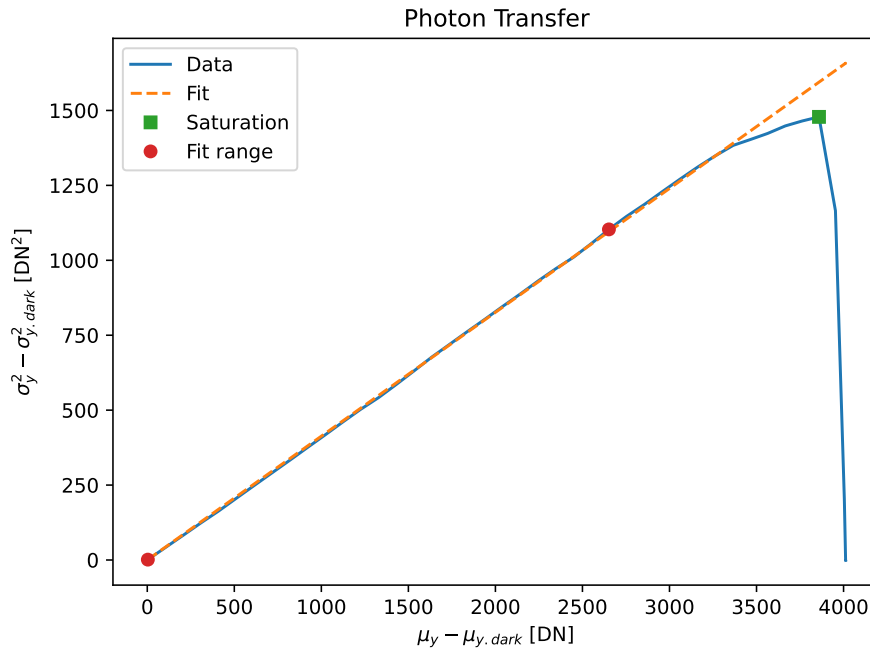
Summary sheet for Operation Point: **Green LED** (@527.5 nm wavelength)

Camera setting

Gain	0.0 dB
Black level	1.0%
Bit depth	12 bits

Operation point parameters

Illumination	Constant with variable exposure time
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Performance

Quantum efficiency

η	70.97 %
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System gain

K	0.413 DN/e ⁻
1/K	2.420 e ⁻ /DN

Temporal dark noise

σ_d	2.095 e ⁻
$\sigma_{y,dark}$	0.912 DN

Signal-to-Noise Ratio

SNR_{max}	97
	39.72 dB
	6.6 bit
SNR_{max}^{-1}	1.033 %

Absolute sensitivity threshold

$\mu_{p,min}$	3.816 p
$\mu_{p,min,area}$	0.508 p/μm ²
$\mu_{e,min}$	2.708 e ⁻
$\mu_{e,min,area}$	0.361 e ⁻ /μm ²

Saturation Capacity

$\mu_{p,sat}$	13207 p
$\mu_{p,sat,area}$	1759 p/μm ²
$\mu_{e,sat}$	9372 e ⁻
$\mu_{e,sat,area}$	1248 e ⁻ /μm ²

Dynamic Range

DR	3461
	70.8 dB
	11.8 bit

Spatial Nonuniformities

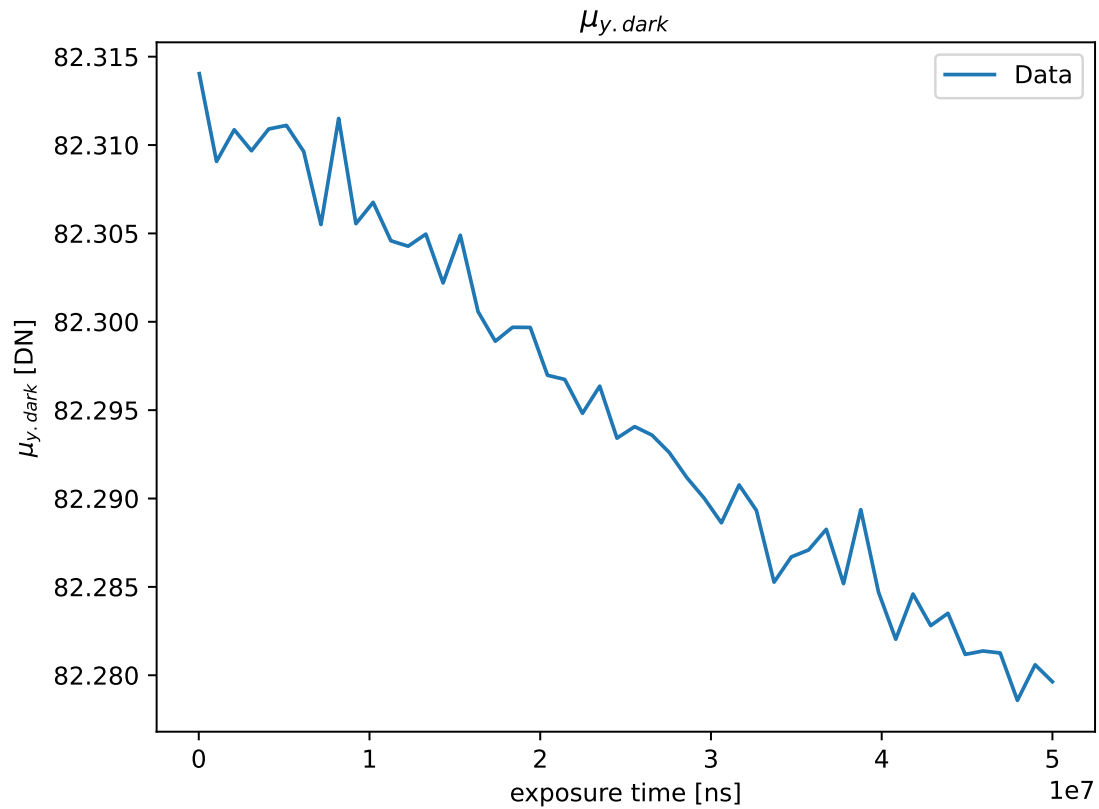
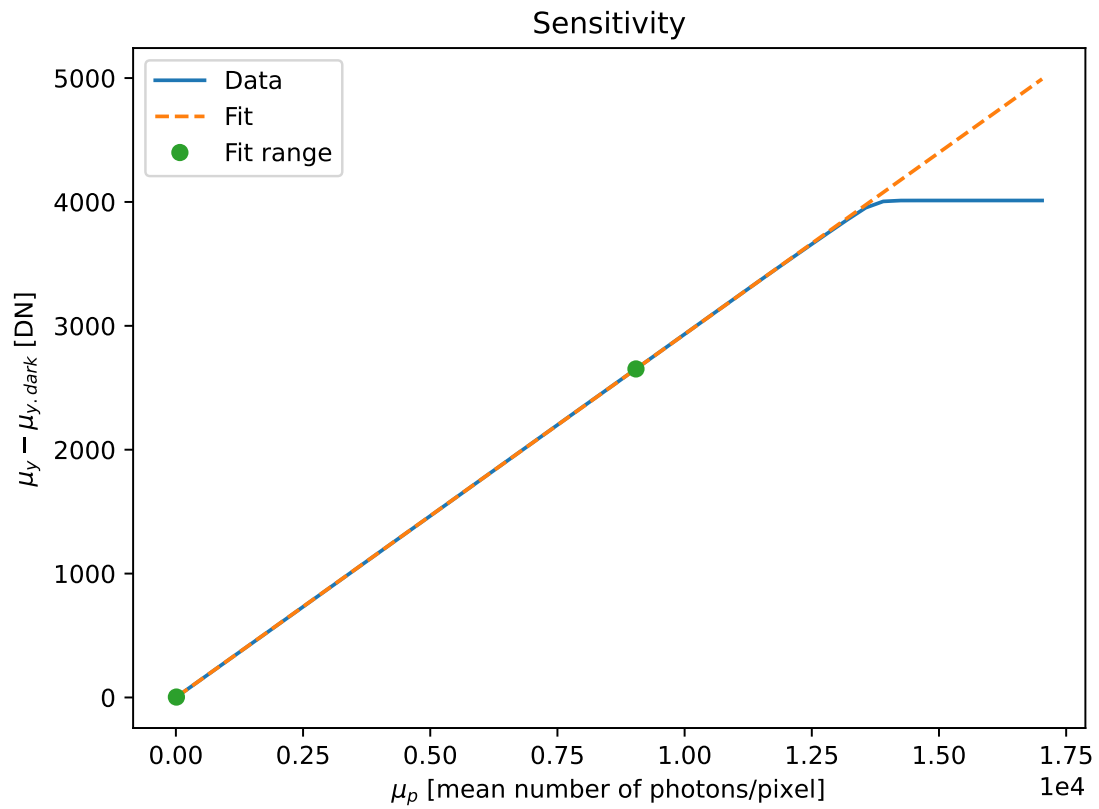
$DSNU_{1288}$	0.7 e ⁻
	0.3 DN
$PRNU_{1288}$	0.8 %

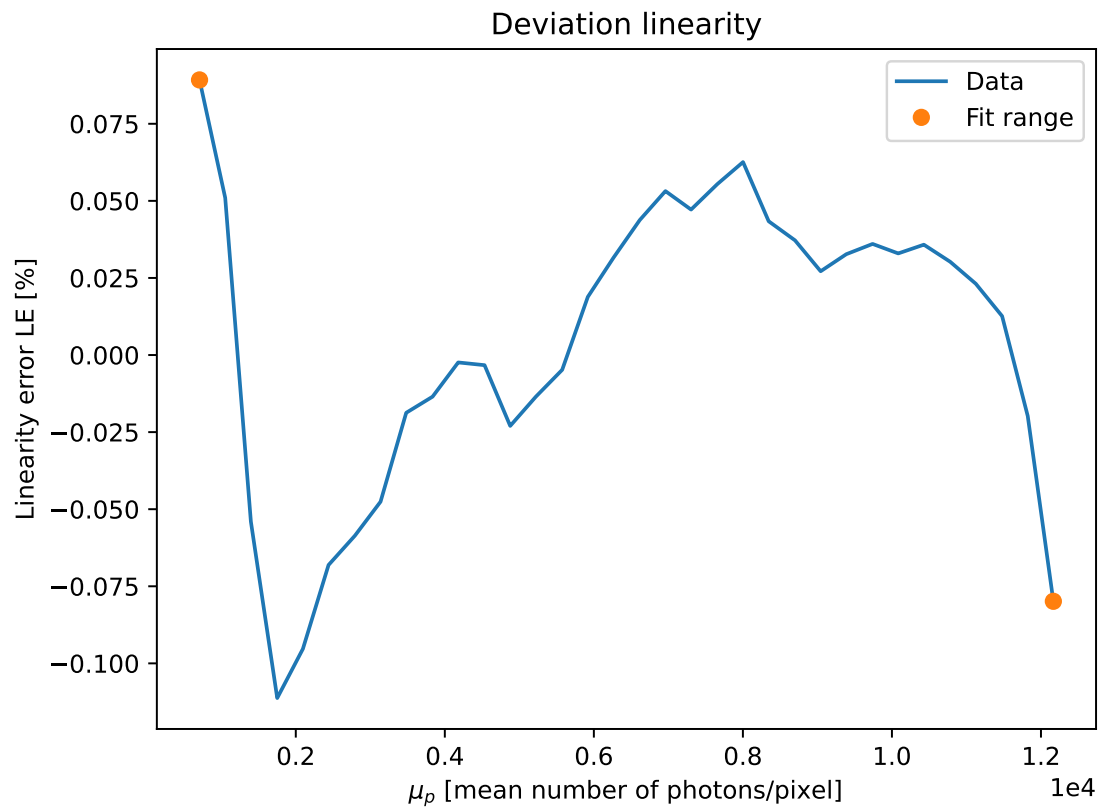
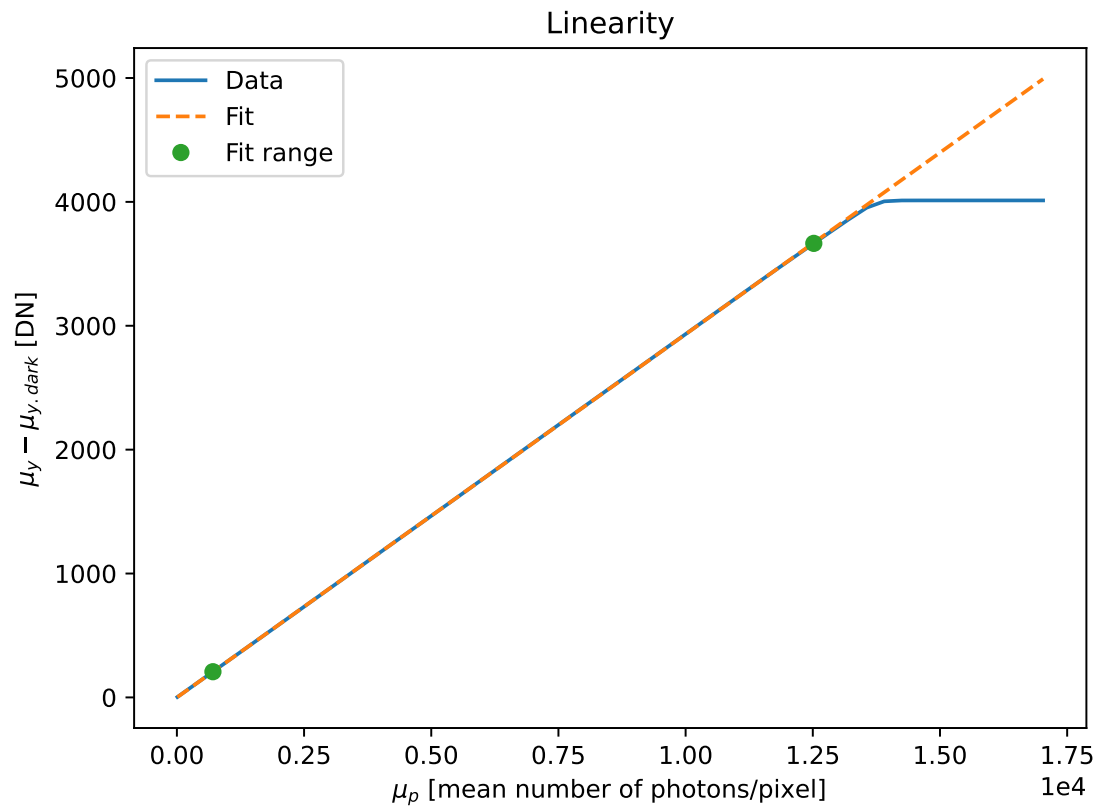
Linearity error

LE_{min}	-0.148 %
LE_{max}	0.089 %

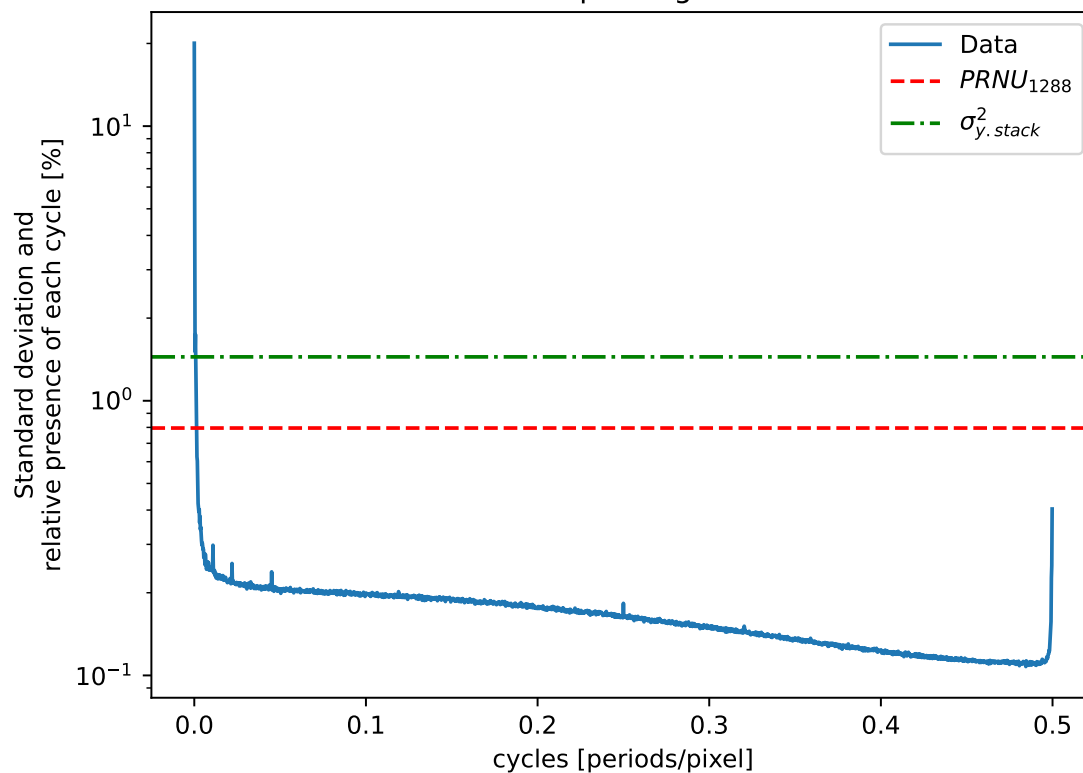
Dark current

$\mu_{I,mean}$	-1.686 e ⁻ /s
	-0.696 DN/s
$\mu_{I,var}$	1.676 e ⁻ /s
	0.693 DN/s

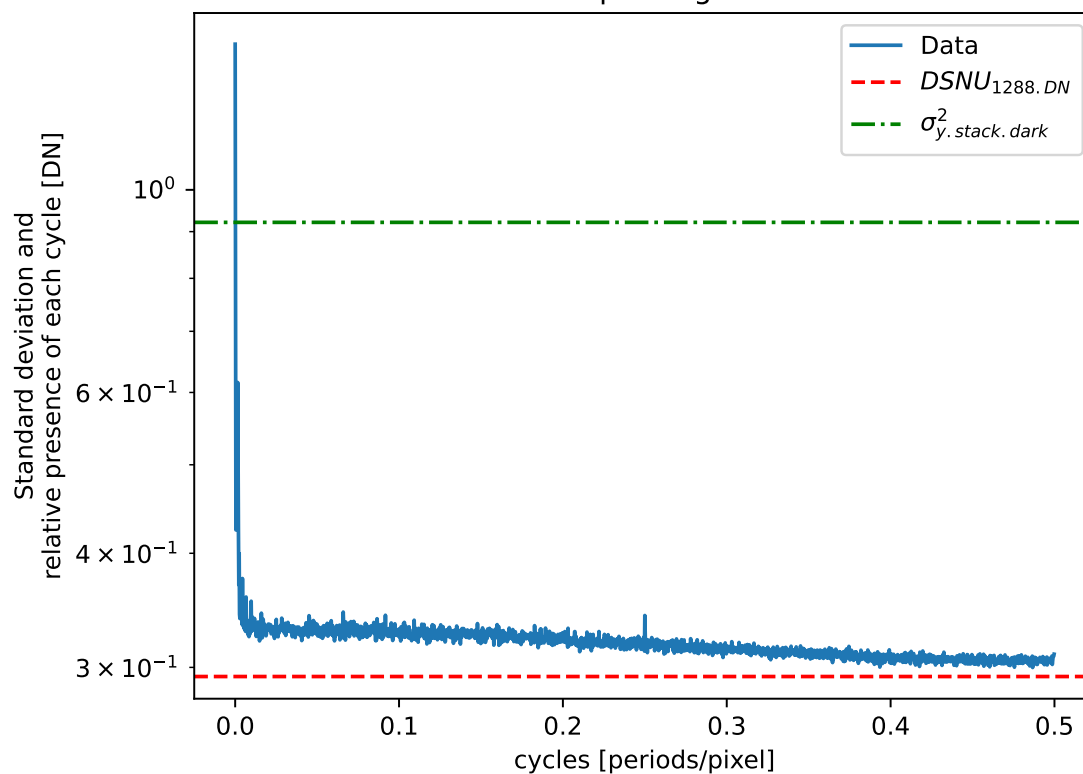




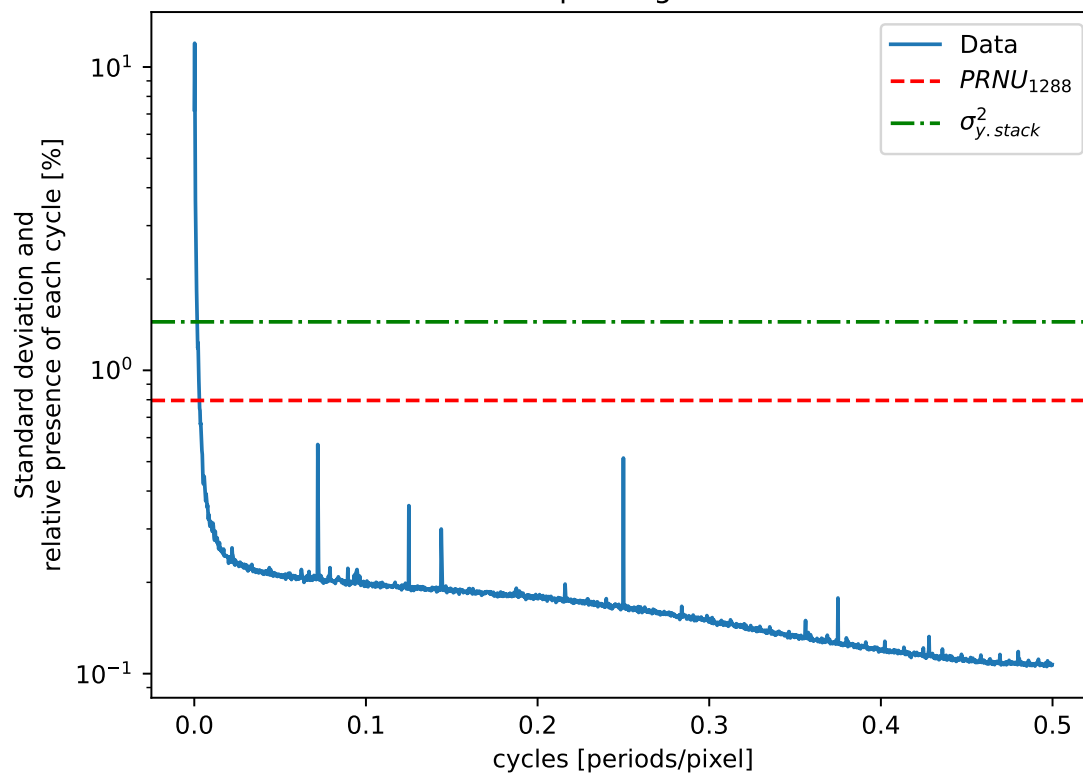
Horizontal spectrogram PRNU



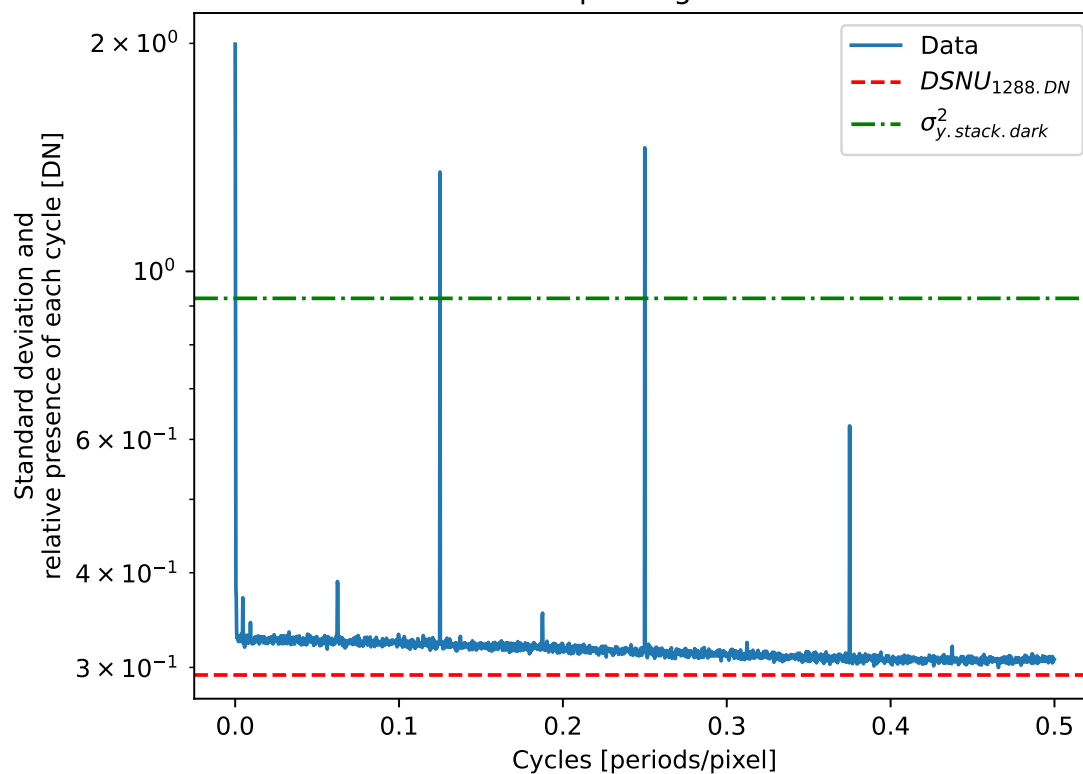
Horizontal spectrogram DSNU



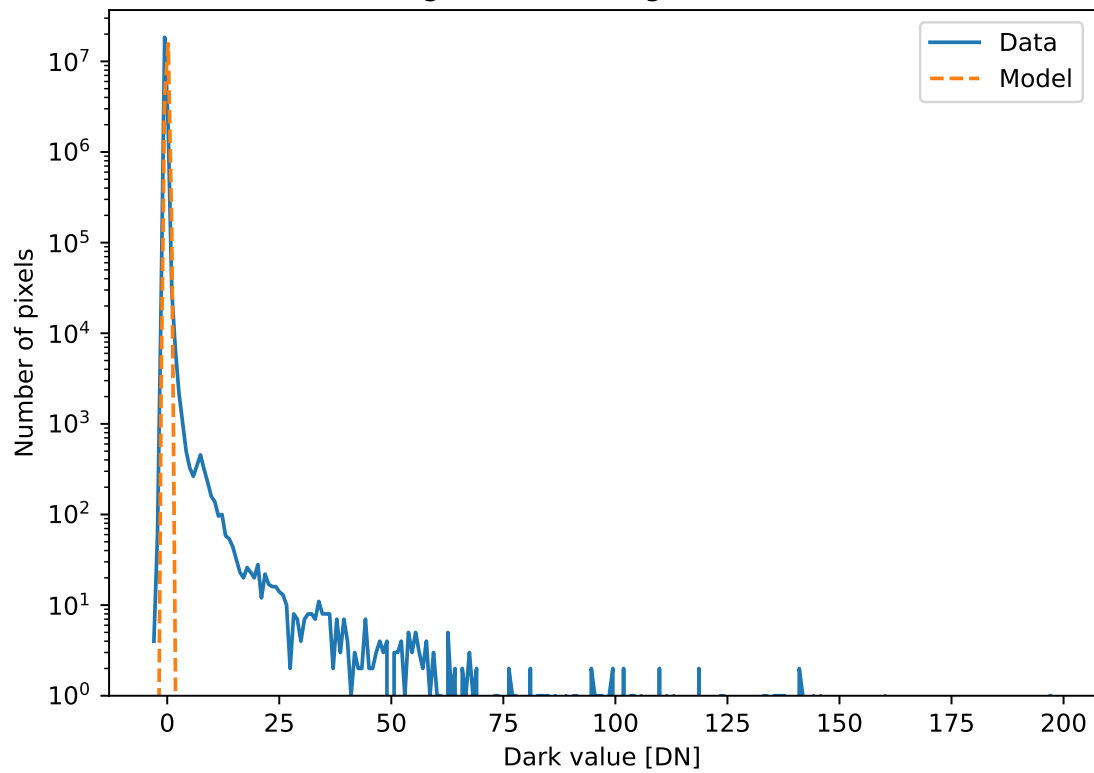
Vertical spectrogram PRNU



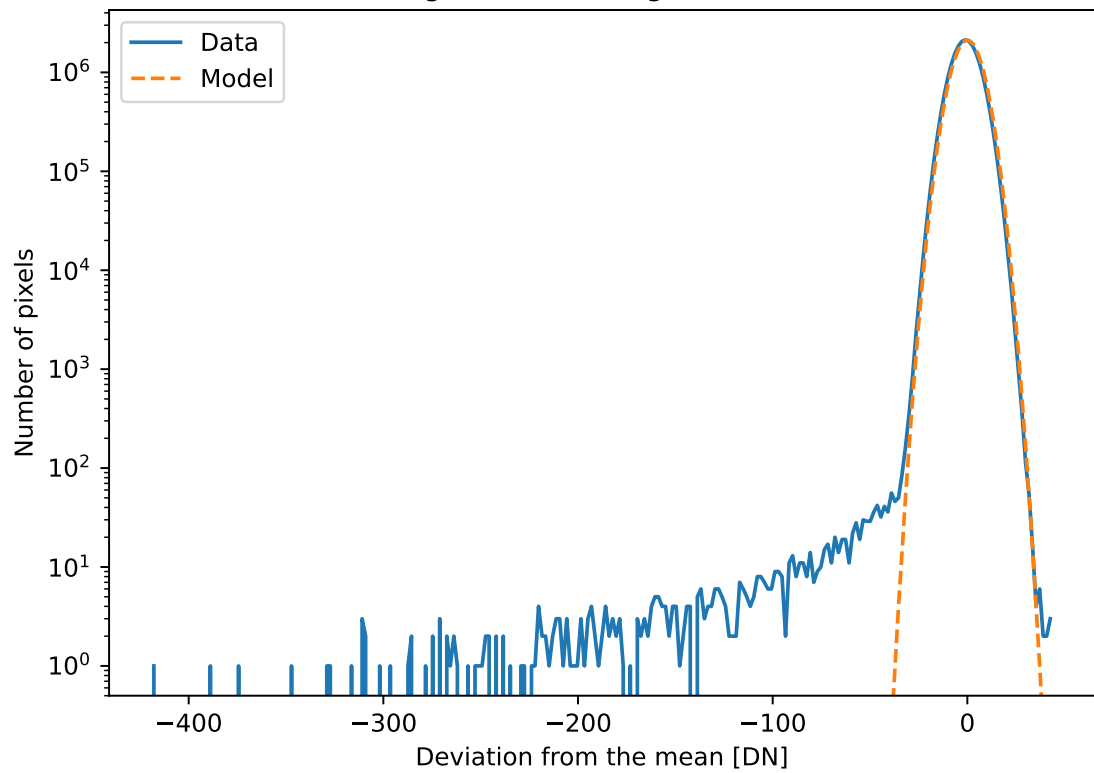
Vertical spectrogram DSNU



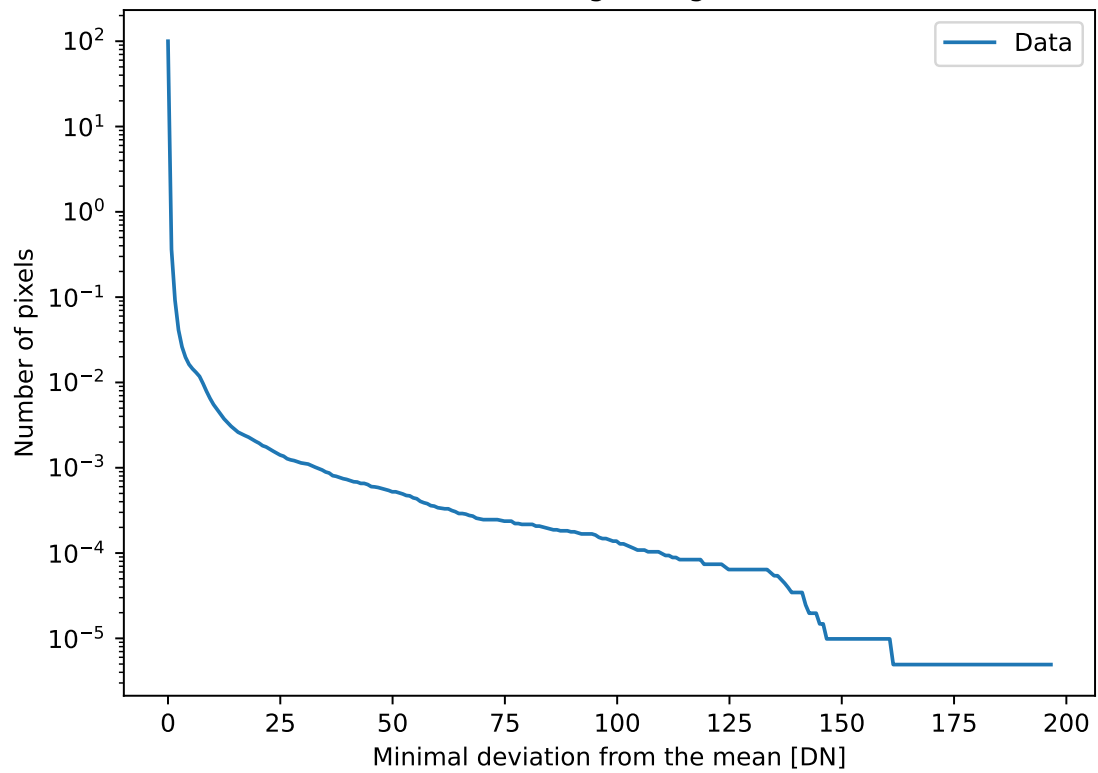
Logarithmic histogram DSNU



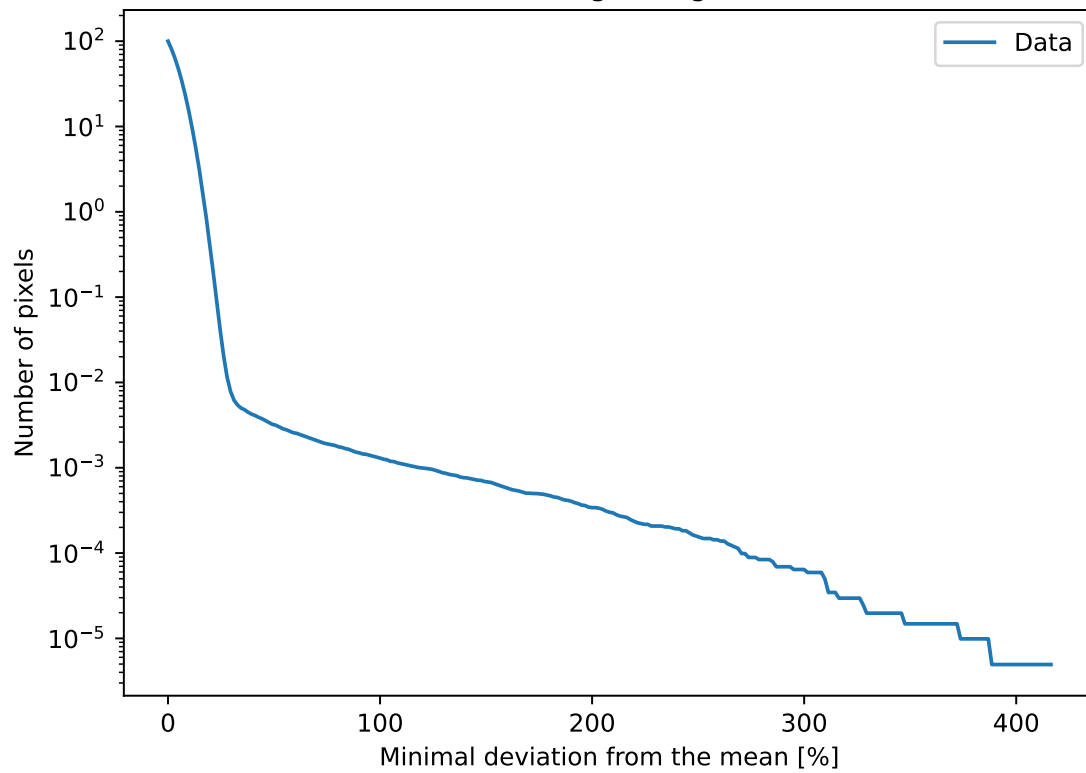
Logarithmic histogram PRNU



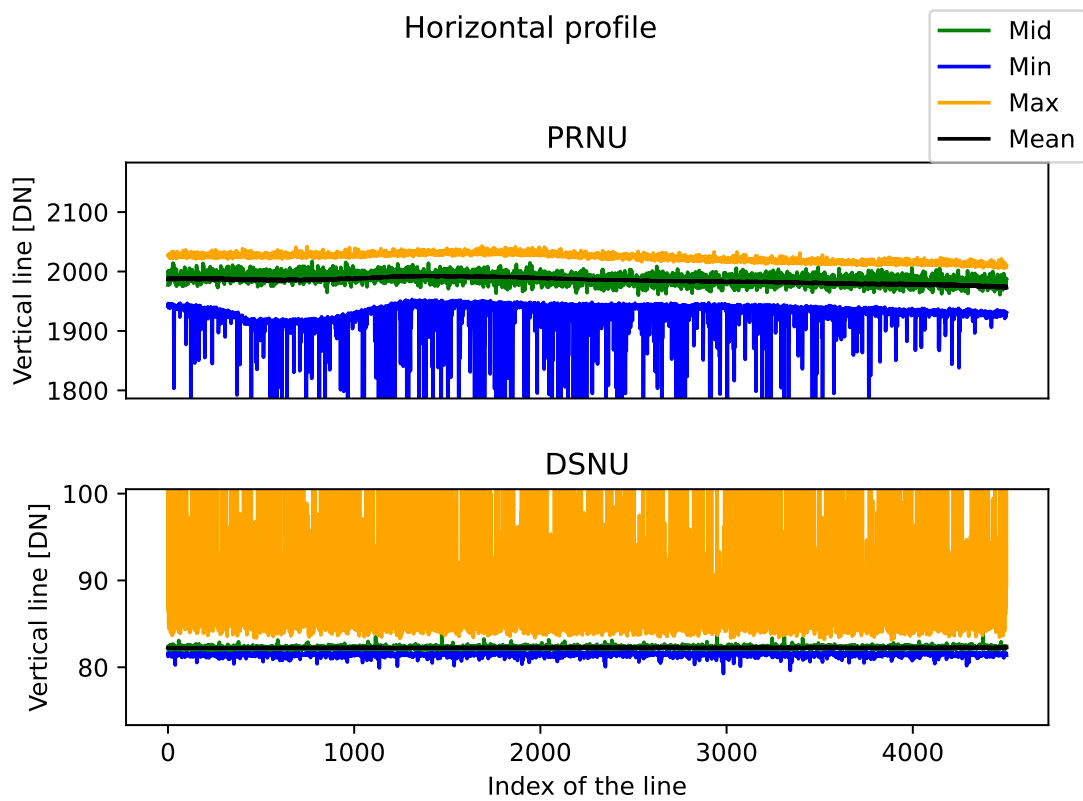
Accumulated log histogram DSNU



Accumulated log histogram PRNU



Horizontal profile



Vertical profile

