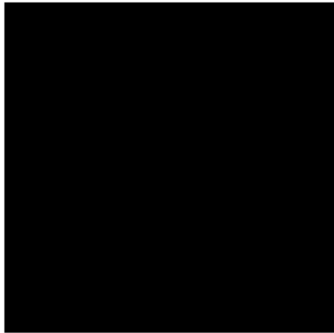# Detector H08-W0276

1 Detector Details and Basic Parameters

Readout: MiniPIX (sn: 105)
Full Name: MiniPIX H08-W0276
Chip: Timepix
Sensor: Si (300 μm)
Temperature: 22.0
Pixet Version: 1.4.10.706
TpxSetup Version: 1.9 (31.7.2018)
Date: 04.10.2018 11:53:06
Responsible: Matous

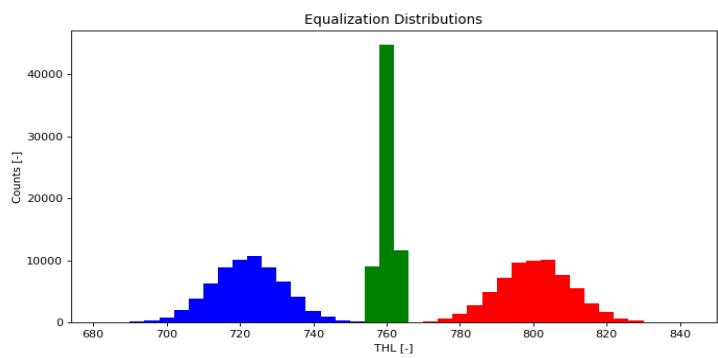| Parameter	Value	Reason
Timepix Clock	10.0	Noise reduction
Ikrum	1	Better energy resolution
FBK	157	Wider energy range in ToT mode
THL Coarse	8	Wider energy range of threshold
Preamp	225	Lower power consumption and heat

2 Digital Test and Bias Test
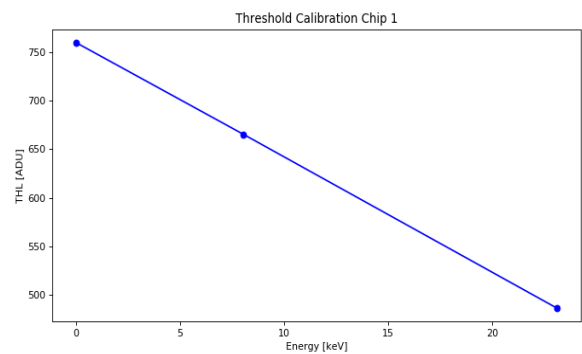

Bad Pixels: 0

3 Bias Leakage Test

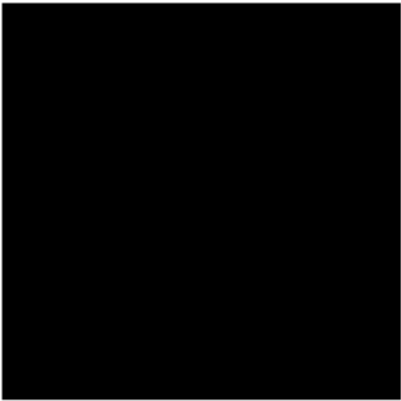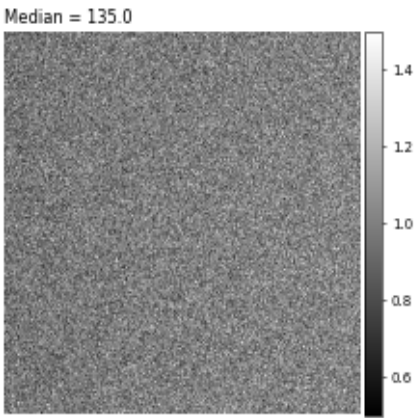| Bias [V]	Leaking Pixels [cnt]	Leaking Current [μA]	Voltage Sense [V]
0	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000
40	0.0000	0.0000	0.0000
60	0.0000	0.0000	0.0000
80	0.0000	0.0000	0.0000
100	0.0000	0.0000	0.0000
120	0.0000	0.0000	0.0000
140	0.0000	0.0000	0.0000
160	0.0000	0.0000	0.0000
180	0.0000	0.0000	0.0000
200	0.0000	0.0000	0.0000

4   Threshold Equalization

Parameter	Value
Mean THL	760.162
Std. Dev	2.247
Masked Pixels	0
Final THL	728

5   Threshold Energy Calibration

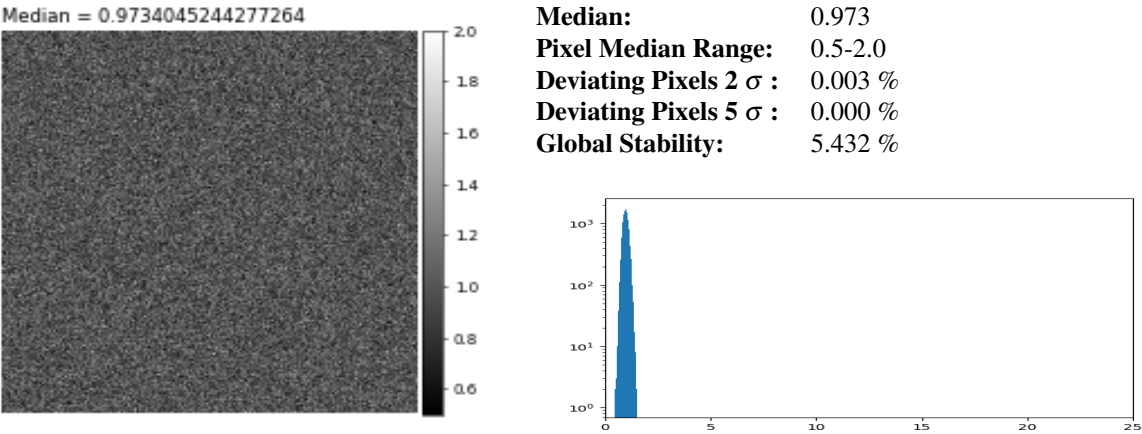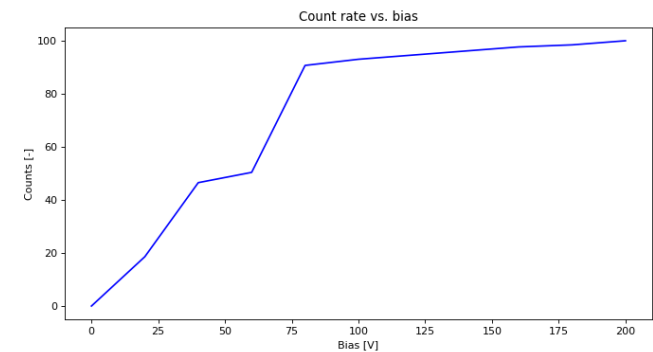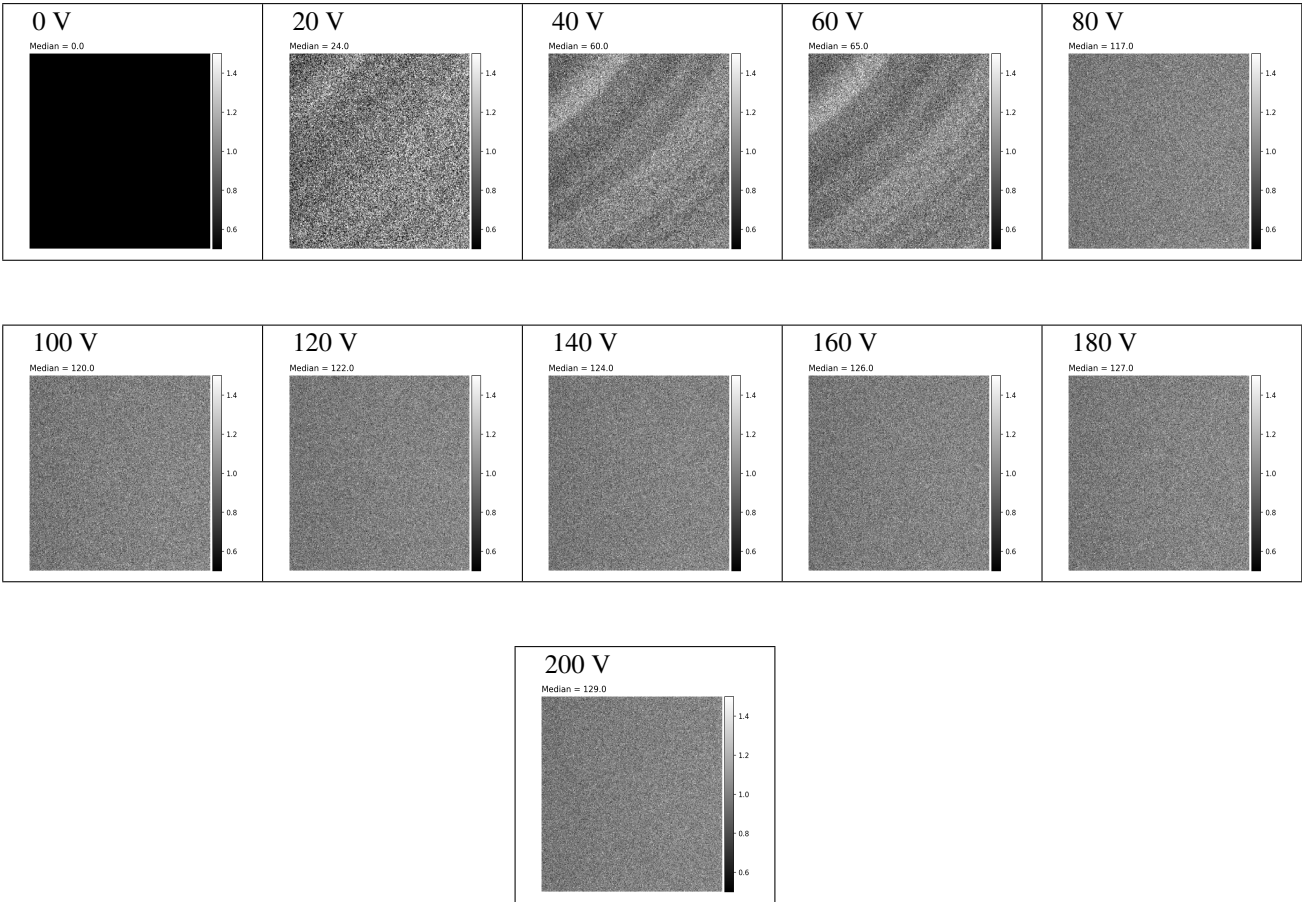| Parameter	Value
A	11.919
B	38.705
W	0.171
T	5.317
K	1.000
Min. Threshold	2.793 keV
THL 5 keV	701.697

6   Bad Pixels Test with X-Ray

Bad Pixels: 0

7 Stability Test with Cd XRF 23.106 keV, duration: 10.0 min

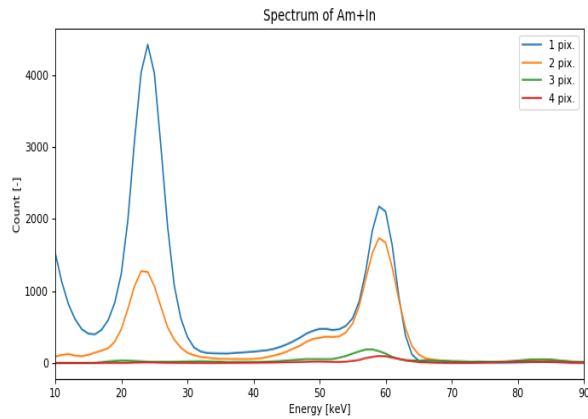|	
Median:	0.973
Pixel Median Range:	0.5-2.0
Deviating Pixels 2 σ :	0.003 %
Deviating Pixels 5 σ :	0.000 %
Global Stability:	5.432 %

8 Bias Test with Fe XRF (6.4keV)

Parameter	Value
Bias From	160
Bias To	200
Bias Step	20

9 Energy Calibration in ToT Mode
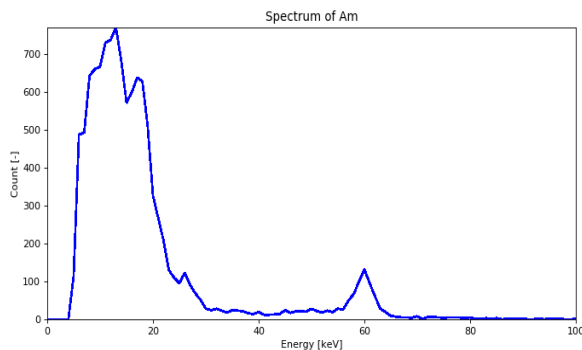
Spectrum of Am+In

Source	Energy	1	2	3	4
Fe	5.905	5.489	10.636	3.000	3.000
In	24.328	24.011	23.502	19.647	23.607
Am	59.598	59.487	59.411	57.674	59.453

Coefficient	Mean value
A	1.000
B	26.000
C	24.000
T	4.000

10 Calibration Verification

Verification from the front side of the detector

Spectrum of Am

Source	Energy	Sigma
Am	59.527	2.654

11 Summary and Classification

Calibrated for threshold of 5 keV (THL=701)

Criterion	Value	Unit	Class
ROC (Wafer probing result)	-	-	A
Masked pixels	0	cnt	AA
Bad pixels after test with sources	0	cnt	AA
Largest bad cluster pixel count	0	cnt	AA
Min. threshold Medipix mode	2.793	keV	AA
Energy resolution ToT at 60 keV	1.985	keV	AA

Final Statement	Class	Verbal
Imaging applications (Counting mode)	**AA**	**Excellent**
Tracking applications (Energy mode)	**AA**	**Excellent**