

Detector I08-W0276

1 Detector Details and Basic Parameters

Readout: MiniPIX (sn: 106)
Full Name: MiniPIX I08-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 12:11:28
Responsible: Matous

Parameter	Value	Reason
Timepix Clock	10.0	Noise reduction
Ikum	1	Better energy resolution
FBK	158	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

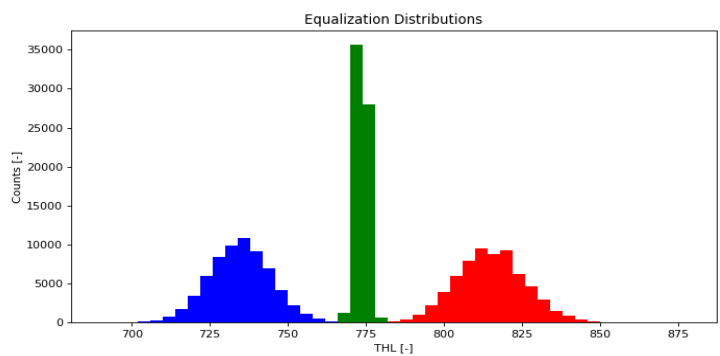


Bad Pixels: 0

3 Bias Leakage Test

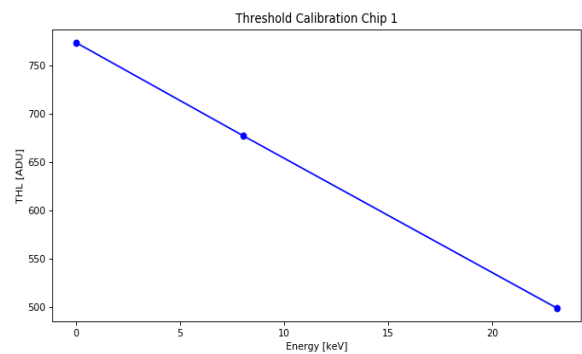
Bias [V]	Leaking Pixels [cnt]	Leaking Current [μA]	Voltage Sense [V]
0	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000
40	0.0000	0.0000	0.0000
60	0.0000	0.0000	0.0000
80	0.0000	0.0000	0.0000
100	0.0000	0.0000	0.0000
120	0.0000	0.0000	0.0000
140	0.0000	0.0000	0.0000
160	0.0000	0.0000	0.0000
180	0.0000	0.0000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

4 Threshold Equalization



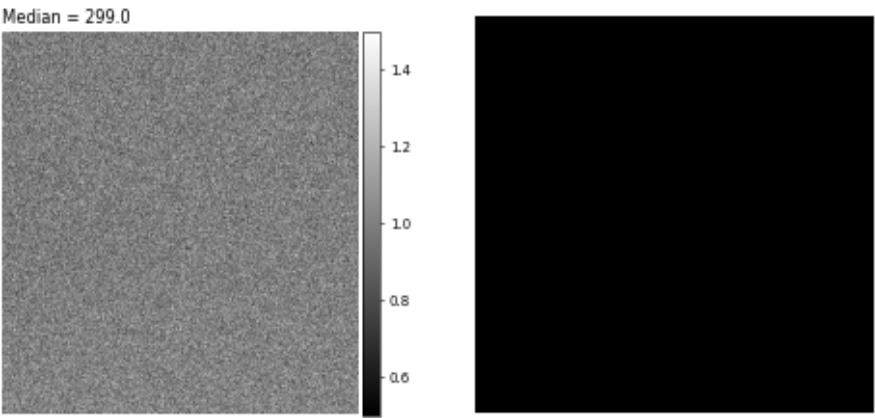
Parameter	Value
Mean THL	773.710
Std. Dev	2.230
Masked Pixels	0
Final THL	740

5 Threshold Energy Calibration



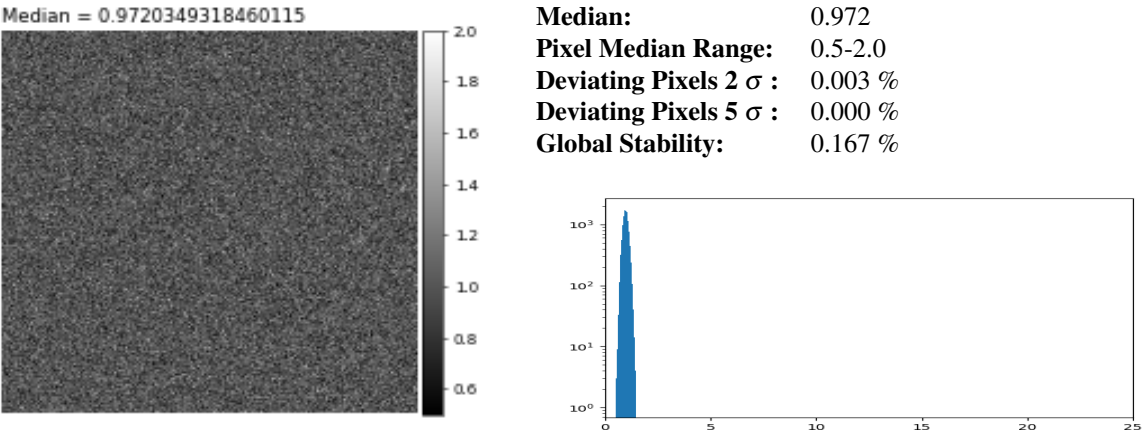
Parameter	Value
A	11.845
B	27.627
W	0.240
T	9.861
K	1.000
Min. Threshold	2.733 keV
THL 5 keV	713.148

6 Bad Pixels Test with X-Ray

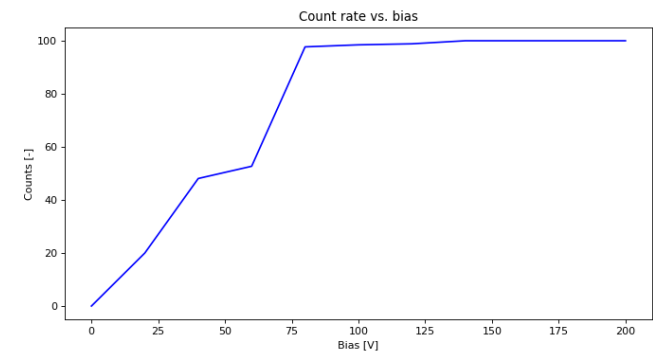


Bad Pixels: 0

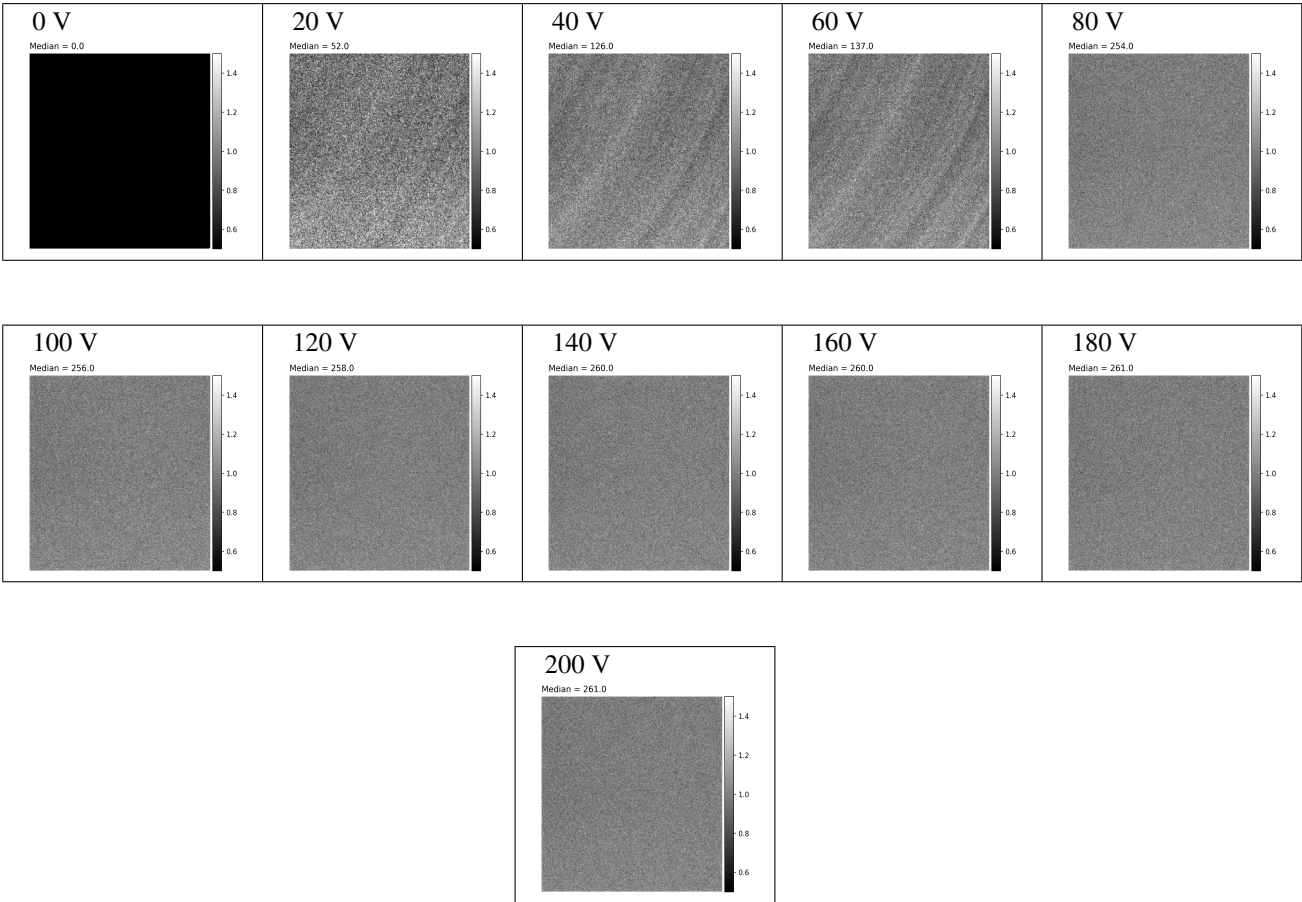
7 Stability Test with Cd XRF 23.106 keV, duration: 10.0 min



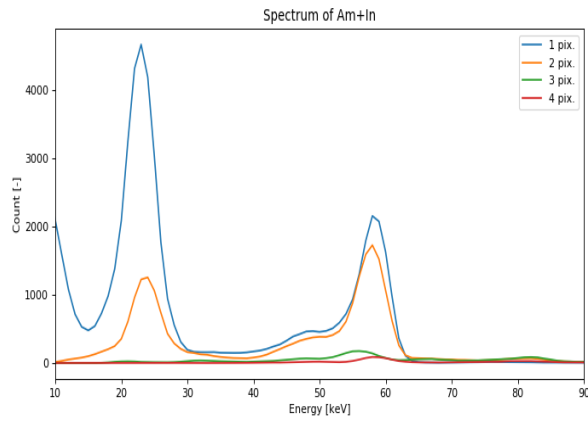
8 Bias Test with Fe XRF (6.4keV)



Parameter	Value
Bias From	160
Bias To	200
Bias Step	20



9 Energy Calibration in ToT Mode

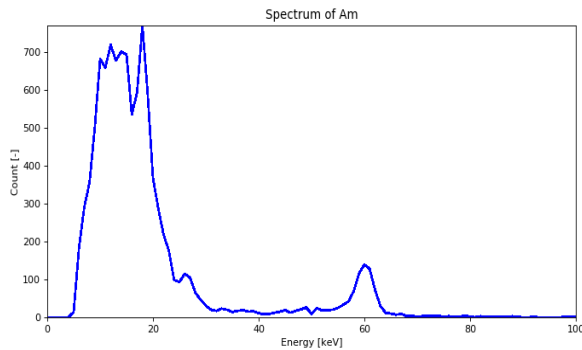


Source	Energy	1	2	3	4
Fe	6.727	6.162	11.000	3.000	3.000
In	24.850	22.999	23.646	20.135	25.717
Am	60.079	58.498	58.002	56.055	58.559

Coefficient	Mean value
A	1.000
B	27.000
C	84.000
T	2.000

10 Calibration Verification

Verification from the front side of the detector



Source	Energy	Sigma
Am	59.594	2.642

11 Summary and Classification

Calibrated for threshold of 5 keV (THL=713)

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	2.733	keV	AA
Energy resolution ToT at 60 keV	2.015	keV	A

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