

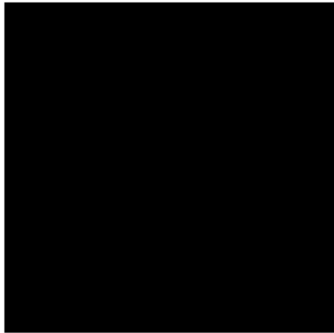
# Detector K08-W0276

## 1 Detector Details and Basic Parameters

**Readout:** MiniPIX (sn: 107)  
**Full Name:** MiniPIX K08-W0276  
**Chip:** Timepix  
**Sensor:** Si (300  $\mu\text{m}$ )  
**Temperature:** 22.0  
**Pixet Version:** 1.4.10.706  
**TpxSetup Version:** 1.9 (31.7.2018)  
**Date:** 04.10.2018 11:36:09  
**Responsible:** Matous

Parameter	Value	Reason
Timepix Clock	10.0	Noise reduction
Ikum	1	Better energy resolution
FBK	159	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

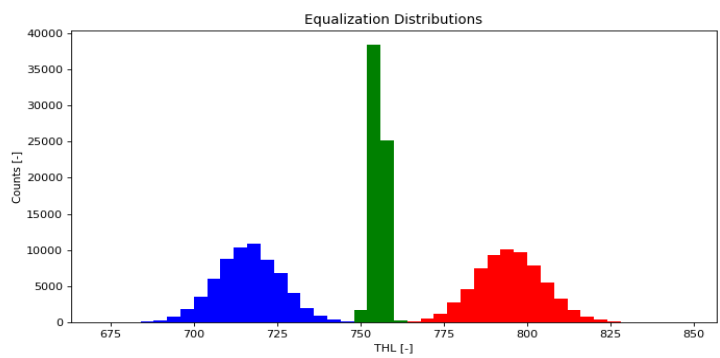


**Bad Pixels:** 0

## 3 Bias Leakage Test

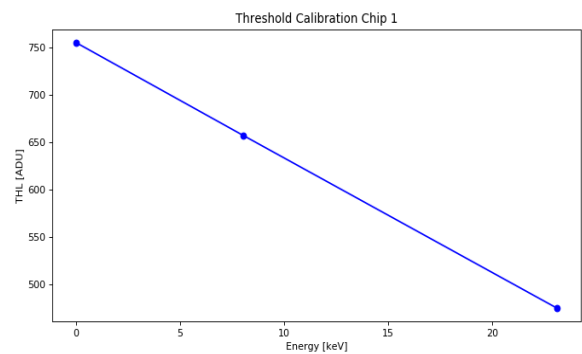
Bias [V]	Leaking Pixels [cnt]	Leaking Current [ $\mu\text{A}$ ]	Voltage Sense [V]
0	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000
40	0.0000	0.0000	0.0000
60	0.0000	0.0000	0.0000
80	0.0000	0.0000	0.0000
100	0.0000	0.0000	0.0000
120	0.0000	0.0000	0.0000
140	0.0000	0.0000	0.0000
160	0.0000	0.0000	0.0000
180	0.0000	0.0000	0.0000
200	0.0000	0.0000	0.0000

4 Threshold Equalization



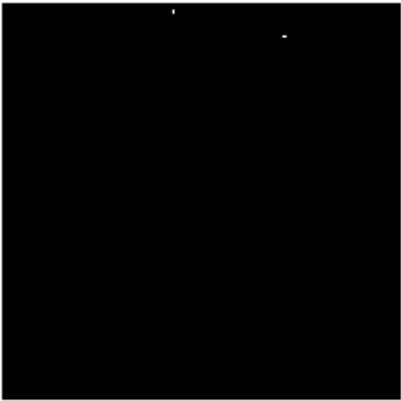
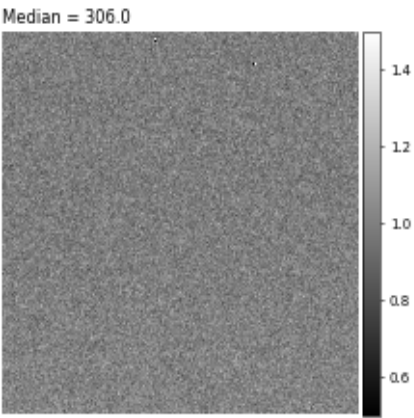
Parameter	Value
Mean THL	755.465
Std. Dev	2.183
Masked Pixels	3
Final THL	722

5 Threshold Energy Calibration



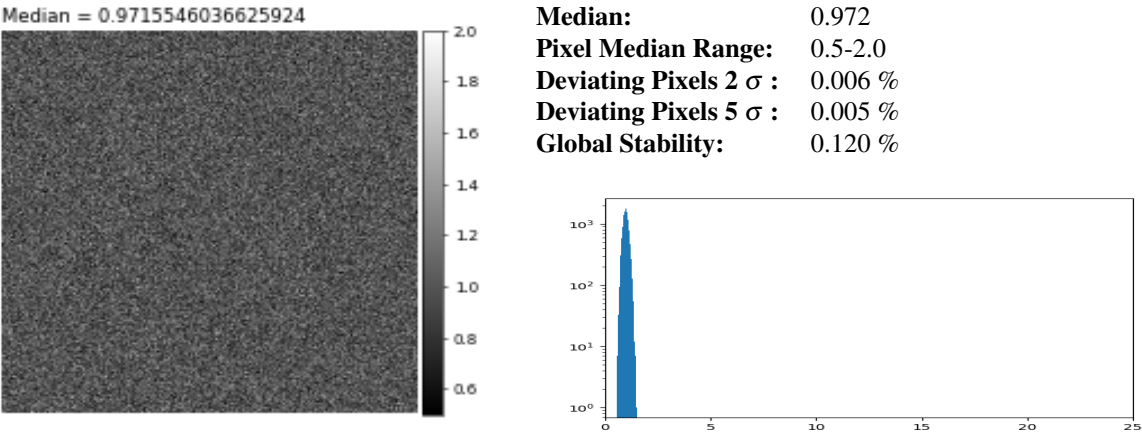
Parameter	Value
A	12.104
B	45.366
W	0.179
T	6.597
K	1.000
Min. Threshold	2.696 keV
THL 5 keV	694.112

6 Bad Pixels Test with X-Ray

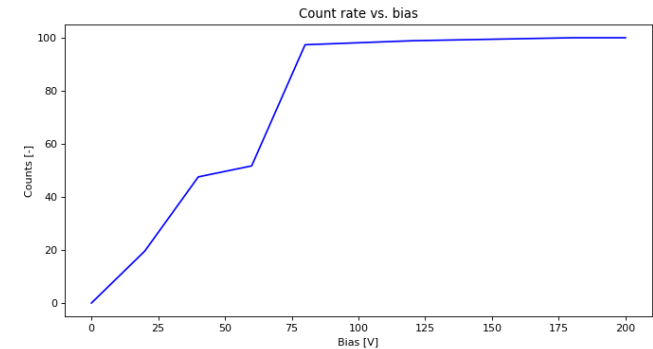


Bad Pixels: 5

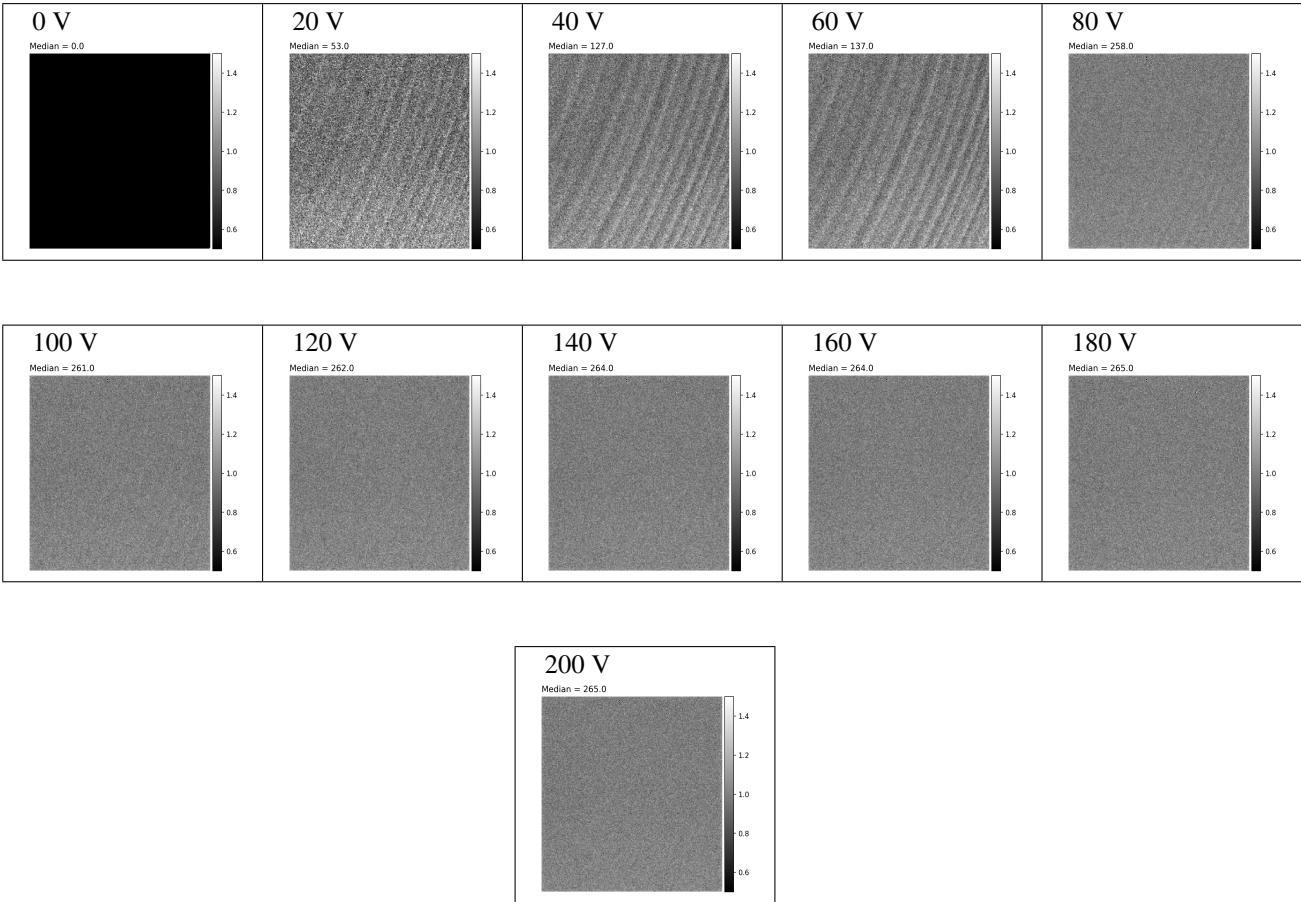
7 Stability Test with Cd XRF 23.106 keV, duration: 10.0 min



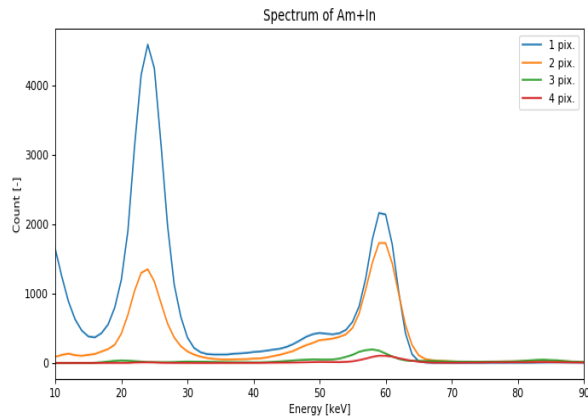
8 Bias Test with Fe XRF (6.4keV)



Parameter	Value
Bias From	160
Bias To	200
Bias Step	20



## 9 Energy Calibration in ToT Mode

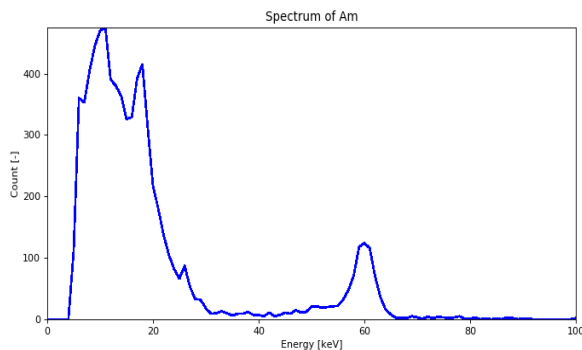


Source	Energy	1	2	3	4
Fe	5.862	5.408	10.579	3.000	3.000
In	24.189	24.053	23.706	19.768	23.696
Am	59.472	59.579	59.630	57.908	59.764

Coefficient	Mean value
A	1.690
B	27.250
C	28.905
T	4.190

## 10 Calibration Verification

Verification from the front side of the detector



Source	Energy	Sigma
Am	59.585	2.693

## 11 Summary and Classification

Calibrated for threshold of 5 keV (THL=694)

Criterion	Value	Unit	Class
ROC (Wafer probing result)	-	-	A
Masked pixels	3	cnt	A
Bad pixels after test with sources	5	cnt	A
Largest bad cluster pixel count	3	cnt	A
Min. threshold Medipix mode	2.696	keV	AA
Energy resolution ToT at 60 keV	2.012	keV	A

Final Statement	Class	Verbal
Imaging applications (Counting mode)	A	Very good
Tracking applications (Energy mode)	A	Very good