

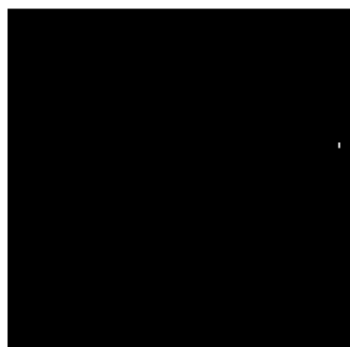
Detector L06-W0048

1 Detector Details and Basic Parameters

Readout:	MiniPIX (sn: 1229)
Full Name:	MiniPIX L06-W0048
Chip:	Timepix3
Sensor:	Si (500 μm)
Model	MNXT3S-XP5220520
Temperature:	22.0
Pixet Version:	1.7.8.936
Script Version:	15.12.2021
Template Name:	MNXT3S-XP5220520_MiniPIX_TPX3_Si_500u.h5
Template Version:	2022.08.18_163122
Custom Settings:	Yes
Date:	23.12.2022 10:44:27
Responsible:	Matous

Parameter	Value	Reason
Ikrum	5	Better energy resolution
FBK	165	Wider energy range in ToT mode
Preamp	16	Lower power consumption and heat

2 Digital Test and Bias Test

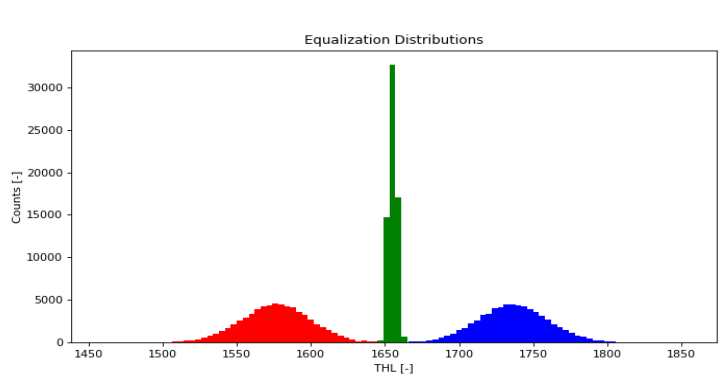


Bad Pixels: 10

3 Bias Leakage Test

Bias [V]	Leaking Pixels [cnt]	Leaking Current [μA]	Voltage Sense [V]
20	0.0000	0.0000	24.1406
40	0.0000	0.0000	44.5312
60	0.0000	0.0068	62.8125
80	0.0000	0.0000	84.8438
100	0.0000	0.0068	104.4141
120	0.0000	0.0000	124.6875
140	0.0000	0.0000	146.7188
160	0.0000	0.0000	165.3516
180	0.0000	0.0135	186.4453
200	0.0000	0.0000	207.1875

4 Threshold Equalization

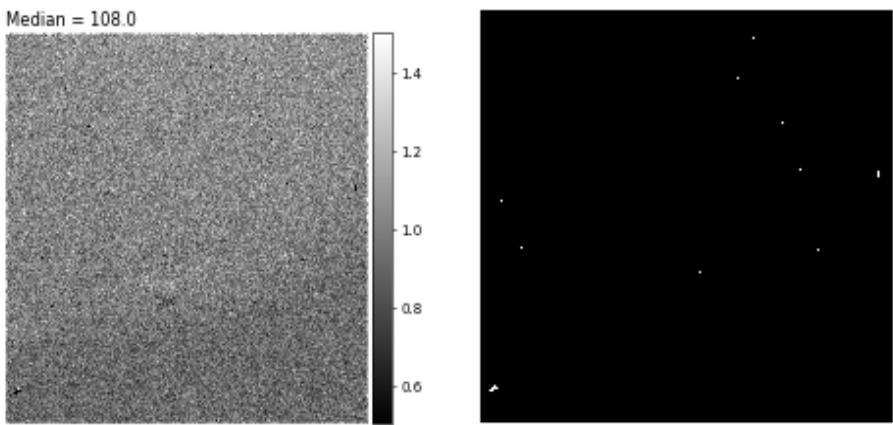


Parameter	Value
Mean THL	1655.184
Std. Dev	7.163
Masked Pixels	55
Final THL	1586

5 Threshold Energy Calibration

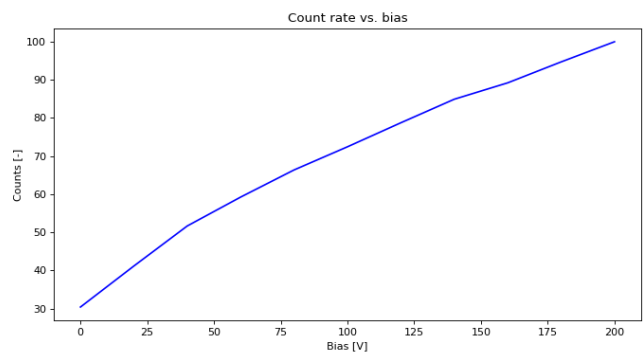
Parameter	Value
A	-10.866
B	1650.433
Min. Threshold	5.930 keV
THL 6 keV	1585.234

6 Bad Pixels Test with X-Ray

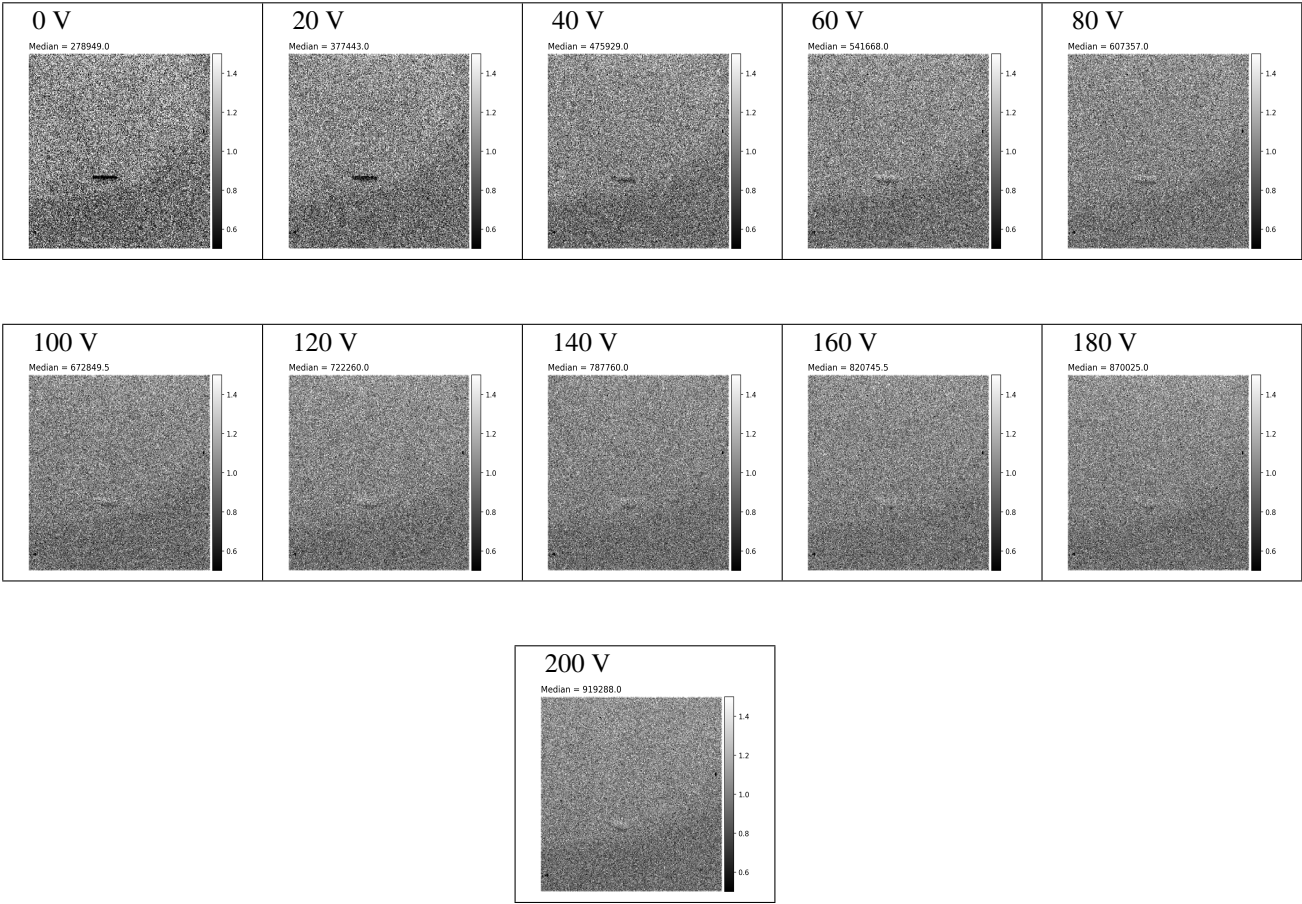


Bad Pixels: 32

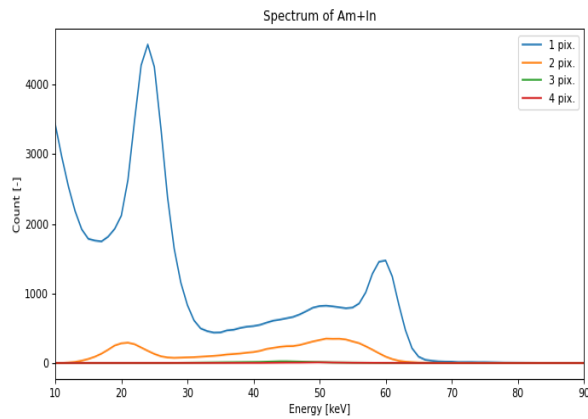
7 Bias Test with Cu XRF (8.04 keV)



Parameter	Value
Bias From	0
Bias To	200
Bias Step	20



8 Energy Calibration in ToT Mode

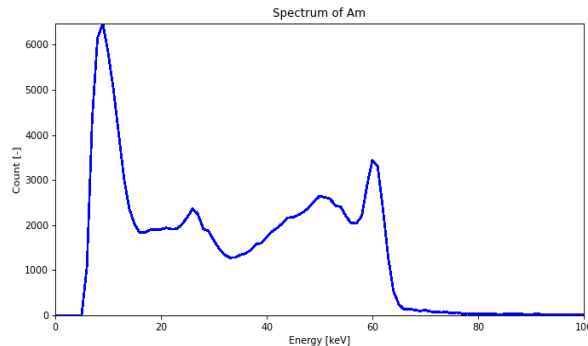


Source	Energy	1	2	3	4
Fe	9.063	8.557	15.870		
In	24.448	24.378	20.523	69.514	32.000
Am	59.537	60.156	54.150	2.598	47.913

Coefficient	Mean value
A	1.011
B	13.775
C	38.733
T	4.069

9 Calibration Verification

Verification from the front side of the detector



Source	Energy	Sigma
Am	60.714	1.686

10 Summary and Classification

Calibrated for threshold of 6 keV (THL=1585)

Criterion	Value	Unit	Class
ROC (Wafer probing result)	-	-	A
Masked pixels	44	cnt	A
Bad pixels after test with sources	32	cnt	A
Largest bad cluster pixel count	10	cnt	A
Min. threshold Medipix mode	5.930	keV	B
Energy resolution ToT at 60 keV	1.686	keV	AA

Final Statement	Class	Verbal
Imaging applications (Counting mode)	B	Moderate
Tracking applications (Energy mode)	B	Moderate