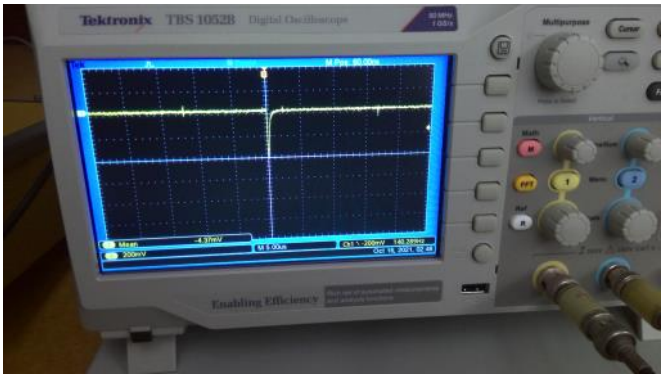
GXS 1 - Na

Friday, October 15, 2021 2:07 PM

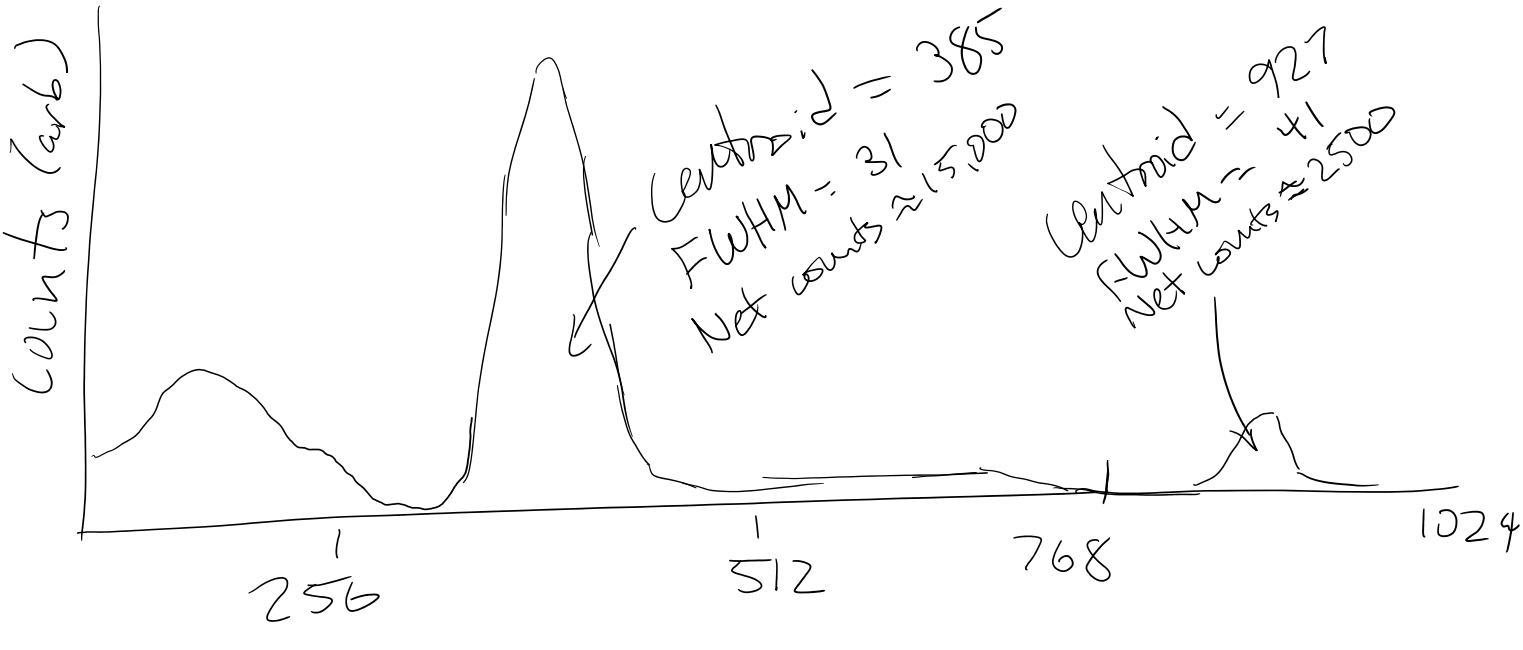
-Using Al, so we'll need a lot of shielding

Initial oscilloscope reading w/ no shielding:



Initial count spectrum:

HV = 1000, gain = 2 × 1.86



channel

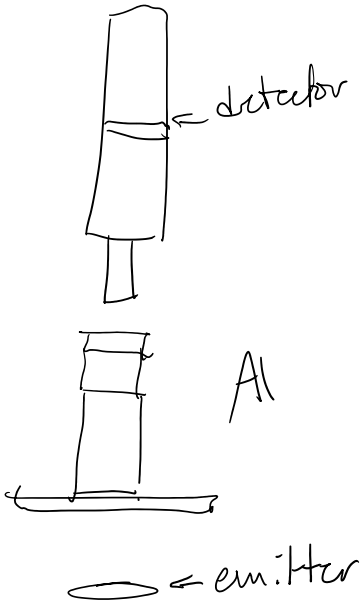
Lower ROI: 354 - 425

Net ~15,000
FWHM = 31
Centroid = 385.5

Upper 889 - 970

Net ~ 2500
FWHM = 41
cent = 927.9

First round: thickness: 1.6 cm, 3.2 cm, 6.7 cm } ± 0.05 mm



383:
N: 2995
G 5120

Rates:
~ 14.4/s

926:
N: 1106
G: 1316

~ 3.7/s

live time: 356s ±1

New params:
325 - 425
t G ~

6247 3722

2nd round: no shielding

time	385 ch: G	385 ch: N	927 ch: G	927 ch: N
178	18,703	16,074	3188	2363

New:

325 - 425 G	325 - 425 N
19764	16984

3: background run:

time	385 G	385 N	927 G	927 N
205	336	119	47	47

New:

325-425 G	325-425 N
471	217

4: shielding: 32mm

time

	G	N	G	N
	11819	9191	2297	1804

201

New: 325 – 425

G	N
12928	10402

5: 67 mm

t	325 – 425		889 – 970	
	G	N	G	N
224	8259	5986	1516	1023

6: 67 mm + 16 mm

t	325 – 425		889 – 970	
	G	N	G	N
324	8729	6103	1787	1334

7: 16 mm

t	325 – 425		889 – 970	
	G	N	G	N
172	14219	11794	2471	2018

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tablified:

thickness	num plates	t	325-425 G	325-425 N	889-970 G	889-970 N
0	0	178	18703	16074	3188	2363
16	1	172	14219	11794	2471	2018
32	1	201	11819	9191	2297	1804
67	1	224	8259	5986	1516	1023
83	2	324	8729	6103	1787	1334
115	3	356	6247	3722	1316	1106

GXS 2 - Cs

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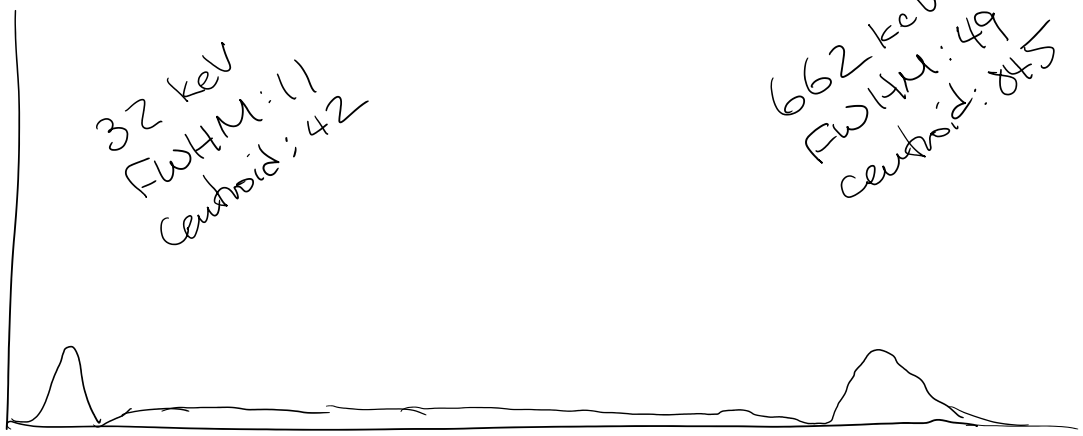
Gain 4×1.65

spectrum:



(mm) shielding	t (sec)	G	N	783 - 903 G	783 - 903 N
0	137	2767	1732	5128	4523
25-60: 0	137	2533	1686		
67+16+32	aborted				
~~32~~		~~25 - 50~~ ~~1076~~	~~345~~	~~4691~~	~~3963~~
		25 - 60			
0-6	233	3913	2307	8439	7049

0.6	233	3913	2307	8439	7049
1	202	3090	1793	7298	6450
3	252	3011	1462	9013	7862
7	246	2123	769	8001	7152
32	207	too noisy		4291	3628
67	211			2382	1895
0.6 (again)	282			10293	8961

GXS 3 - Ba

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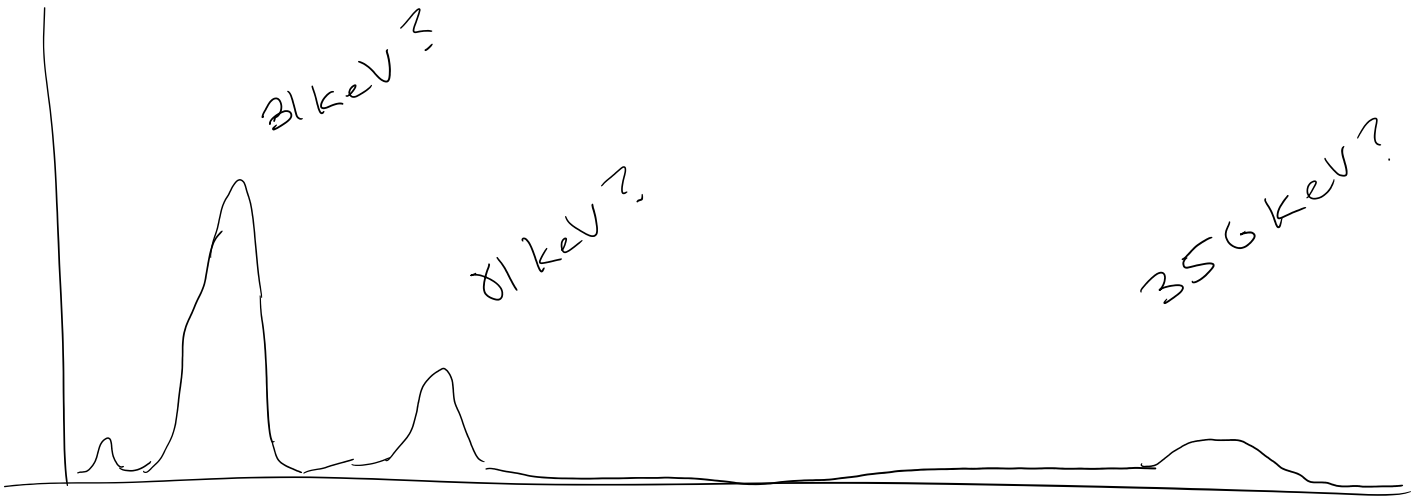
Gain 8 × 1.65



Confirmed, those are what they are

table:

x	t	61 – 107 G	61 – 107 N	185 – 259 G	185 – 259 N	832 – 954 G	832 – 954 N
0	106	43453	37365	18089	12950	13193	8149
99	263	3154	1602	5504	-10	3885	2100
67	259	5082	3036	7719	1343	7449	3819
16	238	9064	5632	22066	12615	20379	11522
4	166	27,364	22404	24092	16216	18680	11545
1	143	45736	39014	23070	15681	17187	10482
0.6	105	38120	32643	17629	12115	12921	7200