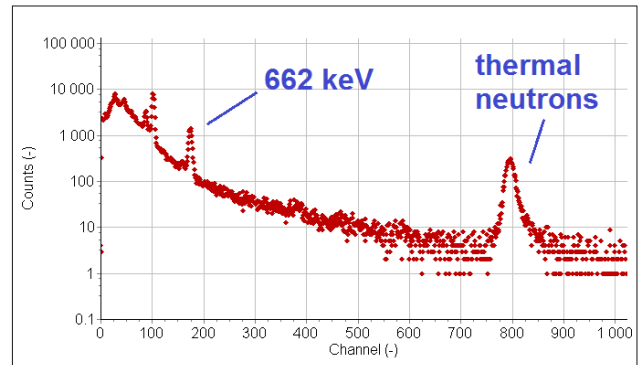
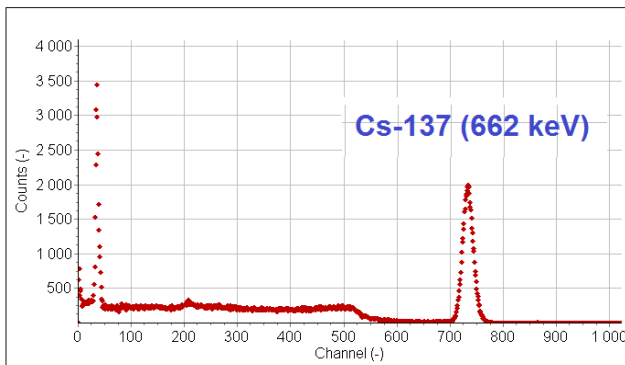


High resolution Dual Mode CLLBC scintillators

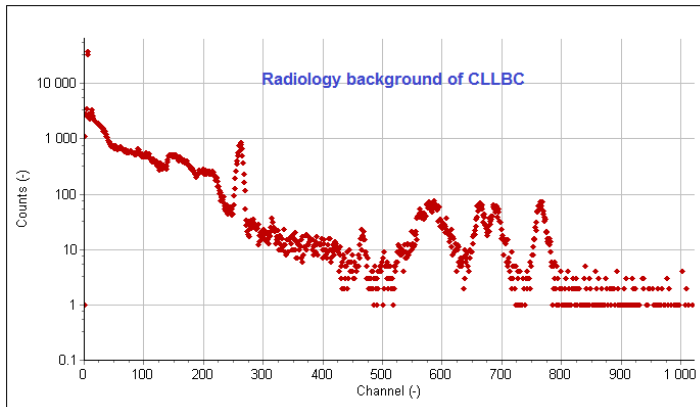
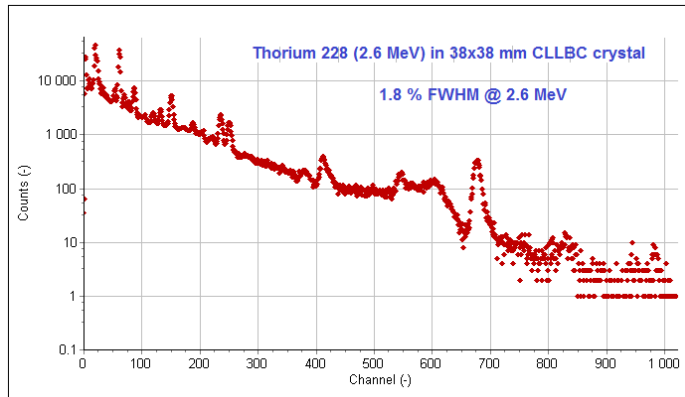
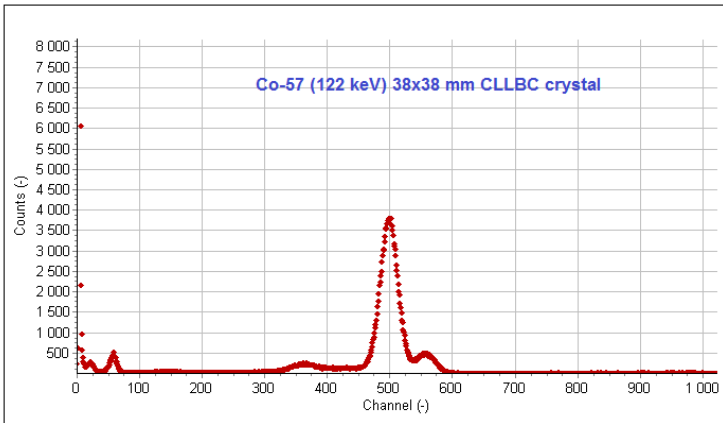
Cesium Lanthanum Lithium BromoChloride) CLLBC , $Cs_2LiLaBr_{4.8}Cl_{1.2}:Ce$ scintillators have properties to the well-known $LaBr_3:Ce$ crystals. Energy resolutions around 3 % FWHM (662 keV) are standard. In addition, thanks to the presence of Lithium, the material can be used for neutron detection with a sharp thermal neutron peak between 3.1- 3.2 MeV.

In addition, CLLBC offers excellent neutron / gamma discrimination using PSD.

Density	:	4.08 g / cc
Maximum emission	:	420 nm
Decay time (typical) ns)	:	120 ns, 500 ns (average approx 150 ns)
Refractive index	:	1.90
Photoelectron yield compared to NaI(Tl)	:	70 % (1.5 μ s shaping time) 84 % (12 μ s shaping time)
Photons / MeV	:	Approx. 45.000 / MeV
Hygrosopic	:	YES
6-Lithium enrichment	:	95 %
Energy resolution @ 662 keV	:	< 3.5 % FWHM (38x38 mm)



Energy (keV)	Typical Resolution CLBC	Typical resolution CeBr3	Typical resolution NaI(Tl)
30 (129-I)	15 %	20 %	18 %
59.5 (241-Am)	10 %	13 %	10 %
122 (57-Co)	6.4%	8 %	8.5 %
662 (137-Cs)	3.2 %	4 %	7 %
1332 (60-Co)	2.3 %	3 %	5.5 %
2600 keV (Th-228)	1.8 %	2.5 %	4.0 %



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