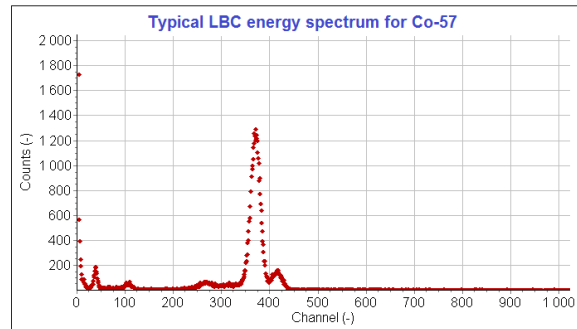
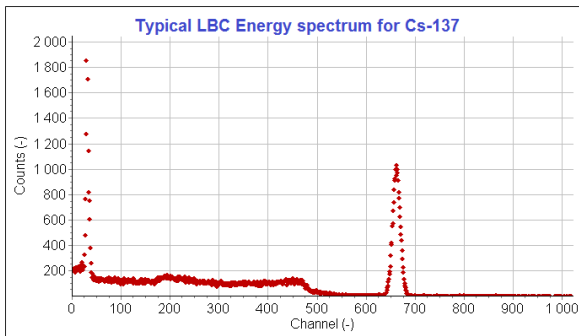


## High resolution LBC scintillators

**LBC (Lanthanum BromoChloride)  $\text{LaBr}_{2.85}\text{Cl}_{0.15}:\text{Ce}$**  scintillators have similar properties to the well-known  $\text{LaBr}_3:\text{Ce}$  crystals. Energy resolutions around 3 % FWHM (662 keV) are standard and the material is mechanically a little stronger than  $\text{LaBr}_3$ . In contrast to background free  $\text{CeBr}_3$ , LBC crystals suffer from the same La-138 background as  $\text{LaBr}_3$

<b>Density</b>	:	4.90 g / cc
<b>Maximum emission</b>	:	380 nm
<b>Decay time (typical)</b>	:	35 ns (primary component)
<b>Refractive index</b>	:	1.90
<b>Photoelectron yield compared to NaI(Tl)</b>	:	140
<b>Hygrosopic</b>	:	YES



Below the typical resolution vs energy is summarized.

Energy (keV)	Typical Resolution LBC	Typical resolution $\text{CeBr}_3$	Typical resolution NaI(Tl)
30 (129-I)	15 %	22 %	16 %
59.5 (241-Am)	10 %	15 %	12 %
122 (57-Co)	6.4%	10 %	9 %
356 (133-Ba)	4 %	5 %	8 %
662 (137-Cs)	3 %	4 %	7 %
1332 (60-Co)	2.5%	3 %	5.5 %

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