SCIONIX

CeBr3 Scintillation Detectors

High-resolution, low-background $CeBr_3$ scintillation detectors

$CeBr_3$ is an alternative to NaI(Tl) for high-resolution gamma spectrometry: typically 4% FWHM at 662 keV, and better than NaI(Tl) above 200 keV. Unlike lanthanum halides, $CeBr_3$ has no La-138 background. Crystals are available up to Ø 127 mm and 152 mm high.



Energy resolution at 662 keV
4% FWHM (typical) [1]

Decay time
18–25 ns, size dependent (typical) [1]

Maximum crystal size
Ø 127 mm, 152 mm high [1]

Specifications

DETECTOR

Scintillator	$CeBr_3$ (cerium bromide)	[1]

PERFORMANCE

Energy resolution at 662 keV	4% FWHM (typical)	[1]
Typical resolution by energy	30 keV (^{129}I) 20%; 59.5 keV (^{241}Am) 13%; 122 keV (^{57}Co) 8%; 662 keV (^{137}Cs) 4%; 1,332 keV (^{60}Co) 3%; 2,600 keV (^{228}Th) 2.5%	[1]
Compared with NaI(Tl)	Better resolution than NaI(Tl) above 200 keV	[1]

MECHANICAL

Maximum crystal size	Ø 127 mm, 152 mm high	[1]

ENVIRONMENT & RATINGS

Intrinsic background	No La-138 background; peaks between 1,500 and 2,200 keV from Ac-227, typically 0.002 c/s per cm^3	[1]

GENERAL

Decay time	18–25 ns, size dependent (typical)	[1]
Emission maximum	370 nm	[1]
Refractive index	2.09 (at 380 nm)	[1]
Light yield	Approx. 60,000 photons/MeV	[1]
Hygroscopic	Yes	[1]

Sources

[1] **High resolution low background CeBr3 scintillators – data sheet**
Scionix · datasheet · p. 1; p. 1, table; pp. 1–2 · checked 2026-11-26
https://scionix.nl/wp-content/uploads/2022/09/CeBr3-datasheet.pdf

Every value is taken from the manufacturer’s own document; the number after the value refers to the source list. Always check against the latest datasheet before ordering.

The data comes from the manufacturer’s published documents. Manufacturers may change specifications; the current configuration and performance are confirmed in the quotation.