Engineering
A Safer World

X-Z LAB, Inc.

Bishop Ranch 6
2440 Camino Ramon
Suite #264
San Ramon, CA 94583
United States

Phone (925) 359-6908

Fax (925) 380-6784

Info contact@x-zlab.com

www.x-zlab.com

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BGO

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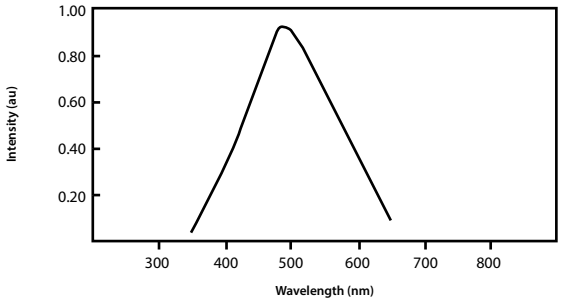
BGO

BGO ($Bi_4Ge_3O_{12}$) is a scintillation crystal used for gamma ray detection with a high effective atomic number and density.

The BGO scintillation crystal has an emission peak of 480 nm, coupling well with PMT and SiPM. Compared to other scintillation crystals, BGO has an unparalleled absorption rate at photopeak.

RL - Spectra of BGO



Advantages of BGO:

- *High denisty & atomic number*
- *Good radiation hardness*
- *No hygroscopicity*
- *Mechanical ruggedness*

With access to the complete crystal finishing process, X-Z LAB has the means to provide custom crystals using state-of-the-art line cutting; fine grinding and polishing machines; and stable matrix assembly techniques.

Feature	Parameter
BGO	
Density (g/cm)	7.13
Melting Point (K)	1323
Index of Refraction	2.15
Effect atomic No.(Z)	74
Hardness (Mohs)	5.6
Lower Wavelength Cut-off (nm)	320
Hygroscopic	No
Cleaveage Plane	None
Wavelength (nm)	480
Decay time (ns)	300
Light Yield (photons/keV$_\gamma$)	8-10
Photoelectron yield [(% of NaI(Tl)] for γ-ray	15-20

γ-energy Spectum for BGO scintillator