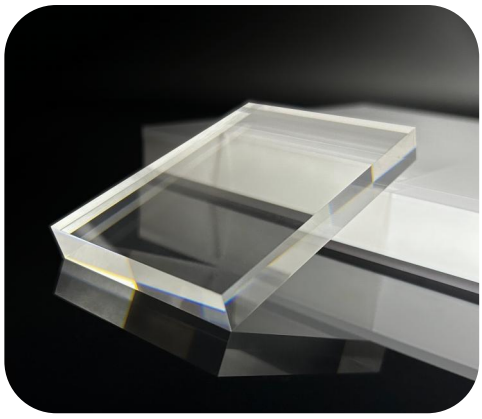
BGO Crystal



Bismuth germanate BGO is a colorless and transparent oxide crystal with a cubic structure and insoluble in water. Under the excitation of high-energy particles or high-energy rays, it can emit green fluorescence with a peak value of 480 nm. BGO crystals have the advantages of strong radiation resistance, high scintillation efficiency, high energy resolution, and insolubility. They are widely used in fields such as nuclear medicine, high-energy physics, environmental monitoring, and safety screening.

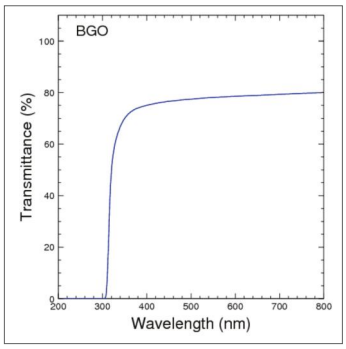
General parameters	$Bi_4Ge_3O_{12}$	Unit
Density	7.13	g/cm^3
Wavelength of Emission Peak	480	nm
Light Output	8,500	ph/MeV
Decay Constant	317	ns
Hardness	5	mohs
Refractive Index	2.15	/
Hygroscopic	no	/
Cleavage	no	/

Basic Information

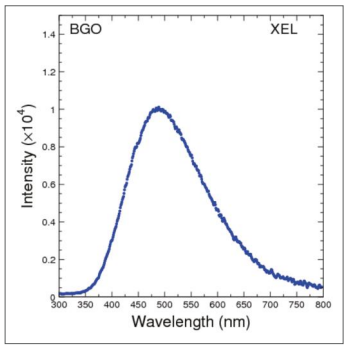
- Growth technique ---------- Bridgman
- Dimension(max) ---------- 40 mm×80 mm×280 mm
- Achieved items ---------- Single crystal and array

Characterization

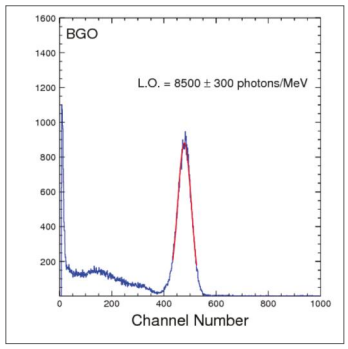
- Dimension of BGO: Ø25×25 mm; PMT: R1306; Reflector: Teflon (0.80 mm); Radiation source: Cs^{137}; HV: 650V; Absolute value of light output: 8,500 photons/MeV; Energy resolution: 11.9%; Decay time: 317 ns



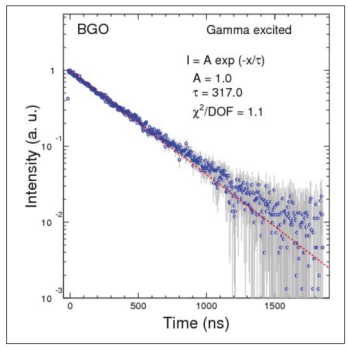
Transmittance curve



X-Ray excited Luminescence curve



Light output curve & Energy resolution curve



Scintillation decay curve by gamma ray excited

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