Epic-Crystal

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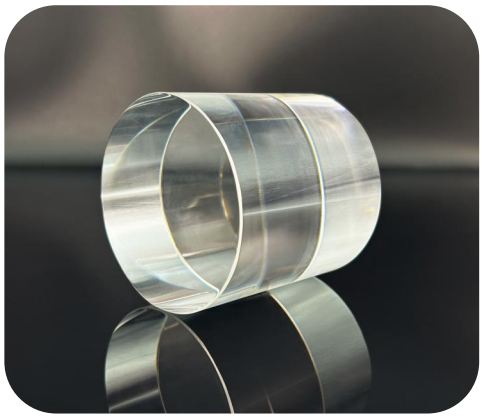
LYSO(Ce) Crystal



LYSO not only has excellent comprehensive scintillation properties such as high light output, fast attenuation, high density, and strong resistance to radiation damage, but its peak luminescence wavelength (420 nm) is located in the sensitive area of the photomultiplier tube and can be effectively detected; in addition, its physical With stable chemical properties, the crystal can be widely used in medical imaging, high-energy physics and other fields, which is beneficial to obtaining high temporal resolution, spatial resolution and miniaturization of detectors.

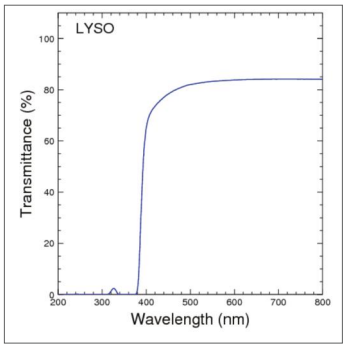
General parameters	LYSO(Ce)	LYSO(Ce, Ca)	Unit
Density	7.25	7.25	g/cm³
Wavelength of Emission Peak	420	420	nm
Light Output	30,000	27,000	ph/MeV
Decay Constant	40	33	ns
Anti-radiation	1 x 10^8	1 x 10^8	rad
Refractive Index	1.82	1.82	/
Hardness	5.8	5.8	mohs
Hygroscopic	no	no	/
Cleavage	no	no	/

Basic Information

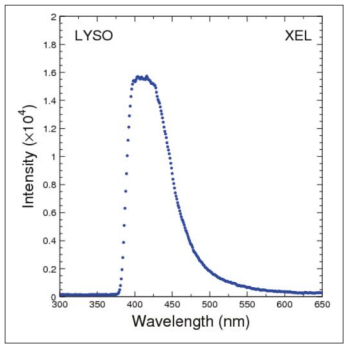
- Growth technique ---------- Czochralski
- Dimension(max) ---------- Diameter 90 mm×200 mm
- Achieved items ---------- Single crystal and array

Characterization

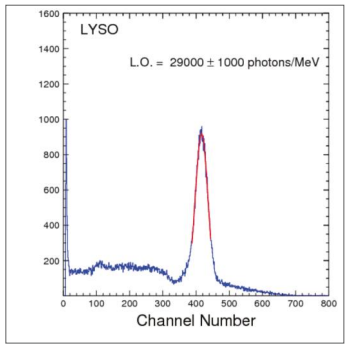
- Dimension of LYSO(Ce): 15×15×15 mm; PMT: R1306; Reflector: Teflon(0.80 mm); Radiation source: Cs^{137}; HV: 650V; Absolute value of light output: 30,000 photons/MeV; Energy resolution: 10.9%; Decay time: 40 ns



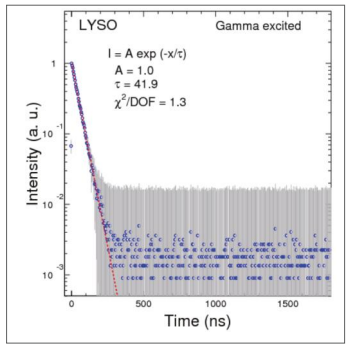
Transmittance curve



X-Ray excited Luminescence curve



Light output curve & Energy resolution curve



Scintillation decay curve by gamma ray excited

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