

Barium Fluoride Scintillators

Description: Barium Fluoride (BaF_2) scintillation crystals are characterised by a very fast scintillation emission, with a decay time of 800 ps at 220 nm. BaF_2 detectors are used for fast timing measurements (e.g. positron life time studies) where sub nanosecond time resolution is mandatory. Typical time resolutions are 150 ps at 1 MeV per detector. For readout of the fast component, quartz window PMTs are required.

Scintillation crystal	: BaF_2
Density	: 4.88 g/cm^3
Emission maximum	: 220 nm (fast component) 310 nm (slow component)
Refractive index	: 1.54 (220 nm) 1.50 (310 nm)
Conversion efficiency (relative to NaI(Tl))	: 5% (fast) 16% (slow)
Diameter	: Up to 150 mm
Pulse shape discrimination	: Well possible to discriminate neutrons from gammas

