



Barium fluoride (BaF₂) crystal has a fast scintillation light peaked at 195 and 220 nm with a 0.8 ns decay time. This ultrafast scintillation promises a wide application in an area where extreme fast timing is important, such as future high energy physics experiments, hard X ray imaging, and time-of-flight(TOF) positron emission tomography.

General parameters	BaF ₂	BaF ₂ -Y	Unit
Density	4.88	4.88	g/cm ³
Decay Constant	0.8/660	0.8/660	ns
Fast/Slow Ratio	1:5	2:1	/
Wavelength of Emission Peak	220/310	220/310	nm
Light yield (relatively NaI:Tl)	8/32	8/32	%
Melting Point	1554	1554	k
Hardness	3	3	mohs
Refractive Index	1.56	1.56	/
Hygroscopic	slightly	slightly	/
Cleavage	(111)	(111)	/

Basic Information

- Growth technique Bridgman
- Dimension(max) Diameter 130 mm×200 mm
- Achieved items Single crystal and array

Characterization

- BaF₂ crystal with Yttrium(Y³⁺) doped performance comparison:

