

Laser Crystals

NLO Crystals

Birefringent Crystals

AO and EO Crystals

Magneto-optical Crystal

Scintillation Crystal

## LaBr<sub>3</sub>:Ce Scintillation Probe

### Introductions



The scintillation probe of LaBR series are made up of LaBr<sub>3</sub>:Ce, fast-response photomultiplier, voltage division circuit, fast-response charge sensitive preamplifier and the metal case.

Because the optimal design of direct coupling, the probe has many advantages like the high energy resolution, good energy linear and the fast response. It widely used in nuclear detection technology

### Product Description

#### LaBR-A Double-Signal LaBr<sub>3</sub>:Ce Scintillation Probe

LaBR -A is one of the LaBr<sub>3</sub>:Ce scintillation probe which is special designed for energy with time-of-flight spectrometer. LaBR -A can not only provide the first time signal, but also provide the signal of  $\gamma$  photon energy. The probe is impossible to be replaced in the energy and time measurement because of make full use of good energy resolution and short decay time of LaBr<sub>3</sub>:Ce. The probe can be also used as the  $\gamma$ -spectrometer probe and  $\gamma$ -time measuring probe.

#### LaBR-B Portable $\gamma$ -spectrometer LaBr<sub>3</sub>:Ce Scintillation Probe

LaBR-B is one of the LaBr<sub>3</sub>:Ce scintillation probe which is special designed for portable  $\gamma$ -spectrometer. The probe has the advantages of compact structure, crystal and photomultiplier tube and pre amplifier integrated package that make it excellent. The probe will gradually become the first choice of the high precision portable  $\gamma$ -spectrometer

#### LaBR-C Universal (economical) LaBr<sub>3</sub>:Ce Scintillation Probe

LaBR -C is one of the universal LaBr<sub>3</sub>:Ce scintillation probe. In the design process, we fully consider the interests of the NaI scintillation probe domestic user and we can realize the probe technology upgrading with the minimum cost. It has considered the technical backward compatibility and can be matched with the commonly used front-end electronics in domestic. that is when the user add the probe to the spectrometer, it will be a new one and the performance can be greatly improved. The NaI probe can be used as a spare part.

#### LaBR-D Radiologging logging(high temperature)LaBr<sub>3</sub>:Ce Scintillation Probe

LaBR-D is one of the LaBr<sub>3</sub>:Ce scintillation probe which is special designed for the oil industry of radioactive logging. LaBr<sub>3</sub>:Ce have the excellent temperature stability and can satisfy the requirements of the probe temperature stability in the nuclear logging of oil field. The sealing of the probe crystal is using the method that stainless steel welding glass window that make it very sturdy. When the LaBr<sub>3</sub>:Ce Scintillation crystals coupling with the special photomultiplier tube, it will achieve a high detection deficiency and excellent energy resolution. What is more, it can be ensure the reliability and stability of the probe in the industrial field.

 LaBr<sub>3</sub>:Ce scintillation probe

Crystal

LaBR 02

Laser Crystals

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## LaBr<sub>3</sub>:Ce Scintillation Probe

### Main Specification

#### Main technical indicators

Items	Specification
Dimension	Diameter $\Phi 25 \sim \Phi 75\text{mm}$ Height 10~200mm
Photon Conversion Efficiency	62000 photon/MeV
Energy Resolution:	(3~3.9)% @ 662 keV
Nonlinear Energy	$\leq 5\%$ @ 50 keV ~1.3 MeV
Output Amplitude	0.5~1V/MeV photon
Energy Signal Output Waveform	positive pulse index. Rise time is 12ns.back porch is 2 $\mu\text{s}$ .Amplitude depends on the high pressure
Output Impedance	50 ohm
Temperature Coefficient of Output Signals	$\leq \pm 0.1\%$ / $^{\circ}\text{C}$ ( -10 to +50 $^{\circ}\text{C}$ )

#### Power Supply Requirement

(1)Low tension:  $\pm 12\text{V}$  DC stabilized power supply

Current consumption: Less than 20 mA

(2)HVDC

①Positive or negative polarity

②500~1000V

③Current consumption $\leq 0.4\text{mA}$

④Output Ripple Voltage $\leq 2\text{mV}$ (peak value)

#### Outside Dimension and Weight

Probe Model	External Dimensions (mm)	Weight (not include cable and crystal) Kg
LaBR -A	$\Phi 70 \times 301$	~ 0.98
LaBR -B	$\Phi 61 \times 204$	~ 0.6
LaBR -C	$\Phi 65 \times 310$	~0.95
LaBR -D	$\Phi 65 \times 310$	~0.95

LaBr<sub>3</sub>:Ce scintillation probe

Crystal

LaBR 02