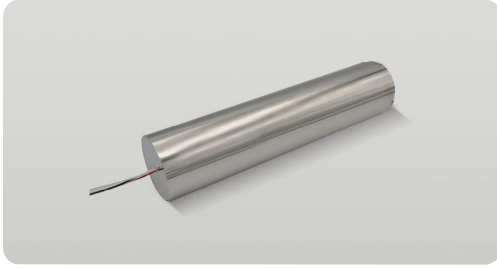


1. Overview



EPHD21003 detector is a high temperature and vibration-resistant scintillation detector. It integrates high temperature LaBr₃(Ce) scintillator, high temperature PMT and high linear voltage divider circuit. The unique design ensures the stable performance of the detector in high temperature vibration environment. LaBr₃(Ce) is a new type of scintillator. Compared with the traditional NaI(Tl) scintillator, LaBr₃(Ce) has the advantages of better pulse amplitude resolution, higher detection efficiency for high energy ray, fast decay time and better temperature characteristic. It is mainly used to measure formation elements in oil logging.

2. Specifications

▶ Detector diameter (mm)	Φ62
▶ Detector length (mm)	258
▶ Scintillator size (mm)	Φ49.5 × 101.6
▶ Pulse amplitude resolution ¹⁾ 25°C Max.	6%
▶ Stability ²⁾ (High temperature counting rate deviation) 175°C Max.	3%
▶ Diamagnetism ³⁾ (Geomagnetism) 25°C Max.	1%
▶ High temperature life ⁴⁾ Min.	400
▶ Vibration ⁵⁾	Random 5grms, 50Hz~500Hz
▶ Shock	100g@11ms
▶ Operating temperature ⁶⁾ (°C)	25~+175
▶ Storage temperature ⁶⁾ (°C)	30~+70

● Test with ¹³⁷Cs

● Tested in natural gamma environment

● The detector is respectively placed in 6 directions of X+, X-, Y+, Y-, Z+ and Z-, and the output pulse amplitudes of the 6 directions are obtained through test in sequence, taking X+ as the reference, the other 5 directions is compared with the reference amplitude, and the maximum value of the change of the 5 directions relative to the reference amplitude is calculated

● The time it takes for the detector to work continuously after preheating at high temperature of 150°C, and the output pulse amplitude of the detector decreases by half relative to the initial value

● Resonance frequency ≥500Hz

● Temperature change rate during detector operation and storage ≤1.8°C/min

3. Overall dimensions and connection methods (unit: mm)

● EPHD21003

