

### 1. Overview



EPHD157031/032 scintillation detector (while drilling) is a high-temperature resistant and anti-vibration scintillation detector. It integrates high temperature and vibration-resistant NaI (TI) crystal, PMT and voltage divider circuit. The unique design ensures the stable performance of the detector in high temperature vibration environment. This product has the advantages of simple and convenient use, high reliability and not easy to damage. It is mainly used in density logging in oil logging environment. The detector is divided into long source distance detector and short source distance detector.

### 2. Specifications

▶ Detector diameter (mm)	Φ25.0
▶ Detector length (mm)	114.5
▶ Scintillator size (mm)	EPHD157031: Φ20.7×24.8; EPHD157032: Φ12.7×12.7
▶ Pulse amplitude resolution 25°C Max.	12%
▶ Pulse amplitude resolution 175°C Max.	17%
▶ High temperature output pulse amplitude decreases <sup>2)</sup> Max.(%)	18%
▶ High temperature plateau length Min. (V)	100
▶ Counting rate change induced by vibration <sup>3)</sup> (s <sup>-1</sup> )	√BASE <sup>4)</sup>
▶ Output pulse amplitude change induced by vibration <sup>5)</sup> (%)	5%
▶ High temperature life <sup>6)</sup> Min.(h)	400
▶ Vibration <sup>7)</sup>	Random 30grms,50Hz~1000Hz
▶ Shock	1000g@0.5ms
▶ Operating temperature <sup>8)</sup> (°C)	30~+175
▶ Storage temperature <sup>9)</sup> (°C)	-30~+70

● Performance tests us<sup>137</sup>Cs

● High temperature output pulse amplitude decrease = (Output pulse amplitude at 25°C - Output pulse amplitude at 175°C) / Output pulse amplitude at 25°C × 100%

● Counting rate change induced by vibration: Change in counting rate above 60 keV in vibration state relative to non-vibration state

● BASE: Counting rate of non-vibration state, count per second

● Output pulse amplitude change induced by vibration: Change in vibration state relative to non-vibration state

● High temperature life: The time it takes for the detector to work continuously after preheating at high temperature of 175°C, and the output pulse amplitude of the detector decreases by half relative to the initial value

● Resonance frequency ≥ 1000Hz

● Temperature change rate during detector operation and storage ≤ 3°C/min