

Azimuthal Gamma (Collar-based)

■ Introduction

Azimuthal Gamma Collar-based can realize the detection of formation lithology while drilling, especially maintain borehole trajectory within the target reservoir in horizontal-drilling. It can provide for interpretation of the shale reservoir's organic richness and clay content, identify the top or bottom boundary in CBM. Azimuthal Gamma Probe-based is particularly valuable in unconventional reservoir well placement and evaluation as well as CBM drilling applications.

■ Introduction

- Lithology identification
- Qualitative evaluation of shale content and radioactive mineral
- Dynamic rotary geosteering (upper gamma and lower gamma) during drilling
- Eliminate the interference of clay composition to sandstone and sand determination
- Data can be sent to MWD through wireless transmission technology, and then upload to surface. The signal is strong
- The sensor is installed on the shell, the measurement sensitivity is higher than that of the probe-based azimuth gamma
- Communicate directly with LHE series MWD through communication sub

■ Application

- Development of oil sheet and CBM
- Measure natural gamma in specific direction
- Determine the interface position and dip angle of different formation

■ Technical Parameters

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| • OD | 172mm |
| • Length | 1100mm |
| • ID | 71.4mm |
| • Collar type | 4A10/4A11 |
| • Operating temperature | Up to 150°C / 302°F |
| • Pressure | 120MPa |
| • Rotation speed | 0 to 255rpm |
| • Gamma range | 0 to 512API |
| • Memory | 64Mbit |
| • Working time | ≥200 hours |
| • Vibration | Sine vibration: 10g 50 to 200Hz
20g 30 to 200Hz
Random vibration: 10grms, 50 to 200Hz |
| • Shock | 1000g, 0.5ms |

