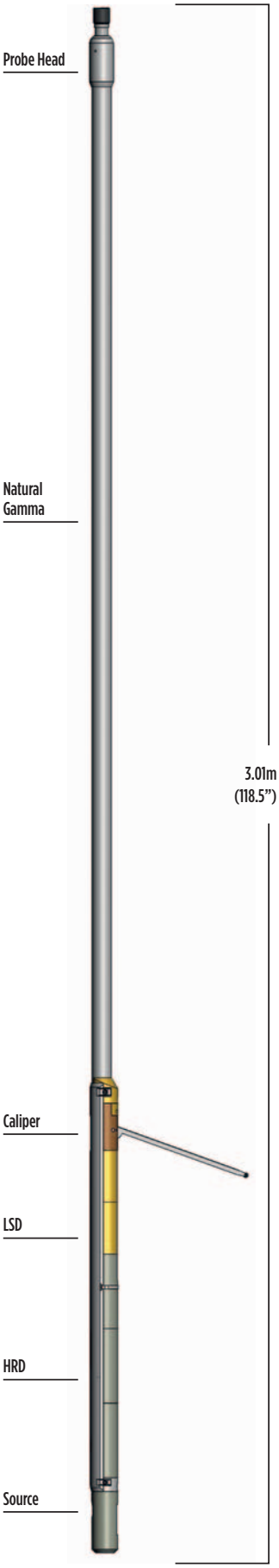
PROBES

FORMATION DENSITY HD

ROBERTSON GEO
Unlocking Your GeoData



Formation Density HD Probe

The Formation Density HD probe provides a calibrated, borehole-compensated density measurement up to 5g/cc using a detachable 137Cs gamma source and dual shielded detectors.

The Formation Density HD probe has enhancements over the standard Formation Density probe including extra collimation, different source-detector spacings and a higher activity source making it suitable for iron ore logging. The far spaced detector (LSD) is calibrated, giving the best estimate of formation density as borehole wall effects are minimised. A shorter spaced detector (HRD) is also calibrated which provides improved vertical resolution.

Principle of Measurement:

The source and detectors are held in contact with the borehole wall by a spring-loaded caliper arm measuring diameter for borehole compensation. Gamma radiation from the source is back-scattered (Compton effect) in the formation, reaching the detectors where the relative counts are measured using sodium iodide scintillation detectors. Calibration constants are determined using a water tank and a shot-filled high-density reference which have previously undergone a primary calibration. The calibration constants are combined with the gamma counts and diameter readings in the supplied software to give a calibrated density in g/cc.

SPECIFICATION:

Features

- Compensated density output in engineering units (g/cc)
- Short-spacing detector for high vertical resolution
- Tungsten shielding reduces borehole effects
- Standard calibration blocks for field or base use

Measurements

- Bulk density
- Dual-calibrated density channels (LSD & HRD)
- Natural gamma
- Caliper

Applications

Minerals:

- Density and porosity
- Lithology
- Bed thickness and boundary location
- Coal ash and moisture content

Engineering:

- Rock strength and elasticity parameters (with sonic log)
- Detection of weathered or fractured zones

Water:

- Location of aquifer and aquitard
- Detection of cavities and missing cement

Operating Conditions

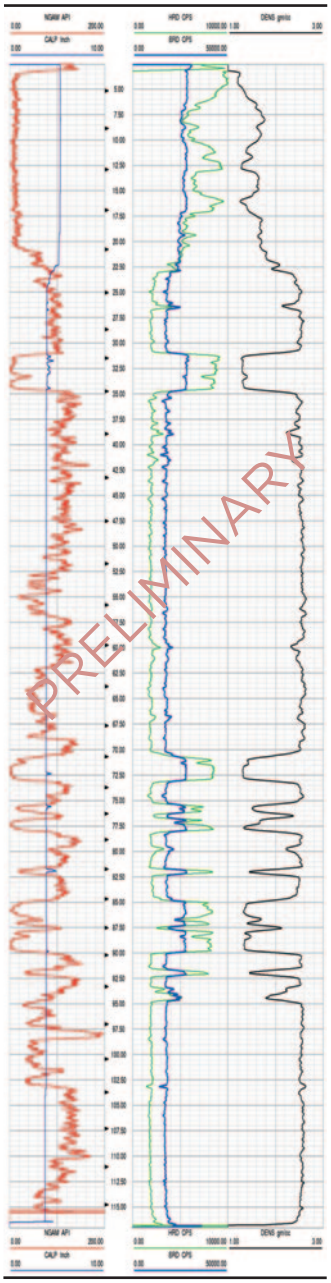
Borehole type:	All, including air filled (qualitative measurement only)
Recommended Logging Speed:	3m/min

Specifications

Diameter:	56mm
Length:	3.01m
Weight:	28.5kg
Temperature:	0-70°C (extended ranges available)
Max. pressure:	20MPa
Density range:	1.1 to 5.0g/cc
Caliper range:	56mm to 300mm

Part Numbers

1018309	Formation Density HD probe



Example of logging data

CLICK HERE FOR ENQUIRY FORM