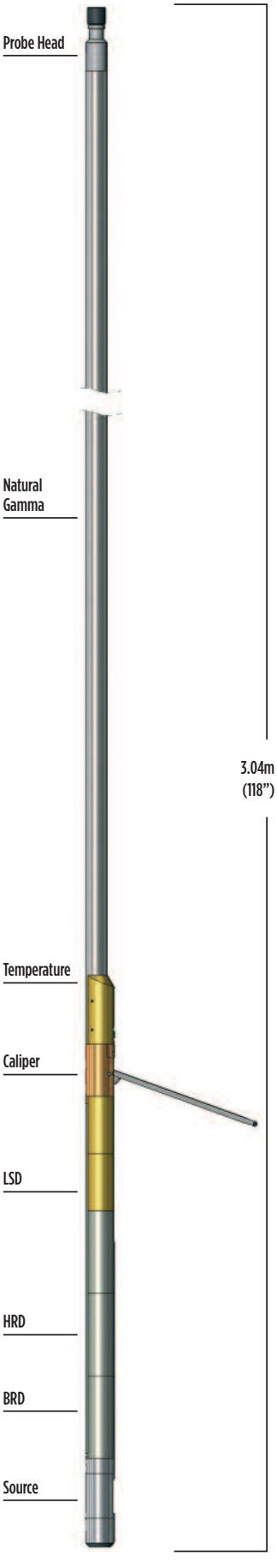
Formation Density, Density Guardlog & Iron Ore Density



Formation Density Probe

The Formation Density probe uses dual shielded detectors to provide a borehole-compensated density measurement with good bed-boundary resolution.

The Density Guardlog probe offers an additional LL3 focussed electrical measurement with good vertical resolution and depth of investigation. The Iron Ore Density probe includes extra collimation, different source-detector spacings and a higher activity source to extend the density range to 5g/cc for iron ore logging.

Principle of Measurement:

The probes contain a detachable 137Cs gamma source and two scintillation gamma detectors. The active windows of the source and detectors are maintained in contact with the borehole wall by a motorised caliper arm. Gamma radiation back-scattered by the formation (Compton effect) reaches the detectors where the relative count rates provide a measure of formation density.

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
- High-resolution density (HRD)
- Natural gamma
- Caliper
- Options: Guard resistivity, Bed-resolution density (BRD), Temperature
- Dual calibrated density channels
- Fluid Temperature

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

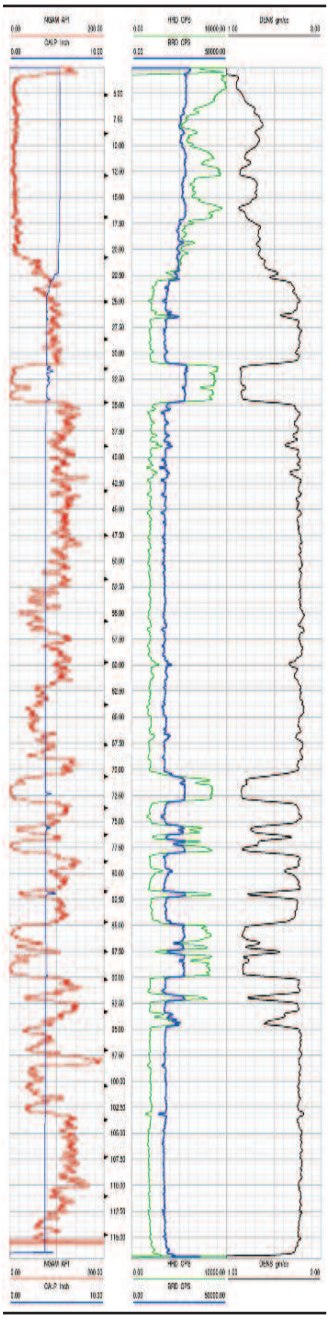
Borehole type:	All, including air filled (qualitative measurement only)
Recommended Logging Speed:	4m/min

Specifications

Diameter:	51mm
Length:	Formation Density 3.04m / Density Guardlog 2.89m
Weight:	21kg (Density Guardlog 28.5kg)
Temperature:	0-70°C (extended ranges available)
Max. pressure:	20MPa
Density range:	1.1 to 2.95g/cc (Formation Density and Density Guardlog probes) 1.5 to 5.0g/cc (Iron Ore Density probe)
Caliper range:	50mm to 300mm
Resistivity range:	1-10000 ohm-m

Part Numbers

I002013	Formation Density probe
I002016	– includes BRD and temperature
I014720	Density Guardlog probe with BRD
I018309	Iron Ore Density probe



Example of logging data

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