



TECHNICAL SHEET

OIL FIELD

GAMMA SPECTROSCOPY MODULE

SLIM-2.5"

Generality and principle of measurement

The natural-gamma spectroscopy probe analyses the energy spectrum of gamma radiation from naturally occurring or man-made radioactive isotopes. The probe includes a large volume detector contained in a dewar flask for thermal stability. The full spectrum Analysis (FSA) technique used to compute the contributions of individual isotopes makes optimum use of all acquired data. It is also used for gain stabilisation by mapping spectral shifts between successive depth intervals. Borehole size, mud weight and probe position effects are compensated by the software.

Gamma photons produced by radioactive decay of unstable isotopes create light emissions in the gamma scintillation detector. The amplitude of the pulse depends of the photon energy. An analyser within the probe separates the pulses into separate channels according to their amplitudes. Count-rates from groups of channels are converted in real-time by the surface software to concentrations of originating elements using preset algorithms.

Measurements and applications

Uranium (ppm)	Lithology determination
Thorium (ppm)	Mineral detection
Potassium (%)	Sedimentology
Gross Gamma	Improved shale-content computation
Full spectrum (static measurement)	Correlation
	Contamination studies

Technical specifications

Length	2.29 m (90")
Diameter	63 mm (2.5")
Weight	32 kg (71lb)
Max. Operating Temperature	125°C
Max. Operating Pressure	86 MPa (12,500psi)

Sensor Array

Detector	Na (TI) scintillator
Detector size	51mm x 300mm
Number of channels	300
Energy range	100KeV to 3MeV



2290 mm