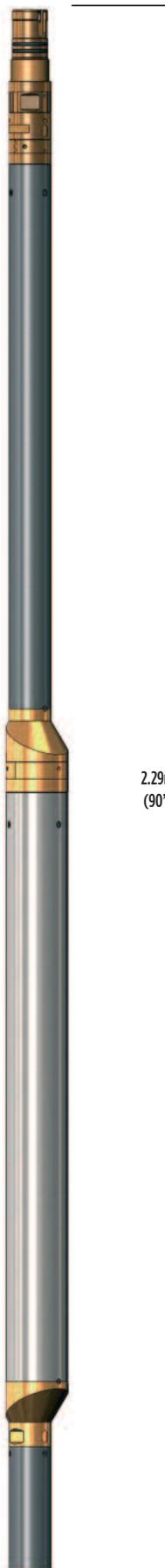


# Spectral Gamma Ray (GSG)



The Spectral Gamma Ray module analyses the energy spectrum of gamma radiation from naturally occurring or man-made radioactive isotopes.

The module 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.

## Principle of Measurement:

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 module 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.

## SPECIFICATION:

### Features

- Large-volume scintillation detector for high sensitivity
- Dewar flask for thermal stability
- Full spectrum dynamic drift compensation

### Measurements

- Uranium (ppm)
- Thorium (ppm)
- Potassium (%)
- Gross gamma
- Full spectrum (static measurement)

### Applications

- Lithology determination
- Mineral detection
- Sedimentology
- Improved shale-content computation
- Correlation
- Contamination studies

### Operating Conditions

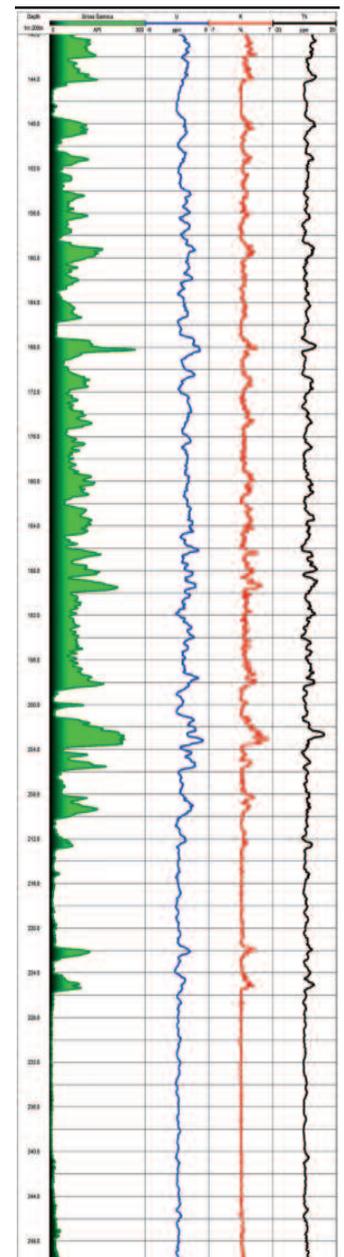
- Borehole type: open/cased, water/air-filled

### Specifications

- Diameter: 63mm (2.5") - max dia. 89mm (3.5")
- Weight: 40.5kg (89.3lb)
- Length: 2.29m (90")
- Max. Temperature: 125°C
- Max. pressure: 86MPa (12,500psi)
- Detector: Na(Tl) scintillator
- Detector Size: 51mm x 300mm
- Energy range: 100keV to 3MeV
- Number of channels: 300

### Part Numbers

- 1016424 Spectral Gamma Ray module
- 1015464 Natural-Gamma Calibration Blanket



Example of logging data

Spectral Gamma Ray Module