



BSG-02 BOREHOLE SPECTRAL GAMMA PROBE

DESCRIPTION

The BSG-02 is a fully digital spectral gamma probe that samples 512 channels of natural gamma radiation in the energy range from 100keV to 3MeV. The total spectrum is integrated over time (1 second) and transmitted to the surface at this rate. The standard detector used in the spectral probe is a 25mm by 76 mm crystal (1" x 3" CsI). Larger sizes are available and are listed under options. The temperature of the crystal detector is monitored and recorded during the borehole survey. This enables the operator to monitor and correct any spectral shift caused by temperature changes.

The spectral gamma probe is designed for use with all IFG logging systems that include the BIN-04 digital data interface, 4 conductor logging cable and the data acquisition software. The probe is controlled by an on-board microprocessor that transmits the digital values (Spectrum) along the logging cable to the surface console (BIN-04) for the re-formatting and transferring to a microcomputer. The microcomputer and the acquisition software (GDAS) displays and records the data in real time. The acquisition software allows up to 10 energy windows to be displayed and examined during logging. The data can be viewed in either graphic or numeric format. For improved statistics, individual spectrums can be accumulated up to 4 minutes in continuous or incremental logging mode.

Post processing software (Spectra) is available to display and process the recorded spectrum data. This software is used to calibrate the gamma spectrum and to compute up to a maximum of 10 energy windows. The output data is in column ASCII format, for the recording to a data file.



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SPECIFICATION

PROBE SPECIFICATION	
Detector Types	Nal crystal, resolution 7.5% Csl crystal, resolution 9.5% BGO crystal, resolution 15.5%
Detector Sizes	25mm x 76mm 19mm x 76mm
Sample Period	Minimum 1 second, Software selectable
Spectrum Channels	100keV to 3MeV range Resolution 5.86KeV per channel
Probe Housing	Stainless steel
Maximum Depth	2000 meters
Connection	4-pin connector (Gearhardt Owen)
Temperature Range	Storage; -35 to +70°C Operating: 0 to +70°C
Output	10mA current loop, 4800 baud
Supply Voltage	48 VDC @ 0.2A (at probe header)
Dimensions	40mm diameter x 120 cm long
Weight	3.5 kg

OPTIONS:

Larger diameter detectors are available on special order. The larger detector sizes increase the probe diameter to:

38mm x 76mm Detector	Probe diameter = 52 mm	Weight = 5.5 kg
50mm x 76mm Detector	Probe diameter = 65 mm	Weight = 5.6 kg
76mm x 76mm Detector	Probe diameter = 90 mm	Weight = 8.0 kg