



BDD-01 SPECTRAL DUAL DENSITY PROBE

DESCRIPTION

The BDD-01 is a fully digital dual spectral density probe that samples 256 channels of backscatter gamma rays over the energy range of 50 keV to 1.5 MeV.

The first detector to source spacing is at 36 cm and the second is at 55cm..

The emitter is a sealed Cs_{137} gamma source. The source is a single peak emitter at the energy of 662 keV and a strength of 5mCi. The total backscatter spectrum is integrated over 2 seconds. The detector used in the density probe are two 25mm by 76 mm crystal (1"x 3 " CsI). When not in use the source is stored in a lockable shielded container.

The spectral density 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 transmit 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 continues 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 recording to a data file.



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SPECIFICATION	
Detector Types	Nal crystal, resolution 7.5% Csl crystal, resolution 9.5% BGO crystal, resolution 15.5%
Detector #1	25mm X 76mm
Spacing #1	36cm
Detector #2	25mm X 76mm
Spacing #2	55cm
Gamma Source	Cs ₁₃₇ , 5m Curie,(0.1887 GBq)
Sample Period	2 seconds
Spectrum Channels	50 keV to 1.5 MeV range Resolution 5.86 KeV per channel
Probe Housing	Stainless Steel
Maximum Depth	2000 meters
Connection	4 pin connector (Gearhardt Owen)
Temperature Range	Storage: -35°C to +70°C Operating: 0°C to +70°C
Output	10mA current loop, 48 baud
Supply Voltage	24V dc. @ 0.2A (at probe header)
Probe Dimensions	40mm diameter X 184cm long
Probe Weight	6.2 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 = 7.6 kg
50mm X 76mm Detector	Probe diameter = 65 mm	Weight = 9.1 kg
76mm X 76mm Detector	Probe diameter = 90 mm	Weight = 12.5 kg