



## **BMD-01 MICRO GAMMA DENSITY PROBE**

### **DESCRIPTION**

The BMD-01 is a fully digital probe that measures the density of the surrounding rock in a borehole. The density is a result of the backscatter of the build in low energy  $\text{Cs}_{137}$  gamma emitter source. The source is shielded from the sensor by a build in lead shield.

The backscatter from the emission of the source is registered with a 25mm by 76 mm Cesium iodine detector. The counts are integrated over 0.5 second and then converted to the measurement of density ( $\text{g}/\text{cm}^3$ ). The emitter is a  $\text{Cs}_{137}$  gamma source with a 12cm source to detector spacing.

The source is a single peak emitter at the energy of 662 keV and a strength of 10uCi. The source is build into the probe and because of its low energy output does not require special storage or safety arrangements.

The density probe is designed for use with all IFG logging systems that include the BIN-04, BIN-05 and BIN-07 digital data interface consoles, mono cable and or 4 conductor logging cable. The probe is controlled by an on-board microprocessor.

The data is transmitted over the logging cable to the surface console for the re-formatting and transferring to a microcomputer.

The acquisition software (DAS) displays and records the data in real time. The acquisition software allows up to 20 columns of ASCII data to be displayed and recorded during the logging process. The data can be viewed in either graphic or in numeric format.

Post processing software (PCLOG) is available to process and plot / print the recorded data.



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SPECIFICATION	
Detector Type	CsI crystal, resolution 9.5%
Detector Size	25mm x 76mm
Gamma Source	Cs <sub>137</sub> , 10uCurie
Spacing	12cm
Sample Period	2 samples per second
Probe Housing	High Strength filawound tube
Maximum Depth	3000 meters
Temperature Range	Storage: -35°C to +70°C Operating: 0°C to +70°C
Output	10mA current loop, 4800 baud
Supply Voltage	24Vdc @ 0.1A (at probe header)
Probe Dimensions	42mm diameter x 133cm long
Probe Weight	5.5 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 = 6.6 kg
76mm x 76mm Detector	Probe diameter = 90 mm	Weight = 9.0 kg