



**EFTECH DRILLING SOLUTIONS**  
Efficient | Reliable | Cost Effective

# 1460 SPECTRAL GAMMA RAY (SGR)

The 1460 Spectral Gamma Ray Tool is a slim borehole logging instrument used for measurement of the isotope constituents of natural gamma radiation. It provides quantitative calculations of Potassium, Thorium, and Uranium.

## OPERATING PRINCIPLE

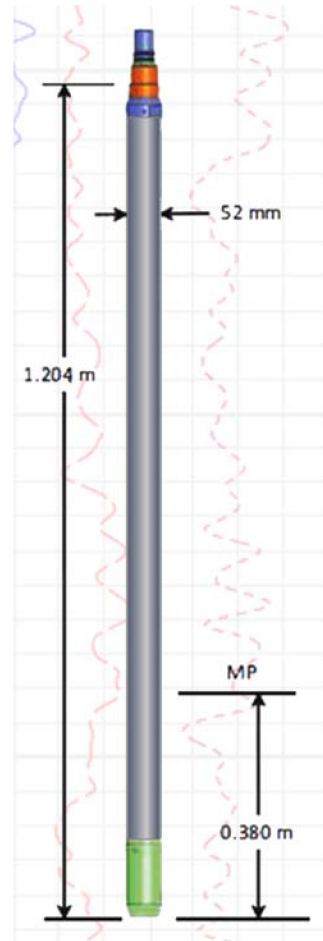
The 1460 Spectrum Gamma Ray tool measures the entire gamma spectrum from 0 to 3000 keV. All detected gamma rays which exceed a threshold level energy are counted to produce the total gamma ray curve. A spectrum fitting algorithm uses all of the available counts to determine the quantitative content of the main three unstable isotopes contributing to the natural radiation emission (Potassium, Uranium, Thorium). Environmental corrections for KCl mud, hole size, and casing are applied through software.

## SPECIFICATIONS

<i>Weight:</i>	8 kg (17.6 lbs)	<i>Recorded Curves:</i>	Spectrum (256 channels) Total Gamma Ray: GR Raw (cps)
<i>Maximum Temp:</i>	150 deg C (300 deg F)	<i>Calculated Curves:</i>	Gamma Ray (gAPI): GR Thorium Content (ppm) (Bq/kg): TH Uranium Content (ppm) (Bq/kg): U Potassium Content (%) (Bq/kg): K Potassium plus Thorium Content : KTh Ratio Uranium/Thorium: RUK Ratio Thorium/Potassium: RThK Ratio Thorium/Uranium: RThU Spectrum fitting quality indicator: ChiSq
<i>Maximum Pressure:</i>	100 MPa (14,000 PSI)		
<i>Detector Type:</i>	CsI crystal		
<i>Spectrum Range:</i>	0 - 4.2 MeV		

## LOGGING PARAMETERS

<i>Logging Speed:</i>	3 m/min (9.8 ft/min)	<i>Measurement Range:</i>	GR: 0-3000 API K: 0-100 % U: 0-1000 ppm Th: 0-1000 ppm
<i>Sample Rate:</i>	1 sample / 2 sec	<i>Accuracy:</i>	GR: +/- 2% of measured values K: +/- 2% of measured values U, Th: +/- 3% of measured values
<i>Depth of Invest.:</i>	300 mm ( 11.8 in)		
<i>Vertical Resolution:</i>	150 mm (5.9 in)		
<i>Minimum Hole Size:</i>	125 mm (4.9 in)		
<i>Maximum Hole Size:</i>	250 mm (9.8 in)		



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TECHNICAL DATA SHEET