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2LSA-1000 Data Sheet

High-Precision Gamma Measurement with the 2LSA-1000 Large Crystal Spectral Gamma Probe

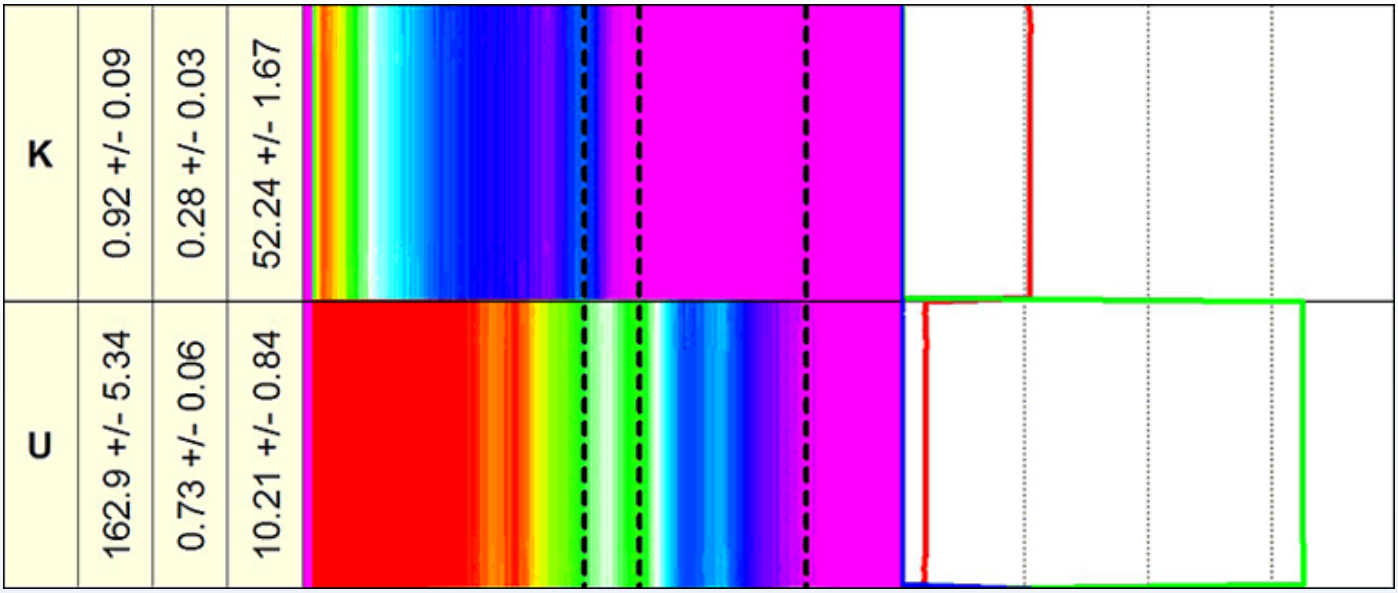
Detecting varying concentrations of naturally occurring potassium (K), thorium (Th), and uranium (Ur) isotopes is essential in mining and environmental applications. While standard gamma probes like the QL40GR offer basic detection capabilities, their limited resolution necessitates more advanced tools for projects requiring precise radiation measurements.

The 2LSA-1000 Large Crystal Spectral Gamma Probe addresses this need by offering high-precision radiation measurements, capable of detecting energy levels up to 3000 KeV. It achieves this through a larger scintillation crystal (available in NaI(Tl), BGO, or LaBr3 compositions), which significantly enhances counting statistics and quantitative analysis.

Key Features:

- **Enhanced Sensitivity**: The larger crystal size improves radiation detection, ensuring accurate measurements even in challenging conditions.
- **Spectral Gamma Logging:** Displays detailed energy spectra, enabling precise isotope analysis and clay typing.
- **Applications**: Ideal for uranium exploration, environmental monitoring, and lithological characterization.

By providing unparalleled accuracy and reliability, the 2LSA-1000 is a critical tool for projects demanding the highest precision in spectral gamma logging.



An image which comparatively shows the spectral decay of Potassium K and Uranium Ur isotopes. Image kindly supplied by Mount Sopris.

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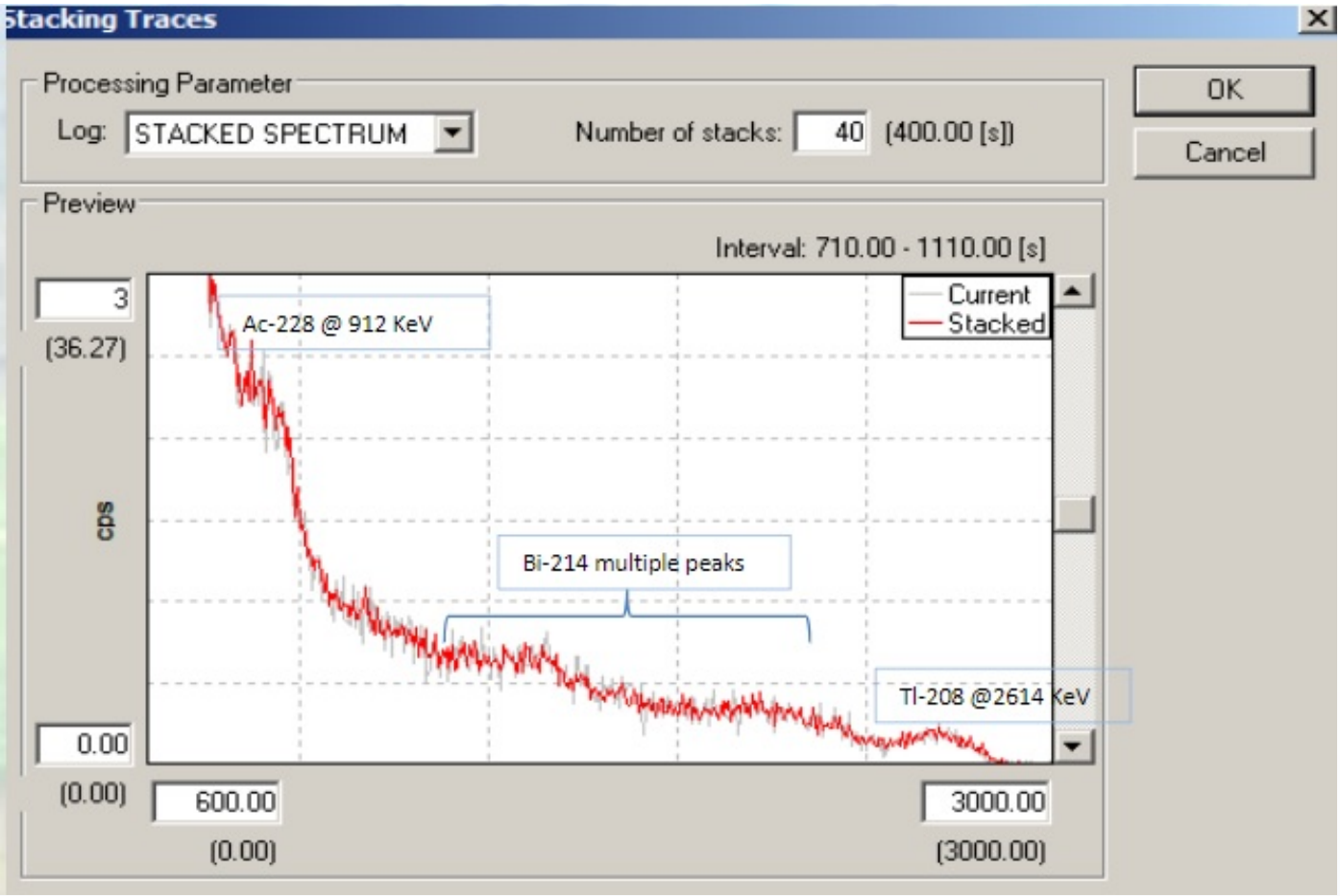

Example dataset showing the stacked spectra gamma-emitting isotopes from Th decay. Image kindly supplied by Mount Sopris.

This adaptable probe allows the user to define the number of channels they wish to use for their project allowing them to choose between 256,512 or 1024 channels. Additional SP and SPR data can be recorded along with the gamma radiation data within 5 energy- windowed gamma logs. Uniquely, this probe allows the collection of real time temperature compensation data, which allows the response to be calculated as temperature changes. To accomplish this, the 2LSA-1000 probe stores the calibration coefficients calculated from factory tests (which used multiple sources and a swept temperature bath).

Operating Conditions

W - Water ?
M - Mud ?
D- Dry ?

S - Steel ?
P - PVC Borehole ?
UC- Uncased ?

*Centralization is not required

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Product Dimensions

Physical	Dimensions (L x W x H)	Weight
(instrument only)	185 cm x 4.4 mm (diameter) x	7 kg

Technical Specifications

Maximum operating pressure:	200 bar or 3000 PSI
Maximum operating temperature:	70 °C (0- 60°C operational range)
Gamma Sensor Dimensions:	26.16 mm (Diameter) x 193.04 mm Na(Th)I Scintillation Crystal and PMT
Measurement resolution and range:	0.1 CPS, 0- 100,000 CPS
Natural Gamma range and energy accuracy:	0-3MeV, 2% accuracy
SPR:	0-1000 Ohms (range), 0.5 (resolution)
SP:	-2000-2000mV (range), 0.5 mV (resolution)
SPR and SP accuracy:	1%

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