PICO ENVIROTEC

RADIATION DETECTION

PGIS-2

PORTABLE GAMMA-RAY SPECTROMETER

The instrument is designed for portable or backpack application of radiation detection and monitoring in a variety of environments.

The system is auto calibrated by natural photo peaks, consisting of a detector unit, integrated with GPS, and a data logger unit based on Android portable devices, such as a smart-phone, a tablet or a notebook. The detector can be equipped with a NaI(Tl) crystal of various volumes ranging from 0.347 liter up to 2 liters.

The PGIS-2 provides recording of a full spectra; real-time dose calculation from spectra; **Radio Isotope Identification (RIID)** alarming of preset events; stationary data accumulation; synchronized comments; option of sending data to the server.

Data is automatically synchronized with GPS, and can be displayed in real-time in a waterfall mode, detailed spectra, Concentration of K, U, Th & Cs, identification of man-made radio nuclides, dose rate etc. Real-time ground navigation allows the operator to follow a survey grid or way-points on a map that can be prepared as a calibrated image or automatically loaded from Open Street maps.

SPECIFICATION HIGHLIGHTS

PGIS-2

- Detector Volume 0.347 L, NaI(Tl) (or BGO optional)
- Integrated GPS (external GPS receiver connection possible)
- Wireless Data Logger – Android based smart phone
- Removable handle
- Weight 5kg (11lb)

PGIS-2-1

- Detector Volume 1 L, NaI(Tl)
- Integrated GPS (external GPS receiver connection possible)
- Wireless Data Logger – Android based smart phone or tablet
- Shock absorbing detector case
- Weight 7.5kg (16.5lb)

PGIS-2-2

- Detector Volume 2 L, NaI(Tl)
- Integrated GPS (external GPS receiver connection possible)
- Wireless Data Logger – Android based smart phone or tablet
- Shock absorbing detector case
- Weight 12kg (26.5lb)

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PGIS-2 SPECIFICATIONS

PGIS - 2 Technical Specifications

MCA Resolution	8196 channels (DSP/FPGA Technology)
Channels in use	256/512/1024
Energy detecttion range	20 keV to 3 MeV
Data handling	Individual detector processing and calibration
Differential nonlinearity	<0.1%
Integral nonlinearity	<0.01%
Gain stabilization	Automatic - Real time stabilization (1sec)
Dynamic throughput	Up to 250,000 cps per detector
Dead time	Virtually zero, achieved with digital pulse processing
Baseline restoration	Digital (IPBR) Inidvidual Pulse Baseline Restoration. The baseline is established for each individual pulse for maximum pulse height accuracy
Pulse shaping	Digital Pulse Shaping
Pile up Rejection	Digital (<40nS)
Data processing	Data complies with NASVD processing requirements. Fully linearized output, the Poisson Distribution is unaffected.
Sampling rate	Dynamic mode: 1 sec; or Accumulation mode: selectable time
Power	Internal LI-Ion battery - 24 hours run time typical
Callibration	Automatic using natural background radiation, multi-peaks algorithm by statistic presence. No radioactive sources required
Dimensiond and weight	depends on a configuration
System stabilization	Cold startup - less than 1 min
Data output	USB; Bluetooth
Radio Nuclide Identification (RIID)	• Norm • Industrial • Threat • Medical • Customizable
Control	High level of self-diagnostics
Software	Real time data acquisition, supporting software for data QC, visualization, export to ASCII (CSV), GIS, XML, or N 42.42 formats