

# GAMMA SURVEYOR



**One control unit and a choice of probes**

**512-channel gamma-ray spectrometer for field, borehole, car, laboratory**

**In situ K, U, Th analyses**

**Sensitive and accurate dose rate meter**

**Nal(Tl) or BGO detectors**

**Simultaneous multi-probe measurement**

**High quality rechargeable Li-Ion batteries for 3-4 working days**

**Easy control system**

**Applications:**

determination of concentrations of elements (especially K, eU, eTh), dose rate and gamma-ray spectra measurements, radiation sources identification for environmental radiation monitoring, geological mapping and studies, mineral and raw material prospecting, laboratory assays, health care etc.



**Gamma Surveyor** is a new group of multi-channel gamma-ray spectrometers and dose rate meters designed for measurements of natural and artificial isotopes in ground, boreholes and laboratories. This group of instruments covers a wide range of devices using various probes and types of detectors:

- portable gamma-ray spectrometer for field and borehole measurements
- compact handheld spectrometer
- accurate dose rate meter
- carborne spectrometer with high-volume detector
- laboratory spectrometer with special detectors and features

The control unit works with all kinds of probes.

## Technical Specifications

The instrument consists of the control unit and probe(s)

### Measuring modes

#### Spectra & Assay

- spectral measurements with determination of K, eU, eTh concentrations
- spectrum view, energy & 24 nuclide identification
- adjustable integration time

#### Dose rate

- precise radiometric measurements
- histogram of previous 64 readings
- adjustable integration time

#### Search

- quick and selective search for gamma-ray sources
- response time 0.5 s
- histogram of previous 256 readings
- variable audio indication

### Control Unit:

- Works with all types of probes
- Attached to the small handheld probe forms a compact instrument
- Possibility of connection of more probes simultaneously, GPS receiver, PC (USB)
- 10 ROIs (regions of interest)
- Data memory: max. 32 MBit, max. 100 files
  - 100 000 measured points (dose rate continuous mode)
  - 58 000 measured points (dose rate)
  - 1 800 measured points (full spectra & assay)
- Graphical LCD display 320x240, white backlight
- Combined keyboard (mobile phone style), 19 keys
- Acoustic signalization
- Power supply from internal exchangeable battery pack (lithium-ion) or external power supply 6-14V (AC adapter and cable for car socket supply included in standard accessories)
- Integrated fully automatic intelligent battery charger activated by external 12 V source connection
- Possibility of firmware upgrade via Internet
- Dimensions: 256 x 90 (145) x 60 mm
- Weight: 0.5 kg
- Ambient temperature range: -10 to +50°C
- Waterproof

### Detectors / Probes:

- Standard probes:
  - combined spectrometric probe for surface and borehole with NaI(Tl) or BGO detector
  - compact spectrometric handheld probe with NaI(Tl) or BGO detector
  - radiometric probe (for dose rate measurements) with NaI(Tl) detector
- 512 channels, max. 250 000 pulses per second
- Measuring range 100 keV to 3 MeV
- Zero dead time
- Detectors: NaI(Tl), BGO, volumes 21.2 in<sup>3</sup> (0.35 l) and 6.3 in<sup>3</sup> (0.1 l), or other on request
- Advanced automatic stabilization of the peak position
- Stabilization using built-in or external reference source 137Cs, alternatively natural isotope K
- The probes are supplied from the control unit (no charging of the probes).
- All calibration data are stored in the probe and a user can create two user defined calibrations.
- For enlargement of the detection volume and thus achievement of a more precise and faster measurement it is possible to connect more probes (of the same type, if possible) to the control unit. It is not necessary to recalibrate the probes for this purpose.
- Dimensions and weights:
  - Compact handheld probe 90 x 120(90) x 290 mm, height with the handle 180 mm / 1.6 kg
  - Combined 2" probe Ø70 x 420 mm / 2.8 kg
  - Combined 3" probe Ø100 x 420 mm / 5.3 kg
- *The measuring system supports point, profile, borehole and continuous measurements as well as the use of external GPS receiver.*
- *User-friendly operation*
- *Output data are compatible with MS Excel, Surfer and other mapping software.*
- *The methodology is based on the recommendation of IAEA (International Atomic Energy Agency). The factory calibration is done on high-volume standards.*



### Standard Accessories:

Transport case  
Carrying belt  
USB cable  
AC/DC adapter  
Car battery adapter  
Gamma Surveyor installation CD  
Operation manual

### Optional Accessories:

Equipment for shallow borehole logging  
Set for laboratory use  
Set for carborne use



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