CAEN SyS

Systems and Spectroscopy Solutions

metorX

HPGe HAND HELD SPECTROMETER

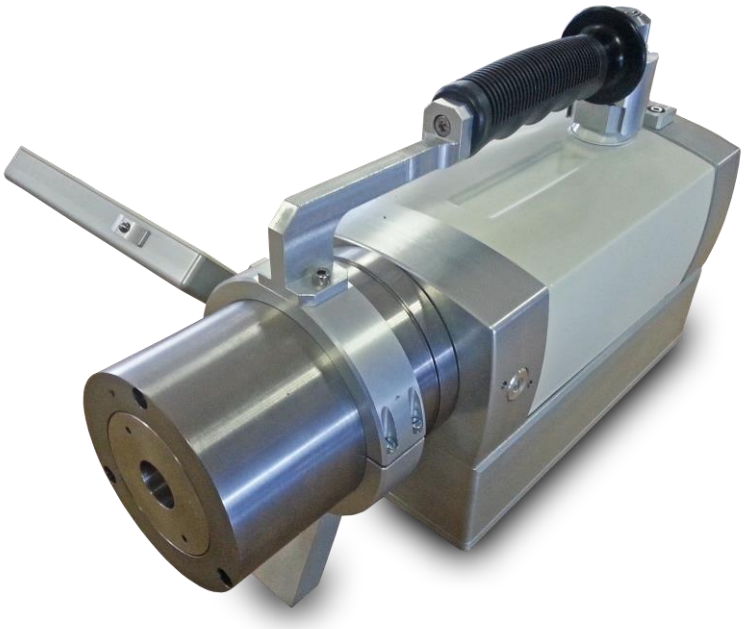
NitroSPEC

MAIN FEATURES

- Minimal weight and size
- Ready for operation in about 1 hour
- Energy range 40-3000 keV
- Autonomous operating time up to 20 hours
- Simple with low cost maintenance and service
- No additional vibrations
- Completely integrated solution
- Minimal time to reach the operating temperature
- Highly competitive price

DESCRIPTION

The **NitroSPEC** is the world's smallest liquid nitrogen cooled Spectrometer which is based on High Purity Germanium (HPGe) semiconductor detectors.
The **NitroSPEC** is providing the complete range of functions and features which are offered by regular laboratory spectrometer based on HPGe detectors but in a really miniature composition of all major components.
During the development of the **NitroSPEC** , R&D specialists were aimed at HPGe deector, Dewar vessel for liquid nitrogen, MCA with software package and visualziation monitor integration in only one miniature monounit to provide easy and comfortable use.
Due to the fact that during the measurement no cables are needed, the operator is unrestricted in his mobility.
power supply is no longer an issue as everything is integrated.



The **NitroSPEC** can be equipped with a wide range of HPGe detectors depending on the application:

- HPGe planar GPD detectors are available for analysis of Gamma and X-rays.
- HPGe coaxial GCD detectors are available with relative efficiencies up to 20%. Standard or with extended energy range (X series).

The **NitroSPEC** includes preamplifier, digital MCA with 16K channels, High and Low Voltage power supply and a set of batteries to provide maximal flexibility.
In field mode the **NitroSPEC** is used as identifier simultaneously acquiring and

saving data for performance of quantiative and qualitative analysis in laboratory conditions. Communication between working station and the **NitroSPEC** is possible via USB or wireless connection.

The **NitroSPEC** complete set is composed by the following components:

- HPGe detector (coaxial or planar)
- Digital multi-channel analyzer
- Analytical software package
- Touch screen display
- Dewar vessel
- Communication interface (USB, wireless)
- Adaptor

ACCESSORIES

- Lead Shielding with collimators
- Hand-cart
- Hard-sided transport case
- Funnel for LN_2 filling
- Car charger
- Spare battery

TECHNICAL SPECIFICATIONS

Detectors

- Relative efficiencies available: 10%, 15%, 20%
- Energy range: 40 - 3000* keV
- Energy resolution for 10% efficient coaxial detector:
  - 825 eV at 122 keV,
  - 1.75 keV at 1.33 MeV

Cooling system

- Dewar vessel volume: 0.6 l
- Time for reaching of operating temperature after liquid nitrogen filling: <1.5 h
- Detector holding time: >20 h

Power supply

- Power consumption: < 3.5 W
- Voltage: 12 V
- Li-Ion Battery operation time: >8 h

Data acquisition

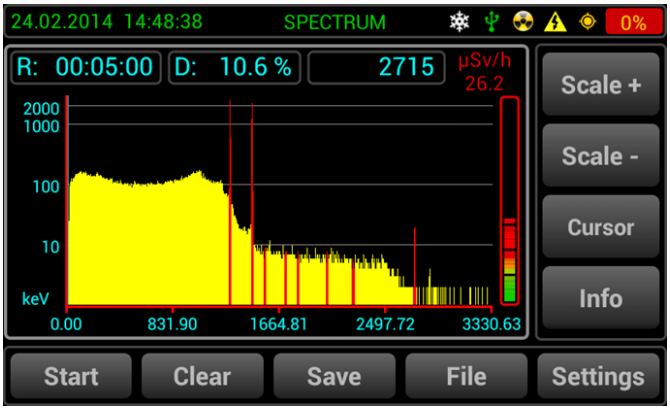
- Maximum number of quantization levels of ADC: 16K
- Channel capacity: 2^{32}
- Integral nonlinearity: <0.04 %
- Differential nonlinearity: <1 %
- Temperature instability: <0.01 %/°C

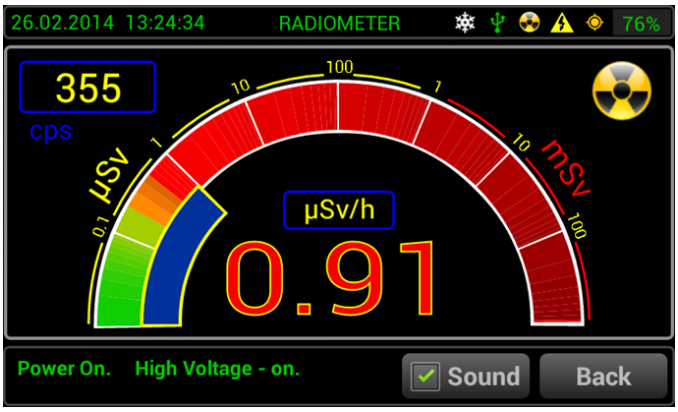
Physical size

- Dimensions: 154x324x217 mm
- Weight: 4.95 kg

Others

- Navigation system: GPS
- Operational temperature range: 0/+40 °C
- Ingress Protection: IP65





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* *Available with extended energy range (X series)*

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