

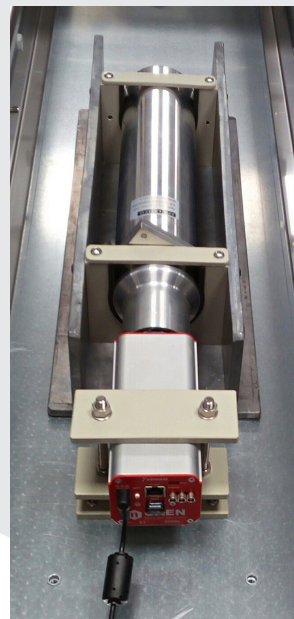


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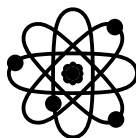


GSU, GSU DYMO

GAMMA SPECTROMETRY UNIT WITH NaI(Tl) SCINTILLATOR



Excellent, reliable
temperature stability



Nuclide identification
available



High-sensitivity,
versatile system

NaI(Tl) based gamma
spectrometer

Specific activity meas. in
samples, slag, dusts

2"x2" or 3"x3" NaI(Tl)
according to samples dim.

Software for ROI definition
and data management

Typical MDA for foundry
steel samples: 0.02 Bq/g

GSU gamma spectrometry unit is composed of a 2"x2" NaI(Tl) detector with MCA, installed inside a 5 cm thick lead shielding well, performing high sensitivity gamma spectrometry and specific activity measurements.

The main application of **GSU** is the analysis of small samples, such as foundry casting samples, air particulate filters, metal by-products, geological samples, food, and other materials. Analysis of slag, dust and liquid samples contained in Marinelli beakers is also possible.

When required, **GSU** includes a custom-designed sample holder designed for foundry casting samples. The ELSE NUCLEAR software allows the user to define specific ROIs, to determine the partial and total specific activities (Bq/g). Isotope identification analysis can be provided optionally.

GSU DYMO is designed to acquire gamma spectra in a dynamic configuration, i.e. either the detector or the object to be monitored is moving. This requires a considerably fast and accurate data acquisition, and a high efficiency. The proprietary software allows to perform this analysis by setting the spectra acquisition frequency (1 s typical). A moving average algorithm is applied to the acquired spectra to better identify sudden variations above the background. **GSU DYMO** is the perfect solution for applications requiring a simple, reliable and versatile gamma spectrometric analysis, such as: aerial monitoring performed with helicopters or drones, area monitoring performed with vehicles (either ground or water), or monitoring of materials carried by conveyor belts.

Thanks to its compactness, and once the monitoring activity is concluded, GSU DYMO can be easily re-deployed on a different vehicle or re-configured to perform a different monitoring activity.

GSU DYMO uses big 3"x12" cylindrical NaI(Tl) scintillators to achieve higher efficiencies.

The processed data are sent to the PC via a direct connection (USB or ETH) and saved in graph and ASCII format; the data are available for sharing through the most common data processing applications.

The management software has an integrated utility for energy calibration and temperature correction, which allows to "follow" the natural K-40 peak and to correct the analysis compensating the temperature effects.

Once the acquisition is started, the software displays in real-time the measurement data such as: time, GPS coordinates (optional), detector status, battery and power status.

TECHNICAL SPECIFICATIONS

General characteristics - GSU

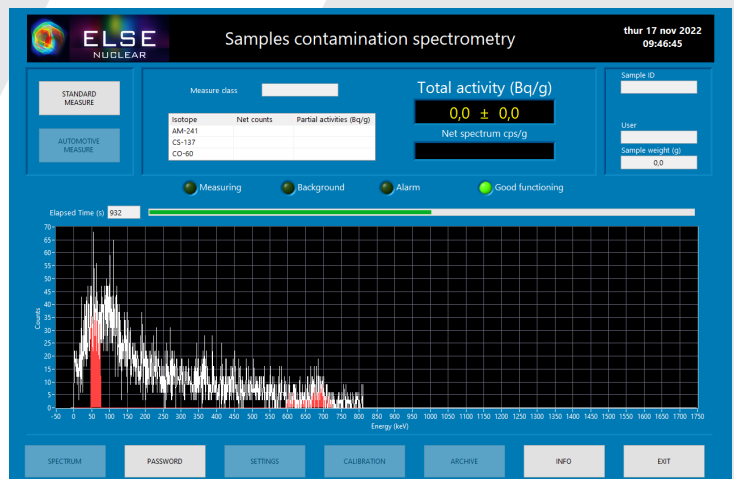
- NaI(Tl) dimensions: 2"x2" or 3"x3"
- Energy Range: 30 keV ÷ 2 MeV
- Resolution at 662 keV: <7.5%
- Typical MDA: 0.02 Bq/g for 300 s meas.
- Typical efficiency (foundry casting samples): 2% (Am-241), 11% (Cs-137), 9% (Co-60)
- Sample holder: PVC, custom design
- Lead shielding: 5 cm thick
- Total weight: 240 kg (including support)

General characteristics - GSU DYMO

- NaI(Tl) dimensions: 3"x12"
- Energy Range: 30 keV ÷ 2 MeV
- Resolution at 662 keV: <9%

MCA characteristics

- 2048 channels
- Ethernet connection
- Available bias voltage: from 0 to 1500 V
- Dimensions: 71 x 66 x 164 mm
- Weight: 700 g
- AC/DC adapter included
- Integrated battery (6 hours lifespan during data acquisition)



GSU software interface



GSU DYMO specific application: monitoring of materials carried by conveyor belt

OPTIONS

- Isotope identification software (-IA version)
- 10 cm lead shielding for further lowering of the MDA (GSU)
- LaBr₃(Ce³⁺) scintillator instead of NaI(Tl), for higher sensitivity and better gamma spectrum resolution

ACCESSORIES AVAILABLE UPON REQUEST

- Calibration source (isotopes and activity to be defined): gel matrix in Marinelli beaker or contaminated steel samples
- Cs-137 point source, < 10 kBq, for periodical quality controls
- GPS locator (GSU DYMO)
- IP65 housing (GSU DYMO)
- Flight case (GSU DYMO)
- Warranty extension from 12 months to 24 months

