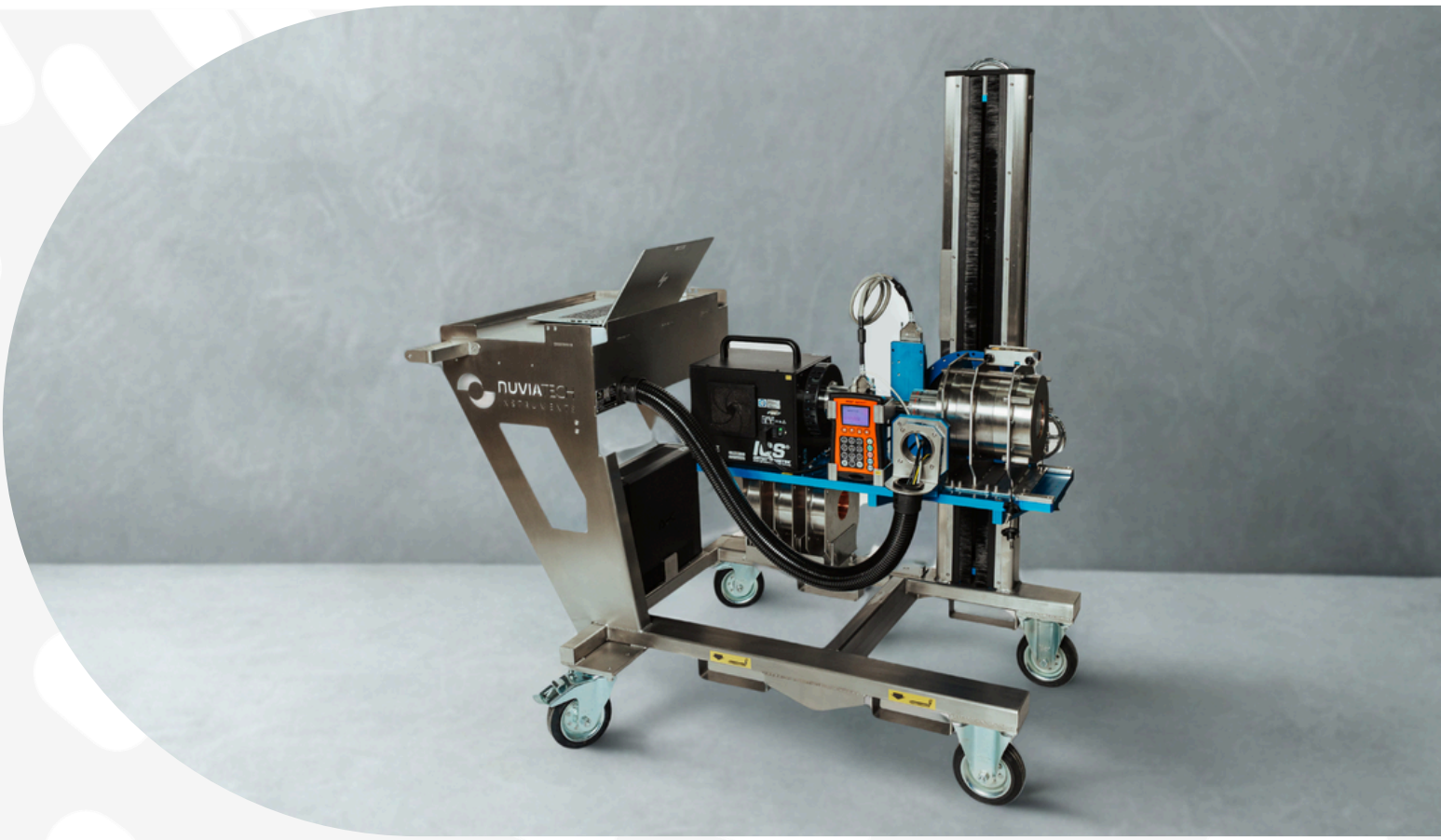
NUVIATECH INSTRUMENTS

SPECIFICATION SHEET

# GAMS 1

Mobile in-situ gamma spectroscopy measuring system



GAMS 1 is a high performance and easy to use assay system for a wide variety of in situ gamma ray measurements. Large wheels permit easy movement over rough surfaces, allowing easy transport of the entire device to any location. The mobile assay system is designed for gamma radiation measurements at any location and conditions (field measurements). The device is dedicated for radionuclides activities measuring in packed or unpacked objects and substances (in situ measurement of waste, decommissioning of nuclear facilities, measurement at borders and ports).

## Benefits

- Mobile gamma spectrometric measuring system
- Suitable for all common geometries pipes, cylinders, floors, ceilings, walls, drums, boxes and soils
- Detector is housed in a shielded and collimated module to minimize the interference from environmental.
- Qualifications waste packages activity measurement ISO 14850

## Key Figures

180°
*Tilt angle*

38 - 120 cm
*Vertical range*

1 hour
*Battery operating time*

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# GAMS 1

Mobile in-situ gamma spectroscopy measuring system

## Product description

- The mobile assay system comprises a cart specially designed to carry all the components HPGe detector, shield and collimator, ICS cooling system, UPS, digiDART ™ high performance multichannel analyzer for mobile application, and laptop computer including all the corresponding software.
- The detector support can be positioned at heights from 0.38 m to 1.2 m The pivot mechanism orients the detector at different angles in the range of 0 - 180°.
- The system measures all common geometries pipes, cylinders, floors, ceilings, walls, drums, boxes, and soils. Two assay systems can be joined to one flexible solution and work together as one more efficient modular system.
- Calibration is a simple procedure, requiring only the use of a single point, mixed isotope source. Automatic energy calibration technique make system setup simple and user friendly.
- Any standard HPGe detector may be used with the assay system (integrated mechanical cooler) and no special factory calibration is required. Detector is housed in a shielded and collimated module to minimize the interference from environmental.

## Control Software

- GAMWIN SW FULL (included) - comprehensive Spectroscopy Analysis Software package
- ORTEC MAESTRO - basic spectroscopy system
- EffTrace - software for rapid estimation of gamma-spectrometric detection efficiency (scintillation and HPGe) for arbitrary objects; it uses an analytical solid-angle calculation with attenuation corrections in a 3D geometry and user-supplied efficiencies versus distance, angle, and energy, making it compatible with any detector.
- GAMS Control SW - control and database software

## Product Application

- In-situ gamma spectrometric measurement of waste
- Decommissioning of nuclear facilities
- Measurements at borders and ports

## Options and Accessories

### LN2 cooling system:

7 -liter dewar

### LN2 filling system:

50-liter self-pressurized dewar, 6-foot transfer line, pressure-fill bayonet, and withdrawal device.
System Calibration: Factory point-source calibration.

### Collimators and shields:

Special shielding and collimators are available on user request.

### Positioning system:

Electro-mechanical positioning unit (stepper engine with end stops and control elements) for positioning of the detector in the vertical axis.

## Specifications

| | |
|---|---|
| Detector | ORTEC Coaxial HPGe Detector of optional efficiency |
| MCA | ORTEC digiDART - 16k channels portable HPGe |
| Cooling system | ORTEC ICS (electromechanical cooling) |
| Collimators and shields | 50 mm thick lead shielding with a 1 mm copper and 0.5 mm tin liner. |
| Laser Meter | Inbuilt laser meter (laser aiming) accurately determines the distance from the detector endcap to the measurement point. Accuracy 3 mm. |
| Construction | Stainless steel |
| Dimension | Height 1300 mm, width 480 mm, depth 1 400 mm |
| Weight | 270 kg (fully assembled) |
| Indenpendent operation time | ~ 1 hour |
| Start-up time | < 5 min (without detector cooling time) |
| Power supply | 230 V external + integrated UPS |
| Operating and storage temperature | from 5 up to 40 °C (operating), from 5 up to 60 °C (storage) |
| Relative air humidity | < 80 % (non condensing) |