

G3010-AGSS

Automated Gamma Spectroscopy System

Introduction

The ANTECH model G3010 Automated Gamma Spectroscopy System (AGSS) or automated sample changer is an effective solution for performing automated, unattended, high-resolution gamma spectroscopy (HRGS) measurements and analysis of bulk samples in a variety of sizes and types of Marinelli beakers.

The design draws on more than 15 years of collaboration with ORTEC® and is optimized for use with the ORTEC® range of high purity Germanium (HPGe) detectors, cryogenic systems and multi-channel analyzers, such as the ORTEC® DSPEC-50. The ANTECH automated sample changer design incorporates state of the art technology including an Allen-Bradley® Programmable Logic Controller (PLC), servo drivers and single cable motors with absolute encoders for robustness. Deploying modern and proven components provides a safe, low maintenance and high reliability operational system.

Software

The AGSS software consists of two interactive components: ANTECH Gamma Sample Plus software and ORTEC® GammaVision® spectroscopy measurement and analysis software. ANTECH Gamma Sample Plus software schedules the measurements and commands the PLC, which directs the 3-axis motion control pick and place system. ORTEC® GammaVision is an all-inclusive gamma spectroscopy measurement and analysis application which contains all the basic and advanced features needed for accurate and consistent radionuclide identification and quantification. The system is controlled through an external control computer which includes Windows 7 or XP operating systems, 32 or 64-bit processor, the ANTECH Gamma Sample Plus software and ORTEC® GammaVision® software.

The user-friendly operator interface of the ANTECH Gamma Sample Plus software was developed with the needs of gamma ray spectroscopists at the forefront and the user interface permits:

- User level assignment and security
- Machine & measurement set-up
- Batch setup with ability to setup next batch while running the current batch
- Printing of batch reports
- Multiple data output and reporting options
- Diagnostics and help functions



Fig 1. The sample tray with Marinelli beakers containing samples for measurement



Fig 2. The ANTECH Model G3010-AGSS

Features

- Flexible design for a wide variety of sample sizes
- Enhanced automation options based on Allen-Bradley® PLC motion technology
- Comprehensive choice of ORTEC® spectroscopic measurement and cooling systems
- Intuitive user interface for integrated and unified scheduling and analysis software
- Graded lead measurement chamber ensures low background counts
- Operator control panel
- CE compliant with many in-built safety features

Benefits

- Easy set-up and use
- Full automation allows unattended operation
- Integrated safety, including magnetic switches in upper level access doors, operator control panel status lights and safe-torque off motor feature
- Design allows rapid change of sample size
- Software diagnostics and user help
- Accessible parts for easy maintenance and cleaning
- Integrated weighscale
- Integrated barcode reader

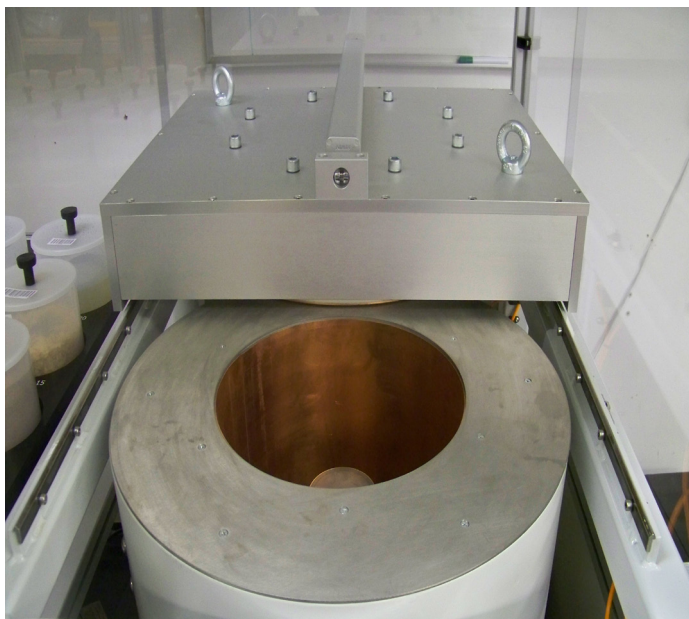


Fig 3. The chamber lid opens automatically to reveal the measurement chamber containing the ORTEC® HPGe spectroscopic detector



Fig 4. Access doors allow for ease of installation, batch preparation, maintenance and cleaning

The AGSS can be shipped as an almost complete package or in a flat packed configuration to accommodate any site access requirements or restrictions.

Specification

Dimensions W x D x H	1850mm x 1200mm x 2600mm (full mast elevation)
Electrical power requirements	110V 50/60Hz, 13 Ampere (maximum), Single Phase + Earth to 240V 50/60Hz, 7 Ampere (maximum), Single Phase + Earth (preferred voltage 230VAC +/- 10%)
Chamber inner dimensions	Ø 279mm x 406mm
Marinelli beaker capacity	0.25 litre to 2.5 litre (user configurable)
Shielded measurement chamber	Equivalent specification and dimensions to the ORTEC® model HPLBS1-4B shielded measurement chamber, with automated sliding lid modification
Motion control electronics	Allen-Bradley® PLC servo drives and motors

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