

## SPECTROMETRIC MOBILE STATION FOR CHARACTERIZATION OF RADIOACTIVE DRUMS

# EASYSCAN

### MAIN FEATURES

- *Efficient alternative to HPGe-based systems*
- *Fully characterized with Monte Carlo simulations*
- *Characterization of drums through sub-volumes analysis*
- Robust, wheel-mounted mechanical structure
- Detectors: 4 NaI(Tl) 3"x3" scintillators with compact MCA
- 20 mm lead shielding/collimator for each detector
- Geometries database and release limits calculation
- Data archive and measurement reports
- MDA (Co-60): down to 0.05 Bq/g (15 min)



### DESCRIPTION

The **EASYSCAN** spectrometric mobile station is a robust and handy system designed to perform an easy, fast and reliable spectrometric analysis of radioactive material contained in drums, where the fine spectroscopy provided by HPGe-based systems is not needed.

The **EASYSCAN** main components are:

- 4 NaI(Tl) 3"x3" scintillator detectors coupled to dedicated MCAs
- Lead shielding for each detector, which also defines the scintillator field of view (collimation)
- Wheel-mounted mechanical support structure for detectors
- Control laptop with user-friendly software interface

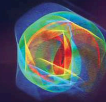
The detectors are arranged in a vertical array of 4 units. Each detector is provided with a 20 mm lead shielding around the active volume (end-cap), acting at the same time as a collimator: each scintillator can only "see" one of the 4 so-defined vertical layers of the drum. The system can achieve an MDA of 0.05 Bq/g (15 minutes measurement, 0.2 g/cc density, 220 l drum).

The wheel-mounted mechanical support structure is robust and very easy to move around, so **EASYSCAN** can be easily deployed in different locations without having to disassemble the scintillators or the electronics. Thanks to the anti-vibration absorbers, it can also well resist accidental bumps that may normally occur during its re-location.

Radioactive drums of different volumes can be characterized with **EASYSCAN**, i.e. 220, 300, 400 liters and even bigger ones. The operator can quickly set each detector at the desired position (height) thanks to four independent manual wheels, located on the top of the structure.

The **EASYSCAN** user interface consists in a sophisticated yet easy-to-use software. The one-button scan procedure is designed to be extremely essential: the operator needs only to set the measurement time and then simply start the acquisition. A 15-minute measurement time is enough for most cases where low to very-low radioactive concentrations shall be measured. Measurement reports are provided at the end of each scan.

**EASYSCAN** comes with a full Monte Carlo characterization of each scintillator response function. Both the response functions and the measurement report can be customized according to specific requirements in terms of isotopes to be searched, material density, drum volume, etc...



## TECHNICAL SPECIFICATIONS

### Detectors and electronics

- Type: 3"x3" NaI(Tl) scintillator crystals coupled to PMT
- Number of units: 4, arranged in a vertical array
- Energy resolution: < 7.5 % for Cs-137
- Compact MCA with 4k channels
- Battery back-up in case of power failure
- Lead shielding/collimator thickness: 20 mm

### Management software

- Visual representation of detector – collimator – drum
- Efficiency curves calculation
- Calculation of specific activity (Bq/g)
- Drum geometry database
- Customizable release concentration limits
- Customizable analysis reports and printing options
- Good functioning verification

### MDA levels

Material density	MDA
Typical drum filled with concrete material (2 g/cc)	Co-60: 0.20 Bq/g Cs-137: 0.80 Bq/g Eu-152: 0.42 Bq/g
Typical drum filled with plastic material (0.2 g/cc)	Co-60: 0.05 Bq/g Cs-137: 0.21 Bq/g Eu-152: 0.11 Bq/g

### Safety design

EASYSCAN operates with no moving parts, as it is a totally manual system. This avoids any risk generated by engine-related issues and helps in reducing residual risks caused by improper use.



## ACCESSORIES AVAILABLE UPON REQUEST

1. Warranty extension from 12 months to 24 months