



Waste Assay Monitor HERCULES

(Liquid Nitrogen cooled)

Application

WAM-201 is intended for the measurement and determination of activities, activity concentration, total activities and total activity concentrations of selected radionuclides which emit gamma radiation in a range from 100 to 1500 keV. Solids and subjects are measured with average density up to 2055kg/m³ located in standard drums with volume of about 0.2m³ and 0.4m³

Features

Waste Assay Monitor is a complex measuring system which is intended for monitoring of radioactive waste in standard 200-litre drums. Hercules includes following systems:

- Monitor - a fixed segmented gamma-spectrometric monitor for determination of activities of selected radionuclides in individual drum segments with vertical motion and collimator. Transfer system is used for moving measuring part from/to the drum measured,
- Dose rate monitor, direction-dependent, measures dose rate of the segment in defined distance from the drum,
- Dose rate monitor measures the background dose rate,
- Rotary table,
- Control and power supply switchboards.

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Specification

Parameter	Value
Energy range, keV	100 to 2500 keV
Radionuclides measured *	¹³⁴ Cs, ¹³⁷ Cs, ⁶⁰ Co, ⁵⁴ Mn, ⁵⁹ Fe, ⁹⁵ Nb, ⁶⁵ Zn, ⁹⁵ Zr, ⁵⁸ Co, ⁵¹ Cr, ¹⁴⁴ Ce, ¹⁸¹ Hf, ¹⁰³ Ru
Measuring range	from minimum detectable activity of 2.5 kBq (for background of 300 nSv/h, for ⁶⁰ Co in 0.2 m ³ drum with an average material density of 300 kg/m ³ and measuring time of 30 min.) up to 1GBq
Measurement precision	+/-20% (for the uniform activity distribution and the density in the volume measured) maximum 50% for the material density of 1000 kg/m ³ in the drum
Material density	up to 2500 kg/m ³
Material volume	up to 0.4 m ³
Material weight	up to 1000 kg (maximum drum weight)
Drum measured	Type I – average of 600 mm, height of 860 mm, wall thickness from 1.4 to 1.5 mm Type II - average of 600 mm, height of 800 mm, all thickness of 4 mm
Detector	HPGe, efficiency of 30%** , resolution < 2 keV at 1.33 MeV
Dimensions	2500 x 700 x 2200 mm
Weight	1700 kg
Communication interface	X2X, CAN, RS-485
Protection from external influence	IP 54
Power supply	220 V +22/+33 V, 50 Hz, 2 kW, maximum power interruption up to 20 ms. TN-S power supply system

* Nuclide list can be changed accordingly

** Can be used with other efficiency

