BALTIC SCIENTIFIC INSTRUMENTS

Bringing Solutions







Waste Assay Monitor HERCULES

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APPLICATION

The WAM measuring system is intended for the measurement and the determination of nuclear waste activities, activity concentrations, total activities and total activity concentrations of the selected radionuclides which emit gamma radiation in a range from 100 to 1500 keV. Total activities are the sum of activities of individual radionuclides; and total activity concentrations are the sum of all activity concentrations of individual radionuclides. Solids and materials with an average density up to 2500 kg/m3 located in the standard drums with a volume of about 0.2 m3 are measured.

FEATURES

The WAM (Waste Assay Monitor) is a complex measuring system which is intended for the monitoring of radioactive waste in standard 200-litre drums. WAM involves the following systems:

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



Parameter	Value
Energy range	100 to 1500 keV (resolution >2 keV at 1332 keV)
Radionuclides measured	Cs-134, Cs-137, Co-60, Mn-54, Fe-59, Nb-95, Zn-65, Zr-95, Co-58, Cr-51, Ce-144, Hf-181 and Ru-103 (and others)
Measuring range	from 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: 1 GBq
Measurement precision	± 20 % (for the uniform activity distribution and the density in the volume measured) maximum 50 % for the material density of 1000 kg/m3 in the drum
Detector	HPGe and/or scintillator (NaI, SrI, LaBr, etc.)
Material density	up to 2500 kg/m^3
Material volume	up to 0.2 m^3
Material weight	up to 700 kg (Maximum drum weight)
Power supply	220 V +22/-33 V, 50 Hz., 2 kW, Maximum power interruption up to 20 ms. TN-S power supply system

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Gamma-rays