ELSE NUCLEAR

ADAMOS

Automated segmented gamma scanning of waste drums

Automated segmented gamma scanning system that characterises drums filled with radioactive waste. The drum is centred and weighed on a rotating platform, and collimated detectors – typically HPGe – move vertically to measure preset sub-sections. Efficiency is pre-calculated with Monte Carlo simulations from the set-up and the density of the drum content; the layout is adapted to the customer's needs.



Energy range	Energy resolution at 1.33 MeV	Relative efficiency
HPGe: 30 keV–7 MeV [2]	**HPGe: ≤2.3 keV FWHM for ^{60}Co (1332.5 keV)** [2]	**15–150% (nitrogen-cooled), 50–150% (electro-cooled)** [2]

Specifications

DETECTOR

Detector type	Typically a collimated high-efficiency HPGe detector with MCA on a vertically moving shelf; can be combined with GM tubes (fast dose rate), large plastic scintillators (pre-scan) or NaI(Tl) instead of HPGe	[2]

PERFORMANCE

Energy resolution at 1.33 MeV	HPGe: ≤2.3 keV FWHM for ^{60}Co (1332.5 keV)	[2]
Relative efficiency	15–150% (nitrogen-cooled), 50–150% (electro-cooled)	[2]

MEASURING RANGE

Energy range	HPGe: 30 keV–7 MeV	[2]

COOLING

Cooling	Electro-cooling or liquid nitrogen	[2]

SOFTWARE & DATA

Software	Efficiency pre-calculated with Monte Carlo simulations from the set-up and the density of the drum content; the report may include correlated isotope concentrations and possible hot-spot locations	[2]

MECHANICAL

Drum size	Drums up to 500 L and 2,500 kg, density up to 2 g/cm³	[1]
Weight	Typical: conveyors 250 kg each, central platform 1,000 kg, detector frame 1,000 kg, electric axes 230 kg each, switchboard 200 kg	[2]

ORDERING & ACCESSORIES

Configurations	HPGe/L-D (2 + 2 conveyors and density measurement with a ^{22}Na source), HPGe/U (U-shaped array for up to 8 drums), HPGe-GM (one HPGe with GM fast scan) and HPGe-2G (two HPGe in 90° geometry)	[2]

GENERAL

Use	Automated segmented gamma scanning to characterise drums filled with radioactive waste	[1]
Scale	Weighing station max. payload 2,500 kg, precision ±2.5 kg	[2]
Measurement sequence	The drum is centred and weighed on a rotating platform; detectors move vertically and scan preset sub-sections through a collimator; the measurement set-up is selected automatically by activity level	[1]
Control	Local PLC and operator panel; the software runs the work cycle and checks the system status	[1]

Sources

[1] **ADAMOS Automated Drum Monitoring System**
ELSE NUCLEAR · product-page · Product page · checked 2026-10-16
https://www.elsenuclear.com/portfolio/adamos/

[2] **ADAMOS Automated Drum Monitoring System (datasheet)**
ELSE NUCLEAR · datasheet · p. 3, Detection equipment; p. 3, HPGe features; p. 2, Mechanical specifications · checked 2026-10-16
https://www.elsenuclear.com/wp-content/uploads/2025/05/DAT_ADAMOS_EN_1.07.pdf

Every value is taken from the manufacturer's own document; the number after the value refers to the source list. Always check against the latest datasheet before ordering.

The data comes from the manufacturer's published documents. Manufacturers may change specifications; the current configuration and performance are confirmed in the quotation.