ELSE NUCLEAR

HERMES DRONE

Gamma spectrometry and radiation mapping payload for drones

Compact, autonomous payload for gamma monitoring and radiological mapping from professional UAVs, for large, inaccessible or hazardous areas. A NaI(Tl) spectrometer identifies radionuclides and measures dose rate, and a MERCURY detector can be added for an extended dose-rate range. The payload has its own power, processing and communication and needs no interface with the UAV.



Detector type
NaI(Tl) scintillator with crystal sizes up to 3 × 3 in and digital MCA with up to 2,048 channels; optional MERCURY dose-rate detector (energy-compensated dual GM) [1]

Energy range
40 keV–3 MeV; 50 keV–3 MeV with 2 × 2 in NaI(Tl) [1]

Weight
About 2.5 kg (2 × 2 in NaI(Tl)) [1]

Specifications

DETECTOR

Detector type	NaI(Tl) scintillator with crystal sizes up to 3 × 3 in and digital MCA with up to 2,048 channels; optional MERCURY dose-rate detector (energy-compensated dual GM)	[1]

PERFORMANCE

Energy resolution at 662 keV	≤7.5% FWHM (2 × 2 in NaI(Tl))	[1]

MEASURING RANGE

Dose-rate range	10 nSv/h–1 Sv/h (with MERCURY)	[1]
Energy range	40 keV–3 MeV; 50 keV–3 MeV with 2 × 2 in NaI(Tl)	[1]

SOFTWARE & DATA

Software	Gamma spectral analysis, manual, timed and distance-based acquisition, dose rate normalised to 1 m above ground, soil concentrations of ^{40}K, ^{238}U and ^{232}Th, georeferenced heat maps with alarm thresholds, kriging with NASVD noise reduction and export to CSV and HTML	[1]

CONNECTIVITY & INTERFACE

Communication	Industrial router with LTE/4G plus Wi-Fi; GNSS position and altitude synchronised with measurements; web interface from a networked PC or tablet	[1]

POWER & BATTERY

Power supply	Independent onboard battery, autonomy depending on configuration; needs no power or data interface with the UAV	[1]

MECHANICAL

Dimensions	Approx. 300 × 150 × 150 mm (2 × 2 in NaI(Tl))	[1]
Weight	About 2.5 kg (2 × 2 in NaI(Tl))	[1]

ENVIRONMENT & RATINGS

IP rating	IP65, vibration-resistant enclosure	[1]

ORDERING & ACCESSORIES

ptions	MERCURY for extended-range dose rate; other detector materials, crystal geometries and MCA configurations on request; rugged tablet and warranty extension (24 months)	[1]

Sources

[1] **HERMES DRONE Gamma Spectrometry and Radiation Mapping Payload for UAVs (datasheet)**
ELSE NUCLEAR · datasheet · p. 2, Technical Specifications; p. 2, Technical Specifications; Typical Specifications; p. 2, Typical Specifications (2″ × 2″ NaI(Tl)) · checked 2026-10-16
https://www.elsenuclear.com/wp-content/uploads/2026/09/DAT_HERMES-DRONE_EN_1.01.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.