

NuVISION

Portable spectrometric gamma imaging system



The NuVISION combines several functions in one device. It can localize hotspots from a distance, identify the corresponding radionuclides and estimate the dose rate contribution of every hotspot separately. The NuVISION is based on a CZT-detector. Its unique design allows both coded mask AND Compton imaging. This combination provides a full 360° field of view (Compton) while having a great 3.5° resolution (coded mask). The high processing speed allows to perform real-time imaging and tracking mobile sources.

Benefits

- Real-time imaging
- High resolution (coded mask) and 360° field of view (compton)
- Wide energy range for spectrometry from 20–1400 keV: Radioisotopes from ²⁴¹Am to ⁶⁰Co
- H*(10) dose rate estimation per hotspot
- Dose rate in specified distance to source can be calculated
- No cable needed, fully independent and autonomous
- User-friendly, portable device

Key figures

1.5% ↪ Energy Resolution at 662keV

3kg ↪ Light weight handheld camera

500 nSv/h ↪ ¹³⁷Cs Localisation in less than 2 minutes

Product description

The NuVISION is a real-time portable gamma-ray imager that quickly and accurately locates hotspots, estimates the dose rate and identifies radionuclides and thus promptly characterizes the environment from a radiological stand point for radioprotection or risk assessment purposes.

Combining two imaging techniques results in angular resolutions of

- 3.5° for a 45° field of view (FOV) using coded mask
- 15° for a 360° FOV using Compton imaging

The danger of missing a high energy hotspot is banned while simultaneously a precise localization can be performed. The spectrometric ability allows to localize the source of interest and isolate it from the background whether it is a NORM, medical or industrial source. It also enables to detect peaks from isotopes which may be masked by other sources.

With a weight of only 3 kg the NuVISION can be used as an handheld device.

Technical Data

Size.....	100 x 120 x 234 mm (HxWxD) 226 x 420 x 293 with bumper, handle, tablet
Weight.....	3 kg (4.8 kg with bumper, handle, tablet)
Detection volume.....	9.6 cm ³
Angular resolution/FOV.....	3.5°/45° coded mask 15°/360° Compton
Energy range.....	20 – 1400 keV
Energy resolution.....	2.5 % at 122 keV 1.5 % at 622 keV
Dose range (at camera head).....	max. 15 mSv/h (DR measurement) max. 30 mSv/h (identification) max. 50 mSv/h (localisation)
Sensitivity in cps/(μSv/h).....	1800 (²⁴¹ Am) 230 (¹³⁷ Cs) 160 (⁶⁰ Co)
Power supply.....	Battery (14.4 V/49.7 Wh) for 6 hours or via power 140 V to 48 V DC power adapter or power adapter (90-264 VAC to 48 V DC)

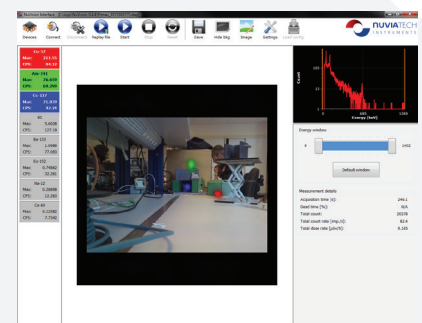
Build according to IP65 standards, no cooling fan and sustains a 30 cm drop height. WIFI or wired operation.

Performance Characteristics

- Sensitive enough to detect a 50 nSv/h ⁵⁷Co source and localize a 500 nSv/h ¹³⁷Cs source in under two minutes
- An angular resolution of 3.5° allows to localize differences of 60 cm in a distance of 10 m
- A tripod with a motorized mount allows completely remote operation (optional)
- A scan modus autonomously acquires measurements of large areas (requires tripod)
- Ethernet and power supply via cable drum allow remote operation from up to 60 m distance
- Advanced possibilities for expert users (e.g. set alarm threshold, spectrum analysis, edit library, ...)

Product applications

- Process control, work planing, identifying hazards
- Safety measures, dose monitoring, ALARA principles
- Homeland security, safeguarding, major events
- Environmental monitoring



NuVISION has been developed in cooperation with the CEA-LETI and leverages their strong expertise in CZT gamma imagers.