

NuVISION

A portable spectrometric gamma imaging system



NuVISION is a compact portable spectrometric gamma camera based on CZT semiconducting detectors and coded aperture AND Compton imaging capabilities. The aim is to provide endusers with a complete portable and sensitive system allowing them to not only detect but also measure a dose rate in H*(10), localize the source and identify the radioisotope, thanks to excellent spectrometric ability on a wide energy range (20-1400 keV ; from Am-241 to Co-60). Additionally, the processing speed allows to perform real-time imaging and to observe mobile sources.

Benefits

- User-friendly, portable device
- No cable needed, fully independent and autonomous
- Real-time imaging
- Specially designed to work in nuclear plants and nuclear cycle facilities
- Combines sharp image quality and 360° field of view
- H*(10) dose rate estimation
- Capable of identifying radiation energies

Key figures

1.5% → Energy Resolution at 662keV

3kg → Light weight handheld camera

50 nSv/h → Cs-137 localisation in less than 2 minutes

Product description

NuVISION weighs only 3 kg including the battery and its 9.6 cm³ CZT detector, and is IP65 rated. Detector energy resolution is 2.5% at 122 keV and 1.5 % at 662 keV. Each gamma event is localised on a 128 × 128 pixel array. The resulting spectral image is reconstructed in real time to identify isotopes and localise activity.

Angular resolution:

- 3° for a 45 degree field of view using the coded aperture
- 15° for a 360 degree field of view using the Compton imaging

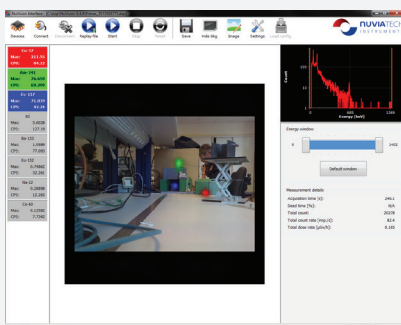
The system is sensitive enough to localize a 50 nSv/h Co-57 source in natural background in less than 5 seconds and a 50 nSv/h Cs-137 source in less than 2 minutes. The strength of the system is its spectrometric capability for the detection of low energy peaks from isotopes which may otherwise be masked by other sources, legitimate or not. The system is able to localise the source of interest and isolate it from the background whether it is a NORM, medical or industrial source.



Product specifications

- IP65 and easily decontaminated
- Battery operated device (up to 7 hours operation)
- Wired or wireless operation
- CZT detector, no cooling system or fan
- Coded aperture camera (no parallax correction as gamma and visual images in same orientation)
- Compton camera with 360 degree field of view

Isotope	c.s-1/ (μSv/h)	Specifications
Am-241	1800	Size 12cm x 10cm x 24cm (HxWxD) 23cm x 42cm x 30cm with bumper, handle, tablet
Cs-137	230	Weight 3 kg (4.8 kg with bumper, handle, tablet)
Co-60	160	Detection Vol. 9.6 cm ³ (56 grams)
		Angular Resol. 3.5° Coded Apert. 15° Compton
		Field of view 45° Coded Apert. 360° Compton
		Battery operation Yes (15V/6.5W)
		Energy Range 20-1400 keV
		Dose Range (at camera head) max. 15 mSv/h (DR measurement) max. 30 mSv/h (identification) max. 80 mSv/h (localisation)
		Sensitivity ¹³⁷ Cs 50nSv/h < 120s
		Sensitivity ⁵⁷ Co 50nSv/h ~ 5s
		Energy Res. 2.5% at 122 keV 1.5% at 662 keV



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

Product applications

- CBRN
- Safeguards
- Military
- Emergency response
- Securing critical sites

