NUVIATECH INSTRUMENTS

SPECIFICATION SHEET

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 (20-1400keV). (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*

50nSv/h ➥ *sensitivity in less than 1min. for 137Cs*

Ref : NuVISION_CBRN_2020_001_EN

Product description

NuVISION weighs only 3 kg including the battery and its 9.6 cm^3 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.

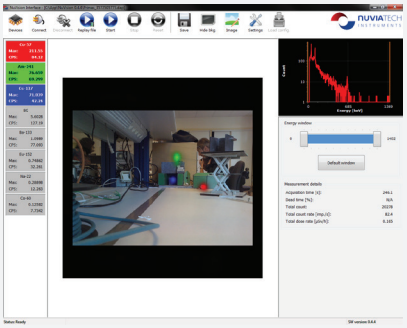
Angular resolution:

- 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 1 second and a 50 nSv/h Cs-137 source in less than 1 minute. 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
- Sensitivity (normal incidence with the coded mask and relative to H*(10) dose rate.



Isotope	c.s-1/ (µSv/h)
Am-241	1800
Cs-137	280
Co-60	160

Specifications	
Size	10x10x24
Weight	3Kg
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
Doser Range	1nSv/h-100mSv/h
Sensitivity ^{137}CS	50nSv/h < 60s
Sensitivity ^{57}CO	50nSv/h < 1s
Energy Res.	2.5% at 122 keV 1.5% at 662 keV

Product applications

- Homeland Security, Safeguarding
- Decommissioning (mapping to plan works and identify hazards)
- Dose monitoring (ALARA)
- Environmental monitoring

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