Gamma Neutron Imager

The CORIS360® Gamma Neutron Imager (GNI) is the only commercial technology capable of imaging both gamma-ray and thermal neutron radiation sources. By adding thermal neutron imaging, CORIS360® GNI significantly improves nuclear security and safeguard capabilities by delivering an unprecedented ability to detect, localize, and identify nuclear materials through both gamma and neutron signatures.

Utilizing an advanced mask design and patented compressed sensing technology, CORIS360® GNI delivers dual gamma-ray and thermal neutron imaging up to ten times faster than conventional methods.

CORIS360® GNI provides remote, rapid and accurate imaging. The 360° × 90° gamma/neutron and panoramic optical field of view enables rapid localization of radiological sources in both open and confined environments. Compact and portable with an IP54 rating, CORIS360® GNI includes two plug-and-play detector modules to optimize performance across diverse radiation environments.

The imager can simultaneously image and spectrally resolve multiple radioactive sources in mixed-field environments. The CORIS360® platform technology is designed to improve decision making, reduce risk, and keep people safe from threats by identifying and imaging the exact location of radiation sources.

CORIS360® Specifications

SYSTEM INCLUDES

	CORIS360® GNI system
	CORIS360® Imaging and processing software
	Tripod (optional tripod mount to image full 4π available)
	Ruggedized carry case
	Two CLLBC detectors
	Power and data cables (optional Li-ion battery available)
	^{152}Eu calibration puck
	Hex key
	Exports N42 spectrum file, PDF report

Dimensions	210mm × 425mm (D × H) 8.3" × 16.8" (D × H)
Weight	15 kg | 33 lbs
Power Supply	100 VAC - 240 VAC (47 Hz - 63 Hz) Input
Operating Temperature	-20°C - 50°C (Ambient) -4°F - 122°F (Ambient)
Storage Temperature	-20°C - 50°C (Ambient) -4°F - 122°F (Ambient)
Detector Type/s	Cubic 0.5" CLLBC Scintillator Cylindrical 1.5" x 1.5" CLLBC Scintillator
Energy Resolution	~4% FWHM @ 662 keV
Energy Range	40 keV to >3 MeV Gamma and Thermal Neutron Detection/Imaging
Max. Gamma Ang. Resolution	16° ± 1° (0.5" detector) 20° ± 1° (1.5" detector)

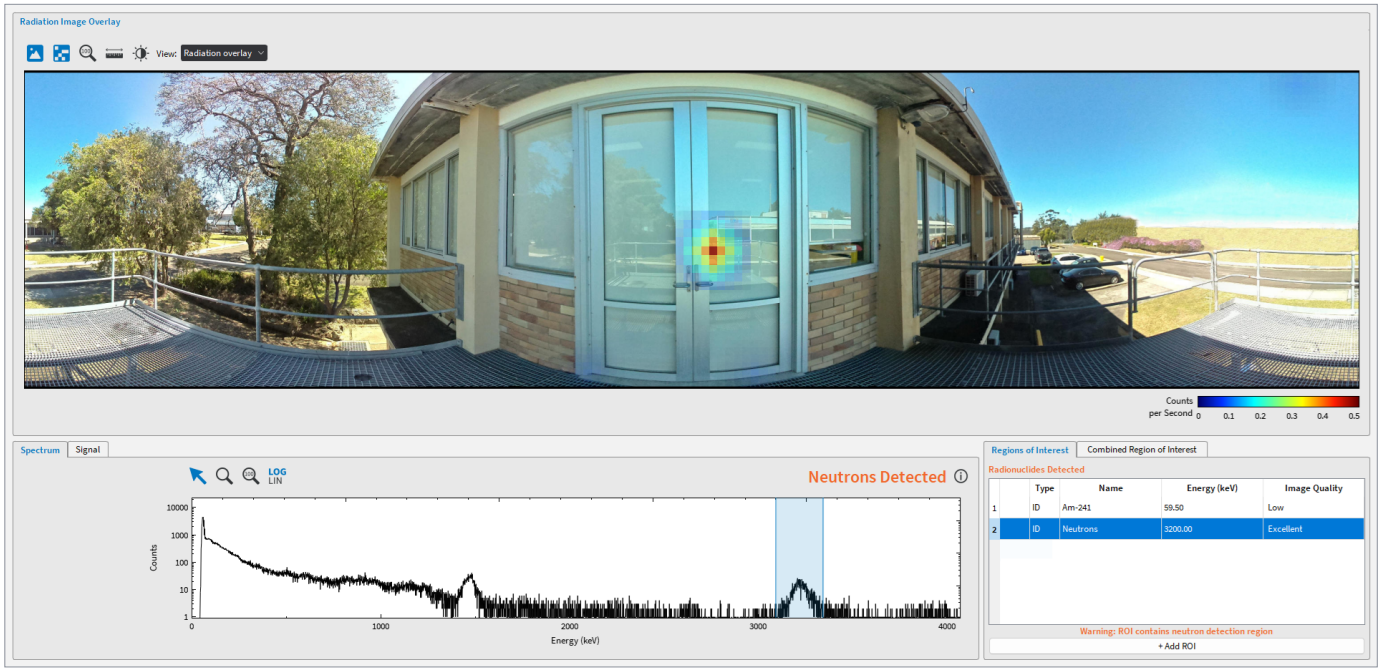
Imaging Region of Interest (ROI)	Peaks and non-peaks Thermal neutron region
Radiation Field of View	360° × 90° (Horizontal × Vertical)
Optical Field of View	360° × 90° (Horizontal × Vertical)
Angular Response	Uniform sensitivity over entire field of view
Gamma Dose Rate Range	<0.1 µSv/h - 40 mSv/h for ^{137}Cs (0.5" detector) (<0.01 mrem/h - 4 rem/h) <0.1 µSv/h - 2 mSv/h for ^{137}Cs (1.5" detector) (<0.01 mrem/h - 200 mrem/h)
Radionuclide Identification	Customizable library of radioisotopes included
Start-up Time	1 minute
Communication	Ethernet, Wi-Fi

APPLICATIONS INCLUDE:

- Nuclear security and border protection
- Safeguards and defense
- Decommissioning projects
- Nuclear operations
- Nuclear medicine facilities
- Radiation protection

CORIS360® GNI Case Studies

Case Study 1: CORIS360® GNI rapidly detected and localized thermal neutrons from a moderated 9 MBq (243 µCi) neutron source hidden within a parked vehicle. CORIS360® GNI was at a standoff distance of 4 metres (13 feet) from the vehicle and imaged the neutron source in <15 minutes.



Case Study 2: CORIS360® GNI rapidly detected and localized thermal neutrons from an AmBe neutron source (22,000 n/s) that was moderated, during an external building search scenario. CORIS360® GNI was at a standoff distance of 2 metres (6.5 feet) from the building and imaged the neutron source in <15 minutes.

CONTACT US

For case studies and technical reports, please get in touch.

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Product By

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CE

Patent Protected
Gamma-Ray Imaging
US 10,795,036 B2 | US 11,346,964 B2
EU & UK 3146527 | AU 2015263838