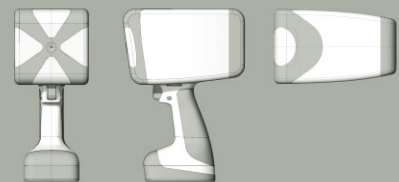
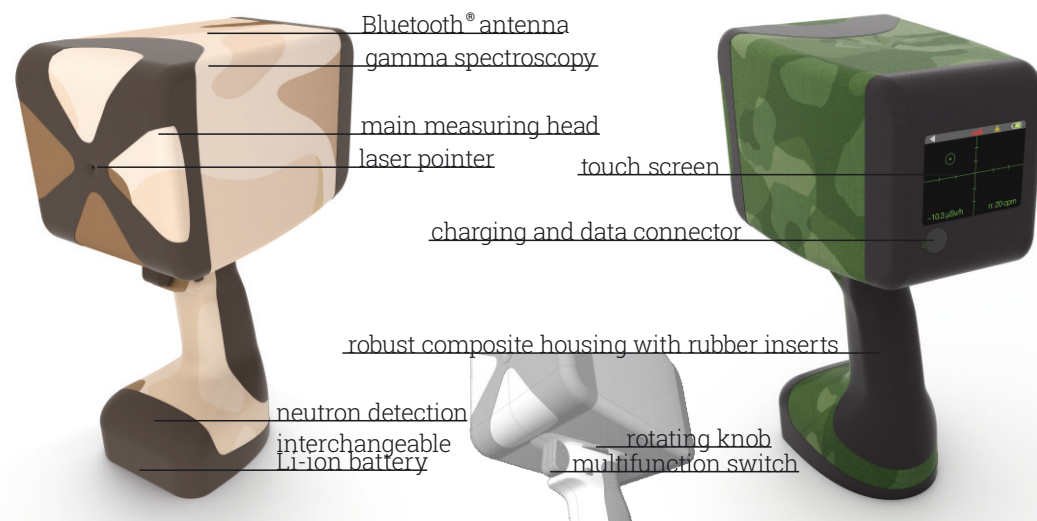


Interesting Facts

- Assuming a typical order-of-magnitude 50Ci radiography source (used in steel industry or in medicine), the direction is measured to better than 10 degrees at a still-safe 100m standoff distance.
- High sensitivity – the direction to the source is indicated already when its radiation level (at the point of measurement) reaches twice the normal background level. This keeps the operator always on safe side.
- Beside the military, the device has many fields of use:
 - customs, police, ports, railways
 - nuclear facilities, medicine, steel industry
 - fire brigades, environmental agencies



GAMMA⁴
 The World's First Handheld Real-Time
 Instrument Showing the Direction
 Towards the Gamma-Ray Source.

Specifications

Gamma Spectroscopic
 Detector

Neutron
 Detector

Energy Range for
 Angular Sensitivity

Gamma Spectrum

Dose Rate / Accuracy
 (Cs-137)

Service Interval

Threats

Analysis

User Interface

Display & Alerts

Communication

Data Storage

Training Requirements

Software

Power

Input Voltage

Battery Specs

Cold Start

Environmental

Operating Temp

Operating Humidity

Storage Temp

Enclosure & Protection

Dust & Water Tightness

Dimensions

Dimensions (L x W x H)

Weight

25,4 mm (1") diameter * 25.4 mm (1") CsI(Tl) with Silicon Photomultiplier (SiPM) – possibility of other detection materials on demand

Available options of neutron detection with different detection materials

40 keV - 10 MeV

4096 channels 0 - 2.8 MeV; measurement range 30 keV - 2.8MeV
 Typical Resolution 7 % FWHM at 662 keV

0.08 µGy/h – 2 mGy/h: ±20%

Recommended five year factory maintenance interval

Measures the direction, dose rate, and energy spectrum of gamma radiation, detects neutrons, selectively sensitive to special nuclear, industrial, or medical material

Immediate angular detection, nuclide ID from seconds to minutes

High contrast color back-lit LCD, day/night mode
 advanced sound via switchable Bluetooth® A2DP

Waterproof wired serial
 Switchable Bluetooth® (with disable option where required)

2GB internal memory; hundreds of thousands of high-resolution spectra
 15 min for all functionality

Android™ application AISense Connect and cloud connectivity for advanced/complex nuclide ID cases

100-240 VAC 50-60Hz (universal wall adapter supplied)

User replaceable Li-ion; operational battery life >4h; recharge time <3h

<10 seconds

-20 to 50°C (-4 to 122°F)

Up to and including condensing

-20 to 55°C (-4 to 131°F)

Rugged aluminum enclosure with full EMI block

IP 65 (completely dust tight, withstands powerful water jets)

163 mm (6.4") x 130 mm (5.1") x 147 mm (5.8") +140 mm (5.5") for handlebar

2200 g (78 oz), including batteries

**AISENSE
 GAMMA⁴**
 The World's First Handheld Real-Time
 Instrument Showing the Direction
 Towards the Gamma-Ray Source



Real Time Measurement

- Direction towards the gamma-ray source
- Direction uncertainty
- Dose rate
- Real-time 10Hz refresh rate

Included in package

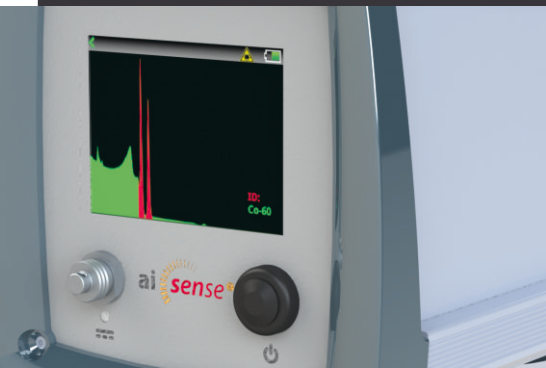
- Fast nuclide identification
- CsI(Tl) with SiPM reaches 7% resolution at 662keV
- Neutron detection

User Benefits

- Fast localization and identification of gamma-ray sources
- Complete tool: localization / dose rate measurement / identification / neutron detection
- Minimizing radiation exposure to the staff
- Single-hand or hands-free operation
- No consumables
- Rugged, versatile
- Reliable already at lowest radiation levels

User Friendly and Effective

- Waterproof wired or switchable Bluetooth® connectivity to smart devices or PCs real-time data transmission
- Switchable Bluetooth® stereo sound transmission to dedicated headphones
- Huge internal memory - thousands of high-resolution spectra
- Cloud connectivity for advanced/complex nuclide ID cases
- Dedicated Android™ application AISense Connect included - enabling data interpretation and full device control

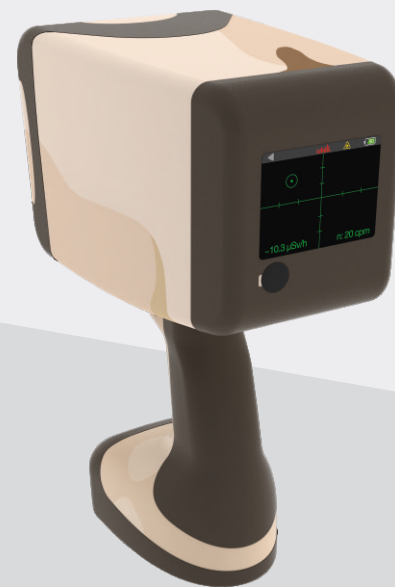


Military Tool

The military version is being developed to comply with demanding NATO standards. User feedback and recommendations from different military units were taken into account, maintaining the innovative core functionality while improving important military-specific aspects, starting with chassis design. The robust and reliable device will change the game in gamma-ray source localization process.

Device Selection Table

Threat	The Appropriate Tool
General radiation level	Dose rate meter
Static radiation distribution	Gamma Camera
Unknown & hidden radiation sources	AISense Gamma IV



Case Studies

Outdoor and/or Indoor Area Examination

The basic mode – the unit is used to perform the check of certain area (ruins, battlefield, building...). As a first step, the increased radioactivity levels are searched. Once detected, the operator determines the source by a simple triangulation – saving time and, more important, minimizing the received dose. The source identification follows.



Checkpoint

When the unit is mounted on a permanent stand at road side (e.g. at a military checkpoint), it is configured in the remote mode and keeps streaming data to an operator in the vicinity. The unit triggers an audible, visual and/or haptic alert when a gamma-ray anomaly (increased dose rate or spatial asymmetry) is detected and will activate the directional indicator, pointing towards the source. The operator can proceed to take the unit from its stand and use it as a handheld to approach the indicated person or vehicle and determine the exact micro-location of the radiation source.

On Military Vehicle

The unit is mounted on a military vehicle (transporter, tank, vessel, drone...), oriented facing forward. The crew is provided with a screen streaming full real-time data from the unit. As soon as elevated radioactivity levels or another anomaly (such as asymmetry) of the gamma-ray field is detected, the remote display starts indicating real time direction, relative to vehicle, towards the radioactive source.



Multiple Devices in Urban Warfare

In the case of combat in complex terrain, multiple coordinated devices can be used to determine the location of the radioactive source directly from fixed positions. The position and direction information from two (or more) devices are used to do positive triangulation.

