

## Product Datasheet

# SPIR-Explorer Sensor

Light Wide Range Radiological Detection and Identification Sensor

The SPIR-Explorer Sensor allows detection, measurement and identification of radiological sources over a very large range. It is intended to be mounted on demanding carrier, such as UAVs or robots.

It may also be used within fixed or deployable systems. Typical uses are searching for any unexpected radiological sources, checking for radiological risk in case of accident, and mapping of contaminated areas.

Operation is fully automated and results are shown and memorised at an associated radiological base station. The sensor uses proven identification technics from SPIR-Ident and SPIR-ID product family in a smaller and lighter form factor.

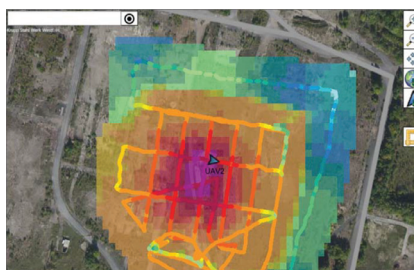


### Features

- Real-time, instant detection, measurement and identification.
- Wide dose rate range: from natural background to high accident levels.
- Light and robust.
- Simple and automated use.



Drone landing on a platform and equipped with a SPIR-Explorer detector.



Overflight of a source: The SPIR-Explorer Sensor is sensitive enough to map the background changes, either on the ground or on the water.

# Specifications

## Radiological Performance

**Detectors** NaI(Tl) dia 32 mm\* 51 mm or  
LaBr3(Eu) dia 25 mm\* 32 mm  
+ 2 GM tubes (mid and high range)

**Energy range** ≤ 50 keV to ≥ 3 MeV

**Dose Rate Measurement range** 0,1 μSv/h to 10 Sv/h  
On the ground extrapolation: dose rate  
(μSv/h per radioisotope), contamination  
(kBq/m<sup>2</sup> per radioisotope)

**Resolution** 0,01 μSv/h

**Accuracy in reference conditions** < 10%

**Angular effect** < 20% over 270° horizontal and vertical

**Detection capability** Better than 0,1 μSv/h increase  
over 0,1 μSv/h BKG in 2s

**Spectrometry** 1024 channels, 16 bit per channel

**Acquisition rate** Every second

**Throughput** 100,000 cps

**Spectroscopy range** BKG to 100 μSV/h

**Stability and linearity correction** 1 channel, or ≤ 2%

**Real time identification and mapping** SpirIDENT Suite software

## Electrical Characteristics

**Supply voltage** Typical 4,5 to 18 V

**Power consumption** ≤ 1 W

**Datal/O** 115 kBd RS232C link in logical level (3.3 V)

**Connector** Miniature cylindrical push-pull 4 pins  
connector such as from LEMO

## Environmental Characteristics

**Temperature range** Operation from -20 °C to 50 °C  
Storage -30 °C to 60 °C  
Able to operate under temperature shock

**Humidity** Must operate under 93% HR at 30 °C

**Protection level** IP54

## Mechanical Characteristics

**Dimensions** 250 mm (L) x 131 mm (W) x 81 mm (H)

**Fixation** 4 x M5 holes

**Mass** NaI(Tl): 710 g  
LaBr3(Eu): 615 g

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