



SkyRanger R70
MUNIN Radiation detector



MUNIN Radiation identification system is here to monitor radiation in an easier, safer and more accurate way than ever before.

The kit is modular and portable, intended for simultaneous detection, measuring, logging and automatic reporting of radiating isotopes at sea or on land.

The sensor utilizes a special MILSPEC AES 256/128 encrypted datalink to communicate its location and measured values in real time to the operations center running our NAS Kolibri software to analyze, visualize, and store the test results.

The test results are then uploaded to the respected authorities for further actions and future reference.



The HUGIN sensor is a lightweight radiation detector designed to be mounted on the SkyRanger R70 UAS or alternatively a UGV/Robot for a wide range of applications where radiation detection, measurement, and nuclide identification is needed.

This includes environmental surveys, military reconnaissance, Radiological Dispersal or Exposure Device (RDD or RED) detection, hospitals/industry, fire hazards and nuclear power plant emergency response.

FEATURES

- Real-time, instant Detection, Measurement and Identification
- Wide dose rate range: from natural background to high accident levels
- Light and robust
- Simple and fully automated use
- Light weight means R70 has longer flight time
- 1000 times more sensitive than most of the GM-based sensors for other drones
- Extrapolation of the measurements at ground level
- Count rate per radionuclide
- Integrated Neutron detector

ENVIRONMENTAL CHARACTERISTICS

Temperature Range: operation from -20 °C to 50 °C.

Humidity: 93% HR at 30 °C.

Weight: 1000g

Protection level: IP65.

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: from 20 keV to 3 MeV

Dose rate measurement range: 0,001 µSv/h to 10 Sv/h (0,1 µR/h to 1000 R/h)

Detection capability: better than 0,1 µSv/h (10 µR/h) increase in 2s

Real-time nuclide identification: better than 0,5 µSv/h (50 µR/h)

Spectrometry: 1024 channels

Acquisition rate: 0,5 second

Spectroscopy range: up to 100 µSV/h (10 mR/h)

NEUTRON DETECTOR

Detector Type Semiconductor based detector

Gamma-ray Reject Rate < 1-cpm at 50 mR/h with a Cs-137 Source.

Neutron Sensitivity 2.4 cps/nv ±0.08 cps/nv [30% Th. Eff.]

Measured Cf-252 Response 1.417 cps

The NAS Kolibri software is programmed to gather, analyze and visualize collected readings from field on a base-station computer as well as a reach back function to a central HQ.

Kolibri can also be connected to a AIS transponder to gather vessel information in a maritime operations, from this information the software will visualize the targeted ship, its smoke plum as well as its heading and speed.

GPS location from the R70 is utilized for visualization and mapping of the dose rates (including extrapolated at ground level), nuclide identification, and count rate for each nuclide. Kolibri has the capability to draw maps with interdiction/hazardous areas in easily understandable colors (GREEN, YELLOW, RED) showing the stored radiation at an area at the time of measurement.



Kolibri software installed on a base station computer. Provides real time processing including ground dose rate calculation and nuclide identification, display, mapping, and data storage.

Kolibri live view GUI

- Session (every session name is user defined)
- Online/Offline map (showing read values in color, center drone and center vessel)
- Vessel info (IF AIS is used)
- All available targets (IF AIS is used)
- Values (live high and low dose rate and Neutron count)
- Wind (direction and speed)
- Graph (Customizable timed graph showing high & low gamma and neutron count)

MUNIN Radiation payload pricing:

**Contact us for options and pricing*

Contact us at:

www.norseassetsolutions.com