

Raider™

RADIONUCLIDE IDENTIFIER

The FLIR Radiation Raider is a state-of-the-art handheld instrument in a class of its own. It is designed to uniquely meet or exceed the performance requirements of ANSI N42-34 (RID) and ANSI N42-48 (SPRD) standards. The instrument utilizes an innovative array of solid-state CZT detectors and (optional) He³ tubes to provide superior gamma and neutron sensitivities resulting in a rapid identification and verification of radioactive materials.

The Raider is small enough and light enough to be held and operated with one hand and can be conveniently clipped to the user's belt in the holster provided. Two bi-directional buttons, one on each side, are all that are required to access every feature of this instrument. It is both water and drop resistant, making it rugged and ideal for strenuous operating situations.

The Raider records, displays, and analyzes spectral information in real time, providing quick and accurate radionuclide identification. This is made possible through high resolution semiconductor CZT detectors and state of the art micro-miniature electronics utilizing modern digital signal processing. A built-in GPS identifies the global position of the instrument and transmits this and other pertinent event information, including the spectra, identification results, picture and audio description of the incident, via its reach-back capability using Bluetooth® or cable communication.

The Raider will operate for extended periods of time on easily accessible, rechargeable or non-rechargeable AA batteries. An internal sensor determines the type of battery in use and enables or disables the internal battery charger as appropriate. It takes only moments to remove depleted batteries, replace them with fresh ones, and continue operation. An internal Polymer Li-Ion battery secures critical information and will operate the unit until the AA batteries are replaced.



FEATURES & BENEFITS

- Solid State CZT detectors
 - Rugged
 - Stabilization not required
 - Excellent energy resolution without crystal cooling
- DSP based electronics
 - Excellent stability
 - Ideal for high resolution CZT detectors
 - High data throughput
- Web server interface for monitoring and configuring the Raider
 - Configure and monitor the Raider using any web browser on a Microsoft Windows PC
 - Dedicated PC software not required
- Water and impact resistant
 - Drop in shallow water, pick up and clean; continue operation
- Built-in GPS
 - Document incident and location
 - Reduces hand-written documentation
- Reach-back via Bluetooth® and/or shared USB communication
 - Supports DHS data standards
 - Permits real time specialist support of Raider findings
- High efficiency, moderated He³ neutron detectors
 - Excellent for verification of radioactive material
 - Neutrons unaffected by traditional gamma shields



SPECIFICATIONS

Gamma	Eight (8) 1 cm ³ CZT solid state detectors
ID Resolution	<3.5 % at 662 keV
Detection Sensitivity	≥ 6 cps/μR/h for Cs ¹³⁷
ID Sensitivity	≥ 0.75 cps/μR/h for Cs ¹³⁷
ID Energy Range	25 KeV to 3 MeV
Categorizes radionuclide	As Innocent, Suspicious or Threat
Isotope library	Meets or exceeds Homeland Security requirements
Dose rate energy range	50 keV to 3 MeV
Dose rate Range	5 μR/h to 100 mR/h; 0.05 μSv/h to 1 mSv/h
Over-range response	up to 5 R/h; 50 mSv/h
Throughput	up to 100 k cps
Spectrum memory	2048 channels
Neutron (optional)	Two (2) He ³ detectors, 0.5" by 1.62" @ 15 atm.
Energy Range	Thermal to 10 MeV
Sensitivity	6 cps/nv ± 20%
Flux range	3.0*10 ⁻³ to 3.0*10 ⁴ nv
Alarm Levels	Three (3) gamma, two (2) neutron, adjustable
Display	Primary 3.5" TFT LCD, 240 W x 320 H pixels, 64 k colors; Secondary OLED display for dose rate and neutron cpm
Protection Class	IP67
GPS	Built in sensor and antenna
Reach-back	via Bluetooth® DUN or USB cable connection
Batteries	Primary; Three (3) AA NiMH or Alkaline, up to 2.7 Ah capacity, built-in charger Secondary; Internal rechargeable Polymer Li-Ion, 0.6 Ah, Low battery notification during operation on internal battery, alarm at 20% remaining capacity
External Power	PC USB or 4.5V/1.5A from external supply (provided)
Operating Time	Up to 24 h in Surveillance mode; Up to 10 h in Finder mode; Up to 6.5 h in Advanced Spectroscopy mode Times depend on battery type used and charge status
Charging Time	5 to 12 h, depending on battery status and power supply
Interfaces	USB 2.0, Bluetooth®
Camera	640 x 480 pixels
Weight	1.4 lbs (650 g)
Dimensions	5.9" x 3.35" x 2", (150 x 85 x 50 mm)
Temperature Range	-4°F to +122°F (-20 °C to +50 °C)
ID Temperature Range	-4°F to +112°F (-20 °C to +45 °C)
Memory	4 Gigabyte solid state memory
Operation	Two (2) bi-directional buttons to operate plus one (1) for power
Web Server Interface	For remote monitoring and configuration of Raider



FEATURES & BENEFITS

- Easily replaceable AA batteries
No need to return to base because of dead batteries
- Detects battery type
Internal sensor determines type battery in use. Eliminates common mistake of charging non-rechargeable batteries

FEATURES

- Energy range from 25 KeV to 3 MeV
- Dose rate range from 5 μR/h to 100 mR/h, energy compensated dose rate algorithm
- High resolution color display
- Convenient two (2) button operation
- Light weight and compact size
- Built-in camera and voice recording for incident documentation
- Visible, audible and proportional tactile alarms
- Belt Holster included
- 4 GB memory for incident recording

Raider™ produced in ISO design and manufacturing certified facility



Sales Europe, Asia, Africa and Oceania

FLIR Radiation GmbH
Piepersberg 12
42653 Solingen, Germany
T + 49 212 222090
F + 49 212 201045

Sales North and South America

FLIR Radiation Inc.
100 Midland Road
Oak Ridge, TN 37830, USA
T + 1.865.220.8700
F + 1.865.220.7181

www.flir-radiation.com

