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# SPIR-Pack™

*Human Portable Radiation Detection and Identification System*



## FEATURES

- Dynamic nuclide identification
- Discrete monitoring in public places and crowds
- Hands-free operation
- Identifies sources in shielded transportation containers
- Mapping capabilities
- Indicates the direction of a source in a crowded location
- Durable cable-free design
- Small, lightweight, comfortable to carry
- Remote supervision and radiological mapping with SpirVIEW Mobile
- Reachback (email with picture, comments and spectrum), file transfer, n42 streaming

## RELATED PRODUCTS

*SpirVIEW Mobile™ Software*  
*SPIR-Ident™ Mobile Platform*  
*SPIR-Ace™ RIID*  
*AccuRad™ PRD*

## DESCRIPTION

Mirion's SPIR-Pack backpack is ideal for all applications requiring the efficient detection and identification of radiological and nuclear threats. These applications provide the protection for large public events, as well as readiness for radiological/nuclear interdiction.

The SPIR-Pack backpack is lightweight, comfortable to carry, and durable, with a long battery life for extended field operations. The SPIR-Pack system includes sensitive detectors that connect to a smartphone. It will only alarm in the presence of radioactive sources (not on background variations), so the smartphone can stay in the user's pocket (or other carrying accessory) until a vibration and/or audible alarm indicates the presence of a source. The multifunctional smartphone app provides dose rate, nuclide identification and an innovative radar screen to indicate the direction of radioactive sources. Users also appreciate that the SPIR-Pack system uses the same app as the SPIR-Ace RIID, which greatly simplifies training time and makes it easier for users to manage both instruments.

The SPIR-Pack backpack provides outstanding radiation mapping capabilities. A group of SPIR-Pack units (and other instruments in the SPIR family) can be remotely monitored using the SpirVIEW Mobile supervision software for complete situational awareness.



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## SPECIFICATIONS

### Detection and Identification

#### Detection

- NaI(Tl) detector: 51 mm diameter x 102 mm length (2 in. diameter x 4 in. length)
- Energy compensated GM tube for accurate high gamma dose rate from multiple radionuclides
- Optional lightweight neutron detector: LiZnS. Detects primarily the gamma radiation, and provides neutron source confirmation capabilities (as does a RIID).
- Optional sensitive neutron detector: BZnS

#### Energy range:

- 25 keV to 3 MeV (gamma)
- 0.0025 eV to 15 MeV (neutron)

**Gamma dose rate range:** 0.001  $\mu$ Sv/h up 100 mSv/h (0.1  $\mu$ R/hr to 10 R/hr)

**Gamma sensitivity** to Cs-137: 3500 cps/( $\mu$ Sv/h) or 35 cps/( $\mu$ R/h)

#### Continuous real-time nuclide identification

- Single, bare or shielded, and mixed isotopes
- Seven libraries containing 80 nuclides
- Identifies up to eight nuclides simultaneously
- Continuous energy stabilization using ambient background (K, Ra, Th, usual contaminants)

### Smartphone Features

- Rugged smartphone, readable in all lighting conditions
- Fast display update (every 0.25 s)
- Alarm indicators: vibration and sound, earphones (included)
- Personal radiation protection alarm
- GPS, Bluetooth® technology, Wi-Fi, cellular communications
- Data available: real-time measurements and alarms, using industry-standard file formats (spe, n42, csv)
- Robust (no-loss, prioritized) real-time transmission to SpirVIEW Mobile (HTTPS) or third party software (FTP, n42 files)
- Share measurements by email

## Characteristics

### Weight and Dimensions

- **Weight:**
  - G: 4.6 kg (10.14 lb)
  - GN (lightweight): 4.8 kg (10.6 lb)
  - GN (sensitive): 10.1 kg (22.26 lb)
- **Dimensions**
  - G and GN lightweight: 30.3 x 25 x 46 cm (11.9 x 10 x 18.1 in.)
  - GN (sensitive): 29 x 20 x 51.5 cm (11.4 x 7.9 x 20.3 in.)
- **Electrical**
  - Li-ion rechargeable, 5300 mAh, 3.7 V, built-in charger
  - Backpack battery life:
    - G and GN lightweight: 24 h
    - GN: 13 h
    - Charge time: 4 h
- **Environment**
  - Operating temperature range: -20 °C to +50 °C (-4 °F to 122 °F)
  - Operating humidity: 93% at 40 °C (104 °F)
  - IP65 protection (even without backpack)
  - Electromagnetic compatibility according CE marking and ANSI N42.53 requirements (50 V/m immunity)
- **Standards**
  - ANSI N42.53
  - ANSI N42.42 file format

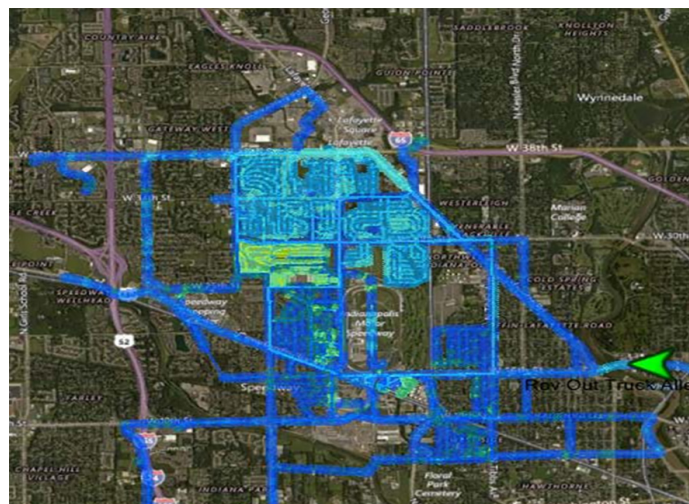
## Accessories and Options

### Included accessories

- AC power adapter, two USB outputs
- DC vehicle adapter, two USB outputs
- USB cable for the phone
- USB to jack cable for the backpack
- Bluetooth technology and wired earphones

### Options

- SpirVIEW Mobile real-time supervision includes SpirREPLAY: centralization, visualization and mapping



Mapping with SpirVIEW Mobile software

