



# VeriFinder Backpack

Hands-Free Modular Spectroscopic Radiation  
Detection System with Smart Connectivity



## Key Features

- ⦿ **Low Training Burden:** Simple and intuitive user interface with automatic background optimization.
- ⦿ **Superior Resolution:** High certainty simultaneous ID of multiple and masked isotopes with low false alarm rate.
- ⦿ **Smart wireless connectivity:** Email instant and automatically generated PDF reports using Wi-Fi, 3G or Bluetooth connectivity.
- ⦿ **Extensive Reach-back Capabilities:** Supports remote, real-time monitoring and control of in-the-field devices including real-time events lists, dose mapping and remote diagnostics.
- ⦿ **High Reliability:** Continuous and automatic end-to-end digital stabilization and health monitoring with no annual calibration required.

The VeriFinder Backpack is a rugged, water resistant and reliable system for radiation detection and identification. It utilizes our patented and field-proven Discovery Technology® and is designed for specialist missions, including Homeland Security, CBRNe Response, Counter Terrorism, and Venue Security.

Symetrica's advanced algorithms increase the effective resolution of the gamma detection system resulting in reliable low-level detection with fast, simultaneous and accurate identification of multiple and masked isotopes in challenging

real-world environments.

The modular gamma and/or neutron detectors can be easily removed from the backpack and mounted for a wide range of alternative applications including static monitoring or mobile operations. The wireless remote control and compatibility with commercial mobile devices maximizes flexibility for configuring custom deployments. Additionally, the optional neutron detector technology is <sup>3</sup>He-free, employing <sup>6</sup>Li:ZnS neutron blade technology that achieves class-leading sensitivity for its size and weight.



# VeriFinder Backpack Specification

## Configuration

Detectors	3x3 in (76.2x76.2 mm) NaI crystal with Discovery Technology <sup>†</sup> <sup>6</sup> Li: <sup>252</sup> Cf-free neutron blade system
Functions	Isotope detection and identification, neutron detection, spectral analysis, dose rate meter, instant online reporting
Weight	From 6.8 kg (15 lb)
Cold Start Time	60 s

## Performance

Identifications	ANSI N42.53
Energy Range (gamma)	25 keV to 3 MeV
Dose Rate Range	10 nSv/h to 900 mSv/h (1 µR/h to 90 R/h) <sup>137</sup> Cs
Scintillator Dose Rate Range	10 nSv/h to 1 mSv/h (1 µR/h to 100 mR/h) with automatic scintillator shutdown protection
High Dose Rate Mode	0.9 mSv/h to 900 mSv/h (90 mR/h to 90 R/h) <sup>137</sup> Cs
Raw Resolution	7.5% FWHM at 662 keV ( <sup>137</sup> Cs)
Effective Resolution <sup>†</sup>	1.6% FWHM at 662 keV ( <sup>137</sup> Cs)
Neutron	<sup>252</sup> Cf 20,000 n/s @ 1.2 m/s @ 1.5 m (4 ft/s @ 5 ft) Moderated or unmoderated
Sampling Time	User settable from 30 s to 120 mins
Response Time	Instant response to sources (0.2 s) with continuous operation through temperature shock
Stabilization & Health Monitoring	Automatic and continuous end-to-end digital calibration [±0.5% at 662 keV], stabilization and health monitoring
Library	47 isotopes in a customizable library
Maintenance	5-year calibration and service interval

## Input/Output

Power	110-240 V mains and external fast battery charger
Battery Life	Single battery: >8 hrs Dual battery: >16 hrs
Battery Type	COTS rechargeable Li-ion
Positioning & Mapping	GPS with GLONASS <i>Optional:</i> Real-time dose mapping and unit tracking at reach-back
Data & Connectivity	PDF reports, ANSI N42.42 compliant, 3G, Wi-Fi, Bluetooth, USB & Ethernet
User Interface	Android Smartphone <i>Optional:</i> Forearm / chest mountable smartphone case. Table in ruggedized case
PC Interface	Web browser interface with fully featured event viewer. Bulk event offload tool <i>Optional:</i> Collated fleet event list with remote view and/or operation of in-the-field devices
Alerts	Audio, tactile (vibration) & display alerts

## Environmental

Operating Temperature	-20°C to 50°C (-4°F to 122°F)
Relative Humidity	Up to 93% relative humidity, non-condensing, 40°C (104°F)
Ingress Protection	IP54 <i>Optional:</i> IP67 as per IEC 60529

Discovery Technology<sup>®</sup> is a combination of Symetrica's hardware and patented algorithms and is deployed in thousands of systems globally from handheld RIIDs to fixed infrastructure Radiation Portal Monitors (RPM). It is the current technology of choice (through competitive evaluation) of multiple US and international government agencies.

Discovery Technology uses on-board processing for spectral enhancement backed up with Symetrica's extensive analysis of real-world data resulting in:

- High true-positive and low false-positive isotope identification.
- World-beating classification and identification performance of NORMs and non-NORMs.
- Fully functional and accurate operation through temperature shock.
- Switch on and operate in high radiation fields.
- Identification of masked isotopes that cannot normally be resolved when analyzing raw spectra.
- Reliable and scalable <sup>3</sup>He-free neutron detection even in high gamma exposed fields.
- Predictive maintenance and no annual calibration required.



Compatible with commercially available mobile devices

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about our products  
[www.symetrica.com](http://www.symetrica.com)



<sup>†</sup> Discovery Technology outperforms other systems with the same scintillator by increasing the effective resolution during identification. Contact us for more information.

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