

RADIATION BACKPACK SENTRY



Product Specification



Part No.: 800396

NSN: None

Category: Set

Drawing No.: XXXXXXXXXX

Description

The Bruker Radiation Backpack Sentry detects radioactive materials from gamma emissions and offers a complete turnkey solution to gamma radiation detection and isotope identification.

The radioactive material may be contamination on surfaces or a source carried by a person or in a vehicle. The source may be stationary or moving, shielded or unshielded. The Radiation Backpack Sentry uses the gamma spectrum to identify the isotopes present and determine whether the radioactive material is a threat according to the organizational ConOps.

The Backpack Sentry employs a 3" x 3" thallium doped sodium iodide scintillation crystal NaI(Tl) with photomultiplier tube for isotope identification. This allows the operator to make decisions non-threat sources such as medical and naturally occurring isotopes.

This saves valuable time and avoids unnecessary negative impacts on civil liberties. The backpacks are meant to be used by multiple roving personnel teams to cover an expansive area searching for critical or high value targets during large public venues or for monitoring and radiological mapping of post events such as a terrorist release or nuclear accidents. Bruker detection algorithms utilize multiple sensor inputs that monitor the environment and continuously compensate for changing backgrounds which provides improved sensitivity and accuracy.

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Size and Weight

Size (approx.)	L x W x H: 508mm x 381 mm x 244mm
Weight (approx.)	6.8 kg
Colour Code	Backpack fabric - Bruker blue

Electrical Interfaces

Power	<p>Rechargeable Batteries:</p> <ul style="list-style-type: none"> Li-Ion, 14.4 V, 3.1Ah for the detector Li-Ion, 3.7 V, 0.32 Ah for the standard handheld Li-Ion, 3.7 V, 0.52 Ah for the optional handheld <p>Additional accessories (not included with the Radiation Sentry Backpack)</p> <ul style="list-style-type: none"> - 12V DC Vehicle Power Adapter - 100V AC to 240V AC / 47Hz to 63Hz Power Supply Unit
Data	USB, Bluetooth

Modes of Operation

Switching Modes	ON / OFF Monitoring
Software Services	Built-In Self-Calibration

General Specification

Operating Temperature	-20°C to +60°C
Operating Humidity	up to 93% relative humidity at +40°C
Calibration Source	Cs ¹³⁷ with an activity of 15 nCi
Isotope Library	Co-60, Cs-137, Ir-192, Am-241, Tc-99m, I-131, F-18, Na-22, Co-57, Ga-67, In-111, Sm-153, Ir-192, Tl-201, Ra-226, K-40, Ra-226, U-238, Ra-226, Th-232, Na-22, Mn-54, Co-57, Co-60, Zn-65, Y-88, Ba-133, Cs-137, Eu-152, Hf-181, Ir-192, Ra-226, Th-232, U-238, Am-241, Cf-252, Mo-99, U-235, Pu-239, U-233, Np-237

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Measurement Procedures – *to be tested*

DIN EN / IEC	IEC 61326	Emissions and immunity requirements
	IEC 61000-4	Electromagnetic compatibility (EMC): <ul style="list-style-type: none"> - Electrostatic discharge immunity test (6 kV using the contact discharge technique) - Radio frequency (RF) test (frequency range of 80 MHz to 2500 MHz at an intensity of 50 V/m) - Radiated emissions test - Surge immunity test - Immunity to conducted disturbances, induced by radio-frequency fields - Power frequency magnetic field immunity test - Voltage dips, short interruptions and voltage variations immunity test
	IEC 61010-1	Safety requirements for electrical equipment for measurement, control, and laboratory use
	IEC 60529	Degrees of protection provided by enclosures: <ul style="list-style-type: none"> - Backpack Detector – IP 54 Degree of Protection - Standard Handheld – On IP Rating - Optional Handheld – IP 67 Degree of Protection
	IEC 60068-2	Environmental testing standard: <ul style="list-style-type: none"> - Ambient temperature range from –20°C to +60°C - Relative humidity levels of up to 93% at +40°C - Resistant to dust and spraying/splashing water to IP 54 standard (for backpack detector only) - Vibrations associated with the operation of handheld or hand-carried equipment (random vibration at 0.01 g²/Hz in frequency range 5 Hz to 500 Hz for a period of 1 hour) - Shock (50 g, 18 ms, half sine) - Dropped from a height of 1 m onto concrete
CE		CE conformance mark

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PN	NSN	RADIATION BACKPACK SENTRY SET	Picture
800359	None	Radiation Sentry Detector	
800388	None	Handheld and Accessories	
800360	None	Backpack	
800383	None	Rechargeable Li-Ion Battery	
800400	None	Battery Charger and Accessories	
800305	None	Bluetooth Headset and Accessories	
800397	None	Transportation Hard Case	
800262	None	Shipping Box	
800373	None	Manual and Accessories Kit	

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PN	NSN	ACCESSORIES	Picture
800383	None	Rechargeable Li-Ion Battery	
xxxxxx	None	100V AC to 240V AC / 47Hz to 63Hz Power Supply Unit	
xxxxxx	None	12V DC Vehicle Power Adapter	



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