

Target F500

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Handheld Radio-Isotope Identifying Device (RIID) with 2" Detector.

General Description

The Target F500 is an ultra-compact rugged sensitive Radio-Isotope Identifying Device (RIID). It provides superior usability by offering a wider energy range, higher throughput, and better stability in a wearable handheld. For the first time, a 2"x 2" size detector is combined with high precision, high-speed digital electronics in an ergonomic lightweight enclosure. The novel design features a water-tight aluminum housing and is small enough to be worn on a belt. The wide energy range from 10 keV to 10 MeV and a dose rate capability of 100 mSv/h is indispensable when it comes to field operations dealing with unknown threats. Minute radiation levels can be detected earlier, quicker and with higher accuracy than with other comparable handhelds. Strong radiation sources are measured and identified even at mega-count per second input rates. The F500 comes with the novel patented stabilization based on the measurement of the photon noise charge. Thereby gain shifts and temperature effects are completely compensated. The hermetically sealed waterproof device is well suited for its mission on land, on water, and even underwater to 10 meters diving depth. A crisp trans-reflective high resolution display supports operation in bright sunlight as well as in the dark. All measurements are saved on the instrument (32GB storage capacity), and can easily be transferred without special software. Its multiple interfaces and the built in WEB interface allow reach-back operation. The interface mechanism also provides for secure remote maintenance and remote operation of the instrument.



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Features

Novel sourceless gain stabilization (patents pending)
Smallest instrument with a 2" x 2" detector
High dose rate capability with a single detector
Spectrometry at 1 million cps and higher
Directional radiation detection
Water tight up to 10 meters (33 feet) - IP68 rated
Easy system integration by HTTP REST interface
Remote operation and configuration with standard web browser

Detectors

Gamma	51 x 51 mm (2" x 2") NaI(Tl)
Gamma/Neutron (opt)	51 x 51 mm (2" x 2") Cs ₂ LiYCl ₆

Performance

Energy range (Gamma)	10 keV - 10 MeV (NaI(Tl))
Linearization	Real-time linearization of gamma energy
Dose rate range (Cs-137, NaI(Tl))	10nSv/h - 10mSv/h (1µrem/h - 1rem/h) / ±30 %
Dose rate range ID Mode (Cs-137, NaI(Tl))	10nSv/h - 250µSv/h (1µrem/h - 25mrem/h)
Dose rate overload range (Cs-137, NaI(Tl))	10mSv/h - 500mSv/h (1rem/h - 50rem/h)
Maximum exposure rate	500 mSv/h (50 rem/h)
Stabilization	Sourceless gain stabilization (patents pending)
Identification	Detection and nuclide identification performance exceeds all ANSI N42.34 requirement
Nuclide library	ANSI N42.34 compatible
Library categories	SNM, IND, MED, NORM
Typical resolution	< 7 % FWHM at 662 keV with NaI detector at 20 °C
Maximum input count rate in identification mode	1 million cps (Cs-137)
Gamma sensitivity	1,850 cps/µSv/h (Cs-137)



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Physical	Dimensions (W x L x H)	92 mm x 232 mm x 88 mm (3.62" x 9.13" x 3.46")
	Weight	<1,300 g (<2.86 lbs)
	Housing material	Machined aluminum, powder coated
Service	Warranty	2 years
Environmental	Operating temperature	-20 °C to 50 °C (-4 °F to 122 °F)
	Relative humidity	100% (water proof)
	Protection rating	IP68, 10 m (33') diving depth
	Tests according IEC 62706	Drop, vibration, mechanical shock, electrostatic discharge, radio frequency immunity
Battery	Type	Secure NiMH battery pack (Li-Ion opt.)
	Standard operation time	8h in dose rate mode with dimmed display back light and GPS switched off at 20 °C (68 °F)
Display	Type	Blanview TFT-LCD
	Size	69 mm x 41 mm (2.72" x 1.61")
	Resolution	800 pixels x 480 pixels
Input/Output	USB	2.0; micro-AB socket
	Bluetooth	Class 4.0
	WLAN	WiFi 802.11 g/n
Software	Functions	Dose, dose rate, identification, finder, advanced
	Remote operation / reachback	via web-interface
	File Formats	Download file formats ANSI N42.42 and spc files compatible with third-party analysis software applications such as GADRAS, Cambio, or PeakEasy
	Data Storage	32GB

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Miscellaneous

GPS Global positioning	12-channel SiRF III receiver
Clock	RTC Real Time Clock

Accessories

Case	Pelican® carrying case
Holster	Belt holster
Lanyard	Carrying strap
Charger	2 A USB charger
Connection cable	micro-B socket USB cable
Battery adapter	Adapter for 4 AA alkaline batteries