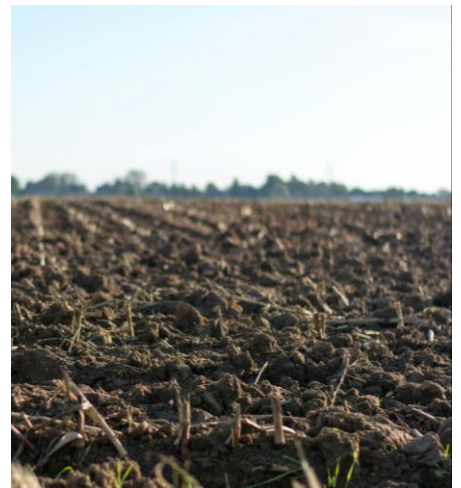


Drone-Based Detectors

Real-Time Aerial Radiation Mapping and Survey Solutions



Features

- Easy to integrate under a drone
- Various scintillator sizes
- Optimized for ease of use
- Integrated data storage and processing
- Life-long feature updates
- Up to 90 km/h mapping speed

Key Applications

- Drone-borne measurements
- Handheld soil scanning
- NORM characterization
- Contamination mapping



MS-SERIES

Radiometric Sensor
3 x 3 Scintillation Detector

ABOUT



MS-350



MS-700



MS-1000



MS-2000



MS-4000

Medusa offers a range of easy-to-use survey tools built to make measuring spatial variation in soil a breeze. At the heart of these tools are our gamma-ray spectrometers, which passively pick up the natural radioactivity in the top layer of soil. They're designed with simplicity in mind, so it is easy for individuals of all experience levels to get started with minimal effort.

***Drone or UAV not included. For users prioritizing compact and efficient deployment, the MS-350 sensor is optimized for integration with the DJI M250 RTK drone platform. With flight endurance of up to 30 minutes, this pairing enables comprehensive data collection over extensive areas ensuring uninterrupted performance for critical survey missions.**

MSB-303

This is a robust two-piece aluminum plate designed to simplify attaching the spectrometer to your drone or survey platform.

Applicable sensors: MS-100, MS-350, MS-700 and the MS-1000

What's included: A generic mounting plate with carbon fibre rods that can be attached to any drone (part A) and a mounting plate compatible with the sensor (part B).

What you need to do: For the DJI M300, M350, and M400, the mounting plate can be installed directly using the provided screws. For other drone platforms, integration requires mechanical adaptation by your engineering team, typically involving drilling mounting holes and securing the plate with appropriate fasteners.

Power: For the DJI M300 and M350, the sensor can be powered using the MDC-512 cable. For the DJI M400, the MDC-512b cable is used. For all other platforms, the sensor accepts a supply voltage between 5–35 V. A custom power lead can be configured from an MDC-513 cable to match the drone's power interface.

- **MS-350**
 - The MS-350 by Medusa Radiometrics is the optimal survey meter for both hand-held and drone-borne operations with a light weight of only 6.0 lbs. The MS-350 utilizes the Medusa Detector Operating System (mDOS) that keeps in-the-field usage simple, whether utilizing it for hand-held contamination mapping, locating a lost source with a UAV, or doing an airborne survey.
 - The typical mapping speed of the MS-350 is up to 15 km/h, with a recording frequency up to 5 Hz. It contains an ultra-rugged 350 ml CsI scintillation crystal, is optimized for ease of use, has integrated data storage and processing, and includes life-long feature updates.
- **MS-700**
 - The MS-700 is optimized specifically for drone usage and is ideal for a wide range of applications such as prospecting, soil mapping, and pollution mapping. Its payload is under 5 kg, which means that the MS-700 is well-suited for off-the-shelf drones.
- **MS-1000**
 - An all-in-one sensor system, the MS-1000 is robust, standalone, and can pair with a drone but is not limited to drone use applications. It features a spectrometer, GNSS, pressure, temperature, and humidity sensors. Real-time analysis and onboard storage are made possible with mDOS.

MS-2000

A scanner that is specialized for vehicle-borne mapping, the MS-2000 is an autonomous, low-power, and robust gamma-ray sensor. It's complete with a vibration-dampening mounting system and ultra-rugged housing made of Kevlar-reinforced carbon fiber. Users can mount the MS-2000 on a variety of vehicles such as quad bikes, tractors, cars, and even larger drones.

MS-4000

The MS-4000 is a lightweight airborne gamma-radiation detection system (AGRS) that can be placed within small airplanes or helicopters. It covers a multitude of applications and has been widely used for mineral exploration and

remediation surveys by customers involved with geophysical survey companies, geotechnical consultants, and research institutes.

SPECIFICATIONS

	MS-350	MS-700	MS-1000	MS-2000	MS-4000
Gamma-Ray Spectrometer					
Scintillation crystal	3x3'' (350 ml) Csl	3x6'' (700 ml) Csl	3x9'' (1000 ml) Csl	90x310mm (2000 ml) Csl	4x4x16'' (4000 ml) Csl
Typical mapping speed	Up to 15 km/h	Up to 20 km/h	Up to 30 km/h	Up to 45 km/h	Up to 90 km/h
Recording frequency	Up to 5 hz				
Radionuclide analysis	⁴⁰ K, ²³⁸ U, ²³² Th and ¹³⁷ Cs				
	MS-350	MS-700	MS-1000	MS-2000	MS-4000
Electrical					
Input voltage	5 – 35 V			12 - 35 V	
Power consumption	3 W (average), 6 W (max)				
Battery	Up to 8 hours			Car Battery	
	MS-350	MS-700	MS-1000	MS-2000	MS-4000
GPS					
Type	uBlox ZED-F9P				
Accuracy	1.5 m CEP				
RTK accuracy	<1 cm				
Signals	GLONASS, BeiDou, Galileo				
	MS-350	MS-700	MS-1000	MS-2000	MS-4000
Mechanical					
Dimension	100 (∅) x 215 (L) mm	100 (∅) x 295 (L) mm	100 (∅) x 375 (L) mm	120 (∅) x 605 (L) mm	17(h) x 20(w) 86(l) cm
Weight	2.7 kg / 6.0 lb	4.7 kg / 10.4 lb	6.7 kg / 14.8 lb	12 kg / 26.5 lb	28 kg / 61.7 lb
Operating Temperature	-20 to +65 °C				
IP rating	IP65				
	MS-350	MS-700	MS-1000	MS-2000	MS-4000
Connectivity					
Wi-Fi	2.4 and 5 GHz				
Ethernet	100 Mbps				
Port	RS-232				
	MS-350	MS-700	MS-1000	MS-2000	MS-4000
Data					
Format	JSON, NMEA, CSV				
Streaming	RS-232, ethernet and Wi-Fi				
Sensors	Spectrometer, GPS, PTH				
Internal storage	16 GB, 500 hours of data				
	MS-350	MS-700	MS-1000	MS-2000	MS-4000
Included software					
Onboard-processing (by mDOS)	Real-time analysis Survey planner Real-time radionuclide inspection Sample measurements				
Post-processing (by GammAn)	Full spectrum analysis (FSA) Window analysis (WA)				

	MS-350	MS-700	MS-1000	MS-2000	MS-4000
Support					
Online support	Extensive library of support guides				
Custom support	Optional				

DOCUMENT HISTORY

Version	Date	Author	Notes
V1.0	10/10/24	AT	New product initiation
V1.1	3/31/25	AT	Added new products

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