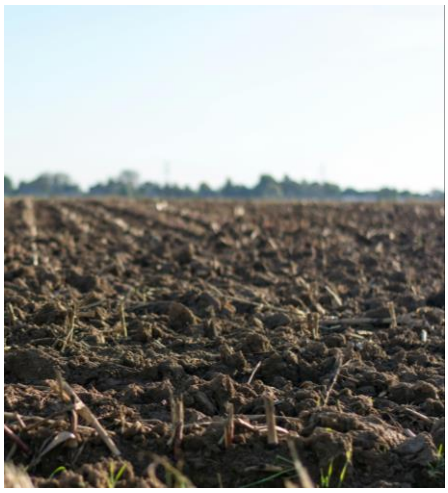
Drone-Based Detectors

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.**

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) CsI	3x6'' (700 ml) CsI	3x9'' (1000 ml) CsI	90x310mm (2000 ml) CsI	4x4x16'' (4000 ml) CsI
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 (Ø) x 215 (L) mm	100 (Ø) x 295 (L) mm	100 (Ø) x 375 (L) mm	120 (Ø) 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)				

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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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