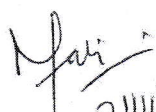




Specifications of Soil Optix Soil Mapper SO-4200-B

SoilOptix Digital Top Soil Mapping System consisting of non-contact, pre-calibrated sensor with a provision to be mounted on a vehicle, either a tractor or a self-propelled off-road vehicle, approximately 60 cm above the ground, traveling up to 20 km/h in 12 m swath widths measuring natural geological properties. It should have high sensitivity, lightweight and rugged carbon housing along with full spectrum recording.			
Radiation Sensor:		<ul style="list-style-type: none">• 31/2" x 13" (88.9mm x 330.2mm) (2L) CsI-based scintillation detectors• Single PCB containing HV supply for detector• 2048-channel MCA and a data processing/storage board.• Dedicated Spectrum Processing with spectrum stabilization• Nuclide specific data• Communication: TCP/IP over a rugged polyurethane coated network cable.• Battery-powered	
Logging		<ul style="list-style-type: none">• Connect to SoilOptix Data Logger software on a field computer• Data acquisition via the SODL software; should run on a standard PC or laptop.• Should have Set-up of the system (SoilOptix Sensor and GPS) Status view to inspect data and functioning of the system.• The data should be stored in records containing energy-stabilized gamma-ray spectra, together with count rate and activities of 40K, 238U, 232Th and 137Cs.• The system should have minimum operator interaction and should provide various views on the data streams while being acquired a user friendly program ideal for optimizing field time.	
Surveying Field		<ul style="list-style-type: none">• Speed: 16- 19 km/h in 12 m swath width• 1 soil sample collected for every 8 acres surveyed	
System Data		<ul style="list-style-type: none">• Size: 41/2" (114.3mm) diameter x 24" (609.6mm) length• Housing: Carbon fiber• Connectors: one 8-pin LEMO M-series• End caps: Anodized aluminum• Environmental: -40 C to +85 C; IP66 protected• Power: 9V-18V 2A• Data acquisition rate: 5Hz-10Hz• Connectivity: user-configurable output streams over IP	
Processing		<ul style="list-style-type: none">• Should develop Custom high definition nutrient maps based on the analysis results. Data output 25 different data layers including macro and micro nutrients, base saturations, textures, and complex models (e.g. bulk density, hydraulic conductivity, and plant available water).• Subscription should be provided for processing for data collected to an around 500 ha/year for 2 years (TOTAL - 1000 ha), and the cost of data mapping per hectare from raw data above 500 hectares in 1st or 2nd year shall be quoted separately by the OEM.• Cost of data mapping per hectare from raw data from third year onwards (for a minimum three-year period) shall be quoted separately by the OEM.	
WARRANTY		1 YEAR	
TOPSOIL PROPERTY LAYERS:			
Texture		Clay	Sand
		Loam	Silt
Macro Nutrients		Calcium	pH
		Calcium Base Saturation	Phosphorus - Bicarb
		Calcium-Magnesium Ratio	Phosphorus - Bray
		CEC	Potassium
		Magnesium	Potassium Base Saturation
		Magnesium Base Saturation	Potassium-Magnesium Ratio
		Organic Matter	Nitrate as N
Micro Nutrients		Aluminum	Manganese
		Boron	Sodium
		Copper	Sulfur
		Iron	Zinc
Complex Models		Bulk Density	Plant Available Water (PAW)
		Hydraulic Conductivity	Elevation


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Computer for Data Acquisition	Software	Windows 10 Pro 64 bit	
	CPU	Intel Core i5-7300U vPro Processor	
	Storage	512 GB SSD	
	Memory	RAM 32GB DDR4-2133MT	
	Display	13.1" Touchscreen 1024x768	
		Intel HD Graphics 620	
		External video support upto 1280x1024	
	Audio	Intel HD Audio compliant	
		Integrated speakers	
	Keyboard & Input	Touchscreen	
	Expansion Slots	SD Card (SDXC)	
	Interface	Docking Connector:	80 pin
		HDMI:	Type A
		VGA:	D-sub 15-pin
		Audio In	3.5mm Mini-jack stereo
		Audio Out	3.5mm Mini-jack stereo
		Serial	D-sub 9-pin
	Power Supply	Battery operation: 19.5hr; Standard long life Li-Ion battery pack; Battery charge time: 3.5hr on/off; AC adapter: AC 100V-240V 50/60Hz, auto sensing/switching worldwide power supply	
	Hazardous certifications	ANS/ISA 2.12.01-2013	
	Accessories	AC Adapter 100W (3 prong)	CF-AA5713AM
		Standard long life battery pack	CF-VZSU46AU
		Battery charger	CF-VCBTB2W
	Warranty	3 year limited warranty, parts and labour	

GPS Receiver for Geotagging	GNSS	Signals	GPS/QZSS L1, GLONASS G1, BeiDou B1, Galileo E1, SBAS
		Tracking channels	72
		IMU	9DOF
		Update rate	14 Hz / 5 Hz
	POSITIONING	Static horizontal	5 mm + 1 ppm
		Static vertical	10 mm + 2 ppm
		Kinematic horizontal	7 mm + 1 ppm
		Kinematic vertical	14 mm + 2 ppm
	Data	Internal storage	8 GB
		Correction input	RTCM2, RTCM3
		Solution output	NMEA, ERB, plain text
		Logs	RINEX2.X, RINEX3.X
	Connectivity	Radio	LoRa 868/915 MHz
		Wi-Fi	802.11b/g/n
		Bluetooth	4.0/2.1 EDR
		Interfaces	USB, RS232, PPS, Event
	Electrical	Battery life	30 hours
		Charging port	MicroUSB 5V
		External power input	6-40V
		Certifications	FCC, CE
	Mechanical	Operating temperature	-20 to +65°C
		Ingress protection	IP67 (water and dustproof)
	Warranty	1 year warranty	

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