

Model 500 Series

GreenSeeker[®] Sensor

The GreenSeeker Model 500/505 is an active light source, real-time plant reflectance sensor. Its unique, patented optical-electronic system emits light at two wavelengths, measures the reflectances and outputs NDVI (Normalized Differential Vegetation Index), a value related to the amount and vigor of plant matter in its field of view. The sensor performs identically in sunlight and darkness. Data formats, speeds and secondary vegetation indices may be user-configured.

The Model 500 is typically used in a multi-sensor array on a boom, while the 505 is pole-mounted for handheld operation. Other configurations are available.

The sensor's *field of view* is nominally 24" wide.

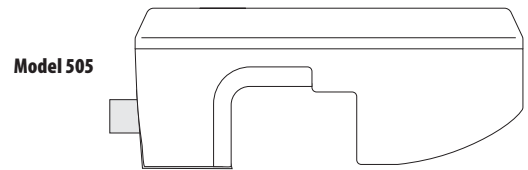


Applications

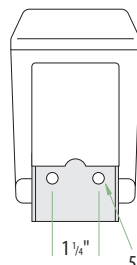
- ◆ Remote Sensing & Agronomic Research
- ◆ Biomass Measurements and Plant Canopy Variations
- ◆ Nutrient Response, Yield Potential, Pest & Disease Impact
- ◆ Real-time Fertilizing for Wheat, Corn, Canola, etc.
- ◆ Mapping for Field Crops, Row Crops, Orchards, Vineyards, etc.
- ◆ Dual Index Data Outputs permit Comparative Analysis
- ◆ Data Collection During other Farming Operations

Connector Pinouts			
PIN	A	B	VCM*
1	GND	GND	+12V
2	GND	GND	V2
3	Analog IN	~	V1
4	CAN LOOP	CAN LOOP	V0
5	NDVI V _{out}	Serial Tx	GND
6	~	/EXT1	
7	~	~	
8	~	Serial Rx	
9	CAN Shld	CAN Shld	
10	CAN HIGH	CAN HIGH	
11	CAN LOW	CAN LOW	
12	+12V	+12V	

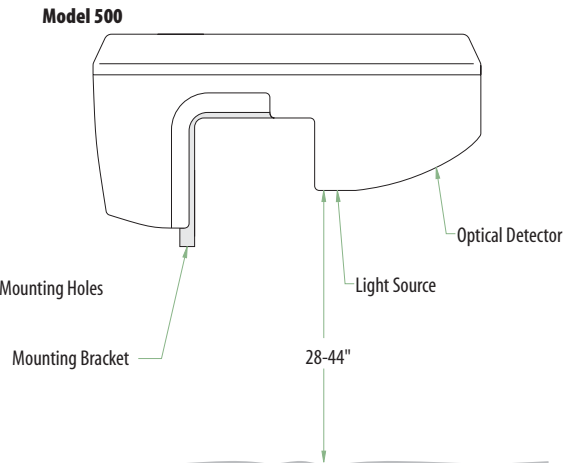
*Port not available on some versions



Model 500



5/16" Mounting Holes



GreenSeeker® Sensor

Specifications

900-1-009/038

Electrical

Voltage	12VDC nominal (11.0V – 15.5V)
Current	300mA nominal (600mA peak)

Mechanical

Dimensions	L: 10.9" W: 3.38" H: 5.9" (27.7 x 8.6 x 15.0 cm)
Weight	2.25 lb (1.02 kg)
Housing Material	High-Impact Glass-Filled Nylon, UV-Resistant

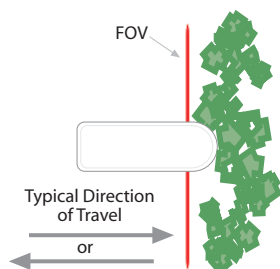
Emission Wavelengths

Near Infrared	(All Models)	774nm	~25nm FWHM
Red	(Model 500/505)	656nm	~25nm FWHM

Outputs

FWHM: spectral width at 50% of peak

Data Format	Model 505	RS232: ASCII Text, 38400, 8,N,1, plus V out
	Model 500	CAN Bus 250kHz, or RS232 Output
1st Vegetation Index	NDVI	
2nd Vegetation Index	IRVI (default)	IRVI, RVI, NDVI, SA-NDVI, WDR-NDVI
NDVI Range	0.00 – 0.99	V.I. Voltage Output 0.00 – 0.99V
FOV (Field of View)	24" ± 4" x 0.6 ± 0.2"	Heights of 24" – 62"
Output Interval	30 – 1400msec	Model 505 default: 100msec



The sensors have two proprietary 12pin ports on the bottom permitting sensors to be daisy-chained for power and networking.

For special mounting configurations or cables for access to Voltage output signal, contact factory.

Height Range	NDVI Variation*
28" – 44" Optimal	±0.02
26" – 54" Normal	±0.03
24" – 62" Extended	±0.04
Sensor-to-Sensor	NDVI Variation
28" – 44"	±0.02

*Values at time of calibration.

Estimated stability to exceed 500 hours of operation.

Models

Model 500	GreenSeeker Sensor: Red/NIR	900-1-009
Model 505	GreenSeeker Sensor Head, Handheld, Red/NIR	900-1-038

U.S. Patent No: 5,585,626 5,296,702 5,389,781 and others

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