

Crop Circle Model ACS-211



ACTIVE CANOPY CROP SENSOR

The Crop Circle ACS-211 active crop canopy sensor calculates the NDVI vegetation index as well as measuring basic reflectance information from plant canopies and soil.

Unlike passive radiometric light sensors, the Crop Circle ACS-211 is not limited by ambient lighting conditions – measurements can be made day or night due to its unique light source technology.

For on-the-go applications, the Crop Circle ACS-211 sensor can be mounted to virtually any type of vehicle to remotely sense and/or map plant or crop canopy biomass while driving through a field. The compact size and low weight design allows the Crop Circle ACS-211 to be easily adapted for pole-mounted and handheld applications. Information produced by the sensor can be utilized to quantify the impact of nutrients, water, disease or other growing conditions on plants or crops.

3D NDVI MEASUREMENTS

The ACS-211 incorporates two optical measurement channels. The sensor simultaneously measures crop/soil reflectance at 670 nm and 780 nm. A unique feature of the ACS-211 sensor is its ability to make 3D NDVI measurements: an industry first. The sensor accomplishes this by assessing the approximate height of the plant canopy. The height measurement is then used to scale the NDVI measurement, accordingly. This new NDVI measurement technique helps to reduce the saturation effect often encountered when using the classic NDVI measurement at high biomasses.

COLLECT DATA EASILY

Using the Holland Scientific GeoSCOUT X datalogger, data can be easily and quickly recorded. Geospatial sensor data are stored on an internal 4GB SD flash card. All recorded data are saved using a comma-separated-variable text format for easy import into third-party GIS mapping and analysis software.

FEATURES:

- » Two measurement channels
- » 3D NDVI measurement
- » Make measurements day or night
- » Measurements not influenced by fluorescent or other AC light sources
- » Wide measurement range— 0.25m to 2.5m
- » Rugged—dust and water resistant
- » Low noise performance
- » Fast data output rate
- » Low power operation

SPECIFICATIONS

Sensor-to-Canopy Range: Typically 10 in (25 cm) to over 96 in (244 cm)

Field-of-View: ~40 degrees by ~8 degrees

Active Light Source: Modulated polychromatic LED array

Photodetection: Two channel silicon photodiode array

Optical Measurement Bands: 670 nm and 780 nm

ELECTRICAL SPECIFICATIONS

Sample Output Rate: 5 samples per second in autosend mode

Operating Range: 0 to 50 °C

Communication Interface: RS-485 multi-drop (bidirectional communication); RS-232 (autosend, output only)

RS-232 Serial Communication: 38400, no parity, 8 data bits, 1 stop bit

Power: 7 to 17V DC @ ~210 mA

EMC Certifications: TBD

MECHANICAL SPECIFICATIONS

Enclosure: Injection molded polycarbonate

Environmental: IP68 for dust and water resistance

Weight: 0.9 lb (430 gm)

Sensor Mount: (2) M6 X 1 threaded holes in base of sensor spaced 1.25 in (3.18 cm)

Dimensions: Width 3.5 in (8.9 cm), Length 7.9 in (20.1 cm), Height 1.9 in (4.8 cm)

Serial/Power Connector: Twelve pin Deutsch, O-ring sealed

ACCESSORIES AND SYSTEM PACKAGES

Crop Circle ACS-211 Handheld System includes: Crop Circle ACS-211, GeoSCOUT X, extension pole apparatus, cables, storage case, charger and user's guide

Crop Circle ACS-211 Mapping System includes: Crop Circle ACS-211, GeoSCOUT X, cables, storage case, mounting plate and user's guide

NOTES:



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