

CROP CIRCLE ACS-430 ACTIVE CROP CANOPY SENSOR



The Crop Circle ACS-430 active crop canopy sensor provides classic vegetative index data as well as basic reflectance information from plant canopies and soil.

Unlike passive radiometric light sensors, the Crop Circle ACS-430 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-430 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 Crop Circle to be easily adapted to 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.

MULTI-CHANNEL SPECTRAL MEASUREMENT

The ACS-430 incorporates three optical measurement channels. The sensor simultaneously measures crop /soil reflectance at 670 nm, 730 nm and 780 nm. A unique feature of the ACS-430 sensor, unlike any other active sensor on the market, is its ability to make height independent spectral reflectance measurements. Holland Scientific refers to these reflectance measurements as Pseudo Solar Reflectance (PSR). This means the spectral reflectance bands are scaled as percentages and will not vary with sensor height above a target. This opens the possibility of using literally dozens of vegetative indices that do not use ratio based calculations.

COLLECT DATA EASILY

Using the Holland Scientific GeoSCOUT GLS-400 datalogger, data can be easily and quickly recorded to a text file on an SD flash card. Additionally, by connecting

a GPS receiver to the GeoSCOUT, data collected from the ACS-430 can be georeferenced and stored for later analysis in third party GIS software.

FEATURES:

- » 3 measurement channels: 670nm, 730nm and 780 nm
- » Computes height independent absolute reflectances
- » Make measurements day or night
- » Measurements not influenced by fluorescent or other AC light sources
- » Wide measurement range— 0.25 m to 2.0 m
- » Rugged IP68 packaging— dust and water resistant
- » Low noise performance
- » Fast data output rate
- » Light weight < 0.43kg

SPECIFICATIONS

Sensor-to-Canopy Range: Typically 10 in (25 cm) to >72 in (183 cm)

Field-of-View: ~30 degrees by ~14 degrees

Active Light Source: Modulated polychromatic LED array

Photodetection: Three channel silicon photodiode array with spectral range of 320 nm to 1100 nm

Optical Measurement Bands: 670 nm, 730nm and 775nm

ELECTRICAL SPECIFICATIONS

Sample Output Rate: Programmable for 1 sample per second to 20 samples per second; Factory default 10 samples per second

Operating Range: 0 to 50 °C

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

RS-232 Serial Communication: 76800, no parity, 8 data bits, 1 stop bit

Power: 9 to 17V DC @ ~350 mA

EMC Certifications: C-Tick, CE

MECHANICAL SPECIFICATIONS

Enclosure: Injection molded polycarbonate

Environmental: IP68 for dust and water resistance

Weight: 0.94 lb. (430 gm)

Sensor Mount: (2) ¼ - 20 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: Four pin male Eurofast type, O-ring sealed

ACCESSORIES AND SYSTEM PACKAGES

Crop Circle ACS-430 Handheld. System includes: Crop Circle ACS-430, GeoSCOUT 400, FieldPAK PS-12 power supply, extension pole apparatus, cables, storage case, charger and user's guide

Crop Circle ACS-430 Mapping System. System includes: Crop Circle ACS-430, GeoSCOUT 400, cables, storage case, mounting plate and user's guide

NOTES:



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