

CROP CIRCLE ACS-470 ACTIVE CROP CANOPY SENSOR



The Crop Circle ACS-470 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-470 is not limited by ambient lighting conditions— measurements can be made day or night due to its unique, patented (pending) light sensor technology.

For on-the-go applications, the Crop Circle ACS-470 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 CONFIGURABILITY

The ACS-470 incorporates three optical measurement channels. A unique feature embodied in the ACS- 470 sensor is the user's in-field ability to select optical measurement bands of interest thereby allowing the instrument to be spectrally customized to a particular sensing application. Spectral configuration is performed via the use of standard 12.5 mm interference filters.

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-470 can be georeferenced and stored for later analysis in third party GIS software.

FEATURES:

- » 3 measurement channels
- » Spectrally configurable
- » Make measurements day or night
- » Measurements not influenced by fluorescent or other AC light sources
- » Wide measurement range— 0.25 m to 2.5 m
- » 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 >72 in (183 cm)

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

Active Light Source: Modulated polychromatic LED array (emission from 430 nm to 850 nm)

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

Optical Measurement Bands: User definable from 430 nm to 800 nm via 12.5 mm interference filters

ELECTRICAL SPECIFICATIONS

Sample Output Rate: Programmable for 1 sample per second to 20 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: 11 to 17V DC @ ~350 mA

MECHANICAL SPECIFICATIONS

Enclosure: PVC plastic housing

Environmental: IP68 for dust and water resistance

Weight: 1.6 lb. (755 gm)

Sensor Mount: (2) ¼ - 20 threaded holes in base of sensor spaced 1.25 in (3.18 cm)

Dimensions: Width 3.5 in (8.89 cm), Length 7.0 in (17.8 cm), Height 2.0 in (5.08 cm)

Serial/Power Connector: Four pin male Eurofast type, O-ring sealed

ACCESSORIES AND SYSTEM PACKAGES

Crop Circle ACS-470 Handheld. System includes: Crop Circle ACS-470, GeoSCOUT 400, FieldPAK PS-12 power supply, extension pole apparatus, cables, storage case, charger and user's guide

Crop Circle ACS-470 Mapping System. System includes: Crop Circle ACS-470, GeoSCOUT 400, cables, storage case, mounting plate and user's guide

Crop Circle ACS-470 Field Calibrator. Includes: calibration fixture and user's guide

Interference Filter Set (6 pieces). Includes:

- 450 nm (BW ±20 nm), 550 nm (BW ±20 nm),
- 650 nm (BW ±20 nm), 670 nm (BW ±11 nm),
- 730 nm (BW ±10 nm) and 760 nm (LWP) interference filters; 12.5 mm diameter

NOTES:



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