

# Crop Circle Model ACS-435



The Crop Circle ACS-435 active crop canopy sensor provides classic vegetation index data as well as basic reflectance information from plant canopies and soil.

Unlike passive radiometric light sensors, the Crop Circle ACS-435 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-435 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 minimal mass of the Crop Circle ACS-435 allows it 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.

## MULTI-CHANNEL SPECTRAL MEASUREMENT

The ACS-435 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-435 sensor, unlike any other active sensor on the market, is its ability to make height independent spectral reflectance measurements. 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 X datalogger, data can be easily and quickly recorded. Geospatial sensor data are stored on an internal 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:

- » Three measurement channels
- » Measures NDVI and NDRE
- » 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: (Preliminary)

**Sensor-to-Canopy Range:** Typically 10 in (25 cm) to over 98 in (250 cm)

**Field-of-View:** ~40 degrees by ~10 degrees

**Active Light Source:** Modulated polychromatic LED array

**Photodetection:** Three channel silicon photodiode array

**Optical Measurement Bands:** 670nm, 730nm and 780nm

## ELECTRICAL SPECIFICATIONS

**Sample Output Rate:** Up to 10 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:** 11 to 16.5V DC @ ~180 mA

**EMC Certifications:** CE

## MECHANICAL SPECIFICATIONS

**Enclosure:** Injection molded polycarbonate

**Environmental:** IP68 for dust and water resistance

**Weight:** 0.9 lb (435 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:** 12-pin Deutsch, O-ring sealed

## ACCESSORIES AND SYSTEM PACKAGES

**Crop Circle ACS-435 Handheld System includes:** Crop Circle ACS-435, GeoSCOUT X, extension pole apparatus, cables, storage case, charger and user's guide

**Crop Circle ACS-435 Mapping System includes:** Crop Circle ACS-435, GeoSCOUT X, cables, storage case, mounting plate and user's guide

*Specification are subject to change without notice.*

## NOTES:



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