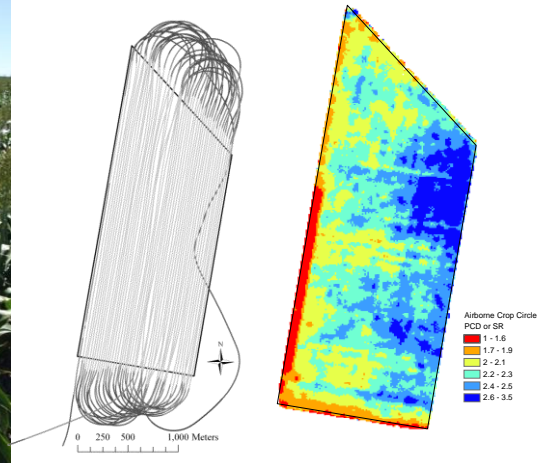


# RAPTOR ACS-225LR ACTIVE AERIAL CROP SENSOR



**SENSE** → **TRACK** → **MAP**

## EARTH AND SKY SENSING

The Raptor ACS-225LR is an active aerial crop sensor that contains an integrated light source for operation under varying ambient illumination conditions. The sensor is capable of collecting vegetation information at well over 120 kts at low altitudes (5 m to over 50 m) above crops or soil. Information produced by the sensor includes NDVI and SRI vegetation indexes as well as basic reflectance information and pseudo height from the NIR channel.

For ground-based applications, the Raptor ACS-225LR sensor can be mounted to the cab of virtually any type of vehicle to remotely sense and/or map plant or crop canopy biomass while driving through a field. 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 Raptor ACS-225LR incorporates two optical measurement channels. The sensor simultaneously measures crop/soil reflectance at 660 nm and 850 nm (or 735 nm and 850 nm model option). A unique feature of the ACS-225LR sensor is its ability to make height independent spectral reflectance measurements. Holland Scientific refers to these reflectance measurements as Pseudo Solar Reflectance (PSR) 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 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-225LR can be georeferenced and stored for later analysis in third party GIS software.

## FEATURES:

- » Two measurement channels: 660 nm and 850 nm
- » Computes height independent absolute reflectance
- » Make measurements day or night
- » Aircraft or tractor mountable
- » Wide measurement range— 0.5 m to 50 m
- » Rugged IP68 packaging— dust and water resistant
- » Low noise performance
- » Fast data output rate— up to 50 samples per second
- » Light weight (~1.0 kg)

## SPECIFICATIONS: (Preliminary)

### OPTICAL

**Sensor-to-Canopy Range:** Typically 1.5 ft (0.5 m) to >165 ft (>50 m)

**Field-of-View:** Aerial mounted: ~7 degrees by ~2 degrees; Tractor mounted (cab) ~60 degrees by ~7 degrees

**Active Light Source:** Modulated polychromatic lamp

**Photodetection:** Two channel silicon photodetector

**Optical Measurement Bands:** 660 nm and 850 nm (735 nm and 850 nm available)

### ELECTRICAL

**Sample Output Rate:** Programmable for 1, 5, 10, 20 and 50 samples per second; Factory default 10 samples per second

**Operating Range:** 0 to 50 °C

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

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

**Power:** 9 to 17V DC @ ~850 mA max.

### MECHANICAL

**Enclosure:** Plastic and iridited aluminum

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

**Weight:** 2.2 lb (1 kg)

**Sensor Mount:** Flange mount using four M6 (or ¼-20) machine screws

**Dimensions:** Width 4.0 in (10.2 cm), Length 8.9 in (22.6 cm), Height 2.0 in (5.1 cm)

**Serial/Power Connector:** Circular Eurofast connector, O-ring sealed

### ACCESSORIES AND SYSTEM PACKAGES

**Raptor ACS-225LR Starter System.** System includes: Raptor ACS-225LR, configuration tool, configuration software, cables, storage case and user's guide

**Raptor ACS-225LR Mapping System.** System includes: Raptor ACS-225LR, GeoSCOUT GLS-400, configuration tool, configuration software, cables, storage case, mounting plate and user's guide

### NOTES:



6001 South 58th Street, Suite D  
Lincoln, NE 68516

Tel/Fax: (402) 488-1226

sales@hollandscientific.com

[www.hollandscientific.com](http://www.hollandscientific.com)