Crop Circle Model DAS44X

The Holland Scientific Crop Circle DAS44X multi-parameter sensor fuses multiple sensing devices into a single compact package. Data collected by the sensor can be utilized to quantify the radiative transfer properties for both soil and vegetation. The Crop Circle DAS44X's versatility allows it to be deployed for both stationary and mobile applications. Additionally, the Crop Circle DAS44X can be networked with other Holland Scientific crop canopy sensors or with third-party sensors in order to expand on its already data rich capabilities. Measurements provided by the Crop Circle DAS44X include: upwelling and downwelling photosynthetic active radiation (PAR), canopy temperature, air temperature, relative humidity and atmospheric pressure. The Crop Circle DAS44X also includes two 16-bit differential voltage channels with the option of configuring one of the channels as a pulse counter.

CHARACTERIZE RT PROPERTIES

Radiative transfer (RT) modeling is an area of primary use for the Crop Circle DAS44X. Data collected by the sensor can be used to assess underlying physical processes related to the interaction of radiation with the plant foliage at the canopy level. Sensor data can be combined with other sensors, such as the Crop Circle ACS435P, to provide even more canopy information related to a plant canopy's biophysical characteristics

COLLECT DATA EASILY

Log DAS44X data using the new GeoSCOUT X GPS data logger. All data is stored in a comma-separated-variable text format for easy export to third-party GIS mapping and analysis software. The GeoSCOUT X can support 4 Crop Circle DAS44X sensors plus two additional RS232 serial devices. Position offsets for each sensor can be readily configured.

FEATURES:

- Measurements: Upwelling and downwelling PAR, canopy temperature, air temperature, relative humidity, atmospheric pressure and SONAR
- Two 16-bit differential voltage channels

USES:

- Trend diurnal changes in plant growth
- High throughput Phenotyping
- Agrochemical performance assessment
- Net primary production estimation
- fAPAR estimationi
- Nutrient studies

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SPECIFICATIONS: (Preliminary)

Measurements: Canopy temperature (IRT), air temperature, atmospheric pressure, SONAR, relative humidity, reflected and incident PAR, 2 voltage measurement channels

IRT Spectral Bandwidth: 5.5um to 14um

IRT Field-of-View: ≈ 30 degrees

IRT Temperature: 0 to 55°C, ±0.5°C

Ambient Air Temperature: 0 to 55°C, ±0.3°C

Par Sensor Spectral Bandwidth: Nominally 400nm to 700nm

Reflected Par Field-of-View: ≈ 30 degrees

Atmospheric Pressure: 15 to 115 kPa, ±1.5% FS

Relative Humidity: 0 to 100% non condensing; 10 to 90%, @ +/-4%

Sonar: 0-150 cm

Common Mode Voltage Range: 0 to 4.5 Volts

Common Mode Rejection: >100dB

DATA ACQUISITION

Data Collection: GeoSCOUT X geospatial data logger

Stand-Alone Output Rate: UP to 10 samples per second

Networked Sample Rate: Determined by the GPS update rate

ELECTRICAL/MECHANICAL

Enclosure: Plastic (polycarbonate and PVC) and Aluminum

Environmental: IP54 for dust and moisture resistance

Electrical Power: 11.5 to 16.5 VDC @ < 300mA

Operation range: 0 to 50°C

Serial/Power Connector: 12-pin Deutsch, O-ring sealed

ACCESSORIES

Crop Circle Das44X Calibration Kit: Includes DAS44X communication software, USB to RS485 converter, cables and manual.

Specification are subject to change without notice.

NOTES:

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