

SRS

# Spectral Reflectance Sensor

The SRS Spectral Reflectance Sensor is a rugged multiband radiometer that measures either Normalized Difference Vegetation Index (NDVI) or Photochemical Reflectance Index (PRI) continuously at the plot or plant scale.

## Applications

NDVI and PRI are correlated with canopy variables such as:

- leaf area index
- light use efficiency
- biomass and crop yield,
- crop and forest phenology,
- canopy growth
- photosynthetic performance
- CO<sub>2</sub> uptake.

## Built for Unattended Monitoring

Watertight, weatherproof housing and fully sealed optics mean the SRS can be deployed in the field for an entire growing season—or longer.

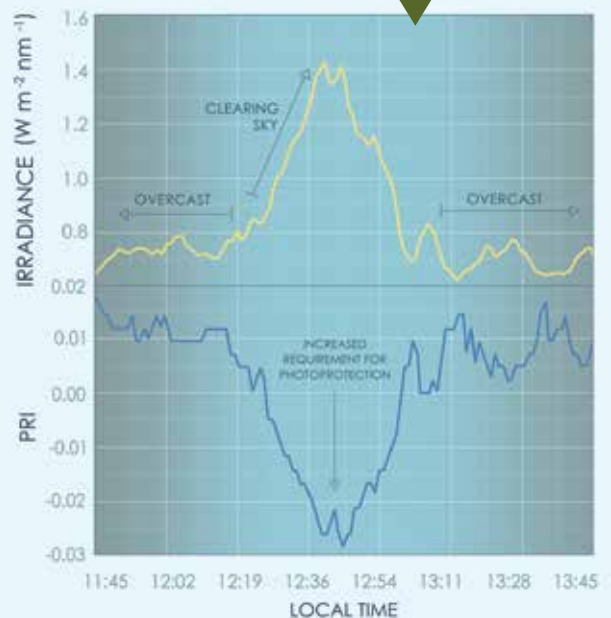
## Low Cost

Rugged, low cost, research-grade sensors let you explore spatial and temporal variability of canopy structure and function.

## Collect High Spatial Resolution NDVI or PRI Continuously

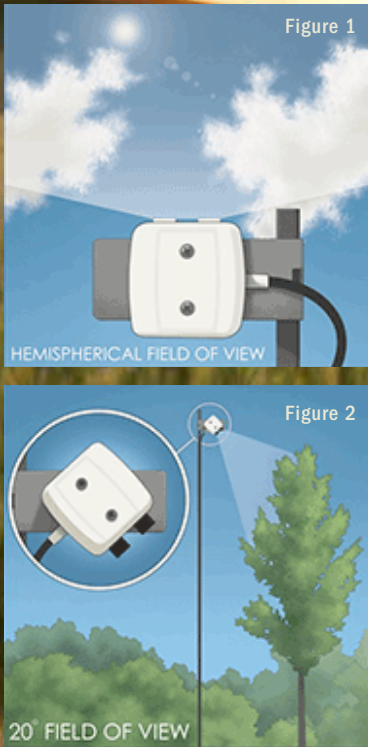
Satellite and aircraft-derived spectral vegetation indices are produced as snapshots in time and have relatively coarse spatial resolutions. The SRS is designed to be mounted directly above the plant or canopy of interest and provides a continuous stream of NDVI or PRI data for as long as it is mounted in the field.

Use PRI to estimate light use efficiency



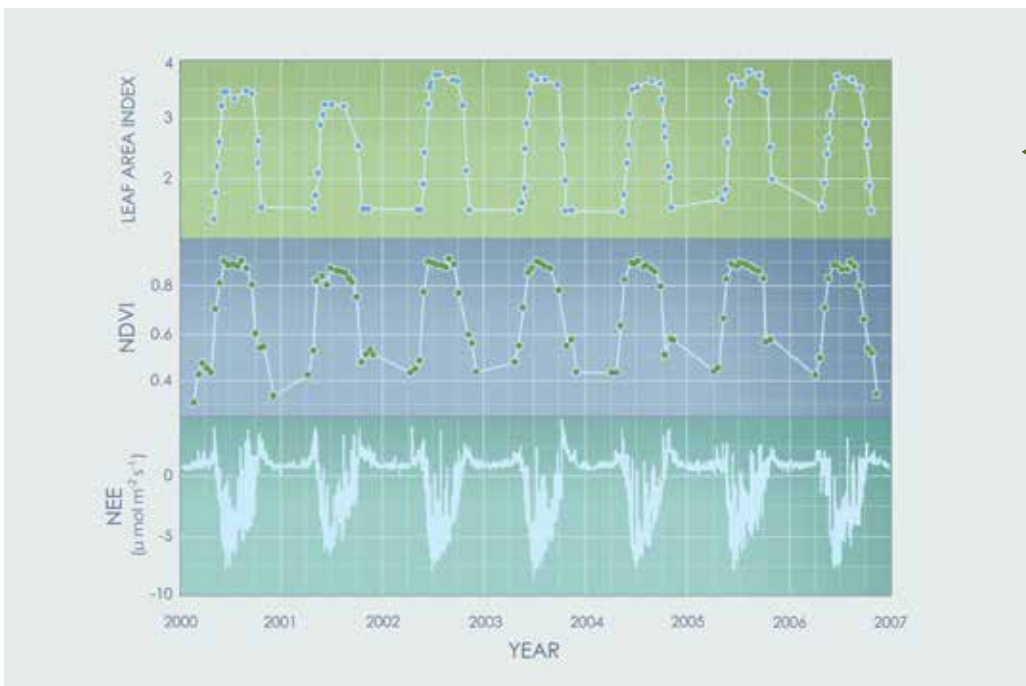
## Specifications

**Accuracy:** 10% or better for spectral irradiance and radiance values. **Dimensions:** 43 x 40 x 27 mm. **Calibration:** NIST traceable calibration to known spectral irradiance and radiance. **Measurement Time:** < 300 ms. **Connector Type:** 3.5 mm (stereo) plug or stripped and tinned wires. **Communication:** SDI-12 digital sensor. **Data logger compatibility:** (not exclusive) Decagon Em50 series, Campbell Scientific. **NDVI bands:** Centered at 630 nm and 800 nm with 50 nm and 40 nm Full Width Half Maximum (FWHM), respectively. **PRI bands:** Centered at 532 nm and 570 nm with 10 nm FWHM.



SRS sensors are arranged to be in a dual view arrangement (up and down looking) for continuous measurement of **percent reflectance**.

Percent reflectance is the ratio between reflected and incident radiation, measured using uplooking (Figure 1) and downlooking (Figure 2) sensors, respectively. Depending on spatial variability in sky conditions, one uplooking sensor may be able to provide reference values for multiple downlooking sensors.



Use NDVI to track changes in LAI and seasonal dynamics in ecosystem productivity.



*we measure the world*

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