



# SKR 1850D & 1850ND SKR 1850D/A & 1850ND/A 4 Channel Sensor

Skye Instruments have been specialising in light and radiation sensors since 1983. All are designed, manufactured and calibrated to the highest standards. Each is supplied with a Calibration Certificate traceable to the UK's National Physical Laboratory (NPL).

These radiometers are available with 4 individual channels, essentially multiple sensors in one housing. Sensors intended for measuring downwelling or incident radiation are fitted with cosine correcting head. Sensors supplied for upwelling or reflected light receive radiation from a narrow 25° cone, enabling measurements from a defined area. Other acceptance angles are available on request.

Usually a pair of sensors with identical wavebands are used to measure incident and reflected light simultaneously, to eliminate variations in natural solar radiation during measurement. Sensors can be installed on a hand-held pole for field mapping, on meteorological or CO<sub>2</sub> flux towers for long term monitoring, or are light enough to be used on aircraft for larger scale studies.

Skye's calibration facility scope is between 280 and 2400 nm with bandwidths from 5 nm to several hundred nm (broadband). The SKR 1850 series sensors can be ordered with the user's choice of wavebands in the VIS and NIR ranges between 400-1050nm. Once the wavebands are fitted and calibrated, they are not changeable by the user. Popular choices include Red & Far-Red, Red & Near Infra Red or channels matching satellite bands for ground truthing. For SWIR wavebands please choose the SKR 1870 sensors.

Sensors are suitable for use in natural solar radiation or any lamp or light source. Each is fully weatherproof, designed for permanent installations outdoors in all climates. These sensors cannot be submerged in water. They are compatible with Skye Display Meters, SpectroSense2 meters and DataHog2 loggers. There is also a choice of outputs and amplifications to suit most instruments from other manufacturers.

As with all Skye products, these sensors have been quoted in many scientific references, please ask for a list of publications.



4 channel light sensors  
Choose wavelengths between 400-1050 nm  
VIS and NIR wavebands  
Cosine corrected for incident light  
Narrow angle FOV for reflected light  
Ideal for NDVI, PRI, WBI & satellite ground truthing

## SKR 1850 SPECIFICATIONS

Range	4 channels individually chosen at time of ordering between 400-1050 nm. Bandwidths from 5nm to several 100 nm	Power supply	SKR 1850 - not required SKR 1850A 5-15 VDC @ 3 mA. Internal power regulator For SKR 1850A with output 0.2V-5.15 VDC For SKR 1850A with higher output e.g. 0-3V, 0-5V etc 9-15 VDC
Construction	Black Delrin acetyl and black anodised aluminium housing. Cosine correcting head acrylic and PVC. Unit completely weatherproof with cosine corrector head removed, sealed with wide transparency glass flats "O" rings. Waterproof rating IP65, fully weatherproof. Regular maintenance required to keep light collecting surfaces clean and free from obstruction, e.g. dust, moisture, algae etc	Linearity	Better than 0.2% of scaled range.
Filters	Metal interference and/or glass depending on wavelengths & bandwidths chosen, to military spec.	Cosine Error	Typically 3% to 80 degrees when the cosine diffuser head is fitted. Sensor has a 25 degree total cone (12.5 degree off normal) Field of View when cosine diffuser head is not fitted. Other FOV available on request
Detector	Silicon photodiode	Response Time	SKR 1850 - typically less than 100 nanoseconds. SKR 1850A - 2 milliseconds
Cable	Screened, 74-C military specification. 3m. Standard length.	Absolute Calibration	Typically better than 5%. Note that this error is to some dependant on bandwidth - wide bandwidths will be less subject to error than Very low bandwidth channels.
Temperature Range	-35 to +75 °C	Dimensions -	
Humidity Range	0-100%	Weight - 400g (with 3m cable)	
Output	SKR 1850 - current output (nA) which varies with filters used. SKR 1850A - voltage output scaled according to filters used. 0.2V as standard, other angles available.		

## ORDERING INFORMATION

### Sensors

SKR 1850D - 4 Channel sensor. Cosine corrected for incident light measurements (Please specify wavelength and bandwidth). 3m cable

SKR 1850ND - 4 Channel sensor. Narrow angle FOV for reflected light measurements. (Please specify wavelength and bandwidth). 3m cable

SKR 1850D/A - 4 Channel sensor with Integral Amplifier. Cosine corrected for incident light measurements (Please specify wavelength and bandwidth). 3m cable\*

SKR 1850ND/A - 4 Channel sensor with Integral Amplifier. Narrow angle FOV for reflected light measurements. (Please specify wavelength and bandwidth). 3m cable\*

\*the Amplified version isn't required when used with a SpectroSense2 or DataHog2.

### Add Prefix

/SS2 - SpectroSense2 connector and 2m cable

/I - DataHog2 connector and 3m cable

### Accessories

SKM 222 - Levelling unit

### Meters and Dataloggers

SKL 904 - SpectroSense2

SKL 908 - SpectroSense2+

SKL 925 - SpectroSense2+ with GPS Module

SDL 5000 series DataHog2 dataloggers

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