

## **HYPERSPECTRAL OCEAN COLOUR RADIOMETER (HYPEROCR)**

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The Hyperspectral Ocean Colour Radiometer (HyperOCR) is the first of Satlantic's new line of precision optical sensors. This innovative sensor provides 136 channels of factory calibrated optical data from 350 to 800 nm.

The HyperOCR can easily integrate into third-party equipment or connect directly to a computer for real-time measurements. Furthermore, Satlantic's proprietary RS-485 SatNet networking interface provides the capability to combine several Satlantic devices on a single telemetry interface for applications where serial inputs are limited on host data acquisition devices.



Applications include hyperspectral determination of ambient above-water irradiance for **aquatic photosynthesis studies** and **bio-optical analysis of natural water bodies**. Additional applications can include estimations of **ultraviolet radiation levels** and hyperspectral measurements in **agricultural and forestry research**.

### **Features:**

- Compact and lightweight
- Low power consumption
- Minimal amount of support equipment required
- Fully isolated interfaces
- Networking capability
- Corrosion proof housing
- Easy to use



# HYPEROCR SPECIFICATIONS

CHARACTERISTICS	Irradiance Air	Irradiance Water	Radiance Air	Radiance Water
<b>SPATIAL</b> Field of View:	Cosine 3% 0 - 60° 10% 60 - 85° (350-800 nm)	Cosine 3% 0 - 60° 10% 60 - 85° (350-800 nm)	3°	8.5°
<b>ELECTRICAL</b> Typical NEI*  Saturation*  * at 500nm with 1024 ms integration time	$1.0 \times 10^{-3}$ ( $\mu\text{W cm}^{-2} \text{ nm}^{-1}$ )  9.0 ( $\mu\text{W cm}^{-2} \text{ nm}^{-1}$ )	$1.5 \times 10^{-3}$ ( $\mu\text{W cm}^{-2} \text{ nm}^{-1}$ )  13.5 ( $\mu\text{W cm}^{-2} \text{ nm}^{-1}$ )	$5.3 \times 10^{-5}$ ( $\mu\text{W cm}^{-2} \text{ nm}^{-1} \text{ sr}^{-1}$ )  0.5 ( $\mu\text{W cm}^{-2} \text{ nm}^{-1} \text{ sr}^{-1}$ )	$9.0 \times 10^{-5}$ ( $\mu\text{W cm}^{-2} \text{ nm}^{-1} \text{ sr}^{-1}$ )  0.8 ( $\mu\text{W cm}^{-2} \text{ nm}^{-1} \text{ sr}^{-1}$ )
<b>PHYSICAL</b> Height: Diameter: Weight: Depth Rating: Operating Temperature:	39.9 cm 6.0 cm 1.0 kg 250 m -10 to +50°C	39.9 cm 6.0 cm 1.0 kg 250 m -10 to +50°C	36.2 cm 6.0 cm 1.0 kg 250 m -10 to +50°C	36.2 cm 6.0 cm 1.0 kg 250 m -10 to +50°C

## SPECTRAL CHARACTERISTICS

Spectrograph range:	305 - 1100 nm
Factory Calibration:	350 – 800 nm
Spectral sampling:	3.3 nm/pixel
Spectral accuracy:	0.3 nm
Spectral resolution:	10 nm
Stray light:	$<1 \times 10^{-3}$
Detectors:	256 channel silicon photodiode array
Entrance Slit:	70 x 2500 $\mu\text{m}$
Pixel Size:	25 x 2500 $\mu\text{m}$

## ELECTRICAL CHARACTERISTICS

Acquisition module:	16 bit ADC
Integration time:	4 - 2048 ms (adaptive gain feature), 1 ms resolution
Frame rate:	3 Hz (at 128 ms integration time)
Data rate:	9600 – 115200 bps (user selectable)
Telemetry interface:	RS-422 / RS-232 (isolated)
Network Interface:	Proprietary Satlantic RS-485 SatNet (isolated)
Power requirements:	9 – 18 or 18 – 72 VDC ranges (2 Watts nominal)