

OCR-500 Series

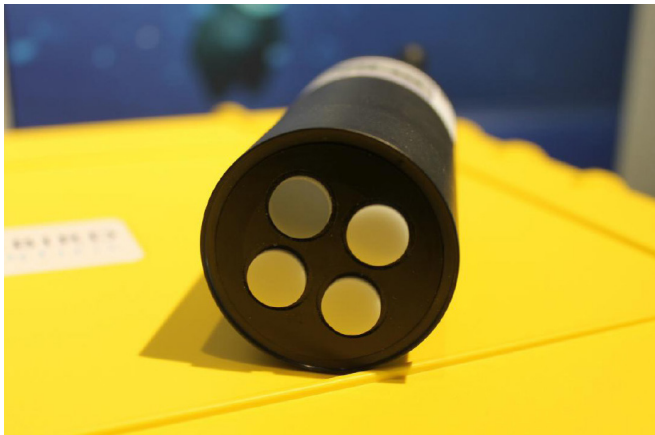
MULTISPECTRAL RADIOMETERS

Overview

The OCR-500 micro-sensor series is a fully digital optical sensor package that combines precision optics and high performance microelectronics. Satlantic designed this sensor series for applications where performance, size and power are key constraints. The OCR-500 series radiometers can be mounted on real-time profilers, moorings, and autonomous deepwater buoys and autonomous underwater vehicles (AUVs).

Options

- Irradiance and radiance measurements
- In water or in air
- 4 or 7 Wavelengths
- Standard wavelengths from 400 to 865 nm
- UV wavelengths available: 305, 325, 340, 380 nm



Irradiance



Radiance

Features

- Fast sampling rate (7 - 24 Hz)
- Fully characterized cosine response
- Custom low fluorescence filters
- Networking capability
- Bioshutter anti-fouling solution available

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Field Specifications

The specifications below represent the expected performance of the instrument when deployed in the field. Under controlled circumstances in a lab, we would expect the instrument to outperform these specifications.

We have chosen to display field specifications to give our users a true measure of how Sea-Bird Scientific instruments perform in harsh environments and applications. It is critical to keep this in mind when comparing specifications with instruments from other manufacturers.

Downwelling Irradiance

Sensor Model OCR-504 / 507 / Auv

Optical	
Typical saturation	300 $\mu\text{W cm}^{-2} \text{ nm}^{-1}$
Noise Equivalent Irradiance (NEI)	2.5 $\times 10^{-3} \mu\text{W cm}^{-2} \text{ nm}^{-1}$
Spatial	
Field of view	In-air or in-water Cosine response (Spectrally corrected)
Cosine Response	3% from 0-60° 10% from 60-85°
Collector Area	86.0 mm^2
Detectors	Custom 17 mm^2 Silicon photodiodes

Physical	
Height (4 and 7 channel)	11.0 cm, 12.5 cm
Diameter (4 and 7 channel)	4.6 cm, 6.5 cm
Weight	260 grams, 420 g
Material	Acetron / Anodized Aluminum
Connector (standard)	Micro 8 pin male
Maximum depth	2000 m/1000 m/1000 m*

*See website for full list.

Upwelling Radiance

Sensor Model OCR-504 / 507 / Auv

Optical	
Typical saturation	5 $\mu\text{W cm}^{-2} \text{ nm}^{-1} \text{ sr}^{-1}$
Noise Equivalent Irradiance (NEI)	300 $\times 10^{-3} \mu\text{W cm}^{-2} \text{ nm}^{-1} \text{ sr}^{-1}$
Spatial	
Field of view	10° in water (Half angle, half maximum) 14° in air (Half angle, half-maximum)
Spatial Response	5 $\times 10^{-4}$ > 1.5 FOV
Entrance aperture	9.5 mm diameter
Detectors	Custom 13 mm^2 Silicon photodiodes

Physical	
Height (4 and 7 channel)	11.0 cm, 12.5 cm
Diameter (4 and 7 channel)	4.6 cm, 6.5 cm
Weight	260 grams, 400 g
Material	Acetron / Anodized Aluminum
Connector (standard)	Micro 8 pin male
Maximum depth	2000 m/1000 m/1000 m*

*See website for full list.

The following apply to both **Downwelling Irradiance and Upwelling Radiance Sensor Models**

Electrical	
Telemetry options	RS232, RS422
Network options	SatNet RS485
Input voltage	6 to 22 VDC (12-volt nominal)
Current (4 and 7 channel)	25 mA at 12VDC (504) 40 mA at 12VDC (507)

Spatial	
Bandwidth range	400 - 865 nm standard
Number of channels	4 or 7 channels
Spectral bandwidth	10 nm or 20 nm
Filter type	Ion Assisted Deposition (IAD) Custom low fluorescence
Out of band rejection	10 ⁶



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