

OCR-500 Series

Multispectral Radiometers

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, moored, and autonomous deepwater buoys and autonomous underwater vehicles (AUV's).

Options

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

Features

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

Irradiance



Radiance



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

*See website for full list

Height (4 and 7 channel)	11.0 cm, 12.5 cm
Diameter	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*

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 radiance (NER)	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

*See website for full list

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*

The following apply to 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)

Spectral

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