RBR
MEASURE THE BLUE PLANET

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RBR*coda*³ PAR, RBR*coda*³ rad

PAR AND NARROW-BAND RADIOMETERS

LOW POWER, HIGH PERFORMANCE

The RBR*coda*³ PAR and RBR*coda*³ rad optical radiometers feature a wide dynamic range, optimized cosine response, and excellent low-light detection, making them ideal for both moored and profiling applications. The sensors are easy to integrate into any RBR multi-parameter instrument, or connect directly via RS-232.

FEATURES

- Low power consumption
- High accuracy
- Wide dynamic range
- Depths up to 2000m
- RS-232 output
- Compact and lightweight

Realtime streaming sensor configurations:

- RBR*coda*³ PAR — photosynthetically active radiation, uniform response between 400nm and 700nm, depths up to 1000m
- RBR*coda*³ PAR|deep — photosynthetically active radiation, uniform response between 400nm and 700nm, depths up to 2000m
- RBR*coda*³ rad — narrow-band radiation, 10nm- and 25nm-wide wavelength channels from 413nm to 560nm, depths up to 1000m
- RBR*coda*³ rad|deep — narrow-band radiation, 10nm- and 25nm-wide wavelength channels from 413nm to 560nm, depths up to 2000m

The RBR*coda*³ PAR sensor provides uniform response to light in the PAR spectral range, while the RBR*coda*³ rad is available in a variety of wavebands.

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Specifications

Physical

Connector	MCBH-6-MP
Diffuser	Acrylic
Housing	Plastic or titanium
Diameter	~25mm
Length	~270mm (with connector)
Depth rating	1000m (plastic), 2000m (Ti)
Weight	170g in air, 40g in water (plastic) 330g in air, 200g in water (Ti)
Sampling rate	Up to 16Hz

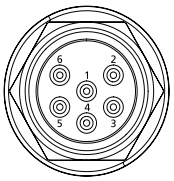
Power

Supply voltage	6V to 18V (12V nominal)
Sampling	77 mJ/sample (1Hz or slower) 15mA/180mW (2Hz or faster)

Interface

RS-232 polled or autonomous streaming

MCBH-6-MP connector pinout



- Pin 1 - Ground
- Pin 2 - Power
- Pin 3 - Serial data from sensor
- Pin 4 - Serial data to sensor
- Pin 5 - N/C
- Pin 6 - N/C

Sensor pack variants

Sensor pack variants of RBR*coda*³ PAR and RBR*coda*³ rad are available to integrate with RBR standard instruments.

Optical radiometry

Dynamic range	>5.5 decades
Absolute calibration[1]	±5%
Linearity	±1%
Operating temperature range	-5°C to 35°C
Cosine response error (water)	±5% at 0-60°C, ±10% at 61-82°C
Azimuth error (water)	±1.5% at 45°C
Out-of-band rejection[2]	>25dB (typical), OD 2.5

[1] RBR calibrates radiometers with NIST traceable references.
[2] Out-of-band rejection is wavelength-dependent for narrow-band radiometers.

Photosynthetically active radiation

Wavelength range	400nm to 700nm
Full scale range	0-5000µmol/m²/s (minimum)
Initial offset error[1]	±0.125µmol/m²/s
Resolution	±0.010µmol/m²/s

[1] Dark offset is internally temperature-compensated.

Narrow-band wavelength channels

Centre wavelengths (CWL)	413 /445 /475 /488 /508 /532 /560nm
Accuracy	±3nm (for all CWLs except 475nm) ±5nm (for CWL 475nm only)
Full width at half-maximum (FWHM)	10nm (for all CWLs except 475nm) 25nm (for CWL 475nm only)
Full scale range	0-400µW/cm²/nm (minimum)
Initial offset error[1]	±0.010µW/cm²/nm
Resolution[2]	±0.001µW/cm²/nm

[1] Dark offset is internally temperature-compensated.
[2] Resolution is wavelength-dependent for narrow-band radiometers.

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