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, 400-700nm, depths up to 1000m
RBR*coda*³ PAR|deep	photosynthetically active radiation, 400-700nm, depths up to 2000m
RBR*coda*³ rad	narrow-band radiation, channels from 413nm to 560nm, depths up to 1000m
RBR*coda*³ rad|deep	narrow-band radiation, 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 narrow-band light channels and channel widths.

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Specifications

Physical

Connector	MCBH-6-MP
Diameter	~25mm
Length	~270mm (standard)
Depth rating	1000m (plastic) 2000m (Ti)
Weight (air)	170g (plastic) 330g (Ti, standard)
Weight (water)	40g (plastic) 200g (Ti, standard)

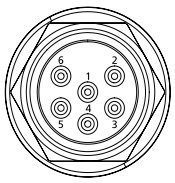
Power

Supply voltage	6 to 18V (12V nominal)
≤2Hz sampling	77 mJ/sample
>2Hz sampling	15mA/180mW at 12V

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.

Radiometer

Initial offset error[1]	±0.0025% full scale
Resolution[2]	±0.0002% full scale
Dynamic range	>5.5 decades
Absolute calibration[3]	±5%
Linearity	±1%
Time constant	<5ms
Operating temperature range	-5°C to 35°C
Gain temperature dependence	±0.15%/°C
Cosine response error (water)	±5% at 0-60° ±10% at 61-82°
Azimuth error (water)	±1.5% at 45°
Out-of-band rejection[2]	>25dB (typical), OD 2.5

Photosynthetically active radiation

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

Narrow-band wavelength channels

Centre wavelengths (CWL)	413 / 445 / 475 / 488 / 508 / 532 / 560nm
Accuracy (for CWL)	±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)
Accuracy (for FWHM)	±3nm
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] Out-of-band rejection and resolution are wavelength dependent for narrow-band radiometers.
[3] RBR calibrates radiometers with NIST traceable references.

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